Hytera
Respond & Achieve

# Z1p

## TETRA handheld radio


The Hytera Z1p is a particularly slim TETRA handheld radio with a standard keypad. It was developed in full accordance with the open ETSI standard TETRA and combines compact form with excellent radio features.

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# Radio

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## Highlights

### Compact design and high transmitting power

The Z1p from Hytera combines a compact design with extensive TETRA functionality in a case that is only 23 mm thin. With its small dimensions, this handheld radio is perfectly suited for concealed carry. Despite its compact design, the Z1p transmits with a power of up to 3 watt.

### Dustproof and waterproof in accordance with IP67

The Z1p offers excellent features even under harsh operating conditions. The device complies with all the requirements of IP67 degree of protection, withstanding submersion in 1 meter of water for a duration of up to 30 minutes. The Z1p meets the requirements of the American MIL-STD-810 G-standard and has passed the HALT tests (Highly Accelerated Life Test.

### Extensive security functions

TETRA security functions, such as air interface encryption and end-to-end encryption, provide reliable security for radio communication. The built-in tamper-proof feature protects stored TETRA algorithms/keys against direct attacks.

### Intelligent antenna design

The integrated radio and GPS antenna provides high comfort and even better features. The two knobs on the Z1p are separated by the antenna to prevent operating errors, even when wearing gloves or in poor light conditions.

### Immediate and direct communication

Z1p provides rapid access to the TETRA radio network and to its services. It was developed according to the regulations of the ETSI TETRA standard and is therefore compatible with infrastructures and terminals from various manufacturers.

### Versatile functions

Besides voice and data communication, the Z1p offers many additional functions: GPS, encryption, programmable keys, etc. Moreover, the handheld radio includes 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 are also 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*: TETRA operating mode 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 Indication 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
- Tamper-proof*

### Security functions for the user
- Orange emergency call button
- 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 network IDs (TMO, DMO)
- Programming of selectable PSTN/PABX gateways
- 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 3 watt transmitting power

Secure TETRA encryption and tamper-proof

Large 1.8" color display, good readability under very bright light

Robust and waterproof: as per MIL-STD-810 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 | 380 – 430 MHz / 410 – 470 MHz* / 806 – 870 MHz* |
| Dimensions (H × W × D) | 120 × 58 × 23 mm (with standard battery) |
| Weight (with battery) | approx. 260 g (with 1100 mAh battery)<br>approx. 270 g (with 1400 mAh battery)<br>approx. 290 g (with 1800 mAh battery) |
| Operating voltage | 7.4 V |
| Battery (lithium-ion battery) | 1400 mAh (standard battery),<br>1100 mAh or 1800 mAh (optional) |
| Battery service life (lithium-ion battery) (5-5-90 duty cycle) | > 13.5 hours (standard battery)<br>> 10,5 hours (with 1100 mAh)<br>> 17 hours (with 1800 mAh) |
| Programmable keys | 18 |
| LCD color display | 1.8 inch, 160 × 128 pixel, 65,536 colors |
| Call group number | TMO: 3000, DMO: 2000 |
| Phone book | 1000 entries |
| Group lists – TMO (used for scanning, scan lists) | 200 (200 groups per list) |
| Group lists – DMO | 50 (200 groups per list) |

| Radio characteristics | |
|---|---|
| Channel spacing | 25 kHz |
| Transmitting power | Up to 3 W (adjustable) /<br>max. 1.8 W at 806 – 870 MHz |
| Transmitting power accuracy | ±2 dB |
| Transmitting power control | 4 steps of 5 dB |
| Receiver class | ETSI EN 392-2 / 396-2 class A & B |
| Static receiver sensitivity | -112 dBm (typical -116 dBm) |
| Dynamic receiver sensitivity | -103 dBm (typical -105 dBm) |
| Maximum audio power output | 1.5 W |

| GPS data | |
|---|---|
| Sensitivity | ≤ -148 dBm receiving sensitivity;<br>≤ -162 dBm signal tracking sensitivity |
| Precision | ≤ 2.5 m |
| Time to first position recognition (TTFF) cold start | < 26 seconds |
| Time to first position recognition (TTFF) warm start | < 1 second |

| Environmental conditions | |
|---|---|
| Operating temperature range | -30 °C to +60 °C |
| Storage temperature range | -40 °C to +85 °C |
| Relative humidity | ETS 300 019 (95 %) |
| Protection against dust and moisture | IEC60529, IP67 |
| Shock and vibration resistance | MIL-STD-810 G |

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.

The illustrations below are solely for reference.
The products themselves may deviate from these representations.

## Standard accessories


Antenna (GPS integrated)


Lithium-ion battery 1400 mAh BL1401


Power adapter (country-specific)


Dual charging station CH10L15


Hand strap RO03

Your Hytera partner:

Further information can be found at:
**www.hytera-mobilfunk.com**

Contact us if you are interested in purchasing, sales or application partnerships: info@hytera.de

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