**Event Mode Run Memory Layout**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Header word 0 | 31 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| Marker | Marker: 0xFFFFFFFF | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 1 | 31 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| Marker | Veto Frame packet header marker: 0xFCFFFFFF  Sample Environment packet header marker: 0xFDFFFFFF  End of run header marker: 0xEFFFFFFF  Neutron Data header marker: 0xFFFFFFFF | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 2 | 31 16 | | | | | | | | 15 | 14 | 13 | 12 | | 11 | 10 9 | | 8 4 | | | | | 3 0 | | |
| Information | Data input FIFO full veto 0-15 | | | | | | | | Frame data overrun | Frame Memory Full veto | No frame sync | Run will continue | | Bad frame | not used | | Length of header | | | | | Reserved for header type | | |
| Header word 3 | 31 0  Frame number | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 4  Frame time (d/h/m/s) | 31 26  not used | | 25 17  Days | | | | 16 12  Hours | | | | | | | 11 6  Minutes | | | | | | 5 0  Seconds | | | | | |
| Header word 5  Frame time (ms/µs/ns) | 31 30  not used | 29 20  Milliseconds | | | | 19 10  Microseconds | | | | | | | | | | 9 0  Nanoseconds | | | | | | | | | |
| Header word 6 | 31 16  Period sequence | | | | | | | | 15 0  Period number | | | | | | | | | | | | | | | | |
| Header word 7 | 31 0  Events in frame | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 8 | 31 0  Total PPP in run | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 9 | 31 24 | | | 23 20 | 19 16 | | | 15 12 | | | | | 11 7 | | | | | 6 | 5 | | 4 | 3 2 | 1 | 0 |
| Vetoes | Frame Repeat  Number | | | Fast chopper | not used | | | External | | | | | not used | | | | | ISIS slow | Wrong pulse | | TS2 pulse | not used | SMP | FIFO |
| Header word 10 | 31 0  Address of next frame (byte address) | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 11 | 31 0  Address of next frame (64-bit word address) | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 13 | 31 0  not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 13 | 31 0  not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 14 | 31 0  not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Header word 15 | 31 0  not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Event 0 | 31 0  X”E0” & 24 bits frame time | | | | | | | | | | | | | | | | | | | | | | | | |
|  | 31 0  32 Position | | | | | | | | | | | | | | | | | | | | | | | | |
| Event 1 | 31 0  X”E0” & 24 bits frame time | | | | | | | | | | | | | | | | | | | | | | | | |
|  | 31 0  32 Position | | | | | | | | | | | | | | | | | | | | | | | | |