Specifications

General				
	Frequences	UHF1: 400-470MHz; UHF2: 450-520MHz UHF3: 350-400MHz; VHF: 136-174MHz		
	Channel Capacity	1024		
	Zone Capacity	64(each with a maximum of 16 channels)		
	Channel Spacing	12.5 KHz / 20 KHz / 25 KHz*		
	Operating Voltage	13.6 V ± 15%		
	Current Drain	Standby	< 0.6A	
		Receive	< 2.0A	
		Transmit	5W	< 5A
			25W	< 8A
			45W/50W	< 12A
	Frequency Stability	± 0.5ppm		
	Antenna Impedance	50 Ω		
	Dimensions (H × W × D)	60 × 174 × 200 mm		
	Weight	1.7Kg		
	LCD Display	220 × 176 pixels, 262000 colors 2.0 inch, 4 rows		

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	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*		
	Blocking TIA-603 ETSI	90dB 84dB		
	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 (400-470MHz): 5-25W; UHF2 (450-520MHz): 5-25W UHF3 (350-400MHz): 5-25W; VHF (136-174MHz): 5-25W
		High Power
		UHF1 (400-470MHz): 5-45W; UHF2 (450-520MHz): 5-45W UHF3 (350-400MHz): 5-45W; VHF (136-174MHz): 5-50W
	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++or SELP
	Digital Protocol	ETSI-TS102 361-1,-2,-3

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	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 (for MD78XG only)		
	Accuracy specs are for long-term tracking(95th percentile values>5 satellites visible at a nominal -130dBm signal strength)	
	TTFF (Time To First Fix) Cold Start	<1 minute
	TTFF (Time To First Fix) Hot Start	<10 seconds
	Horizontal Accuracy	<10 meters

* 20KHz/25KHz will not be available on new equipment in the U.S. after 1/1/2011.

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

Standard Accessories

Palm Microphone Microphone Hanger Microphone Hanger Screws Mounting Bracket

Power Cord Fuse GPS Antenna（for MD78XG only）

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

MD78X/78XG

Versatile Digital Mobile Two-Way Radio

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

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MD78X/78XG
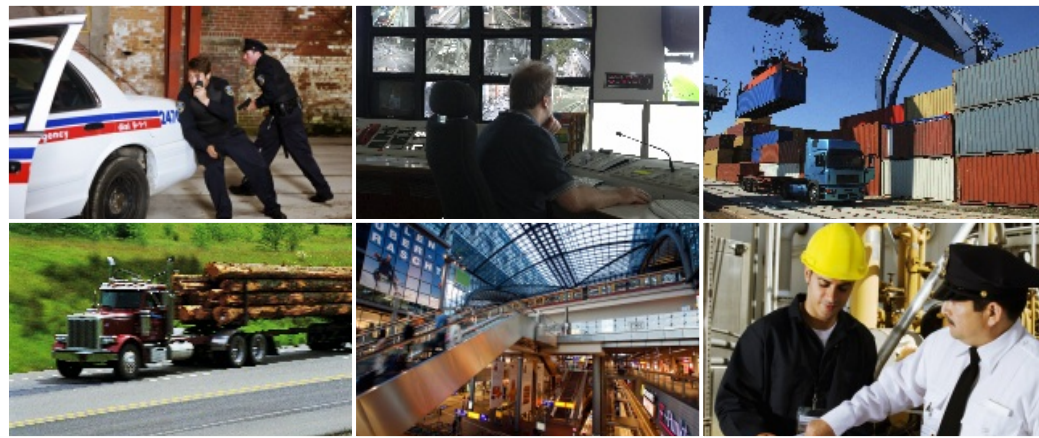### Higher Efficiency, Richer Experience

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 to increase your management efficiency and enable you to be responsive to emergent situations.

Applications

Public Safety	Public Utilities	Transportation (port, airport, railway, etc.)
Forest Industry	Business	Manufacturing

Product Features

● **User-centered Design**
The large-size color display allows good visibility even under extremely 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 the combined application of narrowband codec and digital error-correction technologies, MD78X/78XG is capable of ensuring you superior voice under noisy environments or at the edge of the coverage area. In addition, the adoption of the AGC technology also optimizes your voice. With a built-in 4W speaker, MD78X/78XG ensures clear and crisp voice communication.

● **Higher Spectrum Efficiency, Higher Channel Capacity**
Benefiting from the TDMA technology, MD78X/78XG allows twice the channels based on the same spectrum resource. This is a big help to relieve the stress of increasing shortage in spectrum resource.

● **Dual-slot Pseudo Trunk**
With this feature, the free slot can be allocated to a member that needs to communicate, effectively enhancing frequency efficiency and allowing you to communicate timely under emergency situations.

● **Secure Communication**
Besides the intrinsic encryption of the digital technology, MD78X/78XG provides enhanced encryption capability (such as 256-bit encryption algorithm) and the Scrambler feature (selectable).

● **Versatile Services**
In addition to conventional communication services, MD78X/78XG features rich data services and selectable functions such as Text Message, Scan, Emergency, Channel Steering, Auto Registration, High-speed Data Transmission* and Lone Worker.

● **Further Development Port**
The reserved front and rear port in MD78X/78XG allows users or any third party partner to further develop other helpful applications to extend the radio functionalities!

● **Option Board Interface**
MD78X/78XG supports option board interfaces to radio, allowing third party partner to develop various applications to interconnect with radios to control the radio to expand its functionalities! Among the supported features are voice recording, encryption* etc. Please refer to the API Partner Programmed for more information!

Main Functions

● **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**
Intelligent signaling of MD78X/78XG supports various voice call types, including Private Call, Group Call , All Call and Emergency Call.

● **GPS**
MD78XG supports viewing of GPS positioning information and sending of GPS text message.

● **Data Services**
MD78X/78XG supports data capabilities of sending Private, Group text message. It also supports Third Party to control the radio via Third party API (GPS, Radio Registration Services, Radio Call Control, Telemetry*, Data Transfer*), via Telemetry control to radio.

● **Accessory Expansion**
MD78X/78XG supports third party to develop accessories expansion via front and rear port of the mobile. (Check out that features as channel steering, emergency footswitch has been supported via the back port!)

● **Various Analog Signaling Types**
MD78X/78XG supports various analog signaling types (HDC1200, DTMF*, 2-Tone and 5-Tone), various squelch control types (CTCSS/CDCSS), thus providing higher function expansion capacity to the analog world.

● **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 13 languages, including English, Simplified Chinese, Traditional Chinese, German, Spanish, French, Italian, Polish, Russian, Turkish, Greek and Portuguese, allowing users to select it per their needs.

● **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 of all sites in a IP Multi-site Connect system.

● **Privacy of Voice and Data**
MD78X/78XG supports analog scrambling, and digital encryption using Advanced Encryption Standard (AES) and ARCFOUR (ARC4) encryption methodology to both voice and data.

● **Analog/Digital Telephone Interconnect (via DTMF signaling)**
MD78X/78XG 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 radio users to the Corporate Office Phone System (PBX) or Public Switched Telephone Network (PSTN).

● **Software Upgradable**
With this capability, you can enjoy firmware upgrade without purchasing a new piece of radio hardware!

* indicates functions available in later version.