

RD98XS

Digital Super Repeater

DMR Simulcast and DMR Trunking Upgradable

IP Multi-site Connection

Digital Telephone Interconnection

RDAC Remote Management Software



RD98XS Digital Super Repeater

RD98XS is a 50W, repeater which can work in analog and DMR conventional modes. It can be upgraded to trunking or simulcast mode by software only.

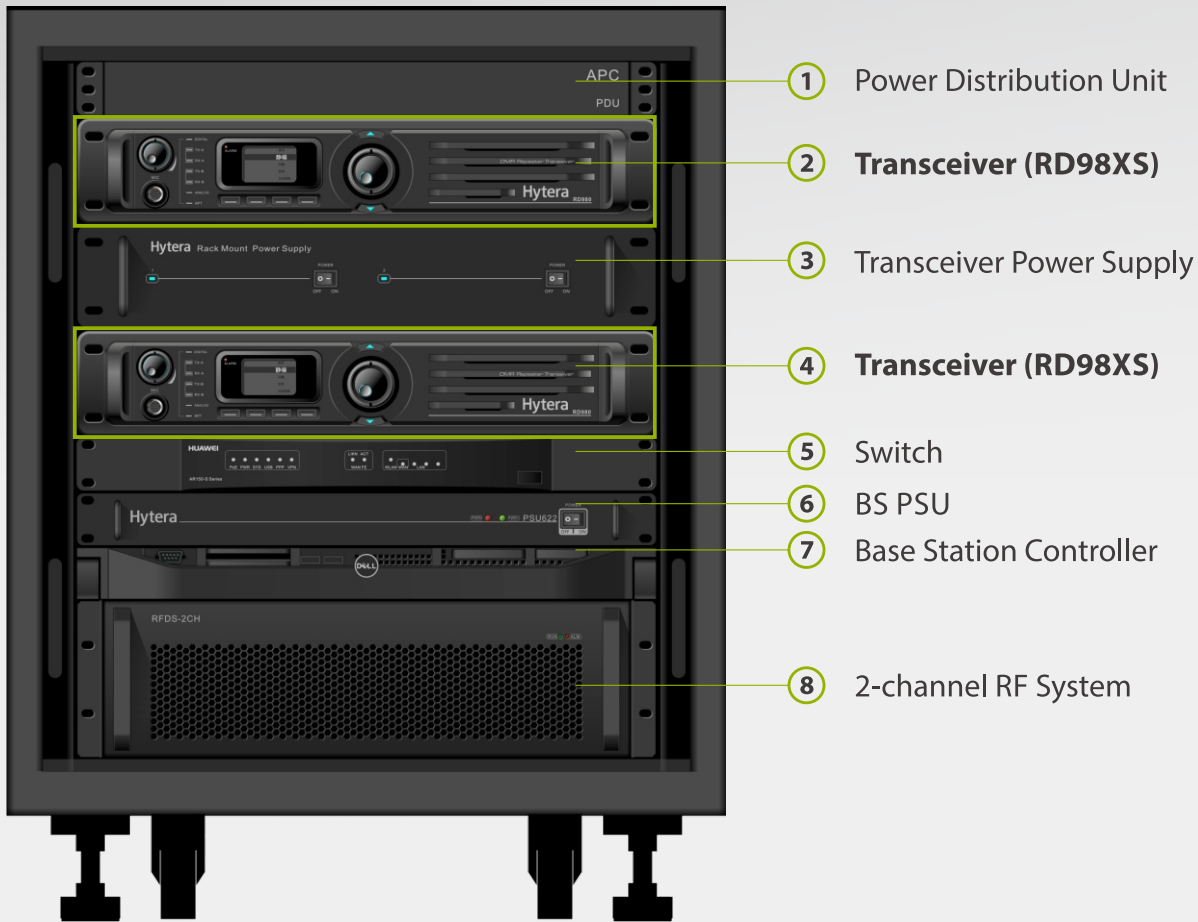
One step upgrade package makes it easy to operate in analog conventional, MPT-1327, DMR conventional, DMR trunking and DMR simulcast with only one hardware platform.



Conventional Features

- **Repeater Diagnostic And Control (RDAC)**
This PC-based application can monitor, diagnose and control the repeater in network locally (via USB port) or remotely (via IP port).
- **Dual Slot Digital Audio Streaming**
RD98XS supports streaming of both the voice slots via the rear port accessory pins, allowing third party for capability expansion.
- **Analog /Digital Auto switch**
RD98XS supports Analog and Digital channel auto switching, allowing efficient frequency sharing between Analog and Digital users during the digital migration.
- **IP Multi-site Connection**
RD98XS supports network interconnection via the IP port to form a private radio network. This extends repeater coverage for data and voice communication.
- **Analog/Digital Telephone Interconnect (via DTMF signaling)**
RD98XS supports simplex or duplex calls 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.
- **Analog Scan**
RD98XS supports Analog voice and signaling scan, allowing repeating of different Analog voice users from various groups.

Upgrade to DMR Trunking Transceiver



DMR trunking Lite 2 carrier BS

- **Open Standard**

DMR Trunking Lite is based on DMR tier III standard, which is a digital radio standard for professional radio users. With dedicated control channel, DMR Trunking Lite can achieve versatile functions.

- **Smooth Migration**

DMR Trunking Lite transceiver supports smooth migration from analog to digital, from conventional to trunking. Multi-modes provide you different choices for continual investment.

- **Integrated RF System**

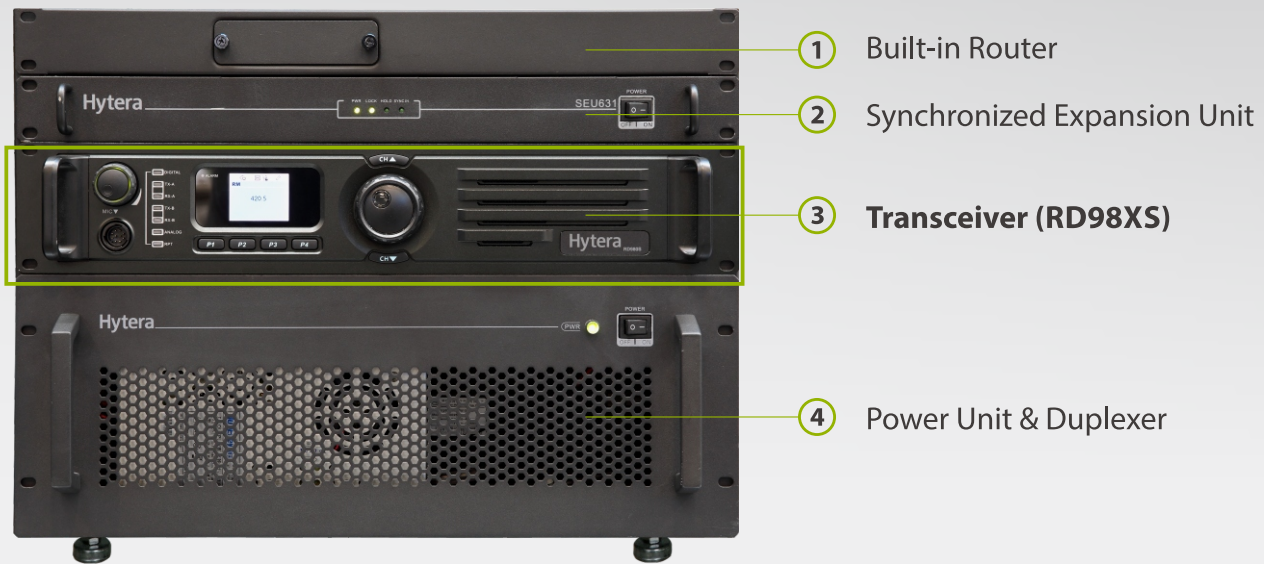
Integrated 2-carrier RF system significantly reduces the space and cost for divider, combiner and duplexer.

- **Non-centralized Structure Design**

Non-centralized structure is only used for less than 5 base stations.

It ensure a cost-effective and flexible networking especially suited to small scale networks.

Upgrade to DMR Simulcast Transceiver



DMR Simulcast Single Carrier BS

- **Smooth Roaming and Handover**

In a simulcast system, the radio is capable of roaming and handover seamlessly between different Bss. The communication can continue normally during handover.

- **Dynamic Voting**

Simulcast system provides good voice performance in overlap area as radios in overlap area always receive the best voice frame through dynamic voting. As a voting center, MSO is used to analyze each voice frame received from Base Stations in real time. The best voice frame will be extracted and sent to radios.

- **Analog/Digital Self-adaptive**

Simulcast system supports both analog and digital modes, and automatically switches the mode based on the incoming signals.

- **Smart Subnetting and Patching**

DMR simulcast system can be divided into different subnets by Base Station or by time slot of channel unit in each Base Station. Each subnet can work as an independent simulcast system. Different subnets can be patched to make a larger subnet temporarily according to the requirements.

Upgrade Features

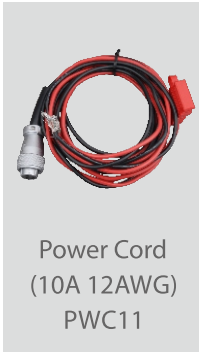
Flexible application via software or hardware upgrade:

- Digital conventional repeater
- DMR trunking transceiver
- Analog simulcast transceiver
- Digital simulcast transceiver
- Analog conventional repeater
- MPT trunking transceiver

RD98XS Accessories

Standard Accessories

Optional Accessories



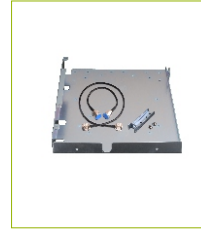
Power Cord
(10A 12AWG)
PWC11



Palm Microphone
SM16A1



Desktop Microphone
SM10A1



Build-in Duplexer
Installation Kit (for
DT11-DT17) BRK16



External Power Supply
(300W, backup power
applicable) PS22002



Bracket (2U)(black)
BRK12



Bracket (2U)(grey)
BRK14



10pin programming
cable (USB) PC37



DB26 data cable
(USB) PC40



Omni-directional
Antenna



Palm Microphone
(IP67) SM16A2



Back to Back Data
Cable PC49



Duplexer

DT11: Duplexer(Frequency: 380-470MHz) (Frequency Spacing:10MHz)(Non-RoHS)
 DT12: Duplexer(Frequency: 160-174MHz)(Tx/Rx Spacing:5MHz)(RoHS)
 DT13: Duplexer(Frequency: 148-160MHz)(Tx/Rx Spacing:5MHz)(RoHS)
 DT14: Duplexer(Frequency: 330-400MHz)(Tx/Rx Spacing:10MHz)(Non-RoHS)
 DT15: Duplexer(Frequency: 136-148MHz)(Tx/Rx Spacing:5MHz)(RoHS)
 DT16: Duplexer(Frequency: 440-480MHz)(Tx/Rx Spacing:5MHz)(RoHS)
 DT17: Duplexer(Frequency: 480-512MHz)(Tx/Rx Spacing:5MHz)(RoHS)
 DT23: Duplexer(Frequency: 136-174MHz)(Tx/Rx Spacing:4MHz)(Non-RoHS)

Pictures above are for reference only and may vary from actual products.



Specifications

General	Frequency Range	UHF1: 400-470MHz; UHF2: 450-520MHz UHF3: 350-400MHz; UHF5: 806-941MHz VHF1: 136-174MHz; VHF3: 210-270MHz	
	Channel Capacity	64	
	Channel Spacing	12.5kHz/20kHz/25kHz	
	Operating Voltage	13.6V \pm 15%	
	Current Drain	Standby	\leq 1.0A
		Transmit	\leq 11A
	Frequency Stability	\pm 0.5ppm	
	Antenna Impedance	50 Ω	
	Duty Cycle	100%	
	Dimensions (H×W×D)	88 x 483 x 366 mm	
	Weight	8.5Kg	
	LCD Display	220 x 176 pixels, 262000 colors, 2.0 inch, 4 rows	

Receiver	Sensitivity	Analog	0.28 μ V (12dB SINAD); 0.22 μ V (Typical)(12dB SINAD); 0.4 μ V (20dB SINAD)
		Digital	0.3 μ V/BER5%
	Adjacent Channel Selectivity	TIA-603	65dB @ 12.5kHz; 75dB @ 20/25kHz
		ETSI	65dB @ 12.5kHz; 75dB @ 20/25kHz
	Intermodulation	TIA-603	75dB @ 12.5/20/25kHz
		ETSI	70dB @ 12.5/20/25kHz
	Spurious Response Rejection	TIA-603	80dB @ 12.5/20/25kHz
		ETSI	80dB @ 12.5/20/25kHz
	Hum and Noise		40dB@12.5kHz 43dB@20kHz 45dB@25kHz
	Rated Audio Power Output		0.5W
	Rated Audio Distortion		\leq 3%
	Audio Response		+1 ~ -3dB
	Conducted Spurious Emission		<-57dBm

Transmitter	RF Power Output	UHF1/UHF2/UHF3: 5-50W (continuous) UHF5(851-870MHz): 5-35W (continuous) UHF5(935-941MHz): 5-30W (continuous) VHF1/VHF3: 5-50W (continuous)
	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 \leq 1GHz; -30dBm >1GHz
	Modulation Limiting	\pm 2.5kHz @ 12.5kHz; \pm 4.0kHz @ 20kHz; \pm 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 ~ -3dB
	Audio Distortion	\leq 3%
	Digital Vocoder Type	AMBE+2™, SELP
	Digital Protocol	ETSI-TS102 361-1,-2,-3

Environmental Specifications	
Operating Temperature	-30°C~+60°C
Storage Temperature	-40°C~+85°C

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development.
Notes: RD98XS, MD78X(G), PD78X(G), PD70X(G): X=0, 2, 5, 6 or 8, model number varies geographically. For details, please contact our regional sales representatives.



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