RD98X - Powerful Digital Repeater

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RD98X Higher Efficiency, Richer Experience

- [x] Smart Digital-Analog Switch
- [x] Outstanding Heat Dissipation

As a professional repeater built to the DMR standard, RD98X integrates user concerns and actual requirements. Powerful digital feature, remarkable service quality and considerate ergonomic design It will refresh your communication experience!

Applications

Public Safety	Utility	Transportation
Energy and Forestry	Business	Sports

Product Features

Smart Digital-Analog Switch

This repeater supports digital and analog modes. It can smartly select the right one based on the type of received signal, allowing you to enjoy digital delights with ease.

Advanced TDMA Technology
The application of Time Division Multiple Access (TDMA) technology greatly enhances spectrum efficiency, which allows twice the user compared with that of traditional FDMA. Obviously, this can not only save your cost in base station and frequency license, but also relieve the pressure of increasing shortage in spectrum resources.

Outstanding Heat Dissipation
The unique cooling design combining a built-in heat pipe and a temperature- controlled fan ensures quick heat dissipation enabling the repeater to work normally even with full power.

Handy Management Service
With the management software, you can remotely monitor and diagnose a repeater. In addition, you can either record or play back the audio freely in digital mode.

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Innovative LED Design
The innovative LED and the 2.0" HD color display delivers to you the repeater status clearly, as well as a pleasing visual experience.

Accessory Expansion
RD98X supports third party to develop accessories expansion via front and rear port of the Repeater. This is achieved via the signal streaming and pin control through the repeater ports.

Main Functions

Repeater Diagnostic And Control (RDAC)
RD98X supports Remote (via IP port to connect to internet) and Local diagnostic (via USB) PC applications to monitor, diagnose and control the repeater status, thus increasing the maintenance efficiency. Hytera's developed RDAC is able to support multiple master network connections to allow radio administrator to monitor multiple radio network upcoming on-line!

Dual Slot Digital Audio Streaming
RD98X supports streaming of both the voice slots via the rear port accessory pins, allowing third party for capability expansion.

Analog Digital Auto-switch
RD98X supports Analog and Digital channel auto switching, allowing efficient frequency sharing between Analog and Digital users during the digital migration.

IP Multi-site Connect
RD98X supports network interconnect via the IP port of repeater to form a private radio network, allowing wide area coverage to meet dispersed locations data and voice communications.

50W High Power
RD98X supports maximum repeating power of 50W, and thus increasing the system coverage with lesser setup equipments.

16 Channels
RD98X supports maximum of 16 channels, allowing efficient radio network control at different scenarios. The channel change can be performed either via RDAC PC tools, via the repeater's front panels channel knob and via the channel steering from the repeater's rear port.

Analog/Digital Operating Mode
RD98X supports Analog and Digital operating modes.

Analog/Digital Back-to-Back Interconnect
RD98X supports different operating mode of Analog and Digital to interconnect for voice cross patch, allowing Analog users to communicate to the Digital users and vice versa. This has allowed the smooth migration for Analog users to the digital world!

Analog Repeater Knockdown
RD98X supports repeater knockdown, when activated via the repeater's rear accessory pin, will disable the transmit path of the repeater.

Multi CTCSS/CDCSS Decode
RD98X supports decoding up to maximum of 16 CDCSS/CTCSS in Analog channels, allowing repeating of different Analog voice users from various groups.

Analog Scan
RD98X supports Analog voice and signaling scan, allowing repeating of different Analog voice users from various groups

Repeater Access Management
RD98X supports radio users access control to the repeater, allows better security to prevent un authorized users from accessing the radio network.

Analog/Digital Telephone Interconnect (via DTMF signaling)
RD98X supports simplex voice communications between radio and telephone users. It allows a radio user to make a telephone call; or a telephone user to make either a Group or Private call to radio users.This feature utilizes the Commercial Off The Shelf (COTS) Analog Phone Patch boxes and a Plain Old Telephone Service (POTS) line to connect the Repeater to the Corporate Office Phone System (PBX) or Public Switched Telephone Network (PSTN).

Continuous Wave Identification (CWID)
RD98X supports Analog transmission of the repeater identification in Morse code format.

Specifications

General

Frequency Range		UHF1:400-470MHz; UHF2:450-520MHz UHF3:350-400MHz; VHF: 136-174MHz
Channel Capacity		16
Channel Spacing		12.5kHz/20kHz/25kHz
Operating Voltage		13.6V±15%
Current Drain	Standby	<1.0A

	Transmit	<11A
Frequency Stability		±0.5ppm
Antenna Impedance		50Q
Duty Cycle		100%
Dimensions (H X W X D)		88x483x366 mm
Weight		8.5 kg
LCD Display		220 x 176 pixels, 262000 colors; 2.0 inch, 4 rows
		Receiver
Sensitivity	Analog	0.28pV (12dB SI NAD); 0.22 pV (Typical) (12dB SI NAD) 0.4pV(20dBSINAD)
	Digital	0.3pV/BER5%
Adjacent Channel Selectivity		65dB @ 12.5kHz; 75dB @ 20/25kHz
TIA-603		65dB @ 12.5kHz; 75dB @ 20/25kHz
ETSI		
Intermodulation		75dB @ 12.5/20/25kHz
TIA-603		70dB @ 12.5/20/25 kHz
ETSI		
Spurious Response Rejection		80dB @ 12.5/20/25 kHz
TIA-603		80dB @ 12.5/20/25 kHz
ETSI		
Hum and Noise		40dB @ 12.5kHz 43dB @ 20kHz 45dB@25kHz
Rated Audio Power Output		0.5W
Rated Audio Distortion		≤ 3%
Audio Response		+1 to -3dB
Conducted Spurious Emission		<-57dBm
		Transmitter
RF Power Output		1-50W
FM Modulation		11K0F3E @ 125kHz; 14K0F3E @ 20kHz; 16K0F3E @ 25kHz
4FSK Digital Modulation		12.5kHz Data Only: 7K60FXD; 12.5kHz Data & Voice: 7K60FXW
Conducted / Radiated Emission		-36dBm <1GHz;-30dBm >1GHz
Modulation Limiting		±2.5kHz @ 12.5 kHz; ±4.0kHz @ 20kHz; ±5.0kHz @ 25kHz
FM Hum & Noise		40dB @ 12.5kHz; 43dB @ 20kHz; 45dB @ 25kHz
Adjacent Channel Power		60dB @ 12.5kHz; 70dB @ 20/25kHz
Audio Response		+1 to -3dB
Audio Distortion		≤ 3%
Digital Vocoder Type		AMBE++, SELP, NVOC, COMM
Digital Protocol		ETSI-TS102 361-1, -2, -3
		Environmental Specifications
Operating Temperature		-30°C to +60°C
Storage Temperature		-40°C to +85°C

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development

Standard Accessories

Power Cord

Optional Accessories

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