

LIGO-KAGRA CDS Meeting

Feb. 28, 2018

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☑ IRIG-B problem

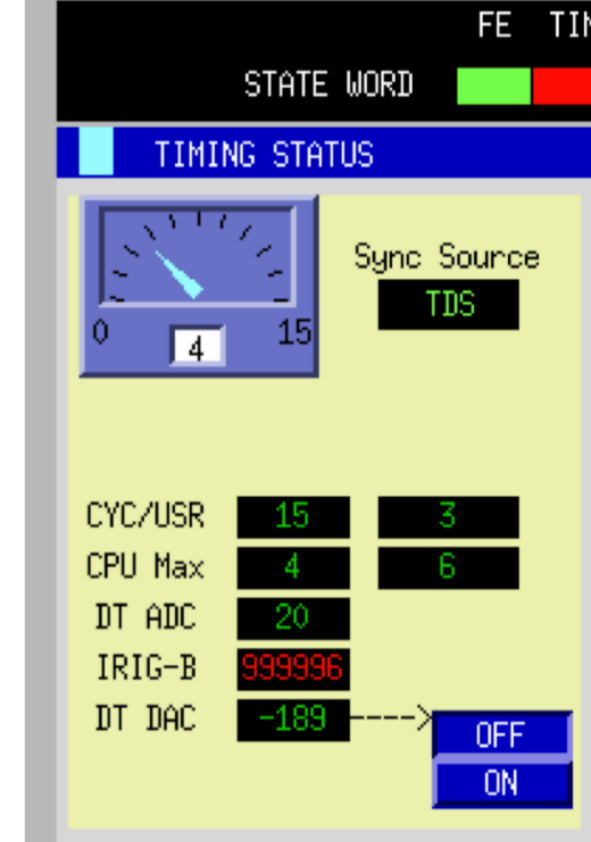
- IRIG-B values of some IOP models becomes 9999xx
(The last meeting: [JGW-G1707427](#))
- This problem sometimes disappears after following procedures.

Case I.

- 1) **Remove DAC and DAC adapter cards** from IO chassis.
- 2) **Boot up model** without any DACs and DAC adapters.
(We have never seen IRIG-B problem on NO DAC model.)
- 3) **Re-install DAC and DAC adapter** cards and re-boot up model again.

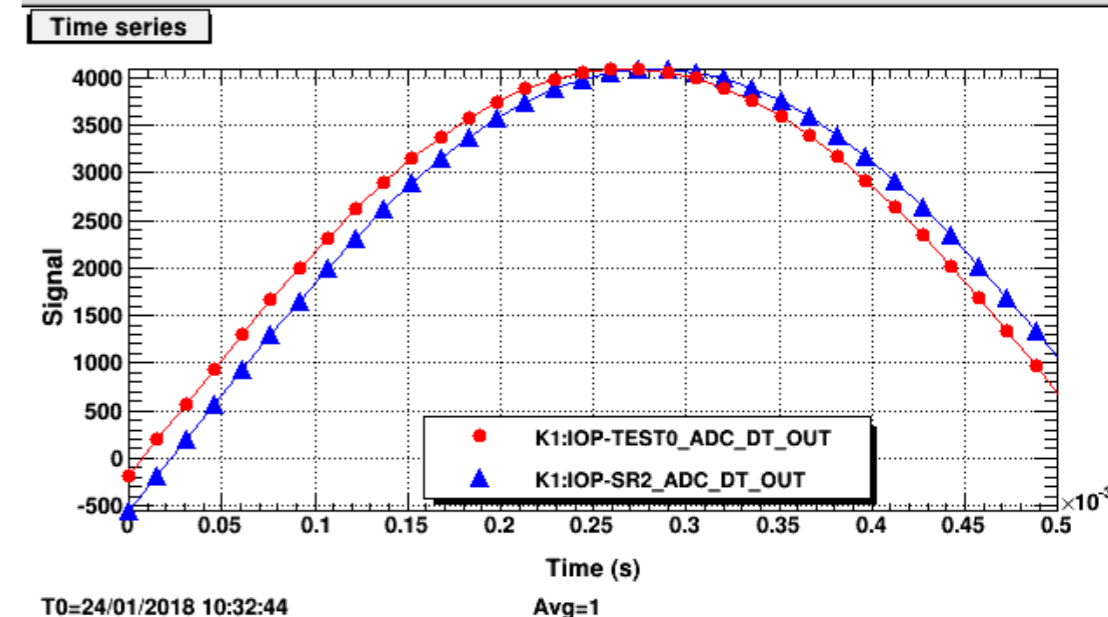
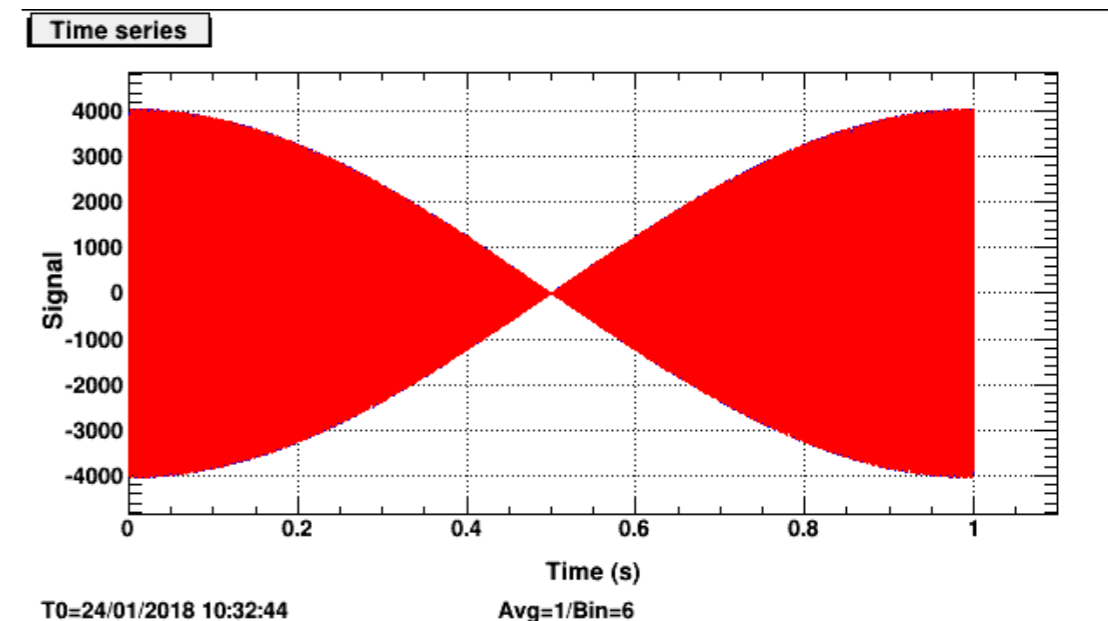
Case II.

- 1) **Disconnect the cable** between ADC0 and ADC adapter cards.
(All models on this IO chassis down.)
- 2) **Re-start models** after connecting the cable again



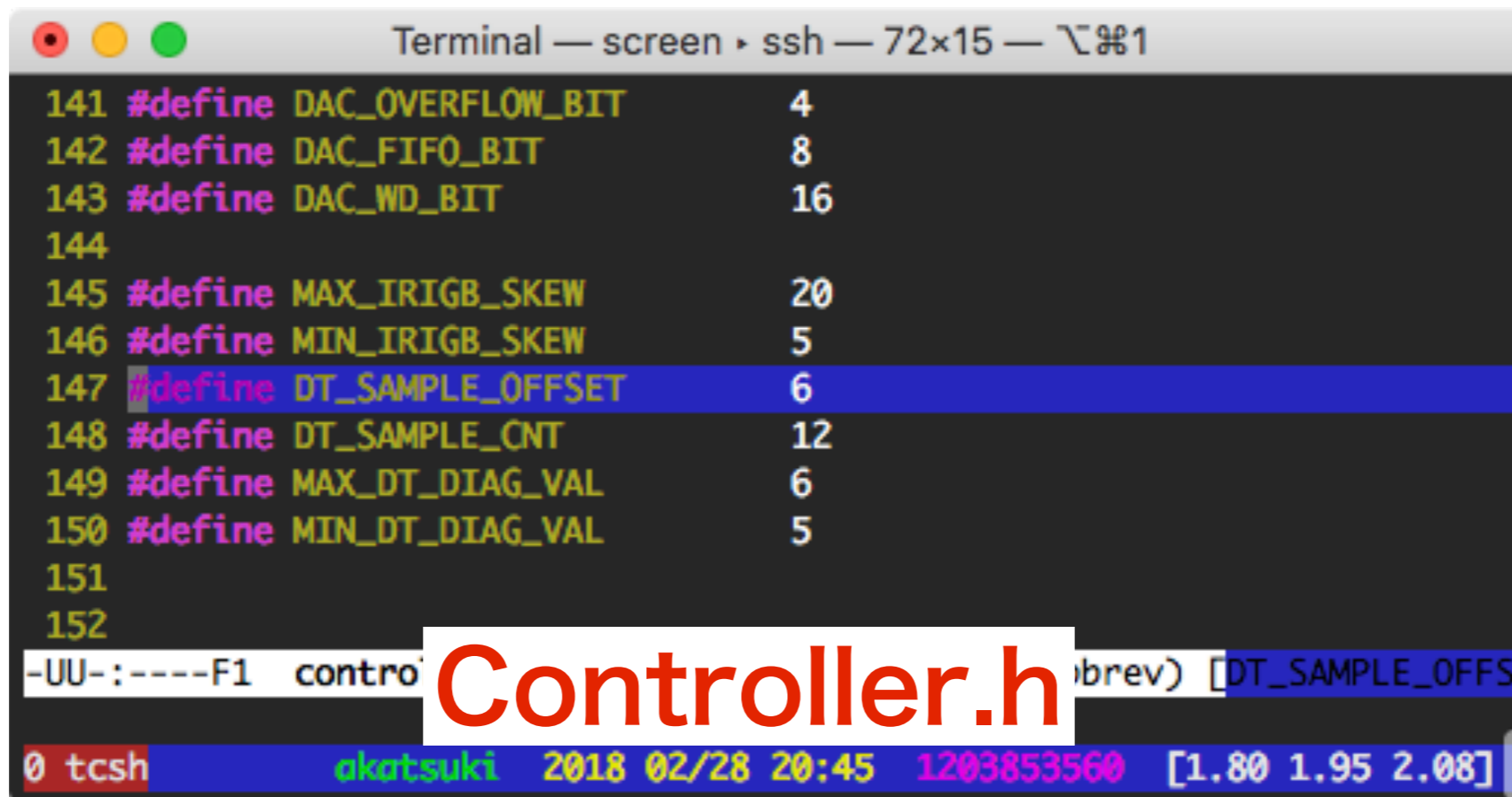
☑ IRIG-B problem

- ADC DT value is always(?) 20 when the IRIG-B problem occurs.
- I checked the duotone signal on the 32th channel on ADC0 and found **duotone signal delays 1-sample from the normal model.**
- I think DT ADC value on GDS TP shows the zero-crossing time (is it right?).
- On the GDS TP screen, DT ADC value is
 - 5us (normal model) and
 - 20us (abnormal model).
- But on the diaggui and my original script, zero-crossing time seems around
 - 7us (normal model) and
 - 22us (abnormal model).



IRIG-B problem

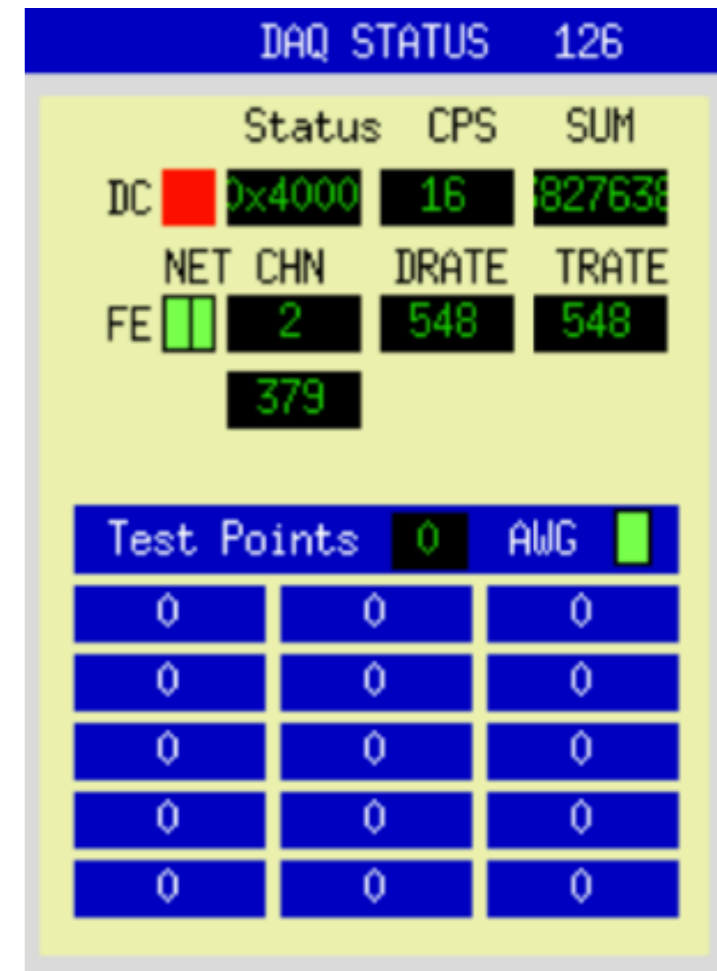
- I wonder that “DT_SAMPLE_OFFSET” must be “5” (NOT “6”) if we want to obtain the zero-crossing time.





```
Terminal — screen • ssh — 72x15 — ￼%1
141 #define DAC_OVERFLOW_BIT      4
142 #define DAC_FIFO_BIT         8
143 #define DAC_WD_BIT           16
144
145 #define MAX_IRIGB_SKEW        20
146 #define MIN_IRIGB_SKEW        5
147 #define DT_SAMPLE_OFFSET      6
148 #define DT_SAMPLE_CNT         12
149 #define MAX_DT_DIAG_VAL       6
150 #define MIN_DT_DIAG_VAL       5
151
152
-UU-:----F1 contro Controller.h (brev) [DT_SAMPLE_OFFS
0 tcsh      akatsuki 2018 02/28 20:45 1203853560 [1.80 1.95 2.08]
```


Unstable DAQ status

- DAQ status of all models often becomes **0xbad** when we start or kill a model.
- DAQ status comes back **0x0**
 - by restarting mx_stream (when 0xbad appears by starting model).
 - by re-start model (when 0xbad appears by killing model).
- We hesitate to (re)start and kill a model in day time.
- Measurements often are stopped by 0xbad state.



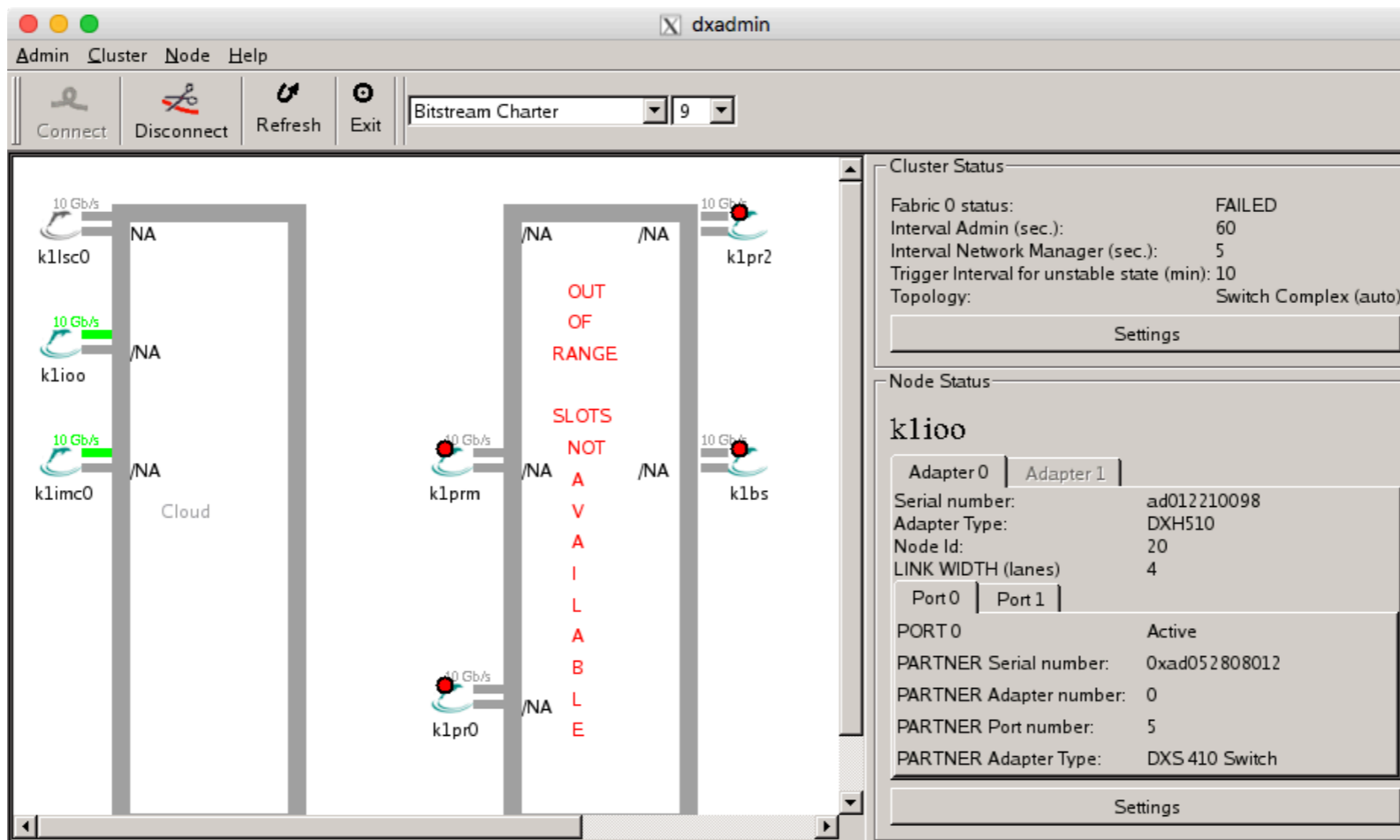
DAQ STATUS 126

	Status	CPS	SUM
DC	 0x4000	16	827638
	NET CHN	DRATE	TRATE
FE	 2	548	548
	379		

Test Points	0	AWG	
0	0	0	
0	0	0	
0	0	0	
0	0	0	
0	0	0	

Dolphin network problem

- Two RTPCs(k1ioo and k1imc0) communicate using Dolphin network.
- Real time models on k1imc0 die (FE in STATE WORD turn RED) when we (re)start/kill model on k1ioo or reboot/shutdown k1ioo.
- I check CDS Wiki (<https://cdswiki.ligo-la.caltech.edu/foswiki/bin/view/CDS/DolphinHowTo>) but I cannot find mistakes in our setting.
- k1ioo and k1imc0 seem to connect in correctly on dxadmin.



The screenshot shows the dxadmin interface with a network diagram and status panels. The network diagram displays two racks of nodes. The left rack contains k1isc0, k1ioo, and k1imc0. The right rack contains k1pr2, k1prm, and k1pr0. A central vertical panel indicates a network issue: "OUT OF RANGE SLOTS NOT AVAILABLE". The status panels on the right show the following information:

Cluster Status

Fabric 0 status:	FAILED
Interval Admin (sec.):	60
Interval Network Manager (sec.):	5
Trigger Interval for unstable state (min):	10
Topology:	Switch Complex (auto)

Node Status

k1ioo

Adapter 0	Adapter 1
Serial number:	ad012210098
Adapter Type:	DXH510
Node Id:	20
LINK WIDTH (lanes)	4

Port 0	Port 1
PORT 0	Active
PARTNER Serial number:	0xad052808012
PARTNER Adapter number:	0
PARTNER Port number:	5
PARTNER Adapter Type:	DXS 410 Switch

Feb 28 04:36:48 Fabric 0 status is failed: 5 adapter(s) with errors, 1 unreachable nodes!