



Z1p

TETRA handheld radio

Hytera Z1p is an ultra-slim TETRA handheld radio with a full keypad. It was developed in complete correspondence with the open ETSI standard TETRA and combines compact form with outstanding radio properties.



Radio

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Highlights

Compact design and high transmitting power

The Z1p from Hytera combines compact design with extensive TETRA functionality, integrated in a housing that is only 23 mm thick. Thanks to its small dimensions, this handheld radio is perfectly suited to concealed applications. In spite of its compact design, the Z1p transmits with a power of up to 3 Watts.

Dust- and waterproof to IP67

Even under harsh operating conditions Z1p boasts excellent features. The device fulfills the requirements of protection class IP67 and can be submerged in water at a depth of 1 meter for at least 30 minutes. The Z1p meets the requirements of the US-American MIL-STD-810 C/D/E/F/G standard and passed the HALT tests (Highly Accelerated Life Test).

Extensive security functions

TETRA security features such as Air Interface Encryption and End-to-End encryption reliably protect the radio communication. The built-in protection against tampering (tamper-proof) protects stored TETRA algorithms/keys against direct attacks.

Intelligent antenna design

The integrated radio and GPS antenna provides high comfort and even better features. Operating errors are effectively avoided, even when working with gloves or under poor lighting conditions, since the antenna separates the two operating buttons of the Z1p from each other.

Immediate and direct communication

The Z1p offers fast access to the TETRA mobile radio network and the services. It was developed according to the regulations of the ETSI TETRA standard and is therefore compatible with infrastructures and terminals from various manufacturers.

Various functions

Besides the voice and data communication, the Z1p offers many additional functions: GPS, encryption, programmable buttons, etc. In addition, the handheld mobile radio features a connection for expansions and accessories.



The features marked with * are available in future versions of the Z1p. Encryption features are optional and have to be configured separately. They also are subject to German and European export regulations.

Functions

Operating mode

- Trunked radio mode (TMO): Communication via the TETRA radio network (semi-duplex and duplex mode)
- Direct mode (DMO): Direct communication between the radios (semi-duplex)
- Support for DMO Repeater and TMO/DMO Gateway communication: Extended range for DMO communication
- Operation as DMO Repeater*: Operating mode TETRA type 1A

Voice services

Group calls

- Group calls with defined, pre-emptive or emergency call priority
- Dynamic Group Number Assignment (DGNA), broadcast call (group, TMO), Talking Party Identification in group call

Individual call

- Individual call semi-duplex and duplex (TMO)
- Individual call with defined, pre-emptive or emergency call priority
- Calling Line Identification Presentation (CLIP)

Calls to telephone networks (PSTN/PABX) (TMO)

- PSTN/PABX individual call full duplex and semi-duplex
- DTMF
- Calling Line Identification Presentation (CLIP)

Additional call services

- Callout

Security functions

- Authentication
- Air Interface Encryption (TEA1, TEA2*, TEA3, TEA4)
- End-to-end encryption (E2EE)
- TETRA security classes 1, 2, 3 – non-encrypted, static encryption (SCK), dynamic encryption (DCK/CCK)
- Key distribution via air interface (OTAR)
- Enable/Disable via air interface, temporary/permanent
- Ambience Listening
- Access control with PIN/PUK code
- Protection against tampering (tamper-proof)*

Security functions for the user

- Orange emergency key
- Lone worker function
- Tilt alarm
- Silent alarm
- Call barring and key lock
- Configuration protection / configuration password
- TX Inhibit (TXI)

Functions of the user interface

- 18 programmable keys for direct access to individual functions (short keys) and 4-ways navigation key
- Call log: Missed/answered calls, dialed numbers
- Flexible dialing (e.g. direct dialing, redialing, dialing lists etc.)
- Two microphones for semi-duplex and duplex calls
- Wireless BT connection to audio and PTT devices with automatic search and recognition
- Adjustable display brightness
- Many international languages already available, can be upgraded
- GPS positioning based on ETSI LIP or NMEA protocol
 - Completely programmable position updates
 - Transmission of position information in case of an emergency call
- Clock synchronization via GPS/SAT, radio network or local time
- PEI interface
- Energy saving mode
- Automatic cell re-selection without call interruption (handover)
- Programming of selectable networks (TMO, DMO)
- Programming of selectable gateways PSTN/PABX
- Customizable alarm tones
- Radio User Assignment (RUA)

Data / message services

- Short data service (SDS) – types 1, 2, 3, 4 and TL
- Concatenated SDS (Long SDS) and Flash SDS
- Status message/text message
- Notification on new messages during calls
- Packet Data Service (packet data, single-slot, multi-slot)
- Java™ platform MIDP 2.0

Ultra-slim radio (only 23 mm) with transmitting power of 3 watts

Secure TETRA encryption and tamper protection (Tamper Proof)

Large 1.8-inch color display, easy to read even in bright sunlight



Robust and waterproof:
In accordance with MIL-STD-810 C/D/E/F/G
and degree of protection IP67

Special orange emergency key

Device interface for audio and data
accessories, plug & play, platform for
Java™ applications





Technical Data

General data	
Frequency ranges	350 - 400 MHz / 380 - 430 MHz 410 - 470 MHz / 806 - 870 MHz
Dimensions (H x W x D)	120 x 58 x 23 mm
Weight (with battery)	approx. 260 g (with 1100 mAh) approx. 270 g (with 1400 mAh) approx. 290 g (with 1800 mAh)
Operating voltage	7.4 V
Battery (lithium-ion battery)	1400 mAh (standard battery), 1100 mAh or 1800 mAh (optional)
Battery service life (lithium-ion battery, 5-5-90 duty cycle)	> 13.5 hours (standard battery) > 10.5 hours (with 1100 mAh) > 17 hours (with 1800 mAh)
LCD color display	1.8 inch, 160 x 128 pixel, 65,000 colors
Call groups - TMO	2048
Call groups - DMO	1024
Phone book	512 entries
Group lists (used for scanning, scan lists)	64 (200 groups per list)

Ambient data	
Operating temperature range	-25 °C to +65 °C
Storage temperature range	-40 °C to +85 °C
Relative humidity	ETS 300 019 (95%)
Protection against dust and moisture	IEC 60529, IP67
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G

Standard accessories

				
Antenna (GPS integrated)	Lithium-ion battery 1400 mAh BL1401	Power adapter (country-specific)	Dual charging station CH10L15	Hand strap RO03

Optional accessories (selection)

						
Various headsets	6-unit power supply (for charging stations) PS7002	6-unit charging station MCA10	Lithium-ion battery 1800 mAh BL1809	BT communication set EHW02	BT push-to-talk button (PTT) POA47	Belt clip carrying case PCN005

Your Hytera partner:



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Radio characteristics	
Channel spacing	25 kHz
Transmitting power	Up to 3 W (adjustable) / max. 1.8 W at 806 - 870 MHz
RF power control	4 steps of 5 dB
Receiver class	ETSI EN 392-2 / 396-2 class A
Static receiver sensitivity	-112 dBm (typical -116 dBm)
Dynamic receiver sensitivity	-103 dBm (typical -105 dBm)
Maximum audio power output	1 W

GPS data	
Sensitivity	≤ -148 dBm receiving sensitivity; ≤ -162 dBm signal tracking sensitivity
Time to first fix (TTFF) cold start-up	< 27 seconds
Time to first fix (TTFF) warm start	< 1 second

All technical indications were tested according to the corresponding standards. Subject to change on the basis of continuous development.

The illustrations below are solely for reference. The products might differ from these illustrations.



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Encryption features are optional and have to be configured separately; they also are subject to German and European export regulations.

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