

Q700

frequency-agile wireless intercom system





Q700

The world's most advanced wireless intercom system.

The Q700 is a programmable, frequency-agile UHF wireless intercom system consisting of a master station and up to six full-duplex belt packs.

The MS700 Master Station

The MS700 master station is the core of the Q700 system, providing the capabilities to receive, route, mix, transmit, and monitor all of the audio sources from the BP700 wireless belt packs — as well as all of the connected wired intercom channels and audio sources. The MS700



gives each belt pack its own front-panel control section, with pushbutton routing to the intercom bus and/or the monitor bus, level and squelch control, and LED monitoring of transmit RF, routing mode, and battery condition.

Additional sections permit local monitoring of intercom and program audio, level and sidetone adjustments for wired intercoms, and frequency programming. The rear panel has connectors for two channels of party-line intercom and two channels of 4-wire intercom or audio, plus a program input and an auxiliary output with relay. It also provides an audio monitor output and monitor “cascade” for connecting additional MS700's.

BP700 Belt Packs

Combined with the MS700 master station, the BP700 belt packs provide unprecedented flexibility for wireless communications. Four mode-selection pushbuttons select the routing of the

user's voice. Two volume controls allow the user to select and mix audio from the main and program/secondary audio channels.

Recessed mic-level and squelch controls permit further fine-tuning of the individual belt pack. Six AA batteries in the latching battery pack keep the unit operating in full-duplex mode for over eight hours, and longer when used in the PTT (push-to-talk) mode.

Programmable Routing

Each pushbutton on every belt pack is independently programmable, and may operate in any desired mode — latching, push-to-enable, and more. Any button may be programmed for any routing function, giving total flexibility to customize any belt pack to the needs of any operator. A simple push of a button instantaneously instructs the master station to route that user's voice to either of the wired intercom channels, the auxiliary output, or to just the wireless group.

Dual Audio Paths

Two audio/data pathways exist between the master station and the belt pack, and from belt pack to the master station — each using only a single transmit frequency. The primary RF channel transmitted by the master station is the sum of all the communications from the belt pack users and selected party-line and four-wire inputs.



Software allows programming of pushbuttons and frequencies.

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Packed full of so many features, it's intercomplete!

A sub carrier channel riding on the primary RF channel has its own line-level input into the master station, which may be used for program audio or another separate communications channel. The sub carrier level is controlled at each belt pack with a separate volume control.

complete

The main RF transmit channel from each belt pack carries the

voice of the user, while its sub carrier sends routing instructions, battery condition, and other data to the master station.

Unsurpassed Frequency Agility

Both transmit and receive functions of the Q700 wireless intercom operate in 25 kHz steps over a 30 MHz (five U.S. television channels) band. The user can select any combination from a set of 2,400 discrete frequencies, for compatible and interference-free operation.

Powerful, Intuitive Programming

A visually-intuitive PC software program allows the user to set up the functions of each individual pushbutton on each belt pack, as well as to program the transmit and receive frequencies of the belt packs and master station.

Alternately, the master station and belt pack frequencies can be programmed via an interface utility provided on the front panel of the master station. Certain belt pack functions may be selected via a series of pushbutton sequences on each belt pack.

In applications ranging from performance and event production to

broadcast to industrial communications, the Q700 wireless intercom offers a winning combination of great flexibility, excellent audio quality, powerful programmability, and the widest interconnection with wired intercom and audio systems — all customizable to the needs of individual operators.



Features

- 2,400-channel frequency-agile intercom system
- Dual audio monitoring on each belt pack
- Two volume control knobs for independent intercom and program level adjust, or for separate level control on intercom channels one and two
- Powerful, intuitive programming capabilities
- Program each belt pack to/for the exact needs of the user
- Monitor any or all audio paths within the master station
- Two user-selectable belt pack ISO modes
- Belt pack battery-status indicators at master station
- Six full-duplex belt packs in 1-RU
- Wide frequency response and audio characteristics to match professional wired intercom systems
- Tone-coded squelch helps prevent interference
- Master station transmit power is switchable to 50 or 250 mW
- Master station can be connected to two party-line and two 4-wire channels simultaneously



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Technical specifications.

Q700 System

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| Frequency Range: | 470-740 MHz in nine 30-MHz bands (U.S. and Canada) |
| Frequency Selection: | Synthesized; 1,200 channels per 30 MHz band, 25 kHz steps |
| Transmission Modes: | Continuous or push-to-talk; full or half duplex |
| Frequency Stability: | $\pm 0.0025\%$ |
| Operating Range: | To 1,500 ft (450 M) under good conditions |
| Modulation: | FM, 50 kHz peak deviation |
| Spurious Output: | -64 dBc, minimum |
| Harmonics: | -56 dBc, minimum |
| Frequency Response: | 120 Hz to 10 kHz, ± 3 dB |
| Distortion: | Less than 1% THD at 1 kHz |
| SNR: | Greater than 90 dB (excluding wired intercom) |
| Audio Processing: | 2:1 companding |
| Squelch: | Tone-coded plus signal level |
| Intercom Modes: | Normal, ISO 1, ISO 2, Aux |
| Program Audio/IFB: | Built-in, transmission via high frequency subcarrier |

BP700 Beltpack

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| Transmitter Power: | 50 mW, minimum |
| Transmit Antenna: | Flexible 1/4 wave, insulated metal-coated Kevlar™ fiber |
| Receive Antenna: | Internal wideband helical |
| Headset Connector: | XLR, 4-pin male standard, 4- and 5-pin female optional |
| Microphone Types: | Dynamic or 2-wire electret, externally programmable |
| Microphone Gain: | Externally accessible control |
| Headset Power Output: | 150 mW, minimum, into 50 ohms |
| Controls: | Main volume control with power switch, program/IFB volume control, four mode switches |
| Indicators: | Power, PTT, four mode LED's |
| Batteries: | Six "AA" alkaline, optional rechargeable NiMH cells |
| Battery Life: | 8-10 hours for alkaline, 6-8 hours for NiMH (both longer in PTT mode) |
| Battery Replacement: | Removable battery holder, optional charger available for NiMH version |
| Size: | Approximately 1.25 x 4 x 5 inches (3 x 10.2 x 12.8 cm) |
| Weight: | Approximately 19 ounces (540 gm) with batteries |
| Construction: | Molded high-impact reinforced ABS |

MS700 Master Station

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| Transmitter Power: | Switchable, 50 or 250 mW |
| Receiver Channels: | Six; four standard plus two optional |
| Receiver Type: | Dual conversion |
| Band Separation: | Receiver and transmitter bands must be separated by at least one 30 MHz band |
| Frequency Selection: | Front-panel controls or external PC (via optional serial interface adapter and Windows™ software) |
| Antennas: | 1/4-wave wire whips, one transmit, one receive; BNC connectors |
| Intercom Channels: | Two; simultaneous and independent |
| Intercom Interfaces: | Clear-Com® or RTS®, externally switchable, via two 3-pin XLR's; simultaneous four-wire via two 4-pin XLR's |
| Intercom Modes: | Controlled by individual belt packs via subcarrier data |
| Program/IFB Input: | Balanced, line-level, 3-pin XLR |
| Auxiliary Output: | Balanced, line level, via 3-pin XLR, with auxiliary contact closure on DB15 connector |
| Monitor Outputs: | Balanced line-level output and cascade in/out via three 1/4" (6.3 mm) stereo phone jacks |
| Controls: | Select, monitor, and level adjust for receivers and intercom; intercom mode; frequency selection switches; monitor level, AC power switch; transmit power switch, others |
| Indicators: | Signal present, mode, belt pack low battery warning, select status, and monitor status for each receiver; monitor LED bargraph; power present, select status and monitor status for intercom channels, others |
| Size: | 19" (48 cm) rack mounting, one rack unit, 14" (36 cm) deep (excluding connectors and controls) |
| Weight: | 10 lbs. (4.5 kg) |
| Power: | 100-260 vac, 50-60 Hz, 30 watts max., IEC connector |

Internal Jumper Block, Audio Routing Matrix: A 48-pair routing jumper block on the main master station circuit board provides access to all audio routing pathways, permitting virtually limitless ability to customize the system to the requirements of the application. Any of the party-line intercom, 4-wire, or program audio inputs may be routed to the main transmitter or the subcarrier bus. Audio transmitted from the belt packs may be similarly routed where desired.

Such customization can permit assigned belt pack buttons to enable or disable routings, isolate or link the attached external intercom channels, create "overrides" that will temporarily mute or dip the level of other intercom traffic for critical communications, allow the possibility of programming a "master" belt pack so the director has global control over the communications, and many other possibilities.

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