ZoneVu

SERIES 2 MODULAR VIDEO
MATRIX SYSTEM
USERS MANUAL

ZVM-SERIES 2

SECURITY *with* VISION

CE

CCTV MANUFACTURERS & DISTRIBUTORS ASSOCIATION

CONTENTS

1. SERIES 2 MATRIX WELCOME

Thank-you for purchasing one of our ZoneVu products.

The ZVM SERIES 2 is a highly modular expandable video matrix system capable of routing over 1024 video inputs to over 256 video outputs. Designed with the latest video cross point technology the Bandwidth and Cross talk performance of the ZVM SERIES 2 Video Matrix is exceptional. The modular design brings flexibility and a wide choice of options for CCTV installations.

MEYERTECH are dedicated to customer service and support. If you have any questions or problems, our staff will be pleased to assist you on the technical help line listed on page **Error! Bookmark not defined.**.

Information regarding other **MEYERTECH** products and technical information can be found on the **MEYERTECH** World Wide Web site by pointing your Internet browser to:

http://www.meyertech.co.uk

2. FEATURES

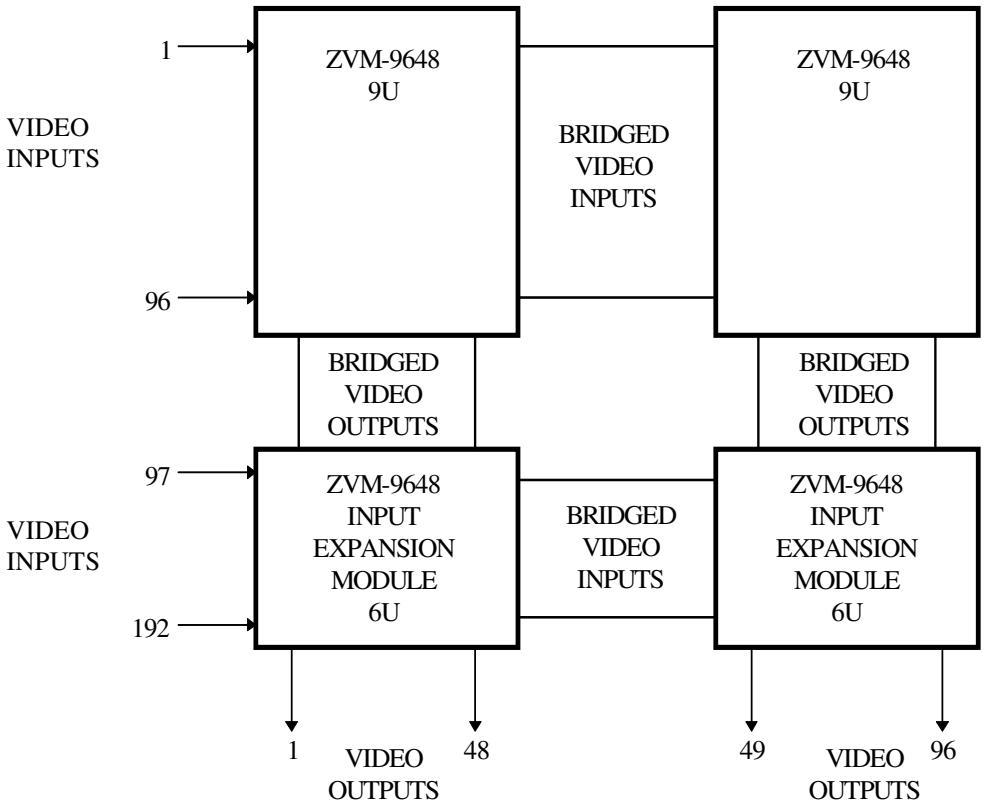
- Bridged video inputs
- Standard support for 32 operator keyboards (including a socket for direct attachment of 1 keyboard).
- OSD (camera captions & time/date generator)
- RS422 telemetry camera control
- Alarm Processing - optional
- PC Interfacing - optional
- High density cross point switching
- Non Volatile Memory
- 19-inch euro-rack enclosure compatible
- Compatible with leading UK GUI vendors
- Salvo & Zonal video switching
- Compatible with the full range of ZoneVu products.

2.1 OPTIONS

A standard ZVM Series 2 configuration requires a ZVM-XXX video matrix module, a ZVC-256 and / or a ZSC-1000plus system controller module and a ZVS-PSU module. Optional modules can be added such as Alarm Processing and Management, and PC GUI control. A typical CCTV system installation may also require ZVR-xxx telemetry receivers, ZVK-xxx operator keyboards and ZVD-xxx peripheral equipment drivers.

2.2 ZVM VIDEO MATRIX MODULES

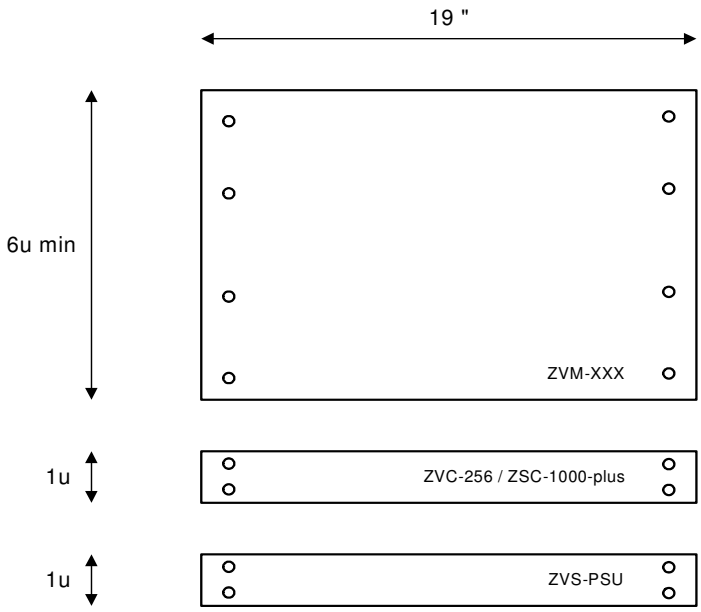
Typical ZVM Video Matrix Configuration



A typical ZoneVu ZVM Series 2 video matrix system will comprise of 3 or more system modules

- ZVM-xxx Video Matrix Module
- ZVC-256 and / or ZSC-1000plus System Controller
- ZVS-PSU System Power Supply Unit

ZVM Series 2 Modules are supplied in Euro rack enclosures and designed to fit into 19” Euro rack cabinets available from companies such as VERO.



3. INSTALLATION

To obtain the optimum performance from your ZVM SERIES 2 Video Matrix System please take time to read this manual before commencing installation. If you have any questions or problems our staff will be pleased to assist you on the technical help lines listed on page **Error! Bookmark not defined.**.

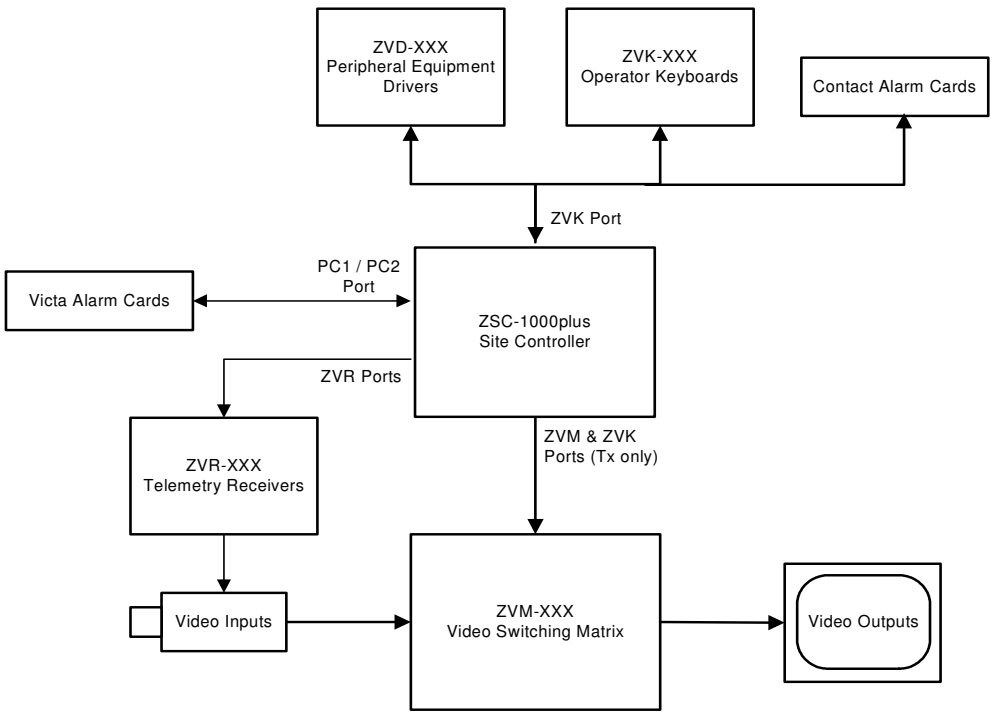
WARNING **THIS EQUIPMENT CONTAINS HAZARDOUS VOLTAGES. THIS EQUIPMENT MUST BE EARTHED TO PREVENT FIRE OR SHOCK HAZARD. DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**

3.1 CONNECTING THE ZVM SERIES 2

Connect up the ZVM SERIES 2 in accordance with the accompanying wiring diagram, paying special attention to the maximum ratings and the notes below.

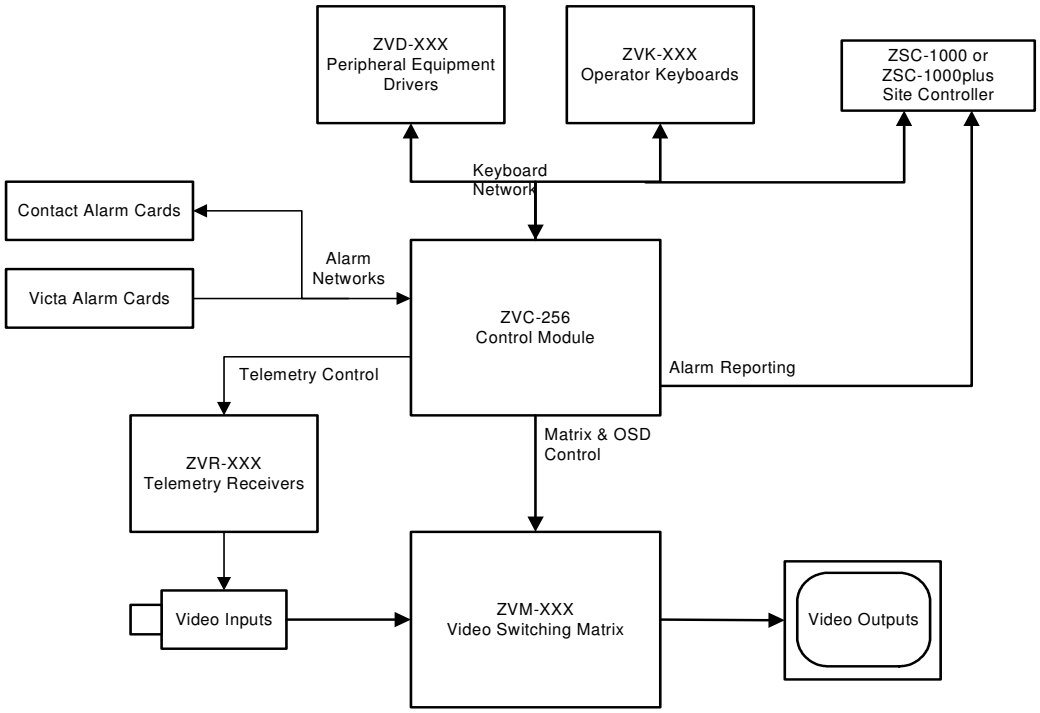
1. The ZVM SERIES 2 MUST be earthed at the AC input supply terminal of the PSU.
2. ALWAYS use Screened cables for low voltage and signal cables ensuring that the screen is connected to 0V or Earth.
3. AVOID looming cables of differing characteristics together E.G. Video cables with cables carrying mains power.
4. The maximum cable run for Twisted Pair is typically 2Km.
5. The maximum cable run for VICTA is typically 750m.

With ZSC-1000plus controller



6. Connect the ZVK port Tx pair at the ZSC-1000plus to the Matrix Control Rx pair at the ZVMXXX
7. Connect the ZVM port Tx pair to the OSD Text Rx pair at the ZVM-XXX.
8. Connect all Telemetry receivers to the ZVR Ports at the ZSC-1000plus
9. Connect all Keyboard Tx lines to the ZSC-1000plus ZVK port Rx line and all Keyboard Rx lines to the ZSC-1000plus ZVK port Tx lines.
10. Contact Alarm Sub-racks should be connected through the ZVK port.
11. Victa Alarm Communications from sub-racks or matrix cards should be connected to the Rx on the PC1 or PC2 ports at the ZSC-1000plus

With ZVC-256 controller



6. Connect the ZVC-256 System Text Output to an unused video input.
7. Connect the Matrix Tx lines at the ZVC-256 to the Matrix Control Rx lines at the ZVM-XXX.
8. Connect the OSD Tx lines at the ZVC-256 to the OSD Text Rx lines at the ZVM-XXX.
9. Connect all Telemetry receivers to the Telemetry Tx lines at the ZVC-256.
10. Connect all Keyboard Tx lines to the ZVC-256 Keyboard Network Rx line and all Keyboard Rx lines to the ZVC-256 Keyboard Network Tx line.
11. Contact Alarm Sub-racks should be connected through the Alarm Network port.
12. Victa Alarm Communications from sub-racks or matrix cards should be connected to the Rx on the PC Alarms port.

4. CONFIGURATION

The ZVM SERIES 2 is configured differently dependant on whether it has a ZVC-256 controller.
For configuration without a ZVC-256, please refer to the ZSC-1000plus user manual.

The ZVC-256 should now be configured by logging on from a ZVK-007 or ZVK-77 keyboard and following the On Screen Menus.

Select the ZVC-256 System Text Output onto the desired monitor.

4.1 CONFIGURING A SERIES 2 WITH A ZVK-007

4.1.1 LOGGING ON FROM THE ZVK-007 KEYBOARD

Access to Matrix Configuration is achieved by logging on to the SUPERVISOR LEVEL of the keyboard.

1. Log On to the ZVK-007 at Supervisor Level.
2. Use the **MODE** Key to step through the Menu options to **ZVM CONFIG.** Select using the **ENT** key.
3. The ZVM SERIES 2 will respond by displaying the Main Menu on the System Text Output.

4.1.2 MENU NAVIGATION

The following **ZVK-007** keys are used to configure the matrix.

ENT	Proceed to the selected option. Also used to accept parameters and to toggle through available options.
DEL	Used to navigate through the menus and to delete characters whilst editing text captions.
MODE/SHIFT	Toggle between Alphabetic and Numeric Keys.
DEC	Toggle between Upper and Lower case characters.
<< (PIP)	Used to move cursor left when editing captions.
>> (ACT)	Used to move cursor right when editing captions.

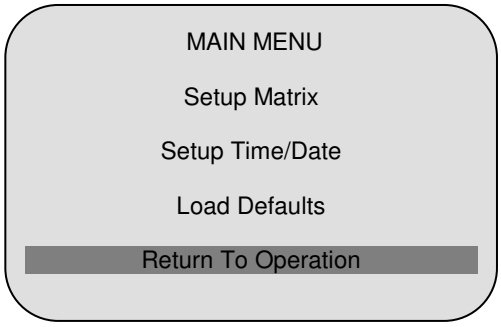
4.2 CONFIGURING A SERIES 2 FROM A ZVK-77

Reference the ZVK-77 User Manual.

Configuration is performed via the programming menu using the softkeys as indicated.

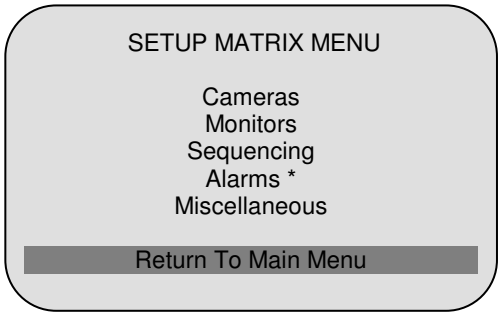
4.3 OSD MENU SYSTEM

Configuration is divided into three sections within the Main Menu of the **O**n **S**creen **D**isplay. To navigate through the menu options press the **DEL** key. The highlighted option can then be accessed by pressing **ENT**.



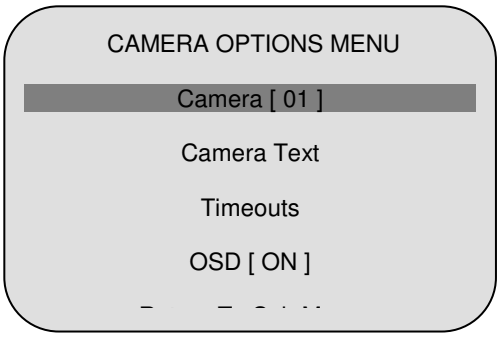
4.4 SETUP MATRIX

The SETUP MATRIX menu is used to configure Camera's, Monitor's, Sequencing, Alarm's and other features.



* ZVA-APM Option required.

4.4.1 CAMERA OPTIONS



The CAMERA OPTIONS MENU allows the user to configure all options on a camera by camera basis.

To view the current settings for a camera enter the camera number in the camera field. All other fields on the page will then be updated with the current operating values.

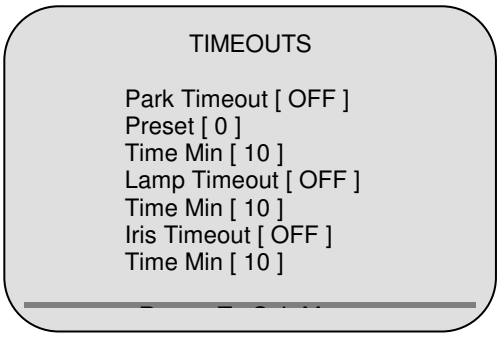
Editable Fields are:

Camera [ ] Enter a camera number between 01 and 256.

Camera Text Allows the user to enter a caption for the current camera of up to 24 characters in length.

OSD [ ] Dynamic OSD. OSD is displayed on a monitor by monitor basis. However, when feedback of video signals back into the matrix is required it is possible to switch OSD off on a camera by camera basis by setting the OSD field to OFF.

4.4.1.1 Timeouts



The TIMEOUTS MENU allows the user to configure all automatic time-out options for the camera selected.

Park Timeout [ ] Toggle camera auto park facility ON or OFF.

Preset [ ] Preset allocated to each camera used with auto park facility 0 - 16 .

Time (Min) [ ] Time before camera is automatically sent to the auto park preset.

Lamp Timeout [ ] Toggle camera lamp auto time-out facility ON or OFF.

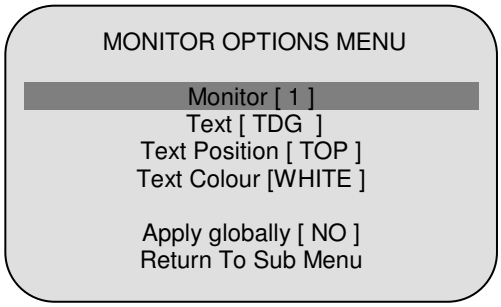
Time (Min) [ ] Time before cameras lamp is automatically switched off.

Iris Timeout [ ] Toggle camera iris auto time-out facility ON or OFF.

Time (Min) [ ] Time before camera iris is automatically returned to the auto iris.

Lamp and Iris time-outs can be overridden from a ZVK-007 keyboard.

4.4.2 MONITOR OPTIONS



The MONITOR OPTIONS MENU allows the user to configure all options available on a monitor by monitor basis.

Editable Fields are:

Monitor [ ] Enter a Monitor number between 1 and 8.

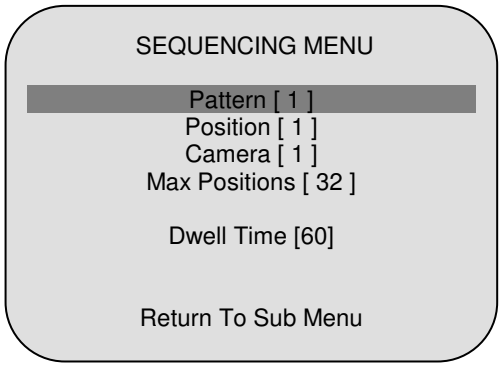
Text [ ] Allows the user to define whether Camera Caption and/or Time/Date are displayed.

Text Position[ ] Toggle monitor text position TOP or BOT.

Text Colour [ ] Toggle monitor text colour BLACK or WHITE.

Apply globally [ ] If set to YES this monitor configuration will be applied to all monitors.

4.4.3 SEQUENCING OPTIONS



The SEQUENCING MENU allows the user to configure all monitor sequencing options.

A pattern is a defined list of cameras. Each camera is switched to the sequencing monitor in turn followed by a dwell time before the next SALVO. The term SALVO indicates that all sequencing monitors are updated simultaneously i.e. they each display the next camera in the sequence at the same time.
To view the current settings for a pattern, enter the pattern number in the pattern field. All other fields on the page (except for Dwell Time, which is a global setting,) will then be updated with the current operating values.

Editable Fields are:

Pattern [ ] Enter a pattern number between 1 and 8. Each pattern can hold up to 32 Cameras.

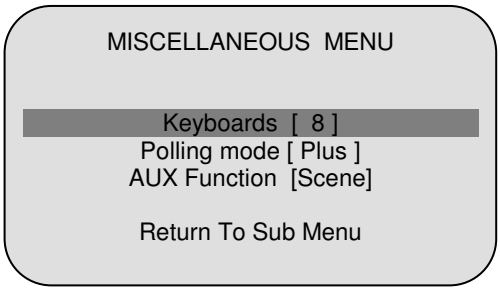
Position [ ] Indicates the current position in the current pattern which is to be edited. Range 1-32.

Camera [ ] Allows the user to enter the camera to be sequenced in the pattern number and position number indicated by the pattern and position fields.

Max Positions [ ] Up to 32 positions can be programmed into any pattern. The Max Position field sets the position after which the sequence restarts at position 1.

Dwell Time [ ] The global time between updating monitors and stepping to the next pattern position. Range 1 to 99 seconds.

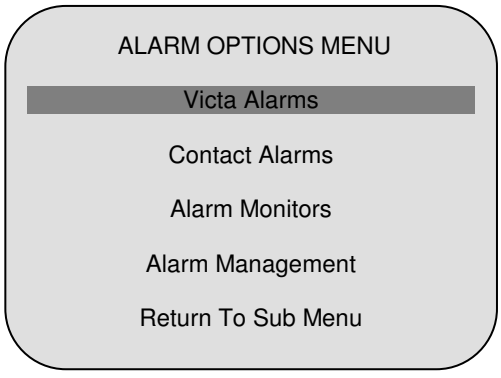
4.4.4 MISCELLANEOUS OPTIONS



The number of keyboards, which the ZVC-256 controller polls, can be set from within the MISCELLANEOUS MENU.

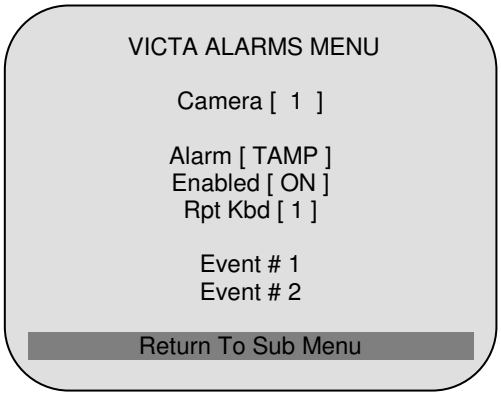
- The maximum number of keyboards is 32. If fewer keyboards are connected, it is advised that this menu reflect the actual number of keyboards connected to the system.
- The polling mode is the method by which the Series 2 attempts to communicate with the operator keyboards. This should only be modified after consultation with Meyertech Technical Support. The options are '**Plus'** and '**Norm'**
- The functionality of the AUX key can also be set-up. This allows the AUX key on the keyboard or the ZoneVu Mosaic GUI, to double up. There are two options, AUX or Scene. The first leaves the AUX function unchanged, the second sets it up to change scenes. This means that if you have cameras capable of storing scene information, the AUX key can now be used to switch through them in sequence.

4.5 ALARM OPTIONS



The ZVA-APM alarm module can process up to 480 contact alarms or a combination of 32 contact alarms and 96 VICTA (video) alarms.

4.5.1 VICTA ALARMS



The VICTA ALARMS MENU allows the user to configure all options relating to alarms received from ZoneVu receivers.

To view the current settings for a camera enter the camera number in the Camera field.

Options Available are:

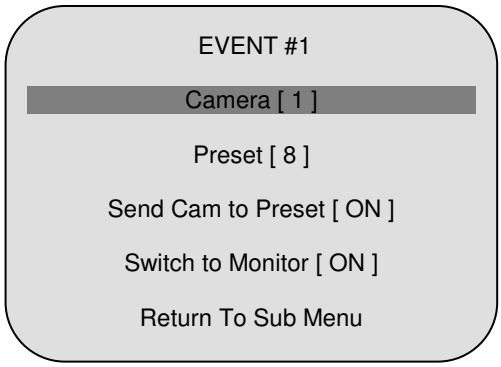
Camera No [ ] Enter a camera number between 01 and 256.

Alarm [ ] Toggle through the 8 alarms. There are 6 contact alarms 1 tamper and 1 sync fail alarm per receiver

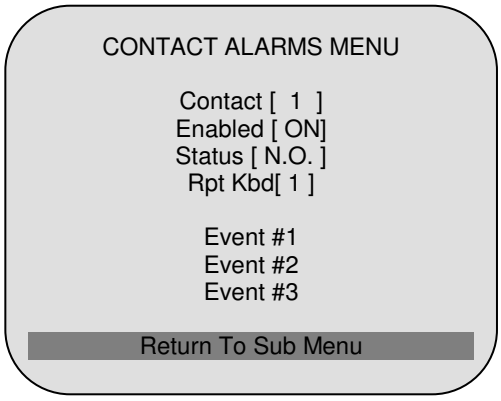
Enabled[ ] Enable or Disable individual alarms on each camera.

Rpt Kbd[ ] The keyboard to which alarms on this camera are reported. 0 = OFF.

Events Each Victa Alarm can trigger two events. Each event can be configured to switch a Camera to a Monitor and send a Camera to a Preset. Additionally, individual aspects of each event can be switched ON or OFF. Alarm monitors for each event are configurable from the Alarm Monitors menu.



4.5.2 CONTACT ALARMS



The CONTACT ALARMS MENU allows the user to configure all options relating to alarms received from ZoneVu ZVA-032 alarm cards.

A ZVA-AIR Alarm Sub-rack can contain up to 15 ZVA-032 cards giving a maximum of 480 contact alarms. To view the current settings for a contact enter the contact number in the Contact field.

Options Available are:

Contact [ ] Enter a camera number between 01 and 480.

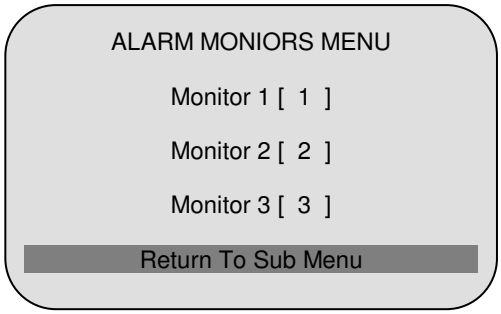
Enabled [ ] Enable or Disable individual contact alarms ON or OFF

Status [ ] Configures individual alarms as Normally Open (NO) or Normally Closed.

Rpt Kbd[ ] The keyboard to which the alarm selected are reported. 0 = OFF.

Events Each Contact Alarm can trigger three events. Each event can be configured to switch a Camera to a Monitor and send a Camera to a Preset. Additionally, individual aspects of each event can be switched ON or OFF. Alarm monitors for each event are configurable from the Alarm Monitors menu.

4.5.3 ALARM MONITORS

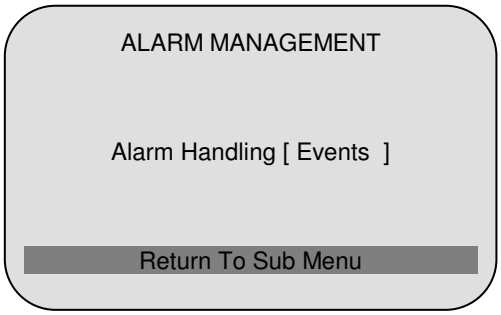


The ALARM MONITORS MENU allows the user to configure the monitors to which cameras are switched when events are triggered.

Monitor 1 corresponds to an Event 1 camera switch, Monitor 2 corresponds to an Event 2 camera switch and Monitor 3 corresponds to an Event 3 camera switch,.

When no alarm conditions exist, all alarm monitors automatically switch to display blank screens.

4.5.4 ALARM MANAGEMENT

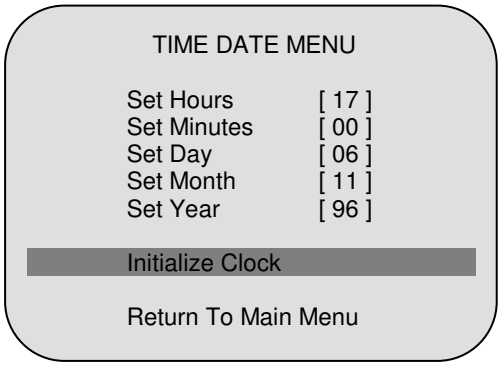


Its is possible to configure the alarm processing module to handle incoming alarms in one of two ways.

Events When an alarm occurs and the alarm queue is not yet full, the alarm processor immediately sends cameras to presets as determined by the user defined configuration data. When an alarm progresses and reaches the top of the alarm queue the alarm processor switches cameras to monitors and reports to the report keyboard as determined by the user defined configuration data. Alarms are cancelled from a ZVK-xxx keyboard. If an alarm is cancelled, but is still active, the alarm re-enters the queue at the bottom.

PC Rpt No user defined events are acted upon. Alarms are reported directly to a PC via the PC Alarms port. Protocol available on request.

4.6 SETUP TIME/DATE



The TIME DATE MENU allows the user to set and initialize the real time clock. The clock display is updated once per second. The options for time and date are set on a monitor by monitor basis within the MONITOR OPTIONS MENU.

Each field must be set individually and the real time clock will only take on the new values when Initialize clock is selected.

4.7 LOAD DEFAULTS

This option allows the user to reload all default programmable information, such as camera captions, text options sequences. See section DEFAULT CONFIGURATION for default data.

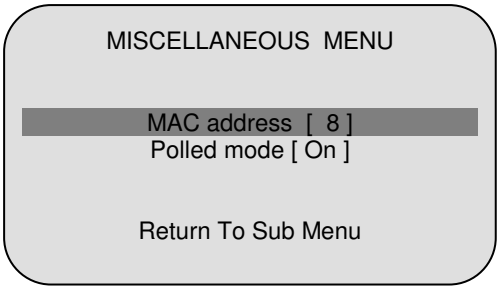
The user is given the option to abort loading default data if necessary.

5. USING A SITE CONTROLLER

The Series 2 matrix with ZVC-256 controller can be used in conjunction with a Meyertech Site Controller product.

The site controller takes over responsibility for communicating with keyboards, receivers and 3rd party devices allowing the Series 2 to concentrate on being a video matrix.

If the Series 2 is purchased with a site controller and ZVC-256 controller then the **alarm menu** is disabled and all alarms are automatically reported to the site controller. Additionally the miscellaneous menu has different options:



- MAC address
  This is the address that the Series 2 will respond to polls from the site controller.

- Polled mode
  This determines how the Series 2 communicates with the site controller.
  - Set to *On* if connected to a polling network (e.g. ZVK or ZoneVu port)
  - Set to *Off* if connected point-to-point to a non-polling port (e.g. ZVM port)

For more information on operating a Series 2 with a site controller see the **Site Controller User Manual.**

6. DEFAULT CONFIGURATION

Default Configurations as a result of Load Defaults or factory preset conditions.

By Camera	Camera	PRESENT
	Camera Captions	Camera 01 to Camera 256
	Park Time-out	OFF
	Preset	[0] (HOME)
	Time (Mins)	[10]
	Lamp Time-out	OFF
	Time (Mins)	[10]
	Iris Time-out	OFF
	Time (Mins)	[10]
	OSD	ON
By Monitor	Monitor	ON
	Text	TDG & CAPTION
	Text Position	TOP
	Text Colour	WHITE
By Sequence Pattern	Position #	Camera #
	Last Position	32
By Victa Alarm	Alarm Inputs	ON
By Contact Alarm	Enabled	ON
	Status	Normally Open
By Alarm Event	Camera	1
	Preset	0
	Camera to Monitor	ON
	Camera to Preset	ON
	Report to Keyboard	ON
	Keyboard Number	1
Global	Time	23:59:00
	Date	31:12:99
	Dwell Time	60 seconds60 seconds
	Alarm Monitors	1, 2, 3
	Alarm Handling	Events
	Aux. Function	Aux

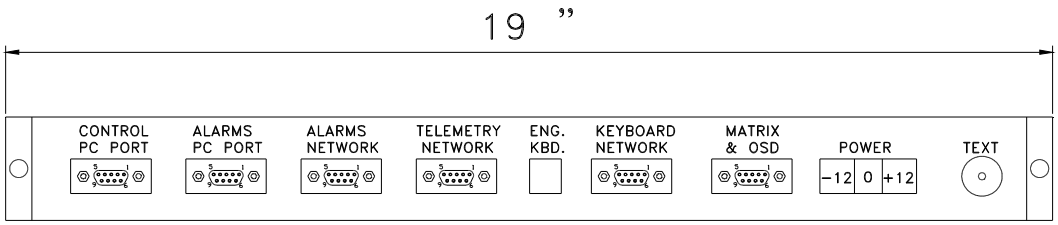
7. SPECIFICATIONS

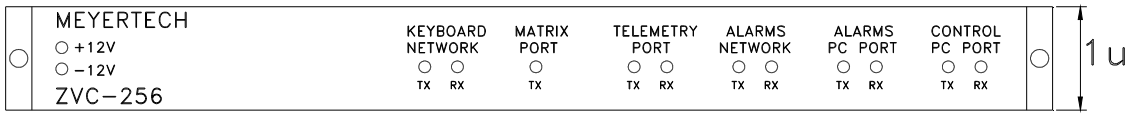
7.1 ELECTRICAL

POWER INPUT	-	+12VDC & -12VDC from ZVS-PSU
POWER CONSUMPTION	-	Less than 80W per 48 outputs
VIDEO	-	Inputs 1V pk-pk 75Ω
	-	Outputs 1V pk-pk 75Ω
CROSSTALK	-	Better than 50dB
SIGNAL TO NOISE	-	Better than 50dB

7.2 PHYSICAL

7.2.1 ZVC-256





Pin Connections relative to the ZVC-256 controller

	Standard	1	2	3	4	5	6	7	8	9
Matrix & OSD	RS422	-Tx	+Tx	-Tx	+Tx	N.C.	N.C.	N.C.	N.C.	N.C.
Keyboard Network	RS422	-Rx	+Rx	-Tx	+Tx	N.C.	N.C.	N.C.	N.C.	N.C.
Eng. Key.	RS422	-Rx	+Rx	-Tx	+Tx	5V	0V	N/A	N/A	N/A
Telemetry Network	RS422	-Tx	+Tx	-Tx	+Tx	0V	-Tx	+Tx	-Rx	+Rx
Alarms Network	RS422	-Rx	+Rx	-Tx	+Tx	0V	N.C.	N.C.	N.C.	N.C.
Alarms PC Port	RS232	N.C.	Rx	Tx	N.C.	0V	N.C.	N.C.	N.C.	N.C.
Control PC Port	RS232	N.C.	Rx	Tx	N.C.	0V	N.C.	N.C.	N.C.	N.C.

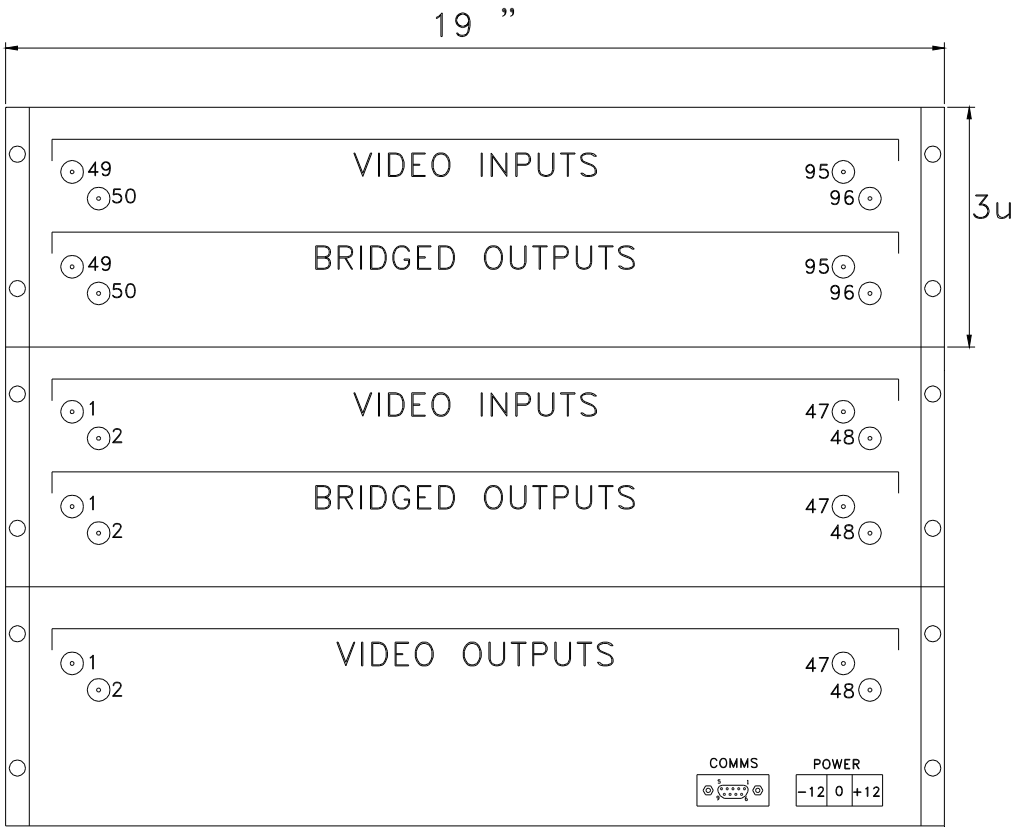
Pin Connections relative to the ZSC-1000+ controller

	Standard	ZVM-XXX	1	2	3	4	5	6
ZVM Port	RS422	Matrix OSD	N.C.	N.C.	0V	-Tx	+Tx	N.C.
ZVK Port	RS422	Matrix Control	N.C.	N.C.	0V	-Tx	+Tx	N.C.
PC1 / PC2 Port	RS232	Alarms	N.C.	Rx	N.C.	N.C.	0V	N.C.

Pin Connections relative to the ZVM-XXX Video Matrix

	Standard	1	2	3	4	5	6	7	8	9
Matrix Control	RS422	-Rx	+Rx			0V			N.C.	N.C.
Matrix OSD	RS422			-Rx	+Rx	0V			N.C.	N.C.
Alarms	RS232						Tx	0V	N.C.	N.C.

7.2.2 ZVM-XXX



TEMPERATURE - Operational 0 Degrees to 40 Degrees C
- Storage minus 20 Degrees to plus 60 Degrees C
- Humidity 10% to 95% (Non-condensing)

VIDEO INPUTS - BNC Terminal with link for 75Ω termination (remove if bridging input).

VIDEO OUTPUTS - BNC Terminal

ENG KEYBOARD - FCC socket RJ-11

COMMS - RS422 twisted pair (Telemetry / Network Communications)
RS232 twisted pair (PC Control / PC Alarms)

ZoneVu commands and data are transmitted in PACKETS. Each Packet has a unique HEADER to identify its destination and a common TERMINATOR to identify the end of the data Packet.

The Packet Headers and the Packet Terminator are formed from non-printable ASCII characters.

Commands and data are formed from printable ASCII characters.

ASCII NUL characters are used to separate data fields.

Baud rate (OSD)	-	19200 baud
Baud rate (Other)	-	9600 baud
Parity	-	none
Stop bits	-	1
Flow control	-	none
Data bits	-	8

8. TROUBLE SHOOTING GUIDE

This Trouble Shooting Guide should be used in the first instance of encountering any problems with the ZVM SERIES 2. If problems persist, contact MEYERTECH on the Technical Help line numbers given on page **Error! Bookmark not defined.**.

Symptom	*Solution*
Keyboard displays "Comms. Fault"	Ensure that the Keyboard MAC number is less than the number of keyboards declared. Check that the keyboard MAC number does not clash with another keyboard MAC number. Especially after installation of keyboard software updates. Verify that the Series 2 is not operating in Site Controller Mode.

9. DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY ACCORDING TO ARTICLE 10 OF COUNCIL DIRECTIVE 89/336/EEC

Manufacture's Name: MEYERTECH LIMITED

Manufacture's Address: MEYERTECH Limited
Zebra Court
White Moss View
Greenside Way
Manchester
M24 1UN

declares, that the product(s):

Product Name : ZVM SERIES 2 Video Matrix

Model(s) : All

Product Options: All

conforms to the following Product Specifications :

EN55022 CLASS B
EN50093

Supplementary Information:

MEYERTECH declare under our sole responsibility that the product to which this declaration relates, is in conformity with the protection requirements of council directive 89/336/EEC on the approximation of the laws of the member states relating to electromagnetic compatibility, when installed in accordance with the instructions given in this manual.

SIGNED -

S K Meyers

S K MEYERS
Director MEYERTECH LIMITED

ISSUED THIS DAY 1st January 1997

European Contact: Meyertech Limited (Head Office), Zebra Court, White Moss View, Greenside Way, Manchester, England, M24 1UN.

10. MAINTENANCE

The Series 2 requires no Planned Preventive Maintenance periods (PPM's) as it is mainly solid state in design.

The Series 2 contains no serviceable parts and should be returned to our Service Centre in Scunthorpe for repair or replacement under warranty. Any repairs, attempted repairs or replaced components not carried out by the Meyertech Service Centre will void all Meyertech warranties and liabilities.

If your Series 2 has to be returned to our Service Centre please follow the returns procedure below, otherwise delays may be incurred in returning or replacing the Series 2.

11. DISPOSAL

There are no additional requirements beyond safe working practice in the decommissioning of the Meyertech Series 2.

However the Series 2 contains printed circuit boards populated with electronic components. The whole unit must be returned to **Meyertech Service Centre** for final disposal. Please follow the normal returns procedure.

Meyertech Limited is a member of the CCTV User Group.

12. SUPPORT

At Meyertech our staff understand quality support is important to you, vital in fact, which is why we place such a high precedence on providing it.

For all matters relating to support go to our website to find the information your require visit http://www.meyertech.co.uk/support.html

13. WARRANTY

Please refer to Meyertech Limited 'Terms & Conditions of Sale of Goods & Services' for interpretation.

1. If the Buyer establishes to the Seller's reasonable satisfaction that there is a defect in the materials or workmanship of the Goods manufactured, then the Seller shall at its option, at its sole discretion and within a reasonable time,
    a. arrange for the repair or making good such defect or failure in such Goods free of charge to the Buyer (including all costs of transportation of any Goods or materials to and from the Buyer for that purpose),
    b. replace such Goods with Goods which are in all respects in accordance with the Contract, or

subject, in every case, to the remaining provisions of this Condition 1 provided that the liability of the Seller under this Condition 1 shall in no event exceed the purchase price of such Goods and performance of anyone of the above options shall constitute an entire discharge of the Seller's liability under this warranty.

2. Condition 1 shall not apply unless the Buyer:

    a. notifies the Seller in writing of the alleged defect within 12 (twelve) months from delivery or such other period or periods as may be agreed in writing between the Seller and the Buyer, and
    b. allows the Seller a reasonable opportunity to inspect the relevant Goods.

3. For the avoidance of doubt, the Seller shall be under no liability under the warranty in Condition 1 above:
    a. where such defects arise from any drawing, design or specification supplied by the Buyer; or

b. where such defects arise from fair wear and tear, wilful damage, or negligence of a party other than the Seller (or its employees or authorised personnel), abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), misuse or alteration or repair of the Goods without the Seller's approval; or
c. where such defects arise in parts, materials or equipment which have not been manufactured or designed by the Seller but have been purchased at the Buyer's request by the Seller from the Buyer's designer and manufacturer or from some other third party (the **"Third Party Supplier").**
d. if the total price of the Goods has not been paid by the due date for payment
e. in respect of any type of defect, damage or wear specifically excluded by the Seller by notice in writing: or
f. if the Buyer makes any further use of the Goods after giving notice in accordance with Clause 1

4. Any repaired or replaced Goods shall be redelivered to the Buyer free of charge to the original point of delivery but otherwise in accordance with and subject to these Conditions.

5. Alternatively to Condition 1 the Seller shall be entitled at its absolute discretion on return of the defective Goods to the Seller (at the Seller's request) to refund the price of the defective Goods in the event that such price shall already have been paid by the Buyer to the Seller, or, if such price has not been paid, to relieve the Buyer of all obligation to pay the sum by the issue of a credit note in favour of the Buyer in the amount of such price.

6. In respect of all Goods supplied to the Seller by a Third Party Supplier the Seller will on request pass on to the Buyer (in so far as reasonably possible) the benefit of any warranty given to the Seller by such Third Party Supplier and will (on request) supply to the Buyer details of the terms and conditions of such warranty and copies of any relevant product information sheets, technical data sheets or product leaflets issued by such Third Party Supplier and the Buyer shall be solely responsible to the entire exclusion of the Seller for complying with the same.

7. For the purposes of Condition 1 references to Goods shall be deemed to exclude software.

8. The Buyer acknowledges that software in general is not error-free and agrees that the existence of such errors in the Software Programs shall not constitute a breach of this Contract.

9. In the event that the Buyer discovers a material error which results in the Programmed Products not performing substantially in accordance with the Functional Specification, or the Licensed Programs not performing substantially in accordance with the relevant Program Documentation and notifies the Seller of the error within 90 days from the date of the Seller making available the respective software to the Buyer (the **`warranty period"**) the Seller shall at its sole option either refund the price which the Buyer has paid to the Seller (or if such price has not been paid, relieve the Buyer of all obligations to pay the sum) in respect of the respective software or use all reasonable endeavours to correct by patch or new release (at its option) that part of the software which does not so comply provided that such non-compliance has not been caused by any modification, variation or addition to the software not performed by the Seller or caused by its incorrect use, abuse or corruption of the software by use of the software with other software or on equipment with which it is incompatible,

10. To the extent permitted by English law, the Seller disclaims all other warranties, with respect to the software which it provides pursuant to the Contract, either express or implied, including but not limited to any implied warranties of satisfactory quality or fitness for any particular purpose.

11. The Buyer is solely responsible for various scanning the software that it receives from the Seller pursuant to the Contract.

12. The Seller warrants that it will use reasonable skill and care in providing the Services to the buyer

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