# Hytera
# Multi-mode
# Advanced Radio

www.hytera.co.uk

# New Convergent Solution

The Hytera Multi-mode Advanced Radio is a revolutionary device in the private radio network industry. The first of its kind to offer a truly convergent platform for critical voice and broadband data services, this innovative development is a significant milestone. The radio supports multi-mode communication in different scenarios, whether it's daily business operations or emergency response, broadband or narrowband, utilising the public or private network.

Offering the user a truly unified communication experience. The rich applications and high-level data security ensures the radio calmly handles any critical situation, improving co-operation and seamless communication.

The ergonomic design combined with the rugged chassis and touch-screen supports a new sensory experience to meet your diversified requirements. You can listen and see clearly, operate and transmit securely and utilise your improved situational awareness to respond and achieve quickly and effectively.
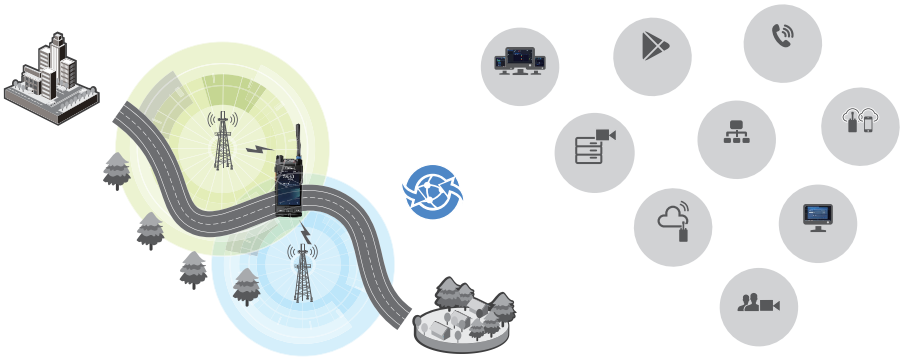
# Product Overview

## Sense

The Hytera Multi-mode Advanced Radio delivers excellent situational awareness, smartly detecting the surrounding environment, providing alerts and acquiring data in real time. Communicating continuously with back-end systems, you can improve your operational effectiveness with instant feedback and informed decision making. The device will become an extension of your senses, assuring your safety and enhancing your response with on-demand services.

## Seamless

Whenever and wherever you are operating, the Hytera Multi-mode Advanced Radio is by your side offering a great voice communication experience. Seamlessly switching between networks, the intelligent device manages multiple communication modes, presented in a dedicated, user-friendly interface, to ensure that you can enjoy a seamless communication experience while the handset takes care of network transitions.

## Supervision

Security of personnel and your voice or data transmissions is critical no matter the application. The Hytera Multi-mode Advanced Radio is designed to provide holistic secure control or your communications, adopting an effective link between the radio and back-end systems. There is no need to worry about data security, device loss, evidence management or command availability as the handset delivers a brand-new encrypted control system.

# Interactive Design Features

## Mission Critical UI Design

One hand operation
Quick press to view critical information
Rich information on the home page, customised favourites

## Keys

**Multi-functional control
(press and rotate)**
Switch between volume,
channel and contacts

**Smart Key**
Function varies depending on application

**PTT**
Push to talk
Easy to use
Large button

## Rugged and Durable

**IP67**
**1.2 metre drop test**
**MIL-STD-810 C,D,E,F,G**

## Identification

Interchangeable colour bands
to quickly identify handset

## Front & Rear Camera

Rear 13MP camera supports
4K HD video

## Screen Design

**Dual-screen for power saving**
**Quick-view Top Screen**
Clear information at a glance from
multiple angles

## Screen Reliability

**Gorilla Glass III**
Scratch-resistance, anti-impact,
anti-fingerprint and oil resistance

**Industrial LCD**
Service life over 30,000h

## Diverse Connections

Sensors: 6-axis E-compass, barometer, gyroscope, accelerometer, proximity sensor, ambient light sensor
Positioning systems: GPS, BDS, GLONASS
Wired connection: accessory pins; Wireless connection: Wi-Fi, NFC and RFID

# Function & Technical Features

## Open Secondary Development Interface to Enrich Services and Applications

An Application Development Kit (ADK) is available to third parties to allow organisations to customise their own applications. Consequently, all mobile resources can be integrated in to this single work platform. Now it's more than just a radio, it's your smart mobile device.

| Government and Public Security | Public Utilities | Airport | Port | Metro and Railway |
|:---:|:---:|:---:|:---:|:---:|

## Broadband and Narrowband Converged

The narrowband switches between digital and analogue, the broadband supports all mobile networks, and the two systems collaborate to guarantee a smooth communication.

## Crystal Clear Critical Voice

The radio adopts advanced audio technology, such as multi-mic noise suppression, acoustic echo cancellation and wind noise suppression, to ensure the user can receive and transmit clear voice communications even in noisy environments.

## Multiple Security Assurances

The device supports authentication and both software and hardware encryption to prevent voice and data theft. The management system monitors the radio in real-time and the device can be stunned, killed, or data erased if there is any user abnormality.
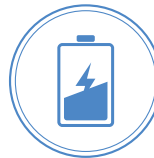
## Quick Charging

The latest smart battery technology delivers quick charging, 3 times faster than regular batteries. 80% of the capacity can be charged in just 30 minutes, while full charge can be achieved in 1 hour.

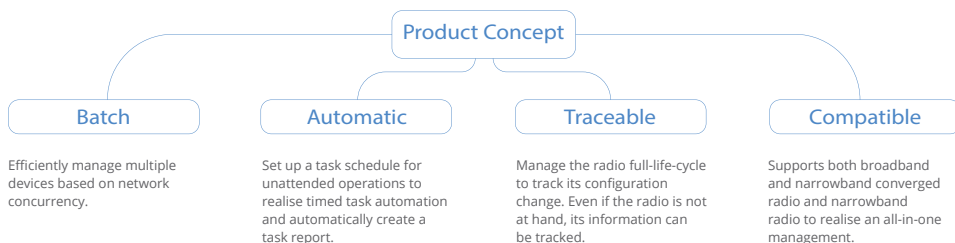# Hytera Smart MDM – Smart and Secure, With Complete Control

The Hytera Smart Mobile Device Management (MDM) fully utilises broadband capacity to facilitate your device management.

By traversing a variety of broadband networks, Wi-Fi, 4G and LTE, this solution conducts batch programming, upgrades, permission control and data backup. As well as device administration and control, the Hytera MDM can also support accessory management such as Remote Video Microphones whilst also being compatible with your Hytera narrowband radios, improving traditional device management.

As users lead with wireless devices and supplement with wired solutions, in an increasingly broadband based network architecture, the Hytera MDM solution delivers concurrent operation, flexible remote-site control and timed push actions to greatly save operational time and costs for device management.

The Hytera MDM provides a full-life-cycle asset management system. The administrator can track the working status of any device across the fleet, determining critical device and user information 24/7.

## Product Concept

### Batch
Efficiently manage multiple devices based on network concurrency.

### Automatic
Set up a task schedule for unattended operations to realise timed task automation and automatically create a task report.

### Traceable
Manage the radio full-life-cycle to track its configuration change. Even if the radio is not at hand, its information can be tracked.

### Compatible
Supports both broadband and narrowband converged radio and narrowband radio to realise an all-in-one management.

# Product Features

## Efficient Batch Programming and Upgrade
Manage large quantities of radios concurrently to improve programming and upgrade efficiency.

## Effective Data Collection and Security Analysis
Collect various radio data including parameters, configuration and diagnosis log to monitor radio and eliminate security threats.

## Rich Third Party APIs
Provide the third party APIs for various service extensions such as cloud storage, streaming media, and interfacing with other systems.

## Quick Configuration and OTAP Programming
Utilise the high-speed and reliable message channel between the radio and console to enable or disable multiple settings such as GPS, BT, Wi-Fi and NFC, and conduct OTAP of the radio through broadband.
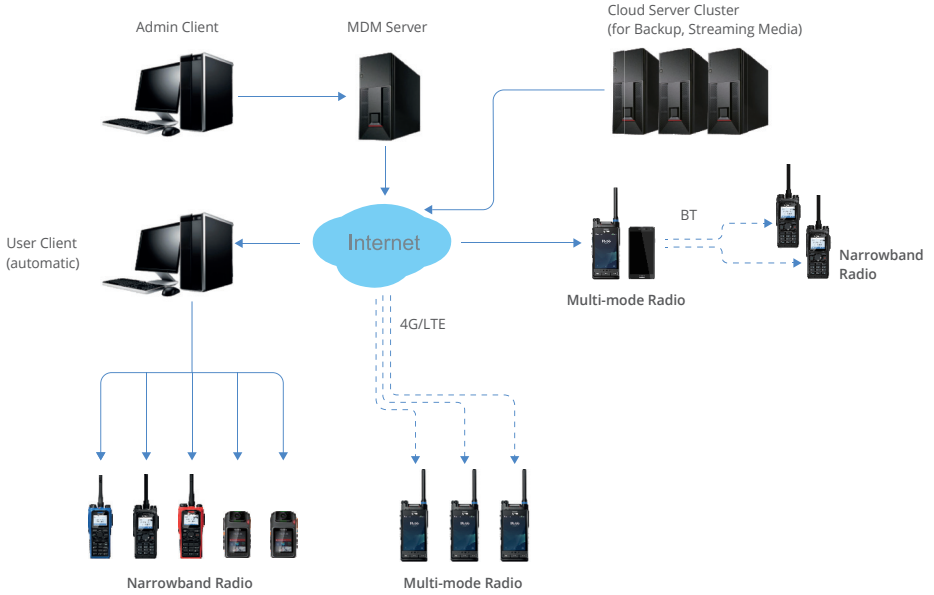
## Multiple Group and Permission Control
Support multiple roles and hierarchical group management to clearly classify the permission and work range for better collaboration.
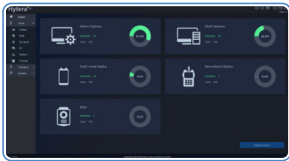
## Diversified Services
Besides programming and upgrades, the system also controls application installation and uninstallation, licence authorisation, remote notification to the radio and file transmission. If the radio is compromised, the system is able to remotely erase sensitive data to avoid information leakage.
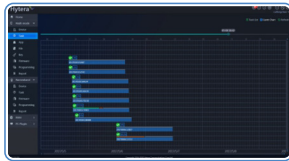
# System Topology



Admin Client

MDM Server

Cloud Server Cluster
(for Backup, Streaming Media)

Internet

User Client
(automatic)

Multi-mode Radio

BT

Narrowband
Radio

4G/LTE

Narrowband Radio

Multi-mode Radio
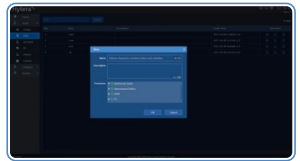
# System Function



## Asset

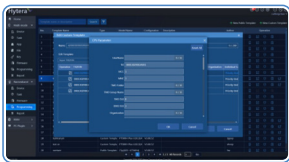Asset management to set up archives for
each radio.



## Task Gantt Chart

Visible Gantt chart to clearly display task
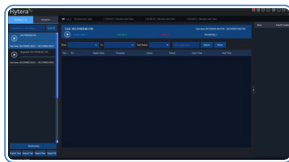progress.



## Role Permission

Different roles for administrators to conduct
different management services.



## Programming Template

Programming template management to
create parameter sets for radio configuration.



## Work Station

Unattended work station to process tasks and
manage radios by batch, concurrently.



## Report

Generate reports for all-round tasks statistics
and tracking.

# Specifications

## Standards and Frequencies

| | |
|---|---|
| DMR Analogue FM | ETSI DMR Tier II, III 350-527 MHz |
| TETRA | 350-470 MHz |
| LTE | 3GPP LTE FDD-LTE: B1/B2/B3/B4/B5/B7/B8/B20/B26/B28 TDD-LTE: B38/B39/B40/B41 |
| CDMA | CDMA 1xRTT BC0 CDMA2000 1xEV-DO BC0 |
| WCDMA | B1/B8 |
| TD-SCDMA | B34/B39 |
| GSM | 850/900/1800/1900MHz |
| Wi-Fi | 802.11 b/g/n, w.4GHz |
| NFC | 13.56MHz |
| Dual BT | V4.2 LE+EDR |
| Positioning System | GPS, BDS, GLONASS |
| Sensors | Proximity Sensor Ambient Light Sensor 6-axis E-Compass Barometer Gyroscope Accelerometer |

## General Specifications

| | |
|---|---|
| Dimensions (H x W x D) | 139.5 x 68 x 25.3mm |
| Weight (with antenna & battery) | ≤375g |
| AP Processor | Qualcomm 8-core, 2.0GHz |
| Memory | **Broadband** RAM: 3GB ROM: 32GB eMMC Expandable to 128GB with Micro SD card **Narrowband** Expandable to 16GB with Micro SD card |
| Ports | USB 2.0 20PIN Accessory/Charging Port |
| Top Display | 1.0" 128x96 |
| Main Display | 4.0" 800x480 Capacitive, Touch screen, Gloves Compatible |
| Front Camera | 13MP    Auto Focus |
| Rear Camera | 13MP    Auto Focus |
| Operating Voltage | 7.4V (Rated) |

## Battery

| | |
|---|---|
| Standard | 2900 mAh Li-polymer |
| Optional | 4000 mAh |
| Battery Life | Standard Battery : 14h 12h voice (5:5:90) + 2h video Optional Battery : 20h 18h voice (5:5:90) + 2h video |

## Transceiver

| Item | DMR/Analogue FM | TETRA |
|---|---|---|
| Channel Spacing | 25/20/12.5kHz | 25kHz |
| TX Power | 1W/4W | 1W (class 4) & 1.8W (class 3L) |
| RX Sensibility | ≤-121dBm | ≤-121dBm(-116dBm typ.) |
| Inter-modulation | ≥65dB | ≥62dB |
| Blocking | ≥84dB | 50 kHz to 100 kHz ≥ 69 dB 100 kHz to 200 kHz ≥ 74 dB 200 kHz to 500 kHz ≥ 79 dB > 500 kHz ≥ 84 dB |
| Suppression of Spurious Response | ≥70 dB | ≥64 dB |
| Frequency Stability | ±0.5ppm | ±0.5ppm |
| Antenna Impedance | 50Ω | 50Ω |
| Audio Output | 2W(Rated) | 2W(Rated) |
| Audio Distortion | ≤3% | ≤3% |
| Microphone | NRR: 30dB(Static), 20dB(Non-Static) AEC: > 60dB | NRR: 30dB(Static), 20dB(Non-Static) AEC: > 60dB |

## Video and Imaging

| | |
|---|---|
| Video File Types | 3GPP (.3gp), MPEG-4 (.mp4), QuickTime (.mov), WEBM (.webm), Windows Media (.asf, .wmv), RealMedia (.rmvb, .rm), MPEG-PS (.mpg, .mpeg), MPEG-TS (.ts), AVI (.avi), Matroska (.mkv) |
| Image File Types | JPEG (.jpg), GIF (.gif), PNG (.png), BMP (.bmp) |
| Video Recording Quality | Front Camera: 1080P HD up to 30 frames per second (fps) Rear Camera: 4K HD |
| Watermark | Video and imaging |

## Audio

| | |
|---|---|
| File Types | MP3 (.mp3), WAV (.wav), 3GPP (.3gp), MPEG-4 (.mp4, .m4a), ATDS raw AAC (.aac), MPEG-TS(.ts), FLAC (.flac), MIDI (.midi, .xmf, .mxmf), RTTTL/RTX(.rtttl, .rtx), OTA (.ota), iMelody (.imy), Ogg (.ogg), Matroska (.mka), QCELP (.qcp), RealMedia (.ra), Windows Media (.wma), AC3 (.ac3) |
| Input | Triple Mic Noise Suppression Wind Noise Suppression Echo Cancellation |

## Environment Performance

| | |
|---|---|
| Dust and Water Proof | IEC 60529-IP67 |
| Shock and Vibration | MIL STD 810 C, D, E, F, G |
| Operating Temperature | -20°C - 60°C |
| Shock and Vibration | -40°C - 85°C |

## Main Features (DMR/Analogue FM/LTE)

| Work Mode | Voice Service | | Apps |
|---|---|---|---|
| Digital Conventional<br>Analogue Conventional<br>Digital Trunking<br>Public Network | Private Call<br>Group Call<br>All Call<br>Broadcast Call<br>Emergency Call<br>Forced Insert/Clear Down | Call Queuing<br>Call Priority<br>Phone Call | Contacts<br>Messaging<br>Camera<br>Gallery<br>Sound Recorder<br>File Manager |
| **Data Service** | **User Security** | | **Others** |
| Text Message<br>Status Message<br>MMS | Emergency Alarm | | Positioning<br>Scan and<br>Roaming |

## Main Features (TETRA/LTE)

| Work Mode | Voice Service | | Apps |
|---|---|---|---|
| DMO<br>TMO<br>Public Network | Private Call<br>Group Call<br>All Call<br>Broadcast Call<br>Emergency Call | Call Queuing<br>Call Priority<br>Phone Call | Contacts<br>Messaging<br>Camera<br>Gallery<br>Sound Recorder<br>File Manager |
| **Data Service** | **User Security** | | **Others** |
| Text Message<br>Status Message<br>MMS | Emergency Alarm | | Positioning |

## Included Accessories

**Smart Battery** (2900mAh Li-polymer)

Belt Clip

Charger

Power Adapter

Antenna

Lanyard

Colour Circle

## Optional Accessories



**Remote Video Microphone**



**Remote Video Microphone with LCD**



**Remote Speaker Microphone**
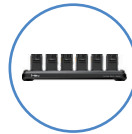


**Covert Camera**



**4000mAh Smart Battery**



**Fast Charger**



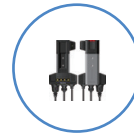**Wired Earset**



**MCU 6-unit Charger for Multi-mode Radio**



**MCU 9-unit Charger for RVM**



**Transparent Earpiece**



**BT Heart Rate Earpiece**



**Carkit**

Your Hytera partner:

# Hytera
Respond & Achieve

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