Mentor XL
Master Reference Generator &
MasterMind Auto Changeover
The ultimate SPG/TSG solution

trilogy

Trilogy has a successful track record of delivering advanced, reliable Sync and Test products to broadcast, post and cable/satellite users in over 50 countries. Designed specifically to satisfy the demands generated by mixed analogue, SD and HD installations, Mentor XL represents the most sophisticated and scaleable Master Reference Generator available.

Mentor XL's innovative architecture avoids the need for numerous option cards or factory upgrades by allowing virtually all options to be activated in software via an IP connection. This ensures that units may easily be upgraded in the field while also enhancing the unit's reliability.

Virtually all HD and tri-level sync formats are accommodated with up to 7 SD/HD outputs available when the expansion card is installed, together with 4 independent tri-level sync feeds. Aspect ratio checks are facilitated by specifying the full field test pattern (FuBK) option. The video test option includes a suite of conventional video test signals which may carry a 4 line x 20 character text ident superimposed with either crawl or scroll motion for signal identification purposes.

Analogue, SD and HD references and test signals are generated simultaneously for both 525 and 625 standards with independent timing control for all outputs to simplify system integration. Special attention has been paid to the audio section with multiple audio generators assignable for AES, embedded SD/HD, wordclock and stereo audio. In addition, any of the four standard AES sample rates can be selected.
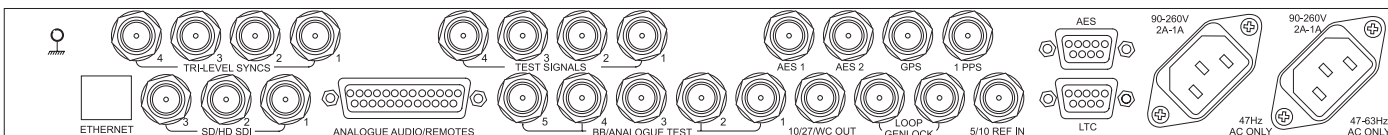
Remote configuration and status is available in the form of Vector - an optional PC utility which allows any IP enabled Mentor XL to be configured over a LAN.

For enhanced security, redundant Mentor XL's may be deployed together with the compatible MasterMind unit. This failsafe, modular changeover monitors the integrity of both main and reserve signals to effect an automatic switch to the reserve Mentor XL.

Key Features

- 525/625/SD/HD simultaneous operation
- Operation as master generator or locked to GPS, NTP, 10MHz or video black/burst
- Extensive test signal library including full field test
- GPS receiver for ultimate timing accuracy
- Multiple independent audio generators for AES, embedded SD/HD and analogue
- Independent tri-level sync outputs for all 720 and 1080 standards
- Dual LTC outputs plus VITC/DVITC
- Vector editor software
- NTP server and client support
- SNMP agent for system management and status
- Redundant Power Supply
- Redundant main and reserve operation in combination with MasterMind Auto Changeover

Base System	Genlock loop through	1
	Black/burst	5
	SD-SDI Black	3
	5/10MHz clock input	1
	Wordclock/10/27MHz	1, selectable
	Misc	2 x 2 GPI, 4 x Memory preset
	PSU and fan fail alarms	NC relay output
System Options — Software	Video Test	Composite: 5, SD & HD: 3 All 720, 1080 & 1080 (1.485Mbps) standards
	Full field test pattern	FuBK pattern for composite & SD-SDI outputs
	Audio test	Independent generators for AES 1&2, analogue (2ch) & embedded. Sample rate selectable : 32/44.1/48/96 kHz
	Timecode	2 independent LTC outputs + VITC/DVITC
	Network time protocol	NTP client or server support
	SNMP	SNMP agent
	Vector Editor	Remote configuration & status reporting
Module	Tri-Level sync	4 per module. All 720p, 1080i and 1080p standards
	GPS receiver	GPS time reference
	GPS antenna	5 volt high gain antenna with mount
	HD/SD output expansion	Adds 4, each assignable as HD or SD
	Redundant PSU	Redundant load sharing power supply

Mentor XL Options

- **Video Test** - This option launches the test patterns for the composite, component and SD-SDI outputs. The full complement of test patterns is included with the capability to add moving markers to indicate 'live' video.

  Horizontal or vertical scrolling text idents, displayed on any desired test signals, may also be programmed by the user. Customer supplied logos can be imported and added to any test signal.

  A further enhancement is the inclusion of a continuous moving bar synced with a tone blip. This test is designed to expose lip sync errors caused by disparate video and audio path delays within the television chain.

  Provision for a 'Clean Aperture' test signal is also included. This test pattern allows the scanned area of video monitors to be set consistently to ensure that out of picture artifacts are not displayed.

- **Full Field Test** - Adds FuBK full field test pattern to composite and SD pattern generators in both 4:3 and 16:9 formats. Trilogy can also import custom full field test patterns from users original artwork.

- **HDTV Test** - Extends video test patterns to include 1080i, 1080p and 720p formats at all common frame rates.

- **Audio Test** - Adds the audio facilities to the Mentor base system. Provides two, independent, audio generators with analogue, AES, and embedded processing for SD outputs. AES sample rate selectable for 32, 44.1, 48 and 96kHz with selectable interrupted tone for channel identification.

- **GPS Receiver** - Facilitates synchronisation of test signal and timecode outputs to highly accurate GPS satellite reference. Requires high quality GPS 5 volt antenna.

- **LTC** - Provides two, independent, LTC outputs together with the capability to superimpose VITC and DVITC on selected test signals.
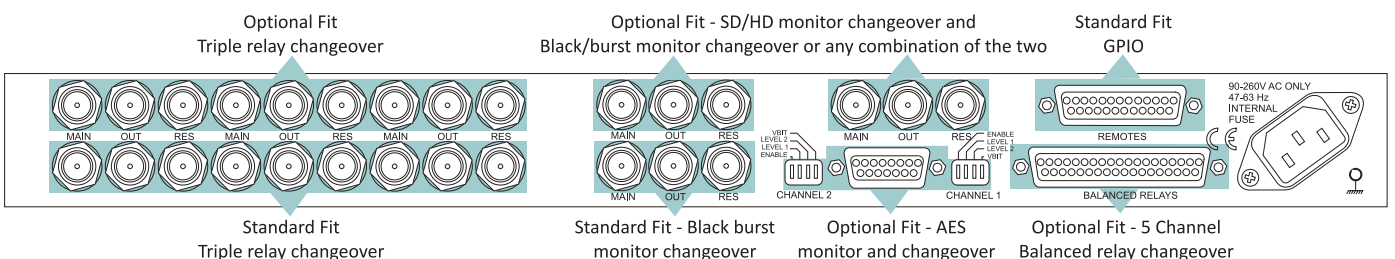
- **Tri-Level Sync** - This module installs in one of the three option slots and outputs 4 tri-level sync signals, each independently timeable over 1 frame (Progressive) or 2 frames (Interlaced) formats. Up to 2 further TLS modules may be installed in the remaining option slots, providing up to a total of 12 tri-level sync outputs.

- **NTP** - Network Time Protocol is a protocol for distributing Coordinated Universal Time (UTC) across a standard TCP/IP network as a means of synchronising equipment. This option adds either NTP 'Server' or 'Client' support.

- **SNMP** - A widely adopted protocol for monitoring and controlling compliant devices via compatible network management systems. This option opens Mentor's SNMP agent for operation with such systems.

- **SD/HD Output Expander** - Module that adds a further 4 SD outputs making a total complement of 7, each assignable as SD-SDI and SD-HDI and independently timeable.

MasterMind Changeover Unit

For added security, main and reserve Mentor units may be deployed with the MasterMind auto changeover to create a highly resilient master generator solution.

MasterMind's modular design allows it to be scaled to suit specific requirements. Inputs may be analogue, digital or a mix with the changeover effected manually or by auto detection. An internal buzzer may be activated to indicate changeover action, or alternatively alarm status may be activated remotely via the GPI interface.

As standard, the base system accommodates one pair of main and reserve black/burst inputs with relay changeover for three pairs of auxiliary unbalanced signals. A further six option cards may be fitted to service additional SD/HD, AES, LTC and audio signals as required.

Optional Fit
Triple relay changeover

Optional Fit - SD/HD monitor changeover and
Black/burst monitor changeover or any combination of the two

Standard Fit
GPIO

Standard Fit
Triple relay changeover

Standard Fit - Black burst
monitor changeover

Optional Fit - AES
monitor and changeover

Optional Fit - 5 Channel
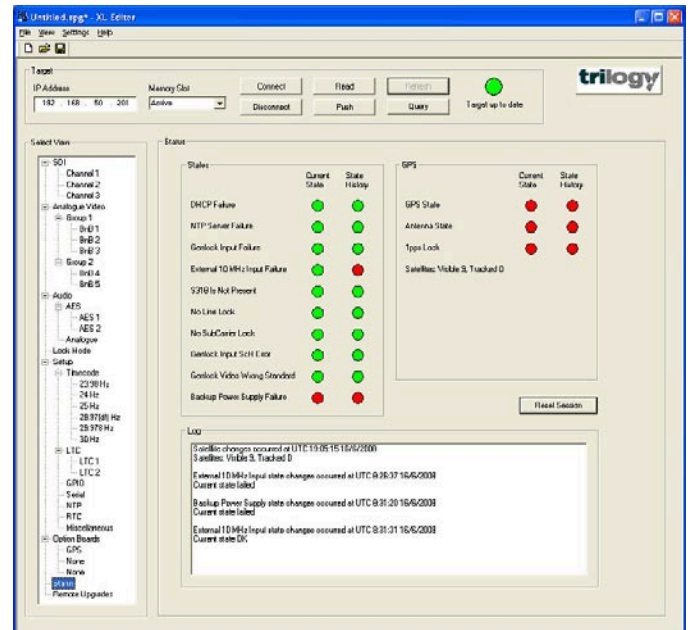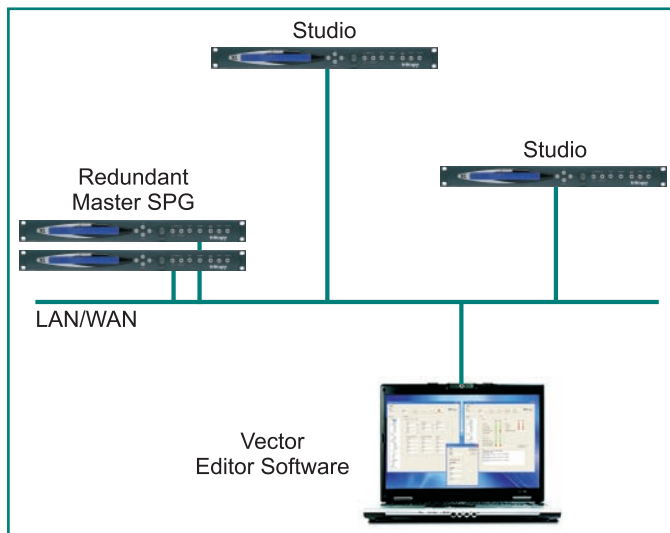Balanced relay changeover

Vector Editor Software

Vector is a powerful utility designed to facilitate remote configuration of the Mentor XL sync/test signal generator within a broadcast facility and across a standard Ethernet network.

Virtually all of Mentor XL's parameters, including output formats, test patterns and timings can be modified. The current configuration can be read and edited as required or, alternatively, preset configurations can be downloaded to any enabled Mentor XL. Vector also provides a simple means of cloning a master Mentor configuration to other units.

Vector also indicates the unit's status allowing visual confirmation of genlock, GPS operation and power supply integrity.

Studio

Redundant
Master SPG

Studio

LAN/WAN

Vector
Editor Software

Key Features

• Remotely configure any IP enabled Mentor XL
• Indicates current status of all parameters
• Displays event log file with time stamp
• Simple cloning of Mentor XL configuration
• Convenient entry of test signal ident text
• Remote firmware upgrade

Ordering Information			
Mentor XL		**MasterMind**	
Mentor XL base unit	360-00-01	MasterMind base unit	330-00-07
Redundant PSU	360-09-00	Black burst monitor changeover	330-12-00
Video test patterns	360-10-00	SD/HD monitor and changeover	330-11-00
Audio test patterns	360-11-00	AES audio monitor and changeover	330-09-00
Full field video test pattern	360-12-00	Triple relay changeover	330-07-00
HD video test patterns	360-13-00	5 Channel Balanced relay changeover	330-08-00
LTC/VITC timecode	360-14-00		
GPS time reference card	360-15-01		
AES Unbalanced output card	360-15-02	**Vector Editor Software**	
HD Tri-level sync	360-16-01	Vector configuration CD-ROM	360-96-00
HD/SD Expansion card	360-17-00	Additional Client Key Code	360-96-01
NTP Server Support	360-18-00		
NTP Client Support	360-18-01		
SNMP Support	360-19-00		