



## PT580H Plus UL913

### TETRA Intrinsically Safe Portable Terminal

- UL913 and CSA certificated
- Clear digital voice
- Built-in BT and GPS
- DMO Repeater
- Distinguished by IP67 compliance
- Designed for hazardous working environments





## PT580H Plus UL913

No matter in an oil platform, gas station, mine, chemical plants, or other explosive environments, safe and reliable communication is on top of everything. Hytera deeply understands the challenges for users in hazardous and harsh environments.

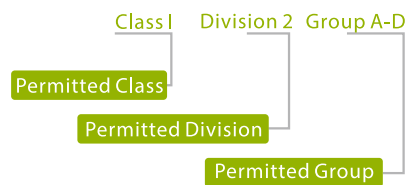
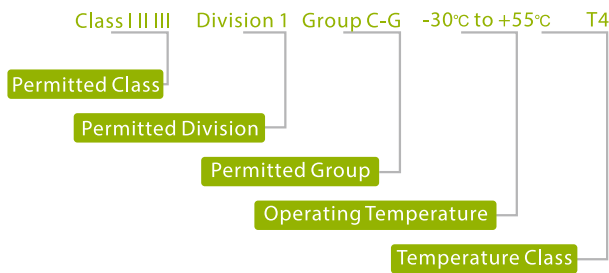
PT580H Plus UL913 is designed to comply with UL913 and CSA standard. The terminal is Intrinsically Safe. It can provide you more secure and reliable communication service in hazardous environments with explosive gases and combustible dust.

# Highlights

- Reception Performance Improvement**  
 2dB of receiver sensitivity improvement via the hardware optimization. Enhancing the weak signal acquisition, increasing the communication range.
- GPS Improvement**  
 The tracking sensitivity is up to -165dBm to ensure the positioning ability is more stable; hot start time is 1s, quick access to the last location data; support LIP and NMEA protocol; at most, the periodic position information upload time is up to 2s; support GPS/Glonass/Beidou positioning system.
- Built-in BT**  
 Supporting BT 4.0, versatile bluetooth application: voice and data transmission, wireless software upgrade and programming, industry application, etc.
- Hands free for duplex call**

- Voice Improvement**  
 Using a unique AGC algorithm with fast automatic adjustment and more responsive to ensure suitable receiving volume. New adding noise cancelling chip ensure voice clearer under noisy environment.
- DMO Repeater**  
 The terminal is acted as a repeater to expand the communication range in DMO Mode. DMO Repeater supports services: group call, individual call, priority call and emergency call, short message, E2EE.
- The terminals with different frequency adopt the same software version.**
- F5 Full frequency for DMO call**  
 Supporting F5 full frequency(806-870MHz) for DMO call.

# UL913 Explosion-proof Introduction



Permitted Division	
Division 1	Gasses or vapors exist under normal conditions
Division 2	Gasses or vapors are present but are normally contained and can escape only through accident or abnormal operation

Temperature Class	
T1	450°C
T2	450°C
T3	300°C
T4	135°C
T5	100°C
T6	85°C

Permitted Group	
Group A	Acetylene
Group B	Hydrogen or Equivalent
Group C	Ethyl Ether, Ethylene or Cyclopropane
Group D	Gasoline, hexane, naphtha, benzene, butane, propane
Group E	Metal Dust
Group F	Carbon Black or Coal Dust
Group G	Flour, starch, grain dusts

Permitted Class	
Class I	Gas Vapors
Class II	Dusts
Class III	Fibers

# PT580H Plus UL913

## Ensure efficient and safe critical communication

### Patented Antenna

Centrally located integrated GPS antenna enhances GPS sensitivity to give excellent performance.

### Separate Knob

Allow users to have Eyes-off, hands-on operation.

### Built-in BT

Allow wireless accessory adaptation.

### Dustproof and Waterproof

IP67 guarantee usage in full of dust environment or exposure to water jet or even soak in 1m water after 30 minutes.

### Powerful audio output

2W audio power output ensure the voice transmitted clearly.

### Ergonomic Keys

With silica gel key materials, resilient touch experience brings easy operation.

### Multi-satellite location service

Support GPS, Glonass and Beidou location.

### Large size color display

Equipped with large-size TFT LCD clear display delivers you favorable accessibility even under strong unlight.

### Security protection

Support AIE, E2EE and TEA1\2\3\4 encryption algorithm

### Enhanced audio quality

New added noise cancelling chip ensure voice broadcasted clearly even in very noisy environment.

### Rugged design

Withstand the tough highly accelerated lift test and strict Military standard G test, PT580H Plus UL913 ensure outstanding performance in tough use.



# Feature

## ● DMO Repeater

- ▶ ETSI type 1A DMO Repeater for channel efficient operation
- ▶ Repeats DMO voice and tone signaling on selected talk group
- ▶ Repeats SDS and Status messaging on selected talk group
- ▶ Transmission of Repeater Presence Signal

## ● Security Service

- ▶ Authentication
  - Mutual Authentication
- ▶ Package Data User Authentication
- ▶ Air Interface Encryption
  - TEA1 -TEA2 -TEA3 -TEA4
- ▶ Security Class
  - Class 1: Clear
  - Class 2: SCK
  - Class 3: DCK and CCK (Via OTAR)
- ▶ DMO SCK
- ▶ End to End Encryption
  - By Software(AES128/AES256)
  - By SIM card
  - Voice Service / SDS Service
- ▶ Temporarily Disable
- ▶ Permanently Disable
- ▶ PIN/PUK code access

## ● User Interface / Display

- ▶ Multi-language
- ▶ Java Platform 2.0
- ▶ 23 programmable key: quick access to menu and configured functions
- ▶ Specified Emergency key
- ▶ Multiple Dialing Methods: scroll dialing, dialing directly, alphabetic search, redial via call records, Dialing rules
- ▶ Two independent microphone
  - Top MIC used in half-duplex call
  - Button MIC used in full-duplex call
- ▶ Adjustable screen brightness
- ▶ Profiles
- ▶ Display reverse
- ▶ Screen saver
- ▶ Customized Terminal Menu
- ▶ Time synchronization
  - With GPS time
  - With System time
- ▶ Configurable Maximal/minimum volume
- ▶ Input Method Editor

## ● Voice Service

- ▶ Fallback Operation
- ▶ Individual call
- ▶ Group call
- ▶ Broadcast call (TMO)
- ▶ Open group call
- ▶ DTMF
- ▶ Gateway call (DMO)
- ▶ Repeater call (DMO)
- ▶ Phone call
  - PABX · PSTN
- ▶ Emergency Call
  - Emergency group call to predefined group
  - Emergency individual call to predefined individual contact
  - Emergency call to predefined PABX/PSTN contact
  - HOT MIC
  - Emergency Cycle
  - Configurable emergency priority
  - Location Information Sending (TMO)
  - Silent Emergency Call (TMO)
- ▶ Pre-emptive call
- ▶ Late entry
- ▶ DGNA
- ▶ Group scanning
- ▶ Talking Party Identification
- ▶ Individual Call Restriction via Phonebook
- ▶ Group Change Voice Broadcast
- ▶ CAD(Call Authorized by Dispatcher)\*
- ▶ BT
- ▶ Notification Talk-group
- ▶ Favorite Folder

## ● User Security

- ▶ One-key Emergency Call
- ▶ Man-Down
- ▶ Ambience Listening
- ▶ Radio User Assignment(RUA)
- ▶ Lone worker
- ▶ Keypad lock
- ▶ Alert for out of network coverage
- ▶ Alert for low battery
- ▶ Call out

## ● Location Service

- ▶ GPS/GLONASS/Beidou
- ▶ Control Center Authentication by MS
- ▶ Lip protocol
  - Trigger Conditions (Configured via Air or CPS)
    - Emergency Call · Interval · Distance
    - Power On/Off · Status Message · Positioning Loss/Regain
- ▶ NMEA location reporting
- ▶ Time Synchronization and Adjustment
- ▶ Display the calling party's Relative direction & position
- ▶ Overspeed Alarm
- ▶ Route Trace

## ● License Control

- ▶ DMO Repeater
- ▶ GCK
- ▶ Route Trace
- ▶ Drive Test
- ▶ Work Order
- ▶ TEA 2
- ▶ E2EE
- ▶ SDS Template
- ▶ MSPD
- ▶ OTAP

## ● Data service

- ▶ Short Data Service
  - SDS-1, 2, 3, 4, TL
  - Status message
  - Immediate text message (TMO)
  - Long text message (TMO)
  - One Touch/ Fast sending Status
  - Message Sending
    - /Receiving during Call
- ▶ Package Data
  - Single-slot -Multi-slot
- ▶ Peripheral Equipment Interface (PEI)
- ▶ AT command
- ▶ OTAP(Over The Air Programming)
- ▶ Status Message Solution
- ▶ WAP 2.0
- ▶ Circuit Mode Data
- ▶ Short Data Template

# Applications

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## Chemical Industry

Flammable gases, liquids and solids are converted and processed in many different processes in the chemical industry. These processes may give rise to explosive mixtures.



## Power Generating Companies

Lump coal, which is not explosive in mixture with air, may be converted in the conveying, grinding and drying processes into coal dusts capable of forming explosive dust/air mixtures.



## Gas Suppliers

Explosive gas/air mixtures may be formed when natural gas is released, e.g. by leakage.



## Fire Fighting

As for fire fighting, some task critical situations such as oil spill or natural gas leakage need high security electrical equipments.



## Pharmaceutical Industry

Alcohols are often used as solvents in the production of pharmaceuticals. Agents and auxiliary materials that give rise to dust explosions, such as lactose, may also be used.



## Refineries

The hydrocarbons handled in refineries are all flammable and, depending on their flash point, may give rise to explosive atmospheres even at ambient temperature. The area around oil processing plant is generally regarded as a place where explosive atmospheres may occur.

# Accessories

## Standard



2400mAh Intrinsicly Safe Li-ion Battery(RoHS) BL2412-Ex\*



EU-standard switching power adapter PS1018



General MCU Charger CH10A07



Spring Belt Clip BC19



Leather Strap RO04



Antenna AN0838H08\*

## Optional



Earbud with on-MIC PTT ESN12\*



C-earset with on-MIC PTT EHN16\*



Swivel Earset with on-MIC PTT EHN17\*



Earpiece with on-MIC PTT & Transparent Acoustic Tube(Black) EAN23\*



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



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



Receive only C type earset EH-01\*



Receive only Swivel type earset EH-02\*



Receive only earbud ES-01\*



Receive only earpiece with transparent acoustic tube ES-02\*



PTT&MIC cable (for use with Receive-Only Earpiece) ACN-01\*



Waterproof Remote Speaker Microphone (IP67)(RoHS) SM26N3\*



Vehicle Adapter for Charger (Output:12V 1A) CHV09



Dual-Pocket MCU Charger (for Li-Ion /Ni-MH battery) CH10A06



Intelligent Multi-unit Charger (with LCD) MCA05



MCU Multi-unit Rapid-rate Charger MCA08



Leather case (with LCD display and keypad) LCY006

\* Comply with UL913 certificate

# Specifications

General Specifications	Frequency Bands	380-430MHZ / 405-475MHZ 806-870MHZ
	Dimensions (HxWxD)	127.5 × 55 × 43mm
	Weight	408g(with battery and antenna)
	Battery	2400mAh Li-Ion battery
	Battery Life (TMO 5/5/90 duty cycle)	>24hours (2400mAh)
	Operating Voltage	7.4V

User Interface	LCD Color Display	1.8inch, 160*128pixels, 65536colors
	Talk Group-TMO	6000
	Talk Group-DMO	4000
	Telephone book	1000
	Inbox	400
	Outbox	50
	Drafts	50
	Scan Lists-TMO	200
	Scan Lists-DMO	50
	Folder-TMO	200
	Folder-DMO	200X200(200 groups in each list)
	State Message	50X200(200 groups in each list)

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

RF Specifications	RF Channel Bandwidth	25KHz
	RF Power Output	1W
	RF Power Level Accuracy	±2dB
	RF Power Control	5dB Per step, 3 power step levels
	Receiver Class	ETSI EN 392-2/396-2 Class A and Class B
	RX Static Sensitivity	-116dBm(typical)-118dBm 806-870MHz: -115dBm (min); -116dBm(typical)
	RX Dynamic Sensitivity	-107dBm(min); -109dBm(typical) 806-870MHz: -106dBm (min); -107dBm (typical)
Audio Power Output	2W	

GPS Specifications	Sensitivity	≤ -146dBm acquisition sensitivity ≤ -165dBm tracking sensitivity
	Accuracy	2.5m
	Cold Start (Time to First Fix)	35s
	Hot Start (Time to First Fix)	1s

Environmental	Operating Temperature	-30°C ~ +60°C (non-hazardous environment) -30°C to +55°C(hazardous environment)
	Storage Temperature	-40°C ~ +85°C
	Humidity	ETS 300-019-1-7 Class 7.3E MIL-STD 810 G
	Water and Dust Protection	IP67 Per IEC60529
	Drop, Shock & Vibration	ETS 300-019-1-7 Class 5M3; MIL-STD 810 G GJB150A-2009



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