

Miner Act Compliant **DRUM[®] 100**

Compact Portable Underground Radio

KUTTA[®]
RADIO



Kutta Radios
Technology
Overview



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.

MSHA
Approved

National Institute for
Occupational Safety and Health
NIOSH



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DRUM 100

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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



Standalone MF Radio



Cross Band Repeater

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

General

Frequency Range	450 kHz
Number of Channels	1
Battery Voltage	7.2 VDC \pm 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

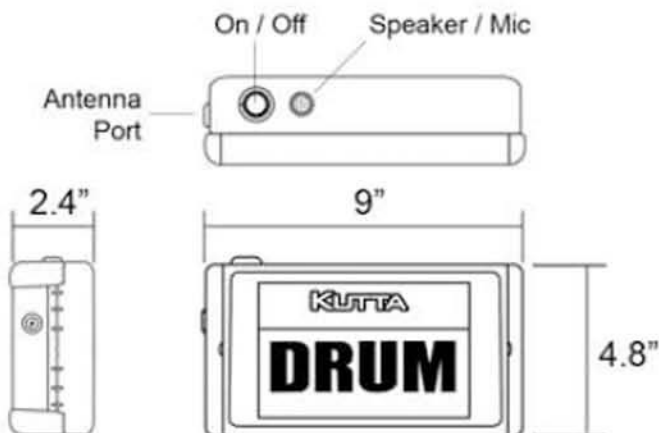
(Including Battery, Antenna, Cable and Speaker / Mic)

Receiver

Sensitivity (12 dB SINAD)	0.5 μ V
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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