

MBARI  
7700 Sandholdt Road  
Moss Landing CA 95039  
831-775-1700

Bill Of Materials February 11,2004 14:42:19 I

| Item | Quantity | Reference                                                                                                                          | Value             | Tolerance | Rating     | Type            | PCB Footprint          | Manufacturer Number            | Distributor Number                     | Description                                                                        | Comment                                                                 |
|------|----------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------|-----------------|------------------------|--------------------------------|----------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|      |          |                                                                                                                                    |                   |           |            |                 |                        |                                |                                        |                                                                                    |                                                                         |
| 1    | 2        | C11,C12                                                                                                                            | MMNLContact       |           |            | 20-16AWG        | DUMMY                  | AMP 171637-3                   |                                        | Contact, Mini Universal Mate-N-Lok, 20-16AWG, Duplex Plated                        | Should be on P2 order, Order Notes Item 1<br>Should be on Conv/GF order |
| 2    | 2        | C14,C13                                                                                                                            | DIN Power Contact |           |            |                 | DUMMY                  | ERNI 594 169                   |                                        | Right Angle, 4 Leg, 20 or 40 amp rating                                            |                                                                         |
| 3    | 12       | C1,C5,C7,C9,C12,C13,C17,C18,C22,C24,C29,C30                                                                                        | 0.1               | 10%       |            | X7R             | SM/C 0805              | Vishay Vitramon VJ0805Y        | Garrett Lab Kit VJ0805 X7R             |                                                                                    |                                                                         |
| 4    | 2        | C28,C2                                                                                                                             | .022              | 10%       | Rating     | X7R             | SM/C 0805              | Vishay Vitramon VJ0805Y        | Garrett Lab Kit VJ0805 X7R             |                                                                                    |                                                                         |
| 5    | 5        | C3,C6,C8,C11,C15                                                                                                                   | 10uF              | 10%       | 16V        | X5R             | SM/C 1210              | Kemet C1210C106K4PACTU         | DigiKey 399-3150-1-ND                  |                                                                                    | Should be on P2 order, Order Notes Item 3                               |
| 6    | 1        | C4                                                                                                                                 | 1uF               | 10%       | 50V        | X7R             | SM/C 1210              | Kemet C1210C105K4RACTU         | DigiKey 399-3076-1-ND                  |                                                                                    |                                                                         |
| 7    | 2        | C14,C10                                                                                                                            | .01               |           | 630V       | X7R             | SM/C 1206              | Panasonic ECJ-3FB2J103K        | DigiKey PCC2292CT-ND                   |                                                                                    | Order 250 per Order Notes Item 29                                       |
| 8    | 2        | C27,C16                                                                                                                            | 33uF              |           | 6.3V       | 293D            | SM/CT 3216 12          | Vishay/Sprague 293D336X96R3B2T | Garrett 293D Lab Kit                   |                                                                                    |                                                                         |
| 9    | 1        | C19                                                                                                                                | 33uF              |           | 63V        | FK              | PANASONIC_FK_SIZE-F    | Panasonic EEV-FK1J330P         | DigiKey PCE3481CT-ND                   | Aluminum Electrolytic, ESR 0.65 ohm                                                | Should be on Conv/GF order, Item 20                                     |
| 10   | 2        | C20,C25                                                                                                                            | 0.1               | 10%       | Rating     | X7R             | SM/C 0805              | Vishay Vitramon VJ0805Y        | Garrett Lab Kit VJ0805 X7R             |                                                                                    |                                                                         |
| 11   | 1        | C21                                                                                                                                | 180pF             | 5%        |            | NPO             | SM/C 0805              | Vishay Vitramon VJ0805A        | Garrett Lab Kit NPO VJ0805             |                                                                                    |                                                                         |
| 12   | 1        | C23                                                                                                                                | 22uF              |           | 16V        | T494D           | SM/CT 7343 12          | Kemet T494D226K016AS           | DigiKey 399-1782-1-ND                  | Tantalum, ESR 0.25 ohm                                                             | Should be on Conv/GF order, Item 20                                     |
| 13   | 1        | C26                                                                                                                                | 1uF               |           | 50V        | X7R             | SM/C 1210              | Kemet C1210C105K4RACTU         | DigiKey 399-3076-1-ND                  |                                                                                    |                                                                         |
| 14   | 1        | D1                                                                                                                                 | BAS19             |           |            |                 | BAS19                  | Diodes Inc BAS19-7             | DigiKey BAS19DICT-ND                   |                                                                                    |                                                                         |
| 15   | 5        | D2,D4,D5,D6,D8                                                                                                                     | 70DW-04           |           |            |                 | BAS70 SOT363           | Diodes Inc BAS70DW-04-7        | DigiKey BAS70DW-04DICT-ND              |                                                                                    | Should be on P2 order, Order Notes Item 4                               |
| 16   | 1        | D3                                                                                                                                 | 7.5V              |           | 150mW      | MAZ8075         | MAZ8000                | Panasonic MAZ80750ML           | DigiKey MAZ80750MLCT-ND                |                                                                                    |                                                                         |
| 17   | 1        | D7                                                                                                                                 | 60V               |           | 5KW        | 5KP60A          | 5KP                    | Vishay General Semi 5KP60A     | Newark 28H8280                         |                                                                                    | Should be on Conv/GF order, Order Notes Item 21                         |
| 18   | 1        | D9                                                                                                                                 | 54V               |           | 600W       | SMBJ54A         | SMBJ                   | DiodesInc SMBJ54A-13           | DigiKey SMBJ54ADICT-ND                 |                                                                                    | Should be on Conv/GF order, Order Notes Item 21                         |
| 19   | 1        | D10                                                                                                                                | 0603              |           |            | Green           | TLGV1020_TOSHIBA       | Lite-On LTST-C190KGKT          | DigiKey 160-1435-1-ND                  | LED GREEN CLEAR 0603 SMD                                                           | Should be on P2 order, Order Notes Item 10                              |
| 20   | 1        | D11                                                                                                                                | 15V               |           | 600W       | SMBJ15A         | SMBJ                   | DiodesInc SMBJ15A-13           | DigiKey SMBJ15ADICT-ND                 |                                                                                    | order 25 per Order Notes Item 30                                        |
| 21   | 1        | D12                                                                                                                                | MBRM5100          |           | 100V/5A    | Schottky        | MBRM5100               | Diodes Inc MBRM5100-13         | DigiKey MBRM5100DICT-ND                |                                                                                    | Should be on Conv/GF order, Order Notes Item 22                         |
| 22   | 1        | D13                                                                                                                                | 5.1V              |           | 600W       | MAZ8051         |                        | Panasonic MAZ80510ML           | DigiKey MAZ80510MLCT-ND                | DIODE ZENER 5.1V 150MW S-MINI 2P                                                   | order 100 per Order Notes Item 31                                       |
| 23   | 8        | FB1,FB2,FB3,FB4,FB21,FB22,FB23,FB24                                                                                                | 56 ohms @ 100MHz  |           | 10A        | 1612            | DM1612X560R-00         | Steward DM1612X560R            | DigiKey 240-1128-1-ND                  |                                                                                    | Should be on P2 order, Order Notes Item 5                               |
| 24   | 16       | FB5,FB6,FB7,FB8,FB9,FB10,FB11,FB12,FB13,FB14,FB15,FB16,FB17,FB18,FB19,FB20                                                         | 600 ohms @ 100MHz |           | 300 mA     | 0603            | HZ0603C601R-00         | Steward HZ0603C601R            | DigiKey 240-1143-1-ND                  |                                                                                    | Should be on P2 order, Order Notes Item 5                               |
| 25   | 3        | FC1,FC2,FC3                                                                                                                        | CLIPS             |           |            | 1/4 x 1-1/4     | CONVGF_FUSECLIPS       | Bussmann BK/1A1907-05          | DigiKey 283-2342-ND                    | PC Mount, Beryllium Copper, Silver Plate, 2 ea                                     | Shoul d be on Conv/GF order, Order Notes Item 24                        |
| 26   | 2        | F1,F3                                                                                                                              | 10A               |           | 250V       | MDA TIME DELAY  | DUMMY                  | Bussmann BK/MDA-10             | DigiKey 283-2308-ND                    | FUSE 10A 250V T-LAG CRM MDA                                                        | Shoul d be on Conv/GF order, Order Notes Item 25                        |
| 27   | 1        | F2                                                                                                                                 | 15A               |           | 250V       | MDA TIME DELAY  | DUMMY                  | Bussmann BK/MDA-15             | DigiKey 283-2310-ND                    | FUSE 15A 250V T-LAG CRM MDA                                                        | Shoul d be on Conv/GF order, Order Notes Item 25                        |
| 28   | 2        | JMP2,JMP1                                                                                                                          | PWB Jumper        |           |            |                 | JMPR 2                 |                                |                                        |                                                                                    |                                                                         |
| 29   | 1        | J1                                                                                                                                 | MMNL6J            |           |            |                 | AMP 770969             | AMP 770969-2                   |                                        | Header, Mini Universal Mate-N-Lok, Dual Row, Right Angle, 6 Circuit, Duplex Plated | Should be on P2 order, Order Notes Item 1                               |
| 30   | 1        | J2                                                                                                                                 | MMNL8J            |           |            |                 | AMP 770970             | AMP 770970-2                   |                                        | Header, Mini Universal Mate-N-Lok, Dual Row, Right Angle, 8 Circuit, Duplex Plated | Should be on P2 order, Order Notes Item 1                               |
| 31   | 1        | L1                                                                                                                                 | 1mH               |           | 0.19A      | P1167           | P1167                  | Pulse Eng P1167.105T           | Mouser 673-P1167.105T                  | Shielded Drum Core                                                                 | order 50 per Order Notes Item 32                                        |
| 32   | 1        | P1                                                                                                                                 | MMNL6P            |           |            |                 | DUMMY                  | AMP 172168-1                   |                                        | Housing, Mini Universal Mate-N-Lok, Free Hanging, 6 Circuit                        | Should be on P2 order, Order Notes Item 1                               |
| 33   | 1        | P2                                                                                                                                 | MMNL8P            |           |            |                 | DUMMY                  | AMP 770579-1                   |                                        | Housing, Mini Universal Mate-N-Lok, Free Hanging, 8 Circuit                        | Should be on P2 order, Order Notes Item 1                               |
| 34   | 1        | P3                                                                                                                                 | DIN 42+6          |           |            | DIN41612 TYPE N | ERNI 42+6              | ERNI 593 815                   |                                        | 42+6, ABC Loaded, Class 207                                                        | used on DPA... see Dick Littlefield                                     |
| 35   | 1        | Q1                                                                                                                                 | IRF1010EL         |           | 60V        |                 | IRF1010                | Intl Rect IRF1010EL            | DigiKey IRF1010EL-ND                   | Hexfet N-CH 60V 84A TO-262                                                         |                                                                         |
| 36   | 2        | Q3,Q2                                                                                                                              | DN3545            |           | 450V       | N-Ch Depletion  | DN3545N3               | Supertex DN3545N3              | Mouser 689-DN3545N3                    |                                                                                    | order 25 per Order Notes Item 33                                        |
| 37   | 1        | R2                                                                                                                                 | 1k                | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 38   | 8        | R3,R7,R8,R9,R10,R13,R14,R15                                                                                                        | 360               | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 39   | 1        | R4                                                                                                                                 | 1M                | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 40   | 4        | R5,R6,R11,R12                                                                                                                      | .005              | 1%        | 1W         | WSK             | WSK2512                | Vishay Dale WSK2512-0.005-1%   | Mouser 71-WSK2512-0.005/R              | 4-Terminal Resistor                                                                | Should be on Conv/GF order, Order Notes Item 27                         |
| 41   | 2        | R17,R16                                                                                                                            | R 0805 1%         | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 42   | 2        | R18,R23                                                                                                                            | 249               | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 43   | 2        | R19,R21                                                                                                                            | 2.7k              | 5%        | 1W         |                 | SM/R 2512              | KOA RK73B3A                    | Garrett Lab Kit 2512 5% RK73B3A Series |                                                                                    | please confirm we have this Lab Kit                                     |
| 44   | 2        | R20,R22                                                                                                                            | 2.7k              | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 45   | 2        | R29,R24                                                                                                                            | 10k               | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 46   | 1        | R25                                                                                                                                | 33k               | 5%        | .063W      | 745C            | CTS 745                | CTS 745C101333JTR              | DigiKey 745C101333JCT-ND               | DIP Network, Bussed                                                                |                                                                         |
| 47   | 2        | R34,R26                                                                                                                            | 100               | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 48   | 1        | R27                                                                                                                                | 64.9k             | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 49   | 1        | R28                                                                                                                                | 162k              | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 50   | 1        | R30                                                                                                                                | 13.7k             | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 51   | 1        | R31                                                                                                                                | 102k              | 1%        | 1/8 W      |                 | SM/R 0805              | KOA Speer RK73H2A              | Garrett Lab Kit 0805 1% RK73H2A        |                                                                                    |                                                                         |
| 52   | 1        | R32                                                                                                                                | 0                 | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 53   | 1        | R33                                                                                                                                | 24.0k             | 0.1%      | 1/10 W     |                 | SM/R 0805              | Panasonic ERA-6YEB243V         | DigiKey P24KZCT-ND                     |                                                                                    |                                                                         |
| 54   | 1        | R35                                                                                                                                | 330               | 5%        | 1/8 W      |                 | SM/R 0805              | KOA RK73B2A                    | Garrett Lab Kit 0805 5% RK73B2A        |                                                                                    |                                                                         |
| 55   | 1        | R36                                                                                                                                | 1.00k             | 0.1%      | 1/10 W     |                 | SM/R 0805              | Panasonic ERA-6YEB102V         | DigiKey P1.0KZCT-ND                    |                                                                                    |                                                                         |
| 56   | 28       | TP1,TP2,TP3,TP4,TP5,TP6,TP7,TP8,TP9,TP10,TP11,TP12,TP13,TP14,TP15,TP16,TP17,TP18,TP19,TP20,TP21,TP22,TP23,TP24,TP25,TP26,TP27,TP28 | T POINT S         |           |            |                 | TP 5015                | Keystone 5015                  | DigiKey 5015KCT-ND                     | SMT Test Point .040"ii                                                             | should be on P2 order, Order Notes Item 7                               |
| 57   | 5        | U1,U2,U3,U5,U6                                                                                                                     | LTC2433           |           | 0-70C      |                 | LTC2433-1              | Linear Tech LTC2433-1CMS       |                                        | 16 Bit SigmaDelta A/D                                                              | should be on P2 order, Order Notes Item 12                              |
| 58   | 2        | U4,U15                                                                                                                             | OP196             |           |            |                 | OP196                  | Analog Devices OP196GS         |                                        | Micropower Op Amp                                                                  | order 50 per Order Notes Item 34                                        |
| 59   | 1        | U7                                                                                                                                 | AT25040           |           | 2.1 MHz    |                 | AT25010_8SI_JEDECISOIC | Atmel AT25040N-10SI-2.7        | DigiKey AT25040N-10SI-2.7-ND           | Serial SPI EEPROM, 512 x 8, 2.7V, Narrow SOIC-8                                    | should be on P2 order, Order Notes Item 16                              |
| 60   | 1        | U8                                                                                                                                 | 74HC595           |           |            |                 | MM74HC595              | Fairchild MM74HC595M           | DigiKey MM74HC595M-ND                  | 8 Bit Shift Register                                                               | should be on P2 order, Order Notes Item 13                              |
| 61   | 2        | U9,U11                                                                                                                             | NC7S14            |           |            |                 | NC7S14                 | Fairchild NC7S14M5X            | DigiKey NC7S14M5CT-ND                  | Schmitt Inverter                                                                   | Should be on P2 order, Order Notes Item 15                              |
| 62   | 1        | U10                                                                                                                                | ADUM1401          |           | 1 MBPS Max |                 | ADUM1401               | Analog Devices ADUM1401ARW     |                                        | Digital Isolator                                                                   | Should be on P2 order, Order Notes Item 14                              |
| 63   | 1        | U12                                                                                                                                | MAX5033D          |           |            |                 | MAX5033                | Maxim MAX5033DUSA              |                                        | Stepdown DC-DC, Adjustable Output                                                  | 50 AWOL -- email sent to allhands                                       |
| 64   | 1        | U13                                                                                                                                | LT1798-2.5        |           |            |                 | LT1798                 | Linear Tech LTC1798CS8-2.5     |                                        | Micropower Reference                                                               | should be on P2 order, Order Notes Item 8                               |
| 65   | 1        | U14                                                                                                                                | LT3010            |           |            |                 | LT3010                 | Linear Tech LT3010EMS8E        |                                        | LDO Regulator                                                                      | should be on P2 order, Order Notes Item 9                               |