

# NOAO

## ENGINEERING CHANGE ORDER

BOARD NAME <u>Power Supply Board (PSB)</u>	ECO# <b>TRNT-011</b>	DATE <u>15JUN2010</u>
BRD SERL# _____ REV _____	ART# <u>TRNT-EL-07-0001-###</u>	
PN# _____ REV _____		REV _____
ASBLY# <u>TRNT-EL-04-0001</u> REV <u>OD</u>	PCB# <u>TRNT-EL-04-1001</u>	REV <u>OD</u>
PL# <u>TRNT-EL-04-4001</u> REV <u>OD</u>	SCH# <u>TRNT-EL-04-2001</u>	REV <u>OD</u>
COGNIZANT ENGR _____	APPROVD _____	

**REASON FOR MODIFICATION:**

Redesign see action list below and attached acrobat mark ups from Peter Moore.

DRAWINGS AFFECTED:	NEW REV
TRNT-EL-04-0001	A
TRNT-EL-04-1001	A
TRNT-EL-04-2001	A
TRNT-EL-04-3001	A
TRNT-EL-04-4001	A

**DESCRIPTION OF MODIFICATION:**

Item	Originator	Action Description	Status
1	dms	specify rohs material and finish	
2	dgs/pcm	Add 49.9K pullup to SHDN (pin 11) of U44. Tie to VIN (pin 14) of U44	did not change - remember Dave reporting that it didn't appear to have an affect (dms)
3	dgs/pcm	Remove dependance on VP80 for 30V supply operation	
4	dgs/pcm	Install 0.68uF capacitor in position C27 (compensation pin of U25) for the VFAN supply. **We installed a 0.47uF on the prototype because of stock availability (in house).	Done/dms
5	dgs	Change the synchronization pulses for the power supplies to square waves for improved performance.	Done/dms
6	dgs/pcm	Change CR15 and CR16 from 80V (B180) to 100V version (B1100). Digikey # B1100-FDICT-ND.	Done/dms ended up being DFLS1150
7	dgs/pcm	VN80A supply - connect C14 and C135 to negative voltage rail instead of ground.	Done/dms
8	dgs/pcm	VN180A supply - connect C16 and C137 to negative voltage rail instead of ground.	Done/dms
9	pcm	30V supply - analyze transformer magnetics for operation range inductance.	
10	pcm	30V suppy - look at providing transistor buffers instead of cascode design.	

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11	dgs/pcm	Change the value of the VPWR_EN pullup resistors (R120, R121, R122, and R124) from 66.5K to 4.7K.	conflict with #18(dms) changed value of R121 to 12.1K, removed R120, R122 & R124 Add 12.1K between LCB_PWR_KILL and VCC
12	dgs/pcm	Silicon serial number added to board, DS28CM00	done/dms
13	dgs/pcm	reduce hole size in the bezel around the on/off button switch	duplicate #24 Needs to go to Joe
14	dgs/pcm	Fan running even after shut down.	solution detailed in items 17, 18, 19
15	all	decide on the power input connector	done Hirose RP34 4 pin right angle ??
16	all	Does the VP/VN 80A need to be variable originated from the AFE design, VP/VN80A only go to regulators and reference generators, the input to one of these voltage references can not go below 8V	
17	pcm 07/06/09	1. Change U3, U5, U7, U9, U11, U15 devices to be DG447 (currently they are DG448 - This change makes the power enable signals for VFAN, VP/N80, VP/N180, and VP/N300 positive true).	done/dms undone all went back to DG448
18	pcm 07/06/09	2. Take the common connection node for resistors R120, R122, R124 to GND. Change resistor values to be 33k Ohms. Note that R121 stays connected to VPWR_EN_PU.	conflict with #11(dms) see #11 comments for what was done
19	pcm 07/06/09	3. Rename the following signals /V80_PWR_ENABLE to be V80_PWR_ENABLE (i.e. positive true). /V180_PWR_ENABLE to be V180_PWR_ENABLE /VFAN_PWR_ENABLE to be VFAN_PWR_ENABLE	Done/dms changed further to be VANA_ENBL VCB_ENBL VFAN_ENBL
20	pcm 07/07/09	1. Change resistor R89 value from 4K99 to 820 Ohms. - This allows the I2C device side of the bus to change the logic level from low to high when using the bi-directional voltage translator devices on the bus.	Done/dms value to 825 like other boards to standardize parts.
21	pcm 07/07/09	2. Remove U18 (MCP9803) pin 6 connection from +3.3v and tie instead to GND. - This normalizes the I2C device addressing scheme for Temp sensor 2.	Done/dms
22	pcm 07/07/09	3. Rename U17 to be Temp #2, rename U18 to be Temp #1. - Corrects the names the temperature sensors to correspond to their addresses.	Done/dms

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23	pcm 07/07/09	4. Remove U19 pin 3 connection to GND and tie to +3.3v - Normalizes the address for the eeprom device.	Done/dms
24	pcm 07/07/09	5. Add a DS28CM00 SSN device to the I2C bus signals SDA and SCL.	done/dms duplicate #12
25			<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">S</div>   P DONE
26	dms 8/26/09 9/16/2009	LS2 connector, graphic depicting orientation of socket /pin in silkscreen ground, shld, chassis ground strapping capability, as well as clear identification with labels	done - as shown on the grounding diag. ???
27	pcm 9/15/09	email torrent connectors DB part error the two voltages are the heater positive supply ( fused +24v raw input ) and the +10v analog supply for temperature sensor circuitry. I suggest that when we respin the power supply we put in a jumper that connects / disconnects these supplies from the connector.	
28	dms	change outer layers from 2 oz to 1 oz copper	
29		Add back side bias circuit	done

### Changes from email before Rev assembly Sept 9, 2010

#### VHV Supply.

- 1). Change R51 from 8.45K to 16.9K sch, pl, pv
- 2). Is C40 pad size sufficient to accommodate a 3.3nf if necessary ?  
should be fine dms
- 3). Change R53, R52 from 12.1K to 6.81K sch, PL,pv
- 4). Change R7, R8 from 3.32K to 6.81K (hope you meant R124, R33) sch, PL, pv
- 5). Change R127 from 12.1K to 24.9K - (mainly for component type reduction)  
sch, pl,pv
- 6). Change R32 from 22.1K to 24.9K - (mainly for component type reduction)  
sch, pl, pv

#### VBB Supply.

- 7). Change R89 from 22.1K to 24.9K - (component type reduction) sch, PL, pv
- 8). Change R80 from 12.1K to 24.9K - (component type reduction) sch, PL, pv
- 9). Change R139, R140 from 12.1K to 6.81K sch, PL, pv
- 10). Change R69, R154 from 3.32K to 6.81K sch, PL,pv
- 11). Change R143, R145 from 634K to 619K sch, PL, pv
- 12). Change R76 from 24.9K to 41.2K sch,PL, pv
- 13). Change R142 from 12.1K to 6.81K sch, PL, pv
- 14). Change R141 from 8.45K to 16.9K sch, pl, pv
- 15). Change transformer type from CooperBussmann VPH2-0216-R to CooperBussmann VP2-1600-R