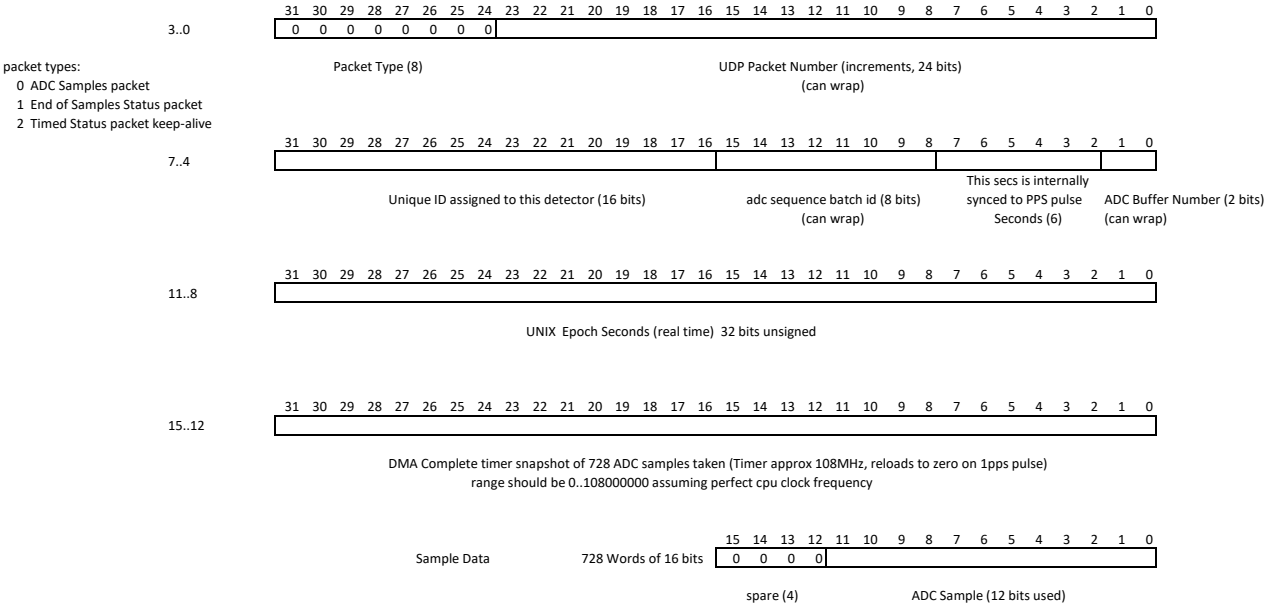
Version 2.1 26 May 2018

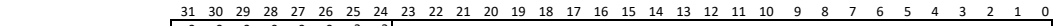
ADC SAMPLE PACKET (1472 Bytes)



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

Status Packet (160 Bytes)

udp packet 168 bytes



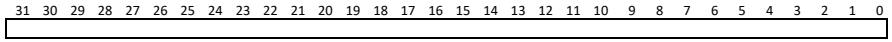
----- ----> 1 0 = timed status

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

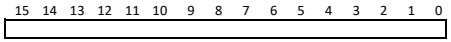
----- ----> `uint32_t udpcount;` // udp packet sent index (24 bits, other 8 bits are packet type)

```
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 c                                                                              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;
```

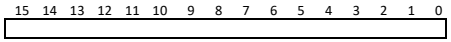


average of STM32 clock frequency referenced to 1pps



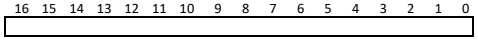
uint16_t uid; // 16 bits used

Unique ID assigned to this detector (16)



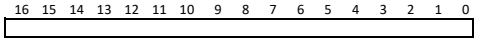
uint16_t adcpktssent; // 16 bits used

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;

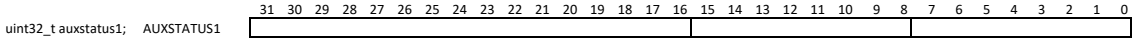
adc trigger offset (above the noise)



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
```



16 bits reserved

detection jabbering (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 epochsecs;     // unix epoch seconds
uint32_t reserved1;     // spare
uint32_t reserved2;     // spare
```

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

end sentinal marker (keep at the end)

```
uint32_t telltale1;     // end of status packet marker
```

0xFEEDCODE