

# ARF410

## Amber Guard F410

### FAQs



# Amber Guard F410 (ARF410)

## 4G Personal GPS Tracker

### 1. Should I choose Amber Connect personal GPS tracker ARF400 or ARF410 model?

The ARF400 and ARF410's functions are almost the same. The differences are:

#### Battery life-

ARF410's battery life is longer than ARF400.

Testing conditions (WiFi turn off)	ARF410 Working time	ARF400 Working time
30 seconds time interval	18 hours	12 hours
60 seconds time interval	36 hours (1 day 12 hours)	22 hours
5 minutes time interval	116 hours (4 days 20 hours)	74 hours (3 days 2 hours)
10 minutes time interval	157 hours (6 days 13 hours)	92 hours (3 days 20 hours)
1 hour time interval	212 hours (8 days 20 hours)	96 hours (4 days)
24 hours time interval	243 hours (10 days 3 hours)	108 hours (4 days 12 hours)
Standby (Time interval is 0)	249 hours (10 days 9 hours)	5 days

#### Frequency band-

ARF410 supports 2G, 3G and 4G, can be used for global markets.

<b>E version: for Asia, Europe, Middle East, Africa countries</b>	2G GSM: 900/1800 MHz
	3G WCDMA: B1/B8 (2100/900 MHz)
	4G FDD-LTE: B1/B3/B7/B8/B20
<b>SA version: for Latin America and Australia countries</b>	2G GSM: Don't support
	3G WCDMA: B1/B5 (2100/850 MHz)
	4G FDD-LTE: B1/B3/B7/B8/B28
<b>A version: for North America USA and Canada</b>	2G GSM: Don't support
	3G WCDMA: B1/B5 (1900/850 MHz)
	4G FDD-LTE: B2/B4/B12

ARF410 supports only 2G and 4G, can't work in USA or Canada.

<b>EU version: for Asia, Europe, Middle East, Africa, Australia countries</b>	2G GSM: B2/B3/B5/B8
	4G FDD-LTE: B1/B3/B5/B7/B8/B20/B28
<b>LA version: for Latin America countries</b>	2G GSM: B2/B3/B5/B8
	4G FDD-LTE: B2/B3/B4/B5/B7/B8/B28/B66
<b>USA and Canada</b>	Not supported

For USA or Canada markets, only ARF400 is suitable.

For the other markets, we suggest you choose ARF410 to save the cost.

#### **Volume for conversation-**

ARF410's volume is a little louder than ARF400's.

#### **WiFi's detection ability-**

ARF400 uses independent WiFi chipset, its WiFi detection ability is stronger than ARF410.

### **2. I have set the tracking interval 5 minutes for both moving and parking, why the actual tracking interval sometimes is longer than 5 minutes?**

- The actual tracking interval is affected by the GPS signal strength and positioning mode (Set by B71 command).
- The positioning mode includes only using GPS, and using GPS and WiFi positioning together.
- If the GPS signal or WiFi signal is good, the actual tracking interval will be 5 minutes regularly.
- If the GPS signal or WiFi signal is not good, the device will search the signal for some time before it sends out the tracking data.
- GPS module will search signal for max 4 minutes, and WiFi module will search for max 10 seconds.

### **3. How to use WiFi positioning?**

- Amber Connect (ARF410) personal trackers support both GPS and WiFi positioning.
- You can set the tracker to use GPS signal only, or use GPS+WiFi signal.
- After the tracker detects the WiFi signal, it will attach the WiFi's MAC and RSSI in the GPRS data and send to server.
- The server needs to integrate the WiFi address database, to convert the MAC and RSSI into address.

#### 4. How many tracking modes?

Amber Connect (ARF410) personal GPS trackers support both SMS and GPRS tracking. Below are some tracking modes for your reference-

##### **SMS tracking only**

GPRS tracking is disabled by default. You can call or send SMS command 000000,C01 to get the position URL whenever you need.

##### **Standby mode**

Device will be in deep sleep mode, it only wakes up and send data after detecting the alarms, including SOS alarm, low battery alarm, no movement alarm, tilt and fall alarm.

The alarm action is configurable, including send SMS, GPRS or make phone call.

This mode saves power the most.

##### **One position tracking daily**

GPRS tracking every 24 hours, and alarm monitoring.

##### **Tracking only while moving**

This mode gives a good balance among the position update, power saving and data consumption saving.

##### **Regular GPRS tracking**

You will feel assured with the latest status monitoring.

#### 5. How the GPS and GSM module work under different tracking interval?

Amber Connect (ARF410) personal GPS tracker's tracking interval-

Interval <1min, both GPS and GSM module working always.

1min=< Interval =<2mins, GSM module always working, GPS module sleeps while no positioning

Interval >2mins, both GPS and GSM module sleep while no working.

For GPS module, after it gets the valid positioning data, working finishes.

If GPS signal is not good, the GPS module will search signal for max 4 minutes; WiFi will search signal for max twice.

For GSM module, after the data is sent successfully and gets the server's reply, working finishes.

#### 6. How to know the device status through LED indicators?

During charging, the GSM and GPS lights flash synchronously to indicate battery status, details are below:

Both Solid on	On charging
Both Flash 0.1s on and 3s off	Battery recharging full

Without charging:

<b>GPS Light (Green)</b>	
Flash 0.1s on and 3s off	GPS valid
Flash 2s on and 2s off	Searching GPS signal
<b>GPS Light (Orange)</b>	
Flash 0.1s on and 3s off	GPRS connected
Flash 2s on and 2s off	GSM Searching
Flash every 0.1s	Initial, Device start or No SIM card insert
<b>Battery Status (Both GPS and GSM lights flash synchronously)</b>	
Both Flash 3s on and 3s off	In sleep mode
Both off	Power off, or set by B94,0 command
Both flash every 0.1s	Low battery

### **7. I have turned off the LED indicator with B94,0 command, how can I know the device is working or powered off?**

- Short press the CAL button, the LEDs will flash to indicate it is still working. Otherwise, device is powered off.
- Besides, you can enable <Power off alarm> by B78 command, and set it to send this alarm notification by SMS or GPRS. Device will send out power off alarm before turning off.

### **8. How the device define the moving or static status?**

- The device judges moving or static status with accelerometer.
- From moving to static- after static over 1 minute, start to judge as static.
- From static to moving- judge as moving immediately.

### **9. How can I know the device is moving or static?**

Each GPRS data includes the moving/static status bit, in Bit 7 of <status> field.

### **10. When will the device enter sleep mode?**

If GPRS tracking interval > 2 mins, device will enter sleep mode after successfully sending out data every time.

If tilt/fall/no movement alarm are enabled, device won't enter sleep mode while moving.

If geo fence alarm is enabled, device needs to keep working always, to detect the position in or out of the geo fence, can't enter sleep mode no matter moving or not.

If the device has enabled GPRS tracking and tracking interval is set, but the SIM card doesn't work, then after GPRS data is generated, device will try to search GSM network, GSM LED (Orange) will flash 2s on and 2s off. After searching fails several times, GSM module will restart, then try to search GSM network again, and on and on.

If the tracking interval is not set, no GPRS data is generated, the device will enter sleep mode if GSM network searching fails.

### **11. Can I customize the sound of device?**

- ✓ Yes, our devices have two types of sounds-
- ✓ One is for pressing SOS button successfully and incoming call.
- ✓ The other is for tilt/fall/no movement pre-alarm.
- ✓ We can use your audio file for these two types of sounds during production.

### **12. How to use the SOS alarm function?**

- Amber Connect (ARF410) personal GPS tracker has a SOS button. We can authorize max 3 SOS numbers, and set different attributes (including two-way call, voice-monitoring and SMS) for each number.
- Press and hold the SOS button, it will call the numbers which have been set two-way call or voice-monitoring by order, until one number has answered, and send SMS with position link to the corresponding numbers.
- In some countries, like in Australia, if the call is not answered after the dialing ends, it will enter the voicemail and stop dialing the next one. Then the SOS alarm call can't be answered in time, this may cause terrible consequences.
- To solve this problem, Amber Connect (ARF410) personal trackers can be set the dialing duration. If exceed the dialing duration and the call is still not answered, the tracker will hang up and dial the next one.

### **13. What is the use of SOS numbers?**

- After SOS number(s) is set, press and hold the SOS button, the tracker will call the SOS number(s).
- SOS number(s) can also call the tracker. We can set the tracker to pick up the call for two-way call, or silently pick up for voice monitoring mode.
- Under voice monitoring mode, the caller can hear the tracker, but the tracker can't hear the caller.

**14. I just pressed the SOS button by mistake, and it is calling the SOS number. Can I cancel the call before it is answered?**

- Yes, Amber Connect (ARF410) personal GPS trackers have rich commands for flexible settings. You can enable the SOS button's hang-up function with B70 command.
- After it is enabled, pressing SOS button can terminate the ongoing two-way call, or hang up the incoming call, or cancel the outgoing call.

**15. How can I prevent unknown numbers to call in?**

Set SOS number(s) or favorite number. Under default setting, the other numbers can't call in.

**16. If the favorite number is also SOS number, whose attribute is prior?**

The attribute of SOS number is prior to the favorite number's. For example, if this number has been set voice monitoring under SOS number attribute, when this number calls the tracker, it will enter voice monitoring mode.

**17. I have set voice monitoring for the SOS number, and disable the auto-answer function with B74 command. What if this SOS number calls in? Will it ring?**

No, if the SOS number has been set voice monitoring function, no matter what B74 command setting, it will be auto answered and enter voice monitoring mode.

**18. Can you tell more about the conversation volume adjustment?**

For the volume, if tick "Fixed Use of self-define volume", it will use this self-defined volume always. If untick it, user can press CAL button to switch volume between default and self-defined during conversation.

If press CAL button not during conversation, it won't switch volume.

After volume is switched, device will memorize it.

Next time when the device power on, it will use the last volume before device power off.

For self-defined volume, if both Speaker and Microphone are set to 0, it means use the default volume – Speaker 40%, Microphone 63%.

If just either set to 0, the one with 0 means zero volume.

Due to the module's limit, microphone's zero volume means lowest volume, not silent. But speaker's zero volume is silent.

### **19. I have pressed the SOS button, why the SMS of SOS alarm sometimes comes minutes later?**

- Our GPRS/SMS alarm data has 3 sending modes, configured by S19 command.
- When alarm is detected,
  - 1st Mode – Tracker sends #1 alarm data immediately with last GPS information. Then starts GPS module, and sends #2 alarm data when GPS is fixed.
  - 2nd Mode - Tracker sends alarm data immediately with last GPS information.
  - 3rd Mode - Tracker starts GPS module, and sends alarm data when GPS is fixed.
  - For 3rd Mode, if the GPS signal is unstable or unavailable, it may take minutes to search the GPS signal before sending out, and thus cause the delay of alarm notification.

### **20. How can I know the SOS alarm has been triggered successfully?**

The device will vibrate when the SOS alarm is triggered successfully. You can add the sound remind with B70 command.

### **21. How to know whether the device is fully charged or not?**

- Place the device on charging cradle. If both LEDs solid on, device is charging.
- If both LEDs flash 0.1s on and 3s off simultaneously, fully charged.
- Full charging time from low battery to full battery is less than 2 hours 10 minutes.

### **22. How to know the battery level?**

- Send SMS command 000000,C03 to check the battery voltage and percentage. Or use Amber Connect (ARF410) parameter tool to read the battery level.
- If you are using our Tuya APP, the battery's percentage level is displayed above the device icon.

### **23. How to know the device's battery is low?**

- Check the device's LED indicators. If both LEDs flash every 0.1s simultaneously, it means low battery.
- Our personal trackers' low battery threshold is 3.45V, battery percentage 13%.

### **24. From my testing, Amber Guard F410 battery life is shorter than what you wrote, why?**

The battery life is affected by the tracking interval, GSM signal strength and GPS signal strength.



### **Tracking interval-**

If tracking interval is less than 1 minute, both GPS and GSM module will keep working, and battery life is short. It can last 18 hours with 30 seconds' tracking interval.

With longer tracking interval, the module will sleep after working, to extend the battery life.

### **GSM signal-**

If GSM signal is not good, and device couldn't connect GSM network, it will restart GSM module after some failed searches, and so on.

The module's restart consumes much power.

### **GPS signal-**

If the GPS signal is not good, every time when the tracker needs to send data, the GPS module will keep searching GPS signal for max 4 minutes. This will consume much power.

Amber Guard F410 is a long battery life personal tracker. If both GPS and GSM signal are good, and WiFi positioning is turned off, it can last 6.5 days with 10 minutes' tracking interval.

## **25. Can I replace the internal battery by myself?**

Yes, our internal battery is pluggable, you can buy some extra batteries for replacement.

## **26. Why device sometimes online, sometimes offline on my platform?**

- This is related with the server setting.
- If the tracking interval is too long and no data upload, the server will regard it as offline.
- When the device uploads data, it will show online again.

## **27. Why the tracker couldn't connect my server?**

Make sure your server has integrated Amber Connect A03 GPRS protocol successfully. After server receives A03 GPRS data, it should send response package to device. Otherwise, device will resend A03 GPRS data every 1 minute for 5 times, then discard and send the next data.

The device needs to set correct GPRS parameters, including IP, Port, APN and tracking interval.

## **28. What is the use of heartbeat data?**

- Heartbeat data is used to keep the TCP connection active between server and tracker.
- The GSM operator will cut the connection between server and tracker if the duration of no data upload exceeds some time.
- If you have set too long tracking interval for static status, you can set a shorter heartbeat interval for this status.
- Heartbeat data size is around 40% of normal GPRS data.

### 29. How much is the monthly data consumption?

The data consumption depends on the tracking interval, heartbeat interval, alarm data and the GSM signal condition.

**Each GPRS data package size is-**

- Using WIFI: max 160 bytes
- Using GPS: max 103 bytes
- Heartbeat data: max 40 bytes

For example, If the device's tracking interval is 10 minutes always, and use GPS only, it will generate  $6 \times 24 \times 30 = 4320$  data package/month.

$4320 \times 103 \text{ bytes} = 444960 \text{ bytes} = 0.44496 \text{ MB/month}$

Considering the unstable GSM network sometimes and alarm data,  $0.44496 \text{ MB} \times 3 = 1.33488 \text{ MB/month}$ .

### 30. How many days can the data be stored if no GSM signal?

- Our personal tracker's memory is 4MB, it can store total 8000 GPRS data.
- For example, if the tracking interval is 5 minutes, it generates  $12 \times 24 = 288$  GPRS data daily, can store  $8000/288 = 27.7$  days.

### 31. Why the tracker doesn't reply my SMS command?

a, Make sure the SMS password is correct-

SMS password is required. Default password is 000000. For example, 000000,B03,10

If SMS command is sent from SOS number, the password can be omitted, like B03,10.

b, Make sure your SMS command format is 100% correct-

The command should be typed under English half-width character.

Any space among the command is not allowed.

c, Make sure your SIM card supports SMS, and there is still quota left.

If above are all no problem, maybe the network is not good, please wait minutes to see.

The GPRS, SMS and call network are independent.

### 32. I called the tracker but couldn't get through, why?

- If SOS number(s) or favorite number has been set, under default setting, only these numbers can call in, the other numbers will be rejected.
- You can set the tracker to answer call from all numbers with B72 command.

### 33. How does the fall detection work?

- Amber Connect (ARF410) personal tracker's fall detection function is disabled by default. It can be enabled with B36 command.
- After falling down, the tracker has 10 seconds' judging period.
- Within these 10 seconds, if detecting big and continuous movement, it will be judged as walking or walking after fall, and won't trigger pre-alarm.
- If detecting no movement or very small movement, after 10 seconds, it will start pre-alarm and emit the sound to remind the user and people around.
- When the <alarm-delay> time is up, the tracker will trigger fall alarm and send out the alarm data.
- Before <alarm-delay> time is up, pressing the SOS button or shaking the tracker will cancel the upcoming fall alarm and stop the pre-alarm sound.

### 34. B29 command can set two sensitivities- sensitivity of motion sensor, and sensitivity for reset-on-motion function, what exactly will they affect?

Sensitivity of motion sensor affects the judgment of moving or stop, it will affect-

- a, The actual tracking interval (if have set different tracking interval for moving/stop with B03 command)
- b, The actual heartbeat interval (if have set different heartbeat interval for moving/stop with S09 command)
- c, No movement detection.

The sensitivity for reset-on-motion function, only affects the tilt or fall alarm's reset-on-motion.



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