ZENTRUM FÜR TELEMATIK E.V.

Format Documentation

NetSat OBC Beacon

Contents

1 Format Specification

The Protocol chain of all NetSat satellites is:

AX25 – *CRC32C* – *CSP* – *Compass* – *ModelService* payload of type GROUP SET

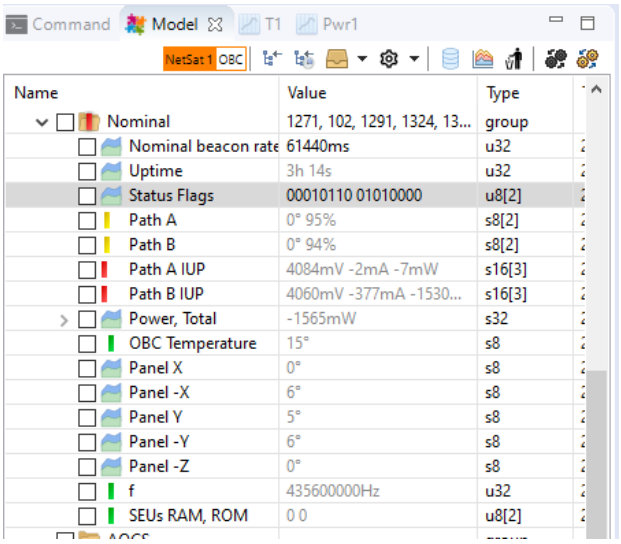
An example beacon as received by SatNogs is

```
00 00 CA 00 A6 64 60 88 A0 64 9C A6 84 61 03 F0 4A 5C 30 00 25 82 78 11 05 01 01
00 0E 35 1F 00 05 AF 2A 13 8A 12 81 72 01 00 F0 00 00 42 5D 00 00 14 50 03 60 03
5F FC 0F FF FF FD FF F8 0F 53 00 53 01 50 01 00 00 0A 00 0F 0E 0E 00 80 BA F6 19
00 00 54 3C D0 C7 89 AC
```

So, the payload of the beacon packet is (little endian):

```
1F 00 05 AF 2A 13 8A 12 81 72 01 00 F0 00 00 42 5D 00 00 14 50 03 60 03 5F FC 0F
FF FF FD FF F8 0F 53 00 53 01 50 01 00 00 0A 00 00 0F 0E 0E 80 BA F6 19 00 00
```

- 1F Model packet type (GDS SET REMOTE)
- 00 05 UID = 1280
- AF 2A Type + Length (A=GROUP F=next byte 2A=42 bytes)
- 13 8A 12 81 72 01 Short time in MS (1.591.303.375.379)
- All further bytes are binary values of all beacon fields shown below
    - 00 F0 00 00 beacon rate [ms]
    - 42 5D 00 00 Uptime [s]
    - 14 50 Status flags
    - 03 60 Power Path A: temperature and percentage
    - 03 5F Power Path B: temperature and percentage
    - FC 0F FF FF FD FF Power Path A: I, U, P
    - F8 0F 53 00 53 01 Power Path B: I, U, P
    - 50 01 00 00 Power, total
    - 0A OBC Temperature
    - 00 00 0F 0E 0E Panel temperature: X, -X, Y, -Y, -Z
    - 80 BA F6 19 Radio frequency
    - 00 00 detected SEUs in RAM and ROM



2 Document Revision History

Doc. Revision	Date	Comment	Author
001B	2020-11-24	Updated set of Information included in this Document	Fischer
001A	2020-11-23	Adapted from latest Version of OBC.DevNotes, Slavi Dombrovski (2020)	Fischer