



# X1e

## DMR handheld radio

The handheld radio X1e from Hytera for hidden and concealed applications meets the open ETSI standard DMR and is the world's smallest DMR radio on the market. It represents a perfect combination of robust construction, versatile functions and clever design. The most surprising aspect about this device is its small size. It is merely 18 mm thin!



# Radio

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### Highlights

#### Elegant design

With its slim design with a depth of only 18 mm, you can store the X1e unnoticed in inside pockets of a jacket. With its 200 g, it is barely heavier than common smartphones.

#### Reliability

The X1e meets all the requirements of the open ETSI standard DMR as well as MIL810-C/D/E/F/G and degree of protection IP67. The device series thus offers you excellent features even under rough operating conditions.

#### Excellent voice quality

With the combined application of the narrow band codex and digital technologies for debugging, the X1e ensures an excellent voice quality even in loud environment and in peripheral areas of radio coverage.

#### Supports Hytera BT headsets

Wireless audio accessories from Hytera can be connected directly to the X1e. As such the radio can be carried conveniently without having to route cables through the clothing.

#### Secure communication

With the X1e you communicate securely thanks to digital encryption for voice and data using the encryption algorithm ARC4 (40 bit) in accordance with DMRA or with the optional algorithms AES128 and AES256 (128 and 256 bit)

#### Improved utilization of the frequency spectrum

Thanks to the TDMA process, the X1e allows an assignment of the available bandwidth with double channel capacity. This has a clear mitigating effect on increasing spectrum scarcity.

#### Upgradeable software

Upgradeable software makes the use of new features possible. By altering the firmware-software, other digital and analog operating modes can be enabled, without the need for purchasing a new radio device.



## Functions (excerpt):

- Optional analog or digital operation
- Versatile voice calls
  - Individual call
  - Group call
  - Broadcast call
  - Emergency call
- GPS functions
  - Retrieve GPS position data
  - Send GPS text messages
- Different analog dialing methods
  - HDC1200, DTMF, 2-tone and 5-tone dialing, selective call
  - Squelch procedure/tone call CTCSS/CDCSS
- Vibration alarm for incoming calls
- Automatic cell re-selection (roaming) in IP multi-site systems
- Analog scrambling
- Secure encryption with encryption algorithm ARC4 (40 bit) in accordance with DMRA or with optional algorithms AES128 and AES256 (128 and 256 bit)
- Upgradeable software

### Integrated antenna

The integrated radio and GPS antenna provides improved comfort and remarkable GPS features.

### Unique operating concept

The two buttons on the radio are separated by the antenna. Operation even with gloves is therefore made easier.

### Dustproof and waterproof

The PD705/PD705G is waterproof and dust-proof in accordance with an IP67 degree of protection, which means it is capable of withstanding a water depth of one meter for at least half an hour.



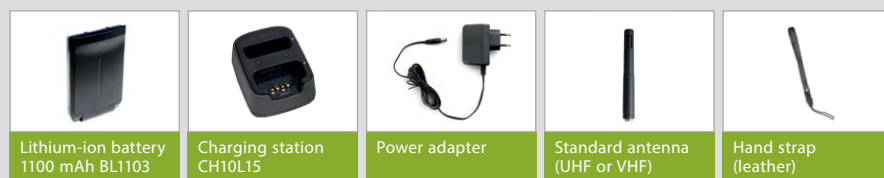
### High degree of user-friendliness

Straightforward usage thanks to the reduced thickness of 18 mm. Usage with a wireless headset, collar or hand microphone (optional accessory) is possible.

### Robustness and reliability

The X1e meets the requirements of the American MIL-STD-810 C/D/E/F/G standards and can therefore withstand even extreme mechanical loads.

## Standard accessories



## Optional accessories (excerpt)



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

## Technical Data

General data	
Frequency range	VHF: 136 – 174 MHz UHF: 400 – 470 MHz
Supported operating modes	<ul style="list-style-type: none"> <li>DMR Tier II in acc. with ETSI TS 102 361-1/2/3</li> <li>Simulcast</li> <li>DMR Tier III in acc. with ETSI TS 102 361-1/2/3/4</li> <li>Analog, MPT 1327</li> </ul>
Channel capacity	1024
Zone capacity	3
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	7.4V (nominal)
Standard battery	1100mAh (lithium-ion battery)
Battery service life (analog) (5-5-90 duty cycle, high transmitting power, standard battery)	approx. 8 hours
Battery service life (digital) (5-5-90 duty cycle, high transmitting power, standard battery)	approx. 10 hours
Frequency stability	± 1.5 ppm
Antenna impedance	50 Ω
Dimensions (H×W×D) (with standard battery, without antenna)	119,5 × 57 × 18 mm
Weight (with antenna and standard battery)	200 g

Ambient data	
Operating temperature range	- 30 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C
ESD	IEC 61000-4-2 (Level 4), ± 8 kV (contact), ± 15 kV (air)
Dust and water protection	IP67
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G
Relative humidity	MIL-STD-810 C/D/E/F/G

GPS	
Time to first position recognition (TTFF) cold start	< 1 minute
Time to first position recognition (TTFF) warm start	< 10 seconds
Horizontal accuracy	< 10 m

Your Hytera partner:



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Transmitter	
Transmitting power	VHF: 1 / 5W UHF: 1 / 4W
Modulation	11 K0F3E at 12.5 kHz 14 K0F3E at 20 kHz 16 KF03E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
Interfering signals and harmonics	- 36 dBm (< 1 GHz) - 30 dBm (> 1 GHz)
Modulation limiting	± 2.5 kHz at 12.5 kHz ± 4.0 kHz at 20 kHz ± 5.0 kHz at 25 kHz
Hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20/25 kHz
Audio sensitivity	+ 1 dB at - 3 dB
Nominal audio distortion	≤ 3%
Digital vocoder type	AMBE+2™

Receiver	
Sensitivity (analog)	0.3 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (20 dB SINAD)
Sensitivity (digital)	0.3 µV / BER 5 %
<b>Adjacent channel selectivity</b> TIA-603 ETSI	60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz 60 dB at 12.5 kHz / 70 dB at 20 / 25 kHz
<b>Intermodulation</b> TIA-603 ETSI	70 dB at 12.5 / 20 / 25 kHz 65 dB at 12.5 / 20 / 25 kHz
<b>Spurious response rejection</b> TIA-603 ETSI	70 dB at 12.5 / 20 / 25 kHz 70 dB at 12.5 / 20 / 25 kHz
Hum and noise	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Nominal audio distortion	≤ 3%
Audio sensitivity	+ 1 dB at - 3 dB
Conducted spurious emission	< - 57 dBm

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

Further information can be found at:

[www.hytera-mobilfunk.com](http://www.hytera-mobilfunk.com)

Contact us if you are interested in sales, distribution or application partnership:

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

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