# H-SERIES DMR RADIOS

Hytera

## *INTRINSICALLY SAFE* COMMUNICATIONS

# H-Series UL 913 HP702 and HP782

## INTRINSICALLY SAFE UL913 DMR RADIOS

Hytera was a founding member of the DMR Association and was the first company to successfully deploy DMR Tier II and Tier III systems. Since then, Hytera has been a leading provider of intrinsically safe DMR radios and systems, and has continuously improved products based on customer feedback.

The H-Series UL913 radios is the culmination of this experience and spirit of innovation. The HP702 UL913 and HP782 UL913 DMR handheld radios are the next-generation in safety and functionality that elevates the industry standards in professional digital two-way radios.

UL CERTIFIED UL 913

DMR DIGITAL MOBILE RADIO ASSOCIATION


HP702 UL913


HP782 UL913


## UL 913 Certified

HP702 UL913 and HP782 UL913 radios, batteries, and accessories are certified for use in hazardous areas with explosive gas and dust.

## Higher Level of Ruggedness

The HP7 UL913 radios are fully compliant with the IP68 and MIL-STD- 810 G standards. They are dust proof, impervious to water jets, submersible to a depth of 2 meters for 4 hours, and can stand up to drop shock testing at 2 meters. The anti-magnetic speaker does not attract magnetic metal dust and shavings.

## Louder and Clearer Audio

Hytera provides industry-leading audio quality through a large 36mm forward-facing optimized speaker that provides up to 93dB of loudness, and AI-based voice enhancement with deep learning ability that can accurately extract voice from noise in real time and decreases unwanted background noises as loud as 30db.

Water-porting technology quickly drains water out of speaker cavity to maintain audio clarity.

## Enhanced Worker Safety

The HP7 UL913 radios are designed for worker safety with an easy access emergency button, emergency calling, and priority interrupt. Lone Worker prompts the user to press a key or speak to indicate they are safe. Man Down allows the radio to automatically enter emergency mode when the radio is inclined at a pre-set angle or remains motionless.

## Longer Battery Life

The latest in lithium polymer technology is used to power the HP7 Series radios for excellent performance. The UL913 certified battery delivers a shift life of over 24 hours on high transmit power with a duty cycle of 5/5/90.

## Clear and Bright Display

The HP782 UL913 features a 2.4-inch, 240x320 HD TFT-LCD display with up to 10 lines of content and an intuitive nine-grid interface.

The HP702 UL913 features a 0.91-inch OLED display that shows the channel, signal strength, power status, power level, and BT status.

# THE HP7-SERIES IS THE NEW STANDARD OF RADIO NETWORK PERFORMANCE

## Enhanced GPS Location Tracking

The HP782 UL912 and HP702 UL912 radios with optional GPS can report current location information to other radios, the dispatcher, or third-party applications in real time, enhancing the efficiency of visualized dispatch applications.

GPS data can be transmitted during voice calls for immediate location targeting, and GPS data can be compressed to increase channel capacity and reduce hardware cost.

## Higher Security

Supports Digital End-to-End and Over-the-Air Encryption for voice and data transmitted on digital channels to prevent eavesdropping.

Hardware encryption is implemented through a built-in encryption card. Software encryption uses the secure and reliable ARC4 and AES encryption algorithms. Radio authentication prevents unauthorized users from accessing the system. If a radio is lost or stolen, the system can Stun or Kill the radio to prevent unauthorized use.

## Bluetooth and MicroSD Card

Optional built-in Bluetooth enables connectivity to wireless accessories. The MicroSD card provides additional capabilities like voice recording.

## Multi-System Operation

The HP7 UL913 radios can be deployed in a wide variety of analog and digital radio networks, including Analog and Digital Conventional, XPT Trunking, DMR Tier II and Tier III Trunking, IP Multi-Site Connect, and DMR Simulcast Systems.

## Extended Coverage and Connectivity

The HP7 UL913 radios extend radio range through increased Tx power efficiency, Rx sensitivity, improved antenna gain, and reduced attenuation. This produces a 25% increase in coverage distance and signal penetration through buildings. The enhanced coverage improves efficiency and reduces network infrastructure costs.

Two patented technologies and a voice buffer reduces packet loss during Rx handover for consistently clear calls and fewer dropped words.

## Greater Calling Flexibility

A variety of calling modes provides the flexibility to communicate with any or all users. The HP7 UL913 radios support Individual Calls (radio to radio, radio to dispatcher), Group Calls (one radio to many, dispatcher to many), All Call (broadcast call to all radios, transmit only), and Telephone Calls (requires connectivity to PSTN, PABX or SIP networks).

# THE HP782 IS THE NEW STANDARD OF FUNCTIONALITY AND USER EXPERIENCE

The HP7 UL913 radios features a large HD TFT-LCD display that provides the necessary screen area for easily accessing a variety of information and functionality.

The following features are supported on the HP782 UL913.

## Simplified Navigation

The app icons are arranged in a nine-grid layout, making visual recognition more intuitive. The menu layers are simplified and streamlined so users can easily change settings and adjust features.

## Clear Notifications and Information Display

On the home screen, the HP782 UL913 displays time and contact alias/ID, and can display two notifications simultaneously. The radio supports notifications of emergency calls, missed calls, call alerts, and new messages, and users can preview message contents.

The dialing interface supports selection of individual calls, group calls, PSTN / PABX phone dialing, fast dialing, and channel switching (CPS selection configuration).

The call interface displays call status (digital / analog, encryption status, recording status, call transfer, etc.), contact alias / ID, contact address, call duration, and speaker location information.

## Multiple User Profiles

The HP782 UL913 supports four User Profiles that can be selected to set the corresponding tone, volume, vibration, and more. For example, profiles can match the environment, such as indoors or outdoors, or in a meeting.

## Interface Switcher

The HP782 UL913 features an Interface Switcher that allows users to easily to switch between the home screen and up to three frequently used interfaces. This makes it easy to view or perform feature settings on these interfaces for efficient operations and to ensure rapid response in critical situations.

## Dynamic Calls

The HP782 UL913 allows users to manually dial without switching the dialing mode. In the dialing interface, users can select a private, group, or PSTN/PABX call. In addition to the contact alias/ID, the radio also displays call status (including call mode, encryption status, recording status, and call forwarding status), contact address, and call duration.

## Text Messaging and Conversational SMS

The HP782 UL913 supports sending private and group text messages. Messages can be typed freeform or the user can send and receive a variety of preprogrammed messages.

The short message is displayed in the form of a dialog box, along with the message and sender details. The interactive mode is more intuitive, and the message sending and receiving is simple and efficient.

## THE NEW STANDARD IN UL 913 CERTIFIED SAFETY

Class I, II, III, Division 1, Groups C-G, T4, -30°C to 60°C
Class I, Division 2, Groups A-D, T4, -30°C to 60°C

**Atmosphere**
**Class I** Gas and vapors
**Class II** Dust
**Class III** Fibers and Filings

**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

**Operating Temperature**

| | | | | |
|---|---|---|---|---|
| Class I, II, III | Division 1 | Groups C-G | T4 | -30°C to 60°C |
| Class I | Division 2 | Groups A-D | T4 | -30°C to 60°C- |

**Area Classification:**
(Flammable material present time) NEC 500
**Division1** Gas/Dust normally present in explosive amounts
**Division2** Gas/Dust not normally present in explosive amounts

**Temperature Class (Maximum device surface temperature)**

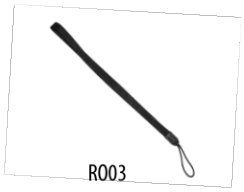
| | |
|---|---|
| T1-450°C | T3B-165°C |
| T2-300°C | T3C-160°C |
| T3-200°C | T4-135°C |
| T3A-180°C | T5-100°C |
| | T6-85°C |

Hytera understands the challenges of working in hazardous environments and is dedicated to developing the safest digital two-way radios available.

The HP7 UL913 radios are built to UL 913 certification for safe use in dangerous areas with explosive gas and combustible dust.

# STANDARD ACCESSORIES

## INCLUDED WITH THE HP702 UL913 and HP782 UL913



R003
Nylon Hand Strap

BC39
Belt Clip

UHF Stubby Antenna
or VHF Long Antenna

PS1014
Power Adapter

CH10L27
Drop-In Single Unit Charger

BL2801-Ex
UL913 Certified 2850mAh Li-Ion IS Battery

# OPTIONAL CERTIFIED ACCESSORIES

UL913 Certified include the LCY206 leather carrier, and all accessories noted with -P at the end of the part number.

## COMBINATION EARPIECES

External earpieces that are used in combination with the ACN-02-P

ACN-02-P
UL913 Mic and PTT button with VOX and
3.5mm Jack Receive-only Earpiece (IP54)

ES-01
Receive-Only Earbud

ES-02
Receive-Only Transparent
Acoustic Tube

EH-01
Receive-Only C-Style Earloop

EH-02
Receive-Only Swivel Earpiece

## ALL-IN-ONE EARPIECES AND HEADSET

External earpieces and microphones that attach directly to the radio

EHN26-P
UL913 C-style Earpiece with microphone
and in-line PTT button

EAN21-P
UL913 3-wire Surveillance
Earpiece with Transparent Acoustic Tube

## OTHER ACCESSORIES

MCL32
6-Radio Multi-Unit Charger

ECN21-P
UL913 Noise-Cancelling Headset
with PTT and boom microphone

LCY026
Leather Carrying Case

PC152
USB programming cable

## REMOTE SPEAKER MICROPHONES

Remote Speaker Mics provide easy access for audio, are water
resistant, and attach directly to the radio.

SM26N1-P
UL913 Palm PTT Mic with Speaker
and emergency button (IP67)

SM26N2-P
UL913 Palm PTT Mic with Speaker
and emergency button (IP54)

# SPECIFICATIONS

| General | |
|---|---|
| Frequency Range | UHF 350-470MHz , VHF 136-174MHz |
| Channel Capacity | 1,024 Channels (512 Analog, 512 Digital) |
| Zone Capacity | 64 Zones with 256 Channels per Zone |
| Channel Spacing | 12.5kHz / 20kHz / 25kHz |
| Operational Voltage | 7.4V (Rated) |
| Battery | 2850mAh Li-Ion Polymer UL 913 certified |
| Battery Life (5/5/90) | HP702 UL913: 25 Hours, 29 Hours GPS disabled<br>HP782 UL913: 24 Hours, 28 Hours GPS disabled |
| Weight<br>(with antenna and battery) | HP702 UL913: 13oz (369g)<br>HP782 UL913: 13.7oz (389g) |
| Dimensions (H x W x D) | 5 3/16" x 2 5/32" x 1 7/16" (132 x 55 x 36.5mm)<br>without antenna |
| Frequency Stability | ± 0.5ppm |
| Antenna Impedance | 50Ω |
| Display | HP702 UL913: OLED 0.91" Display<br>HP782 UL913: LCD 2.4", 320x240, 262,000 colors |
| Bluetooth | BT 5.0 BLE+EDR |
| **GPS (5 Satellites visible at nominal 130dBm)** | |
| Time to First Fix Cold Start | <60 Seconds (Typical TTFF) |
| Time to First Fix Hot Start | <10 Seconds (Typical TTFF) |
| Horizontal Accuracy | <5 meters |
| **Receiver** | |
| Digital Sensitivity | 0.18μV (BER 5%) |
| Analog Sensitivity | 0.16μV (Typical) (12dB SINAD)<br>0.18μV (12dB SINAD) |
| Adjacent Selectivity | TIA-603: 60dB@12.5kHz, 70dB@20/25kHz<br>ETSI: 60dB@12.5kHz, 70dB@20/25kHz |
| Spurious Response Rejection | TIA-603: 70dB@12.5/20/25kHz<br>ETSI: 70dB@12.5/20/25kHz |
| Intermodulation | TIA-603: 70dB@12.5/20/25kHz<br>ETSI: 65dB@12.5/20/25kHz |
| Hum and Noise | 40dB@12.5kHz, 43dB@20kHz, 45dB@25kHz |
| Rated Audio Power Output | 0.5W |
| Rated Audio Distortion | ≤3% |
| Audio Response | +1 to -3dB |
| Conducted Spurious Emission | <-57dBm |

| Transmitter | |
|---|---|
| RF Power Output | VHF High Power: 5W, VHF Low Power: 1W<br>UHF High Power: 4W, UHF Low Power: 1W |
| FM Modulation | 11K0F3E @ 12.5kHz<br>14K0F3E @ 20kHz<br>16K0F3E @ 25kHz |
| 4FSK Digital Modulation | 12.5kHz Data Only: 7K60FXD<br>12.5kHz Data and Voice: 7K60FXW |
| Conducted/Radiated Emission | -36dBm <1GHz, -30dBm >1GHz |
| Modulation Limiting | ±2.5kHz @ 12.5kHz<br>±4.0kHz @ 20kHz<br>±5.0kHz @ 25kHz |
| FM Hum and Noise | 40dB @ 12.5kHz, 45dB @ 25kHz |
| Adjacent Channel Power | 60dB @ 12.5kHz, 70dB @ 25kHz |
| Audio Response | +1 to -3dB |
| Audio Distortion | ≤3% |
| Digital Vocoder Type | AMBE+2™ |
| **Environmental** | |
| UL913 Certification for Radios, Batteries and Accesories | Class I, II, III, Division 1, Groups C-G,T4, -30° to 60°C<br>Class I, Division 2, Groups A-D,T4, -30° to 60°C |
| Operating Temperature | -22°F to +140°F (-30°C to +60°C) |
| Storage Temperature | -40°F to +185°F (-40°C to +85°C) |
| ESD | IEC 61000-4-2 (Level 4)<br>±8kV Contact, ±15kV Air |
| Dust and Water Ingress | IP68 Standard |
| Humidity | Per MIL-STD-810 C/D/E/F/G Standard |
| Shock and Vibration | Per MIL-STD-810 C/D/E/F/G Standard |

| Ordering Information | |
|---|---|
| HP702-G-BT-UL913-Uv | UHF 350-470MHz (Antenna 400-470MHz), 1-4W, with GPS and Bluetooth |
| HP702-G-BT-UL913-V1 | VHF 136-174MHz (Antenna 146-164MHz), 1-5W, with GPS and Bluetooth |
| HP782-G-BT-UL913-Uv | UHF 350-470MHz (Antenna 400-470MHz), 1-4W, with GPS and Bluetooth |
| HP782-G-BT-UL913-V1 | VHF 136-174MHz (Antenna 146-164MHz), 1-5W, with GPS and Bluetooth |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