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℃ T

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

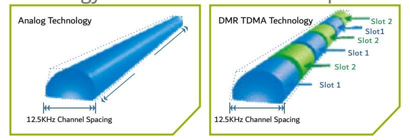
Gas Types by Group:
A-Acetyene
B-Hydrogen
C-Ethylene and related products
D-Propane and alcohol products

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

Digital Technology

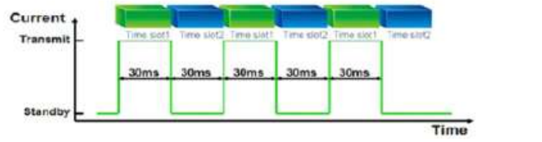
1 Higher Spectrum Efficiency

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



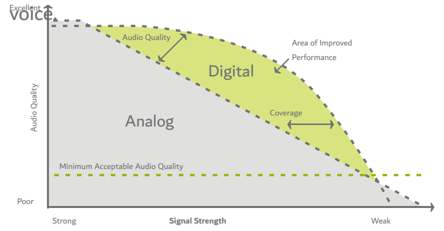
2 Longer Battery Life

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, PD78XG/PD70XG 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

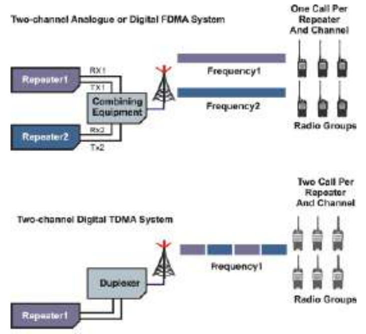


4 Compatible to Analog System

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

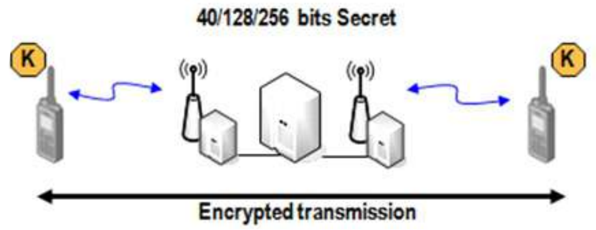
5 Save Equipment Cost

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(PD78XG) 32(PD70XG)
	Zone Capacity		64 (PD78XG, each with a maximum of 16 channels) 3(PD70XG, each with a maximum of 16 channels)
	Channel Spacing		12.5KHz / 20KHz / 25KHz
	Operating Voltage		7.4V (rated)
	Battery		2400mAh (Li-Ion)
	Battery Life (5-5-90 Duty Cycle, High TX Power) PD78XG High-capacity 2400mAh Li-Ion Battery		Analog: UHF1: 16h 14.5h (G); UHF2: 15.8h 14.4h (G); UHF5 : 16.8h 15.2h(G); VHF: 15.6h 14.2h (G) Digital: UHF1: 21.2h 18.8h (G); UHF2: 20.6h 18.3h (G); UHF5: 21.3h 18.9h(G); VHF: 20.6h 18.3h (G)
	Frequency Stability		±1.5ppm
	Antenna Impedance		50Ω
	Dimensions (H×W×D) (with standard battery, without antenna)		125 X 55 X 43mm (PD78XG) 125 X 55 X 41mm (PD70XG)
	Weight (with antenna & standard battery)		369g (PD78XG) 355g (PD70XG)
	LCD Display (PD78XG)		160×128 pixels, 65535 colors 1.8 inch, 4 rows
Receiver	Sensitivity	Analog	0.3μV (12dB SINAD); 0.22μV (Typical) (12dB SINAD) 0.4μV (20dB SINAD)
		Digital	0.3μV /BER5%
	Selectivity	TIA-603	60dB @ 12.5KHz / 70dB @ 20/25KHz
		ETSI	60dB @ 12.5KHz / 70dB @ 20/25KHz
	Intermodulation	TIA-603	70dB @ 12.5/20/25KHz
		ETSI	65dB @ 12.5/20/25KHz
	Spurious Response Rejection	TIA-603	70dB @ 12.5/20/25KHz
		ETSI	70dB @ 12.5/20/25KHz
	Blocking	TIA-603	80dB
		ETSI	84dB
	Hum and Noise		40dB @ 12.5KHz; 43dB @ 20KHz; 45dB @ 25KHz
	Rated Audio Power Output		0.5W
	Rated Audio Distortion		≤3%
	Audio Response		+1 ~ -3dB
	Conducted Spurious Emission		< -57dBm

Transmitter	RF Power Output	UHF1/UHF2 High Power: 4W UHF1/UHF2 Low Power: 1W UHF5* High Power: 3W (806-870MHz), 2.5W (896-941MHz); U5* Low Power: 1W VHF High Power: 5W; VHF 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℃ ~ +55℃
	Storage Temperature	-40℃ ~ +85℃
	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 (For PD78XG only)	Accuracy specs are for long-term tracking(95th percentile values>5 satellites visible at a nominal -130dBm signal strength)	
	TTFF (Time To First Fix) Cold Start	<1 minute
	TTFF (Time To First Fix) Hot Start	<10 seconds
	Horizontal Accuracy	<10 meters

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

Hytera
Respond & Achieve

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EN20140321A

Hytera
Respond & Achieve

PD78XG/ PD70XG(UL913)

Intrinsically Safe Full Power Digital Radio

- UL/CSA/CQST Certified explosion-proof DMR Portable Two-way Radio
- Designed for Hazardous Working Environments
- Smooth Migration from Analog to Digital
- Larger Battery Capacity, Longer Cycle Life

http://support.hytera.com

www.hytera.com

PD78XG/PD78X PD70XG/PD70X (UL913)

As digital two way radio built to the DMR standard, PD78X/PD78XG/PD70X/PD70XG (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 launched 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. The PD78XG/PD70XG enable your workers communicate safely and efficiently wherever it must be.

Applications

Oil & Gas, Refinery, Chemical Industry, Fire Fighting



PD78X,PD78XG,PD70X,PD70XG in this document are intrinsically safe, they are different from the conventional types.

Highlights

UL913 and CSA Certificated Explosion-proof Safety

Hytera PD78XG/PD70XG 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.

Reliable Quality

PD78XG/PD70XG is strictly compliant with MIL-STD-810 C/D/E/F/G and IP67 standards, ensuring outstanding performance even in harsh environments.

Support MPT and DMR Trunking Modes

Upgrade software enables new features without buying a new radio could also be switched into MPT and DMR trunking modes with corresponding license a applied in the same hardware.

High Audio Quality and Assured Communication Based on DMR Technology

Benefitted from the latest digital DMR technology, PD78XG/PD70XG ensure your workers talk and hear clearly over excessive noise.

Ease To Use

With large PTT, volume, channel knobs and programmable buttons, PD78XG/PD70XG are easy to operate even when wearing gloves. The PD78XG/PD70XG with large and colour display(PD78XG only) and bright LED show status information at a glance.

Larger Li-Ion Battery capacity, longer cycle life

Equipped with 2400mAH and UL913/CSA certificated Li-Ion battery, PD78XG/PD70XG provides with shift life of 18 hours under 5-5-90 duty cycle. And the battery life-span is longer as the charge/discharge cycles reduced.

Features

- **Higher Spectrum Efficiency, Higher Channel Capacity**

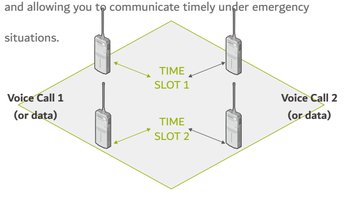
  Benefiting from the TDMA technology, PD78XG/PD70XG allows twice the channels based on the same spectrum resource. This is a big help to relieve the stress of increasing shortage in spectrum resource.

- **Dual Modes (Analog + Digital)**

  PD78XG/PD70XG can operate in either analog or digital mode. It is compatible with the prevalent analog system, ensuring a smooth analog-to-digital transition.

- **Dual-slot Pseudo Trunk**

  With this feature, the free slot can be allocated to a member that needs to communicate, effectively enhancing frequency efficiency and allowing you to communicate timely under emergency situations.



Solt 1, Solt 2 are automatically assigned to voice call 1 or voice call 2.

- **Secure Communication**

  Besides the basic encryption of the digital technology, PD78XG/PD70XG provides enhanced encryption capability (such as 40,128, 256-bit encryption algorithm) and the Scrambler feature (selectable).

- **Data Services**

  PD78XG/PD70XG supports data capabilities of sending Private, Group text message. It also supports Third Party to control the radio via Third party API (GPS, Radio Registration Services, Radio and Call Control, Telemetry*, Data Transfer*), via Telemetry control to radio.

- **Various Analog Signaling Types**

  PD78XG/PD70XG supports various analog signaling types (HDC1200, DTMF, 2-Tone and 5-Tone), various squelch control types (CTCSS/CDCSS), thus providing higher function expansion capacity to the analog world.

- **Supplementary Services**

  PD78XG/70XG supports supplementary services of Radio Check, Remote Monitor, Call Alert, Radio Enable and Radio Disable.

- **Enhanced Safety**

  Hytera PD78XG/PD70XG provides a dedicated emergency button. In case of any accident, a press on the button will trigger an alarm and initiate a voice call to a pre-programmed work fellow or group. Built-in Man-down, GPS and Lone Worker functions are also a available with the digital portable.

- **Versatile Services**

  In addition to conventional communication services, PD78XG/PD70XG features rich data services and selectable functions such as Text Message, Scan, Emergency, Man Down (optional), Auto Registration, High-speed Data Transmission and Lone Worker.

Accessories

Standard Accessories

Li-Ion Battery | Power Adapter | MCU Rapid-rate Charger | Belt clip | Leather Strap | Antenna

Ul913 certified audio accessories

EAN17
3-wire Earpiece
with Transparent
Acoustic Tube (Beige)

EAN18
3-wireEarpiece
with Transparent
Acoustic Tube (Black)

SM18N2
Water-proof
Remote Speaker