

DMR Mobile Radio Product Comparison Guide

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Hytera

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Introduction

About Hytera US Inc

Hytera US Inc is a leader in research and development bringing next-generation radio technology to the market. Hytera US Inc is a solution provider whose core area of expertise is providing cost-effective radio systems of the highest reliability, durability, and value.

Digital Mobile Radio (DMR)

Digital Mobile Radio (DMR) is the open radio industry standard developed by the European Telecommunications Standards Institute (ETSI) and promoted worldwide by the DMR Association. Hytera was instrumental in the development of the DMR standard, and with the initial launch of fully compliant DMR two-way radios.

DMR digital capabilities improve radio communications and provide several advantages over legacy analog radio systems:

- Instant push-to-talk individual and group calling with radio identification.
- Doubles the capacity of existing licensed radio channels.
- Provides efficient use of infrastructure equipment.
- Enables power efficiency for longer battery life.
- Superior audio performance with digital background noise suppression

Hytera H-Series Mobile DMR Radios

Hytera DMR H-Series mobile and handheld radios are known for their legendary durability and ruggedness, and for being the best value for high-performance and feature rich radios.

- Advanced voice, text, and dispatch communications features
- Supports both analog and digital operation modes.
- Rugged and reliable with IP and MIL-STD compliance
- Emergency calling, lone worker, and priority interrupt safety features
- Encrypted transmissions for secure communications
- Built-in GPS and Bluetooth
- Wide variety of microphone, speaker, and mounting accessories

The HM652, HM682, and HM782 mobile radios provide good/better/best options for in-vehicle communications.

DMR Repeaters and Trunking Systems

Hytera provides a variety of radio network systems, including DMR Tier II Conventional Repeaters that can be connected via IP networks for wide-area deployments, extended pseudo trunking (XPT), and DMR Tier III trunking systems.

H-Series DMR Professional Mobile Radios Overview







HM652 DMR Mobile Radio	HM682 DMR Mobile Radio	HM782 DMR Mobile Radio
Good The compact and cost-effective HM652 is an entry-level mobile radio	**Better** The compact and high-value HM682 is a mid-tier mobile radio	**Best** The full-featured HM782 is the top-of-line mobile radio
MIL-STD 180G rated for shock and vibration and IP54 rated for water and dust intrusion		
512 Channels, 32 Zones, 32 Channels per Zone	512 Channels, 32 Zones, 256 Channels per Zone	1,024 Channels, 64 Zones, 256 Channels per Zone
Control Keys on Handheld Speaker Microphone	Control and programmable piano key buttons on control head	Control, navigation, and programmable piano key buttons on control head
LCD screen on Handheld Speaker Microphone	1.5” LCD full color display	2.4” LCD TFT full color display, 320x240
AI-Based Noise Cancellation, GPS and Bluetooth Models, Mixed Mode Channel Scanning (Analog and Digital),		
Basic ARC4 Digital Encryption, *Advanced AES Software Encryption (license required)	Hardware Encryption with SD card, Basic ARC4 Digital Encryption, *Advanced AES Software Encryption (license required)	
Dedicated Button on SM25A1 handset	Dedicated Emergency Call button	
Lone Worker, Remote Monitor, Remote Radio Enable/Disable (Stun and Revive)		
Can be deployed on DMR Tier II, and XPT radio systems		Can be deployed on DMR Tier II, XPT, and DMR Tier III radio systems
Functions as wireless gateway, and supports Back-to-Back and Clarity Transmission modes		
		Ethernet RJ-45 Port for digital gateway functions, Audio recording or HW Encryption with MicroSD card

H-Series DMR Professional Mobile Radios Feature Comparison Table (Page 1 of 2)







Feature	HM652	HM682	HM782
Control Keys	On Handheld Microphone	On Control Head with Screen Navigation Keys	On Control Head with Screen Navigation Keys
Display Screen	LCD display on handheld speaker microphone	1.5" LCD full color display	2.4" LCD TFT full color display, 320x240
Frequency Bands MHz	UHF 400-470	UHF 400-470	UHF 350-470, VHF 136-174
Channels (Analog or Digital)	512	512	1,024
Zones	32 (32 Channels per Zone)	32 (256 Channels per Zone)	64 (256 Channels per Zone)
RF Output Power	UHF 5-45W	UHF 5-45W	VHF 50W, UHF 45W
DMR & AI-Based Noise Suppression	YES	YES	YES
Pre-Defined Text Messaging	-	25 messages 256 characters each	25 messages 256 characters each
Free Form Text Messaging	–	–	YES
Programmable Buttons	3 (On Handheld Microphone)	3	5
GPS	YES (on specific models)	YES (on specific models)	YES
Bluetooth	YES (on specific models)	YES (on specific models)	YES
IP Rating	IP54	IP54	IP54
MIL-STD 810 C/D/E/F/G	YES	YES	YES
Channel Scanning	Analog and Digital	Analog and Digital	Analog and Digital
Voice Activated Mic (VOX)	YES	YES	YES

H-Series DMR Professional Mobile Radios Feature Comparison Table (Page 2 of 2)







Feature	HM652	HM682	HM782
Conventional Repeaters	YES	YES	YES
Pseudo Trunk Operation	YES	YES	YES
Extended Pseudo Trunk (XPT)	YES (With Multi-site License)	YES (With Multi-site License)	YES
DMR Tier III Trunking	-	–	YES*
Radio Registration Service (RRS)	YES	YES	YES
Roaming	YES	YES	YES
Digital Encryption	Basic, ARC4/AES*, Advanced Hytera AES*	Basic, ARC4/AES*, Advanced Hytera AES*	Basic, ARC4/AES*, Advanced Hytera AES*,
Hardware Encryption	-	-	Hardware Encryption with SD card
Analog Scrambler	YES	YES	YES
Emergency Calling	YES	YES	YES
Emergency Button	Dedicated Button on SM25A1 handset	Dedicated Button	Dedicated Button
Priority Interrupt	YES*	YES	YES
Lone Worker	YES	YES	YES
Remote Monitor	YES	YES	YES
Stun / Revive	YES	YES	YES
SIP Phone	-	-	YES (with optional speaker/mic with keypad)
DTMF Dial	-	-	YES (with optional speaker/mic with keypad)
OTAP (Over the Air Programing)	-	-	YES
IP-Transit	-	-	YES

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Feature Definitions

Frequency Bands	These are the frequencies within the radio spectrum supported by the radio and enables deploying the radios in areas with these frequencies available.
Channels Analog / Digital	The number of channels that can be utilized for simplex (one way at a time) radio calls.
Zones	A method of grouping and organizing channels for multiple users.
RF Output Power	The transmission power of the radio that enables the communications distance. The higher the power, the longer the distance and transmission through barriers.
DMR Digital Noise Suppression	The voice encoder (VODEC) digitally processes the audio and eliminates background noise. This is specified as part of the DMR standard, and Hytera provides additional digital enhancements to audio quality.
AI-Based Noise Suppression	Audio is processed using Artificial Intelligence to learn and extract human voice from background noise in real time
Pre-Defined Text Messaging	The radio can receive and display pre-defined text messages from dispatching application or other radios. Provides a way to notify employees of common instructions without radio conversations.
Free Form Text Messaging	The radio has a full keypad that allows users to send free-form alpha numeric texts
Programmable Buttons	Buttons on the top or side of the radio that can be customized for different functions such as emergency calls, and lone worker response.
GPS	Allows tracking of the radio location with Global Positioning System so dispatchers can see user locations to track vehicle assets, coordinate field operations, and improve worker safety.
Bluetooth	Bluetooth support allows wireless communication between the radio and external accessories such as earpieces, microphones, and push-to-talk buttons.
IP Rating	IP rating specifies how the radio resists water and dirt penetrating the housing of the radio. IP54, IP55, IP67, and IP68 provide incremental improvements with IP68 as the highest available protection.
MIL-STD 810 C/D/E/F/G	MIL-STD-810 is the performance and manufacturing guidelines set by the US Department of Defence for military and commercial equipment. The military standard specifies operational compliance for temperature, shock, vibration, and humidity.
Analog/Digital Scanning	The radio can scan other channels for calls based on user defined time periods. Can scan both analog and digital, or either analog or digital channels
Voice Activated Microphone (VOX)	Voice Activated Microphone enables hands-free voice activation of the microphone. Can be supported on the radio only, or on the radio and push-to-talk microphone accessories.
Conventional Digital/Analog Repeaters	Can be used with conventional DMR Tier II repeaters that support both digital and analog operation.
Pseudo Trunk Operation	In DMR transmissions there are two slots per channel (two data paths 25/2.5Kh spacing). Pseudo trunking allows a radio to use a free slot for a call and increase channel capacity.
Extended Pseudo Trunk (XPT)	XPT is built from multiple Hytera DMR Tier II repeaters at a site connected to each other by a simple network switch, making the system more efficient to provide more channel capacity without an FCC management channel or additional radio infrastructure. Available for single and multi-site deployments.
IP-Transit	IP Transit is a feature that allows mobile radios in dispersed locations to be connected to exchange voices, data and control packets to each other over TCP/IP protocol, extending the communication network.

Feature Definitions (Continued)

DMR Tier III Trunking	DMR Tier III support radio trunking that operates under individual licenses with a controller function that automatically manages and optimizes the radio communications channels. Tier III enables voice, text messaging, and packet data services in a variety of formats.
Radio Registration Service (RRS)	Allows a dispatching application to see when a radio is switched on or off.
Roaming	Allows mobile terminals to seamlessly and automatically move between sites in an IP connected repeater system.
Digital Encryption	Used to mitigate the threat of interception by providing the Confidentiality service. Provides several security services including: Confidentiality (the protection of message contents from disclosure), Authentication (the verification of the identity of message sender), and Ensure message Integrity (the message contents have not been modified).
Hardware Encryption	The radio will realize encryption via the radio hardware (SD card)
Analog Scrambler	The Analog Scrambler provides secure transmission and reception of analog radio transmissions. It transposes or inverts signals or otherwise encodes voice transmission to make the message unintelligible at a receiver not equipped with an appropriately set descrambling device.
Emergency Calling	Enables a single emergency call to be broadcast to all radios simultaneously. Send and receive.
Emergency Button	A button that alerts dispatch or triggers an emergency all call message to all radio users. Emergency buttons can be a programmable button configured as an emergency button, or a dedicated emergency button located on the top of the radio.
Priority Interrupt	Priority Interrupt allows a dispatcher or select radio users to interrupt existing radio calls with important emergency information
Lone Worker	Lone Worker requires a user in a remote location to press a button when the radio provides an audio alert to notify dispatch that the worker is OK.
Remote Monitor	Allows dispatchers to remotely monitor radio communications of users in emergency situations.
Stun / Revive	Allows dispatch to stun (disable) a stolen or missing radio, and to revive (re-enable) the radio if located. This is used to maintain the privacy and security of communications on the radio network.
SIP Phone	The radio can communicate with phones via the Phone feature
DTMF Dial	The DTMF (Dual-Tone Multi-Frequency) encoding technology uses two specific tones (high and low) to represent a number, so as to realize some features. After accessing the phone system, the radio can send or receive phone calls, which are based on the DTMF signaling.
OTAP (Over the Air Programing)	Radio can be automatically programed over the air using the OTAP application for fast and efficient upgrades.

Hytera

Hytera US Inc

info@hytera.us

www.hytera.us

954-846-1011

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EAGLE COMMUNICATIONS

EAGLE COMMUNICATIONS

34 Waterworks Way, Irvine, CA 92618

Toll Free 1 (800) 600-EAGLE

Local (949) 837-8788 (Orange County)

Fax (949) 837-2511

www.two-wayradio.com