



Broadcast
Solutions

Gemini

Matrix Intercom System

Mentor RG + MasterMind

Sync and Test Pulse Generator

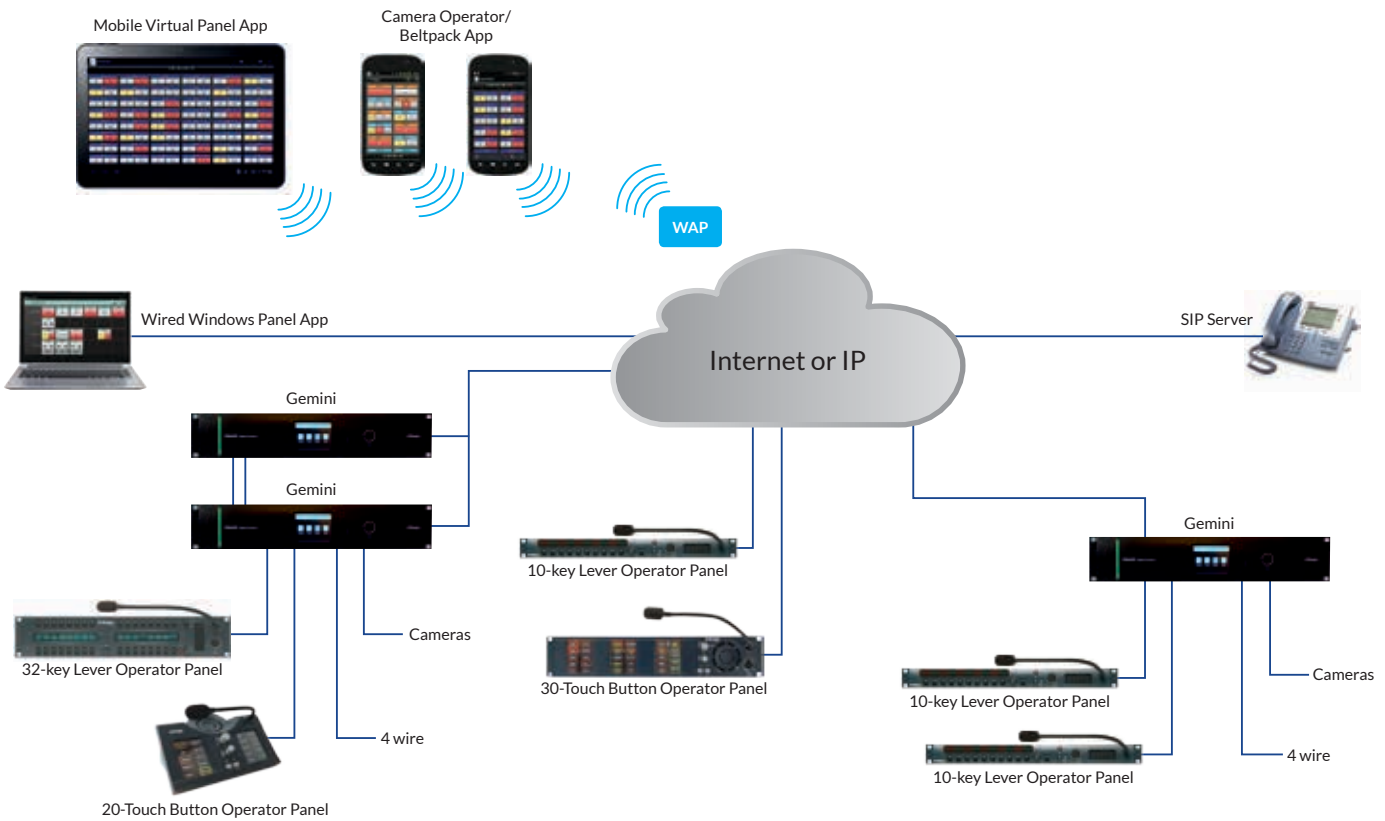
GEMINI DIGITAL MATRIX INTERCOM SYSTEM

In high profile broadcast environments operating around the clock, communication by its very nature is critical to success. Proven reliability, capabilities and performance make the professional intercom system an absolute essential for any production.

For private one-to-one, group and conference calls, Gemini matrix intercom allows productions to simply and quickly initiate, conduct and manage conversations with simple user operations and intuitive configuration controls. An ideal entry level system, Gemini can scale into a large system to meet future broadcast production requirements.

Gemini matrix intercom is a flexible, real-time intercom system that features comprehensive integrated IP capabilities together with interfaces to 4-wire circuits, telephony, AES/MADI, IP panels and SIP for analog or IP based solutions.

Gemini supports a range of panels including desktop and rack mount lever key panels, touchscreen button panels, and Virtual panels for smartphones and tablets.



Gemini System

Gemini is a scalable matrix intercom system with 64 channels of Digital Signal Process (DSP)-based IP communications support, up to 12 camera channels and an enhanced front panel with alarm features. The Gemini system offers 8 to 32 local ports for panels, analogue and digital audio interfaces and telephony, within a single 2RU matrix. Gemini can be expanded to 8 matrices with 256 ports via the dual redundant ring connectivity that provides program quality performance with near-zero latency. Based on a distributed architecture, rather than a single central matrix, the Gemini's integrated IP connectivity allows the system to expand to virtually any geographical location over LAN, WAN or Internet. The redundant ring ensures no single point of failure for ultimate system dependability.



System Expansion

Expansion is accomplished by connecting multiple frames over a digital audio network (High Speed Link - HSL) that supports hundreds of simultaneous conversations. Gemini also supports an additional 64 communication channels over IP, and integral audio mixer / DA's allow up to 12 channels of camera intercom to be connected without using standard audio ports. For further system expansion, multiple Gemini 'rings' may be interconnected over any IP network, without loss of functionality or any practical limit to overall system size.

Interface Boards

A range of interface boards may be selected in any combination for

connection to conventional control panels over CAT5, analog 4-wire audio equipment, analog telephone lines, AES / MAD1 streams or IP-enabled panels. The optional IP capability allows up to 64 channels of voice to be carried over any standard IP network to other Trilogy matrices. It also carries all inter-matrix messaging and system configuration data. Gemini's GPI capability allows external control access to an extensive array of audio routing and logic functions.

Telephony

When fitted with a POTS (Plain Old Telephone Service) interface option, the matrix serves up to four lines per board, with dialing to and from control panels, auto-answering and DTMF

control of audio routing, allowing remote users to access Gemini from any internal and external lines, or mobile phones and tablets.

Session Initiation Protocol (SIP)

SIP is now established as the de-facto standard for VoIP telephony and it has also been adopted by the European Broadcast Union (EBU) and many audio CODEC suppliers as the preferred method for connection of intercom audio. SIP simplifies interfacing to other IP-based systems and devices, for example, VoIP phone systems, smart phones and tablets, as well as a means to establish intelligent communication between disparate intercom suppliers.

Panels

Compatible with the Gemini intercom system is an extensive range of versatile, high-quality operator panels that are highly flexible and intuitive. With choices including dual-action lever key, touchscreen and virtual panels, these control panels are designed and manufactured to meet the demanding standards of production users and assure reliability, flexibility of operation and ease of use.

Key Panels

Select key panels are also equipped with an IP interface that permits connection to a Gemini matrix over any standard LAN or WAN.



10 Lever Key 1U IP Panel
700-38-00B



8 Lever Key Desktop Panel
700-41-02



32 Lever Key 2U Panel
700-33-01B



16 Lever Key 2U Panel + Phone Keypad
700-31-52B



16 Lever Key 2U Panel
700-31-01B



24 Lever Key 2U Panel
700-30-51B

Touchscreen Panels

Features include: 8-character color displays; pop-up telephone dial pad; color-coded key functions for listen/speak; individual audio level adjustment; signal presence and incoming call signaling; audio replay facility.



30 Button IP 'Touch' 2U Panel
700-37-03



20 Button IP 'Touch' Desktop
700-47-03

Virtual Panels

Virtual and Patch panel applications are particularly useful for performing a host of routing functions for Telephony, IFBs, Groups and Conferences.

Applications can operate wired or wirelessly on Android or Windows enabled devices, such as PCs, tablets and smartphones.



Gemini Key Benefits

- Distributed matrix architecture maximizes resilience and reduces installation costs
- Full access audio network provides program quality performance with no latency
- Dual redundant 'ring' connectivity has no single point of failure for ultimate system dependability
- Integrated IP capability permits unlimited expansion in terms of system size or geographic location
- Supports integration with IP phone systems and other SIP compliant devices
- Lever key, Virtual and Touchscreen control panels to suit individual operational preferences

System Configuration

The Gateway software provides unrestricted ability for Gemini users to build, modify and save multiple databases to suit any operational requirement. Gateway allows users to configure all system parameters, whether it is just a change to key assignments, audio level adjustment, or extensive re-configuration of an entire network.

Gateway Configuration

Editor features:

- Intuitive "Drag and Drop" graphical interface for Gemini configuration and management
- Off-line to create configurations for the matrix or on-line to allow real-time changes on the fly

Gemini also features:

- Browser-based utility for remote access to all engineering and maintenance functions
- Integrates neatly with third-party software management systems via flexible API



MENTOR RG AND MASTERMIND

The Mentor RG generates synchronized video, audio and timecode signals for broadcast and other mission critical systems purposes to an extremely accurate time signature, often provided by a GPS reference system. The single box solution ensures absolute synchronization of multiple signals in any broadcast or professional media application. The Mentor would typically be installed as the master reference generator in a TV station or an OB truck. Since accurate reference signals are crucial to successful operations, two Mentors and a changeover would be used to give the ultimate in redundancy.

Mentor RG



All SD and HD reference and test signals are generated simultaneously for both 525 and 625 standards, with independent timing control for all outputs to meet the most demanding requirements. The Mentor pays special attention to multiple audio generators assignable for AES audio including DARS; embedded audio in the SD/HD channels; Wordclock; and Analog stereo audio.

Base model includes:

- Black Burst and Tri-Level sync outputs
- SD-SDI black signals
- Word clock
- AES silence feeds

Options:

- Test pattern features and audio test signals, NTP and IEEE-1588 PTP reference signals over Ethernet
- LTC in and out with VITC and DVITC timecode
- SNMP monitoring and Full Field test patterns
- Expansion modules include Tri-Level sync outputs, HD-SDI outputs including 3G signals, GPS antenna connections and unbalanced AES out

Key Features

- Precision Time Protocol IEEE-1588 PTP grandmaster
- Multiple video and audio formats in one box
- Simultaneous 525/625 and HD Tri-Level Sync outputs
- Highly accurate GPS reference for synchronization and timecode
- Redundant PSU option
- Redundant units with changeover
- 4K test pattern ready
- Vector web-browser setup and monitoring tool

Configuration and Control

The Mentor RG can be configured from the front panel, which features an alarm bar, or from the built-in Vector web browser application. Vector makes it easier to adjust and save every parameter and setting for all of the individual signals, including the extensive GPS and PTP controls. Multiple configurations can be created, saved and copied between Mentor RG's to save time during setup and operations.



MasterMind Changeover

For added security, main and reserve Mentor RG units may be deployed with the MasterMind auto changeover to create a highly resilient master generator solution with changeover of critical signals in the event of a system failure.

The modular design of MasterMind allows for scalable installations that suit your specific requirements. Inputs may be analog, digital or a mix of both 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 depending on operator preferences and location.



The MasterMind options include:

- Black/Burst monitor and changeover module
- Tri-Level Sync monitor and changeover module
- SD/HD monitor and changeover module
- LTC Timecode monitor and changeover module
- AES3 monitor and changeover module
- Three channel relay card allowing switching of unbalanced auxiliary video signals
- Five-channel unbalanced relay card for analogue audio, LTC, AES



Clear-Com, an HME company, is a trusted global provider of professional real-time communications solutions and services since 1968. We innovate market proven technologies that link people together through wired and wireless systems.

Clear-Com was first to market portable wired and wireless intercom systems for live performances. Since then, our history of technological advancements and innovations has delivered significant improvements to the way people collaborate in professional settings where real-time communication matters.

For the markets we serve – broadcast, live performance, live events, sports, military, aerospace and government – our communications products have consistently met the demands for high quality audio, reliability, scalability and low latency, while addressing communication requirements of varying size and complexity.

Our reputation in the industry is not only based on our product achievements, but also on our consistent level of customer engagement and dedication to delivering the right solutions for specialized applications, with the expertise to make it work. Around the globe and across markets, Clear-Com’s innovations and solutions have received numerous awards and recognitions for ingenuity and impact to customers.

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