



WBS-670



WBS-680

Powerful Features and Performance
For Reliable Mobile Communications



Whether you are adding to a wired intercom system or creating a standalone wireless communications system, the WBS-670 and WBS-680 wireless intercoms are excellent choices. These systems extend the reach of your communications system in live performance, studio and mobile television production, industrial and aerospace applications, or wherever full-duplex wireless communications are required.

Frequency-Agile UHF Operation

The WBS-670 and WBS-680 operate in select frequency bands between 470-686MHz. Both wireless systems are supplied with 24 factory-selected, intermodulation-free frequencies. Select from factory presets or any suitable frequency in 25kHz increments. 720 Tx and 720 Rx frequencies can be selected, each from independent 18 MHz operational bands.

Adjustable Transmitter Power

The beltacks can sense when operating in close proximity to the base station and intelligently reduce transmitter output by 10dB. This effectively eliminates overloading the base station receiver front end which is the primary cause of “nearfar” densing problems. WBS wireless system beltacks operate in normal power mode for typical distances. A manual high power setting is available when operating the beltacks more than 200ft (160m) from the base station.

Pre-Selected Compatible

Frequencies and Frequency Scan System setup is easy with the 24 internal pre-selected and intermodulation-free frequency groups. Aided by the “ClearScan” function, base stations and beltacks can typically be coordinated and work together within minutes. Memory locations can be allocated so that particular sets of frequencies can be chosen, programmed and saved as a new preset.

Graphical User Interface

A clear, backlit LCD screen displays the status of the beltacks and provides easy access to all the powerful features as well as configuration of the operational parameters. The LCD displays which beltack is transmitting, operating frequencies, and group/channel status.

Superior Audio Quality and Range

The audio quality of the WBS-670 and WBS-680 wireless systems is on par with that of professional wired partyline and digital matrix intercoms. UHF frequencies are ideally suited for operating through obstacles. A variety of remote antenna options can help improve range in difficult, interference-prone production environments.

Seamless Connection to Wired Intercoms

WBS wireless systems can interface with a variety of two-wire partyline, four-wire digital matrix or other wireless intercom systems. In addition to interfacing with external intercom systems, the WBS systems provide connections for auxiliary balanced audio input and output. Wireless Talk-Around (WTA) and Stage Announce (SA) features are available on the WTR-680 beltack.

Rechargeable Battery Option

The battery pack will operate the beltack 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. Chargers are available in single-bay or four-bay configurations.

WIRELESS INTERCOM SYSTEMS

WBS-670 SINGLE-CHANNEL WIRELESS

The WBS-670 1RU, rack-mountable base station supports up to four full-duplex wireless beltpacks.

System Features:

- Full talk/listen headset at the base
- Rear panel connections allow system expansion
- LCD screen displays which beltpacks are transmitting the operating frequencies and group/channel status
- Input and output level adjustment controls for both the connected wired intercom and auxiliary audio connection
- 3-pin XLR loop-through connectors for one channel of wired partyline intercom at the rear
- 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
- RJ-45 connector for direct connection to a digital four-wire intercom port, and a pair of auxiliary connectors

WBS-680 TWO-CHANNEL WIRELESS

The WBS-680 1RU, rack-mountable base station supports up to four full-duplex wireless beltpacks.

System Features:

- Full talk/listen headset at the base
- Rear panel connections allow base station to connect to two separate channels of wired intercom (two-wire, four-wire, or both)
- Toggle switch enables the user to communicate with either intercom channel A or B (including any wired intercoms connected at the base station)
- LCD screen displays which beltpacks are transmitting the operating frequencies and group/channel status
- Input and output level adjustment controls for both the connected wired intercom and auxiliary audio connection
- 3-pin XLR loop-through connectors for one channel of wired partyline intercom at the rear
- 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, which can activate a loudspeaker, two-way radio, IFB, or any other relay activated device



- A pair of efficient, half-wave co-linear antennas is supplied with the system. A variety of external antennas may also be used.

WTR-670 BELTPACK FEATURES

- Extremely light, durable cast magnesium
- Durable, detachable antennas are secured to the beltpack via threaded post connectors
- Low-profile volume control
- Robust, distinguishable momentary latch talk button



- RJ-45 connector for direct connection to a digital four-wire intercom port, and a pair of auxiliary connectors
- A pair of efficient, half-wave co-linear antennas is supplied with system. A variety of external antennas may also be used.

WTR-680 BELTPACK FEATURES

- Extremely light, durable cast magnesium
- Durable, detachable antennas are secured to the beltpack via threaded post connectors
- Low-profile volume control
- Robust, distinguishable momentary latch talk button
- Stage Announce
- Wireless-Talk-Around (WTA)

WBS-670/680 UHF FREQUENCY BAND CHART

| NTSC TV CHANNEL | START FREQUENCY | END FREQUENCY | FREQUENCY BAND OPTIONS | PAL TV CHANNEL | | |
|-----------------|-----------------|---------------|------------------------|-----------------|---------|---------|
| 14 | 470 | 476 | 88 | 21 | 470-478 | |
| 15 | 476 | 482 | | 22 | 478-486 | |
| 16 | 482 | 488 | | 23 | 486-494 | |
| 17 | 488 | 494 | | 24 | 494-502 | |
| 18 | 494 | 500 | | 25 | 502-510 | |
| 19 | 500 | 506 | | 26 | 510-518 | |
| 20 | 506 | 512 | A | 27 | 518-526 | |
| 21 | 512 | 518 | | 28 | 526-534 | |
| 22 | 518 | 524 | | 29 | 534-542 | |
| 23 | 524 | 530 | | 30 | 542-550 | |
| 24 | 530 | 536 | | 31 | 550-558 | |
| 25 | 536 | 542 | | B | 32 | 558-566 |
| 26 | 542 | 548 | 33 | | 566-574 | |
| 27 | 548 | 554 | 34 | | 574-582 | |
| 28 | 554 | 560 | 35 | | 582-590 | |
| 29 | 560 | 566 | 36 | | 590-598 | |
| 30 | 566 | 572 | C | | 37 | 598-606 |
| 31 | 572 | 578 | | 38 | 606-614 | |
| 32 | 578 | 584 | | 39 | 614-622 | |
| 33 | 584 | 590 | | 40 | 622-630 | |
| 34 | 590 | 596 | | E | 41 | 630-638 |
| 35 | 596 | 602 | | | 42 | 638-646 |
| 36 | 602 | 608 | 43 | | 646-654 | |
| 37 | 608 | 614 | 44 | | 654-662 | |
| 38 | 614 | 620 | 45 | | 662-670 | |
| 39 | 620 | 626 | 46 | | 670-678 | |
| 40 | 626 | 632 | 2 | 47 | 678-686 | |
| 41 | 632 | 638 | | 48 | 686-694 | |
| 42 | 638 | 644 | | 49 | 694-702 | |
| 43 | 644 | 650 | | 50 | 702-710 | |
| 44 | 650 | 656 | | 3 | 51 | 710-718 |
| 45 | 656 | 662 | | | 52 | 718-726 |
| 46 | 662 | 668 | 53 | | 726-734 | |
| 47 | 668 | 674 | 54 | | 734-742 | |
| 48 | 674 | 680 | 4 | | 55 | 742-750 |
| 49 | 680 | 686 | | | 61 | 790-798 |
| | | | | NOT USED IN USA | | |

| | | | | | |
|----------------------------------|-----|-----|----------|----|---------|
| G9 is only available in Germany. | 796 | 802 | G | 65 | 822-830 |
| | 802 | 808 | | 66 | 830-838 |
| | 808 | 814 | | 67 | 838-846 |
| | 844 | 850 | 9 | 68 | 846-854 |
| | 850 | 856 | | 69 | 854-862 |
| | 856 | 862 | | | |

■ Transmit Bands ■ Receive Bands

Single Channel Wireless Intercom System (WBS-670) Frequency Band Options: A2, B4, C3, C6, G9

Two-Channel Wireless Intercom System (WBS-680) Frequency Band Options: A2, B4, C3, C6, E88

| OVERVIEW | | |
|--|--|--|
| | WBS-680/WBS-670 Base Station | WTR-680/WTR-670 Beltpacks |
| RF Frequency Range | 518-608MHz, 614-686MHz in 18MHz TX and RX bands WBS-670: G9 band, 796-814MHz Tx, Germany only | 518 - 608MHz, 614 - 686MHz in 18MHz TX and RX bands WTR-670: G9 band, 844-862MHz Tx, Germany only |
| Power Requirement | 100-240VAC, 50-60Hz, 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 | 140mA (Push-to-Talk, Talk On) |
| Temperature Range | -4°F to 140°F (20°C to 55°C) | -4°F to 140°F (20°C to 55°C) |
| Dimensions | 19.0" W x 1.72" H x 14.0" D (48.3cm x 4.4cm x 35.6cm) | 3.75" W x 5.05" H x 1.65" D (9.5cm x 12.8cm x 4.2cm) |
| Weight | WBS-680: 7lbs. 2oz. (3.24kg) WBS-670: 6lbs. 15oz. (3.15kg) | 16oz. (0.454kg) with batteries 15oz. (0.425kg) with batteries |
| Transmit Antenna | 1/2 Wave (supplied), TNC Male Connector | 1/4 Wave (supplied), Screw type |
| Receiver Antenna | 1/2 Wave (supplied), TNC Male Connector | 1/4 Wave (supplied), Screw type |
| FCC ID | B5DM514 | B5DM515 |
| Frequency Response | 300Hz - 8,000Hz | 300Hz - 8,000Hz |
| Four-Wire Input | Level Adjustable (2Vrms typical) | N/A |
| Four-Wire Output | Level Adjustable (2Vrms typical) | N/A |
| Clear-Com® Partyline Levels | Input/Output Level Adjustable (1Vrms typical), Line Impedance 200W | N/A |
| RTS® Partyline Levels | Input/Output Level Adjustable (0.775Vrms typical), Line Impedance 200W | N/A |
| Telex® Partyline Levels | Input/Output Level Adjustable (1 Vrms typical), Line Impedance 300W | N/A |
| Auxiliary Input | Adjustable (2Vrms typical) | N/A |
| Aulliliary Output | Adjustable (2Vrms typical into 600W) (at rated deviation) | N/A |
| Stage Announce Output (WBS-680 only) | Internally Adjustable (1Vrms typical at rated deviation into 100KW) | N/A |
| Stage Announce Relay (WBS-680 only) | Dry contact, rated at 1Amp, 24V Max. / N/A | N/A |

| TRANSMITTER | | |
|-------------------------------|--|---|
| | WBS-680/WBS-670 Base Station | WTR-680/WTR-670 Beltpacks |
| Type | Synthesized, 720 channels | Synthesized, 720 channels |
| Transmit Power | WBS-680: 100mW max. (High), 10mW (normal) WBS-670: 50mW max. (High), 5mW (normal) | WTR-680/WTR-670: 50mW max. (auto-power reduction when close to base) |
| RF Frequency Stability | 0.005% | 0.005% |
| Modulation | FM, 40KHz Deviation | FM, 40KHz Deviation |
| Modulation Limiter | Peak-Responding Compressor | Peak-Responding Compressor |
| Modulation Frequency Range | 300Hz -8,000Hz +-2dB | 300Hz -8,000Hz +-2dB |
| Microphone Audio Input | 30W - 3,500W | 30W - 3,500W |
| Microphone Input Sensitivity | 9mV | 9mV |
| Radiated Harmonics & Spurious | Exceeds FCC specifications | Exceeds FCC specifications |
| FCC Acceptance | Type accepted under FCC Part 74 | Type accepted under FCC Part 74 |

| RECEIVER | | |
|------------------------|---|---|
| | WBS-680/WBS-670 Base Station | WTR-680/WTR-670 Beltpacks |
| Type | Dual Conversion Superheterodyne, Synthesized, FM, 720 channels | Dual Conversion Superheterodyne, Synthesized, FM, 720 channels |
| RF Sensitivity | <0.7mV for 12dB SINAD | <0.7mV for 12dB SINAD |
| Signal-to-Noise Ratio | 95dB | 95dB |
| IF Selectivity | 3dB at 230KHz | 3dB at 230KHz |
| Image Rejection | 70dB or better | 70dB or better |
| Squelch Quieting | 95dB | 95dB |
| RF Frequency Stability | 0.005% | 0.005% |
| Distortion | <1% at full deviation | <1% at full deviation |
| Local Headset Output | 40mW output into 600W (1% distortion) | 40mW output into 600W (1% distortion) |
| FCC Acceptance | Notification under FCC Part 15 | Notification under FCC Part 15 |

BATTERY CHARGERS

WTR1C

The WTR1C is a single battery charger that provides built-in maintenance capability to maximize the battery cycle life for the WBS-670 and WBS-680 wireless intercom systems. It helps to optimize the battery and maintains the battery's peak capacity while it is charging. There is no restriction to how long the battery can remain in the charger. Rapid charge capabilities fully charge batteries in less than two hours.



WTR4C

The WTR4C has the same features as the WTR1C, except that the WTR4C can charge up to four batteries simultaneously.



STATUS INDICATORS

- Charging LED - Solid light indicates battery pack is charging
- Ready LED - Solid light indicates battery is fully charged
- Rejected LED - Flashing light indicates faulty or dead battery
- Power LED - Solid light indicates there is power to the charging slot
- Conditioning Cycle LED - Flashing light indicates discharging process

BATTERY FEATURES

- Easy-to-read LED status indicator lights
- Battery is fully charged in less than two hours
- Maintains battery at peak capacity
- Optimizes battery life
- Battery can remain in charger indefinitely

TECHNICAL SPECIFICATIONS

| BC-800NM4 & BC-800NM BATTERY CHARGERS | | |
|---------------------------------------|--|--|
| Physical Characteristics | BC-800NM4 | BC-800NM |
| Product Dimensions | 13" (33cm) W x 1.7" (4.5cm) H x 7" (17.8cm) D | 3" (7.62cm) W x 3.5" (8.89cm) H x 6" (15.24cm) D |
| Product Weight | 4lbs (1.5kg) without battery adapters | 1lb, 6oz (0.62kg) |
| Shipping Dimensions | 11.5" (29.2cm) W x 10.5" (26.7cm) H x 18.5" (47cm) D | 7" (17.8cm) W x 4.5" (11.43cm) H x 7" (17.8cm) D |
| Shipping Weight | 10lbs, 9oz (4.8kg) with battery adapters, power supply, & rechargeable battery packs | 2lbs, 10oz (1.2kg) with rechargeable battery pack & power supply |
| Material | ABS KJW fire retardant plastic, textured | ABS KJW fire retardant plastic, textured |

| FEATURES | |
|--------------------------------|---|
| Conditioning Cycle | Provides built-in maintenance capability to maximize battery cycle life |
| Status Indicators | 'Charging', 'Ready', 'Rejected' (dead battery), 'Conditioning Cycle' and 'Power LED' indicators make the BC-800NM simple and easy to use |
| Intelligent Charging | <ul style="list-style-type: none"> Optimizes the battery Battery can remain in the charger indefinitely Maintains battery at peak capacity |
| Rapid Charge Capability | Charges in less than 2 hours |

| USER ENVIRONMENT | |
|------------------------------|--|
| ESD | 8KV continuous contact discharge; 15KV from air to all surfaces without contact |
| Humidity | 95% relative humidity (non-condensing) |
| Drop | Unit functions normally after 4ft./1.2m drop to concrete |
| Storage Temperature | -40° to 122oF/-40° to 50°C |
| Operating Temperature | 32° to 122°F/0o to 50°C |
| Power Supply | BC-800NM4: (Universal): 90V-230VAC, 50/60Hz Output: 15VDC, 5A or 24VDC, 4.5A BC-800NM: (Universal): 90V-230VAC, 50/60Hz Output: 15VDC, 1.5A or 24VDC, 1.3A |
| Safety Standards | Charger & power supply UL listed (UL 1950), CSA Certified (C 22.2 No. 223); Compliant to FCC part 15 Class A and CE Marking (Electromagnetic Compatibility) Directive 89/336/EEC and Low Voltage Directive 73/23/EEC; C15PR-22 Class B |

| PERFORMANCE CHARACTERISTICS | |
|-----------------------------|---|
| Rapid Charge | Charges batteries to 90+% capacity in 2 hours or less |
| Complete Charge | Completes 100% capacity charge in 4 hours or less |
| Conditioning | Completely discharges a battery and automatically switches to charging mode |
| Maintenance Charge | Maintains the battery at optimum capacity indefinitely |

| USER INTERFACE | |
|----------------------------------|---|
| Power LED | Indicates POWER to charging slot |
| Conditioning/Charging LED | Flashing indicates discharging process |
| Reject LED | Flashing indicates faulty battery |
| Conditioning/Charging LED | Solid indicates battery pack is being charged |
| Ready LED | Solid indicates battery charged |



About Clear-Com®

Clear-Com, an HME company, is a global provider in professional voice communications systems since 1968. We develop and market proven intercom technologies such as Analog & Digital Partyline, Digital Matrix, Wireless and Intercom-over-IP systems for critical communication applications in broadcast, performance venues, military, government and enterprise markets. Recognized for our legacy of intercom innovations, production teams around the world have come to depend on Clear-Com for clear, reliable and scalable communications solutions.

About HM Electronics, Inc. (HME)

HM Electronics, Inc. is a diverse group of companies providing solutions that enhance productivity and customer service in markets including restaurants, sports and professional audio. Founded in 1971, we sell, service and support products in 89 countries worldwide, via company-owned offices in the U.S., Canada, Europe, and China, and an extensive network of HME-authorized distributors, dealers and service agents. Every day quick service restaurants take over 24 million orders using HME systems. With the recent acquisition of Clear-Com, HME is the world's leading provider of professional intercom systems.

www.clearcom.com

Americas and Asia-Pacific Headquarters

California, United States
Tel: +1.510.337.6600
Email: SalesSupportUS@clearcom.com

Europe, Middle East, and Africa Headquarters

Cambridge, United Kingdom
Tel: +44 1223 815000
Email: SalesSupportEMEA@clearcom.com

China Office

Beijing Representative Office
Beijing, P.R.China
Tel: +86-10-65811360/65815577