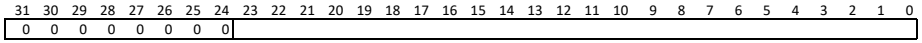
Version 1.41 24th March 2018

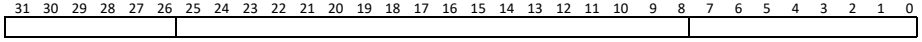
ADC SAMPLE PACKET (1472 Bytes)



packet types:
- 0 ADC Samples packet
- 1 End of Samples Status packet
- 2 Timed Status packet keep-alive

Packet Type (8)

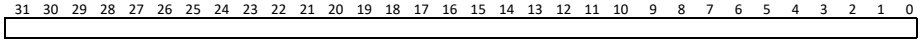
UDP Packet Number (increments, 24 bits)
(can wrap)



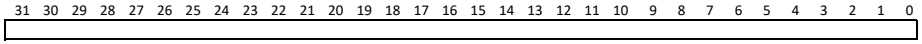
Seconds (6)
This secs is internally synced to real time

Unique ID assigned to this detector (18)

ADC Buffer Number (8)
(can wrap)

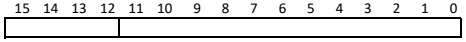


1 Pulse-per-Second Internal Timer snapshot value (32) (Timer approx 108MHz, reloads to zero on 1pps pulse)



DMA Complete timer snapshot of 728 ADC samples taken (Timer approx 108MHz, reloads to zero on 1pps pulse)

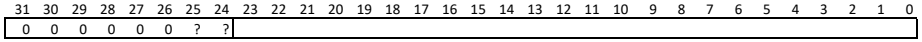
728 Words of 16 bits



spare (4)

ADC Sample (12 bits used)

Status Packet (140 Bytes)



1 0 = timed status

same thing | Packet Type (8) 0 1 = end seq status UDP Packet Number (increments, 24 bits) (can wrap)

uint32_t udpcount; // udp packet sent index (24 bits, other 8 bits are packet type)

```
struct UbxGpsNavPvt {
    //      Type  Name         Unit   Description (scaling)
    unsigned long iTOW;      // ms    GPS time of week of the navigation epoch. See the description of iTOW for details.   0
    unsigned short year;     // y     Year UTC                                                                              4
    unsigned char month;     // month  Month, range 1..12 UTC                                                               6
    unsigned char day;       // d     Day of month, range 1..31 UTC                                                         7
    unsigned char hour;      // h     Hour of day, range 0..23 UTC                                                          8
    unsigned char min;       // min   Minute     9
    unsigned char sec;       // s     Seconds of minute, range 0..  10       NOTE This secs is not real time - it has latency.
    char          valid;     // -     Validity Flags (see g  11
    unsigned long tAcc;      // ns    Time accuracy estimate UT(  12
    long          nano;      // ns    Fraction of second, range -1e9..1e9 UTC         16
    unsigned char fixType;   // -     GNSSfix Type, range 0..5                        20
    char          flags;     // -     Fix Status Flags (see graphic l  21
    unsigned char reserved1; // -     22
    unsigned char numSV  23
```

```
long          lon;       // deg    Longitude (1e   24
long          lat;       // deg    Latitude (1e-7)          28
long          height;    // mm     Height above Ellipsoid               32
long          hMSL;      // mm     Height above mean sea level                36
unsigned long hAcc;      // mm     Horizontal Accuracy Estimate                 40
unsigned long vAcc;      // mm     Vertical Accuracy Estimate             44
long          velN;      // mm/s   NED north velocity          48
long          velE;      // mm/s   NED east velocity              52
long          velD;      // mm/s   NED down velocity              56
long          gSpeed;    // mm/s   Ground Speed (2-D)          60
long          heading;   // deg    Heading of motion 2-D (:   64
unsigned long sAcc;      // mm/s   Speed Accuracy Estimate   68
unsigned long headingAcc; // deg   Heading Accu   72
unsigned short pDOP;     // -      Position DOP (0.01)         76
short         reserved2; // -      Reserved                          78
unsigned long reserved3; // -      Reserved                          80
} NavPvt;
```

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

----- ---->

|

same thing | not used (14) Unique ID assigned to this detector (18)

|

----- ----> uint32_t uid; // only 18 bits used

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

----- ---->

|

same thing | ADC number of buffers sent in last capture sequence before status packet

|

----- ----> uint32_t adcpktssent; // Number of ADC pks sent in this trigger event

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

adc trigger offset (above the noise)

adctrigoff : uint16_t;
adcnoise : uint16_t;

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

adc current noise level

```
uint32_t sysuptime;      // number of seconds system up from boot uptime
uint32_t netuptime;      // number of seconds network up
uint32_t gpsuptime;      // number of seconds gps locked
uint8_t majorversion;    // major ver
uint8_t minorversion;    // minor ver
uint16_t adcnoise;       // adc average peak noise
uint32_t reserved1;      // spare
uint32_t reserved2;      // spare
uint32_t reserved3;      // spare
uint32_t reserved4;      // spare
```

Any new fields to be added here ....

end sentinal marker (keep at the end) uint32_t telltale1; // end of status packet marker 0xFEEDCODE