Hytera

X1p (UL913)

Intrinsically Safe Ultra-thin Digital Radio

- UL/CSA Certified explosion-proof DMR Portable Two-way Radio
- Designed for Hazardous Working Environments
- The thinnest explosion-proof portable radio worldwide.
- Larger Battery Capacity, Longer Cycle Life

SGS C US

Ex CQST NAN YANG

DMR DIGITAL MOBILE RADIO ASSOCIATION

www.hytera.com

X1p(UL913)

As the thinnest explosion-proof digital two-way radio, Hytera X1p(UL913) are specially designed for those who work in environments with explosive gas and combustible dusts, where using regular radios could be unsafe. Hytera understands the challenges of professionals in hazardous environments. Dedicated to designing and delivering of intrinsically safe and reliable communications solutions, Hytera has already launched X1p /PD78X/PD78XG/PD70X/PD70XG(UL913), portable explosion-proof DMR radio with ergonomic and rugged design, easy to use, long battery life and UL913-rated for safety. X1p(UL913) brings you a more convenient and comfortable using experience in a rough and high protective environment.

Applications

Oil & Gas, Refinery, Chemical Industry, Fire Fighting

X1p(UL913) in this document are intrinsically safe, they are different from the conventional types.

Highlights

UI913 and CSA Certificated

Explosion-proof Safety

Hytera X1p(UL913) intrinsic safety radio is designed upon the requirements of USA UL913 and Canada CSA standard, the radio works safely in most hazardous environments with explosive gas and dust particles.

① **Ease of use**

Easy to use with the rugged body as thin as 21mm, professional wireless headsets or collar microphone, palm controller and flexible antenna.

② **IP67 compliance**

Complies with IP67 requirements, withstanding up to 1m submersion for 30 minutes or more.

③ **Rugged & reliable**

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

④ **Large-size colour display**

X1p(UL913) adopts a 1.8" TFT LCD display (65536 colours), allowing good visibility even under outdoor strong sunlight.

Features

Advanced encryption

AES encryption algorithm & 256 digit dynamic encryption keys ensure secure communication.

Open USB interface

Open USB port facilitates secondary and application development.

GPS positioning

The built-in GPS module supports GIS applications.

Dual mode (analog & digital)

Dual modes (analog & digital) operation ensures a smooth analog-to-digital migration.

Versatile voice calls

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

Vibration

Vibration alerts the reception of voice call and message.

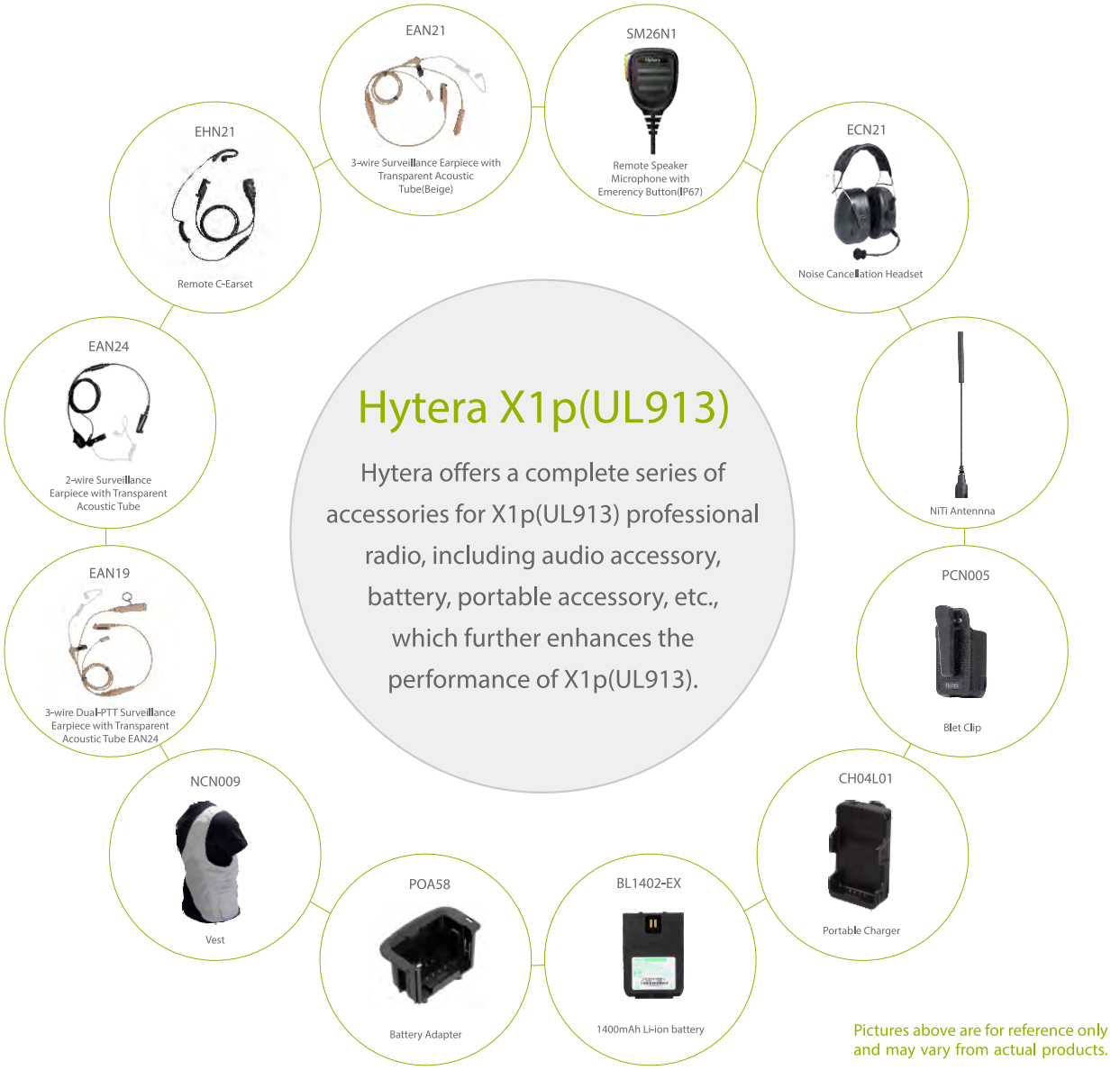
Rich signaling

Supports multiple advanced analog signaling, including HDC1200, DTMF phone, 2-Tone and 5-Tone, providing more expansion capacity.

Software upgradable

Upgrade software enables new features without buying a new radio; X1p(UL913) can also be switched into MPT and DMR trunking modes with corresponding license applied to the same hardware.

Accessories



Pictures above are for reference only and may vary from actual products.

Power Supply:

BL1402-Ex Li-Ion Battery(1400mAh),
CH04L01 Portable Charger,
CHV09 Vehicle Adapter for Charger,
MCA05-X Battery Optimizing System (X1e series),
POA53 Li-ion Battery Adapter for X1e series,
POA58: multi-unit charger battery adapter for X1e series ,
MCA10 MCU Multi-unit Rapid-rate Charger for X1e series

Carry Accessories:

NCN009 Covert Shoulder Harness,
PCN005 Belt Clip

Audio:

EAN19 3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige),
EAN21 3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige),
EAN22 Detachable Earpiece with Transparent Acoustic Tube,
EHN20 Remote Swivel Earset,
EHN21 Remote C-Earset,
ESN14 Remote Earbud,
ECN21 Heavy duty, Noisecancelling Headset,
SM26N1 Waterproof Remote Speaker Microphone(IP67),
SM26N2 Waterproof Remote Speaker Microphone(IP54),
EAN24 2-wire Surveillance Earpiece with Transparent Acoustic Tube (Black),
EH-02 Receive-Only Ajustable Earhook with Swivel Speaker,
EH-01 Receive-Only C Style Earloop,
ES-01 Receive- Only Earbud,
ES-02 Receive-Only Earpiece with Transparent Acoustic Tube,
ACN-02 PTT&MIC cable

UL913 Certificate

Class I II III-Division 1, Group C-G, -30℃ to 55℃, T4
Class I- Division 2, Group A-D

Atmosphere:
Class I-Gas, vapors;
Class II-Dust;
Class III-Fibers, Flyings

Operating Temperature

Temperature Class (Maximum device surface temperature)

T1-450℃	T3C-160℃
T2-300℃	T4-135℃
T3-200℃	T5-100℃
T3A-180℃	T6-85℃
T3B-165℃	

Class I II III Division 1 Group C-G -30℃to 55℃ T3C

Area Classification: (Flammable material present time) NEC 500
Division 1: Gas/Dust normally present in explosive amounts
Division 2: Gas/Dust not normally present in explosive amounts

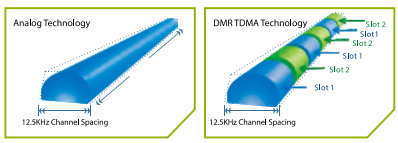
Gas Types by Group:
A-Acetyene
B-Hydrogen
C-Ethylene and related products
D-Propane and alcohol products

Dust Types by Group:
E-Metal dust
F-Coal dust
G-Grain and non-metallic dust

Digital Technology

1 Higher Spectrum Efficiency

Mandate by FCC that non frequency efficient (⩾12.5kHz) equipment will not be approved after 2011 due to congestion. And all public safety equipments have to be migrated by 2013. High channel efficient technology is the trend of world to replace analog technology

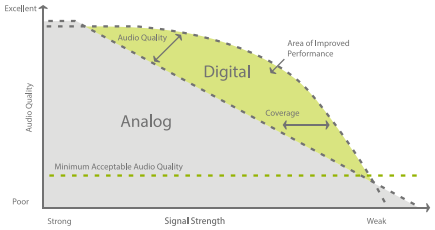


2 Longer Battery Life

Two-slot TDMA, however, offers a good way forward. Since an individual call uses only one of the two timeslots, it requires only half of the transmitter's capacity. 40% Battery Life Improvement with TDMA.

3 Better Digital Audio Quality

With the combined application of narrowband codec and digital error-correction technologies, X1p(UL913) is capable of ensuring you superior voice in noisy environments or at the edge of the coverage area. In addition, the adoption of the AGC technology also optimizes your voice.

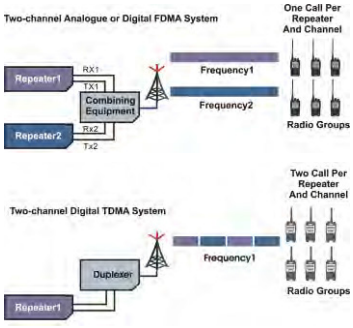


4 Compatible to Analog System

DMR can operate in either analog or digital mode. Accordingly, you can get rid of worries about its compatibility with the analog system that you are using, and just enjoy the benefits it brings. DMR allows migration to take place one radio at a tie, one channel at a time or the entire system at a time.

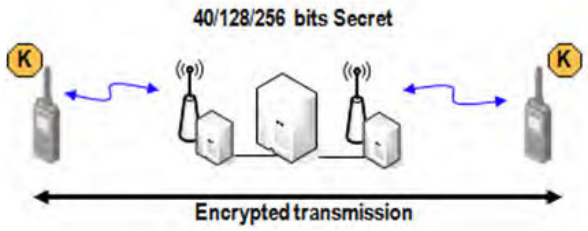
5 Save Equipment Cost

Compared with FDMA solution, 2 slot TDMA solution allows 2 simultaneous calls through 1 repeater, which helps reduce minimum entry cost.



6 End-to-End Encryption

Voice or data information is encrypted during the transmission from end to end. The encrypted information can only be decode by the terminals who has the specific key.



Specifications

General	Frequency Range		UHF1: 400-470MHz; UHF2:450-520MHz; UHF5: 806-941MHz; VHF: 136-174MHz
	Channel Capacity		1024
	Zone Capacity		64
	Channel Spacing		25/20/12.5kHz
	Operating Voltage		7.4V (rated)
	Battery		1400mAh (Li-Ion)
	Battery Life (5-5-90 Duty Cycle, High TX Power)		Digital: 12 Hours @1400mAh Analog: 9 Hours @1400mAh
	Frequency Stability		±1.5ppm
	Antenna Impedance		50Ω
	Dimensions (H×W×D) (with battery, without antenna)		120 x 57 x 26 mm (1400mAh)
	Weight		about 280g (1400mAh Li-ion battery)
	LCD Display		160 x 128 pixels, 65536 colors 1.8 inch, 6 rows
	Explosion-proof level	UL913	I.S.Class I,II,III Div1 Grp C,D,E,F,G T3C NI ClassI,Div2, Grp A, B, C, D
Receiver	Sensitivity	Analog	0.3μV (12dB SINAD) 0.22μV (Typical) (12dB SINAD) 0.4μV (20dB SINAD)
		Digital	0.3μV /BER5%
	Selectivity TIA-603 ETSI		60dB @ 12.5kHz / 70dB @ 20&25kHz 60dB @ 12.5kHz / 70dB @ 20&25kHz
	Intermodulation TIA-603 ETSI		70dB @ 12.5/20/25kHz 65dB @ 12.5/20/25kHz
	Spurious Response Rejection TIA-603 ETSI		70dB @ 12.5/20/25kHz 70dB @ 12.5/20/25kHz
	Hum and Noise		40dB @ 12.5kHz 43dB @ 20kHz; 45dB @ 25kHz
	Rated Audio Distortion		⩽3%
	Audio Response		+1 ~ -3dB
	Conducted Spurious Emission		< -57dBm

Transmitter	RF Power Output	VHF High Power: 5W VHF Low Power: 1W UHF1/UHF2/ High Power: 4W, UHF5 High Power: 3W (806-870MHz), 2.5W (896-941MHz) UHF1/UHF2/UH5 Low Power: 1W
	FM Modulation	11K0F3E @ 12.5kHz 14K0F3E @ 20kHz 16K0F3E @ 25kHz
	4FSK Digital Modulation	12.5kHz Data Only: 7K60FXD 12.5kHz Data & Voice: 7K60FXW
	Conducted/Radiated Emission	-36dBm<1GHz -30dBm>1GHz
	Modulation Limiting	±2.5kHz @ 12.5kHz ±4.0kHz @ 20kHz ±5.0kHz @ 25kHz
	FM Hum & Noise	40dB @ 12.5kHz 43dB @ 20kHz 45dB @ 25kHz
	Adjacent Channel Power	60dB @ 12.5kHz; 70dB @ 20/25kHz
	Audio Response	+1 ~ -3dB
	Audio Distortion	⩽3%
	Digital Vocoder Type	AMBE++ or SELP
	Digital Protocol	ETSI-TS102 361-1, 2&3
Environmental Specifications	Operating Temperature	-30°C to +60 °C (non-hazardous environment) -30°C to +55°C (hazardous environment T3C)
	Storage Temperature	-40°C ~ +85°C
	ESD	IEC 61000-4-2 (level 4) ±8kV (contact) ±15kV (air)
	American Military Standard	MIL-STD-810 C/D/E/F/G
	Dust & Water Intrusion	IP67 Standard
	Humidity	Per MIL-STD-810 C/D/E/F/G Standard
	Shock & Vibration	Per MIL-STD-810 C/D/E/F/G Standard
GPS	TTFF(Time To First Fix) Cold Start	<1 minute
	TTFF(Time To First Fix) Hot Start	<10 seconds
	Horizontal Accuracy	<10 metres

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development.

Hytera

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