

THOMSON

VIBE EM4000

HD Encoder



User Manual

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Preface

Standard Documentation Set

The standard ViBE EM4000 documentation set consists of:

- a User Manual
- a Quick Start Guide

The ViBE EM4000 User Manual contains background information about the ViBE EM4000 Encoder, and describes operating procedures. This manual can be used while learning about ViBE EM4000, and for enhancing your basic knowledge of the product.

The ViBE EM4000 Quick Start Guide contains information about installing and quickly configuring the equipment.

Software version

This manual covers the functionality of software Release 1.10 of the ViBE EM4000 Encoder.

This manual continues to be relevant to subsequent software versions where the functionality of the equipment has not changed. When a new software version changes the functionality of the product, a new version of this manual is provided.

About this Manual

This manual is written for Operators of the ViBE EM4000 Encoder.



This manual should be kept in a safe place for reference for the life time of the equipment. If the equipment is passed on to a third party, please ensure to pass on all relevant documentation including this manual.

The manual is organized into the following chapters and appendixes:

- Chapter 1 '**Overview**' gives a general description of the equipment and its main features. It also identifies the controls, indicators and connectors on the front and rear panels.

- Chapter 2 '**Installation and setup**' provides the procedures required for device installation and initial configuration and describes how to connect the device to other devices in your system.
- Chapter 3 '**Front Panel Operation**' describes how to use the Front Panel of the equipment.
- Chapter 4 '**Web Browser Interface**' describes how to use the Web Browser Graphical User Interface to configure the equipment.
- Chapter 5 '**Servicing**' describes how to install software options via the Command Line Interface and gives recommendations for cleaning the air inlet grille.
- Chapter 6 '**Tools**' describes the tool(s) which can be used with the product. In this release, the Download Application is described.
- Appendix A '**Technical Specifications**' gives specifications of the device, Device compliance, Declarations of Conformity and an Ordering guide for ordering the device and its options.
- Appendix B '**Safety Instructions**' gives instructions related to risk of fire, electric shock or injury to persons.
- Appendix C '**Regulatory Notices**' provides device compliances regarding FCC emission control, Canadian EMC compliance, EN55022 Class A recommendations, VCCI Class A recommendations and Laser compliance.
- Appendix D '**Customer Services**' indicates what you should do if you have a problem with equipment, whether you need to repair it, to return it or to dispose of it.
- Appendix E '**Alarms**' gives the list of alarms which may be visible in the Alarm panel. For each alarm the diagnostics, action to be performed and alarm severity are given.

A **glossary** can be found at the end of the manual just before the Index.

Conventions Used in This Manual

Warnings, Cautions and Notes

Heed Warnings

All warnings on the product and in the operating instructions should be adhered to. The manufacturer cannot be held responsible for injuries or damage where warnings and cautions have been ignored or taken lightly.

Read Instructions

All the safety and operating instructions should be read before this product is operated.

Follow Instructions

All operating and use instructions should be followed.

Terms in this Manual

Safety-related statements appear in this manual in the following form:



Warning statements identify conditions or practices that may result in personal injury or loss of life.



Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.



Notes provide supplementary information. They are highlighted for emphasis, as in this example, and are placed immediately after the relevant text.

Formatting

Naming conventions for the interface elements and Windows elements in this manual follow the Microsoft Manual of Style, Third Edition. Naming conventions for MPEG-2, ATSC, and DVB structures follow the conventions derived from the standards documents listed in [Appendix A 'Technical Specifications'](#). In addition, the following formatting conventions apply to this manual:

- **Pale blue** text refers to specific interface elements that you are instructed to select, click, or clear.

Example: “Select **Settings** from the **Configuration** menu.”

- **Blue** text refers to document names, sections, figures or tables.

Example: “Refer to **Section ‘Warnings, Cautions and Notes’** on page 13 for more information.”

- Mono-spaced text can indicate the following:

- ❖ Text you enter from a keyboard

Example: “Enter administrator for your login and administrator for your password”

- ❖ Paths to components on your hard drive

Example: “The MIB is at the following location: C:\MIB”.

Documentation Feedback

We take great care with our publications. Please help us to improve them by sending your feedback with the reference of the manual to the email address:

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Chapter 1

Overview

Introduction

This chapter gives a general description of the equipment and its main features. It also identifies the controls, indicators and connectors on the front and rear panels.

In this Chapter

'Product Overview'	.....	page 8
'Product Description'	.....	page 13

Product Overview

Purpose

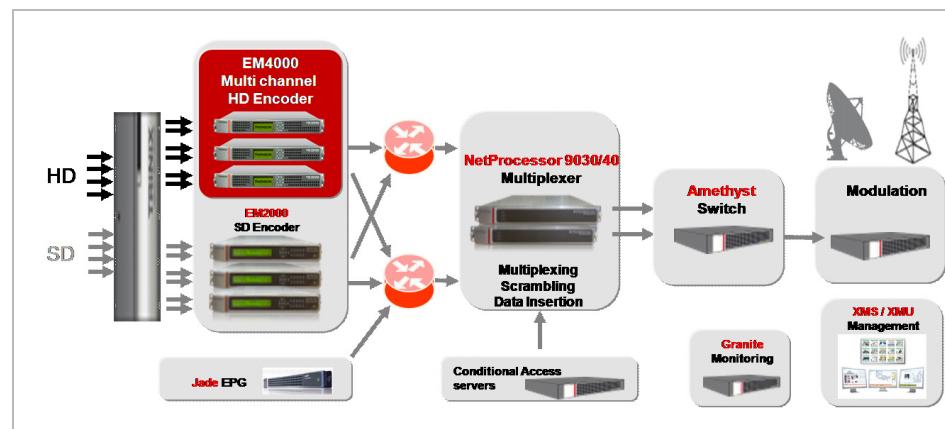
The ViBE EM4000 MPEG HD Encoder is a High Definition Video Compression Encoder that provides real-time implementation of the MPEG-4 AVC (H.264) compression algorithm for High Definition content format.

The ViBE EM4000 provides video encoding of up to 4 video channels in MP@L4 and HP@L4 formats at 2 to 20 Mbit/s.

The ViBE EM4000 MPEG Encoder features up to 4 HD-SDI inputs for up to 4 HD video and embedded audio.

The compressed signals are available on 2 Giga Ethernet interfaces.

Figure 1-1. ViBE EM4000 in a Workflow



Main Features

(Some features are optional)

- Inputs / Outputs
 - ❖ 2 or 4 HD-SDI video inputs depending of the EM4000 version
 - ❖ 2 GigE outputs
 - ❖ 2 100/1000 BT Ethernet Control & Command links
- Video
 - ❖ 2 or 4 HD TV channels depending of the EM4000 version
 - ❖ Full MPEG-4 AVC support with MBAFF and PAFF for interlaced contents
 - ❖ Remote Flexstream (statistical multiplexing)
 - ❖ Capped VBR mode

■ Audio

- ❖ HD-SDI embedded audio input
- ❖ Audio transcoding
 - Dolby® E transcoding to Dolby® Digital (AC3) or Dolby® Digital Plus (E-AC3) stereo
 - Dolby® E transcoding to Dolby® Digital (AC3) 5.1 or Dolby® Digital Plus (E-AC3) 5.1
- ❖ Audio encoding
 - MPEG-1 Layer II 2.0, 1.0
 - Dolby® Digital (AC3) 2.0, 1.0
 - Dolby® Digital (AC3) 5.1
 - Dolby® Digital Plus (E-AC3) 2.0, 1.0
 - Dolby® Digital Plus (E-AC3) 5.1
 - AAC-LC 2.0, 1.0
 - HE-AAC 2.0, 1.0
 - HE-AAC v2 2.0
 - AAC-LC 5.1
 - HE-AAC 5.1
- ❖ Audio transport (external encoding)
 - Dolby® Digital (AC3)
 - Dolby® Digital Plus (E-AC3)

■ VBI processing

- ❖ VITC
- ❖ Closed Caption
- ❖ PVR descriptor
- ❖ WST (HD teletext)
- ❖ AFD

■ Control and Monitoring

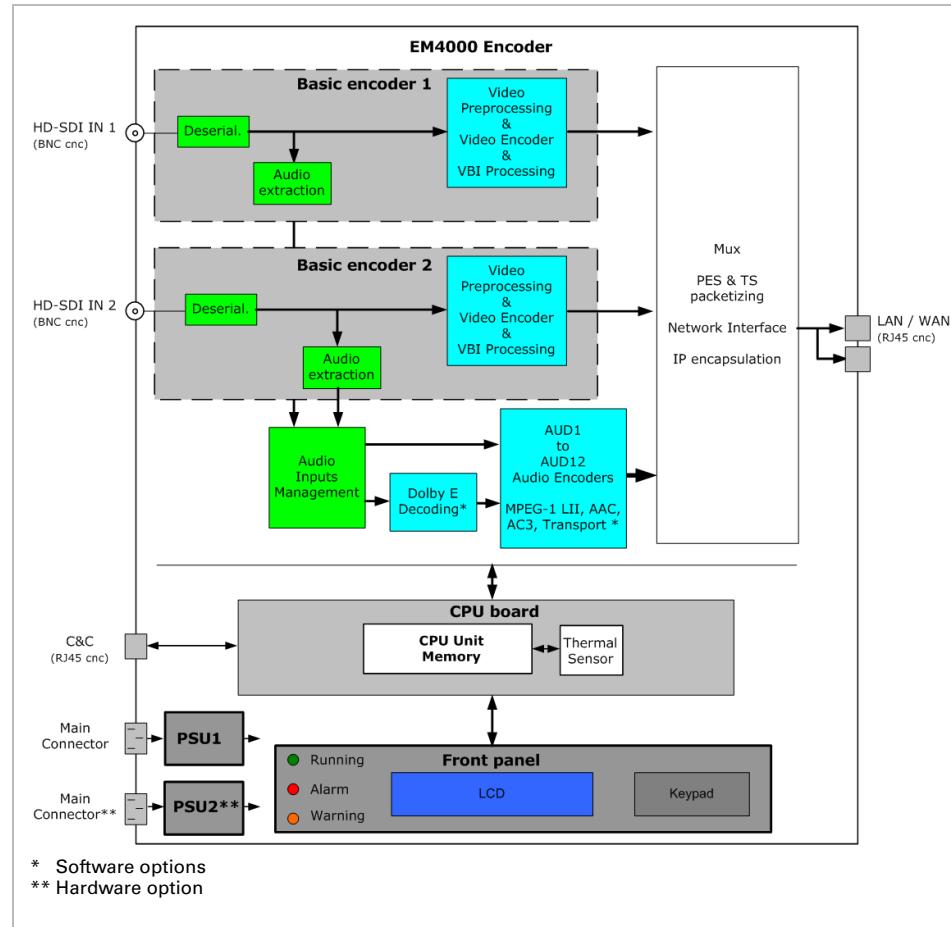
- ❖ Control and Monitoring through Web Browser or XMS eXtensible Management System
- ❖ Monitoring through SNMP

Encoder block diagrams

ViBE EM4000 NEM40IN2AA Encoder

The ViBE EM4000 NEM40IN2AA Encoder Block Diagram is represented below:

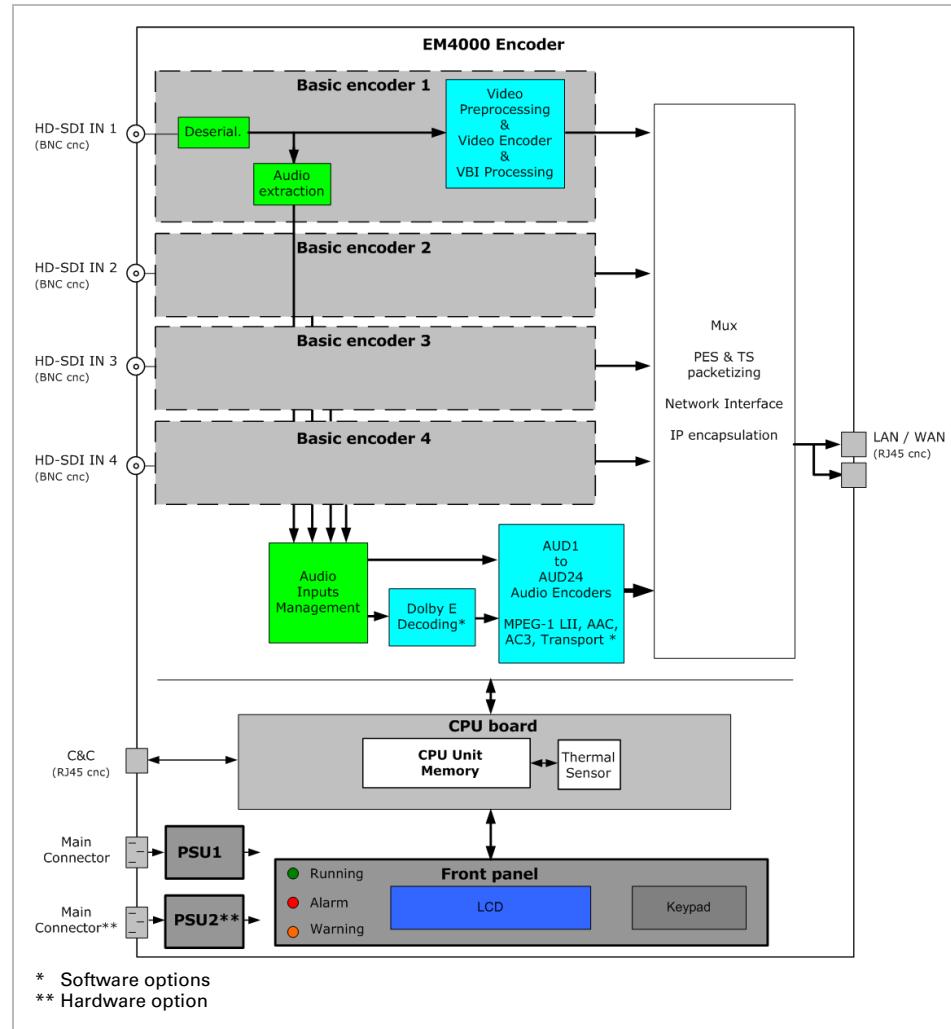
Figure 1-2. ViBE EM4000 NEM40IN2AA block diagram



ViBE EM4000 NEM40IN4AA Encoder

The ViBE EM4000 NEM40IN4AA Encoder Block Diagram is represented below:

Figure 1-3. ViBE EM4000 NEM40IN4AA block diagram



Encoder modes of operation

The ViBE EM4000 Encoder features some Basic encoders.

The device can be set to have:

- 1 MPTS at the output of each Basic encoder
- 1 MPTS at the output of the ViBE EM4000 Encoder

Some examples of these configurations are represented below:

Figure 1-4. 1 MPTS per channel (Basic encoder) operation mode - EM4000 NEM40IN2AA

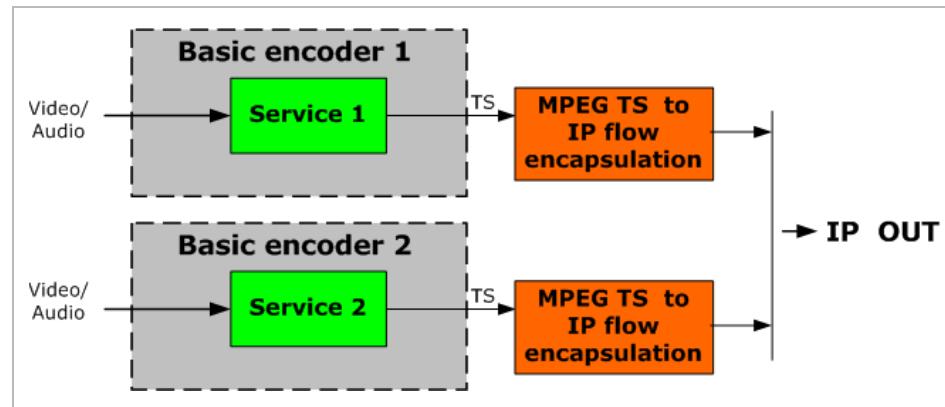
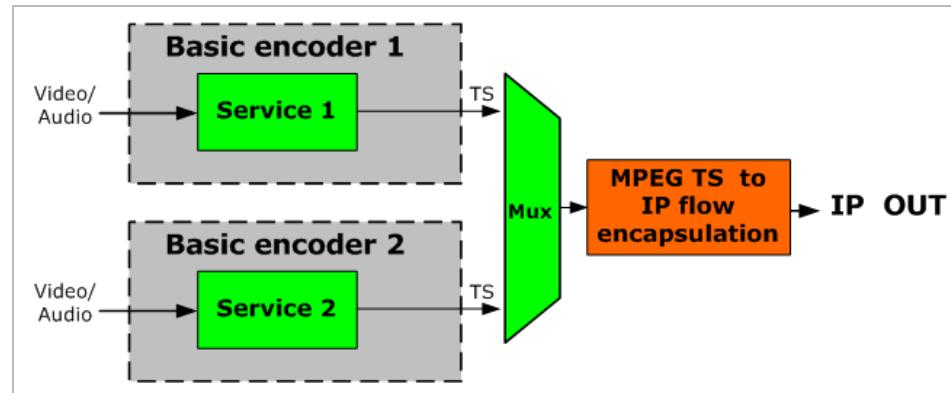


Figure 1-5. 1 MPTS per shelf (ViBE EM4000 Encoder) operation mode- EM4000 NEM40IN2AA



Product Description

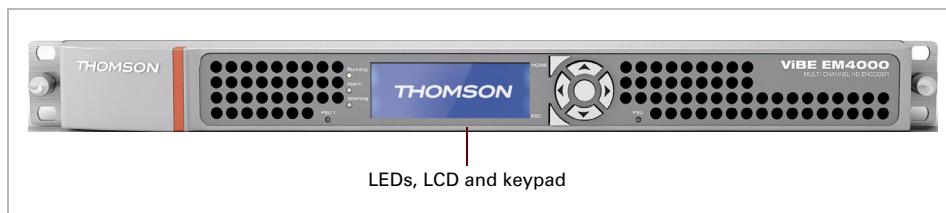
Chassis

Overview

ViBE EM4000 is a modular product in a 1 RU 19" chassis with dual built-in power supplies (a 2nd power supply can be supplied on an optional basis).

Front Panel

Figure 1-6. ViBE EM4000 front panel



The features of the ViBE EM4000 front panel are described in the Front Panel Operation chapter of this User Manual.

Rear Panel

Figure 1-7. ViBE EM4000 NEM40IN2AA rear panel

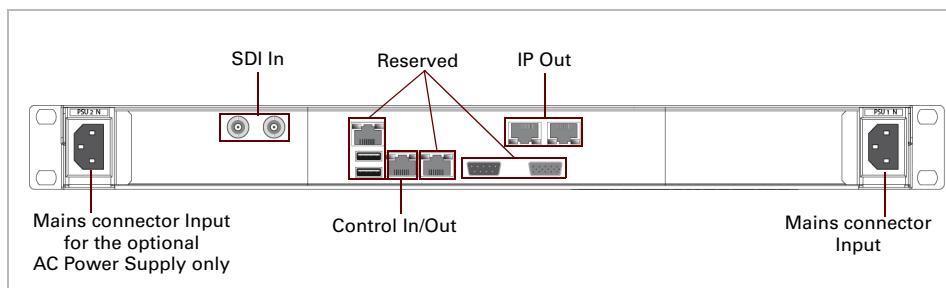
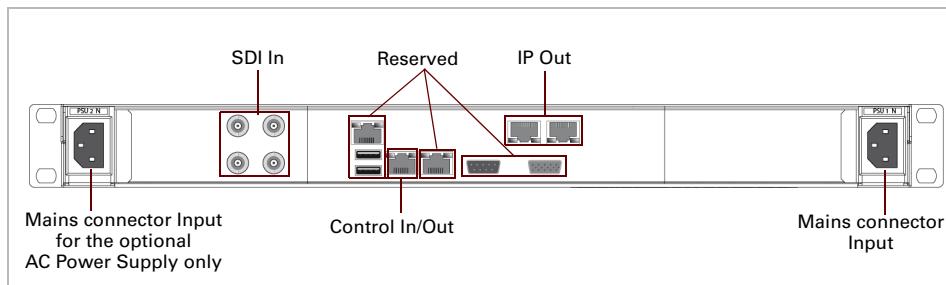


Figure 1-8. ViBE EM4000 NEM40IN4AA rear panel



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Chapter 2

Installation and Startup



Read and follow the important safety information in section 'Safety Instructions' on page 201, noting especially those instructions related to risk of fire, electric shock or injury to persons.

Introduction

This chapter provides the procedures required for device installation and initial configuration and describes how to connect the device to other devices in your system.

In this Chapter

'Unpacking'	page 16
'Installing the Device (Steps)'	page 17
'Mounting in Rack'	page 18
'Powering Up'	page 25
'Performing the Initial Settings'	page 26
'Connecting the Signal Cables'	page 35

Unpacking

Table 2-1 lists the accessories that are always shipped with your device. Use this list to ensure that your order is complete.

More accessories can be delivered depending on your chosen options.

Table 2-1. List of accessories delivered with the device

Quantity	Description
1	ViBE EM4000 Encoder
1	ViBE EM4000 Quick Start Guide
1	CD-ROM
1	Acceptance Test Report
x	Power cables if ordered

Installing the Device (Steps)

The following steps are required for device installation and initial configuration:

- 1.** Remove the protective film from both sides before installation.
- 2.** Mount the device in a rack.
- 3.** Power up the device.
- 4.** Enter the initial parameters via the Local Console application (IP parameters, Date/Time, etc.).
- 5.** Connect the device to the other devices.
- 6.** Launch a Web Browser.

Mounting in Rack

Rack mounting is not mandatory for ViBE EM4000 but the ventilation and safety requirements given in this section must be observed in all cases.



The chassis must not be fixed with its rack mounting ears only. If you intend to install it in a rack, L-profiles are required and you must observe the ventilation and safety instructions described in the following sections.

ViBE EM4000 Installation Requirements

This section lists the principles to be observed and the steps to be taken when installing ViBE EM4000 in a 19" rack.

Restrictions must be observed:

- related to ventilation (see section '[Ventilation](#)' on page 18)
- related to cabling (see [section 'Cabling'](#) on page 23)
- related to EMC ground (see [section 'EMC Ground'](#) on page 23)
- related to Power supply and protective ground (see [section 'Power Supply and Protective Ground'](#) on page 24).

Ventilation

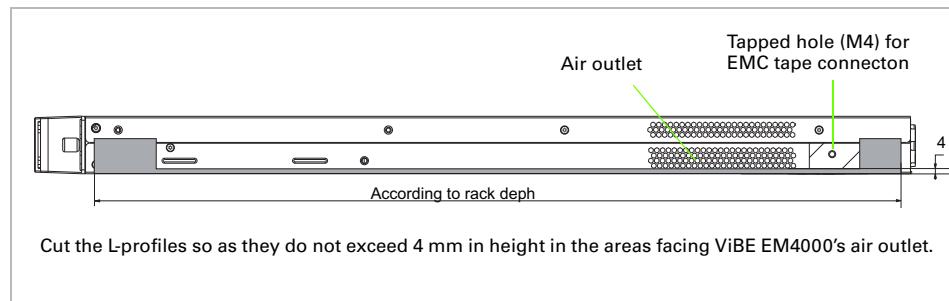
Please note that product failure rates are increased by high temperatures. The following precautions should therefore be observed:

- Prevent hot air from one device being introduced into other devices.
- Ensure adequate distribution of air flows to the device intakes.
- Avoid the effects of natural convection between devices.
- Avoid hot/cold air short-circuits.
- Avoid transverse effects in coupled racks.
- Prevent hot air from accumulating in the rack.
- Check the air flows: the rack should ensure a sufficient supply of cold air and sufficient evacuation of hot air (according to the number of devices mounted in the rack and their corresponding air flows).

The following important requirements should be noted in addition to the general recommendations:

- The device must be installed in a room with low dust levels. The maximum density of dust in the air must not exceed $100\mu\text{g}/\text{m}^3$ and the maximum number of particles with a diameter greater than $1\mu\text{m}$ must not exceed 1 million/ m^3 . To prevent the power supply from overheating, remember to regularly clean the rack filter (if there is one) according to the manufacturer's recommendations and clean ViBE EM4000's air inlet grill (at least once a year).
- There must be enough room for a column of cold air to circulate on the front of the chassis and a column of hot air to circulate on the rear of the chassis.
- Cut the L-profiles so as they do not exceed 4 mm in height in the areas facing ViBE EM4000's air outlet. This will prevent any hot air from accumulating in the device.

Figure 2-1. L-profiles



- Given its 1RU height, ViBE EM4000 can be placed on top of another ViBE EM4000. It is however advisable to observe the following restrictions:
 - ❖ It is possible to stack ViBE EM4000s in groups of two, each group being separated from another group by a space of 1RU.

Failure to observe these installation requirements will directly result in a deterioration in performance, reliability and service life of equipment.

Figure 2-2. First example: ViBE EM4000 on a pressurized floor in a standard rack (front view)

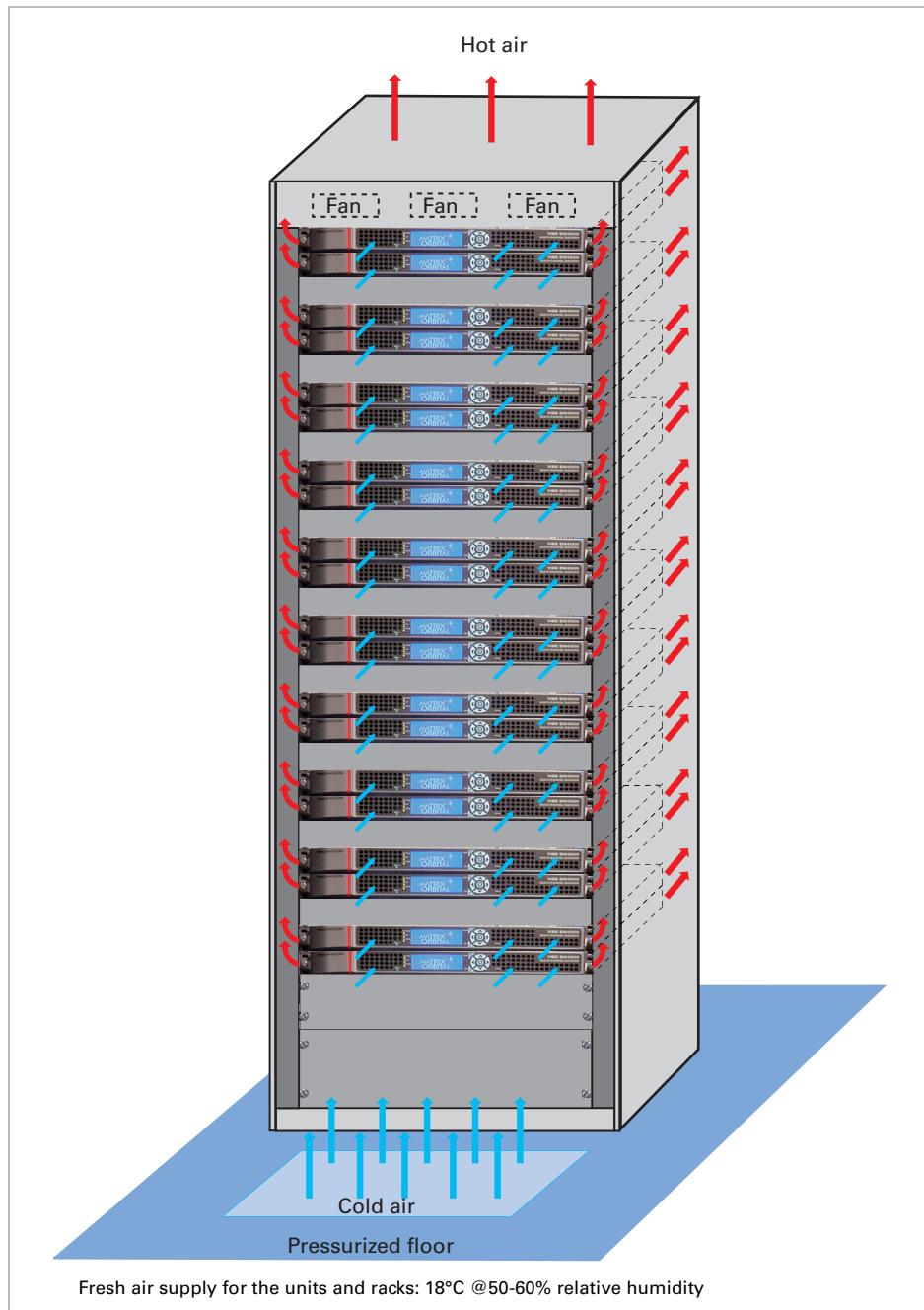


Figure 2-3. Second example: ViBE EM4000 on an unpressurized floor in a standard rack (front view)

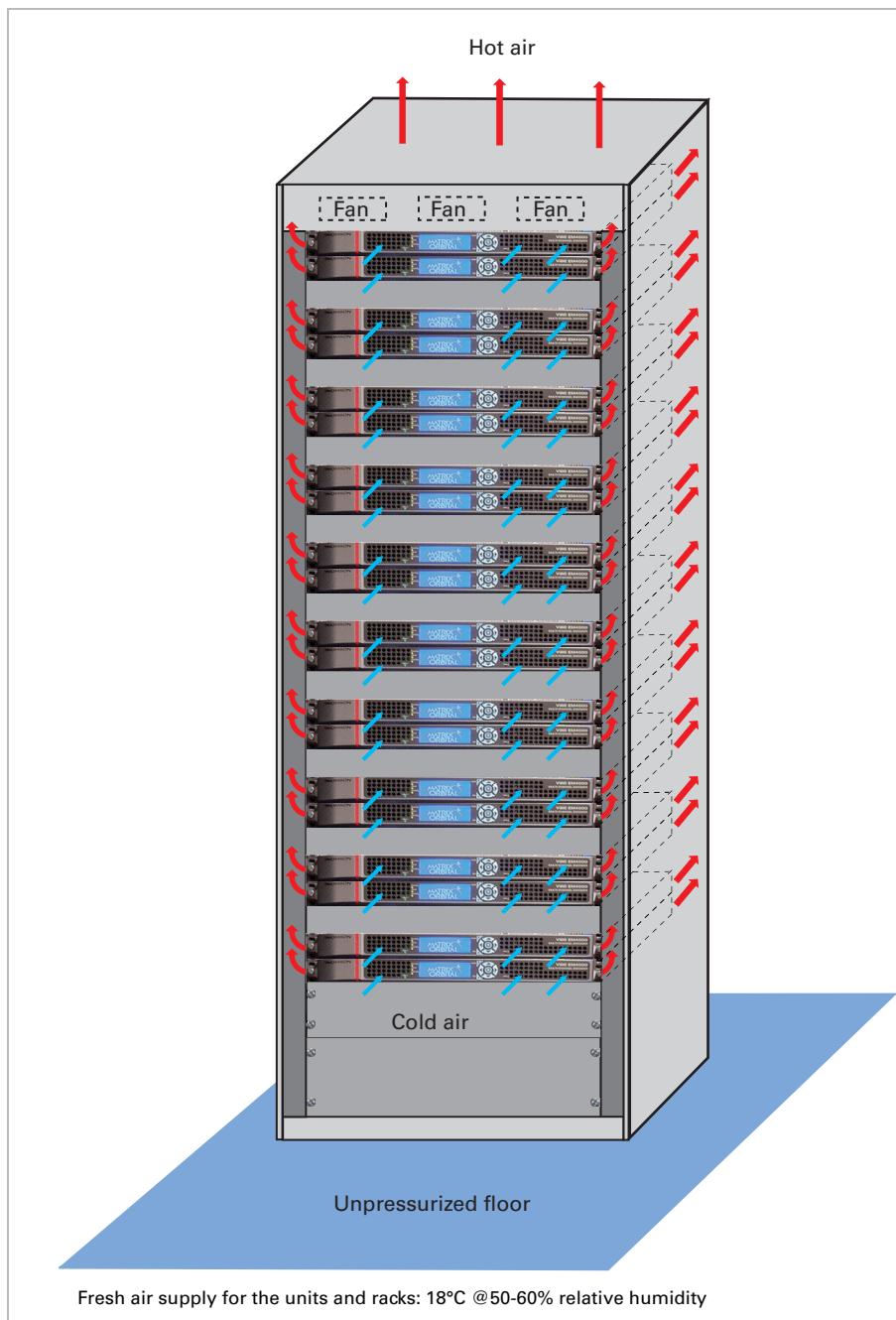
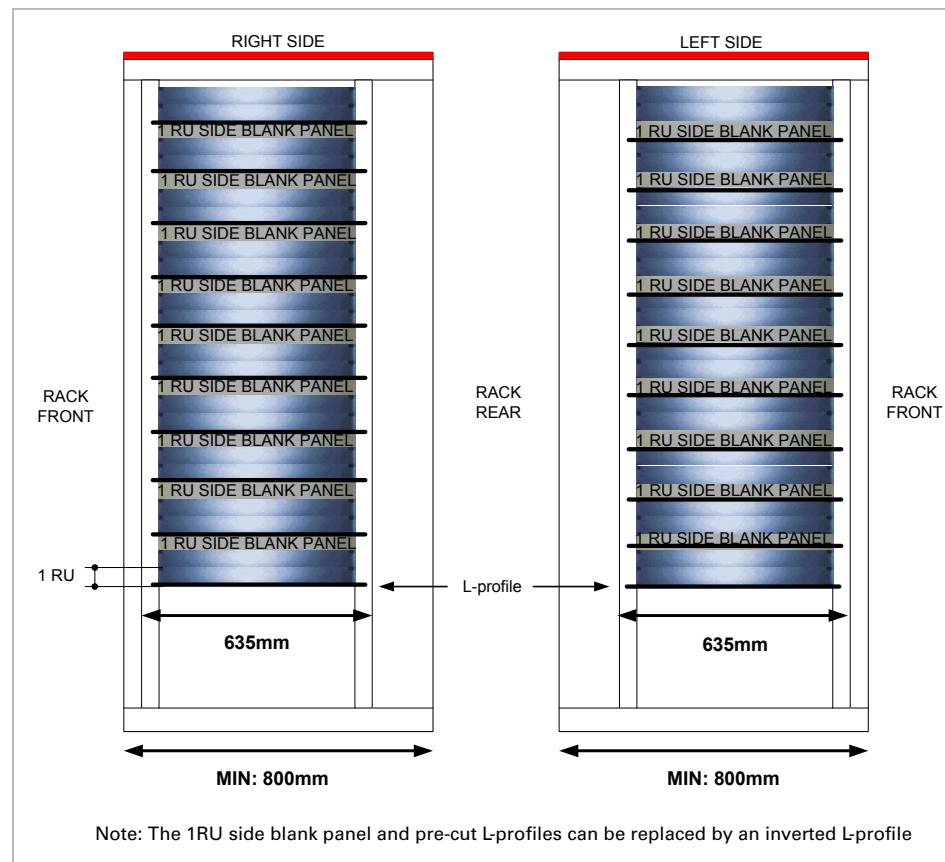


Figure 2-4. ViBE EM4000 in a standard rack (side view)



Cabling

It is essential to separate the power supply cables from the signal cables. When facing the rear of the rack (as the device is connected via the rear panel), the power supply cables must be guided to the right of the chassis and the signal cables to the left.

EMC Ground

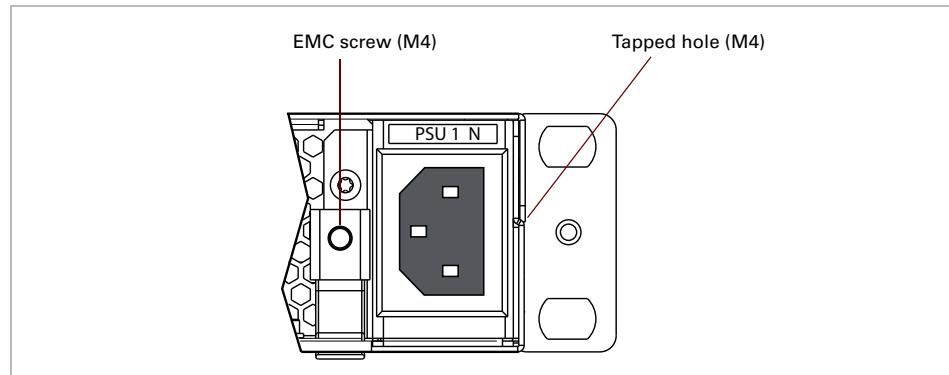
The EMC connection is required to ensure ground equipotentiality between the different devices in the technical center (only one connection is required per device).

Each Encoder side panel features a tapped hole to connect a bonding strip. The bonding strip can be fixed either on one side of the chassis (right or left side) or on the rear of the chassis (left side).

- Fixing the bonding strip on the back of the chassis. The bonding strip is fixed using an M4 nut (provided with the product). It must have a 6mm^2 cross-section and be under 500mm in length.
- Fixing the bonding strip on the side of the chassis. The bonding strip is fixed using an M4 screw whose length depends on the bonding strip type (no more than 15 mm of the screw must be inserted into the Encoder). The bonding strip must have a 6 mm^2 cross-section and be under 500 mm in length.

The rack EMC DC bus (to which the ViBE EM4000 EMC strip is connected) must be connected to the rack ground pin. This pin is also connected to the safety ground.

Figure 2-5. EMC screw, rear panel



Power Supply and Protective Ground

Power Supply Cord(s) Specifications

The AC mains power cords are only shipped with the device if ordered. Otherwise, it is advisable to use mains cables with the following features:

- Device end of cable: IEC 320 compliant connector
- Flexible wire: 3 x 1 mm² cross-section or 18 AWG, 10 A minimum, 250 V compliant with the applicable standard or rules of the country where the device is installed
- Mains outlet end of cable: plug compliant with the applicable standard or rules of the country where the device is installed.

Connecting AC Mains Power Supply Cord(s)

Power Supply End

The connection panel should comply with the legislation in force in the country of installation. The connection panel must be positioned in the rack in such a way that the plug and power cord(s) are within easy reach for switching off purposes.

For (each) mains inlet, the wiring system must feature overload and earth fault protection and a bipolar cut-off device or a differential circuit breaker. If in doubt, contact a qualified electrician.

ViBE EM4000 End

Plug the power cord(s) into the mains inlet(s).

Powering Up



Check that ViBE EM4000 is not yet connected to the LAN as factory-set IP addresses may cause disturbance on the LAN when ViBE EM4000 is switched on (address conflict).

Connect the power cords. The green Power LED(s) PSU 1 (and PSU 2 if optional PSU is installed) will come on.

After a start-up phase, the device will become operational. When the device is switched on, the last stored configuration will be active.

Performing the Initial Settings

Accessing the Local Console application

Introduction

The device features the Local Console application. The Local Console application can be accessed by connecting to the Encoder via the CONTROL 1 Ethernet link and an SSH client application.

The free PuTTY SSH client application is used in this chapter.

The PuTTY application can be downloaded on <http://www.putty.org/>

Figure 2-6. PuTTY application

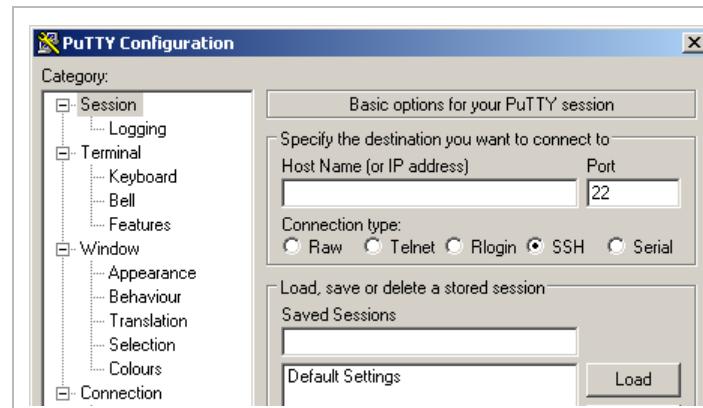
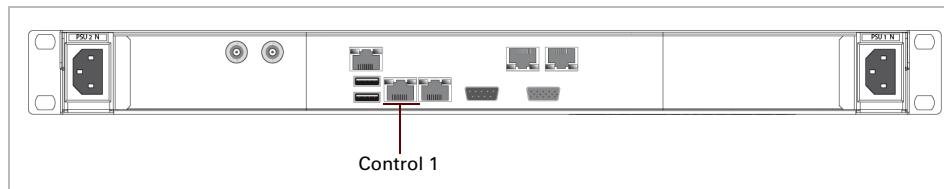


Figure 2-7. Control 1 connector, ViBE EM4000 NEM40IN2AA rear panel



- The ViBE EM4000 IP address, which is required for the **first** connection, is given on the **Acceptance Test Report** shipped with the device.
 - The factory set IP address and Netmask for the Control & Command port are 192.168.1.1 and 255.255.255.0.
 - The Encoder IP address can be viewed/edited via the Encoder Front panel. Refer to section '[IP Settings screen](#)' on page 45.
 - The IP address can be changed during the installation setup (see section '[Editing IP parameters \(ipset\)](#)' on page 29) or via the Encoder Front panel. Refer to section '[IP Settings screen](#)' on page 45.
- This IP address will be the new customer set IP address that will be required for subsequent connections to the device.

As the ViBE EM4000 Control Ethernet interfaces host an autocrossover mechanism, you can use a direct or crossed cable connection between the PC and ViBE EM4000.

SSH client application setting

The SSH client application must be set with the following parameters:

- ❖ [Host name \(or IP address\)](#): Encoder IP address
- ❖ [Port](#): 22

Accessing the Local Console

1. Run the SSH application on the PC connected to the network using the Encoder IP address. The Login page is displayed.
2. Enter `user` as Login

Figure 2-8. Enter login, Login page



3. Enter `user` as password

The Local console main screen is displayed:

Figure 2-9. Local Console main screen



Setting Initial Parameters

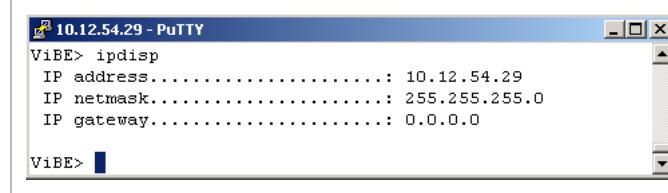
Commands Relating to IP Parameters

The following procedure is used to set the IP parameters of the Control 1 & 2 port located on the ViBE EM4000's rear panel.

Displaying IP Parameters (*ipdisp*)

To display the Encoder IP parameters, type *ipdisp* after the **ViBE** prompt:

Figure 2-10. Displaying Encoder IP parameters - *ipdisp* command

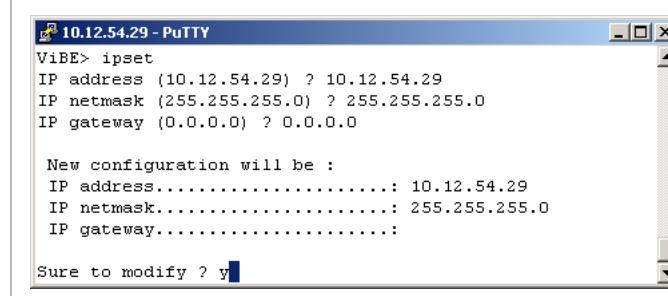


```
10.12.54.29 - PuTTY
ViBE> ipdisp
IP address.....: 10.12.54.29
IP netmask.....: 255.255.255.0
IP gateway.....: 0.0.0.0
ViBE>
```

Editing IP parameters (*ipset*)

To edit the Encoder IP parameters, type *ipset* after the **ViBE** prompt:

Figure 2-11. Editing Encoder IP parameters - *ipset* command



```
10.12.54.29 - PUTTY
ViBE> ipset
IP address (10.12.54.29) ? 10.12.54.29
IP netmask (255.255.255.0) ? 255.255.255.0
IP gateway (0.0.0.0) ? 0.0.0.0

New configuration will be :
IP address.....: 10.12.54.29
IP netmask.....: 255.255.255.0
IP gateway.....:

Sure to modify ? y
```

- Enter the new value of the parameter(s) to be edited and press Return. If the parameter does not require editing, you do not need to enter its value. Just press Return straight after ? to confirm the current value. If the IP gateway address is not used, type 0.0.0.0.
- Type *y* after **Sure to modify ?** if you wish to confirm the new configuration or *n* if you wish to keep the previous configuration.



- The changes will be acknowledged after the Encoder has been rebooted.
- The Encoder must be connected to the network during the boot which follows IP address configuration to facilitate detection of MAC/IP address pair changes.

Commands Relating to the Date and Time

Displaying the current date and time (*ddate*)

To display the current date and time, type `ddate` after the [ViBE](#) prompt:

Figure 2-12. Displaying the current date and time - *ddate* command



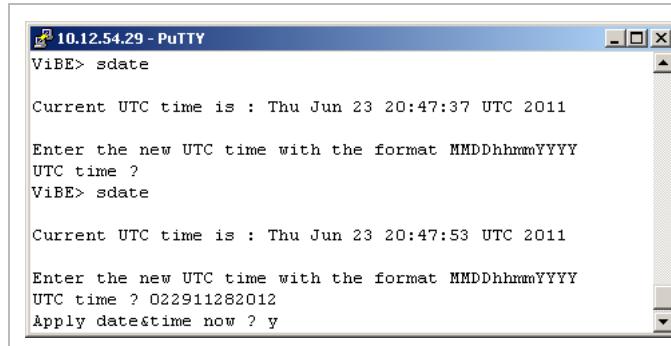
```
10.12.54.29 - PuTTY
ViBE> ddate
Thu Jun 23 20:45:32 UTC 2011
ViBE>
```

UTC date and time will be displayed.

Editing the date and time (*sdate*)

To edit the date and time, type `sdate` after the [ViBE](#) prompt:

Figure 2-13. Editing the date and time - *sdate* command



```
10.12.54.29 - PuTTY
ViBE> sdate
Current UTC time is : Thu Jun 23 20:47:37 UTC 2011
Enter the new UTC time with the format MMDhhmmYYYY
UTC time ?
ViBE> sdate
Current UTC time is : Thu Jun 23 20:47:53 UTC 2011
Enter the new UTC time with the format MMDhhmmYYYY
UTC time ? 022911282012
Apply date&time now ? y
```

Enter the following fields:

- Type the new date and time values in month, day, hour, minute and year format (without spaces) after [UTC time ?](#).
- Type `y` after [Apply date&time now ?](#) if you wish to confirm the new values or `n` if you wish to keep the previous values.

The [Done](#) message will be displayed to indicate that the changes have been acknowledged.

Commands relating to the NTP configuration

The purpose of NTP (Network Time Protocol) is to synchronize devices via a shared network. An external NTP server serves as reference for the Encoder, which is an NTP client (its internal clock is synchronized with the NTP server).



You are advised to manually set the ViBE EM4000 system clock as close as possible to the NTP server clock. Several minutes are required to achieve perfect synchronization between the two platforms.

Displaying NTP server status and IP address (*dntp*)

To display the NTP server status and IP address, type `dntp` after the **ViBE** prompt:

Figure 2-14. Displaying NTP server status and IP address - *dntp* command

```
10.12.54.29 - PuTTY
ViBE> dntp

NTP time synchronization : Disable
Preferred NTP server address :
Secondary NTP server address :

ViBE>
```

Editing NTP server status and IP address (*sntp*)

To edit the NTP server status and IP address, type `sntp` after the **ViBE** prompt:

Figure 2-15. Editing NTP server status and IP address - *sntp* command

```
10.12.54.29 - PuTTY
ViBE> sntp

NTP time synchronization [1=Enable]/[0=Disable] (0) 1
Preferred NTP server IP address () : 172.32.63.35

Enable NTP time synchronization (servers 172.32.63.35)
Change takes effect after board reboot

ViBE>
```

- To enable/disable time synchronization, type 1 (Enable) or 0 (Disable).
- To edit the preferred IP address, type the new address on the second line.



- The changes will be acknowledged after the Encoder has been rebooted.
- The first synchronization operation may take up to 20 minutes.

Declaring Web Interface Users

Foreword

The Encoder can be operated via a Web Browser connected to the Web Interface featured on the device. Users accessing the Encoder via this Interface must have been declared in the device. User declaration and management (creation, deletion, password, rights, etc.) are performed via the Local Console.

User rights are defined according to four preset profiles: Operator, Technician, Administrator, Service. The rights corresponding to the profiles are as follows:

Table 2-2. Web Interface User Profiles and corresponding rights

	operator	technician	administrator	service
View Topology	X	X	X	X
View Predefined Configurations	X	X	X	X
Create Predefined Configurations		X	X	X
Recall Predefined Configurations		X	X	X
View Encoder Configuration	X	X	X	X
Edit Encoder Configuration		X	X	X
View Alarms	X	X	X	X
Reboot Device		X	X	X
Create User		X	X	

The following Users are defined on device shipment:

Table 2-3. Users defined on device shipment

User name	Password	Profile
admin	admin	administrator
service	service	service
technician	technician	technician
operator	operator	operator
user	user	operator

Table 2-3. Users defined on device shipment

User name	Password	Profile
guest	guest	guest (=operator)

It is possible to edit the characteristics of these Users and a maximum of 64 Users can be defined.

Adding a User (*usradd*)

To add a User, type `usradd` after the **ViBE** prompt:

Figure 2-16. Adding a Web Interface User - *usradd* command

```
ViBE> usradd
Add user
name ..... : tech1
password ..... :
confirm password ... :
- administrator
- service
- technician
- operator
profile ..... : technician
add tech1 as technician
Done.
```

Enter the following fields:

- **name**: User name
- **password**: password for accessing the Web Interface
- **confirm password**: re-enter the password for accessing the Web Interface
- **profile**: enter the User profile. The available profiles are given just above this field.

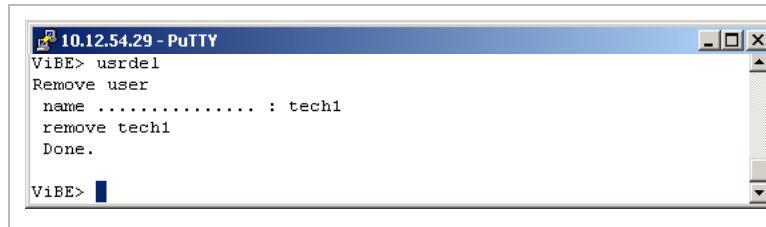
The following information will be displayed:

- **add xxxxxx as yyyy**: User xxxxxx with the profile yyyy has been successfully added.
If the operation is not successful, the reason for failure will be displayed.

Deleting a User (*usrdel*)

To delete a User, type `usrdel` after the **ViBE** prompt:

Figure 2-17. Deleting a Web Interface User - `usrdel` command



```
10.12.54.29 - PuTTY
ViBE> usrdel
Remove user
name ..... : tech1
remove tech1
Done.

ViBE>
```

Enter the following fields:

- **name**: name of User to be deleted

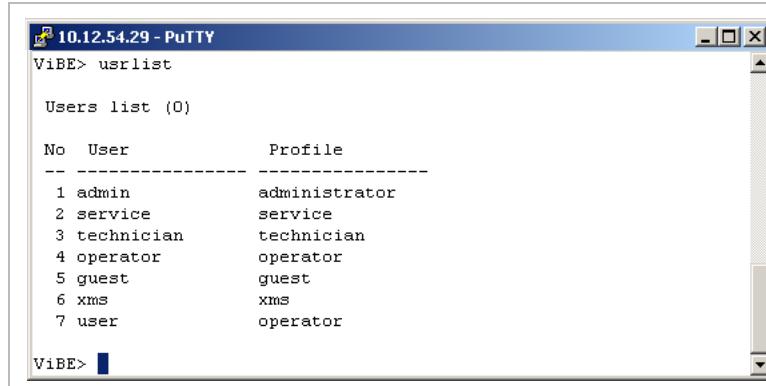
The following information will be displayed:

remove xxxx: User xxxx has been successfully deleted.
If the operation is not successful, the reason for failure will be displayed.

Displaying the list of Users (`usrlist`)

To display the list of Users and their profiles, type `usrlist` after the `ViBE` prompt:

Figure 2-18. Displaying the list of Web Interface Users - `usrlist` command



```
10.12.54.29 - PuTTY
ViBE> usrlist

Users list (0)

No User Profile
-----
1 admin administrator
2 service service
3 technician technician
4 operator operator
5 guest guest
6 xms xms
7 user operator

ViBE>
```

The following information will be displayed:

- **User**: User name
- **Profile**: User profile

Declaring Software options (if required)

If software options need to be installed, see the [Servicing](#) chapter to install them using the Local Console.

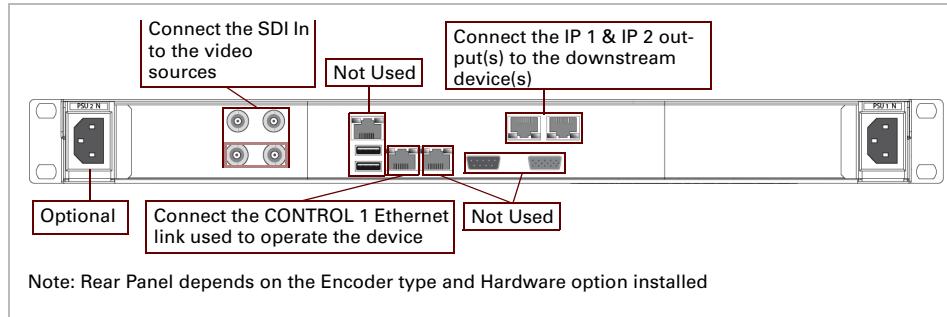


If options are ordered with the product, they will have been installed at the factory and will be immediately available to the operator.

Connecting the Signal Cables

On the rear panel

Figure 2-19. Rear Panel, ViBE EM4000 Encoder

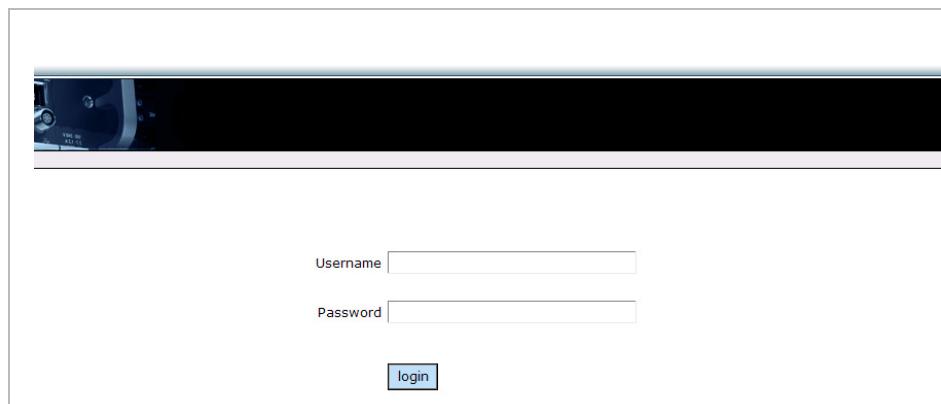


Running the Web Browser

When the previous installation procedure is complete, device operation can begin. Set up the connection between the PC and the Encoder. To do this:

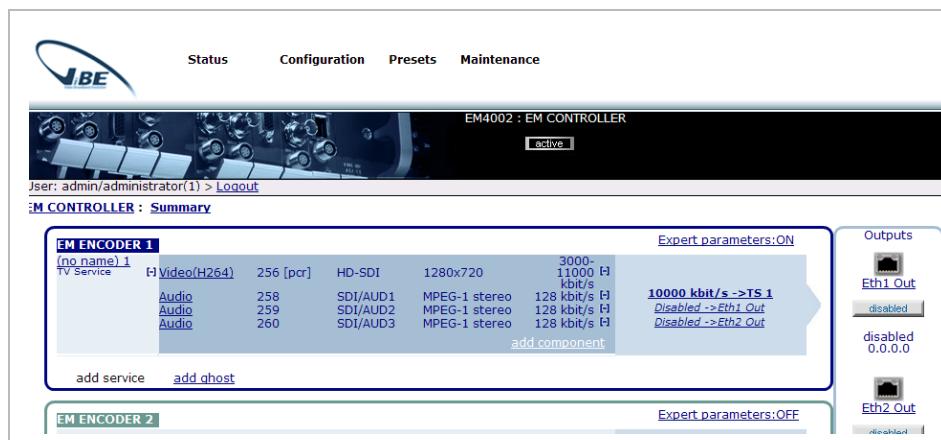
1. Run the Web Browser on the PC connected to the Encoder via the Control Ethernet link.
2. Connect to the Encoder by entering its IP address. The [Login](#) page will be displayed:

Figure 2-20. Login page



3. Log in by entering your Username and Password (admin can be entered for both the default username and password if it has not been deleted from the list of Users). The device [Status/Summary](#) page will be displayed:

Figure 2-21. Status/Summary page



To operate the Encoder via its Web Browser Interface, refer to [Chapter 4 'Web Browser Interface'](#) on page 51.

Chapter 3

Front Panel Operation

Introduction

This chapter explains how to use the Front Panel to configure the equipment.

In this Chapter

'Front Panel Description' page 38

'Screen Description' page 41

Front Panel Description

Foreword

The aim of the front panel is not to replace the Management System but to provide a basic control/command interface for the main settings.

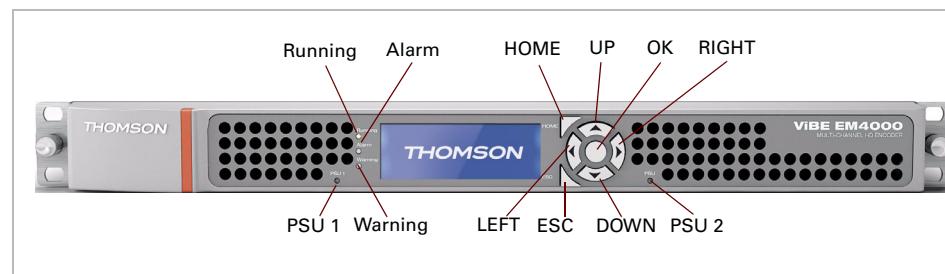
Device operation via its front panel is generally limited to:

- changing basic settings (IP settings, etc.).
- displaying device codes and serial numbers.
- displaying installed software releases.
- displaying raised alarms.
- recalling predefined configurations. These configurations are defined via the Web Interface or in-factory. For more information, see section '[Web Browser Interface](#)' on page 51.
- displaying device internal temperature.
- rebooting the device.

Description and overview

The Encoder front panel features an LCD screen, a 7-key keypad (Home, ESC, OK and 4 arrow keys) and a set of three status LEDs and 2 Power Supply LEDs.

Figure 3-1. ViBE EM4000 - Front Panel



■ Device status LEDs

They indicate the following:

Table 3-1. Device status LED specifications

LED	Color	Description
RUNNING	green	The Device is On
ALARM	red	At least one major alarm has been raised
WARNING	orange	At least one minor alarm has been raised

■ Power Supply LEDs

They indicate the following:

Table 3-2. Power Supply LED specifications

LED	Description
PSU 1	Power Supply No. 1 is On
PSU 2	Power Supply No. 2 (optional PSU) is On

■ Keypad

The keypad features 7 keys used to display and select a menu or a setting:

Table 3-3. Keypad specifications

Key	Function
→	Move the cursor to the right
←	Move the cursor to the left
↑	Move the cursor up
↓	Move the cursor down
OK	Access the main menu, a sub-menu or confirm a setting value
ESC	Go back to the menu above
HOME	Go back to the MAIN menu

To change a numeric value with the keypad:

1. Select the value to change using the ← or → key until the marker indicates the value to change.
 2. Set the value with the ↑ or ↓ key.
 3. Press the OK key to confirm the new value.
- LCD screen

The LCD screen features a graphic display (192 x 64 pixels). It provides up to 4 lines:

- ❖ Line 1: menu context
- ❖ Lines 2, 3 and 4: 2 x 3 menu matrix

Figure 3-2. LCD menu matrix overview

MENU CONTEXT	
<ITEM1>	<ITEM2>
<ITEM3>	<ITEM4>
<ITEM5>	<ITEM6>

Symbols (or markers) help to locate and/or select displayed items:

Table 3-4. Meaning of Encoder front panel LCD symbols

Symbol	Meaning
<	Animated symbol, in the top right of the status screen, indicating that the Encoder is operational.
> <	Text preselection marker. The selected text can then be confirmed by pressing the OK key on the keypad. Move this marker using one of the 4 arrow keys.

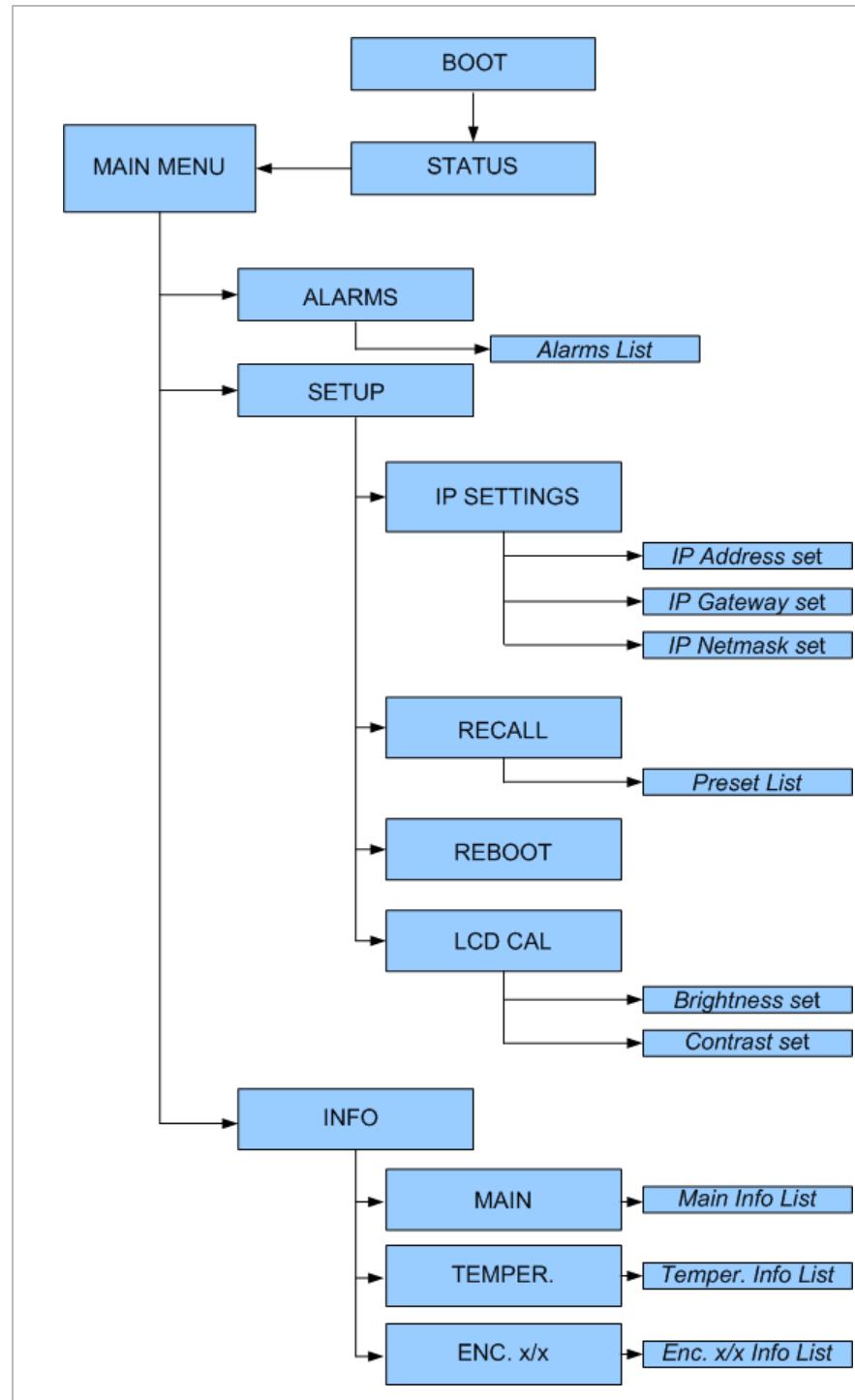
Setting LCD screen brightness and contrast

For optimum readability of texts displayed on the LCD screen, it may be necessary to adjust the Brightness and Contrast according to the lighting conditions. Refer to section '[LCD CAL screen](#)' on page 48.

Screen Description

Screen tree menu

Figure 3-3. Menu tree of screens displayed on the Encoder front panel



Summary of screen functions

List summarizing the functions that can be accessed via the screens:

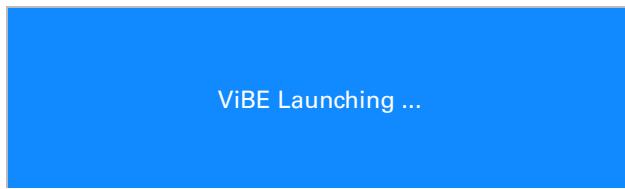
Table 3-5. Functions that can be accessed via the Encoder front panel screens

Screen	Function
section ' Device booting screen ' on page 42	Indicates that the device is starting up.
section ' Status screen ' on page 43	Indicates the device name and IP address.
section ' Main Menu screen ' on page 43	Displays available sub-menus.
section ' Alarms screen ' on page 44	Displays alarms raised on the device.
section ' Setup screen ' on page 45	Displays available sub-menus.
■ section ' IP Settings screen ' on page 45	Displays and used to edit device IP settings.
■ section ' Recall screen ' on page 46	Used to recall a predefined configuration.
■ section ' Reboot screen ' on page 48	Used to reboot the device.
■ section ' LCD CAL screen ' on page 48	Used to adjust the LCD brightness and contrast.
section ' Info screen ' on page 49	Displays available sub-menus.
■ section ' Main Board Information screen ' on page 49	Displays Main board information.
■ section ' Temperature Information screen ' on page 50	Displays Temperature information.
■ section ' Encoding Board Information screen ' on page 50	Displays Encoder board(s) information.

Device booting screen

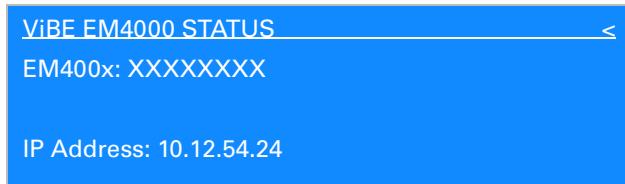
When the device is powered on, after a few seconds the LCD lights on and the following message is displayed during the booting process:

Figure 3-4. Booting screen



The Status screen will be displayed once the booting process is complete:

Figure 3-5. Status screen



The Status screen is described below.

Status screen

Figure 3-6. Status screen



<

Animated symbol, used to indicate that the Encoder is operational.

EM400x

Indicates the name of the Encoder. This name is assigned via the Management System (Web Browser or XMS).

IP Address

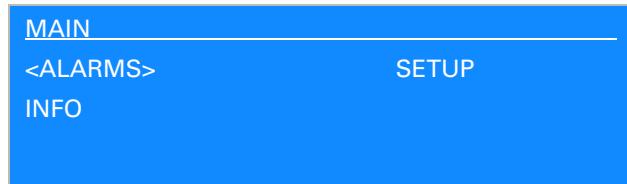
Indicates the Encoder IP address.

Main Menu screen

To display the Main Menu screen:

- From the Status screen, press the OK key.
- From a sub-menu, press the ESC key once or more depending on the sub-menu displayed.

Figure 3-7. Main Menu screen



To select a sub-menu, use the **←**, **→**, **↓** and **↑** keys and then confirm your choice by pressing the OK key.

Available sub-menus:

Alarms	Used to display alarms raised on the Encoder.
Setup	Used to: <ul style="list-style-type: none">■ Set device IP settings■ Recall a predefined configuration■ Reboot the device■ LCD adjustments (Contrast and Brightness)
Info	Used to get information about Encoder board references, chassis references, serial numbers, release numbers and temperatures.

Alarms screen

The Alarms screen is used to view alarms raised on the device. To display this screen, go to the Main menu screen, select **ALARMS** using the arrow keys and press OK.

Figure 3-8. Alarms Menu screen

ALARMS	Severity	↑↓
Name	XX/YY	
[AID/AID ext] : Alarm Wording (first line) Alarm Wording (last line)		

Severity	Used to indicate alarm severity. The alarm can be Critical , Major , Minor or Warning .
Name	Used to indicate the name of the function with the alarm(s): MAIN Brd , ENCODER 1 Brd , ENCODER 2 Brd , etc.
XX/YY	XX indicates the number of the alarm in the YY list, where YY represents the total number of alarms raised.

AID/AID ext	Used to indicate the alarm identifiers (Alarm ID and Alarm ID Extension) so that it is easier to find relevant information in the documentation.
Alarm Wording	Used to provide the alarm description, which is identical to the description displayed on the Management System.

If necessary, the **↓** and **↑** keys can be used to display the next or previous alarm.

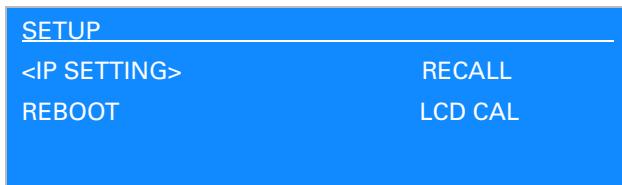


The list of alarms is created when the Alarms screen is selected. To update the list of alarms, you will need to exit the Alarms screen.

Setup screen

The Setup screen is used to access the IP Settings, Recall, Reboot and LCD CALibration sub-menus. To display this screen, go to the Main menu screen, select **SETUP** using the arrow keys and press OK.

Figure 3-9. Setup screen



IP Settings screen

The IP Setting screen is used to view and set the Control & Command IP Settings. To display this screen, go to the Setup screen, select **IP SETTING** using the **←** and **→** keys and press OK.

The IP Address, Netmask and Gateway will be displayed:

Figure 3-10. IP Settings screen



- Example: Procedure for editing the IP Address (the procedure is the same to edit the IP Netmask or IP Gateway values)
 - ❖ Use the **↓** and **↑** keys to select Address, Netmask or Gateway setting and press OK. The first digit is blinking.

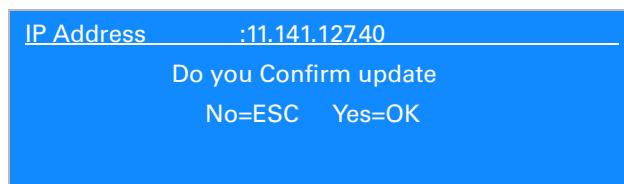
- ❖ Use the **◀** and **▶** keys to select the field to be modified and then use the **↓** and **↑** keys to adjust the value. Refer to figure below:

Figure 3-11. IP Address, Settings screen



- ❖ Confirm the new value by pressing OK. The Confirm screen will be displayed:

Figure 3-12. IP Address settings, Confirm screen



- ❖ Press OK to enable the new IP address or press ESC/HOME to exit this screen.



- The consistency between the IP address and Gateway address is checked. If an error is detected a **Bad value** message can be displayed. The Gateway address can also be resetted.
- The changes will be acknowledged after the Encoder has been rebooted.

Recall screen

The Recall screen is used to recall a predefined configuration. Configurations are predefined via the Web Interface. To define configurations, see section '**'Predefined Configurations'** on page 99. To display the Recall screen, go to the Setup screen, select **RECALL** using the **◀** and **▶** keys and press **OK**.

Figure 3-13. Recall screen



XX/YY

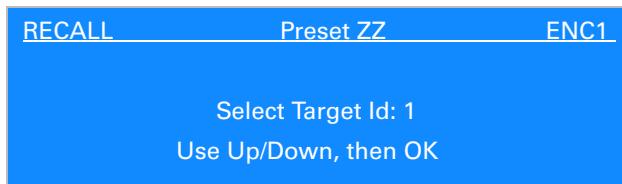
XX indicates the number of the currently selected predefined configuration. YY indicates the total number of predefined configurations.

ZZ EQU: **ZZ:** Used to indicate the ID of the configuration.
EQU (or ENC): Used to indicate the type of configuration (**EQU** = chassis, **ENC** = Basic encoder).
-----: Name of the configuration as set on creation.

- Procedure for recalling a configuration
 - ❖ Select the configuration to be recalled on the Recall screen using the **↓** or **↑** keys.
 - ❖ Confirm your choice by pressing OK.

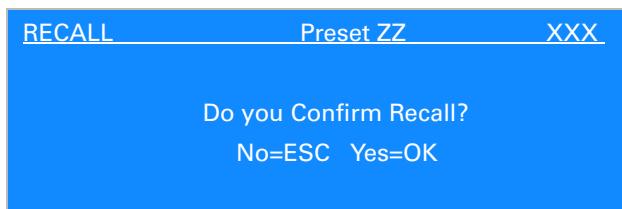
If the recalled configuration is a Basic encoder type configuration, the following screen will be displayed:

Figure 3-14. Recall, Basic encoder type configuration screen



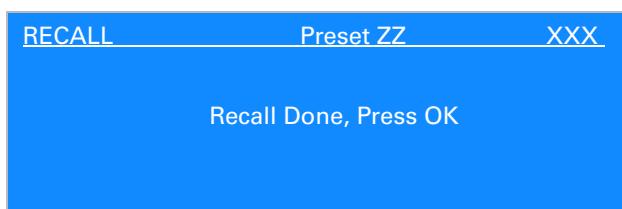
- ❖ Select the Basic encoder (ENCx) to be configured using the **↓** or **↑** keys.
 - ❖ Confirm your choice by pressing OK.
- Regardless of the type of recalled configuration, the Confirm screen will be displayed:

Figure 3-15. Recall, Confirm screen



- ❖ Press OK to enable the recall or ESC/HOME to exit this screen.
- At the end of the operation and if the recall was successful, the following screen will be displayed:

Figure 3-16. Recall, recall successful screen

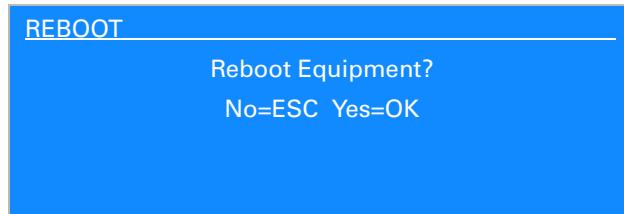


An error message will be displayed in the event of failure.

Reboot screen

The Reboot screen is used to reboot the device. To display this screen, go to the Setup screen, select [REBOOT](#) using the **←** and **→** keys and press OK.

Figure 3-17. Reboot screen



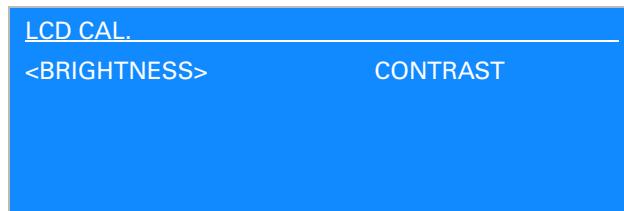
Procedure for rebooting the device

- Press OK to reboot the device. If you do not wish to reboot the device, press ESC/HOME to exit this screen.

LCD CAL screen

The LCD Calibration screen is used to adjust the LCD Brightness and Contrast. To display this screen, go to the Setup screen, select [LCD CAL](#) using the **←** and **→** keys and press OK.

Figure 3-18. LCD CAL screen



Procedure for adjusting LCD Brightness or Contrast

Use the **←** and **→** keys to select the Brightness or Contrast setting and press OK.

Figure 3-19. Brightness CAL screen



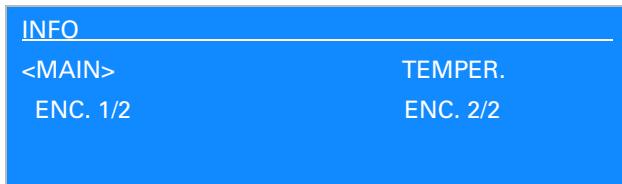
- Use the **↓** and **↑** keys to adjust the setting according to the lighting conditions.

- Press OK to confirm and save the setting(s) or ESC/HOME to exit this screen without saving the setting(s). If OK is pressed the new settings will be restored on next Encoder power up, otherwise the previous settings will be recalled.

Info screen

The Info screen is used to access the Main Board or Encoding Board(s) information sub-menu. To display this screen, go to the Main menu screen, select **Info** using the **←** and **→** keys and press OK.

Figure 3-20. Info screen



Main Board Information screen

The Main Board Information screen is used to get Main Board information. To display this screen, go to the Info screen, select **MAIN** using the **←** and **→** keys and press OK.

- The following information will be displayed:

Figure 3-21. Main Board Info screen



Active SW	Used to indicate the Main board active Software release number.
HW Version	Used to indicate the Main board Hardware release number.
EQCODE	Used to indicate the Main board equipment code. The equipment code is used to order a software option.
S/N	Used to indicate the Main board serial number.

Temperature Information screen

The Temperature Information screen is used to display the Ambient Temperature. To display this screen, go to the Info screen, select **TEMPER.** using the **←** and **→** keys and press OK.

- The following information will be displayed:

Figure 3-22. Temperature Info screen



T Ambient	Used to indicate the airflow temperature at the encoder input. The temperature is displayed in degree Centigrade and degree Fahrenheit.
-----------	---

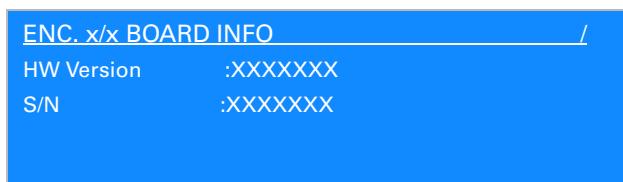
Encoding Board Information screen

The Encoding Board Information screen is used to get Encoding Board(s) information. The ViBE EM4000 2 video channels features one Encoding board, The ViBE EM4000 4 video channels features two Encoding boards.

To display this screen, go to the Info screen, select **Encoding** using the **←** and **→** keys and press OK.

- The following information will be displayed:

Figure 3-23. Encoding Board Info screen



HW Version	Used to indicate the Encoding board Hardware release number.
S/N	Used to indicate the Encoding board serial number.

Chapter 4

Web Browser Interface

Introduction

This chapter explains how to use the Web Browser Graphical User Interface to configure the equipment. Operation with Web Interface is explained by using a ViBE EM4000 NEM40IN2AA Encoder. The principles are identical for the ViBE EM4000 NEM40IN4AA Encoder.

Number of Basic encoders

- ViBE EM4000 NEM40IN2AA: 2 Basic encoder
- ViBE EM4000 NEM40IN4AA: 4 Basic encoders

In this Chapter

'Encoder Web Interface Specifications'	page 52
'Reaching the GUI'	page 55
'Quick configuration'	page 56
'Screen Layout'	page 57
'Status of the device'	page 60
'Settings'	page 63
'Predefined Configurations'	page 99
'Maintenance'	page 109

Encoder Web Interface Specifications

Protocol used

HTTP protocol version 1.1 is supported.

Compatible Web Browsers

The Web Interface has been tested with a Web Browser installed on a Windows XP system. You can run the ViBE EM4000 GUI provided you observe the following requirements for your personal computer:

- Web browser must be Internet Explorer 7.0 (or higher) or Mozilla Firefox 3.0 (or higher)
- Java script must be enabled.

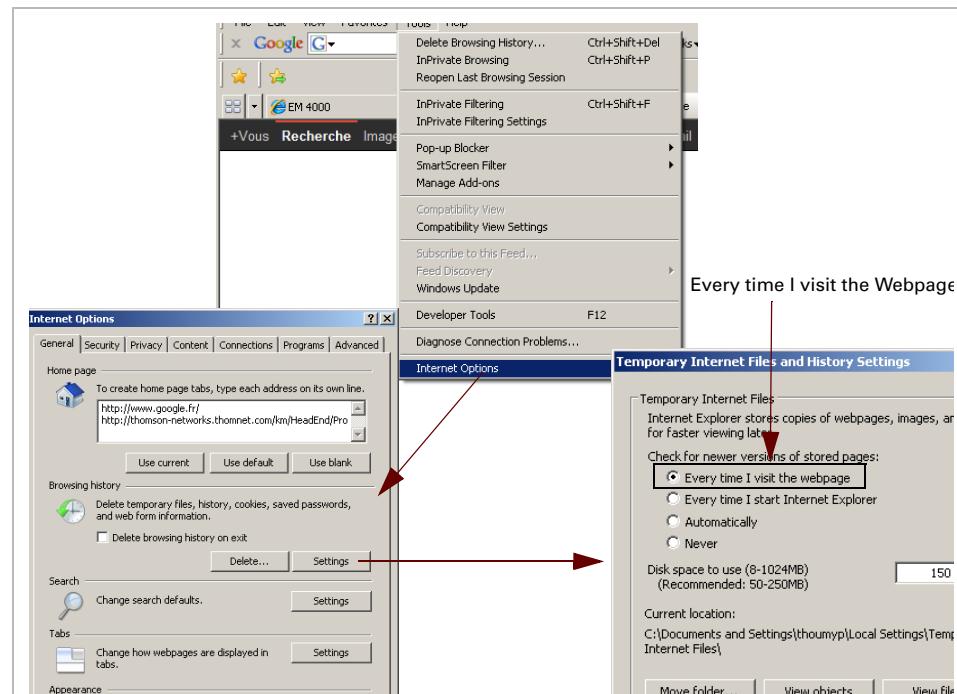
Web Browser setting

1. Versions of stored pages in the Web Browser

This setting must be set to **Every time I visit the webpage**

Example with Internet Explorer version 8

Figure 4-1. Every visit to the page setting

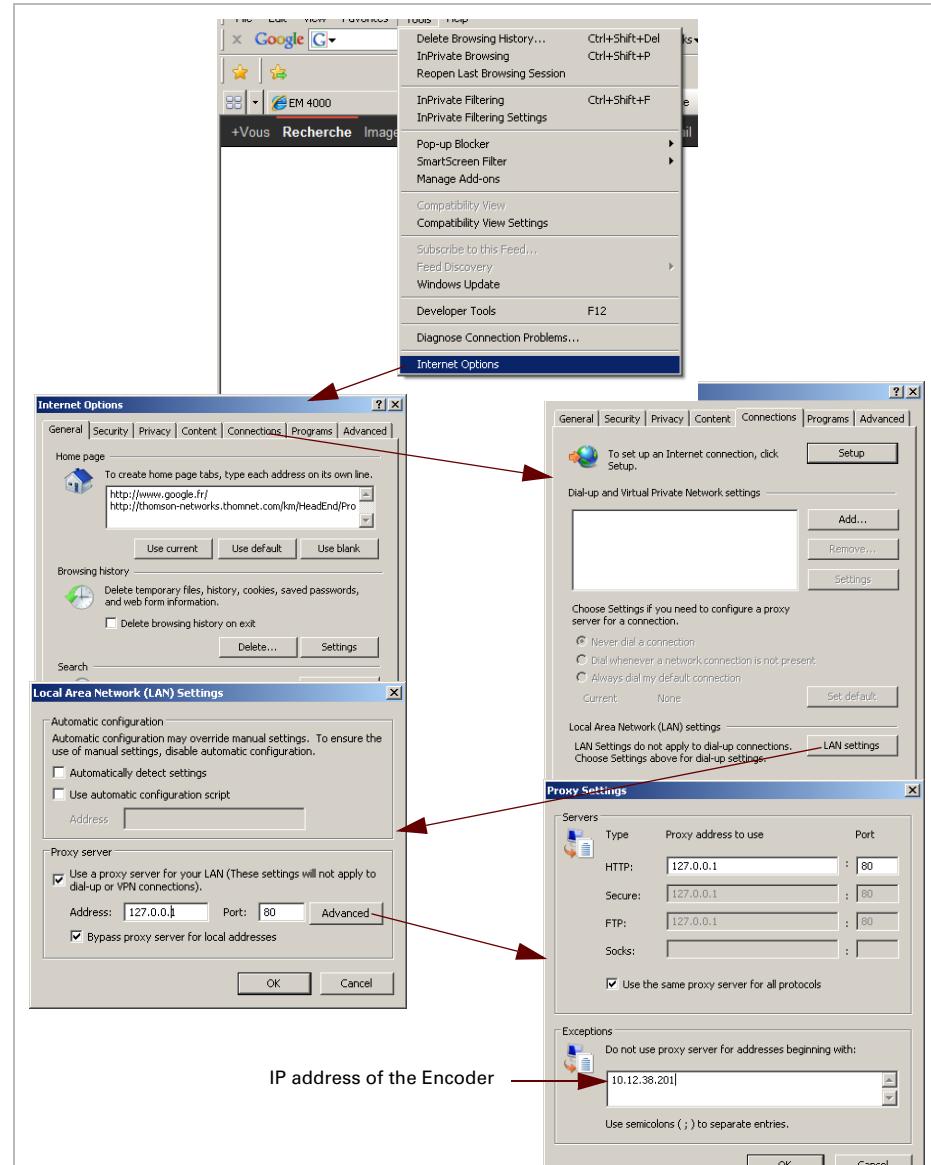


2. Proxy server bypass

If the Web Browser is connected to the Encoder via a proxy server, bypass the proxy server.

Example with Internet Explorer version 8

Figure 4-2. Bypass of the proxy server



Maximum number of connected Users

Ten Users can be connected to the Encoder via its Web Interface at any one time. No priority rules are set between Users. To disconnect from the Encoder you are advised to use the [Logout](#) link on the Interface pages to reduce the number of Users.

Definition of Encoder Users

To operate the Encoder via a Web Browser connected to its Web Interface, Users must be declared in the device. Users are declared and managed (creation, deletion, passwords, rights, etc.) via the Local Console application featured in the Encoder. Refer to the '['Servicing'](#)' chapter in this *User Manual*.

The following Users are set on device shipment. They have the following names, passwords and profiles:

Table 4-1. Users set on device shipment

User name	Password	Profile
admin	admin	administrator
service	service	service
technician	technician	technician
operator	operator	operator
user	user	operator
guest	guest	operator

The different profiles provide the following rights:

Table 4-2. User profiles and corresponding rights

	operator	technician	administrator	service
View Topology	X	X	X	X
View Predefined Configurations	X	X	X	X
Create Predefined Configurations		X	X	X
Recall Predefined Configurations		X	X	X
View Encoder Configuration	X	X	X	X
Edit Encoder Configuration		X	X	X
View Alarms	X	X	X	X
Reboot Device		X	X	X
Create User		X	X	

Reaching the GUI

Setting up the link between the PC and the Encoder

To set up the link between the operating PC and Encoder Web Interface and reach the GUI:

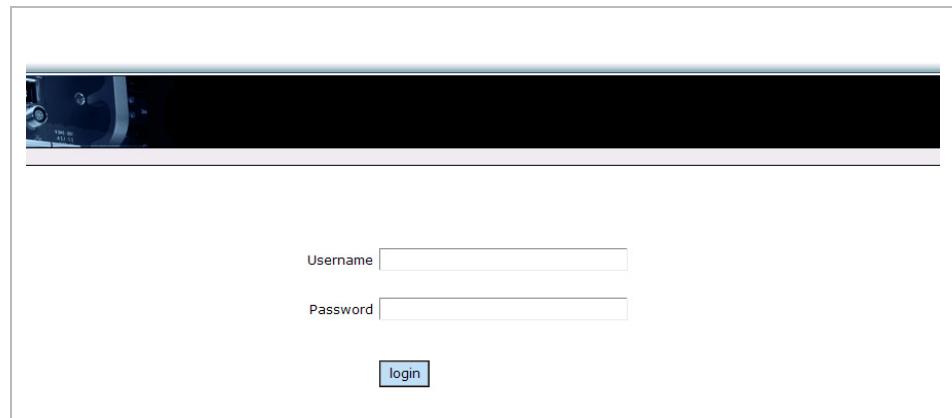
1. Connect the PC Ethernet link to the *Control 1* connector on the Encoder rear panel, or to the network connected to this connector.
2. Run the Web Browser on the PC and enter the Encoder IP address as the [HTTP address](#).

Figure 4-3. Reaching the GUI



Following connection, the Web Interface [Login](#) page will be displayed:

Figure 4-4. Login page



3. Enter your Username and Password. See section '[Definition of Encoder Users](#)' on page 54.



Default Users are set on device shipment (e.g. **Username = admin** and **Password = admin**).

The Status/Summary page will be displayed. See section '[Status/Summary page](#)' on page 58.

Quick configuration

To rapidly configure the Encoder, please follow these steps:

Table 4-3. Steps for rapidly configuring the Encoder

Step	Section
1. Define the number of output TS(s)	Refer to section ' Configuring the number of TSs at Encoder output ' on page 63.
2. Configure the output IP interfaces	Refer to section ' Configuring LAN/WAN network interfaces ' on page 64.
3. Configure the TS stream and output IP encapsulation	Refer to section ' Configuring TS streams and IP encapsulation ' on page 67.
4. Load a Predefined in-factory Configuration	Refer to section ' Predefined Configurations ' on page 99 and section ' Configurations predefined in-factory (WBU_ISOG Conf) ' on page 100.
5. Fine tune the configuration to actual Encoder use	Refer to section ' Setting a Basic encoder ' on page 72.

Screen Layout

General information

Each page comprises:

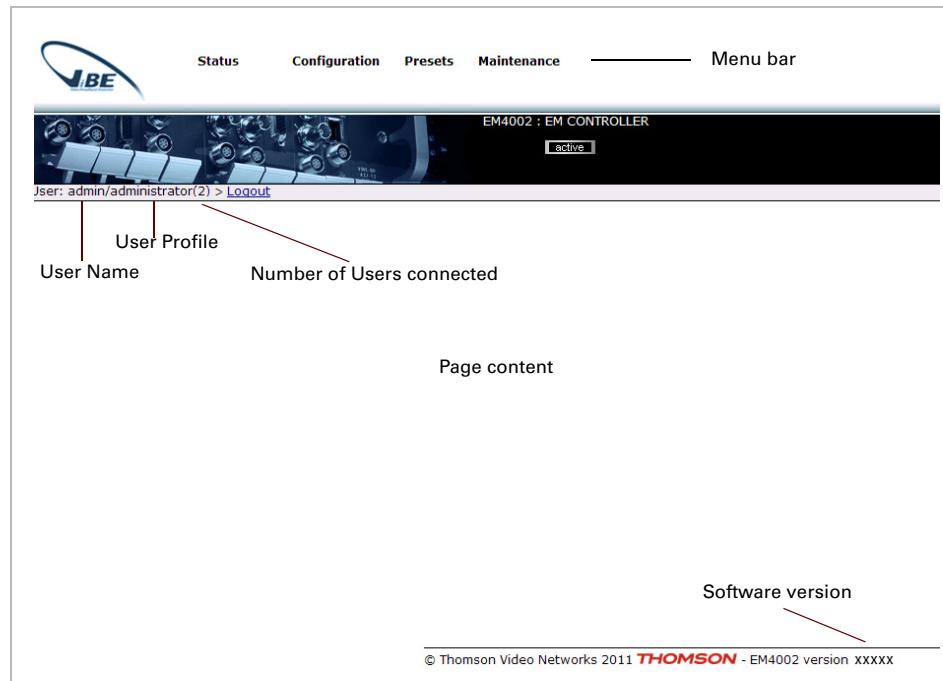
- a menu bar featuring the following commands

Table 4-4. Menu bar

Command	Use
	to access the Status/Summary page
Status	to access the Status/Summary, Alarms and HW/SW information pages
Configuration	to access the Encoder and Basic encoder configuration pages
Preset	<ul style="list-style-type: none"> ■ to save the Encoder or Basic encoder configuration to the Encoder internal memory or to a disk. ■ to recall an Encoder or Basic encoder configuration from the Encoder internal memory or from a disk.
Maintenance	<ul style="list-style-type: none"> ■ to reboot the Encoder. ■ to define the names of the Encoder and Basic encoders. ■ to save the Encoder settings to a disk. ■ to load the Encoder settings from a disk.

- a header indicating the User login name, current User profile and the number of Users connected to the device.
- a [Logout](#) link, used to end the session.
- the page contents.
- a footer indicating the Web Interface software version.

Figure 4-5. Web Interface page breakdown



The pages used to configure the equipment also contain the following buttons:

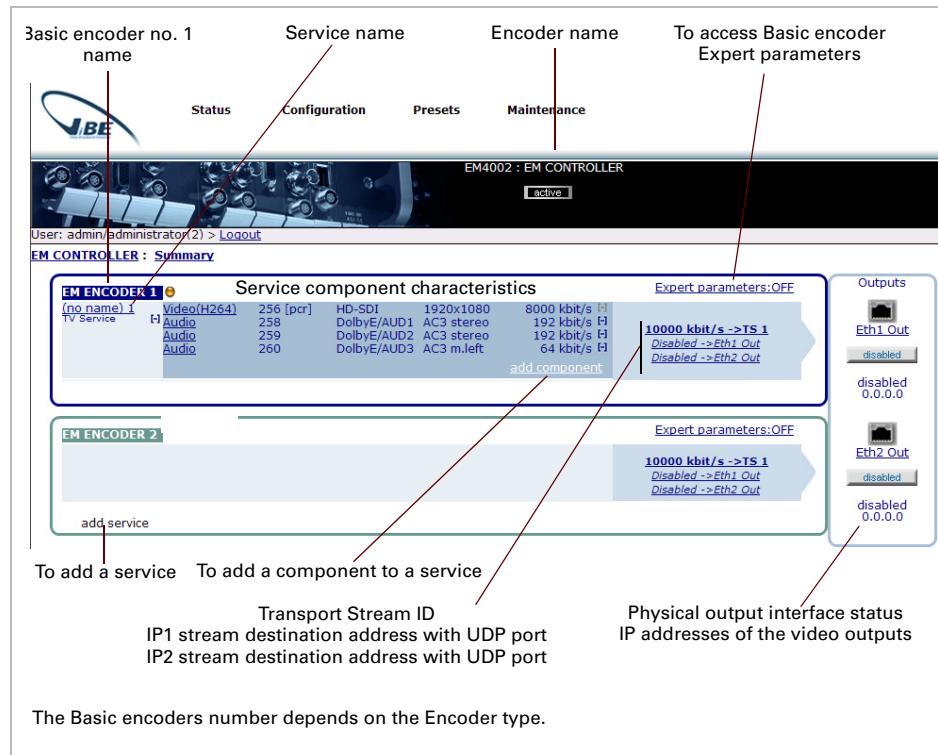
Table 4-5. Reset and Submit buttons

Button	Definition
<input type="button" value="submit"/>	Confirms changes made on the current page
<input type="button" value="reset"/>	Cancels changes made on the current page

Status/Summary page

The Status/Summary page is displayed as soon as the User has been identified via the Login page, or by clicking on the  logo (or on the encoder name link) on the current page. It features the following information:

Figure 4-6. Status/Summary page breakdown, ViBE EM4000



On this page:

- The Encoder name is set on the Maintenance/Identification page. See [section 'Configuring the names of the Encoder and Basic encoders'](#) on page 110.
- Click the service name link to display the encoded service configuration page. See [section 'Editing a service'](#) on page 74.
- Click a component link to display the component configuration page. See [section 'Editing an HD video component'](#) on page 75, [section 'Editing an Audio component'](#) on page 83 or [section 'Editing a VBI HD component'](#) on page 96.
- Click the Ethx Out link (Physical output) to display the IP Physical output configuration page. See [section 'LAN/WAN network interface Eth1'](#) on page 64.
- Click the TS ID link to display the TS and IP Encapsulation configuration page. This page can only be accessed via this [Status/Summary](#) page and is described below.

Status of the device

The following section will explain how to display the status of the device.

To display the Summary, Alarms and HW/SW Information pages click Status on the Menu bar.

Figure 4-7. Status menu



Summary command

This command displays the same page as the page displayed by clicking on the  logo. Refer to section '[Status/Summary page](#)' on page 58.

Alarms command

This command displays the page of alarms raised on the device.

Figure 4-8. Description of Alarms

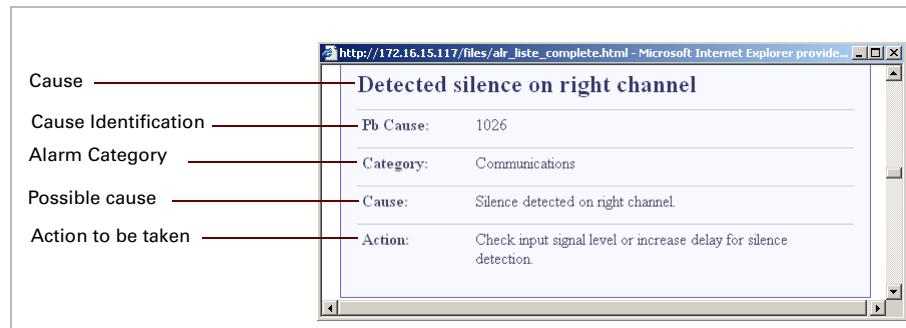
EM CONTROLLER : Alarms			
Chassis	 [Major]	[LAN/WAN1] : Link down	Help
EM ENCODER 1	 [Major]	[LAN/WAN2] : Link down	Help
EM ENCODER 2	 [Major]	[ENC 1/VIDEO INPUT] : Loss of signal	Help
EM ENCODER 2	 [Major]	[ENC 2/VIDEO INPUT] : Loss of signal	Help

Diagram illustrating the columns of the Alarms table:

- Alarm location: Chassis, EM ENCODER 1, EM ENCODER 2
- Alarm severity: Critical, Major or Warning (indicated by the red circle icon)
- Cause of the alarm: [LAN/WAN1] : Link down, [LAN/WAN2] : Link down, [ENC 1/VIDEO INPUT] : Loss of signal, [ENC 2/VIDEO INPUT] : Loss of signal
- Help: A link to additional information for each cause of the alarm.

Click [Help](#) associated with an alarm to display the details of the alarm.

Figure 4-9. Alarm details



HW/SW information command

This command displays device Hardware and Software information:

Figure 4-10. HW/SW information

EM CONTROLLER : HW/SW Information		
Hardware Installed options		
Option	Quantity	Name
NEMH4PSU	0	Additional PSU
Software Installed options		
Option	Quantity	Name
NEMS4H4A	0	One channel HD/SD AVC encoding
NEMS4FLA	0	WAN+LAN Flexstream
NEMS4FLE	0	LAN Flexstream
NEMS4D51	0	DD-DD+ surround encoding (1x5.1/3x2.0)
NEMS4DDE	0	Dolby E decoding
NEMS4DOL	0	DD-DD+ stereo encoding
NEMS4AAC	0	AAC stereo encoding
NEMS4A51	0	AAC-HE surround encoding (1x5.1/3x2.0)
NEMS4MP1	0	MPEG1 L2 stereo encoding
Software		
Active packages	EM4000 01.00.00.008	
Inactive packages	EM4000 00.00.04.001	
MAIN-Board		
Board Type	MAIN-Board	
Prod Unit Part Number	NEM40IN2	
Product Serial Number		
Main Unit Part Number		
Main Serial Number		
Equipment Code	3B0A	
Hardware Level	0	
Prod Unit Variant Number		
Power2 Product Unit Variant		
Power2 Option Unit Part Number		
AES Board Unit Part Number		
AES Option Unit Part Number		
ENCODING-Board 1		
Board Type	ENCODING-Board	
Prod Unit Part Number		
Product Serial Number		
Main Unit Part Number		
Main Serial Number		
Hardware Level	0	

The ENCODING-Board number depends on the Encoder type.

In the Hardware Installed options group box

Nxxxxxxxx

Reference, quantity and name of the hardware option(s) declared in the Encoder.

In the Software Installed options group box

Nxxxxxxx	Reference, quantity and name of the software option(s) declared in the Encoder.
----------	---

In the Software group box

Active package	Software version in use on the Encoder.
Inactive packages	Software version loaded onto the Encoder but not in use. For more information, refer to ' 'Servicing' ' chapter in this <i>User Manual</i> .

In the Main-Board group box

Board Type	Type of Board
Prod Unit Part Number	Encoder reference
Product Serial Number	Encoder serial number
Main Unit Part Number	Factory use
Main Serial Number	Factory use
Equipment Code	Equipment code. This code is used to order software options. For more information on ordering software options, refer to ' 'Servicing' ' chapter in this <i>User Manual</i> .
Hardware Level	Hardware version
Prod Unit Variant Number	Factory use
Power2 Product Unit Variant	Factory use
Power2 Option Unit Part Number	Factory use
AES Board Unit Part Number	Factory use
AES Option Unit Part Number	Factory use

In the Encoding-Board 1 group box

Board Type	Type of Board
Product Unit Part Number	Factory use
Product Serial Number	Factory use
Main Unit Part Number	Factory use
Main Serial Number	Factory use
Hardware Level	Hardware version

Settings

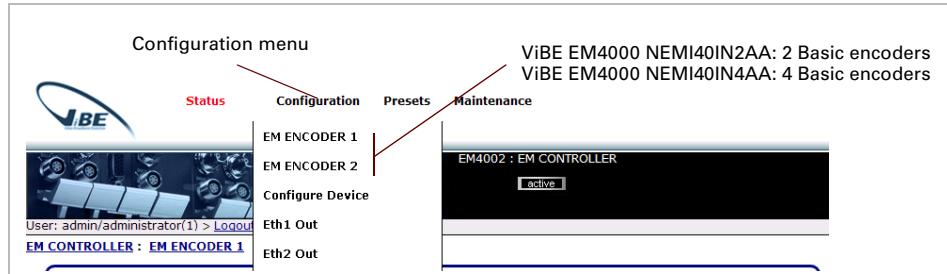
Setting the ViBE EM4000 Encoder

The following section will explain how to set all the parameters of the Encoder and display the status of the device.

Configuring the number of TSs at Encoder output

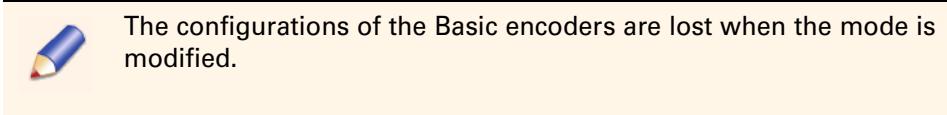
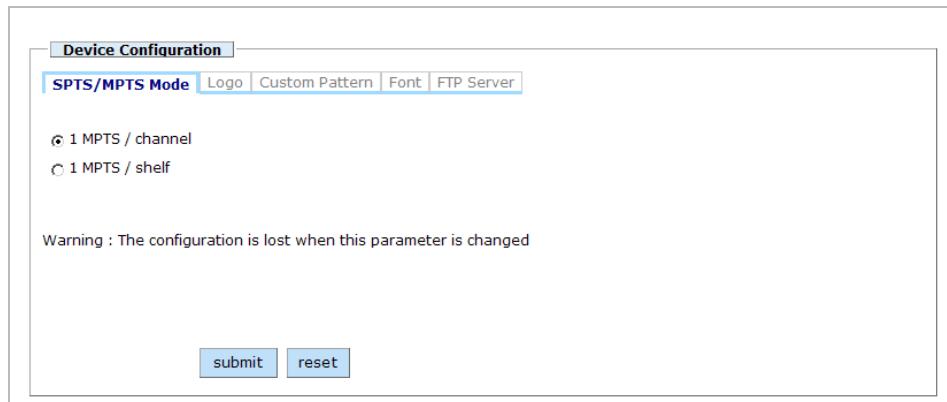
On the Configuration menu click Configure Device to display the configuration page for the the number of TSs.

Figure 4-11. Configuration menu, ViBE EM4000 NEM40IN2AA



This command is used to configure the number of TSs at Encoder output.

Figure 4-12. Device configuration - SPTS / MPTS mode page



[1 MPTS / channel](#)

Generated TS: 1 TS at the output of each Basic encoder.

[1 MPTS / shelf](#)

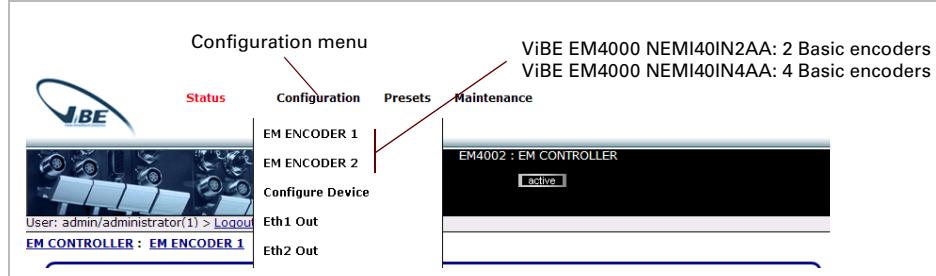
Generated TS: 1 TS at the Encoder output.

Configuring LAN/WAN network interfaces

LAN/WAN network interface Eth1

On the Configuration menu click **Eth1 Out** to display the LAN/WAN Eth1 configuration page.

Figure 4-13. Configuration menu



This command is used to configure the Encoder's LAN/WAN ETH1 network interface.

Figure 4-14. Eth1 Out configuration - Network Interface page

The screenshot shows the 'IP Configuration' page with the 'Network Interface' tab selected. It includes sections for Internal Configuration (Negotiation, Speed, Mode), Addresses (IP address, Netmask, Default Gateway), and Interface State (when disabled, when standby). Buttons for 'submit' and 'reset' are at the bottom.

enabled Used to enable the Eth1 interface.

disabled Used to disable the Eth1 interface.

In the Internal Configuration group box

Negotiation	The Ethernet interface supports automatic or manual mode. In automatic mode, the interface automatically sets 100 Mbps or 1000 Mbps bitrate and half duplex or full duplex mode. In manual mode, the interface must be configured manually.
Speed	This parameter is used to configure Ethernet bitrate in manual mode. Available bitrates are 100 Mbps or 1000 Mbps .
Mode	This parameter is used to configure the Ethernet operating mode in manual mode. The available modes are half duplex or full duplex (recommended mode).

In the Addresses group box

IP address	Interface address. It must be between 0.0.0.0 and 255.255.255.255 .
Netmask	Interface netmask value. It must be between 0.0.0.0 and 255.255.255.255 .
Default Gateway	Default gateway value. It must be between 0.0.0.0 and 255.255.255.255 .

In the Interface State when disabled group box

Interface Deactivation	Operating mode for the IP interface when it is not enabled (enabled/disabled set to disabled). Link Down : The interface is not powered electrically. Link Up/No Traffic : The interface is powered electrically but it does not support any traffic. A "ping" sent to the interface will not get a response. Link Up/No Multicast : The interface is powered electrically but no stream is sent to the network. A "ping" sent to the interface will get a response. The Interface Deactivation parameter value must be selected according to the redundancy scheme adopted.
------------------------	--



In this release, only the [Link Up/No Traffic](#) mode is available.

In the Interface State when standby group box

Interface Status	Status for the IP interface when the XMS/XMU sets it to standby: Disabled: The interface status is set to Disabled (see above Interface Deactivation parameter). Unchanged: The interface status is not modified.
------------------	---

Click [Routing](#) to display the routing configuration page for the LAN/WAN ETH1 network interface.

Figure 4-15. Eth1 Out configuration - Routing page

Index	Destination @	Destination Subnet Mask	Gateway @
0	0.0.0.0	0.0.0.0	0.0.0.0
1	0.0.0.0	0.0.0.0	0.0.0.0
2	0.0.0.0	0.0.0.0	0.0.0.0
3	0.0.0.0	0.0.0.0	0.0.0.0

submit reset

enabled Used to enable IP routing.

disabled Used to disable IP routing.

In the Static IP routing group box

4 routes can be set in this group box

Destination @ IP address of the network or destination host.

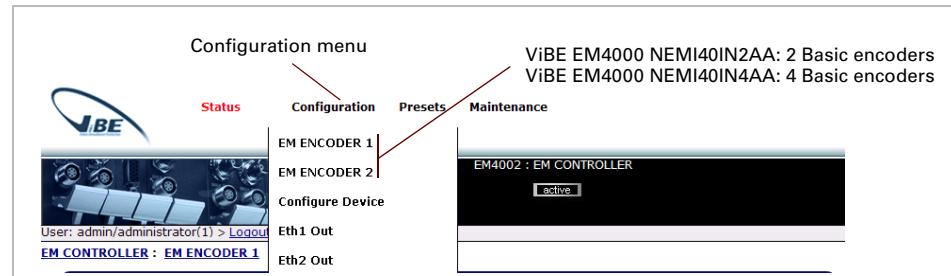
Destination Subnet Mask Subnet mask of the network or destination host.

Gateway @ IP address of the router to be used to reach the network or destination host.

LAN/WAN network interface Eth2

On the Configuration menu click **Eth2 Out** to display the LAN/WAN Eth2 configuration page.

Figure 4-16. Configuration menu



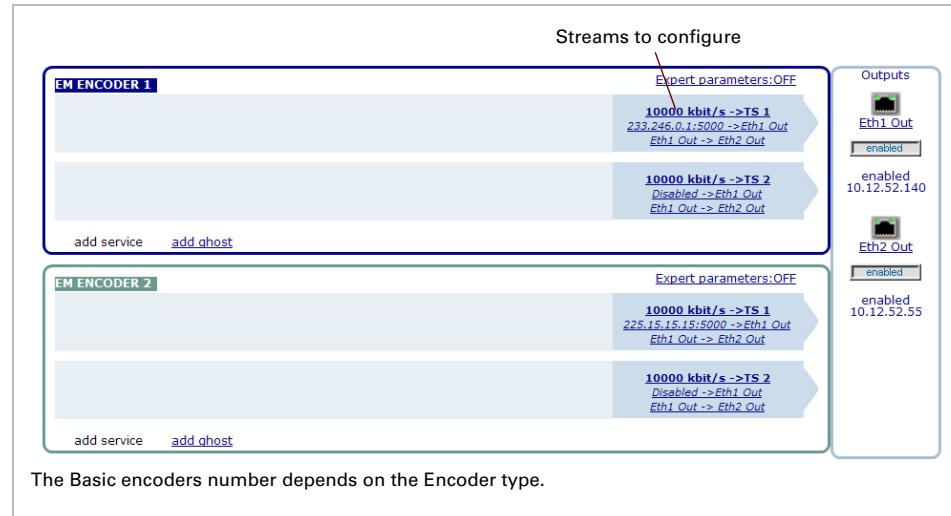
This command is used to configure the Encoder's LAN/WAN ETH2 network interface.

The configuration pages are identical to those displayed with the **Eth1 Out** command. See section '[LAN/WAN network interface Eth1](#)' on page 64.

Configuring TS streams and IP encapsulation

On the Status/Summary page, click on the stream to be configured. The number of streams to be configured depends on the Encoder operating mode.

Figure 4-17. Status/Summary page breakdown



Editing the Transport Stream parameters

Figure 4-18. Transport Stream configuration page

The screenshot shows a web-based configuration interface for a transport stream. At the top, there's a navigation bar with tabs: 'TS parameters', 'Transport Stream' (which is selected), 'Transmission IP #1', 'Transmission IP #2', and 'Scrambling'. Below the tabs are several input fields and dropdown menus:

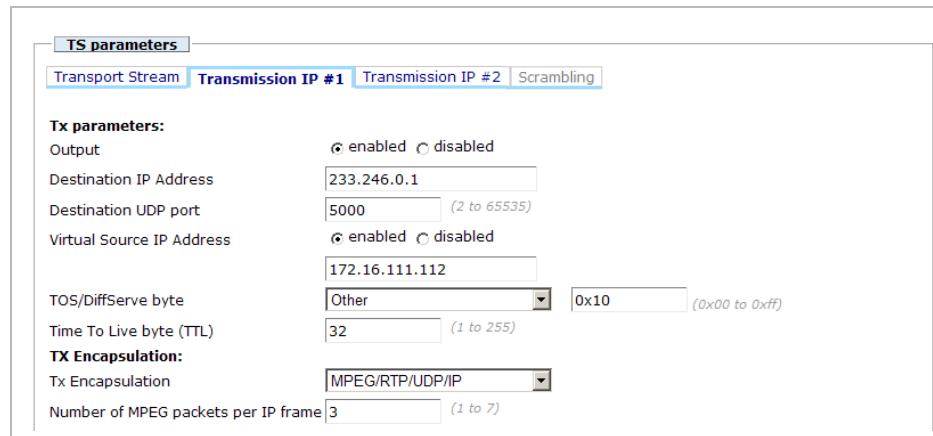
- Original Network Id:** A text input field containing '1' with a note '(0 to 65535)'.
- Transport Stream Id:** A text input field containing '1' with a note '(0 to 65535)'.
- Signalling Mode:** A dropdown menu set to 'ISO Conformity'.
- NIT in PAT:** A radio button group where 'Off' is selected.
- Generate TSDT:** A radio button group where 'On' is selected.
- Station Identification:** An input field containing a long string of characters.
- TSDT Repetition Rate:** A dropdown menu set to '10 s'.
- TS bitrate:** A text input field containing '10000.000' followed by 'kbit/s' with a note '(200.000 kbit/s to 15000.000 kbit/s)'.

At the bottom right are two buttons: 'submit' and 'reset'.

Original Network Id	Used to uniquely identify the outgoing stream. They are inserted in the signalling tables.
Transport Stream Id	
Signalling Mode	<p>Used to set the signalling mode.</p> <p>ISO Conformity: Only ISO tables (PAT, PMT, CAT) are sent in the outgoing signal.</p> <p>DVB Conformity: The device also generates and sends DVB tables (NIT, SDT, EIT, TDT, TOT).</p> <p>Without Signalling: The device does not send any signalling.</p>
NIT in PAT (for ISO mode)	<p>Off: The NIT is not referenced in the PAT.</p> <p>On: The NIT is referenced in the PAT.</p>
Generate TSDT	<p>Available only in DVB Conformity Signalling mode.</p> <p>Off: The Transport Stream Description Table is not generated.</p> <p>On: The Transport Stream Description Table is generated.</p>
Station Identification	Identification of the station. Available only if Generate TSDT is On.
TSDT Repetition Rate	Repetition period of the TSDT. Available only if Generate TSDT is On. The value must be: 10s, 5s, 2s, 1s, 500ms, 200ms or 100ms .
TS bitrate	TS CBR bitrate with null packets. The minimum rate depends on the bitrate allocated to the services. The maximum bitrate depends on the Encoder configuration (number of SPTS at output).

Click [Transmission IP #1](#) to display the configuration page for stream IP #1:

Figure 4-19. Transmission IP #1 configuration page



In the Tx parameters group box

Output	This parameter is used to enable or disable the output IP #1.
Destination IP Address	Destination IP address for IP frames transporting MPEG packets (unicast or multicast address). It must be between 0.0.0.0 and 255.255.255.255 .
Destination UDP port	Destination UDP port number for IP frames transporting MPEG packets. It must be between 5000 and 50000 .
Virtual Source IP Address	Virtual IP address for transmitted frames. It must be between 0.0.0.0 and 255.255.255.255 . The virtual source address is used to set an IP address that is different from the port address in the multicast packet source address field. This feature is used in some redundancy architectures implementing an IGMP v3 network when all Ethernet interfaces of all encoders (including those of redundant encoders) need to be accessible via the "ping" command. If not used, set the enabled/disabled parameter to disabled.

TOS/DiffServe byte

This parameter is used to configure the **TOS/DiffServ** field for IP frames transporting MPEG packets. If **Other** is selected, the Operator can edit the field value and enter the required value in the right-hand field. The default value is **0x00**. The other choices correspond to the following DiffServ values:

Label	DiffServ byte value
Best Effort (BE)	0x00
AF11 ^a	0x28
AF12	0x30
AF13	0x38
AF21	0x48
AF22	0x50
AF23	0x58
AF31	0x68
AF32	0x70
AF33	0x78
AF41	0x88
AF42	0x90
AF43	0x98
Expedited Forwarding (EF)	0xB8

^a AF stands for Assured Forward

Time To Live byte (TTL)

This parameter sets the data stream time-to-live, expressed as a number of hops. Each time the IP packet goes through a router, the TTL value is decreased by one unit. When the TTL reaches zero, the packet is discarded. The default value is **32**.

In the Tx Encapsulation group box

TX Encapsulation

This parameter is used to choose between **MPEG/RTP/UDP/IP** encapsulation and **MPEG/UDP/IP** encapsulation. The default value is **MPEG/UDP/IP**.

Number of MPEG packets per IP frame

This parameter is used to set the number of MPEG packets per IP frame sent. Possible values are between **1** and **7**. The recommended value is **7** to get the smallest IP overhead. This value is identical for all the IP streams.

Click **Transmission IP #2** to display the configuration page for stream IP #2:

Figure 4-20. Transmission IP #2 configuration page

Except for the [Mirroring](#) parameter, the other parameters are identical to those on the [Transmission IP#1](#) page.

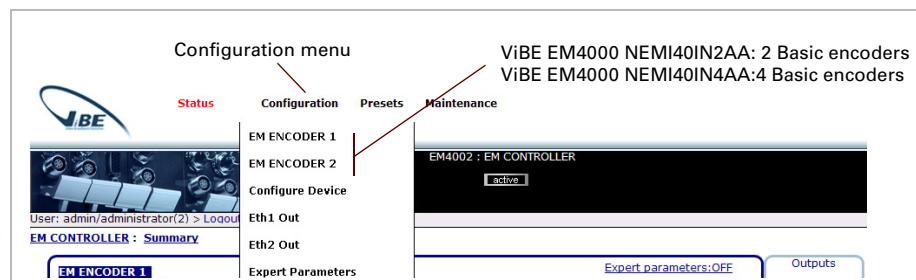
Mirroring

If the parameter is enabled, the [Transmission IP #2](#) parameters will be identical to [Transmission IP #1](#) and the other parameters on the page will be disabled.
If this parameter is [disabled](#), the configuration parameters that follow will be enabled and can be used to configure [Transmission IP #2](#).

Configuring Expert Parameters

On the [Configuration](#) menu click [Expert Parameters](#) to display the Expert parameters configuration page.

Figure 4-21. Configuration menu



This command is used to configure the Expert parameters that do not affect encoding features.

Figure 4-22. Expert Parameters page

The screenshot shows a web-based configuration interface for 'Expert Parameters'. At the top, there is a section titled 'Declared Expert parameters' with a radio button for 'Use Expert parameters' set to 'Off'. Below this is a group of checkboxes labeled 'Other' containing items: 'No empty packet on IP', 'Param D2', 'Param D3', 'Param D4', 'Param D5', 'Param D6', 'Param D7', and 'Param D8'. At the bottom of the page are two buttons: 'submit' and 'reset'.

Use Expert parameters If **On**, the checked Expert parameters are enabled.
If **Off**, Expert parameters are disabled.

No empty packet on IP Empty packets are deleted on both IP outputs.

Setting a Basic encoder

The following section will explain how to configure a Basic encoder. The Basic encoder number depends on the ViBE EM4000 model. In this section the Basic encoder number is 2 (ViBE EM4000 NEM40IN2AA):

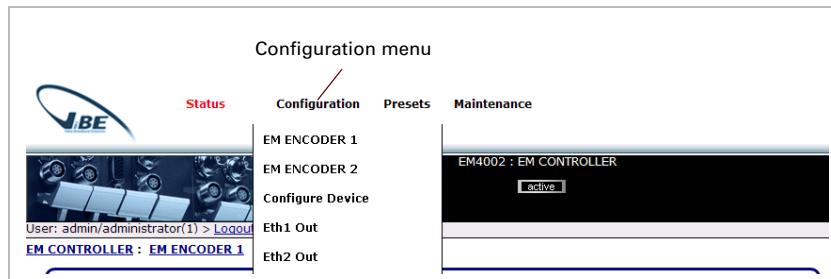
- EM ENCODER 1
- EM ENCODER 2

The name of the Basic encoders can be set on the Maintenance/Identification page. See section '[Configuring the names of the Encoder and Basic encoders](#)' on page 110.

Basic encoder configuration

On the [Configuration](#) menu click the **EM ENCODER** to configure.

Figure 4-23. Configuration menu,



This command is used to access the configuration page for Basic encoder No. x.



Configuration of Basic encoders must only be performed after configuration of the Encoder's operating mode
See section '[Configuring the number of TSs at Encoder output](#)' on page 63.

Figure 4-24. Basic encoder configuration page

The Basic encoder can be set by clicking the following links

Table 4-6. Setting a Basic encoder

link	Description
Service name	Edit the service parameters
Components	Edit the component parameters (Video, audio or VBI)
add service	Add a service to the Basic encoder
add component	Add a component (video, audio or VBI) to the service. A service must contain a video component.
[-]	Delete a service or component. A video component can not be deleted if another component is in the service.
Expert parameters: xx	Edit the Expert parameters of the Basic encoder

Editing a service

Click [Service name](#) or [add a service](#). If a service is already configured [add a service](#) is not displayed.

Figure 4-25. Service Configuration - General page

This page is used to set general service parameters.

Name	Used to indicate the name of the service displayed by the Decoder.
Type	Used to indicate service type (TV , Mosaic , NVOD reference , NVOD item or Other). The standardized numerical value corresponding to the service type is displayed in the right-hand box. If the desired service type is not available, select Other and enter the value in the right-hand box.
Provider	Used to indicate the name of the service provider displayed by the Decoder.
Service Id	Used to indicate the service identifier.
PID PMT	Used to indicate the PID of TS packets in which the PMT describing the service will be inserted. Services may use PMT PIDs specific to each service or a PMT PID common to all services.
PID PCR	Used to indicate the PID of the component in which the PCR is sent. The PCR is transported by the Video component.
Running Status	Used to select several broadcasting types: Not Running , Starts in few seconds , Pausing or Running . This parameter can be used to insert (or not insert) the service and its components in the outgoing TS. It affects the SDT field indicating service status.

Editing an HD video component

Click [add a component](#) to select the shortcut menu and click [Add Video HD](#) or the video component. The following page will be displayed:

Figure 4-26. Editing an HD video component - General page

This page is used to set general component parameters.

Source	Used to select the video source to be encoded. Choice between: HD SDI : <i>HD SDI</i> input on the device rear panel. Pattern : Pattern selected in the Default Pattern field below.
Default Pattern	Used to select the pattern that will be displayed if no video component is present at Encoder input or if Pattern has been selected in the Source field above. Choice between Black Pattern or Bar Pattern .
Standard	Used to select the video standard at Encoder input. Choice between: 1080i and 720p .
Frequency Area	 Changing this parameter stops the outgoing video signal for approximately 5 to 10 seconds.
Format	Only the 16:9 format is available.

Profile	Used to select the video encoding profile. Choice between MP@L4 (H264 Main Profile) and HP@L4 (H264 High Profile) .  Changing this parameter stops the outgoing video signal for approximately 5 to 10 seconds.
Compression Delay	Used to set the encoding delay: <ul style="list-style-type: none">■ Standard Delay = 163 fields (or frames) (3.2 s in 50 Hz, 2.7 s in 59.94 Hz)■ Long Delay = 249 fields (or frames) (4.9 s in 50 Hz, 4.1 s in 59.94 Hz)  Changing this parameter stops the outgoing video signal for approximately 5 to 10 seconds.
Rate	Used to set the output bitrate for the video component. Possible values are between 2000 kbit/s and 20,000 kbit/s in 1 kbit/s steps.
PID	Used to identify the TS packets transporting the video component. The value must be between 32 and 8190 .
PCR	Used to insert the program clock reference in the headers of the TS packets transporting the video component. In this release, the PCR must be sent by the video component. This parameter cannot be edited.
Status	Used to select video component broadcasting state. Choice between: Off Air : Component broadcasting is postponed but the component is present in the service configuration. On Air : The component is On Air.

Click [Advanced AVC](#) to display the advanced configuration page.

Figure 4-27. Editing an HD video component - Advanced page

This page is used to set Advanced parameters.

Picture Resolution

Used to adjust picture resolution according to the desired video bitrate. Picture resolution depends on the video standard. Choice between:

1080i	720p
1080i / 1920	720p / 1280
1080i / 1440	720p / 960
1080i / 1280	720p / 640
1080i / 960	



Changing this parameter stops the outgoing video signal for approximately 5 to 10 seconds.

Picture Definition

Used to set the definition of the picture.

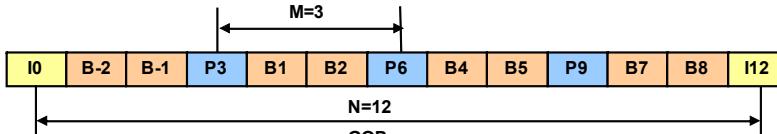
Choice between: [Auto](#), [Soft](#), [Standard](#), [Sharp](#).

Picture Structure

Structure of the picture at Encoder input.

Choice between: [Field](#), [Frame](#), [Auto \(PAFF\)](#)

[Auto](#) corresponds to Picture Adaptive Field/Frame.

<p>P Picture Period (M)</p> <p>GOP Size (N)</p> <p>Adaptive GOP</p>	<p>Used to set the repetition rate for P pictures. This parameter depends on the Adaptive GOP parameter. It is always lower than the GOP size parameter or equal to 1.</p> <p>A lower value will reduce the number of B-pictures in the GOP (these pictures are the most efficient in terms of compression ratio).</p>  <p>Coding order</p> <p>I: Intra-coded picture P: Predictive-coded picture B: Bidirectionally predictive-coded picture</p> <p>Note: The best video quality is achieved with the P picture period (M) set to M=8.</p>
---	--

Closed GOP	Used to enable On or disable Off Closed GOP mode: Closed GOP mode is used to break temporal dependency between GOPs. This requires systematically encoding a P picture before each I picture in temporal order. This mode reduces encoding quality and should only be used when stream editing operations are expected. Note: When Closed GOP is used, the effective GOP size is enlarged by one picture to handle the additional P picture used to close the GOP.
PVR Descriptor	Used to enable On or disable Off insertion of AU-information in the MPEG Transport Stream adaptation field.

Click **HD VBI** to display the HD VBI configuration page.

Figure 4-28. Editing an HD video component - VBI page

This page is used to set HD video component VBI parameters.

Time Code	This parameter determines whether the Time Code information should be sent On or not sent Off in the MPEG video component. After extraction from the digital field blanking, the Time Code is sent in the encoded video component as a picture timing SEI message.
Closed caption	In 59.94 Hz mode, this parameter determines whether the closed caption information, extracted from the digital field blanking, should be sent On or not sent Off in the encoded video component as a picture timing SEI message.



Changing this parameter stops the outgoing video signal for approximately 5 to 10 seconds.

AFD insertion	This parameter determines whether the AFD value should be sent in a specific SEI message or not sent: Off: AFD value is not sent. On with reversion data: If the AFD value is not available on the input, the AFD reversion data value below is sent. On with static data: The AFD data value below is always sent.
AFD data	This parameter determines the value of the AFD . Refer to the AFD insertion parameter above. Choice between: <ul style="list-style-type: none">- 16:9 Full-frame image in a 16:9 frame (follow user display).- 4:3 Pillarbox image in a 16:9 frame.- 16:9 Full-frame image in a 16:9 frame (16:9 letterbox on 4:3).- 14:9 Pillarbox image in a 16:9 frame.- 16:9 image, shoot & protect 14:9 in a 16:9 frame.- 16:9 image, shoot & protect 4:3 centre in 16:9 frame.

Click [Misc.](#) to display the other HD video component parameters.

Figure 4-29. Editing an HD video component - *Misc* page

The screenshot shows a web-based configuration interface for an HD video component. At the top, there is a navigation bar with tabs: General, Advanced AVC, Advanced MPEG-2, HD VBI, **Misc.**, VBR, and PreProc. The 'Misc.' tab is currently active. Below the tabs, there are three dropdown menus: 'Priority' set to 'High', 'Copyright' set to 'With', and 'Content' set to 'Original'. At the bottom of the form are two buttons: 'submit' and 'reset'.

This page is used to set other HD video component parameters.

Priority	Used to set Normal or High priority by positioning a flag in the PES packet header.
Copyright	Used to indicate whether the video content is With or Without a Copyright by positioning a flag in the PES packet header.
Content	Used to indicate whether the video content is a Copy or an Original by positioning a flag in the PES packet header.

Click **VBR** to display the HD video component VBR page.

Figure 4-30. Editing an HD video component - VBR page

This page is used to set video component VBR parameters.

VBR Mode

Used to set the operating mode for HD component bitrate at Encoder output. Choice between:

Off (CBR): The output bitrate is fixed.

Capped: The bitrate varies within the range set by the **Min Bitrate** and **Max Bitrate** parameters according to the complexity of the picture to be encoded and the **Quality** parameter.



If the Encoder is in Flexstream mode, VBR Mode cannot be edited in this case.

Min Bitrate

Used to set the minimum bitrate in **Capped** mode. The value must be between **2000 kbit/s** and **20000 kbit/s**.

Max Bitrate

Used to set the maximum bitrate in **Capped** mode. The value must be between **2000 kbit/s** and **20000 kbit/s**.

Quality

Used to set the picture quality level required. The value must be between **0** and **100%**. Default value: **100%** (best quality).

Click [PreProc](#) to display the HD video component preprocessing parameters.

Figure 4-31. Editing an HD video component - PreProc page

The screenshot shows a web-based configuration interface for an HD video component. At the top, there is a navigation bar with tabs: General, Advanced AVC, Advanced MPEG-2, HD VBI, Misc., VBR, and PreProc. The PreProc tab is currently selected and highlighted in blue. Below the tabs, there are four configuration options with dropdown menus:

- Noise Reduction: Set to 1.
- Adaptive Filter: Set to 1.
- Demo Mode: Set to Disabled.
- Mosquito Noise Reducer: Set to Off.

At the bottom of the form are two buttons: submit and reset.

This page is used to set preprocessing for the HD video component.

[Noise Reduction](#)

Used to set noise reduction processing.

Noise reduction processing is adjusted according to the noise level estimated during the motion estimation process. This means that filtering will be stronger on noisy materials leading to lower contrast pictures. Noise Reduction processing must be set according to the noise level:

- [Off](#): Noise reduction processing is off.
- [1](#): Noise reduction processing is low.
- [2 to 4](#): Intermediate values.
- [5](#): Noise reduction processing is high.

[Adaptive Filter](#)

Used to set Adaptive Filter processing.

This processing reduces the high-frequency spatial texture which noticeably increases encoding complexity. The Adaptive Filter must be set according to the spatial texture of the picture to be encoded.

- [Off](#): Adaptive filter processing is off.
- [1](#): Adaptive filter processing is low.
- [2 to 4](#): Intermediate values of Adaptive filter processing.
- [5](#): Adaptive filter processing is high.

[Demo Mode](#)

This parameter is used to split the picture into 2: one part with Preprocessing and the other part without. This feature should only be used for demonstration purposes. Choice between:

- [Disabled](#): Demonstration mode is disabled.
- [Vertical split](#): Demonstration mode is enabled and the picture is split vertically.
- [Horizontal split](#): Demonstration mode is enabled and the picture is split horizontally.

Mosquito Noise Reducer Used by setting the Mosquito Noise Reducer and Block Artefacts Reducer to [Auto / Off](#).



Not available in this release.

Editing an Audio component

A video component must be present in the service.

Click [add a component](#) to select the shortcut menu and click [Add Audio](#) or click the audio component.

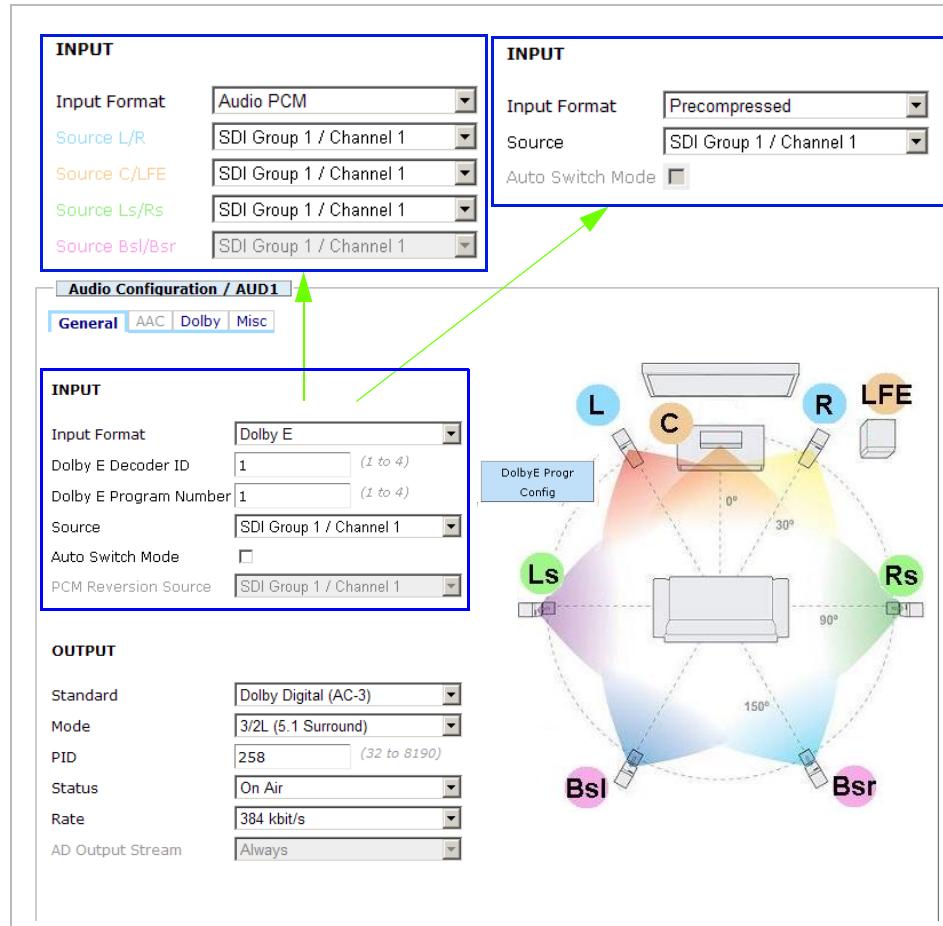
If the maximum number of audio components per service has already been reached, [Add Audio](#) will not be underlined and the link will be unavailable.



- About Audio encoders
 - ❖ EM40IN2AA: The Encoder features 12 audio encoders (12 x AUD).
 - ❖ EM40IN4AA: The Encoder features 24 audio encoders (24 x AUD).
- Audio limitations:
 - ❖ EM40IN2AA
 - 4 Dolby® Digital 5.1 (or Dolby® Digital Plus 5.1) audio can be encoded at the same time.
 - 4 Dolby® E streams can be decoded at the same time.
 - ❖ EM40IN4AA
 - 8 Dolby® Digital 5.1 (or Dolby® Digital Plus 5.1) audio can be encoded at the same time.
 - 8 Dolby® E streams can be decoded at the same time.

The Audio component General page will be displayed. The Input group box of the General page depends on the audio Input Format ([Dolby E](#), [Audio PCM](#) or [Precompressed](#)).

Figure 4-32. Editing an audio component, General page



This page is used to set general audio component parameters.

In the Input group box: **Input format = Dolby E**

Input Format

Used to indicate the format of the de-embedded audio. Choice between **Dolby E**, **Audio PCM**, **Precompressed**.

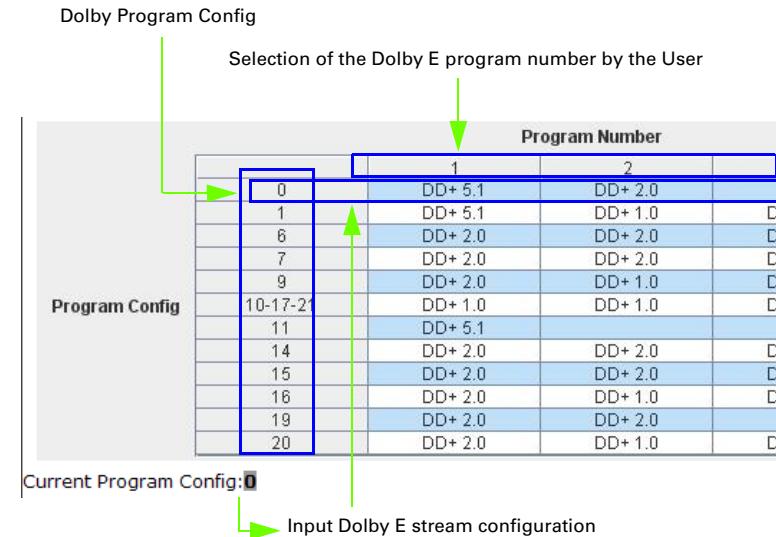
Dolby E Decoder ID

Used to indicate the Dolby® E decoder which must be used.

Dolby E Program Number

Used to select the program to be decoded in the Dolby® E stream. Choice of 1 to 4.

Program selection is facilitated by the Monitoring function. Click [DolbyE Progr Config](#) to display the following page:



The incoming Dolby® E stream program configuration is displayed. The configuration related to the [Program Number](#) is used to set the program type. For example, if [Current Program Config = 0](#) then [Program Number = 1](#) will decode a 5.1-type stream (6 mono channels) and [Program Number = 2](#) will decode a stereo-type stream (2 mono channels).

Source

Used to select the Source of the Dolby® E stream to be decoded. Choice between [SDI Group 1/ Channel 1, 2/1, 3/1, 4/1](#) (group choice for mux 1) and [SDI Group 1/ Channel 2, 2/2, 3/2, 4/2](#) (group choice for mux 2).

Auto Switch Mode

Dolby® E to PCM auto switch mode configuration.

- Dolby® E to PCM 2.0 detection

When automatic switch mode is **ON** and if PCM 2.0 is detected at the input instead of Dolby® E, the audio encoder switches to the source defined by the **PCM Reversion** Source parameter below. The encoder signals a stereo stream (rather than a surround stream). The default bitrates cannot be set by the User and are indicated in the tables below:

Output standard	Dolby® E detected (Rate set by the User)	PCM 2.0 detected (Rate fixed)
Dolby® Digital (AC3)	384 kbit/s	192 kbit/s
	448 kbit/s	256 kbit/s
Dolby® Digital Plus (E-AC3)	192 kbit/s	96 kbit/s
	256 kbit/s	128 kbit/s

When auto switch mode is **OFF** and the Dolby® E stream disappears, the last valid Dolby® E frame will be repeated 3 times and if it is still not resynchronized, the encoder will be muted (encoding of silence at the same bitrate).

- Dolby® E 5.1 to Dolby® E 2.0 detection

When automatic switch mode is **ON** and if Dolby® E 2.0 is detected at the input instead of Dolby® E 5.1, the encoder switches to the default bitrate. The default bitrates cannot be set by the User and are indicated in the table below:

Output standard	Dolby® E 5.1 detected (Rate set by the User)	Dolby® E 2.0 detected (Rate fixed)
Dolby® Digital (AC3)	384 kbit/s	192 kbit/s
	448 kbit/s	256 kbit/s
Dolby® Digital Plus (E-AC3)	192 kbit/s	96 kbit/s
	256 kbit/s	128 kbit/s

When auto switch mode is **OFF** and the Dolby® E stream contains 2.0 instead of 5.1, a 5.1 signal is still encoded with front left and right using the Dolby® E 2.0 input, and the other channel will be silenced.

PCM Reversion Source If automatic switch mode is **ON**, choice of the PCM source when PCM 2.0 is detected instead of Dolby® E. Choice between **SDI Group 1/ Channel 1, 2/1, 3/1, 4/1** (group choice for mux 1) and **SDI Group 1/ Channel 2, 2/2, 3/2, 4/2** (group choice for mux 2).

In the Input group box: **Input format = Audio PCM**

Input Format Used to indicate the format of the de-embedded audio. Choice between **Dolby E, Audio PCM, Precompressed**.

Source L/R Used to select the source of the L/R signal (or mono signal). Choice between **SDI Group 1/ Channel 1, 2/1, 3/1, 4/1** (group choice for mux 1) and **SDI Group 1/ Channel 2, 2/2, 3/2, 4/2** (group choice for mux 2).

Source C/LFE Used to select the source of the C/LFE signal when **5.0** or **5.1** mode are selected. Choice between **SDI Group 1/ Channel 1, 2/1, 3/1, 4/1** (group choice for mux 1) and **SDI Group 1/ Channel 2, 2/2, 3/2, 4/2** (group choice for mux 2).

Source Ls/Rs Used to select the source of the Ls/Rs signal when **5.0** or **5.1** mode are selected. Choice between **SDI Group 1/ Channel 1, 2/1, 3/1, 4/1** (group choice for mux 1) and **SDI Group 1/ Channel 2, 2/2, 3/2, 4/2** (group choice for mux 2).

Source Bsl/Bsr Not used

In the Input group box: **Input format = Precompressed**

Input Format Used to indicate the format of the de-embedded audio. Choice between **Dolby E, Audio PCM, Precompressed**.

Source Used to select the source of the precompressed audio signal. Choice between **SDI Group 1/ Channel 1, 2/1, 3/1, 4/1** (group choice for mux 1) and **SDI Group 1/ Channel 2, 2/2, 3/2, 4/2** (group choice for mux 2).

Auto Switch mode Not used

In the OUTPUT group box

Standard	Used to select the compression standard: MPEG Layer II : This standard is not available if Input format is Dolby E or Precompressed . MPEG Layer II (AD) : The Audio Description feature is enabled and the audio description is encoded in MPEG1 LayerII. This standard is not available if Input format is Dolby E or Precompressed . AAC LC or HE-AAC or HE-AAC v2 : The syntax and packet type are set on the AAC page. These standards are not available if Input format is Dolby E or Precompressed . HE-AAC (AD) : The Audio Description feature is enabled and the audio description is encoded in HE-AAC. The syntax and packet type are set on the AAC page. This standard is not available if Input format is Dolby E or Precompressed . Dolby Digital (AC-3) : AC3 encoding parameters are set on the Dolby page. This standard is not available if Input format is Precompressed . Dolby Digital Plus (E-AC-3) : E-AC3 encoding parameters are set on the Dolby page. This standard is not available if Input format is Precompressed . AC3 Transport or E-AC3 Transport : This standard (Dolby AC3 packetization) is used to send audio samples synchronous with the video without any compression or changes. This standard can only be chosen if the Input Format above is set to Precompressed .
Mode	Used to select the encoding mode. The modes available depend on the encoding standard: In MPEG1 layer II - Choice between: Stereo , Joint Stereo , Mono Left , Mono Right and Dual channel . In AAC LC or HE-AAC - Choice between: Stereo , Joint Stereo , Mono Left , Mono Right and 5.1 Surround . In HE-AAC v2 - Only Stereo mode is available. In Dolby Digital (AC-3) or Dolby Digital Plus (E-AC-3) - Choice between: 1/0 (Mono Left) , 2/0 (Stereo) , 3/2 (5.0 Surround) , 3/2L (5.1 Surround) .
PID	Used to indicate the PID value assigned to the audio component.
PCR	Used to indicate if the Audio component carries the PCR.
Status	Used to select the broadcast status for the audio component. Choice between: Off Air : Component broadcasting is postponed but the component remains in the service configuration. On Air : The component is On Air.

Rate Used to select audio bitrates. The bitrates available depend on the audio encoding standard and mode.



When **Input Format** = Dolby E, **Output mode** = 5.0 or 5.1 and **Output Standard** = Dolby Digital (AC3) or Dolby Digital Plus (E-AC3) and **Auto Switch mode** is checked then 2 bitrate groups are proposed. In each group, the 1st value indicates the encoding bitrate used with a Dolby® E stream at input. If the Dolby® E stream is replaced by a PCM 2.0 stream, then the 2nd value will be used for encoding. See **Auto Switch Mode** parameter above.

When **Standard** = xx Transport , the **Rate** is the max bitrate. If the transported stream has a higher bitrate, an alarm is raised.

AD Output Stream

In Audio Description encoding mode:

Adaptive: No AD packet on output when no AD input.
Always: AD packets on output even when no AD input (null packets are generated).

Click **AAC** to display the AAC audio component parameters.

Figure 4-33. Editing an audio component - AAC page

Audio Configuration / AUD1	
General AAC Dolby Misc	
Syntax	MPEG-2
Packet	ADTS
 MPEG-4 HE-AAC audio coding technology licensed by Fraunhofer IIS	
<input type="button" value="submit"/> <input type="button" value="reset"/>	

This page is used to set audio component AAC parameters when **AAC LC**, **HE-AAC** or **HE-AAC v2** has been chosen as the audio Output Standard on the General page.

Syntax

Used to set the syntax of AAC encoding. Choice between **MPEG-2** and **MPEG-4**.

Packet

Used to set the type of AAC encapsulation. Choice between **ADTS** (Audio Data Transport Stream) and **LOAS** (Low Overhead Audio Stream) if the Syntax is MPEG-4.

Click [Dolby](#) to display the Dolby® Metadata Control page.

Figure 4-34. Editing an audio component - Dolby Metadata Control page

The screenshot shows a web-based configuration interface for an audio component. The top navigation bar includes tabs for 'General', 'AAC', 'Dolby' (which is currently selected), and 'Misc'. Below this, a sub-navigation bar has tabs for 'Metadata Control' (selected), 'Metadata Parameters #1', and 'Metadata Parameters #2'. The main content area contains two dropdown menus: 'Metadata Source' and 'Metadata Reversion Mode', both set to 'Internal'. At the bottom left is the Dolby Digital logo, and at the bottom right are 'submit' and 'reset' buttons.

This page is used to set the Metadata source when [Dolby Digital \(AC3\)](#) or [Dolby Digital Plus \(E-AC3\)](#) has been chosen as the audio Output Standard on the General page.

[Metadata source](#)

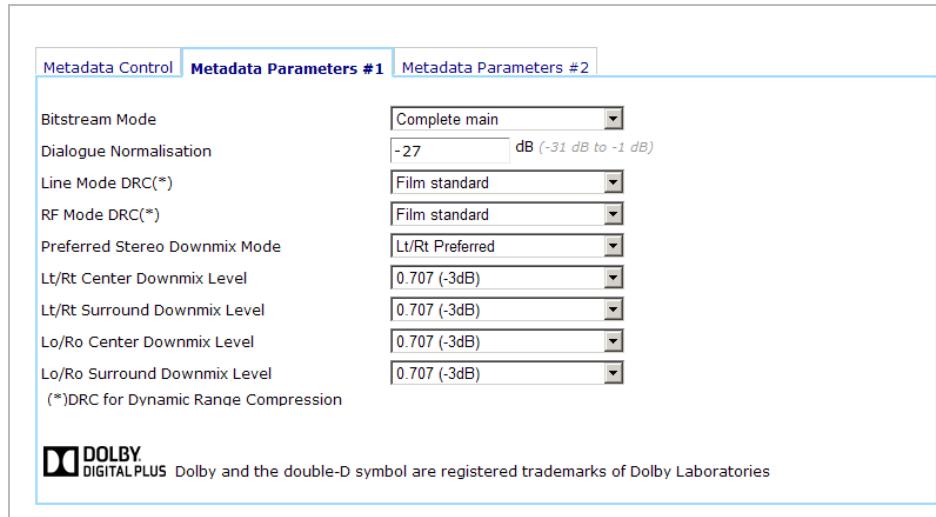
Used to set the Metadata source if Input Format is set to [Dolby E](#) on the General page. Choice between:
Internal: Metadata is set via the [Metadata parameters # 1](#) and [Metadata parameters # 2](#) pages.
Dolby E: Metadata is extracted from the Dolby® E encoded stream.

[Metadata Reversion Mode](#)

This parameter can not be changed. It indicates Encoder behavior when the expected Metadata is missing:
Last valid: The last Metadata parameters to be enabled are used.
Internal: The parameters set on the [Metadata parameters # 1](#) and [Metadata parameters # 2](#) pages are used.

On the Dolby page, click the [Metadata Parameters #1](#) tab to display the 1st Dolby® Metadata configuration page.

Figure 4-35. Editing an audio component - Dolby Metadata parameters #1 page



This page is used to set the Metadata used by the Dolby Encoder in Internal Metadata mode.

[Bitstream Mode](#)

Used to indicate the type of audio service. Choice between:

- Main audio service: [Complete main](#)
- Main audio service: [Music and effects](#)
- Associated service: [Visually impaired](#)
- Associated service: [Hearing impaired](#)
- Associated service: [Dialogue](#)
- Associated service: [Commentary](#)
- Associated service: [Emergency](#)
- Associated service: [Voiceover/Karaoke](#)

[Dialogue Normalisation](#)

Used to indicate the average dialog level. Range from [-1 dB](#) to [-31 dB](#) in [1 dB](#) steps.

Default value: [-27 dB](#).

[Line Mode DRC](#)

This information is used by Dolby® Digital audio decoders with line-level outputs, to adjust their output dynamic according to a profile. Choice between: [None](#), [Film standard](#), [Film light](#), [Music standard](#), [Music light](#), [Speech](#).

Default value: [Film standard](#).

[RF Mode DRC](#)

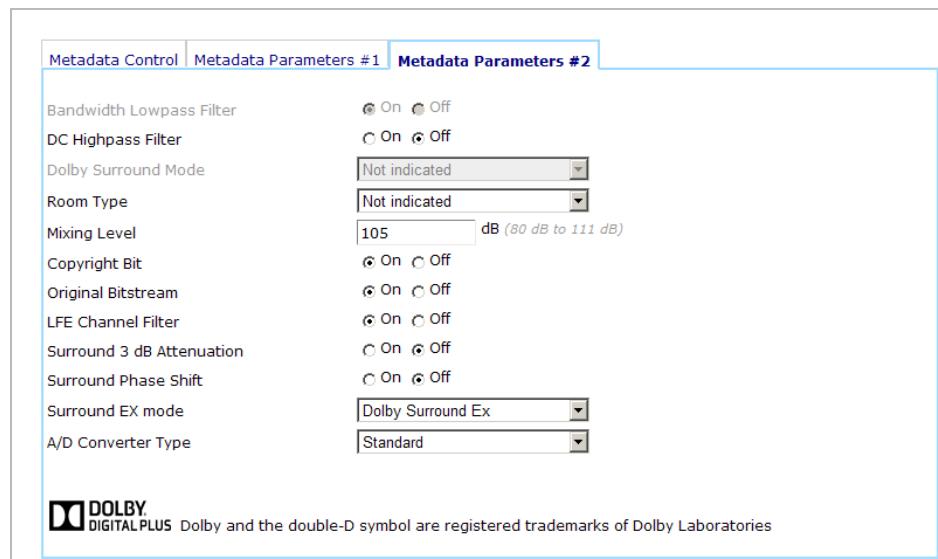
This information is used by Dolby® Digital audio decoders with an RF-remodulated output, to adjust their output dynamic according to a profile. Choice between: [None](#), [Film standard](#), [Film light](#), [Music standard](#), [Music light](#), [Speech](#).

Default value: [Film standard](#).

Preferred Stereo Downmix Mode	This parameter, enabled in 5.0 or 5.1 mode, is used to select either the Lt/Rt or Lo/Ro downmix in a decoder with stereo outputs. Choice between: Not indicated , Lt/Rt Preferred , Lo/Ro Preferred . Lt/Rt: Left total/Right total. The Lt/Rt downmix totals the Surround channels and adds them in-phase to the Left channel and out-of-phase to the Right channel. This enables a Dolby® Surround Pro Logic decoder to rebuild the L/C/R/S channels for a Pro Logic home theater. Lo/Ro: Left only/Right only. The Lo/Ro downmix discretely adds the Left and Right Surround channels to the Left and Right speaker channels, respectively. This preserves stereo separation for stereo-only monitoring and produces a mono-compatible signal. The LFE channel is not included in any downmixes. Default value: Lt/Rt Preferred .
Lt/Rt Center Downmix Level	This parameter, enabled in 5.0 or 5.1 mode, is used to select the level shift applied to the Center channel when adding to the left and right outputs as a result of downmixing to an Lt/Rt output. Choice between: 1.414 (+3.0 dB) , 1.189 (+1.5 dB) , 1.000 (0.0 dB) , 0.841 (-1.5dB) , 0.707 (-3 dB) , 0.595 (-4.5 dB) , 0.500 (-6.0dB) . Default value: 0.707 (-3 dB) .
Lt/Rt Surround Downmix Level	This parameter, enabled in 5.0 or 5.1 mode, is used to select the level shift applied to the Surround channels when downmixing to an Lt/Rt output. Choice between: 0.841 (-1.5dB) , 0.707 (-3 dB) , 0.595 (-4.5 dB) , 0.500 (-6.0dB) . Default value: 0.707 (-3 dB) .
Lo/Ro Center Downmix Level	This parameter, enabled in 5.0 or 5.1 mode, is used to select the level shift applied to the Center channel when adding to the left and right outputs as a result of downmixing to an Lo/Ro output. Choice between: 1.414 (+3.0 dB) , 1.189 (+1.5 dB) , 1.000 (0.0 dB) , 0.841 (-1.5dB) , 0.707 (-3 dB) , 0.595 (-4.5 dB) , 0.500 (-6.0dB) . Default value: 0.707 (-3 dB) .
Lo/Ro Surround Downmix Level	This parameter, enabled in 5.0 or 5.1 mode, is used to select the level shift applied to the Surround channels when downmixing to an Lo/Ro output. Choice between: 0.841 (-1.5dB) , 0.707 (-3 dB) , 0.595 (-4.5 dB) , 0.500 (-6.0dB) . Default value: 0.707 (-3 dB) .

On the Dolby page, click the [Metadata Parameters #2](#) tab to display the 2nd Dolby® Metadata configuration page.

Figure 4-36. Editing an audio component - Dolby® Metadata parameters #2 page



This page is used to set the Metadata used by the Dolby® Encoder in Internal Metadata mode.

Bandwidth Lowpass Filter	Used to enable On or disable Off the low pass filter on the input audio samples. Default value: On .
DC Highpass Filter	Used to enable On or disable Off the high pass filter on the input audio samples. Default value: Off .
Dolby Surround Mode	Used to indicate whether the stereo audio is Dolby® Surround encoded or not. Choice between: Not indicated , Not encoded and Encoded . Default value: Not indicated . The value is not acknowledged in 1/0 mode.
Room Type	Used to indicate what type of mixing room was used for the final mixing. Choice between: Not indicated , Large , Small . Default value: Not indicated .
Mixing Level	Used to indicate the acoustic pressure of the sound during the final mixing. Range between 80 and 111 dB in 1 dB steps. Default value: 105 dB .
Copyright Bit	Used to indicate whether the encoded Dolby® Digital bitstream is copyright protected (On) or not (Off). Default value: On .
Original Bitstream	Used to indicate whether the encoded Dolby® Digital bitstream is the master version or a copy. Default value: On .

LFE Channel Filter	This parameter, enabled in 5.0 or 5.1 mode, is used to enable (On) or disable (Off) a 120 Hz filter. The filter is applied to the LFE channel input of a Dolby® Digital encoder prior to encoding. It is ignored if the LFE channel is disabled. The filter removes frequencies above 120 Hz that would cause aliasing when decoded. This filter should only be switched off if the audio to be encoded is known not to have any signals above 120 Hz. Default value: On . This value will not be acknowledged if the Mode parameter is set to 1/0 (Mono left) , 1/0 (Mono Right) , 2/0 (Stereo) .
Surround 3 dB Attenuation	This parameter, enabled in 5.0 or 5.1 mode, is used to enable (On) or disable (Off) a 3 dB attenuation before encoding the Surround channel(s). Default value: Off .
Surround Phase Shift	This parameter, enabled in 5.0 or 5.1 mode, is used to enable (On) or disable (Off) application of a 90-degree phase shift to the Surround channels. The Dolby® Digital decoder can therefore easily create an Lt/Rt downmix. Default value: On .
Surround EX mode	This parameter, enabled in 5.0 or 5.1 mode, is used to indicate that a project was mixed in the Surround EX™ format with a matrix-encoded surround signal embedded within the two surround channels. Choice between: Not Surround Ex , Dolby Surround Ex , Small Room . Default value: Not Surround Ex
A/D Converter Type	This parameter enables audio that has passed through a particular A/D conversion stage to be marked as such, so that a decoder may apply the complementary D/A process. Choice between: Standard or HDCD . Default value: Standard .

Click the [Misc](#) tab to display other audio component parameters.

Figure 4-37. Editing an audio component - Misc page

The screenshot shows the 'Misc' tab of the 'Audio Configuration / AUD1' settings page. The page contains the following fields:

- Additional Delay:** A text input field showing '0 ms' with a range of '-500 ms to +500 ms'.
- Alarm Saturation:** A radio button group with 'On' (selected) and 'Off'.
- Alarm Detected Silence:** A dropdown menu set to '2 s' with a range from 2 to 60 seconds.
- Language:** A dropdown menu labeled 'Select a language -->' and a text input field for direct entry.
- Audio Type:** A dropdown menu set to 'Undefined' and a slider for '0' (0 to 255).
- Copyright:** A dropdown menu set to 'With'.
- Content:** A dropdown menu set to 'Original'.

At the bottom are 'submit' and 'reset' buttons.

This page is used to set other audio component encoding parameters.

Additional Delay

Used to adjust the audio component in keeping with the video component to obtain correct lip-sync, by compensating for audio/video phase shift generated upstream (an external audio encoder for instance). This parameter may also be used with a non-standard decoder.

Range of settings available: [-500 ms to 500 ms](#).

Alarm Saturation

Used to enable **On** or disable **Off** feedback of alarm saturation generated when 2 consecutive audio samples have a value corresponding to 0 dBFS. If the source is permanently saturated, disable this parameter to prevent feedback of untimely and unimportant alarms.

Alarm Detected Silence

Used to set activation of the Detected Silence alarm. The Detected Silence alarm indicates that the input audio signal value is below -65 dBFS for at least the duration set by this parameter. Range between [2](#) and [60](#) in 2 s steps.

Language

Used to indicate the audio component language. The language code will be displayed in the right-hand box. It is possible to directly enter the language code in this box. The 3-letter language codes comply with ISO 639-2. Choice between: [French \(fra\)](#), [English \(eng\)](#), [German \(deu\)](#), [Spanish \(spa\)](#), [Basque \(bas\)](#), [Italian \(ita\)](#), [Russian \(rus\)](#), [Dutch \(ndl\)](#), [Portuguese \(por\)](#), [Danish \(dan\)](#), [Greek \(gre\)](#), [Finnish \(fin\)](#), [Swedish \(swe\)](#), [Norwegian \(nor\)](#), [Other](#).

Audio Type

Used to indicate the audio component type. Choice between: [Undefined](#), [Clean effects](#), [Hearing impaired](#), [Visual Impaired](#).

Copyright	Used to indicate whether or not the audio signal is protected by copyright (flag in the PES packet header). Choice between: With or Without .
Content	Used to indicate whether the audio signal is an original or a copy. Choice between: Original or Copy (flag in the PES packet header).

Editing a VBI HD component

Click [add a component](#) to select the shorcut menu and click [Add VBI HD](#) or click the VBI component.

If the maximum number of VBI components per service has already been reached, [Add VBI HD](#) will not be underlined and the link will be unavailable.

The VBI HD configuration page will be displayed.

Figure 4-38. Editing a VBI HD component page

The screenshot shows a form titled "VBIHD Configuration". It contains three input fields: "PID" with the value "260" and a note "(32 to 8190)", "Status" set to "On Air", and "VBI Type" set to "HD Teletext". Below the fields are two buttons: "submit" and "reset".

This page is used to set VBI HD component parameters.

PID	Used to indicate the PID of the VBI HD component.
Status	Used to indicate the broadcast status of the VBI component. Choice between: Off Air : Component broadcasting is postponed but the component is present in the service configuration. On Air : The component is on air.
VBI Type	Only the HD Teletext type is available.

Adding a PMT descriptor

The command used to edit PMT descriptors associates descriptors with services or components. Descriptor editing should comply with the DVB standard in reference document ETS 300 468 "Specification for service information (SI) in Digital Video Broadcasting (DVB) systems".

Descriptors are added to components or services that have already been created. Edit the component or the service and click [Add PMT Descriptor](#) in the Descriptors group box.

Figure 4-39. Adding a PMT descriptor

PCR
Status On Air

submit reset

Descriptors

There is no descriptor for this element

Add PMT descriptor

Add PMT descriptor

The Descriptor editing page will be displayed:

Figure 4-40. Editing a PMT descriptor page

PMT Descriptor Configuration

Tag video stream descriptor (2 - 0x02) 2 (0 to 255)

Body

type hexadecimal values only, example: 01 2B FF C8
the length is computed automatically, maximum: 255 bytes

submit reset

This page is used to set PMT descriptor parameters.

Tag

Used to select the descriptor type. The descriptor number is displayed in the right-hand box. It is also possible to directly enter the descriptor number (decimal value) in this box.

Body

Used to add parameters to the selected descriptor. Bytes must be entered in hexadecimal format in groups of 2 digits or letters separated (or not) by spaces. Upper and lower case letters can be used. The **Length** field is calculated automatically.

Editing Expert parameters

Expert Parameters are parameters which are used to set video, audio and VBI Encoders to specific encoding modes for particular clients.

On the Status/Summary page click [Expert parameters: xx](#)

To access to Basic encoder Expert parameter

EM ENCODER 1

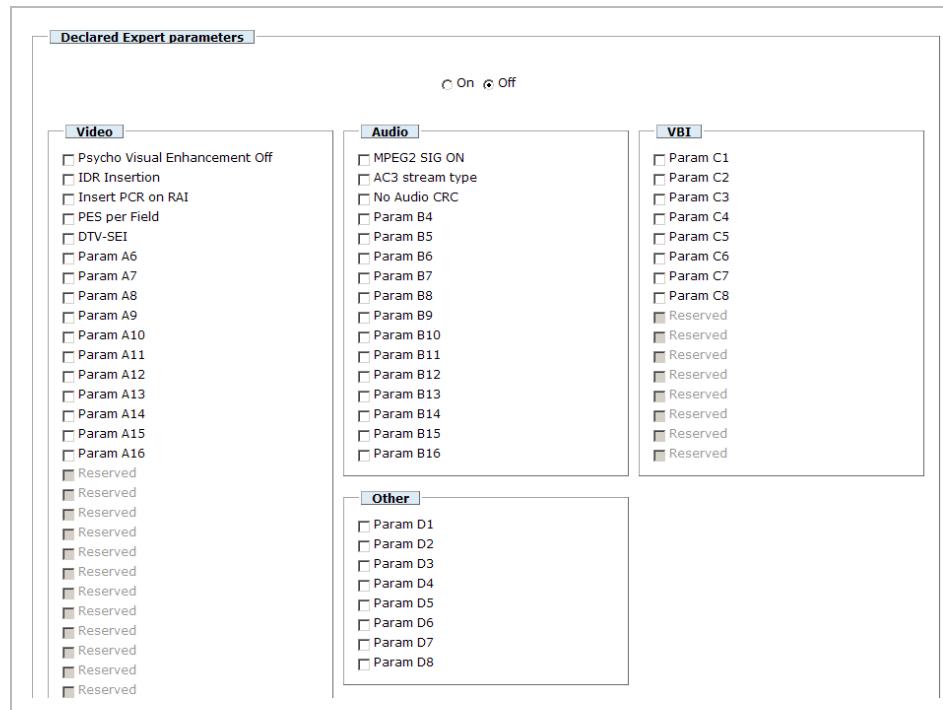
service1_1 Video(H264) 258 [pcr] HD-SDI 1920x1080 8000 kbit/s

Expert parameters: OFF

[+] add component

The Expert parameters page is displayed:

Figure 4-41. Expert parameters page



On

The checked Expert parameters are enabled.

Off

Expert parameters are disabled.

In the Video group box

Psycho Visual Enhancement Off

Psycho Visual Enhancement is off. This parameter must only be ticked for objective measures.

IDR Insertion

I-pictures are replaced by IDR (Instantaneous Decoder Refresh) pictures. In this mode Closed GOP is set to ON. IDR mode is only recommended in the event of interoperability problems with some decoders.

Insert PCR on RAI

Insertion of PCR on RAI is authorized by the standard but could cause some accuracy errors on analyzers.

PES per Field

Configure the encoder in PES per field mode. By default the encoder is in PES per frame mode.

DTV-SFI

Used in specific cases

In the Audio group box

MPEG2 SIG. ON

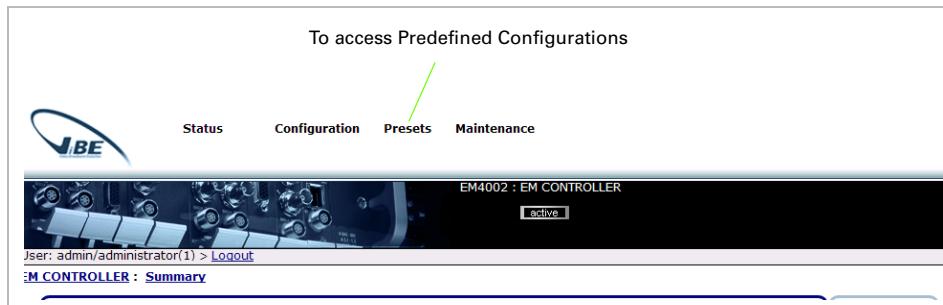
Audio signaling in the PMT is in compliance with the ISO/IEC 13818-3 audio standard (MPEG2).

AC3 stream type	Signaling adaptation for AC3 streams. Standard signaling (0x06 stream type for private data plus an AC3 descriptor) is replaced by specific signaling (0x81 stream type without a descriptor).
No Audio CRC	The CRC is removed from MPEG-1 Layer II and AAC frames for all audio components generated by the Encoder. This does not concern Dolby® AC3 and E-AC3 audio encoding.

Predefined Configurations

The page associated with the [Presets](#) menu is used to manage predefined configurations.

Figure 4-42. Status/Summary page breakdown



Overview of predefined configurations

Predefined configurations are configurations that are stored in the device or can also be saved to disk in the form of files.

There are 2 types of predefined configuration:

- **Chassis** type configurations which contain:
 - ❖ the configuration parameters concerning services and components
 - ❖ all other parameters (IP etc.)
- **EM Encoder** type configurations which store:
 - ❖ the configuration parameters concerning services and components for one Basic encoder.

The User can:

- Set configurations
- Save the active configuration
- Recall predefined configurations stored in the device
- Delete predefined configurations stored in the device

- Save predefined configuration files to disk
- Load predefined configuration files stored on a disk.

The [Presets](#) command displays the following screen:

Figure 4-43. Presets page

Configurations stored in the device									
Stored predefined configurations									
recall	del	save	num	date - time	user	access	size	type	description
	X	+	33	14/03/985302788 - 23:54:19	admin	RO	18Kb	Chassis	WBU-ISOG_59.94_1080i
	X	+	34	14/03/985302788 - 23:57:36	admin	RO	18Kb	Chassis	WBU-ISOG_59.94_720p
	X	+	35	14/03/985302788 - 23:56:24	admin	RO	18Kb	Chassis	WBU-ISOG_50_1080i
	X	+	36	14/03/985302788 - 23:58:18	admin	RO	18Kb	Chassis	WBU-ISOG_50_720p
	X	+	1	09/02/985302789 - 04:23:22	admin	RW	9Kb	EM Encoder	my encoder 2

Add new configuration from file - Save active configuration (0 KB)

Displaying predefined configurations

Configurations stored in the device are displayed on the Presets page as follows:

Figure 4-44. Displaying predefined configurations

Date and UTC time that the configuration was saved									Description given when the configuration was saved		
User configuration rights											
Stored predefined configurations											
recall	del	save	num	date - time	user	access	size	type	description		
	X	+	33	14/03/985302788 - 23:54:19	admin	RO	18Kb	Chassis	WBU-ISOG_59.94_1080i		
	X	+	34	14/03/985302788 - 23:57:36	admin	RO	18Kb	Chassis	WBU-ISOG_59.94_720p		
	X	+	35	14/03/985302788 - 23:56:24	admin	RO	18Kb	Chassis	WBU-ISOG_50_1080i		
	X	+	36	14/03/985302788 - 23:58:18	admin	RO	18Kb	Chassis	WBU-ISOG_50_720p		
	X	+	1	09/02/985302789 - 04:23:22	admin	RW	9Kb	EM Encoder	my encoder 2		

Add new configuration from file - Save active configuration (0 KB)

Diagram illustrating the fields in the 'Stored predefined configurations' table:

- Date and UTC time that the configuration was saved: Points to the 'date - time' column.
- Description given when the configuration was saved: Points to the 'description' column.
- User configuration rights: Points to the 'user' column.
- No. of the memory used: Points to the 'size' column.
- User who saved the configuration: Points to the 'user' column.
- Configuration type: Points to the 'type' column.
- Memory space used by the configuration: Points to the 'size' column.

Configurations predefined in-factory (WBU_ISOG Conf)

4 WBU-ISOG configurations are stored in the Encoder on device shipment (1 per video standard and frequency) with 1 audio AC3 passthrough + 1 audio MPEG-1 Layer II stereo.

They cannot be edited or deleted. They enable the Operator to quickly configure the Encoder with standard settings.



The WBU_ISOG configurations configure only the components of the Encoder. The Inputs / Outputs (IP, TS, etc.) must be configured separately.

WBU-ISOG configuration specifications

- Conf_xxx_xxx_WBU_ISOG
 - ❖ Configuration mode = 1MPTS over IP
 - ❖ PID definition for 1st Basic encoder:
 - VIDEO PID = 0x0200
 - Audio1 PID = 0x1010
 - Audio2 PID = 0x1020
 - PMT PID = 0x0100
 - PCR PID = VIDEOPID = 0x0200
 - ❖ PID definition for 2nd Basic encoder
 - VIDEO PID = 0x0201
 - Audio1 PID = 0x1011
 - Audio2 PID = 0x1021
 - PMT PID = 0x0101 (257)
 - PCR PID = VIDEO PID = 0x0201
 - ❖ PID definition for 3rd Basic encoder (ViBE EM4000 NEM40IN4AA only)
 - VIDEO PID = 0x0202
 - Audio1 PID = 0x1012
 - Audio2 PID = 0x1022
 - PMT PID = 0x0102 (257)
 - PCR PID = VIDEO PID = 0x0202
 - ❖ PID definition for 4th Basic encoder (ViBE EM4000 NEM40IN4AA only)
 - VIDEO PID = 0x0203
 - Audio1 PID = 0x1013
 - Audio2 PID = 0x1023
 - PMT PID = 0x0103 (257)
 - PCR PID = VIDEO PID = 0x0203
- Conf_59_94_1080i_WBU_ISOG
 - ❖ Audio parameter definition
 - Audio1: Standard = AC3 Transport, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - Audio2: Standard = MPEG-1 Layer II, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - ❖ Video parameter definition

- Frequency = 59.94 Hz
- Profile = HP@L4
- Standard / Resolution = 1080i x 1920
- Bitrate = 8 Mbps
- GOP = 32:8
- PAFF = Auto
- Compression Delay = Long Delay, PVE = On, PVR = Off
- Adaptive GOP = Full
- Preprocessing: Noise Reduction = 1, Adapt Filter = 2, Entropy Shaping = 1, Mosquito = Off
- ❖ No expert parameter
- Conf_59_94_720p_WBU_ISOG
 - ❖ Audio parameter definition
 - Audio1: Standard = AC3 Transport, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - Audio2: Standard = MPEG-1 Layer II, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - ❖ Video parameter definition
 - Frequency = 59.94 Hz
 - Profile = HP@L4
 - Standard / Resolution = 720p x 1280
 - Bitrate = 8 Mbps
 - GOP = 64:8
 - PAFF = Frame
 - Compression Delay = Long Delay, PVE = On, PVR = Off
 - Adaptive GOP = Full
 - Preprocessing: Noise Reduction = 1, Adapt Filter = 2, Entropy Shaping = 1, Mosquito = Off
 - ❖ No expert parameter
- Conf_50_1080i_WBU_ISOG
 - ❖ Audio parameter definition
 - Audio1: Standard = AC3 Transport, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - Audio2: Standard = MPEG-1 Layer II, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - ❖ Video parameter definition
 - Frequency = 50 Hz

- Profile = HP@L4
- Standard / Resolution = 1080i x 1920
- Bitrate = 8 Mbps
- GOP = 24:8
- PAFF = Auto
- Compression Delay = Long Delay, PVE = On, PVR = Off
- Adaptive GOP = Full
- Preprocessing: Noise Reduction = 1, Adapt Filter = 2, Entropy Shaping = 1, Mosquito = Off
- ❖ No expert parameter
- Conf_50_720p_WBU_ISOG
 - ❖ Audio parameter definition
 - Audio1: Standard = AC3 Transport, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - Audio2: Standard = MPEG-1 Layer II, Source = SDI Grp1/Ch1, Mode = Stereo, Rate = 192 kbit/s
 - ❖ Video parameter definition
 - Frequency = 50 Hz
 - Profile = HP@L4
 - Standard / Resolution = 720p x 1280
 - Bitrate = 8 Mbps
 - GOP = 48:8
 - PAFF = Frame
 - Compression Delay = Long Delay, PVE = On, PVR = Off
 - Adaptive GOP = Full
 - Preprocessing: Noise Reduction = 1, Adapt Filter = 2, Entropy Shaping = 1, Mosquito = Off
 - ❖ No expert parameter

Figure 4-45. WBU_ISOG configurations stored in-factory

Configurations stored in-factory										
Stored predefined configurations										
recall	del	save	num	date - time	user	access	size	type	description	
	X		33	14/03/985302788 - 23:54:19	admin	RO	18Kb	Chassis	WBU-ISOG_5G_1080p	
	X		34	14/03/985302788 - 23:57:36	admin	RO	18Kb	Chassis	WBU-ISOG_5G_720p	
	X		35	14/03/985302788 - 23:56:24	admin	RO	18Kb	Chassis	WBU-ISOG_5G_--	
	X		36	14/03/985302788 - 23:58:18	admin	RO	18Kb	Chassis	WBU-ISOG_5G_--.jp	

Add new configuration from file - Save active configuration (0 KB)

Save / Recall Configurations

Saving the active configuration in the device

To save the active configuration in the device, click [Save active configuration](#) on the Presets page. The following page will be displayed:

Figure 4-46. Saving the active configuration 1/2

Save active configuration	
Save to	<input type="text" value="num 9"/>
Coder/Chassis	<input type="text" value="EM ENCODER 1"/>
Description	<input type="text" value="EM4000 TV1"/>
<input type="button" value="submit"/> <input type="button" value="reset"/>	

- Enter the following fields:

[Save to](#)

Used to indicate the number of the memory in which the configuration will be saved. Only unused memory numbers will be displayed. 32 memories can be used.

[Coder/Chassis](#)

Used to indicate the type of configuration to be saved ([Chassis](#) or [EM ENCODER x](#)) and if the configuration is of [EM ENCODER](#) type, the number of the Basic encoder to be saved.

[Description](#)

Used to add any User comments.

- Confirm the operation by clicking [submit](#). The following screen will be displayed:

Figure 4-47. Saving the active configuration 2/2

EM CONTROLLER : Presets
You have saved the current configuration in memory #9.

The created configuration will be displayed in the Stored predefined configurations box on the Presets page.



Configurations may not be saved if there is insufficient memory space. If this is the case, delete any unused configurations.

Recalling a configuration stored in the device

To recall a configuration stored in the device, click the  icon associated with the configuration on the Presets page:

- If the configuration is of chassis type, the following page will be displayed:

Figure 4-48. Configurations stored in-factory



Click **OK**. The recalled configuration is immediately applied to the chassis.

- If the configuration is of Encoder type, the following page will be displayed:

Figure 4-49. Recalling an EM Encoder type stored configuration 1/3



- Click **OK**. The following window will be displayed:

Figure 4-50. Recalling an EM ENCODER type stored configuration 2/3



1. Select the Basic encoder that is to receive the configuration.

2. Confirm the operation by clicking on **submit**. The following screen will be displayed:

Figure 4-51. Recalling an EM ENCODER type stored configuration 3/3



Deleting a predefined configuration from the device

To delete a predefined configuration, click the icon associated with the configuration on the Presets page. The following dialog box will be displayed:

Figure 4-52. Confirming deletion of a predefined configuration



Click **OK**.

Saving a configuration file to disk

To save a configuration file to disk, click the icon associated with the configuration on the Presets page. The following page will be displayed:

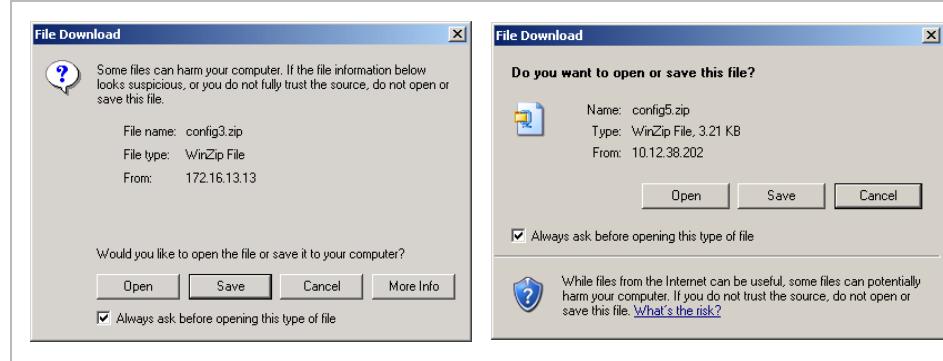
Figure 4-53. Saving a configuration file to disk 1/3



1. Click [configuration # X](#) where **X** indicates the number of the memory whose content will be saved on the hard drive.

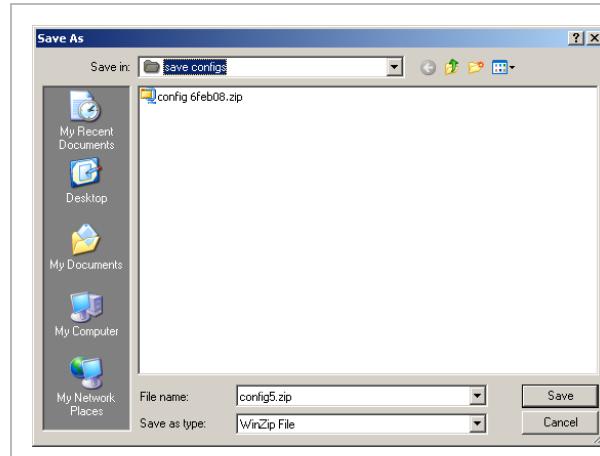
2. If one of the following screens is displayed, click **Save**:

Figure 4-54. Saving a configuration file to disk 2/3



The following window will be displayed:

Figure 4-55. Saving a configuration file to disk 3/3



3. Select the destination directory for the file on the hard drive and enter the file name.
4. Click **Save**.

Loading a predefined configuration file from a disk

To load a predefined configuration from a hard drive to a memory, click the [Add new configuration from file](#) link on the Presets page. The following page will be displayed:

Figure 4-56. Loading a configuration file from a hard drive 1/2

The screenshot shows a simple web interface for loading a configuration file. At the top left is a button labeled "Load from file". Below it is a dropdown menu labeled "Load to" with the value "num 3". To the right of the dropdown is a text input field labeled "File" with a "Browse..." button next to it. At the bottom is a blue rectangular button labeled "submit".

1. Enter the following fields:

Load to	Number of the memory that will store the configuration. Only unused memory numbers will be displayed.
File	Type the path to the configuration file or set the path by clicking Browse....

2. Confirm the operation by clicking [submit](#). The following screen will be displayed:

Figure 4-57. Loading a configuration file from a hard drive 2/2

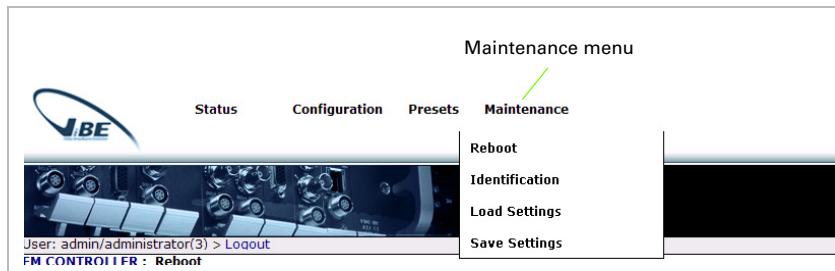
The screenshot displays a success message after a file upload. It starts with the text "Upload configuration" and below it, the message "The configuration has been successfully uploaded."

Maintenance

Rebooting the Encoder

On the [Maintenance](#) menu click [Reboot](#) to display the reboot page.

Figure 4-58. Maintenance menu



This command is used to reboot ViBE EM4000 Encoder.

Figure 4-59. Encoder Reboot page



[Reboot the unit](#)

Reboot the ViBE EM4000 Encoder.

To reboot the Encoder check [Reboot the unit](#) and click [Yes](#).

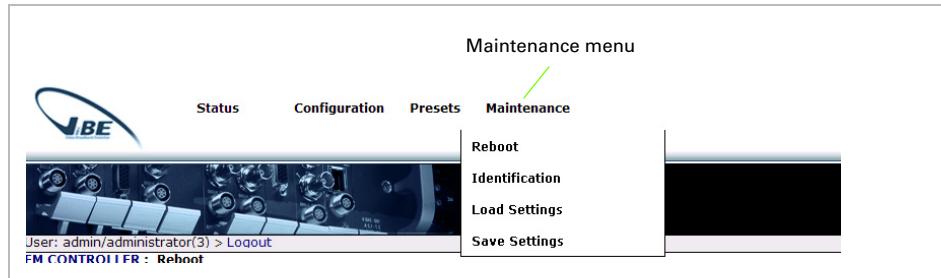


Connection with the Encoder will be lost during the reboot process. Once the Encoder reboot is complete, the Operator will have to reconnect to the Encoder by clicking on the  logo, for instance. An error page may be displayed if reconnection is attempted too soon. If this is the case, try reconnecting by clicking on the Browser Refresh button.

Configuring the names of the Encoder and Basic encoders

On the [Maintenance](#) menu click [Identification](#) to display the identification page.

Figure 4-60. Maintenance menu



This command is used to configure the names of the ViBE EM4000 Encoder and its Basic encoders.

Figure 4-61. Encoder Identification page, ViBE EM4000 NEM40IN2AA

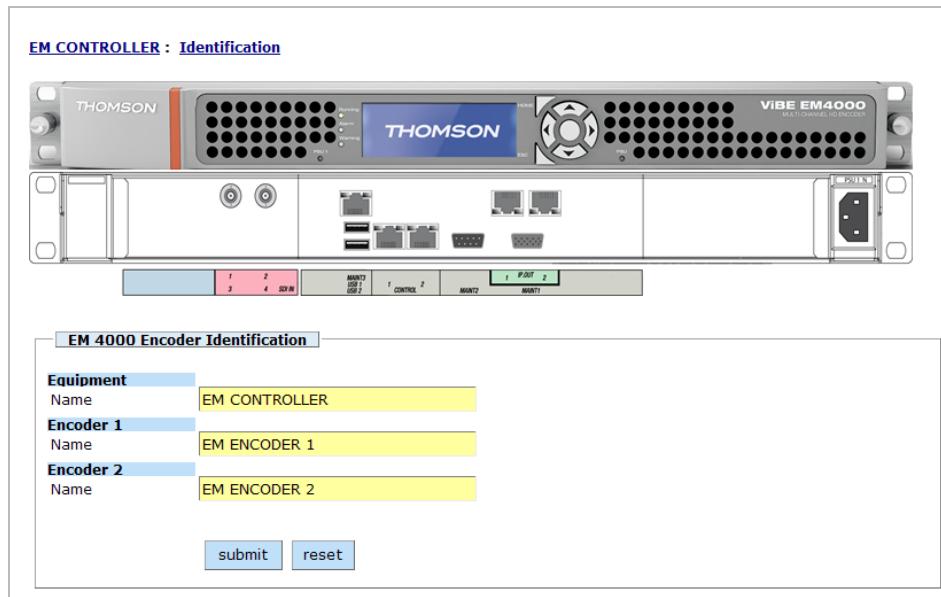


Figure 4-62. Encoder Identification page, ViBE EM4000 NEM40IN4AA

The screenshot shows the 'EM CONTROLLER : Identification' page. At the top, there is a photograph of the ViBE EM4000 NEM40IN4AA unit, which is a multi-channel HD encoder. Below the photograph is a table titled 'EM 4000 Encoder Identification'. The table lists five entries: 'Equipment' (EM CONTROLLER), 'Encoder 1' (EM ENCODER 1), 'Encoder 2' (EM ENCODER 2), 'Encoder 3' (EM ENCODER 3), and 'Encoder 4' (EM ENCODER 4). Each entry has a 'Name' field where the equipment name is listed. At the bottom of the table are two buttons: 'submit' and 'reset'.

EM 4000 Encoder Identification	
Equipment	Name : EM CONTROLLER
Encoder 1	Name : EM ENCODER 1
Encoder 2	Name : EM ENCODER 2
Encoder 3	Name : EM ENCODER 3
Encoder 4	Name : EM ENCODER 4

Parameters are directly edited in the related box.

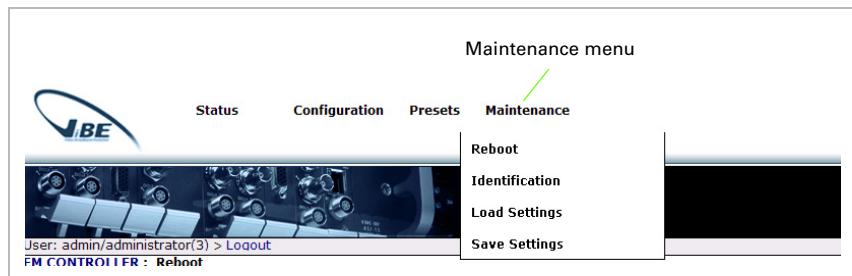
Equipment	Name of the ViBE EM4000 Encoder
Encoder x	Name of the Basic encoder x.

Save / Load Encoder settings

On the [Maintenance](#) menu click [Save settings / Load Settings](#) to save / load a settings file.

The [Save Settings](#) command is used to save a file containing all the Encoder settings to a hard drive. The [Load Settings](#) command is used to load a settings file from a hard drive.

Figure 4-63. Maintenance menu

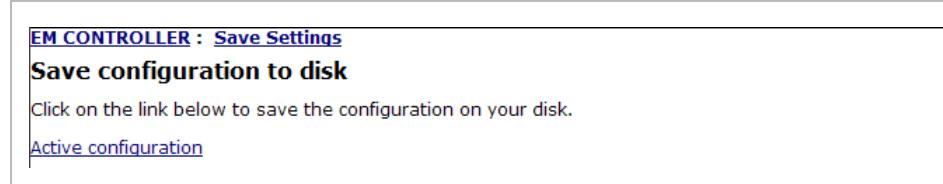


Saving Encoder settings to a disk

To save Encoder settings:

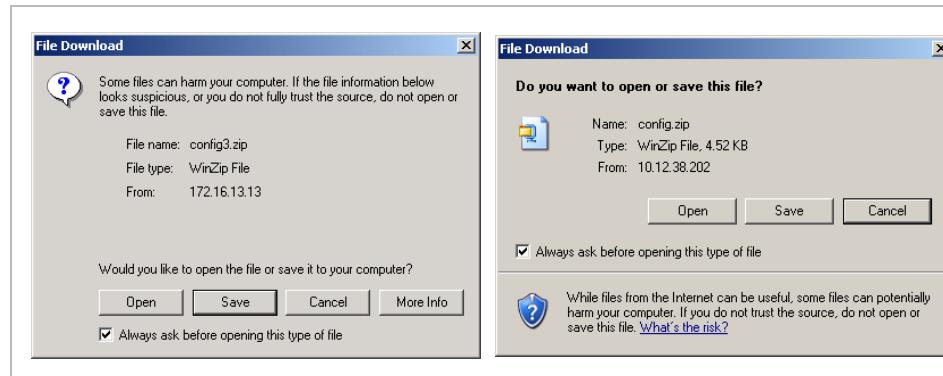
1. Click **Save Settings**. The following page will be displayed:

Figure 4-64. Saving a configuration file to the hard drive 1/3



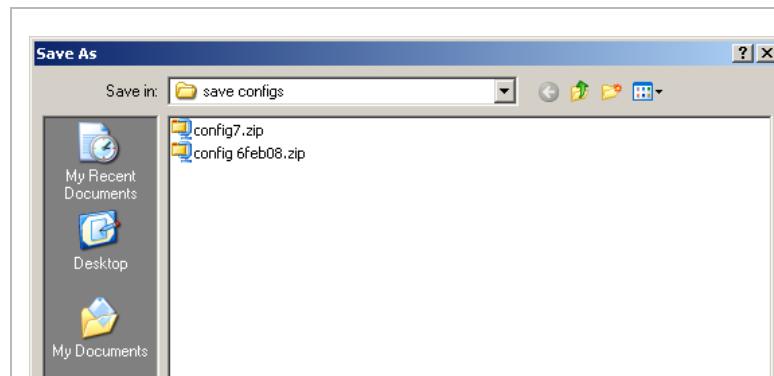
2. Click **Active configuration**.
3. If one of the following windows is displayed, click **Save**:

Figure 4-65. Saving a configuration file to the hard drive 2/3



The following window will be displayed:

Figure 4-66. Saving a configuration file to the hard drive 3/3



4. Select the destination directory for the file on the hard drive and enter the file name.
5. Click **Save**. The file is saved on the hard drive.

Loading Encoder settings from a disk

The **Load settings** command is used to load a settings file from a hard drive and to immediately apply it to the Encoder. This file may have been created using the **Save settings** command described above or the

command in the [Presets menu](#), provided that the generated file is of chassis type.

To load Encoder settings:

1. Click [Load Settings](#). The following page will be displayed:

Figure 4-67. Loading a configuration file from the hard drive 1/2

The screenshot shows a web page titled "EM CONTROLLER : Load Settings". Below it is a section titled "Load configuration from disk" with the sub-instruction "Type the complete path name of the file you want to upload, or click the 'browse' button to select a file". A "Load from file" button is present above a file input field labeled "File". To the right of the input field is a "Browse..." button. Below these is a "submit" button.

2. Enter the path to the configuration file in the [File](#) box, or set the path by clicking [Browse....](#).
3. Confirm the operation by clicking [submit](#). The following page will be displayed:

Figure 4-68. Loading a configuration file from the hard drive 2/2

The screenshot shows a web page titled "Upload configuration". It displays a message: "The configuration has been successfully uploaded."

If the recalled file is not of chassis type, the following message will be displayed:

Figure 4-69. Loading a configuration, error

The screenshot shows a web page titled "Upload configuration". It displays a message: "The configuration could not be uploaded."

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Chapter 5

Servicing

Introduction

This chapter describes:

- The Local Console Application featured on the device. The Local Console application is used to perform certain servicing operations described in this chapter:
 - ❖ Access to the Local Console application
 - ❖ Operations performed via the Local Console application
- Maintenance operations relating to device fans.

In this Chapter

'Operations performed using the Local Console'	page 116
'Accessing the Local Console application'	page 116
'List of Local Console commands'	page 117
'Description of basic parameters'	page 120
'Managing software options'	page 124
'Managing software licenses'	page 129
'Software downloading'	page 130
'Managing Web Interface Users'	page 130
'Managing predefined configurations'	page 133
'Managing community strings and SNMP agent information'	page 137
'Preventive and corrective maintenance operations'	page 142

Operations performed using the Local Console

Introduction

The device features the Local Console application. The Local Console application can be accessed by connecting to the Encoder via the Ethernet link and an SSH client application.

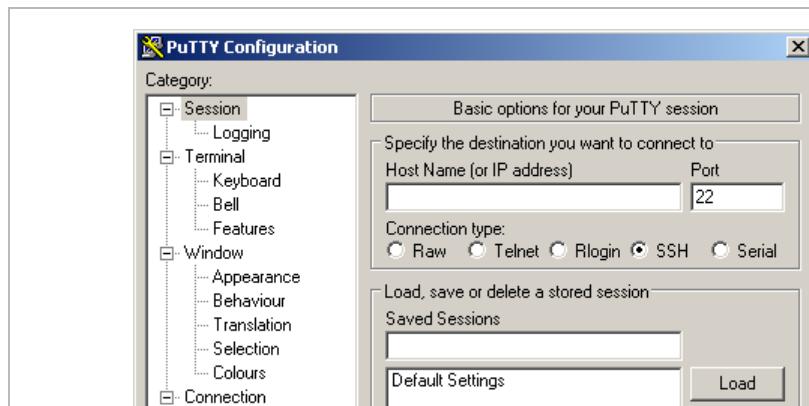


The Encoder IP address can be viewed/edited via the Encoder Front panel.

The free PuTTY SSH client application is used in this chapter.

The PuTTY application can be downloaded on <http://www.putty.org/>

Figure 5-1. PuTTY application



Accessing the Local Console application

IP parameter values on Encoder shipment

The parameters are indicated on the Acceptance Test Report shipped with the device or can be viewed via the Encoder Front panel (see section '[Front Panel Operation](#)' on page 37).

SSH client application setting

The SSH client application must be set with the following parameters:

- ❖ [Host name \(or IP address\)](#): Encoder IP address
- ❖ [Port](#): 22

Accessing the Local Console

1. Run the SSH application on the PC connected to the network using the Encoder IP address. The Login page is displayed.
2. Enter user as Login

Figure 5-2. Enter login, Login page



3. Enter user as password

Figure 5-3. Local Console main screen



Then see section '[List of Local Console commands](#)' on page 117 for a list of the commands.

List of Local Console commands

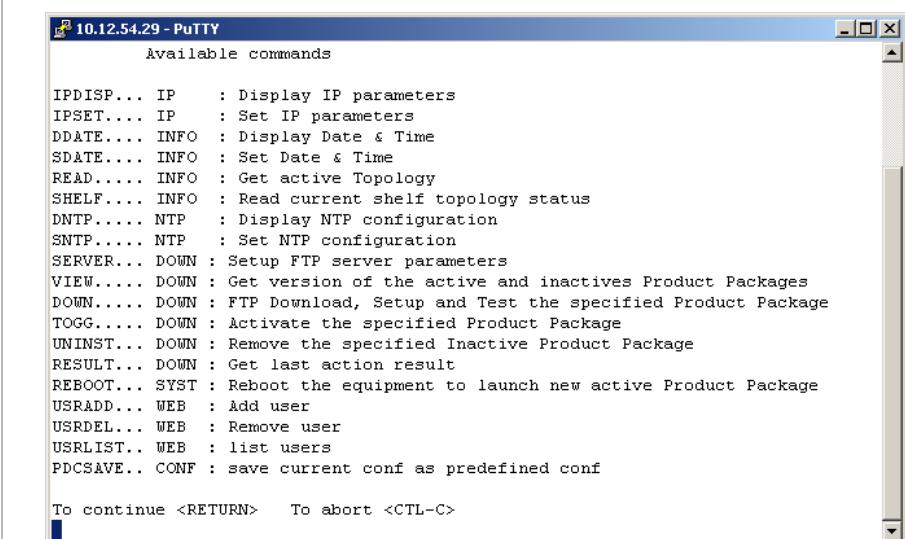
To display all Local Console commands, type `help` after the `ViBE` prompt:

Figure 5-4. Displaying all Local Console commands



The list of available commands will be displayed:

Figure 5-5. List of Local Console commands 1/2



```
10.12.54.29 - PuTTY
Available commands

IPDISP... IP      : Display IP parameters
IPSET.... IP     : Set IP parameters
DDATE.... INFO   : Display Date & Time
SDATE.... INFO   : Set Date & Time
READ.... INFO    : Get active Topology
SHELF.... INFO   : Read current shelf topology status
DNTP.... NTP     : Display NTP configuration
SNTP.... NTP     : Set NTP configuration
SERVER... DOWN   : Setup FTP server parameters
VIEW.... DOWN   : Get version of the active and inactives Product Packages
DOWN.... DOWN   : FTP Download, Setup and Test the specified Product Package
TOGG.... DOWN   : Activate the specified Product Package
UNINST... DOWN   : Remove the specified Inactive Product Package
RESULT... DOWN   : Get last action result
REBOOT... SYST   : Reboot the equipment to launch new active Product Package
USRADD... WEB    : Add user
USRDEL... WEB    : Remove user
USRLIST... WEB   : list users
PDCSAVE.. CONF  : save current conf as predefined conf

To continue <RETURN> To abort <CTRL-C>
```

Figure 5-6. List of Local Console commands 2/2



```
10.12.54.29 - PuTTY
Available commands (cont'd)

PDCLOAD.. CONF  : load a predefined conf
PDCREM... CONF  : remove a predefined conf
PDCGET... CONF  : get one or all predefined conf
RINFO.... SNMP   : Get System info
WINFO.... SNMP   : Set System info
CLIST.... SNMP   : Show Communities
CADD..... SNMP  : Add a new Community
CDEL..... SNMP  : Delete Community
CREAD.... SNMP   : Read Communities from file
CSAVE.... SNMP   : Save Communities to file
LSOPT.... OPTSW  : get function options list
INSOPT... OPTSW  : add options
RMOPT.... OPTSW  : remove options
EQCOD.... RID    : Display equipment code
DRID.... RID    : Display board and shelf status
SETKEYID. KEY   : Set injected-id key
HELP.... Display help
QUIT.... Quit tool

ViBE> ■
```

Overview of commands

The Local Console application provides many commands. Some of these commands are not however intended for the device User but reserved

for Thomson Video Networks use. Only the commands available to Users are therefore described. The following table lists these commands:

Table 5-1. Commands available on the Local Console application

User operations and related commands	Command description & page
Setting basic parameters	
■ ipdisp	To display IP Control parameters, page 120
■ ipset	To edit IP Control parameters, page 121
■ ddate	To display the current date and time, page 121
■ sdate	To edit the date and time, page 122
Synchronizing Encoder time with an NTP server	
■ dntp	To display NTP synchronization status, page 122
■ sntp	To initialize the synchronization process via the NTP server, page 122
Displaying chassis topology	
■ read	To display the chassis topology, page 123
■ shelf	To display the status, name and ordering reference of the board, page 123
Managing software options	
■ lsopt	To display installed software options, page 124
■ eqcod	To read the Encoder equipment code, page 125
■ drid	To read the Encoder serial number, page 125
■ insopt	To install a software option, page 127
■ rmopt	To uninstall a software option, page 128
Managing software licenses	
Downloading software (Product Package)	
■ view, down, togg, uninist	page 130

Table 5-1. Commands available on the Local Console application

User operations and related commands	Command description & page
Managing Web Interface Users	
■ <code>usradd</code>	To add a User, page 132
■ <code>usrdel</code>	To delete a User, page 132
■ <code>usrlist</code>	To display the list of Users, page 133
Managing predefined configurations	
■ <code>pdcsave</code>	To save a configuration, page 134
■ <code>pdcload</code>	To load a predefined configuration, page 134
■ <code>pdcrem</code>	To delete a predefined configuration, page 135
■ <code>pdcget</code>	To get the description of a predefined configuration, page 136
Managing community strings and SNMP agent information	
■ <code>rinfo</code>	To display SNMP agent information, page 137
■ <code>winfo</code>	To write SNMP agent information, page 138
■ <code>cread</code>	To display the list of community strings, page 138
■ <code>clist</code>	To display the list of temporary community strings, page 139
■ <code>cadd</code>	To add a community string, page 140
■ <code>cdel</code>	To delete a community string, page 140
■ <code>csave</code>	To save the list of community strings, page 140

Description of basic parameters

Commands relating to IP parameters

Displaying IP parameters (`ipdisp`)

To display the Encoder IP parameters, type `ipdisp` after the **ViBE** prompt:

Figure 5-7. Displaying Encoder IP parameters - ipdisp command

```
10.12.54.29 - PuTTY
ViBEE> ipdisp
IP address.....: 10.12.54.29
IP netmask.....: 255.255.255.0
IP gateway.....: 0.0.0.0
ViBEE>
```

Editing IP parameters (*ipset*)

To edit the Encoder IP parameters, type *ipset* after the *ViBE* prompt:

Figure 5-8. Editing Encoder IP parameters - ipset command

```
10.12.54.29 - PuTTY
ViBEE> ipset
IP address (10.12.54.29) ? 10.12.54.29
IP netmask (255.255.255.0) ? 255.255.255.0
IP gateway (0.0.0.0) ? 0.0.0.0

New configuration will be :
IP address.....: 10.12.54.29
IP netmask.....: 255.255.255.0
IP gateway.....:

Sure to modify ? y
```

- Enter the new value of the parameter(s) to be edited and press Return. If the parameter does not require editing, you do not need to enter its value. Just press Return straight after ? to confirm the current value. If the IP gateway address is not used, type 0.0.0.0.
- Type *y* after *Sure to modify ?* if you wish to confirm the new configuration or *n* if you wish to keep the previous configuration.



- The changes will be acknowledged after the Encoder has been rebooted.
- The Encoder must be connected to the network during the boot which follows IP address configuration to facilitate detection of MAC/IP address pair changes.

Commands relating to the date and time

Displaying the current date and time (*ddate*)

To display the current date and time, type *ddate* after the *ViBE* prompt:

Figure 5-9. Displaying the current date and time - ddate command

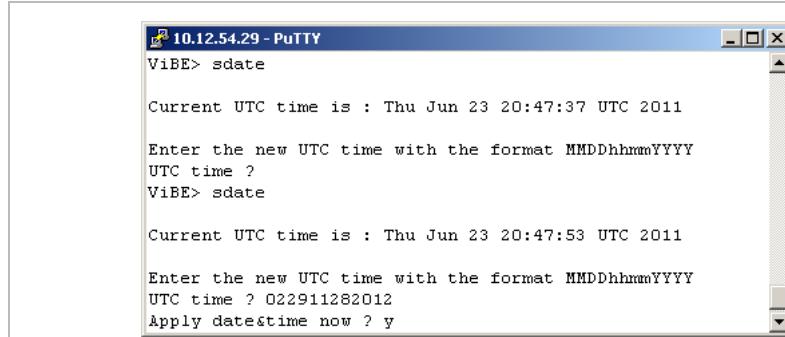
```
10.12.54.29 - PuTTY
ViBEE> ddate
Thu Jun 23 20:45:32 UTC 2011
ViBEE>
```

UTC date and time will be displayed.

Editing the date and time (*sdate*)

To edit the date and time, type `sdate` after the **ViBE** prompt:

Figure 5-10. Editing the date and time - *sdate* command



```
10.12.54.29 - PuTTY
ViBE> sdate
Current UTC time is : Thu Jun 23 20:47:37 UTC 2011
Enter the new UTC time with the format MMDDhhmmYYYY
UTC time ?
ViBE> sdate
Current UTC time is : Thu Jun 23 20:47:53 UTC 2011
Enter the new UTC time with the format MMDDhhmmYYYY
UTC time ? 022911282012
Apply date&time now ? y
```

Enter the following fields:

- Type the new date and time values in month, day, hour, minute and year format (without spaces) after [UTC time ?](#).
- Type `y` after [Apply date&time now ?](#) if you wish to confirm the new values or `n` if you wish to keep the previous values.

The [Done](#) message will be displayed to indicate that the changes have been acknowledged.

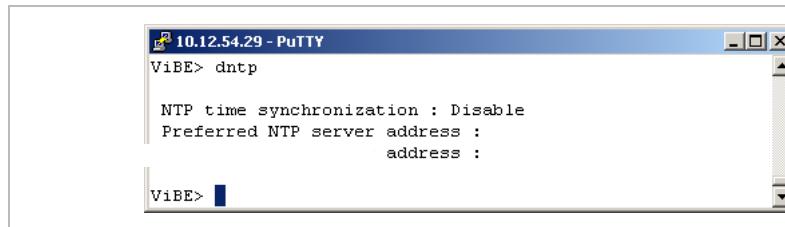
Commands relating to NTP configuration

The purpose of NTP (Network Time Protocol) is to synchronize devices via a shared network. An external NTP server serves as a reference for the Encoder, which is an NTP client (its internal clock is synchronized with the NTP server).

Displaying NTP server status and IP address (*dntp*)

To display the NTP server status and IP address, type `dntp` after the **ViBE** prompt:

Figure 5-11. Displaying NTP server status and IP address - *dntp* command



```
10.12.54.29 - PuTTY
ViBE> dntp
NTP time synchronization : Disable
Preferred NTP server address :
address :
```

Editing NTP server status and IP address (*sntp*)

To edit the NTP server status and IP address, type `sntp` after the **ViBE** prompt:

Figure 5-12. Editing NTP server status and IP address - sntp command

```
10.12.54.29 - PuTTY
ViBE> sntp

NTP time synchronization [1=Enable]/[0=Disable] (0) 1

Preferred NTP server IP address () : 172.32.63.35

Enable NTP time synchronization (servers 172.32.63.35)
Change takes effect after board reboot

ViBE>
```

- To enable/disable time synchronization, type 1 (Enable) or 0 (Disable).
 - To edit the server IP address, type the new address on the second line.
- 
 - The changes will be acknowledged after the Encoder has been rebooted.
 - The first synchronization operation may take up to 20 minutes.

Commands relating to chassis topology

Displaying chassis topology (*read*)

To display the Encoder chassis topology, type `read` after the `ViBE` prompt:

Figure 5-13. Displaying Encoder chassis topology - *read* command

Chassis [1...1]	slots	id	type	Boards
	[1]	1	EM Encoder	[ENCODING-Board] | NEM40IN2
	[1]	2	EM Encoder	[ENCODING-Board]
	[2]	3	EM Encoder	[ENCODING-Board]
	[2]	4	EM Encoder	[ENCODING-Board] NEM40IN4
	[5]	9	EM Controller	[MAIN-Board]

```
10.12.54.24 - PuTTY
ViBE> read

Chassis [1...1]
slots      id      type      Boards
-----  -----
[1]        1       EM Encoder [ENCODING-Board] | NEM40IN2
[1]        2       EM Encoder [ENCODING-Board]
[2]        3       EM Encoder [ENCODING-Board]
[2]        4       EM Encoder [ENCODING-Board] NEM40IN4
[5]        9       EM Controller [MAIN-Board]

ViBE>
```

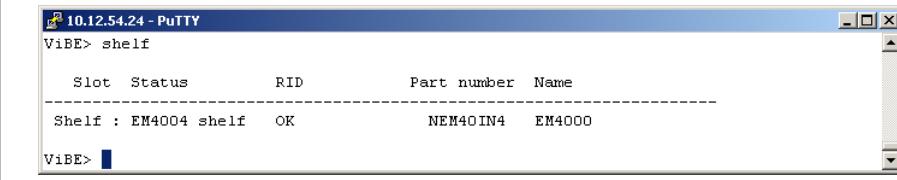
The following information will be displayed:

- `slots`: Slot number
- `id`: Board ID number
- `type`: Type of the board
- `Boards`: Name of the board

Displaying status, RID and Part Number (*shelf*)

To display the boards installed in the chassis together with their ordering references and names, type `shelf` after the `ViBE` prompt:

Figure 5-14. Displaying Encoder status, RID and Part Number - shelf command



Slot	Status	RID	Part number	Name
Shelf : EM4004	shelf	OK	NEM40IN4	EM4000

The following information will be displayed:

- **Slot**: slot number. **Shelf** refers to the chassis;
- **Status**: status of board in the slot. Possible messages are:
 - ❖ **Encoder shelf**
 - ❖ **Running**: the application has been run
 - ❖ **Error (xxx)**: an error was detected while the board was booting.
xxx is a code reserved for Thomson Video Networks use only.
- **RID**: indicates whether the read information is correct. Possible messages are:
 - ❖ **OK**: the information is correct
 - ❖ **Not Read**: the information has not been read
- **Part number**: Chassis ordering reference
- **Name**: Chassis name

Managing software options

Software options are managed via the Local Console.

The purpose of this section is to explain the procedures for displaying device software option status and ordering and installing software options.



If options are ordered with the product, they will have been installed at the factory and will be immediately available to the operator.

Displaying software options (*lsopt*)

To display the software options installed, type **lsopt** after the **ViBE** prompt:

Figure 5-15. Displaying software option status - *lsopt* command

id	ref.	status	key	comment	nb
50	NEMS4H4A	Installed	3238C8	One channel HD/SD AVC encoding	4
51	NEMS4FLA	Installed	332FB6	WAN+LAN Flexstream	4
52	NEMS4FLE	---	XXXXXX	LAN Flexstream	0
60	NEMS4D51	Installed	3C7450	DD-DD+ surround encoding (1x5.1/3x2.0)	8
61	NEMS4DDE	Installed	3D6342	Dolby E decoding	8
62	NEMS4DOL	Installed	3E083C	DD-DD+ stereo encoding	24
63	NEMS4AAC	Installed	3F09CA	AAC stereo encoding	24
64	NEMS4A51	Installed	405985	AAC-HE surround encoding (1x5.1/3x2.0)	8
65	NEMS4MP1	Installed	41507D	MPEG1 L2 stereo encoding	24

The following information will be displayed:

- **id**: software option ID number
- **ref.**: software option sales reference
- **nb**: number of options installed
- **status**: option status; **installed** indicates that the option has been installed,
----- indicates that the option has not been installed
- **key**: key used to install the option
- **comment**: option name.

Ordering and installing software options

To order and install a software option, please observe the following procedure:

1. Order the software option from Thomson Video Networks by providing the equipment code and the serial number of the Encoder;
2. Install the option using the key supplied by Thomson Video Networks.

Ordering a software option (*eqcod*) (*drid*)

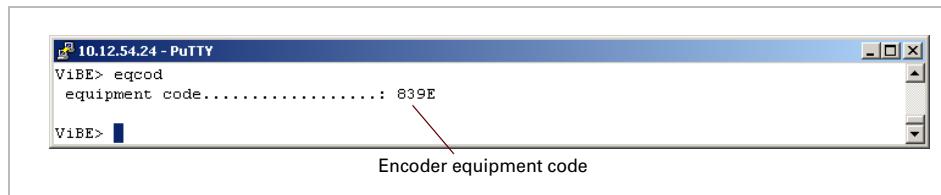
1. Read the Encoder equipment code and Product serial number

Two methods are available:

- ❖ via the Local Console
 - ❖ via a Web Browser
- a. Reading the Encoder equipment code and Product serial number via the Local Console

To read the Encoder equipment code, type **eqcod** after the **ViBE** prompt:

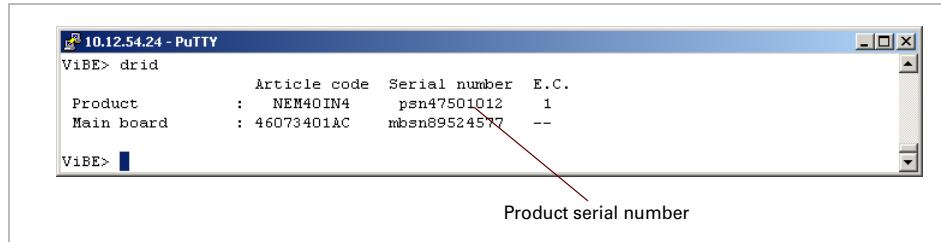
Figure 5-16. Reading the equipment code via the Local Console - eqcod command



The code will be displayed.

To read the Encoder serial number, type `drid` after the `ViBE` prompt:

Figure 5-17. Reading the Product serial number via the Local Console - drid command



The serial number will be displayed.

b. Reading the Encoder equipment code and Product serial number via a Web Browser

The Encoder equipment code and Product serial number can be read via a Web Browser connected to the Encoder's Web Interface. Select [HW/SW Information](#) in the Status page. For further information about operation via the Web Interface, see section '[Web Browser Interface](#)' on page 51.

Figure 5-18. Reading the equipment code and the serial number via a Web Browser

Hardware Installed options		
Option	Quantity	Name
NEMH4PSU	0	Additional PSU
Software Installed options		
Option	Quantity	Name
NEMS4H4A	4	One channel HD/SD AVC encoding
NEMS4FLA	4	WAN+LAN Flexstream
NEMS4FLE	0	LAN Flexstream
NEMS4D51	8	DD-DD+ surround encoding (1x5.1/3x2.0)
NEMS4DDE	8	Dolby E decoding
NEMS4DOL	24	DD-DD+ stereo encoding
NEMS4AAC	24	AAC stereo encoding
NEMS4A51	8	AAC-HE surround encoding (1x5.1/3x2.0)
NEMS4MP1	24	MPEG1 L2 stereo encoding
Software		
Active packages		EM4000 01.00.00.019
Inactive packages		EM4000 01.00.00.002
MAIN-Board		
Board Type		MAIN-Board
Prod Unit Part Number		NEM401N4
Product Serial Number		psn47501012
Main Unit Part Number		46073401AC
Main Serial Number		mbsn89524577
Equipment Code		839E
Hardware Level		1
Prod Unit Variant Number		
Power2 Product Unit Variant		
Power2 Option Unit Part Number		
AES Board Unit Part Number		
AES Option Unit Part Number		

2. Provide Thomson Video Networks with the equipment code and specify the software option required. Thomson Video Networks will then supply a specific key (which is unique and can only be used for this Encoder).
3. Install the software option. See section '[Installing a software option \(insopt\)](#)' on page 127.

Installing a software option (*insopt*)

To install a software option using the code supplied by Thomson Video Networks:

1. Type *insopt* after the *ViBE* prompt:

Figure 5-19. Enabling a software option - `insopt` command 1/2



2. Enter the software Option key.

Figure 5-20. Enabling a software option - `insopt` command 2/2



The [install option done](#) message will be displayed to indicate that the option has been installed.

You can also ensure that the option has been confirmed using the `lsopt` command (See section '[Displaying software options \(lsopt\)](#)' on page 124).



When an installed option is edited (i.e. if the number of AAC audios must be increased), this option will need to be uninstalled before being reinstalled with the new key (see section below).

Uninstalling a software option (`rmopt`)

To uninstall a software option, you will need its [id](#). This information can be displayed using the `lsopt` command:

Figure 5-21. Displaying option id

id	ref.	status	key	comment	nb	
					nb	nb
50	NEMS4H4A	Installed	3238C8	One channel HD/SD AVC encoding	4	4
51	NEMS4FLA	Installed	332FB6	WAN+LAN Flexstream	4	4
52	NEMS4FLE	- - -	XXXXXX	LAN Flexstream	0	0
60	NEMS4D51	Installed	3C7450	DD-DD+ surround encoding (1x5.1/3x2.0)	8	8
61	NEMS4DDE	Installed	3D6342	Dolby E decoding	8	8
62	NEMS4DOL	Installed	3E083C	DD-DD+ stereo encoding	24	24
63	NEMS4AAC	Installed	3F09CA	AAC stereo encoding	24	24
64	NEMS4A51	Installed	405985	AAC-HE surround encoding (1x5.1/3x2.0)	8	8
65	NEMS4MP1	Installed	41507D	MPEG1 L2 stereo encoding	24	24

To uninstall a software option:

1. Type `rmopt` after the [ViBE](#) prompt:

Figure 5-22. Uninstalling a software option - rmopt command 1/2



2. Enter the Option id of the option to be uninstalled:

Figure 5-23. Uninstalling a software option - rmopt command 2/2



The [remove option done](#) message will be displayed to indicate that the option has been uninstalled.

Recovering lost keys

If you lose a software option key, please contact Thomson Video Networks Customer Services with:

- Option purchase order
- Encoder [equipment code](#)
- Ordering reference of the option relating to the lost key.

Managing software licenses

Software licenses are managed via the Local Console.

Software license management follows the same procedures as software option management (refer to section '[Managing software options](#)' on page 124).



If software licenses are ordered with the product, they will have been installed in-factory and be immediately available to the operator.

Example

- Displaying software licenses

Figure 5-24. Displaying software license(s) - lsopt command

Software license					
id	ref.	status	key	comment	nb
50	NEMS4H4A	Installed	3238C8	One channel HD/SD AVC encoding	4
51	NEMS4FLA	Installed	332FB6	WAN+LAN Flexstream	4
52	NEMS4FLE	--	XXXXXX	LAN Flexstream	0
60	NEMS4DS1	Installed	3C7450	DD-DD+ surround encoding (1x5.1/3x2.0)	8
61	NEMS4DDE	Installed	3D6342	Dolby E decoding	8
62	NEMS4DOL	Installed	3E083C	DD-DD+ stereo encoding	24

■ Ordering and installing software licenses

To order and install a software license, please observe the following procedure:

1. Order the software license from Thomson Video Networks by providing the [equipment code](#) and the [serial number](#) of the Encoder (refer to section '[Ordering a software option \(eqcod\) \(drid\)](#)' on page 125);
2. Install the software license using the key supplied by Thomson Video Networks (refer to section '[Installing a software option \(insopt\)](#)' on page 127).

Software downloading

Downloading is used to upgrade device firmware. It can be performed via the {Download} application supplied by Thomson Video Networks Customer Service. The {Download} application is described in section '[Tools](#)' on page 143. The view, down, uninst and togg commands are for factory use only.

Up to 5 software packages can be downloaded to the ViBE EM4000 memory via the {Download} application (1 active package and 4 inactive packages).



The term 'software package' also refers to a software release.

Managing Web Interface Users

Foreword

The Encoder can be operated via a Web Browser connected to the Web Interface featured on the device. Users accessing the Encoder via this Interface must have been declared in the device. User declaration and management (creation, deletion, password, rights, etc.) are performed via the Local Console.

User rights are defined according to four preset profiles: Operator, Technician, Administrator, Service. The rights corresponding to the profiles are as follows:

Table 5-2. Web Interface User Profiles and corresponding rights

	operator	technician	administrator	service
View Topology	X	X	X	X
View Predefined Configurations	X	X	X	X
Create Predefined Configurations		X	X	X
Recall Predefined Configurations		X	X	X
View Encoder Configuration	X	X	X	X
Edit Encoder Configuration		X	X	X
View Alarms	X	X	X	X
Reboot Device	X	X	X	X
Create User	X	X		

The following Users are defined on device shipment:

Table 5-3. Users defined on device shipment

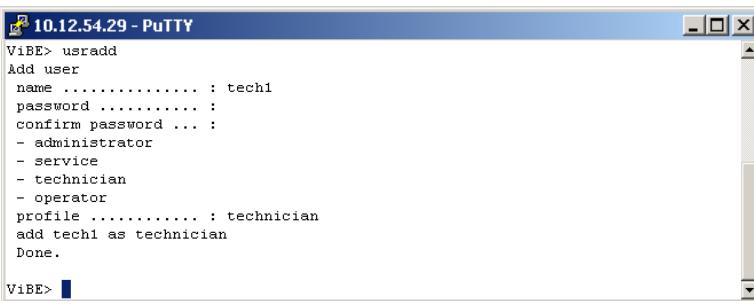
User name	Password	Profile
admin	admin	administrator
service	service	service
technician	technician	technician
operator	operator	operator
user	user	operator
guest	guest	guest (=operator)

It is possible to edit the characteristics of these Users and a maximum of 64 Users can be defined.

Adding a User (`usradd`)

To add a User, type `usradd` after the `ViBE` prompt:

Figure 5-25. Adding a Web Interface User - `usradd` command



```
ViBE> usradd
Add user
name ..... : tech1
password ..... :
confirm password ... :
- administrator
- service
- technician
- operator
profile ..... : technician
add tech1 as technician
Done.
```

Enter the following fields:

- **name**: User name
- **password**: password for accessing the Web Interface
- **confirm password**: re-enter the password for accessing the Web Interface
- **profile**: enter the User profile. The available profiles are given just above this field.

The following information will be displayed:

- **add xxxxxx as yyyyyy**: User xxxxxx with the profile yyyyyy has been successfully added.
If the operation is not successful, the reason for failure will be displayed.

Deleting a User (`usrdel`)

To delete a User, type `usrdel` after the `ViBE` prompt:

Figure 5-26. Deleting a Web Interface User - `usrdel` command



```
ViBE> usrdel
Remove user
name ..... : tech1
remove tech1
Done.
```

Enter the following fields:

- **name**: name of User to be deleted

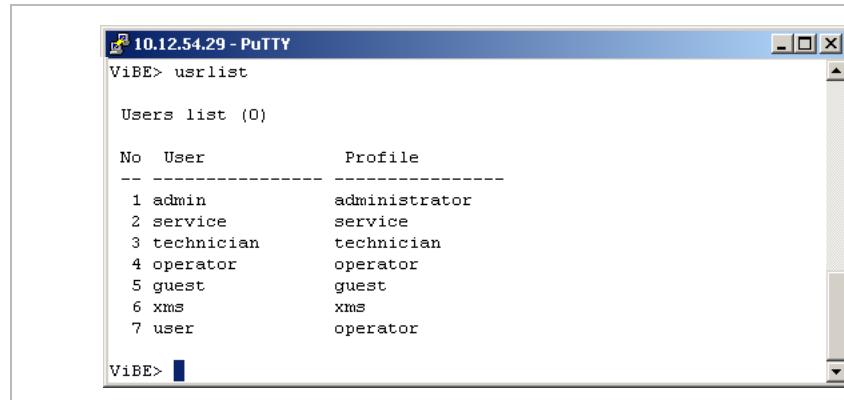
The following information will be displayed:

remove xxxxx: User xxxxx has been successfully deleted.
If the operation is not successful, the reason for failure will be displayed.

Displaying the list of Users (*usrlist*)

To display the list of Users and their profiles, type `usrlist` after the ViBE prompt:

Figure 5-27. Displaying the list of Web Interface Users - *usrlist* command



No	User	Profile
1	admin	administrator
2	service	service
3	technician	technician
4	operator	operator
5	guest	guest
6	xms	xms
7	user	operator

The following information will be displayed:

- **User**: User name
- **Profile**: User profile

Managing predefined configurations

Foreword

Predefined configurations are stored configurations.

A maximum of 32 configurations can be stored. This number may be reduced according to the complexity of the configurations stored.

The Local Console is used to manage configurations (saving, loading, deleting, status reading, etc.). It cannot be used to define configuration contents. Configuration contents are defined via the Web Interface (which is also used for configuration management).

Table 5-4. Configuration use according to the application

	Local Console	Web Interface
Defining configurations		X
Managing configurations (saving, loading, deleting)	X	X



There is no locking mechanism between the different interfaces which have access to predefined configurations. It is therefore up to the User to manage operation of these interfaces.

Saving a current configuration (pdcsave)

To save a current configuration, type `pdcsave` after the `ViBE` prompt:

Figure 5-28. Saving a current configuration via the Local Console - `pdcsave` command

The screenshot shows a PuTTY terminal window titled "10.12.54.29 - PUTTY". The command `ViBE> pdcsave` is entered. The output shows the topology and the configuration details for saving. The configuration number is 5, and the comment is EM4000_2. The message "save cuid 0 in conf 5 OK" indicates success.

```
ViBE> pdcsave
Topology :
cuid      0 - CHASSIS
cuid      1 - EM_ENCODER
cuid      2 - EM_ENCODER

cuid to save : 0
conf number : 5
author : PT
comment : EM4000_2
save cuid 0 in conf 5 OK
ViBE>
```

Enter the following fields:

- **cuid to save:**
 - ❖ 0: The configurations of the chassis (IP, etc.) and Basic encoder parameters are saved (chassis type configuration).
 - ❖ x: The configuration of the Basic encoder x is saved (EM Encoder type configuration).
- **conf number:** enter the number assigned to the configuration (1 to 32). If the number is already being used, the predefined configuration corresponding to this number will be overwritten.



Some numbers are reserved for predefined configurations stored at the factory and can not be overwritten.

- **author:** enter the name of the predefined configuration's author.
- **comment:** enter a personal comment to identify the configuration.

The following information will be displayed:

- **save cuid x in conf yy OK:** storage in memory has been performed successfully.
If the operation is not successful, the `save KO <xxxx>` message will be displayed where `xxxx` indicates the reason for failure.

Loading a predefined configuration (pdcload)

To load a predefined configuration, type `pdcload` after the `ViBE` prompt:

Figure 5-29. Loading a predefined configuration via the Local Console - pdcloud command

```
10.12.54.29 - PuTTY
ViBE> pdcloud
conf number : 5
cuid : 0
load conf 5 in cuid 0 OK
ViBE>
```

Enter the following fields:

- **conf number**: enter the predefined configuration number (1 to 32);
- **cuid**: enter the predefined configuration cuid:
 - ❖ 0: The configuration is applied to the chassis and EM Encoder. The configuration loaded must be of chassis type.
 - ❖ x: The configuration is applied to the Basic encoder x. The configuration loaded must be of EM Encoder type.

The following information will be displayed:

- **load conf x OK**: configuration **x** has been successfully loaded (a warning message may be displayed). If the operation is not successful, the **load KO <xxxx>** message will be displayed where **xxxx** indicates the reason for failure. For example if the configuration is saved (**pdcsave**) with a **cuid = 1** (EM Encoder type) and the same configuration is recalled (**pdcloud**) with a **cuid = 0** (chassis type) the **load KO <conf type mismatch>** message will be displayed.

Deleting a predefined configuration (**pdcrem**)

To delete a predefined configuration, type **pdcrem** after the **ViBE** prompt:

Figure 5-30. Deleting a predefined configuration via the Local Console - pdcrem command

```
10.12.54.29 - PuTTY
ViBE> pdcrem
conf number : 5
remove conf 5 OK
ViBE>
```

Enter the following fields:

- **conf number**: enter the number of the predefined configuration to be deleted (1 to 39).



Some configurations are predefined configurations stored in-factory. They cannot be deleted.

The following information will be displayed:

- **remove conf xx OK:** configuration **xx** has been successfully deleted (a warning message may be displayed).
If the operation is not successful, the **remove KO <xxxx>** message will be displayed where **xxxx** indicates the reason for failure.

Reading the description of a predefined configuration (**pdcget**)

To read the description of a predefined configuration, type **pdcget** after the **ViBE** prompt:

Figure 5-31. Reading a predefined configuration description via the Local Console - **pdcget**

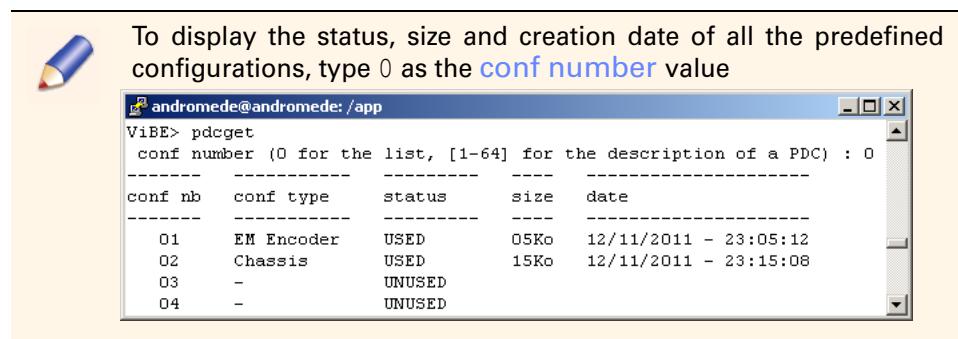
```
10.12.54.29 - PUTTY
ViBE> pdcget
conf number (0 for the list, [1-64] for the description of a PDC)
: 31
-----
conf nb :      31
conf type :   Chassis
status :     USED
author :      PT
comment :
date :        23/06/2011 - 23:36:16
access mode : READWRITE
conf size :   13 Ko
data model :  V7.0a
-----
ViBE>
```

Enter the following fields:

- **conf number:** enter the predefined configuration number (1 to 39).
Also refer to the note below.

The following information will be displayed:

- **conf nb:** predefined configuration number
- **conf type:** type of predefined configuration (**chassis** or **EM Encoder**)
- **status:** **USED** indicates that the configuration is being used (**UNUSED** if not)
- **author:** name of the configuration's author (entered on creation of the predefined configuration)
- **comment:** comment entered on creation of the predefined configuration
- **date:** UTC time and date when the configuration was created
- **access mode:** configuration rights (**READ/WRITE** or **READ ONLY**)
- **size:** size of the memory used by the configuration
- **data model:** release of the NCCP protocol



Managing community strings and SNMP agent information

Foreword

Community strings are identifiers that validate SNMP messages.

Community string principles are used in order to have a simplified access rights mechanism for SNMP requests.

Each *community string* is associated with an access level. All traps transporting MIB variables to the NMS are sent with a *community string* set to **public**.

The access level is used to refuse write access to an MIB variable for a specific *community string*, even if the MIB authorizes this write access.

The Local Console is used to manage *community strings*. A maximum of 30 *community strings* can be created. The device is shipped with 2 predefined *community strings* (a **public** one with read only rights and a **private** one with read/write rights).

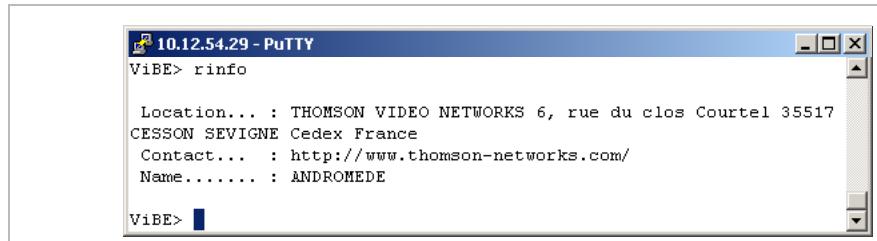
The list of *community strings* is edited in a temporary memory using the Cadd or Cdel commands. The contents of this temporary memory are sent to the *community string* memory (used by the SNMP agent) using the csave command. You can view the content of the *community string* memory at any time using the cred command. The cred command displays the contents of the *community string* memory and resets the temporary memory.

The Local Console is also used to define *sysContact*, *sysName* and *sysLocation* information for the SNMP agent Mib-2.system branch.

Reading SNMP agent information (*rinfo*)

To read SNMP agent Mib-2.system branch *sysContact*, *sysName* and *sysLocation* information, type *rinfo* after the ViBE prompt:

Figure 5-32. Reading SNMP information - rinfo command



```
10.12.54.29 - PuTTY
ViBE> rinfo

Location... : THOMSON VIDEO NETWORKS 6, rue du clos Courtel 35517
CESSON SEVIGNE Cedex France
Contact... : http://www.thomson-networks.com/
Name..... : ANDROMEDE

ViBE>
```

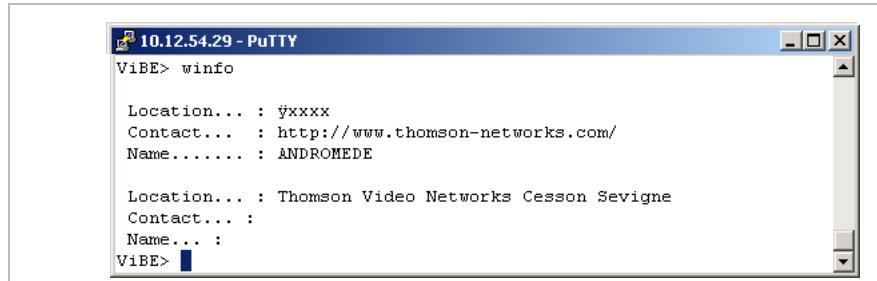
The following information will be displayed:

- **Location**: *sysLocation* information
- **Contact**: *sysContact* information
- **Name**: *sysName* information

Writing SNMP agent information (*winfo*)

To write SNMP agent Mib-2.system branch *sysContact*, *sysName* and *sysLocation* information, type *winfo* after the **ViBE** prompt:

Figure 5-33. Writing SNMP agent *sysContact*, *sysName* and *sysLocation* information - *winfo* command



```
10.12.54.29 - PuTTY
ViBE> winfo

Location... : yxxxxx
Contact... : http://www.thomson-networks.com/
Name..... : ANDROMEDE

Location... : Thomson Video Networks Cesson Sevigne
Contact... :
Name... :
ViBE>
```

The current information will be displayed.

Enter the following fields:

- **Location**: *sysLocation* information
- **Contact**: *sysContact* information
- **Name**: *sysName* information

Displaying the list of *community strings* (*cread*)

To display the list of *community strings*, type *cread* after the **ViBE** prompt:

Figure 5-34. Displaying the list of SNMP communities - `cread` command

```
10.12.54.29 - PuTTY
ViBE> cread
Read communities from file ...
Done.

Communities that can be used to access the agent

Rights Community
-----
ro public
rw private

ViBE>
```

The following information will be displayed:

- **Rights**: community rights (`ro` read only authorized and `rw` read/write authorized)
- **Community**: community name

If the list has been edited beforehand using the `cadel` or `cadd` commands but has not been saved using the `csave` command, the following question will be displayed: `do you want to discard changes [Y]/[N] <N>`. Type `Y` to reset the temporary list (viewed using `clist`) with the contents of the *community string* memory (the previous changes will be deleted) or type `N` to cancel the operation without applying the changes.

Displaying the list of temporary *community strings* (`clist`)

To display the list of temporary *community strings*, type `clist` after the **ViBE** prompt:

Figure 5-35. Displaying temporary community strings - `clist` command

```
10.12.54.29 - PuTTY
ViBE> clist
Communities that can be used to access the agent

Rights Community
-----
ro public
rw private

ViBE>
```

The following information will be displayed:

- **Rights**: community rights (`ro` read only authorized and `rw` read/write authorized)
- **Community**: community name

If the list has been edited beforehand using the `cadel` or `cadd` commands but has not been saved using the `csave` command, the following message will be displayed: `<don't forget to save changes>`.

Adding a *community string* (*cadd*)

To add a *community string*, type *cadd* after the *ViBE* prompt:

Figure 5-36. Adding a *community string* - *cadd* command



```
10.12.54.29 - PuTTY
ViBE> cadd
Add a new community ...
Community..... : house
Right (ro/rw) ... : ro
Done.

ViBE>
```

Enter the following fields:

- **Community**: community name
- **Right <ro/rw>**: community right (*ro* read only authorized and *rw* read/write authorized)

The following information will be displayed:

- **Done**: the community has been created in the temporary memory. Creation should be confirmed using the *csave* command.

Deleting a *community string* (*cdel*)

To delete a *community string*, type *cdel* after the *ViBE* prompt:

Figure 5-37. Deleting an SNMP community - *cdel* command



```
10.12.54.29 - PuTTY
ViBE> cdel
Remove community ...
Community..... : house
Done.

ViBE>
```

Enter the following fields:

- **Community**: name of community to be deleted

The following information will be displayed:

- **Done**: the community has been deleted from the temporary memory. Deletion should be confirmed using the *csave* command.

Saving the list of *community strings* (*csave*)

To save the list of *community strings* (transfer the temporary memory to the community memory), type *csave* after the *ViBE* prompt:

Figure 5-38. Saving the list of SNMP communities - csave command



The following information will be displayed:

- **Save communities to file ... Done.**: the save operation has been performed successfully. If the contents of the community memory have not been edited by the transfer, the following message will be displayed: **Communities already saved**.



Preventive and corrective maintenance operations

Cleaning chassis ventilation grids

If dust is left to build up on the Encoder ventilation grids, the internal temperature of the chassis will rise and this will affect device performance, service life and reliability.

You are therefore advised to regularly clean the ventilation grids (approximately every year).

Replacing chassis fans

The fans fitted in the chassis have a service life of 65,000 hours. They should therefore be replaced every six years.

The fans also need to be replaced if one of them is faulty. To perform these operations, please contact Thomson Video Networks Customer Service.

Fault diagnosis

The chassis features a monitoring device that feeds an alarm back to the Management or Monitoring System in the following cases:

- One of the fans is faulty
- The temperature on one of the boards exceeds 55°C. This high temperature could be due to a faulty or blocked fan, or an outside temperature which is too high.

Chapter 6

Tools

Introduction

This chapter describes the **{Download}** application which can be supplied by Thomson Video Networks Customer Service.

In this Chapter

'Download application'	.....	page 144
'Overview'	.....	page 144
'Download procedure'	.....	page 148

Download application

Overview

Downloading is used to upgrade device firmware. It can be performed via the {Download} application which is supplied by Thomson Video Networks Customer Service. The procedure is described below.

Encoder boards feature two program banks each. When downloading is complete, the inactive bank will contain the software release that has just been downloaded but which is inactive, and the active bank will contain the active software release. The inactive bank can contain up to 4 inactive software releases. The toggle function can be used to toggle one software release from the inactive bank so that it becomes the active software release in the active bank.

The {Download} application provides the following features:

- Simultaneous upgrade of several Encoders
- For an Encoder or a group of Encoders
 - ❖ Full upgrade (downloading + toggling)
 - ❖ Downloading only



Device firmware upgrades can also be performed via the XMS (eXtended Management System). Refer to the XMS User Manual.

Operation

Installing and running the application

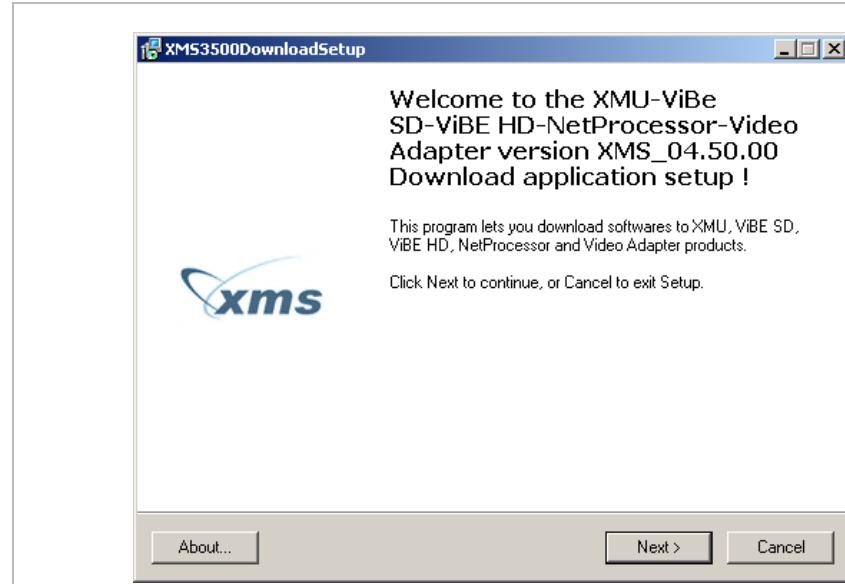
Installing the application

To install the {Download} application:

1. Copy the DownloadSetup.exe file on the PC's hard drive.

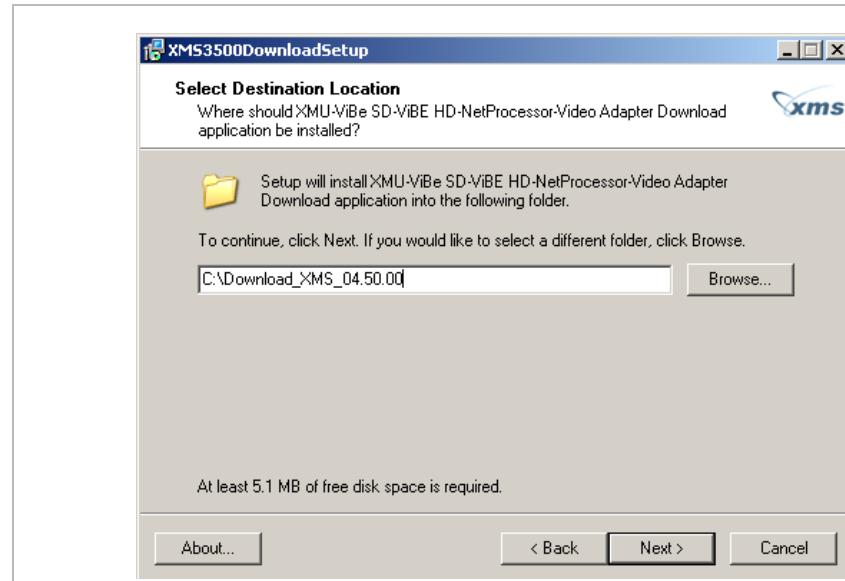
2. Launch DownloadSetup.exe to install the {Download} application. The following window will be displayed:

Figure 6-1. Installation, {Download} application 1/4



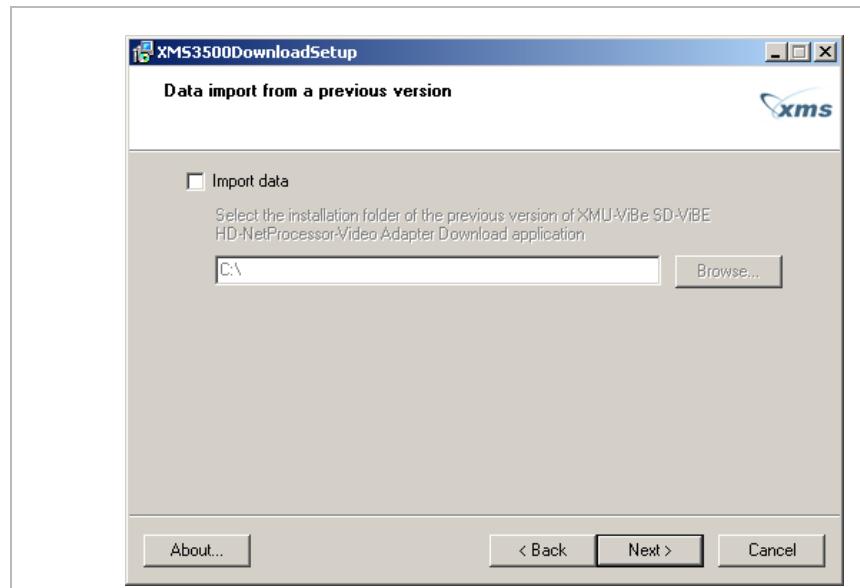
3. Click [Next](#). The following window will be displayed:

Figure 6-2. Installation, {Download} application 2/4



4. Select the destination directory for the files of the {Download} application and click [Next](#). The following window will be displayed:

Figure 6-3. Installation, {Download} application 3/4



5. Click [Next](#). The {Download} application is installed. On installation completion the following window will be displayed:

Figure 6-4. Installation, {Download} application 4/4



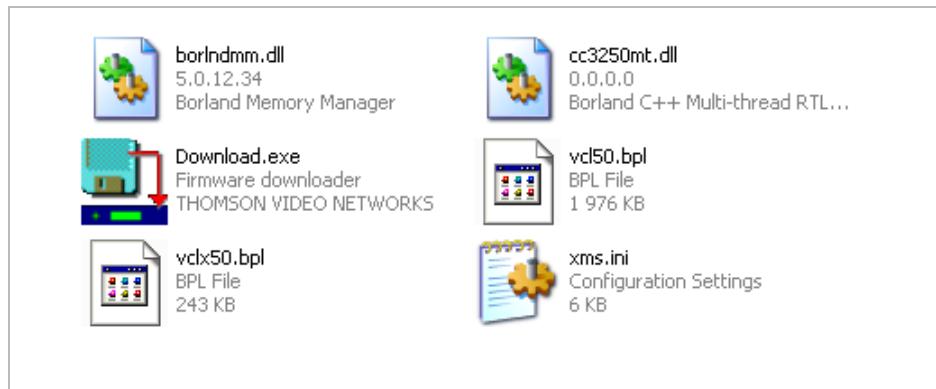
6. Click [Finish](#).

Running the application

To run the {Download} application:

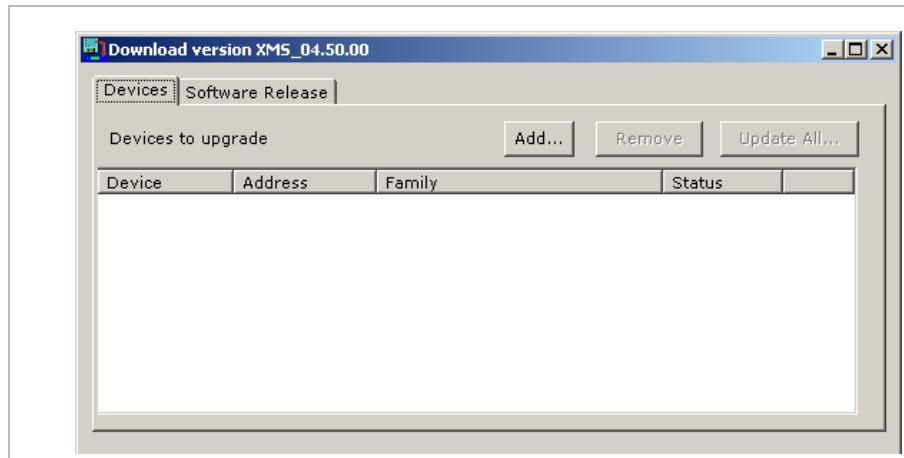
1. Open the {Download} application folder.

Figure 6-5. {Download} application folder



1. Click the [Download.exe](#) file. The application's main window will be displayed:

Figure 6-6. Main window, {Download} application



Screen description

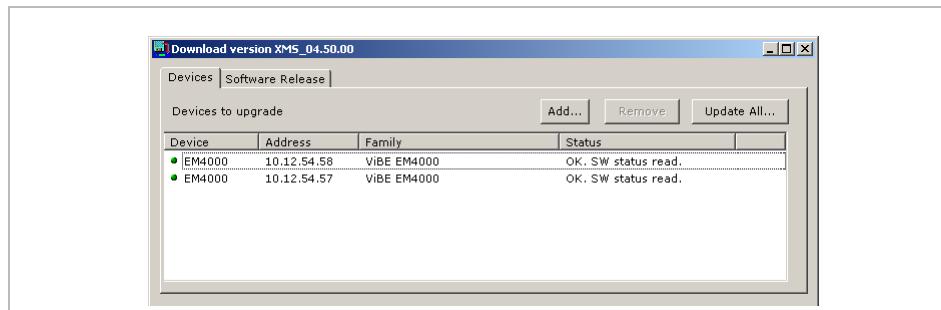
The main window features two pages:

- Devices
- Software Release

The {Download} application release number is displayed in the title bar of the main window.

Devices page

Figure 6-7. Devices page, {Download} application



This page displays the list of installed devices and their status. Click a column header to sort its content.

Software Release page

Figure 6-8. Software Release page, {Download} application



This page is used to select ([Browse](#)) the directory containing the software release to download.

Download procedure

The download procedure is as follows:

- Declare the devices to be upgraded
- Select the directory containing the file to be downloaded
- Select the devices to be upgraded
- Select the operation to be performed (upgrade, download or toggle)



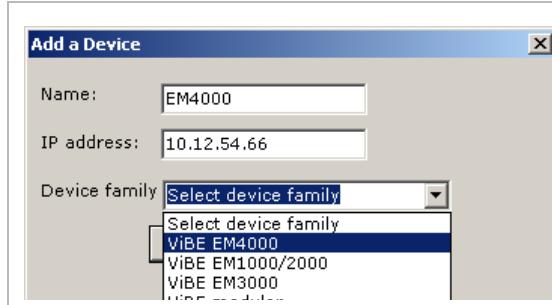
- 5 software releases (1 active software release and 4 inactive software releases) can be loaded in the ViBE EM4000 Encoder memory. To delete a software release from the memory, refer to section '[Uninstall an inactive software](#)' on page 153.
- The term 'software release' also refers to a package.

Step 1: Declaring the devices to be upgraded

Method 1:

1. Click **Add** on the Devices page. The following dialog box is displayed:

Figure 6-9. Name, IP address and Device family of the device to be upgraded, {Download} application



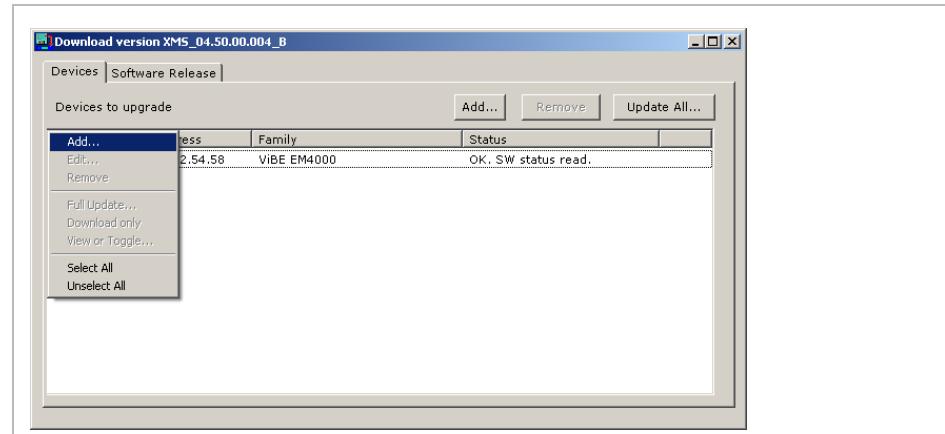
2. Enter the **device name**, **IP address** and **device family** of the device to be upgraded.
3. Click **OK**.

This information will be displayed in the main window.

Method 2:

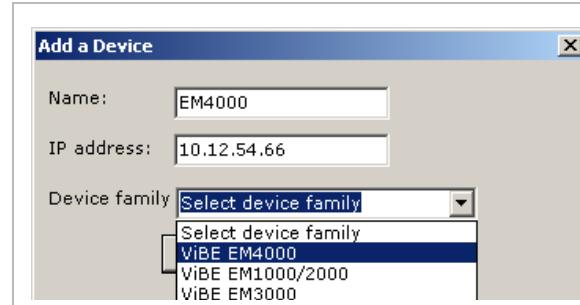
1. Position the mouse cursor on the Devices page and then right-click to display the following shortcut menu:

Figure 6-10. Devices page {Download} application



2. Click [Add...](#). The following dialog box is displayed:

Figure 6-11. Name, IP address and Device family of the device to be upgraded, {Download} application



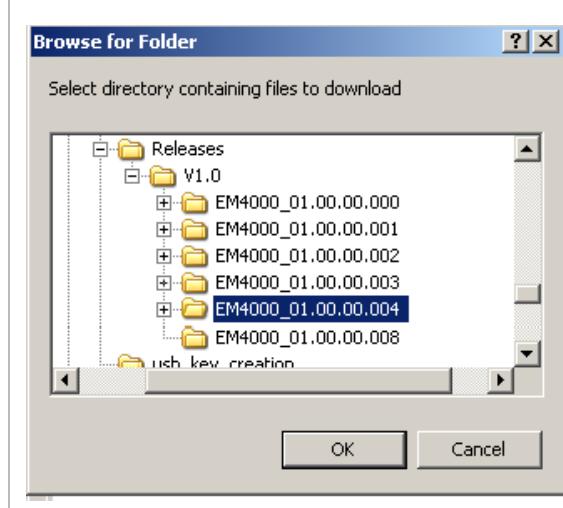
3. Enter the device name, IP address and device family of the device to be upgraded.
4. Click [OK](#).
5. This information will be displayed in the main window.

Step 2: Selecting the directory containing the file to be downloaded

1. Click the [Software Release](#) tab.

2. Click the [Browse...](#) button.
3. Select the directory containing the file to be downloaded.

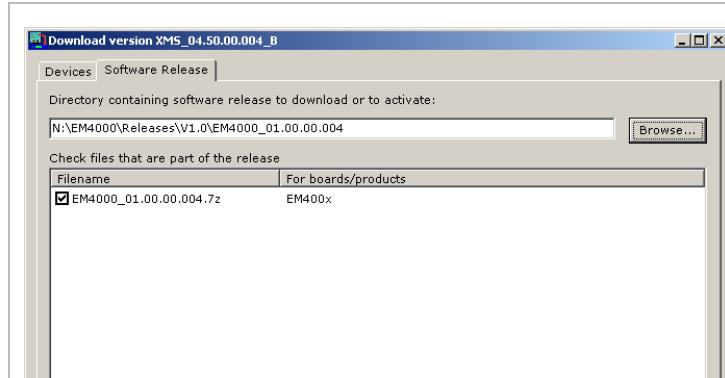
Figure 6-12. Directory containing the file to be downloaded, {Download} application



4. Click [OK](#).

The contents of the selected directory will be displayed:

Figure 6-13. Files displayed on the Software Release page, {Download} application



5. If necessary, select the file to be downloaded.

Step 3: Selecting devices to upgrade

1. Click the [Devices](#) tab.
2. Select the devices to upgrade.

To upgrade specific devices, use the standard shortcut operations (Shift + left click) or (Ctrl + right click).

To select all devices, use the [Select All](#) command in the shortcut menu.

Step 4: Selecting the operation to be performed

Select the operation to be performed on the selected devices via the shortcut menu: [Full Update...](#), [Download only](#), [View or Toggle...](#)

■ [Full Update... command](#)

This command downloads and toggles the file chosen on the Software Release page in each selected device.

If the file is already in the device active bank, no operation will be performed. If it is in the inactive bank, this command will toggle it into the active bank. If this file is neither the active bank nor the inactive bank, the file will be downloaded into the inactive bank and then toggled into the active bank.

■ [Download only command](#)

For each selected device this command checks whether the file selected on the Software Release page is in the active or inactive bank. If it cannot be found, the file will be downloaded into the inactive bank.

■ [View or Toggle ... command](#)

The [View or Toggle...](#) command will be grayed out (unavailable) if several Encoders have been selected.

This command displays the software releases of the active and inactive banks for the selected Encoder and is used to toggle between these active and inactive banks.

Figure 6-14. *View or Toggle command, {Download} application*



To toggle between the active and inactive banks:

1. If necessary, select the inactive software release to active.

2. Check the box to select the device.
3. Click OK.

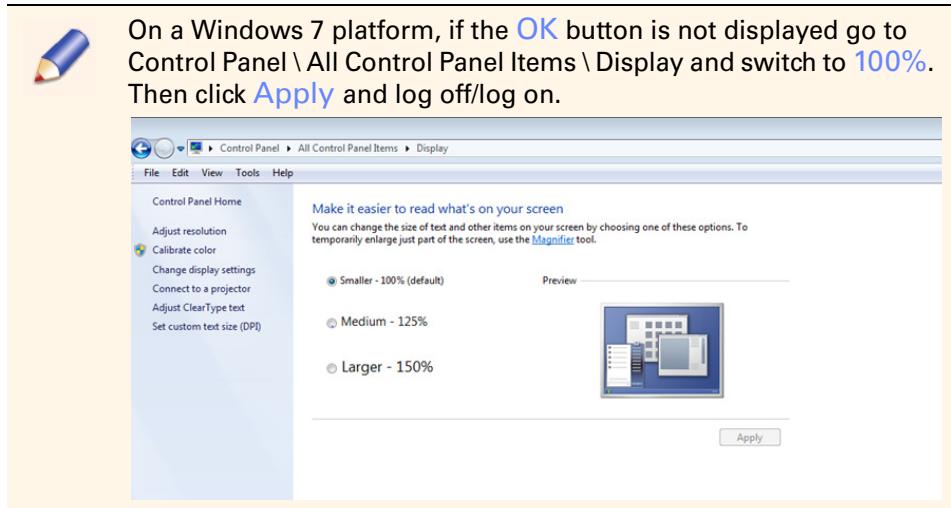
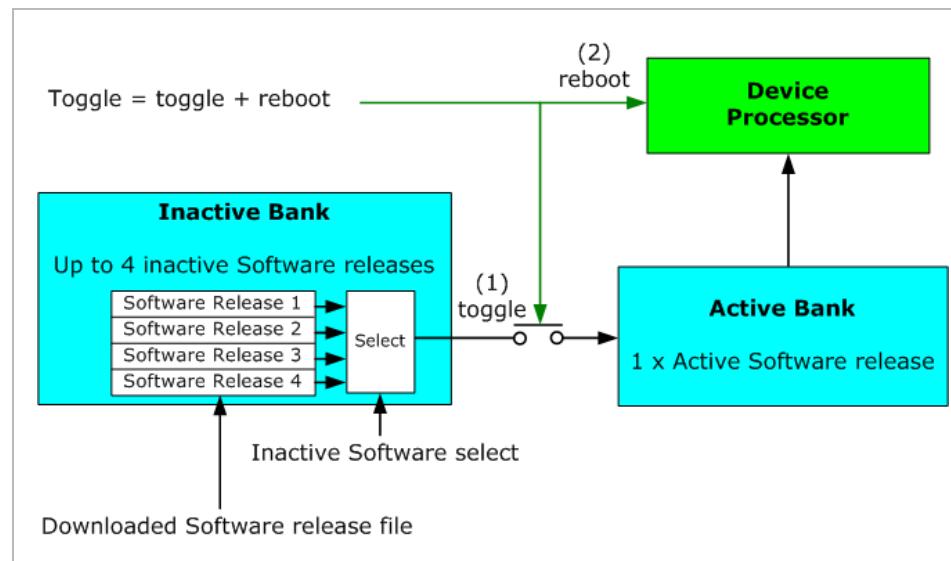


Figure 6-15. Toggle command, {Download} application

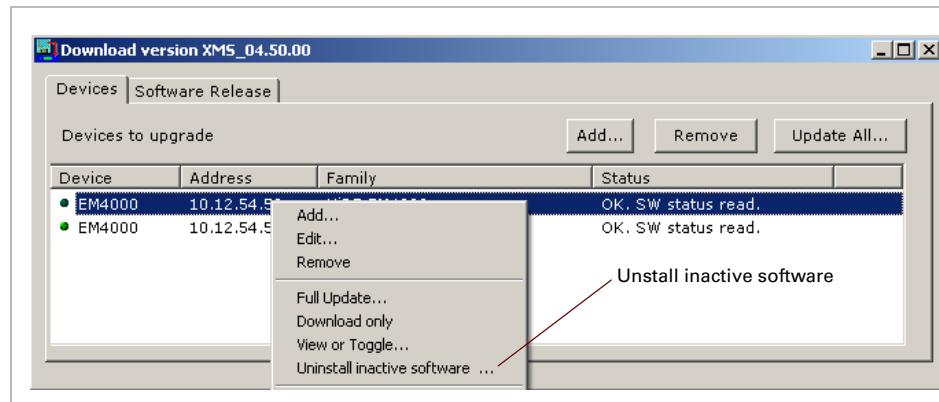


Uninstall an inactive software

To uninstall an inactive software:

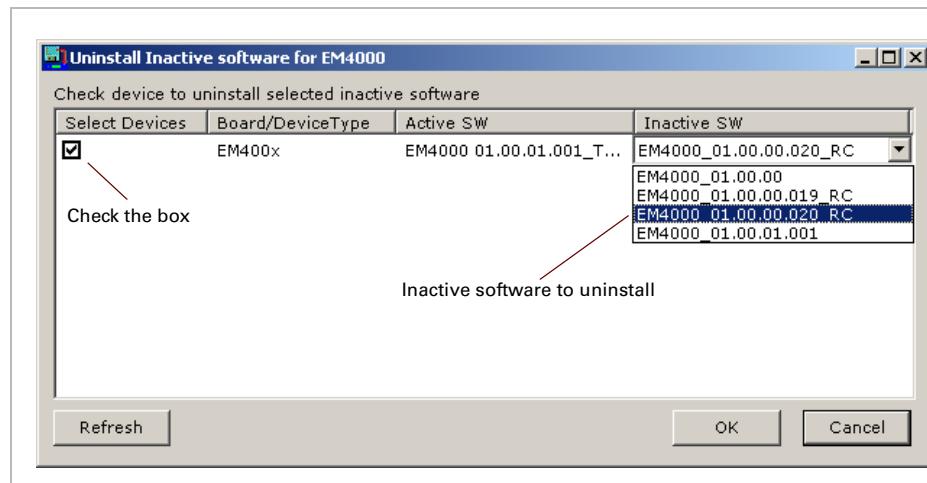
1. Position the mouse cursor on the Encoder which contains the inactive software and then right-click to display the shortcut menu:

Figure 6-16. Uninstall an inactive software, {Download} application 1/2



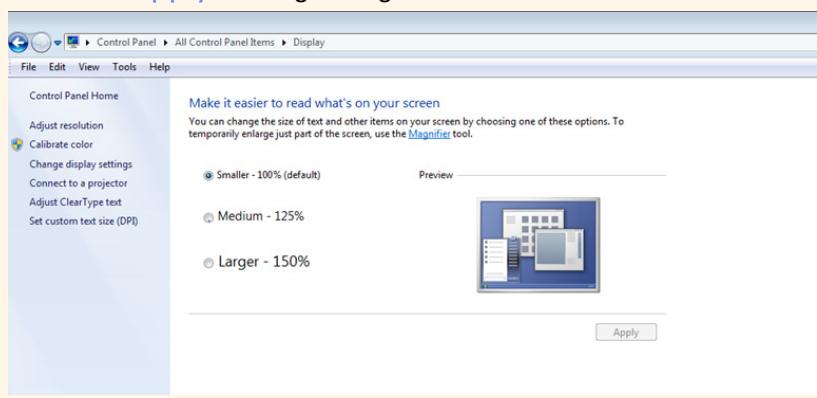
2. Select **Uninstall inactive software**. The following window will be displayed:

Figure 6-17. Uninstall an inactive software, {Download} application 2/2



3. Select the **Inactive SW** to be uninstalled and check the box to select the device.
4. Click OK.

 On a Windows 7 platform, if the **OK** button is not displayed go to Control Panel \ All Control Panel Items \ Display and switch to **100%**. Then click **Apply** and log off/log on.



Other application commands

- [Edit](#) command

This command is used to edit the name and IP address of the device selected in the main window.

This command will only be enabled if a device has been selected.

1. Select the device.
2. Select the [Edit...](#) command in the shortcut menu.

- [Remove](#) command

This command is used to delete the selected device from the main window.

1. Select the device.
2. Select the [Remove...](#) command in the shortcut menu or click the [Remove](#) button.

- [Update All...](#) command

This button on the Devices page is a shortcut command that is equivalent to [Select All + Full Update](#).

Status messages

The following status messages may be displayed in the [Status](#) column on the Devices page.

Table 6-1. Status messages, {Download} application

Status messages	Indications
Connecting...	A socket has been opened to set up a session with the Encoder.
Logging...	The session is open. The connection name has been sent. The application is waiting for a reply from the Encoder.
Read topology...	The Encoder topology read command has been sent. The application is waiting for a reply.
Get SW versions...	The bank content identification command has been sent. The application is waiting for a reply.
Get SW versions (2nd attempt)...	The first attempt at reading the software release has failed. The application is trying again.

Table 6-1. Status messages, {Download} application

Status messages	Indications
OK. SW status read	Reply to the bank content identification command: all the required information is present.
Setup download...	The application is checking whether the download is necessary.
No need to download...	The download is not necessary as the software release is already in the active or inactive bank.
Download started for X board(s). Please wait...	The command for file downloading has been sent.
Downloading... (X %)	The FTP download is complete, the file has been transferred to the Encoder and saving has begun in the flash memory.
Downloading...	The FTP download is complete, the file has been transferred to the Encoder and saving has begun in the flash memory. No information is available about the progress of the operation.
Download successful	The file has been transferred to the inactive bank and the identification command has confirmed that the inactive bank contains the appropriate software release.
Toggle done	The toggle command has been sent.
No need to update	The device does not require an upgrade.

Error messages

The following error messages may be displayed in the [Status](#) column on the Devices page.

Table 6-2. Error messages, {Download} application

Error messages	Indications
Failed. Connection error	Impossible to set up the session. The Encoder is unavailable or in the process of rebooting.
Failed. Login rejected: Too many connections	Too many applications are open.

Table 6-2. Error messages, {Download} application

Error messages	Indications
Failed. No answer from some boards	Impossible to execute the command as some installed boards are not responding.
Aborted. Already downloading!	Impossible to execute the command as downloading is in progress.
Failed. Software error.	Software error in the {ViBE Download} application.
Failed. Impossible to connect.	The connection has been lost.
Failed. SW not found in inactive bank for X function(s)	Impossible to toggle banks as inactive bank does not contain the required software.

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Appendix A

Technical Specifications

Introduction

This chapter gives:

- specifications of the device
- device compliance
- Declarations of Conformity
- ordering guide to order the device and its options

In this Chapter

'General Device Specifications'	page 160
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General Device Specifications

Electrical Specifications

Power supply

Table A-1. Power Supply specifications

Standards	Title
Mains voltage	100 - 240 VAC (one range with no switching).
Mains type	50 - 60 Hz
Max. input current with 1 PSU	6.5A - 2.5A
Max. input current per PSU with 2 PSUs (Hardware option)	3.1A - 1.3A
Inrush current	< 50A cold start up @ 230V per unit, < 10ms
Network connection	Type A device connected with a non-industrial IEC 60320 compliant plug.
Earthing arrangement	TN/TT For Norway and only for this country, this device can be connected to an earthing arrangement of IT type for an interphase voltage of 230V.
Isolation class	I
Installation category	II
Overcurrent protection	Built-in protection, cannot be accessed or reset.

Power Consumption

- The chassis is designed to operate at high power to account for future upgrades. The maximum power required for this type of chassis is 600W (primary at 240VAC).
- The maximum power required (primary) for the ViBE EM4000 Encoder depends on the chassis configuration:

Table A-2. ViBE EM4000 Power Consumption

Item	Power Consumption (W)
EM4000 NEM40IN2AA with one PSU	200
EM4000 NEM40IN4AA with one PSU	270
Optional PSU (option NEMH4PSUAA)	25

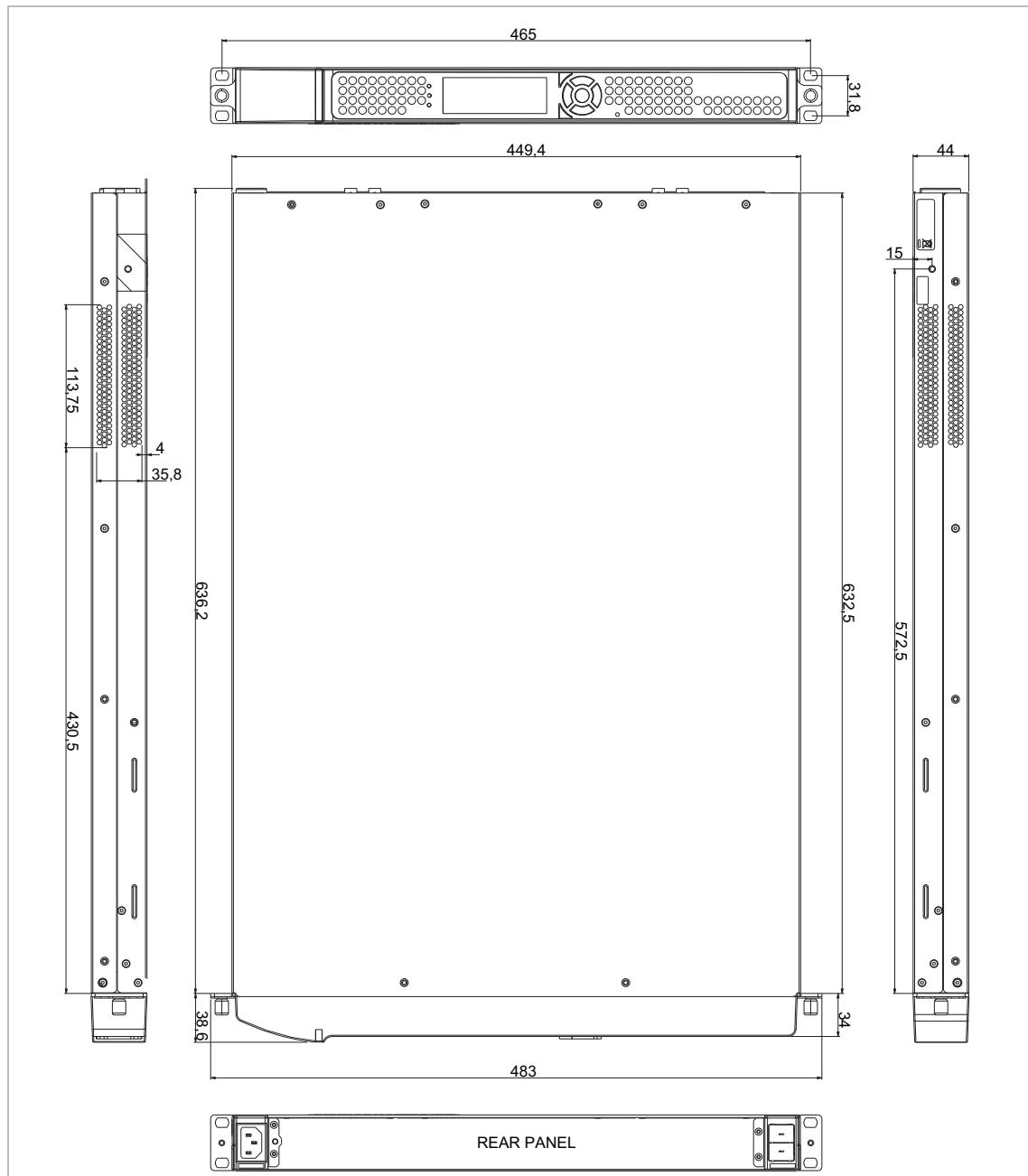
Mechanical Features

Dimensions

ViBE EM4000 has the following dimensions:

- Width: 19" (449 mm)
- Height: 1RU
- Depth: 633 mm without connector, 639 mm with connectors

Figure A-1. ViBE EM4000 dimensions



Weight

Table A-3. ViBE EM4000 weight

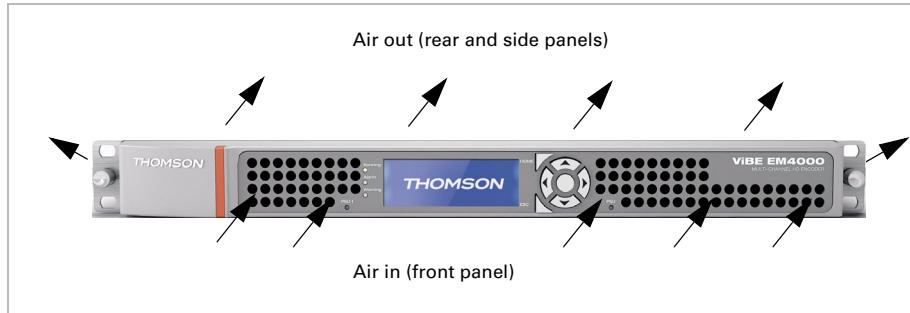
Item	Weight (Kg)
EM4000 NEM40IN2AA with one PSU	10.7
EM4000 NEM40IN4AA with one PSU	11.0
Optional PSU (option NEMH4PSUAA)	1.0

Ventilation

Table A-4. ViBE EM4000 ventilation

Built-in ventilation system	Description and Value
Ventilation	Air circulated from front to rear and sides
Ventilated air flow	46 m ³ /h
Temperature difference (Delta T)	< 20°C

Figure A-2. Cooling air flow



Heat dissipating power

Table A-5. ViBE EM4000 heat dissipating power

Item	Description and Value
EM4000 NEM40IN2AA with one PSU	680 BTU/Hour
EM4000 NEM40IN4AA with one PSU	920 BTU/Hour
Optional PSU (option NEMH4PSUAA)	85 BTU/Hour

Reliability

Table A-6. ViBE EM4000 and MTBF (Mean Time Between Failure)

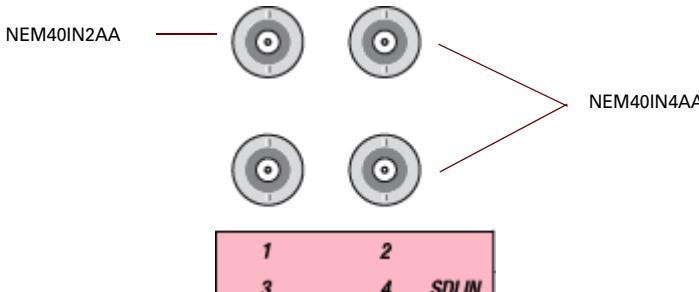
Items	MTBF @ 30°C
EM4000 NEM40IN2AA with one PSU	62,400 hours
EM4000 NEM40IN2AA with two PSUs (option NEMH4PSUAA)	62,200 hours
EM4000 NEM40IN4AA with one PSU	52,800 hours
EM4000 NEM40IN4AA with two PSUs (option NEMH4PSUAA)	52,700 hours

These MTBFs are Telcordia SR332 Issue 2 compliant. If the temperature increases, the MTBF will be reduced.

Interface Specifications

Input interfaces

Table A-7. ViBE EM4000 input connectors

Connector	Description
NEM40IN2AA	
SDI IN	<ul style="list-style-type: none"> ■ Purpose: 2 or 4 HD-SDI inputs ■ Features: <ul style="list-style-type: none"> ❖ Connectors: 2 or 4 BNC 75 Ohms ❖ Standard compliance: SMPTE 259M/292M/425M

Input Processing

Input formats

The video input formats supported are:

- 720p/50 as per SMPTE 296M-2001
- 1080i/50 as per SMPTE 274M-2003 and ANSI/SMPTE 274M-2005
- 720p/59.94 as per SMPTE 296M-2001
- 1080i/59.94 as per SMPTE 274M-2003 and ANSI/SMPTE 274M-2005

The serial inputs offer automatic cable equalization and support attenuation and jitter as defined in SMPTE 259M (525i/625i), SMPTE 292M (720p/1080i).

Synchronizer

Each video input has a pseudo-synchronizer to improve product behavior when using a deteriorated input signal.

Video behavior

- Source switching compliant with RP168-2002 (clean switch between 2 synchronous signals) is managed seamlessly.

- Source switching not compliant with RP168-2002 (switch between 2 synchronous signals that have shifted or 2 asynchronous signals) is not seamless (picture freeze during the switch).
- In the event of an HD SDI unplug/plug, picture freeze for 3 seconds at most and then switch to black pattern.
- In the event of a degraded signal for more than 1 picture, the Encoder will repeat the last valid frame twice (freeze for 2 pictures at most) and then switch to the black pattern if the system is not yet resynchronized.

Audio behavior

Table A-8. Audio behavior

Input format	In case of degraded signal
PCM	<ul style="list-style-type: none"> ■ Insertion of silence (i.e. audio encoding fed with silence) ■ Silence encoding with the same setup as the "nominal" stream (same encoding mode and bitrate) ■ No error masking (no repetition of last valid frame)
Precompressed	<p>With error masking (AC3 transport):</p> <ul style="list-style-type: none"> ■ Insertion of silence ■ Implies repetition of last valid frame and then mute <p>Without error masking (AAC transport):</p> <ul style="list-style-type: none"> ■ Insertion of silence
Dolby® E	<ul style="list-style-type: none"> ■ Auto switch from Dolby® E to PCM encoding ■ Insertion of silence

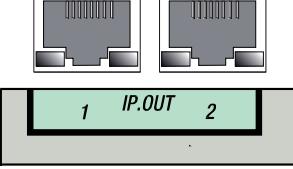
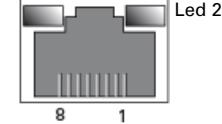
VBI behavior

In case of degraded signal

- Repetition of last valid VBI AFD data when AFD is selected
- No repetition for all other VBI data

Output interfaces

Table A-9. ViBE EM4000 output connectors

Connector	Description																																																																
																																																																	
IP OUT 1 & 2	<ul style="list-style-type: none"> ■ Purpose: Electrical Gigabit Ethernet interfaces for compressed A/V output over IP. ■ Features: <ul style="list-style-type: none"> ❖ Type: IEEE 802.3 1000-BaseT ❖ Connector type: RJ45 ❖ 110 Ohms line impedance ❖ Standard: IEEE 8.2.3-2002 ❖ Bitrate: 10 Mbit/s, 100 Mbit/s, 1 Gbit/s (autosensing) ❖ Operating mode: Half/Full duplex (autonegotiation) ❖ Autocrossover mechanism for cable connection ❖ Cabling: two twisted pairs, category STP5 or FTP5, gauge AWG 24 ❖ EMC and Security: according to IEEE 802.3-2002 ❖ Permissible output jitter: according to IEEE 802.3-2002 ■ Pinout and indication: <div style="text-align: center;">  </div> <div style="text-align: center;"> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Pin number</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TDP (Transmitted Data +)</td> </tr> <tr> <td>2</td> <td>TDN (Transmitted Data -)</td> </tr> <tr> <td>3</td> <td>RDP (Received Data +)</td> </tr> <tr> <td>4, 5</td> <td>Not connected</td> </tr> <tr> <td>6</td> <td>RDN (Received Data -)</td> </tr> <tr> <td>7, 8</td> <td>Not connected</td> </tr> </tbody> </table> </div> <p>Leds indicate Speed and Activity of the link:</p> <div style="text-align: center;"> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Tx</th> <th>Rx</th> <th>Mode</th> <th>Led 1</th> <th>Led 2</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>No link</td> <td>Off</td> <td>Off</td> </tr> <tr> <td></td> <td></td> <td>100 Mbits/s</td> <td>Green</td> <td>Off</td> </tr> <tr> <td>x</td> <td></td> <td>100 Mbits/s</td> <td>Flashing Green</td> <td>Off</td> </tr> <tr> <td></td> <td>x</td> <td>100 Mbits/s</td> <td>Flashing Yellow</td> <td>Off</td> </tr> <tr> <td>x</td> <td>x</td> <td>100 Mbits/s</td> <td>Flashing Yellow</td> <td>Off</td> </tr> <tr> <td></td> <td></td> <td>1 Gbits/s</td> <td>Green</td> <td>Green</td> </tr> <tr> <td>x</td> <td></td> <td>1 Gbits/s</td> <td>Flashing Green</td> <td>Green</td> </tr> <tr> <td></td> <td>x</td> <td>1 Gbits/s</td> <td>Flashing Yellow</td> <td>Green</td> </tr> <tr> <td>x</td> <td>x</td> <td>1 Gbits/s</td> <td>Flashing Yellow</td> <td>Green</td> </tr> </tbody> </table> </div>	Pin number	Name	1	TDP (Transmitted Data +)	2	TDN (Transmitted Data -)	3	RDP (Received Data +)	4, 5	Not connected	6	RDN (Received Data -)	7, 8	Not connected	Tx	Rx	Mode	Led 1	Led 2			No link	Off	Off			100 Mbits/s	Green	Off	x		100 Mbits/s	Flashing Green	Off		x	100 Mbits/s	Flashing Yellow	Off	x	x	100 Mbits/s	Flashing Yellow	Off			1 Gbits/s	Green	Green	x		1 Gbits/s	Flashing Green	Green		x	1 Gbits/s	Flashing Yellow	Green	x	x	1 Gbits/s	Flashing Yellow	Green
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IP Adaptation

Ethernet interface

Physical layer

- The Ethernet Interface chooses between half duplex and full duplex for the operating mode. Thomson Video Networks recommends operating the IP data in full duplex mode. If Auto-negotiation results in another mode, alarms will be raised.
- The interface can be switched off by the User for the automatic redundancy mechanism.

MAC Layer

- The MAC Layer is compliant with IEEE 802.3-2002
- Unicast and Multicast transfer modes are available:
 - ❖ Unicast destination MAC @ are recovered by the ARP protocol,
 - ❖ Multicast destination MAC @ are computed by the embedded software from the user-defined IP multicast address (RFC 1112).
- Corrupt Ethernet input frames are discarded
- The MAC layer supports multiple Ethernet frame types and lengths:
 - ❖ Video frames whose length depends on the configured number of MPEG packets per IP packet
 - ❖ Network management frames

IP Layer

- IPv4 protocol is used
- Destination IP @ can be statically set by the User

Routing

- One default gateway can be set when no routing protocol is handled. Default Gateway IP@ can be statically set by the User
- Routing management has the following features:
 - ❖ Four static routes can be set by the User
 - ❖ RIPv2 and OSPF dynamic routing protocols can be selected by the User
 - ❖ RIPv2 and OSPF parameters can be set by the User
- QoS is supported by tagging TOS/Diffserv bytes to classify the data packets (RFC 2597 & RFC 2598).

Mapping (encapsulation)

- MPEG/UDP/IP/Ethernet or MPEG/RTP/UDP/IP/Ethernet encapsulation is available for the transmission path. The encapsulation mode can be selected by the User

UDP mode (MPEG/UDP/IP)

- UDP implementation is compliant with RFC 768
- Destination UDP ports can be statically set by the User
- The number of transmitted MPEG packets per IP frame can be set by the User: 1 to 7 MPEG packets can be selected per frame

RTP mode (MPEG/RTP/UDP/IP)

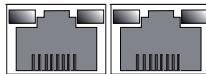
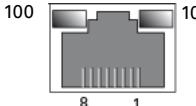
- RTP implementation is compliant with RFC 2250
- The number of transmitted MPEG packets per frame can be set by the User:
1 to 7 MPEG packets can be selected per frame

MPEG transmission

The MPEG packet size is 188 bytes

Control & Command interfaces

Table A-10. ViBE EM4000 Control & Command connectors

Connector	Description																																												
	 																																												
CONTROL	<ul style="list-style-type: none"> ■ Purpose: Ethernet links for device Configuration and Monitoring. ■ Features: <ul style="list-style-type: none"> ❖ Type: IEEE 802.3 100-BaseT ❖ Connector type: RJ45 ❖ 110 Ohms line impedance ❖ Type: IEEE 802.3 100-BaseT ❖ Bitrate: 10/100 Mb/s with autosensing ❖ Operating mode: Half/Full duplex (autonegotiation) ❖ Auto-crossover mechanism for cable connection ❖ EMC and Security: according to IEEE 802.3-2002 ❖ Permissible output jitter: according to IEEE 802.3-2002 ❖ Input jitter tolerance: according to IEEE 802.3-2002 ■ Pinout and indication:  <table border="1"> <thead> <tr> <th>Pin number</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TDP (Transmitted Data +)</td> </tr> <tr> <td>2</td> <td>TDN (Transmitted Data -)</td> </tr> <tr> <td>3</td> <td>RDP (Received Data +)</td> </tr> <tr> <td>4,5</td> <td>Not connected</td> </tr> <tr> <td>6</td> <td>RDN (Received Data -)</td> </tr> <tr> <td>7,8</td> <td>Not connected</td> </tr> </tbody> </table> <p>Leds indicate Speed and Activity of the link:</p> <table border="1"> <thead> <tr> <th>Mode</th> <th>10 Led</th> <th>100 Led</th> </tr> </thead> <tbody> <tr> <td>No link</td> <td>Off</td> <td>Off</td> </tr> <tr> <td>10BT Half Duplex out of operation</td> <td>Yellow</td> <td>Off</td> </tr> <tr> <td>10BT Half Duplex in operation</td> <td>Flashing Yellow</td> <td>Off</td> </tr> <tr> <td>10BT Full Duplex out of operation</td> <td>Green</td> <td>Off</td> </tr> <tr> <td>10BT Full Duplex in operation</td> <td>Flashing Green</td> <td>Off</td> </tr> <tr> <td>100 BT Half Duplex out of operation</td> <td>Off</td> <td>Yellow</td> </tr> <tr> <td>100 BT Half Duplex in operation</td> <td>Off</td> <td>Flashing Yellow</td> </tr> <tr> <td>100 BT Full Duplex out of operation</td> <td>Off</td> <td>Green</td> </tr> <tr> <td>100 BT Full Duplex in operation</td> <td>Off</td> <td>Flashing Green</td> </tr> </tbody> </table>	Pin number	Name	1	TDP (Transmitted Data +)	2	TDN (Transmitted Data -)	3	RDP (Received Data +)	4,5	Not connected	6	RDN (Received Data -)	7,8	Not connected	Mode	10 Led	100 Led	No link	Off	Off	10BT Half Duplex out of operation	Yellow	Off	10BT Half Duplex in operation	Flashing Yellow	Off	10BT Full Duplex out of operation	Green	Off	10BT Full Duplex in operation	Flashing Green	Off	100 BT Half Duplex out of operation	Off	Yellow	100 BT Half Duplex in operation	Off	Flashing Yellow	100 BT Full Duplex out of operation	Off	Green	100 BT Full Duplex in operation	Off	Flashing Green
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Features

MPEG system layer

Table A-11. MPEG system layer specifications

Parameter	Description
System layer	MPEG-4: ISO/IEC 13818-1 & Amendment 3: Transport of AVC video data over ITU-T Rec H.222.0 compliant
Additional service component formats (VBI, anc. data)	DVB compliant ETSI 101154 v1.8.1
Signaling	<ul style="list-style-type: none"> ■ ISO Signaling: PAT, CAT, PMT ■ DVB Signaling: ISO + (SDT, NIT, TDT, TOT, EIT p/f)
MPEG (TS) bitrate	1 to 54 Mbit/s in 1 bit/s increments
Multiplexing	The following components are multiplexed: <ul style="list-style-type: none"> ■ Video ■ Audio ■ VBI ■ Signaling
Component PID allocation	PSI/SI rule compliant A component PID is automatically allocated by the encoder but it can be set manually.
Number of services and components generated (per Basic encoder)	<ul style="list-style-type: none"> ■ Service: 1 ■ Video component: 1 per service ■ Audio components: up to 12 stereos per device ■ VBI component: 1 (HD Teletext)

HD Video encoding

Input HD video encoding formats

Table A-12. HD video encoding formats

Mode	Vertical Resolution	Horizontal Resolution	Frame Rate (Fps)
Interlaced	1080i	1920, 1440, 1280, 960	29.97 interlaced
Interlaced	1080i	1920, 1440, 1280, 960	25 interlaced
Progressive	720p	1280, 960, 640	59.94 progressive
Progressive	720p	1280, 960, 640	50 progressive

HD Video preprocessing

Video compression provided by the ViBE EM4000 Encoder is designed to eliminate intra-frame and inter-frame redundancy. Any phenomenon, such as noise, which reduces the original picture redundancy will have a negative effect on encoding. Noise is particularly disadvantageous as it adds high frequencies to the picture and the encoder is then unable to distinguish these high frequencies from the useful information. The same applies to picture sequences where high-frequency spatial texture noticeably increases encoding complexity.

This explains the need for advanced video processing to:

- reduce noise in video sequences to encode
- slightly reduce definition in the complex areas of the picture

The Encoder therefore features 2 types of processing:

- noise reduction processing
- adaptive video filter processing

Noise reduction

Noise reduction is based on 2 features:

- a median filter to reduce impulse noise. The median filter is a hybrid filter which is used to linearly weight the results of several (spatial median) non-linear filters in different directions
- a motion-compensated recursive temporal filter to reduce other forms of noise (Gaussian noise, quantization noise, etc.)

The Noise reduction feature can be set by the User.

Adaptive video processing

Adaptive video processing is based on 3 filters:

- a vertical low-pass filter with 7 coefficients
- a horizontal low-pass filter with 7 coefficients
- a filter dedicated to low luminance processing

Adaptive Filter processing can be set by the User.

HD Video processing

Table A-13. HD Video processing specifications

Parameter	Description
Video encoding Profile ^a	<ul style="list-style-type: none"> ■ H264 MPEG4 AVC MP@L4 4:2:0 ■ H264 MPEG4 AVC HP@L4 4:2:0 <p>Limited to formats listed in section 'Input HD video encoding formats' on page 171.</p>
Encoding syntax	<ul style="list-style-type: none"> ■ AU Delimiters: Compliant with DVB recommendation ■ VUI parameters: Compliant with DVB recommendation ■ SEI pic_timing: Compliant with DVB recommendation ■ SEI recovery point: Compliant with DVB recommendation ■ TS RAI: Compliant with DVB recommendation
Entropy Coding	<ul style="list-style-type: none"> ■ CABAC
Picture Structure	<ul style="list-style-type: none"> ■ Frame MBAFF, Field and PAFF
Encoding tools	<ul style="list-style-type: none"> ■ Dual Pass encoding ■ All Intra Luma 4x4 modes ■ All Intra Luma 8x8 modes ■ All Intra Luma 16x16 modes ■ All Intra Chroma 8x8 modes ■ Inter modes down to 8x8 partition size ■ Submotion vectors (1/4 pixel) ■ 4x4 Transform ■ 8x8 Transform ■ Skipped MB ■ Spatial Direct modes ■ Multiple reference for P & B pictures

Appendix A 'Technical Specifications' – Features

Table A-13. HD Video processing specifications

Parameter	Description
GOP	<ul style="list-style-type: none"> ■ M < N < 64 ■ Possibility of full adaptive, restricted or fixed GOP: <ul style="list-style-type: none"> ❖ Full adaptive GOP mode (variable M and N) This mode allows P picture period and effective GOP size to vary according to video content (i.e. spatio-temporal complexity and events such as scene changes or fades). In this case, the effective GOP size varies from M up to N + 8 max. (encoding order), where M and N are user-set. ❖ Restricted GOP mode This mode is a limitation of the full adaptive mode where the effective GOP size varies from M up to N+1. This restriction can lead to lower video quality around scene changes. ❖ Fixed GOP mode For this mode, both P picture period and GOP size are set to the value set by the user. ■ Seamless M and N change during configuration by the User <p>Note: The GOP size = 1 is authorized.</p>
Bitrate	<ul style="list-style-type: none"> ■ CBR and VBR (Local & Remote Flexstream or Capped^b) mode ■ Bitrate, from 2 to 20 Mbit/s (CBR) in 1kbit/s steps^c ■ Seamless bitrate change during configuration by the User

Table A-13. HD Video processing specifications

Parameter	Description
Video buffer management	Leak mode
Miscellaneous features	<ul style="list-style-type: none"> ■ Detection of scene cuts, fades ■ PVR descriptor support i.e. insertion of AU - information in adaptation field of MPEG-2 Transport Stream according to ETSI TS 101 154 V1.8.1. This feature is used by Personal Video Recorders (PVR) to process streams (especially encrypted ones because the adaptation field is not encrypted) ■ Picture Definition: 4 levels (with <i>Auto level</i>) set by the User ■ IDR: I-pictures are replaced by IDR (Instantaneous Decoder Refresh) pictures Note: IDR mode is only recommended in the event of interoperability problems with some decoders ■ If there is no video input signal and the video component is not set to Off air, the Encoder will generate a video component containing a black pattern or a color pattern.
End to end delay ^d	<p>Two compression delays are available:</p> <ul style="list-style-type: none"> ■ Standard Delay = 163 fields ■ Long Delay = 249 fields <p>End-to-end delay:</p> <ul style="list-style-type: none"> ■ 50Hz <ul style="list-style-type: none"> ❖ Standard Delay: 3.2s ❖ Long Delay: 4.9s ■ 59.94Hz <ul style="list-style-type: none"> ❖ Standard Delay: 2.7s ❖ Long Delay: 4.1s

^a Profile switching is not seamless.^b Capped VBR: The Encoder adapts its bitrate to a quality level without being part of a Flexstream pool.^c 1 to 20 Mbit/s in Flexstream mode if Slide mode Management is activated.^d Measured between the Encoder HD SDI input and the PTS value.

Audio processing

Test signals

To facilitate device installation and/or testing, 2 types of test signal can be substituted for digital audio inputs:

- "Sine tone": 2.114 kHz 20 bits @0dBFS for both the left and right channel. This test signal is used to calibrate the audio system (encoder and decoder)

- "Setup tone": 2 kHz for the right channel and 1 kHz for the left channel, 24 bits @ -15 dBFS. This test signal is used for system setup. As the left and right channels have different frequencies they are easy to identify. The audio level is approximately the same as the average level of a standard audio signal and this therefore prevents the unwanted change in audio level when switching between the audio input and the test signal.

Audio capabilities

For the ViBE EM4000 Encoder the audio capabilities are:

Encoding

- NEM40IN2AA: The Encoder features 12 audio encoders (12 x AUD).
- NEM40IN4AA: The Encoder features 24 audio encoders (24 x AUD).

Each Audio encoder can encode audio in the following formats:

- MPEG-1 Layer II*
- Dolby® Digital (AC3) 2.0*
- Dolby® Digital (AC3) 5.1*
- Dolby® Digital Plus (E-AC3) 2.0*
- Dolby® Digital Plus (E-AC3) 5.1*
- Dolby® Digital (AC3) transport
- Dolby® Digital Plus (E-AC3) transport
- AAC-LC 2.0*
- HE-AAC 2.0*
- HE-AAC v2 2.0*
- AAC-LC 5.1*
- HE-AAC 5.1*

* Software options

Decoding

- NEM40IN2AA: The Encoder features 4 Dolby® E decoders. Up to 4 Dolby® E streams can be decoded and encoded in Dolby® Digital format (software options).
- NEM40IN4AA: The Encoder features 8 Dolby® E decoders. Up to 8 Dolby® E streams can be decoded and encoded in Dolby® Digital format (software options).



Audio limitations:

■ **NEM40IN2AA**

- ❖ 4 Dolby® Digital 5.1 (or Dolby® Digital Plus 5.1) audio can be encoded at the same time.
- ❖ 4 Dolby® E streams can be decoded at the same time.

■ **NEM40IN4AA**

- ❖ 8 Dolby® Digital 5.1 (or Dolby® Digital Plus 5.1) audio can be encoded at the same time.
- ❖ 8 Dolby® E streams can be decoded at the same time.

In term of audio computing, 1 Audio Description (AD) component is equivalent to 1 stereo (2.0) component.

MPEG-1 Layer II audio encoding

This feature is a software option. Refer to section '[MPEG-1 Layer II audio encoding](#)' on page 185.

Dolby Digital (AC3), Dolby Digital Plus (E-AC3) 2.0 encoding

This feature is a software option. Refer to section '[Dolby® Digital \(AC3\), Dolby® Digital Plus \(E-AC3\) 2.0 encoding](#)' on page 186.

Dolby Digital (AC3), Dolby Digital Plus (E-AC3) 5.1 encoding

This feature is a software option. Refer to section '[Dolby® Digital \(AC3\), Dolby® Digital Plus \(E-AC3\) 5.1 encoding](#)' on page 187.

AAC-LC, HE-AAC 2.0 encoding

This feature is a software option. Refer to section '[Dolby® E decoding](#)' on page 190.

AAC-LC, HE-AAC 5.1 encoding

This feature is a software option. Refer to section '[AAC-LC, HE-AAC 5.1 encoding](#)' on page 189.

Dolby® Digital (AC3) / Dolby® Digital Plus (E-AC3) Transport (external encoding)

Transmission format: Annex of Digital Audio Compression Standard (AC3); ATSC (Advanced Television Systems Committee) A52

Dolby® Digital (AC3) / Dolby® Digital Plus (E-AC3) transport mode is used to send audio samples synchronous with the video without compression or changes.

In this mode, the device that generates the audio signal must be synchronized with the Encoder's video clock. The audio samples are

synchronous with the video and are sent unchanged. This type of encoding is used to transparently transport audio samples encoded in Dolby® Digital (2.0 or 5.1).



If a Dolby Digital Transport component has been instantiated and the input is a Dolby Digital Plus stream, then the Dolby Digital Plus stream is passed-through, and an alarm is raised.

If a Dolby Digital Plus Transport component has been instantiated and the input is a Dolby Digital stream, then the Dolby Digital stream is passed-through, and an alarm is raised.

The error masking (error detection and last frame repetition) feature is implemented.

Table A-14. Dolby® Digital (AC3) / Dolby® Digital Plus (E-AC3) Transport audio bitrates

Mode	Bitrates (kbit/s)
Dolby® Digital (AC3) Transport	96, 128, 192, 224, 256, 320, 384, 448, 512, 576, 640
Dolby® Digital Plus (E-AC3) Transport	96, 128, 192, 224, 256, 320, 384, 448, 512, 576, 640

Audio description encoding

Audio descriptions can be encoded in MPEG-1 Layer II or HE-AAC if the associated options are available.

The Audio Description feature, is used to send an audio commentary channel and associated data (*fade* and *pan* values) in addition to its normal stereo sound. This channel is designed for the visually impaired and is used to send a verbal description of the visual scene on the screen, subject to decoder compatibility. The data associated with the commentary is used to define the mix (adjust right / left levels) for the *pan* values and the commentary level in relation to the normal sound for the *fade* values.

Figure A-3. Principle of the fade command during the verbal description

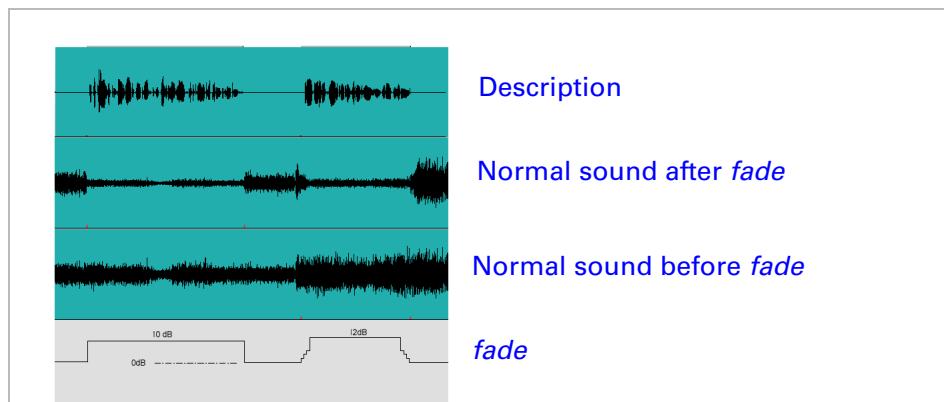


Figure A-4. Principle of the pan command

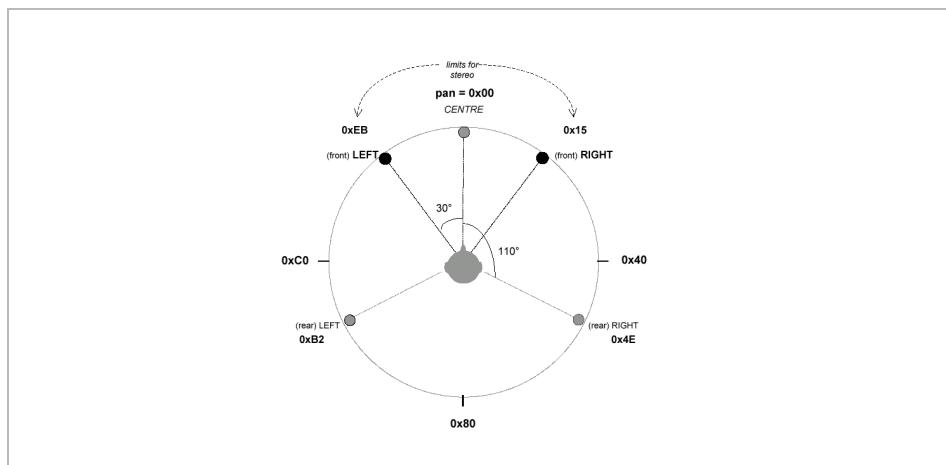


Figure A-5. Audio Description processing in the ViBE EM4000

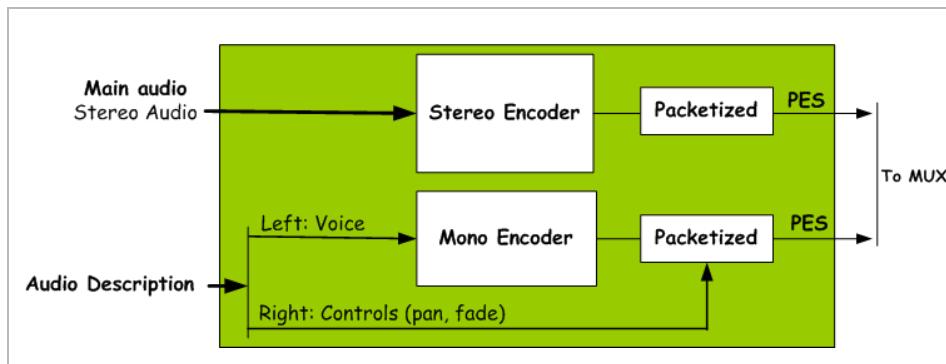
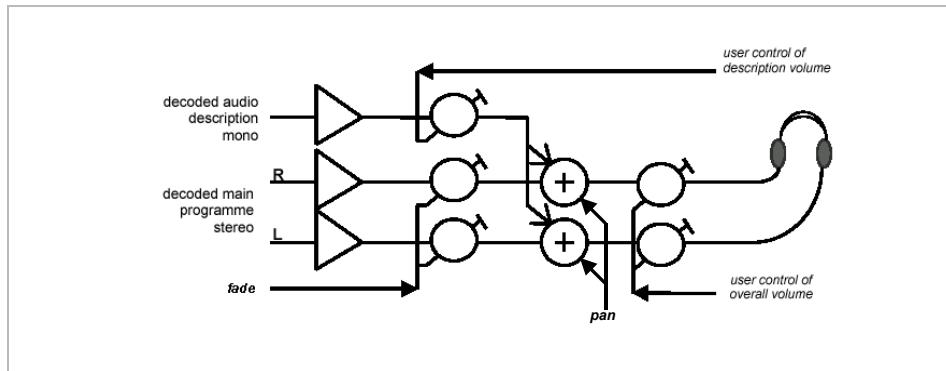


Figure A-6. Audio Description processing in a Decoder



When the Audio Description feature is enabled and no audio signal is detected for the description, the Encoder can either send silence or automatically replace encoded silence audio packets with null packets, which can be removed from the component by an external device to recover bandwidth. The component remains signaled in the PMT.

Dolby E® decoding

This feature is a software option. Refer to section '['Dolby® E decoding'](#)' on page 190.

Audio, other features

Audio silence alarms

A Detected Silence alarm indicates that the input audio signal value is below -65 dBFS. The delay for raising the Detected Silence alarm can be configured from 2 s to 60 s in 2 s increments.

Audio saturation alarms

When the input format is PCM, the audio level is monitored for each mono channel, and the "saturation" alarm is raised if the Audio level of one channel reaches 0dBFS for at least 2 successive audio samples.

The saturation alarms can be disabled by the User.

Additional audio delay

In order to compensate a delay on the video or audio path upstream of the encoder, it is possible to delay the audio with a positive or negative offset.

The delay can be set by the User from -500 ms to 500 ms in 1 ms steps.

VBI Processing

Time Code (VITC)

The Encoder can extract VITC (defined as per SMPTE RP188-1999) from the HD SDI input signal according to SMPTE 334M-2002. The Encoder automatically detects which line the Time Code is on. The extracted VITC is then included in the encoded video component as a picture timing SEI message.

Closed Caption

Closed caption, according to EIA 708 and embedded in the HD SDI input stream according to SMPTE 334M-2002, can be extracted and embedded in the encoded video stream as a picture timing SEI message (proprietary specifications).

PVR descriptor

The Encoder supports encoding of data fields in the private data bytes of the adaptation field according to reference AU information (ETSI 101-154). If this feature is incompatible with some decoders, it can be set to Off via the Management System.

Active Format Description (AFD)

The HD receiver requires an AFD in order to correctly format the HD widescreen broadcasts for an SD 4:3 display connected to the receiver via SCART. The value is inserted in a specific SEI message.

List and values of AFD codes:

- 8: as coded frame
- 9: 4:3 active picture
- 10: 16:9 active picture
- 11: 14:9 active picture
- 13: 4:3 coded image with a shoot and protect 14:9 center
- 14: 16:9 coded image with a shoot and protect 14:9 center
- 15: 16:9 coded image with a shoot and protect 4:3 center

3 AFD transmission modes are available:

- Off: AFD value is not sent
- On with reversion data: If the AFD value is not available on the Encoder input, an AFD reversion data value is sent
- On with static data: An AFD reversion data value is always sent.

HD Teletext

The Encoder supports WST extraction from HD-SDI and insertion in only one VBI component.

1. The Encoder supports WST extraction from HD-SDI according to Free TV Australia Operational Practice OP - 47 *Storage and Distribution of Teletext Subtitles and VBI Data for High Definition Television*. There is no filtering of the teletext according to the line: all teletext data received on 143h/102h DID/SDID is inserted in a unique component (unique PID). Up to 6 VANC data packets can be extracted per frame (1200 bytes/frame). In addition, the maximum bitrate allowed for a teletext component is 240 kbit/s @ 50 Hz.
2. VBI component insertion in the TS layer is according to ETSI EN 300 472 *Specification for Conveying ITU-R System B Teletext in DVB Bitstreams*.

Flexstream

■ Principle

Flexstream, a statistical multiplexing device, has been designed to increase video compression quality when several encoders share a given bitrate. The Operator configures each encoder with a minimum and maximum bitrate and a quality level. The bitrate of each Encoder varies and is dependent on the complexity of the signal to be encoded (the complexity being evaluated by each of the encoders), and the quality level requested.

Each Encoder sends information about video source complexity and the bitrate required to reach the requested quality level to the bitrate allocator for each frame. The bitrate allocator allocates each Encoder with a bitrate which is proportional to the complexity level of the video source. If the Operator so wishes, the allocator can limit the allocated bitrates to the values required to reach the set quality levels. In this way, if none of the Encoders have complex frames, the allocator will only allocate a portion of the total bitrate and the bandwidth will be filled with stuffing bytes which can then be replaced by opportunistic data injected on a downstream multiplexer. Stuffing quantity varies as it depends on the complexity of the incoming video signals.

■ Flexstream Bitrate allocator

The bitrate allocator responsible for collecting the complexity of pictures to be encoded and for allocating bitrates to each Encoder in a pool can be located on a site that is remote from the Encoder site or on the same site. The allocator is built in the 9030/9040 NetProcessor (multiplexer) device and communicates with the Encoders via the UDP/IP multicast network. The allocator can manage several pools of Encoders.

A Flexstream pool can contain ViBE EM4000 Encoders, ViBE EM2000 Encoders, ViBE EM1000 Encoders, ViBE EM3000 Encoders and ViBE Dual Pass Encoders (DP ENC, AD ENC, IP ENC).

This feature is a software option. Refer to section '[Local Flexstream](#)' on page 192 and section '[Remote Flexstream](#)' on page 192.

Control/Command

Control/Command via a Web Browser

The ViBE EM4000 Encoder can be operated using a Web Browser connected to the device's Web Interface application via the Ethernet *CTRL/CD* link. This operating mode is used to access all Encoder features, store and recall operating configurations and view device status and alarms.

Control/Command via the XMS

The ViBE EM4000 Encoder features a built-in XMS Interface. In a system with XMS 3500 software and an XMU, the XMS applications can be used with a ViBE EM4000 MPEG HD Encoder for:

- ❖ n+p redundancy management
- ❖ Remote Flexstream configuration
- ❖ Alarm & Status monitoring

Control/Command via SNMP

The ViBE EM4000 Encoder features a MIB which can be used via the Ethernet *CONTROL & COMMAND* link and SNMP protocol.

- SNMP V2.c
- MIB II support
- Trap management
- Monitor alarms
- Reboot unit
- Recall Predefined Configurations
- Display Remote Inventory Data
- Display Last Events

NTP Time Synchronization

The ViBE EM4000 Encoder features an NTP client to synchronize the real time clock of the product with external NTP servers. The Encoder can be connected to two different NTP servers (for redundancy purposes).

Control/Command via the Encoder front panel

This Liquid Crystal Display and its associated keypad can be used to:

- enter IP parameters (address, netmask and gateway)
- display hardware & software release numbers

Appendix A 'Technical Specifications' – Features

- display current alarms
- display internal temperature
- recall preset configurations.

Options

Hardware options

Additional AC Power Supply

Ordering reference NEMH4PSUAA

This option must be ordered at the same time as the Encoder.

When the additional AC Power Supply is installed the two AC Power Supplies are automatically redundant.

Software options

Audio options

MPEG-1 Layer II audio encoding

Ordering reference NEMS4MP1AA

This option enables MPEG-1 LII encoding capability for one stereo (2.0).

Up to 12 MPEG-1 Layer II audio encoding options can be installed per chassis NEM40IN2AA.

Up to 24 MPEG-1 Layer II audio encoding options can be installed per chassis NEM40IN4AA.

Table A-15. MPEG-1 Layer II encoding audio bitrates

Mode	Bitrates (kbit/s)
Mono	64, 80, 96, 112, 128
Stereo / Joint stereo / Dual channels	128, 160, 192, 224, 256

Dolby® Digital (AC3), Dolby® Digital Plus (E-AC3) 2.0 encoding

Ordering reference NEMS4DOLAA

This option enables Dolby encoding capability for one stereo (2.0).

Up to 12 Dolby® Digital (AC3), Dolby® Digital Plus (E-AC3) 2.0 encoding options can be installed per chassis NEM40IN2AA.

Up to 24 Dolby® Digital (AC3), Dolby® Digital Plus (E-AC3) 2.0 encoding options can be installed per chassis NEM40IN4AA.

Table A-16. Dolby Digital (AC3) , Dolby Digital Plus (E-AC3) 2.0 encoding audio bitrates

Mode	Bitrates (kbit/s)
Mono	32, 48, 64
Stereo	192, 224, 256, 384, 448

Table A-17. Dolby Digital Plus (E-AC3) 2.0 encoding audio bitrates

Mode	Bitrates (kbit/s)
Mono	32, 48, 64
Stereo	64, 96, 128, 192, 224

Dolby® Digital (AC3), Dolby® Digital Plus (E-AC3) 5.1 encoding

Ordering reference NEMS4A51AA

This option enables Dolby encoding capability for one 5.1 or three stereos (2.0).

Up to 4 Dolby® Digital (AC3) Dolby® Digital Plus (E-AC3) 5.1 encoding options can be installed per chassis NEM40IN2AA.

Up to 8 Dolby® Digital (AC3) Dolby® Digital Plus (E-AC3) 5.1 encoding options can be installed per chassis NEM40IN4AA.

Table A-18. Dolby® Digital (AC3) 5.1 encoding audio bitrates

Mode	Bitrates (kbit/s)
5.1 Surround / 5.0 Surround	384, 448, 512, 576, 640

Table A-19. Dolby® Digital Plus (E-AC3) 5.1 encoding audio bitrates

Mode	Bitrates (kbit/s)
5.1 Surround / 5.0 Surround	192, 224, 256, 384, 448

AAC-LC, HE-AAC, HE-AAC v2 2.0 encoding

Ordering reference NEMS4AACAA

This option enables AAC encoding capability for one stereo (2.0).

Up to 12 AAC-LC, HE-AAC, HE-AAC v2 2.0 encoding options can be installed per chassis NEM40IN2AA.

Up to 24 AAC-LC, HE-AAC, HE-AAC v2 2.0 encoding options can be installed per chassis NEM40IN4AA.

Table A-20. AAC-LC 2.0 encoding audio bitrates

Mode	Bitrates (kbit/s)
Mono	48, 64, 96
Stereo / Joint stereo / Dual channels	96, 128, 160

Table A-21. HE-AAC 2.0 encoding audio bitrates

Mode	Bitrates (kbit/s)
Mono	24, 32, 48
Stereo / Joint stereo / Dual channels	48, 64, 80, 96

Table A-22. HE-AAC v2 2.0 encoding audio bitrates

Mode	Bitrates (kbit/s)
Stereo	24, 32

AAC-LC, HE-AAC 5.1 encoding

Ordering reference NEMS4A51AA

This option enables AAC capability for one 5.1 or three stereos (2.0).

Up to 4 AAC-LC, HE-AAC, 5.1 encoding options can be installed per chassis NEM40IN2AA.

Up to 8 AAC-LC, HE-AAC, 5.1 encoding options can be installed per chassis NEM40IN4AA.

Table A-23. AAC-LC 5.1 encoding audio bitrates

Mode	Bitrates (kbit/s)
5.1 Surround	256, 320, 384, 448

Table A-24. HE-AAC 5.1 encoding audio bitrates

Mode	Bitrates (kbit/s)
5.1 Surround	128, 160, 192, 256

Dolby® E decoding

Ordering reference NEMS4DDEAA

This option enables the Dolby® E decoding capability for one Dolby® E stream.

Up to 4 Dolby® E decoding options can be installed per chassis NEM40IN2AA.

Up to 8 Dolby® E decoding options can be installed per chassis NEM40IN4AA.

The Dolby® E stream is de-embedded from the HD SDI stream. The Dolby® E stream can theoretically contain up to 8 programs, each program being either surround, stereo or mono. The total number of channels (mono) in the stream is 8 max. One out of four programs can be decoded via one Dolby E decoder option.

After decoding, the programs can be encoded in Dolby® Digital (AC3) or Dolby® Digital Plus (E-AC3).

Metadata are extracted from the Dolby® E stream and can be sent with the encoded Dolby stream.

Dolby E monitoring

A Dolby E monitoring-specific indication is provided. An area integrated in the Web Interface analyzes the Dolby E stream deembedded from the HD SDI and indicates the type of stream found according to the program number.

Dolby E® to PCM auto switch mode - Dolby Dual configuration

In Dolby *Dual configuration* mode, switching on 2 different groups/channels from Dolby® E to PCM and vice versa is supported.

The switch from Dolby® E to PCM and back is almost seamless (silence insertion <200 ms).

This switch mode can be set ON/OFF by the User.

When automatic switching mode is ON, the Encoder switches to the default bitrate (when PCM 2.0 is detected instead of Dolby® E) and signals a stereo stream (rather than a surround stream). The default bitrate mode cannot be set by the User.

The bitrates used are:

Table A-25. Bitrates in Dolby Dual configuration mode - Dolby® E to PCM 2.0 switching

Output Standard selected	Dolby® E detected, Rate set by the User (kbit/s)	PCM 2.0 detected, Fixed default bitrate (kbit/s)
Dolby® Digital (AC3)	384	192
	448	256
Dolby® Digital Plus (E-AC3)	192	96
	256	128

If another Main bitrate is proposed by the User and auto switch mode is ON, the bitrate will remain the same for both the stereo and surround streams and the signaling will remain of Surround type (in fact, in this case silence is inserted on Ls, Rs, Center and LFE channels).

When auto switch mode is OFF and the Dolby® E stream disappears, the last valid Dolby® E frame will be repeated 3 times and if it is still not resynchronized, the encoder will be muted (encoding of silence at the same bitrate).

Dolby® E 5.1 to Dolby® E 2.0 auto switch mode - Dolby Dual configuration

The Encoder can monitor the Dolby® E input and encode in the 5.1 or 2.0 program. This switch mode can be set ON/OFF by the User.

When automatic switching mode is ON, the Encoder switches to the default bitrate (when 2.0 is detected in the Dolby® E stream instead of 5.1) and signals a stereo stream (rather than a surround stream). The default bitrate mode cannot be set by the User.

The bitrates used are:

Table A-26. Bitrates in Dolby Dual configuration mode - Dolby® E 5.1 to Dolby® E 2.0 switching

Output Standard selected	Dolby® E 5.1 detected, Rate set by the User (kbit/s)	Dolby E® 2.0 detected, Fixed default bitrate (kbit/s)
Dolby® Digital (AC3)	384	192
	448	256
Dolby® Digital Plus (E-AC3)	192	96
	256	128

When auto switch mode is OFF and the Dolby® E stream contains 2.0 instead of 5.1, a 5.1 signal is still encoded with front left and right using the Dolby® E 2.0 input, and the other channel will be silenced.

Flexstream options

Local Flexstream

Ordering reference NEMS4FLEAA

This option enables the Flexstream feature in a pool of Encoders located on the same site (LAN infrastructure) and sharing the bandwidth in local statistical multiplexing mode.

One Local Flexstream option must be installed per video channel.

Remote Flexstream

Ordering reference NEMS4FLAAA

This option enables the Flexstream feature in a pool of Encoders located on the same and/or different sites (WAN infrastructure) and sharing the bandwidth in remote statistical multiplexing mode.

One Remote Flexstream option must be installed per video channel.

Standard Compliance

Table A-27. Standard compliance

Standards	Title
TV standards	
SMPTE 259M-2006	SDTV Digital Signal/Data — Serial Digital Interface
SMPTE 274M-2005	1920 x 1080 Image Sample Structure, Digital Representation and Digital Timing Reference Sequences for Multiple Picture Rates
SMPTE 291M-2006	Ancillary Data Packet and Space Formatting
SMPTE 292M-2006	1.5 Gb/s Signal/Data Serial Interface
SMPTE 296M-2001	1280 x 720 Progressive Image Sample Structure – Analog and Digital Representation and Analog Interface
SMPTE 425M-AB2006	3 Gb/s Signal/Data Serial Interface
SMPTE 372M-2009	Dual Link SMPTE 292M Interface for 1920 x 1080 Picture Raster
SMPTE RP 165-1994	Error Detection Checkwords and Status Flags for Use in Bit-Serial Digital Interfaces for Television
SMPTE 2031	Carriage of DVB/SCTE VBI Data in VANC
SMPTE 2016	Vertical Ancillary Data Mapping of Active Format Description and Bar Data
SMPTE RP188-1999	Transmission of Time Code and Control Code in the Ancillary Data Space of a Digital Television Data Stream

Certifications and environmental specifications

Table A-28. Certifications and environmental specifications

Category	Standard	Designed/tested for compliance with:
Safety	2006/95/EEC	European Low Voltage Directive 2006/95/E replacing 73/23/EEC and 93/68/EEC.
	EN60950	Safety of Information Technology Equipment, including Electrical Business Equipment, (En 60950-1, First Edition, 2006).
	ANSI / UL60950	"Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements", (ANSI/UL 60950-1, First Edition, Dated 2007-03-27). Certified.
	IEC 60950	"Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements", (IEC 60950-1, First Edition, 2005).
	CAN/CSA C22.2, No. 60950	"Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements", (CAN/CSA-C22.2 No. 60950-1-03. 2 nd Edition Dated 2007-03-01) Certified.
EMI	2004/108/EEC	EMC European Directive 2004/108/EC replacing 89/336/EEC and 93/68/EEC.
	EN 55022 standard	Electromagnetic compatibility (Europe). Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement: EN 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase). EN 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection.
	EN55024 standard	Electromagnetic compatibility (Europe). Information technology equipment - Immunity characteristics - Limits and methods of measurement: EN 61000-4-2: Electrostatic Discharge Immunity Test. EN 61000-4-3: Radiated, Radio-Frequency Electromagnetic Field Immunity Test. EN 61000-4-4: Electrical Fast Transient/Burst Immunity Test. EN 61000-4-5: Surge Immunity Test. EN 61000-4-6: Immunity to Conducted Disturbances, Induced Radio-Frequency Fields. EN 61000-4-8: Power Frequency Magnetic Field Immunity Test. EN 61000-4-11: Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests.
	US FCC CFR 47 part 15	Federal Communication Commission - part 15 (USA): Radio Frequency devices.

Table A-28. Certifications and environmental specifications

Category	Standard	Designed/tested for compliance with:
EM (continuation)	AS/NZS 3548	C-Tick: Electromagnetic compatibility (Australia & New Zealand). Information technology equipment, modems, fax machines, BPL modem.
	ICES-003 Ed4	Digital Apparatus (Canada).
EMF	Council recommendation 1999/519/EC	Recommendation on the limitation of exposure of the general public to electromagnetic fields.
	EN 62311:2008	Assessment of electronics and electrical equipment related to human exposure restrictions for electromagnetic fields.
CE labeling	93/68/EEC (22/07/93)	European Directive.
Environment testing	ETS 300 019-1-3	Classification of environmental conditions; Stationary use at weather protected locations: <ul style="list-style-type: none"> • Environmental class 3.1 and 3.1E. • Operation in temperature-controlled locations. • + 5°C to + 40°C. • 85% humidity compliant with the climatogram featured in the standard.
	ETS 300 019-1-2	Classification of environmental conditions; Transportation: <ul style="list-style-type: none"> • Environmental class 2.2: "Careful transportation" for mechanical conditions. • - 25°C to + 70°C. • 95% humidity compliant with the climatogram featured in the standard. • Sinusoidal vibrations in packaging. • Random vibrations in packaging. • Shocks in packaging. • Falls in packaging. • Falls in packaging - Green Book Option.
	ETS 300 019-1-1	Classification of environmental conditions; Storage <ul style="list-style-type: none"> • Environmental class 1.2. • Storage in weather-protected, partly temperature-controlled locations. • - 25°C to + 70°C. • 95% humidity compliant with the climatogram featured in the standard. • Shocks during In-Use.
Pollution specifications		No. 2 pollution.
Protection specifications	IEC 60529: 1989	IP20 protection.

EU declaration of conformity

<p style="text-align: right;">THOMSON ► VIDEO NETWORKS Ref. :</p> <p style="text-align: center;">DECLARATION DE CONFORMITE CE EU DECLARATION OF CONFORMITY</p>			
<p>Thomson Video Networks SAS 6, rue du Clos Courtel – CS 31719 35517 CESSION-SEVIGNE Cedex, France</p>			
<p>Matériels Equipments :</p>			
Code Article <i>Part number :</i> ViBE-4000-XXXXXX	Produit <i>Products :</i> ViBE EM4000 Multi-Channel Encoder		
<p>Je soussigné, <i>I the undersigned,</i></p>			
<p>Déclare avoir acquis la présomption de conformité du matériel ci-dessus référencé, utilisé et installé conformément à la notice, aux exigences essentielles des directives suivantes : <i>Declare that the hereabove references' product, used and installed according to its user notice, acquired the presumption of conformity to the essential requirement of the following directives:</i></p>			
<ul style="list-style-type: none">Sécurité: Directive Basse Tension 2006/95/EC, par l'application de la norme EN 60950-1:2006 <i>Safety: Low Voltage Directive, 2006/95/EC, by application of the standard EN 60950-1:2006.</i>Compatibilité électromagnétique: Directive 2004/108/EC, par l'application des normes EN 55022:2006 / A1:2007, EN 55024:2010, EN 61000-3-2:2006 / A1:2009 / A2:2009, EN61000-3-3 :2008. <i>Electromagnetic compatibility: Directive 2004/108/EC, by application of the standards EN EN 55022:2006/A1:2007, EN 55024:2010, EN 61000-3-2:2006/A1:2009/A2:2009, EN61000-3-3:2008.</i>			
Date, 19/03/2012	Nom, JL Diascorn	Fonction, Product Manager	Visa , 
<p>THOMSON VIDEO NETWORKS 6 rue du Clos Courtel – CS 31719 35510 CESSION-SEVIGNE Cedex, France Tel. +33 (0)2 99 28 50 00 - Fax +33 (0)2 99 28 50 01 www.thomson-networks.com</p>			

RoHS declaration of conformity

<p>THOMSON ► VIDEO NETWORKS Ref. :</p>												
<p>Certificat de conformité à la directive Européenne Certificate of compliance of European Directive 2002/95/EC (RoHS)</p>												
<p>Nous soussignés, <i>We, the undersigned,</i></p> <p>Certifions que les produits suivants, ainsi que leurs dérivés <i>Hereby certify that the following product and their by-products :</i></p> <table border="0" style="width: 100%;"><tr><td style="width: 30%;">Code Article <i>Part number :</i></td><td style="width: 70%;">Produit <i>Products :</i></td></tr><tr><td>Vibe-4000-XXXXXX</td><td>Vibe EM4000 Multi-Channel Encoder</td></tr></table> <p>Satisfont aux exigences imposées par la directive Européenne 2002/95/EC du Parlement Européen et du Conseil du 27 janvier 2003, traitant des restrictions d'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques, par application de l'exemption du plomb dans les soudures pour les serveurs, les systèmes de stockage et de matrices de stockage, les équipements d'infrastructure de réseaux destinés à la commutation, la signalisation, la transmission ainsi qu'à la gestion de réseaux dans le domaine des télécommunications:</p> <p><i>Are compliant with the requirements imposed by the European Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment using the exemption concerning lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications:</i></p> <table border="0" style="width: 100%;"><tr><td style="width: 25%;">Date,</td><td style="width: 25%;">Nom,</td><td style="width: 25%;">Fonction,</td><td style="width: 25%;">Visa ,</td></tr><tr><td>19/03/2012</td><td>JL Diascorn</td><td>Product Manager</td><td></td></tr></table> <p>THOMSON VIDEO NETWORKS 6 rue du Clos Courtel – CS 31719 35510 CESSION-SEVIGNE Cedex, France Tel. +33 (0)2 99 28 50 00 - Fax +33 (0)2 99 28 50 01 www.thomson-networks.com</p> <p>THOMSON VIDEO NETWORKS SAS au capital social de 4 427 000 euros. Siège social : 6, rue du Clos Courtel, 35510 Cesson-Sévigné, France. RCS Rennes 477 555 718 – VAT FR58477555718</p>	Code Article <i>Part number :</i>	Produit <i>Products :</i>	Vibe-4000-XXXXXX	Vibe EM4000 Multi-Channel Encoder	Date,	Nom,	Fonction,	Visa ,	19/03/2012	JL Diascorn	Product Manager	
Code Article <i>Part number :</i>	Produit <i>Products :</i>											
Vibe-4000-XXXXXX	Vibe EM4000 Multi-Channel Encoder											
Date,	Nom,	Fonction,	Visa ,									
19/03/2012	JL Diascorn	Product Manager										

Ordering guide

Table A-29. Ordering references for VIBE EM4000

Commercial code	Part number	Description
Chassis		
ViBE4000-2BB-IN	NEM40IN2AA	EM4000 platform, single PSU, capability for 2 HD channels. Capability for up to 4 xDolby E decoding and 4x surround 5.1 encoding or 12 x stereo encoding
ViBE4000-4BB-IN	NEM40IN4AA	EM4000 platform, single PSU, capability for 4 HD channels. Capability for up to 8 xDolby E decoding and 8x surround 5.1 encoding or 24 x stereo encoding
Hardware option		
EM4000-OPT-DUALPSU	NEMH4PSUAA	Double PSU HW option. Up to 1 PSU can be ordered per chassis
Software license		
EM4000-SW-110	NEMC4011AA	EM4000 Software, v1.10. 1 license must be ordered per chassis
Video encoding license		
EM4000-LIC-HDAVC	NEMS4H4AAA	One channel HD AVC encoding license. 1 license must be ordered per channel
System licenses		
EM4000-LIC-FLEXTRE	NEMS4FLEAA	LAN Flexstream. 1 license must be ordered per channel
EM4000-LIC-FLEXALL	NEMS4FLAAA	WAN-LAN Flexstream
Audio software options		
EM4000-LIC-DD20	NEMS4D0LAA	DD-DD+ stereo encoding (one 2.0). Up to 12 options can be ordered per chassis NEM40IN2AA or 24 options per chassis NEM40IN4AA
EM4000-LIC-AAC	NEMS4AACAA	AAC/HE-AAC stereo encoding (one stereo). Up to 12 options can be ordered per chassis NEM40IN2AA or 24 options per chassis NEM40IN4AA
EM4000-LIC-MPEG1L2	NEMS4MP1AA	MPEG1LII stereo encoding (one stereo). Up to 12 options can be ordered per chassis NEM40IN2AA or 24 options per chassis NEM40IN4AA
EM4000-LIC-DD51	NEMS4D51AA	DD-DD+ surround encoding (one 5.1 or three 2.0). Up to 4 options can be ordered per chassis NEM40IN2AA or 8 options per chassis NEM40IN4AA

Table A-29. Ordering references for ViBE EM4000

Commercial code	Part number	Description
EM4000-LIC-HEAAC51	NEMS4A51AA	AAC-LC HE-AAC surround encoding (one 5.1 or three 2.0). Up to 4 options can be ordered per chassis NEM40IN2AA or 8 options per chassis NEM40IN4AA
EM4000-LIC-DE	NEMS4DDEAA	Dolby E decoding. Up to 4 options can be ordered per chassis NEM40IN2AA or 8 options per chassis NEM40IN4AA

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Appendix B

Safety Instructions

ENGLISH

Read and follow the important safety information in [section 'Safety Summary \(English\)'](#) on page 202, noting especially those instructions related to risk of fire, electric shock or injury to persons. Additional specific warnings not listed there may be found throughout the manual.



To reduce the risk of electric shock, never remove the cover of the equipment.
If you remove the cover of the equipment, the warranty ceases to apply.

GERMAN

Lesen und befolgen Sie die nachstehenden, wichtigen Sicherheitshinweise ([section 'Sicherheit - Überblick \(Deutsch\)'](#) on page 206). Beachten Sie insbesondere die Anweisungen bezüglich Brand-, Stromschlag- und Verletzungsgefahr. Das Handbuch enthält weitere, hier nicht angeführte spezifische Warnhinweise.



Um die Stromschlaggefahr zu verringern, die Geräteabdeckung niemals entfernen. Andernfalls erlischt die Garantie.

FRENCH

Il est recommandé de lire, de bien comprendre et surtout de respecter les informations relatives à la sécurité qui sont exposées au paragraphe [section 'Consignes de sécurité \(Français\)'](#) on page 210, notamment les consignes destinées à prévenir les risques d'incendie, les décharges électriques et les blessures aux personnes. Les avertissements complémentaires, qui ne sont pas nécessairement repris dans le paragraphe sus-cité, mais présents dans tous les paragraphes du manuel, sont également à prendre en considération.



Pour prévenir les risques de décharges électriques, n'enlevez jamais le capot de l'équipement.
Si le capot de l'équipement est enlevé, la garantie cesse de s'appliquer.

Safety Summary (English)

Safety Terms and Symbols

Terms on the Product

The following terms may appear on the product:

DANGER — A personal injury hazard is immediately accessible as you read the marking.

CAUTION — A hazard to property, product, and other equipment is present.

Symbols on the Product

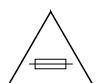
The following symbols may appear on the product:



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



Indicates that the user, operator or service technician should refer to product manual(s) for important operating, maintenance, or service instructions.



This is a prompt to note fuse rating when replacing fuse(s). The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Danger



The following warning statements identify conditions or practices that can result in personal injury or loss of life.

Mains Power Safety Instructions

RELIABLE EARTHING — The product is designed for connection to an earth-grounded AC outlet and must be correctly earthed through the main outlet of cable. To avoid risk of electrical shock or equipment damage, do not disconnect the grounding plug.

AC MAINS POWER CORD — AC mains cords are only shipped with equipment if ordered. Otherwise, it is advisable to use mains cords as described in section '[Power Supply and Protective Ground](#)' on [page 24](#). The mains power cords should comply with the legislation in force in the country of installation.

MAINS POWER/CIRCUIT OVERLOADING — For each branch circuit, the connection panel should feature overload and earth fault protection and a bipolar cut-off device or a differential circuit breaker.

MAINS POWER/CONNECTION PANEL — The connection panel should comply with the legislation in force in the country of installation. Connection panel position in the rack must ensure that plugs and power cords are within easy reach for switching off purposes.

OVERLOAD PROTECTION — Power supply unit has integrated overload protection which cannot be accessed or reset. In the event of a malfunction, please contact the Thomson Video Networks Customer Services Department.

POWER DISCONNECTING — The equipment may or does feature more than one power supply cord. To reduce the risk of electric shock, disconnect all power supply cords before any intervention.

Rack Mount Safety Instructions

ELEVATED OPERATING AMBIENT — If installed in a closed or multi-unit rack assembly, the operating air ambient temperature of the rack environment may be greater than room ambient. Provide proper ventilation as described in section '[Mounting in Rack](#)' on [page 18](#) to keep the equipment in an environment compatible with the maximum operating temperature specified by the manufacturer.

MECHANICAL LOADING — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

CIRCUIT OVERLOADING — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring.

RELIABLE EARTHING — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

L-PROFILES USE — The equipment must not be fixed with its rack mounting ears only. If you intend to install it in a rack, L-profiles are required and you must observe the ventilation and safety instructions described in section '[Mounting in Rack](#)' on page 18.

HANDLING PRECAUTIONS — To avoid injury while installing the equipment in a rack (or removing it from a rack), take all the necessary precautions. Ask another person for help or use a suitable carry lift.

Operating Safety Instructions

DO NOT OPERATE IN EXPLOSIVE ATMOSPHERE — To avoid injury or fire hazard, do not operate this equipment in an explosive environment (atmosphere and materials).

DO NOT OPERATE IN WET/DAMP CONDITIONS — To avoid electric shock, this equipment should only be operated in dry conditions.

REPLACEMENT OF RAM WITH BUILT-IN LITHIUM BATTERY — The equipment includes non volatile RAM with built-in lithium batteries which should never require replacing. If for any reason replacement does prove necessary, please observe the following conditions:

- The operation must only be performed by qualified personnel;
- Only replace with the same or equivalent memory type.
- Ensure the memory is inserted the right way round;
- Please dispose of dead memories according to the manufacturer's instructions.

Danger of explosion if memory is incorrectly replaced.



Cautions



The following caution statements identify conditions or practices that can result in damage to equipment or other property.

USE CORRECT POWER SOURCE — Do not operate this equipment from a power source that applies a voltage outside the voltage range specified for the product.

PROVIDE PROPER VENTILATION — To prevent product overheating, provide equipment ventilation in accordance with installation instructions. All empty slots should be fitted with blank panels (mask plates) so as not to impair ventilation.

DO NOT OPERATE WITH SUSPECTED EQUIPMENT FAILURE — If you suspect equipment damage or equipment failure, have the equipment inspected by qualified service personnel.

ENSURE MAINS DISCONNECT — As mains switch is not provided, the power cord(s) of this equipment provide the means of disconnection. The socket outlet must be installed near the equipment and must be easily accessible.

ROUTE CABLE PROPERLY — Route power cords and other cables so that they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.

RETAIN ORIGINAL PACKAGING — If equipment is returned to the Customer Service Department, the faulty equipment must be packed where possible in its original packaging (protective corners and boxes). If you no longer have the packaging, the faulty equipment must be protected against shocks during transportation. The Customer Service Department examines packaging on arrival and can refuse to carry out repairs if the packaging has been visibly damaged during transportation and this has led to further damage in addition to the fault originally noted.

Transportation costs and risks for equipment returns are borne by the customer. Equipment should only be returned with a Return Material Authorization form.

WARRANTY COMPLIANCE — Observe the following rules:

- Only pluggable board replacement by a qualified personnel is allowed.
In all other cases replace the equipment with a spare.
- Never remove the cover of the equipment.

Sicherheit - Überblick (Deutsch)

Sicherheit - Begriffe, Hinweise und Warnzeichen

Am Produkt angebrachte Hinweise

Folgende Hinweise können sich am Produkt befinden:

GEFAHR — Dieser Warnhinweis verweist auf eine unmittelbare Verletzungsgefahr.

VORSICHT — Dieser Warnhinweis verweist auf ein bestehendes Risiko für das Gerät, Produkt oder Betriebsmittel.

Am Produkt angebrachte Warnzeichen

Folgende Warnzeichen können sich am Produkt befinden:



Warnung vor einer gefährlichen elektrischen Spannung im Gerätgehäuse, die stark genug sein kann, um eine Stromschlaggefahr darzustellen.



Aufforderung an den Benutzer, Bediener oder Servicetechniker, die in den Produkthandbüchern angeführten wichtigen Bedienungs-, Wartungs- und Serviceanweisungen zur Kenntnis zu nehmen.



Aufforderung, beim Auswechseln von Sicherungen den vorgeschriebenen Nennwert für die im Text angeführte Sicherung einzuhalten.



Obligatorische Erdungsklemme zur ordnungsgemäßen Erdung, bevor weitere Geräte angeschlossen werden können.



Zusätzliche, nicht obligatorische externe Erdungsklemme als Ergänzung zur internen Erdungsklemme.



Statikempfindliche Bauteile, die durch elektrostatische Entladung (ESD) beschädigt werden können, sind durch ESD-geeignete Verfahren, Werkzeuge und antistatische Oberflächen während der Wartung zu schützen.

Gefahr



Folgende Warnungen verweisen auf Situationen und Handlungen, die Verletzungs- oder Lebensgefahr zur Folge haben können.

Sicherheitshinweise bezüglich des Stromnetzes

ORDNUNGSGEMÄÙE ERDUNG — Das Gerät muss an einen geerdeten AC-Ausgang angeschlossen und ordnungsgemäß über den Hauptkabelausgang geerdet werden. Zum Vermeiden von Stromschlaggefahr und Geräteschäden den Schutzkontaktstecker nicht herausziehen.

AC NETZKABEL — Geräte werden ohne AC-Netzkabel geliefert. Diese sind separat zu bestellen. Netzkabel sollten stets gemäß den Anweisungen im Abschnitt section '[Power Supply and Protective Ground](#)' on page 24 verwendet werden und den anwendbaren Rechtsvorschriften im jeweiligen Installationsland entsprechen.

ÜBERSPANNUNG DES STROMNETZES/STROMKREISES — Für jeden Abzweigstromkreis ist an der Anschlussplatte ein Überspannungs- und Erdschlussenschutz sowie eine doppelpolare Abschaltung oder ein Differentialschutzschalter vorzusehen.

STROMNETZ/ANSCHLUSSPLATTE — Die Anschlussplatte hat den landesspezifischen Rechtsvorschriften zu genügen. Die Anschlussplatte ist so im Rack zu montieren, dass alle Stecker und Netzkabel zum Ausschalten leicht zugänglich sind.

ÜBERSPANNUNGSSCHUTZ — Das Netzanschlussgerät ist mit einem nicht zugänglichen und nicht zurücksetzbaren Überspannungsschutz ausgestattet. Für die Behebung eventueller Störungen ist der Kundendienst von Thomson Video Networks zuständig.

TRENNUNG DER STROMVERSORGUNG — Einige Geräte verfügen ggf. über mehrere Spannungsversorgungskabel. Zur Verringerung der Stromschlaggefahr sind vor jedem Eingriff sämtliche Kabel herauszuziehen.

Sicherheitshinweise bezüglich Rackgehäuse

BETRIEBSTEMPERATURUMGEBUNG — Bei geschlossenen Racks bzw. Mehrfach-Racks kann die Umgebungstemperatur im Rack höher als die Raumtemperatur sein. Durch eine ausreichende Belüftung gemäß Abschnitt section '[Mounting in Rack](#)' on page 18 ist dafür zu sorgen, dass die vom Hersteller vorgeschriebene maximale Betriebstemperatur nicht überschritten wird (Temperaturangaben siehe Abschnitt Technische Daten des Benutzerhandbuchs).

STROMKREIS-ÜBERLASTUNG — Beim Anschluss des Geräts an den Stromkreis sind die eventuellen Auswirkungen einer Stromkreis-Überlastung auf den Überstromschutz und die elektrischen Leitungen zu berücksichtigen.

ORDNUNGSGEMÄÙE ERDUNG — Rack-montierte Geräte sind vorschriftsmäßig zu erden. Hierbei ist besonders auf Netzanschlüsse ohne direkten Anschluss an den Abzweigstromkreis zu achten (z. B. bei der Verwendung von Mehrfachsteckdosen).

VERWENDUNG VON L-PROFILEN — Zur ordnungsgemäßen Anbringung des Geräts im Rack sind neben den Tragösen L-Profile zu verwenden. Beim Einbau sind die im Abschnitt section '[Mounting in Rack](#)' on page 18 angeführten Sicherheitshinweise und Belüftungsanweisungen zu beachten.

SICHERHEITSMÄÙNAHMEN BEIM EIN-/AUSBAU — Zur Vermeidung von Verletzungen beim Ein- und Ausbau des Geräts in das bzw. aus dem Rack sind alle erforderlichen Vorsichtsmaßnahmen zu treffen. Es sollte eine weitere Person um Hilfe gebeten oder eine entsprechende Hubvorrichtung verwendet werden.

Sicherheitshinweise bezüglich des Betriebs

GERÄTEBETRIEB IN EXPLOSIONSGESCHÜTZTER UMGEBUNG — Zur Vermeidung von Verletzungen und Brandgefahr darf das Gerät nicht in explosionsgefährdeten Umgebungen betrieben werden (Atmosphäre und Stoffe).

GERÄTEBETRIEB IN TROCKENER UMGEBUNG — Zur Vermeidung von Stromschlaggefahr darf das Gerät nicht in feuchter oder dunstiger Umgebung betrieben werden.

AUSWECHSELN DES RAM-SPEICHERS MIT EINGEBAUTER LITHIUMBATTERIE — Einige Geräte besitzen einen nicht flüchtigen RAM-Speicher mit Lithiumbatterie, der i. d. R. niemals ausgewechselt werden muss.

Sollte der RAM-Speicher dieses Geräts doch einmal ausgewechselt werden müssen, sind folgende Anweisungen zu beachten:

- Der RAM-Speicher ist durch qualifiziertes Personal auszuwechseln;
- denselben oder einen gleichwertigen RAM-Speicher verwenden;
- Auf die richtige Positionierung des neuen Speichers achten;
- Alte Speicher gemäß den Anweisungen des Herstellers entsorgen.



Bei nicht ordnungsgemäß installiertem Speicher besteht Explosionsgefahr.

Vorsichtshinweise



Folgende Vorsichtshinweise verweisen auf Situationen und Handlungen, die zu Schäden an den Geräten oder sonstigen Betriebsmitteln führen können.

Angemessene Stromquelle verwenden — Das Gerät darf nicht an eine Stromquelle angeschlossen werden, die eine Spannung liefert, die außerhalb des für das Produkt zulässigen Nennspannungsbereichs liegt.

Gerät ausreichend belüften — Um einer Überhitzung des Geräts vorzubeugen, ist für eine angemessene Belüftung gemäß den Anweisungen in Abschnitt Installation des Benutzerhandbuchs zu sorgen. Leere Geräteeinschübe sind mit Leerblenden zu verschließen.

Gerät nicht bei Störung betreiben — Wird ein Geräteschaden oder eine Störung vermutet, ist das Gerät von qualifizierten Servicetechnikern zu überprüfen.

Trennung vom Stromnetz sicherstellen — Verfügt das Gerät über keine(n) Netzschatzer, ist das Gerät durch Ziehen des/der Netzkabel vom Stromnetz zu trennen. Die Steckdose(n) ist/sind leicht zugänglich in unmittelbarer Nähe des Geräts anzubringen.

Kabel richtig verlegen — Netzkabel und sonstige Kabel sind so zu verlegen, dass sie nicht beschädigt werden können. Schwere Kabelbündel sind ordnungsgemäß abzustützen, um Schäden an den Steckverbindungen vorzubeugen.

Originalverpackung aufbewahren — Ist das Gerät beschädigt und an den Kundendienst zurückzuschicken, sollte zum sicheren Transport möglichst die Orginalverpackung (mit Eckenschutz und Schutzhüllen) verwendet werden oder das Gerät zumindest stoßsicher verpackt werden. Bei der Annahme des Gerätes untersucht der Kundendienst die Verpackung auf eventuelle Transportschäden und kann die Reparatur ablehnen, sollte die Verpackung während des Tranports beschädigt worden sein und dies zusätzliche Schäden am Gerät verursacht haben.

Die mit der Rückgabe und den Transport verbundenen Kosten und Risiken sind vom Kunden zu tragen. Dem eingeschickten Gerät ist ein ordnungsgemäß ausgefüllter Rückgabeschein beizulegen.

Garantieleistung — Folgende Regeln sind für die Inanspruchnahme der Garantie zu beachten:

- Das Auswechseln der Steckkarte hat ausschließlich durch qualifiziertes Personal zu erfolgen. In allen anderen Fällen ist das Gerät durch ein Ersatzgerät zu ersetzen.
- Niemals die Abdeckungen des Gerätes abnehmen.

Consignes de sécurité (Français)

Consignes et symboles de sécurité

Signalétique apposée sur le produit

La signalétique suivante peut être apposée sur le produit :

DANGER — Risque de danger imminent pour l'utilisateur.

MISE EN GARDE — Risque d'endommagement du produit, des installations ou des autres équipements.

Symboles apposés sur le produit

Les symboles suivants peuvent être apposés sur le produit :



Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.



Signale que l'utilisateur, l'opérateur ou le technicien de maintenance doit faire référence au(x) manuel(s) pour prendre connaissance des instructions d'utilisation, de maintenance ou d'entretien.



Il s'agit d'une invite à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.



Identifie une borne de protection de mise à la masse qui doit être raccordée correctement avant de procéder au raccordement des autres équipements.



Identifie une borne de protection de mise à la masse qui peut être connectée en tant que borne de mise à la masse supplémentaire.



Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

Avertissements



Les avertissements suivants signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire même fatales.

Instructions de sécurité relatives à l'alimentation secteur

MISE À LA TERRE DE PROTECTION — Assurez-vous que la mise à la terre est correctement effectuée avant de mettre l'appareil sous tension. La mise à la terre de protection se fait au travers du cordon d'alimentation. Pour éviter tout risque de chocs électriques ou de dommage à l'équipement, ne déconnectez jamais la fiche de terre.

CORDON D'ALIMENTATION SECTEUR (AC) — Les cordons secteur ne sont fournis avec l'équipement que s'ils ont été commandés. Sinon il est préconisé d'utiliser des cordons conformes à ceux décrits section '[Power Supply and Protective Ground](#)' on page 24. Les cordons secteur doivent être en conformité avec la législation du pays où le produit est installé.

ALIMENTATION SECTEUR ET PROTECTIONS ÉLECTRIQUES — Pour chaque circuit électrique, le câblage doit comporter une protection contre les surintensités, une protection contre les défauts de fuite à la terre et un système de coupure des deux pôles ou un disjoncteur différentiel.

ALIMENTATION SECTEUR/PANNEAU DE CONNEXION — Le panneau de connexion doit être conforme à la législation du pays où le produit est installé. Ce panneau de connexion doit être placé dans la baie de telle sorte que les prises et les cordons d'alimentation soient à portée de main afin de permettre la mise hors tension de l'équipement.

PROTECTION CONTRE LES SURINTENSITÉS — L'alimentation électrique dispose d'une protection intégrée contre les surintensités, non accessible et non réarmable. En cas de dysfonctionnement, contactez le Département Services Clients de Thomson Video Networks.

SOURCES D'ALIMENTATION ET INTERVENTION DANS LE CHÂSSIS — Le châssis peut être alimenté par deux sources d'alimentation pourvues pour chacune d'elles d'un cordon d'alimentation. Déconnectez tous les cordons d'alimentation avant toute intervention.

Instructions de sécurité relatives à l'installation du châssis dans une baie

TEMPÉRATURE D'AMBIANCE ÉLEVÉE — Si l'équipement est installé dans une baie, la température d'ambiance de l'équipement peut être supérieure à la température du local technique. Assurez-vous que la ventilation est conforme à ce qui est indiqué section '[Mounting in Rack](#)' on page 18 pour maintenir l'équipement dans un environnement compatible avec la température ambiante maximum spécifiée par le Constructeur.

CHARGE MÉCANIQUE — Si l'équipement est installé dans une baie, veillez à ce que les conditions de montage soient conformes à ce qui est indiqué section '[Mounting in Rack](#)' on page 18.

CIRCUIT DE SURCHARGE — Le produit est équipé de circuit de protection de surcharge des circuits d'alimentation et de protection contre les court-circuits. Appliquez les valeurs appropriées indiquées sur la plaque signalétique.

LIAISON DE TERRE — Assurez-vous de la continuité de la liaison de terre pour l'équipement monté en baie. Une attention particulière doit être apportée en cas d'utilisation de nourrices ou de boîtiers de raccordement.

EQUERRES INVERSÉES OU ÉQUERRES EN L — Il est strictement interdit de supporter le châssis par ses oreilles. Si le châssis doit être installé dans une baie, posez le châssis sur des équerres inversées ou sur des équerres avec profil en L et observez les règles de ventilation et de sécurité énoncées section '[Mounting in Rack](#)' on page 18.

PRÉCAUTIONS LORS DES MANIPULATIONS — Prenez toutes les précautions nécessaires pour ne pas vous blesser lors du montage / démontage de l'équipement dans une baie. N'hésitez pas à demander l'assistance d'une autre personne ou à utiliser un chariot élévateur adapté.

Instructions de sécurité générales

ATMOSPHÈRE EXPLOSIVE — Ne mettez en service le produit qu'en zone exempte de tout risque d'explosion (atmosphère et matériaux).

HUMIDITÉ — De façon à éviter tout risque de choc électrique, ne mettez en service le produit qu'en zone sèche.

REEMPLACEMENT DE MÉMOIRE AVEC PILE AU LITHIUM INCORPORÉE
— L'équipement contient des mémoires sauvegardées avec des piles au lithium incorporées. Ces composants ont une durée de vie suffisante pour ne jamais être changés. Si, pour une raison quelconque, le remplacement s'avère nécessaire, il convient de respecter les conditions suivantes :

- L'opération ne doit être réalisée que par un personnel qualifié;
- Le composant doit être remplacé par un composant de mêmes caractéristiques.
- Respectez le sens de montage du composant;
- La mise au rebut du composant usagé doit s'effectuer suivant les consignes du fabricant du composant.



Il y a risque d'explosion si la mémoire est montée de manière incorrecte.

Mises en garde



Les mises en garde suivantes signalent les conditions et les pratiques susceptibles d'occasionner des dommages à l'équipement et aux installations.

SOURCE D'ALIMENTATION ADÉQUATE — Ne branchez pas ce produit à une source d'alimentation qui délivre une tension hors de la plage de tension nominale spécifiée pour ce produit.

VENTILATION ADÉQUATE — Pour éviter tout risque de surchauffe, ventilez correctement le produit. Reportez-vous section '[Mounting in Rack](#)' on page 18. Pour ne pas perturber la ventilation, tous les emplacements non occupés par des cartes doivent être obturés par des caches de bouchement.

DYSFONCTIONNEMENT SUSPECTÉ — Si vous constatez une anomalie, faites procéder à une vérification par un personnel qualifié.

MARCHE/ARRÊT DE L'ÉQUIPEMENT — Le châssis ne comporte pas d'interrupteur Marche/Arrêt. Les cordons d'alimentation doivent être à portée de main afin de permettre la mise hors tension de l'équipement.

ACHEMINEZ LES CÂBLES CORRECTEMENT — Acheminez les câbles d'alimentation et les autres câbles de telle façon qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.

EMBALLAGE D'ORIGINE — En cas de retour au Département Service Clients, l'équipement défectueux doit être placé autant que possible dans son emballage d'origine (cales de protection et boîtes). Si vous ne disposez plus de l'emballage, l'équipement défectueux doit être protégé afin de supporter les chocs pendant le transport. Notre Département Service Clients examine les emballages à l'arrivée et pourra refuser d'effectuer une réparation en cas de défaut visuel sur l'emballage dû au

transport et ayant entraîné de nouveaux défauts par rapport à la nature de l'anomalie que vous avez constatée.

Il est rappelé que le transport pour le retour des équipements est à la charge et aux risques du Client. L'équipement ne doit être retourné qu'accompagné d'une autorisation de retour d'équipement RMA (Return Material Authorisation).

ANNULATION DE GARANTIE — Respectuez les règles suivantes pour ne pas annuler la garantie :

- Seul le remplacement des cartes enfichables et qui ne requiert pas le démontage du capot est autorisé. Dans tous les autres cas, remplacez l'équipement par un équipement de rechange.
- Ne démontez jamais le capot.

Safety Instructions for Finland, Norway, Sweden

Specific Safety Instructions

SPECIFIC SAFETY INSTRUCTIONS FOR FINLAND — Laite on liittettävä suojaamadoituskoskettimilla varustettuun pistorasiaan.

SPECIFIC SAFETY INSTRUCTIONS FOR NORWAY — Apparatet må tilkoples jordet stikkontakt.

SPECIFIC SAFETY INSTRUCTIONS FOR SWEDEN — Apparaten skall anslutas till jordat uttag.

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Appendix C

Regulatory Notices

FCC Emission Control

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Thomson Video Networks can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

EN55022 Class A Warning

In a domestic environment, products that comply with Class A may cause radio interference in which case the user may be required to take adequate measures.

VCCI Class A Warning

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Laser Compliance

Laser Safety Requirements

The device used in this product is a Class 1 certified laser product. Operating this product outside specifications or altering from its original design may result in hazardous radiation exposure, and may be considered an act of modifying or new manufacturing of a laser product under U.S. regulations contained in 21CFR Chapter 1, subchapter J or CENELEC regulations in HD 482 S1. People performing such an act are required by law to recertify and reidentify this product in accordance with provisions of 21CFR subchapter J for distribution within the U.S.A., and in accordance with CENELEC HD 482 S1 for distribution within countries using the IEC 825 standard.

Laser Safety

Laser safety in the United States is regulated by the Center for Devices and Radiological Health (CDRH). The laser safety regulations are published in the "Laser Product Performance Standard," Code of Federal Regulation (CFR), Title 21, Subchapter J.

The International Electrotechnical Commission (IEC) Standard 825, "Radiation of Laser Products, Equipment Classification, Requirements and User's Guide," governs laser products outside the United States. Europe and member nations of the European Free Trade Association fall under the jurisdiction of the Comite European de Normalisation Electrotechnique (CENELEC).

For the CDRH: The radiant power is detected through a 7 mm aperture at a distance of 200 mm from the source focused through a lens with a focal length of 100 mm.

For IEC compliance: The radiant power is detected through a 7 mm aperture at a distance of 100 mm from the source focused through a lens with a focal length of 100 mm.

Laser Used in the Equipment

The equipment may or does feature a board emitting class 1 invisible laser radiation.

No standard applies to this device. Nevertheless, you are strongly recommended not to look directly at the optical connector when the device is switched on (or the end of the fibre connected to it).

The laser characteristics are as follows:

For 1000BASE-SX (ordering reference: N900GSF0GA): Class1, 850 nm, maximum optical output power: 0dBm, AVAGO, AFBR-5710LZ, CDRH 9720151-13, TUV e9971083.07, UL e173874.

For 1000BASE-LX (ordering reference: N900GSF1GA): Class1, 1300 nm, maximum optical output power: -3dBm, AVAGO, AFCT-5710LZ, CDRH 9521220-52, TUV 933/510206/02, UL e173874.

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Appendix D

Customer Services

Introduction

This chapter indicates what you should do if you have a problem with your equipment, whether you need to repair it, to return it or to dispose of it.

In this Chapter

'Support Center Contacts'	page 222
'Warranty'	page 224
'Services'	page 225
'Spare Parts'	page 226
'Returning Equipment'	page 227
'Repackaging for Shipment'	page 228
'Recycling the Product'	page 230

Support Center Contacts

- Our international call center provides Thomson team members to answer your product and customer service questions. It is available by phone or e-mail 24 hours a day, 7 days a week.

The Thomson call center phone numbers are available on our website (Service & Support / Contact Support page):

<http://www.thomson-networks.com/contact-us/technical-support>

International Support Centers:

EMEA/APAC/Canada

Toll Free Number +800 9010 1010

Available from following countries:

Australia, Belgium, Canada, Cyprus, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Malaysia, The Netherlands, Norway, Philippines, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, The UK

Hungary Toll Free Number: **802 05133**

India Toll Free Number: **000 800 852 1339**

USA

Toll Free Number

1866 420 8666

LATAM

Toll Free Numbers:

Argentina: **+800 9010 1010**

Brazil: **0800 8923 721**

Mexico: **001 800 514 2514**

Peru: **0800 54 852**

For all countries including the ones above

we can also be reached through our "regular" line (caller charged at standard fee)

+33 1 70 48 07 76

After your call is logged by our call center, you are called back by a technical support engineer.

- To contact the Thomson support center by email please write to us at: [Email: contact.support@thomson-networks.com](mailto:contact.support@thomson-networks.com)

To ensure fast customer service please include the following information when contacting Thomson by email:

- ❖ Your contract number
- ❖ Your geographical location (i.e. country you are in)
- ❖ The name of your product

- ❖ Any additional system configuration information relating to your product

Warranty

Thomson Video Networks guarantees that the product will be free from defects in materials and workmanship, and that the product and/or software will conform to the applicable specifications, within the duration of the warranty.

The product is under warranty for a period of twelve (12) months.

The software is under warranty for a period of ninety (90) days.

Concerning the software warranty, Thomson guarantees that, for a period of 90 days, after the product's delivery date, or after a system's Site Acceptance Test, the physical media will be free from defects and viruses and the embedded software will conform to applicable specifications. There is no warranty that Thomson software will be error-free. The purchase of a software license entitles the customer to use the Thomson software release shipped at the time the license is purchased. Rights to new releases (upgrades) are only provided through a Thomson OneCare service level agreement or can be priced upon request.

Concerning third party firmware & software (e.g. Java, Sun Microsystems, etc.), when supplied with a Thomson product, Thomson is not responsible for supplying any support or information regarding said software.

The Distributor Warranty Policy described in the individual distributorship agreement applies.

For details on the Thomson warranty policy, please contact your Thomson sales representative (list of sales representatives available on the Thomson website at: <http://www.thomson-networks.com/>

Services

Training and assistance service offers are available and can be quoted for upon request.

Thomson OneCare service level agreement offers apply to this product.

Spare Parts

The spare part is the product itself, there are no other subsets available as spare parts.

Returning Equipment

Please contact the call center with questions about the process for returning Thomson equipment. Within the standard Thomson warranty period, there is a 30 day turnaround (factory in/out) guarantee for repairs.

Unless specifically agreed, cost and risks for return shipment of equipment are borne by the Customer. The faulty device must be packed where possible in its original packaging (protective corners and boxes). If you no longer have the packaging, the faulty device must be protected against shocks during transportation. The company may not be held liable for any consequence resulting from non-observance of this return procedure. The company will not be able to guarantee a repair time for any RMA request for which we do not have a clear and complete fault description. If no fault is found, a fixed price will be raised to cover shipping and testing of the unit.

Rewrap for Shipment

Retain original packaging — Unless specifically agreed, cost and risks for return shipment of equipment are borne by the Customer. The faulty device must be packed where possible in its original packaging (protective corners and boxes). If you no longer have the packaging, the faulty device must be protected against shocks during transportation. The company may not be held liable for any consequence resulting from non-observance of this return procedure. The Thomson Customer Service Department will examine packaging on arrival and can refuse to carry out repairs if the packaging has been visibly damaged during transportation and this has led to further damage in addition to the fault originally noted.

Long Term Product Support

Long-Term Product Support (LTPS) is the Thomson support provided during the product life cycle, starting at the announcement of the end of product manufacture and ending at the announcement of the end of services.

After product phase-out announcement, LTPS data is provided by the Thomson Regional Sales and Field Services organizations.

The Thomson OneCare SLA commitment concerning LTPS data and associated services may differ from those included as part of the general Thomson LTPS policy. In such cases, LTPS data and associated services governed by the terms and conditions of OneCare contracts override the general LTPS policy.

Recycling the Product



Thomson Video Networks has developed a comprehensive end-of-life product take back program for recycling or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive and, in the United States, those of the Environmental Protection Agency, individual state or local agencies.

Thomson Video Networks guarantees the proper disposal of your end-of-life products. A Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent upon request.

Thomson Video Networks will be responsible for all costs associated with recycling and disposal, including freight, however you are responsible for the removal of the equipment from your facility and packing the equipment ready for pickup.

For further information on the Thomson Video Networks product take back system, please visit our website's Environmental Policy page:
<http://www.thomson-networks.com/>

Appendix E

Alarms

Introduction

This chapter gives the list of alarms which can be displayed on the Encoder. For each alarm the diagnostics, action to be performed and alarm severity are given.

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Alarm Help (X733 syntax) 9.60

**db last updated: July 13, 2012, 11:38 AM
& doc generated: July 23, 2012, 2:40 PM**

Alarm Help (X733 syntax) 9.60

Probable Cause

51/backplaneFailure

Category

Equipment

Default severity

major

Wording (English)

Backplane failure

Wording (French)

Défaillance du fond de panier

Diagnosis (English)

CPU - PIC interface : initialisation failed.

Diagnosis (French)

Interface CPU - PIC : échec de l'initialisation.

Action (English)

Reset the board. If the alarm registers again, return the board to Customer Service.

Action (French)

Réinitialisation de la carte. Si le problème persiste, retour de la carte à l'usine.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel

EM4000 Dual Channel
EM4000 Hexa Channel
ViBE

MTEP syntax alarms matching this probable cause (english)

[94] Backplane failure

MTEP syntax alarms matching this probable cause (french)

[94] Défaillance du fond de panier

Alarm Help (X733 syntax) 9.60

Probable Cause

1231/bad bitrate

Category

Quality of service

Default severity

warning

Wording (English)

Bad bitrate

Wording (French)

Mauvais débit

Diagnosis (English)

Input bitrate does not match with expected one or bitrate violation

Diagnosis (French)

Le débit d'entrée ne correspond pas au débit attendu.

Action (English)

Check receive signal bitrate

Action (French)

Vérifier la configuration audio de l'équipement et la configuration du codeur AC3 externe.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

RD 2000

RD 5000 SD

RD 5002 SD

RD 1000

RD 1002

Jade

ViBE

ViBE Encoder

RD 5000 HD-SD

RD 3000

SD Encoder

MTEP syntax alarms matching this probable cause (english)

[104] Bad bitrate

[110] Bad bitrate

Alarm Help (X733 syntax) 9.60

- [136] Tributary rate out of band
- [139] Bad bitrate
- [191] Tributary rate out of band

MTEP syntax alarms matching this probable cause (french)

- [104] Mauvais débit
- [110] Mauvais débit
- [136] Débit affluent hors bande
- [139] Mauvais débit
- [191] Débit affluent hors bande

Alarm Help (X733 syntax) 9.60

Probable Cause

1063/bad embedded signal

Category

Communications

Default severity

minor

Wording (English)

Bad embedded signal

Wording (French)

Mauvais signal inséré

Diagnosis (English)

Bad embedded signal.

Diagnosis (French)

Mauvais signal inséré.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE

DBE 4120 (Contribution)
SSEB/DSS (MSE)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Encoder

MTEP syntax alarms matching this probable cause (english)

- [17] Embedded audio out of use
- [104] Bad embedded signal
- [110] Bad embedded signal
- [120] Bad embedded signal

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [17] Audio insérée hors service
- [104] Mauvais signal inséré
- [110] Mauvais signal inséré
- [120] Mauvais signal inséré

Alarm Help (X733 syntax) 9.60

Probable Cause

160/configurationOrCustomisationError

Category

Processing error

Default severity

critical

Wording (English)

Configuration or customization error

Wording (French)

Erreur de configuration ou de personnalisation

Diagnosis (English)

Configuration or customization error detected.

Diagnosis (French)

Erreur de configuration ou de personnalisation détecté.

Action (English)

Check consistency between configuration of board or equipment declared and the board or equipment physically installed. If the problem persists, contact Customer Service.

Action (French)

Vérifier la cohérence entre la configuration de la carte ou de l'équipement déclaré et la carte ou l'équipement physiquement présent. Si le problème persiste, contacter le Service Clients.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
Net Processor 9040
Net Feeder 9010
EM4000 Dual Channel
EM4000 Hexa Channel
DBD4431 - COFDM
ViBE
Opal II
ViBE Mosaïc Generator ASI
VS7000 v1.x

DBE 4120 (Contribution)
SSEB/DSS (MSE)
Net Processor 9030
MUXEMB/DSS (23 TS inputs)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
Rate Shaper
Opal
ViBE Mobile TV
ViBE Mosaïc Generator IP

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (english)

- [34] Flexstream configuration error
- [63] Failed to update the configuration
- [64] Failed to update the configuration
- [66] Output port configuration failed
- [87] Configuration or customisation error
- [87] replaceable unit configuration mismatch
- [94] Configuration or customisation error
- [134] Board programmation lost
- [135] Board programmation lost
- [136] Board programmation lost (code lost)
- [145] Transmit parameter signal out of loop

MTEP syntax alarms matching this probable cause (french)

- [34] Erreur de configuration du Flexstream
- [63] Impossible de changer la configuration
- [64] Impossible de changer la configuration
- [66] Echec de la configuration du port de sortie
- [87] Erreur de configuration ou de personnalisation
- [87] Configuration de l'unité incompatible
- [94] Erreur de configuration ou de personnalisation
- [134] Perte de la programmation
- [135] Perte de la programmation
- [136] Perte de la programmation
- [145] Paramètres de transmission non synchronisable

Alarm Help (X733 syntax) 9.60

Probable Cause

1175/configuration inconsistency

Category

Processing error

Default severity

critical

Wording (English)

Configuration inconsistency

Wording (French)

Incohérence dans la configuration

Diagnosis (English)

Illegal or inconsistent configuration.

Diagnosis (French)

La fonction est dans un état instable.

Action (English)

Contact Customer Service.

Action (French)

Réinitialiser la fonction

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)

DBE 2110 (1 internal video 4 audios)

DBE 2120 (8 audios)

DBE 2120 (12 audios)

DBE 2110 (1 internal video 8 audios)

DBE 2120 (4 audios)

DBE 4110 (DSNG)

DBE 4120 (Contribution)

DBE 4130 (Broadcast)

SSEB/DSS (MSE)

SSEB/ISO (MSE)

DBE 4140 (Local insertion)

Net Processor 9030

Amber

Net Processor 9040

Mediation Unit

DBS2930

Modulator

Audio Video Acquisition

Redundant Switching Unit

Switcher

SNA/TNA 4600 coupler

NAGRAVISION/DVBSC

VIACCESS/DVBSC

MEDIAGUARD/DVBSC

IRDETO/DVBSC

CONAX/DVBSC

SelectaVision/DVBSC

NDS/DVBSC

CRYTOWORKS/DVBSC

Alarm Help (X733 syntax) 9.60

EM4000 Dual Channel	EM4000 Quad Channel
EM4000 Hexa Channel	EM4000 Octal Channel
N8000	MSU 4422
DBD4431 - DVB QPSK Demodulator	DBD4431 - COFDM
DBD4431 - DVB ASI Input	RD 2000
RD 5000 SD	RD 5002 SD
Tandberg TT5031 (Conax)	Tandberg TT5032 (Mediaguard)
Tandberg TT5033 (Nagravision)	Tandberg TT5034 (Viaccess)
General Purpose Interface	Jade
V-SFN Itis Adapter	ViBE Encoder
RD 5000 HD-SD	RD 3000
Opal II	ViBE Mobile TV
ViBE Mosaïc Generator ASI	ViBE Mosaïc Generator IP
VS7000 v1.x	VS7000 v2.0

MTEP syntax alarms matching this probable cause (english)

- [17] Communication problem
- [17] Set-up error
- [18] Unknown encoder for the PID %4
- [19] Configuration mismatch
- [45] setup error (%2)
- [61] %5 board not declared
- [61] %4 board not detected
- [61] Daugther board %1 is missing
- [75] bad IP Default Gateway Addr
- [75] bad Ctrl/Cmd IP Addr
- [75] bad Ctrl/Cmd IP Mask
- [75] bad Data Injection IP Addr
- [75] bad Data Injection IP Mask
- [76] unstable configuration
- [76] configuration can't be applied
- [87] configuration inconsistency
- [88] Incorrect DBP configuration (%1)
- [89] Incorrect DBP boards configuration (%1)
- [92] Incorrect device configuration
- [97] unknown super CAS id
- [97] unknown channel id
- [97] unknown ECM stream id
- [98] unknown super CAS id
- [98] unknown channel id
- [98] unknown ECM stream id
- [101] incoherent configuration with CAC (error code = %2)
- [102] Configuration inconsistency
- [133] Current configuration lost
- [134] current configuration lost
- [135] Current configuration lost
- [136] Current configuration lost (Bad EEPROM)
- [137] System not configured
- [138] Settings failure
- [140] Configuration error
- [144] Illegal configuration
- [144] Configuration not supported
- [145] Invalid cell number
- [166] Consistensy problem with C and C unit configuration
- [177] Switcher rejected command
- [206] Broadcast status inconsistent with the topology

MTEP syntax alarms matching this probable cause (french)

- [17] Problème de communication

Alarm Help (X733 syntax) 9.60

- [17] Erreur set-up
- [18] Encodeur inconnu pour le PID %4
- [19] Incompatibilité de configuration
- [45] mauvaise configuration (%2)
- [61] Carte %5 non déclarée
- [61] Carte %4 non détectée
- [61] Carte fille %1 absente
- [75] Mauvaise adresse IP Gateway par défaut
- [75] Mauvaise adresse IP pour le contrôle/commande
- [75] Mauvais masque IP pour le contrôle/commande
- [75] Mauvaise adresse IP pour l'injection de données
- [75] Mauvais masque IP pour l'injection de données
- [76] Configuration instable
- [76] Impossible d'appliquer la configuration sauvegardée
- [87] configuration incohérente
- [88] Configuration DBP incorrecte (%1)
- [89] Configuration des cartes DBP incorrecte (%1)
- [92] Configuration équipement incorrecte
- [97] Identificateur de super CAS inconnu
- [97] Identificateur de canal inconnu
- [97] Identificateur de voie ECM inconnu
- [98] Identificateur de super CAS inconnu
- [98] Identificateur de canal inconnu
- [98] Identificateur de voie ECM inconnu
- [101] configuration incohérente avec celle du CAC (%2)
- [102] Incohérence dans la configuration
- [133] Perte de la configuration courante
- [134] Perte de configuration
- [135] Perte de la configuration
- [136] Perte de la configuration
- [137] Système non configuré
- [138] Problème de configuration
- [140] Erreur de configuration
- [144] Configuration illégale
- [144] Configuration non supportée
- [145] Nombre de cellule invalide
- [166] Incohérence avec la configuration déclarée sur l'unité de contrôle
- [177] Commande rejetée par la grille
- [206] Etat de diffusion incompatible avec la topologie

Alarm Help (X733 syntax) 9.60

Probable Cause

153/corruptData

Category

Processing error

Default severity

major

Wording (English)

Corrupt data

Wording (French)

Données corrompues

Diagnosis (English)

Corrupt data detected.

Diagnosis (French)

Données corrompues détectées.

Action (English)

Report the problem to the Customer Service.

Action (French)

Signaler le problème au Service Clients.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Newtec QPSK 2080
Newtec QPSK 2077 Sx
Newtec QPSK 2177
Newtec DVB-S 2280
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE
SD Encoder

Newtec QPSK 2077 Hx
Newtec QPSK 2077 Fx
Newtec DVB-S 2277
Audio Video Acquisition
EM4000 Dual Channel
EM4000 Hexa Channel
DM3200/6400
Opal II

MTEP syntax alarms matching this probable cause (english)

- [66] Input buffer corrupted
- [94] Corrupt data
- [132] Front panel non volatile memory checksum fail

Alarm Help (X733 syntax) 9.60

[138] Data buffer failure

MTEP syntax alarms matching this probable cause (french)

[66] Buffer d'entrée corrompu

[94] Données corrompues

[132] Erreur de checksum NOVRAM - contrôleur de face avant

[138] Echec du buffer de données

Alarm Help (X733 syntax) 9.60

Probable Cause

3/degradedSignal

Category

Communications

Default severity

minor

Wording (English)

Degraded signal

Wording (French)

Signal dégradé

Diagnosis (English)

Input signal is degraded or fluctuating.

Diagnosis (French)

Lorsque cet événement se produit, le champ Problème spécifique indique un code interne utilisé pour déterminer la cause de la dégradation du signal.

Action (English)

Check input signal and cable(s). May be due to unexpected switch behaviour

Action (French)

Vérifier le(s) câble(s) et le signal d'entrée. Peut être dû à une commutation intempestive du signal .

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Barco Quasar without RF converter

Barco Channelized Quasar

Barco Agile Quasar VHF

Barco Agile Quasar UHF

Barco Quasar MKII without RF converter

Barco Channelized Quasar MKII

Barco Agile Quasar MKII VHF

Barco Agile Quasar MKII UHF

Barco Agile Quasar MKII Full Band

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

N8000

MSU 4422

Tandberg TT5031 (Conax)

Tandberg TT5032 (Mediaguard)

Tandberg TT5033 (Nagravision)

Tandberg TT5034 (Viaccess)

ViBE

Alarm Help (X733 syntax) 9.60

ViBE Encoder
ViBE Front End PDH

ViBE Decoder
SD Encoder

MTEP syntax alarms matching this probable cause (english)

- [110] Degraded signal
- [120] Degraded signal
- [137] Signal low
- [145] Fluctuating input
- [155] Satellite BER too high
- [155] Eb/N0 too low
- [155] Eb /N0 too low (signal noise ratio too low)

MTEP syntax alarms matching this probable cause (french)

- [110] Signal dégradé
- [120] Signal dégradé
- [137] Signal faible
- [145] Entrée fluctuante
- [155] Taux d'erreur trop élevé
- [155] Eb/N0 trop faible
- [155] Eb /N0 too low (rapport signal sur bruit trop faible)

Alarm Help (X733 syntax) 9.60

Probable Cause

1330/Detected silence

Category

Communications

Default severity

major

Wording (English)

Detected silence

Wording (French)

Silence détecté

Diagnosis (English)

Silence detected on specified channel

Diagnosis (French)

Silence détecté sur la voie spécifiée

Action (English)

Check input signal level or increase delay for silence detection.

Action (French)

Vérifier le niveau du signal d'entrée ou augmenter le délai pour la détection du silence.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Amber	ViBE EM3000 MPEG4
EM4000 Dual Channel	EM4000 Quad Channel
EM4000 Hexa Channel	EM4000 Octal Channel
ViBE Mobile TV	ViBE Mosaïc Generator ASI
ViBE Mosaïc Generator IP	VS7000 v1.x

MTEP syntax alarms matching this probable cause (english)

MTEP syntax alarms matching this probable cause (french)

Alarm Help (X733 syntax) 9.60

Probable Cause

605/duplicateInformation

Category

Communications

Default severity

major

Wording (English)

Duplicate information

Wording (French)

Information dupliquée

Diagnosis (English)

The specified parameter is duplicated in the context.

Diagnosis (French)

Le paramètre spécifié est dupliqué dans le contexte.

Action (English)

Check the specified parameter.

Action (French)

Vérifier le paramètre spécifié.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

EM4000 Dual Channel
EM4000 Hexa Channel
SD Encoder

EM4000 Quad Channel
EM4000 Octal Channel

MTEP syntax alarms matching this probable cause (english)

MTEP syntax alarms matching this probable cause (french)

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Probable Cause

204/excessiveResponseTime

Category

Quality of service

Default severity

warning

Wording (English)

Excessive response time

Wording (French)

Temps de réponse excessif

Diagnosis (English)

In Remote Flexstream context

For encoder: time before bitrate application is inferior to 20% of Round Trip Delay (RTD)

For allocator: complexity received too late

Diagnosis (French)

Dans le contexte Remote Flexstream:

Pour le codeur: le temps restant avant l'application du bitrate est inférieur à 20 % du Round Trip Delay (RTD)

Pour l'allocateur: complexité reçue trop tard

Action (English)

In Remote Flexstream context

Check RTD, allocator TACT and encoder TANT values or decrease network latency

Action (French)

Dans le contexte Remote Flexstream:

Vérifier les valeurs du RTD, du TACT et du TANT ou diminuer la latence du réseau

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
SD Encoder

Net Processor 9040
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder

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MTEP syntax alarms matching this probable cause (english)

[143] [REMOTE FLEXTREAM] Excessive response time

MTEP syntax alarms matching this probable cause (french)

[143] [REMOTE FLEXTREAM] Temps de réponse excessif

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Probable Cause

1108/function not operating

Category

Equipment

Default severity

major

Wording (English)

Function not operating

Wording (French)

Fonction inopérante

Diagnosis (English)

A function of the equipment is found inoperating

Diagnosis (French)

Une fonction ou module d'un équipement est inopérant

Action (English)

Contact Customer Service.

Action (French)

Contact Customer Service.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Amber	EM4000 Dual Channel
EM4000 Quad Channel	EM4000 Hexa Channel
EM4000 Octal Channel	DBD 4433 - QPSK Input
DBD 4433 - QAM Input	DBD 4433 - ASI Input
DBD 4433 - PDH Input	DBD 4433 - ATM Input
DBD 4433 - DSNG Input (Q/8/16)	DBD 4436 - QPSK Input
DBD 4436 - QAM Input	DBD 4436 - ASI Input
DBD 4436 - PDH Input	DBD 4436 - ATM Input
DBD 4436 - DSNG Input (Q/8/16)	Opal II
ViBE Mobile TV	ViBE Mosaic Generator ASI
ViBE Mosaic Generator IP	VS7000 v1.x

MTEP syntax alarms matching this probable cause (english)

[154] Audio 1 decoder is not operating

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- [154] Audio 2 decoder is not operating
- [154] Audio 3 decoder is not operating
- [154] Video decoder is not operating
- [155] Decoding stopped

MTEP syntax alarms matching this probable cause (french)

- [154] Décodeur audio 1 inopérant
- [154] Décodeur audio 2 inopérant
- [154] Décodeur audio 3 inopérant
- [154] Décodeur vidéo inopérant
- [155] Décodage stoppée

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Probable Cause

1068/Half duplex mode

Category

Communications

Default severity

minor

Wording (English)

Half duplex mode

Wording (French)

Mode half duplex

Diagnosis (English)

Auto negotiation done in half duplex mode (transceiver status).

Diagnosis (French)

Négociation automatique effectuée en mode half duplex (statut de l'émetteur-récepteur).

Action (English)

Transmission and Reception stream could be correct but it is recommended to work in Full Duplex Mode

Action (French)

Le flux de transmission et de réception pourrait être correct, mais il est recommandé de travailler en mode full duplex.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

ViBE Encoder

ViBE Front End 100BT

SD Encoder

MTEP syntax alarms matching this probable cause (english)

[111] Half duplex mode

[116] Half duplex mode

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MTEP syntax alarms matching this probable cause (french)

- [111] Mode half duplex
- [116] Mode half duplex

Alarm Help (X733 syntax) 9.60

Probable Cause

1075/hardware failure

Category

Equipment

Default severity

critical

Wording (English)

Hardware failure

Wording (French)

Défaillance matérielle

Diagnosis (English)

One or more key hardware modules of the unit are not responding.

Diagnosis (French)

Un ou plusieurs modules matériels clés de la carte ne répondent pas.

Action (English)

Reboot the equipment. If the alarm registers again, contact Customer Service

Action (French)

Rebooter l'équipement. Si l'alarme est toujours levée, contacter le Service Clients.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)

DBE 2110 (1 internal video 4 audios)

DBE 2120 (8 audios)

DBE 2120 (12 audios)

DBE 2110 (1 internal video 8 audios)

DBE 2120 (4 audios)

DBE 4110 (DSNG)

DBE 4120 (Contribution)

DBE 4130 (Broadcast)

SSEB/DSS (MSE)

DBE 4140 (Local insertion)

Mediation Unit

Newtec QPSK 2080

Newtec QPSK 2077 Hx

Newtec QPSK 2077 Sx

Newtec QPSK 2077 Fx

Newtec QPSK 2177

Newtec DVB-S 2277

Newtec DVB-S 2280

Vecima VistaLynx QAM

Audio Video Acquisition

DBP 282 M (2x1 channels)

Amethyst III ASI

XNA 4600 adapter

Net Feeder 9010

VIACCESS/FT

MEDIAGUARD/CANAL+

NAGRAVISION/DVBSC

VIACCESS/DVBSC

MEDIAGUARD/DVBSC

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IRDETO/DVBSC	CONAX/DVBSC
SelectaVision/DVBSC	NDS/DVBSC
CRYPTOWORKS/DVBSC	ViBE EM3000 MPEG4
EM4000 Dual Channel	EM4000 Quad Channel
EM4000 Octal Channel	HDE 8100
N8000	Integrated Receiver Decoder
Tandberg TT5031 (Conax)	Tandberg TT5032 (Mediaguard)
Tandberg TT5033 (Nagravision)	Tandberg TT5034 (Viaccess)
Rate Shaper	V-SFN Itis Adapter
HDD 8200	Opal II
Gecko 8900FFN	Gecko 8900TFN-V
ViBE Mobile TV	SD Encoder
ViBE Mosaïc Generator ASI	ViBE Mosaïc Generator IP
VS7000 v1.x	VS7000 v2.0
CP6000	

MTEP syntax alarms matching this probable cause (english)

- [17] Encoder out of use
- [26] Encoder out of use
- [34] Encoder out of use
- [34] HDLC link out of use
- [34] 1rst pass encoding out of use
- [34] Helper channel out of use
- [34] Bad SSEB MIGHT for 4150
- [45] encoder C1P out of use
- [45] Bad SuperEncoder MIGHT for 4150
- [63] Failed to update the alarm LED
- [64] Failed to update the alarm LED
- [95] Hardware failure
- [97] ECM computed without associated card
- [97] ECM computed without associated card
- [97] the ciphering module has broken down
- [97] ECMG out of order
- [97] no ciphering module
- [97] smart card unknown
- [97] ECMG is shutting down
- [98] ECM computed without associated card
- [98] ECMG out of order
- [98] no ciphering module
- [98] smart card unknown
- [98] ECMG is shutting down
- [102] Hardware failure
- [103] Hardware failure
- [106] Hardware failure
- [111] Hardware failure
- [115] Hardware failure
- [116] Hardware failure
- [119] Hardware failure
- [132] Ancillary data block <-> composite decoder link failed
- [132] Automatic calibration failure
- [132] LTCe FIFO overflow failure
- [132] Ancillary data processing hardware default
- [132] Front panel <-> User Maintenance link fail synthesis
- [132] Front panel <-> Supervisor link fail synthesis
- [132] Front panel <-> CIVA link fail synthesis
- [138] Hardware malfunction from the synthetiser
- [138] Hardware malfunction from the RF phase lock DRO
- [138] Hardware malfunction from the 100MHz local oscillator PLL
- [138] Hardware malfunction from the 70MHz local oscillator PLL
- [138] MC&C board internal alarm

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- [138] Modulator board internal alarm
- [138] Function/module interface internal alarm
- [138] Unexpected architecture
- [140] System fault
- [144] Hardware error
- [144] MMI initialisation failed
- [144] Input initialisation failed
- [144] Euroboard input failed
- [144] TS initialisation failed
- [144] CA initialisation failed
- [144] DEC initialisation failed
- [147] 625 Ln no response
- [147] 525 Ln no response
- [147] PTS no response
- [147] Genlock no response
- [148] No response
- [148] No response
- [148] No response
- [149] No response
- [149] Audio not running
- [150] No response
- [151] No response
- [151] No response
- [151] No response
- [151] No response
- [154] Hardware failure (%3)
- [155] Hardware failure
- [173] NV RAM Fault
- [173] Watchdog Timer Fault
- [173] Program Code Checksum Error
- [179] Bad NVRAM Checksum. (All MCC options invalidated)
- [180] Factory configuration problem on MCC board
- [183] Hardware failure
- [184] Hardware failure
- [190] Hardware failure
- [191] Hardware failure

MTEP syntax alarms matching this probable cause (french)

- [17] Encodeur hors service
- [26] Compresseur HS
- [34] Compresseur HS
- [34] Lien HDLC HS
- [34] Codage première passe HS
- [34] Helper channel HS
- [34] Mauvaise SSEB MIGHT pour 4150
- [45] compresseur C1P hors service
- [45] Mauvais SuperEncoder MIGHT pour 4150
- [63] Impossible de mettre à jour la LED indiquant une alarme
- [64] Impossible de mettre à jour la LED indiquant une alarme
- [95] Défaillance matérielle
- [97] Calcul ECM sans carte associée
- [97] Calcul ECM sans carte associée
- [97] Module de calcul HS
- [97] ECMG HS
- [97] Pas de module de calcul
- [97] Carte fille inconnue
- [97] L'ECMG est en cours d'arrêt
- [98] Calcul ECM sans carte associée
- [98] ECMG HS
- [98] Pas de module de calcul

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- [98] Carte fille inconnue
- [98] L'ECMG est en cours d'arrêt
- [102] Défaillance matérielle
- [103] Défaillance matérielle
- [106] Défaillance matérielle
- [111] Défaillance matérielle
- [115] Défaillance matérielle
- [116] Défaillance matérielle
- [119] Défaillance matérielle
- [132] Défaut liaison bloc données auxiliaires-décodeur composite
- [132] Echec de l'autocalibration
- [132] Débordement FIFO d'entrée LTCe
- [132] Problème dans le bloc données auxiliaires
- [132] Défaut sur liaison face avant - liaison maintenance utilisateur
- [132] Défaut sur liaison face avant - liaison d'exploitation distante
- [132] Défaut sur liaison face avant - carte interne de traitement
- [138] Dysfonctionnement hardware du synthétiseur
- [138] Dysfonctionnement hardware de la RF phase lock DRO
- [138] Problème hardware sur l'oscillateur local 100MHz
- [138] Dysfonctionnement hardware sur l'oscillateur local 70MHz
- [138] Alarme interne à la carte MC&C
- [138] Alarme interne à la carte de modulation
- [138] Alarme interne au module d'interface
- [138] Architecture non reconnue
- [140] Défaut système
- [144] Erreur matérielle
 - [144] L'initialisation du module MMI a échoué
 - [144] L'initialisation du module d'entrée a échoué
 - [144] Entrée Euroboard en panne
 - [144] L'initialisation du module TS a échoué
 - [144] L'initialisation du module de contrôle d'accès a échoué
 - [144] L'initialisation du module de decodage a échoué
- [147] 625 Ln, pas de réponse
- [147] 525 Ln pas de réponse
- [147] PTS pas de réponse
- [147] Genlock pas de réponse
- [148] Pas de réponse
- [148] Pas de réponse
- [148] Pas de réponse
- [149] Pas de réponse
- [149] Audio ne fonctionne pas
- [150] Pas de réponse
- [151] Pas de réponse
- [154] Défaillance matérielle (%3)
- [155] Défaillance matérielle
- [173] Défaut de la NV RAM
- [173] Défaut de l'horloge interne de l'organe de surveillance
- [173] Checksum du code du programme erroné
- [179] Mauvais checksum de la NVRAM. Toutes options du MCC désactivées
- [180] Problème de configuration usine de la carte MCC
- [183] Défaillance matérielle
- [184] Défaillance matérielle
- [190] Défaillance matérielle
- [191] Défaillance matérielle

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Probable Cause

123/highTemperature

Category

Environmental

Default severity

critical

Wording (English)

High temperature

Wording (French)

Température élevée

Diagnosis (English)

Internal temperature is over maximum ratings. The device may be permanently damaged if kept in that state.

Diagnosis (French)

La température interne excède la limite maximum. L'équipement risque d'être définitivement endommagé si son état n'est pas modifié.

Action (English)

Check if the ventilation is running, if air inlet and outlet are not obstructed, and ambient external temperature is below 40°C.

Action (French)

S'assurer que la ventilation fonctionne, que les entrées et sorties d'air ne sont pas obstruées et que la température ambiante externe est inférieure à 40° C. Autre action possible: réinitialiser l'équipement et attendre que la température se stabilise pendant 25 minutes. Si l'alarme se produit de nouveau, mettre hors tension le châssis contenant l'équipement concerné et contacter le Customer Service.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)
DBE 2120 (8 audios)
DBE 2110 (1 internal video 8 audios)
DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)

DBE 2110 (1 internal video 4 audios)
DBE 2120 (12 audios)
DBE 2120 (4 audios)
DBE 4120 (Contribution)
SSEB/DSS (MSE)
Amber

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DBX 2200 (12 TS inputs)	Barco Quasar without RF converter
Barco Channelized Quasar	Barco Agile Quasar VHF
Barco Agile Quasar UHF	Barco Quasar MKII without RF converter
Barco Channelized Quasar MKII	Barco Agile Quasar MKII VHF
Barco Agile Quasar MKII UHF	Barco Agile Quasar MKII Full Band
Vecima VistaLynx QAM	Audio Video Acquisition
Amethyst III ASI	Net Feeder 9010
ViBE EM3000 MPEG4	EM4000 Dual Channel
EM4000 Quad Channel	EM4000 Hexa Channel
EM4000 Octal Channel	MSU 4422
RD 2000	RD 5000 SD
RD 5002 SD	RD 1000
RD 1002	Maestream
RD 5000 HD-SD	RD 3000
Opal II	Gecko 8900FFN
Gecko 8900TFN-V	Junger C8000
ViBE Mobile TV	SD Encoder
ViBE Mosaïc Generator ASI	ViBE Mosaïc Generator IP
VS7000 v1.x	VS7000 v2.0
CP6000	

MTEP syntax alarms matching this probable cause (english)

- [11] Excessive temperature
- [94] High temperature
- [95] High temperature
- [102] High temperature
- [106] High temperature
- [115] High temperature
- [116] High temperature
- [119] High temperature
- [132] CIVA board overheating
- [133] Overheating
- [137] Temperature high
- [146] Excessive temperature

MTEP syntax alarms matching this probable cause (french)

- [11] température excessive
- [94] Température élevée
- [95] Température élevée
- [102] Température élevée
- [106] Température élevée
- [115] Température élevée
- [116] Température élevée
- [119] Température élevée
- [132] Surchauffe de la carte
- [133] Température excessive
- [137] Température élevée
- [146] Température excessive

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Probable Cause

1067/Link down

Category

Communications

Default severity

major

Wording (English)

Link down

Wording (French)

Liaison coupée

Diagnosis (English)

The line transceiver of the board cannot lock on signal. Note : This event, as many other reception alarms, is generally produced by transmission problems in the network. It can also come from a device partial failure. The quality of transmission shall be analysed by skilled staff. A check of network state shall be made. If no cause is directly detected there, a transmission analyser shall be used in place of the device for comparison. If a test system is not available a device exchange can be performed. Hereunder analysis proposal covers only trivial causes.

Diagnosis (French)

L'émetteur-récepteur de lignes de la carte ne peut pas verrouiller le signal. Remarque : cet événement est généralement dû à des problèmes de transmission du réseau. Il peut également provenir d'une défaillance partielle de l'équipement. La qualité de la transmission doit être analysée par un personnel qualifié. L'état du réseau doit également être vérifié. Si aucune cause n'est directement détectée de cette manière, remplacer l'équipement par un analyseur de transmission et effectuer une comparaison. Si aucun système de test n'est disponible, il est possible d'échanger les équipements.

Action (English)

Check if the good cable is plug on the board. If signal conformity is proved, de plug and re plug the board. Wait until it is recognised by the control and command software.

Action (French)

S'assurer que le câble approprié est correctement raccordé à la carte. Si la conformité du signal est établie, retirer, puis réinsérer la carte.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

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The following device(s) can raise this probable cause

EM4000 Dual Channel	EM4000 Quad Channel
EM4000 Hexa Channel	EM4000 Octal Channel
RD 2000	RD 5000 SD
RD 5002 SD	RD 1000
RD 1002	RD 5000 HD-SD
RD 3000	SD Encoder
ViBE Mosaïc Generator ASI	ViBE Mosaïc Generator IP
VS7000 v1.x	CP6000

MTEP syntax alarms matching this probable cause (english)

- [111] Link down
- [116] Link down
- [135] Unconnected linked tributary
- [136] Unconnected linked tributary
- [155] Fast ethernet link down
- [183] No data link
- [184] Lower layer down
- [185] Lower layer down
- [186] Lower layer down
- [187] Lower layer down
- [187] SSCOP link down
- [187] ILMI link down
- [188] Lower layer down
- [189] Lower layer down
- [190] Lower layer down
- [191] Lower layer down

MTEP syntax alarms matching this probable cause (french)

- [111] Liaison coupée
- [116] Liaison coupée
- [135] Afluent lié non connecté
- [136] Afluent lié non connecté
- [155] Liaison coupée
- [183] Pas de lien data
- [184] Couche inférieure HS
- [185] Couche inférieure HS
- [186] Couche inférieure HS
- [187] Couche inférieure HS
- [187] Perte du lien de signalisation
- [187] Perte du lien ILMI
- [188] Couche inférieure HS
- [189] Couche inférieure HS
- [190] Couche inférieure HS
- [191] Couche inférieure HS

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Probable Cause

157/lossOfRealTimeI

Category

Processing error

Default severity

major

Wording (English)

Loss of real time

Wording (French)

Perte de temps réel

Diagnosis (English)

Consequence of input signal sync error or CPU load.

Diagnosis (French)

Conséquence d'une erreur de synchronisation du signal d'entrée ou de la charge CPU.

Action (English)

Check input signal and cable(s). May be due to unexpected switch behaviour.

Action (French)

Vérifier le(s) câble(s) et le signal d'entrée. Peut être dû à une commutation intempestive du signal .

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

ViBE Encoder

MTEP syntax alarms matching this probable cause (english)

[102] Loss of real time

[103] Loss of real time

MTEP syntax alarms matching this probable cause (french)

[102] Perte de temps réel

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[103] Perte de temps réel

Alarm Help (X733 syntax) 9.60

Probable Cause

8/lossOfSignal

Category

Communications

Default severity

major

Wording (English)

Loss of signal

Wording (French)

Perte de signal

Diagnosis (English)

No input signal detected on physical interface.

Diagnosis (French)

Pas de signal d'entrée détecté sur l'interface physique.

Action (English)

Check signal at the input physical interface and check cable.

Action (French)

Vérifier le câble et le signal d'entrée sur le connecteur physique.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)

DBE 2110 (1 internal video 4 audios)

Net Processor 9030

Net Processor 9040

Barco Quasar without RF converter

Barco Channelized Quasar

Barco Agile Quasar VHF

Barco Agile Quasar UHF

Barco Quasar MKII without RF converter

Barco Channelized Quasar MKII

Barco Agile Quasar MKII VHF

Barco Agile Quasar MKII UHF

Barco Agile Quasar MKII Full Band

Newtec QPSK 2177

Newtec DVB-S 2277

Newtec DVB-S 2280

Audio Video Acquisition

XNA 4600 adapter

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

HDE 8100

N8000

MSU 4422

DBD4431 - DVB QPSK Demodulator

DBD 4433 - QPSK Input

DBD 4433 - QAM Input

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DBD 4433 - ASI Input	DBD 4433 - PDH Input
DBD 4433 - ATM Input	DBD 4433 - DSNG Input (Q/8/16)
DBD 4436 - QPSK Input	DBD 4436 - QAM Input
DBD 4436 - ASI Input	DBD 4436 - PDH Input
DBD 4436 - ATM Input	DBD 4436 - DSNG Input (Q/8/16)
DBD 4437 B - Dual Service 420	DBD 4437 8 - Single Service 420/422P
DBD 4437 9 - Single Service 420/422P	DBD 4437 X - Single Service 420
DBD 4437 Y - Single Service 420	DBD 4437 Z - Single Service 420
RD 5000 SD	Tandberg TT5031 (Conax)
Tandberg TT5032 (Mediaguard)	Tandberg TT5033 (Nagravision)
Tandberg TT5034 (Viaccess)	Rate Shaper
V-SFN Itis Adapter	RD 5000 HD-SD
HDD 8200	Gecko 8900FFN
Gecko 8900TFN-V	Junger C8000
ViBE Mobile TV	SD Encoder
ViBE Mosaïc Generator ASI	ViBE Mosaïc Generator IP
VS7000 v1.x	CP6000

MTEP syntax alarms matching this probable cause (english)

- [7] no signal in PES INTF
- [17] No SDI signal
- [25] No signal
- [26] No analog signal
- [26] No SDI signal
- [27] no signal
- [27] no reference signal
- [34] No SDI signal
- [45] no SDI signal
- [47] Internal secure mode activated
- [63] Signal is lost at the input port %2
- [64] Signal is lost at the input port %2
- [110] Loss of signal
- [115] Loss of signal
- [120] Loss of signal
- [132] No signal on reference input
- [132] No signal on digital video input
- [132] No signal on analog video input
- [134] Signal lost
- [135] Tributary lost
- [137] Input data loss
- [138] ASI optical signal loss
- [138] LVDS input signal loss
- [140] Input Loss
- [140] Input Loss
- [145] Absence RF
- [145] No signal
- [145] No G703 signal
- [146] No input
- [147] No signal
- [154] No signal is detected (input %1)
- [155] Loss of signal
- [186] Signal lost
- [190] Tributary lost

MTEP syntax alarms matching this probable cause (french)

- [7] Aucun signal sur PES INTF
- [17] Pas de signal SDI
- [25] Aucun signal en entrée
- [26] Pas de signal analogique

Alarm Help (X733 syntax) 9.60

- [26] Pas de signal SDI
- [27] Pas de signal analogique
- [27] Absence de synchro
- [34] Pas de signal SDI
- [45] absence signal SDI
- [47] Sécurisation interne activée
- [63] Pas de signal sur l'entrée %2
- [64] Pas de signal sur l'entrée %2
- [110] Perte de signal
- [115] Perte de signal
- [120] Perte de signal
- [132] Absence de la référence synchroniseur
- [132] Absence de la vidéo incidente numérique
- [132] Absence vidéo analogique d'entrée
- [134] Perte du signal
- [135] Perte du signal affluent
- [137] Données perdues
- [138] Perte du signal ASI optique
- [138] Perte du signal LVDS
- [140] Pas de signal en entrée
- [140] Pas de signal en entrée
- [145] Absence RF
- [145] Absence de signal
- [145] Pas de signal G703
- [146] Pas d'entrée
- [147] Pas de signal
- [154] Pas de signal détecté (entrée %1)
- [155] Perte de signal
- [186] Perte du signal
- [190] Perte du signal affluent

Alarm Help (X733 syntax) 9.60

Probable Cause

1029/loss of stream

Category

Communications

Default severity

warning

Wording (English)

Loss of stream

Wording (French)

Perte de flux

Diagnosis (English)

No transport stream at device input.

Diagnosis (French)

Pas de flux de transport à l'entrée de l'équipement.

Action (English)

Check input stream

Action (French)

Vérifier le flux d'entrée.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

RD 2000

RD 5000 SD

RD 5002 SD

RD 1000

RD 1002

ViBE Encoder

ViBE Decoder

ViBE Front End PDH

ViBE Front End 100BT

ViBE Front End ASI

RD 5000 HD-SD

RD 3000

MTEP syntax alarms matching this probable cause (english)

[110] Loss of stream

[117] Loss of stream

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [110] Perte de flux
- [117] Perte de flux

Alarm Help (X733 syntax) 9.60

Probable Cause

1348/no AD control track in signal

Category

Communications

Default severity

major

Wording (English)

No AD control track in signal

Wording (French)

Pas de contrôle AD dans le signal

Diagnosis (English)

Input signal does not contain Audio Description Control Track

Diagnosis (French)

Le signal d'entrée ne contient pas de données de contrôle pour l'Audio Description

Action (English)

Check input signal.

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Selectable Upstream autobackup: Impossible

The following device(s) can raise this probable cause

EM4000 Dual Channel
EM4000 Hexa Channel

EM4000 Quad Channel
EM4000 Octal Channel

MTEP syntax alarms matching this probable cause (english)

[104] No AD Control Track in signal

MTEP syntax alarms matching this probable cause (french)

[104] Pas de données de contrôle pour l'AD dans le signal

Alarm Help (X733 syntax) 9.60

Probable Cause

1052/no AFD in signal

Category

Communications

Default severity

warning

Wording (English)

No AFD in signal

Wording (French)

Pas de AFD dans le signal

Diagnosis (English)

AFD not detected.

Diagnosis (French)

AFD non détecté.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Decoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder
SD Encoder

MTEP syntax alarms matching this probable cause (english)

- [26] No AFD in signal
- [105] No AFD in signal
- [107] no AFD in signal
- [109] no AFD in signal

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [26] AFD absent
- [105] Pas de AFD dans le signal
- [107] Pas de AFD dans le signal
- [109] Pas de AFD dans le signal

Alarm Help (X733 syntax) 9.60

Probable Cause

1053/no ED in signal

Category

Communications

Default severity

warning

Wording (English)

No ED in signal

Wording (French)

Pas de ED dans le signal

Diagnosis (English)

EDS not detected.

Diagnosis (French)

EDS non détecté.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
SD Encoder

MTEP syntax alarms matching this probable cause (english)

[26] No extended data in signal
[105] No ED in signal

MTEP syntax alarms matching this probable cause (french)

[26] Extended Data absent

Alarm Help (X733 syntax) 9.60

[105] Pas de ED dans le signal

Alarm Help (X733 syntax) 9.60

Probable Cause

1062/no embedded signal

Category

Communications

Default severity

minor

Wording (English)

No embedded signal

Wording (French)

Pas de signal inséré

Diagnosis (English)

No embedded signal.

Diagnosis (French)

Pas de signal inséré.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE
SD Encoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Encoder

MTEP syntax alarms matching this probable cause (english)

- [17] No embedded audio input
- [104] No embedded signal
- [110] No embedded signal
- [120] No embedded signal

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [17] Pas d'entrée avec audio insérée
- [104] Pas de signal inséré
- [110] Pas de signal inséré
- [120] Pas de signal inséré

Alarm Help (X733 syntax) 9.60

Probable Cause

1336/No expected standard in signal

Category

Communications

Default severity

major

Wording (English)

No expected standard in signal

Wording (French)

Standard attendu absent du signal

Diagnosis (English)

Signal is not compliant with configurated and specified standard

Diagnosis (French)

Le signal n'est pas compatible avec le standard configuré et spécifié

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel

EM4000 Dual Channel
EM4000 Hexa Channel
SD Encoder

MTEP syntax alarms matching this probable cause (english)

[104] No expected standard in signal
[120] No expected standard in signal

MTEP syntax alarms matching this probable cause (french)

[104] Standard attendu absent du signal
[120] Standard attendu absent du signal

Alarm Help (X733 syntax) 9.60

Probable Cause

1044/no PCM in signal

Category

Communications

Default severity

minor

Wording (English)

No PCM in signal

Wording (French)

Pas de PCM dans le signal

Diagnosis (English)

Input signal is not PCM audio.

Diagnosis (French)

Le signal d'entrée n'est pas un signal audio PCM.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

ViBE

ViBE Encoder

SD Encoder

MTEP syntax alarms matching this probable cause (english)

[104] No PCM in signal

[110] No PCM in signal

[120] No PCM in signal

MTEP syntax alarms matching this probable cause (french)

[104] Pas de PCM dans le signal

[110] Pas de PCM dans le signal

Alarm Help (X733 syntax) 9.60

[120] Pas de PCM dans le signal

Alarm Help (X733 syntax) 9.60

Probable Cause

1176/no stream carried in program

Category

Processing error

Default severity

minor

Wording (English)

No stream carried in program

Wording (French)

Aucun flux acheminé dans le programme

Diagnosis (English)

No stream or program found.

Diagnosis (French)

Aucun flux trouvé pour le service courant.

Action (English)

Check source and if the problem persists, Contact Customer Service.

Action (French)

Aucune

Automatic redundancy

Current autobackup: Selectable Upstream autobackup: Impossible

The following device(s) can raise this probable cause

XNA 4600 adapter

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

Rate Shaper

ViBE Decoder

HDD 8200

MTEP syntax alarms matching this probable cause (english)

[63] Failed to process a program header for the program stream

[64] Failed to process a program header for the program stream

[107] no stream carried in program

[108] no stream carried in program

[190] Program not found in incoming MPTS

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [63] Erreur dans l'entête de programme.
- [64] Erreur dans l'entête de programme.
- [107] Aucun flux acheminé dans le programme
- [108] Aucun flux acheminé dans le programme
- [190] Programme introuvable dans MPTS d'entrée

Alarm Help (X733 syntax) 9.60

Probable Cause

1051/no TC in signal

Category

Communications

Default severity

warning

Wording (English)

No TC in signal

Wording (French)

Pas de TC dans le signal

Diagnosis (English)

Time Code (VITC/DVITC) not detected.

Diagnosis (French)

Time Code (VITC/DVITC) non détecté.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Decoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
Audio Video Acquisition
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder
SD Encoder

MTEP syntax alarms matching this probable cause (english)

[26] No VITC/DVITC Time Code
[105] no TC in signal
[107] no TC in signal
[109] no TC in signal
[132] No expected VITC (analog TC)

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [26] Pas de time-code dans le signal (VITC/DVITC)
- [105] Pas de TC dans le signal
- [107] Pas de TC dans le signal
- [109] Pas de TC dans le signal
- [132] Absence VITC

Alarm Help (X733 syntax) 9.60

Probable Cause

1046/no teletext in signal

Category

Communications

Default severity

warning

Wording (English)

No teletext in signal

Wording (French)

Pas de télétexthe dans le signal

Diagnosis (English)

Teletext not detected.

Diagnosis (French)

Télétexthe non détecté.

Action (English)

Check input signal

Action (French)

Vérifier le signal d'entrée.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
DBD4431 - COFDM
ViBE Encoder
SD Encoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
Audio Video Acquisition
EM4000 Dual Channel
EM4000 Hexa Channel
DBD4431 - DVB QPSK Demodulator
DBD4431 - DVB ASI Input
ViBE Decoder

MTEP syntax alarms matching this probable cause (english)

[26] No CEEFAX in signal
[105] No teletext in signal
[109] no teletext in signal

Alarm Help (X733 syntax) 9.60

- [132] No expected teletext (A, B) or subtitle B input
- [148] Teletext no data

MTEP syntax alarms matching this probable cause (french)

- [26] CEEFAX absent
- [105] Pas de télétexte dans le signal
- [109] Pas de télétexte dans le signal
- [132] Absence télétexte ou sous titre
- [148] Pas de données teletext

Alarm Help (X733 syntax) 9.60

Probable Cause

1198/Option missing

Category

Processing error

Default severity

minor

Wording (English)

Option missing

Wording (French)

Option non installée

Diagnosis (English)

The current configuration cannot be fully applied due to a software option not installed or due to an unsufficient count of software options. The function works in a degraded mode that does not render the expected service. The reference of the missing software option is displayed in the alarm wording.

Diagnosis (French)

La configuration courante ne peut pas être complètement appliquée parce qu'il manque une option logicielle ou parce que le nombre d'instance de l'option est insuffisant. La fonction opère en mode dégradé et ne rend pas le service attendue. La référence de l'option manquante est affichée dans le libellé de l'alarme.

Action (English)

Install the missing option or reconfigure the board in order to avoid the usage of this optional feature.

Action (French)

Installer l'option manquante ou re-configurer la carte pour ne pas faire usage de cette fonctionnalité optionnelle.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030
XMS
EM4000 Dual Channel
EM4000 Hexa Channel
RD 2000

Net Processor 9040
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
RD 5000 SD

Alarm Help (X733 syntax) 9.60

RD 5002 SD	Jade
ViBE	ViBE Encoder
ViBE Decoder	ViBE Front End PDH
ViBE Front End 100BT	ViBE Front End ASI
RD 5000 HD-SD	RD 3000
SD Encoder	ViBE Mosaïc Generator ASI
ViBE Mosaïc Generator IP	VS7000 v1.x

MTEP syntax alarms matching this probable cause (english)

[62] %1

MTEP syntax alarms matching this probable cause (french)

[62] %1

Alarm Help (X733 syntax) 9.60

Probable Cause

154/outOfCPUCycles

Category

Processing error

Default severity

critical

Wording (English)

Out of CPU cycles

Wording (French)

Plus de ressource processeur disponible

Diagnosis (English)

Diagnosis (French)

Action (English)

Action (French)

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030
Net Feeder 9010
EM4000 Quad Channel
EM4000 Octal Channel

Net Processor 9040
EM4000 Dual Channel
EM4000 Hexa Channel

MTEP syntax alarms matching this probable cause (english)

MTEP syntax alarms matching this probable cause (french)

Alarm Help (X733 syntax) 9.60

Probable Cause

1329/No valid bitrate allocation received

Category

Communications

Default severity

major

Wording (English)

No valid bitrate allocation received

Wording (French)

Allocation de débit reçue non valide

Diagnosis (English)

No valid bitrate allocation received

Diagnosis (French)

Allocation de débit reçue non valide

Action (English)

For Remote Flexstream: check the remote allocator work. Check that a transmission error has been detected. Check if errors appear on encoders which belong to the same pool.

Action (French)

Pour le Remote Flexstream: vérifier le bon fonctionnement de l'allocateur distant. Vérifier si une erreur de transmission a été détectée. Vérifier si des erreurs apparaissent sur les codeurs appartenant au même groupe.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
SD Encoder

EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder

MTEP syntax alarms matching this probable cause (english)

[143] [REMOTE FLEXTREAM] PCR bitrate error

MTEP syntax alarms matching this probable cause (french)

Alarm Help (X733 syntax) 9.60

[143] [REMOTE FLEXTREAM] Erreur de débit PCR

Alarm Help (X733 syntax) 9.60

Probable Cause

58/powerProblem

Category

Equipment

Default severity

major

Wording (English)

Power problem

Wording (French)

Problème d'alimentation

Diagnosis (English)

Power supply unit reports a power supply problem.

Diagnosis (French)

L'unité d'alimentation signale un problème d'alimentation.

Action (English)

Check if Power Supply Unit concerned is plugged in the chassis, if power cord is plugged and if switch is ON. Otherwise, switch off the Power Supply Unit concerned and then switch on. If the alarm registers again, replace the Power Supply Unit concerned and in any case contact Customer Service for analysis and repair.

Action (French)

S'assurer que l'unité d'alimentation concernée est branchée dans le châssis, que le cordon d'alimentation est correctement raccordé et que l'interrupteur est en position marche (ON). Autre action possible : mettre hors tension l'unité d'alimentation concernée, puis la remettre sous tension. Si l'alarme se produit de nouveau, remplacer l'unité d'alimentation concernée et, dans tous les cas, contacter le Service Clients pour analyse et réparation.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)
DBE 2120 (8 audios)
DBE 2110 (1 internal video 8 audios)
DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)

DBE 2110 (1 internal video 4 audios)
DBE 2120 (12 audios)
DBE 2120 (4 audios)
DBE 4120 (Contribution)
SSEB/DSS (MSE)
DBX 2200 (4 TS inputs)

Alarm Help (X733 syntax) 9.60

DBX 2200 (8 TS inputs)
MUXEMB/DSS (23 TS inputs)
Vecima VistaLynx QAM
EM4000 Dual Channel
EM4000 Hexa Channel
DM3200/6400
Gecko 8900FFN
Cisco Catalyst 2960
SD Encoder

DBX 2200 (12 TS inputs)
DBX 4300 (6 to 26 TS inputs)
Sandar
EM4000 Quad Channel
EM4000 Octal Channel
ViBE
Gecko 8900TFN-V
Cisco Catalyst 3560 / 3750

MTEP syntax alarms matching this probable cause (english)

- [5] Alimentation alarm. Code = %3
- [66] Power supply or process failure
- [94] Power problem
- [181] Power problem on unit %4

MTEP syntax alarms matching this probable cause (french)

- [5] Alarme alimentation. Code = %3
- [66] Problème d'alimentation ou de process
- [94] Problème d'alimentation
- [181] Problème d'alimentation sur le module %4

Alarm Help (X733 syntax) 9.60

Probable Cause

1098/Rebooting

Category

Equipment

Default severity

major

Wording (English)

(Re)booting

Wording (French)

(Re)démarrage

Diagnosis (English)

(Re)boot of the device is in progress. The product does not render the expected service until this alarm disappears.

Diagnosis (French)

L'équipement est en phase de (re)boot. Le produit ne rend pas le service attendu tant que cette alarme persiste.

Action (English)

Wait for boot to be completed.

Action (French)

Attendez que le démarrage soit terminé

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

DBE 4110 (DSNG)
DBE 4130 (Broadcast)
DBE 4140 (Local insertion)
EM4000 Dual Channel
EM4000 Hexa Channel
V-SFN Itis Adapter
SD Encoder

DBE 4120 (Contribution)
SSEB/DSS (MSE)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Encoder

MTEP syntax alarms matching this probable cause (english)

[46] Equipment still booting
[140] Start Boot

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

- [46] Equipement en phase de boot
- [140] Début d'initialisation

Alarm Help (X733 syntax) 9.60

Probable Cause

17/receiveFailure

Category

Communications

Default severity

major

Wording (English)

Receive failure

Wording (French)

Echec de réception

Diagnosis (English)

In Flexstream context

The encoder cannot communicate with the allocator via the HDLC bus.

In Remote Flexstream context

For encoder: no bitrate order from remote allocator received

For allocator: complexity not received

Diagnosis (French)

Dans le contexte Flexstream

Le codeur ne peut pas communiquer avec l'allocateur via le bus HDLC.

Dans le contexte Remote Flexstream

Pour l'encodeur: pas de consigne d'application de débit reçue de l'allocateur

Pour l'allocateur: complexité non reçue

Action (English)

In Flexstream context

Check the HDLC link. Check the status of the allocator. If the alarm registers again, contact Customer Service for analysis and repair

In Remote Flexstream context

Check ethernet connections and encoders configuration

Action (French)

Dans le contexte Flexstream

Vérifier la liaison HDLC et le statut de l'allocateur. Si l'erreur persiste, contacter le Service Clients pour analyse et réparation.

Dans le contexte Remote Flexstream

Vérifier les connexions ethernet et la configuration des codeurs

Alarm Help (X733 syntax) 9.60

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030	Amber
Net Processor 9040	ViBE EM3000 MPEG4
EM4000 Dual Channel	EM4000 Quad Channel
EM4000 Hexa Channel	EM4000 Octal Channel
ViBE	ViBE Encoder
Opal II	ViBE Mobile TV
SD Encoder	ViBE Mosaïc Generator ASI
ViBE Mosaïc Generator IP	VS7000 v1.x

MTEP syntax alarms matching this probable cause (english)

- [59] Problem with allocator
- [139] Receive failure from master
- [143] [REMOTE FLEXTREAM] Receive failure

MTEP syntax alarms matching this probable cause (french)

- [59] Problème avec l'allocateur
- [139] Echec de réception du maître
- [143] [REMOTE FLEXTREAM] Echec de réception

Alarm Help (X733 syntax) 9.60

Probable Cause

62/replaceableUnitMissing

Category

Equipment

Default severity

critical

Wording (English)

Replaceable unit missing

Wording (French)

Unité amovible manquante

Diagnosis (English)

Board can not be detected.

Diagnosis (French)

La carte ne peut être détectée.

Action (English)

Check that board is correctly inserted in the right slot. If the problem persists, contact Customer Service.

Action (French)

S'assurer que la carte est correctement insérée dans l'emplacement approprié. Si le problème persiste, contacter le Service Clients.

Automatic redundancy

Current autobackup:

Impossible

Upstream autobackup:

Selectable

The following device(s) can raise this probable cause

Net Processor 9030

Net Processor 9040

Barco Quasar without RF converter

Barco Channelized Quasar

Barco Agile Quasar VHF

Barco Agile Quasar UHF

Barco Quasar MKII without RF converter

Barco Channelized Quasar MKII

Barco Agile Quasar MKII VHF

Barco Agile Quasar MKII UHF

Barco Agile Quasar MKII Full Band

Vecima VistaLynx QAM

Net Feeder 9010

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

MSU 4422

ViBE

ViBE Mosaïc Generator ASI

ViBE Mosaïc Generator IP

VS7000 v1.x

CP6000

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (english)

- [94] Replaceable unit missing
- [137] No channel filter
- [144] No input board

MTEP syntax alarms matching this probable cause (french)

- [94] Unité de remplacement manquante
- [137] Pas de channel filter
- [144] Pas de carte d'entrée

Alarm Help (X733 syntax) 9.60

Probable Cause

69/replaceableUnitProblem

Category

Equipment

Default severity

major

Wording (English)

Replaceable unit problem

Wording (French)

Problème d'unité amovible

Diagnosis (English)

The board has been configured as inhibited. It is declared as a spare inactive board. Note : this is an informational state.

Diagnosis (French)

TBD.

Action (English)

If this state is not willed, check configuration.

Action (French)

TBD.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

XNA 4600 adapter
EM4000 Quad Channel
EM4000 Octal Channel

EM4000 Dual Channel
EM4000 Hexa Channel

MTEP syntax alarms matching this probable cause (english)

[183] Board inhibited

MTEP syntax alarms matching this probable cause (french)

[183] Carte inhibée

Alarm Help (X733 syntax) 9.60

Probable Cause

1077/rtc battery failure

Category

Equipment

Default severity

minor

Wording (English)

Real time clock battery failure

Wording (French)

Défaillance de la batterie d'horloge temps réel

Diagnosis (English)

Backup battery is discharged. Product may loose its configuration after the next reboot or switch off.

Diagnosis (French)

La batterie de secours est déchargée. Le produit risque de perdre sa configuration après la prochaine réinitialisation ou mise hors tension.

Action (English)

Contact your Sales representative for maintenance.

Action (French)

Contacter le Service Clients pour maintenance.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
SD Encoder

EM4000 Dual Channel
EM4000 Hexa Channel
ViBE

MTEP syntax alarms matching this probable cause (english)

[94] Real time clock battery failure

MTEP syntax alarms matching this probable cause (french)

[94] Défaillance de la batterie d'horloge temps réel

Alarm Help (X733 syntax) 9.60

Probable Cause

1331/Saturated signal

Category

Communications

Default severity

major

Wording (English)

Saturated signal

Wording (French)

Signal saturé

Diagnosis (English)

Signal saturation detected on specified channel

Diagnosis (French)

Saturation du signal détecté sur la voie spécifiée

Action (English)

Check input signal level or disable saturation detection

Action (French)

Vérifier le niveau du signal d'entrée ou désactiver la détection de saturation.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel

EM4000 Dual Channel
EM4000 Hexa Channel

MTEP syntax alarms matching this probable cause (english)

MTEP syntax alarms matching this probable cause (french)

Alarm Help (X733 syntax) 9.60

Probable Cause

156/sfwrDownloadFailure

Category

Processing error

Default severity

major

Wording (English)

Sfwr download failure

Wording (French)

Echec de téléchargement de logiciel

Diagnosis (English)

Impossible to download a firmware in a programmable component.

Diagnosis (French)

Impossible de télécharger un logiciel embarqué dans un composant programmable.

Action (English)

Contact Customer Service for analysis and repair.

Action (French)

Recueillir des informations supplémentaires dans le journal et contacter le Service Clients pour analyse et réparation.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 4140 (Local insertion)

Vecima VistaLynx QAM

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

ViBE

ViBE Encoder

ViBE Decoder

SD Encoder

DBE 2100 (1 external video 4 audios)

DBE 2110 (1 internal video 4 audios)

DBE 2120 (8 audios)

DBE 2120 (12 audios)

DBE 2110 (1 internal video 8 audios)

DBE 2120 (4 audios)

DBE 4110 (DSNG)

DBE 4120 (Contribution)

DBE 4130 (Broadcast)

SSEB/DSS (MSE)

SSEB/ISO (MSE)

MTEP syntax alarms matching this probable cause (english)

Alarm Help (X733 syntax) 9.60

- [17] Can't load firmware
- [26] Can't load firmware
- [34] Can't load firmware
- [45] can't load flex (%2)
- [95] Sfwr download failure
- [102] Sfwr download failure
- [106] Sfwr download failure

MTEP syntax alarms matching this probable cause (french)

- [17] Impossible de charger le logiciel
- [26] Chargement du logiciel impossible
- [34] Chargement du logiciel impossible
- [45] pb avec flex (%2)
- [95] Echec de téléchargement de logiciel
- [102] Echec de téléchargement de logiciel
- [106] Echec de téléchargement de logiciel

Alarm Help (X733 syntax) 9.60

Probable Cause

1030/stream error

Category

Communications

Default severity

major

Wording (English)

Stream error

Wording (French)

Erreur de flux

Diagnosis (English)

Error in stream.

Diagnosis (French)

Erreur dans le flux.

Action (English)

Check input stream

Action (French)

Contacter le Service Client.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

DBX 2200 (4 TS inputs)

DBX 2200 (8 TS inputs)

DBX 2200 (12 TS inputs)

Newtec QPSK 2080

Newtec QPSK 2077 Hx

Newtec QPSK 2077 Sx

Barco Quasar without RF converter

Barco Channelized Quasar

Barco Agile Quasar VHF

Barco Agile Quasar UHF

Barco Quasar MKII without RF converter

Barco Channelized Quasar MKII

Barco Agile Quasar MKII VHF

Barco Agile Quasar MKII UHF

Newtec QPSK 2077 Fx

Barco Agile Quasar MKII Full Band

Newtec QPSK 2177

ViBE EM3000 MPEG4

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

Integrated Receiver Decoder

RD 1000

RD 1002

Jade

Rate Shaper

ViBE Encoder

ViBE Decoder

ViBE Front End PDH

Alarm Help (X733 syntax) 9.60

ViBE Front End 100BT
RD 5000 HD-SD
RD 3000

ViBE Front End ASI
HDD 8200
Opal

MTEP syntax alarms matching this probable cause (english)

- [28] Bad packet size
- [63] Request to get the program headers failed
- [64] Request to get the program headers failed
- [66] Packet continuity counter error.
- [66] Cannot insert timestamp, invalid picture header
- [66] Packet payload errors
- [66] Cannot reconstruct output stream
- [66] Transport_error_indicator set in packets
- [104] Stream error
- [110] Stream error
- [117] Stream error
- [137] No valid data
- [138] Data interface failure
- [147] Error in stream
- [147] Unknown error
- [147] Error in stream
- [155] TS Error
- [155] Decoder Stream Error

MTEP syntax alarms matching this probable cause (french)

- [28] Taille paquet incorrecte
- [63] La récupération de l'entête du programme a échoué
- [64] La récupération de l'entête du programme a échoué
- [66] Erreur de "Packet Continuity Error"
- [66] Impossible d'insérer le timestamp, entête d'image non-valide
- [66] Erreurs sur les paquets MPEG
- [66] Impossible de reconstruire le flux de sortie
- [66] Transport_error_indicator mis à 1 sur les paquets
- [104] Erreur de flux
- [110] Erreur de flux
- [117] Erreur de flux
- [137] Pas de données valides
- [138] Echec de l'interface données
- [147] Erreur dans le flux
- [147] Erreur inconnue
- [147] Erreur de trame
- [155] Erreur de TS
- [155] Erreurs sur le flux desortie du codeur

Alarm Help (X733 syntax) 9.60

Probable Cause

1031/stream overflow

Category

Communications

Default severity

major

Wording (English)

Stream overflow

Wording (French)

Débordement du flux

Diagnosis (English)

Input rate is too high.

Diagnosis (French)

Le débit d'entrée est trop élevé.

Action (English)

Check input stream

Action (French)

Vérifier le flux d'entrée.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

Net Processor 9030
DBX 2200 (4 TS inputs)
DBX 2200 (12 TS inputs)
Barco Quasar without RF converter
Barco Agile Quasar VHF
Barco Quasar MKII without RF converter
Barco Agile Quasar MKII VHF
Barco Agile Quasar MKII Full Band
Net Feeder 9010
EM4000 Dual Channel
EM4000 Hexa Channel
Integrated Receiver Decoder
ViBE Decoder
ViBE Front End 100BT
Opal

Net Processor 9040
DBX 2200 (8 TS inputs)
DBX 4300 (6 to 26 TS inputs)
Barco Channelized Quasar
Barco Agile Quasar UHF
Barco Channelized Quasar MKII
Barco Agile Quasar MKII UHF
XNA 4600 adapter
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Encoder
ViBE Front End PDH
ViBE Front End ASI
SD Encoder

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (english)

- [23] TS interface overflow
- [55] input overflow
- [110] Stream overflow
- [117] Stream overflow
- [135] Input overflow
- [137] Input bitrate high
- [137] Input bitrate out of range
- [148] Overflow
- [148] Teletext overflow
- [155] TS Buffer overflow
- [183] AAL5 packet buffer overflow

MTEP syntax alarms matching this probable cause (french)

- [23] Débordement sur entrée TS
- [55] Débordement entrée
- [110] Débordement du flux
- [117] Débordement du flux
- [135] Débordement de l'interface
- [137] Débit trop élevé en entrée
- [137] Débit en entrée incorrect
- [148] Débordement
- [148] Débordement du buffer teletext
- [155] Overflow du buffer TS
- [183] AAL5 packet buffer overflow

Alarm Help (X733 syntax) 9.60

Probable Cause

1278/Unreachable destination

Category

Communications

Default severity

major

Wording (English)

Unreachable destination

Wording (French)

Destination inaccessible

Diagnosis (English)

Unreachable destination. Destination host is not connected to network, or bad IP settings of destination host or problem of configuration on intermediate routers.

Diagnosis (French)

Impossible d'atteindre la destination. Hôte de destination non connecté au réseau, paramètres IP de l'hôte de destination incorrects ou problème de configuration des routeurs intermédiaires.

Action (English)

Check destination host. Contact your network infrastructure representative

Action (French)

Vérifier l'hôte de destination. Contacter votre service infrastructure réseau.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Impossible

The following device(s) can raise this probable cause

Net Processor 9030
Mediation Unit
EM4000 Dual Channel
EM4000 Hexa Channel
ViBE Encoder
SD Encoder
ViBE Mosaïc Generator IP
VS7000 v2.0

Net Processor 9040
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
ViBE Front End 100BT
ViBE Mosaïc Generator ASI
VS7000 v1.x
CP6000

MTEP syntax alarms matching this probable cause (english)

Alarm Help (X733 syntax) 9.60

- [111] Unreachable destination
- [116] Unreachable destination

MTEP syntax alarms matching this probable cause (french)

- [111] Destination inaccessible
- [116] Destination inaccessible

Alarm Help (X733 syntax) 9.60

Probable Cause

1339/Unsuitable link speed

Category

Communications

Default severity

minor

Wording (English)

Unsuitable link speed

Wording (French)

Vitesse de la liaison inadaptée

Diagnosis (English)

The affected ethernet interface has detected a connection but the speed is not compatible with the port speed.

Diagnosis (French)

Une connexion a été détectée sur l'interface ethernet mais la vitesse n'est pas compatible avec celle du port

Action (English)

For the Control and Command ethernet, check that the network is a 10Mbps or a 100Mbps network.

For the Ethernet streaming ports, check that the network is a 100Mbps or 1000Mbps network.

Action (French)

Pour l'ethernet Contrôle et Commande, vérifier que le réseau est un réseau 10Mbps ou 100 Mbps.

Pour les ports ethernet de flux, vérifier que le réseau est un réseau à 100 Mbps ou 1000 Mbps.

Automatic redundancy

Current autobackup: Impossible

Upstream autobackup: Impossible

The following device(s) can raise this probable cause

EM4000 Dual Channel

EM4000 Quad Channel

EM4000 Hexa Channel

EM4000 Octal Channel

SD Encoder

MTEP syntax alarms matching this probable cause (english)

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (french)

Alarm Help (X733 syntax) 9.60

Probable Cause

1183/unvalid saved configuration

Category

Processing error

Default severity

critical

Wording (English)

Invalid saved configuration

Wording (French)

Configuration sauvegardée non valide

Diagnosis (English)

The configuration stored in the non volatile memory is invalid and has been discarded. The product is working with its default configuration.

Diagnosis (French)

La configuration sauvegardée dans la mémoire non volatile est invalide et n'a pu être appliquée. Le produit fonctionne dans sa configuration par défaut.

Action (English)

Load a new configuration and if the problem persists, Contact Customer Service.

Action (French)

Charger une nouvelle configuration.

Automatic redundancy

Current autobackup:

Impossible

Upstream autobackup:

Selectable

The following device(s) can raise this probable cause

Net Processor 9030

Mediation Unit

Net Feeder 9010

EM4000 Dual Channel

EM4000 Hexa Channel

V-SFN Itis Adapter

ViBE Encoder

ViBE Front End PDH

ViBE Front End ASI

Net Processor 9040

Audio Video Acquisition

ViBE EM3000 MPEG4

EM4000 Quad Channel

EM4000 Octal Channel

ViBE

ViBE Decoder

ViBE Front End 100BT

SD Encoder

MTEP syntax alarms matching this probable cause (english)

Alarm Help (X733 syntax) 9.60

- [19] Unvalid configuration
- [81] Recall of PCMCIA configuration failed
- [95] Unvalid saved configuration
- [102] Unvalid saved configuration
- [106] Unvalid saved configuration
- [115] Unvalid saved configuration
- [116] Unvalid saved configuration
- [119] Unvalid saved configuration
- [132] Saved context default
- [133] Saved configurations lost
- [140] Last Restore error

MTEP syntax alarms matching this probable cause (french)

- [19] Configuration invalide
- [81] Echec du rappel de la configuration sauvegardée sur la carte PCMCIA
- [95] Configuration sauvegardée non valide
- [102] Configuration sauvegardée non valide
- [106] Configuration sauvegardée non valide
- [115] Configuration sauvegardée non valide
- [116] Configuration sauvegardée non valide
- [119] Configuration sauvegardée non valide
- [132] Défaut de contexte sauvegarde
- [133] Perte de la configuration sauvegardée
- [140] Erreur lors de la dernière restauration

Alarm Help (X733 syntax) 9.60

Probable Cause

1076/ventilation failure

Category

Equipment

Default severity

critical

Wording (English)

Ventilation failure

Wording (French)

Défaillance de la ventilation

Diagnosis (English)

Fan concerned is out of service.

Diagnosis (French)

Le ventilateur concerné est hors service.

Action (English)

If external, check that an air fan is powered on. Else, check that no object has been inserted in the unit and is blocking a fan. If no external cause is detected, contact Customer Service.

Action (French)

Mettre le châssis hors tension afin d'éviter toute température excessive susceptible de causer un dommage matériel. Pour les produits 5U, remplacer l'unité de ventilation. Pour les produits 1U, remplacer le châssis.

Automatic redundancy

Current autobackup: Impossible Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)
DBE 2120 (8 audios)
DBE 2110 (1 internal video 8 audios)
DBE 4110 (DSNG)
DBE 4130 (Broadcast)
Amber
DBX 2200 (8 TS inputs)
Mediation Unit
Audio Video Acquisition
XNA 4600 adapter
EM4000 Dual Channel

DBE 2110 (1 internal video 4 audios)
DBE 2120 (12 audios)
DBE 2120 (4 audios)
DBE 4120 (Contribution)
DBE 4140 (Local insertion)
DBX 2200 (4 TS inputs)
DBX 2200 (12 TS inputs)
Vecima VistaLynx QAM
Amethyst III ASI
ViBE EM3000 MPEG4
EM4000 Quad Channel

Alarm Help (X733 syntax) 9.60

EM4000 Hexa Channel
RD 2000
RD 5002 SD
RD 1002
ViBE
RD 3000
ViBE Mobile TV
Cisco Catalyst 4510R
SD Encoder
ViBE Mosaïc Generator IP
VS7000 v2.0

EM4000 Octal Channel
RD 5000 SD
RD 1000
Maestream
RD 5000 HD-SD
Opal II
Cisco Catalyst 2960
Cisco Catalyst 3560 / 3750
ViBE Mosaïc Generator ASI
VS7000 v1.x
CP6000

MTEP syntax alarms matching this probable cause (english)

- [32] Ventilator fault
- [94] Ventilation failure
- [132] Fan unit default
- [133] Fan fault
- [182] Air fans KO

MTEP syntax alarms matching this probable cause (french)

- [32] Ventilation HS
- [94] Défaillance de la ventilation
- [132] rotor(s) bloqué(s)
- [133] Défaut de ventilation
- [182] Ventilation HS

Alarm Help (X733 syntax) 9.60

Probable Cause

1064/video standard mismatch

Category

Communications

Default severity

major

Wording (English)

Video standard mismatch

Wording (French)

Norme vidéo incompatible

Diagnosis (English)

Input standard is different from the declared standard.

Diagnosis (French)

La norme détectée est différente de celle définie dans la configuration.

Action (English)

change preferred standard in configuration or change standard of input signal

Action (French)

Redéfinir la norme dans la configuration ou modifier la norme du signal d'entrée.

Automatic redundancy

Current autobackup: Selectable

Upstream autobackup: Selectable

The following device(s) can raise this probable cause

DBE 2100 (1 external video 4 audios)
DBE 2120 (8 audios)
DBE 2110 (1 internal video 8 audios)
DBE 4110 (DSNG)
DBE 4130 (Broadcast)
SSEB/ISO (MSE)
Audio Video Acquisition
EM4000 Dual Channel
EM4000 Hexa Channel
RD 2000
RD 5002 SD
ViBE Decoder
RD 3000
CP6000

DBE 2110 (1 internal video 4 audios)
DBE 2120 (12 audios)
DBE 2120 (4 audios)
DBE 4120 (Contribution)
SSEB/DSS (MSE)
DBE 4140 (Local insertion)
ViBE EM3000 MPEG4
EM4000 Quad Channel
EM4000 Octal Channel
RD 5000 SD
ViBE Encoder
RD 5000 HD-SD
SD Encoder

Alarm Help (X733 syntax) 9.60

MTEP syntax alarms matching this probable cause (english)

- [34] Bad standard 50/60Hz
- [45] Bad standard 50/60Hz
- [107] videoStdMismatch
- [110] Video standard mismatch
- [132] Unknown or wrong standard on reference input
- [132] Unknown or wrong standard on digital video input
- [132] Unknown composite standard

MTEP syntax alarms matching this probable cause (french)

- [34] Mauvais standard 50/60Hz
- [45] Mauvais standard 50/60Hz
- [107] Norme vidéo incompatible
- [110] Norme vidéo incompatible
- [132] Référence synchroniseur inconnue ou incorrecte
- [132] Standard vidéo numérique inconnu ou incorrect
- [132] Standard composite inconnu

Glossary

This glossary is common to all products. Defined words do not necessarily apply to this product.

100/1000Base-T	An Ethernet standard designed to generate, monitor and capture 100/ 1000 Ethernet traffic.
3:2 pulldown	A technique used when converting film material (which operates at 24 pictures per second) to 525-line video (operating at 29.97 pictures per second).
3G-SDI	3 Gbps High-Definition Serial Digital Interface.
4:2:0	A chrominance sub-sampling system in which the color difference signals are sampled on alternate lines at half the luminance rate.
4:2:2	A chrominance sub-sampling system in which the color difference signals are sampled on all lines at half the luminance rate.
AAC	Advanced Audio Compression algorithm that has been ratified for both MPEG-2 (ISO/IEC 11818-7) and MPEG-4 (ISO/IEC 14496-3).
AAC-LC	Low Complexity-Advanced Audio Coding.
AC-3	Audio Coding 3. AC-3 is a digital audio encoding, also called Dolby Digital, technique developed by Dolby® for multi-channel sound applications.
ADTS	Audio Data Transport Stream. ADTS is a method for encapsulating AAC bitstreams into transport streams. AAC bitstream is packaged in a streaming format called Audio Data Transport Stream (ADTS), consisting of a series of frames, each frame having a header followed by the AAC audio data.
AES	Audio Engineering Society. Professional organization of electrical engineers whose concern is with the standards of audio engineering.
AFD	Active Format Descriptor. Standard set of codes that can be sent in the MPEG video stream or in the baseband SDI video signal that carries information about their aspect ratio and active picture characteristics.
AGC	Automatic Gain Control.
AMOL I and II	Automatic Measure of Lineups. Data inserted in the VBI lines and used by automated equipment to measure program-viewing ratings (NTSC). AMOL I: 48 bits/line, AMOL II: 96 bits/line.

ANSI/SCTE-20	Methods for Carriage of Closed Captions and Non-Real Time Sampled Video. It defines how to implement VBI (Vertical Blanking Interval) services using the user data field of the picture layer of the MPEG-2 video bitstream, and according to ISO/IEC 13818-2.
ANSI/SCTE-21	The Standard for Carriage of NTSC VBI Data in Cable Digital Transport Stream. It defines a standard for the carriage of VBI services in MPEG-2 compliant bitstreams constructed according to ISO/IEC 13818-2.
ARIB	Association of Radio Industries and Businesses. ARIB is a standardization organization in Japan. It is a designated center for the promotion of efficient use of the radio spectrum and frequency change support agency. Its activities include those previously performed by the Research and Development Center for Radio Systems (RCR) and Broadcasting Technology Association (BTA).
ARP	Address Resolution Protocol. Internet protocol used to map an IP address to physical (hardware) addresses on local area networks.
ASI	Asynchronous Serial Interface.
ATSC	Advanced Television Standards Committee. ATSC is a set of standards developed for digital television transmission over terrestrial, cable, and satellite networks for the USA.
AVC	Advanced Video Coding.
B-Frame	Bidirectional-Frame. A frame type in the MPEG compression scheme that is predicted from past and future reference frames.
Balanced Audio	An audio signal that consists of two wires carrying an audio signal in anti-phase with each other. Balanced audio has greater ability to reject interference.
BAT	Bouquet Association Table The BAT provides information about bouquets. It gives the name of the bouquet and a list of associated services.
BISS	Basic Interoperable Scrambling System. BISS is a satellite signal scrambling system developed by the European Broadcasting Union and a consortium of hardware manufacturers.
Bouquet	A collection of services (TV, radio, and data, or any combination of the three) grouped and sold together, and identified in the SI as a group. A single service may be in several bouquets.
Buffer	A memory store used to provide a consistent rate of data flow.
CA	Conditional Access. System to control subscriber access to services, programs and events.
CABAC	Context-based Adaptive Binary Arithmetic Coding CABAC is a form of entropy coding used in H.264 video encoding. It is notable for providing much better compression than CAVLC but is more computationally expensive. CABAC is not supported in Baseline and Extended profiles.

CAT	Conditional Access Table CAT table is used for conditional access to the streams. It provides association with the EMM stream.
CAVLC	Context Adaptive Variable Length Coding. CAVLC is a form of entropy coding used in H.264 video encoding. CAVLC has lower coding efficiency than CABAC but is less computationally expensive.
CBR	Constant Bit-rate. The bit-rate of the bit-stream is constant. (see VBR)
CC	Close Caption.
Chrominance	Chrominance (chroma or C for short) is the signal used in video systems to convey the color information of the picture, separately from the accompanying luma signal (or Y for short).
CIF	Common Intermediate Format. A format used to standardize the horizontal and vertical resolutions in pixels of YCbCr sequences in video signals, commonly used in video teleconferencing systems (video size: 352p x 288p).
Closed Caption	A TV picture subtitling system used with 525-line analog transmissions.
Composite Video	A baseband representation of a video signal containing luminance and chrominance information.
Compression	The process of removing redundant data from audio or video streams to reduce the amount of data transferred or stored.
CPU	Central Processing Unit.
CrCb	Digital Color difference signals. These signals, in combination with the luminance signal (Y), define the color and brightness of each picture element (pixel) on a TV line. <i>See: Chrominance.</i>
CRC	Cyclic Redundancy Check. A cyclic redundancy check (CRC) is an error-detecting code designed to detect accidental changes to raw computer data, and is commonly used in digital networks and storage devices such as hard disk drives.
CVBS	Composite Video, Blanking, and Sync.
CVCT	Cable Virtual Channel Table (ATSC).
CW	Control Word.
CWG	Control Word Generator.
dB	Decibel The decibel is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level. A ratio in decibels is ten times the logarithm to base 10 of the ratio of two power quantities. A decibel is one tenth of a bel, a seldom-used unit.
dBFS	Decibel Full Scale

De-blocking Filter	An in-loop deblocking filter is designed to smooth out artifacts introduced by the compression process in the reconstructed image in both the encoder and decoder.
Decoder	The device containing the electronic circuitry necessary to decode encrypted signals. Some Decoders features a receiver.
D TS	Decoding Time Stamp A field that may be present in a PES packet header that indicates the time that an access unit is to be decoded in the system target Decoder.
DET	Data Event Table (ATSC)
DID	Data Identifier DID is used for embedded audio within the SDI or HD-SDI signal. The Data Identifier word indicates the type of ancillary data that the packet corresponds to.
Dolby Digital	Formerly AC-3. An audio coding system based on transform coding techniques and psychoacoustic principles.
Downconvert	The process by which the frequency of a broadcast transport stream is shifted to a lower frequency range.
Downmixing	Combining (or mixing down) the content of n original channels to produce m channels, where $m < n$.
DPI	Digital Program Insertion.
DSNG	Digital Satellite News-Gathering.
DSP	Digital Signal Processor.
DTVCC	Digital Television Closed Captioning.
DVB	Digital Video Broadcasting The Digital Video Broadcasting Project (DVB) is an industry-led consortium of around 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing open technical standards for the global delivery of digital television and data services. Services using DVB standards are available on every continent with more than 500 million DVB receivers deployed.
DVB-H	Digital Video Broadcasting - Handheld. A technical specification for bringing broadcast services to mobile handsets. DVB-H was formally adopted as ETSI standard EN 302 304 in November 2004.
DVB-T	Digital Video Broadcasting baseline system for digital terrestrial television.
DVB SI	Digital Video Broadcasting Service Information.
DVS 053	See ANSI/SCTE-21.
DVS 157	See ANSI/SCTE-20.

DVS 706	The Carriage of Vertical Blanking Information Data in North American Digital Television Bitstream. Based on the ETSI EN 301 775 standard and provides extensions for the carriage of VBI data. VBI data is carried in MPEG-2 packetized elementary stream (PES) packets as private stream 1, which in turn is carried in MPEG2 transport packets. The Data_unit_ID values identify the type of data as AMOL 1, AMOL II, or TV Guide. Data encoded in the data fields are supposed to be transcoded into the VBI of 525 line video but may be interpreted directly by a decoder.
EBU	European Broadcast Union.
ECM	Entitlement Control Message. Private Conditional Access information that specifies control words and possibly other stream-specific, scrambling, and/or control parameters.
ECMG	ECM Generator
EDI	Ethernet Data Input.
EIA 708-B	Digital Television Closed Captioning specifies the standards for DTV technology. DTV closed captioning is transported in the bitstream as a logical data channel in MPEG-2 picture user data field of the DTV digital bitstream (as defined in the ATSC A/53 and ISO/IEC 13818 standards). To ensure compatibility, the transport channel is designed to carry analog (EIA-608-B) and digital closed captioning (EIA-708-B).
EIT	Event Information Table A mandatory Digital Video Broadcast (DVB) SI table that transmits information relating to the events in the MPEG transport stream.
Elementary Stream	A generic term for a coded bit-stream, be it video, audio or other.
EMC	Electromagnetic Compatibility.
EMM	Entitlement Management Message. Private Conditional Access information that specifies the authorization level or services of specific decoders.
Encryption	Encoding of a transmission to prevent access without the appropriate decryption equipment and authorization.
EPG	Electronic Program Guide. Provides users of television, radio, and other media applications with continuously updated menus displaying scheduling information for current and upcoming programming.
ES	Elementary Stream A generic term for a stream of data of one particular type. Typically these streams are of Video or Audio Types.
Ethernet	The most widely used local area network (LAN) defined by the IEEE as the 802.3 standard.
ETSI EN 300 706	The European Television Standards Institute's (ETSI) specification for World Standard Teletext (WST).

ETSI EN 300 775	The European Telecommunications Standards Institute (ETSI) specification for the Carriage of Vertical Blanking Information Data in DVB bitstreams. VBI data is carried in MPEG-2 packetized elementary stream (PES) packets as private stream 1, which in turn is carried in MPEG2 transport packets. The packet identifier (PID) of a VBI data stream associated with a service is identified in the program map table (PMT) of the program specific information (PSI) for that service. A VBI PES packet contains data for only one video frame and always carries a PTS. A Data_unit_ID identifies the type of data as EBU teletext non-subtitle data, EBU teletext subtitle data, video program system (VPS), or widescreen signaling (WSS). Data encoded in the data fields are supposed to be transcoded into the VBI of 625-line video but may be interpreted directly by a decoder.
ETT	Extended Text Table
FCC	Federal Communications Commission.
FEC	Forward Error Correction. A system of error control for data transmission, whereby the sender adds systematically generated redundant data to its messages. The carefully designed redundancy allows the receiver to detect and correct a limited number of errors occurring anywhere in the message without the need to ask the sender for additional data. FEC enables the receiver to correct errors without the need for a reverse channel to request retransmission of data, but this advantage is at the cost of a fixed higher forward channel bandwidth
Field	For an interlaced video signal, a "field" is the assembly of alternate lines of a frame. Therefore, an interlaced frame is composed of two fields, a top field and a bottom field.
Fps	Frame Per Second.
FTP	File Transfer Protocol. A standard network protocol used to copy a file from one host to another over a TCP-based network.
Frame	A frame contains lines of spatial information of a video signal. For progressive video, these lines contain samples starting from one time instant and continuing through successive lines to the bottom of the frame. For interlaced video a frame consists of two fields, a top field and a bottom field. One of these fields will commence one field later than the other.
GOP	Group of Pictures. In MPEG video, a GOP represents one or more I pictures, followed by P and B pictures.
GPI	General Purpose Interface
GUI	Graphical User Interface A type of user interface that allows users to interact with electronic devices with images rather than text commands. A GUI represents the information and actions available to a user through graphical icons and visual indicators such as secondary notation, as opposed to text-based interfaces, typed command labels or text navigation.
H.264	ITU/ETSI name for MPEG-4 Part-10 (ISO/IEC 14496-10).

HANC	Horizontal Ancillary. Ancillary packets located in the horizontal blanking interval of the video signal.
HD	High Definition.
HD-SDI	High-Definition Serial Digital Interface.
HDTV	High Definition Television.
HE-AAC	High-Efficiency Advanced Audio Encoding. A lossy data compression scheme for digital audio defined as a MPEG-4 Audio profile in ISO/IEC 14496-3. There are two types of HE-AAC: - HE-AAC = AAC+ = AAC-LC + SBR (Spectral Band Reconstitution) - HE-AACv2 = eAAC+ = AAC-LC + SBR + PS (Parametric Stereo)
HSYNC	Horizontal (line) Sync.
HTML	Hyper Text Markup Language. HTML is the predominant markup language for web pages. That is the basic building-blocks of web pages.
HTTP	Hyper Text Transfer Protocol.
I-Frame	Intracoded Frame. A frame, which is coded using purely intracoding with reference to no other field or frame information. I frames provide a reference point for dependent P and B frames and allow random access into the compressed video stream.
I-Picture	Refer to I-Frame.
ID	Identifier
IDR	Instantaneous Decoding Refresh. IDR pictures can be decoded without reference to previous frames.
IEC	International Electrotechnical Committee.
IGMP	Internet Group Management Protocol. IGMP is a communication protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships. There are three versions of IGMP, as defined by "Request for Comments" (RFC) documents of the Internet Engineering Task Force (IETF). IGMPv1 is defined by RFC 1112, IGMPv2 is defined by RFC 2236 and IGMPv3 was initially defined by RFC 3376 but has since been superseded by RFC 4604.
IP	Internet Protocol.
IP Address	A 32-bit (IPv4) or 128-bit (IPv6) numerical identifier for a specific TCP/IP host device on a network, that represents the sender or receiver of information sent across the network.
IRD	Integrated Receiver Decoder. The IRD is the official name for the satellite receiver, which has a built-in decoder for unscrambling subscription channels. Also known as a Set-Top Box for cable.
ISO	International Standards Organization.

Glossary

ITU-R	International Telecommunications Union - Radio. Formerly CCIR. Deals with the standardization of wireless communication.
ITU-T	International Telecommunications Union - Telecommunications. Formerly CCITT. Produces global telecommunication standards, and defines tariff and accounting principles.
Joint Stereo	An audio mode in which the left and right channels of audio are encoded into one channel. This mode is used to reduce bandwidth needs, and thus improve compression efficiency.
JPEG	Joint Photographic Experts Group. Name of the committee that created the JPEG standard (and also other standards). The JPEG standard specifies the codec, which defines how a still image is compressed into a stream of bytes and decompressed back into an image.
JVT	Joint Video Team (JVT). The Joint Video Team is a group of video coding experts from ITU-T Study Group 16 (VCEG) and ISO/IEC JTC 1 SC 29 / WG 11 (MPEG) created to develop an advanced video coding specification. The JVT's main result has been ITU-T Rec. H.264 | ISO/IEC 14496-10, commonly referred to as H.264/MPEG-4 AVC, H.264/AVC, or MPEG-4 Part 10 AVC.
kbit/s	Kilo bits per second.
LAN	Local Area Network. A local area network is a network that connects computers and devices in a limited geographical area such as home, school, computer laboratory or office building.
LATM	Low-overhead Audio Transport Multiplex. LATM is part of the method to encapsulate HE-AAC audio into transport stream.
LC-AAC	Low Complexity-Advanced Audio Coding.
LCD	Liquid Crystal Display.
LED	Light Emitting Diode.
LOAS	Low-overhead Audio Stream LOAS is part of the method to encapsulate HE-AAC audio into a transport stream.
M	In a GOP (Group Of Picture), M is the distance between successive P-Frames.
Macroblock	A area of the TV picture. Macroblocks are usually composed of two or more blocks of pixels. The size of a block depends on the codec and is usually a multiple of 4. In MPEG-2 the size is fixed at blocks of 8x8 pixels. In H264 the overarching macroblock size is fixed at 16x16 pixels, but this is broken down into smaller blocks or partitions which are either 4, 8, 12 or 16 pixels by 4, 8, 12 or 16 pixels.
MBAFF	MacroBlock Adaptive Frame Field coding. Use a macroblock pair structure for pictures coded as frames.
Mbit/s	Million bits per second.
MGT	Master Guide Table (ATSC).

MIB	Management Information Base. SNMP collects management information from devices on the network and records the information in a management information base. The MIB information includes device features, data throughput statistics, traffic overloads, and errors.
Motion Compensation	The use of motion vectors to improve the efficiency of the prediction of sample values. The prediction uses motion vectors to provide offsets into the past and/or future reference frames or fields containing previously decoded sample values that are used to form the prediction error signal.
Motion Estimation	The process of estimating motion vectors in the encoding process.
Motion Vector	A two-dimensional vector used for inter prediction that provides an offset from the coordinates in the decoded picture to the coordinates in a reference picture.
MP@ML	Main Profile at Main Level A subset of the MPEG-2 standard, which supports transmissions up to 15 Mbit/s.
MP@HL	Main Profile at High Level A subset of the MPEG-2 standard, which supports transmissions up to 80 Mbit/s.
MPEG	Moving Pictures Experts Group An international standards-setting group, working to develop standards for compressed full-motion video, audio, and other associated information. Current standards are MPEG-1, MPEG-2, and MPEG-4.
MPEG-2	Industry standard for video and audio source coding using compression and multiplexing techniques to minimize video signal bit-rate in preparation for broadcasting. Specified in ISO/IEC 13818. The standard is split into layers and profiles defining bit-rates and picture resolutions.
MPEG-4	Industry standard for video and audio source coding using compression and multiplexing techniques to minimize video signal bit-rate in preparation for broadcasting. Specified in ISO/IEC 14496. Part 2 of this standard defines the original MPEG-4 video compression whereas Part 10 is the new algorithm also known as H264.
MPTS	Multiprogram Transport Stream.
Multicast	Process where a single stream is served from one source to multiple receivers. The multicast address range is: 224.0.0.0 - 239.255.255.255.
Multiplex	-The combination of two or more signals into one single output stream. -A number of discrete data streams (typically 8 to 24 depending on the compression standards), from encoders, that are compressed together in a single DVB compliant transport stream for delivery to a Modulator.
N	In a GOP (Group Of Picture), N is the distance between successive I-Frames.
NAL	Network Abstraction Layer (H264)
NIT	Network Information Table A mandatory Digital Video Broadcast (DVB) SI table, that provides a grouping of Transport Streams (TSs) and the relevant tuning information.

Glossary

NMS	Network Management System.
NTP	Network Time Protocol.
NTSC	National Television Systems Committee An American based committee who sets color television broadcast transmission and reception standards used in the US, Canada, Mexico and Japan as well as other Latin American and Asian countries. This system uses 525 picture lines and a 59.97 Hz field frequency.
NVOD	Near Video On Demand. NVOD is a consumer video technique used by multi-channel broadcasters using high-bandwidth distribution mechanisms such as satellite and cable television. Multiple copies of a program are broadcast at short time intervals (typically 10–20 minutes) providing convenience for viewers, who can watch the program without needing to tune in at a scheduled point in time. The video can be sold.
P-frame	Predicted frame A P-frame holds only the changes in the image from the previous frame.
Packet	- In networks, a unit of data transmitted over a packet-switching network. A packet consists of a header followed by a number of contiguous bytes from an elementary data stream. - In transport streams, a packet is a small, fixed-size data quantum.
PAFF	Picture Adaptive Frame Field coding. Allows a freely selected mixture of pictures coded either as complete frames where both fields are combined together for encoding or as individual single fields.
PAT	Program Association Table. It lists all programs available in the MPEG-2 transport stream. Each of the listed programs is identified by a 16-bit value called <code>program_number</code> . Each of the programs listed in the PAT has an associated value of <code>PID</code> for its Program Map Table (PMT).
PCM	Pulse Code Modulation PCM is a modulation technique. It is a digital representation of an analog signal where the magnitude of the signal is sampled regularly at uniform intervals. Every sample is quantized to a series of symbols in a digital code, which is usually a binary code.
PCR	Program Clock Reference. A time stamp used in digital video compression that indicates the system time clock's (STC) value the instant the time stamped packet leaves the encoder. In the Moving Pictures Experts Group 2 (MPEG-2) system the digital video source is clocked at 27 MHz and the decoder must generate the same 27 MHz clock so that the encoder and decoder clocks are synchronized. These clocks are called System Time Clocks (STC). To synchronize the decoder, the encoder sends a PCR to the decoder. The decoder receives the packet and compares the STC value with its own STC counter value. If the values are the same then no adjustment is needed but if the two values are different, the decoder must either reset, speed up, or slow down its STC.

PDC	Program Delivery Control (VBI). PDC is specified by the standard ETS 300 231, published by the European Telecommunications Standards Institute (ETSI). This specifies the signals sent as hidden codes in the teletext service, indicating when transmission of a program starts and finishes.
PES	Packetized Elementary Stream A specification in the MPEG-2 Part 1 (Systems) (ISO/IEC 13818-1) and ITU-T H.222.0[1][2] that defines carrying of elementary streams in packets within MPEG program streams and MPEG transport streams [3]. The elementary stream is packetized by encapsulating sequential data bytes from the elementary stream inside PES packet headers.
PID	Packet Identifier A unique integer value used to identify the contents of an MPEG-2 Transport Stream packet (Video component PID, Audio component PID, etc.).
Profile	A defined subset of the syntax specified in the MPEG-2 or MPEG-4 video coding specification.
PMT	Program Map Table. A mandatory MPEG-2 PSI table. Each service has a PMT. It lists the service component parts (elementary streams of video, audio, location of the PCR fields, etc.).
PSI	Program Specific Information. Normative data that is necessary for the demultiplexing of transport streams and the regeneration of programs.
PSIP	Program and System Information Protocol. A method of describing Naming and Navigation data for a multi program transport stream as defined in ATSC A/65A.
PSU	Power Supply Unit.
PTS	Presentation Time Stamp. The PTS is a metadata field in an MPEG transport stream that is used to achieve synchronization of programs' separate elementary streams (for example Video, Audio, Subtitles) when presented to the viewer. The PTS is given in units related to a program's overall clock reference, either Program Clock Reference (PCR) or System Clock Reference (SCR), which is also transmitted in the transport stream or program stream.
PVR	Personal Video Recorder.
QCIF	Quarter Common International Format. To have one fourth of the area as "quarter" implies the height and width of the frame are halved (video size: 176p x 144p).
QSIF	Quarter Screen International Format. To have one fourth of the area as "quarter" implies the height and width of the frame are halved (video size: 160 x 120 pixels (NTSC) or 192 X 144 pixels (PAL)).
QVGA	Quarter Video Graphics Array. QVGA is a popular term for a computer display with 320x240 display resolution.
R, G, B	Red, Green, Blue.

Resolution	Determined by the number of pixels displayed per line or for a given area.
RLC	Run Length Coding. Run length encoding is a method of compressing digital information by representing repetitive data information by a notation that indicates the data that will be repeated and how many times the data will be repeated.
RRT	Rating Region Table (ATSC).
RS	Reed-Solomon coding. Reed-Solomon is an algorithm for Forward Error Correction (FEC). It does not specify a block size or a specific number of check symbols, instead these variables can be set to the best variables for each transmission medium. Reed Solomon codes are used in a wide variety of commercial applications such as CDs, DVDs, and in data transmission technologies like DVB and WiMAX.
RST	Rating System Table (ATSC).
RTP	Real Time Transport Protocol. This Protocol defines a standardized packet format for delivering audio and video over IP networks.
RTSP	Real Time Streaming Protocol. A network control protocol designed for use in entertainment and communications systems to control streaming media servers. Used for establishing and controlling media sessions between end points.
RU	Rack Unit. A unit of measure used to describe the height of equipment intended for mounting in a 19-inch rack or a 23-inch rack. One rack unit is 1.75 inches (44.45 mm) high.
Scrambling	Alteration of the characteristics of a television signal in order to prevent unauthorized reception of the information in clear form.
SBR	Spectral Band Replication. SBR is a tool used in HE-AAC for broadcast transmissions.
SD	Standard Definition.
SDI	Serial Digital Interface.
SDT	Service Description Table. A mandatory Digital Video Broadcast (DVB) SI table, that provides information in the SI stream about the services in the system; for example, the name of the service, the service provider, etc.
SDTV	Standard Definition Television.
SI	Service Information Digital information describing the delivery system, content and scheduling /timing of broadcast data streams (DVB).
SIF	Source Input Format A video format that was developed to allow the storage and transmission of digital video. The SIF format specifies resolutions of the following: NTSC (525/59.94 SIF format) is 352x240 x29.97fps PAL (625/50 SIF format) is 352x288 x25.00fps

SMPTE	Society of Motion Picture and Television Engineers. A Standards Organization devoted to advancing theory and application in motion imaging, including film, television, video, computer imaging, and telecommunications.
SNG	Satellite News-Gathering.
SNMP	Simple Network Management Protocol. SNMP provides a means to monitor and control network devices, and to manage configurations, statistics collection, performance, and security. SNMP network management is based on the client and server model. Each managed host runs a process called an agent. The agent is a server process that maintains the Management Information Base (MIB) database for the host. SNMP uses ports 161 and 162.
SNTP	Simple Network Time Protocol.
SPTS	Single Program Transport Stream.
SRTP	Secure Real Time Transport Protocol.
StatMux	Statistical Multiplexing Statistical multiplexing is a proven technique used to dynamically assign compression bitrates based upon video complexity and motion requirements of individual channels. The principle of statistical multiplexing is that a group or “pool” of encoders shares a fixed quantity of bandwidth. The bandwidth is allocated on a frame by frame basis by a centralized controller (multiplexer) so the encoder with the most complex video is allowed to borrow more bandwidth from the pool of encoders with less difficult video.
STB	Set-Top Box. A device that provides access to the Broadband broadcast or Internet and displays information on a TV screen.
STT	System Time Table (ATSC).
SVC	Scalable Video Coding. SVC is the name for the Annex G extension of the H.264/MPEG-4 AVC video compression standard. SVC standardizes the encoding of a high-quality video bitstream that also contains one or more subset bitstreams. A subset video bitstream is derived by dropping packets from the larger video to reduce the bandwidth required for the subset bitstream. The subset bitstream can represent a lower spatial resolution (smaller screen), lower temporal resolution (lower frame rate), or lower quality video signal.
Switch (Network)	A network switch is a computer networking device that connects network segments. An Ethernet switch operates at the data link layer of the OSI model to create a separate collision domain for each switch port. With 4 computers (e.g., A, B, C, and D) on 4 switch ports, A and B can transfer data back and forth, while C and D also do so simultaneously, and the two conversations will not interfere with one another.

TCP	Transmission Control Protocol. One of the main protocols in TCP/IP networks. TCP enables two hosts to establish a connection and exchange streams of data. TCP guarantees delivery of data and packets, that will be delivered in the same order in which they were sent. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.
TCP / IP	Transmission Control Protocol/Internet Protocol Two interrelated protocols that are part of the Internet protocol suite. TCP operates on the OSI transport layer and breaks data into packets. IP operates on the OSI network layer and routes the packets. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet. TCP/IP allows the construction of very large networks with little central management.
TDT	Time and Date Table. A mandatory Digital Video Broadcast (DVB) SI table that supplies the Coordinated Universal Time (UTC) time and date.
Time-Code	A sequence of numeric codes generated at regular intervals by a timing system.
Time-stamp	A sequence of characters, denoting the date and/or time at which a certain event occurred.
Timeslicing	Time slicing is a technique that is used in DVB-H applications to increase the battery life time of mobile DVB-H receivers (for instance cell phones, PDAs, etc.). Chunks of data will be transmitted in bursts, which allows the mobile receiver to be switched off when no data is transmitted. During this inactivity the mobile receiver can scan neighboring cells in order to select the best reception conditions and be prepared for seamless handovers.
TOT	Time Offset Table. An optional (DVB) SI table that supplies the actual UTC-time also including time offset information coded as MJD.
TS	Transport Stream. A multiplex of several Elementary Streams that are contained in packets.
TSDT	Transport Stream Descriptor Table. A mandatory MPEG-2 PSI table that describes which type of Transport stream it is in (i.e. DVB, ATSC etc.). It may also contain other descriptors.
TVCT	Terrestrial Virtual Channel Table (ATSC).
UDP	User Data Protocol. A connectionless protocol, like TCP, that runs on top of IP networks. Unlike TCP/IP, UDP/IP provides very few error recovery services, offering instead a direct way to send and receive datagrams over an IP network without acknowledgement for guaranteed delivery.
Unicast	Unicast is communication between a single sender and a single receiver over a network.
UTC	Coordinated Universal Time. UTC is the time standard by which the world regulates clocks and time. In casual use, UTC corresponds to Greenwich Mean Time (or GMT).

VANC	Vertical Ancillary. Ancillary packets located in the vertical blanking interval.
VBI	Vertical Blanking Interval. In analog video, the interval after the last displayed line of video in a field and before the first displayed line of video in the next field, during which a television receiver will synchronize vertically.
VBR	Variable Bit-Rate. VBR is an encoding method that is designed to achieve a better video quality vs. bitrate ratio than CBR (Constant Bit-Rate) encoding. This is achieved by continuously changing the bit rate during the encoding process depending on the picture complexity. Refer to <i>Statmux</i> .
VBV	Video Buffering Verifier The video buffering verifier is a theoretical MPEG video buffer model used to ensure that an encoded video stream can be correctly buffered and played back at the decoder device.
VCT	Virtual Channel Table (ATSC). A VCT contains a list of all the channels that are or will be online, along with their attributes. This table is critically important as it contains the set of data that enables a receiver to tune and locate the service being broadcast.
VGA	Video Graphics Array (640x480 pixels).
VITC	Vertical Interval Time Code. VITC is Time-Code information inserted in the vertical blanking of the video signal.
VITS	Vertical Interval Test Signal. VITS signals may be inserted in the lines of the vertical blanking interval to permit on the air testing of video circuit functions and adjustments.
VLAN	Virtual Local Area Network. A local area network with a definition that maps workstations on some other basis than geographic location (for example, by department, type of user, or primary application). The virtual LAN controller can change or add workstations and manage load balancing and bandwidth allocation more easily than with a physical picture of the LAN. Network Management System software keeps track of relating the virtual picture of the local area network with the actual physical picture. VLANs are based on logical instead of physical connections.
VPS	Video Programming System. VPS is an older system which helped video recorders in Germany to automatically record TV broadcasts correctly. Since replaced with Program Delivery Control (PDC).
Weighted prediction	Allows an encoder to specify the use of a scaling and offset when performing motion compensation, and providing a significant benefit in performance in special cases, such as fade-to-black, fade-in, and cross-fade transitions.

Glossary

WSS	Wide Screen Signalling. WSS is digital information embedded in the TV signal describing the qualities of the broadcast, in particular the intended aspect ratio of the image. This can be used by a widescreen TV to switch to the correct display mode. The WSS signal is placed in line 23 (PAL) and lines 20/283 (PAL-M and NTSC) and has 14 data bits.
WST	World System Teletext. WST is the name of a standard for encoding and displaying teletext information, which is used in 625 line / 50 Hz television systems (ITUR 653). It is used for teletext throughout Europe today. The actual version of the WST is Word System B.
Y (Luminance)	Defines the brightness of a TV picture.

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