RD985S

DMR repeater

The DMR all-rounder

The digital repeater RD985S is a genuine multi-talent: It supports not only conventional radio operation in analog and DRM modes, but can also be used in DMR trunked radio systems and, besides, is responsible for radio coverage in DMR Simulcast and Hytera XPT Systems.

Heart of professional radio systems

All the repeaters from Hytera can be connected in digital mode via IP connection to a comprehensive radio network. In analog mode, the repeaters can be connected together back-to-back.

Upgradeable for big tasks

The RD985S repeater supports not only conventional analog and digital modes, but also other modes that can be unlocked with an upgrade. It can be upgraded into a base station for DMR synchronization, DMR trunked radio or Hytera XPT radio systems. This means that the RD985S is a secure investment for growing radio projects.

High transmitting power

The repeater RD985S offers an adjustable transmitting power of up to 100 watts (in the UHF) and thereby satisfies the high requirements placed on modern PMR radio systems.

Technical Data RD985S

General data

Frequency range	RD985S: VHF: 136 – 174 MHz UHF: 400 – 470 MHz 450 – 520 MHz RD985S 100 W: UHF: 400 – 470 MHz
Supported operating modes	▪ DMR Tier III (optional, ETSI TS 102 361-1/2/3) ▪ XPT (optional) ▪ DMR Tier II (ETSI TS 102 361-1/2/3/4) ▪ DMR Tier II Simulcast (optional) ▪ Analog
Number of channels	16
Number of zones	1
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	RD985S: 13.6 ± 15% V_{DC} RD985S 100 W: 28 V_{DC}
Max. power consumption (in stand by)	RD985S: ≤ 0.8 A RD985S 100 W: ≤ 0.5 A
Max. current consumption (during transmission)	RD985S: ≤ 11 A RD985S 100 W: ≤ 12.5 A
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (H × B × T)	88 x 483 x 366 mm
Weight	8.5 kg
LCD display	220 x 176 pixels, 262,000 colors, 2.0 inches, 4 rows

Environmental conditions

Operating temperature range	-30 °C to +60 °C
Storage temperature range	-40 °C to +85 °C
Relative humidity	< 95%

Transmitter

Transmitting power	RD985S: 1 – 50 W RD985S 100 W: 5 – 100 W
Modulation	11 K0F3E at 12.5 kHz 14 K0F3E at 20 kHz 16 K0F3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
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 cancellation	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 response (TIA-603D)	+1 dB to -3 dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE +2™

Receiver

Sensitivity (analog)	0.28 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 / 25 kHz 65 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
Signal-noise ratio (S/N)	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 (TIA-603D)	+1 dB to -3 dB
Conducted spurious emission	< -57 dBm

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.

Hytera Mobilfunk GmbH

Address: 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-mobilfunk.com

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