Mentor XL MasterMind and Vector Quick Start Guide

trilogy
A CLEAR-COM COMPANY

Contents

This guide is intended as a Quick Start Reference only. Comprehensive information covering these products is provided on the accompanying CD.

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First Steps

- o Carefully unpack the units and inspect for any transit damage.

- o Locate the despatch note (one per consignment) and check that all items match your purchase order.

- o You may find it helpful to record the unit serial number in a safe place. This may be required later if additional software options are purchased.

- o Connect 1 or 2 IEC mains cables to each unit.

    - o The power supplies are auto sensing for input voltages from 90 – 260 VAC. There is no power switch: the unit will power-up immediately.

    - o The two power supplies provide main and backup operation. If only one is connected, the unit will show an alarm message under the Status menu.

- o The Mentor XL boot cycle takes approximately 60 seconds: when ready, the display screen shows:
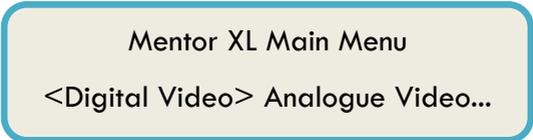
> Mentor XL Main Menu
>
> <Digital Video> Analogue Video...

Mentor XL - Connections

o   Connect video cables according to the rear panel legend.

o   Wiring details for the D-type multi-way connectors are given on pages 10 and 11 of this guide.

o   Separate fault loops are provided on the 25 pin connector to indicate power supply or fan failure. These should be connected to an external alarm or monitoring system.

o   If the NTP or Vector options are present, the Mentor XL should also be connected to a local area network, using a standard CAT 5 Ethernet cable (not supplied).

o   When first powered up, the Mentor XL is configured with static IP address settings. Alternatively, it may be configured to dynamically acquire an IP address from a network DHCP server. See the User Guide on the accompanying CD for more information.

o   To use Vector, the set-up and management utility for Mentor XL, a static IP address is recommended. See page 15 of this guide for more information.

Mentor XL - Using the Front Panel Controls

Primary menu
navigation
controls

Menu shortcut
buttons

Rotary control
knob
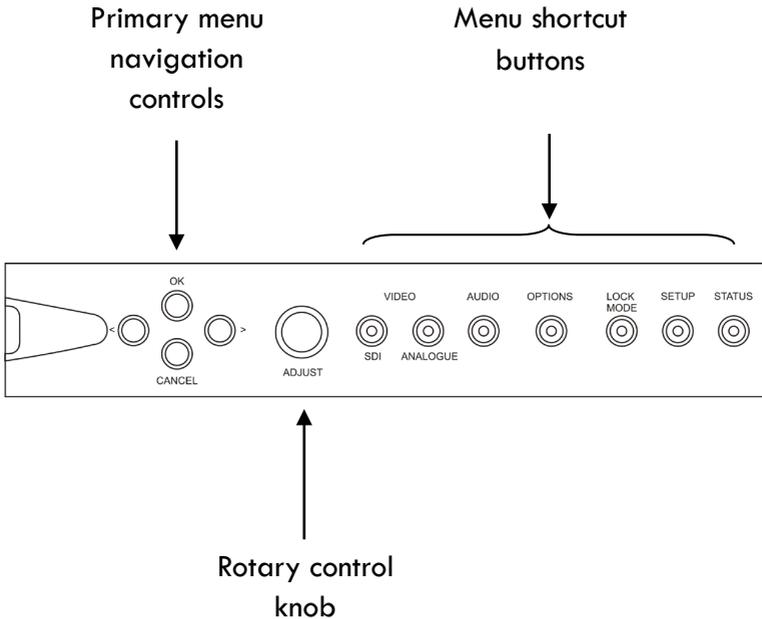
o   Use the left – right arrow buttons < >, or the rotary
    control to navigate the menus.

o   Press OK to select an option, or to go deeper into the
    menu.

o   Press Cancel to exit the current menu level and return
    towards the top level.

o   The currently highlighted item is indicated with
    chevrons: <highlighted>.

o   The currently selected value is indicated with square brackets: [selected] or asterisks: *selected*.

o   When using the rotary control to increase or decrease values, the increment can be adjusted by changing the Δ value shown on the LCD. Use the left / right keys to highlight Δ, then the rotary control to adjust. Typically, Δ values of 1, 10 or 100 are available.

o   Default menu behaviour is for the display to return to the next higher level after ten seconds of inactivity. This mode can be disabled using the Setup Display menu – see the User Guide on the accompanying CD for more information.

Confirming Hardware Options

o   Each Mentor XL may be fitted with up to three option boards.

o   To see which option boards are fitted, scroll right until <Options> is selected and press OK. If no options are fitted, this menu item will not appear.

o   The normal hardware configuration is:

Slot	Typical hardware configuration
1	360-15 GPS Board
2	360-20 SD/HD/3G Board
3	360-16 Tri-level sync Board

Mentor XL - Memory

o   Any changes made to system parameters are
    effective immediately the "OK" button is pressed.

o   The currently active settings are saved in non-volatile
    memory, so they are preserved if the Mentor XL is
    restarted.

o   Four on-board memory banks are provided: complete
    settings may be saved to, or loaded from each of
    these memory locations at any time.

o   For security, we suggest that you save the current
    active settings in a designated memory bank.

o   Configuration files may be backed up remotely or
    transferred between units by using the Vector web
    based management feature.

See the "Setup Memory" menu, or the User Guide on the
accompanying CD for more information.

Mentor XL - System Defaults

On initial power-up, the Mentor XL will use its internal oven controlled oscillator as the master reference, until either:

o   A video genlock signal or 5/10 MHz reference is applied and configured.

o   Or if the GPS option is fitted, full 1PPS lock is attained.

The following additional defaults apply:

Parameter	Setting
Digital Video	625/50 standard
SDI Test Pattern	100% Colour Bars
SDI Ident	On
Analogue Video	All Black/burst
AES Audio	Off
Analogue Audio	Off
LTC	Off

Mentor XL - GPS

Choice of antenna and cable type is the key to achieving optimum performance from the GPS option.

Antenna

Trilogy recommends the Trimble Bullet III antenna. Other antennae may be suitable: please check manufacturer's specifications.

Cable

The table below details various potential cable types with length restrictions.

Recommended Cable Types For Use With Trimble Bullet III Antenna				
	RG59	†CT125	CT167	LMR400
Nominal Impedance (Ω)	75	75	75	50
Nominal Diameter (mm)	6.15	7.8	10.1	10.3
Cable < 35 metres	✓	✓	✓	✓
Cable < 50 metres		✓	✓	✓
Cable < 75 metres		✓	✓	✓
Cable < 100 metres			✓	✓
†CT125 is also marketed as CX125				

For more information, please check the Mentor XL User Guide provided on the accompanying CD.

Mentor XL - Connector Wiring Details

Connections to the D9 Socket labelled "AES":

Pin	Description
1	AES 1 +
2	AES 1 -
3	Shield
4	n/c
5	0V GND
6	Shield
7	AES 2 +
8	AES 2 -
9	Shield

Connections to the D9 Socket labelled "LTC":

Pin	Description
1	LTC 1 +
2	LTC 1 -
3	Shield
4	n/c
5	0V GND
6	Shield
7	LTC 2 +
8	LTC 2 -
9	Shield

Connections to the D25 Socket "Analogue Audio/Remote":

Pin	Description	Notes
1	Fan OK - 1	Pair with 16 - Closed if OK
2	RS422 CTS-	
3	RS422 RXD+	or RS232 RX
4	RS422 TXD+	or RS232 TX
5	RS422 RTS-	
6	RS422 TXD-	
7	GND	
8	RS422 RXD-	
9	GND	
10	+ 12V DC./ 0.3A	Internal 0.5A thermal reset
11	Analogue Audio Out 1+	
12	Analogue Audio Out 2 +	
13	GND	
14	Power OK - 1	Pair with 15. Closed if OK
15	Power OK - 2	Pair with 14. Closed if OK
16	Fan OK - 2	Pair with 1. Closed if OK
17	GPIO - Output 1	
18	GPIO - Input 2	
19	GPIO - Input 1	
20	RS422 CTS+	or RS232 CTS
21	GPIO - Output 2	
22	RS422 RTS+	or RS232 RTS
23	Analogue Audio Out 1-	
24	Analogue Audio Out 2-	
25	GND	

MasterMind - Module Identification

Module location within the MasterMind is flexible, so a system of coloured identification rings is used to aid identification. These are fitted to the BNC connectors of video modules, using the colours defined below.

Module	Description	Ident ring colour
330-06-00 330-09-00	AES audio monitor and changeover module	n/a
330-07-00	Triple relay switching module	Orange
330-08-00	5 channel balanced relay module	n/a
330-11-00	SDI monitoring module	Blue
330-12-00	Black/burst monitoring and switching module	Violet
330-12-01	Tri Level Sync monitoring and switching module	Yellow

MasterMind - Connector Wiring Details

Connections to the D25 chassis socket "Remote".

Pin	Function
1	B Input Selected
2	Combined A Fail
3	Combined B Fail
4	Main PSU Fail
5	Combined Module Regulator Fail
6	Input. Force Output to A
7	Input. Force Output to B
8	Not Used
9	Not Used
10	Black/burst 1A Fail
11	Black/burst 1B Fail
12	Black/burst 2A Fail
13	Black/burst 2B Fail
14	SDI 2A Fail
15	SDI 2B Fail
16	Option Board A Fail
17	Option Board B Fail
18	Black/Burst 3A Fail
19	Black/Burst 3B Fail
20	SDI 1A Fail
21	SDI 1B Fail
22	Manual Mode
23	Local Alarms Off
24	Remote Alarms Off
25	Ground

Please see the User Guide on the accompanying CD for further detail.

330-06/330-09 Connections to D15 socket.

Pin	Function
1	Ground/Chassis
2	Main 1 Input -
3	Reserve 1 Input -
4	Output 1+
5	Main 2 Input +
6	Reserve 2 Input +
7	Ground/Chassis
8	Output 2-
9	Main 1 Input +
10	Reserve 1 Input +
11	Ground/Chassis
12	Output 1-
13	Main 2 Input -
14	Reserve 2 Input -
15	Output 2+

330-08 Connections to D37 socket.

Channel	Main Input	Reserve Input	Output	Chassis
1	20, 2	22, 4	21, 3	1
2	24, 5	26, 7	25, 6	23
3	27, 9	29, 11	28, 10	8
4	31, 12	33, 14	32, 13	30
5	34, 16	36, 18	35, 17	15

All wiring is arranged as balanced pairs:
e.g. 20, 2 denotes + on pin 20, - on pin 2.

Please see the User Guide on the accompanying CD for further detail.

Vector for Mentor XL

Current Mentor XL software includes the browser based set-up and management utility, Vector which greatly simplifies initial set-up of the Mentor XL.

To start using Vector, follow these simple steps:

- o Power up the Mentor XL and wait until it has initialised: this takes around 60 seconds.

- o Using the front panel controls, navigate to: SETUP >> MORE >> COMMS >> NETWORK.

- o Enter IP ADDRESS and SUBNET MASK values which are appropriate for your network. The gateway address is optional. If you are unsure, consult your IT Administrator.

- o Connect the Ethernet port on the Mentor XL to your network, using a standard RJ-45 cable.

- o On a PC connected to the same network as the Mentor XL, open your web browser.

- o Navigate to the address **http://<address>** where <address> is that which you entered on the Mentor XL front panel. For example, **http://192.168.1.50.**

- o At the log-in screen, enter the username and password which by default are both set as *admin.*
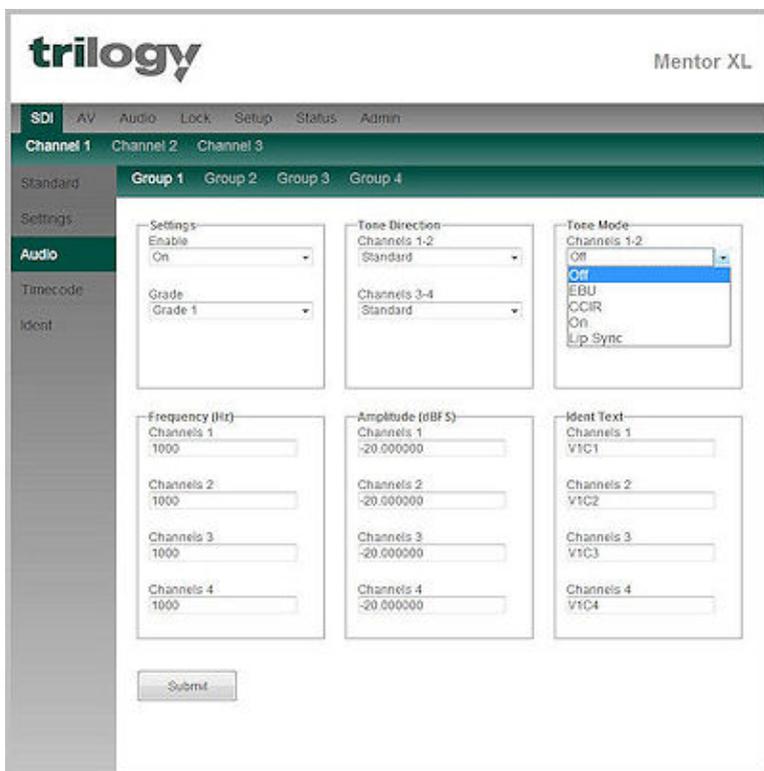
*An example screen shot of Vector which greatly
simplifies initial set-up of the Mentor XL*

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