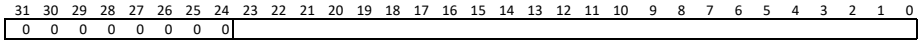
Version 1.4 20th March 2018

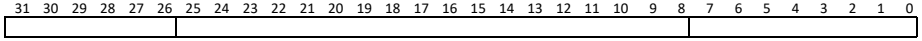
ADC SAMPLE PACKET (1472 Bytes)



Packet Type (8)

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

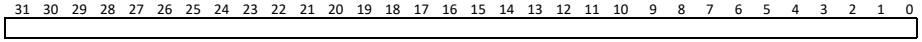
packet types:
- 0 ADC Samples packet
- 1 End of Samples Status packet
- 2 Timed Status packet keep-alive



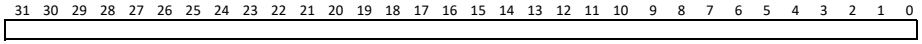
Seconds (6)
This secs is internally synced to real time

Unique ID assigned to this detector (18)

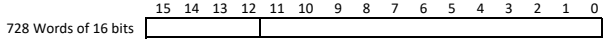
ADC Buffer Number (8)
(can wrap)



1 Pulse-per-Second Internal Timer snapshot value (32) (Timer approx 108MHz, reloads at 4000000000)



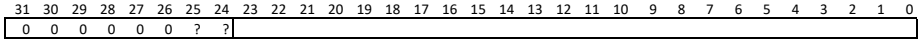
DMA Complete timer snapshot of 728 ADC samples taken (Timer approx 108MHz, reloads at 4000000000)



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

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

----- ---->
|
same thing |
|
----- ----> 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