Caltta

PH690
DMR Digital Radio

Rugged and Compact For Professional Users to Stay Connected

- Professional design
- Loud and clear sound
- Rich features
- High level protection

PTT Key
Side Key 1
Side Key 2
LED Indicator

Channel selection knob
Power/Volume knob
microphone
2.0 inch LCD
Keypad
Speaker
SOS button

Antenna
Accessory interface
Belt clip hole
Battery
Battery lock button

PH690 KEY FEATURES

PH690 integrates professional appearance layout, perfect PTT function design and professional manufacturing technology. It makes the user's work easier, the organisation's operation more efficient, which is the first choice for PTT communication.

Higher Safety

With security measures such as authentication and end-to-end encryption, PH690 effectively protects your daily communication from eavesdropping, and meet the requirements of industry customers who focus on safety performance.

Friendly User Interface

PH690 has a classic layout, and user can operate it skillfully. With a 2.0 inch transflective screen, user can view more information and do more settings. Based on professional user habits, simple MMI is developed to help professional users operate radio more comfortably.

Loud and Clear Audio

With a 36mm front speaker, high-efficiency amplifier and excellent audio encoder, PH690 can provide loud and clear voice, to help user not miss every key voice command in a noisy environment.

Long Battery Life

Equipped with a 2600mAh standard battery, PH690 can work for 20 hours under a 5-5-90 duty cycle in digital mode. A long battery life facilitates user's focus on essential job.

Rich Features

In addition to basic DMR voice and data services, PH690 also offers many optional features, such as Bluetooth, GPS location, voice recording, advanced encryption, ECS (Enhanced Conventional System), TF card, optional board, and so on.

Solid and Reliable

PH690 meets IP68 and Mil-STD 810G certifications. It can be used in tough and harsh environments as a professional and reliable communication tool.

Function List

Voice Services
Private Call, Group Call and All Call, Call Alert, Priority Interrupt, Background Call

Working Mode
Digital Conventional, Analogue Conventional, ECS (Enhanced Conventional System)

Connections
Bluetooth 2.1+EDR/4.0, GPS/BDS Positioning System, Vibration, Real Time Clock, Open API.

Data Services
Text Message, Status Message, Location

Supplementary Services
Roaming, Programmable Buttons, One Click Upgrade, Recording.

Security Protection
Emergency Alarm, Man Down, Lone Worker, Registration Authentication, End-to-End Encryption, Remote Stun/Revive

Application Scenarios

PH690 is a professional DMR radio with simple design, friendly UI, large battery, excellent sound quality, making it deployable in all commercial industries.

Public Safety

Port & Airport

Logistics

Utilities

Specifications

General

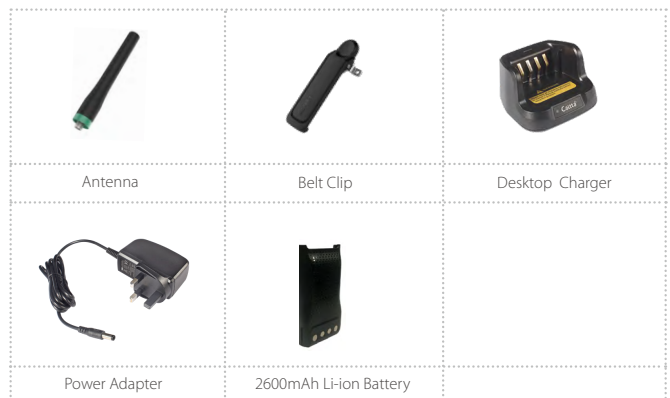|	
Digital Protocol	ETSI/TS102 361-1,-2,-3
Frequency	UHF1:400-470MHz , VHF:136-174MHz
Channel Capacity	1024
Zone Capacity	64
Channel Spacing	12.5kHz/20KHz/25KHz
Frequency Stability	±0.5ppm
Operating Voltage	7.4V
Battery Capacity	2600mAh
Battery Life (5:5:90)	Analogue: 16 hours, Digital: 20 hours
Size (H x W x D)	126×54.5×36.5mm (without antenna)
Weight	About 310g (with antenna and battery)
Screen	2.0inch LCD, 240×320, 6 Lines Text
Vocoder	AMBE++
Bluetooth	BT2.1+EDR/4.0)
Location	GPS/Glonass)
Man Down	Standard
Vibration	Standard
Real-time Clock	Standard
Encryption	64 bit Standard 256 bit AES Encryption (Optional)

Transmitter

Low Power Output	1W
High Power Output	4W (UHF1), 5W(VHF)
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	-40 dB@12.5KHz/-43dB@20KHz /-45dB@25KHz
Adjacent Channel Power	60 dB@12.5KHz /70 dB @20/25KHz
Audio Distortion @ Rated Audio	≤3% (Typical)
Audio Response	+1 ~ -3dB(TIA603D)

Environmental

Operating Temperature	-30℃ ~ +60℃
Storage Temperature	-40℃ ~ +85℃
ESD	IEC 61000-4-2 (level 4) ±8kV (Contact) ±15kV(Air)
Dust and Water Resistance	IP68
Reliability	MIL-STD-810 G

Receiver

Sensitivity (Analogue)	0.22uV (12dB SINAD)
Sensitivity (Digital)	0.22uV (5% BER)
Adjacent Channel Selectivity	60 dB@12.5KHz/70 dB@20/25KHz (TIA603A) -1T
	45dB@12.5KHz /70 dB@20/25KHz (TIA603D) -2T
	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 Desensitisation	80dB (TIA603D) / 84dB (ETSI)
Co-channel Rejection	-12~0 dB @12.5KHz/-8~0 dB @20/25KHz
Hum and Noise	-40 dB@12.5KHz /-43 dB@20KHz /-45dB@25KHz
Rated Audio Power	0.5W
Max Audio Power	2.0W
Audio Distortion @ Rated Audio	≤3% (Typical)
Audio Response	+1 ~ -3dB (TIA603D)
Conducted Spurious Emission	-57 dBm (TIA603D)

GPS

Accuracy specs are for long-term tracking (95th percentile values>5satellites visible at nominal -130 dBm signal strength)

TTFF (Time To First Fix) - Cold Start	<60s
TTFF (Time To First Fix) - Hot Start	<10s
Location Accuracy	<10m

Standard Accessories

Antenna	Belt Clip	Desktop Charger
Power Adapter	2600mAh Li-ion Battery	