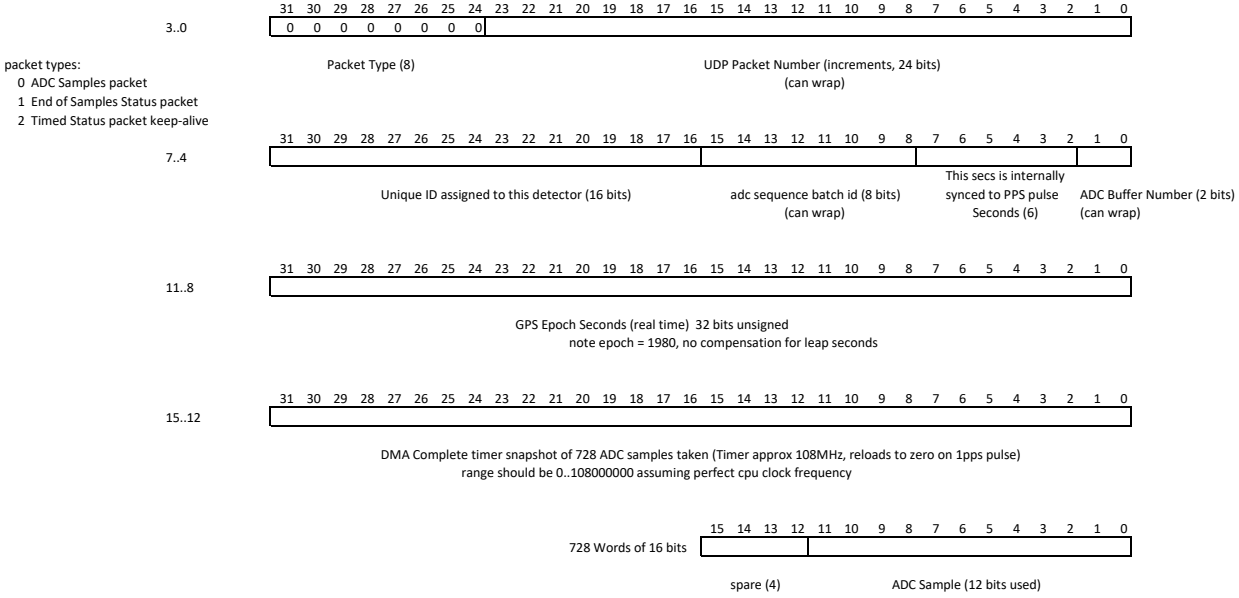
Version 2.0 21 May 2018

ADC SAMPLE PACKET (1472 Bytes)



Status Packet (156 Bytes)

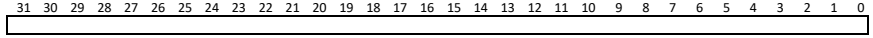
udp packet 164 bytes

```
                                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
          ----- ---->           0  0  0  0  0  0  ?  ?
          |                                      1  0 =   timed status
same word |                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..6   10        NOTE This secs is not real time - it has latency.
                               char          valid;      // -     Validity Flags (see gr   11
                               unsigned  long  tAcc;     // ns    Time accuracy estimate UTC   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 b   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
```

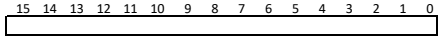
```
unsigned  long  vAcc;     // mm    Vertical Accuracy Estimate                  44
long          velN;      // mm/s  NED north velocity                  48
long          velE;      // mm/s  NED east velocity                       52
long          velD;      // mm/s  NED down velocity                       56
long          gSpeed;    // mm/s  Ground Speed (2-D)                  60
long          heading;   // deg   Heading of motion 2-D (1e  64
unsigned  long  sAcc;    // mm/s  Speed Accuracy Estimate   68
unsigned  long  headingAcc; // deg   Heading Accur  72
unsigned  short pDOP;     // -     Position DOP (0.01)                 76
short         reserved2;  // -     Reserved                                    78
unsigned  long  reserved3;  // -     Reserved                                    80
} NavPvt;
```

clktrim



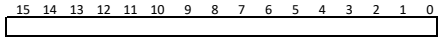
average of STM32 clock frequency referenced to 1pps

uint16_t uid; // 16 bits used



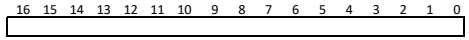
Unique ID assigned to this detector (16)

uint16_t adcpktssent; // 16 bits used



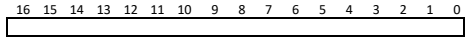
ADC number of buffers sent in last capture sequence before status packet (16)
// Number of ADC pks sent in this trigger event

adctrigoff : uint16_t;



adc trigger offset (above the noise)

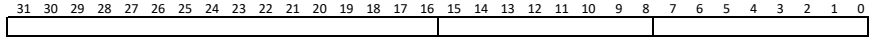
adcbase : uint16_t;



adc average base level (ie dc 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;    // STM firmware major ver
uint8_t minorversion;    // STM firmware minor ver
uint16_t adcnoise;       // adc average peak noise
```

uint32_t auxstatus1; AUXSTATUS1



16 bits reserved

detection jabber (8 bits)
0 = no jabber

adc sequence last batch id (8 bits)
(can wrap)

```
uint32_t adcudpover;     // adc -> udp send overruns
uint32_t trigcount;      // adc trigger count
uint32_t udpsent;        // udp sample packets sent
uint16_t peaklevel;      // peak trig level
uint16_t jabcnt;         // jabber counter
uint32_t noisevar;       // noise variance

uint32_t reserved1;      // spare
uint32_t reserved2;      // spare
uint32_t reserved3;      // spare
```

Any new fields to be added here .....

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