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:  0 = No GPS,  1 = GPS,  2 = DGPS,  6 = DR |
| mode | | U8 | Status:  0 = invalid  1 = fix not available,  2 = 2D,  3 = 3D |
| north\_south | | U8 | North or South  0: invalid  1: north  2: south |
| latitude | | U32 | Latitude  NMEA0183协议中的值\*10000 |
| east\_west | | U8 | East or West  0: invalid  1: east  2: west |
| longitude | | U32 | Longitude  NMEA0183协议中的值\*10000 |
| altitude | | S32 | Antenna altitude in meters, M = Meters  NMEA0183协议中的值\*10 |
| geoidal\_separation | | S32 | Geoidal separation  NMEA0183协议中的值\*10 |
| pdop | | U16 | Position dilution of precision (PDOP)  NMEA0183协议中的值\*100 |
| hdop | | U16 | Horizontal Dilution of Precision (HDOP)  NMEA0183协议中的值\*100 |
| vdop | | U16 | Vertical dilution of precision (VDOP)  NMEA0183协议中的值\*100 |
| course | | U16 | course over ground in degrees true  NMEA0183协议中的值\*100 |
| speed | | U32 | speed over ground  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  1: used |
| ... |  |  |
| PRN\_12 | U8 |  |
| elevation\_12 | S8 | [-90° ,90°] |
| azimuth\_12 | U8 |  |
| SNR\_12 | U8 |  |
| used\_12 | U8 | 0: unused  1: used |