

PT590

NEXT LEVEL **TETRA**
PORTABLE RADIO

BEST IN CLASS

The new PT590 surely raises the bar of TETRA portable radios and is ready to become long lasting companion for today's and tomorrow's critical operations. It stands out due to excellent coverage, superior audio quality, productivity-boosting and advanced safety features.

Ready for mission, easy to use.



In critical moments, every second counts. Your personnel in the field rely on effective voice communications to connect and collaborate instantly and easily to stay safe and get things done. The PT590 TETRA portable radio makes your people always ready for the next moment.

The innovative PT590 portable radio reaches a completely new level in TETRA communication. The device offers convincing audio technology, best-in-class RF

performance, and dual-frequency GNSS. This results in better voice quality, wider communication coverage, and more accurate positioning, always ensuring mission-critical communications. This rugged TETRA radio also ensures incredible ease of use for your workers in the field - thanks to its ergonomic design, intuitive display, and remote radio management capability.

The PT590 is the first TETRA radio in class, that supports voice control and provides a one-fits-all USB Type-C port.



MISSION READY

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

SUPER LOUDNESS

106 Phones 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 phones of audio loudness.

ULTRA CLARITY

30 dB Noise Cancellation, 20 ms Fast Separation



The PT590 adopts the most advanced AI-based noise cancellation algorithm and has machine learning behaviour. After learning and training thousands of noise samples, this radio has extremely high noise elimination effect (up to 30 dB) in both steady and unstable environments. To make sure that your people receive the right commands clearly from the first word, the PT590 can separate the human voice from the noise just within 20 ms. This ensures your personnel to get every word even in a very short call.

HIGH ADJUSTMENT

30 cm Howling Suppression



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



AIR INTERFACE ENCRYPTION (AIE)

TEA 1/2/3/4, TEA 5/6/7*

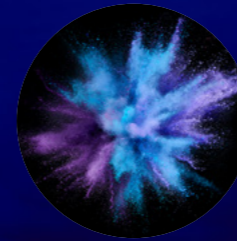
Born for mission-critical communications, the PT590 supports all levels of AIE including Class 1, Class 2 and Class 3 which secure signalling, voice, and data transferred between the radio and the base station. The PT590 supports TEA 1/2/3/4 algorithms and will further support ETSI specified TEA 5/6/7 in the future.



END-TO-END ENCRYPTION (E2EE)

TETRA Standard*, SIM Card Customized*

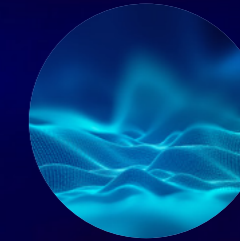
Using end-to-end encryption algorithms, the TETRA radio supports 128-bit AES or 256-bit AES encryption keys that can be used to encrypt voice and data and is used in situations with stringent communication security requirements. The PT590 supports TETRA E2EE in compliance with the TCCA SFPG standard to encrypt voice and data communication between different radios and also between radios from different manufacturers. 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.



EXTENDED RADIO RANGE

3 W Continuous Class 3 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 information even at a distance or in remote areas. Your people always stay connected anywhere and anytime.



ENHANCED SIGNAL CORRECTION CAPABILITY

Anti-multipath Algorithm

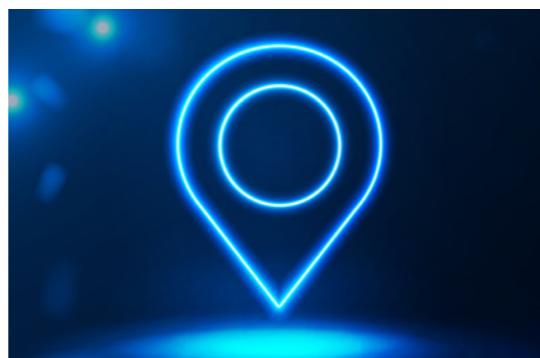
Adopting the anti-multipath interference algorithm, the PT590 receives and transmits voice smoothly and stably, regardless of any complex local metallic environment such as a port or a chemical plant.

SECURED COMMUNICATION

STAY CONNECTED



Positioning is crucial for personnel safety, especially in emergency situations. The PT590 ultra-high precision positioning helps the command centre or teammate to 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

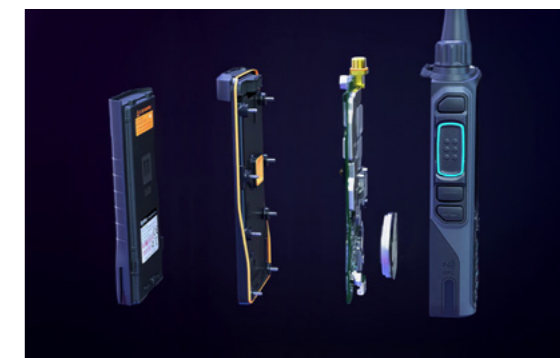
The PT590 applies unprecedented dual frequency positioning technology. By receiving and processing satellite signals in two frequency bands at the same time, it effectively compensates and corrects the signal distortion that occurs after the satellite signal passes through the atmosphere. As a result,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



LONG-LASTING DEVICE

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 a 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 an unexpectedly long shift.



RUGGED FOR THE REAL WORLD

IP68 2m, 4h under water

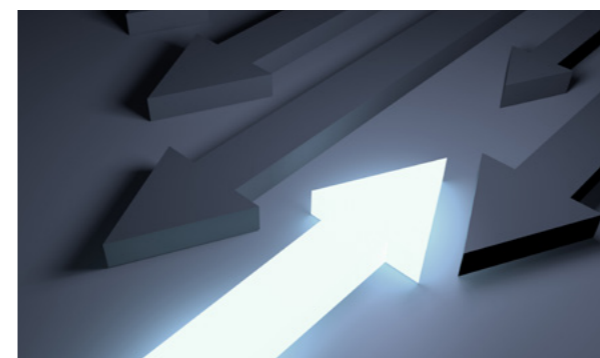
Combining purpose-built design and stringent testing, the durable PT590 can withstand the elements of field work in the real world. It meets the harshest test standard MIL-STD-810 H to survive 1.5-meter drops. The PT590 is IP65, IP66, IP67 and IP68 (2m, 4h) rated. The PT590 is equipped with an anti-magnetic speaker which prevents the accumulation of magnetic metal dust and can effectively stabilize the communication quality.



VIEW MORE, DO MORE

2.4-inch Colour Screen, 9-grid Menu

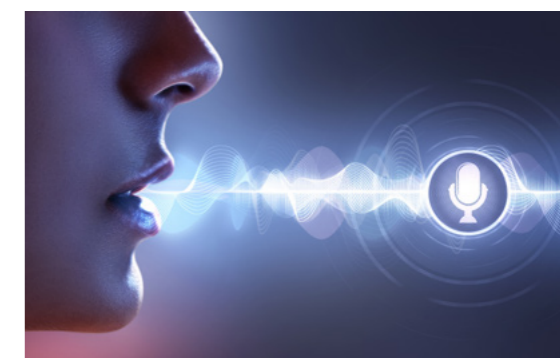
The 2.4-inch transfective LCD-TFT screen of the PT590 is semi-transparent and semi-reflective, ensuring clear readability in direct sunlight and reducing eye strain. The PT590 abandons the traditional list-style menu and has a new friendly UI design. The 9-grid menu design helps your personnel get immediate access to the function and the shallow menu structures design reduces the menu level and operation steps, thus ensuring your personnel can access the settings quickly and accurately. Moreover, the conversation short message interface allows your people to view all the message history at one time.



MINIMIZE DOWNTIME, MAXIMIZE EFFICIENCY

Faster & Easier Remote Programming

With Smart MDM software and wireless connectivity, the PT590 with WLAN* feature activated can be remotely programmed or upgraded anywhere and anytime. No huge time and effort are put into the radio recall and process anymore. 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 high-efficiency capabilities such as batch programming, log diagnosis, and device management, helping reduce cost and complexity in management and maintenance.



CONTROL YOUR RADIO ON VOICE*

Wake-up by Voice, > 100 Voice Commands

In an emergency or some critical moment, your personnel need to initiate a call but fail to reach the radio nearby or just have their hands occupied. Is it still possible for them to make a call successfully? The PT590 says yes. Your personnel can still control and operate the PT590 by their voice. As first radio in the market, the PT590 introduces the function of voice command. For example, this function supports group call, talk group change, and function switch like turning on BT or location service. When it is impossible to make a call by hand, the PT590 voice command just brings extra safety with the opportunity for information transfer.

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	2,000 mAh
Battery Life (on the 5-5-90 duty cycle)	> 22 h
Operating Voltage	7.7 V

USER INTERFACE

LCD-TFT Colour Display	2.4 inch, 320*240 pixels
Talk group TMO	12,000
Talk group DMO Phone	6,000
Book	2,000
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	permanent ± 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	Standard Profile 100 Phons Outdoor Profile 106 Phons

LOCATION SERVICES

Constellations (satellite systems and frequency bands)	GPS: L1/L5 BeiDou: B1/B2a GLONASS: L1 Galileo: E1/ESa
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 - 30° C to +70° C (with optional battery)*
Storage Temperature	-40° C to +85° C
Water and Dust Protection Drop, Shock & Vibration	IP65, IP66, IP67, IP68 (2m, 4h) MIL-STD-810 H EN300 019-1-7.5M3 GJB1 50A

CONNECTIVITY

BT Version	BT 5.2
NFC Tag Type	ISO/IEC 15693
USB Type-C Port	USB 2.0

STANDARD ACCESSORIES

Smart Battery BP2003
Belt Clip BC48
Antenna AN0405H24 (380-430 MHz)
Strap RO03
Smart Charger CH10L30
Power Adapter PS1018

VERSION

	Standard	Advanced*
3W TX Power	✓	✓
USB Type-C Port	✓	✓
BT 5.2	✓	✓
GNSS	✓	✓
Dual-frequency Positioning	✓	✓
Voice Command	-	✓
WLAN	-	✓
Sim Card E2EE	optional	optional

*For Future Release



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