Hytera
Respond & Achieve

X1p

DMR hand-held radio

The X1p is a ultra-thin digital hand-held radio with a full power key pad, which is developed in compliance with the ETSI DMR standard.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.de/en

Radio

X1p

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Highlights

Advanced encryption
The AES encryption algorithm and the 40 to 256 bit digit encryption keys ensure secure communication.

Supports Hytera Bluetooth earpieces*
The X1p supports Bluetooth earpieces from Hytera, facilitating operations including PTT.

Open USB interface
An open USB port facilitates secondary and application development.

GPS positioning
The built-in GPS module supports GIS applications (geographic information system).

Dual mode (analog & digital)
By supporting analog and digital operation, the X1p ensures a smooth migration from analog to digital.

Versatile voice calls
Versatile voice calls include individual call, group call and all-call.

Direct mode
Like the other DMR terminals from Hytera, the X1p supports the use of both timeslots in direct mode. In direct mode two calls can be held in the same area at the same time.

Rich signalling
Supports multiple advanced analog signalling techniques, including HDC1200, DTMF, 2-tone* and 5-tone, providing more expansion capacity.

Software upgradable
Upgradable software enables new features. By changing the firmware software the radio can be used for DMR Tier II or DMR Tier III without buying a new radio.

This radio is a perfect combination of structural rigidity, versatile features and refined design; secure communication ensured by AES encryption algorithm & 256 digit dynamic encryption keys; convenient application development facilitated by a built-in Bluetooth and USB port; and worry-free handling achieved by IP67 protection. All comes with a surprisingly small size: 21 mm thin when using a 1100 mAh Li-ion battery.

Innovative Design

Multiple languages
The user interface of the X1p supports different languages allowing users to select it per their needs. T9 support for text input is available.

Large-size colour display
X1p adopts a 1.8" TFT LCD display (65,536 colours), allowing good visibility even under outdoor light conditions.

Key pad
The key pad can be deactivated automatically. For enabling the key pad a password can be set.

Extra operation time
Compared with an analog radio, the X1p can obtain an extra operation time of 40 % by using DMR TDMA. This means an operation time up to 10 hours.

IP67 compliance
Complies with IP67 requirements, withstanding up to 1 m submersion in water for at least 30 minutes.

Rugged & reliable
Complies with MIL-STD-810 C/D/E/F/G standards and passes HALT (Highly Accelerated Life Test).

The features marked with * are available in future versions of the X1p.

Versatile accessories for specific tasks (excerpt)


Li-Ion battery (1800 mAh) BL1809


3-wire surveillance earpiece with acoustic tube EAN21


Remote swivel earset EHN20


Remote earbud ESN14


Remote C-earset EHN21


Vest NCN009


Digital wireless covert earpiece (flatpack sensor) EWN08


Belt charger CH04L01


MCU dual-pocket charger CH10L15


Belt clip PCN005

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

Technical Data

General data	
Frequency range	VHF: 136 – 174 Mhz, UHF: 400 – 470 Mhz
Channel capacity	1024
Number of zones	64
Channel spacing (analog)	12.5 / 20 / 25 KHz
Channel spacing (digital)	12.5 KHz
Operating voltage	7.4 V (nominal)
Standard battery	1100 mAh (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 × 21 mm (1100 mAh, lithium-ion battery) 119.5 × 57 × 26 mm (1800 mAh, lithium-ion battery)
Weight (with standard battery and antenna)	approx. 240 g (1100 mAh, lithium-ion battery) approx. 280 g (1800 mAh, lithium-ion battery)
LCD display	160 × 128 pixels, 65,536 colours, 1.8 inches, 4 lines

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 %
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 to - 3 dB
Conducted spurious emission	< - 57 dBm

Transmitter	
Transmitting power	VHF: 1 / 5 W UHF: 1 / 4 W
Modulation	11 KΦF3E at 12.5 kHz 14 KΦF3E at 20 kHz 16 KΦF3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K6ΦFXD 12.5 kHz (data and voice): 7K6ΦFXW
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
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20/25 KHz
Nominal audio sensitivity	+ 1 dB to - 3 dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE++
ETSI standard	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 discharge) ± 15 kV (air discharge)
Protection against dust and moisture	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 fix (TTFF) cold start	< 1 minute
Time to first fix (TTFF) warm start	< 10 seconds
Horizontal accuracy	< 10 m

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

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SGS Certificate DE11/81829313

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