

NODAC GPRS Communication Protocol Between GPS Tracker and Server

Version 1.47

OCB-GT-03i

OCB-GT-06

OCB-VT-013

| Change Version | Reason of Change | Date |
|-----------------------|---|-------------|
| V1.00 | Initial Document | 2005-6-25 |
| V1.01 | Addition of Alarms | 2006-10-8 |
| V1.02 | Addition of Output Control Addition of Stats in GPRS String | 2007-1-26 |
| V1.03 | Add command 4107/4207/4126/4130/4131/4132/9016 OCB-VT-013 integrated Change 4116 Delete 9014 | 2008-7-10 |
| V1.04 | Add 5114 Add AD of OCB-VT-013 | 2008-12-2 |
| V1.05 | Add Power-cut Alarm Add Buzzer Control for OCB-GT-06 | 2009-02-04 |
| V1.06 | Add 9001 to get SN and IMEI Add 5101/5115/5199 | 2009-3-18 |
| V1.07 | Add 4136 | 2009-08-03 |
| V1.45 | Change 4136 Add 4902/5503 | 2009-09-15 |
| V1.46 | Wording Correction | 2010-06-03 |
| V1.47 | Delete OCB-GT-03I/OCB-GT-03IX. Add OCB-GT-03i | 2010-07-15 |

I Command Format

Command format of GPRS packets are as follows: From server

to tracker:

@@<L (2 bytes)><ID (7 bytes)><command (2 bytes)><parameter><checksum (2 bytes)>\r\n

From tracker to server:

\$\$<L (2 bytes)><ID (7 bytes)><command (2 bytes)><data><checksum (2 bytes)>\r\n

Note:

Do NOT input '<' and '>' when writing a command.

All multi-byte data complies with the following sequence: High byte prior to low byte. The size of a GPRS packet (including data) is about 100 bytes

| Item | Specification |
|----------|--|
| @@ | 2 bytes. It means the header of packet from server to tracker. It is in ASCII code (Hex code: 0x40) |
| \$\$ | 2 bytes. It is the header of packet from tracker to server, It is in ASCII code (Hex code: 0x24) |
| L | 2 bytes. It means the length of the whole packet including the header and ending character and it is in hex code |
| ID | 7 bytes, ID must be digit and not over 14 digits, the unused byte will be stuffed by 'f' or '0xff'. It is in the format of hex code. For example, if ID is 13612345678, then it will be shown as follows: 0x13, 0x61, 0x23, 0x45, 0x67, 0x8f, 0xff. If all 7 bytes are 0xff, it is a broadcasting command. ID is in hex code |
| command | 2 bytes. The command code is in hex code. Please refer to the command list below. |
| data | Min 0 byte and max 100 bytes. See Annex 1 for description of 'data'. |
| checksum | 2 bytes. It indicates CRC-CCITT (default is 0xffff) checksum of all data (not including CRC itself and the ending character). It is in hex code. For example: 24 24 00 11 13 61 23 45 67 8f ff 50 00 05 d8 0d 0a 0x05d8 = CRC-CCITT (24 24 00 11 13 61 23 45 67 8f ff 50 00) |
| \r\n | 2 bytes. It is the ending character and in hex code (0x0d,0x0a in hex code) |

II Command List

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III Command Details

1. Login – 0x5000

| | |
|--------------|--|
| Command: | \$\$<L><ID><0x5000><checksum><\r\n> |
| Description: | After tracker is properly setup, it will apply for a GPRS connection by sending this login command every 30 seconds to the server until the server confirms its login. |
| Example: | 24 24 00 11 12 34 56 FF FF FF FF 50 00 8B 9B 0D 0A |
| Note: | Tracker ID here is 123456 and same for the following examples. |

2. Login Confirmation – 0x4000

| | |
|--------------|--|
| Command: | @<L><ID><0x4000><Flag><checksum><\r\n> |
| Description: | Server sends this command back to the tracker to confirm tracker's login. |
| Note: | Flag (1 byte) = 0x00, login fails and will try again. = 0x01, login succeeded. |
| Example: | 40 40 00 12 12 34 56 FF FF FF FF 40 00 01 A9 9B 0D 0A |

3. Track on Demand – 0x4101

| | |
|--------------|---|
| Command: | @<L><ID><0x4101><checksum><\r\n> |
| Description: | Get the current location of the tracker |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 41 01 67 D9 0D 0A |
| Response: | \$\$<L><ID><0x9955><data><checksum><\r\n> |
| Example: | 24 24 00 60 12 34 56 FF FF FF FF 99 55 30 33 35 36 34 34 2E 30 30 30 2C 41 2C 32 32 33 32 2E 36 30 38 33 2C 4E 2C 31 31 34 30 34 2E 38 31 33 37 2C 45 2C 30 2E 30 30 2C 2C 30 31 30 38 30 39 2C 2C 2A 31 43 7C 31 31 2E 35 7C 31 39 34 7C 30 30 30 30 7C 30 30 30 30 2C 30 30 30 69 62 0D 0A |
| Note: | See Annex 1 for description of 'data'. |

4. Track by Interval – 0x4102

| | |
|--------------|---|
| Command: | @<L><ID><0x4102><Interval(2 bytes in hex code)><checksum><\r\n> |
| Description: | Set time interval for automatic timed report (GPRS tracking). |
| Note: | Interval is in unit of 10 seconds. =0x00 0x00, stop tracking by interval. Max time interval = 65535*10 seconds. |
| Example: | 40 40 00 13 12 34 56 FF FF FF FF 41 02 00 0A 36 19 0D 0A Above command will set 10 (0x00 0x0A)*10=100s as tracking interval. |
| Response: | \$\$<L><ID><0x5100><Flag (1byte)> <Interval (2 bytes)><checksum><\r\n> |
| Note: | Flag |

| | |
|--|--|
| | <p>=0x00, failure response. =0x01, success response. Once the interval successfully set, the tracker will send the following position report to the server at the interval specified: \$\$<L><ID><0x9955><data><checksum>\r\n</p> |
|--|--|

5. Authorization – 0x4103

| | |
|--------------|---|
| Command: | @<L><ID><0x4103><button no (1 byte)><phone no for SMS><phone no for call><checksum>\r\n |
| Description: | Set authorized phone number for buttons (inputs) |
| Note: | <p>button no (input no) is in hex code. It supports up to 3 buttons. If button no = 0x01, set authorized phone number for SOS button (input1); = 0x02, set authorized phone number for Button B (input2); = 0x03, set authorized phone number for Button C (input3). phone no for SMS: Authorized phone number for receiving SMS. phone no for call: Authorized phone number for receiving phone call. phone no is 16 bytes in ASCII. If the phone number is less than 16 bytes, the blank byte(s) should be stuffed by '0x00'. For example: If the authorized number is 1234567890, then it should be written as follows: 0x31 0x32 0x33 0x34 0x35 0x36 0x37 0x38 0x39 0x30 0x00 0x00 0x00 0x00 0x00 0x00 If all 16 bytes data are 0x00, the authorized number is invalid.</p> |
| Example: | <p>40 40 00 32 12 34 56 FF FF FF FF 41 03 01 38 38 38 38 38 38 38 38 38 38 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 99 68 0D 0A Above command will set '8888888888' as authorized phone number for SOS button.</p> |
| Response: | \$\$<L><ID><0x4103><Flag><checksum>\r\n |
| Note: | <p>Flag =0x00, failure response. =0x01, success response.</p> |

6. Speeding Alarm – 0x4105

| | |
|--------------|--|
| Command: | @<L><ID><0x4105><speed (1 byte in hex code)><checksum>\r\n |
| Description: | Set speeding alarm for the tracker. When the tracker is over this preset speed limit, SMS alarms will be sent to the authorized phone number for SOS button and GPRS alarms will be sent to the server every 30 seconds until the tracker' speed is lower than this speed limit. |
| Note: | <p>speed =0x00, cancel speeding alarm; =0x01, speed limit is set to 10km/h; =0x02, speed limit is set to 20km/h; </p> |

| | |
|-----------|---|
| | =0x0A, speed limit is set to 100km/h; =0x14, speed limit is set to 200km/h; Max speed limit is 200km/h. |
| Example: | 40 40 00 12 12 34 56 FF FF FF FF 41 05 0B C0 14 0D 0A Above command will set speed limit: 110km/h. |
| Response: | \$\$<L><ID><0x4105><Flag><checksum>\r\n |
| Note: | If Flag =0x00, failure response. =0x01, success response. |

7. Movement Alarm – 0x4106

| | |
|--------------|---|
| Command: | @ @<L><ID><0x4106><area (1byte in hex code)><checksum>\r\n |
| Description: | When the tracker moves out of a preset square scope, three SMS alarms and three GPRS alarms will be sent to the authorized phone number for SOS button and the server every 30 seconds. |
| Note: | area =0x00, cancel movement alarm function =0x01, it is set in a square with current location as center and with side length=2x30m; =0x02, it is set in a square with current location as center and with side length=2x50m; =0x03, it is set in a square with current location as center and with side length=2x100m; =0x04, it is set in a square with current location as center and with side length=2x200m; =0x05, it is set in a square with current location as center and with side length=2x300m; =0x06, it is set in a square with current location as center and with side length=2x500m; =0x07, it is set in a square with current location as center and with side length=2x1000m; =0x08, it is set in a square with current location as center and with side length=2x2000m. |
| Example: | 40 40 00 12 12 34 56 FF FF FF FF 41 06 04 64 A8 0D 0A Above command will set a square with current location as center and with side length=2x200m. |
| Response: | \$\$<L><ID><0x4106><Flag><checksum>\r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

8. Geo-fence Alarm - 0x4107, 0x4207

| | |
|--------------|---|
| Command: | @ @<L><ID><0x4107 or 0x4207><coordinates><checksum>\r\n |
| Description: | Sets geo-fence alarm. When the tracker moves out of (in) a preset scope, three SMS alarms and three GPRS alarms will be sent to the authorized phone number for SOS button and the server every 30 seconds. |

| | |
|---------------------|--|
| Note: | 0x4107 is the command for exiting the geo-fencing area (Out). |
| | <p>0x4207 is the command for entering the geo-fencing area (In).</p> <p>Coordinates includes: Lower-left X,Lower-left Y,Upper-right X,Upper-right Y Lower-left X should be less than Upper-right X; All longitudes and latitudes should be in ASCII format as follows:- Longitude: DDDFFFFFEE/W. 4 places of decimal. '0' is needed to be stuffed if no value available. Latitude: DDFEFFFFN/S. 4 places of decimal. '0' is needed to be stuffed if no value available</p> <p>Only one alarm can be set in either In or Out. Only one alarm can be set in either Movement Alarm or Geo-fence Alarm. The latest setting will overwrite the previous one.</p> |
| Example | <pre>40 40 00 42 12 34 56 FF FF FF FF 41 07 31 31 34 30 34 2E 30 30 30 2C 45 2C 32 32 33 32 2E 30 30 31 30 2C 4E 2C 31 31 35 30 35 2E 31 32 33 34 2C 45 2C 32 33 33 32 E 35 36 37 38 2C 4E E5 90 0D 0A Above command will set Geo-fence: 11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N</pre> |
| Response: | \$\$<L><ID><0x4107 or 0x4207><Flag><checksum>\r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |
| Cancel Geo-fence | @ @<L><ID><0x4107 or 0x4207><checksum>\r\n |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 41 07 07 1F 0D 0A |

9. Extended Settings – 0x4108

| | |
|----------|--|
| Command: | @ @<L><ID><0x4108><ABCDEFGHII><checksum>\r\n |
|----------|--|

| | |
|--------------|--|
| Description: | <p>Set extended functions with details as follows:</p> <p>ABCDEFGHIJ (defaulted as 0x01 0x00 0x00 0x00 0x01 0x00 0x00 0x00 0x00 0x01): A=0x00, turn off the function of replying with an SMS position report after a call is made to the tracker.</p> <p>A=0x01, turn on the function of replying an SMS position report after a call is made to the tracker.</p> <p>B=0x00, location data of NMEA 0183 GPRMC will be interpreted into normal text for easy reading.</p> <p>B=0x01, location data complies with NMEA 0183 GPRMC protocol. C=0x00, turn off the function to automatically hang up an incoming call.</p> <p>C=0x01, turn on the function to automatically hang up an incoming call after 5 rings.</p> <p>D=0x00, turn off the function of sending alarms when the tracker is turned on.</p> <p>D=0x01, turn on the function of sending an SMS alarm to the authorized phone number</p> |
| | <p>for SOS and a GPRS alarm to the server when the tracker is turned on. E: reserved and defaulted as 0x01.</p> <p>F=0x00, turn off the function of sending alarms when the tracker enters GPS blind area.</p> <p>F=0x01, turn on the function of sending an SMS alarm to the authorized phone number for SOS and a GPRS alarm to the server when the tracker enters GPS blind area. G=0x00, all LED lights work normally.</p> <p>G=0x01, all LED lights stop flashing when the tracker is working. H: reserved and defaulted as 0x00.</p> <p>I=0x00, turn off the function of sending an SMS alarm when the extra power of the vehicle tracker is cut.</p> <p>I=0x01, turn on the function of sending an SMS alarm to the authorized phone number for SOS when the extra power of the vehicle tracker is cut. J=0x00, turn off the buzzer for the incoming call.</p> <p>J=0x01, turn on the buzzer for the incoming call.</p> |
| Example: | 40 40 00 1B 12 34 56 FF FF FF FF 41 08 01 00 00 00 01 00 00 00 00 01 B0 78 0D 0A |
| Response: | \$\$<L><ID><0x4108><Flag><checksum>\r\n |
| Note: | <p>Flag</p> <p>=0x00, failure response;</p> <p>=0x01, success response.</p> |

10. Initialization – 0x4110

| | |
|--------------|---|
| Command: | @@<L><ID><0x4110><checksum>\r\n |
| Description: | Make all settings (except for the password, IP, Port, APN, ID and GPRS interval) back to factory default. |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 41 10 65 C9 0D 0A |
| Response: | \$\$<L><ID><0x4110><Flag><checksum>\r\n |

| | |
|-------|--|
| Note: | Flag =0x00, failure response; =0x01, success response. |
|-------|--|

11. Sleep Mode – 0x4113

| | |
|--------------|---|
| Command: | @@<L><ID><0x4113><power-saving level (1 byte in hex code)><checksum>\r\n |
| Description: | Set sleep mode for power saving. |
| Note: | If power-saving level =0x00, to close sleep function; =0x01, level 1; =0x02, level 2. Description of power-saving level: Assume that the GPS acquisition time is ONE minute. In level 1, the GPS module will be working for the first three minutes and then shut down for ONE minute, and then work again for another three minutes..... In level 2, the GPS module will be working for the first two minutes and then shut down for ONE minute, and then work again for another two minutes..... |
| Example: | 40 40 00 12 12 34 56 FF FF FF FF 41 13 01 C8 8B 0D 0A Above command will set sleep mode to level 1. |
| Response: | \$\$<L><ID><0x4113><Flag><checksum>\r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

12. Output Control (Conditional) – 0x4114 or 0x5114

| | |
|--------------|---|
| Description: | This command is to control the outputs of the trackers with a speed limit and used for vehicle trackers (OCB-VT-013) only. Advised Caution in Using this Function |
| Note: | This function is only achievable when the speed is below 10km/h (0x4114) or 20km/h (0x5114) and meantime GPS is available. |
| | |
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| | |
| | |

For OCB-VT-013

| | |
|----------|--|
| Command: | @@<L><ID><0x4114 or 0x5114><ABCDE><checksum>\r\n |
|----------|--|

| | |
|-----------|---|
| Note: | <p>A=0x00, close output (OUT1) -open drain A=0x01, open output (OUT1) -connect to GND A=0x02, remain previous status.</p> <p>B=0x00, close output (OUT2) -open drain B=0x01, open output (OUT2) -connect to GND B=0x02, remain previous status.</p> <p>C=0x00, close output (OUT3) -open drain C=0x01, open output (OUT3) -connect to GND C=0x02, remain previous status.</p> <p>D=0x00, close output (OUT4) -open drain D=0x01, open output (OUT4) -connect to GND D=0x02, remain previous status.</p> <p>E=0x00, close output (OUT5) -open drain E=0x01, open output (OUT5) -connect to GND E=0x02, remain previous status.</p> |
| Example: | <p>40 40 00 16 12 34 56 FF FF FF FF 41 14 01 00 01 00 01 89 2E 0D 0A</p> <p>Above command will open output1, output3 and output5 and close output2 and output4.</p> |
| Response: | \$\$<L><ID><0x4114 or 0x5114><Flag><checksum>\r\n |
| Note: | <p>Flag</p> <p>=0x00, failure response;</p> <p>=0x01, success response.</p> |

13. Output Control (Immediate) – 0x4115

| | |
|----------------|---|
| Description: | This command is to control the outputs of the trackers and used for vehicle trackers (OCB-VT-013) only. Advised Caution in Using this Function |
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| | |
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| | |
| For OCB-VT-013 | |
| Command: | @@<L><ID><0x4115><ABCDE><checksum>\r\n |

| | |
|-----------|--|
| Note: | <p>A=0x00, close output (OUT1) -open drain A=0x01, open output (OUT1) -connect to GND A=0x02, remain previous status.</p> <p>B=0x00, close output (OUT2) -open drain</p> <p>B=0x01, open output (OUT2) -connect to GND B=0x02, remain previous status.</p> <p>C=0x00, close output (OUT3) -open drain C=0x01, open output (OUT3) -connect to GND C=0x02, remain previous status.</p> <p>D=0x00, close output (OUT4) -open drain</p> <p>D=0x01, open output (OUT4) -connect to GND D=0x02, remain previous status.</p> <p>E=0x00, close output (OUT5) -open drain</p> <p>E=0x01, open output (OUT5) -connect to GND E=0x02, remain previous status.</p> |
| Example: | 40 40 00 16 12 34 56 FF FF FF FF 41 15 01 00 01 00 01 CC 8E 0D 0A |
| Response: | \$\$<L><ID><0x4115><Flag><checksum>\r\n |
| Note: | <p>Flag</p> <p>=0x00, failure response;</p> <p>=0x01, success response.</p> |

14. Triggered Alarms – 0x4116

| | |
|--------------|--|
| Description: | This command is to get alarms when tracker's button (or input) is triggered. |
| | For OCB-GT-03I, OCB-GT-03IX and OCB-GT-06 |
| Command: | @@<L><ID><0x4116><ABC><checksum>\r\n |
| Note: | <p>A=SOS Button</p> <p>B=Button B</p> <p>C=Button C</p> <p>When A or B or C (in ASCII)</p> <p>=1 (0x31), alarm when button is pressed</p> <p>=2 (0x32), alarm when button is released</p> <p>=3 (0x33), alarm when button is either pressed or released</p> <p>SOS button only alarms when it is pressed (active alarm).</p> |
| Example: | <p>40 40 00 14 12 34 56 FF FF FF FF 41 16 31 32 33 2C 52 0D 0A</p> <p>Above command will enable alarms when SOS button is pressed, Button B is released and Button C is either pressed or released.</p> |
| | |
| | |

| | |
|----------------|---|
| For OCB-VT-013 | |
| Command: | @@<L><ID><0x4116><ABCDE><checksum>\r\n |
| Note: | <p>A=Input1 (SOS Button) B=Input2 C=Input3 D=Input4 E=Input5</p> <p>When A or B or C or D or E (in ASCII) =1 (0x31), to enable alarm when input is active =2 (0x32), to enable alarm when input is inactive =3 (0x33), to enable alarm when input is either active or inactive</p> <p>SOS button only alarms when it is pressed (active alarm). Input1, Input2 and Input3 are negative triggering; Input4 and Input5 are positive triggering.</p> |
| Example: | <p>40 40 00 16 12 34 56 FF FF FF FF 41 16 31 32 33 31 32 54 50 0D 0A</p> <p>Above command will enable alarms when Input1 is active, Input2 is inactive, Input3 is either active or inactive, Input4 is active and Input5 is inactive.</p> |
| Response: | \$\$<L><ID><0x4116><Flag><checksum> \r\n |
| Note: | <p>Flag =0x00, failure response; =0x01, success response.</p> |

15. Power Down – 0x4126

| | |
|--------------|--|
| Command: | @@<L><ID><0x4126><data><checksum>\r\n |
| Description: | Makes the tracker into power down mode (for power-saving purpose) when it is inactive or stationary for a period of time. In Power Down states, GPS stops working and GSM enters sleep and stop sending out message until it is activated by message, incoming calls, movement or any input changes. |
| Note: | <p>data is in ASCII code and in unit of minute. = 00 (0x30 0x30), to turn off this function; = [01,99], to set Power Down mode.</p> |
| Example: | <p>40 40 00 13 12 34 56 FF FF FF FF 41 26 31 35 9D 07 0D 0A</p> <p>Above command will set the tracker to enter Power Down mode after it is inactive for 15 (0x31 0x35) minutes.</p> |
| Response: | \$\$<L><ID><0x4126><Flag><checksum> \r\n |
| Note: | <p>Flag =0x00, failure response; =0x01, success response.</p> |

16. Listen-in (Voice Monitoring) – 0x4130

| | |
|--------------|---|
| Command: | @@<L><ID><0x4130><data><checksum>\r\n |
| Description: | Authorize a phone number to make a silence call to the tracker, the track answers the call automatically and allows the caller to listen to what happens around the tracker. There is no voice indication that the call is in progress. |
| Note: | data is the telephone number for wiretapping and it should be numbers or numbers started with '+'. Max 16 digits. In ASCII code. |
| Example: | 40 40 00 1B 12 34 56 FF FF FF FF 41 30 38 38 38 38 38 38 38 38 38 38 AD 3A 0D 0A Above command will authorize phone number '8888888888' for wiretapping. |
| Response: | \$\$<L><ID><0x4130><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

17. Log by Interval – 0x4131

| | |
|--------------|---|
| Command: | @@<L><ID><0x4131><data><checksum>\r\n |
| Description: | Set time interval for logging GPS information. The information is stored within the device memory. When the memory gets full, the newest record will be overwritten on top of the oldest (FIFO - First In, First Out). In that case, only the newest information is stored. |
| Note: | data is in ASCII code and in unit of second. If data = 0 (0x30), to close this function. = [1,65535], to set interval for logging. |
| Example: | 40 40 00 13 12 34 56 FF FF FF FF 41 31 31 35 5B F4 0D 0A Above command will make the tracker to log every 15 (0x31 0x35) seconds when it gets GPS fix. |
| Response: | \$\$<L><ID><0x4131><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

18. Time Zone – 0x4132

| | |
|--------------|---------------------------------------|
| Command: | @@<L><ID><0x4132><data><checksum>\r\n |
| Description: | Corrects time into your local time |

| | |
|-----------|--|
| Note: | Default GPS time is GMT. data is to set time difference in minutes to GMT data = [-32768,32767]. In ASCII code and in unit of minute This correction is applied to location reports by SMS and SMS alarms, NOT GPRS. |
| Example: | 40 40 00 14 12 34 56 FF FF FF FF 41 32 34 38 30 E5 B5 0D 0A Above command will set 480 minutes as time difference; 40 40 00 15 12 34 56 FF FF FF FF 41 32 2D 34 38 30 41 A1 0D 0A Above command will set -480 minutes as time difference. |
| Response: | \$\$<L><ID><0x4132><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

19. Heading Change Report – 0x4136

| | |
|--------------|---|
| Command: | @ @<L><ID><0x4136><data><checksum>\r\n |
| Description: | When the heading direction of the tracker changes over the preset degree, a message with location data will be sent back to the server by GPRS. This is to enhance the accuracy and continuous trace when the tracker makes a direction change. |
| Note: | data=[0,359],in ASCII code; |
| Example: | 40 40 00 13 12 34 56 FF FF FF FF 41 36 31 30 A4 BE 0D 0A Above data is 10 degree. When the tracker turns over 10 degree, a message will be sent back to the server. |
| Response: | \$\$<L><ID><0x4136><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

20. Reboot GPS – 0x4902

| | |
|--------------|--|
| Command: | @ @<L><ID><0x4902> <checksum>\r\n |
| Description: | Reboot the GPS module of the tracker. |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 49 02 71 AC 0D 0A |
| Response: | \$\$<L><ID><0x4902><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

21. Heartbeat – 0x5199

| | |
|--------------|--|
| Command: | @ @<L><ID><0x5199><data><checksum> \r\n |
| Description: | Set time interval for heartbeat |
| Note: | data=[0,65535], in ASCII code and in unit of minute |
| Example: | 40 40 00 13 12 34 56 FF FF FF FF 51 99 31 32 24 89 0D 0A Above command will set interval as 12 minutes and the tracker will send heartbeat (0x00) data to the server at every 12 minutes. |
| Response: | \$\$<L><ID><0x5199><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

22. Clear Message Queue – 0x5503

| | |
|--------------|---|
| Command: | @ @<L><ID><0x5503><checksum> \r\n |
| Description: | Clear all message queue logged when there is no GPRS coverage. |
| Note: | This command is to clear those data logged when no GPRS connection. |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 55 03 AC E0 0D 0A |
| Response: | \$\$<L><ID><0x5503><Flag><checksum> \r\n |
| Note: | Flag =0x00, failure response; =0x01, success response. |

23. Get SN & IMEI – 0x9001

| | |
|--------------|---|
| Command: | @ @<L><ID><0x9001><checksum> \r\n |
| Description: | Get tracker's Serial Number, IMEI and firmware version. |
| Example: | 40 40 00 11 12 34 56 FF FF FF FF 90 01 41 CF 0D 0A |
| Response | 24 24 00 33 12 34 56 FF FF FF FF 90 01 33 30 33 37 38 31 35 30 35 39 2C 33 35 33 33 35 38 30 31 31 30 31 38 31 34 35 2C 56 31 2E 34 35 2D 4E FE D0 0D 0A Here we can see: SN=3037815059 IMEI=353358011018145 |

Firmware Version= V1.45-N

24. Read Interval – 0x9002

| | |
|--------------|--|
| Command: | @ @<L><ID><0x9002><checksum> \r\n |
| Description: | Read preset time interval of automatic timed report (GPRS tracking). |
| Example | 40 40 00 11 12 34 56 FF FF FF FF 90 02 71 AC 0D 0A |

27. Alarms – 0x9999

| | |
|--------------|---|
| Command: | \$\$<L><ID><0x9999><Alarm><data><checksum>\r\n |
| Description: | When there is an alarm detected described as below, this command will be sent from the tracker to the server |
| Alarms | 1 byte in Hex code and details as follows |
| Alarm | Definition |
| =0x01 | SOS button is pressed / Input 1 active |
| =0x02 | Call B button is pressed / Input 2 active |
| =0x03 | Call C button is pressed / Input 3 active |
| =0x04 | Input 4 active |
| =0x05 | Input 5 active |
| =0x10 | Low battery alarm |
| =0x11 | Speeding alarm |
| =0x12 | Movement alarm |
| =0x13 | Geo-fence alarm |
| =0x14 | Alarm of tracker being turned on |
| =0x15 | Alarm of tracker entering GPS blind area |
| =0x16 | Alarm of tracker exiting GPS blind area |
| =0x31 | SOS button is released/Input 1 inactive |
| =0x32 | Call B button is released/Input 2 inactive |
| =0x33 | Call C button is released/Input 3 inactive |
| =0x34 | Input 4 inactive |
| =0x35 | Input 5 inactive |
| =0x50 | External power cut alarm |
| =0x52 | Veer report |
| Example: | <p>24 24 00 61 12 34 56 FF FF FF FF 99 99 03 30 33 35 39 30 31 2E 30 30 30 2C 41 2C 32 32 33 32 2E 36 30 38 33 2C 4E 2C 31 31 34 30 34 2E 38 31 33 37 2C 45 2C 30 2E 30 30 2C 2C 30 31 30 38 30 39 2C 2C 2A 31 32 7C 31 32 2E 32 7C 31 39 34 7C 30 34 30 30 7C 30 30 30 30 2C 30 30 30 30 83 4B 0D 0A</p> <p>It means button C is pressed / Input 3 is active.</p> |
| Note: | See Annex 1 for description of 'data'. |

Annex 1: Description of data

Data Format: GPRMC | HDOP | Altitude | State | AD1,AD2

Example: 094506.000,A,2232.5412,N,11404.6919,E,0.00,,290709,,*12|1.7|110|0000|00AA,0267

(1) GPRMC includes: hhmmss.dd,S,xxmm.dddd,<N|S>,yyymm.dddd,<E|W>,s,s,h,h,ddmmyy,d,d,D*HH

Example: 134829.486,A,2232.6083,N,11404.8137,E, 58.31,309.62,010809,,*1A

Note:

| Parameter | Description | Example |
|------------|---|---|
| hhmmss.dd | UTC time hh = hours; mm = minutes; ss = seconds; dd = decimal part of seconds | 13:48:29.486 |
| S | GPS status indicator, A = valid, V = invalid | A=Valid |
| xxmm.dddd | Latitude xx = degrees; mm = minutes; dddd = decimal part of minutes | 22 deg. 32.6083 min. |
| <N S> | Either character N or character S N = North, S = South | N = North |
| yyymm.dddd | Longitude yyy = degrees; mm = minutes; dddd = decimal part of minutes | 114 deg. 04.8137 min. |
| <E W> | Either character E or character W E = East, W = West | E = East |
| s.s | Speed, in unit of knot. (1 knot = 1.852 km) | 58.31 Knots |
| h.h | Heading, in unit of degree | 309.62 deg. |
| ddmmyy | Date dd = date; mm = month' yy = year | 01,08,09 |
| d.d | Magnetic variation | Normally blank |
| D | Either character W or character E W = West ,E=East | Normally blank |
| * | checksum delimiter: | In case there would be one more comma (,) prior to *, GPRMC is still to be ended by '*' |
| HH | Checksum | 1A |

(2) '|' is list separator in ASCII (0x7c)

(3) HDOP, in ASCII code, 0.5-99.9. HDOP is blank when the tracker has no GPS fix. (4) Altitude, in

algorithm.

(5) State: Status of inputs and outputs: For OCB-GT-03I/OCB-GT-03IX/OCB-GT-06

Bit0~Bit7: Reserved and default as '0' Bit8:

Status of Input1

If Bit8=0: Input1 is inactive; Bit8=1: Input1 is active (SOS button is pressed)

Bit9: Status of Input2

If Bit9=0: Input2 is inactive; Bit9=1: Input2 is active (Button B is pressed) Bit10: Status of Input3

If Bit10=0: Input3 is inactive; Bit10=1: Input3 is active (Button C is pressed)

For OCB-VT-013

Bit0: Status of Out1

If Bit0=0: Out1 is closed; Bit0=1: Out1 is open. Bit1: Status of Out2

If Bit1=0: Out2 is closed; Bit1=1: Out2 is open. Bit2: Status of Out3

If Bit2=0: Out3 is closed; Bit2=1: Out3 is open. Bit3: Status of Out4

If Bit3=0: Out4 is closed; Bit3=1: Out4 is open.

Bit4: Status of Out5

If Bit4=0: Out5 is closed; Bit4=1: Out5 is open. Bit5~Bit7: Reserved.

Bit8: Status of Input1

If Bit8=0: Input1 is inactive; Bit8=1: Input1 is active. Bit9: Status of Input2

If Bit9=0: Input2 is inactive; Bit9=1: Input2 is active. Bit10: Status of Input3

If Bit10=0: Input3 is inactive; Bit10=1: Input3 is active.

Bit11: Status of Input4

If Bit11=0: Input4 is inactive; Bit11=1: Input4 is active. Bit12: Status of Input5

If Bit12=0: Input5 is inactive; Bit12=1: Input5 is active.

Bit13~Bit15: Reserved and default as '0'

(6) AD1, AD2: 10 bit analog input (only for voltage) for OCB-VT-013 only, 0x0000~0x03ff in HEX, separated by ',' (comma).

Example: 094506.000,A,2232.5412,N,11404.6919,E,0.00,,290709,,*12|1.7|110|0000|00AA,0267

AD1 is 0x00AA and AD2 is 0x0267.

Voltage Formula: $\text{Input Voltage} = (\text{AD} * 6) / 1024$

0x00AA=>170(decimal)=> $(170 * 6) / 1024 = 0.99609375\text{V}$ (voltage)

0x0267=>615(decimal)=> $(615 * 6) / 1024 = 3.603515625\text{V}$ (voltage)