GPRS Communication Protocal

Version: V1.7_20150713

Catalogue

In this protocol, all data is following format of [Manufacturer*Device ID*Content Length*Content], In this format, “Manufacturer” only with 2 bytes, content length with four bytes ASSII code, e.g. FFFF means the length is 65535.

A. Send Command From Terminal

1. Link Maintenance

(1)
Terminal Command:
[CS*YYYYYYYYYY*LEN*LK]
E.g.: [SG*8800000015*0002*LK]
Server Answer:
[CS*YYYYYYYYYY*LEN*LK]
E.g.:[SG*8800000015*0002*LK]
Illustration: Link maintenance data transferred every 5 minutes, if the terminal do not receive replied data, then connection will be made again every 5 minutes.
(2)
Terminal Command:
[CS*YYYYYYYYYY*LEN*LK,steps,turnover,battery percent]
E.g.: [SG*8800000015*000D*LK,50,100,100]
Server Answer:
[CS*YYYYYYYYYY*LEN*LK]
E.g.: [SG*8800000015*0002*LK]

Illustration: Link maintenance data transferred every 5 minutes, if the terminal do not receive replied data, then connection will be made again every 5 minutes. The 2 cases are both existed.

2. Location data report

Terminal Command:
[CS*YYYYYYYYYY*LEN*UD,location data(see appendix 1)]

E.g.:[SG*8800000015*0087*UD,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0000,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Server Answer:
No
Illustration: Terminal reports the location and state information by given time period, server do not need to answer

3. Blind Spot Data filling in

Terminal Command:
[CS*YYYYYYYYYY*LEN*UD2,location data]
E.g.:
[SG*8800000015*0088*UD2,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0000,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Server Answer:
NO
Illustration: Filling in report data when the offline the server.

4. Alarm data report

Terminal Command:
[CS*YYYYYYYYYY*LEN*AL,location data]
E.g.:
[SG*8800000015*0087*AL,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Server Answer:
[CS*YYYYYYYYYY*LEN*AL]
E.g. [SG*8800000015*0002*AL]

Illustration: When alarm triggered on the terminal, alarm information sent to server, if there is no answer received, then terminal will keep reporting until alarm acknowledged.

5. Location Requesting Command

Terminal Command:
[CS*YYYYYYYYYY*LEN*WAD,Language,location data]
E.g.[SG*8800000015*008B*WAD,CH,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Server Answer:
[CS*YYYYYYYYYY*LEN*RAD,Positioning type, location data]
E.g.:[SG*8800000015*000C*RAD,GPS, Corresponding language address information]

Illustration: Terminal requests address command, in which CH represents Chinese, EH represents English, address data is code GB232, Positioning type are GPS positioning and Base positioning

6. Latitude and longitude Requesting Command

Terminal Command:

[CS*YYYYYYYYYY*LEN*WG,Location data]

E.g.:

[SG*8800000015*0087*WG,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]

Server Answer:

[CS*YYYYYYYYYY*LEN*RG, Positioning type, Latitude, Latitude mark, longitude, longitude mark]

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E.g: [SG*8800000015*0021*RG,BASE,22.571707,N,113.8613968,E]

Illustration: This command is used when GPS is out of use, and requesting the latitude and longitude from base station.

B. Server to send command

1. Data upload interval setting

Server Command:

[CS*YYYYYYYYYY*LEN*UPLOAD,time interval]

E.g.:[SG*8800000015*0009*UPLOAD,10]

Terminal Answer:

[CS*YYYYYYYYYY*LEN*UPLOAD]

E.g:[SG*8800000015*0006*UPLOAD]

Illustration: To set the time interval of timming repost from terminal.

2. Center number setting

Server Command:

[CS*YYYYYYYYYY*LEN*CENTER,Center number]

E.g:[SG*8800000015*0012*CENTER,00000000000]

Terminal Answer:

[CS*YYYYYYYYYY*LEN*CENTER]

E.g:[SG*8800000015*0006*CENTER]

Illustration: To set center number, by this phone number, you can send SMS command

3. Auxiliary center number setting

Server Command
[CS*YYYYYYYYYY*LEN*SLAVE,Auxiliary center number]
E.g:[SG*8800000015*0011*SLAVE,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SLAVE]
E.g:[SG*8800000015*0005*SLAVE]
Illustration: To set auxiliary center number, by this phone number, you can send SMS command

4. Control code setting

Server Command
[CS*YYYYYYYYYY*LEN*PW,Code]
E.g:[SG*8800000015*0009*PW,111111]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*PW]
E.g:[SG*8800000015*0002*PW]
Illustration: To set terminal code, non-center number can send SMS only by add code.

5. Making calls

Server Command
[CS*YYYYYYYYYY*LEN*CALL,Phone number]
E.g:[SG*8800000015*0010*CALL,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*CALL]
E.g:[SG*8800000015*0004*CALL]
Illustration: Under this command to call corresponding number.

6. SMS

Server Command
[CS*YYYYYYYYYY*LEN*SMS,SMS number,SMS content]
E.g:[SG*8800000015*001C*SMS,00000000000,123ABCHi]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SMS]
E.g:[SG*8800000015*0003*SMS]
Illustration: To execute this command, send SMS to corresponding phone number, SMS content send by applying GB232 Code.

7. Monitoring

Server Command
[CS*YYYYYYYYYY*LEN*MONITOR]
E.g:[SG*8800000015*0007*MONITOR]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*MONITOR]
E.g:[SG*8800000015*0007*MONITOR]
Illustration: Terminal calls center number automatically.

8. SOS Number setting

(1) First SOS phone number setting
Server Command
[CS*YYYYYYYYYY*LEN*SOS1,Phone number]
E.g:[SG*8800000015*0010*SOS1,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SOS1]
E.g:[SG*8800000015*0004*SOS1]

(2) Second SOS phone number setting
Server Command
[CS*YYYYYYYYYY*LEN*SOS2,phone number]
E.g:[SG*8800000015*0010*SOS2,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SOS2]
E.g:[SG*8800000015*0004*SOS2]

(3) Third SOS phone number setting
Server Command
[CS*YYYYYYYYYY*LEN*SOS3,phone number]
E.g:[SG*8800000015*0010*SOS3,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SOS3]
E.g:[SG*8800000015*0004*SOS3]

(4) Simultaneous setting of Three SOS numbers
Server Command
[CS*YYYYYYYYYY*LEN*SOS,phone number,phone number,phone number]
E.g:[SG*8800000015*0027*SOS,00000000000,00000000000,00000000000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SOS3]
E.g:[SG*8800000015*0003*SOS]

Illustration: To set SOS phone numbers, when danger happens, send SMS or make phone call to these number

9. Remote upgrades

Server Command
[CS*YYYYYYYYYY*LEN*UPGRADE,URL]
E.g:[SG*8800000015*0039*UPGRADE,http://www.3g-elec.com/g29_updata/test/jt_ads.bin]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*UP]
E.g:[SG*8800000015*0007*UPGRADE]
Illustration: Control terminal remote upgrade

10. IP port setting

Server Command
[CS*YYYYYYYYYY*LEN*IP,IP/Domain,Port]
E.g:[SG*8800000015*0014*IP,113.81.229.9,5900]
Terminal Answer:
There is no answer from command terminal, just disconnect the current connection,and reconnect the sever
Illustration: To set the IP and port connected with Sever.

11. Factory reset

Server Command
[CS*YYYYYYYYYY*LEN*FACTORY]
E.g:[SG*8800000015*0007*FACTORY]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*FACTORY]
E.g:[SG*8800000015*0007*FACTORY]
Illustration: Factory reset for terminal

12. Language & Time Zone setting

Server Command
[CS*YYYYYYYYYY*LEN*LZ,Language,Time zone]
E.g:[SG*8800000015*0006*LZ,1,8]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*LZ]

E.g:[SG*8800000015*0002*LZ]
Illustration: to set Terminal language and time zone

13. Inquire Google URL link

Server Command
[CS*YYYYYYYYYY*LEN*URL]
E.g:[SG*5678901234*0003*URL]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*URL,Google link]
E.g:[SG*5678901234*006B*URL,url:
http://maps.google.com.hk/maps?q=N22.571695,E113.861404
Locate date:2014-4-23
Locate time:18:16:59]
Illustration: To search address of current URL

14. SOS SMS Alarm Switch

Server Command
[CS*YYYYYYYYYY*LEN*SOSSMS,0/1]
E.g:[SG*5678901234*0008*SOSSMS,0]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SOSSMS]
E.g:[SG*5678901234*0006*SOSSMS]
Illustration: To set whether to send SMS to SOS numbers when SOS alarm happens (0:Off,1: On).

15. Low battery SMS Alarm Switch

Server Command
[CS*YYYYYYYYYY*LEN*LOWBAT,0/1]
E.g:[SG*5678901234*0008*LOWBAT,1]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*LOWBAT]
E.g:[SG*5678901234*0006*LOWBAT]
Illustration: To set whether to send SMS to center numbers when low battery alert happens. (0:Off,1: On).

16. APN Setting

Server Command
[CS*YYYYYYYYYY*LEN*APN,APN Name,User name,code, User data]

E.g:[SG*5678901234*0011*APN,cmnet,,,46000]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*APN]
E.g:[SG*5678901234*0003*APN]
Illustration: to set terminal APN parameter

17. SMS Access Control

Server Command
[CS*YYYYYYYYYY*LEN*ANY,0/1]
E.g:[SG*5678901234*0005*ANY,0]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*ANY]
E.g:[SG*5678901234*0003*ANY]
Illustration: To set terminal SMS Access Control

18. Parameter Inquiry

Server Command
[CS*YYYYYYYYYY*LEN*TS]
E.g:[SG*5678901234*0002*TS]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*TS,software version; device ID; IMEI number;IP;Port;Center number;auxiliary center number;SOS number 1;SOS number2;SOS number 3;report interval; battery volume;language;time zone; satellite number;GSM signal strenght;LED switch;code;]

Illustration: Inquiry terminal parameter
E.g: [SG*5678901234*00FC*TS,ver:G29_BASE_V1.00_2014.04.24_09.47.23;
ID:SG*5678901234;
imei:1234SG*56789012345;
url:113.81.229.9;
port:5900;
center:;
slave:;
sos1:;
sos2:;
sos3:;
upload:30S;
work mode:1;
bat level:3;
language:1;
zone:8.00;

GPS:NO(0);
GPRS:OK(89);
LED:OFF;
pw:123456;
]

19. Version Inquiry

Server Command
[CS*YYYYYYYYYY*LEN*VERNO]
E.g:[SG*8800000015*0005*VERNO]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*VERNO,Version number]
E.g:[SG*8800000015*0028*VERNO,G29_BASE_V1.00_2014.04.23_17.46.49]
Illustration: inquiry terminal software version

20. Reset

Server Command
[CS*YYYYYYYYYY*LEN*RESET]
E.g:[SG*5678901234*0005*RESET]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*RESET]
E.g:[SG*5678901234*0005*RESET]
Illustration: Terminal reset.

21. Positioning Command

Server Command
[CS*YYYYYYYYYY*LEN*CR]
E.g:[SG*5678901234*0002*CR]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*RESET]
E.g:[SG*5678901234*0002*CR]
Illustration: Wakeup Terminal GPS module, be in positioning status in a sequence of time

22. Bluetooth Control Command

Server Command
[CS*YYYYYYYYYY*LEN*BT,On/Off(1,0)]
E.g:[SG*5678901234*0004*BT,1]
Terminal Answer:

[CS*YYYYYYYYYY*LEN*RESET]
E.g:[SG*5678901234*0002*BT]
Illustration: To control terminal Bluetooth switch, 1 for On, 0 for Off

23. Power off command

Server Command
[CS*YYYYYYYYYY*LEN*POWEROFF]
E.g:[SG*5678901234*0008*POWEROFF]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*RESET]
E.g:[SG*5678901234*0008* POWEROFF]
Illustration: power off function

24. Take-off Alarm Switch

Server Command
[CS*YYYYYYYYYY*LEN*REMOVE,0/1]
E.g:[SG*5678901234*0008*REMOVE,1]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*REMOVE]
E.g:[SG*5678901234*0006*REMOVE]
Illustration: Take-off Alarm Switch function

25. Pedometer Switch

Server Command
[CS*YYYYYYYYYY*LEN*PEDO,0/1]
E.g:[SG*5678901234*0004*PEDO,0]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*ANY]
E.g:[SG*5678901234*0004*PEDO]
Illustration: To set terminal SMS control access

26. Step Calculation Period Setting

Server Command
[CS*YYYYYYYYYY*LEN*WALKTIME,Time frame,time frame, time frame]
E.g:[SG*5678901234*002A*WALKTIME,8:10-9:30,10:10-11:30,12:10-13:30]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*ANY]

E.g:[SG*5678901234*0008*WALKTIME]
Illustration: To set the time range when Pedometer is on

27. Overturn detection Period setting

Server Command
[CS*YYYYYYYYYY*LEN*SLEEPTIME,Time Frame]
E.g:[SG*5678901234*0014*SLEEPTIME,21:10-7:30]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*ANY]
E.g:[SG*5678901234*0009*SLEEPTIME]
Illustration: to set Overturn detection time range

28. Do not Disturb Period Setting

Server Command
[CS*YYYYYYYYYY*LEN*SILENCETIME,Time Frame, Time Frame, Time Frame, Time Frame]
E.g:[SG*5678901234*0037*SILENCETIME,21:10-7:30,21:10-7:30,21:10-7:30,21:10-7:30]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SILENCETIME]
E.g:[SG*5678901234*000B*SILENCETIME]
Illustration: To set Do not disturb time range

29. Locating watch command

Server Command
[CS*YYYYYYYYYY*LEN*FIND]
E.g:[SG*5678901234*0004*FIND]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*FIND]
E.g:[SG*5678901234*0004*FIND]
Illustration: Send this command, terminal rings for 1 minute

30. Number of Heart Reward command setting

Server Command
[CS*YYYYYYYYYY*LEN*FLOWER,Number]
E.g:[SG*5678901234*0008*FLOWER,5]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*FLOWER]
E.g:[SG*5678901234*0006*FLOWER]
Illustration: To set number of heart reward displayed

31. Phrase Display Command setting

Server Command
[CS*YYYYYYYYYY*LEN*MESSAGE,Phrase content]
E.g:[SG*5678901234*0018*MESSAGE,597D003100320033]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*MESSAGE]
E.g:[SG*5678901234*0007*MESSAGE]
Illustration: This command push phrase displayed on terminal

32. Alarm setting command

Server Command
[CS*YYYYYYYYYY*LEN*REMIND,Alarm 1,Alarm 2, Alarm3]
E.g:[SG*5678901234*0018*REMIND,08:10-1-1,08:10-1-2, 08:10-1-3-0111110]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*REMIND]
E.g:[SG*5678901234*0006*REMIND]
Illustration: Alarm time-Switch- frequency-type.

33. SMS Switch

Server Command
[CS*YYYYYYYYYY*LEN*SMSONOFF,0/1]
E.g:[SG*5678901234*000A*SMSONOFF,0]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*SMSONOFF]
E.g:[SG*5678901234*0008*SMSONOFF]
Illustration: Terminal main switch for all SMS(0:OFF,1:On).

34. Auto answer setting

Server Command
[CS*YYYYYYYYYY*LEN*GSMANT,0/1]
E.g:[SG*5678901234*0008*GSMANT,0]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*GSMANT]
E.g:[SG*5678901234*0006*GSMANT]
Illustration: To set terminal auto answering phone calls

35. White List Setting Command

Server Command
[CS*YYYYYYYYYY*LEN*WHITELIST1,NO1,NO2,NO3,NO4,NO5]
E.g:[SG*5678901234*002D*WHITELIST1,123456,123456,123456,123456,123456]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*WHITELIST1]
E.g:[SG*5678901234*000A*WHITELIST1]
Illustration: To set 1-5 white list phone numbers
Server Command
[CS*YYYYYYYYYY*LEN*WHITELIST2,NO1,NO2,NO3,NO4,NO5]
E.g:[SG*5678901234*002D*WHITELIST2,123456,123456,123456,123456,123456]
Terminal Answer:
[CS*YYYYYYYYYY*LEN* WHITELIST2]
E.g:[SG*5678901234*000A*WHITELIST2]
Illustration: To set 6-10 white list phone numbers

36. Contacts Setting Command

Terminal Command:
[CS*YYYYYYYYYY*LEN*PHB,Name 1,NO1,Name2, NO2, Name3,NO3, Name4,NO4, Name5,NO5]
E.g:[SG*5678901234*001B*PHB,597D003100320033,313131]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*PHB]
E.g:[SG*5678901234*0003*PHB]
平台发送(后面5个):
[CS*YYYYYYYYYY*LEN*PHB2, Name 6,NO6, Name 7,NO7, Name 8,NO8, Name9,NO9, Name 10,NO10]
E.g:[SG*5678901234*001C*PHB2,597D003100320033,313131]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*PHB]
E.g:[SG*5678901234*0004*PHB2]
Illustration: Using this command to set terminal phone numbers

37. Talkback

Server Command
[CS*YYYYYYYYYY*LEN*TK,ARM Audio data]
Terminal Answer:
[CS*YYYYYYYYYY*LEN*TK,Received Results]
ARM Audio data need to be transformed:
0X7D 0X01 --> 0X7D
0X7D 0X02 --> 0X5B

0X7D 0X03 --> 0X5D
0X7D 0X04 --> 0X2C
0X7D 0X05 --> 0X2A
Received Result:1—Success 0- Fail

Terminal command:
[CS*YYYYYYYYYY*LEN*TK,ARM Audio data]
Server Answer:
[CS*YYYYYYYYYY*LEN*TK,Received results]
ARM Audio data need to be transformed:
0X7D --> 0X7D 0X01
0X5B --> 0X7D 0X02
0X5D --> 0X7D 0X03
0X2C --> 0X7D 0X04
0X2A --> 0X7D 0X05
Received results:1—Success
Fail
Command to send if Terminal requests to record:
[CS*YYYYYYYYYY*LEN*TKQ]

38. Contacts Setting

[3G*8800000015*len*PHB,NO,Name,NO,Name,NO, Name,NO, Name,NO, Name,NO, Name]
len: hex system means 2 bytes
NO:ascii
Name:Unicode
Max 5 Pair NO. & Name, No limited in 20 ascii CH, Name limited in 10 Unicode CH

E.g.:
[3G*8800000015*0010*PHB,110,5F204E09]
[3G*8800000015*len*PHB2,NO,Name,NO,Name,NO,Name,NO,Name,NO,Name,NO,Name]
len: hex system means 2 bytes
NO:ascii
Name:Unicode
Max 5 Pair NO. & Name, No limited in 20 ascii CH, Name limited in 10 Unicode CH
E.g.:
[3G*8800000015*0010*PHB2,110,5F204E09]
Phb means first 5 NO,phb2 means latter 5 NO

3. Appendix

Location Data Parameter	E.g.(ASII)	Illustration
Date	120414	(D/M/Y)2014.04.12
Time	101930	(H/M/S)10:19 30
Position	A	A: Positioning V: Non positioning
latitude	22.564025	According DD.DDDDDD Format to define, this latitude value is:22.564025.
Latitude mark	N	N northern latitude, S Southern Latitude.
longitude	113.242329	According DD.DDDDDD Format to define, this latitude value is: 113.242329
Longitude mark	E	E east longitude ,W West longitude
Speed	5.21	5.21 km/h
Direction	152	Direction 152
Altitude	100	Unit is M
Satellite number	9	Represents numbers of satellites
GSM Signal Strength	100	Represents current GSM signal strength (0-100)
Battery	90	Represents battery volume percent
Walk step	1000	Walking 1000 Steps
Turnover times	50	Turnover 50 times
Terminal status	00000000	Using Hex String to signify >16bit means alarm, <16bit means status. Bit (0 Start) (1 valid) 0 low battery status 1 out fence status 2 In fence status 3 Wrist band status 16 SOS alarm 17 Low battery alarm 18 Out fence alarm 19 In fence alarm 20 Wristband takeoff alarm
Base station number	4	Reporting to numbers of base station
Base Station connection ta	1	GSM Delay
MCC	460	460 Means China
MNC	02	02 Means China Mobile
Area code for base station	10133	Area code
Connecting Base station Serial number	5173	Base Station Serial Number
Connect Base Station Signal Strength	100	Signal strength

No.1Base Station Area Code	10133	Area Code
No.1 BS Serial Number	5173	Base Station Serial Number
No.1 BS Signal Strength	100	Signal Strength
No.2Base Station Area Code	10133	Area Code
No.2 BS Serial Number	5173	Base Station Serial Number
No.2BS Signal Strength	100	Signal Strength
No.3Base Station Area Code	10133	Area Code
No.3 BS Serial Number	5173	Base Station Serial Number
No.3BS Signal Strength	100	Signal Strength
…	…	…
Wifi Hotspot number	5	Wifi Numbers (Max. 5), ranking by signal strength
Wifi No.1 Name	rrr	No. 1 wifi Hotspot Name
Wifi No.1 MAC Address	1c:fa:68:13:a5:b4	No.1 wifi MAC Address
Wifi No.1 Signal Strength	-61	No.1 wifi Signal strength
Wifi No.2 Name	abc	No. 2 wifi Hotspot Name
Wifi No.2 MAC Address	1c:fa:68:13:a5:b5	No.2 wifi MAC Address
Wifi No.2 Signal Strength	-87	No.2 wifi Signal strength