Clear-Com

WBS-670
WBS-680

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frequency-agile UHF wireless intercom systems

Whether you're adding to a wired intercom system or creating a stand-alone wireless communications system, the WBS-670 and WBS-680 wireless intercoms are excellent choices. Combining frequency agility, audio clarity, powerful features, and roadworthiness with ease-of-use, these systems will extend the reach of your communications system in live theatre and performance, studio and mobile television production, industrial and aerospace applications, or wherever full-duplex wireless communications are required.

WBS-670 Single-Channel Wireless

The WBS-670 supports up to four full-duplex wireless beltpacks with its 1-RU base station. Multiple stations may be used together for larger productions, tied together via the party-line intercom channel. The WTR-670 wireless beltpack features a low-profile on/off/volume control and a momentary/ latching talk button. Rugged detachable antennas are easily field-replaceable. The integral LCD window shows channel and frequency information, and allows the programming of beltpack channels and functions.

The simple base-station front panel with its backlit LCD screen gives total control over frequency and beltpack selection, as well as control over the input and output level to an attached party-line or digital matrix intercom and an auxiliary in and out. If desired, a headphone may be connected to the front panel to communicate with the wireless beltpacks and the connected wired intercom system.

The rear panel features 3-pin XLR loop-through connectors for one channel of party-line intercom, an RJ-45 connector for direct connection to a digital intercom port, and a pair of auxiliary connectors. Screw-on TNC connectors for the base station transmitter and receiver sections are fitted with a pair of efficient half-wave collinear antennas, or a variety of external antennas may be used. The WBS-670 is compatible with virtually all wired party-line and matrix intercom systems.

WBS-680 Two-Channel Wireless

Like the WBS-670, the WBS-680 supports up to four beltpacks per base station. This system adds the ability to connect the wireless beltpacks, via the base station, to two channels of wired intercom — party-line, digital matrix, or one of each. A variety of different communications routings are activated from the beltpacks, with each beltpack user having full control; if desired, the technical director can lockout unnecessary functions on any individual beltpack.

The WTR-680 beltpack front panel provides a channel A/B selector button, allowing the user to talk and listen to either wired intercom channel A (plus the other wireless beltpack users on that channel) or wired intercom channel B. The WTR-682 beltpack allows the user to listen and talk on either or both of the two intercom channels. A "wireless talk around" button places the user's voice on the wireless-only bus, unheard by those on the wired intercoms. In addition, the beltpacks have a "stage announce" button, which when activated places the user's voice off the intercom line and onto an

auxiliary output with associated relay on the base station — for paging and announcements.

The WBS-680 adds another wired intercom connector section on the rear panel, plus a stage-announce output and relay contact. Front-panel controls and indicators give control and status information about all of these communication connections. Also, a base-station link connector permits the "wireless talk around" to be shared among base stations.

Frequency-Agile UHF Operation

The WBS-670 and WBS-680 operate in selected frequency bands between 518 – 740 MHz. Three different sets are available for compatibility virtually anywhere. An 18 MHz (three U.S. TV channels) frequency window is used for the base-station transmitter, with a separate 18 MHz window for the beltpack transmit frequencies (base-station receive frequencies). These bands are each divided into 740 distinct frequencies at 25 kHz intervals. The WBS-680 has two different base-station transmit frequencies — one each for intercom channels A and B.

Adjustable Transmitter Power

The base-station transmitter has a high-power setting of 100 mW (WBS-670 is 50mW), a low-power setting of 10 mW for closer distance use, and may be turned off when necessary for setup and linking. The beltpack transmitters have built-in sensing circuitry that drops the normal 50 mW output by 10 dB whenclose to the base station, to prevent de-sensing of its receivers.

Pre-Selected Compatible Frequencies and Frequency Scan

System setup is a snap using the 24 internal preselected and intermodulation-free frequency groups. Aided by the "scan" function, which senses the local RF environment and determines which of the frequency groups has the largest number of clear frequencies, base stations and beltpacks can typically be coordinated and working together within minutes. A dozen more memory locations are allocated for user-programmable groups, so that particular sets of frequencies can be chosen, programmed, and saved as a new preset.

Great Audio Quality and Range

Perhaps you've experienced that many of the available options for adding wireless capability to the intercom system end up sounding like a telephone or a two-way radio—intelligible but not great. The audio quality of the WBS-670 and WBS-680 is on a par with that of a professional party-line or digital matrix intercom, so voice communications and program material sound more natural and less fatiguing. Efficient antennas and sensitive receiver design lead to excellent range for reliable use at a distance. A variety of remote antenna options, such as quarter-wave ground-plane and log-periodic, enhance that range and help with difficult production environments.

Internal Audio Routing Options

Circuit paths on the WBS-680 main board may be wired, either internally or externally, to give variable-level dual-listen features to the beltpacks — one can hear channel A when talking on B, and vice-versa. This feature is set at the base station and affects all beltpacks identically. Also, base-station internal switching can place auxiliary audio on beltpack channel B only, or on both A and B.

Rechargeable Battery Option

The convenient battery pack will operate the beltpack in full-duplex mode for 14 hours with a set of alkaline batteries. The optional rechargeable NiMH (nickel metal hydride) batteries will give over 11 hours of continual use — enough to cover the entire production from setup to teardown. A 4-bay charger keeps a system's worth of batteries at the ready.

Specifications:

	WBS-680/WBS-670 BASE STATION	WTR-680/WTR-682/WTR-670 BELTPACKS
Overall		
RF Frequency Range:	518-608 MHz, 614-740 MHz in 18 MHz TX and RX bands WBS-670 Only: 796-814 MHz Tx, Europe	518 - 608 MHz, 614 - 740 MHz in 18 MHz TX and RX bands WTR-670 Only: 844-862 MHz Tx, Europe
Power Requirement:	100-240 VAC, 50-60 Hz, IEC receptacle	6 Alkaline "AA" Cells (NiMH optional)
Typical Battery Life Alkaline:	N/A	14 Hours (Continuous duty with talk light on)
Typical Battery Life Nickel Metal Hydride (1500 mAh):	N/A	11 Hours (Continuous duty with talk light on)
Current Draw:	N/A	140 mA (Push-to-Talk, Talk On)
Temp Range:	-4oF to 140oF (20oC to 55oC)	-4oF to 140oF (20oC to 55oC)
Dimensions:	19.0" W x 1.72" H x 14.0" D (48.3 cm x 4.4 cm x 35.6 cm)	3.75" W x 5.05" H x 1.65" D (9.5 cm x 12.8 cm x 4.2 cm)
Weight:	WBS-680: 7 lbs. 2 oz. (3.24 kg) WBS-670: 6 lbs. 15 oz. (3.15 kg)	16 oz. (0.454 kg) with alkaline batteries 15 oz. (0.425 kg) with alkaline batteries
Transmit antenna:	1/2 Wave (supplied), TNC Male Connector	1/4 Wave (supplied), Screw type
Receive antenna:	1/2 Wave (supplied), TNC Male Connector	1/4 Wave (supplied), Screw type
FCC ID:	B5DM514	B5DM515
Frequency Response:	300 Hz - 8,000 Hz	300 Hz - 8,000 Hz
Four-Wire Input:	Level Adjustable (2 Vrms typical)	N/A
Four-Wire Output:	Level Adjustable (2Vrms typical)	N/A
Clear-Com® Intercom:	Input/Output Level Adjustable (1 Vrms typical), Line Impedance 200 W	N/A
RTS® Intercom:	Input/Output Level Adjustable (0.775 Vrms typical), Line Impedance 200 W	N/A
Telex® Intercom:	Input/Output Level Adjustable (1 Vrms typical), Line Impedance 300 W	N/A
Auxiliary Input:	Adjustable (2 Vrms typical)	N/A
Auliliary Output:	Adjustable (2 Vrms typical into 600 W) (at rated deviation)	N/A
Stage Announce Output: (WBS-680 only)	Internally Adjustable (1Vrms typical at rated deviation into 100K W)	N/A
Stage Announce Relay: (WBS-680 only)	Dry contact, rated at 1Amp, 24 V Max. / N/A	N/A
Transmitter		
Type:	Synthesized, 720 channels	Synthesized, 720 channels
Transmit Power:	WBS-680: 100 mW max. (High), 10 mW (normal) WBS-670: 50 mW max. (High), 5 mW (normal)	WTR-680/WTR-670: 50 mW max. (auto-power reduction when close to base)
RF Frequency Stability:	0.005%	0.005%
Modulation:	FM, 40 KHz Deviation	FM, 40 KHz Deviation
Modulation Limiter:	Peak-Responding Compressor	Peak-Responding Compressor
Modulation Frequency Range:	300 Hz -8,000 Hz +-2 dB	300 Hz -8,000 Hz +-2 dB
Microphone Audio Input:	30 W - 3,500 W	30 W - 3,500 W
Microphone Input Sensitivity:	9 mV	9 mV
Radiated Harmonics & Spurious:	Exceeds FCC specifications	Exceeds FCC specifications
FCC Acceptance:	Type accepted under FCC Part 74	Type accepted under FCC Part 74
Receiver		
Type:	Dual Conversion Superheterodyne, Synthesized, FM, 720 channels	Dual Conversion Superheterodyne, Synthesized, FM, 720 channels
RF Sensitivity:	<0.7 mV for 12 dB SINAD	<0.7 mV for 12 dB SINAD
Signal-to-Noise Ratio:	95 dB	95 dB
IF Selectivity:	3 dB at 230 KHz	3 dB at 230 KHz
Image Rejection:	70 dB or better	70 dB or better
Squelch Quieting:	95 dB	95 dB
RF Frequency Stability:	0.005%	0.005%
Distortion:	<1% at full deviation	<1% at full deviation
Local Headset Output:	40mW output into 600 W (1% distortion)	40mW output into 600 W (1% distortion)
FCC Acceptance:	Notification under FCC Part 15	Notification under FCC Part 15

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Americas and Asia
4065 Hollis Street • Emeryville, CA 94608, USA
Tel: 1-510-496-6666 • Fax: 1-510-496-6699

Europe, Middle East and Africa
7400 Beach Drive, Cambridge Research Park • Cambridge CB5 9TP, UK
Tel: +44 (0) 1223 815000 • Fax: +44 (0) 1223 815099

www.clearcom.com