Hytera
Respond & Achieve

X1e

DMR handheld radio

The Hytera X1e handheld radio for covert and concealed applications meets the open ETSI DMR standard, and is currently the world's smallest DMR radio on the market. It represents the perfect combination of robust versatile functionality, and clever design. At just 20mm thin, the X1e is perfect for covert security operations.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.co.uk

Radio

X1e

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Highlights

Elegant design
With its slim design at a depth of only 20 mm, you can store the X1e unnoticed inside jacket pockets and, at just 240g, it is barely heavier than a common smartphone.

Reliability
The X1e meets all the requirements of the open ETSI DMR standard, as well as MIL810-C/D/E/F/G and an IP67 degree of protection. Thus, this device offers excellent features, even in tough operation conditions.

Excellent voice quality
With the combined application of the narrowband codec and digital technologies, the X1e delivers excellent voice quality, even in loud environments and in peripheral areas of radio coverage.

Supports Hytera Bluetooth headsets
Wireless audio accessories from Hytera can be connected directly to the X1e. As such, the radio can be carried and operated 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 analogue operating modes can be enabled, without the need for purchasing a new radio device.

Systems radio
Utilise the X1e in a Hytera XPT or Digital Trunking (Tier III) system to benefit from the advanced features across a larger, intelligent network. Chargeable licences apply.

Functions:

- Analogue 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 analogue 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
- Analogue 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
- Lone worker
- Man down
- Multi-site roaming

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 when wearing gloves, is therefore made easier.

Dustproof and waterproof
The X1e is waterproof and dustproof in accordance with degree of protection IP67, which means it is capable of withstanding a water depth of one meter for at least half an hour.

Simple, user-friendly design
Straight forward to use thanks to the reduced thickness of 20mm. Usage with a wireless headset, collar or hand microphone (optional accessory) is also possible.

Robust and reliable
The X1e meets the requirements of the American MIL-STD-810 C/D/E/F/G standards and can therefore withstand knocks and drops.

In the box


Lithium-ion battery 1400 mAh BL1401


MCU Dual-Pocket Charger CH10L16


Power adapter PS1044


Standard antenna (UHF or VHF)


Wrist Strap RO03

Optional accessories


Lithium-ion battery 1800 mAh BL1809


Vehicle power adapter CHV09


Programming cable (USB) PC45


Vest for concealed usage NCN009


Concealed induction microphone set (beige) EWN07


Remote Speaker Microphone SM26N1


BT Earpiece with Dual PTT EHW02

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	• DMR Tier II in acc. with ETSI TS 102 361-1/2/3 • Simulcast • DMR Tier III via chargeable licence in acc. with ETSI TS 102 361-1/2/3/4 • XPT Digital Trunking • Analogue, MPT 1327
Channel capacity	1024
Number of zones	3
Channel spacing	12.5 / 20 / 25 kHz (analogue) 12.5 kHz (digital)
Operating voltage	7.4 V (nominal)
Standard battery	1400 mAh (lithium-ion battery)
Battery life (digital, with lithium-ion batteries) (5-5-90 duty cycle, high transmitting power)	approx. 10 h (with 1100 mAh battery) approx. 12 h (with 1400 mAh battery) approx. 15 h (with 1800 mAh battery)
Frequency stability	± 1.5 ppm
Antenna impedance	50 Ω
Dimensions (H × W × D) (with battery, without antenna)	119.5 × 57 × 18 mm (1100 mAh battery) 119.5 × 57 × 20 mm (1400 mAh battery) 119.5 × 57 × 23 mm (1800 mAh battery)
Weight (with antenna and battery)	approx. 220 g (with 1100 mAh battery) approx. 240 g (with 1400 mAh battery) approx. 260 g (with 1800 mAh battery)

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

Transmitter	
Transmitting power	VHF: 1 / 5 W UHF: 1 / 4 W
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 (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 % (500 mW)
Nominal audio power output	500 mW
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.

Your Hytera partner:

Further information can be found at:
www.hytera.co.uk

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Ref. no.: X1e_EN_004D_040117