GPS Ethernet Communication Protocol Base UDP

UDP port: 2800
Number representations use “little endian” formats, and are sent with the least significant byte first

Table 1 – message protocol

| Attribute | Bits | Comment |
|---|---|---|
| version | U8 | 0x01 |
| reserved | U8 | 0x00 |
| message length | U16 | |
| message data | message length | |
| checksum | U8 | The calculation method is the same as NMEA 0183 |

Table 2 – GPS message data

| Attribute | Bits | Comment |
|---|---|---|
| year | U16 | |
| month | U8 | |
| day | U8 | |
| hour | U8 | |
| minute | U8 | |
| second | U8 | |
| millisecond | U16 | |
| quality | U8 | GPS quality Indicator:<br>0 = No GPS,<br>1 = GPS,<br>2 = DGPS,<br>6 = DR |
| mode | U8 | Status:<br>0 = invalid<br>1 = fix not available,<br>2 = 2D,<br>3 = 3D |
| north_south | U8 | North or South<br>0: invalid<br>1: north<br>2: south |
| latitude | U32 | Latitude<br>NMEA0183 协议中的值*10000 |
| east_west | U8 | East or West<br>0: invalid<br>1: east<br>2: west |

| | | | |
|---|---|---|---|
| longitude | | U32 | Longitude<br>NMEA0183 协议中的值*10000 |
| altitude | | S32 | Antenna altitude in meters, M = Meters<br>NMEA0183 协议中的值*10 |
| geoidal_separation | | S32 | Geoidal separation<br>NMEA0183 协议中的值*10 |
| pdop | | U16 | Position dilution of precision (PDOP)<br>NMEA0183 协议中的值*100 |
| hdop | | U16 | Horizontal Dilution of Precision (HDOP)<br>NMEA0183 协议中的值*100 |
| vdop | | U16 | Vertical dilution of precision (VDOP)<br>NMEA0183 协议中的值*100 |
| course | | U16 | course over ground in degrees true<br>NMEA0183 协议中的值*100 |
| speed | | U32 | speed over ground<br>NMEA0183 协议中的值*100 |
| satellites_view | | U8 | Total number of satellites in view |
| satellites_used | | U8 | Number of satellites in use |
| satellite_infos | PRN_1 | U8 | |
| | elevation_1 | S8 | [-90° ,90°] |
| | azimuth_1 | U8 | |
| | SNR_1 | U8 | |
| | used_1 | U8 | 0: unused<br>1: used |
| | ... | | |
| | PRN_12 | U8 | |
| | elevation_12 | S8 | [-90° ,90°] |
| | azimuth_12 | U8 | |
| | SNR_12 | U8 | |
| | used_12 | U8 | 0: unused<br>1: used |