



X1e

DMR hand-held radio

The hand-held radio X1e from Hytera for hidden and concealed applications meets the open ETSI standard DMR and is the world's smallest DMR radio transceiver 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 18mm 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.

Improved use of the radio spectrum

Thanks to the TDMA process, the X1e allows an assignment of the available bandwidth with double channel capacity. This results in a clear relief of the increasing spectrum scarcity.

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 error correction, the X1e ensures an excellent voice quality even in loud environment and in peripheral areas of radio coverage.

Secure communications

With the X1e, you can securely communicate thanks to digital encryption for voice and data using the Advanced Encryption Standard (AES) method and dynamic 256-bit encryption.



Functions (excerpt)

- Optionally analogue or digital operation
- Versatile voice calls
 - Individual call
 - Group call
 - Broadcast call
 - Emergency call
- GPS functions
 - Query GPS position data
 - Send GPS text messages
- Different analogue dialling methods
 - HDC1200, DTMF, 2-tone* and 5-tone dialling, selective call
 - Squelch procedure/tone call CTCSS/CDCSS
- Vibration alarm for incoming calls
- Automatic cell re-selection (roaming) in multi-site systems
- Analogue scrambling and digital encryption for voice and data using the Advanced Encryption Standard (AES) and ARCFOUR (ARC4) processes
- Upgradeable software

The features marked with * are available in future versions of the X1e.

Integrated antenna

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

Unique operating concept

The two control buttons are separated from each other by the antenna. This facilitates easy operation, even with gloves.

Dust and waterproof

The X1e meets the requirements of degree of protection IP67 and passed the corresponding submersion test: up to 30 minutes in a water depth of 1 meter.

High degree of user-friendliness

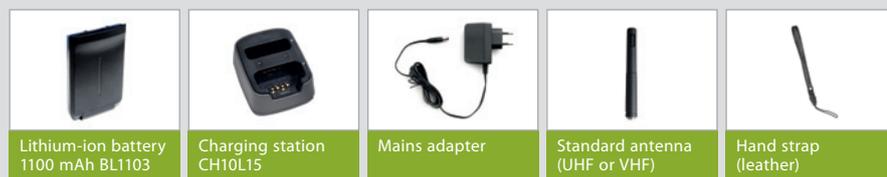
Simple handling thanks to its low thickness of only 18 mm as a combination and the use of a wireless headset, clip-on or hand-held microphone (optional accessories).

Robustness and reliability

The devices meet the requirements of MIL-STD-810 C/D/E/F/G standards and passed the HALT tests (Highly Accelerated Life Test).



Standard accessories



Optional accessories (excerpt)



The illustrations shown above are only for reference purposes. The products themselves may vary from these representations.

Technical data

General data	
Frequency ranges	VHF: 136 – 174 Mhz UHF1: 400 – 470 Mhz UHF3: 350 – 400 Mhz
Channel capacity	32
Channel spacing	12.5 / 20 / 25 KHz
Operating voltage	7,4V (nominal)
Battery	1100 mAh (Lithium-ion battery)
Battery service life (5-5-90 operating cycle, high transmitting output)	Analogue: > 8 hours Digital: > 10 hours
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (H×W×D) (with standard battery, without antenna)	119,5 × 57 × 18 mm
Weight (with standard battery and antenna)	200 g
Front cover	PC & metal frame

Receiver	
Sensitivity (analogue)	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 %
Adjacent channel selectivity 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
Intermodulation TIA-603 ETSI	70 dB at 12.5 / 20 / 25 kHz 65 dB at 12.5 / 20 / 25 kHz
Spurious response rejection 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 ~ - 3 dB
Circuit-mode spurious emission	< - 57 dBm

Transmitter	
RF transmitting power	VHF – High output: 5 W VHF – Low output: 1 W UHF1 / UHF3 – High output: 4 W UHF1 / UHF3 – Low output: 1 W
Modulation	11 KΦF3E at 12.5 kHz 14 KΦF3E at 20 kHz 16 KΦF3E at 25 kHz
Digital 4FSK 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
Noise suppression	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Capacity of the adjacent channel	60 dB at 12.5 kHz 70 dB at 20 / 25 kHz
Audio sensitivity	+ 1 dB at - 3 dB
Audio distortion	≤ 3 %
Digital vocoder type	AMBE ++ / SELP
Digital protocol	ETSI-TS102 361-1, -2, -3

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)
Protection against dust and moisture	Degree of protection IP67
Relative humidity	acc. to MIL-STD-810 C/D/E/F/G
Shock and vibration resistance	acc. to MIL-STD-810 C/D/E/F/G

GPS	
Time to first fix (TTFF) cold start-up	< 1 minute
Time to first fix (TTFF) warm start	< 10 seconds
Horizontal precision	< 10 m

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

Your Hytera partner:



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Encryption features are optional and require a separate configuration, subject to German and European export regulations.

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