ONE200
Installation Manual

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http://www.oneaccess-net.com

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How to Read this Manual

The present document is broken down into 7 chapters.

Chapter 1 – Safety Instructions

This chapter provides the safety instructions for use and installation of the router.

Chapter 2 – Directives and Standards

This chapter details the list of standards, which the device complies with.

Chapter 3 – Device Description

This section describes the router front and rear panels and the associated technical characteristics.

Chapter 4 – Interface Description

This section describes the router interfaces.

Chapter 5 – Technical Characteristics

This section describes technical characteristics such as operating conditions.

Chapter 6 - Installation

This chapter describes how to mount a daughter-board and gives instructions to connect the router.

Chapter 7 – Power-up

This chapter describes the device power-up and how to monitor the self-test progress.

Appendix – Connection description

These chapters provide the pin-out of cables that are compatible with the router.

Table of Contents

1 Safety Instruction

The following symbol instructs the user to consult the manual before any connection:

1.1 Connection to Power Supply

To connect the power supply, always follow these steps:

- Connect the DC input jack from the power supply to the DC 5V power input on the rear panel of the router,
- Connect the power supply to an AC electrical outlet (100-240 VAC). Plugging in the power supply turns on the router.

Unplug the AC input before mounting/unmounting any part on the device. The AC input is the part you must disconnect first. For safety reasons, you shall be able to easily access this part.

1.2 Overcurrent Protection

The product requires that the building's electrical installation is designed for protection against short-circuit (over current) protection. A fuse or circuit breaker no larger than 240 VAC, 10A must be used on the phase conductors.

1.3 Safety Level Interface

The add-on modules and daughter boards must be installed only in the products authorized by OneAccess and only by qualified personnel as recommended in the installation manual.

1.4 LAN Interface 10/100 Mbps (100BT)

The Ethernet 10/100 Mbps auto-sense has a 'SELV' (Safety Extra Low Voltage) interface. They must be used only for indoor applications, connected to a 10/100 Mbps interface, which has also the 'SELV' characteristics.

1.5 Serial Interface (Vxx)

The router has a serial line interface supporting V.11, V.28, V.35 or V.36, which is 'SELV'. It must be used only for indoor applications and connected to V.11, V.28, V.35 or V.36 interfaces which are also designed as 'SELV'.

Do not connect a serial interface cable while the router is booting.

1.6 ADSL/SDSL/G.SHDSL Interface (UPLINK)

The router has an ADSL/SDSL/G.SHDSL interface (TNV-1 type (Telephone Network Voltage)), designed for connection to a telephone line.

1.7 E1.T1 Interface (UPLINK)

This interface is 'TNV-1'.

1.8 ISDN S0 Backup (ISDN)

This interface is 'TNV-1'. It must be only connected to an ISDN S0 interface.

1.9 PSTN Modem Interface (PSTN)

The analog MODEM interface V.32(bis)/V.34/V.90/V.92 is 'TNV-1'. It must be connected to a standard telephone line.

1.10 RS 232 Interface (RS 232)

The daughter board provides 2 RS 232 interfaces, which are 'SELV'. They must be used only for indoor applications and connected to RS 232 interfaces which are also designed as 'SELV'.

1.11 T2 Interface

The PRI201 module marked PBX/E1 DATA offers 1 or 2 ISDN primary interfaces (RJ45 connector). This interface is 'TNV-1'.

In case of indoor unexposed applications, this interface is intended to be connected to a S2/E1/T1 interface, which is also designed as 'TNV-1'.

In case of network E1/T1 applications, this interface is intended to be connected and protected from the network by a Network Termination which is also designed as 'SELV'. For Canada / USA applications the E1/T1 modes must be connected to a Certified / Listed Channel Service Unit (CSU).

1.12 FXS Interface

The FXS modules marked PBX/access offers up to 8 FXS access (RJ45 connectors). These Interfaces are 'TNV 3' (Telecommunications Network Voltage).

1.13 T0/S0 Interface

The T0/S0 modules marked PBX/ISDN offers up to 8 Basic Rate ISDN interfaces (BRI) (RJ45 connector). These interfaces support TNV-1 (Telephone Network Voltage), but may be considered "SELV" in some applications.

The factory configuration of these interfaces is T0 mode. Do not connect these interfaces under this factory configuration with a public ISDN access, under penalty of damaging these modules definitively.

2 Directives and Standards

2.1 Declaration of Conformity

Déclaration de conformité suivant les directives R&TTE, DBT et CEM
Declaration of Conformity according to R&TTE, LVD and EMC directives

ONE200

Commutateur et routeur voix-données / *Voice and data switch and router*

Tension d'alimentation *Supply voltage*	**90-250 Vac, 30 W A, 50-60 Hz (5 V - 6 A)**
avec les cartes *with the cards*	ADSL board, RNIS board (S0 backup, BRI, PRI), FXS board, DSP board

Nous déclarons que ce produit est présumé conforme aux exigences essentielles applicables des directives suivantes du Parlement Européen et du Conseil :

- la Directive R&TTE 1999/5/CE, du 9 mars 1999, concernant les équipements hertziens et les équipements terminaux de télécommunications et la reconnaissance mutuelle de leur conformité ;
- la Directive Basse Tension 73/23/CEE du 19 février 1973 concernant le rapprochement des législations des Etats Membres relatives au matériel électrique destiné à être employé dans certaines limites de tension ;
- la Directive CEM 89/336/CEE du 3 mai 1989 concernant le rapprochement des législations des États membres relatives à la compatibilité électromagnétique, modifiée par la Directive 92/31/CEE du 28 avril 1992.

We declare that this product has been given a presumption of conformity with the applicable essential requirements of the following directives of the European Parliament and of the Council :

- *R&TTE Directive 1999/5/EC of march 9th 1999, on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity ;*
- *Low Voltage Directive 73/23/EEC of february 19th 1973, on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits ;*
- *EMC Directive 89/336/EEC of may 3rd 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility, amended by Directive 92/31/EEC of april 28th 1992.*

Nous déclarons que les normes harmonisées suivantes ont été utilisées pour démontrer cette présomption de conformité et ont donné lieu aux rapports de tests suivants, disponibles sur demande.

We declare that the following harmonised standards were used to demonstrate this presumption of conformity and the results are included in the following tests reports, which can be made available on request.

EN60950 : 2000	**Rapport / *Report* : 03ME03473-03312003**
EN 300386 V1.3.1 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 55022 (98) - FCC Part 15 Class B	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-3-2 (2000)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-3-3 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-2 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-3 (2002)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-4 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-5 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-6 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**
EN 61000-4-11 (2001)	**Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK**

Le produit est marqué du symbole « CE » en application des directives citées ci-dessus.
The product is marked with the « CE » symbol in accordance with the directives mentionned above.

Responsable autorisé / *Authorized signatory* : Directeur Général / *Genaral Chief Officer*

Nom / *Name* : Denis BEHAGHEL

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2.2 Standards

The ONE200 is designed in conformity with the standards listed hereafter, provided that the basic housing, modules, interface boards and installation kits are mounted as recommended in the corresponding installation manual(s).

Safety	
EN60950 (2000)	Safety of information technology equipment, including electrical business equipment.

Environment :	
Climatic, physico chemical, mechanic, packing	
ETS 300 019-1 (95)	Environmental conditions and environmental testing for telecommunication equipment
In use : Temperature Controlled	
Test specification : - class T3.1 (normal) - class T3.1 (exceptionnal)	Part 1, Classification of environmental conditions
Storage: partly temperature controlled	
T1.1	Part 2, Specification of environmental test
Transportation: careful Transportation	
T2.3	

Electromagnetic Compatibility, immunity	
EN 55024	Information technology equipment immunity characteristics. Limits and methods of measurement.
EN 55022 class B (98)	Limits and methods of measurement of radio interference characteristics of information technology equipment .
FCC part 15 class B	Federal Communication Commission regulation (USA).
EN 300386 V.1.3.1 (2001)	EMC Requirements

2.3 FCC Startement (USA)

The United States Federal Communications Commission (in 47 CFR 15.105) has specified that the following notice be brought to the attention of users of this product:

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and the receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio/TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

Use of a shielded cable is required to comply within Class B limits of Part 15 of FCC Rules.

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this device not expressly approved by OneAccess may cause, harmful interference and void the FCC authorization to operate this device.

3 Device Description

3.1 Hardware Description

The ONE200 is a mid-range access router that provides advanced voice and IP services. The router is available with digital and analog telephony interfaces using Circuit Emulation Service (CES), VoDSL (VMOA, VTOA) or VoIP. In addition to voice service, the device features powerful router functions including Quality of Service (QoS), secure access control and extensive management functions.

The basic ONE200 configuration is equipped with (the bolded keywords in parentheses indicate the keywords printed on the router back panel):

- 1 serial port for Configuration and Debug (CONSOLE),
- 1 LAN access 10/100 Mbps (100BT),
- 1 Uplink access: E1/T1 or ADSL or G.SHDSL (2 or 4 wires) or SDSL (UPLINK).

The following functions/interfaces can be optionally offered:

- 1 Serial access V.28/V.11/V.35/V.36, in DTE or DCE mode, with autodetection of the electrical layer (Vxx),
- 1 'IPSEC' encryption accelerator,
- 1 managed switch with 5 ports (SWITCH).

The addition of a daughter board enables the installation of one of the following functions:

- 1 S0 ISDN Backup,
- 1 Modem access (V.32, V.32bis, V.34, V.90, V.92) (PSTN),
- 2 RS232 accesses V.28 (RS 232).

A slot is dedicated to provide voice/data services by means of the following interface modules:

- 4 or 8 analog voice accesses in FXS,
- 4 or 8 ISDN S0/T0 accesses (voice/data), which can be configured in TE or NT,
- 1 or 2 ISDN T2 access (voice/data).

The different combinations are defined when ordering the router.

3.2 Front Panel

The front panel is provided with LEDS, which inform about the status of several router functions.

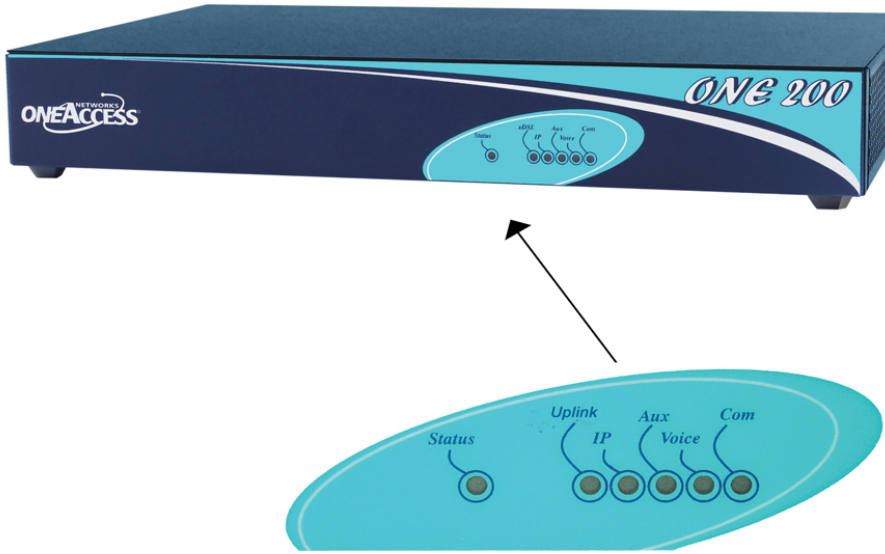


Figure 1. Front panel

Leds	OFF	Green	Red	Orange	Blinking green
Status	Switched Off	Switched On & Operational	Switched On & Not operational		Reboot in progress
Uplink	Not used	Synchronized	Loss of synchronization		Synchronization in progress
IP	Not used	All IP interfaces are up	All IP interfaces are down	One IP Interface is not up (Connection failure on the LAN or WAN)	-
Aux	Not used	Interworking function is operational (FRF, CES)	Failure on Data Service		-
Voice	Not used	Service operational	Service not operational		
Com	No voice communication	Voice Compression operational on one or several channels			

3.3 Rear Panel

All the connectors are located on the rear panel:

- Input for the external power supply connector (DC input jack, **5V-6A**),
- Configuration and Management port (RJ45) (**CONSOLE**),
- 1 WAN access port (MDR36 connector) (**Vxx**),
- 1 xDSL or E1 access port (RJ45) (**UPLINK**),
- 1 LAN access 10/100Mbps port #0 (RJ45) (**100BT**),
- 1 S0 Backup access (RJ45) (**ISDN**) or
  1 Modem access (RJ11) (**PSTN**) and/or 2 x RS 232 access ports (RJ45) (**RS 232**),
- 5 ports switch (RJ45) (**SWITCH**, from port #1 up to #4),
- 1 slot used for the connections to the voice extension modules (**M5**).

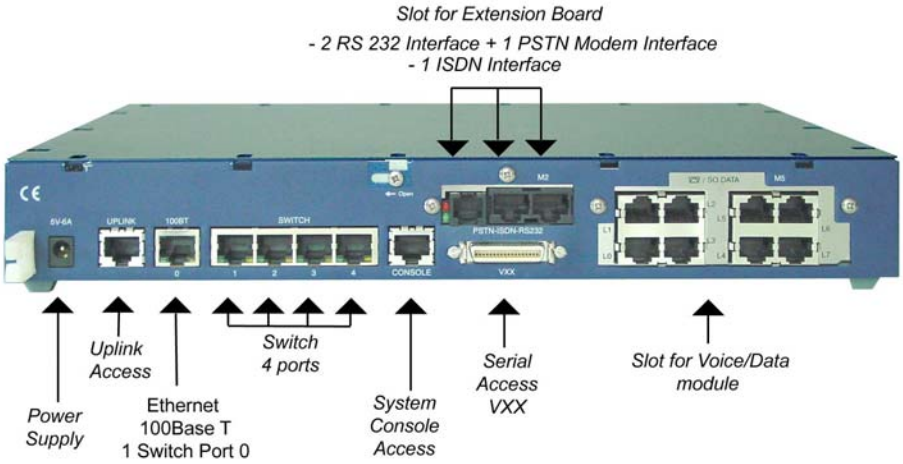


Figure 2. Rear panel equipped with a modem/RS 232 daughter board

Depending of the ordered configuration of the system, the rear panel may vary.

3.4 Mother Board

The mother board provides:

- The processing unit (CPU),
- RAM and flash memory,
- A connector for the installation of S0 or Modem or RS 232 daughter board,
- A connector for the 'voice/data' extension module,
- The connector for the voice compression - decompression module (DSP).

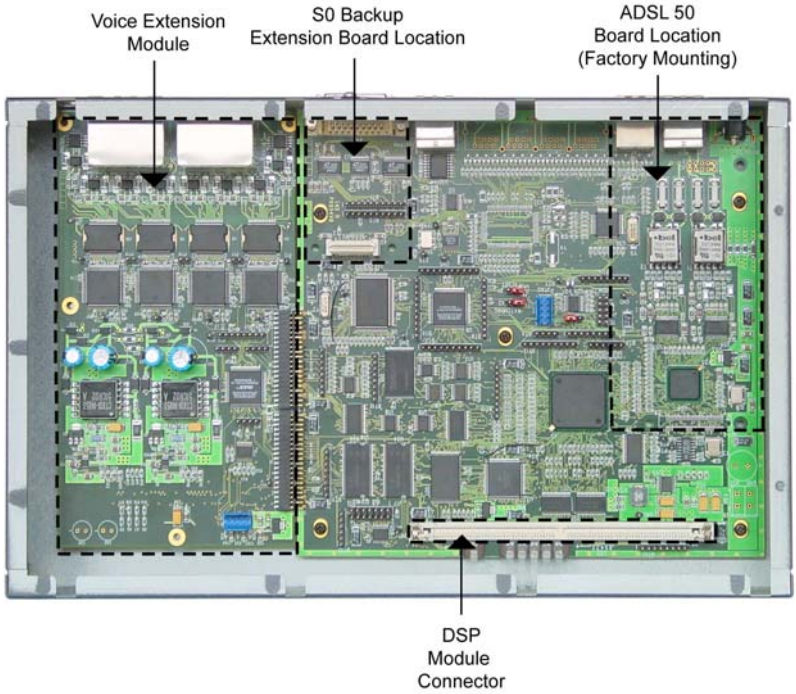


Figure 3. Top View of the ONE200 mother board

Depending on the ordered configuration of the system, the composition of the device may vary.

3.5 Configuration Identification

The different device configurations are identified by adding one or several letters to the device denomination and printed the router labelling sticker.

Options codification:

- **G**: G.SHDSL 2 wire access or SDSL,
- **D**: G.SHDSL 4 wire access,
- **A**: ADSL access, 2 possible versions:
  - UPL-ADSL-AC: ADSL board support G.DMT Annex A ,
  - UPL-ADSL-B/BDT: ADSL board support G.DMT Annex B and B-DT,
- **P**: (for PRI) E1/T1 Uplink access,
- **V**: (V.xx) serial interface supporting V.11/V.35/V.28/V.36,
- **S**: (Security) IPSEC encryption accelerator,
- **E**: Ethernet Switch function,
- **B**: S0 Backup or Modem/RS 232 function supported.

Example

ONE200GE is a ONE200 router equipped with:

- 1 G.SHDSL 2 wires access,
- Ethernet Switch function.

4 Interface Description

4.1 LAN 10/100 Mbps Interface (100BT)

4.1.1 Characteristics

- 10/100 Mbits/s,
- Half or full duplex,
- Auto-negotiation.

4.1.2 Meaning of LED Colors

Lit green Led	Link active
Blinking yellow Led	Traffic in progress

4.1.3 Connector Pinout

RJ45 Connector:

Pin	Signal	Pin	Signal
1	TD (+)	5	NC
2	TD (-)	6	RD (-)
3	RD (+)	7	NC
4	NC	8	NC

4.1.4 Cables

A standard Ethernet cable is needed (shielded UTP Cat. 5).

4.2 Serial Interface (Vxx)

4.2.1 Characteristics

- Interface: RS 232, V.36, X.24, V.35, RS 449, EIA530, RIA530-A,
- DCE and DTE mode,
- Clock mode: contradirectionnal et codirectionnal,
- Automatic configuration of the characteristics of the serial port thanks to the signature of the cable connected.

4.2.2 Cables

The type of cable used on the serial line must be compliant with the configuration.

The installation of a cable on the serial line sets the use mode (DTE or DCE) and the type (V.11 or V.28 or V.35 or V.36) of the considered line.

The automatic detection of the type of the used cable for the serial interface is performed when the device is powered up.

It is mandatory to connect both sides of the serial interfaces (Vxx) cables before powering up the device.

All cables are defined in Appendix A.

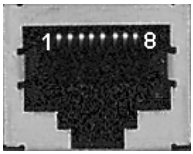
4.3 Debug Interface (CONSOLE)

4.3.1 Characteristics

- RS 232,
- 9600 bps,
- 8 bits, 1 bit for stop, no parity.

4.3.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	TX	5	NC
2	RX	6	NC
3	GND	7	NC
4	NC	8	NC

4.3.3 Cables

The console cable is defined in Appendix B.

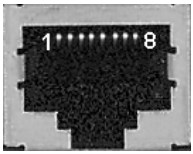
4.4 ADSL Interface (UPLINK)

4.4.1 Characteristics

- ANSI T1.413 issue 2,
- ITU G.992.1 (Gdmt Annex A, B),
- ITU G.992.2 (G.lite),
- Dying gasp (on ADSL interface Annex B).

4.4.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	NC	5	RING
2	NC	6	NC
3	NC	7	NC
4	TIP	8	NC

4.4.3 Cables

The cable of connection to the ADSL must be made using a standard cable.

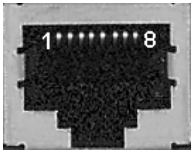
4.5 G.SHDSL/SDSL Interface (UPLINK)

4.5.1 Characteristics

- Line coding: 2B1Q or PAM, ATM-based,
- ETSI TS 101 135, ITU-T G.991.1, ANSI TR-28 for 2B1Q coding (single pair),
- ITU-T G.991.2 for the G.SHDSL (Appendix A and B), 2 or 4 wires,
- Throughput:
  - SDSL 2B1Q: 144 kbps up to 2,320 kbps,
  - SHDSL 2 wires: 192 kbps up to 2,320 kbps,
  - SHDSL 4 wires: 384 kbps up to 4,640 kbps.

4.5.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	TIP (Line 2 / 4 wires)	5	RING (Line 1)
2	RING (Line 2 / 4 wires)	6	NC
3	NC	7	NC
4	TIP (Line 1)	8	NC

Line 2 is intended for the optional G.SHDSL mode with 4 wires.

4.5.3 Cables

The cable of the G.SHDSL interface must be carried out using a standard telephone cable according to the wiring described above.

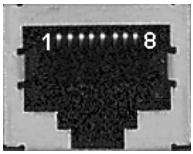
4.6 E1/T1 Interface (UPLINK)

4.6.1 Characteristics

- E1 or T1,
- ANSI T1. 403 et FCC68,
- ITU-T I.431, G.703, G.736 (E1), G.823 (E1). G.704.

4.6.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	RX (+)	5	TX (-)
2	RX (-)	6	NC
3	NC	7	NC
4	TX (+)	8	NC

4.6.3 Cables

The cord used for access E1/T1 is a shielded cord category 5, including 2 twisted pairs: emission (4-5) and reception (1-2).

4.7 Ethernet Switch Interface (SWITCH)

4.7.1 Characteristics

The switch Ethernet function offers 4 ports Ethernet. Every port can be switched and/or routed.

- 10/100 Mbits/s,
- Half or full duplex,
- Auto-negotiation,
- Auto MDI/MDIX (detection whether the cable is crossed or not).

4.7.2 Meaning of LED Colors

Green LED Lit	Link active
Blinking yellow LED	Traffic in progress

4.7.3 Connector Pinout

RJ45 Connector:

Pin	Signal	Pin	Signal
1	TD (+)	5	NC
2	TD (-)	6	RD (-)
3	RD (+)	7	NC
4	NC	8	NC

4.7.4 Cables

The cables are shielded, crossover/straight cables with 4 twisted pairs. The switch supports autodetection of crossover/straight cable ('auto-MDI/MDI-X detection'); the transmission pairs are (1-2) and receive pairs are (3-6).

4.8 S0 Interface (ISDN)

4.8.1 Characteristics

The interface provides an ISDN access designed for data services.

- TE Mode only,
- Full duplex 2B + D channels compliant with ITU-T I.430.

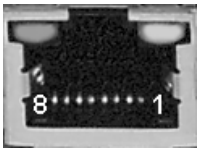
4.8.2 Meaning of LED Colors

2 LEDs provide the port status:

Green LED	Off	Level 1 deactivated
	On	Level 1 activated
Yellow LED	Off	No communication
	On	Communication in progress

4.8.3 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	NC	5	RX (-)
2	NC	6	TX (-)
3	TX (+)	7	NC
4	RX (+)	8	NC

4.8.4 Cables

The ISDN cord is an unshielded cable including 2 twisted pairs: emission (3-6) and reception pairs (4-5).

4.9 PSTN Modem Interface (PSTN)

4.9.1 Characteristics

The router can be equipped with a daughter board delivering an access to the PSTN via an integrated analog modem. The modem has the following characteristics:

- Compatible with V.32, V.32bis, V.34, V.90 and V.92,
- Compliant with TBR21.

4.9.2 Connector Pinout

RJ11 Connector:

Pin	Signal
1	NC
2	RING
3	TIP
4	NC

4.9.3 Cables

The cable is a standard telephone cord with one twisted pair.

4.10 RS 232 Interface

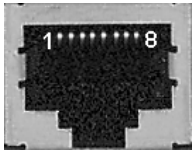
4.10.1 Characteristics

An extension board allows to provide 2 RS 232 access.

- Synchronous mode: DCE or DTE mode is supported (configuration with jumpers),
- Asynchronous mode (< 115 kbits/s),
- Electrical Interface V.28,
- 8 signals managed: 102, 103, 104, 105 (RTS), 106, 108 (RTS), 109 (CD), 115.

4.10.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	115 / RXC	5	103 / SD
2	105 / DPE	6	108 / ETDP
3	104 / RD	7	102 / GND
4	109 / DS	8	106 / PAE

4.10.3 RS 232 Configuration

Each RS 232 interface can be separately configured in DTE or DCE mode when using the synchronous mode:

	PORT 0	PORT 1
DCE	X3 1  DCE_DTE	X2 1  DCE_DTE
DTE	X3 1  DCE_DTE	X2 1  DCE_DTE

When using the asynchronous mode, the jumper connection is not relevant.

4.10.4 Cables

The cable type must correspond to the desired more (DCE or DTE). All types of cord for RS 232 port are defined in Appendix C.

4.11 FXS Analog Interface

The FXS204/208 module enables the connection of up to 4 or up to 8 analog telephone lines thus providing up to 8 analog voice interfaces.

The use of this module requires the installation of one DSP module (8-channels).

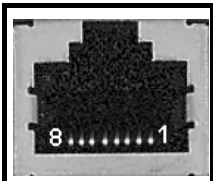
The connection of the FXS interfaces is done via RJ45 connectors (1 connector per FXS).

4.11.1 Characteristics

- Line impedance: 600 Ω or complex,
- Frequency range of the ringing signal: 16Hz to 70 Hz,
- Voltage of the ringing signal: > 35VRMS for a load of 1 REN (6,93K + 8µF @ 20Hz) in the frequency range,
- Line current: 24 mA max. for a line resistance <1000 Ω,
- Polarity inversion of the TIP and RING pins,
- Line current <2mA in the power-down mode,
- Q.23 dialing,
- Ringer Equivalency Number (REN): 2 / interface.

4.11.2 Connector Pinout

The connection to the analog voice interface is made on the rear panel via an RJ45 connector. The connector pinout is as follows:



Pin	Signal	Pin	Signal
1	NC	5	TIP
2	NC	6	NC
3	NC	7	NC
4	RING	8	NC

4.11.3 Cables

The cable used for a connection toward a PABX or toward a standard analog phone set in FXS mode is realized with a RJ45 plug on one hand and with 8 wires on the other hand. Two of these wires must be connected to the wiring closet of the PABX or to a telephonic plug.

The FXS208 modules have a screw marked located on the rear panel. This must be permanently connected to the main protective earth (refer to Chapter 1, Safety Instruction).

4.12 T0/S0 Interface

4.12.1 BRI204/208 module configuration

The BRI204 module is composed of a mother board which supports 4 digital interfaces. These interfaces can be manually configured by means of jumpers.

The BRI208 module is composed of a mother board which supports 4 digital interfaces, and of an extension board which supports 4 additional digital interfaces. These additional interfaces can also be manually configured by means of jumpers.

In order to configure the line 0 to 3 supported by the BRI208 mother board, it is necessary to remove the extension board to access to the jumpers:

- Firmly hold the BRI208 motherboard,
- Carefully rise up the extension board in order to unplug the 2 connectors from the motherboard.

The factory configuration of these interfaces is T0 mode. Do not connect these interfaces under this factory configuration with a public ISDN access, under penalty of damaging these modules definitively.

4.12.2 Port Settings (BRI204 - BRI208)

A specific location is available to leave the unused jumpers italique.

X5 Jump

Function	Activates the Life Line function
Configuration	Set : Life Line function inactive
	Removed : Life Line function active
Factory setting	Set

X6 Jump

Function	Activates the watchdog of the Life Line function (activated in normal running)
Configuration	Set : watchdog active
	Removed : watchdog inactive
Factory setting	Set

[X1;X2] [X7;X8] [X11;X12] [X15;X16] Jump

Function	Operating in pairs, activate power feeding for ISDN terminals from line #0 up to #3 (30 volts)
Configuration	Set : Power supply connected (both jumpers set)
	Removed : Power supply disconnected (both jumpers removed)
Factory setting	Set

[X3;X4] [X9;X10] [X13;X14] [X17;X18] Jump

Function	Operating in pairs, connect a 100Ω impedance adaptation for line #0 up to #3, the first jumper of the pair is associated with the reception, the second one with the transmission
Configuration	Set : Adaptation connected
	Removed : Adaptation disconnected
Factory setting	Set

4.12.3 Extension Board Settings (BRI208)

A specific location is available to leave the unused jumpers.

[X1;X2] [X5;X6] [X9;X10] [X13;X14] Jumps

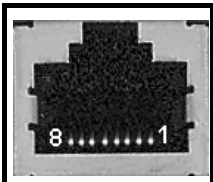
Function	Operating in pairs, activate power feeding for ISDN terminals from line #0 up to #3 (30 volts).
Configuration	Set: Power supply connected (both jumpers set
	Removed: Power supply disconnected (both jumpers removed)
Factory setting	Set

[X3;X4] [X7;X8] [X11;X12] [X15;X16] Jumps

Function	Operating in pairs, connect a 100Ω impedance adaptation for line #0 up to #3, the first jumper of the pair is associated with the reception, the second one with the transmission.
Configuration	Set Adaptation connected
	Removed Adaptation disconnected
Factory setting	Set

4.12.4 Connector Pinout

The connection to the BRI accesses is made on the rear panel via RJ-45 connectors. The RJ45 connector pinout is:



Pin	Signal	Pin	Signal
1	NC	5	TX (-)
2	NC	6	RX (-)
3	RX (+)	7	NC
4	TX (+)	8	NC

4.13 T2 Interface

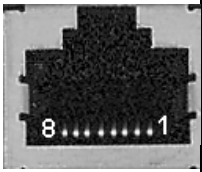
The PRI201 module provides 1 or 2 E1/T2 G.703/G.704 access.

Associated with a DSP compression - decompression module, this interface supports up to 16 voices channels.

The external connection of the E1/T2 interface is made on the rear panel using an RJ45 connector.

4.13.1 Connector Pinout

The connection to the PRI access is made on the rear panel using the RJ45 connector in accordance with the following pinout



Pin	Signal	Pin	Signal
1	RX (+)	5	TX (-)
2	RX (-)	6	NC
3	NC	7	NC
4	TX (+)	8	NC

4.13.2 Cables

The cable required for E1/T2 access is a shielded cable with 2 twisted pairs (transmission pairs (4-5) and receive pairs (1-2).

4.14 DSP 400 Module

The DSP400 module(s) are used in association with the BRI208, PRI201 and FXS208 modules to provide.

These modules realize the compression & decompression for the voice communication.

Two modules are available:

- DSP401 module, equipped with 1 DSP processor (8 voice channels),
- DSP402 module, equipped with 2 DSP processors (16 voice channels).

The ONE200 supports 1 DSP module and can process up to 16 voice channels.

The DSP modules are secured and connected to the motherboard by a 80 pins SIMM connector.

The table below summarizes the type of DSP module required for each modules

Voice Module	Required DSP Module
FXS204	DSP401
FXS208	DSP401
BRI204	DSP401
BRI208	DSP402
PRI201	DSP402

5 Technicals Characteristics

5.1 Climatic Environment

Operating Conditions:

Temperature	0° C ≤ T ≤ 45°C
Relative Humidity (HR)	5% ≤ HR ≤ 80%
Absolute Humidity	≤ 24g / m3
Altitude	≤ 2500 m

Storage Environment:

Temperature	- 25° C ≤ T ≤ 55°C
Relative Humidity (HR)	5% ≤ HR ≤ 80%
Absolute Humidity	≤ 24g / m3
Altitude	≤ 2500 m

5.2 Power Supply

- External Power Supply 100-240 VAC / 30W (5V - 6A),
- External Power Supply 48 VDC.

5.3 Dimensions

The dimensions of the housing are:

Width	320 mm
Height	1 U
Depth	200 mm

6 Installation

Always unplug. the power cable before any hardware maintenance operation.

This chapter describes mounting/unmounting operations for optional modules. The user should be aware that the router software auto-detects on-board modules and interfaces.

All vacant slots of the rear panel must be obstructed with suitable face-plates in order to guarantee the respect of the EMC standards as defined in Chapter 2. Directives and Standard

6.1 Opening the Chassis

1 By means of a Posidriv #1 screwdriver, unlock the screw **without removing it**, (half a turn should be sufficient for unlocking the screw). Make the screw slide to the left hand side (by following the arrow next to the 'Open' mark),
2 Slide the cover from the front to back panel as indicated on the figure below,
3 Remove the cover.

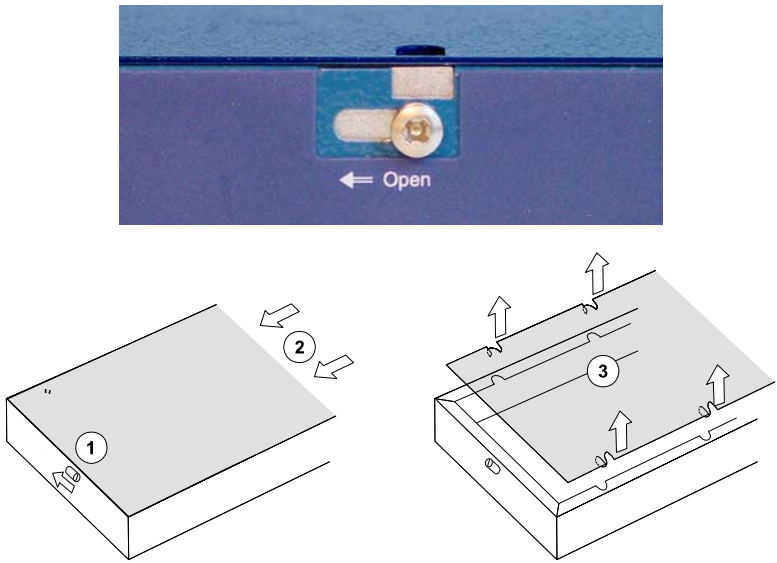


Figure 4. Opening the Chassis

6.2 Extension Board

The installation or exchange of a daughter board requires opening the chassis.

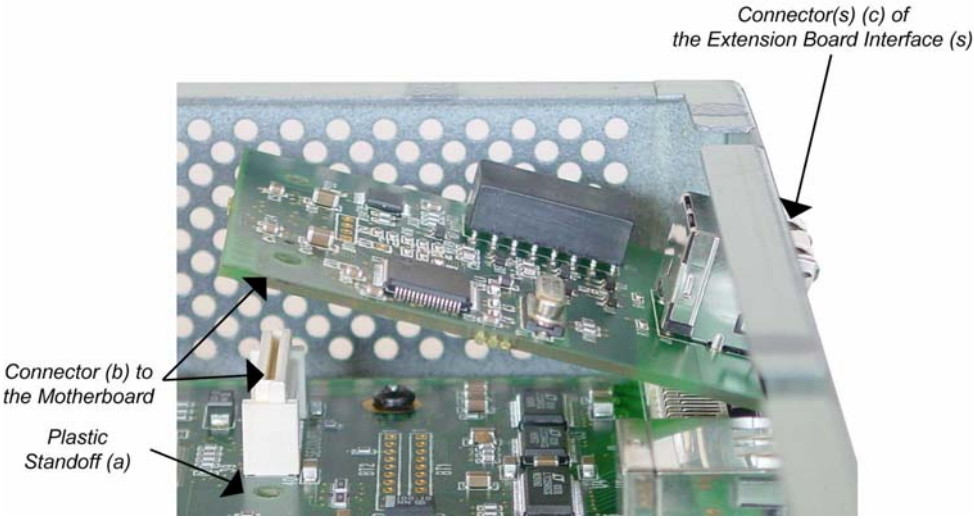


Figure 5. Removal-Installation of an Extension Board

6.2.1 Removal of an Extension Board

- Unlock and remove the screws (a) of the module on the rear panel,
- Unlock and remove the screws (b) of the module printed circuit,
- Loosen the module from the motherboard connector by gently separating the motherboard and the module,
- Rise up the board.

6.2.2 Installation of an Extension Board

- Remove the protective faceplate of the slot,
- Position the module so that the module metallic faceplate fits in the place made available by the removal of the faceplate,
- Lower the module while aligning the module with the motherboard connector,
- Plug the module into the motherboard connector,
- Tighten the screws (b) on the printed circuit,
- Tighten the screws (a) on the router rear panel.

6.3 Installation of a DSP Module

Interventions on the DSP module require the removal of the protective cover of the device.

The DSP module is installed in the location indicated on the configuration is automatically detected, controlled and taken into account during the powering up of the device.

The DSP module connector has two clips at each far end to lock the module.

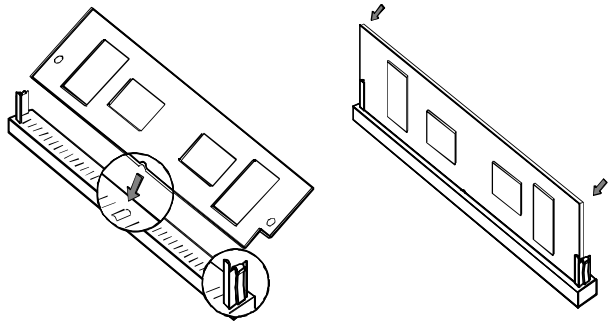


Figure 6. Installation of the DSP Module

The DSP module is very fragile and must be handled with care

6.3.1 Removal of a DSP Module

- Separate slightly and simultaneously both clips toward the outside. The module must move downwards on its own,
- Loosen the module upwards.

The module is cut asymmetrically (alignment notch) to identify which way the module is inserted in the connector.

6.3.2 Installation of a DSP Module

- Position the module in the SIMM connector with a 45° angle with the motherboard. Make sure that the module punching fits with the 'bump' of the SIMM connector,
- Move gently the DSP module to put it in a vertical position and tighten this module firmly until the lateral clips lock the module in vertical position.

6.4 Voice Extension Module

The exchange or the installation of extension module requires the removal of the upper protective cover.

The extension modules can be installed into the slot marked 'M5'. The inserted module is automatically detected and checked during power-up.

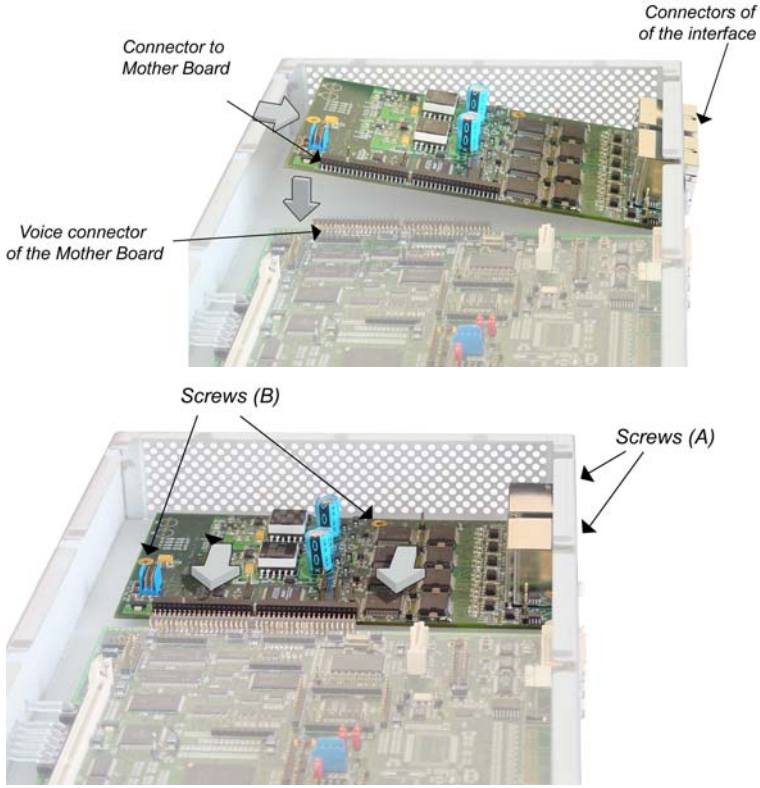


Figure 7. Installation of a Voice Extension Board

6.4.1 Removal of a Voice Extension Module

- Unlock and remove the screws (a) of the module on the rear panel,
- Unlock and remove the screws (b) of the module printed circuit,
- Loosen the module from the motherboard connector by gently separating the motherboard and the module,
- Rise up the board.

6.4.2 Installation of a Voice Extension Module

- Remove the protective faceplate of the slot,
- Position the module so that the module metallic faceplate fits in the place made available by the removal of the faceplate,
- Lower the module while aligning the module with the motherboard connector,
- Plug the module into the motherboard connector,
- Tighten the screws (B) on the printed circuit,
- Tighten the screws (A) on the router rear panel.

The FXS204/208 modules have a screw marked located on the rear panel. This screw must be permanently connected to the main protective ground.

In case of BRI208 module installation, it is necessary to remove the mezzanine daughter board (providing the four additional BRI ports) to access the fixing screws with the chassis.

6.5 Connections

6.5.1 External Power Supply

The external power supply is connected on the rear panel of the device.

The external power supply is delivered with the router package.

- Connect the 'jack' connector of the external power supply to the connector marked '**5V-6A**' device connector,
- Secure the power supply connection by installing the DC power supply cord into the plastic ring as indicated in Figure 8.

Figure 8. Connection of the DC Input Jack

The device shall not be used with another power supply than a power supply recommended by OneAccess.

7 Power up

To power up the device, always follow these steps:

- Connect the DC power input jack from the power supply to the DC power input of the rear panel of the router,
- Connect the power supply to the AC mains (100-240 V AC).

Few seconds after power-on, the device performs a series of self-tests and loads the software into memory (RAM), during which the 'STATUS' LED on the front panel blinks.

At the end of software loading (about 30 seconds):

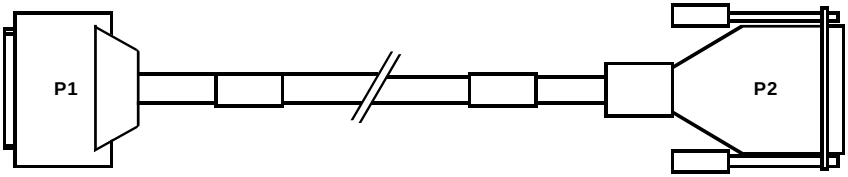
- The 'STATUS' LED light remains steady green if software initialization was successfull,
- The 'STATUS' LED remains blinking in case of software absence or error during software loading.

Refer to the Software and ONEOS User Guide for more information.

Appendix A Serial Interface cable

A.1 V.24/V.28 DTE CORD

Pin Connection Table reference: ***4 021 863 00 Ed A***

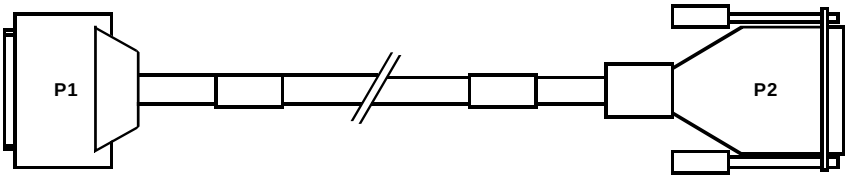


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 25 Pts male**
Casing	Screening	1 + Casing
1	103 (SD)	2
2	113 (TXCE)	24
3	114 (TXC)	15
4	115 (RXC)	17
5	104 (RD)	3
6		
7	105 (RTS)	4
8	108 (DTR)	20
9		
10	109 (CD)	8
11	107 (DSR)	6
12	106 (CTS)	5
13	141 (LL)	18
14	142 (TM)	25
15		
16	102	7
17	Ident0	
18	Ident2*	
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31	125 (IA)	22
32	140 (RL)	21
33		
34	102	
35	Ident1*	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.2 V.24/V.28 DCE CORD

Catalog reference: ***4 021 864 00 Ed A***

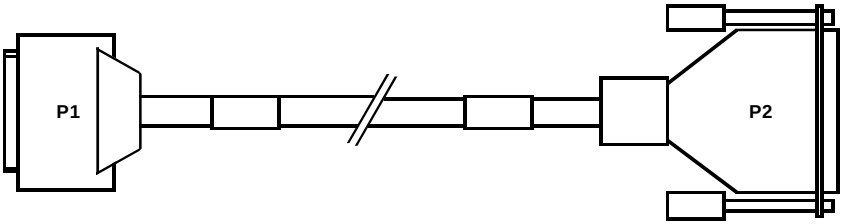


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 25 Pts female**
Casing	Screening	1 + Casing
1	104 (RD)	3
2	115 (RXC)	17
3	114 (TXC)	15
4	113 (RXCE)	24
5	103 (SD)	2
6		
7	106 (CTS)	5
8	107 (DSR)	6
9		
10	109 (CD)	8
11	108 (DTR)	20
12	105 (RTS)	4
13	125 (IA)	22
14	140 (RL)	21
15		
16	102	7
17	Ident0*	
18	Ident2*	
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31	141 (LL)	**18**
32	142 (TM)	**25**
33		
34	102	
35	Ident1	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.3 V.36 DTE CORD

Catalog reference: ***4 021 865 00 Ed A***

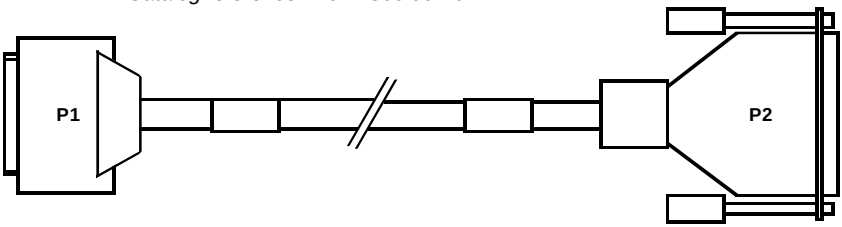


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 37 Pts male**
Casing	Screening	1 + Casing
1	103A (SD)	4
2	113A (TXCE)	17
3	114A (TXC)	5
4	115A (RXC)	8
5	104A (RD)	6
6		
7	105A (RTS)	7
8	108A (DTR)	12
9		
10	109A (CD)	13
11	107A (DSR)	11
12	106A (CTS)	9
13	141 (LL)	10
14	142 (TM)	18
15	102a	37
16	102	19
17	Ident0	
18	Ident2*	
19	103B (SD)	22
20	113B (TXCE)	35
21	114B (TXC)	23
22	115B (RXC)	26
23	104B (RD)	24
24		
25	105B (RTS)	25
26	108B (DTR)	30
27		
28	109B (CD)	31
29	107B (DSR)	29
30	106B (CTS)	27
31	125 (IA)	15
32	140 (RL)	14
33	102b	20
34	102	
35	Ident1	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.4 V.36 DCE CORD

*Catalog reference**: 4 021 866 00 Ed A***

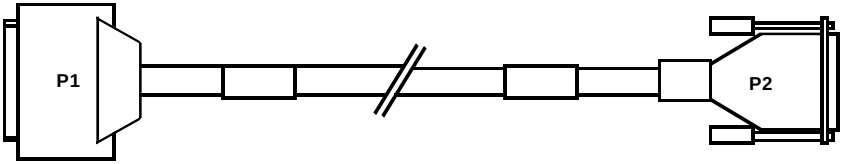


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 37 Pts female**
Casing	Screening	1 + Casing
1	104A (RD)	6
2	115A (RXC)	8
3	114A (TXC)	5
4	113A (TXCE)	17
5	103A (SD)	4
6		
7	106A (CTS)	9
8	107A (DSR)	11
9		
10	109A (CD)	13
11	108A (DTR)	12
12	105A (RTS)	7
13	125 (IA)	15
14	140 (RL)	14
15	102b	20
16	102	19
17	Ident0*	
18	Ident2	
19	104B (RD)	24
20	115B (RXC)	26
21	114B (TXC)	23
22	113B (TXCE)	35
23	103B (SD)	22
24		
25	106B (CTS)	27
26	107B (DSR)	29
27		
28	109B (CD)	31
29	108B (DTR)	30
30	105B (RTS)	25
31	141 (LL)	10
32	142 (TM)	18
33	102a	37
34	102	
35	Ident1*	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.5 X.21/V.21 DTE CORD

Catalog reference: ***4 021 867 00 Ed A***

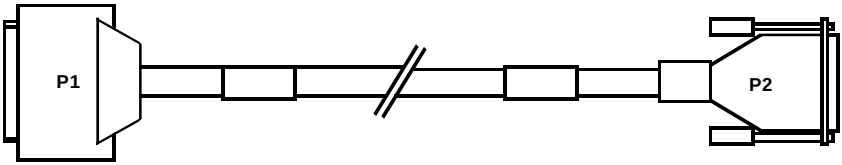


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 15 Pts male**
Casing	Screening	1 + Casing
1	103 (TA)	2
2	113 (XA)	7
3		
4	115 (SA)	6
5	104 (RA)	4
6		
7	105 (CA)	3
8		
9		
10		
11		
12	109 (IA)	5
13		
14		
15		
16	102	8
17	Ident0	
18	Ident2	
19	103 (TB)	9
20	113 (XB)	14
21		
22	115 (SB)	13
23	104 (RB)	11
24		
25	105 (CB)	10
26		
27		
28		
29		
30	109 (IB)	12
31		
32		
33		
34	102	
35	Ident1*	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.6 X.21/V.11 DCE CORD

Catalog reference: ***4 021 868 00 Ed A***

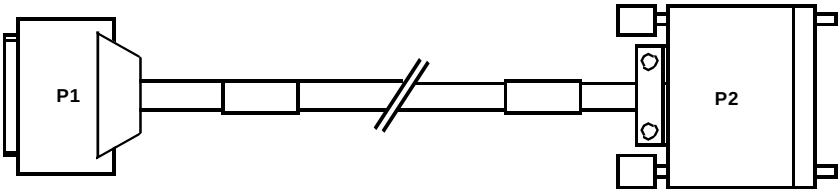


- P1 - **MDR 36 Pts**	SIGNAL	P2- **SUB-D 15 Pts female**
Casing	Screening	1 + Casing
1	104 (RA)	4
2	115 (SA)	6
3		
4	113 (XA)	7
5	103 (TA)	2
6		
7	109 (IA)	5
8		
9		
10		
11		
12	105 (CA)	3
13		
14		
15		
16	102	8
17	Ident0*	
18	Ident2	
19	104 (RB)	11
20	115 (SB)	13
21		
22	113 (XB)	14
23	103 (TB)	9
24		
25	109 (IB)	12
26		
27		
28		
29		
30	105 (CB)	10
31		
32		
33		
34	102	
35	Ident1	
36	Ident3	

* signal looped to pin 34 for cable autodetection

A.7 V.35 DTE-1mm CORD

Catalog reference: ***4 022 170 00 Ed A***

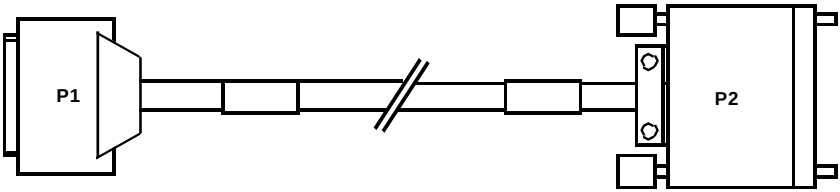


- P1 - **MDR 36 Pts**	SIGNAL	P2- **male connector**
Casing	Screening	1 + Casing
1	103A (SD)	P
2	113A (TXCE)	U
3	114A (TXC)	Y
4	115A (RXC)	V
5	104A (RD)	R
6		
7	105A (RTS)	C
8	108A (DTR)	H
9		
10	109A (CD)	F
11	107A (DSR)	E
12	106A (CTS)	D
13	141 (LL)	L
14	142 (TM)	NN
15		
16	102	B
17	Ident0	
18	Ident2*	
19	103B (SD)	S
20	113B (TXCE)	W
21	114B (TXC)	AA
22	115B (RXC)	X
23	104B (RD)	T
24		
25		
26		
27		
28		
29		
30		
31	125 (IA)	J
32	140 (RL)	N
33		
34	102	
35	Ident1	
36	Ident3*	

* signal looped to pin 34 for cable autodetection

A.8 V.35 DCE-1mm CORD

Catalog reference: ***4 022 171 00 Ed A***

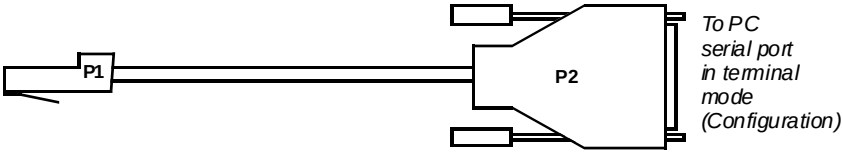


P1 - **MDR 36 Pts**	SIGNAL	P2- **female connector**
Casing	Screening	A + Casing
1	104A (RD)	R
2	115A (RXC)	V
3	114A (TXC)	Y
4	113A (TXCE)	U
5	103A (SD)	P
6		
7	106A (CTS)	D
8	107A (DSR)	E
9		
10	109A (CD)	F
11	108A (DTR)	H
12	105A (RTS)	C
13	125 (IA)	J
14	140 (RL)	N
15		
16	102	B
17	Ident0*	
18	Ident2	
19	104A (RD)	T
20	115B (RXC)	X
21	114B (TXC)	AA
22	113B (TXCE)	W
23	103B (SD)	S
24		
25		
26		
27		
28		
29		
30		
31	141 (LL)	L
32	142 (TM)	NN
33		
34	102	
35	Ident1*	
36	Ident3*	

* signal looped to pin 34 for cable autodetection

Appendix B - Console Cord

Catalog reference: **4 022 332 B 00 Ed A**

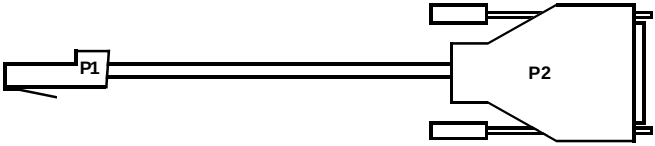


RJ45 - P1	SIGNAL	SUB-D 9 Pts Female - P2
1	TX	2
2	RX	3
3	GND	5

Appendix C - RS 232 Interface Cord

C.1 V.28 / RS 232 DTE CORD

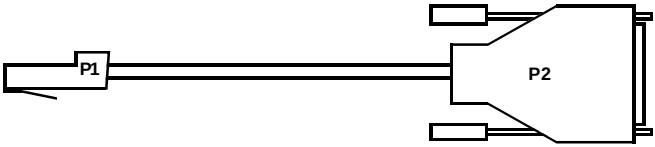
Catalog reference : ***4022 815 B 00***



- P1 - RJ45	SIGNAL	P2 - SUB-D 25 Pts Male
1	115 (RXC)	17
2	106 (CTS)	5
3	103 (SD)	2
4	108 (DTR)	20
5	104 (RD)	3
6	109 (CD)	8
7	102	7
8	105 (RTS)	4
Screening		Casing

C-2. V.28 / RS 232 DCE Cord

Catalog reference: ***9594 508 07146***



- P1 - RJ45	SIGNAL	P2 - SUB-D 25 Pts female
1	115 (RXC)	17
2	105 (RTS)	4
3	104 (RD)	3
4	109 (CD)	8
5	103 (SD)	2
6	108 (DTR)	20
7	102	7
8	106 (CTS)	5
Screening		Casing