The DRUM 100 Medium Frequency Radio is a battery powered, analog frequency modulation, single-channel voice communication radio. This radio can use either magnetic induction or direct coupling in the medium frequency (MF) band to propagate its signal parasitically across metal infrastructure in an underground / tunnel environment.
The DRUM 100 operates in one of two configurations:
- Standalone MF Radio - Speaker / Mic Connected to Audio Interface
- Cross Band Repeater - Handheld Radio Adapter Connected to Audio Interface

**DRUM 100 – Standalone MF Radio**

- 5 Watts at 450 kHz
- 50 Ohm Antenna Impedance
- High Efficiency Class D Amplifier
- Tone Squelch Support
- High Dynamic Range Receiver
- Illuminated Power Switch
- MSHA Permissible
- Analog Point To Point Operation
- 1 Watt Speaker Audio
- Long Battery Life
- Rugged Design with Dust-Tight Enclosure
- FM Modulation of Audio Signal
- Speaker Microphone w/ PTT and Emergency
- Wideband Deviation for Optimum S/N Ratio

**DRUM 100 – Cross-Band Repeater**

- Dual Band Repeater (MF to Handheld)
- Up-Converts MF to Handheld Frequency
- Down-Converts Handheld Frequency to MF Adapters Available for Many Handheld Radios
- MF Output Power: 5 Watts typical
- High Efficiency Class D Amplifier for MF
- Tone Squelch Support for MF and Handheld
- Simplex or Duplex Handheld Operation
- Illuminated Power Switch
- MF Antenna Coupling Accessories

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**General**

- **Frequency Range**: 450 kHz
- **Number of Channels**: 1
- **Battery Voltage**: 7.2 VDC ± 20%
- **Battery Life (5-5-90 duty cycle)**: 14 hours
- **Battery Life (10-10-80 duty cycle)**: 10 hours
- **Operating Temperature Range**: 0° to 70° C
- **Frequency Stability**: 10 ppm
- **Antenna Impedance**: 50 ohms
- **Total Weight**: 4.8 lbs  
  *(Including Battery, Antenna, Cable and Speaker / Mic)*

**Receiver**

- **Sensitivity (12 dB SINAD)**: 0.5 uV
- **Selectivity**: 12 kHz @ -6 dB
- **Intermodulation Distortion**: N/A
- **Audio Output**: 1 Watt < 10% distortion
- **Spurious Rejection**: > 60 dB
- **Noise Figure**: 3 dB typical
- **Input IP3 (3rd order intercept)**: -23 dBm
- **Input P1 dB (1 dB compression)**: -33 dBm

**Transmitter**

- **RF Power Output**: 5 Watts
- **Emission Designator**: 16K0F3E
- **Spurious Emission**: < -60 dB
- **3rd Order IMD**: -31 dBc @ 5 Watts
- **Amplifier Type**: Class D

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