



NATIONAL OPTICAL
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**TORRENT
PARTS LIST
LCB MEZZANINE BOARD**

**Dwg No.: TRNT-EL-04-4003 Rev: A5
Next Assembly: TRNT-EL-04-0003**

| LTR | DESCRIPTION | ECR | DATE | BY | APPRVD |
|-----|---|----------|------------|-----|------------------|
| OD | intital release | | 28-Apr-09 | dms | mhunten, pmoore |
| -1 | correction to item 35, add item 43, 44 & 45 | | | | |
| -2 | correction to item 25, part number correction | | 29-Jun-09 | dms | |
| A | complete redesign, some rearrangement of parts in list, remove note 5 | TRNT-005 | 16-Dec-09 | dms | p.moore |
| A1 | add item 51, | TRNT-008 | 1/25/2010 | DMS | |
| A2 | Change comp values, see ECO for details, items 5,8,10 & 30 | TRNT-010 | 3/29/2010 | DMS | dgs, rg, mhunten |
| A3 | Remove current sense resistors that now reside on LCB, item 29 reduction in qty | TRNT-015 | 3/31/2011 | dms | p.moore, mhunten |
| A4 | Add item 52, add R137, R138 to item 44 | TRNT-027 | 10/26/2011 | dms | pmoore |
| A5 | remove item 18, 33, 45 & 51, change item 44 qty and remove R74, & R87, add all referenced items to not installed. Change R72, R80 to 10 ohms, affects item 21 & Item 38 | TRNT-031 | 3/2/2012 | dms | pmoore |

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|--|
| 1. Components shall only be crossed to equivalent or improved performance parts. |
| 2. All components are listed in the Materials tab |
| 3. This board is rohs compliant, all rework shall be done on a rohs work station |
| 4. If modifications are performed on this board, the cleaning process should be confined to the modified areas. Do not subject the board to any all-over cleaning processes. |
| 5. Item 16 can, in some cases, use the commercial part type instead of the industrial grade. |
| 6. Components not installed; 0603 size resistors: R1, R12, R25, R31, R50, R53, R58, R61, R66, R71, R74, R78, R79, R82, R87, R88, R122, R124 0603 size capacitors: C1, C5, C19, C20, C23, C26, C29, C30 SOT: Q3, Q4 |
| |
| |

| ITEM | QTY | pkgg | RefDes | Value | Part Number | MFR | PN Digikey | Description |
|------|-----|-------------------|---|---------|----------------------------------|-------------------------|---------------------|--|
| 1 | 1 | | | | TRNT-EL-04-1003 | NOAO | | PCB, Blank LCB Mezzanine Board |
| 2 | 27 | RL 3000 | D1, D2, D3, D4, D5, D6, D7, D8, D9, D11, D13, D14, D15, D16, D18, D19, D21, D24, D25, D26, D27, D28, D29, D30, D32, D33, D35 | | BAT54S-7-F | Diodes Inc. | BAT54S-FDIDKR-ND | Diode, SOT23 schottky barrier |
| 3 | 4 | 70 | D10, D12, D31, D34 | | BZX84C20-7 | Diodes Inc. | BZX84C20-FDIDKR-ND | Diode, Zener SOT23, 20V 350mW |
| 4 | 12 | rl >2000 | C2, C3, C6, C7, C11, C13, C16, C18, C22, C25, C32, C35 | 0.01uF | ECJ-1VB1H103K | Panasonic | PCC1784DKR-ND | Cap, Cerc 0603 0.01uF 50V 10% X7R |
| 5 | 2 | rl >3000 | C9, C14 | .47uF | GRM188R71E474KA12D | Murata Electronics | 490-3291-6-ND | Cap, Cerc 0603 .47uF 25V 10% X7R |
| 6 | 6 | ~ 800 | C12, C17, C21, C24, C31, C34 | 1uF | GRM21BR71H105KA12L | Panasonic | 490-4736-6-ND | Cap, Cerc 0805 1uF 50V 10% X7R |
| 7 | 2 | rl 4000 | C4, C8 | 0.022uF | C0603C223K5RACTU | Kemet | 399-1280-6-ND | Cap, Cerc 0603 0.022uF 50V 10% X7R |
| 8 | 2 | rl 4000 | C10, C15 | 0.047uF | GRM188R71H473KA61D | Murata Electronics | 490-3287-2-ND | Cap, Cerc 0603 50V 10% X7R 0.047uF |
| 9 | 4 | rl 1000 | C27, C28, C33, C36 | 2.2uF | GRM21BR71E225KA73L | Murata Electronic | 490-3331-6-ND | Cap, Cerc 0805 25V 10% X7R 2.2uF |
| 10 | | | moved to notes page | | | | | |
| 11 | 12 | 212 | Q5, Q6, Q7, Q8, Q10, Q12, Q13, Q14, Q15, Q16, Q17, Q18 | | IRFL4105PBF | International Rectifier | | Transistor, SOT-223 hexfet pwr MOSFET N CH |
| 12 | 2 | 36 | P1, P2 | | LS2-115-02-S-D-K | Samtec | | Con, 2mm SMT 30 pin |
| 13 | 4 | 76 | U1, U2, U22, U28 | | LM334DT | ST Microelectronics | 497-7820-6-ND | IC, adj current source 40V 10mA |
| 14 | 2 | 48 | U31, U34 | | LT4220IGN#PBF | Linear Technology | | IC, Dual supply hot swap controller |
| 15 | 2 | tube 34 | U3, U6 | | LT4356IS-1#PBF | Linear Technology | LT4356IS-1#PBF-ND | IC, SOIC16 overvolt prot Reg, surge stopper |
| 16 | 12 | 250 | U4, U7, U12, U13, U17, U20, U24, U25, U29, U30, U32, U33 | | LT6105IMS8#PBF LT6105CMS8#PBF | Linear Tech | | IC, MSOP8 precision, extended input range current sense amp |
| 17 | 8 | 132 | U9, U10, U11, U14, U15, U16, U19, U27 | | MAX4659EUA+ | Maxim | | IC, Analog switch high current 25 ohm SPDT CMOS |
| 18 | | | | | | | | |
| 19 | 4 | 73 | D17, D20, D22, D23 | | MMBZ5257B-7-F | Diodes Inc. | MMBZ5257B-FDIDKR-ND | Diode, Zener SOT23, 33V 350mW |
| 20 | 4 | 67 | Q1, Q2, Q9, Q11 | | NDS7002A | Fairchild Semi | NDS7002ACT-ND | Transistor, SOT23-3 FET N Ch |
| 21 | 16 | 2500 | R4, R5, R15, R16, R17, R24, R65, R72, R76, R80, R94, R98, R112, R115, R119, R121 | 10 | ERJ-3EKF10R0V | Panasonic - ECG | P10.0HDKR-ND | Resistor, 0603 10 1/16W 1% |
| 22 | 4 | ct >15" > 77pc | R30, R49, R104, R108 | 17.4 | ERJ-3EKF17R4 | Panasonic - ECG | P17.4HDKR-ND | Resistor, 0603 17.4 1/16W 1% |
| 23 | 4 | 89 | R2, R3, R13, R14 | 0.05 | WSLT2512R0500FEA | Vishay / Dale | WSLT-.05DKR-ND | Resistor, 2512 0.05 ohms 1W 1% 75 PPM |
| 24 | 4 | 91 | R26, R32, R51, R54 | 0.1 | WSL2512R1000FEA | Vishay / Dale | WSLG-.10DKR-ND | Resistor, 2512 0.1 ohms 1W 1% 75 PPM |
| 25 | 4 | 92 | R57, R68, R70, R90 | 0.25 | WSL2512R2500FEA | Vishay / Dale | WSLG-.25DKR-ND | Resistor, 2512 0.25 ohms 1W 1% 75 PPM |

| ITEM | QTY | pkgg | RefDes | Value | Part Number | MFR | PN Digikey | Description |
|------|-----|-------|--|-------|---------------------------------|-------------------|---------------------------------|--|
| 26 | 24 | ~750 | R59, R62, R83, R89, R93, R97, R102, R105, R106, R109, R110, R113, R114, R116, R118, R120, R123, R125, R126, R128, R129, R130, R132, R133 | 73.2 | ERJ-6ENF73R2V | Panasonic | P73.2CDKR-ND | Resistor, 0805 73.2 ohms 1/8W 1% |
| 27 | 4 | >3500 | R38, R47, R85, R92 | 100 | ERJ-3EKF1000V | Panasonic - ECG | P100HDKR-ND | Resistor, 0603 100 1/16W 1% |
| 28 | 6 | >2500 | R36, R46, R63, R67, R73, R86 | 1.0K | ERJ-3EKF1001V | Panasonic | P1.00KHDKR-ND | Resistor, 0603 1.0K 1/10W 1% |
| 29 | 10 | >4000 | R7, R11, R18, R23, R29, R39, R45, R56, R84, R91 | 1.47K | ERJ-3EKF1471V | Panasonic | P1.47KHDKR-ND | Resistor, 0603 1.47K 1/10W 1% |
| 30 | 2 | 5000 | R34, R42 | 9.53K | ERJ-3EKF9531V | Panasonic | P9.53KHDKR-ND | Resistor, 0603 9.53K 1/10W 1% |
| 31 | 2 | 4000 | R60, R64 | 3.32K | RC0603FR-073K32L | Yageo | 311-3.32KHRDKR-ND | Resistor, 0603 3.32K 1/10W 1% |
| 32 | 4 | 2500 | R10, R22, R75, R81 | 4.99K | ERJ-3EKF4991V | Panasonic | P4.99KHTR-ND | Resistor, 0603 4.99K 1/10W 1% |
| 33 | | | | | | | | |
| 34 | 4 | 750 | R6, R19, R131, R134 | 12.4K | ERJ-3EKF1242V | Panasonic - ECG | P12.4KHDKR-ND | Resistor, 0603 12.4K 1/10W 1% |
| 35 | 4 | 5000 | R9, R20, R111, R117 | 14.3K | RC0603FR-0714K3L | Yageo | 311-14.3KHRDKR-ND | Resistor, 0603 14.3K 1/10W 1% |
| 36 | 2 | 4000 | R95, R100 | 18.7K | RC0603FR-0718K7L | Yageo | 311-18.7KHRDKR-ND | Resistor, 0603 18.7K 1/10W 1% |
| 37 | 4 | 4000 | R52, R55, R96, R99 | 24.9K | ERJ-3EKF2492V MCR03EZPFX2492 | Panasonic Rohm | P24.9KHDKR-ND RHM24.9KHTR-ND | Resistor, 0603 24.9K 1/10W 1% |
| 38 | | | | | | | | |
| 39 | 2 | 5000 | R33, R40 | 28.0K | ERJ-6ENF2802V | Panasonic | P28.0KCDKR-ND | Resistor, 0805 28.0K 1/8W 1% |
| 40 | 4 | ~150 | R8, R21, R127, R135 | 37.4K | ERJ-3EKF3742V | Panasonic - ECG | P3.74KHDKR-ND | Resistor, 0603 37.4K 1/10W 1% |
| 41 | 2 | >3500 | R28, R43 | 38.3K | ERJ-3EKF3832V | Panasonic | P38.3KHCT-ND | Resistor, 0603 38.3K 1/10W 1% |
| 42 | 2 | 5000 | R37, R48 | 47.5K | RC0603FR-0747K5L | Yageo | 311-47.5KHRDKR-ND | Resistor, 0603 47.5K 1/10W 1% |
| 43 | 2 | ~150 | R69, R77 | 49.9K | ERJ-3EKF4992V | Panasonic | P49.9KHDKR-ND | Resistor, 0603 49.9K 1/10W 1% |
| 44 | 6 | 5000 | R35, R44, R103, R107, R137, R138 | 100K | ERJ-3EKF1003V | Panasonic - ECG | P100KHDKR-ND | Resistor, 0603 100K 1/16W 1% |
| 45 | | | | | | | | |
| 46 | 2 | 5000 | R27, R41 | 174K | ERJ-6ENF1743V | Panasonic | P174KCDKR-ND | Resistor, 0805 174K 1/8W 1% |
| 47 | | | | | | | | |
| 48 | 2 | 43 | U21, R26 | | TPS2490DGS | TI | 296-17085-ND | IC, MSOP10 hotswap controller positive high voltage power limiting |
| 49 | 4 | 70 | U5, U8, U18, U23 | | UCC3913D | TI | 296-2335-5-ND | IC, negative voltage hot swap manager |
| 50 | 2 | | TP1, TP2 | | wire, 20 awg bare | | | Wire, bare solid 18-20 awg |
| 51 | | | | | | | | |
| 52 | 2 | | R101, R136 | | ERJ-6ENF3012V | Panasonic | | Resistor, 0805 30.1K 1/8W 1% |
| | | | | | | | | |
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