

High-level IIC intrinsically safe Digital Radio

# PH910Ex / PH990Ex



- intrinsically safe with ATEX & IECEx
- Slim & Portable Design, Industry Leading
- 0.18uV Sensitivity, Expand Communication Distance
- Built-in Bluetooth, More Functions Expansion
- Support GPS, High-precision Location
- Local Recording, Secure and Reliable
- IP67 Protection, Robust and Reliable
- Rich Accessories, Suitable for Various Scenarios



**IECEx**

# Application Scenarios



# Accessories

## Standard



Antenna



Intrinsically safe  
2000mAh Li-ion Battery



Power Adapter



Charger



Belt Clip



Strap

# Specifications

## General

Protocol	ETSI TS 102 361-1,-2,-3,-4
Explosion-proof Certification	<b>ATEX</b> Gas Rating: II 2G Ex ib II C T4 Gb Dust Rating: II 2D Ex ib III C T120°C Db Mines Rating: I M2 Ex ib I Mb <b>IECEX</b> Gas Rating: Ex ib II C T4 Gb Dust Rating: Ex ib III C T120°C Db Mines Rating: Ex ib I Mb
Frequency	UHF1: 400-470 MHz UHF3: 350-400 MHz VHF: 136-174 MHz
Channel Capacity	1024 (PH990Ex) 64(PH910Ex)
Zone Capacity	64 (PH990Ex) 4 (PH910Ex)
Channel Spacing	12.5KHz/20KHz/25KHz
Operating Voltage	7.4V
Battery Capacity	2000mAh (Standard)
Battery Life	Analog: 17hours Digital: 19hours (PH990Ex)/19.5hours (PH910Ex) (5:5:90 work cycle)
Size (H x W x D, with battery, without antenna)	129.7x55.6x37.6mm (PH990Ex) 129.7x55.6x36.8mm (PH910Ex)
Weight(with battery and antenna)	About 415g (PH990Ex) About 400g (PH910Ex)
Screen	1.8" transfective color screen 240x180, 4 lines (PH990Ex)
Vocoder	AMBE++
Man Down	Support
Bluetooth	Support
Positioning	GPS
Encryption	ARC4(40bit) / AES128/256 (Optional)
Recording	Optional
Interface	18 pin accessory interface, support audio/programming

## Environmental

Operating Temperature	-30°C ~ +55°C
Storage Temperature	-40°C ~ +85°C
ESD	IEC 61000-4-2(level 4) ±8kV (Contact) ±15kV (Air)
Dust and Water Protection	IP67
Reliability	Comply with MIL-STD-810 H

## Receiver

Sensitivity (Analog)	0.18uV (12dB SINAD)
Sensitivity (Digital)	0.18uV (5% BER)
Adjacent Channel Selectivity	60 dB@12.5KHz/70 dB@20/25KHz (TIA603A) 60dB@12.5KHz / 70 dB@20/25KHz ( ETSI )
Intermodulation	70 dB (TIA603D) 65 dB (ETSI)
Spurious Rejection	70 dB (TIA603D) 70 dB (ETSI)
Blocking or Desensitization	80dB (TIA603D) 84dB (ETSI)
Co-channel Rejection	-12~0dB @12.5KHz/-8~0dB @20/25KHz
Hum and Noise	-40dB@12.5KHz / -43dB@20KHz / -45dB@25KHz
Rated Audio Power	0.5W
Conducted Spurious Emission	-57dBm (TIA603D)
Audio Response	+1 ~ -3dB (TIA603D)
Audio Distortion	≤3%

## Transmitter

Output	1W (Rated) < 2W (Maximum)
FM Modulation	12.5KHz:11K0F3E / 20KHz:14K0F3E / 25KHz:16K0F3E
4FSK Digital Modulation	12.5KHz Data Only:7K60F1D&7K60FXD 12.5KHz Voice Only:7K60F1E&7K60FXE 12.5KHz Voice And Data:7K60F1W
Conducted/ Radiated Emission	-36dBm ≤1GHz -30dBm >1GHz
Modulation Limiting	±2.5KHz @12.5KHz / ±4KHz @20KHz / ±5.0KHz @25KHz
FM Hum and Noise	-40dB@12.5KHz / -43dB@20KHz / -45dB@25KHz
Adjacent Channel Power	60dB@12.5KHz / 70dB @20/25KHz
Audio Response	+1 ~ -3dB(TIA603D)
Audio Distortion	≤3%

## GPS

Accuracy specs for long-term tracking (95th percentile values>5 satellites visible at nominal -130 dBm signal strength)	
TTF (Time To First Fix) - Cold Start	<60s
TTF (Time To First Fix) - Hot Start	<10s
Horizontal Accuracy	<10m

General Disclaimer: the specifications in this document are in accordance with the applicable standard test. Due to the continuous technology development, Caltta may change the specifications without timely notice.

**Caltta** CALTTA TECHNOLOGIES CO.,LTD.

Address: 12F/Building G2, International E-City, Nanshan, Shenzhen, China

Web: <https://www.caltta.co.uk>

**Privacy Statement:** Caltta Technologies is a leading provider of comprehensive critical communication solutions and committed to protecting personal data in accordance with applicable laws and regulations and with technologies including anonymization and data encryption and necessary security management measures.

Authorised UK Partner  
**TRONEX**  
TELECOMMUNICATIONS LTD