

4G Bracelet R16H User Manual



1. Product Description

R16H is a 4G parolee tracking bracelet. It supports GPS and Beidou dual-mode positioning outdoors and LBS+WiFi+Bluetooth positioning indoors. The device is specially designed with steel sheets inside the straps to prevent cutting. If the straps on either side are cut, an alarm will be triggered. The lock is specially designed with a high-strength steel cover to prevent the parolee from disassembling it by himself. Even if it is disassembled, an alarm will be triggered. The efficient power-saving working mode, large built-in battery and wearable power bank bring great convenience to users. This product is a boon to judicial correction departments and users.

2. Product Specification

Item	Parameter
GSM/GPS Chipset	QUECTEL EC600U-CN/EU/AU
GSM Frequency	Asian version: GSM 900/1800 LTE-FDD B1/B3/B5/B8 LTE-TDD B34/B38/B39/B40/B41 Europe version: GSM B2/B3/B5/B8 LTE-FDD B1/B3/B5/B7/B8/B20/B28 LTE-TDD B38/B40/B41 American version: GSM B2/B3/B5/B8 LTE-FDD B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66 LTE-TDD B38/ B40/ B41

SIM Card	Single NANO SIM card
Location	GPS & Beidou & LBS & Wi-Fi
Outdoor Location Accuracy	<5m
Internal Battery	2500mAh
Working Time	72 hours with 1 minutes interval time, 14 days with 5 minutes interval.
Portable Power Bank Battery	5000mAh
Motion Sensor	G-Sensor
NFC	Optional
Size (Straps Excluded)	60mm*53mm*26mm
Weight (Straps Included)	205g
Memory	Support store 2000 location points in GSM/LTE signal blind area
Water Proof Level	IP68
Work Temperature	-20~60℃
Work Humidity	5%~95% Non-condensing

Standard Package:

Index	Item	Quantity	Picture
1	Bracelet	1pcs	

2	Portable Power Bank	1pcs	
3	Strap Locker	1pcs	
4	Locker Cover	1pcs	
5	L Wrench	1pcs	
6	Magnetic Charging Cable for Bracelet	1pcs	
7	USB Charging Cable for Power Bank	1pcs	

3. Bracelet Features

- **Water Proof Level:** The waterproof grade is IP68, so it can be immersed in water and worn in the shower.
- **Material:** The device is made of a comfortable, hypoallergenic material that is silicone, lead-free, and highly durable. The device can be worn for extended periods of time. The device should not cause skin irritation from sweat or moisture.
- **4G LTE & GSM:** Supports automatic switching between 4G and 2G networks, and supports frequency bands and roaming around the world.
- **GPS and WIFI and LBS Location:** By default, GPS/Beidou positioning data is uploaded outdoors first. In indoor lighting environments without GPS signals, WiFi/LBS information is uploaded to the platform, which resolves it into longitude and latitude.
- **Location Tracking:** Supports uploading location data at setting intervals when there is motion detected and sleep after there is no motion, and supports setting different time intervals from the platform software.
- **SOS Alarm:** Supports SOS button and alarm. Pressing the SOS button for more than three seconds will trigger the SOS alarm. The device vibrates and informs the user that the alarm is successfully triggered. Then, the three set SOS phone numbers are dialed in turn until someone answers. After answering, a two-way call begins.
- **Two-way Call:** Only the set number can call the shackle, short press the SOS button to answer and hang up.
- **Voice Monitoring:** the SOS phone number can call the bracelet and do voice monitoring.
- **Motion Detection:** Built-in G-Sensor detects motion status and upload location data only when in motion
- **Removal Detection:** The buckle of the shackle is designed to be disassembled. Users need to use special tools to disassemble it. The lock has a stainless steel protective cover for disassembly. When the customer disassembles the lock, the device will vibrate and trigger a removal alarm, and the bracelet siren will alarm.
- **Strap Cutting Detection:** The built-in steel circuit in the ankle strap detects whether the strap is cut. If either side of the strap is cut, the device

will vibrate and trigger the removal alarm, and the bracelet siren will alarm.

- **GEO-Fence Alarm:** You can define the GEO-Fence alarm on the platform, once the alarm triggered, the device will vibrate and the GEO-Fence alarm will be triggered, the bracelet siren will alarm.
- **Portable Charging:** there is an portable power bank with 5000mAh capacity, so user can charge it while wear it on wrist/ankle.
- **Low Battery Alarm:** Supports low battery alarm, and alarms once when the battery is at 20%, 10% and 5% respectively. When the alarm occurs, the shackles must vibrate and make voice to remind the wearer to charge, and the indicator light will also flash.
- **Automatically Start and Prevent Shutdown:** When a SIM card is installed, the bracelet will automatically turn on after charging, and cannot be turned off after power on.
- **NFC:** NFC is optional, the NFC tag inside the bracelet is used to do the user identify.

4. Bracelet Function Definition

4.1 LED Definition

LED	Description	Status Definition
Battery Light	 Single color light, showing battery status	Off: Standby when stationary Slow flashing: Not enough light Still on: Charging
GPS Light	 Single color light, showing GPS status	Light off: GPS not working or no GPS signal Slow flashing: Searching for GPS signal, no positioning Still on: GPS signal is normal, positioning has been achieved

GSM/LTE Light	 Single color light, showing GSM/LTE status	Light off: GSM is not working or there is no GSM signal Slow flashing: Searching for GSM signal, not connected to the server Still on: GSM signal is normal, connected to the server
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4.2 SOS Button Definition

Function	Description
Power on	Long press SOS to turn on the device
Check the shackle status	Short press the SOS button and the battery indicator lights up to show normal status
Trigger SOS alarm	Long pressing the SOS button for more than three seconds triggers the SOS alarm. The device vibrates and flashes three LTE lights at the same time. A voice prompt informs the user that the alarm is successfully triggered. Then, the three set phone numbers are dialed in turn until someone answers. After answering, the two-way call mode is entered.
Power off	If there is no SIM card inserted, long press SOS to shut down the phone

4.3 Bracelet Straps and Locker

Item	Description
Straps	The strap should contain a circuit that triggers a strap-cut alarm no matter which side of the strap is cut, and the shackle should vibrate to warn the user
Locker	When the lock is removed, the shackles should be unlocked and the alarm should be triggered, and the shackles should vibrate and warn the user with voice.

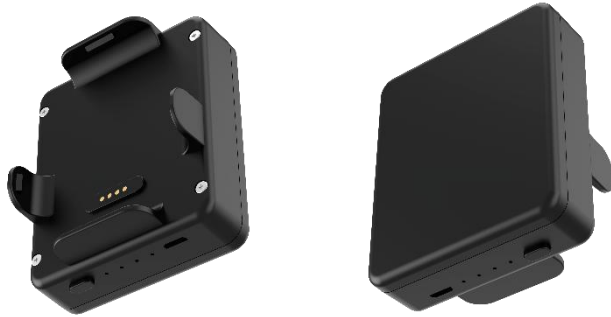
4.4 Motor and Speaker Working Definition

The motor and speaker are used to send vibration and voice reminders. The speaker will also be used for two-way calls. The motor and speaker need to work in the following situations.

Scenario	Speaker Action	Motor Action
Power on	Voice content: The device is powered on Repeat: 1 time	Vibration duration: 3 seconds
Power off	Voice content: The device is powered off Repeat: 1 time	No vibration
Charging	Voice content: The device is charging Repeat: 1 time	No vibration
Charging completed	Voice content: Device charging completed Repeat: 3 times	No vibration
SOS alarm	Voice content: Emergency alarm has been triggered Repeat: 1 time	Vibration duration: 3 seconds
Low battery alarm	Voice content: The battery is low, please	No vibration

	charge Repeat: 3 times	
Strap cutting/locker removed	Voice content: setting alarm tone Repeat: 15 times	Vibration duration: 60 seconds
Dynamic alarm tone (GEO-Fence alarm and other reminder voices for platform detection)	Voice content: setting alarm tone Repeat: 15 times	Vibration duration: 60 seconds
Bracelet strap locked (It is triggered when the state changes from unlocked to locked, which is convenient for knowing that the strap buckle is installed correctly when installing the shackles.)	Voice content: The bracelet is locked. Repeat: 3 times	No vibration

5. Portable Power Bank



Description: the portable power bank can used to charge the bracelet while user wear it on wrist/ankle.

Notes: the portable power bank is not water proof, please do not charge while you wear the bracelet in the water.

5.1 Power Bank Button Definition

Operation	Result
Click button <2s	Display power percentage and output
Click button >=2s	Turn off the LED light
Double click	Turn off the LED light

5.2 Power Bank LED Definition

Power Percentage	LED 1st	LED 2nd	LED 3rd	LED 4th
100%	ON	ON	ON	ON
75%~100%	ON	ON	ON	Flash 0.5s/time
50%~75%	ON	ON	Flash 0.5s/time	OFF
25%~50%	ON	Flash 0.5s/time	OFF	OFF
<25%	Flash	OFF	OFF	OFF

	0.5s/time			
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6. Bracelet SMS Commands

Notes: all these SMS command are case insensitive, the default password for SMS command is 123456.

SMS Command	Function	Description
PW,PASSWORD,IP,IP_Address,PORT#	Set server IP/domain name and Port	E.g.: PW,123456,IP,47.90.254.117,20029#
PW,123456,APN,APN_Content,APN_USER NAME,APN_PASSWORD#	Set or Change APN.	If APN name is cmnet, APN USERNAME and PASSWORD is null, the command should be bellow: PW,123455,APN,cmnet,, #
PW,Current_Password,PW,New_Password#	Change password of SMS command.	E.g.: PW,123456,PW,654321#
PW,PASSWORD,TIMER,A,B#	Set tracker location updating interval time and heart beat data uploading interval time.	A is location updating interval time, the accepted value is 1~60, unit is minute, default setting is 5 minutes. B is heart beat data (used to keep the connection alive) uploading interval the accepted value is 1~60, unit is minute, default setting is 3 minutes. E.g.: PW,123456,TIMER,5,3#
PW,PASSWORD,GMT,A,B,C#	Set device time zone	A can be E/W which means eastern/western. B is time zone hour part, the accepted value is integer between 0 and 12. C is time zone minute part, the accepted value is integer between 0 and 60. E.g.: PW,123456,GMT,E,8,0#
PW,PASSWORD,OWNER,A#	Set device owner name	A is device owner name, it can be English character and digit and total length no more than 50.

		E.g.: PW,123456,OWNER,Jack#
PW,PASSWORD,VOL,A#	Set speaker volume level	A is volume level, it can be integer between 0 and 11, the default setting is 11. E.g.: PW,123456,VOL,10#
PW,PASSWORD,MIC,A#	Set microphone sensitivity	A is microphone sensitivity, it can be integer between 0 and 15, the default setting is 14. E.g.: PW,123456, MIC,10#
PW,PASSWORD,LOWBAT,A#	Set low battery alarm threshold percentage.	A is low battery alarm threshold, it can be integer between 0 and 70, the default setting is 15%. E.g.: PW,123456, LOWBAT,10#
PW,PASSWORD, FACTORY#	Restore to factory setting	E.g.: PW,123456,FACTORY#
PW,PASSWORD, ICCID#	Check the IMEI&IMSI&ICCID number of device.	E.g.: PW,123456, ICCID# Reply content: IMEI:862090055455966,IMSI:460115062998698, ICCID:89860322247558084610
PW,PASSWORD, PARAM#	Check parameters and status.	E.g.: PW,123456, PARAM# Reply content: APN:cmiot,, Server:39.107.140.187,60000 Id:862090055455966,OWNER:Jack TIMER:5,HBT:3,mode:1,alm:1 SOS:13682378551,, TimeZone:E,8,0 Vol:11,Mic:14 Alarm below 15% Sensor:15,Moving:20(3min)