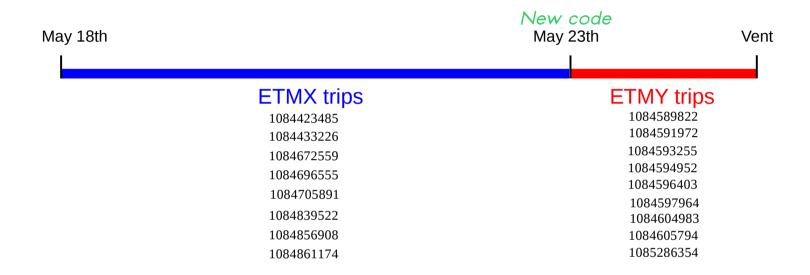
Lock loss at LHO

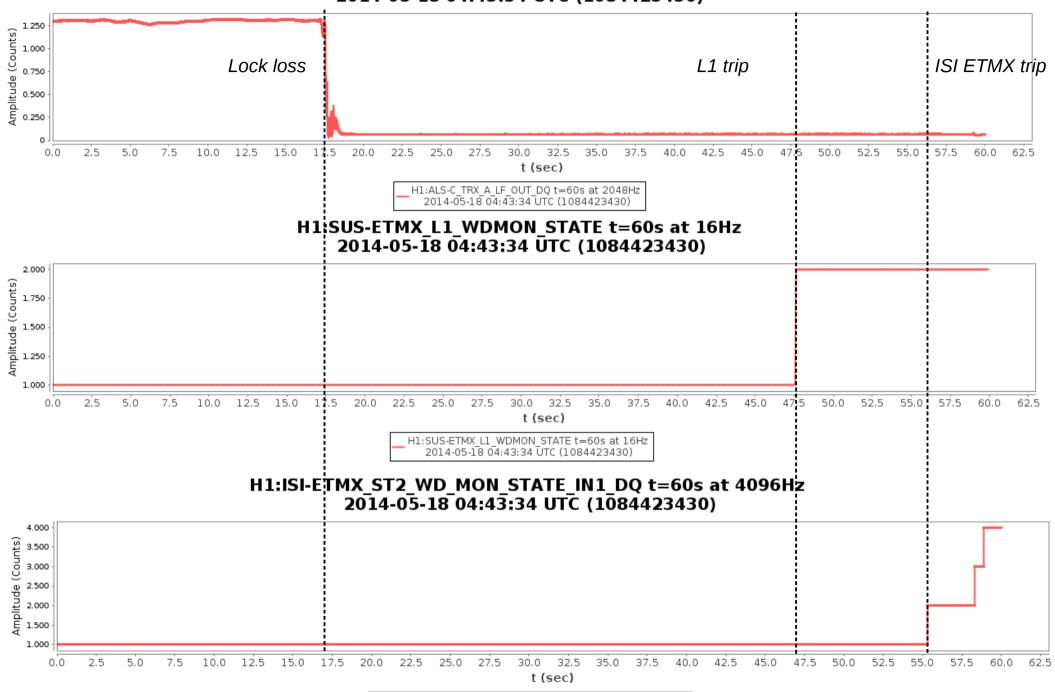
Trips due to lock loss \rightarrow 2 distinct phases



All the ETMX trips present the same symptoms. All the ETMY trips present the same symptoms.

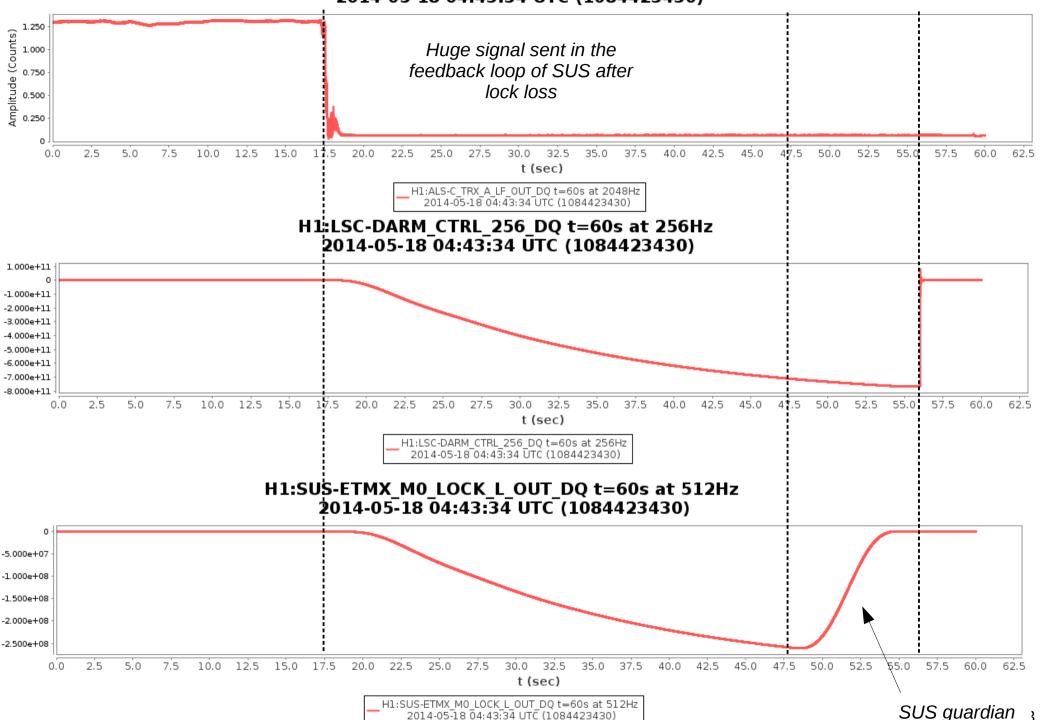
Starting with ETMX

H1:ALS-C_TRX_A_LF_OUT_DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)



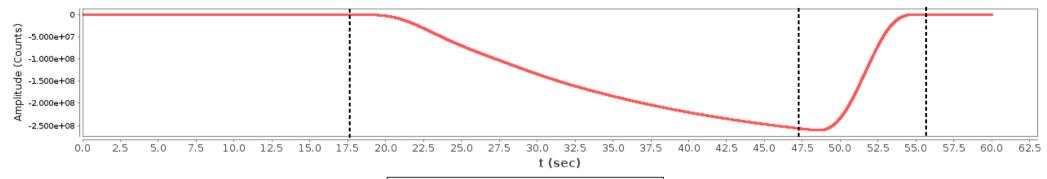
H1:ISI-ETMX_ST2_WD_MON_STATE_IN1_DQ t=60s at 4096Hz 2014-05-18 04:43:34 UTC (1084423430)

H1:ALS-C TRX A LF OUT DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

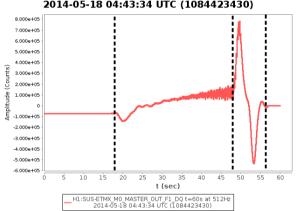


SUS guardian 3

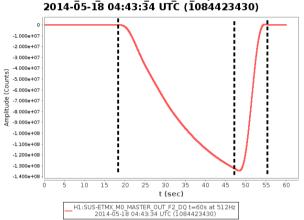
H1:SUS-ETMX_M0_LOCK_L_OUT_DQ t=60s at 512Hz 2014-05-18 04:43:34 UTC (1084423430)



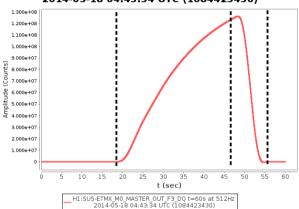
HI:SUS-EIMX MU MASIEK UUI FI DU T=DUS AT 312HZ 2014-05-18 04:43:34 UTC (1084423430)



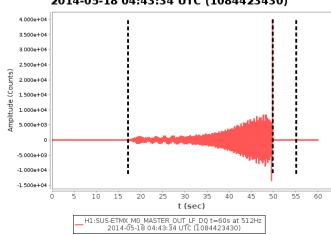
H1:SUS-ETMX M0 LOCK L OUT D0 t=60s at 512Hz 2014-05-18 04:43:34 UTC (1084423430) HI:SUS-EIMX MO MASIER OUI F2 DQ t=60s at 512Hz



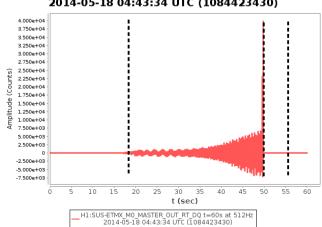
HI:5U5-EIMX MU MASIEK UUI F3 DQ T=bUS aT 512HZ 2014-05-18 04:43:34 UTC (1084423430)



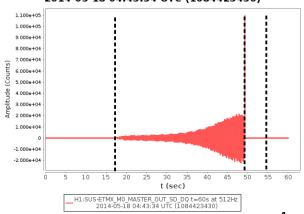
H1:SUS-ETMX M0 MASTER OUT LF DQ t=60s at 512Hz 2014-05-18 04:43:34 UTC (1084423430)



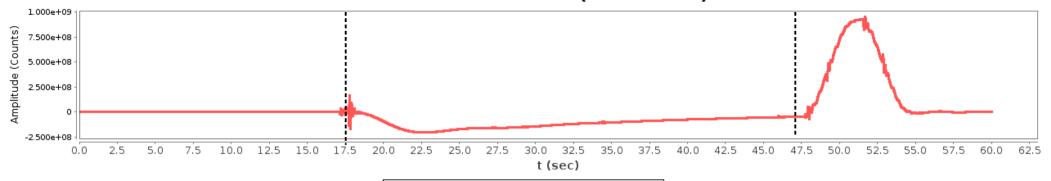
H1:SUS-ETMX M0 MASTER OUT RT DQ t=60s at 512Hz 2014-05-18 04:43:34 UTC (1084423430)



H1:SUS-ETMX M0 MASTER OUT SD DQ t=60s at 512Hz 2014-05-18 04:43:34 UTC (1084423430)

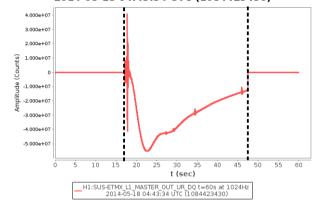


H1:SUS-ETMX_L1_LOCK_L_OUT_DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)

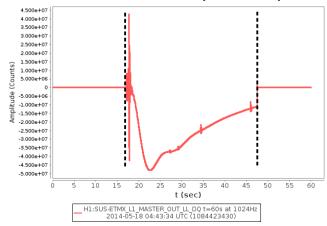


__H1:SUS-ETMX_L1_LOCK_L_OUT_DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)

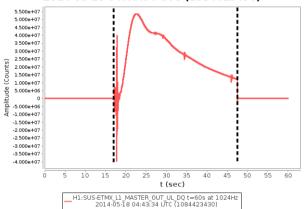
H1:SUS-ETMX_L1_MASTER_OUT_UR_DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)



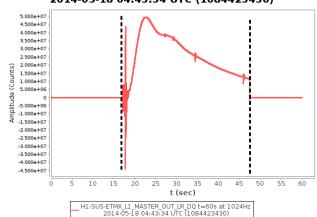
H1:SUS-ETMX L1 MASTER OUT LL DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)



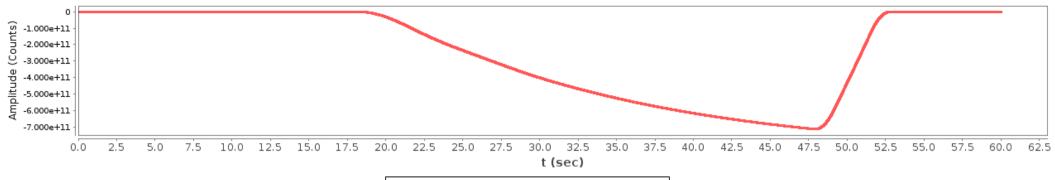
H1:SUS-ETMX_L1_MASTER_OUT_UL_DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)



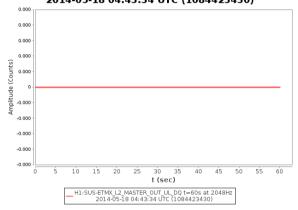
H1:SUS-ETMX L1 MASTER OUT LR DQ t=60s at 1024Hz 2014-05-18 04:43:34 UTC (1084423430)



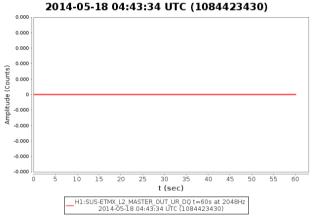
H1:SUS-ETMX_L2_LOCK_L_OUT_DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)



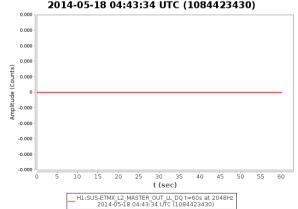
H1:SUS-ETMX_L2_MASTER_OUT_UL_DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)



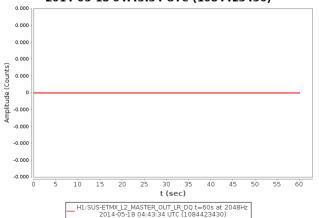
H1:SUS-ETMX_L2_MASTER_OUT_UR_DQ t=60s at 2048Hz 2014-05-18 04-43-34 UTC (1084423430)



H1:SUS-ETMX_L2_MASTER_OUT_LL_DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

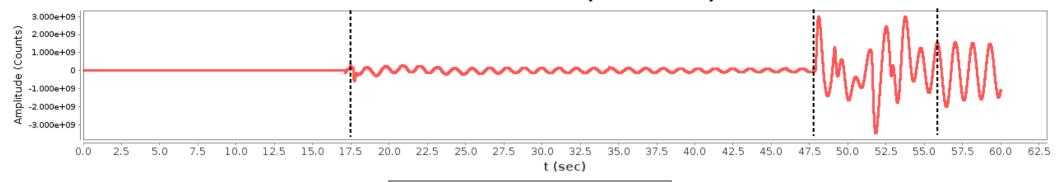


H1:SUS-ETMX L2 MASTER OUT LR DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)



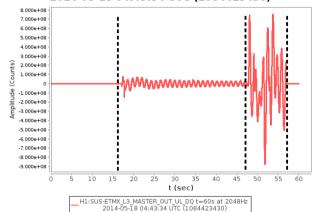
Nothing sent on L2

H1:SUS-ETMX_L3_LOCK_L_OUT_DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

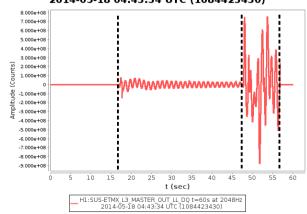


H1:SUS-ETMX L3 LOCK L OUT DQ t=60s at 2048Hz 2014-05-18-04:43:34 UTC (1084423430)

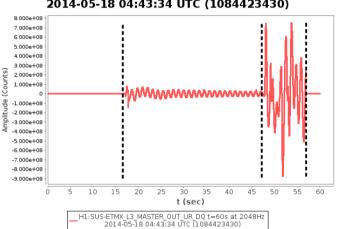
H1:SUS-ETMX L3 MASTER OUT UL DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)



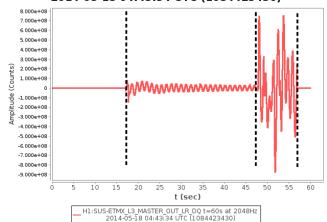
H1:SUS-ETMX L3 MASTER OUT LL DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

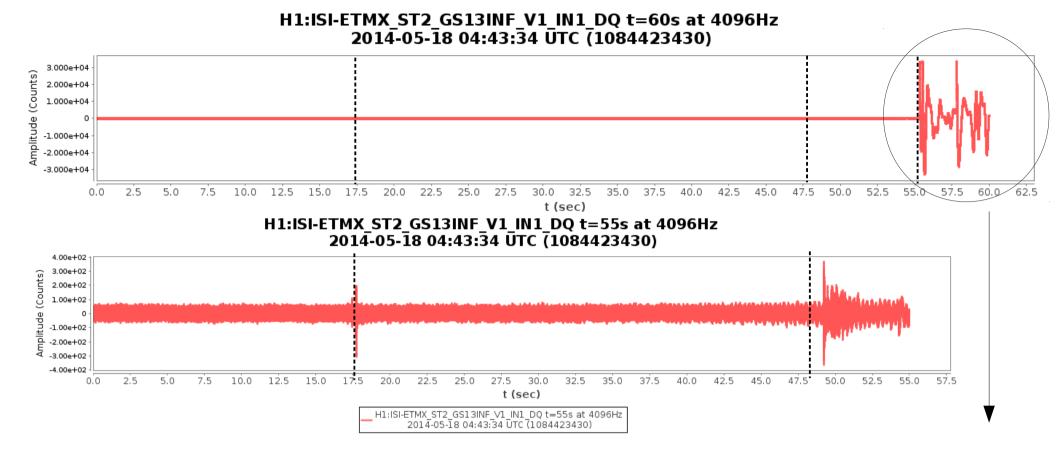


H1:SUS-ETMX L3 MASTER OUT UR DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

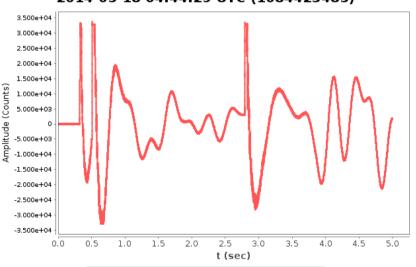


H1:SUS-ETMX L3 MASTER OUT LR DQ t=60s at 2048Hz 2014-05-18 04:43:34 UTC (1084423430)

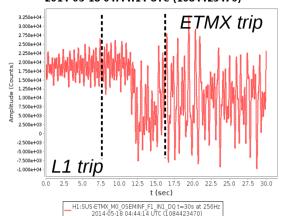




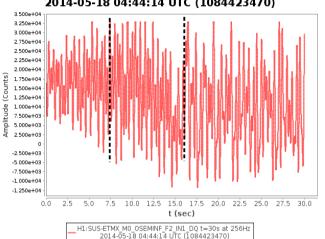




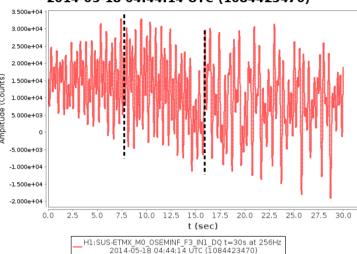
H1:SUS-ETMX M0 OSEMINF F1 IN1 DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



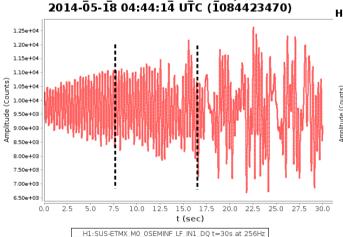
H1:SUS-ETMX M0 OSEMINF F2 IN1 DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



H1:SUS-ETMX M0 OSEMINF F3 IN1 DO t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

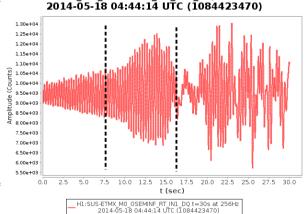


H1:SUS-ETMX M0 OSEMINF LF IN1 DQ t=30s at 256Hz

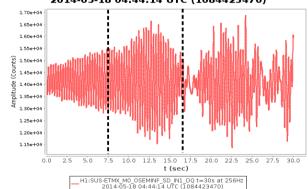


2014-05-18 04:44:14 UTC (1084423470)

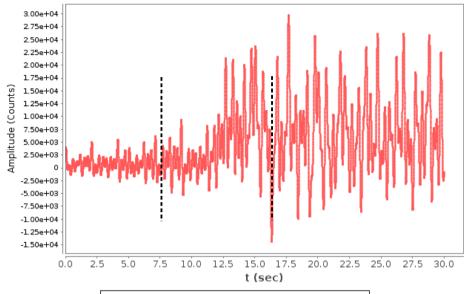
H1:SUS-ETMX M0 OSEMINF RT IN1 DO t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



H1:SUS-ETMX M0 OSEMINF SD IN1 DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

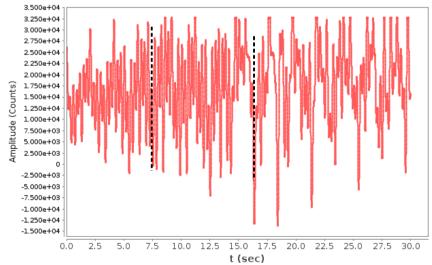


H1:SUS-ETMX_L1_OSEMINF_UL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



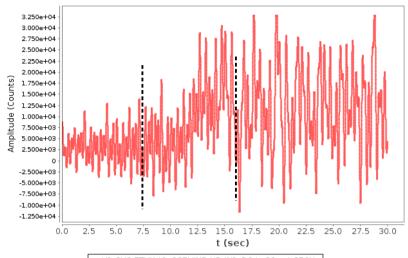
H1:SUS-ETMX_L1_OSEMINF_UL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

H1:SUS-ETMX_L1_OSEMINF_LL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



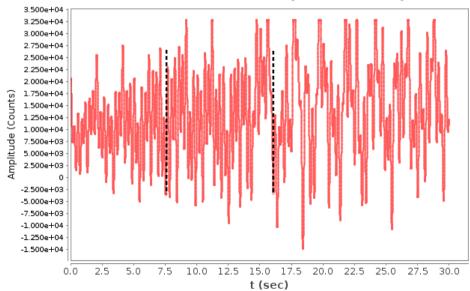
H1:SUS-ETMX_L1_OSEMINF_LL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

H1:SUS-ETMX L1 OSEMINF_UR IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



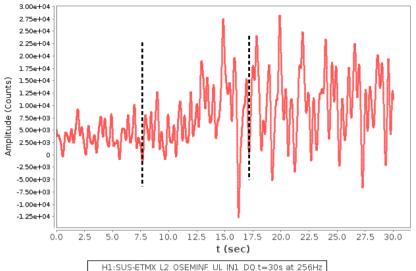
H1:SUS-ETMX_L1_OSEMINF_UR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

H1:SUS-ETMX_L1_OSEMINF_LR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



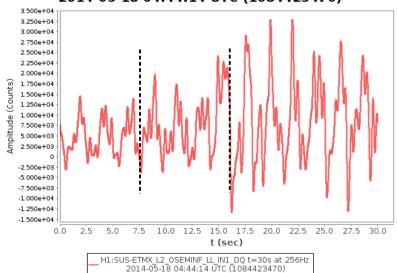
H1:SUS-ETMX_L1_OSEMINF_LR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

H1:SUS-ETMX L2_OSEMINF_UL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

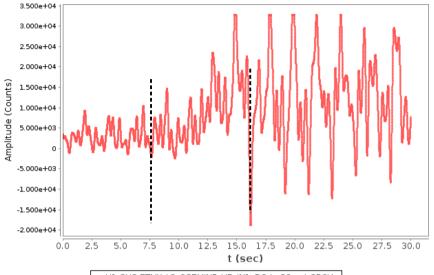


2014-05-18 04:44:14 UTC (1084423470)

H1:SUS-ETMX_L2_OSEMINF_LL_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

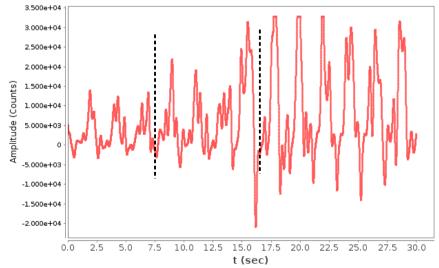


H1:SUS-ETMX L2 OSEMINF_UR IN1 DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)



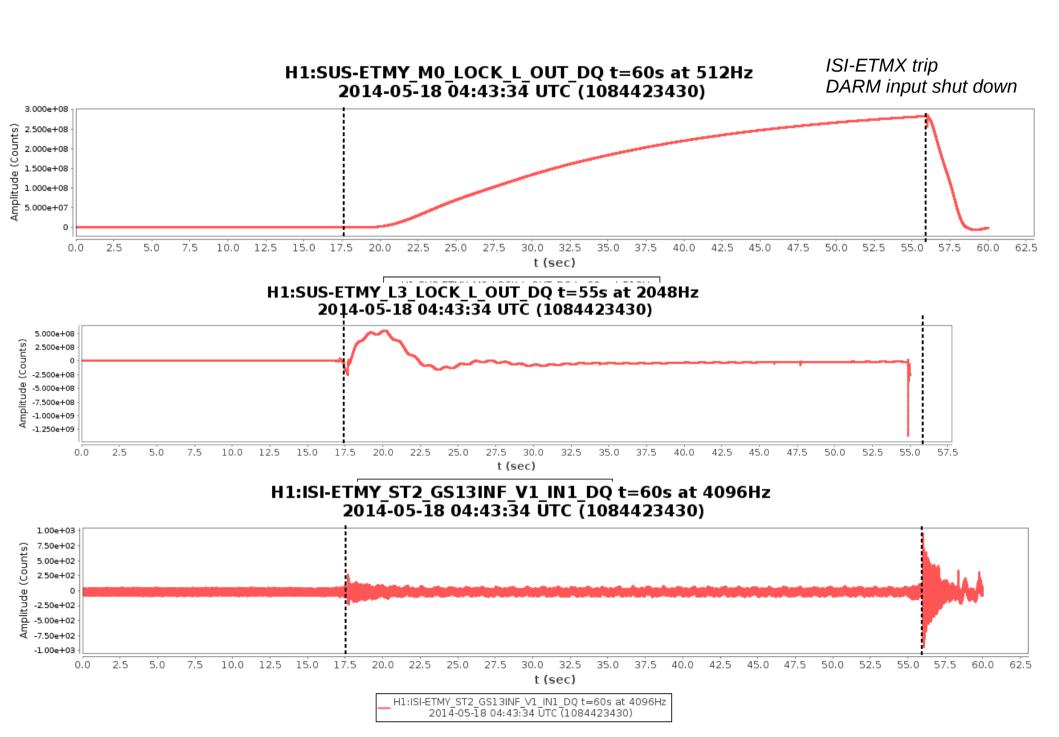
_H1:SUS-ETMX_L2_OSEMINF_UR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

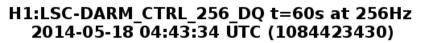
H1:SUS-ETMX_L2_OSEMINF_LR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

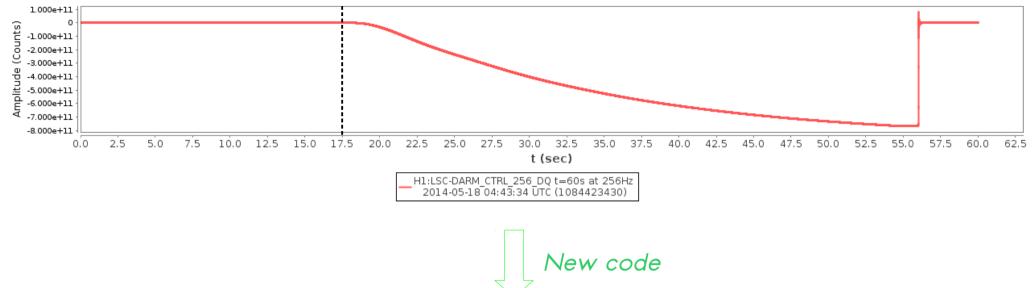


H1:SUS-ETMX_L2_OSEMINF_LR_IN1_DQ t=30s at 256Hz 2014-05-18 04:44:14 UTC (1084423470)

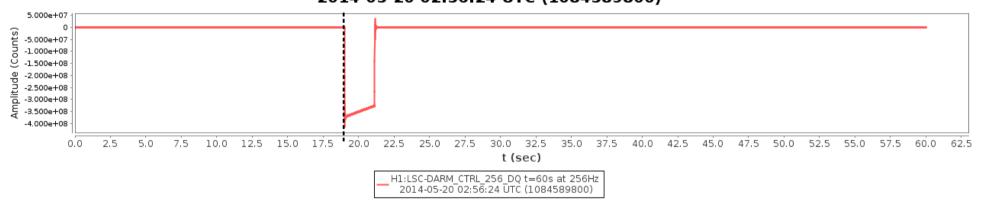
Same behavior on ETMY (without the L1/ISI trip)







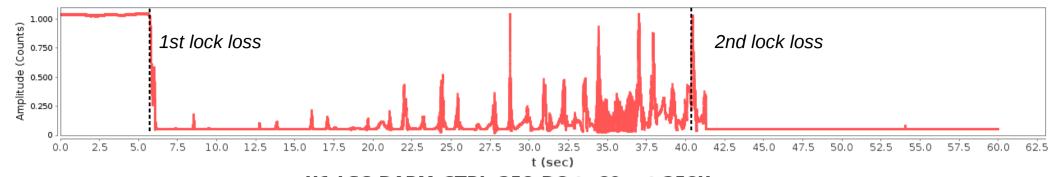
H1:LSC-DARM_CTRL_256_DQ t=60s at 256Hz 2014-05-20 02:56:24 UTC (1084589800)

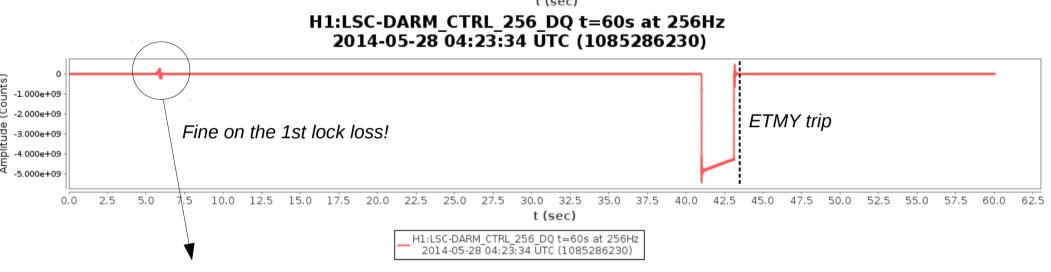


Not perfect, but L1/ETMX are not tripping anymore

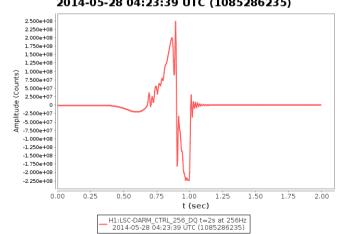
Let's have a look at ETMY

H1:ALS-C_TRX_A_LF_OUT_DQ t=60s at 2048Hz 2014-05-28 04:23:34 UTC (1085286230)



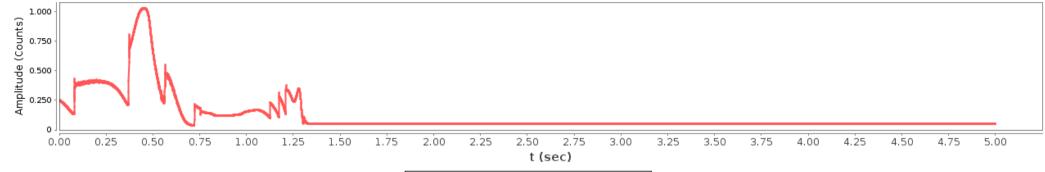


H1:LSC-DARM_CTRL_256_DQ t=2s at 256Hz 2014-05-28 04:23:39 UTC (1085286235)



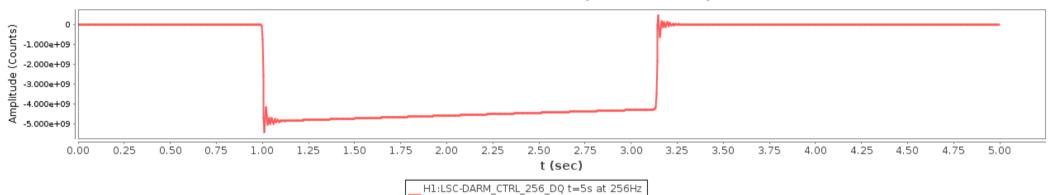
Let's focus on the 2nd lock loss

H1:ALS-C_TRX_A_LF_OUT_DQ t=5s at 2048Hz 2014-05-28 04:24:14 UTC (1085286270)

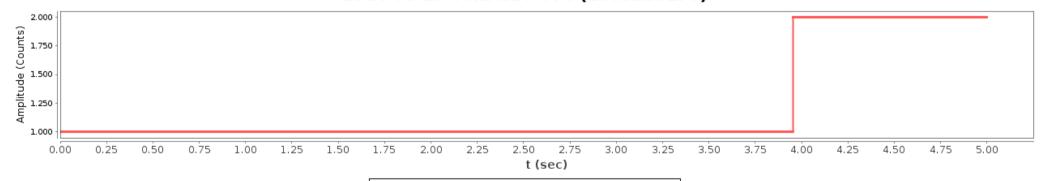


H1:ALS-C_TRX_A_LF_OUT_DQ t=5s at 2048Hz 2014-05-28 04:24:14 UTC (1085286270)

2014-05-28 04:24:14 UTC (1085286270)



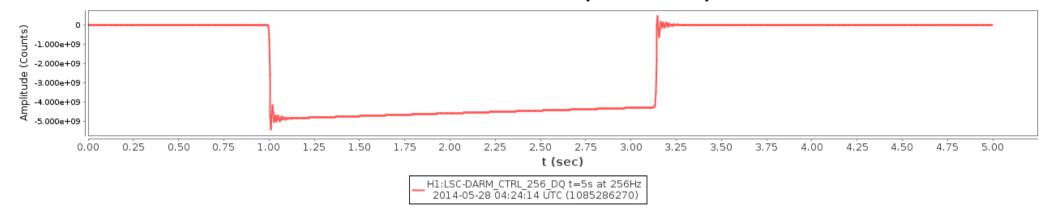
H1:ISI-ETMY_ST2_WD_MON_STATE_IN1_DQ t=5s at 4096Hz 2014-05-28 04:24:14 UTC (1085286270)



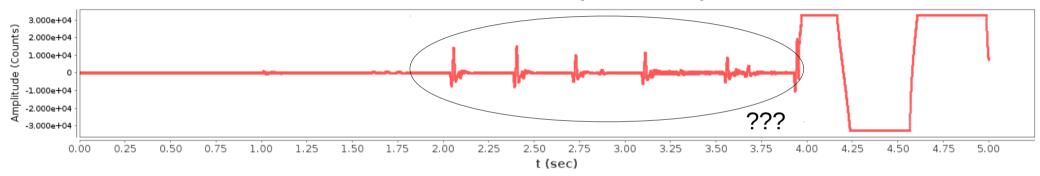
H1:ISI-ETMY_ST2_WD_MON_STATE_IN1_DQ t=5s at 4096Hz 2014-05-28 04:24:14 UTC (1085286270)

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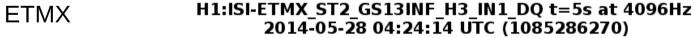
H1:LSC-DARM_CTRL_256_DQ t=5s at 256Hz 2014-05-28 04:24:14 UTC (1085286270)

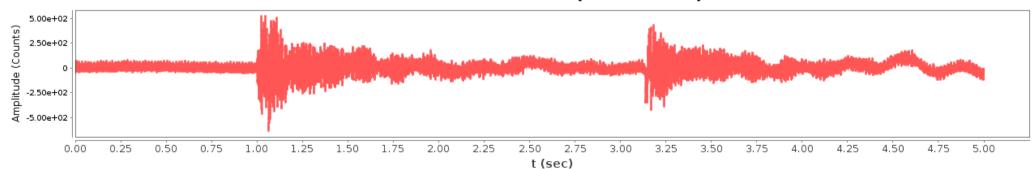


ETMY H1:ISI-ETMY_ST2_GS13INF_H3_IN1_DQ t=5s at 4096Hz 2014-05-28 04:24:14 UTC (1085286270)



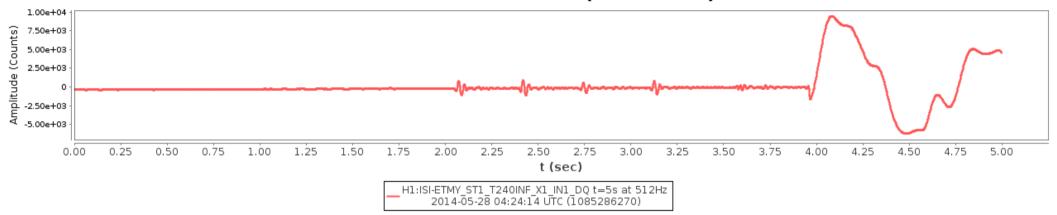
__H1:ISI-ETMY_ST2_GS13INF_H3_IN1_DQ t=5s at 4096Hz 2014-05-28 04:24:14 UTC (1085286270)



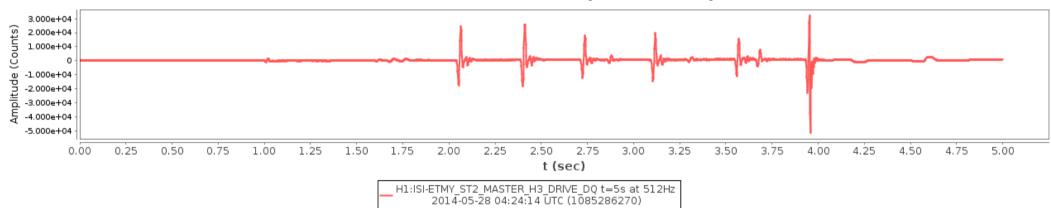


H1:ISI-ETMX_ST2_GS13INF_H3_IN1_DQ t=5s at 4096Hz 2014-05-28 04:24:14 UTC (1085286270)

H1:ISI-ETMY_ST1_T240INF_X1_IN1_DQ t=5s at 512Hz 2014-05-28 04:24:14 UTC (1085286270)

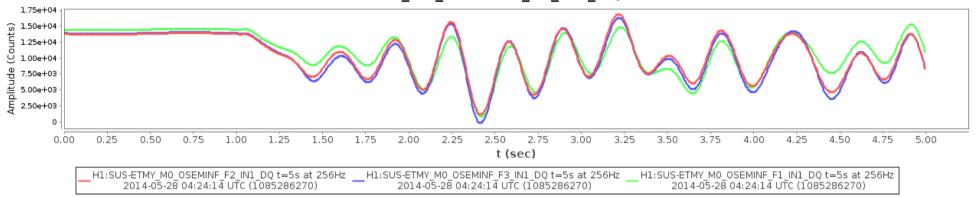


H1:ISI-ETMY_ST2_MASTER_H3_DRIVE_DQ t=5s at 512Hz 2014-05-28 04:24:14 UTC (1085286270)

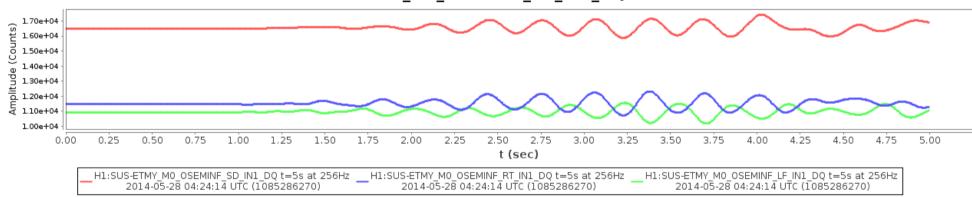


What about SUS?

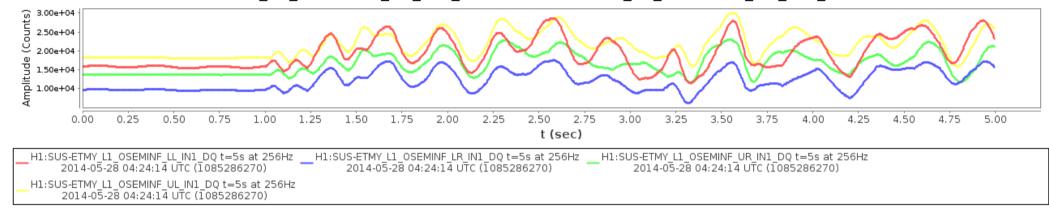
$\begin{array}{c} \text{H1:SUS-ETMY_M0_OSEMINF_F1_IN1_DQ, H1:SUS-ETMY_M0_OSEMINF_F2_IN1_DQ, H1:SUS-ETMY_M0_OSEMINF_F3_IN1_DQ} \\ \end{array}$



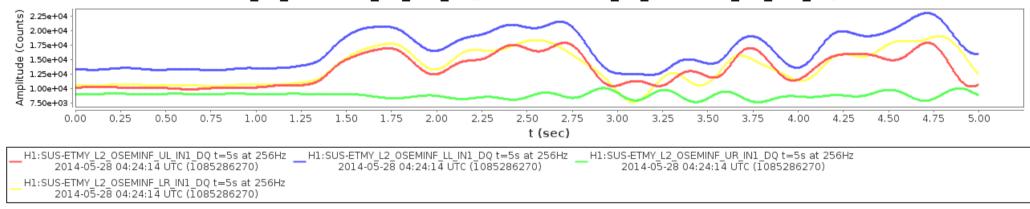
$\begin{array}{c} \text{H1:SUS-ETMY_M0_OSEMINF_LF_IN1_DQ, H1:SUS-ETMY_M0_OSEMINF_RT_IN1_DQ, H1:SUS-ETMY_M0_OSEMINF_SD_IN1_DQ} \end{array}$



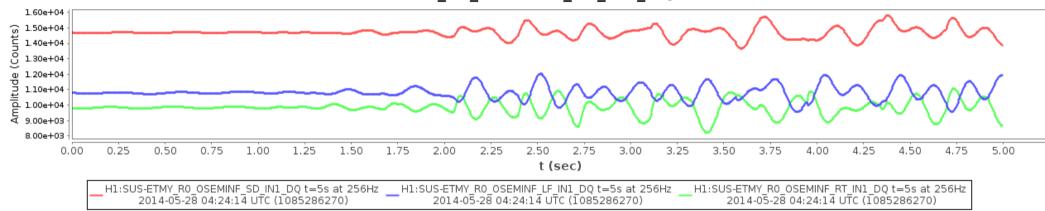
H1:SUS-ETMY_L1_OSEMINF_LL_IN1_DQ, H1:SUS-ETMY_L1_OSEMINF_LR_IN1_DQ, H1:SUS-ETMY_L1_OSEMINF_UR_IN1_DQ



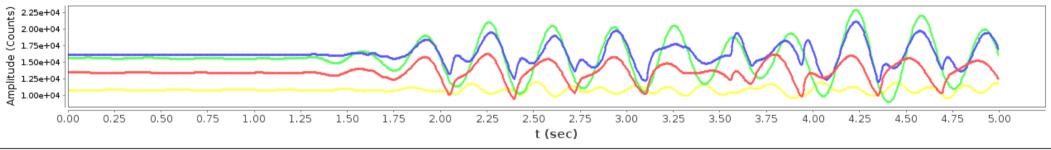
H1:SUS-ETMY_L2_OSEMINF_LL_IN1_DQ, H1:SUS-ETMY_L2_OSEMINF_LR_IN1_DQ, H1:SUS-ETMY_L2_OSEMINF_UR_IN1_DQ



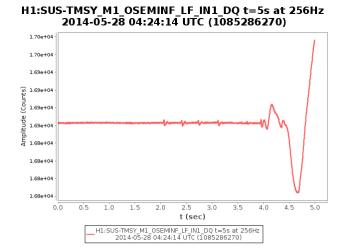
H1:SUS-ETMY_R0_OSEMINF_LF_IN1_DQ, H1:SUS-ETMY_R0_OSEMINF_RT_IN1_DQ, H1:SUS-ETMY_R0_OSEMINF_SD_IN1_DQ

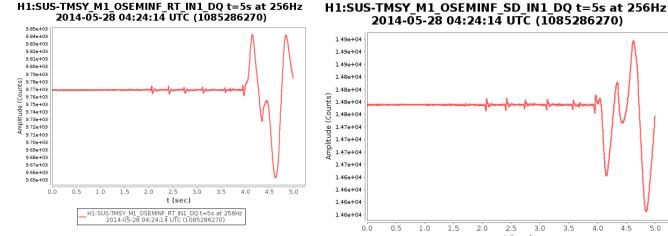


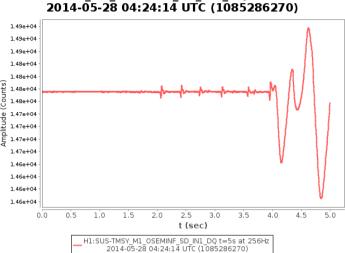
H1:SUS-ETMY_R0_OSEMINF_F1_IN1_DQ, H1:SUS-ETMY_R0_OSEMINF_F2_IN1_DQ, H1:SUS-ETMY_R0_OSEMINF_LF_IN1_DQ

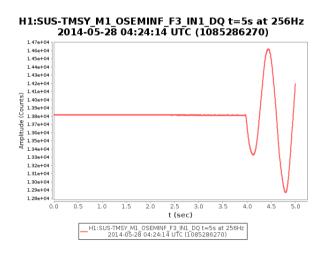


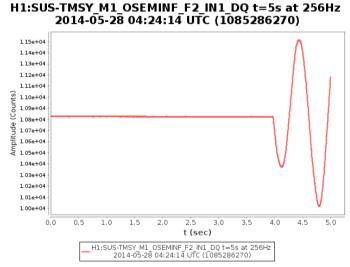
2014-05-28 04:24:14 UTC (1085286270)

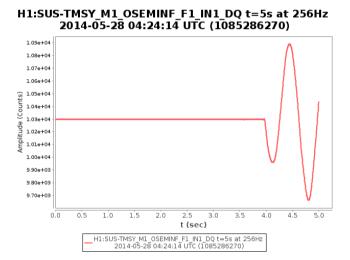






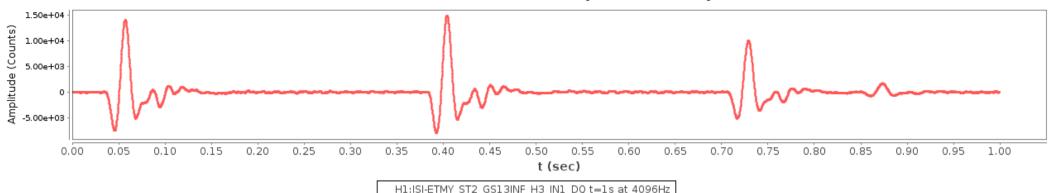




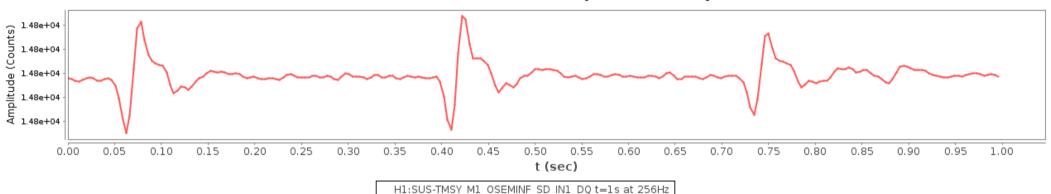


Shows up only on TMSY

H1:ISI-ETMY_ST2_GS13INF_H3_IN1_DQ t=1s at 4096Hz 2014-05-28 04:24:16 UTC (1085286272)



H1:SUS-TMSY_M1_OSEMINF_SD_IN1_DQ t=1s at 256Hz 2014-05-28 04:24:16 UTC (1085286272)



H1:SUS-TMSY_M1_OSEMINF_SD_IN1_DQ t=1s at 256H 2014-05-28 04:24:16 UTC (1085286272)

Need to investigate more on how the feedback signal is shut down

Does TMSY hit a stop when the platform is shaken around? What can we do about it?