

# Specifications



General	
Dimensions (H x W x D)	145.7 mm x 60 mm x 29.1 mm (with standard battery) 145.7 mm x 60 mm x 33.1 mm (with high capacity battery)
Weight	328±5 g (with standard battery and antenna) 373±5 g (with high capacity battery and antenna)
Display	Main screen Size: 3.6 inches Resolution: 1280 x 720 Color depth: 24 bits Capacitive touch Top screen Size: 0.92 inch Resolution: 128 x 88 Color: black and white Capacitive touch, usable with gloves and capacitive stylus
Camera	Front camera 8 MP, fixed focus Rear camera 16 MP, auto focus
Battery	Standard: 2,400 mAh, Li-polymer battery, 7.7 V (rated) Optional: 4,000 mAh, 7.7 V (rated)
Memory	RAM: 4 GB ROM: 64 GB eMMC Expandable to 256 GB with Micro SD card
Card Slot	2 Nano SIM card slots 1 broadband Micro SD card slot 1 encryption card slot
AP Processor	Qualcomm 8-core, 2.2 GHz
Operating System	Android 10
Google Certification	Google Mobile Services
Audio Output	Output power: 2 W Audio distortion: ≤ 3% Audio loudness: 118 dB SPL at 5 cm, 98 dB Phon at 30 cm
Port	USB Type-C port 13-Pin accessory connector
Video Format	3GPP (.3gp), MPEG-4 (.mp4), QuickTime (.mov), WEBM (.webm), Windows Media (.asf, .wmv), RealMedia (.rmvb, .rm), MPEG-PS (.mpeg), MPEG-TS (.ts), AVI (.avi), Matroska (.mkv)
Video Quality	Front camera: 1080P HD, 30 fps Rear camera: 1080P HD, 60 fps
Watermark	Image and video
Image Format	JPEG (.jpg), GIF (.gif), PNG (.png), BMP (.bmp)

General	
Audio File Format	MP3 (.mp3), WAV (.wav), 3GPP (.3gp), MPEG-4 (.mp4, .m4a), ATDS raw AAC (.aac), MPEG-TS (.ts), FLAC (.flac), MIDI (.midi, .xm, .mxmf), RITTL/RTX (.rttl, .rtx), OTA (.ota), iMidi (.imy), Ogg (.ogg), Matroska (.mka), OCELP (.ocp), RealMedia (.ra), Windows Media (.wma), AC3 (.ac3)
Sensor	Proximity sensor Ambient light sensor 3-axis accelerometer + gyroscope Magnetometer Accelerometer
Connectivity	
DMR	Frequency range: 340—470 Mhz TX power: 1 W/4 W
Broadband	TDD-LTE: B34/B38/B39/B40/B41 FDD-LTE: B1/B2/B3/B4/B5/B7/B8/B20/B26/B28 W-CDMA: B1/B2/B4/B5/B8 TD-SCDMA: B34/B39 CDMA: CDMA 1xRTT BCO, CDMA2000 1xEV-DO BCO GSM: 850/900/1800/1900 MHz
WLAN	3GPP LTE Rel-12 IEEE 802.11 a/b/g/n/ac, 2.4 GHz/5 GHz
NFC (Optional)	V5.0 BDR/EDR/BLE 13.56 MHz
Positioning	GPS/BDS/GLONASS/Galileo/QZSS/A-GPS Positioning performance in open air TTFF (cold start) < 60s TTFF (hot start) < 10s Horizontal accuracy ≤ 2 m (> 5 SVs, -130 dBm, CEP for 50%)
Environment	
Water and Dust Resistance	IEC 60529 IP68 (1 meter, 1 hour)
Shock and Vibration Resistance	MIL-STD-810 H
ESD	IEC 61000-4-2 (level 4), ±8 kV (contact), ±15 kV (air)
Operating Temperature	-20°C to +60°C
Storage Temperature	-30°C to +80°C
Humidity	Per MIL-STD 810H, ≤ +65°C, 95%RH



## PDM680 Rugged MCS Radio



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## Overview

The Mission Critical Services (MCS) includes a suite of standards established by 3GPP for public safety. This LTE-empowered MCS solution offers Push-to-Talk (PTT) users with Mission Critical Push-to-Talk (MCPTT), Mission Critical Video (MCVideo), and Mission Critical Data (MCData) services for efficient and enriched communications. And the MCS solution features cross-system interoperability.

The PDM680 rugged MCS radio is designed to help first responders stay connected and informed anywhere and anytime in critical situations. As a professional rugged radio, the PDM680 delivers reliable mission-critical voice communications, and mission-critical video and data services for those working in the most challenging conditions. In addition to the "on-network" operation, the PDM680 supports device-to-device (D2D) communications that allow the first responders to communicate without relying on the LTE network.

## Key Features



- 3GPP eMBMS and MCPTT
- D2D Communications



- AI-powered Noise Cancellation



- Android Platform
- GMS Certification



- LTPS LCD Screen



- Remote Control
- Versatile Connectivity

## Mission-Critical Design

The streamlined and intuitive user interface enables quick access to important information, helping you respond faster in an emergency. The distinctive layout of physical keys makes one-hand operation easier and smoother. All these advantages of the PDM680 contribute to a more efficient mission-critical interaction.

### Smart Knob

Volume/channel/contact

### Emergency Key

### Smart Key

Smart Key Function varies from missions

### Large PTT key

### 2 Programmable Keys

Quick access to functions and apps

### Customizable Color Ring

Shows user name, group ID, slogan, or logo

### Dual Cameras

Rear 16 MP, front 8 MP

### Dual Screens

Tilt top screen, readable in multiple directions

HD main screen, visible in all lighting conditions

### 3 Programmable Keys

### USB Type-C Port



## Highlights

### 3GPP MCS

- Mission-critical services

Compliant with 3GPP MCS, the PDM680 delivers MCPTT, MCVideo, and MCDATA services to ensure mission-critical communications for public safety. By its very nature, the PDM680 provides mission-critical voice services such as group call and private call by the prominent PTT key. With the 8 MP front camera and 16 MP rear camera, the PDM680 enables real-time video communications over LTE network between the field and command center. Moreover, this radio supports multimedia messages including text, picture, video, file, voice, and location.

- Mission-critical application

Hytera HyTalk MC is a 3GPP-compliant application tailored for the PDM680 to deliver MCPTT, MCVideo, and MCDATA services. It helps improve personal safety, situational awareness, and efficiency for those who work in the public safety, public utility, transportation, or other industries.

### D2D Communications

- Stay connected anywhere

Reliable and effective communications is crucial to first responders to provide help in disaster situation, especially when the LTE network is down or nonexistent. Built with Digital Mobile Radio (DMR) technology, the PDM680 can provide D2D communications where LTE connectivity is not available. This ensures the stable PTT services over a long distance.

Moreover, the PDM680 features MCS-DMR Simulcall that offers one-touch communications across MCS devices and DMR radios. It helps the commander streamline operations to initiate the MCS call and the DMR call simultaneously at the press of the PTT key.

\*The PDM680 is on par with traditional DMR radios in terms of D2D communication distance. The actual distance is subject to the terrain and environmental conditions.





## Audio and Ruggedness

### • Louder is always clearer

On a crowded street, hearing each word clearly on the radio is vital for police officers to get job done safely and efficiently. Designed with their unique needs in mind, the PDM680 is engineered for audio excellence. The audio can reach a maximum SPL of 118 dB. Even at 30 cm away from the sound source, the loudness level is as high as 98 dBPhon. Moreover, AI-powered noise cancellation, dual-mic noise reduction, echo cancellation, and wind noise suppression technologies minimize the background noise and boost the audio clarity.

### • Ready for the toughest conditions

The PDM680 is a truly rugged radio. It meets IP68, MIL-STD-810H, and IEC ESD level-4, surviving almost any challenges from water, dust, dirt, 1.5-meter drops, strong shocks and vibrations to extreme temperatures and humidity. The industrial mission-critical touchscreen can be easily used with wet fingers or gloves.



## Android Platform and Connections

### • Richer apps, higher efficiency

With Android and open API, the PDM680 is compatible with tremendous third-party applications to better suit your industries for enhanced productivity. From GPS navigation to web surfing to ticketing, work is done easier ever. Thanks to the 3.6-inch LTPS LCD screen, you can interact with applications easily and intuitively in any lighting conditions without missing any mission-critical details.

### • More connections for easier use

The PDM680 is equipped with a 13-Pin connector for reliable connection to heavy-duty accessories, as well as a USB Type-C port for charging and data transfer. And the radio supports WLAN, BT, and NFC, making connection to other wireless devices easier and simpler.



## Security

### 360° protection

Adopting multiple defensive mechanisms, the PDM680 safeguards your mission-critical system, device, data and voice. Signature authentication ensures the system security. All data at rest is full-disk encrypted, while the data and voice in transit

are protected by E2EE. The industry-leading remote management makes the radio in your complete control, from real-time monitoring to data erasing and more.

## Accessories

### • Standard Accessories















Li-polymer Battery (2,400 mAh)  
Charger

Power Adapter  
Antenna

Belt Clip  
Nylon Strap

Main Screen Protector  
Color Ring

### • Optional Accessories

						
Covert Camera VM220D	Wireless Earpiece EHW07	Wireless Earpiece EHW08	Wireless PTT POA121	Wireless Remote Speaker Microphone SM27W2	Waterproof Remote Speaker Microphone SM26N1	Receive-only Earbud ES-01
						
Receive-only swivel Earset EH-02	Earphone EHS24	Audio POK196	PTT & MIC Cable ACN-02	Smart Battery (4,000 mAh) BP4005	Charger (2 A) CH20L13	Leather Strap R004