DMR Handheld Radio Product Comparison Guide

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Introduction

About Hytera US Inc

Hytera US Inc is a leader in research and development and 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 quality.

Hytera has established consummate quality systems, and has passed ISO 9001, ISO 14001, OHSA S18001 certifications, and has implemented the rigorous Six Sigma management system.

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 analog radio channels
- Provides efficient use of infrastructure equipment
- Enables power efficiency for longer battery life.
- Superior audio performance with digital background noise suppression

Hytera Two Way DMR Radios

Hytera DMR iSeries and H-Series product lines provide the most broad and diverse DMR product offering in the industry. Hytera DMR radios are known for their legendary durability and ruggedness, and for being the best value for 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
- Lithium Ion batteries that enable up to 24 hours of operation
- Emergency calling, lone worker, and man down safety features
- Encrypted transmissions for secure communications
- Built-in GPS and Bluetooth on select models
- Wide variety of earpiece, microphone, and charging accessories

Intrinsically Safe UL913 DMR Radios

Hytera provides the broadest line of Intrinsically Safe UL913 radios available on the market. Hytera IS radios are designed for safe use in mining and energy production environments with explosive gas and combustible dust.

DMR Repeaters and Trunking Systems

Hytera provides a variety of network radio systems, including Tier II Analog and Digital Conventional Repeaters that can be connected via IP networks for Wide-Area deployments, pseudo trunking, and extended pseudo trunking (XPT). Hytera is also a leader in fully DMR standards compliant Tier III trunking systems.


BD302i
iSeries


BD5i
iSeries


BD612i
iSeries


PD362i
iSeries


PD4i
iSeries


HP6
H-Series


HP7
H-Series

Hytera DMR iSeries Commercial Radio Product Line

iSeries BD302i Entry-Level Commercial DMR Radio

The Hytera BD302i is an entry-level digital radio that requires minimal training for users. The BD302i has 2W of output power for small and medium workplaces. The BD302i provides compact size and light weight, impressive audio quality, and excellent value for the money.

The BD302i is IP54 and MIL-STD 801G rated for durability. It features a 2200mAh Li-Ion battery that can be charged with an AC/DC power adapter or an optional dual pocket (radio and battery) charger. The BD302i supports 400 to 470MHz UHF with 48 channels.

iSeries BD5i Series Commercial DMR Radios

BD502i BD552i

The Hytera BD502i and BD552i are compact radios that are reliable and easy-to-use. The BD5i Series is a step up from the BD302i with higher output power for extended distance, and a wider frequency range.

The BD5i radios are IP54 and MIL-STD 801G rated and feature a 1500mAh Li-Ion battery that can be charged with an AC/DC adapter, a single-unit charger, or with an optional 6-unit charger. They support 400 to 470MHz UHF and 136 to 174MHz VHF. The **BD502i** supports 48 channels and audio channel announcement, and the **BD552i** supports 256 channels and adds an OLED display and Bluetooth.

iSeries PD362i Commercial DMR Radio

The perfect balance of price and performance, the PD362i is one of the best-selling Hytera DMR radios. The PD326i is a compact and lightweight radio with a built-in antenna that can be carried in a pocket or attached to a lanyard. It has up to 3W of power, and is ideal for use in retail, hotels, and education. It features an LED screen and a partial keyboard with programmable buttons. The PD362i supports advanced networking with dispatching applications, roaming between repeaters, and Pseudo Trunking.

The PD362i is IP54 and MIL-STD 801G rated for durability. It features 2000mAh Li-Ion battery that can be charged with an AC/DC power adapter, a USB cable, or an optional single unit charger, or a wireless charger. The PD362i supports 400 to 470MHz UHF with 48 channels.

iSeries BD612i Rugged Commercial DMR Radios

The Hytera **BD612i** is the next generation of the Hytera TC6 analog radios, and improves on the legendary Hytera ruggedness, performance, and value. The BD612i radio is a ruggedized version of the BD502i and is used in construction and manufacturing where IP66 and MIL-STD 801G ratings for durability are required.

The BD612i features a 1500mAh Li-Ion battery that can be charged with an AC/DC adapter, a single-unit charger, or with an optional 6-unit charger. The BD612i supports 400 to 470MHz UHF and 136 to 174MHz VHF with 48 channels, and audio channel announcement.

iSeries PD4i Series Commercial DMR Radios

PD402i PD482i

The Hytera PD402i and PD482i are robust and reliable two-way radios with advanced networking with dispatching applications, roaming between repeaters, and Pseudo Trunking. The PD4i series provides higher power (5W VHF, 4W UHF), and optional safety and encryption features.

The **PD402i** is IP55 rated, features audio channel announcement, and supports 48 channels and 400 to 470MHz UHF and 136 to 174MHz VHF. The **PD482i** is IP54 rated and adds an OLED display, a full keypad, text messaging, encryption, 256 channels, Bluetooth, and GPS. It supports 350 to 470MHz UHF and 136 to 174MHz VHF frequencies.

Hytera DMR H-Series Professional Radio Product Line

H-Series HP6 and HP7 Professional DMR Radios

The Hytera H-Series HP6 and HP7 are the next generation in Hytera DMR radios that provide state-of-the-art performance with 25% farther range, industry leading audio quality, the longest battery life, and a wide variety of advanced features.

Large speakers provide up to 93dB of loudness, and AI-based voice enhancement with deep learning ability accurately extracts voice from noise in real time.

The HP6 and HP7 handheld radios are IP68 and MIL-STD- 810 G compliant. They are dustproof, submersible to a depth of 2 meters for 4 hours, can withstand multiple drop shock tests at 2 meters, and feature an anti-magnetic speaker that does not attract magnetic metal dust and shavings.

The H-Series is designed for worker safety with an emergency calling button, priority interrupt, lone worker and man down. H-Series radios support optional GPS for dispatching applications, optional advanced encryption, and Bluetooth for wireless accessories.

HP702 HP782

HP602 HP682

The HP6 and HP7 radios have 5W UHF and 4W VHF of transmit power. The HP682 and HP782 feature full color LCD screens and full keypads. The HP602 and HP702 feature single-line OLED displays and several programmable buttons.

H-Series radios can be deployed on Analog and Digital Conventional, and XPT Trunking, DMR Tier II Trunking, IP Multi-Site Connect, and DMR Simulcast Systems. The **HP702** and **HP782** radios can be deployed on DMR Tier III systems. The HP7 radios are also available as UL913 Intrinsically Safe radios.

The **HP702** and **HP782** are the top-of-the line DMR handheld radios feature the latest generation 2400mAh lithium polymer batteries that deliver a shift life of up to 26 hours. They support 350 to 470MHz UHF and 146 to 174MHz VHF frequencies.

The **HP602 and HP682** are Hytera's smaller and more cost-effective H-Series handheld radios. The HP6 radios provide unparalleled value with loud and clear audio, long battery life, and remarkable ruggedness. They feature the latest generation 2000mAh lithium polymer batteries that deliver a shift life of up to 20 hours, and support 400 to 527MHz UHF and 146 to 174MHz VHF frequencies.

DMR Radio Features Overview

Commercial Radios

For employees in business and education who need reliable, lightweight, and easy to use two-way radios

Professional Radios

For users in demanding environments who need rugged two-way radios with advanced communications and worker safety features

BD302i iSeries	BD5i iSeries	BD612i iSeries	PD362i iSeries	PD4i iSeries	HP6 H-Series	HP7 H-Series
Entry-Level			Mid-Level		Professional Level	
Short Range	Long Range		Mid Range	Long Range		
IP54	IP54	IP66	IP54	IP54 / IP55	IP68	
Lightweight and Easy to Use				GPS [1]		
	Bluetooth[1]			Bluetooth[1]		
			Text Messaging			
			Worker Safety Features [2]		Advanced Worker Safety Features [2]	
			Radio Registration Service (RRS) for Dispatching and Roaming Between Repeaters			
					Extended Pseudo Trunk (XPT) [2]	
						DMR Tier 3 [2]

1 Available on models within this product line

2 May require an additional license fee

Commercial DMR Radios Feature Comparison Table (Page 1 of 2)





Feature	BD302i	BD502i / BD552i		BD612i	PD362i	PD402i / PD482i	
Weight	5 ounces	8 ounces		8.5 ounces	5.6 ounces	9.5 ounces	10.9 ounces
Dimensions	3 3.1″ x 1.9″ x 1″	4.25" x 2.12" x 1.14"		4.25" x 2.12" x 1.3"	4.3″ x 2.7″ x .9″	4.3″ x 2.12″ x 1.2″	4.35″ x 2.3″ x 1.7″
Keypad	–	–		–	Partial Keypad	–	Full Keypad
Display Screen	–	–	Single Line OLED	–.	2-Line LCD	–	Three-Line OLED
Frequency Bands	UHF 400 - 470MHz	UHF 400 - 470MHz VHF 146 - 174MHz		UHF 400 - 470MHz VHF 136 - 174MHz	UHF 430 - 470MHz	UHF 400 - 470MHz VHF 136 - 174MHz	UHF 350 - 470MHz VHF 136 - 174MHz
Channels (Analog / Digital)	48 (24/24)	48 (24/24)	256 (128/128)	48 (24/24)	256 (128/128)	256 (128/128)	256 (128/128)
Zones (16 Channels Each)	3	3	16	3	16	3	16
RF Output Power	2W	VHF 5W, UHF 4W		VHF 5W, UHF 4W	1.5W – 3W	VHF 5W, UHF 4W	
DMR Digital Noise Suppression	YES	YES		YES	YES	YES	
Pre-Defined Send Only Texts	–	–		–	10 Messages, 64 Characters Each	10 Messages, 64 Characters Each	
Free Form Text Messaging	–	–		–	–	–	YES
Programmable Buttons	1	1		1	1 side and 3 front panel buttons	2 side buttons	1 top and 2 side buttons
GPS	–	–		–	–	–	YES (GPS Model)
Vibration Notification	–	–		–	–	–	
Bluetooth	–	–	YES (BT Model)	–	–	–	YES (BT Model)
Standard Battery (Optional)	Lithium-Ion 2000mAh	Lithium-Ion 1500mAh (2000mAh Optional)		Lithium-Ion 1500mAh (2000mAh Optional)	Lithium -Ion 2000mAh	Li-Ion 1500mAh (2200mAh Optional)	Li-Ion 2000mAh (1500mAh Optional)
5-5-90 Charge Life (Digital Mode)	16 Hours	16 Hours (22 Hours)		16 Hours (22 Hours)	12 Hours	16 Hours (22 Hours)	16 Hours
Standard Charger	AC/DC Power Adapter	Single Unit Drop-In Charger		Single Unit Drop-In Charger	AC/DC Power Adapter, USB Charging Cable	AC/DC Power Adapter	
Optional Accessory Chargers	Dual Pocket Charger (Radio and battery)	Single Unit Charger, Six-Unit Charger		Single Unit Charger, Six-Unit Charger	Single Unit Charger, Wireless Charger, Six-Unit Charger	Dual Pocket Charger,	Six-Unit Charger

Commercial DMR Radios Feature Comparison Table (Page 2 of 2





Feature	BD302i	BD502i / BD552i	BD612i	PD362i	PD402i / PD482i
MIL-STD 810 C/D/E/F/G	YES	YES	YES	YES	YES
IP Rating	IP54	IP54	IP66	IP54	IP55 / IP54
Intrinsically Safe Models	–	–	–	–	–
Channel Scanning	Analog or Digital	Analog or Digital	Analog or Digital	Analog or Digital	Analog or Digital
Voice Activated Mic (VOX)	YES	YES	YES	YES	YES
Conventional Repeaters	YES	YES	YES	YES	YES
Pseudo Trunk Operation	YES	YES	YES	YES	YES
Extended Pseudo Trunk (XPT)	–	–	–	–	–
DMR Tier III Trunking	–	–	–	–	–
Radio Registration Service (RRS)	–	–	–	YES	YES
Roaming	–	–	–	YES	YES*
Digital Encryption	–	–	–	Basic*	Basic*
Analog Scrambler	YES	YES	YES	YES	YES
Emergency Calling	YES	YES	YES	YES	YES
Emergency Button	Programmable	Programmable	Programmable	Programmable	Programmable / Dedicated
Priority Interrupt	–	–	–	–	–
Man Down	–	–	–	–	–
Lone Worker	–	–	–	–	–
Remote Monitor	–	–	–	YES*	YES*
Stun / Revive	–	–	–	YES*	YES*

*Requires additional license fee

Professional DMR Radios Feature Comparison Table (Page 1 of 2)

Feature	HP602 / HP682		HP702 / HP782	
Weight	9.35 ounces	9.9 ounces	10.23 ounces	10.93 ounces
Dimensions	4.75" x 2.3" x .8"		5.2" x 2.3" x 1.3"	
Keypad	–	Full Keypad	–	Full Keypad
Display Screen	0.91" OLED Display	1.8" Color TFT LCD, 160 x 128 pixels	0.91" OLED Display	1.8" Color TFT LCD, 160 x 128 pixels
Frequency Bands MHz	UHF 400 – 527, VHF 146 – 174		UHF 350 – 470, VHF 146 – 174	
Channels (Analog / Digital)	1,024 (512/512)		1,024 (512/512)	
Zones	64 (256 Channels per Zone)		64 (256 Channels per Zone)	
RF Output Power	VHF 5W, UHF 4W		VHF 5W, UHF 4W	
DMR Digital Noise Suppression	YES		YES	
Pre-Defined Text Messaging	25 messages, 256 characters each		25 messages, 256 characters each	
Free Form Text Messaging	–	YES	–	YES
Programmable Buttons	2	5	3	6
GPS	YES (on specific models)		YES (on specific models)	
Vibration Notification	YES		YES	
Bluetooth	YES (on specific models)		YES (on specific models)	
Battery	Lithium Polymer 2000mAh		Lithium Polymer 2400mAh	
5-5-90 Charge Life, Digital Mode	16 Hours, 20 Hours GPS Off		24 Hours, 26 Hours GPS Off	21 Hours, 25 Hours GPS Off
Standard Charger	AC/DC Power Adapter, Single Unit Charger		AC/DC Power Adapter, Single Unit Charger	
Optional Accessory Chargers	Six-Unit Charger		Six-Unit Charger	

Professional DMR Radios Feature Comparison Table (Page 2 of 2)

Feature	HP602 / HP682	HP702 / HP782
IP Rating	IP68	IP68
MIL-STD 810 C/D/E/F/G	YES	YES
Intrinsically Safe Model	–	HP782 UL913
Channel Scanning	Analog and Digital	Analog and Digital
Voice Activated Mic (VOX)	–	–
Conventional Repeaters	YES	YES
Pseudo Trunk Operation	YES	YES
Extended Pseudo Trunk (XPT)	YES	YES
DMR Tier III Trunking	–	YES*
Radio Registration Service (RRS)	YES	YES
Roaming	YES	YES
Digital Encryption	Basic, ARC4/AES*, Advanced Hytera AES*	Basic, ARC4/AES*, Advanced Hytera AES*
Analog Scrambler	YES	YES
Emergency Calling	YES	YES
Emergency Button	Programmable Button	Dedicated Button
Priority Interrupt	YES*	YES
Man Down	YES	YES
Lone Worker	YES	YES
Remote Monitor	YES	YES
Stun / Revive	YES	YES

*Requires additional license fee

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 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.
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.
Vibration Notification	The radio vibrates to notify the user of calls or messages. Used in covert operations and indoor applications.
Bluetooth	Bluetooth support allows wireless communication between the radio and external accessories such as earpieces, microphones, and push-to-talk buttons.
Battery	Hytera uses long-lasting, lightweight, and durable Lithium Polymer and Lithium Ion batteries.
5-5-90 Charge Life Digital Mode	The operational life a radio with a single charge based on the 5-5-90 duty cycle, which means 5% of the time transmitting, 5% receiving, and 90% on standby.
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 Defense 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. 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.

Feature Definitions

DMR Tier III Trunking	DMR Tier III radio trunking is the pinnacle of radio systems and operates under individual licenses with a controller function that automatically manages and optimizes the radio channels. DMR Tier III enables high-capacity and wide-area calling, 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). *Ensure message Integrity (the message contents have not been modified).
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
Man Down	Sends an alarm to dispatch if a radio has been sitting still or at an angle for a pre-defined period of time. Man Down can alert the dispatcher if a worker is injured, unconscious or incapacitated.
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.

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