



V-Series Desktop Panels



V-Series Panels



Interfaces



Software



System Frames

Maximum Flexibility and Resilience
Enabling Critical Production Communications



Clear-Com®
AN HME COMPANY

About Clear-Com®

Clear-Com, an HME company, is a global provider in professional voice communications systems since 1968. We develop and market proven intercom technologies such as Analog & Digital Partyline, Digital Matrix, Wireless and Intercom-over-IP systems for critical communication applications in broadcast, performance venues, military, government and enterprise markets. Recognized for our legacy of intercom innovations, production teams around the world have come to depend on Clear-Com for clear, reliable and scalable communications solutions.

About HM Electronics, Inc. (HME)

HM Electronics, Inc. is a diverse group of companies providing solutions that enhance productivity and customer service in markets including restaurants, sports and professional audio. Founded in 1971, we sell, service and support products in 89 countries worldwide, via company-owned offices in the U.S., Canada, Europe, and China, and an extensive network of HME-authorized distributors, dealers and service agents. Every day quick service restaurants take over 24 million orders using HME systems. With the recent acquisition of Clear-Com, HME is the world's leading provider of professional intercom systems.

PRODUCT FAMILY OVERVIEW

The Eclipse Digital Matrix Platform is an established digital intercom platform which enables critical intercommunications among production teams who need direct (point-to-point) and one-to-many (group and partyline or conference) connections. The Eclipse family is designed and engineered to be highly flexible and extensible for addressing the intercom needs of the global production community.

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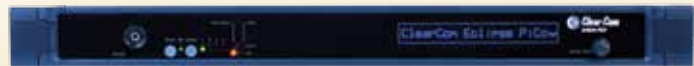


SYSTEM FRAMES

The robust Eclipse platform offers a broad selection of powerful system frames for applications of any size and complexity. Multiple Eclipse systems can be linked to expand into a single communication network with up to 3,120 users. As the heart of communication systems for many productions around the world, Eclipse also intelligently integrates with IP-based intercom software and digital wireless intercom systems to provide seamless interoperation. Furthermore, all Eclipse systems are easily managed with intuitive configuration software.

ECLIPSE-PICO

Eclipse-PiCo provides high-quality full-duplex communications requiring a moderate number of ports in a compact 1RU form, ideal for communication needs in small to mid-size production environments such as OB vans, studio and sports facilities. On-board configurations accessible from front menu enable quick and easy changes to input/output levels, routes and configurations.



ECLIPSE-MEDIAN

A powerful 6RU system frame, Eclipse-Median delivers up to 112 CAT5 panel/four-wire ports and can hold any combination of interface cards. The Eclipse-Median houses two CPU and seven matrix slots with eight built-in interface module slots, uniquely designed for outside broadcast vehicles, mobile flight-case systems, or any production environment where rack space is limited. The interface modules are all powered by a redundant pair of PSUs. Up to 15 Eclipse-Median matrices can be connected to form a single networked platform.



ECLIPSE-OMEGA

Eclipse-Omega offers up to 240 RJ-45 ports over 15 card slots in a 6RU frame. Each of the 15 slots can house a range of digital and analog matrix cards to provide full-duplex connections with panels, external lines, and interfaces to other matrix systems. Eclipse-Omega is perfect for large scale communications productions with many users or destination points located in two or more different facilities. By connecting multiple Eclipse-Omega matrices, up to 3120 users can be supported on a single cluster.





SYSTEM FEATURES CHART

	Eclipse-PiCo	Eclipse-Median	Eclipse-Omega
Frame Size	1RU	6RU	6RU
Maximum No. of Ports	36 (32 with a RS-422 data port)	112 (7 x 16-port cards)	240 (15 x 16-port cards)
On-board Relays and GPI Inputs	8	8	8
Frequency Response of 30Hz to 22kHz, +/-3dB	✓ (24-bit resolution)	✓ (24-bit resolution)	✓ (24-bit resolution)
Redundant Processing		✓	✓
Dual Redundant Power Supplies	✓	✓	✓
Intelligent Trunk Linking of Matrices	✓ (Over CAT5 or POTS)	✓ (Over CAT5, POTS, IP or Fiber)	✓ (Over CAT5, POTS, IP or Fiber)
Intuitive Programming Software	ECS (Eclipse Configuration Software)	ECS	ECS
Real-time Assignment of Partyline Conferences	Production Maestro Pro	Production Maestro Pro	Production Maestro Pro
Multiple Choices for Panel Connection such as AES3, Direct CAT5 and IP	✓ (IP requires VoICE 2.0 interface)	✓	✓
Port Level Control Adjustment	✓	✓	✓
Seamless Interfacing with Clear-Com IMF Modules	✓	✓	✓
DTMF Inward Access Control	✓	✓	✓
DTMF Outward Dialing	✓	✓	✓
User Menu for I/O Levels, Routing and Status	✓		
Configurable VOX	✓	✓	✓
VOX Detection Controlled from Software	✓	✓	✓
Individual Crosspoint Level Adjustment on User Panels	✓	✓	✓
Connectivity over Non-blocking Fiber		✓	✓
Redundant Ethernet and a Serial Link for Programming	✓ (Single LAN)	✓	✓
System Remotely Programmed and Maintained via Ethernet	✓	✓	✓
Seamless Integration with CellCom/FreeSpeak Digital Wireless		✓	✓
Intelligent Integration with Concert Software Users and IP V-Series Panels		✓	✓

USER CONTROL PANELS

Innovative user control panels deliver unmatched features, functionality, audio quality and performance. Eclipse digital intercom panels are fully programmable and available with rotary, lever key or pushbutton controls. Panel ranges include both display and non-display models.



V-Series 12-Key Lever Panel



V-Series 24-Key Pushbutton Panel



V-Series 12-Key Rotary Panel



V-Series 24-Key Rotary Panel

V-SERIES CONTROL PANELS

V-Series Control Panels combine cutting-edge Digital Signal Processing and native IP technology in an acoustically-controlled contemporary design.

The broadest variations in form and size: The V-Series Panels are available in rotary-, pushbutton-, or lever-key in 12-key/1RU panel, 24-key/2RU panel and 12-key Desktop panel forms. Up to eight Expansion panels for additional keys can be added to the 12-key and 24-key panels in rotary-, pushbutton- and lever-key forms.

Distinctive and extensive graphic display: The bright yellow OLED color provides superior contrast for accentuating the panel labels for greater legibility in dim locations and for enhancing visibility in bright sunlight. Source and destination labels are more distinct and easily identified through 10-character high resolution graphic displays with international character support.

The V-Series panels are capable of **simultaneously running both eight shift pages, and up to eight extension panels** giving the user flexible solutions for area intercom (shift) and many extra physical keys on extension panels for source or IFB routing.

User-configured signaling LEDs and Listen Again digital memory: User-configured signaling LEDs make incoming calls easy to follow at busy times. When there are multiple calls or operators miss the last call, the Listen Again digital memory can replay up to the last 30 seconds of any incoming call at his/her fingertips.

Digital Signal Processing (DSP) and Audio Level Controls: Leading Digital Signal Processing (DSP) makes local and centralized real-time changes to audio routing and effects possible. Individual up and down level controls let users adjust personal audio mix for all calls or to send call alerts to partylines. The Supervisor functionality centralizes control of any V-Series panel, enabling efficient workflow.

Connection options: Analog CAT5/CAT6, digital CAT5/ CAT6 with AES-3, Co-Ax video cable and IP direct to the panel (enabled by I.V.Core Technology).



V-Series 24-Key Lever Panel

USER CONTROL PANELS

PANEL FEATURES

- 12 or 24 rotary, lever, or pushbutton keys combination for user preference
- Robust, high contrast yellow OLEDs
- Keypad for telephone dialing and quick menu access (2RU and Desktop models)
- Front-mounted loudspeakers for high impact audio
- Assignable Main and Auxiliary Rotary level controls with LED level indication
- Gooseneck microphone and headset with a choice of XLR-4 or XLR-5 connectors
- 10-character displays with contemporary, easy-to-read font, including international character fonts
- Rear connections for Audio I/O and GPI control
- Native IP connectivity built-in
- XLR type RJ-45 for robust matrix connection
- Soft menus for local assignment
- “Listen Again” digital audio memory replay
- Supervisor capability



V-Series 12-Key Pushbutton Desktop Panel



V-Series 12-Key Lever Desktop Panel



V-Series 12-Key Pushbutton Panel



LEGACY CONTROL PANELS



i-1200E



i-1400E



i-1430E



i-1470E



e-1410E

I-Series Panels

Rugged and reliable 1RU panels. Factory built with four 5-character selector modules and a microphone headset module. The 32 key i-Series panels also include keypads. Five standard are available:

i-1200E 2x8-key non-display, gooseneck and headset connections and loudspeaker with level control

i-1400E 4x8-key non-display, gooseneck and headset connections and loudspeaker with level control

i-1430E 4x8-key display gooseneck and headset connections and loudspeaker with level control with keypad (dial and assignment menus)

i-1470E as per I-1430E, but with AUX-101 option (local audio and GPIs)

e-1410E 4x8-key display extension panel

Note: Clear-Com reserves the right to withdraw legacy control panels from sale at any time following sufficient notice.



4224EBL Panel

32 (+32 shift) pushbuttons. Assignable crosspoint level control. Four character high-contrast VFD (vacuum fluorescent display) labels.



ICS-2003E Panel

12-key master intercom panel. Large, informative display screen. Keypad for programming, IFBs, partylines, DTMF dialing and direct access to any panel or port in a single matrix.



ICS-1008E Panel

16 pushbutton keys, non-display panel



ICS-1016E Panel

32 pushbutton keys, non-display panel



ICS-22 Panel

Flush-mount dual channel panel (US 4-gang wall box size) with headset and gooseneck microphone connectors. Simple A and B channel call selections.

High performance, 6RU high frame cards for the Eclipse-Median and Eclipse-Omega system frames establish intelligent connections.



E-FIB Card

Fiber-Net card and rear Interface enables dual redundant audio fiber network connections to 14 other frames.

E-Que Card

A wireless cell controller card and rear that seamlessly connects the Eclipse Digital Matrix with the CellCom/FreeSpeak Integra for digital wireless communication to provide E1 and T1 Trunking and high capacity links between matrix frames.



MVX-A16 Card

A 16-port audio and data card set for use with panels, interface modules and direct ports using balanced four-wire audio and RS422 data interfacing. The card set consists of a front router card and a 16 way RJ45 port rear card.



LMC-64 Card

The IP-based audio level monitor card, installed in the Eclipse system frame, enables the Production Maestro Pro application to use the Clear-Vu Audio Metering for up to 64 channels per card. Using two standard scaling options, Nordic and VU, the LMC-64 Card enables easy and rapid audio adjustments for any critical application.

E-MADI Card

The E-MADI (Multiple Audio Digital Interface) card provides connection with standard MADI devices with up to 64 AES3 format digital audio “four-wires”. The card can be configured for 24, 32, 48, 56 or the full 64 channels with sample rates up to 96kHz.



IVC-32 Card

The IVC-32 card provides up to 32 IP channel connections of high performance and low latency audio connections in and out of the Eclipse-Median or Eclipse-Omega frames. The IVC-32 card has two main purposes: to integrate Concert and to enable IP connections with all V-Series IP-enabled panels. This card makes extending intercom access to new users in remote locations highly flexible and cost-effective.

Note: Up to three E-MADI cards or up to four E-Que, IVC-32 or LMC-64 cards can be fitted in Eclipse-Median or Omega frames.

INTERFACE MODULES

Connections with third-party devices or panels are enabled in the Eclipse using a variety of interface modules.

CCI-22 (Dual Partyline Ring Interface Module)

connects two 2-wire full-duplex partyline circuits with the matrix. The interface supports Clear-Com signaling to and from the matrix system, deriving its power from the external partyline circuit. Levels and cable nulling are completely adjustable. The CCI-22 functions with Clear-Com and other two-wire intercom systems.



FOR-22 (Dual 4-wire Transformer Balance and Radio Relay Control Module)

connects two external four-wire circuits to the matrix. The module provides proper impedance matching, transformer isolation and level adjustments between systems. It also supports external relay activation and call-sense circuitry.



INTERFACE MODULES

TEL-14 (Dual Telephone Interface Module) The two-line, auto-nulling digital hybrid telephone interface module is designed for establishing IFB connections between the main intercom and remote production trucks, and enabling telephone calls directly from any intercom panel in an Eclipse matrix.



AES-6-CX and AES-6-RJ The six-channel AES-6-CX module connects V-Series or 4000 digital panels to Eclipse matrices over AES3 digital audio pairs (RJ) or Co-Ax (CX), providing two audio paths to the intercom panel.



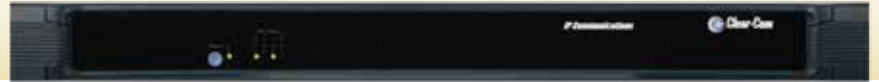
RLY-6 (6-way Relay Control Module) provides six fully programmable SPDT (single pole, double throw) relay outputs, to support dedicated switching functions external to the matrix system. This provides for external DC signal light activation or door control, for example.



GPI-6 (6-way General Purpose Input Control Module) provides six general purpose Opto logic inputs into the matrix, allowing external sources to trigger routing changes and other events through the matrix system.

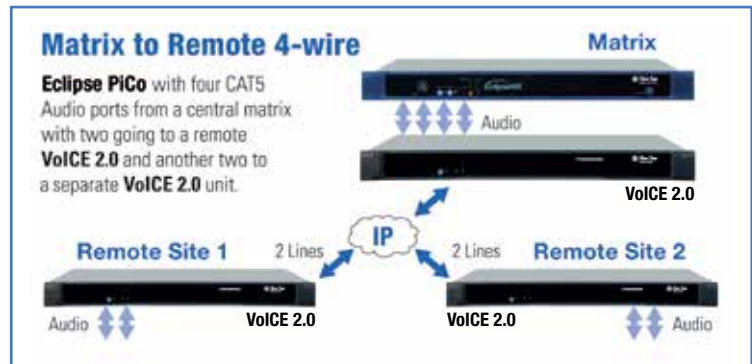


Clear-Com VoICE 2.0 frame (Voice over IP Communications Equipment) can be used to link multiple Eclipse system frames together that are located at remote sites over IP.



Each four-way VoICE 2.0 interface frame, when operating back to back with other frames, can provide:

- Up to 4 remote user panels intelligently linked backed to the Eclipse
- Up to 4 intelligent trunk lines between remote matrix systems
- Up to 4 four-wire Audio pairs and 4 Asynchronous RS-422 data links between remote sites



INTERFACES

Rack-mountable interface frames offer a practical way to hold interface modules and directly connect external audio sources to the Eclipse systems.



IMF-3 interface frame holds up to 11 interface modules in a 3RU chassis. Modular rear-mounted connector units feature two RJ-45 connectors to the matrix ports and two DB-9s attaching the connected devices. The frame is used in conjunction with the PSU-101 rack-mountable dual power supply, providing power to the enclosed interfaces.



PSU-101 is the power supply for the IMF-3 interface frame. It has both an audible failure alarm and failure relay contacts to activate a remote signal. A single PSU-101 will power a minimum of two interface frames, depending on the type of interfaces and their individual power requirements.



IMF-102 interface frame combines an internal power supply, connection for a second redundant supply, a rear input/output connector panel and slots for two modular interfaces – all in a 1RU chassis. The compact frame offers a practical way to add two interfaces to an Eclipse-Omega, Median or PiCo Matrix frame. A PSU-101 can be added for power supply redundancy.



TW-60 interface supports “Radio Interoperability” and interfaces with up to four Land Mobile Radios. The interface can connect to earphone, microphone and push-to-talk radio controls. An audio output delay, to allow key-up time of a radio system on the outbound side of each connection, is also included with delay between 0 and 5000ms. Receive level, Transmit level and Delay time are three separate controls for each radio.



BAL-8 (8-way Transformer Balance unit) is a 1RU interface containing eight transformer isolated ports. The unit isolates the connection between matrix ports and peripheral devices such as two-way radios and four-wires. (All Eclipse matrix direct outputs are low impedance electronically balanced.)



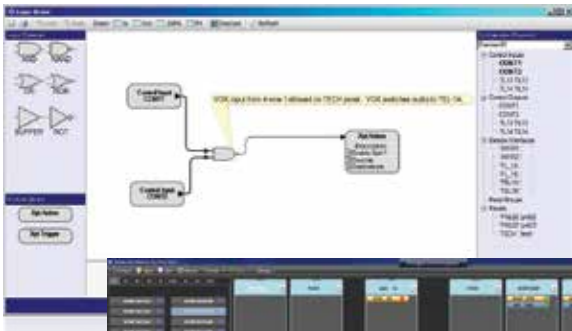
IFB-104 (IFB line Interface) is a 1RU panel that directly connects up to four IFB feeds to the ports of a digital matrix system. Individual or multiple IFB ear buds or headphones may be used directly from each connected matrix port.

The IFB-104 does not require external power to drive its circuitry. Each channel has a rear-mounted wet/dry switch, allowing either direct connection or powering via a partyline intercom power supply. The signal from the matrix port is transformer-coupled to the XLR connector output.

Eclipse Configuration Software (ECS)

ECS gives users graphical views of the system, panels and control logic (Logic Maestro) for ease of configuration and management of the entire Eclipse network. More built-in automation, a pre-set factory configuration, intuitive hardware discovery, and better visibility of the software settings—are all new features and functions to enhance the out-of-box start-up experience.

Logic Maestro



ECS has the ability to apply labels online in real time and set up control functions to each individual panel button. This is combined with a series of drop-down menus to easily access different features of the system such as label assignments, networking, DTMF access, key functions and much more.

Based on a stand alone or client/server concept, programming is done from a PC through Ethernet LAN connections. Status and diagnostic messages are available, allowing systems to be maintained remotely.

Key label and audio route changes are available in real time without download. An unlimited number of configurations may be backed up on a computer and downloaded to the matrix frame as needed.

Production Maestro Pro



Eclipse Configuration Software (ECS)

ECS FEATURES

- Automatic setup of initial configuration by hardware discovery and default factory configuration
- Configuration upload from frames
- Real time key assignment routes, IFB and partyline routing
- Centrally set global and local IFB operations
- Programmable and real time V-Series Panel audio routing-mixing
- DTMF dial tone inward access
- Activation of relays, routes, and DTMF sequences via controls
- Global label based key latch disable
- Configuration of frame and panel relay controls
- Port I/O audio level control
- Centrally set local and global ISO routes
- 8 programmable pages on a panel
- 4 configuration maps per frame
- Intelligent linking (analog and digital trunks over 4-wires, E1 or T1 and Fiber)
- Hardware graphical diagnostics and reporting
- Event and status logging
- Logic Maestro for graphical logic control programming
- CellCom/FreeSpeak Integra Digital Wireless beltpack configuration
- Eclipse 5.2.4 and later versions can support E-MADI cards

PRODUCTION MAESTRO PRO

Production Maestro Pro is an add-on software module of the Eclipse Configuration Software for flexible and fast conference and lines routing setup. It manages live external lines in and out of any small or large intercom central system to remote users' panels and their keys, which is very useful for technical operators handling large sports venue lines upstream of studio users. Users can simply route four-wire lines to groups of panel users instantly with the graphical assignment system.

Production Maestro Pro's Clear-Vu Audio Metering enables visual audio levels on a PC screen using real-time graphical meters. Clear-Vu provides both activity and level monitoring of feeds with a glance while reducing the need for multiple monitoring speakers.

PRODUCTION MAESTRO PRO FEATURES

- A real-time production tool
- Intuitive drag-and-drop assignment
- Multi-user synchronized operations
- Multiple levels of undo/redo
- Resilient fault tolerant design
- Audio input level adjustment
- Real-time conference renaming
- 4-wire route monitoring
- Key Groups for assigning panel keys as one entity
- Save time by assembling preset conferences in advance of their activation
- Adjust input and output audio levels
- Audio metering (requires LMC-64 card)



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