Repeater

RD98XS

Digital Super Repeater

As an improved version of RD98X DMR digital repeater, RD98XS adopts a more powerful and compatible hardware platform, and can flexibly function as 8 kinds of products by software upgrade, meeting customers' requirements in different periods for higher ROI. The possible functions are:

- Analog conventional repeater
- Analog simulcast transeiver
- MPT trunking transceiver
- MPT trunking simulcast transeiver*[1]
- Digital conventional repeater
- Digital simulcast transeiver*[1]
- DMR trunking transceiver
- DMR trunking simulcast transceiver*[1]

Front of RD98XS

Rear of RD98XS

Ergonomic Design

① **Modularized Design**
Helpful to enhance reliability and performance.

② **Large-size Colour Display & UI Interface**
The 2.0"TFT LCD display & UI interface enables you to access and manage the repeater easily.

③ **Ergonomic Navigation Knob**
Easy access to functions with big navigation knob to facilitate operation.

④ **Excellent 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 well even with full load.

⑤ **LED Indicator**
The LED indicators enables you to identify the repeater status clearly.

⑥ **Compact Body**
The 2RU/19"rack allows more installation flexibility while requiring less space.

⑦ **Built-in Duplexer**
Enough space is reserved for built-in duplexer, saving installation space.

⑧ **4 Programmable Keys**

⑨ **Built-in Speaker**

Additional Features

Compatible Hardware and Scalable Software
Based on a unified hardware platform, RD98XS enables customers to upgrade software from analog to digital, conventional to simulcast, and conventional to trunking capabilities without purchasing a new repeater.

Repeater Diagnostics and Control
Through a PC-based application, the product can monitor, diagnose and control remote (connected to the Internet via an IP port) and local repeaters (via a USB port), thus increasing the productivity. Hytera's RDAC software supports multi-site connection and allows the administrator to monitor networked repeaters.

Voice via Dual Time Slots (easy for monitoring and voice recording)
In digital mode, RD98XS supports voice input and output through dual time slots and enables users to record calls continuously.

Digital-analog Interconnection for Smooth Transition
Back to back interconnection of digital & analog network can be achieved by wired or wireless IP, ensuring a smooth analog-to-digital transition.

Flexible IP Networking
By connecting geographically distributed repeaters that run at the same or different frequencies to form an IP-based and location-independent wireless communication network, the IP feature allows mobile terminals to obtain voice and data services while roaming.

High Reliability
MTBF of up to 100,000 hours for cyclic and continuous transmission at 50W TX power and 100% duty cycle.

* Additional GPS board is required when using as simulcast transceiver

			Portable Radio		Mobile Radio	Repeater
			PD70X/70XG	PD78X/78XG	MD78X/78XG	RD98X/RD98XS
General	Frequency Range(MHz)		UHF1: 400-470MHz; UHF2: 450-520MHz; UHF3: 350-400MHz; UHF5: 806-941MHz *; VHF: 136-174MHz			
	Channel Capacity		32	1024		16
	Zone Capacity		3 (each with a maximum of 16 channels)	64 (each with a maximum of 16 channels)		-
	Channel Spacing		25/20/12.5 KHz			
	Operating Voltage		7.4V (rated)		13.6 V ± 15%	
	Current Drain	Standby	-	-	< 0.6A	< 0.8A
		Receive	-	-	< 2.0A	-
		Transmit	-	-	< 12A (45W/50W) < 8A (25W) < 5A (5W)	<11A
	Battery		2000mAh (Li-Ion)		-	-
	Battery Life(5-5-90 Duty Cycle, High TX Power)		Analog: UHF1: 13.5h/12h (G) UHF2: 12.5h/11h (G) UHF3: 12.5h/11h (G) UHF5* : 9.5h/8.5h(G) VHF: 11h/10h (G)	Digital: UHF1: 15.5h/14h (G) UHF2: 14.5h/12.5h (G) UHF3: 14.5h/12.5h (G) UHF5*: 12h/11h(G) VHF: 13.5h/12h (G)	-	-
	Frequency Stability		± 1.5ppm			± 0.5ppm/ ± 10Hz (transeiver)
	Antenna Impedance		50 Ω			
	Duty Cycle		-			100%
	Dimensions (H × W × D)		125 X 55 X 35mm (with standard battery, without antenna)	125 X 55 X 37mm (with standard battery, without antenna)	60 X 174 X 200mm	88 X 483 X 366mm
	Weight		335g (with antenna & standard battery)	355g (with antenna & standard battery)	1.7Kg	8.5Kg
	Front Case		PC		PC+ABS	-
	LCD Display		-	160 × 128 pixels, 65536 colours 1.8 inch, 4 rows	220 × 176 pixels, 262000 colours 2.0 inch, 4 rows	
Transmitter	RF Power Output		UHF1/UHF2/UHF3 High Power: 4W; UHF5* High Power: 3W; UHF1/UHF2/UHF3/UHF5* Low Power: 1W VHF High Power: 5W VHF Low Power: 1W		Low Power UHF1/UHF2/UHF3/UHF5*: 5-25W; VHF: 5-25W High Power UHF1//UHF2/UHF3: 5-45W;UHF5* : 5-35W VHF: 5-50W	5-50W (adjustable)
	FM Modulation		11K0F3E @ 12.5KHz 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 @ 20 kHz ± 5.0kHz @ 25 kHz			
	FM Hum & Noise		40dB @ 12.5KHz 43dB @ 20KHz 45dB @ 25KHz			
	Adjacent Channel Power		60dB @ 12.5KHz 70dB @ 20/25KHz			
	Audio Response		+1 ~ -3dB			
	Audio Distortion		≤3%			
	Digital Vocoder Type		AMBE++ or SELP			
	Digital Protocol		ETSI-TS102 361-1，2&3			
Receiver	Sensitivity	Analog	0.3 μ V (12dB SINAD) ; 0.22 μ V (Typical) (12dB SINAD) ; 0.4 μ V (20dB SINAD)			
		Digital	0.3 μ V/BER5%			
	Selectivity TIA-603 ETSI		60dB @ 12.5KHz; 70dB @ 20/25KHz 60dB @ 12.5KHz; 70dB @ 20/25KHz		65dB @ 12.5KHz; 75dB @ 20/25KHz 60dB @ 12.5KHz; 70dB @ 25/20KHz	65dB @ 12.5KHz; 75dB @ 20/25KHz 65dB @ 12.5KHz; 75dB @ 20/25KHz
	Intermodulation TIA-603 ETSI		70dB @ 12.5/20/25KHz 65dB @ 12.5/20/25KHz		75dB @ 12.5/20/25KHz 70dB @ 12.5/20/25KHz	75dB @ 12.5/20/25KHz 70dB @ 12.5/20/25KHz
	Spurious Response Rejection TIA-603 ETSI		70dB @ 12.5/20/25KHz 70dB @ 12.5/20/25KHz		75dB @ 12.5/20/25KHz 70dB @ 12.5/20/25KHz	80dB @ 12.5/20/25KHz 80dB @ 12.5/20/25KHz
	Blocking TIA-603 ETSI		80dB 84dB		90dB 84dB	90dB 90dB
	S/N		40dB @ 12.5KHz; 43dB @ 20KHz; 45dB @ 25KHz			
	Rated Audio Power Output		0.5W		Internal (@20ohm load)3W External (@8 ohm load)7.5W	0.5W
	Rated Audio Distortion		≤3%			
	Audio Response		+1 ~ -3dB			
	Conducted Spurious Emission		< -57 dBm			
Environmental Specifications	Operating Temperature		-30℃ ~ +60℃			
	Storage Temperature		-40℃ ~ +85℃			
	ESD		IEC 61000-4-2 (level 4); ± 8kV (contact); ± 15kV (air)			-
	American Military Standard		MIL-STD-810 C/D/E/F/G			-
	Dust & Water Intrusion		IP67 Standard		IP54 Standard	-
	Humidity		Per MIL-STD-810 C/D/E/F/G Standard			-
	Shock & Vibration		Per MIL-STD-810 C/D/E/F/G Standard			-
GPS	TTFF (Time To First Fix) Cold Start		<1 minute			-
	TTFF (Time To First Fix) Hot Start		<10 seconds			-
	Horizontal Accuracy		<10 meters			-

* This frequency band is only available for DMR trunking mode.

All Specifications are subject to change without notice due to continuous development.