

Specification



General	
Digital Protocol	ETSI TS102 361-1, -2, -3, -4(optional)
Frequency	UHF1: 400-470MHz  UHF3: 350-400MHz  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 (Standard) / 2000mAh (Optional)
Battery Life	Analog: 16 Hours Digital: 20 Hours (5: 5: 90 working cycle, high power transmission)
Size (H x W x D)	126*54.5*36.5mm ( With 2600mAh Battery and Antenna)
Weight	About 310g (With Antenna and 2600mAh Battery)
Screen	2.0-inch LCD, 240×320, 6-line text
Vocoder	AMBE++
Bluetooth	BT2.1+EDR / 4.0 (optional)
Location	GPS (optional)
Man down / Vibration	Support
Real-time Clock	Support
Encryption	Support 40bit Basic Encryption, 128/256bit Advanced Encryption is optional

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

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

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	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 /-45 dB@25KHz
Rated Audio Power	0.5W
Max Audio Power	2.0W
Rated Audio Distortion	≤3%
Audio Response	+1~-3dB (TIA603D)
Conducted Spurious Emission	-57 dBm (TIA603D)

Transmitter	
Low Power Output	1W
High Power Output	4W (UHF1&UHF3) or 5W (VHF)
FM Modulation	12.5KHz: 11K0F3E / 20KHz: 14K0F3E / 25KHz: 16K0F3E  12.5KHz Data Only: 7K60F1D&7K60FXD 12.5KHz Voice Only: 7K60F1E&7K60FXE 12.5KHz Voice And Data: 7K60F1W
4FSK Digital Modulation	
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 /-45 dB@25KHz
Adjacent Channel Power	60 dB@12.5KHz /70 dB @20/25KHz
Audio Distortion	≤3%
Audio Response	+1~-3dB(TIA603D)

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 notice.



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.



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# Features



## Full Encryption

Support 40bit basic encryption. 128/256bit AES encryption are optional. It also supports lone worker, alarm, man-down and other functions to protect users' safety.



## Excellent Appearance

The 2.0-inch LCD screen and full keyboard bring users a richer operating experience.



## Large-capacity Battery

With a 2600mAh large-capacity battery and digital power reduction technology, PH690 can work for at least 20 hours in digital mode(5:5:90), meeting the needs of long work shifts.



## Loud and Clear Voice

With a 2W speaker and optimized audio design, PH690 ensures clear communication even in a noisy environment.



## Complete Services

In addition to basic DMR voice and data services, PH690 also supports many optional features such as GPS/BDS , Bluetooth , VOX , etc.



## Military Standard

MIL-STD-810G rated, PH690 is resistant to dropping and shocks at various levels.



## Digital-and-analog Compatible

Digital-and-analog compatible, PH690 realizes the smooth evolution of the system. It also supports digital direct/repeater dual-time slots and automatic cross-site roaming.



## IP68 Protection













IP68 rated, PH690 is resistant to water and dust, ensuring normal operation in extreme environments.



# Scenarios



# Accessories

Standard						
						
Desktop Charger	2600mAh Li-ion Battery	Power Adapter	Antenna	Belt Clip		
Optional						
						
8-way Charger	Bluetooth Earphone	Bluetooth PTT Ring	Transparent Tube Earphone	C-Style Earphone	Remote Microphone	Programming Cable