



# Definition uGT readout record

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<http://www.hephy.at>

<http://globaltrigger.hephy.at>

<https://twiki.cern.ch/twiki/bin/viewauth/CMS/GlobalTrigger>

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**UNDER CONSTRUCTION !!!!**

## Contents

63	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	0																		
0x5		Ev_t		LV1_id								BXId				Source_id				FOV		H	X	\$	\$									
uFOV		Res		nAMC		Reserved						OrN												0x0										
0	L	M	S	E	P	V	C	AMC1_size								0	0	0	0	Blk_No		AmcNo		BoardID										
...																																		
0	L	M	S	E	P	V	C	AMC6_size								0	0	0	0	Blk_No		AmcNo		BoardID										
0x0		AmcNo AMC1		LV1_id								BXId				Data_lgth																		
User												OrN								BoardID														
uGT build												MP7 FW version																						
input data												BlockID=0x00				Block size				reserved ??														
input data												input data																						
...																																		
BlockID=0x02				Block size				reserved ??								input data																		
additional 11 input data blocks AMC1																																		
output data												BlockID=0x21				Block size				reserved ??														
output data												output data																						
...																																		
BlockID=0x23				Block size				reserved ??								output data																		
additional 8 output data blocks AMC1																																		
0x0		AmcNo AMC2		LV1_id								BXId				Data_lgth																		
User												OrN								BoardID														
uGT build												MP7 FW version																						
9 output data blocks AMC2																																		
blocks for AMC3 ... AMC6																																		
CRC 32 (AMCs)												LV1_id				0	0	0	0	Data_lgth														
CRC 32												0	0	0	0	Blk_No				LV1_id				BXId										
0xA								Evt_lgth								CRC								C	F	X	X	Ev stat		TTS	T	R	\$	\$

Example of a readout record dump:

```
5186f41767557c08 - AMC13 header: Event type, LV1 id, BX id, FED#
0f00014a00010000 - AMC13 header: Data length, AMC#1
0f00009000020000 - AMC13 header: Data length, AMC#2
0f00009000030000
0f00009000040000
0f00009000050000
0f00009000060000
0186f4176750014a - AMC#1 header: AMC#1, LV1 id, BX id, Data length
000000c0ff300000 - AMC#1 header: Ev. type *, Orbit nr. (16 bits)
0000115200030202 - AMC#1 header: uGT FW build, MP7 FW version
00000000001e0200 - AMC#1 input data: Block ID, Block size
... muon input data
021e020000000000 - Block ID, Block size
... muon input data
00000000041e0200
... muon input data
061e020000000000
... muon input data
06000200081e0200
... e/gamma input data
0a1e020006000200
... e/gamma input data
000008000c1e0200
... jet input data
0e1e020000000800
... jet input data
02000200101e0200
... tau input data
121e020002000200
... tau input data
0002a02a141e0200
... esums data
181e02000006f000
... ext cond input data
00000000211e0100 - AMC#1 output data: Block ID, Block size
... algo output data AMC#1
231e010000000000
... algo output data AMC#1
00000000251e0100
... algo output data AMC#1
271e01005ca70bcc
... algo output data AMC#1
00000000291e0100
... algo output data AMC#1
2b1e010000000000
```

```

... algo output data AMC#1
000000002d1e0100
... algo output data AMC#1
2f1e010000000000
... algo output data AMC#1
00000000311e0100
... algo output data AMC#1
9ac23b761700014a - AMC#1 trailer: CRC, LV1 id (8 bits), Data length
0286f41767500090 - AMC#2 header
000000c0ff300000 - AMC#2 header
0000115200030202 - AMC#2 header
00000000211e0100
... algo output data AMC#2
231e010000000000
... algo output data AMC#2
00000000251e0100
... algo output data AMC#2
271e01005ca70bcc
... algo output data AMC#2
00000000291e0100
... algo output data AMC#2
2b1e010000000000
... algo output data AMC#2
000000002d1e0100
... algo output data AMC#2
2f1e010000000000
... algo output data AMC#2
00000000311e0100
... algo output data AMC#2
cb79a76317000090 - AMC#2 trailer
0386f41767500090 - AMC#3 header
000000c0ff300000 - AMC#3 header
0000115200030202 - AMC#3 header
00000000211e0100
...
... AMC#3 - AMC#6
...
36cb696317000090 - AMC#6 trailer
f6b9461200017675 - AMC13 trailer: CRC, LV1 id (8 bits), BX id
a000042484680000 - AMC13 trailer: Ev. length, CRC (16 bits)

```

Remark: \*) Event type set in configuration key: "ugt infra mp7 base" by "<param cmd="roLoadMenu" id="model:eventType" type="uint">0xc0</param>"

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## References

- [1] AMC13 Event Builder:  
[http://ohm.bu.edu/~hazen/CMS/AMC13/UpdatedDAQPath\\_2014-07-10.pdf](http://ohm.bu.edu/~hazen/CMS/AMC13/UpdatedDAQPath_2014-07-10.pdf)
- [2] MP7 Readout & DAQ:  
[https://github.com/cms-l1-globaltrigger/mp7\\_ugt\\_legacy/blob/master/doc/mp7\\_ugt\\_firmware\\_specification/MP7Readout.pdf](https://github.com/cms-l1-globaltrigger/mp7_ugt_legacy/blob/master/doc/mp7_ugt_firmware_specification/MP7Readout.pdf)