

Possible structure of the 8F-AE Extended Packet Sent on PORT A

Similar to Packets Packet 8F-0B, and 8F-AD described in the User Guide Pages A104 - 108

Packet Sent at 2006/11/18 09:20:14

```
10 8F AE 03 0B 00 00 00 08 6C 4E 00 00 00 00 12 0B 07 D6 01 00 0E 80 00 FB C9 42 98 5E 34 00 00 00
CE F4 79 00 00 4B 2F E0 80 00 C4 3D F5 00 00 00 00 E3 78 49 E0 80 00 00 00 05 C6 A1 80 80 00 00 2F
8C 6C FF B0 01 09 FF E6 EE EC 04 E3 FB 10 03
```

10 8F AE	Header and secondary identifier
03 0B 00 00	? ? ? ? (part of seconds count as a float ? or event count or ...?)
00 08 6C 4E	Seconds count (0 = midnight Sunday, 0x93A7F = 23:59:59 Sat)
00 00 00 00	? ? ? ? or (part of seconds count expressed as a float ?)
12 0B 07 D6	Day (Byte), Month (Byte), YearHi/YearLo (Integer)
01	Receiver Mode , (see user guide page A-107)
00 0E	UTC Offset (Integer)
80 00 FB C9 42 98 5E 34	Oscillator Bias (Float)
00 00 00 CE F4 79 00 00	Oscillator drift rate (Float)
4B 2F E0 80 00 C4 3D F5	Oscillator Bias Uncertainty (float)
00 00 00 00 E3 78 49 E0	Latitude (0xE37849E0 = 3816311264 *)
80 00 00 00 05 C6 A1 80	Longitude (0x80....05C6A180 = 96903552 *)
80 00 00 2F 8C 6C FF B0	Altitude
01 09 FF E6 EE EC 04 E3 FB	Satellite ID (see user guide page A-108)
10 03	Terminator

The user guide defines the seconds-count as a float, which means that either the preceding 03 3B 00 00 should be part of this or the following 00 00 00 00 suggesting a fractional count

Taking the three bytes that here are shown as 08 6C 4E give a 24 bit integer with the correct value.

* Lat and Long are sent as floats and 8 bytes should be considered. The MS Bit of the first byte is the sign, and the last four bytes can be taken as representing the value in units of radians * 2^{32} . So here, the latitude is 0xE37849E0 = 3816311264 in decimal. Dividing by $2^{32} = 0.888554208$ radians.

Multiply by $180/\pi = 50.910406$ degrees

Similarly, Longitude = 0x80000000 05C6A180 = 96903552 / $2^{32} * 180/\pi = 1.292714$ deg

As the leading bit is set (the 0x80..), the sign is negative, so Long = -1.29 etc degrees (west)

Which is, quite accurately, the 'JNT residence !