Wireless Communications

FreeSpeak II®
DX Series
Wireless IFB
WBS Series

About Intercom Technology

An intercom (intercommunication system) is a standalone, closed-circuit system for one-way "simplex" and/or two-way "duplex" communication. The general purpose of a professional intercom system is to facilitate simple to complex communication setups for few to thousands of users who need to be continuously on talk and/or listen mode. Two-way communications systems can operate in half-duplex or full-duplex. With half-duplex systems, one party talks while the other party listens. With full-duplex systems, both parties can talk and listen at the same time as if they are in a natural conversation in person.

Users who have different roles in a particular operation can be in a conference or partyline together. Or they can be sub-divided into a matrix of independent groups in any one or many private intercom channels. In addition to establishing communication points, an intercom system can also be interfaced with third-party devices such as 2-way radios, 4-wire audios, telephone, TV cameras, AES3 digital audio, relay control (for signal light activation or door control), etc.

The core technology of an intercom system could be based on one of the following platforms: 2-wire/analog, 4-wire digital, wireless, or IP networks. The decision to deploy one platform over the other will greatly depend on requirements, environment and budget. These intercom platforms operate independently or can be linked to form a larger system in order to meet specific unique communication workflow needs. Moreover, intercom systems can be bridged together with different communications systems as part of a multi-platform solution.

In certain applications, intercom systems need to be geographically distributed to support the various communication positions in a given workflow. Therefore, they can be connected over 2-wire or 4-wire; MADI for close-distance connections such as floor-to-floor; optical fiber for short to long distances within a building; and IP networks (LAN, WAN, or Internet) for connections across a wide area, across town, or across the country.

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Wireless intercom systems offer the convenience of untethered communication for mobile users, while providing the power, flexibility and audio quality of wired systems.

Clear-Com provides the broadest range of wireless intercom systems for professional users who require a standalone wireless system or an integrated wireless solution to meet virtually any technical requirement, budget, and/or environments.

FREESPEAK II WIRELESS INTERCOM SYSTEMS

When it comes to communication requirements for specialized applications, FreeSpeak II wireless intercom systems are the right solutions. These systems provide exceptional RF performance and reliable connections, giving users the peace of mind even in the most demanding circumstances. They offer high capacity and scalability to meet the needs of complex configurations, greater number of talk groups or users, and expansive coverage areas. Moreover, they work even in challenging environments that exist indoors and outdoors.

> 1.9 GHz

> 2.4 GHz

FreeSpeak II® 1.9GHz and 2.4GHz Digital Wireless Intercom Systems

FreeSpeak II is a powerful and reliable distributed wireless intercom platform for sophisticated and expansive communication needs. FreeSpeak II comes in a 1.9GHz version for operations in the 1.880-1.930GHz band and 2.4GHz for environments or geographies where either or both frequencies are available for use*. The system can freely use a mix of both bands.

The FreeSpeak II system comprises of the base station, beltpacks, transceiver modules, and transceiver splitter. FreeSpeak II can be implemented as a standalone base station system or as an integrated wireless solution within Eclipse HX matrices. The splitter can connect to base stations and/or Eclipse HX matrices via fiber to extend the transceiver coverage out over long distances.

Flexible cellular roaming technologies allow users to move freely about in large, multi-site environments without the worry of fading or losing connection. The system provides point-to-point and group communication capabilities.

FreeSpeak II Base Station

*Frequency bands are allocated and approved for use by country. Check the price list for supported countries and appropriate model numbers.

Wireless Beltpacks

The five-channel, full-duplex FreeSpeak II digital beltpacks are uniquely designed for the rigorous demands of large-scale operations and continuous communication use. Ergonomic form factor, intuitive operation, and rugged housing make the beltpacks ideal for extended use.

Full-duplex 7kHz bandwidth offers high audio quality and reduces the strain on the user's ears after extended usage.

Four push-to-talk, one reply key and two rotary encoders allow up to five communication routes to be assigned to each beltpack. These can be any desired combination of group and point-to-point communication assignments.

Large OLED display provides extensive information, including the names of beltpacks, assigned users and groups of each beltpack, battery level, and signal strength.

A variety of beltpack menus are accessible via the OLED display including headset levels, microphone levels, audible alert at low battery level, and adjustable local sidetone.

FreeSpeak II 1.9GHz

FreeSpeak II 2.4GHz

FreeSpeak II O2 beltpacks
(available in 1.9GHz and 2.4GHz)

Beltpack Feature Highlights

- Up to five communication routes per beltpack, with selective access to more channels

- Four programmable pushbuttons, two rotary encoders and a reply button

- Menu driven display, which can be partially or completely restricted

- Secure system – beltpacks are registered to a particular base station or Matrix or can have secure access to multiple control functions

- Internal antennas – no antenna breakage or damage

- Long battery usage – typically 18 hours of continuous talk time

- Two battery options – rechargeable Li-Ion cells or disposable Alkaline AA Batteries

- Drop-in charging port with built-in USB battery and beltpack charging capability

- Strong metallic belt-clip and shoulder strap points

- Over-the-air beltpack registration

- Real-time statistics, beltpack and transceiver diagnostics, and functionality like Remote Mic Kill

- GPIO logic configuration to trigger call lights, tally or radios

- "Listen Again" audio memory to replay last 15 seconds of audio

- Technician's flash light

- Works at high pressure environments – atmospheric pressure up to 75 psi (O2 beltpacks only)

Drop-in battery and beltpack charger

USB Port for local DC powering

18+ hours of battery operation (door shown open)

Ergonomic design for beltpack controls

Transceiver Modules

FreeSpeak II users can roam thousands of feet from the base station or matrix frame while staying connected. This is achieved through the Cellular Roaming capability between distributed transceiver modules. The transceiver splitter extends the base station to create an expansive coverage area with multiple transceivers, which provide connections to the wireless beltpacks.

FreeSpeak II Transceiver - E1 (1.9GHz & 2.4GHz)

FreeSpeak II transceivers are available in 1.9GHz and 2.4GHz versions that can be deployed within the same system (either the base station or integrated matrix solution), thus increasing both the quantity of wireless users and cell roaming area. Each FSII-TCVR can support up to five 1.9GHz beltpacks or up to four 2.4GHz beltpacks.

When using the base station, up to 25 full-duplex wireless beltpacks using either or both 1.9GHz and 2.4GHz bands can be connected. In an integrated Eclipse HX matrix setup via E-QUE-HX card, as many as 25 1.9GHz wireless beltpacks (in North America or 50 1.9GHz in EU countries) and 40 2.4GHz wireless beltpacks (in

all regions) can be used at the same time. These beltpack users are then able to directly communicate with any other remote or local matrix panel or other wireless or wired beltpack user who is on the Eclipse HX Matrix System network.

Key Features:

- 1.9GHz and 2.4GHz models available
- Operates over a CAT5 connection
- Supports up to 5 FSII 1.9GHz beltpacks or up to 4 FSII 2.4GHz beltpacks per transceiver
- IP rated for water and dust resistance
- LED power indicator light
- EtherCon rugged connection

2.4GHz Transceiver

1.9GHz Transceiver

Transceiver Splitter

FreeSpeak II Transceiver - IP (1.9GHz Only)

The FreeSpeak II IPT transceivers can be deployed via internet protocol (IP), allowing users to leverage AES67 compatible IP networks to expand their wireless intercom. Operating in the 1.9GHz frequency band, each transceiver can support up to 10 1.9GHz beltpacks.

In an integrated Eclipse HX matrix setup via E-IPA64-HX card, as many as 50 1.9GHz wireless beltpacks (in North America or 64 1.9GHz in EU countries) can be used at the same time, and up to 64 transceivers can be supported on one Eclipse HX Matrix System. These beltpack users are then able to directly communicate with any other remote or local matrix panel

or other wireless or wired beltpack user who is on the Eclipse HX Matrix System network.

Key Features:

- Requires E-IPA-HX card and an Eclipse HX Frame (not available for FSII-BASE-II)
- For use with 1.9GHz only
- Operates over IP on an AES67 compatible network
- Supports up to 10 FSII beltpacks per transceiver
- Up to 64 transceivers supported on Eclipse HX Matrix System
- IP rated for water and dust resistance
- Powered over Ethernet from PoE switch

1.9GHz Transceiver

Integrated Wireless

FreeSpeak II is the only wireless system on the market that can seamlessly integrate its wireless beltpacks with Clear-Com's Eclipse HX Digital Matrix Intercom System.

With FreeSpeak II, wireless beltpack users can communicate with any Eclipse HX panel user on a one-to-one or group basis. This unique capability is achieved with the E-QUE-HX cellular controller card or the E-IPA-HX IP card, which fit directly in the matrix frames.

Each E-QUE-HX card connects up to 10 transceivers (with splitter) to provide beltpack connections to any number of ports within the Eclipse HX System. Up to 50 wireless beltpacks per Matrix (depending on region and environment) can roam between 60 transceivers and communicate on the Matrix system. Up to six E-QUE-HX cards can be used in a Matrix frame.

Each E-IPA64-HX card connects up to 64 transceivers to provide beltpack connections to any number of ports within the Eclipse HX System. Up to 64 wireless beltpacks per Matrix (depending on region and environment) can roam between 64 transceivers and communicate on the Matrix system. Only one E-IPA64-HX card can be used for wireless in a Matrix frame.

Integrated FreeSpeak II has the ability to individually address each beltpack and then connect that beltpack to one or many users on the Matrix.

Patented Dynamic Port Allocation technology allows the beltpacks to roam between transceivers without breaking connections.

FreeSpeak II 1.9 GHz Beltpacks	
Part #	**Countries Approved For Use**
FSII-BP19-X4-US FSII-BP19-X5-US FSII-BP19-X7-US	United States, Canada
FSII-BP19-X4-EU FSII-BP19-X5-EU FSII-BP19-X7-EU	Europe Union Countries (CE), Australia, New Zealand, Hong Kong, Singapore
FSII-BP19-X4-J FSII-BP19-X5-J FSII-BP19-X7-J	Japan
FSII-BP19-X4-LA FSII-BP19-X5-LA FSII-BP19-X7-LA	Argentina
FSII-BP19-X4-B FSII-BP19-X5-B FSII-BP19-X7-B	Brazil

FreeSpeak II 2.4 GHz Beltpacks	
Part #	**Countries Approved For Use**
FSII-BP24-X4 FSII-BP24-X5 FSII-BP24-X7	United States, Canada, Mexico
FSII-BP24-X4-EU * FSII-BP24-X5-EU * FSII-BP24-X7-EU *	Europe Union Countries (CE), Argentina, Brazil, China, Japan, New Zealand, S. Korea, Australia, Singapore

*For use worldwide

FreeSpeak II 1.9 GHz Transceivers	
Part #	**Countries Approved For Use**
FSII-TCVR-19	United States, Canada
FSII-TCVR-19-EU	Europe Union Countries (CE), Australia, New Zealand, Hong Kong, Singapore
FSII-TCVR-19-J	Japan
FSII-TCVR-19-LA	Argentina
FSII-TCVR-19-B	Brazil
FSII-TCVR-IP-EU	Europe Union Countries (CE)
FSII-TCVR-IP-J	Japan
FSII-TCVR-IP-US	United States, Canada

FreeSpeak II 2.4 GHz Transceivers	
Part #	**Countries Approved For Use**
FSII-TCVR-24-US	United States, Canada, Mexico
FSII-TCVR-24-EU *	Europe Union Countries (CE), Argentina, Brazil, China, Japan, New Zealand, S. Korea, Australia, Singapore

*For use worldwide

DX SERIES WIRELESS INTERCOM SYSTEMS

The DX Series wireless intercom systems are full-duplex communications systems. These intuitive systems are easy to deploy and configure. Every advanced system was designed with facilities that could seamlessly interface with any wired intercom system, allowing mobile users to stay connected to fixed user positions in the covered area. Superb audio quality and system reliability make these systems the preferred wireless intercom of choice for many users.

> DX100

> DX121

> DX210

> DX300ES

> DX410

DX100 2.4GHz Digital Wireless Intercom

Ideal for mobile field applications, the DX100 system enables two-way communications in a compact, portable base station.

Up to 15 wireless beltpacks can be assigned to each base station, four of which can be used in hands-free, full-duplex mode.

Digital Frequency-Hopping Spread Spectrum (FHSS) with encryption secures communication to prevent eavesdropping.

Remotely "unlatch" beltpacks from transmitting at the base to stop a rogue beltpack that has been left transmitting without having to locate the beltpack.

Triple diversity — space, time and frequency diversity — provide redundant communication to make it the most dependable system available.

Flexible, battery-powered operation allows the base to be powered in four different ways:

- Six 1.5V AA batteries
- Optional rechargeable BAT850 battery
- 12 VDC automotive adapter
- 100-240 VAC power adapter (provided)

Power outage backup feature enables uninterrupted communication in the event of power loss.

MB100

DX121 2.4GHz Digital Wireless Intercom

The DX121 is a versatile, cost-effective system for adding wireless beltpacks to wired intercom systems. Up to four wireless beltpacks can be assigned to each base station, one of which can be used in hands-free, full-duplex mode.

2.4GHz Digital Frequency-Hopping Spread Spectrum (FHSS) 64-bit encryption ensures confidential communication.

Assignable relay closure provides advanced functionality when used with matrix intercoms or radio based communications systems.

Built-in one-port battery charger charges a remote beltpack or All-in-One headset battery.

Connects to headset jack of beltpacks and intercom panels.

Compatible Beltpack and All-in-One Headset (For use with the DX100 and DX121)

Features:

- Separate IC and ISO buttons
- Beltpack mic gain and side tone control
- Selectable PTT or latching button modes
- ISO restrict mode
- Internal antennas
- Lithium-Ion rechargeable batteries with up to 20 hours of operation
- User voice prompts
- Rugged construction

WH220 Headset

BP200 Beltpack

DX210 2.4GHz Digital Wireless Intercom

The DX210 is a two-channel system that delivers a perfect blend in performance, connectivity with wired systems, and ease of use. The two separate 2-wire and 4-wire connections make it highly compatible with any industry-standard 2-wire intercom systems or 4-wire intercom/audio devices.

Each BS210 base station can support up to four full-duplex beltpacks and/or WH220 all-in-one wireless headsets for talk and listen capabilities or 11 half-duplex beltpacks for listen-only purposes. By linking four base stations together, up to 16 full-duplex or 44 half-duplex beltpack users can be in communication.

System Highlights:

- Wireless ISO talk-around
- Digital auto nulling (front panel access)
- Two separate 2-wire/4-wire connections
- Triple diversity — space, time and frequency — supporting extreme multi-path environments
- Spectrum-friendly technology
- Relay (GPIO) actuation with ISO function
- Feedback protection for un-terminated 2-wire channels

BS210

WH220 All-in-One Headset

BP210 Beltpack

DX300ES 2.4GHz Digital Wireless Intercom

The flexible DX300ES offers a two-channel mobile intercom system that is easy to set up and use, as well as expandable to accommodate larger operations. Its compact design makes it highly portable and convenient to deploy instantly where full-duplex communication is required.

Each base can support up to four full-duplex or 12 half-duplex wireless beltpack and/or WH301 wireless all-in-one headset users. By linking two base stations together, up to 6 full-duplex or 30 half-duplex beltpack users can be in communication.

Special features include dedicated channel relays and 4-wire audio interfaces for ease of connectivity to third-party systems.

MB300ES

System Highlights:

- Fast, easy setup for strategic relocation

- Secure, 64-bit encryption

- Digital Frequency Hopping Spread Spectrum (FHSS)

- Convenient all-call button allows transmit on both channels

- Triple diversity — space, time and frequency diversity — supporting extreme multi-path environments

- Flexible power options: 100-240 VAC, 12-14 VDC, 1.5V AA batteries or an optional rechargeable BAT850 battery

- Portable size and weight

- Auxiliary Input and Output 10-pin terminal strip connector

- Dedicated channel relays

WH301 All-in-One Headset

BP300 Beltpack

DX Series Technology

All DX Series wireless intercom systems feature Spectrum-Friendly™ technology for interference-free operation in the increasingly crowded 2.4GHz frequency band. This technology prevents emerging frequency conflicts by designating the 2.4GHz operating frequency range: low- (2.4019- 2.4399GHz), high- (2.4434-2.4814GHz), or full-band.

In AFH mode, DX Series comply with European Telecommunications Standards Institute (ETSI) harmonized European standard EN 300 238 v1.8.1.

DX410 2.4GHz Digital Wireless Intercom

The DX410 is a two-channel digital wireless system, delivers the best overall performance, range and sound within the DX Series.

The system features 7kHz wideband audio, the same audio quality level as high-end wireless intercoms. Its expanded audio range and increased intelligibility enables even soft whispers to be heard clearly, even in high RF interference environments.

System Highlights:

• Two channels

• 7kHz wide bandwidth audio

• 2-wire and 4-wire bridging

• 2-wire auto-nulling

• Lost packet concealment

• Upgraded radio

• Supports up to 15 wireless beltpacks and/or wireless headsets

BS410 Base Station

DX410 also features 2-wire and 4-wire bridging and 2-wire auto-nulling. The bridging capability allows the option for combining the 2-wire and 4-wire ports together on either channel A or B, allowing operators to use a 4-wire out to send all the audio to a mixer, matrix intercom or other audio source. 2-wire auto-nulling enables fast and accurate integration with Clear-Com or TW wired partyline systems.

Each DX410 base station can support up to 15 registered BP410 wireless beltpacks and/or WH410 all-in-one wireless headsets. In a single-channel operation, any four beltpack users can engage in simultaneous, full-duplex (talk-listen) communication, while only three users may be in full-duplex mode in a dual-channel operation.

DX410 is simple to set up and configure, taking less time to deploy. No software programming is necessary.

BP410 Beltpack

WH410 All-in-One Headset

DX100, DX121, DX210 Beltpacks and Base Stations	
Order #	Model #
CZ11360	BP200
CZ12015	BP210
CZ11518	WH210
CZ-WH200	WH220
CZ11400	MB100
CZ12020	MB100-EU (EU countries only)
CZ11461	BS121
CZ12027	BS121-EU (EU countries only)
CZ11516	BS210
CZ12029	BS210-EU (EU countries only)

DX300 Beltpacks and Base Stations	
Order #	Model #
CZ11408	BP300
CZ-WH301	WH301
CZ11467	MB300ES
CZ12030	MB300ES-EU (EU countries only)

DX410 Beltpacks and Base Stations	
Order #	Model #
CZ-BP410	BP410
CZ-WH410	WH410
CZ-BS410	BS410
CZ-BS410-EU	BS410-EU (EU countries only)

UHF WIRELESS INTERCOM SYSTEMS

These simple wireless intercom systems are typically deployed as standalone units or as an interface with wired intercoms. They offer high quality audio, interference-free communication at a great value.

> Wireless IFB

> WBS Series

Wireless IFB

Wireless IFB (interruptible fold back) systems operate between 486.4 and 639.9MHz. Wireless IFBs are used for one-directional communication. Directors and other management can use this to monitor program audio, or for talent cueing and crew communications during a production.

Wireless IFB (interruptible fold back) systems operate between 486.4 and 639.9MHz. Wireless IFBs are used for one-directional communication. Directors and other management can use this to monitor program audio, or for talent cueing and crew communications during a production.

The PRC-2 receiver provides simplicity and flexibility in a package that is intuitive for untrained users to operate.

Wireless IFB uses +/-20 kHz FM deviation for efficient use of the bandwidth, with compandor noise reduction circuitry for an excellent signal to noise ratio.

**Operating Frequencies:
486.4 to 691.1 MHz**

Block 19: 486.4 to 511.9 MHz
Block 21: 537.6 to 563.1 MHz
Block 24*: 614.4 to 639.9 MHz

This block is targeted to be banned by the FCC for use within the US by July 13, 2020.

NOTE: This product is not approved for sale in Europe.

PRC-2

PTX-3

WBS Series UHF Analog Wireless Intercom

WBS comes in a dual-channel (WBS-680) option with the base station supporting up to four full-duplex wireless beltpacks and provides two separate channels for 2-wire or 4-wire connectivity.

WBS-680 Dual-channel

The WBS-680 operates in select frequency bands between 470-488MHz and 590-608MHz. The wireless system is supplied with 24 factory-selected, intermodulation-free frequencies. Select from factory presets or any suitable frequency in 25kHz increments.

System Features:

- Full talk/listen headset at the base
- Rear panel connections allow system expansion
- Input and output level adjustment controls for both the connected wired intercom and auxiliary audio connection
- WTA (Wireless-Talk-Around) button momentarily routes audio to only the wireless beltpacks monitoring the current channel, serving as isolation (ISO) channel

- Stage Announce (SA) button allows a (dry) relay signal
- RJ45 connector for direct connection to a digital 4-wire intercom port, and a pair of auxiliary connectors
- A pair of efficient, half-wave co-linear antennas is supplied with system

Operating Frequencies		
Band	**Base TX**	**Beltpack TX**
E88	590-608 MHz	470-488 MHz

NOTE: Not all frequency bands are available in all countries.

Wireless Accessories

DX Series (DX100, 121, 210, 300ES, 410)

Batteries and Chargers

For use with:
BP200
BP210
BP300

BAT41

AC40A Battery Charger
Order #104034

For use with:
BP410
WH220
WH301
WH410

BAT50
Order #CZ-BAT50

AC50 Battery Charger
Order #CZ-AC50-US (USA)
Order #CZ-AC50-WW (Worldwide)
Order #CZ-AC50-KR (Korea)

For use with:
MB100

BAT850
Order #G27021-1

AC850A Battery Charger
Order #G28820-1Z1

Power Supplies

For AC40A and all DX base stations

For AC50 US/Canada
Order #Atn: 453G013

For AC50 Worldwide

Miscellaneous Accessories

DX Base Antenna
Order #101G048
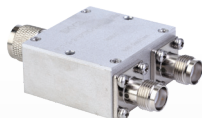
DX Antenna Splitter/Combiner
Order #647G006
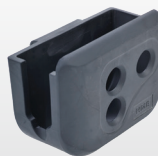
DX Beltpack Pouch
Order #107G065

1RU Antenna Mounting Kit
Order #G28066-1

CAT-5 Cable
Order #115G372

Wireless Accessories

FreeSpeak II

AC60 Battery Charger

BAT60

Battery Charger Wall-mount Bracket

FSII-SPL Transceiver Splitter

WBS Series

WTR4C Battery Charger

WTR-BAT

DX Wireless Battery and Charger Compatibility Chart

	Beltpack				All-in-One Wireless Headset			Base Station	
	BP200	**BP210**	**BP300**	**BP410**	**WH220**	**WH301**	**WH410**	**MB100**	**MB300ES**
Battery	BAT41	BAT41	BAT41	BAT50	BAT50	BAT50	BAT50	BAT850	BAT850
Charger	AC40A	AC40A	AC40A	AC50	AC50	AC50	AC50	AC850	AC850
DX Base Station Compatibility									
MB100	●	●			●				
MB121	●	●			●				
BS200	●	●			●				
BS210	●	●			●				
BS410				●			●		
MB300			●			●			
MB300ES			●			●			
EB300			●			●			

Compatible Headsets	Description	DX Series (MD4 connector)	FreeSpeak II (XLR connector)	WBS (XLR connector)	Wireless IFB (mini-jack connector)
CC-110	Single- or double-ear premium light-weight headsets. Superior comfort Dynamic mic rotates 300-degrees. Mic boom acts as an On/Off switch for quick muting. 4-pin female XLR connector		●	●	
CC-220			●	●	
CC-300	Single- or double-ear headsets. Excellent noise attenuation. Superior comfort Dynamic mic rotates 300-degrees. Mic boom acts as an On/Off switch for quick muting. 4-pin female XLR connector		●	●	
CC-400			●	●	
CC-40	Single- or double-ear headsets. 200/400 Ohms and excellent noise attenuation with a dynamic mic. 4-pin female XLR connector		●	●	
CC-60			●	●	
CC-26K	Single-ear, 300-Ohm Ultra light-weight (1.3oz) headset with dynamic, noise-canceling mic element on a flexible boom. 4-pin female XLR connector		●	●	
CC-010A	IFB ear set includes audio driver, coiled acoustic eartube with clothing clip, and 5ft (1.5m) cable with 1/8" (3.5mm) straight mini-jack connector				●

Compatible Headsets Accessories	Description	DX Series	FreeSpeak II	WBS	Wireless IFB
MD-XLR Headset Adapter Part # G27256-1	These adapters enable headsets with dynamic mics and XLR connectors to interface with all the DX Series headset jacks. An active built-in circuit provides impedance matching and DC isolation. XLR adapters interface with 4P male, 4P female or 5P male headset connectors	●			
Headset Extension Cable Part # 115G394	Six-foot headset extension cable for all mini-DIN DX Series headset connectors	●			

	Radio Frequency	# of Channels on the Beltpack	Number of Beltpack per Base/Card	Number of Stacked Bases	Max Distance: Transceiver to Base/Card	Max Distance: Beltpack to Transceiver
FREESPEAK II						
FreeSpeak II 1.9	1.880-1.930GHz	4 plus reply	25 (Base) 50 (Matrix via E-QUE-HX card EU) 25 (Matrix via E-QUE-HX card USA) 64 (Matrix via E-IPA64-HX card EU) 50 (Matrix via E-IPA64-HX card USA)	Subject to max beltpacks in radio space	~500-600ft (150-180m) (with E-QUE-HX card) Up to 300ft (90m) (with E-IPA64-HX card) Via Splitter: 3,280ft (1km) (with CAT5) 65,000ft (20,000m) (with fiber)	Indoor (structure dependent): ~300-500ft (90-150m) Outdoor (line of sight): ~800-1500ft (240-450m)
FreeSpeak II 2.4	2.4GHz	4 plus reply	25 (Base) 40 (Matrix)	Subject to max beltpacks in radio space	~500-600ft (150-180m) (with E-QUE-HX card) Via Splitter: 3,280ft (1km) (with CAT5) 65,000ft (20,000m) (with fiber)	Indoor (structure dependent): ~300-500ft (90-150m) Outdoor (line of sight): ~800-1500ft (240-450m)
DX SERIES						
DX100	2.4GHz	1	4 Full-Duplex & 11 Half-Duplex Listen	1	Up to 65ft (20m) using Coax	1000ft (300m)
DX121	2.4GHz	1	1 Full-Duplex & 3 Half-Duplex Listen	4	Up to 65ft (20m) using Coax	1000ft (300m)
DX210	2.4GHz	1 or 2	3 or 4 Full-Duplex & 11 or 12 Half-Duplex Listen	4	Up to 65ft (20m) using Coax	1000ft (300m)
DX300ES	2.4GHz	1 or 2	3 or 4 Full-Duplex & 11 or 12 Half-Duplex Listen	4	Up to 65ft (20m) using Coax	1000ft (300m)
DX410	2.4GHz	2	3 or 4 Full-Duplex & 11 or 12 Half-Duplex Listen	4	Up to 65ft (20m) using Coax	1000ft (300m)
UHF						
Wireless IFB	486.4-691.1MHz 537.6-563.1MHz 614.4-639.9MHz	1	1	N/A	N/A	600ft (180m)
WBS-680	470-488MHz 590-608MHz	1/2 (one at a time)	4 Full-Duplex; Unlimited Half-Duplex Listen	4	Coax cable length to be provided by others	1640ft (500m)

Other Clear-Com® Intercom Products

Partyline Wired Intercom

Clear-Com Encore

Analog 2-wire, group communications systems with intuitive plug-and-play design and superior audio clarity best known as the "Clear-Com Sound".

Digital Network Intercom

HelixNet

Flexible, scalable, and intelligent digital network partyline system platform for dynamic group communication.

Integrated Matrix and IP Communications Solutions

Eclipse HX

Latest advancement in digital matrix intercom technology for enabling critical intercommunications among teams who need direct (point-to-point) and one-to-many (group and partyline or conference) connections. Eclipse HX can scale up to a large communications solution by networking multiple systems together. The system can connect over 4-wire, MADI, optical fiber, E1/T1 and IP networks. Eclipse HX system frames and the panels have native IP capabilities built in for integrating with IP-based communications solutions.

Connectivity Solutions

Clear-Com offers connectivity solutions designed for linking multiple intercom systems together over IP networks, routing and distributing audio and video signals over optical fiber networks, and interfacing communications solutions with SIP telephony protocols and 2-way radios.

Signal Transport Solutions

Collections of connectivity devices for linking, transporting, distributing and/or routing signals in a secure network. These devices connect over optical fiber or IP networks.

LQ Series

LQ Series devices can link different industry-standard intercom systems together, irrespective of the type of communications system. LQ also extends the capabilities and intercom channels of a single system to one or more remote locations by simply positioning an LQ device at the destination location and interfacing with such Clear-Com devices as wired beltpacks, smartphones with Agent-IC mobile apps or with third-party VoIP phones over SIP telephony systems.

ProGrid™ Audio Network Devices

ProGrid devices deliver signals from intercom, audio, video equipment - independent of manufacturer or brand - quickly, cost-effectively and easily. The ProGrid family consists of several categories of devices: Analog Audio Converters, Intercom Interfaces, Digital MADI Interfaces, AES/EBU Connectivity Interfaces, and Yamaha Interface Cards.

BroaMan Video Audio Network Devices

BroaMan devices are necessary for the infrastructure of large-scale applications. They transport all types of signals, including digital and analog video, digital and analog audio, digital and analog intercom and all forms of control data on copper and fiber infrastructure. These devices distribute, route or repeat multiple video and audio signals like SD/HD/3G-SDI, over the same optical fiber.

Interoperability Solutions

Clear-Com Gateway

Interoperability is the ability to communicate across multiple different systems in order to facilitate coordination of actions at an event at every level. Clear-Com's Interoperability Solutions address the communication challenges with gateway solutions that link and bridge a myriad of communications systems such as radios, intercoms, telephones and IP networks.

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

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 communications 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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