



Digital Mobile Radio

MD782 *i*SERIES

- Superior Digital Voice with Analog Upgrade Options
- GPS Option and Integration with Data Applications





As a product built to the DMR standard, the MD782i delivers quality digital voice and data communications as well as all-round digital functions to increase your efficiency and enable you to be responsive to emergency situations. The radio can also be used as a control station to monitor and communicate with radio fleets from a desk. The GPS version of the radio allows integration with Hytera SmartDispatch or other 3rd party GPS Solutions.

Applications

Education

Utilities

Security

Waste Management

Forestry

Construction

Logistics

Taxi



Product Features

- **Over-the-air Alias**
MD782i can support sending radio alias over the air when PTT. The radio receives the call can decide to create a new contact or overwrite the old one automatically. It gives a great convenience to the customer to manage the fleet with the correct contact stored in each radio without touching each unit for programming.
- **OTAP**
OTAP for Conventional Repeater System: Over the Air Programming modifies the parameters of remote terminals through the air interface signaling, including digital conventional channel parameters and part parameters of the terminal. It saves time and manpower to operate and maintain a radio system.
- **Enhanced Quick GPS**
Compressed GPS data can be packaged in a single frame to greatly increase the capacity up to 450 units/min, which is tripled in DMR Tier II system. This enhancement improves channel efficiency for data and reduce hardware cost.
- **Secure Communication**
Besides the encryption inherent to digital technology, MD782i provides enhanced encryption capabilities (such as 256-bit encryption algorithm). This process includes End-to-end encryption and over-the-air encryption. It has analog scrambling, and digital encryption using Advanced Encryption Standard (AES) and ARCFOUR (ARC4) encryption methodology to both voice and data. (A feature for both DMR conventional and Tier III Trunked operation mode).
- **Trunked & Conventional Switch**
By pressing a single button or twisting the channel knob, it enables radios to be switched between trunking and conventional mode without restarting. During this process, registration & deregistration in trunking system is done automatically, and over the air authentication is still available.
- **Optimized Push-to-talk**
It allows a radio to set up audio buffer and store what the user speaks before the call is established. Then it sends the stored audio together with the coming real-time audio after the call is established. Therefore, users can talk right after pressing PTT without waiting for the "go-ahead tone". This feature also enhances the handover function without dropping communications in Tier III system during sites switch..
- **One Touch Call/Text**
Supports One Touch features that comprise of Preprogrammed Text Messages, Voice Calls and Supplementary Features
- **Out-of-range Notification RMO**
A radio is always notified when it has left the repeater coverage. The users can realize if they are in the talk range all the time by paying attention to the alert tone.
- **Advanced Back-to-back Communications**
More powerful than traditional back-to-back connection, this new feature sends not only audio, but also signaling and data. With the Advanced Back-to-back Connection, a radio receives a bunch of cross patch calls from another system, recognizing the PTT ID and receive text messages from initiator. It also establishes remote RF link between sites; through serial port back-to-back connection to repeater, the mobile transmits signal, data and voice. Data relays through serial port interconnection between the mobile and repeater. With this new feature, Hytera control station can provide RF link for the repeater network when there is no solid backhaul connection.
- **Full Duplex Call (Optional)**
Simultaneous voice transmission and reception in full duplex call now is available in Repeater Mode Operation (RMO) and Direct Mode Operation (DMO). It greatly enlarges full-duplex coverage beyond Trunking Mode Operation (TMO); long calls are made hands-free and much more efficiently between radios, and even between radios and phones. This feature requires the full duplex hardware version of MD782i.
- **Single Frequency Repeat (Optional)**
Using interference cancellation technique, the full duplex version of MD782i can use one slot to receive signal and another slot to transmit it on the same frequency at the same time, extending communications distance in DMO mode.
- **Scan**
Capable of scanning of pure analog voice and signaling, pure Digital voice and data, and also mix mode scan that comprise of Analog and Digital activities.
- **Software Upgradeable**
Upgradeable software enables new features without buying a new radio; MD782i could also be switched into DMR trunking modes with corresponding trunking license applied in the same hardware.
- **Analog Upgradeable Version**
The Analog version of the MD782i can be upgraded at your organizations own pace to provide an easy step-by-step migration to digital technology. Analog features include 2-tone, HDC 1200, 5-tone Signaling, Scan, and Scrambler.
- **One Touch Call/Text**
Supports One Touch features that comprise of Preprogrammed Text Messages, Voice Calls and Supplementary Features

Accessories

Included

- Palm Microphone
- Microphone Hanger & Screws
- Mounting Bracket
- Power Cord
- Fuse
- GPS Antenna

Optional



Keypad
Microphone
SM19A1



External
Speaker
SM09D1



Programming Cable
(USB Port)
PC37



Desktop
Microphone
SM10A1

Specifications

General	Frequency Range		VHF: 136 - 174MHz; UHF1: 400 - 470MHz UHF2: 450 - 520MHz; UHF3: 350 - 400MHz UHF5: 804 - 941MHz	
	Channel Capacity		1024	
	Zone Capacity		64 (with a maximum of 16 channels each)	
	Channel Spacing		25 / 20 / 12.5KHz	
	Operating Voltage		13.6 V ± 15%	
	Current Drain		Standby	<0.6A
			Receive	<0.2A
			Transmit	5W: <5A 25W: <8A 45/50W <12A
	Frequency Stability		± 1.5ppm	
	Antenna Impedance		50 Ω	
	Dimensions (HxWxD)		2.36 x 6.85 x 7.87 inches	
	Weight		3.75 lbs	
	FCC ID	MD782i	136-174 MHz: YAMMD782iVHF 400-470 MHz: YAMMD782iU1 450-520 MHz: YAMMD782iU2	
Industry Canada ID	MD782i	138-174 MHz: 8913A-MD782iVHF(L / H) 406.1-470 MHz: 8913A-MD782iU1(L / H) 450-470 MHz: 8913A-MD782iU2(L / H)		

Environmental Specifications	Operating Temperature		-22° F ~ +140° F
	Storage Temperature		-40° F ~ +185° F
	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	TTFF (Time To First Fix) Cold Start		<1 minute
	TTFF (Time To First Fix) Hot Start		<10 seconds
	Horizontal Accuracy		<10 meters



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Transmitter	RF Power Output		Low VHF & UHF1,2,3: 5-25W ; High VHF: 5-50W, UHF1,2,3: 5-45W UHF5: 5-35W
	FM Modulation (Analog Emissions Designator)		11K φF3E @ 12.5KHz; 14KφF3E @ 20KHz; 16KφF3E @ 25KHz
	4FSK Digital Modulation (Digital Emissions Designator)		12.5KHz Data Only: 7K6φFXD 12.5KHz Data & Voice: 7K6φFXW
	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™
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		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
	S/N		40dB @ 12.5KHz; 43dB @ 20KHz; 45dB @ 25KHz
	Rated Audio Power Output		Internal: @20ohm load - 3W External: @8 ohm load - 7.5W
	Max Audio Power Output		Internal: @20ohm load - 8W External: @8 ohm load - 20W
	Rated Audio Distortion		≤ 3%
	Audio Response		+1 ~ -3dB
Conducted Spurious Emission		< -57dBm	

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