

# Eclipse Digital Matrix



## Robust, flexible and reliable communication solutions

For over 35 years, Clear-Com has provided matrix intercom solutions to the broadcast, live performance, government, and other mission-critical users who demand highly reliable and uncompromising levels of audio performance.

The Clear-Com Eclipse digital matrix is the latest advancement in communications technology, blending the best of features and functions from two of the industry's field-proven matrix technology platforms: Clear-Com Matrix Plus 3 and Drake 4000 Series II. With additional innovations, the Eclipse digital matrix platform is enhanced to be much more powerful, functional, and expandable than ever before.

The Eclipse matrix systems provide a flexible and scalable foundation for user-to-user and group-based multi-connections, supporting as few as 16 on a single matrix frame or as many as 3120 users connections on a networked system platform. Designed and engineered to meet communication needs of any size and complexity, Clear-Com Eclipse is unrivalled in terms of performance, versatility and expandability:

- Powerful, redundant processing
- Integrated Digital Wireless
- Individual level control
- Unsurpassed audio quality
- Rugged design
- Intelligent linking of matrices



# Raising Performance to New Levels

## **Powerful, Redundant Processing**

The powerful processing card, running in real-time, easily handles large system, fiber and intelligent linking traffic while providing for increased capability in the future. For redundancy, the Omega and Median frames feature two microprocessor CPU cards as standard, with automatic switching between them. Each CPU can communicate with two rear LAN connections.

## **Integrated Digital Wireless**

The E-Que card for the Omega and Median frames provides connection for up to 10 CellCom®/FreeSpeak® transceiver remote antennas.

In this way, up to 50 wireless belt-pack users can communicate in full duplex with all panels and interfaces on the

matrix system directly. The wireless belt-pack users can freely roam about an area, handing off between the available antennas using this patented cellular technology.

## **Individual Level Control**

Individual listen-level controls on most of the panels allow the user to adjust the level of each key to provide personalized audio "mix". Incoming and outgoing volume levels for each matrix port can also be adjusted, which allows the matrix to be connected to a wide variety of panels and interfaces.

## **Unsurpassed Audio Quality**

Audio features include 24 bit 48-kHz sampling to provide better than CD quality. Voice Operated Crosspoint detection is controlled from the ECS

software, and provides audio gating as well as visual signaling.

## **Rugged Design**

The robust mechanical design of the Omega and Median includes an inner chassis with precision guides for the front and rear cards, and a solid backplane for accurate mounting of the cards and rear connectors. The CPU card, port cards and other system cards have a rigid front structure, with integral ejector tabs for secure and foolproof hot card insertion and extraction. Dual redundant power supplies are front-mounted, with fault alarms and separate IEC power connectors. PSUs have cooling fans with a low ambient noise level of <45 dBA, which benefits quiet production environments.

## **Intelligent linking**

An Eclipse matrix can intelligently link to other Eclipse matrices via redundant fiber rings, trunk lines, E1/T1 or IP over larger distances. Fiber rings allow a total of up to 15 matrices to be linked together into one non-blocking 1320 port matrix system. For redundancy, each frame connects to a main and a backup ring which route audio in opposite directions to help prevent audio loss in the case of fiber failure. This technology also allows the fiber ring to "self-heal" the audio connections in the event that a matrix frame in the ring is turned off.

Matrices in different cities or countries can be linked via automated trunk lines or Internet-protocol interfaces. Any port within the frame may be used as a trunk line to carry a full-duplex communication path between the frames. The Clear-Com IP interface VoICE 2.0 can route these trunks through LAN or WAN networks thus saving costs.





## For maximum versatility, expandability and connectivity

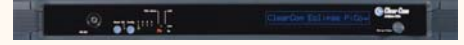
The Eclipse product family provides a broad range of powerful, digital matrix frames, panels and interfaces to support intercom requirements ranging from basic to complex.

The Eclipse matrix has been proven effective to scale as the communication needs grow. System expansion is easily configured within the Eclipse Configuration Software, ECS. All user panels and interfaces work across the range.

### Eclipse products at a glance

- Connects as few as 16 users and up to 3120 users.
- Full-duplex communication, allowing users on the same channel to have 2-way (talk and listen) conversations.
- Non-blocking linking over fiber to provide users with immediate access to any remote port.
- Easy configuration using the ECS (Eclipse Configuration System) software-based configuration tool.
- Multiple choices of display, non-display, desktop, lever key or pushbutton user panels.
- Integrated license-free Digital Wireless with CellCom®/FreeSpeak®

### Eclipse Family



#### Eclipse PiCo/Easi-PiCo

Compact and highly functional, designed for small to medium size production environments such as OB trucks, studio or news facilities.



#### Eclipse Median

Mid-size and designed for expanded support in mobile facilities or fly away systems where space is a premium.



#### Eclipse Omega

Powerful and flexible, designed for large-scale venues such as multiple broadcast sites, theaters and national sports stadiums.



*Eclipse PiCo*

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

Eclipse PiCo offers 36 full-duplex communication ports, including four 4-wire ports, in a one-rack unit (1 RU) chassis. Each Eclipse PiCo has two power supplies for fail-safe redundancy, and eight onboard general-purpose inputs and outputs. It supports V-Series, I-stations, 4000 series panels and ICS panels.

Eclipse PiCo is also programmed and controlled with the Eclipse Configuration Software (ECS). Up to four full system configurations can be stored on the Eclipse PiCo matrix frame and an unlimited number of configurations may be backed up on a computer and downloaded to the matrix as needed. TCP/IP access is

available for configuration updates and networking. The system may be accessed remotely for programming or to retrieve configurations.

A local High Speed Link CAT-5 connection provides intelligent linking functionality between matrices without using PiCo ports. In this way, two locally connected Eclipse PiCo's can provide 72 port audio connections for Panels and interfaces in 2RU.

An intuitive user menu provides quick and easy access to all port input and output levels, routing and GPI status. This provides users the ability to make quick online changes required in OB trucks and live events.

The Eclipse PiCo has been vibration tested to MIL-STD-810F (shock and vibration) specifications, extremely important for mobile facilities such as OB vans.

## Eclipse PiCo Features:

- 36 Ports in 1RU
- 32 RJ45 with 4 extra 4-wire ports
- High Speed Link on 1 RJ-45
- Eight On-Board Relays and General Purpose Inputs
- User menu for I/O levels routing and status
- Intelligent Linking
- Seamless Interfacing with Clear-Com IMF modules
- DTMF Inward Access
- DTMF outward dialling
- Configurable VOX
- Individual Level Control
- Intuitive ECS Programming Software
- 4 on-board configurations selectable by front menu.
- Frequency Response of 30Hz to 22kHz,+/-3dB
- -65dB SNR-70dB Crosstalk
- Dual-Redundant Power Supplies

## Easi-PiCo

Easi-PiCo can be pre-configured with 4 set-ups supporting 16 ports, a highly economical and low risk approach to evolve from a party-line system to a small scale point-to-point matrix system. Delivered as an entry-level matrix package, the Easi-PiCo solution includes a scaled down Eclipse PiCo frame, interface cards, power supply and choices of belt packs and panel options.

The Easi-PiCo 16 channel system does not require any software set-up and offers a mix of non-display panels and interfaces. Easi-PiCo systems can be later expanded into a full 36-port Eclipse PiCo through an onsite software-upgrade.

# Eclipse Median



Eclipse Median

The Eclipse Median is a 6RU frame that houses 2 CPU and 7 matrix slots with 8 built-in interface module slots, uniquely designed for outside broadcast vehicles, mobile flight-case systems, or any production environment where rack space is limited.

Eclipse Median delivers up to 112 CAT-5 panel/4-wire ports combined with any combination of interface cards: CCI-22 Party line, FOR-22 4-wire / relay, TEL-14 dual channel telephone hybrid, RLY-6 relay output card or GPI-6 GPI input

interface cards and soon an AES-6 Co-ax and Digital audio module. The interface cards are all powered by a redundant pair of Median PSUs and are safely connected at the rear of the frame.

The Eclipse Median uses all the same cards as its bigger brother the Eclipse Omega and can network with it by both Fiber-Net and intelligent trunks. The Median can also intelligently network with the Eclipse PiCo 1RU matrix. The Median can use the E-Que CellCom®/FreeSpeak® integrated digital wireless cards.

## Eclipse Median Features:

- 7 x 16-port cards provide large-system performance in a small package
- 8 In-built Interface module slots.
- Matrices connect over fiber
- Intelligent linking between systems
- Ability to integrate with CellCom®/FreeSpeak® digital wireless beltacks
- Dual redundant processors
- 24-bit resolution with audio frequency response of 30Hz to 22kHz, +/-3 dB
- 65dB SNR-70dB Crosstalk
- Individual crosspoint level adjustment in 0.5 dB increments
- Eight GPI inputs and relays included
- Compatible with V-Series, I-Stations, ICS and 4000 panels
- Powerful, visual, and intuitive system software
- VOX detection controlled from the software
- Redundant Ethernet and serial links for programming
- System remotely programmed and maintained via Ethernet



# Eclipse Omega



Eclipse Omega

Eclipse Omega is an advanced digital matrix intercom platform, offering up to 240 RJ-45 ports over 15 module slots in a 6-RU chassis – the highest port density of any available system on the market. Eclipse Omega is perfect for large scale communication productions with thousands of users located in multiple facilities. By connecting multiple Eclipse Omega matrices, up to 3120 users can be supported on a single networked platform.

Each of the 15 slots can house 16-port matrix cards to provide full-duplex connections with panels, external lines, and interfaces to other matrix systems. The Omega can use the E-Que CellCom®/FreeSpeak® integrated digital wireless cards.

External interface modules are connected using external 1RU and 3RU frames, leaving all 15 slots available for client and interface cards.

## Eclipse Omega Features:

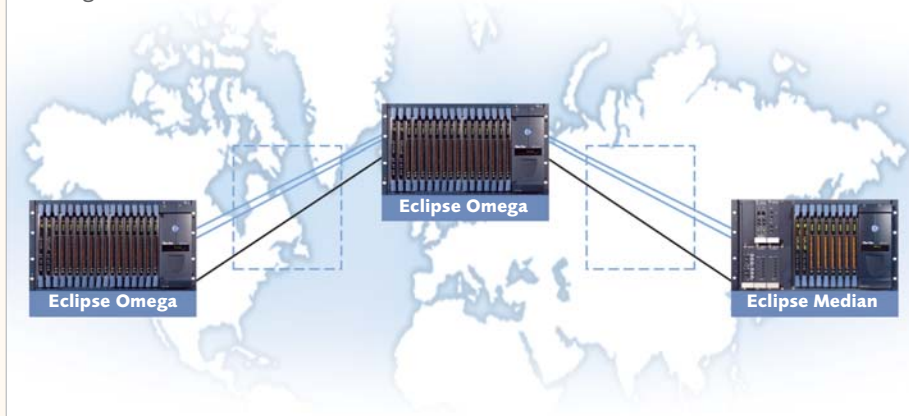
- 15-port cards give large-system performance in a small package
- Matrices connect over fiber
- Intelligent linking between systems
- Ability to integrate with CellCom®/FreeSpeak® digital wireless beltpacks
- Dual redundant processors
- 24-bit resolution with audio frequency response of 30Hz to 22kHz, +/-3 dB
- 65dB SNR-70dB Crosstalk
- Individual crosspoint level adjustment in 0.5 dB increments
- Eight GPI inputs and relays included
- Compatible with V-Series, ICS, I-Station and 4000 panels
- Powerful, visual, and intuitive system software
- VOX detection controlled from the software
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### Intelligent Networking

Intelligent Networking is the solution to connect together widely separated matrices.

Clear-Com high capacity linking of Eclipse matrix frames include:

Analogue Trunk, Fiber-Net and IP Truck lines.



# Matrix to Matrix Product Comparison

	Easi-PiCo	PiCo	Median	Omega
<b>No. of Ports</b>	Up to 16	Up to 36	Up to 112	Up to 240
<b>Physical Size</b>	1RU	1RU	6RU	6RU
<b>CAT-5 ports</b>	Yes	Yes	Yes	Yes
<b>Co-AX Interface</b>	Yes	Yes	Yes	Yes
<b>Digital CAT-5 interface</b>	Yes (DIG-2)	Yes (DIG-2)	Yes	Yes
<b>Trunking</b>	Yes	Yes	Yes	Yes
<b>Fiber connection</b>	No	No	Yes	Yes
<b>High Speed Link</b>	Yes	Yes	No	No
<b>CellCom/FreeSpeak Integration</b>	No (but can use separate basestation)	No (but can use separate basestation)	Yes	Yes
<b>Redundant PSU</b>	Yes	Yes	Yes	Yes
<b>Redundant CPU</b>	No	No	Yes	Yes
<b>Redundant LAN</b>	No	No	Yes	Yes
<b>Frame GPI/O</b>	8 in 8 out	8 in 8 out	8 in 8 out	8 in 8 out
<b>Configurations on CPU</b>	4	4	4	4
<b>ECS software</b>	With upgrade to PiCo	Yes	Yes	Yes
<b>Pre-configured</b>	Yes	No	No	No
<b>Diagnostics</b>	No (Status menu only)	Yes	Yes	Yes

# Eclipse Configuration Software (ECS)

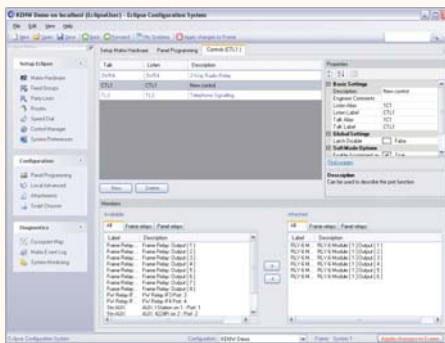
Eclipse configuration software – ECS - is visual and intuitive, featuring graphical views of the panels. ECS has the ability to apply labels and control functions to each individual panel button. This is combined with a series of drop-down menus to access different features of the system such as label assignments, networking, DTMF access, key functions, and much more.

Based on a 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. An unlimited number of configurations may be backed up on a computer and downloaded to the matrix frame as needed.



## Software Features:

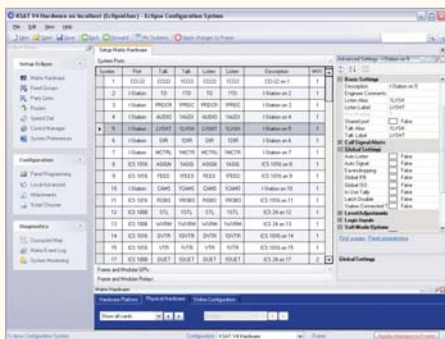
- Configuration upload from frames
- Global and local IFBs
- Automatic interface recognition
- Programmable VOX
- DTMF inward access
- Activation of relays, routes, & DTMF sequences via controls
- Global and individual key latch disable
- Configuration of frame and panel relays
- Forced listens (normally made routes)
- Port I/O level control
- Local and global ISO routes
- Control Macro logical routing and signaling
- Digital wireless beltpack configuration
- Multiple pages on a panel
- 4 configuration maps per frame
- Intelligent linking (trunks and fiber)
- Hardware graphical diagnostics and reporting
- Event logging



Control Manager



My Systems



Matrix Hardware Manager



Panel Programming

# Intelligent Networking

## Introduction

Local intercom teams are often required to communicate with several distant intercom teams. For example, two or more production centers may want to collaborate on the same project and therefore requiring intensive communication that may not be easily handled by telephones. Because the teams can be quite distant, even separated by oceans, a local switching matrix can be used at each site but will have connections to the other remote matrices.

Intelligent Networking is the solution to connect together widely separated matrices.

The use of a trunk line to take pre-mixed audio between many local to one remote

user provides a useful cost efficiency that allows telecom lines to be used.

When many users wish to have a care-free availability of remote calls the higher bandwidth of Fiber provides such a non-blocking option.

Matrices can trunk to remote destinations through other matrices. This Trunk Forwarding is unique to Clear-Com. This saves matrix ports, as not all matrices have to have trunks to all other matrices.

## Overview

The Clear-Com Eclipse family of matrices offers several alternatives to connect widely separated matrices. With Clear-Com's networking capability, local work teams on different Eclipse matrix systems can be linked together, irrespective of site location and distance. This powerful and intelligent feature enables small to large multi-site production teams to communicate very cost efficiently, locally or overseas. Clear-Com's Intelligent Networking options include:

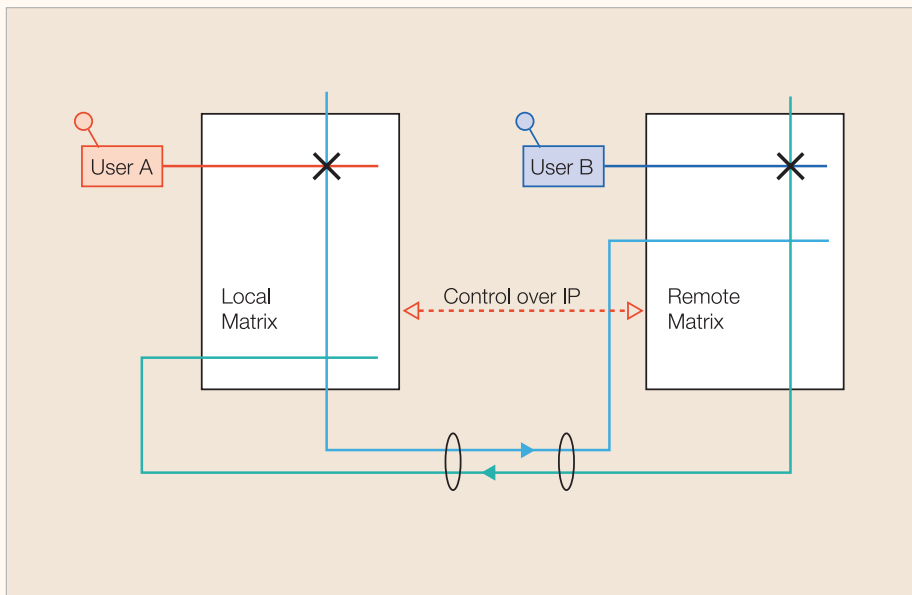
- Analogue audio trunk lines
- Fiber-Net (E-Fib)
- IP trunk lines

### Analogue Audio Trunk Lines

Clear-Com's four-wire Analogue Trunk lines provide the basic functionality to give local panel users keys to remote matrix resources.

For example, the local users:

- Have keys to other remote users for duplex communication;
- Participate in global virtual Party Line conferences with members from many matrices;
- Create groups of users from networked sites; and
- Activate a remote relay.



Local user with trunk line audio to remote matrix.

## Fiber Networking

Even with high capacity trunking as in E-Que, trunk lines may not always be available for connection. In this situation, a possible alternative would be to use Fiber-Net interfaces. Fiber-Net interfaces for Eclipse Omega and Median frames can provide full non-blocking access between matrices within 10km\* of each other and have access to single mode fiber. The dual concentric fiber ring topology within Fiber-Net gives the advantage of full redundancy, maintaining

audio links even when the main fiber pair is fully disconnected and the backup fiber is disconnected at one frame at the same time. Matrices loop back audio when the next link is inactive.

Fiber-Net runs at full audio bandwidth allowing the intercom matrices to share audio resources as if they were local. In effect, a fiber network of intercom frames act like one matrix.

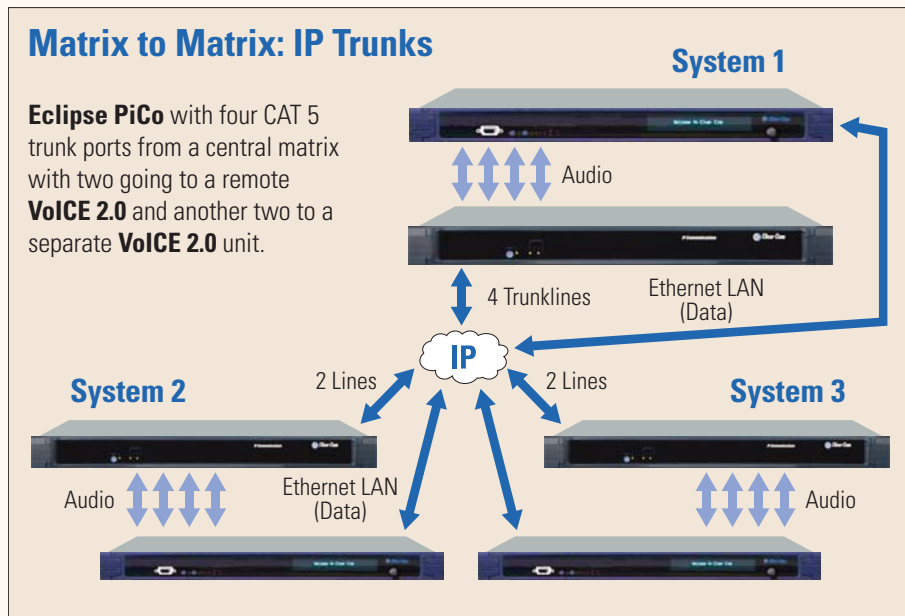
## IP Networking

Clear-Com enables the use of low cost IP networks to provide voice communications to connect distant matrices all over the world. With all the benefits of the trunking capabilities, Clear-Com's VoICE interface frame

- Converts up to 4 analogue trunk lines;
- Controls data over Ethernet into an IP stream; and
- Connect distant matrices over Local Area IT Networks, Wide Area Networks or Internet.

A central VoICE unit will connect with up to four other remote VoICE units thus saving central VoICE units in larger networks. VoICE IP communication interfaces will work between all Eclipse frames and between the older Matrix+3 frames and 4000 matrix systems.

\*Further distances are available. Ask for a quotation.



Digital trunking over IP using the VoICE frames

## Networking Comparison Table

Network Options	Audio Quality	Call Blocking	Trunk Forwarding	Redundancy
Analogue Trunk Line	High	Requires management	Yes	None
Fiber-Net	Highest	Very unlikely	Not required	Yes
IP Trunk Line	Variable high to low Network latency	Requires management	Yes	No

# Clear-Com Matrix Panels

Clear-Com's comprehensive range of innovative user panels offers an unrivaled match of features, functionality and performance with contemporary styling. Clear-Com has the widest range of user panel types, designed to meet the needs of all production personnel. These range from modern, fully programmable digital pushbutton, lever key and LCD units, to basic, non-display panels.

All panels can have their keys programmed through ECS to be "Talk only", "Listen only", "Talk with Listen" (where individual level controls can mute the audio), "Dual Talk and Listen" where momentary talk with or without latching listen is available on one button; and also with and without Control GPIs, and other route Monitor and Stacked Talks (in addition to pre-defined Fixed groups).

Panels can provide and receive call alerting to and from external Party-Line systems.

LED signaling has options to suit customer preference, and all keys can signal audio presence and gated VOX audio.

Matrix panels have been engineered with particular attention to the audio qualities, with clear and intense loudspeaker design, intended to reject acoustic feedback.

Display panels give the user the ability to make changes either to their own panel settings or to others on the same system. The ICS-2003 master panel can assign users to system wide conferences and fixed groups, while the Supervisor facilities in V-Series and LCD key panels allow master users to control, listen and setup other user panels.

## Display Panels

Clear-Com's display panels give the user an excellent balance of high performance and value.

### V-Series

The innovative V-Series panels come in lever key or pushbutton models with 1RU/12 key or 2RU/24 key sizes. All keys have an individual up/down level control, which is also available as an info-menu for each individual key and display. A panel menu control for local and remote assignment and set-up is also included. The V-Series uses leading edge Digital Signal Processing (DSP) to provide multiple routing options within the panel, AGC and local IFB with local audio inputs.

V-Series provides a Supervisor mode that permits one user to make changes to another panel on-line for uniform set-up. The supervisor can also listen to other panels' audio.

V-Series includes internal digital audio memory for "listen again," enabling the panel user to listen to the last 10 seconds of audio to confirm a command.

V-Series is complemented with 1RU 12 key display extension panels and a desktop version for non-technical equipment areas or live events and offices.



1RU, 12 key size, lever key user panel



1RU, 24 key size, push button user panel

### 4000 Series 2 VFD

The 4224EBL features 32 (+32 shift) pushbuttons, with high-contrast VFD (vacuum fluorescent display), giving clear key labels and DTMF dial functionality.



4224 Series

# Clear-Com Matrix Panels

## 4000 LCD Key Panels

Clear-Com's innovative LCD keypanels feature high contrast, tri-color LCD keys that support two rows of 5-character mnemonics and have an individual level mix rotary control per key allowing personal audio mixes to be made intuitively and quickly.

The 4212EBL has 12 (+12 shift) keys, with 12 individual rotary controls above each key to adjust listen levels.

The 4222EBL has 24 (+24 shift) keys, with 24 individual rotary controls above each key to adjust listen levels.

The 4222EBL panel can also provide a Supervisor Function with the ability to mimic the audio and visual information presented to another operator and allowing the supervisor to take parallel control of a remote position. Supervisor Function allows an operator to assign a new key label for the another operator live and on-air, or to adjust levels for them, since the Supervisor can hear the other panel's audio.



4212RB



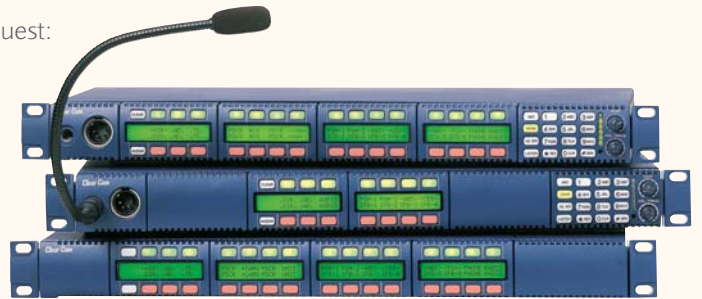
4222RBL

## I-Stations

The 1RU I-Stations are engineered and built to be rugged and reliable. I-Station is fully flexible and can be factory built with up to four key selector modules and either a simple Loudspeaker/Headset Function module or combined LS/HS Function and keypad module.

Seven options are available as standard with others available on request:

- I-1100E** 1 Non-display 8 key module no keypad
- I-1110E** 1x8 key display key module no keypad
- I-1210E** 2x8 key display, key module, no keypad
- I-1400E** 4x 8 non-display key modules no keypad
- I-1410E** 4x8 key display key modules no key pad
- I-1430E** 4x8 key display key modules with key pad (dial and assignment menus)
- I-1470E** as per I-1430E but with aux 101 option (local audio and GPIs)



## Master Station

The powerful ICS-2003 is a 12-key Master Intercom Panel with a large, informative display screen and a keypad for programming, IFBs, Party-Lines, DTMF dialing and direct access to any panel or port in the matrix.



ICS-2003

## Non-Display Panels

The Clear-Com non-display panel range provides a cost-effective solution where continual label changes are not required.

The 4215E features 16 programmable keys and innovative Quickfix™ labels.

The ICS-1016 features 32 pushbutton keys

The ICS-1008 features 16 pushbutton keys



4215E



ICS-1016



ICS-1008

# Interface Frames

The Eclipse matrices are complemented with a set of line interface and GPIO control modules. These provide intercom users with transformer and relay interfacing to radio basestations, connections to powered Party Line ring systems, PSTN telephone lines, Digital CAT5 links, IP communications and relay and Opto controls. This expands the capability of the core intercom matrix to connect with the many options that modern communication systems require.

## IMF-3 (3RU Frame)

The IMF-3 holds up to 11 interface modules in 3-RU. 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 power supply, providing power to the enclosed interfaces. A second PSU-101 may be attached for DC power redundancy.



IMF-3 3RU

## PSU-101

The PSU-101 is the power supply for the IMF-3 interface frame. The one-rack-space unit may be connected with a second unit for fully redundant operation. 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.



PSU-101

Additional power supplies may be added in installations with a large quantity of interfaces, to provide both sufficient power and redundancy.

## TW-60

The 1RU TW-60 interface provides functionality in an add-on product, to support, "Radio Interoperability" and includes a physical interface point, to connect up to 4 Land Mobile Radios. The interface connects to Earphone, Microphone and Push to Talk radio controls. An audio output delay, to allow key-up time of radio system on the outbound side of each connection, is also included with delay between 0 and 5000ms.



TW-60

Three separate controls for each radio are provided, Receive level, Transmit level and Delay time. Additionally there is a green LED to indicate the unit is receiving audio, inbound from the radio and a red LED to indicate the unit is transmitting audio, outbound to the radio.

# Interface Frames

## IMF-102 (1RU frame)

The 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 1-RU chassis. The compact frame offers a practical way to add two interfaces to an Eclipse Omega, Median or PiCo digital intercom frame.



IMF-102 1RU

## IFB-104 (IFB line Interface)

The IFB-104 is a 1-RU 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 powered directly from each connected matrix port.



IFB-104

Alternately, a Ring intercom power supply may be connected, allowing the use of active personal IFB receivers, such as the Clear-Com TR-50. 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 party-line intercom power supply. The signal from the matrix port is transformer-coupled to the XLR connector output.

## BAL-8 (8 way Transformer Balance unit)

The BAL-8 is a 1-RU interface containing eight transformer-isolated ports. The unit isolates the connection between matrix ports and peripheral devices such as two-way radios and 4-wires. (All matrix direct outputs are low impedance electronically balanced.)



BAL-8

## FIM-108

The FIM-108 is a 1-RU optical fiber interface for use with the Clear-Com Eclipse, 4000 series II and Matrix Plus digital intercom systems. Each pair of fiber interfaces allows up to eight CAT-5 connected matrix intercom panels or interfaces to be remotely connected to the matrix card frame via optical fiber.



FIM-108



Tel-14

## Tel-14 (Dual Telephone Interface Module)

The Tel-14 is a two-line, auto-nulling digital hybrid telephone interface module. Onboard DSP processors provide greater than 40-dB of trans-hybrid loss, as well as automatic echo cancellation for the highest intelligibility and audio quality. Users can centrally enable or disable auto-answer and auto-disconnect. The interface is designed for establishing IFB connections between the main intercom and remote production trucks, and enabling telephone calls directly to or from any intercom station in an Eclipse matrix.



CCI-22

## CCI-22 (Dual Party-line Ring Interface Module)

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



AES-6

## AES-6

The AES-6 Co-ax/AES module will provide co-axial/BNC connection to the V-Series and 4000 panels. The module will also provide up to 6 channels of AES/EBU digital audio for connection to digital audio consoles and routers.

(Product currently under development)



GPI-6

## **GPI-6 (6-way General Purpose Input Control Module)**

The GPI-6 provides six general-purpose Opto logic inputs into the matrix, allowing external sources to trigger routing changes and other events through the matrix system.



RLY-6

## **RLY-6 (6-way General Purpose Output Relay Control Module)**

The RLY-6 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.



FOR-22

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

The FOR-22 connects two external 4-wire circuits to the matrix. Camera intercoms, two way radios, microwave and satellite links, IFB's, and program audio inputs and outputs are candidates for the FOR-22. The module provides proper impedance matching, transformer isolation and level adjustments between systems. It also supports external relay activation and call-sense circuitry. The relays can be controlled separately to add to the frame relays complement.

# Digital Matrix Product Family Overview

## Eclipse PiCo



## Eclipse Median



## Eclipse Omega



## V-Series



1RU, 12 key size, lever key user panel



1RU, 24 key size, push button user panel

## 4000 Series 2 VFD



4224 Series

## 4000 LCD Key Panels

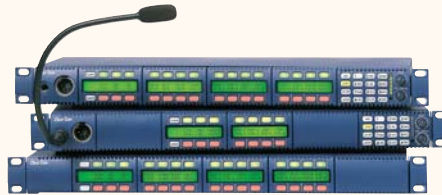


4212RB

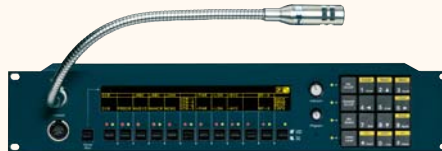


4222RBL

## I-Stations



## Master Stations



ICS-2003

## Non-Display Panels



4215E



ICS-1016



ICS-1008

## Interface frames



IMF-3 3RU



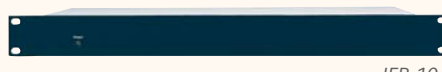
PSU-101



TW-60



IMF-102 1RU



IFB-104



BAL-8



FIM-108

## Interface Modules



Tel-14



CCI-22



GPI-6



RLY-6



FOR-22



AES-6



AES-6-RJ



AES-6-CX

# The Complete Clear-Com Product Offerings

For more than 35 years, Clear-Com's party-line, digital matrix, wireless and IP-based intercom solutions have led the industry with high quality audio performance that meets mission-critical live production needs in a variety of settings.

## Party-Line Intercom System

**Clear-Com Encore™** offers the most comprehensive set of party-line intercom systems—from main stations to remote stations, wall-mounted speaker stations to multi-channel beltpacks, robust interfaces, headsets, announcer consoles, and more.

Based upon Clear-Com's unique, market-proven communication technology, Clear-Com Encore delivers superior sound quality and offers a streamlined, contemporary and user-intuitive design.



Clear-Com Encore™

## Wireless Intercom Solutions

Clear-Com carries the broadest range of wireless intercom selections on the market to address the ever-increasing needs for wireless mobile communication in large production venues. All Clear-Com wireless offerings are full-duplex, enabling beltpack users to talk and listen simultaneously. Each beltpack provides users with the flexibility of one-to-one or group communication. Available as standalone systems or linked with traditional wired intercom systems such as party-line or matrix systems, these solutions allow operators to "cut the cord", offering unrestricted mobility and unparalleled ease of communication.

Clear-Com includes the following wireless offerings:

**CellCom®/FreeSpeak®** – License-free digital transmission wireless intercom that provides wireless beltpack connections seamlessly in a large coverage area. CellCom®, trademarked in the US, operates in 1.921- 1.928 GHz range; FreeSpeak®, for all non-US markets, operates in 1.881- 1.916 GHz range.



Tempest 2400 & Tempest 900

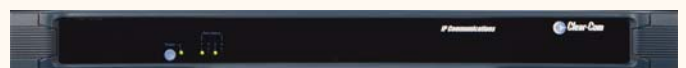
CellCom®/FreeSpeak®

## Tempest® 2400 & Tempest® 900

One- to four- channel digital wireless intercom systems that operate in either 2.4 GHz or the 900 MHz band. Tempest can operate up to 5 wireless beltpacks per base station and up to 75 users on 15 base stations. **WBS** – WBS-670 (single channel) or WBS-680 (two channel) analogue wireless intercom systems operates in frequency bands between 518-740 MHz, ideal for crowded venues with potential frequency or environmental challenges.

## IP Communications

Clear-Com offers the most advanced solutions to link matrices to matrices and matrix to panels over large distances. The **VOICE 2.0** IP interface takes advantage of Internet Protocol and leverages the growing availability of VPN and the Internet to lower operating costs for wide area linked matrices. **SOFT-Voice**, a virtual panel application on your PC, connects back to VoICE 2.0 to provide IP based remote panel connections to the home matrix.



VoICE 2.0



SOFT-Voice  
Screenshot



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