NOAO

ENGINEERING CHANGE ORDER

BOARD NAME	TORRENT LCB-MEZ Board			ECO#	**TRNT-036**	DATE	05/17/2013
BRD SERL#	All	REV	A	ART#	ALL LCB-MEZ rev –A-		
PN#		REV				REV	
ASBLY#	TRNT-EL-04-0003	REV	A3	PCB#	TRNT-EL-04-1003	REV	A6
BOM#	TRNT-EL-04-4003	REV	A	SCH#	TRNT-EL-04-2003	REV	A5
COGNIZANT ENGNR	Peter Moore			CHARGE#			

REASON FOR MODIFICATION:

Delay the VHV negative supply turn on by 40ms relative to the VHV positive supply. This allows the positive supply to ramp up and stabilize before the negative supply draws current through the HVBias amplifiers that otherwise droops the positive supply below ground by a sufficient amount to cause latch up in the CMOS devices attached to the supply network. This only occurs in P-Channel mode (i.e. when negative HVBias supplies are selected). When enabling the analog voltages to the AFE boards without this modification, occasional latch up occurs that draws 130ma plus from the VHV negative power supply which droops to approx. -12v.

The installed diodes in this ECO allow the negative supply to turn off at the same time as the positive supply but delay turn on by approx. 40ms

DRAWINGS AFFECTED:	NEW REV
TRNT-EL-04-2003	A6
TRNT-EL-04-4003	A7
TRNT-EL-04-0003	A4

DESCRIPTION OF MODIFICATION:

1. Add a 470nf 16v ceramic capacitor between pins 1 and 5 of U5 and U8. This can be best effected by soldering a 0603 capacitor between the gate and source pins of Q1 and Q2. Designated as C37 & C38

2. Add a 1N4148 diode (or equivalent) across resistors R103 and R107.
   Cathode towards U10/U14 connection and Anode towards U5/U8 connection respectively.
   Designated as D36 & D37