

NAVIGATION DATA MESSAGE – message of user navigation data(0xA8)

This is a response message which provides data of user navigation solution. This message is sent from the GPS receiver to host. The payload length is 59 bytes

Structure:

<0xA0,0xA1>< PL><A8>< message body><CS><0x0D,0x0A>

Example:

A0 A1 00 3B A8 02 08 06 04 02 32 18 18 0E C5 E1 99 48 20 78 ED 00 00 2E 3B 00 00 26 93 00 93 00 93
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
00 93 00 93 00 93 EE 35 4D 30 1D 99 AA 37 0F D7 0B 74 00 00 00 00 00 00 00 00 00 00 00 00 F5 0D 0A
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59

| Field | Name | Example(hex) | Description | Type | Unit |
|-------|-------------------------|--------------|--|--------|---------------|
| 1 | Message ID | A8 | | UINT8 | |
| 2 | Fix Mode | 02 | Quality of fix 0: no fix 1: 2D 2: 3D 3: 3D+DGPS | UINT8 | |
| 3 | Number of SV in fix | 08 | Number of SV in fix 0-12 | UINT8 | |
| 4-5 | GPS Week | 0604 | GPS week number | UINT16 | |
| 6-9 | TOW | 02321818 | GPS time of week Scaling 0.01 | UINT32 | 1/100 sec |
| 10-13 | Latitude | 0EC5E199 | > 0: North Hemisphere < 0: South Hemisphere Scaling 1e-7 | SINT32 | 1/1e-7 degree |
| 14-17 | Longitude | 482078ED | > 0: East Hemisphere < 0: West Hemisphere | SINT32 | 1/1e-7 degree |
| 18-21 | ellipsoid altitude, | 00002E3B | height above ellipsoid Scaling 0.01 | UINT32 | 1/100 meter |
| 22-25 | mean sea level altitude | 00002693 | height above mean sea level Scaling 0.01 | UINT32 | 1/100 meter |
| 26-27 | GDOP | 0093 | Geometric dilution of precision Scaling 0.01 | UINT16 | 1/100 |
| 28-29 | PDOP | 0093 | Position dilution of precision Scaling 0.01 | UINT16 | 1/100 |
| 30-31 | HDOP | 0093 | Horizontal dilution of precision Scaling 0.01 | UINT16 | 1/100 |

| | | | | | |
|---------------------------|---------|----------|--|--------|----------------|
| 32-33 | VDOP | 0093 | Vertical dilution of precision Scaling 0.01 | UINT16 | 1/100 |
| 34-35 | TDOP | 0093 | Time dilution of precision Scaling 0.01 | UINT16 | 1/100 |
| 36-39 | ECEF-X | EE354D30 | ECEF X coordinate Scaling 0.01 | SINT32 | 1/100 meter |
| 40-43 | ECEF-Y | 1D99AA37 | ECEF Y coordinate Scaling 0.01 | SINT32 | 1/100 meter |
| 44-47 | ECEF-Z | 0FD70B74 | ECEF Z coordinate Scaling 0.01 | SINT32 | 1/100 meter |
| 48-51 | ECEF-VX | 00000000 | ECEF X Velocity Scaling 0.01 | SINT32 | 1/100 m/s |
| 52-55 | ECEF-VY | 00000000 | ECEF Y Velocity Scaling 0.01 | SINT32 | 1/100 m/s |
| 56-59 | ECEF-VZ | 00000000 | ECEF Z Velocity Scaling 0.01 | SINT32 | 1/100 m/s |
| Payload Length : 59 bytes | | | | | |