Hytera
Respond & Achieve

RD985

DMR repeater

The digital repeater RD985 is the heart for multi-cell conventional DMR radio networks and was developed according to the ETSI standard for DMR. It offers an ergonomic design, reliability and outstanding digital functions for sophisticated communication.
RD985 – Your digital advantage over your competitors!

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera-mobilfunk.com

Repeater

RD985

DMR repeater

Highlights

Dual mode and automatic change
The RD985 repeater can be operated both in analog and in digital mode and is completely compatible with the analog systems currently in use. The device can automatically change between digital and analog mode depending on the type of receiver signal and, thanks to the elimination of manually configuring frequencies and channels, both time and money are saved.

100% efficiency
The RD985 offers constant power (up to 50 watts) and therefore meets the high requirements of all conventional digital radio systems.

Flexible installation options
The RD985 repeater can be installed in a 19-inch equipment rack using an optional installation kit. Alternatively, you can easily install it on a rack, a mounting support or a work table. Thanks to the space intended for an optional duplexer inside the device, the device remains compact.

Efficiency in the high-frequency range
Thanks to the TDMA technology, twice as many users can use the same channel, such as is the case with analog or digital FDMA systems. Due to the restricted frequency resources, this represents an important relief and reduces the expenses for system terminals and frequency licenses.

Secure communication
The RD985 repeater features an enhanced digital encryption function that protects your communication against wire tapping.

High cooling capacity
Thanks to heat dissipation, the power amplifier can dissipate its heat exceptionally efficiently. In addition, the integrated fan system ensures stable and powerful operation.

Operation in repeater and/or basic mode
If the repeater is operated on an analog channel, you can choose between repeater mode and basic mode. In basic mode the repeater can be used as a duplex transceiver.

High reliability
Since the repeater was designed according to military standards, it offers high reliability and excellent performance. Test results from independent laboratories have shown that the device can be operated for up to 100,000 hours without interference and it therefore meets the requirements for use in extreme situations.

High-resolution 2-inch LCD color display
Whether during ongoing operation or during a maintenance task: You can easily access all the desired information via the large LCD color display.

Professional design
The innovative LED display on the volume control complements the attractive design of the device and, at the same time, optimizes its utilization. Thanks to the user-friendly menus and the large navigation control, it is extremely easy to use the device.

Clear LED indicators
The 8 LED indicators on the front allow the current status to be easily identified.

Ergonomic design
The beveled handles facilitate the installation and transport of the device.

Standard accessories


Power cord

Optional accessories (excerpt)


External voltage supply PS22002


Programming cable (USB) PC37


Handheld microphone SM16A1


Table microphone SM10A1


Installation kit for duplexer BRK09


Installation kit for 19-inch racks (black) BRK12

The illustrations below are for reference purposes only. The products might differ from these illustrations.

Technical Data

General data	
Frequency range	VHF: 136 MHz – 174 MHz UHF: 400 MHz – 470 MHz
Supported operating modes	• DMR Tier II in acc. with ETSI TS 102 361-1/2/3 • Analog
Channel capacity	16
Zone capacity	1
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	13.6 ± 15% V_{DC}
Max. power consumption (in case of stand by)	≤ 0.8 A
Max. power consumption (in case of transmission)	≤ 11 A
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (H × W × D)	88 × 483 × 366 mm
Weight	8.5 kg
LCD display	220 × 176 Pixel, 262,000 colors, 2.0 inches, 4 rows

Receiver	
Sensitivity (analog)	0.3 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (20 dB SINAD)
Sensitivity (digital)	0.3 µV / BER 5%
Adjacent channel selectivity TIA-603 ETSI	 65 dB at 12.5 kHz/ 75 dB at 20 / 25kHz 60 dB at 12.5 kHz/ 70 dB at 20 / 25kHz
Intermodulation TIA-603 ETSI	 75 dB at 12.5 / 20 / 25 kHz 70 dB at 12.5 / 20 / 25 kHz
Spurious response rejection TIA-603 ETSI	 80 dB at 12.5 / 20 / 25 kHz 80 dB at 12.5 / 20 / 25 kHz
Hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Nominal audio power output	0.5 W
Nominal audio distortion	≤ 3 %
Audio sensitivity	+ 1 dB to - 3 dB
Conducted spurious emission	< 57 dBm

Transmitter	
Transmitting power	5 – 50 W (adjustable)
Modulation	11 KΦF3E at 12.5 kHz 14 KΦF3E at 20 kHz 16 KΦF3E at 25 kHz
4FSK digital modulation	12.5kHz (data only): 7K6ΦFXD 12.5 kHz (data and voice): 7K6ΦFXW
Interfering signals and harmonics	- 36 dBm (< 1 GHz) - 30 dBm (> 1 GHz)
Modulation limiting	± 2.5 kHz at 12,5 kHz ± 4.0 kHz at 20 kHz ± 5.0 kHz at 25 kHz
Noise suppression	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20/25 kHz
Audio sensitivity	+ 1 dB at - 3dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE++

Ambient data	
Operating temperature range	- 30 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C

All technical specifications were tested according to the relevant standards.
Subject to change on the basis of continuous development.