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 excellent digital functions for a sophisticated and ambitious communication. RD985 – Your digital advantage over your competitors!

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.de/en

Repeater

RD985

DMR repeater

Highlights

Dual mode and automatic change
The RD985 repeater can be operated both in analogue and in digital mode and is completely compatible to the currently used analogue systems. The device can automatically change between digital and analogue 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 a constant power (up to 50 watt) and in this way meets the high requirements of all conventional digital radio systems.

Flexible installation options
The repeater RD985 can be installed in a 19-inch equipment rack with 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 applied TDMA technology, twice as many users can use the same channel as in case of analogue or digital FDMA systems. Due to the restricted frequency resources, this represents an important relief and reduces the expenses for system terminals and frequency licences.

Secure communications
The RD985 repeater includes an expanded digital encryption function which protects your communication against wire tapping.

High cooling capacity
Thanks to the heat dissipation the power amplifier can dissipate its heat extra-ordinarily efficiently. In addition, the integrated fan system supports the stable and efficient operation.

Operation in repeater and/or basic mode
If the repeater is operated on an analogue channel, you can select 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. The test results of independent laboratories showed that the trouble-free service life of the device amounts to up to 100,000 hours, thus meeting the requirements of use in extreme situations.

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

Professional design
The innovative LED display on the volume control supplements the attractive design of the device and, at the same time, optimises its utilisation. Thanks to the user-friendly menus and the large navigation control, the use of the device is extremely simple.

Clear LED display
The LED displays on the front allow an easy identification of the current status.

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

Standard accessories


Power cable

Optional accessories (excerpt)


External power supply PS22002


Programming cable (USB) PC37


Hand-held microphone SM16A1


Table microphone SM16A1


Installation kit for duplexer BRK09


Installation kit for 19-inch racks (black) BRK12

The illustrations shown above are only for reference purposes. The products themselves may vary from these representations.

Technical data

General data	
Frequency ranges	UHF1: 400 – 470 MHz UHF2: 450 – 520 MHz UHF3: 350 – 400 MHz VHF: 136 – 174 MHz
Channel capacity	16
Channel spacing	12.5 / 20 / 25 kHz
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
Duty cycle	100 %
Dimensions (W × H × L)	483 × 88 × 366 mm / 19 × 3.4 × 14.4 inches
Weight	8.5 kg
LCD display	220 × 176 Pixel, 262,000 colours, 2.0 inches, 4 rows

Receiver	
Sensitivity (analogue)	0.3 µV (12 dB SINAD) 0.22 µV (standard) (12 dB SINAD) 0.4 µV (20 dB SINAD)
Sensitivity (digital)	0.3 µV / BER 5 %
Blocking TIA-603 ETSI	 90 dB 90 dB
Adjacent channel selectivity TIA-603 ETSI	 65 dB at 12,5 kHz / 75 dB at 20 / 25 kHz 60 dB at 12,5 kHz / 70 dB at 20 / 25 kHz
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 response	+ 1 to - 3 dB
Conducted spurious emission	< 57 dBm

Transmitter	
Transmitting power	5 – 50 W
Frequency modulation	11 KΦF3E at 12.5 kHz 14 KΦF3E at 20 kHz 16 KΦF3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K6ΦFXD 12.5 kHz (data and voice): 7K6ΦFXE
Conducted / radiated emission	- 36 dBm < 1 GHz - 30 dBm > 1 GHz
FM hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Modulation limiting	± 2.5 kHz at 12.5 kHz ± 4.0 kHz at 20 kHz ± 5.0 kHz at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20/25 KHz
Audio response	+ 1 to - 3 dB
Audio distortion	≤ 3 %
Digital vocoder	AMBE + + / SELP
Digital protocol	ETSI-TS102 361-1, 2 & 3

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

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

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SGS Certificate DE11/81829313

Hytera Mobilfunk GmbH

Adress: Fritz-Hahne-Straße 7, 31848 Bad Münder, Germany
Phone: + 49 (0)5042 / 998-0 **Fax:** + 49 (0)5042 / 998-105 **E-Mail:** info@hytera.de
www.hytera.de/en

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