

Maestro

MULTI-CHANNEL MASTER CONTROL AND CHANNEL BRANDING

The Maestro platform is designed to meet your needs today and into the future. Upgrading from standard-definition to high-definition (SD to HD) or adding new features never involves replacing the Maestro system's main board. The Channel Branding option helps you to present and preserve your brand in today's competitive broadcast marketplace.



The Grass Valley™ next-generation Maestro™ master control system offers an exceptional combination of integrated features, expandability, and control options, including support for multi-format video and audio on a single board. In addition, the Maestro system fits within a Grass Valley Concerto™ Series routing matrix frame, offering the convenience of master control and routing within the same frame.

Maestro comes with a modular control panel and optional PC-based graphical user interface (GUI) that provides all the control functions of a traditional hardware control panel. As the hardware and GUI control panels have near identical forms, it eliminates the need for an operator to learn two different user interfaces.

A single Maestro master control system supports up to 48 channels with operator channel selection and control from the hardware or GUI control panels.

Maestro is designed to meet your needs today and into the future. When upgrading from SD to HD or adding new features, you never have to replace the Maestro system's main board. You can even add select new features through software and firmware upgrades. While certain features require simple add-on boards, they will never require extra slots in the frame.

Maestro's architecture is designed to accommodate changing technologies. Major components such as CPUs, digital video effects, and channel branding DSPs are built on replaceable add-on boards. Rather than the planned obsolescence built into conventional systems, Maestro is ready to grow with your needs and as available technologies advance.

Branding Flexibility

Using external key cut/key fill, AES audio inputs, and internal channel branding sources, Maestro provides up to 10 active branding sources that can be on-air simultaneously.

The external branding features of the Maestro system include:

- Four key cut/key fill inputs
- Four voiceover audio inputs
- Four upstream keys and four downstream keys (total of eight keys)
- Full keyer control, shadow, border, and matte generation
- Linear and luminance keys

The internal branding features of the Maestro system include:

- Four still image or CG text sources
- Two animation sequence or text crawl sources
- Four voiceover audio sources

KEY FEATURES

- Architecture ready for today and designed for the future
- Up to eight on-air keys and four audio voiceovers
- Up to 10 simultaneous internal branding sources
- Internal branding still images, CG text displays, animations, text crawls, and audio voiceovers
- Extremely flexible control options
- 10-bit 2D digital effects (SqueezeBack™ and other effects)
- Supports up to 48 channels per system with operator selection and control
- Uses just one slot per channel in any Concerto Series router frame
- Supports SD, HD, AES, embedded audio, and Dolby audio formats
- Modular operator hardware control panel and PC-based graphical user interface
- Worry-free source and program selection from external sources
- Independent control of up to four multi-channel audio-overs
- Supports up to 16 audio channels (embedded and AES)
- Dolby E pass-through supported
- Saturn™ automation protocol (extended for new Maestro features) supports easy integration into existing systems
- Interfaces to Encore and Jupiter control systems

PRODUCT DATA SHEET

Channel Branding Option

Maestro Channel Branding is available in Basic or Enhanced options. Basic Channel Branding provides a solution for most brand needs including logos, bugs, ID, trouble slide, time and temperature display, and dynamic data displays such as school closure, program teasers, and audio announcements. Enhanced Channel Branding expands branding to include animations and text crawls. This provides you with solutions to your branding needs including animations, backgrounds, snipes, animated teasers, and dynamic text crawls.

Still images may be full-screen in all Maestro video standards. Still images are displayed as they are created by your graphics department, allowing control over brand look and position. Still images support transparency and may be repositioned, if required.

CG Text is a unique Maestro Channel Branding feature, that combines the display of multiple still image and text boxes in a single branding source. Up to eight image or text boxes may be defined referencing up to 16 still images and four character generator fonts. Still image and text content can be dynamic with the displayed images and text displays controlled from simple external text files. The external text files can be created using a simple text editor or from a data source such as the Internet, election, or auction reporting system. CG Text is a full-screen, template-based display that provides a solution to branding needs such as dynamic logos, time and temperature, school closure, data ticker, program log, or teasers with multiple active components.

Animations include animation sequences and text crawl sources. An animation sequence may be full-screen in all Maestro video standards. The length of an animation playout is determined by the size of the screen area being animated. A full-screen HD animation may play for several seconds while a small logo or “snipe” might play for hundreds of seconds. Looping playout is supported allowing any animation to play continuously without interruption. A text crawl is a full-screen template-based display, which may include a colored background with transparency.

The text data displayed with CG Text or a text crawl may consist of many lines of data displayed in sequence until the entire text page has been displayed, at which time the text is reloaded containing any additions or updates that have been loaded since the last page display began. CG Text and text crawl support formatting escape sequences, which are simple text commands included in the text file that provide user control of parameters such as time, date, font color, drop shadow effects and colors, underline, and color and font selection. CG Text and text crawl also allow the insertion of still images as part of the text display. Up to 16 still images may be referenced and inserted as desired. A text crawl also supports the insertion of an animation sequence into the text display. Each CG Text and text crawl element is a separate source and may contain unique formatting, fonts, and content.

The still images displayed using CG Text or a text crawl are referenced using a still image filename. Although the filename cannot be changed, the actual still images may be changed or updated by simply saving a new or edited still image with the associated filename. The new image will then be displayed the next time the source is loaded.

Simplified Branding Creation and Workflow

Still images, animation sequences, and audio messages are created using the tools you already have. Elements are transferred to the Maestro channels using simple drag-and-drop actions or by saving the file to a mapped disk drive using standard Windows and Mac tools. No complex element transfer methods such as jump memory or FTP transfers are required. Ingest, processing, and loading of the branding elements to associated Maestro on-air channels is completed automatically and does not require the master control operator or any technical supervision. The simple exchange method allows your graphics department to create content and control brand with little change to the current workflow.

Unprecedented Control Flexibility



The Maestro platform also provides unprecedented control flexibility. Its control panel is comprised of modular sub-panels, which allow you to determine which controls you actually need. With various panel sizes available (typical 4x2 panel configuration pictured), you can decide what is more important—a small panel footprint or all the controls at your fingertips in a larger footprint.

Available sub-panels include:

- Source Control (3 control units)
- Keyer Control (1 control unit)
- Audio Control (2 control units)
- Channel Control (1 control unit)
- Source Assignment (1 control unit)

Maestro control panels are available in the following sizes:

- 4x2 (accommodates 8 control units)
- 5x2 (accommodates 10 control units)

In addition to the hardware control panel, Maestro offers a full-featured touchscreen GUI. This software-based control panel can complement or replace the hardware control panel as it offers all of the same control features. If desktop space is a concern or only occasional manual control is needed, the touchscreen option may be an attractive alternative to the traditional hardware control panel. Either way, the choice is yours.

Maestro Modular Control Panel

You can combine individual source control, source assignment, keyer, audio, channel control, transition, and other panels as needed to create a master control panel tailored to your needs. The intuitive touchscreen GUI is available to complement or replace the system's hardware control panel.

	Depth*1	Width	Height	Weight*2	Rack Units
Main Frames					
4 RU Maestro/Concerto Frame	19 in. (483 mm)	19 in. (483 mm)	7 in. (178 mm)	35 lbs. (16 kg)	4
8 RU Maestro/Concerto+ Frame	20.5 in. (521 mm)	19 in. (483 mm)	14 in. (356 mm)	70 lbs. (32 kg)	8
Hardware Control Panels					
MAE-4X2-PFRM	approx. 5.3 in. (133 mm)	approx. 25.7 in. (653 mm)*3	approx. 18.3 in. (464 mm)*3	25 lbs. (12 kg)	N/A
MAE-5X2-PFRM	approx. 5.3 in. (133 mm)	approx. 31.5 in. (800 mm)*3	approx. 18.3 in. (464 mm)*3	33 lbs. (15 kg)	N/A

*1 Allow a minimum of four inches behind the frames for cabling

*2 All weights approximate

*3 Indicated measurement is for top surface of panel

SPECIFICATIONS

Environmental

Cooling Requirements

Air intake/exhaust locations:

8 RU frame: The Maestro 8 RU frame ventilation system draws cooling air through openings on the left side. Warm air is exhausted through four fans located on the right side. The left and right sides must therefore be kept clear of obstructions. It is not necessary to leave open space above or below the chassis

Note: Heat-generating equipment must not be mounted beneath the Maestro chassis

4 RU frame: Air intake is on the left, exhaust on the right

Electrical

Unless specified otherwise, the following specifications apply to a single channel (i.e., one video plus associated audio channels)

Power

8 RU Maestro/Concerto frame: Power supply – 100-240V, 50/60 Hz, 10-15A, auto-sensing

4 RU Maestro/Concerto frame: Power supply – 100-240V, 50/60 Hz, auto-sensing

Touchscreen (GUI) PC: Antec SP-450 power supply – 115V, 9A/230V, 5A (manual voltage adjustment required), 50/60 Hz

Touchscreen (GUI) monitor: 100-240V, 0.7-0.35A, 50/60 Hz, auto-sensing

Video Standards

Interlaced scan:

- 1080i, 60 Hz, 16x9 HD (ATSC): SMPTE 274M-2005, ATSC Table 3 @ 1.5 Gb/s
- 1080i, 50 Hz, 16x9 HD SMPTE: 274M-2005 @ 1.5 Gb/s
- 575i, 50 Hz, 4x3 SD (PAL): BT.601-4 (normal 625/50 @ 270 Mb/s)
- 480i, 60 Hz, 4x3 SD (NTSC): SMPTE 125M, SMPTE 259M, ATSC Table 3, (normal 525/60 @ 270 Mb/s)

Progressive scan:

- 720p, 60 Hz, 16x9 HD (ATSC): SMPTE 296M-2001, ATSC Table 3 @ 1.5 Gb/s
- 720p, 50 Hz, 16x9 HD: SMPTE 296M-2001

Video Reference

SD operation: Analog blackburst (preferred). Must be compatible with input video standard (as listed above). Although any constant APL color test signal may be used for SD sync, the preferred reference signal is analog blackburst

HD operation: HD tri-level sync (preferred). Must be compatible with input video standard (as listed above)

Connector: One – 75Ω BNC, looping

Video Inputs

Number and type:

- 2 primary (background A/B)
- 1 DVE reveal (background C)
- 1 video for embedded breakaways or mix-overs (background D)
- 4 key cut
- 4 key fill

Connector: 75Ω BNC

Return loss: > 15 dB 270 Mb/s

Video Outputs

Number and type:

- 2 program
- 2 preview
- 2 clean feed (configurable tap points)

Keys

Key signal inputs: 4, each with cut and fill. Keys can be inserted “upstream” (paired with the background video) or “downstream” (can persist even when background video is changed)

Video Delay

- With DVE option: 1 frame plus 1 line
- Without DVE option: 1 frame plus 1 line

Audio Specifications

Audio standard: AES-1992 (r1997) 1999-11-23 printing

Rear panel types: 75Ω (BNC connectors) or 110Ω (25-pin D connectors)

Dolby E: Pass-through (for NTSC, Dolby E is switched on line 10)

Audio inputs: signal type 48 kHz AES3

Internal Channel Branding Option

Still images: 4 still image or CG text sources

Maximum still image size:

- Full-screen in all Maestro video standards. Supports alpha channel
- CG Text supports 8 image or text boxes including dynamic still images and text. Each CG Text source may reference 16 still images and 4 character generator fonts. Text data is defined in ASCII text files

Maximum CG Text display page size:

Approximately 4,000 characters. Number of displayed text lines defined during configuration

Supported still image file formats:

.TIF, .BMP, .JPG, .PNG, and .WMF

Animations: 2 animation sequences or text crawl sources. Length of animation sequence is determined by the area of the element being animated

Supported animation sequence file formats: .GIF and .MNG

Text crawl: Template-based display including multiple fonts, character color and transparency, and background with color and transparency

Maximum text crawl length:

- Approximately 4,000 characters
- Text crawls support still images and an animation embedded in the text crawl. Each text crawl source may reference 16 still images and a single animation sequence. Text crawl data is defined in ASCII text files

Text formatting control: Insert day/month/year, select font, font color, drop shadow on/off, drop shadow color, drop shadow size, insert still image, insert animation, underline on/off, underline color, and underline offset

Audio voiceovers: 4 audio voiceover sources

Number of audio channels: Up to 16 channels sampled at 48 kHz with 16 bits per sample

Supported audio file formats: .WAV and Broadcast .WAV

ORDERING INFORMATION

Frames, Fans And Power Supplies

MAE-FRM128-CPL

Maestro 128 frame with one power supply, matrix controller, and fan unit for Encore CPL control. Supports up to 4 master control channels per frame.

MAE-FRM128-XPT

Maestro 128 frame with one power supply, matrix controller, and fan unit for Jupiter XPT control. Supports up to 4 master control channels per frame.

CRS-FRM64-CPL

Concerto 64 frame with one power supply, matrix controller, and fan unit for Encore CPL control. Supports one master control channel and one matrix card per frame.

CRS-FRM64-XPT

Concerto 64 frame with one power supply, matrix controller, and fan unit for Jupiter XPT control. Supports one master control channel and one matrix card per frame.

MAE-BNC-RP

Maestro Rear I/O Panel – 75Ω BNC video and AES audio connectors. Supports 4 AES audio streams (8 channels)

MAE-DB25-RP

Maestro Rear I/O Panel – 75Ω BNC video and 110Ω DB25 AES audio connectors. Supports 4 AES audio streams (8 channels).

Master Control Channels

MAE-SD

Maestro SD Master Control, A/B/C/D video inputs, 4 AES audio streams (8-channels) audio, up to 16 channel embedded audio, 4 external key inputs, 2 external audio mixer inputs, and S/W license. More than 4 AES audio streams requires MADI interface.

MAE-HD

Maestro HD Master Control, A/B/C/D video inputs, 4 AES audio streams (8-channels) audio, up to 16 channel embedded audio, 4 external key inputs, 2 external audio mixer inputs, and S/W license. More than 4 AES audio streams requires MADI interface.

Channel Branding Options

MAE-BE-BAS-SD

Maestro SD Basic Channel Branding supports 4 still image or CG Text sources, and 4 audio voiceover clips. Includes one branding DSP mezzanine board and one MAE-MEM-HDD hard disk drive.

MAE-BE-BAS-HD

Maestro HD Basic Channel Branding supports 4 still image or CG Text sources, and 4 audio voiceover clips. Includes one branding DSP mezzanine board and one MAE-MEM-HDD hard disk drive. Includes HD Channel Branding S/W License.

MAE-BE-ENH-SD

Maestro SD Basic Channel Branding supports 4 still image or CG Text sources, 2 animation or text crawl sources, and 4 audio voiceover clips. Includes 3 branding DSP mezzanine boards and 2 MAE-MEM-HDD hard disk drives.

MAE-BE-ENH-HD

Maestro HD Basic Channel Branding supports 4 still image or CG Text sources, 2 animation or text crawl sources, and 4 audio voiceover clips. Includes 3 branding DSP mezzanine boards and 2 MAE-MEM-HDD hard disk drives. Includes HD Channel Branding S/W license.

MAE-BE-UPG

Maestro Basic to Enhanced Channel Branding upgrade. Adds 2 animations or text crawl sources. Consists of 2 branding DSP mezzanine boards and one additional MAE-MEM-HDD hard disk drive. Requires previous installation of MAE-BE-BAS-SD/HD.

MAE-BE-EAS

Maestro Emergency Message (EAS) support option. Provides serial interface to TFT or SAGE EAS encoder. Replaces external character generator for crawl generation. Use EAS encoder on-air tally to insert message crawl and audio. Requires AES audio output from EAS encoder.

Digital Video Effects Options

MAE-DVE-SD

Maestro SD Digital Video Effects (DVE) – Single Channel, 2D, SD DVE (SqueezeBack, Push, etc.)

MAE-DVE-HD

Maestro HD Digital Video Effects (DVE) – Single Channel, 2D, HD DVE (SqueezeBack, Push, etc.). Includes HD DVE S/W license.

Hardware Control Panels

MAE-4X2STD-CP

Maestro 4x2 Hardware Control Panel – Includes control panel frame, dual power supplies and the following: Source Control, Audio Control, Keyer Control, Source Assignment and Delegation Control sub-panels.

MAE-5X2STD-CP

Maestro 5x2 Hardware Control Panel – Includes control panel frame, dual power supplies and the following: Source Control, Audio Control, Keyer Control, Source Assignment Delegation Control and two blank sub-panels.

MAE-PS-CP

Maestro hardware control panel spare power supply – 100-240 VAC

Software Control Panels

MAE-GUI-HW

Maestro Touchscreen Control Panel – Includes rack-mountable, industrial-grade PC, LCD touchscreen monitor, and GUI software license. Works with hardware control panel server.

MAE-GUI-COMP

Maestro Software Control Panel – Includes rack-mountable, industrial-grade PC, and GUI software license. Does not include monitor. Works with hardware control panel server.

MAE-GUI-PKG

Maestro Complete Touchscreen Control Panel – includes rack-mountable, industrial-grade PC, LCD touchscreen monitor, and GUI software license. Does not require hardware control panel server. Includes video overlay option.

MAE-GUI-PS

Maestro Panel Server of GUI PC – Note: only required needed if there will be no hardware control panel and only the GUI will be used to communicate with the Maestro channels.

MAE-GUI-VIDEO

Maestro Video Overlay – PCI card for providing video (PGM and PST) overlays in GUI screen. Supports SDI standard definition only.

MAE-GUI-SW

Maestro Touchscreen Control Panel GUI software license. Allows operation of software control panel on customer-provided PC. Customer PC must meet minimum requirements.

Software Upgrades

MAE-HD-SW

Maestro High Definition (HD) software and S/W license.

MAE-HDMP-UPG

Maestro SD to HD Upgrade – upgrades main processor board from SD to SD/HD, includes S/W license.

MAE-HDBE-UPG

Maestro Channel Branding SD to HD Upgrade, includes S/W license.

MAE-HDDVE-UPG

Maestro DVE SD to HD Upgrade, includes S/W license.

Please contact your authorized Grass Valley representative.

CUSTOMER SUPPORT & PROFESSIONAL SERVICES

Our customer support and professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock, commissioning, professional training courses, and technical maintenance programs and service agreements.

www.grassvalley.com/support

