



Hytera Product Bulletin

May, 2014

Digital Migration Radio

DMR
DIGITAL MOBILE RADIO ASSOCIATION



PD35X

PD36X

PD50X

PD56X

PD60X

PD66X

PD68X

MD65X

Hytera
Respond & Achieve

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1. DMR New Products Launch

1.1 PD56X: Digital Migration Radio

- Small, Sleek, Light

The size is 115 X 54 X 30mm, dual-color injection, weight is 280g.

- Long Battery Life

In digital mode, PD56X operates at least 16 hours under a duty cycle of 5-5-90.

- Rugged & Reliable

It is compliant with MIL-STD-810 C/D/E/F/G standards.

- True 2-Slot and Pseudo Trunk in DMO

- 3 Lines Black and White Display

Note: Launch new frequency 136-174 MHz



1.2 PD66X PD68X: Digital Migration Radio (Coming Soon)

- Small, Sleek, Light

The size is 122 X 54 X 27mm, PC & Metal frame, weight is 310g.

- IP67

IP67 rated withstanding up to 1m submersion for 30 minutes or more.

- Full Band

Expanded frequency range of 400-527MHz.

- True 2-Slot and Pseudo Trunk in DMO

Note: Only launch 400-527 MHz now



1.3 PD35X PD36X: Digital Migration Radio (Coming Soon)

- Pocket Size Design and Easy to Carry

123X55X23mm (PD35X) 106X54X23mm (PD36X), weight is only 160g

- 3 Lines Black and White Display

- Micro USB port enables easy to charge.

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

- Lower price gives you better digital experience.

Note: Only launch 400-440 MHz now



1.4 R6.0 Radio New Features Release

• Comandor

This feature can provide better voice quality on analog channel and can allow radios to be configured via CPS or menu operation. This feature is available for analog channel only.

CPS configuration:

Channel -> Analog Channel -> Comandor

Menu configuration:

General Setting -> Menu -> Common Menu -> Settings -> Radio Settings -> Comandor

• Radio Block

After the radio block feature is enabled via CPS, if input the wrong CPS read/write password exceeding the preset tries, the radio will be blocked. Users may obtain a license from the local dealer to unblock the radio. (Please contact the local dealer for more information about this feature)

CPS configuration:

Common -> Setting -> Password -> Radio Lock

• Position Query

This feature can query the distance and location of another radio. The querying radio must have the display and keypad supporting positioning feature. The queried radio must have the positioning feature.

CPS configuration:

General Setting -> Menu -> Common Menu -> Accessories -> Position Query

• BT Audio Switch

Users can program the BT audio switch key via CPS. When the BT device is connected, users can press this key to switch the speaker type.

CPS configuration:

General Setting -> Button -> BT Audio Switch

• One Touch Menu

After the One Touch Call/Menu key is configured, user can press this key to access the preset menu directly.

CPS configuration path:

General Setting -> Buttons -> One Touch Call/Menu

General Setting -> One Touch Call/Menu -> Type -> Menu

- **Telephone Style Handset**

The MD78X mobile radio supports telephone style handset, with which can control the mobile radio. (Please contact the local dealer for more information)

- **UART to IP**

Base on the early USB and UART feature, the UART to IP feature is added to API. This feature is for trial only currently and will be released in later version. Please refer to the API protocol for more information. (Please contact the local dealer or us for more information about third party development protocol)

1.5 R6.0 Repeater New Features Release

- **SNMP Communication Protocol**

This feature supports general network management protocol, which allows users to develop network management software per actual need.

CPS configuration path: Conventional -> General Setting -> Network -> SNMP -> SNMP Trap IP

- **SIP Phone Gateway with 2 Simultaneous Calls**

Base on SIP protocol, the interconnection between DMR radio network and Public Switched Telephone Network (PSTN) has been realized. A communication between radios, repeaters, IP-PBX devices and PSTN phone can be established via SIP protocol.

The phone can initiate all the private and group call ID which is registered in the IP-PBX, not just only the Tx contact ID which configured in the selected channel. SIP phone supports 2 simultaneous calls. In the SIP phone system, one IP-PBX device can support the interconnection between multiple repeaters and PSTN network; besides PSTN, it can support the interconnection between dispatch station and IP phone.

(a) SIP Phone Gateway Features

1. Enhanced direct connection between repeater and IP-PBX.
2. 2 simultaneous voice calls between telephone and radios.
3. Flexible extension numbers for each radio and group.
4. Easy to initiate any private or group call with the mobile phone.
5. Standard DTMF keypad on the radio helps make a phone call easily.
6. Identify a phone call and a radio call by unique gateway ID.

(b) Network Architecture



(c) Comparison Between PSTN Gateway and SIP Gateway

Compare Item	SIP Connection		PSTN Connection	
Gateway	IP PBX(UCM6102)		PSTN Gateway(M30)	
Repeater	RD62X, RD96X, RD98X(S)		RD62X, RD96X, RD98X(S)	
Interface	Ethernet Port(RJ45)		DB26 Port	
Network	IP Network	✓	Analogue PSTN	×
Voice channel	2	✓	1	×
Incoming call mode	Flexible private and group call by SIP phone	✓	PSTN can only call repeater's default TX contact	×

• Info Hidden Menu

Users can hide the information of the repeater via this menu to ensure the network security.

CPS Configuration:

Conventional -> General Setting -> Menu

• Repeat Gain

Users can configure the repeat gain feature for analog mode via CPS. This feature allows the repeater to transmit the received signal after amplified. It can enhance the voice quality in weak signal areas.

1.6 ATEX, FM, IECEX and CSA Certified Intrinsically Safe PD79X EX VHF

As a digital two way radio built to the DMR standard, PD79X EX is specially designed for those who work in environments with explosive gas and combustible dusts, where using regular radios could be unsafe. After PD79X EX UHF1 released last year, VHF got all these certifications in March. Hytera also launched various audio accessories for easy operating.



1	23	4	5	6	7	
ATEX	II	2G	Ex	ib	IIC	T4

- 1 Equipment group:**
 - I: Mining;
 - II: Other environments (non-mining: chemical industrials, oil refineries, etc.);
- 2 Classification for hazardous places**
 - 1: Very high level (zone 0 or zone 20);
 - 2: High level (zone 1 or zone 21);
 - 3: Normal level (zone 2 or zone 22);
 - Zone 0: present continuously
 - Zone 1: present intermittently
 - Zone 2: present abnormally
- 3 Atmosphere:**
 - G: Gas, vapors and mist;
 - D: Dust;
- 4 Explosion-protected standard:**
 - EU ATEX directive and IECEx standards

Certification

ATEX

II 2G Ex ib IIC T4

II 2D Ex ib IIIC T120°C

I M2 Ex ib I

IECEX

EX ib IIC T4

EX ib IIIC T120°C

Ex ib I

FM

I/1/AEx ib/IIC/T4

21/AEx ib/IIIC/T120°C

NI/I/2/ABCD/T4A

5 Type of protection:

e: Increased safety;

o: Oil immersion;

ia: Intrinsically safe (1G);

ib: Intrinsically safe (2G);

iaD: Intrinsically safe (1D);

ibD: Intrinsically safe (2D);

tD: Dust protection by enclosure;

6 Gas group:

I: Methane (Mining)

IIA: Propane

IIB: Ethylene

IIC: Acetylene, hydrogen

(hazard Level: IIC > IIB > IIA)

7 Temperature class:

T1: 450°C

T2: 300°C

T3: 200°C

T4: 135°C

T5: 100°C

T6: 85°C

Target Market

1. Oil and gas
2. Fire fighting
3. Pharmaceutical industry
4. Mining
5. Refineries
6. Other explosive environment (such as power generating companies, landfill tips and civil engineering, food and feedstuffs industry, paint-spraying operations and so on).

Highlights

Improved PCB Circuit Layout & EMC Shielding

To achieve such a high safety standard, Hytera PD79X Ex adopts optimized distributed line design on PCB, minimizing the odds of circuit fault. All the key components on the PCB are covered with shield, which translates to better EMC performance.

Innovative Silicone Encapsulating

Silicone encapsulant technology prevents the internal circuits from interface with air and liquid which effectively stops the intrusion of liquid, dust and harmful gas.

Innovative Electrostatic Free Design

Hytera applies patent on electrostatic free design and dual material molding technology in PD79X EX. The static dispersive material (blue) minimizes static accumulation on the surface.

Patented Battery Latch

To disengage the battery from PD79X EX, the lock of the latch need to be moved along two different axes. Such patented design ensures no disengagement of the battery pack from the main radio in case of dropping that might cause spark.

Environmentally Safe and High Reliability

With certifications for ATEX, IECEX, the latest FM and CSA specifications, PD79X EX works safely in most hazardous environments even with the presence of hydrogen and dust particles. The overall design complies with IP67 and American Military Standard-MIL-STD-810G, which makes it can bear the harshest environments like High/Low Temperature, High Humidity, Vibration, and Shock.

Enhanced Safety

Hytera PD79X Ex provides a dedicated emergency button. Built-in Man-down, GPS and Lone Worker functions are also available with PD79X EX.

High Audio Quality and Assured Communication Based on DMR Technology

Benefitted from the advantages of DMR digital technology, PD79X Ex provides higher audio quality and stable communication performance with 40% less battery consumption than analog radios. It provides better communication quality and enhanced privacy.

Easy to Operate

Hytera PD79X Ex provides tough and highly readable LCD screen and intuitive user interface. The anti-skidding and fool-proofing ergonomic designs are dedicated for user easy operation. Large PPT button and channel knobs are useful for users wearing gloves.

ATEX/IECEX/FM/CSA/CQST certified accessories








BL1807-EX1800mAh
Li-ion Battery



SM18N4-EX
speaker
microphone

ATEX certified audio new accessories

	ATEX Headset above PTT part	ATEX COM-Unit PTT part	ATEX Headset	Model NO.
1			POA34-EX + SM24N1-EX	EBN10-EX
2			POA34-EX + SM24N2-EX	EBN11-EX
3			Bone Conduction Headset POA34-EX	POA34-EX + POA63-EX
4		SM24N1-EX	POA61-EX + SM24N1-EX	ELN09-EX
5			POA61-EX + SM24N2-EX	ELN10-EX
6			Throat-vibrating Earpiece POA61-EX	POA61-EX + POA63-EX
7		SM24N2-EX	POA62-EX + SM24N1-EX	ECN20-EX
8			POA62-EX + SM24N2-EX	ECN21-EX
9			Noise-cancelling Headset POA62-EX	POA62-EX + POA63-EX
10			POA65-EX + SM24N1-EX	ECN23-EX
11			POA65-EX + SM24N2-EX	ECN24-EX
12			Lightweight boom headset POA65-EX	POA65-EX + POA63-EX

1.7 UL913/CSA Certified Intrinsic Safety Portable Radio PD70X(G)

Hytera understands the challenges of professionals in hazardous environments. Dedicated to designing and delivering of intrinsically safe and reliable communications solutions, Hytera launched PD70X(G), a portable explosion-proof DMR radio with UL913 certification for safety.



UL913/CSA Certification

Class I, II, III, Division 1, Group C-G, -30°C to 55°C, T4

Class I, Division 2, Group A-D

①

②

③

④

⑤

Class I, II, III Division 1 Group C-G -30°C to 55°C T4

① Atmosphere:

Class I: Gas, vapors;

Class II: Dust;

Class III: Fibers, flyings

② 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

③ Gas types by group:

A: Acetylene

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

④ Operating temperature

⑤ Temperature class (maximum device surface temperature):

T1: 450°C

T2: 300°C

T3: 200°C

T3A: 180°C

T3B: 165°C

T3C: 160°C

T4: 135°C

T5: 100°C

T6: 85°C



Target Market

1. Oil and gas
2. Fire fighting
3. Pharmaceutical industry
4. Refineries
5. Other explosive environment (such as power generating companies, landfill tips and civil engineering, food and feedstuffs industry, paint-spraying operations and so on).

Highlights

UL913 and CSA Certificated Explosion-proof Safety

Hytera PD70XG intrinsic safety radio is designed upon the requirements of USA UL913 and Canada CSA specification, the radio works safely in most hazardous environments with explosive gas and dust particles.

Reliable Quality

PD70X(G) is strictly compliant with MIL-STD-810 C/D/E/F/G and IP67 standards, ensuring outstanding performance even in harsh environments.

High Audio Quality and Assured Communication Based on Tetra Technology

Benefitted from the latest digital DMR technology, PD70X(G) ensure your workers talk and hear clearly over excessive noise.

Ease To Use

With large PTT, volume, channel knobs and programmable buttons, PD70X(G) are easy to operate even when wearing gloves.

Larger Li-Ion Battery capacity, longer cycle life

Equipped with 2400mAH and UL913/CSA certificated Li-Ion battery, PD70X(G) provides with shift life of more than 18 hours under 5-5-90 duty cycle.

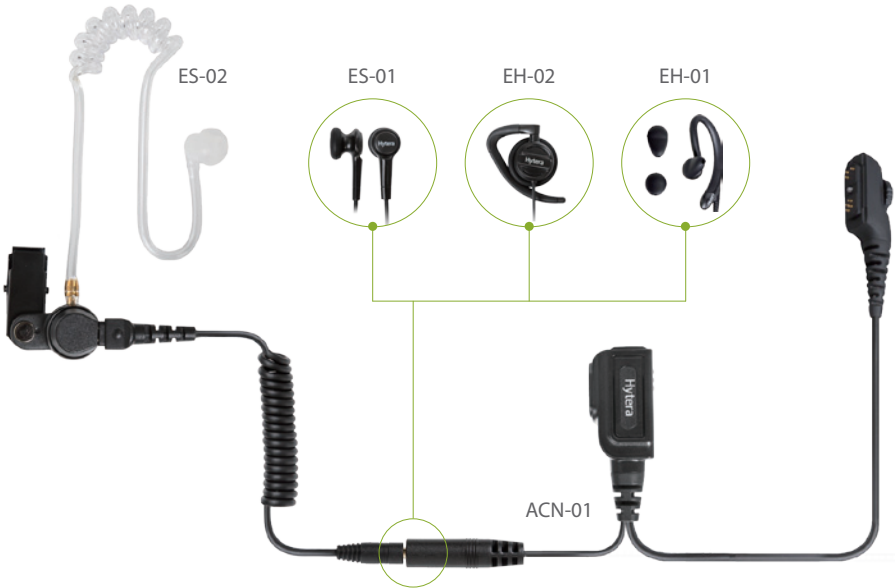
Hardware configuration

PD70X(G) UL913 certified battery accessory



BL2411 2400mAh
Li-ion Battery

UL913 certified audio accessories



ESN12



EHN16



EHN17



EAN23



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



EAN18
3-wire Earpiece with Transparent
Acoustic Tube(Black)



SM18N2
water-proof
Remote speaker

1.8 New Accessories (Coming Soon)

Item No	Picture	Description	Applicable model
ESW01-N2		Wireless Earpiece Kit	PD6 and X1 series

1.9 Hytera Accessory APP is Release

Android cellphone users can download the app from Hytera official website: www.hytera.com.

Iphone users can download the app from apple store by searching "hytera". Users can check the accessory model, description, photos and etc.



2. DMR Trunking System New Products Launch

2.1 DMR Trunking Pro System Ensures High Level Security and Reliability

Hytera DMR trunking pro system has developed for several years from version R1.0 to R3.0. More high level features are adding into the new version. The completed functions ensure high level security and reliability. Some key functions are shown as below:

Security Services

Hytera DMR trunking pro system provides authentication between base station and radio, ESN check, high level end to end encryption for both voice and data. In addition, radio stun, revive and kill functions can avoid unauthorized radio using.

Reliability Services

Hytera DMR trunking pro system provides all the key components redundancy to ensure high reliability such as MSO local and geographic redundancy, BSCU redundancy, PSU redundancy, control channel backup, etc. In addition, DMR trunking pro system provides multiple fallback modes such as single MSO fallback, single base station fallback, trunking to conventional fallback, etc.

Supplementary Services

Hytera DMR trunking pro system provides high level functions to satisfy users better experience such as vote now, handover, PSTN call, base station voice recording, OTAP, etc.

2.2 New Power Supply Unit Launch (Support Backup)

In April 2014, Hytera launched the newest base station power supply unit (PSU), which support hot backup. The new PSU hardware and the cable on the backboard are redesigned. One of this PSU can support the power of 4 CHU and 2 BSCU in one 4-carrier base station, while the other PSU can act as a backup.

2.3 New Brochure for DMR Trunking Lite System Release

With the release of the DMR trunking system lite, Hytera released the latest brochure for DMR trunking lite system in March 2014. New brochure attaches the newest product photographs and description, and the whole structure has been adjusted. New DMR trunking lite system brochure contains system overview, system key features, system key component, typical networking, network management system and dispatching system, application industry, terminal highlights, base station specifications, and etc.

2.4 Hytera Integrated Command & Control System Introduction

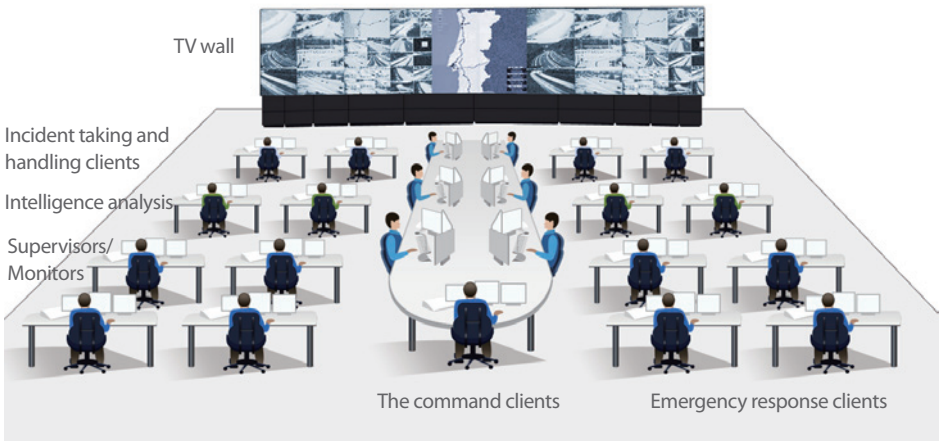
Hytera integrated command & control system applies to urban emergency command and control, as well as other industrial scenarios where a call center is required to receive calls, collect information, generate dispatching orders, dispatch personnel for handling, collect dispatching statistics, and monitor the handling.

System Highlights:

1. Various voice terminals, system products, and application software, providing end-to-end public security solutions.
2. Powerful wireless voice dispatching function.
Provide a powerful communications platform and intergrate the wireless voice, video, data applications. Dispatchers can operate various system in one dispatch screen. To provide a basis for rapid decision-making, and greatly improving the police handling speed.
3. Seamless integration with digital trunking systems (DMR and TETRA) and public safety information systems to meet the digital trend.
Convenient short message communication enables management of daily tasks for police officers: online, offline, report standby status, and cancel standby status reporting.
4. Grid-based management and flat dispatching.
5. Unified platform and framework, plug-in design, satisfying customization requirements.

System Structure and Application:

Based on incident taking quantity and emergency handling process, a command center is deployed with incident taking agents, handling agents, supervisors/monitors, commanders, and joint emergency response agents in proportion, to implement incident handling, case recording, study and determination analysis, and dispatching. Command centers can be deployed hierarchically as required.



3. Tetra New Products Launch

3.1 Tetra New Products Introduction (Coming Soon)

Z1P: Digital Covert Radio (380-430MHz)

Highlights

- Ultra thin to 23mm
- 3W RF output, wider communication coverage
- Tamper proof
- Build-in Bluetooth
- DMO repeater 1A
- WAP and JAVA
- Multi-slot PD
- Lone worker , Man down
- GPS application
- AIE Class 1/2/3
- E2EE (AES128 AES256 SIM Card)



General Specification	
Frequency Bands	380-430MHz / 350-400MHz / 410-470MHz /806-870MHz 380-430MHz / 350-400MHz / 410-470MHz /806-870MHz
Dimensions	120X 58 X 23mm
Weight	269g (with 1400mAh standard battery)
Battery (5/5/90 Duty Cycle, Hi TX Power)	10.5 Hours (1100mAh Li-ion battery) 13.5 Hours (1400mAh Li-ion battery) 17 Hours (1800mAh Li-ion battery)
Operating Voltage	7.4V
RF Power Output	3W
Audio Power (Max)	1W
Operating Temperature	-25°C ~ +65°C
Water and Dust Protection	IEC60529, IP67
Drop, Shock & Vibration	MIL-STD-810 C/D/E/F/G

4. Hytera Product Series Overview

Product Series	Product Model	Photo	Frequency Range	Mode
PD3	PD35X		400-440MHz	Tier II
	PD36X		400-440MHz	Tier II
PD5	PD50X		136-174MHz, 400-470MHz, 446MHz	Tier II
	PD56X		136-174MHz, 400-470MHz	Tier II
PD6	PD60X		136-174MHz, 400-527MHz	Tier II
	PD66X		400-527MHz	Tier II
	PD68X		400-527MHz	Tier II

Product Series	Product Model	Photo	Frequency Range	Mode
PD7	PD70X(G)		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz	Tier II, Tier III
	PD78X(G)		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz	Tier II, Tier III
X1	X1e		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz	Tier II, Tier III
	X1p		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz	Tier II, Tier III
MD7	MD78X(G)		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz	Tier II, Tier III
MD6	MD65X		400-470MHz	Tier II
DMR Intrinsic Safety	PD79X EX		136-174MHz, 400-470MHz	Tier II, Tier III

Product Series	Product Model	Photo	Frequency Range	Mode
DMR Intrinsic Safety	PD78X (UL913)		136-174MHz, 400-470MHz, 450-520MHz*, 806-941MHz*	Tier II, Tier III
	PD70X (UL913)		136-174MHz, 400-470MHz, 450-520MHz*, 806-941MHz*	Tier II, Tier III
RD6	RD62X		136-174MHz, 400-470MHz	Tier II
RD9	RD96X		136-174MHz, 350-400MHz, 400-470MHz	Tier II
	RD98X		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz	Tier II
	RD98XS		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz	Tier II, Tier III
DMR Trunking Pro System	DS-6210		136-174MHz, 400-470MHz, 450-520MHz, 350-400MHz, 806-941MHz*	Tier III

Product Series	Product Model	Photo	Frequency Range	Mode
DMR Trunking Lite System	DS-6211		136-174MHz, 400-470MHz, 450-520MHz	Tier III
DMR Simulcast System	DS-6310		136-174MHz, 350-400MHz, 400-470MHz	Tier II
Tetra Portable	PT580H		350-400MHz, 380-430MHz, 410-470MHz, 806-870MHz	Trunking
	PT580H UL913			Trunking
Tetra Mobile	MT680			Trunking
	MT680 Remote Head			Trunking
	MT680 Fixed Station			Trunking
Tetra Base Station	DIB 500			380-486MHz (Rx/Tx), 806-876MHz(Rx) & 851-921MHz(Tx)

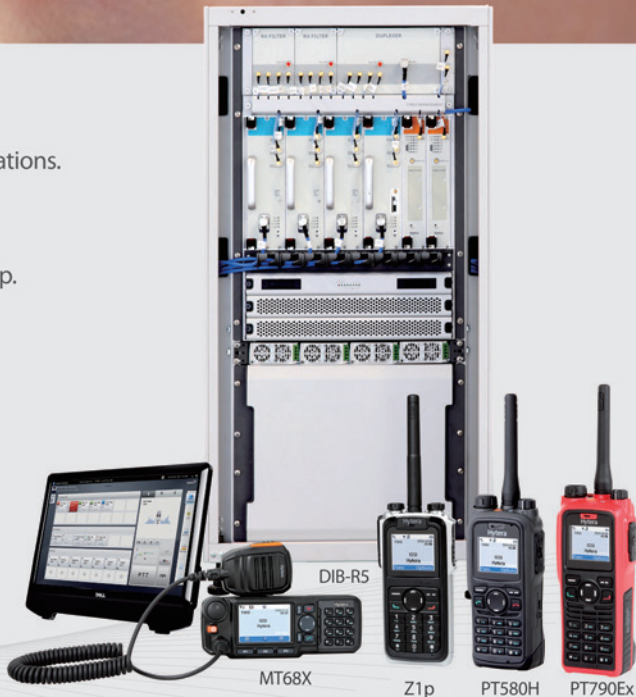
* This frequency will be supported soon.

Hytera TETRA Solution

Brings the future of
Critical communication within sight

Total solution of terminal,
infrastructure and applications.
Eolve smoothly to the future,
TETRA 2/ TEDS ready.
Turnkey for stress-free ownership.
Reliable system operation.
Affordable.

Hytera
Respond & Achieve





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