

Janus binary file decoder (MEPhI)

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Janus binary file

- **Header:** general info for decoding + start Run time
- **Data** → consists of events: event size and # + channel mask + data

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00000000	03	03	03	06	00	52	14	25	00	01	00	20	00	00	00	00
00000010	3F	E8	27	80	93	9E	01	00	00	9B	01	00	60	E5	D0	22
00000020	DB	F9	59	40	00	00	00	00	00	00	00	00	FF	FF	FF	FF
00000030	FF	FF	FF	FF	00	03	A9	15	FF	1F	01	03	AC	15	FF	1F
00000040	02	03	11	15	FF	1F	03	03	65	15	FF	1F	04	03	25	15
00000050	FF	1F	05	03	FD	14	FF	1F	06	03	A3	15	FF	1F	07	03
00000060	29	15	FF	1F	08	03	28	15	FF	1F	09	03	08	15	FF	1F
00000070	03	03	06	06	FF	1F	03	03	4F	15	FF	1F	04	03	03	14

Header structure

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00000000	03	03	03	06	00	52	14	25	00	01	00	20	00	00	00	00
00000010	3F	E8	27	80	93	9E	01	00	00	9B	01	00	60	E8	D0	22
00000020	DB	F9	59	40	00	00	00	00	00	00	00	00	FF	FF	FF	FF
00000030	FF	FF	FF	FF	00	03	A9	15	FF	1F	01	03	AC	15	FF	1F
00000040	02	03	11	15	FF	1F	03	03	65	15	FF	1F	04	03	25	15
00000050	FF	1F	05	03	FD	14	FF	1F	06	03	A3	15	FF	1F	07	03
00000060	29	15	FF	1F	08	03	28	15	FF	1F	09	03	08	15	FF	1F
00000070	03	03	06	00	52	14	25	00	01	00	20	00	00	00	00	00

File version
 SW version
 Electronics
 Unknown
 Acq Mode
 Energy NCh
 Time unit

Time conversion
 Start Acquisition

Data structure

Please refer to Janus manual

Actual File version 03.03, current manual revision 02.

Janus → ROOT tree decoder

- ROOT script – can be executed at any machine with root 5.34/38 (or newer?)
- Access to tree through TBrowser is flexible and powerful enough for any task

```
filipp@Nimbus2000:~/Work/SiPM/SPD/Janus_decoder$ root -l
root [0] .L JanusFERS5200BinToTree_ROOT534.C+
root [1] JanusFERS5200BinToTree("Run106_list.dat")

===== Janus binary header =====
Data Format Version : 0x303 (3.3)
Software Version    : 0x603 (0.6.3)
Board Type          : 0x1452 (5202)
Unknown 16-bit field: 0x6a (106)
Acquisition Mode   : 0x3 (Spectroscopy + Timing)
Energy NChannels    : 8192
Time Unit           : 0x0 (LSB)
Time conversion     : 0.5
Start Acquisition   : 1779441815152
Run Number used     : 106
=====

===== Last written event =====
Event index : 10569
BoardID     : 0
TrigTime    : 257100711699
TrigID      : 63123
NTrig       : 10
TrigMap ch  : 18,20,22,24,26,28,30,32,34,36
=====

Done. Written events : 10570
Output ROOT file     : Janus_Run106_StartAcq1779441815152.root
```

Examples

