



TETRA RADIO EVOLVED

PT590 Ready for Mission
Simple to Use



www.hytera-europe.com

In the critical moment, every second counts. Your personnel in the field rely on effective voice communications to connect and collaborate instantly and easily to keep safe and get things done. The PT590 Mission Critical TETRA Portable Radio makes your personnel always ready for the next moment.

The PT590 Mission Critical TETRA Portable Radio inherited all the functionalities from Hytera's first-generation TETRA radio and added lots of new features after painstaking research. With innovative audio technology, best-in-class RF performance, and dual-frequency GNSS, the PT590 has improved voice quality, wider communication coverage, and more accurate positioning, for mission critical communications at all times.

This rugged TETRA radio also provides incredible ease of use for your workforce in the field—thanks to its ergonomic design, intuitive display, one-fits-all USB Type-C port, remote radio management capability, interoperability with accessories and voice control.

Proximity Sensor

Volume/Talk Group Knob

Microphone

Bluetooth 5.2

2.4-inch Colour Display

Independent Navigation Keys

USB Type-C Port

WLAN*

Accessory Connector

Anti-magnetic Speaker

PTT Button

Colour Label

Li-polymer Battery

LED Indicator

Emergency Button

Programmable Buttons

NFC Tag





In a crowded street, busy port, or factory in full swing, the PT590 keeps your personnel connected with loud and clear audio to ensure perfect collaboration.

MISSION READY



SUPERIOR AUDIO QUALITY

Increased Volume Super Loudness

106 phons
Loudness

To make your personnel hear and be heard with the right and complete content in highly noisy environments, the PT590 is equipped with a powerful speaker which has an innovative acoustic cavity design and large acoustic apertures for 106 phons of audio loudness.

Ultra Clarity

30 dB **20 ms**
Noise Cancellation Fast Separation

The PT590 adopts the most advanced AI-based noise cancellation algorithm and gets machine learning behavior. After learning and training thousands of noise samples, this radio has extremely high noise elimination effect (up to 30 dB) in both steady and complexed noisy polluted environments.

Created to Ensure your personal receive clear commands from the first word spoken, the PT590 with AI can separate the human voice from the noise just within 20 ms.

High Adjustment

30 cm
Feedback Suppression

When officers or workers stay in team activities, they often communicate on the move. Using advanced feedback suppression technology, the PT590 suppresses the feedback effectively when two radios are too close. No annoying screeching feedback even when two radios are 30 cm away from each other.



STAY CONNECTED

Extended Radio Range

3 W

Continuous Transmission

-120 dBm

Receiving Sensitivity

The PT590 is trustworthy when your personnel take it and go out for work. With sustained and stable Class 3 (3 W) transmitting power and industry-leading receiving sensitivity (-120 dBm), the PT590 provides stable communications without losing any information even at a distance or in the edge area. Your personnel will have access to improved transmission power capabilities and enhanced reception.

Enhanced Signal Correction Capability

Anti-multipath
Algorithm

Adopting the anti-multipath interference algorithm, the PT590 receives and transmits voice smoothly and stably, regardless of the complex metallic environment such as a port and chemical plant.



SECURED COMMUNICATION

Air Interface Encryption (AIE)

1/2/3

Class

Designed for mission-critical communications, the PT590 supports all levels of AIE including Class 1, Class 2, and Class 3 secure signaling, voice, and data transferred between the radio and the base station.

End-to-End Encryption (E2EE)

TETRA
Standard*


Hytera
Private

SIM Card
Customized*

Using end-to-end encryption algorithms, the TETRA radio supports 128-bit AES or 256-bit AES encryption keys that can be used to encrypt voice and data and is used in situations with stringent communication security requirements.

The PT590 supports TETRA E2EE in compliance with the TCCA SFPG standard to encrypt voice and data communication between different radios and also between radios from different manufacturers, that comply to the standard. PT590 can also support customized encryption and communication with all other TETRA products of the Hytera portfolio. For the special needs of customers, it also provides a hard encryption interface of the SIM card, which can satisfy customers' customization and development of encryption functions.





Positioning is crucial for personal safety, especially in emergency situations. The PT590 ultra-high precision positioning helps the command center or teammate find workers as soon as possible and handle emergencies in a safer and more efficient manner.



ACCURATE POSITIONING

4

GNSS

7

Frequencies

1 m

Location Accuracy

Positioning and location sharing can improve response times and increase safety. The PT590 unprecedentedly applies dual-frequency positioning technology. By receiving and processing satellite signals in two frequency bands at the same time, it effectively compensates and corrects the signal distortion that occurs after the satellite signal passes through the atmosphere. As a result, the PT590 positioning accuracy is improved to an industry-leading level—within 1 meter.



LONG-LASTING PARTNER

22 h

Battery Life

Type-C

Fast Charging

The 2,000 mAh Li-polymer battery, together with the innovative low power consumption technology, can last up to 22 hours on the 5-5-90 duty cycle.

In addition to the traditional charging contacts, the PT590 has an extra USB Type-C port which allows the radio to be charged with mains power or even the power bank anywhere and anytime. The 18 W fast charging can fully charge the PT590 in only 1.5 hours. Even just a 30-minute quick charge can give the PT590 at least 10 hours power for unexpected long shift.



RUGGED FOR THE REAL WORLD

IP68

2m, 4h

-30°C

Low Temperature

Combining purpose-built design and stringent testing, the durable PT590 can withstand the elements of field work in the real world. It meets the harshest test standard MIL-STD-810 H to survive 1.5-meter drops. With the optional low-temperature battery, the extreme temperature ranges from -30°C to 70°C. The PT590 is IP65, IP66, IP67, and IP68 (2m, 4h) rated.

The PT590 is equipped with an anti-magnetic speaker which prevents the accumulation of magnetic metal dust, and can effectively stabilize the communication quality.





EASY TO USE



LIGHT FOR ALL-DAY COMFORT

285 g
Weight

31 mm
Depth

Delightfully light and surprisingly slim, this radio is just 285 gin weight and 31 mm in depth. It is easy to carry all day long and comfortable to operate with one hand. The anti-slip case made of plastic and liquid silicone rubber allows the PT590 to be securely held in wet environments.

Moreover, keys are re-engineered for better user experiences. The large, textured PTT button and the independent four navigation keys are more finger-friendly. The three programmable buttons can be optionally set as quick access to frequently used features with a single press.



PROFESSIONAL USB TYPE-C PORT

One-fits-all
Function

Reliability
Nanostructure Coating

The PT590 is the first TETRA radio outfitted with a USB Type-C port. Besides the charging function, this USB Type-C port provides programming and upgrading functions as well. This unique design brings you unprecedented convenience especially when no programming cable is available at hand. To ensure the reliability of this port, advanced nanostructure coating technology is adopted to protect the internal structure from corrosion and oxidation. This helps ensure a stable connection after repeated uses.





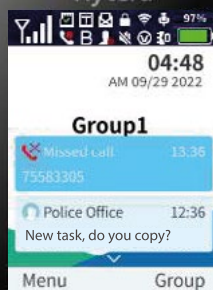
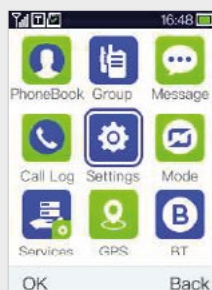
VIEW MORE, DO MORE

2.4-inch
Colour Screen

9-grid
Menu

Conversational
SMS Interface

The 2.4-inch LCD screen of the PT590 is semi-transparent and semi-reflective, ensuring clear readability in direct sunlight and reducing eye strain. The PT590 abandons the traditional list-style menu and has a new friendly user interface design. The 9-grid menu design helps provide fast and simple visual access to your personnel to get immediate access to the function and the shallow menu structures design reduces the menu level and operation steps, thus ensuring your personnel to access the settings quickly and accurately. Moreover, the conversational short message interface allows your personnel to view all the historical messages at one time for improved efficiency.

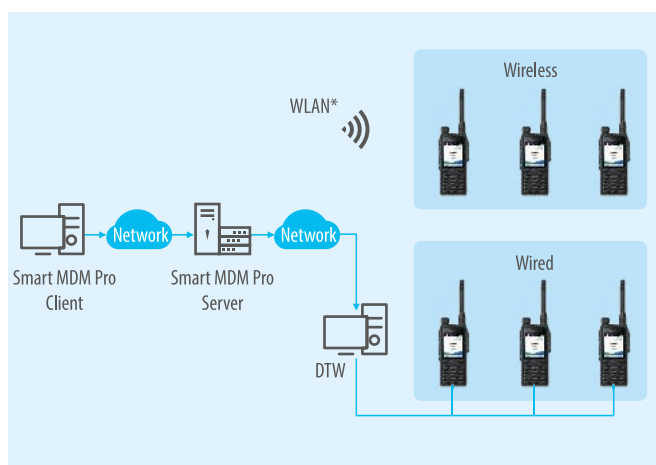


MINIMIZE DOWNTIME, MAXIMIZE EFFICIENCY

45%

Faster in Programming

With Hytera Smart MDM software and wireless connectivity, the PT590 with WLAN* feature activated can be remotely programmed or upgraded anywhere and anytime. No need for time and effort in collecting the Terminal any-longer as the PT590 just stays on the side of your personnel and ensures non-disrupted operations in the field. The Smart MDM can also provide other highefficiency capabilities such as batch programming, log diagnosis, and device management, helping reduce cost and complexity in management and maintenance.



CONTROL YOUR RADIO BY VOICE*

Wake-up
by Voice

>100

Voice Commands in English

In an emergency or in a critical critical moment, your personnel need to initiate a call but are unable to reach the terminal nearby or just have their hands occupied. Is it still possible for them to make a call successfully? With the PT590 yes you can. Your personnel can still control and operate the PT590 by using voice commands.

We introduced the function of the voice command in the PT590 for the first time. This function supports group calls, changing of talk groups, activation of bluetooth and GNSS. When it is impossible to make a call by hand, the PT590 voice command just brings extra reassurance for information transfer. When in a life threatening situation and your pinned down, trapped or have fallen you can call out your commands to the PT590 Terminal so your calls for assistance can still be heard.



SPECIFICATIONS

General	
Frequency Range	Fv: 380-475 MHz
Dimensions (H x W x D)	125 x 55 x 31 mm
Weight (with battery and antenna)	285 g
Battery	2000 mAh
Battery Life (on the 5-5-90 duty cycle)	>22 h
Operating Voltage	7.7 V
User Interface	
LCD Color Display	2.4 inch, 320*240 pixels
Talk group-TMO	12000
Talk group-DMO	6000
Phone Book	2000
Inbox	
Outbox	≤550 entries
Drafts	
Talk group Folders-TMO	200
Talk group Folders-DMO	50
Status Messages	200
RF	
RF Channel Bandwidth	25 kHz
RF Power Output	3 W
RF Power Level Accuracy	± 2 dB
RF Power Control	5 dB per step
Receiver Class	ETSI EN 392-2/396-2 Class A and Class B
RX Static Sensitivity	-118 dBm (Min); -120 dBm (Typical)
RX Dynamic Sensitivity	-108 dBm (Min); -110 dBm (Typical)
Audio	
Audio Power Output	2 W (Peak 3 W)
Max Loudness	100 Phons (Standard Profile) & 106 Phons (Outdoor Profile)
Location Services	
Constellations	GPS: L1/L5 BeiDou: B1I/B2a GLONASS: L1 Galileo: E1/E5a
Tracking Sensitivity	≤-165 dBm
Acquisition Sensitivity	≤-149 dBm
Accuracy	<1.0 m (95% Probable, -130 dBm)
Cold Start (Time to First Fix)	<35 seconds
Hot Start (Time to First Fix)	<1 second
Environment	
Operating Temperature	-20°C to + 60°C
Storage Temperature	-30°C to + 70°C (Performance Limited)
Water and Dust Protection	IP65, IP66, IP67, IP68 (2 m, 4 h)
Drop, Shock & Vibration	MIL-STD-810 H EN300 019-1-7 5M3 GJB150A
Connectivity	
Bluetooth Version	BT 5.2
NFC Tag Type	ISO/IEC 15693
USB Type-C Port	USB2.0

STANDARD ACCESSORIES



Smart Battery



Antenna



Belt Clip



Strap



Smart Charger



Power Adapter

VERSION

	Standard	Advanced*
3W TX Power	Y	Y
USB Type-C Port	Y	Y
BT 5.2	Y	Y
GNSS	Y	Y
Dual-frequency Positioning	Y	Y
Voice Command	-	Y
WLAN	-	Y
SIM Card E2EE	Optional	Optional

* For future release

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