We have confirmed the following parameters for the R.F. device FCC ID:YQD-GL100S.

GSM 850				
Test channel	Fundamental Frequency	Output Power(dBm)	Average Power(mW)	duty cycle
128	824.2MHz	32.5	444.57	2/8
189	836.4MHz	32.5	444.57	2/8
251	848.8MHz	32.5	444.57	2/8
PCS 1900				
Test channel	Fundamental Frequency	Output Power	Average Power(mW)	duty cycle
512	1850.2	29.5	222.81	2/8
661	1880	29.5	222.81	2/8
810	1909.8	29.5	222.81	2/8

We confirm the maximum turn/transmit time among all modes is less than 50 bursts/1minutes, each burst is 577us length. As a normal call, there are 13,000 bursts /1minutes. In addition,the GSM Antenna Gain is GSM850: -3dBi,PCS1900: -1dBi.
The follows is analyses:

The device is designed to provide two applications, one is continuous tracking and another is position request. Under every applications the location info can be send to one preset number or server or both through SMS or HTTP.

(1) In continuous tracking mode, Tracker will report position through HTTP to server at the some interval(1min~1440min),the interval can be set by the user.

(2) In position request mode, when the tracker received the request through SMS or CALL, it will start to acquire position through GPS. Once the position is acquired and fixed, it will report the current position through SMS to mobile or through HTTP to server. And the tracker will report the latest position if position fix fails.

(3)If 2 requests are received nearly at the same time, if the service for the first is not finished, it will skip the second. If the service for the first has finished, it will process the service for the second.

(4)The incoming request for location may meet or happen with continuous tracking at the same time, system will handle incoming request for location for the first priority task, and skip the continuous tracking event.

(5) The class 10 service support <u>one up four down</u> or <u>two up three down</u>. The number of slots be used is the lesser of what the particular cell supports and the maximum capability of the mobile device. In one GPRS service the network always assigned 1 slot at first and will adjust the slot number according to the data amount within the maximum capability.

As the tracker deal with the service one by one and each service may send about 100Bytes data, in most case there will be only one slot up and one slot down working. Only when the user requests the location info frequently one by one, the network may assign more slots to transmit data. The worst case is that 2 slots in 8 slots are used to transmit large quantity data.

When EUT transmit data:
In our application, there are four types message:
1) The length of every GTTRI message is 130Bytes;
2) In TCP short connection mode，it needs 492+130=622Bytes to send a location message;
3) In TCP long connection mode，it needs104+130=234 Bytes to send a location message;
4) In UDP mode, one message needs 28+130=158Byte;
So, the maximum streaming is 622Byte for one message.

In our use, the worst condition is sending one message per minute and the longest message type is TCP short connection mode, that is 622Bytes.As a burst include 114bit useful information, the total bursts needed for transmit 622Byte is：622Byte*8/114bit=43.6, that is less than 50burst。If the coding schematic is CS4, the needed burst is fewer.

So the worst transmit case among all modes is: 50 bursts/1minutes.

The time average power of the device in GSM850 band is not larger than $50*577*10^{-6}*1778.28*10^{-3}/60=0.855mW$. It is less than $60/f=60/0.8242=73mW$. The time average power of the device in PCS band is not larger than $50*577*10^{-6}*891.24*10^{-3}/60=0.429mW$, It is less than $60/f=60/1.8502=32.43mW$. So SAR test of this device could be excluded.
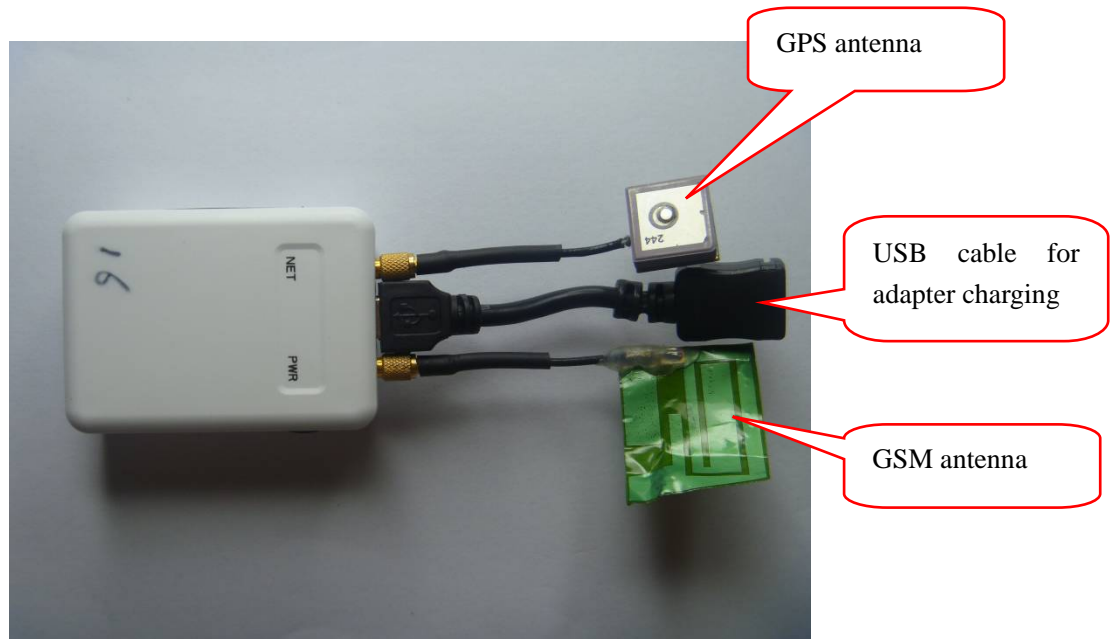
Module aspect

Module in the shoe

Illustration:

1. The device include a GSM module,the minimum separation distance between antenna of the module and human is about 10mm.
2. The port connect a 5V DC adapter can power device and charge the internal battery for customer only, backend server developer or administrator can use the port to configure and firmware upgrading device only.