

GPS tracker software manual

1. Connection and network

The watch supports wired and wireless data connections.

1.1 GPRS

The watch can connect to the network through GPRS of the SIM card, and send data to the server through TCP protocol. It works with 2G/3G/4G network. If the feedback packet sent by the server is not received within the scheduled time, the watch will try to re-read the SIM card or try to restart to regain the network connection. The APN configuration information of major global operators has been stored in the standard firmware of the watch. When the watch detects the SIM card, it will read the MCC and MNC from the SIM card, find the matching APN configuration information to complete the automatic configuration of APN. If the matching APN configuration information cannot be found, you need to manually configure the APN. Besides SMS and GPRS commands, APN can also be configured through Bluetooth App. Please refer to the Bluetooth App User Guide for details.

1.2 Wi-Fi

The device supports network communication via Wi-Fi connection. You can set Wi-Fi connection parameters through SMS or GPRS commands. For specific command format, please refer to Chapter 3, Protocol and Command. In the default firmware version, when the network connection is disconnected, the device will only try to reconnect through 4G, not through Wi-Fi. However, the customized firmware can try to reconnect through Wi-Fi.

1.3 BLE

The device supports network communication through BLE.

1. The device can be paired with a mobile phone for communication.
2. The device can search for surrounding Bluetooth MAC addresses and upload them to the server. The default firmware version only turns on the Bluetooth module within 30 minutes after booting up. But it can be set to keep Bluetooth on through SMS or GPRS commands.
3. The device support customize firmware to broadcast its own MAC address for other devices to discover it.

1.4 Cable

The watch supports communication with computers or testing equipment through data cable. You can send AT commands or flash firmware through a data cable. Pressing two keys simultaneously can force the flashing of the device

2 Tracking

Pls login to our demo system with your demo account. Any question pls mail to info@thinkrace.com.

<https://traxbean.5gcity.com/>

Account: demouser

Initial password: 123456

3 SOS alert

The watch supports switch ON/OFF SOS alert by GPRS command.

With SOS enabled, the wearer could press the SOS button for 3 seconds to trigger an SOS alert. The watch will vibrate for one second and send 'SOS alert' data with latest location to the tracking server.

After sending the 'SOS alert' data, the watch will start SOS call process. It will make phone call to the first SOS number for three times until the call is answered. If no answer or SOS button was pressed again to cancel the outgoing call, it will try to call all the other SOS numbers by turns.

If the SOS is enabled but the SOS number has not been set, the watch will display "No SOS number. Setup now". See Chapter 3, Protocol and Command for the method of setting SOS number.

4 Phone call

The watch can answer calls. The SIM card calling function in the watch is required. When the watch shows that there is an incoming call, click the upper key to answer the call. You cannot reject the call by pressing the key. After the call is connected, click the Up button to end the call.

The watch supports the white list function, through which you can only filter trusted numbers for calls. See Chapter 3, Protocol and Command for the detail function of white list function.

5 Safety, operation and support

Warning

When using the device, please comply with the laws and regulations in your area. Not following these safety instructions may result in fire, electric shock, injury, or damage to equipment or other property. Before using the device, please read all the security information below.

Operation

The device contains highly sensitive electronic components, which can be damaged by dropping, burning, puncturing, or crushing. Do not use damaged devices, such as cracked screens, obvious water ingress, or damaged watch straps, as they may cause injury. Avoid prolonged exposure to sand and dust.

Phone call

The calling function requires a SIM card that supports calling. Do not use the call function while performing other activities that require full attention.

Repair

Do not open the device and attempt to repair it yourself. Dismantling the equipment may cause damage, render it no longer waterproof, and may result in injury to you. If the device is damaged or malfunctioning, please contact the dealer or their authorized service provider.

Battery

Do not attempt to replace the built-in battery of the device by yourself. You may damage the battery, causing overheating and personal injury. The maintenance service of lithium-ion batteries in the equipment should only be provided by dealers or their authorized service providers. Batteries must be recycled or disposed of separately and cannot be mixed with household waste. Do not burn the battery.

Distraction

In certain situations, using devices can distract your attention and may pose a danger. Please comply with the relevant regulations prohibiting or restricting the use of mobile phones (such as avoiding texting while driving and using dialing functions).

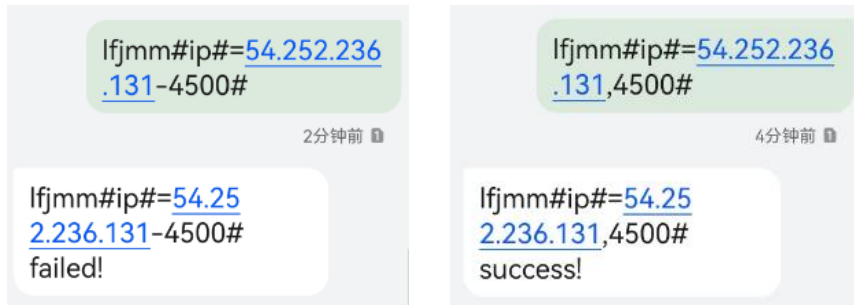
Tracking

This application relies on data services. These data service signals are subject to change at any time and may not be available in all areas, so the positioning information provided in some locations with poor signals may be unavailable, inaccurate, or untimely.

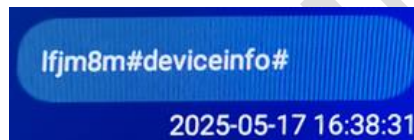
6. Protocol and command

SMS commands refer to a series of specific commands that a watch can execute by receiving SMS without connecting the server. These commands are released from the watch manager by sending SMS (Short Message Service) to the watch SIM card through their mobile phone. The SIM card of the watch should support SMS and have enough balance, and the watch firmware will decode and execute commands.

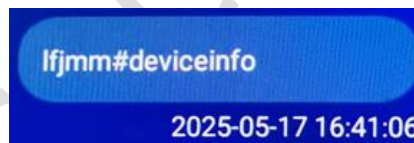
The SMS command format is "password#Command ID#" or "password#Command ID=parameter#". The firmware of the watch will check the password. For SMS messages with the correct password, the watch will execute the command and reply with the execution result via SMS.



For SMS with incorrect password, the watch will not execute any instructions. Some watches will play short ringtones to remind users of password errors, while others will display incorrect instructions on the information interface.

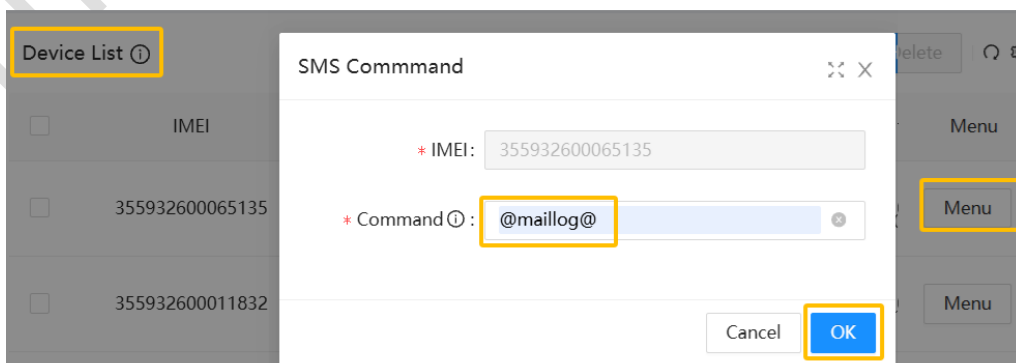


For SMS messages with incorrect command formats, watches with screens will display the command on the information interface.

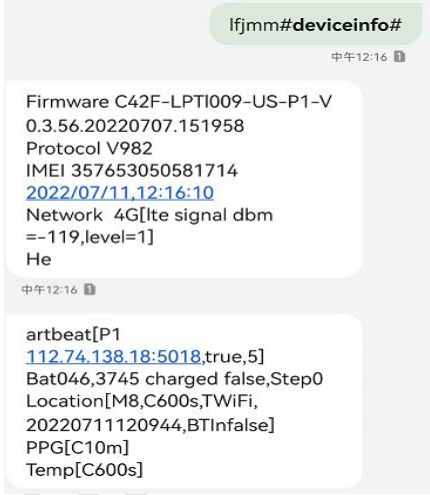


GPRS command refer to a series of specific commands that a server sends to a watch through wireless communication networks such as GPRS/4G/Wi-F. The GPRS commands content format is "@Command ID@" or "@Command ID=parameter@". The comma ',' in the parameter should be replaced by a dash '-'. The parameter should not include '@' or '#'.The GPRS command does not verify passwords. Pls check 'IW protocol-24.GPRS command (Downlink ID:BPSM, Response ID:APSM)' for the format of whole command.

For more commands and data package formats, see IW protocol document.



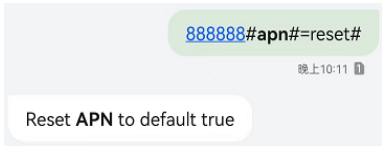
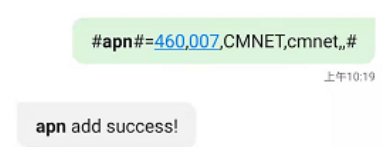
6.1 Reviewing the watch status

Command format	Description	Example
SMS command format Password#deviceinfo# No GPRS command	The command ID is DEVICEINFO; The watch is supposed to reply with watch's information, such as working mode, time interval of GPS tracking, the last time of location, etc.	 <pre> lfjmm#deviceinfo# 中午12:16 Firmware C42F-LPTI009-US-P1-V 0.3.56.20220707.151958 Protocol V982 IMEI 357653050581714 2022/07/11,12:16:10 Network 4G[lte signal dbm =-119,level=1] He 中午12:16 artbeat[P1 112.74.138.18:5018,true,5] Bat046,3745 charged false,Step0 Location[M8,C600s,TWiFi, 20220711120944,BTInfalse] PPG[C10m] Temp[C600s] </pre>
Contents of reply SMS	Description	
Firmware C42F-LPTI009-US-P1-V0.3.56.20220707.151958	The version of watch firmware.	
Protocol V982	The version of communication protocol implemented to the watch	
IMEI 357653050581714	IMEI No. assigned to the watch.	
2022/07/11,12:16:10	The time of reply the command.	
Network 4G[lte signal dbm =-119,level=1]	The current network is 4G, the signal level of 4G is 1 (The best signal is 5).	
Heartbeat [P1112.74.138.18:5018,true,5]	The server IP for uploading the heartbeat values; The value "true" means connected to the tracking server successfully; The value "5" means heartbeat uploading interval is 5 minutes.	
Bat046,3745 charged false, Step0	Battery level and pedometer value; The value "046" means the battery level is 46%; The value "3745" means the voltage value is 3.745v; The value "0" means the pedometer is 0 steps.	
Location [M8,C600s,TWiFi, 20220711120944,BTInfalse]	The value "M8" means the watch is working in tracking mode 8. The value "C600s" means location data uploading interval is 600 seconds; TWiFi means the tracking way of last location is WiFi; The value "20220711120944" is location time of the last location. It is 2022-07-11 12:09:44; BTInfalse is undefined for 4G watch.	
PPG[C10m]	Heart rate detection interval;	

or PPG[C5,P64,H108,L70,T31.00, TA35.55,20200225230645]	C0m means the watch don't support heart rate detection; The value "C10" means the heart reat uploading interval is 5 mins; The value "P64" means the value of heart rate is 64; The value "H108" means the high pressure of blood pressure is 108; The value "L70" means the low pressure of blood pressure is 70; The value "T31.00" means the wrist temperature is 31.00 degrees Celsius; The value "TA35.55" means the body temperature is 35.55 degrees Celsius; The value " 20200225230645" means the heart rate and temperature data detection time is 2020-02-25 23:06:45.
Temp[C0s] or Temp[C600s]	Temperature detection interval; The value "C0s" means the watch don't support body temperature detection; The value "C600s" means the temperature data uploading interval is 600 seconds;

6.2 Setting up APN

The APN configuration information of major global operators has been stored in the standard firmware of the watch. When the watch detects the SIM card, it will read the MCC and MNC from the SIM card, find the matching APN configuration information to complete the automatic configuration of APN. If the matching APN configuration information cannot be found, you need to manually configure the APN. Besides SMS and GPRS commands, APN can also be configured through Bluetooth App. Please refer to the Bluetooth App User Guide for details.

Command format	Description	Example
SMS command format Password#apn#=reset# GPRS command format @apn@=reset@	The command ID is APN; Reset the APN configuration to default value; The watch is supposed to reply with 'Reset APN to default true/false'.	
SMS command format Password#apn#=MCC,MNC,ApnName,apn,user,password# GPRS command format @apn@=MCC,MNC,ApnName,apn,user,password@	The command ID is APN; Configure and enable a new APN parameter, or enable an existing APN parameter which is already in the firmware; The watch is supposed to reply with 'apn add success!'; Repeatedly setting the same APN parameters may cause the watch to reply with ERROR reminder SMS.	 GPRS command: @apn@=234,50,TM,TM,,@

SMS command format Password#apn#=current# No GPRS command	The command ID is APN; Check the existing APN saved in watch firmware; The watch is supposed to reply with the APN which are matching the current MCCMNC. It won't list all APN parameters; Every APN parameter start with APN Settings ID such as 'APNSettings id=23'.	
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6.3 Power OFF

Command format	Description	Example
SMS command format Password#poweroff# GPRS command format @poweroff@	The command ID is POWEROFF; Power OFF the watch remotely; The watch is supposed to reply with 'do poweroff ok!' then execute the command.	

6.4 Reboot

Command format	Description	Example
SMS command format Password#reboot# GPRS command format @reboot@	The command ID is REBOOT; Restart the watch remotely; The watch is supposed to reply with 'do reboot OK!' then execute the command.	