Free to talk. Free to work. Free to move.

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Wireless accessories for two-way radios.

FreeMic™ 200 Overview

Never before has a product offered the freedom, mobility, reliability and ease-of-use of the FreeMic wireless speakermic. Using cutting-edge near-field magnetic technology, FreeMic is made specifically for secure, short distance wireless communication.

The FreeMic interfaces wirelessly with an adapter that attaches to the accessory interface of the portable radio, creating a communication "bubble" that envelopes the personal space of each user. Thanks to the laws of physics, transmissions are inherently private and secure. The key advantages of this technology include:

Greater Reliability

Unlike RF-based products, FreeMic is immune to frequency contention. While a Bluetooth solution might drop signals and degrade audio quality whenever an RF transmitter is nearby, FreeMic will always deliver crisp, clear communication.

Better Security

The range for near-field magnetic communication is both predictable and highly reliable due to a dramatic attenuation in magnetic field energy at three to five feet. This means that no signals propagate beyond the "bubble"—barring any attempts at eavesdropping.

Lower Power Consumption

With signals designed to propagate only within a two-meter range, magnetic communication has a huge power and battery advantage (up to six times) over Bluetooth and other RF solutions.

FreeMic™ 200 Specifications

Wireless technology	Near-field magnetic induction
Range	3 to 5 feet (0.9 to 1.5 meters)
Attachment clip	Heavy-duty spring-loaded, rotates 360°
Microphone	Noise-cancelling
Speaker volume control	Buttons on speakermic
Voice operated TX	VOX optional
Adapter power source	From radio interface
Speakermic battery	Lithium polymer (rechargeable)
Battery life	Approx. 20 hours continuous talk time
Low-battery warning	Audio tone
Charge indicator	LED on FreeMic
Charger style	Wall wort w/USB indicator
Car charger	Yes (sold separately)
Speakermic weight	4.0 oz (<113 g)
Adapter weight	0.7 oz (<20 g)
Speakermic dimensions	3.2 x 2.4 x 0.8 inches (81 x 61 x 20 mm)
Adapter dimensions	2.8 x 0.9 x 0.9 inches (71 x 23 x 23 mm)
Operating Temperature	-30° to +60° C (-22° to +140° F)
Humidity	95% RH @ 8 hours (non-condensing)

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Wireless accessories for two-way radios.

FreeMic™ 200 Product Description

For many two-way radio users, wires are cumbersome and limiting. "Wired" accessory manufacturers have addressed these issues by employing advanced audio components and/or industrial-strength product designs. Now, FreeLinc answers the call for convenient, secure communications via "wireless" accessories. We've selected and employed features that have already proven useful in the field, then added our own set of powerful enhancements. Thus the FreeMic benefits not only from our new, patented features and our selection of Near-field Magnetic Communication (NFMC) based wireless, but also from established public-domain technologies. Moreover, FreeLinc knows that users of its products share one fundamental need: cord-free operation of two-way radios. Our singular mission to "untether" workers from their bulky two-ways provides a full freedom of motion that can only be met by wireless. FreeMic features these components:

The Speaker is extremely durable, constructed of industrial-strength plastic for all-weather, all-environment use. It attaches securely via heavy-duty spring-clip, and communicates with a wireless two-way radio adapter. The speakermic design includes a push-to-talk (PTT) button, a voice operated transmission (VOX) feature, a 2.5mm jack for attaching earphones, a jack for connecting to a battery charger, and an LED battery charging indicator. Weighing only 113 grams, each speakermic features:

- *Rugged design for daily use – with convenient push-to-talk on the speakermic.*
- *Exceptional battery life – up to 20 hours total talk time.*
- *Unrivaled reliability – unaffected by signal degradation or obstacles.*
- *No spectrum contention - transmissions within communication bubble are unaffected by RF.*
- *Clear communication – noise-canceling electret microphone for audio fidelity.*

The Adapter enables/controls cable-free communication between the speakermic and the two-way radio. Each specially molded adapter module is specific to the two-way radio model used by the customer (contact a FreeLinc sales associate or visit www.freelinc.com for a list of compatible radio models). While each adapter style is different due to the variances in radio models supported, on average each adapter weighs about 20-grams and is constructed of industrial-strength plastic. Due to the simplex nature of two-ways, a push-to-talk (PTT) button is needed to transmit audio; a PTT button is located on FreeLinc adapters in an easy-to-reach spot.

The Charger (used separately) is provided to re-power the speakermic's lithium polymer battery. A "low power" warning is provided by audio tone; speakermic power on/off is fully automatic. Recharging the speakermic requires approximately 3 hours; while charging, the speakermic LED illuminates red; when fully charged the speakermic LED illuminates green. (The adapter draws power from the radio via the industry standard interface.) The speakermic LED does not illuminate when disconnected from the charger.

FreeLinc's Technology Defined

FreeLinc's cutting edge technology supports mobility, freedom-of-motion, exceptional battery life, audio integrity, ease-of-use, durability, secure communications and comfort. NFMC communicates wirelessly by coupling a low power, non-propagating, quasi-static magnetic field between devices. A quick comparison of NFMC to RF illustrates why the technology is the superior choice for FreeLinc's solutions:

Two wireless technologies have promised to deliver an alternative to wires for personal audio applications: NFMC and Bluetooth. Bluetooth is an industry standard that utilizes conventional radio frequency (RF) wireless communication whereby a modulated RF plane wave propagates through free space. Range performance is strongly affected by the presence of people and objects as well as by other occupants of the spectrum, including other Bluetooth users, 802.11 devices, cordless phones, and microwave ovens.

Many similar conventional RF communication systems are optimal for sending large amounts of information and communicating over long distances. Yet all consume power, create information security issues, and often result in interference, crowding, and limited reliability among devices. RF-only systems can fade, null, are blocked, or have multi-path signal degradation in the presence of either people or obstacles.

In sharp contrast, NFMC operates in a magnetic "envelope" containing one to three meters of each user's personal space—fully private and secure. The result is an easier to use, lower cost system that makes far more efficient use of power and bandwidth than conventional RF systems. By limiting the range and bandwidth to only what the application requires, NFMC achieves a very substantial savings in power. Signals are designed to propagate only within a two-meter range, enabling a huge power and battery advantage (up to six times) over competing RF solutions. Additional power saving is achieved through the much lower carrier frequency and the use of a lower complexity protocol stack. More FreeLinc technological benefits include:

- *Dedicated communication channels – unaffected by surroundings and largely interference free.*
- *No bandwidth sharing – bubble-like continuous signal minimizes latency, lost packets, bit errors.*
- *Worldwide regulatory flexibility – no additional FCC/IC/ETSI certification required.*
- *Reliable coexistence with WiFi, CDMA, TDMA, GSM –no noise, pops, static, dropouts or fading.*
- *Sufficient bit rates for quality voice – 384Kbps reserved for the transmission of audio content.*