



HDR100 Repeater

VHF, UHF



The HDR100 is a software-defined, multimode conventional repeater that provides digital (DMR) and analog signaling. While in digital DMR mode the HDR100 operates in a 2-slot TDMA format on 12.5 kHz channels to provide 6.25 kHz equivalent efficiency. In analog mode the repeater operates in a 12.5 kHz FDMA format. The digital and analog modes of operation are compliant with the FCC 2013 Narrowband mandate.

Flexible System Design

The HDR100 repeater can be configured to meet a wide range of communications needs ranging from single channel/single site to wide-area multisite networks. Multiple repeaters can be networked together using the IP Connectivity option to create cost effective DMR Tier 2 compliant networks. Additional channels and sites can be added in the future to increase system capacity or area covered.

Automatic Detection of Analog and Digital Modes

The HDR100 detects whether the signal received is analog or digital and transmits in the appropriate mode. The repeater provides an ideal solution for users transitioning from analog to digital operation.

Three-year warranty

Innovative Design

The compact 19" 2RU rack-mount design includes a 2" TFT LCD with menu navigation and control knob, colored LEDs for status indication and an advanced heat sink design with a thermal controlled cooling fan.

Cost Effective Networks

Momentum networks use 2:1 TDMA technology to virtually double system capacity over traditional FDMA-based networks. In many network configurations TDMA technology results in significant cost savings.

Standards-based Technology

Compliance with the DMR standard ensures interoperability between radios from different suppliers. Momentum Tier 2 conventional DMR networks support radios from multiple radio suppliers.



GENERAL

Frequency Range

VHF 136-174 MHz
 UHF1 400-470 MHz
 UHF2 450-520 MHz

Channel Capacity

16

Channel Spacing

25/20/12.5 KHz

Operating Voltage

13.6V±15% V DC

Current Drain

Standby 1.2A
 Transmit 12A

Frequency Stability

±1ppm

Antenna Impedance

50Ω

Duty Cycle

100%

Dimensions (WxDxD)

438 x 88 x 366 mm
 19.02 x 3.5 x 14.4 in

Weight

18.7 lbs (8.5 kg)

LCD Display

220 x 176 pixels, 262k colors

TRANSMITTER

RF Power Output

5-50W (Continuous)

FM Modulation

11K0F3E @ 12.5 kHz
 14K0F3E @ 20 kHz
 16K0F3E @ 25 kHz

4FSK Digital Modulation

12.5 kHz Data Only 7K60FXD
 12.5 kHz Data & Voice 7K60FXW

Conducted/Radiated Emission

-36dBm<1GHz
 -30dBm>1GHz

Modulation Limiting

±2.5 kHz @ 12.5 kHz
 ±4.0 kHz @ 20 kHz
 ±5.0 kHz @ 25 kHz

FM Hum and Noise

-40db @ 12.5 kHz
 -43db @ 20 kHz
 -45db @ 25 kHz

Adjacent Channel Power

60dB @ 12.5 kHz
 70dB @20/25kHz

Audio Response

+1 ~-3dB

Audio Distortion

3%

Digital Vocoder Type

AMBE++ or SELP

RECEIVER

Sensitivity (Analog)

0.3µV (12dB SINAD)
 0.22µV (Typical) (12dB SINAD)
 0.4µV (20dB SINAD)

Sensitivity (Digital)

0.3µV / BER 5%

Blocking

100dB

Adjacent Channel Selectivity

65dB @ 12.5 kHz /
 75dB @ 20/25 kHz

Intermodulation

75dB

Spurious Response Rejection

85dB

Hum and Noise

-40dB @ 12.5 kHz
 -43dB @ 20 kHz
 -45dB @ 25 kHz

Rated Audio Power Output

0.5W

Audio Distortion

3%

Audio Response

+1 ~-3dB

Conducted Spurious Emission

-57 dBm

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature

-22 to +140°F (-30 to +60°C)

Storage Temperature

-40 to +185°F (-40 to +85°C)

REGULATORY DATA

Frequency Range (MHz)	RF Output (W)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules
136-174	50W	OWDTR-0086-E	90	3636B-0086	RSS-119
400-470	50W	OWDTR-0087-E	90	3636B-0087	RSS-119
450-520	50W	OWDTR-0088-E	90	-	-

Technical specifications are subject to change without notice.
 Product sales are subject to applicable U.S. export control laws.

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