BLT Test Summary

Mar 19, 2014

Reference Run

1. Plug-in “SYNC LVL1” output to visual scaler as well as copy of BLT signal. Take data with SQ1 and all HV on condition. Record visual scaler rates/minute and standalone trigger rates. “SYNC LVL1” and standalone trigger rates should be equal. Also these rates should be consistent with previous (March 5th) measurements. (See next page)

Various BLT Signal Types at GTM input

2. Keep the HV all on (To enhance inefficiency effect) and keep recording livetime (#SYNC LVL1)/BLT while changing following signal conditions. If livetime ~ 1, then that is the most likely the relevant signal type to be input to GTM module. Ask(arrange with) John Haggerty to go through with you if he is available. Take scope shot of the BLT signal (goes into GTM input) for each change.
   a. Plug-in terminators to empty channels (see next page for detailed instruction). Keep them for the rest of the measurements.
   b. Use out_bar signal from module 429A instead of out signal.
   c. Use “NORM” mode on 688AL module.
   d. Insert gate generator between 688AL and GTM and try to make the signal wider from present, 150ns, 200ns, 300ns with the best livetime setting of above b. and c. combination.

Reference Run (Mar. 19)

- Livetime = (#SYNC LVL1) / #trigger
- #scaler of input to GTM is comparable with the one measured on March 5.
- Trigger rate is little bit higher than Mar 5.
- Livetime is 1.

Run	HV	# Scaler (to GTM)	# SYNC LVL1	Scaler - SYNC LVL1	# trigger	Livetime	Run Duration in DB [sec]	Time in run [sec]
406297	SQ1	25581	25541	3040	25541	1	74	60
406300		25136	22067	3069	25136	1	71	60
406309	Full S	102031	24836	77177	24836	1	73	60
406310		108587	26191	82396	26191	1	81	64

March 5th Measurements

Run	HV	# Scaler	Scaler rate [Hz]	# trigger	Trigger rate [Hz]	Run duration in DB [sec]	Time in run (RC) [sec]
404555	SQ1	26126	303.79	17080	207.07	86	62
404556		25839	303.99	17766	209.01	85	60
404557	SQ2	29770	358.67	20867	252.41	83	60
404558		30078	395.76	21167	278.51	76	60
404559	SQ1 + SQ2	53891	649.29	24684	297.40	83	60
404560		54002	650.63	24691	297.48	83	60
404552	full	101981	1228.69	24824	299.08	83	60
404553		101971	1199.66	24836	292.19	85	60

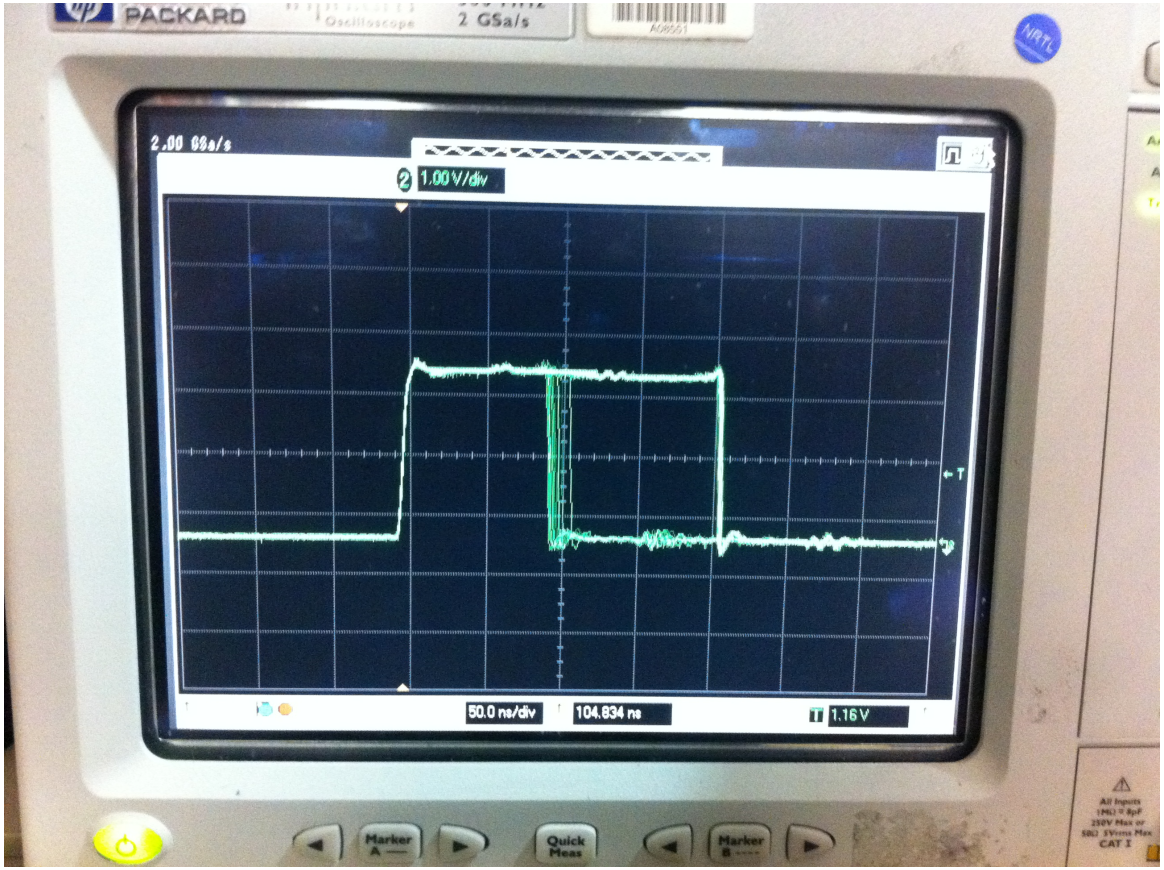
Various BLT Signal Types at GTM input

- Pulgged in a terminator to ECL-NIM converter.
- Plugged in terminators when one of interconnected output is used in fan-in/fan-out module.
- Default setup: OUT-signal from Logic fan-in/fan-out module + Comp mode in Level adapter.

Run	HV	Setup	# scaler from SYNC LVL1	# trigger	Livetime	Time in Run [sec]
406311	Full S	Default	24640	24640	1	60
406322	Full S	Anti-OUT + COMP mode	24792	24792	1	60
406324	Full S	OUT + Norm mode	28061	28061	1	68
406325	Full S	Default again	24661	24661	1	60
406434	Full S	Default + 150ns width	25559	25550	1	60
406436	Full S	Default + 200ns	25448	25448	1	60
406438	Full S	Default + 300ns	25483	25483	1	60
406447	Full S	Default again	25446	25446	1	60
406448	Full S	Default spare output to GTM	25352	25352	1	60
406449	Full S	Anti-OUT + Comp mode	25599	25599	1	60
406451	Full S	Anti-OUT + Norm mode	25603	25603	1	60

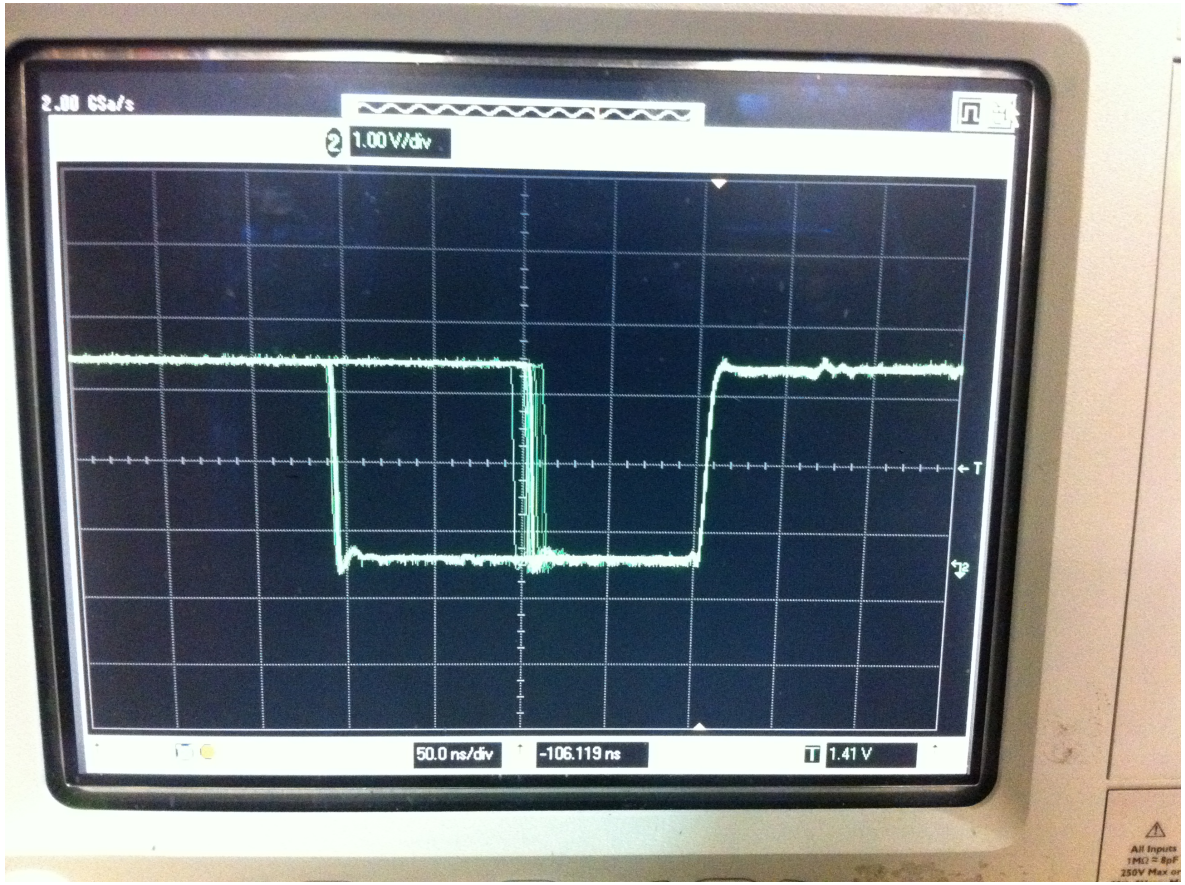
Various BLT Signal Types at GTM input

- Default; “OUT” signal from Logic fan-in/fan-out, COMP mode in Level adapter.



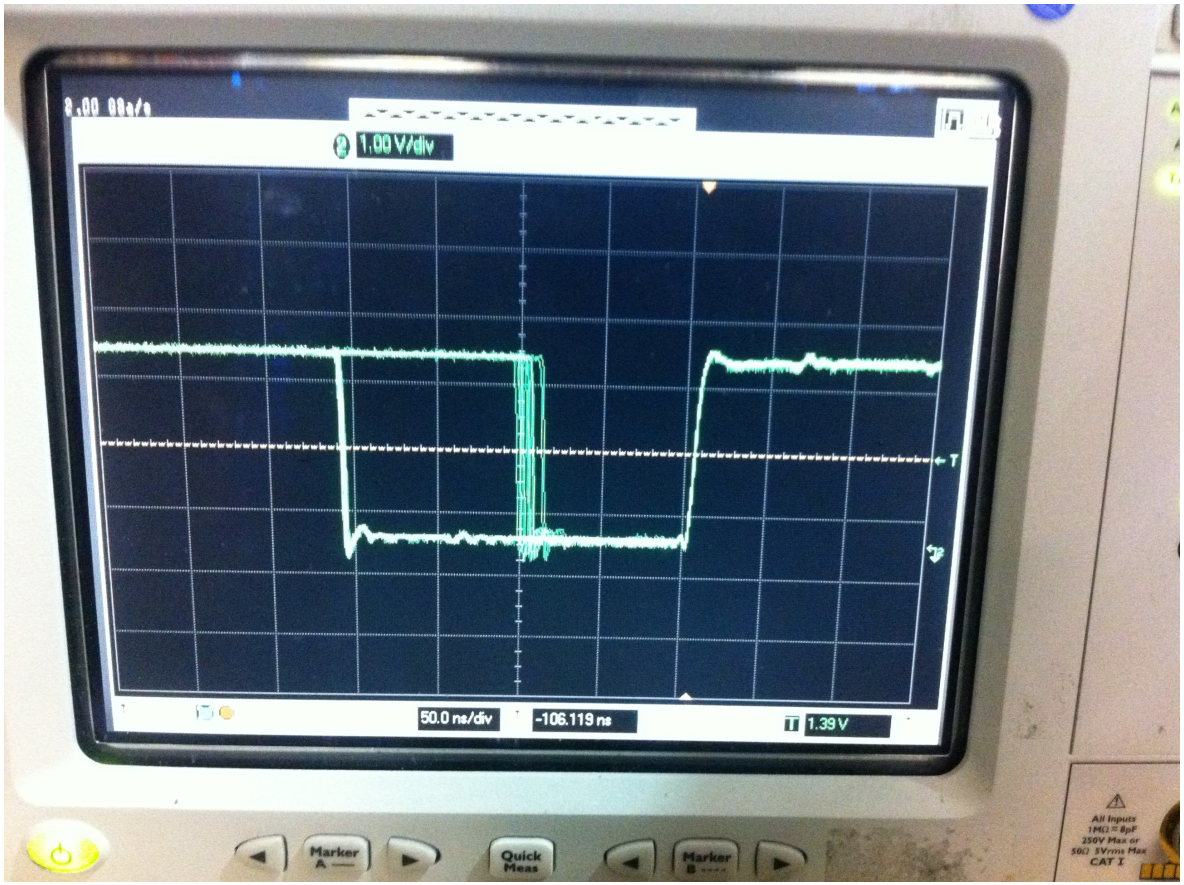
Various BLT Signal Types at GTM input

- “anti-OUT” signal from Logic fan-in/fan-out, COMP mode in Level adapter.

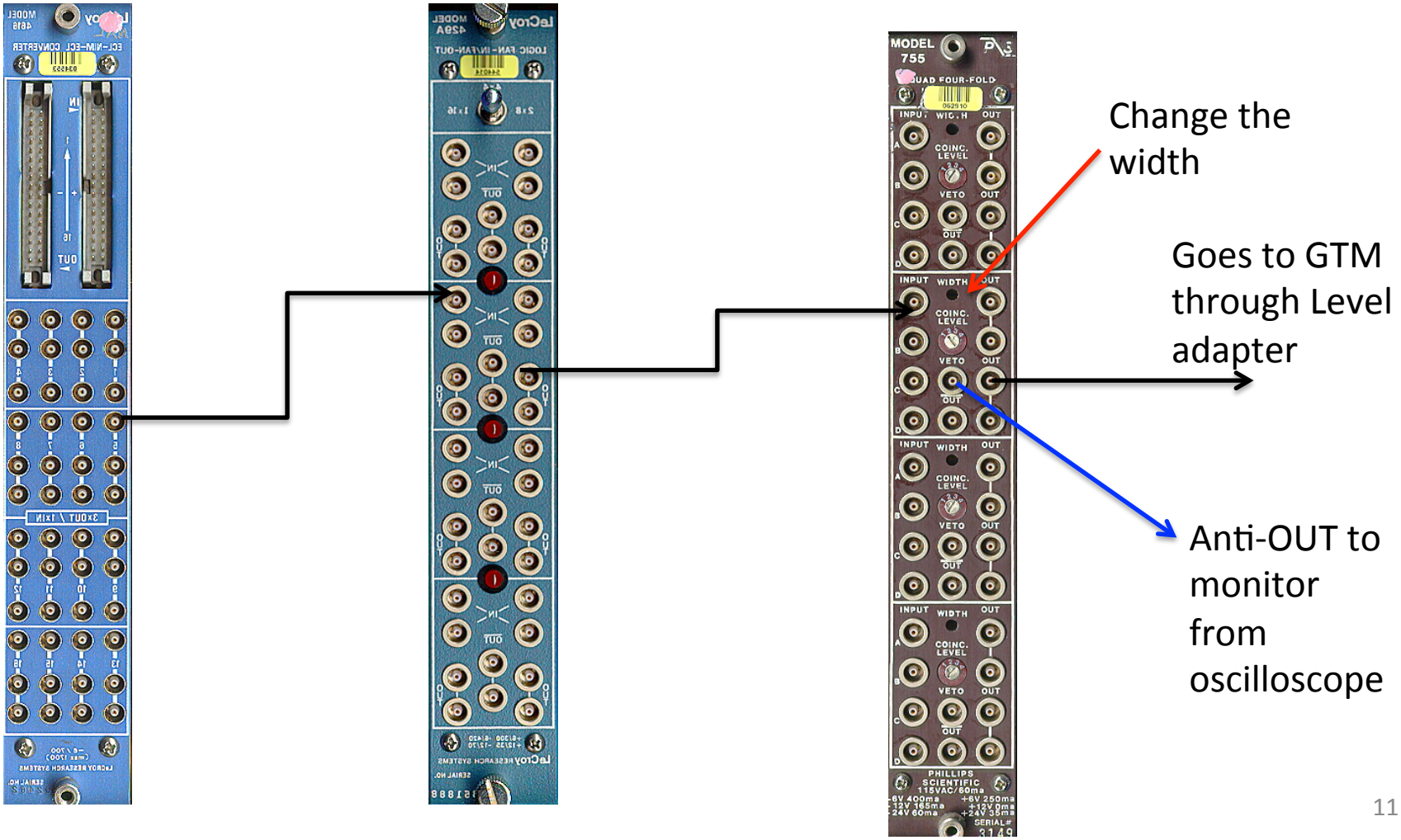


Various BLT Signal Types at GTM input

- “OUT” signal from Logic fan-in/fan-out, NORM mode in Level adapter.

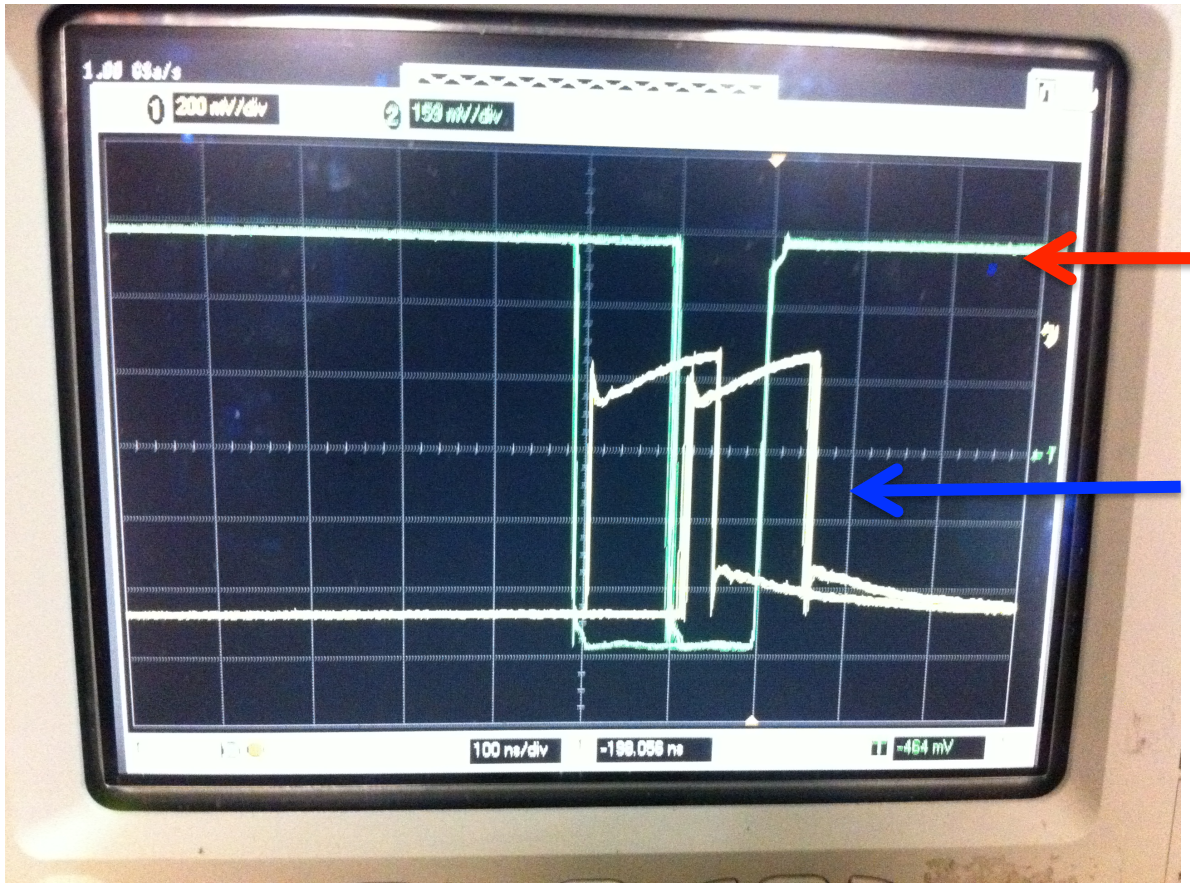


Various BLT Signal Types at GTM input - Setup for changing signal width



Various BLT Signal Types at GTM input

- Default (OUT-signal from Logic fan-in/fan-out module + Comp mode) + 150ns signal width

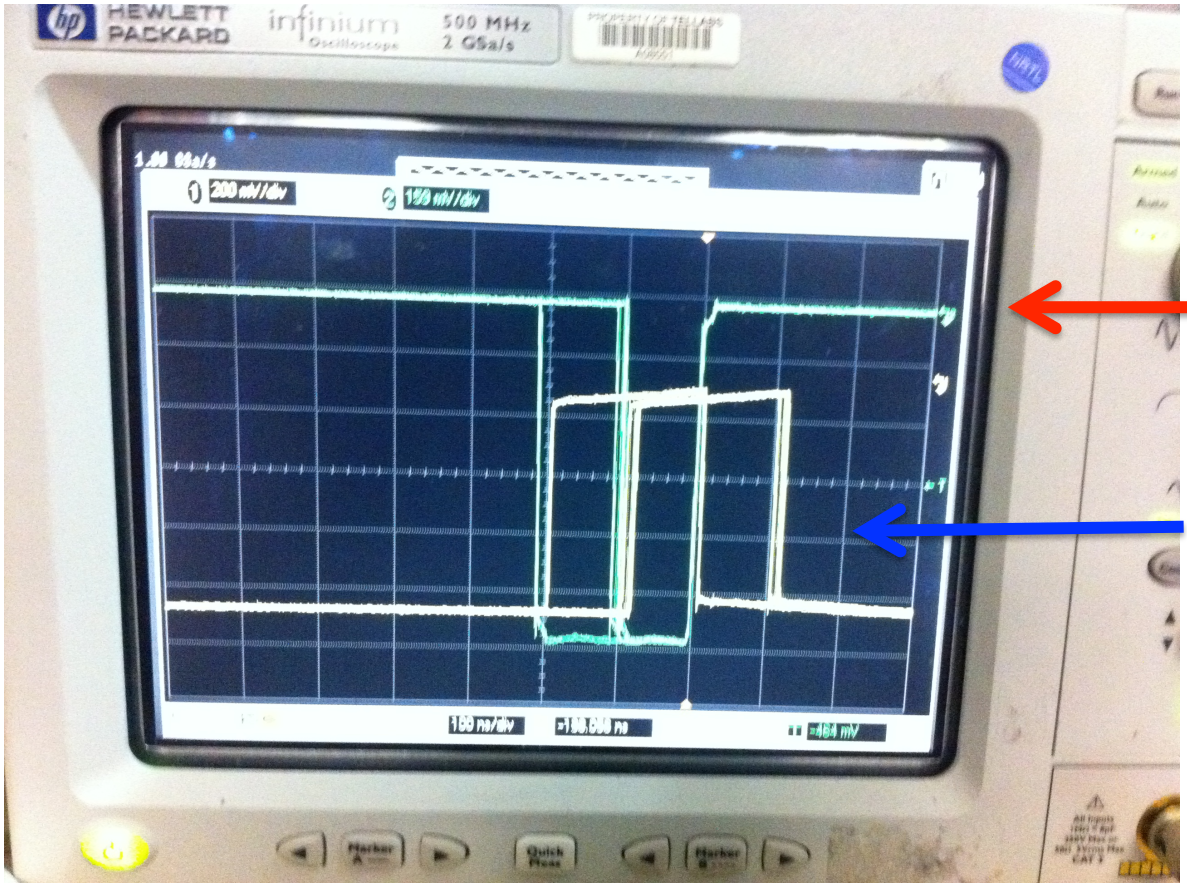


Raw signal output from Logic fan-in/ fan-out module (default signal width)

Anti-OUT from Quad 4-Fold Logic module. Changed signal width to 150ns

Various BLT Signal Types at GTM input

- Default (OUT-signal from Logic fan-in/fan-out module + Comp mode) + 150ns signal width

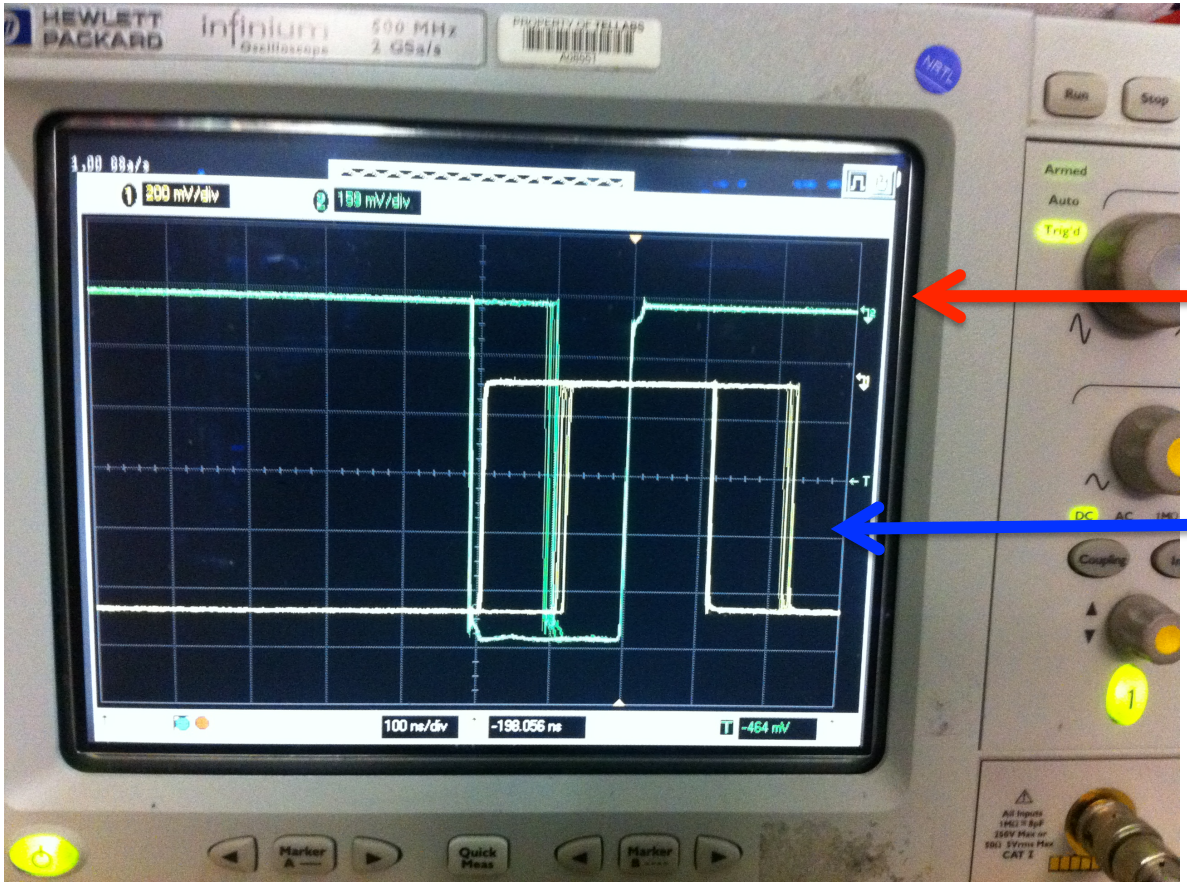


Raw signal output from Logic fan-in/ fan-out module (default signal width)

Anti-OUT from Quad 4-Fold Logic module. Changed signal width to 200ns

Various BLT Signal Types at GTM input

- Default (OUT-signal from Logic fan-in/fan-out module + Comp mode) + 150ns signal width



Raw signal output from Logic fan-in/ fan-out module (default signal width)

Anti-OUT from Quad 4-Fold Logic module. Changed signal width to 150ns