



MD78X/78XG

Versatile Digital Mobile Two-Way Radio

- Large-size HD Transflective Color Display
- Superior Digital Voice





MD78X/78XG

Higher Efficiency,
Richer Experience

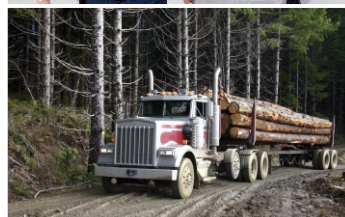
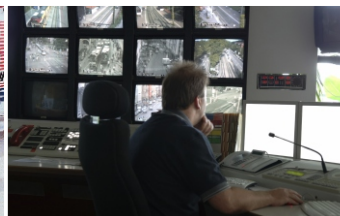
As a product built to the DMR standard, MD78X/78XG (MD78XG is the model with GPS) is endowed with ergonomic design, all-round digital functions and remarkable quality. These features improve your management efficiency and enable you to be responsive to emergent situations.

Applications

Public Safety
Forest Industry

Public Utility
Business

Transportation (port, airport, railway, etc.)
Manufacturing



Product Highlights

● User-centered Design

The large-size color display allows good visibility even under strong light. And the seven programmable keys facilitate your communication in various conditions.

● Reliable Quality

MD78X/78XG is strictly compliant with MIL-STD-810 C/D/E/F/G and IP54 standards, ensuring outstanding performance even under harsh environments.

● Superior Voice

With narrowband codec and digital error-correction technologies, MD78X/78XG delivers superior voice under noisy environments. The AGC technology maintains a suitable voice volume, and the built-in 4W speaker further ensures clear and crisp voice.

● Dual-slot Pseudo Trunk

The free slot can be allocated to enhance frequency efficiency and timely response under emergency.

● Versatile Services

In addition to voice services, MD78X/MD78X offers data services and selectable features, such as Text Message, Scan, Emergency, Channel Steering, Auto Registration, Lone Worker etc.

● Secondary Development

The third party partner can develop applications via the accessory port to extend radio functionality.

● Option Board Interface

MD78X/78XG supports option board interface. This allows third party partners to develop various applications to interconnect with the radio. They could control the radio to expand its functionality! Among the supported features are voice recording, encryption etc. Please refer to the API Partner Programmed for more information!

Main Features

● Dual Modes (Analog+Digital)

- MD78X/78XG can operate in either analog or digital mode. It is compatible with the prevalent analog system, ensuring a smooth analog-to-digital transition.

● Versatile Voice Calls

MD78X/78XG supports various voice call types, including Private Call, Group Call, All Call and Emergency Call.

● Positioning Service

MD78XG can display positioning information and transmit positioning message.

● Data Services

MD78X/78XG can send private and group text message. The third party application can control the radio via API (GPS, Radio Registration Services, Call Control, Telemetry, Data Transfer).

● Accessory Expansion

The third party can develop accessory via front and rear port to control the radio. (Note that features as channel steering, emergency footswitch have been supported via the rear port.)

● Various Analog Signaling Types

MD78X/78XG supports various analog signals (HDC1200, DTMF phone, 2-Tone and 5-Tone), various squelch signals (CTCSS/CDCSS), thus providing higher expansion capacity to the analog system.

● Supplementary Services

MD78X/78XG supports supplementary services of Radio Check, Remote Monitor, Call Alert, Radio Enable and Radio Disable.

● Multiple Languages

MD78X/78XG supports up to 26 languages, including English, Simplified Chinese, Traditional Chinese, German, Spanish, French, Italian, Polish, Russian, Turkish, Portuguese, Korean, Greek, Farsi, Arabic, Thai, Japanese, Kazakh, Czech, Hebrew, Amharic, Urdu and Croatian.

● One Touch

MD78X/78XG supports One Touch features that comprise of Text Message, Voice Calls and Supplementary Services.

● Scan

MD78X/78XG supports scanning of pure analog voice and signaling, pure Digital voice and data, and also mix mode scan that comprise of Analog and Digital activities.

● Roaming

MD78X/78XG supports automatic roaming among all sites in a IP Multi-site Connect system.

● Voice and Data Safety

MD78X/78XG supports analog scrambling, and digital encryption using Advanced Encryption Standard (AES) and ARCFOUR (ARC4) encryption methodology to secure both voice and data services.

● Analog/Digital Telephone Interconnect (via DTMF signaling)

MD78X/78XG 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.

● Software Upgradeable

New features can be enabled via software upgrade. Moreover, MD78X/78XG can switch between MPT and DMR trunking modes through license.

Standard Accessories

Palm Microphone
Power Cord

Microphone Hanger
Fuse

Microphone Hanger Screws
GPS Antenna (for MD78XG only)

Mounting Bracket

Specifications

General	Frequency Range	UHF1: 400-470MHz; UHF2: 450-520MHz UHF3: 350-400MHz; UHF5: 806-941MHz VHF1: 136-174MHz; VHF3: 210-270MHz		
	Channel Capacity	1024		
	Zone Capacity	64(each with a maximum of 256 channels)		
	Channel Spacing	Analog: 12.5/20/25kHz Digital: 12.5kHz		
	Operating Voltage	13.6V ±15%		
	Current Drain	Standby	< 0.6A	
		Receive	< 2.0A	
		Transmit	5W	< 5A
			25W	< 8A
	Frequency Stability	±1.5ppm		
	Antenna Impedance	50Ω		
	Dimensions (H×W×D)	60 x 174 x 200 mm		
	Weight	1.7Kg		
	LCD Display	220 x 176 pixels, 262000 colors, 2.0 inch, 4 rows		
Receiver	Sensitivity	Analog	0.3μV (12dB SINAD); 0.22μV (Typical) (12dB SINAD) 0.4μV (20dB SINAD)	
		Digital	0.3μV /BER5%	
	Selectivity TIA-603 ETSI	65dB @ 12.5kHz / 75dB @ 20/25kHz 60dB @ 12.5kHz / 70dB @ 20/25kHz		
	Intermodulation TIA-603 ETSI	75dB @ 12.5/20/25kHz 70dB @ 12.5/20/25kHz		
	Spurious Response Rejection TIA-603 ETSI	75dB @ 12.5/20/25kHz 70dB @ 12.5/20/25kHz		
	Hum and Noise	40dB @ 12.5kHz; 43dB @ 20kHz; 45dB @ 25kHz		
	Rated Audio Power Output	Internal (@20 ohm load)	3W	
		External (@8 ohm load)	7.5W	
	Max Audio Power Output	Internal (@20 ohm load)	8W	
		External (@8 ohm load)	20W	
Rated Audio Distortion	≤3%			
Audio Response	+1 ~ -3dB			
Conducted Spurious Emission	< -57dBm			

Transmitter	RF Power Output	Low Power UHF1/UHF2/UHF3: 5-25W; UHF5: 10-25W VHF1/VHF3: 5-25W
		High Power VHF1: 5-50W; UHF1/UHF2/UHF3: 5-45W; UHF5: 10-35W(806-900MHz), 10-30W(900-941MHz)
	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 @ 12.5kHz; ± 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 ~ -3dB
	Audio Distortion	≤ 3%
Digital Vocoder Type	AMBE+2™ or SELP	
Digital Protocol	ETSI-TS102 361-1,-2,-3	
Environmental Specifications	Operating Temperature	-30°C ~ +60°C
	Storage Temperature	-40°C ~ +85°C
	ESD	IEC 61000-4-2 (level 4) ± 8kV (contact) ± 15kV (air)
	American Military Standard	MIL-STD-810 C/D/E/F/G
	Dust & Water Protection	IP54
	Humidity	Per MIL-STD-810 C/D/E/F/G
	Shock & Vibration	Per MIL-STD-810 C/D/E/F/G

GPS (for MDT/8K only)	Accuracy specs are for long-term tracking (5 satellites visible at nominal -130dBm)	
	TTF (Time To First Fix) Cold Start	< 1 minute
	TTF (Time To First Fix) Hot Start	< 10 seconds
	Horizontal Accuracy	< 5m (50% probable) ; < 10m (95% probable)

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

Optional Accessories

External Speaker SM09D1	Desktop Microphone SM10A1	320W External Power Supply PS22002	Programming Cable (USB Port) PC37	Data Cable PC40	Keypad Microphone SM19A1	Antenna	GPS Antenna	1DIN vehicle mounting bracket	Adaptor cable for repeater accessory pin
Dispatch cable	Mobile Radio Remote Mount Kit	Cabinet Power Supply PS16001	Palm Microphone (IP67) SM16A2	Telephone Style Headset SM20A1	DB26 Connector Dispatching Cable PC43	Programming Cable (CPS programming and firmware upgrading) PC47	Pictures above are for reference only and may vary from actual products.		

Hytera Communications Corporation Limited
 Address: Hytera Tower, Hi-Tech Industrial Park North, Beihuan Rd.,
 Nanshan District, Shenzhen, China
 Tel: +86-755-2697 2999 Fax: +86-755-8613 7139 Post: 518057
 Http: //www.hytera.com Stock Code: 002583.SZ



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