Clear-Com® Gateway
CG-X1 and CG-X4

Linking People Together

CG-X1

CG-X4

Key Features

- Modular Scalable Platform
- Supports up to 16 ports in a 1RU rackspace
- SIP Interface
- VOX (Voice-Activated Switch)
- VAD (Voice Activity Detection)
- Tone detection and generation
- Audio Bridge
- DTMF Bridging
- COR Bridging
- Notch Filtering
- Unicast – Multicast
- Voice-frequency switching
- Radio over IP (RoIP)
- LMR IP Backhaul
- Conferencing
- Cross Patching
- Voter/Comparator Option
- 2-wire PPT
- DMR and P25 Compatibility
- 8 assignable SIP accounts
- 40 volt models available

Clear-Com® Gateway is an interoperability platform for linking and bridging communication systems to deliver advanced radio interfacing and IP connectivity on a single platform.

Description
The Clear-Com Gateway platform consists of the compact CG-X1 and CG-X4 devices for connecting 2-way radios, intercoms, telephones and IP networks. The CG-X1 is the 2-port option for remote sites and single-channel bridging. The CG-X4 carries a higher port density of 8 ports in a small form factor. Up to 16 ports can be housed in a single, standard 19" 1RU space with optional rack mount kit.

Radio Bridging
Clear-Com® Gateway bridges radio channels across different radio platforms, port-to-port, port-to-multi-port and Radio-over-IP (RoIP). The digital radio module allows analog-to-digital and digital-to-digital bridging and conferencing on one platform.

Radio Interfacing
Gateway devices offer advanced radio interfacing for analog and digital radios with a suite of programmable features to meet the most demanding radio and Land Mobile Radio (LMR) applications. When connected to Clear-Com intercom systems, 4-wire port signaling is provided to activate features and trigger radios. Clear-Com® Gateway is compatible with Project 25 (P25) and Digital Mobile Radio (DMR) standards.

IP Interfacing
Clear-Com Gateway supports standards based IP interfacing for Voice-over-IP (VoIP), RoIP, Unicast, Multicast and SIP applications for connectivity and interoperability. Each IP module comes with eight SIP accounts. When connected to Clear-Com intercom systems, SIP applications become accessible.

Modular Design
Each gateway device is configured using modules. The 4-wire module connects intercom, radio and audio sources. The VoIP module connects SIP and RoIP with Unicast and Multicast modes. The digital radio module is a 3-channel module that incorporates Digital Voice Systems' AMBE™ 3003 VoCoder technology for gateway applications with digital mode radio systems. The CG-X1 supports one module with 2 ports and the CG-X4 supports 4 modules with 8 ports.

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Technical Specifications

4-Wire Audio Ports

4-Wire

Input/Output Levels: -16 to 7 dBm @ 600 Ohms, adjustable in 0.1dB steps
Frequency Response: 5 to 3400 Hz; +/-1 dB ref. to 1 KHz
Isolation: >60 dB
Idle Noise: <20 dbrnC0
Input Impedance: 600 Ohms or 100 Ohms, software selectable each port
Output Impedance: 600 Ohms, true differential
Hybrid Return Loss: 25 dB minimum

Port Signaling

M-Lead Relay

Optical: Coupled MOS
Maximum Contact Voltage: 60 VDC, 20 VAC
Maximum Current: 50 mA

E-Lead Input

Active High Input: Open circuit or >+1.8 VDC
Active Low Input: Ground, negative voltage or <+0.32 VDC
Clear-Com Signaling: Eclipse and HelixNet
DTMF Signaling
E&M Lead (COR & PTT) Signaling

Voice-over-IP Module

IP Ports

Format: Supports 10Base-T and 100Base-T
Networking Stack: TCP/IPv4
Protocols: SIP, SDP, RTP, IPV67 and STUN (Simple Traversal of UDP through Network Address Translation)
Codecs: G.711 (fully compatible), G.726 (16/24/33/40 kbps), G.722, DVI4 (narrow/HD/Ultra HD), Linear PCM
SIP Accounts: 8 per module

Digital Radio Module

VoCoder: 3-channel
Digital Voice Systems: AMBE-3003™ Vocoder encode or decode AMBE™
Input/Output: Analog and Serial
Encode/Decode: P25, DMR

Interface and Connectors

LAN: RJ45 (port 2 on CG-X1, port 7 on CG-X4)
PC Configuration: USB Port Type B
4-Wire: RJ45

Power Supply

Switchable plug-in adapter with locking connector and IEC cord
Input Voltage: 85 – 264VAC; 100 – 240VAC; nominal
Output Voltage: 12V; 1.67A
MTBF (min.): 200,000 hours demonstrated

Temperature

Operating: 32°F - +122°F (0°C - +50°C)
Storage: -40°F - +176°F (-40°C - +80°C)
Humidity: 0 – 95%, non-condensing

Dimensions

CG-X1: 5.4in W x 1.4in H x 6.4in D (137.2mm x 35.6mm x 162.6mm)
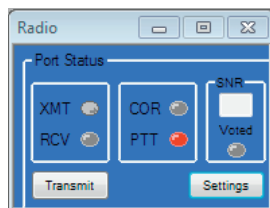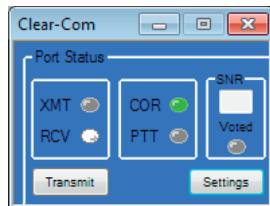**CG-X4:** 5.7in W x 1.4in H x 13in D (144.8mm x 35.6mm x 330.2mm)

Weight

CG-X1: 3.5lbs (1.59kg)
CG-X4: 4.75 lbs (2.15kg)

Gateway Software

Configuration screen

Monitoring Screens

Gateway Rackmount Kit

CG-X42-RU
(shown with CG-X1 and CG-X4)

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