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1. GPRS uploading data format

<data head><protocol version>,<IMEI>,<device name>,<GPRS real-time/stored data flag>,<date>,<time>,<GPS fix flag>,<latitude>,<N/S>,<longitude>,<W/E>,<used satellite number of BDS>,<used satellite number of GPS>,<used satellite number of GLONASS>,<HDOP>,<speed>,<course>,<altitude>,<mileage>,<MCC>,<MNC>,<LAC>,<Cell ID>,<GSM signal strength>,<digital input>,<digital output>,<analog input 1>,<analog input 2>,<analog input 3>,<temperature sensor 1>,<temperature sensor 2>,<RFID>,<external accessories status>,<battery percent>,<alert event type>;<checksum><data tail>

2. GPRS uploading data example

\$MGV002,860719020193193,DeviceName,R,240214,104742,A,2238.20471,N,11401.97967,E,00,03,00,1.20,0.462,356.23,137.9,1.5,460,07,262C,0F54,25,0000,0000,0,0,0,28.5,28.3,,10,100,Timer;!

3. GPRS uploading data analysis

| Name | Description | Example |
|------------------------------------|--|-----------------|
| <data head> | Fixed character '\$'. | \$ |
| <protocol version> | "MG" is fixed character string, "V002" is the changeable version. | MGV002 |
| , | Separator. | , |
| <IMEI> | IMEI of device, fixed 15 bytes. | 860719020193193 |
| <device name> | Device name the user set, range: 0~15 bytes. Note: device name only can use letters or numbers. | DeviceName |
| <GPRS real-time/stored data flag> | 'R' means this GPRS data is a real-time data, 'S' means this GPRS data is a stored data. | R |
| <date> | System date, format: DDMMYY. | 240214 |
| <time> | System time, format: HHMMSS. | 104742 |
| <GPS fix flag> | 'A' means GPS fix successfully, 'V' means GPS can not fix. | A |
| <latitude> | Latitude (degrees & minutes), format: DDMM.MMMM. | 2238.20471 |
| <N/S> | North/South indicator. | N |
| <longitude> | Longitude (degrees & minutes), format: DDDMM.MMMMM. | 11401.97967 |
| <W/E> | East/West indicator. | E |
| <used satellite number of BDS> | The number of BDS satellite used to fix, range: 00~99. | 00 |
| <used satellite number of GPS> | The number of GPS satellite used to fix, range: 00~99. | 03 |
| <used satellite number of GLONASS> | The number of GLONASS satellite used to fix, range: 00~99. | 00 |
| <HDOP> | Horizontal dilution of precision. | 1.20 |
| <speed> | Speed over ground, unit: knot. | 0.462 |
| <course> | Course over ground, unit: degree. | 356.23 |
| <altitude> | Altitude, unit: meter. | 137.9 |
| <mileage> | Mileage, unit: Km. | 1.5 |
| <MCC> | Mobile country code. | 460 |
| <MNC> | Mobile network code. | 07 |
| <LAC> | Location area code. | 262C |
| <Cell ID> | Cell ID. | 0F54 |
| <GSM signal strength> | GSM signal strength, range: 00~99. | 25 |
| <digital input> | Status of digital input, example shows four digital inputs ('0' means the low level, '1' means the high level). (only used for vehicle tracker) | 0000 |
| <digital output> | Status of digital output, example shows four digital outputs ('0' means disable the output, '1' means enable the output).(only used for vehicle tracker) | 0000 |
| <analog input 1> | Detected value of analog input 1, range: 0~4096. (only used for vehicle tracker) | 0 |
| <analog input 2> | Detected value of analog input 2, range: 0~4096. (only used for vehicle tracker) | 0 |
| <analog input 3> | Detected value of analog input 3, range: 0~4096. (only used for vehicle tracker) | 0 |
| <temperature sensor 1> | Detected value of temperature sensor 1, unit: degree. (only used for vehicle tracker) | 28.5 |
| <temperature sensor 2> | Detected value of temperature sensor 2, unit: degree. (only used for vehicle tracker) | 28.3 |

| | | |
|-------------------------------|---|-------|
| <RFID> | RFID information (reserved). (only used for vehicle tracker) | |
| <external accessories status> | Charging flag ('0' means not charging, '1' means charging) | 10 |
| | Belt status ('0' means no belt is connected, '1' means the first belt is connected, '2' means the second belt is connected, '3' means the first and second belts are all connected) | |
| <battery percent> | Battery percent, range: 000~100. | 100 |
| <alert event type> | Alert event type, see alert event type table . | Timer |
| ; | End mark. | ; |
| <checksum> | Checksum (reserved). | |
| <data tail> | Fixed character '!'. | ! |

4. Alert event type table

| Type name | Description | Example |
|-------------------|---|----------------|
| Restart | Device restart by hardware. | Restart |
| PowerOn | Device power on by software. | PowerOn |
| PowerOff | Device power off by software. | PowerOff |
| Sos | SOS emergency alert. | Sos |
| Timer | Sending GPRS data by interval. | Timer |
| CallForSms | Sending SMS by making a call (only for SMS). | CallForSms |
| LowBattery | Low battery alert. | LowBattery |
| GeoX(GeoName) In | Going into the geo-fence, 'X' is the sequence of geo-fence, range: 1~5, "GeoName" is the name user set for geo-fence, range: 0~9 bytes. | Geo1(home) In |
| GeoX(GeoName) Out | Going out of the geo-fence, 'X' is the sequence of geo-fence, range: 1~5, "GeoName" is the name user set for geo-fence, range: 0~9 bytes. | Geo1(home) Out |
| BeltOn | Belt is connected. | BeltOn |
| BeltOff | Belt is disconnected. | BeltOff |
| Error | Alert type error. | Error |