ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

GUITAR INPUT

UNB L/R HEAD PHONE

MIC IN

CODEC1

CODEC2

USB

S/PDIF

DSP

MCU

KEY

POT

LCD

FBV(RJ45)

SDRAM

FLASH

POWER

COMPANY:	LINE 6
TITLE:	P19-1 POD HD BEAN MAIN PAGE DESCRIPTION
PROGRAM:	PADS LOGIC 2007
REV:	C
FILENAME:	SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch
SCALE: 1:1	SIZE: C
PART NUMBER:	35-00-0394
SHEET:	1 OF 11

DRAWN: CED	DATED: 03.30.2011
CHECKED: review panel	DATED: 07.16.2010

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

*DNI = DO NOT INSTALL

MRST

*DNI R82 0 1% — Install R82 when using DSP emulator and MCU flash is unprogrammed.

RESET_DSP

R136 4.75K 1% — Set "BOOT_ME" low during reset to activate on chip bootloader.

GND1

+3.3V

R22 4.75K 1%

/BOOT_ME

+1.8V

R18 10.0 1%

+3.3V

R23 4.75K 1%

C165 0.1uF, C65 0.1uF, C166 0.1uF

C60 0.1uF, C71 0.1uF, C55 0.1uF, C66 0.1uF, C70 0.1uF, C42 0.1uF, C46 0.1uF

R83 10.0 1%

C160 100uF, C44 0.1uF

MCU JTAG EMULATOR I/F
conforms to ARM 14 pin I/F spec.

J8
14X2

*DNI

1	VTref	2	
3	nTRST	4	GND
5	TDI	6	GND
7	TMS	8	GND
9	TCK	10	GND
11	TDO	12	nSRST
13	VTref	14	GND

R122 4.75K 1%, R119 4.75K 1%, R121 4.75K 1%, R118 4.75K 1%

MIDI_TXD
MIDI_RXD
I2C_SCL
I2C_SDA
SPI_CLK
SPI_MISO
SPI_MOSI
FB_TXD
FB_RXD
LED0
LED1
LED2
LED3
DSP_TO_MCU_INT
USB_MCU/DSP_WDOG
RESET_USB
LED4
LED6
GUITAR_Z_IN_0
LCD_CONTRAST_PULSE
LED5
SPI_SS_DSP
MCU_AIN0
MCU_AIN1
MCU_AIN2
MCU_AIN3
(FLASH MEM)
MCU_CS0
MCU_OE
3 bit board application identifier
GUITAR_Z_IN_1
GUITAR_Z_IN_2
GUITAR_IN_SENSE
HEADPHONE_SENSE
SW_GROUP0
SW_GROUP1
SW_GROUP2
R97 4.75K 1%
TDO
nSRST
TCK
TMS
TDI

R186 30.1R 1%

42	P0.0/TXD0/PWM1	
49	P0.1/RXD0/PW..	
50	P0.2/SCL/CAP..	
58	P0.3/SDA/MAT..	
59	P0.4/SCK0/CA..	
61	P0.5/MISO0/M..	
68	P0.6/MOSI0/C..	
69	P0.7/SSEL0/P..	PWM2
75	P0.8/TXD1/PWM4	
76	P0.9/RXD1/PW..	
78	P0.10/RTS1/C..	
83	P0.11/CTS1/C..	
84	P0.12/DSR1/M..	
85	P0.13/DTR1/M..	
92	P0.14/DCD1/E..	
99	P0.15/RI1/EI..	EINT2
100	P0.16/EINT0/..	
101	P0.17/CAP1.2..	
121	P0.18/CAP1.3..	
122	P0.19/MAT1.2..	
123	P0.20/MAT1.3..	EINT3
4	P0.21/PWM5/C..	PWM5
5	P0.22/CAP0.0..	
6	P0.23	
8	P0.24	
21	P0.25	
23	P0.27/AIN0/C..	
25	P0.28/AIN1/C..	
32	P0.29/AIN2/C..	
33	P0.30/AIN3/E..	
91	P1.0/CS0	
90	P1.1/OE	
34	P1.16/TRACEPK0	
24	P1.17/TRACEPK1	
15	P1.18/TRACEPK2	
7	P1.19/TRACEPK3	
102	P1.20/TRACES..	
95	P1.21/PIPEST..	
86	P1.22/PIPEST..	
82	P1.23/PIPEST..	
70	P1.24/TRACECLK	
60	P1.25/EXTIN0	
52	P1.26/RTCK	
144	P1.27/TDO	
140	P1.28/TDI	
126	P1.29/TCK	
113	P1.30/TMS	
43	P1.31/TRST	
141	XTAL2	
142	XTAL1	
135	RESET	
22	NC	

C161 100pF
CLK_24576
(24.5760MHz X 6) / 2 = 73.728MHz

P3.0/A0	89		
P3.1/A1	88	MCU_A01	MCU_A[00:22]
P3.2/A2	87	MCU_A02	
P3.3/A3	81	MCU_A03	
P3.4/A4	80	MCU_A04	
P3.5/A5	74	MCU_A05	
P3.6/A6	73	MCU_A06	
P3.7/A7	72	MCU_A07	
P3.8/A8	71	MCU_A08	
P3.9/A9	66	MCU_A09	
P3.10/A10	65	MCU_A10	
P3.11/A11	64	MCU_A11	
P3.12/A12	63	MCU_A12	
P3.13/A13	62	MCU_A13	
P3.14/A14	56	MCU_A14	
P3.15/A15	55	MCU_A15	
P3.16/A16	53	MCU_A16	
P3.17/A17	48	MCU_A17	
P3.18/A18	47	MCU_A18	
P3.19/A19	46	MCU_A19	
P3.20/A20	45	MCU_A20	
P3.21/A21	44	MCU_A21	
P3.22/A22	41	MCU_A22	
P3.23/A23/XCLK	40		
P3.24/CS3	36		
P3.25/CS2	35	MCU_CS2	(USER INTERFACE - LCD)
P3.26/CS1	30		
P3.27/WE	29	MCU_WE	
P3.28/BLS3/A..	28	MCU_AIN7	
P3.29/BLS2/A..	27	MCU_AIN6	
P3.30/BLS1	97		
P3.31/BLS0	96		

P2.0/D0	98	MCU_D00	MCU_D[00:16]
P2.1/D1	105	MCU_D01	
P2.2/D2	106	MCU_D02	
P2.3/D3	108	MCU_D03	
P2.4/D4	109	MCU_D04	
P2.5/D5	114	MCU_D05	
P2.6/D6	115	MCU_D06	
P2.7/D7	116	MCU_D07	
P2.8/D8	117	MCU_D08	
P2.9/D9	118	MCU_D09	
P2.10/D10	120	MCU_D10	
P2.11/D11	124	MCU_D11	
P2.12/D12	125	MCU_D12	
P2.13/D13	127	MCU_D13	
P2.14/D14	129	MCU_D14	
P2.15/D15	130	MCU_D15	
P2.16/D16	131	SW_IMAGE0	SW_IMAGE[0:9]
P2.17/D17	132	SW_IMAGE1	
P2.18/D18	133	SW_IMAGE2	
P2.19/D19	134	SW_IMAGE3	
P2.20/D20	136	SW_IMAGE4	
P2.21/D21	137	SW_IMAGE5	
P2.22/D22	1	SW_IMAGE6	
P2.23/D23	10	SW_IMAGE7	
P2.24/D24	11	SW_IMAGE8	
P2.25/D25	12	SW_IMAGE9	
P2.26/D26/BO..	13	P2.26/D26/BOOT0 = Not Connected	(Boot from 16 bit memory on CS0)
P2.27/D27/BO..	16	P2.27/D27/BOOT1 = Not Connected	
P2.28/D28	17	FLASH_RDY/BSY	(not used in SST brand FLASH)
P2.29/D29	18	MCU_WP	
P2.30/D30/AIN4	19	MCU_AIN4	
P2.31/D31/AIN5	20	MCU_AIN5	

U13
LPC2220
15-84-2220

VSS (3, 9, 26, 38, 67, 54, 79, 93, 103, 107, 111, 128), VSSA (139), VSSA_PLL (138)

MCU

+3.3V

C52 0.1uF

U11
LM809 3.3V

R94 4.75K 1%

MRST

3.3V_RESET

3 BIT BOARD APPLICATION IDENTIFIER

MCU_IDEN2: P1.18 = L
MCU_IDEN1: P1.17 = L
MCU_IDEN0: P1.16 = H

P19-1 = 0x02

This board: All resistors are 1% Tolerance

+3.3V

C87 0.1uF

MCU_A[00:22]

MCU_A01	25	A0	
MCU_A02	24	A1	
MCU_A03	23	A2	
MCU_A04	22	A3	
MCU_A05	21	A4	
MCU_A06	20	A5	
MCU_A07	19	A6	
MCU_A08	18	A7	
MCU_A09	8	A8	
MCU_A10	7	A9	
MCU_A11	6	A10	
MCU_A12	5	A11	
MCU_A13	4	A12	
MCU_A14	3	A13	
MCU_A15	2	A14	
MCU_A16	1	A15	
MCU_A17	48	A16	
MCU_A18	17	A17	
MCU_A19	16	A18	
MCU_A20	9	A19	
MCU_A21	10		
MCU_A22	13		
FLASH_RDY/BSY	15		
MCU_WP	14	WP	
3.3V_RESET	12	RST	
MCU_CS0	26	CE	
MCU_OE	28	OE	
MCU_WE	11	WE	
+3.3V	47	NC	

VDD 37

DQ0	29	MCU_D00
DQ1	31	MCU_D01
DQ2	33	MCU_D02
DQ3	35	MCU_D03
DQ4	38	MCU_D04
DQ5	40	MCU_D05
DQ6	42	MCU_D06
DQ7	44	MCU_D07
DQ8	30	MCU_D08
DQ9	32	MCU_D09
DQ10	34	MCU_D10
DQ11	36	MCU_D11
DQ12	39	MCU_D12
DQ13	41	MCU_D13
DQ14	43	MCU_D14
DQ15	45	MCU_D15

GND1 27
GND2 46

U16
45-02-0066
SST39VF6401

FLASH 4M X 16

DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN MCU	
		PROGRAM: PADS LOGIC 2007	REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 2 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

*DNI= DO NOT INSTALL

+3.3V
C76 C80 C89 C103 C112 C108 C97 C82 C117
0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF
+3.3V
C75 C79 C83 C100 C113 C109 C99 C86
1nF 1nF 1nF 1nF 1nF 1nF 1nF 1nF

+1.25V
C74 C78 C81 C98 C114 C110 C102 C88
0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF
+1.25V
C73 C77 C62 C91 C105 C111 C104 C90
1nF 1nF 1nF 1nF 1nF 1nF 1nF 1nF

+1.25V
L25 600R@100MHZ
A Route directly back to pin 80 AVSS.
C177 100uF 10V
C171 0.1uF
C173 10nF
C176 1nF
A

+3.3V
C56 C67 C49 C53 C61 C57
0.1uF 0.1uF 0.1uF 1nF 1nF 1nF
VCC1 VCC2 VCC3 VCCQ1 VCCQ2 VCCQ3 VCCQ4
1 14 27 3 9 43 49

DSP_ADDR[00:18]
DSP_ADDR01 23 A0
DSP_ADDR02 24 A1
DSP_ADDR03 25 A2
DSP_ADDR04 26 A3
DSP_ADDR05 29 A4
DSP_ADDR06 30 A5
DSP_ADDR07 31 A6
DSP_ADDR08 32 A7
DSP_ADDR09 33 A8
DSP_ADDR10 34 A9
DSP_SDA10 22 A10
35 A11
DSP_ADDR12
DSP_ADDR17 20 BA0
DSP_ADDR18 21 BA1
DSP_SDRAS 18 RAS
DSP_SDCAS 17 CAS
DSP_MS0 19 CS
DSP_SDWE 16 WE
DSP_SDCKE 37 CKE
DSP_SDCLK0 38 CLK
15 LDQM
39 UDQM
VSS1 28
VSS2 41
VSS3 54
VSSQ1 6
VSSQ2 12
VSSQ3 46
VSSQ4 52

DQ0 2 DSP_DATA00
DQ1 4 DSP_DATA01
DQ2 5 DSP_DATA02
DQ3 7 DSP_DATA03
DQ4 8 DSP_DATA04
DQ5 10 DSP_DATA05
DQ6 11 DSP_DATA06
DQ7 13 DSP_DATA07
DQ8 42 DSP_DATA08
DQ9 44 DSP_DATA09
DQ10 45 DSP_DATA10
DQ11 47 DSP_DATA11
DQ12 48 DSP_DATA12
DQ13 50 DSP_DATA13
DQ14 51 DSP_DATA14
DQ15 53 DSP_DATA15
NC1 36
NC2 40
DSP_DATA[00:31]
U15
15-70-0002
SDRAM 4M X 16

+3.3V
C96 C115 C101 C107 C195 C95
0.1uF 0.1uF 0.1uF 1nF 1nF 1nF
VCC1 VCC2 VCC3 VCCQ1 VCCQ2 VCCQ3 VCCQ4
1 14 27 3 9 43 49

DSP_ADDR[00:18]
DSP_ADDR01 23 A0
DSP_ADDR02 24 A1
DSP_ADDR03 25 A2
DSP_ADDR04 26 A3
DSP_ADDR05 29 A4
DSP_ADDR06 30 A5
DSP_ADDR07 31 A6
DSP_ADDR08 32 A7
DSP_ADDR09 33 A8
DSP_ADDR10 34 A9
DSP_SDA10 22 A10
35 A11
DSP_ADDR12
DSP_ADDR17 20 BA0
DSP_ADDR18 21 BA1
DSP_SDRAS 18 RAS
DSP_SDCAS 17 CAS
DSP_MS0 19 CS
DSP_SDWE 16 WE
DSP_SDCKE 37 CKE
DSP_SDCLK0 38 CLK
15 LDQM
39 UDQM
VSS1 28
VSS2 41
VSS3 54
VSSQ1 6
VSSQ2 12
VSSQ3 46
VSSQ4 52

DQ0 2 DSP_DATA16
DQ1 4 DSP_DATA17
DQ2 5 DSP_DATA18
DQ3 7 DSP_DATA19
DQ4 8 DSP_DATA20
DQ5 10 DSP_DATA21
DQ6 11 DSP_DATA22
DQ7 13 DSP_DATA23
DQ8 42 DSP_DATA24
DQ9 44 DSP_DATA25
DQ10 45 DSP_DATA26
DQ11 47 DSP_DATA27
DQ12 48 DSP_DATA28
DQ13 50 DSP_DATA29
DQ14 51 DSP_DATA30
DQ15 53 DSP_DATA31
NC1 36
NC2 40
DSP_DATA[00:31]
U20
15-70-0002
SDRAM 4M X 16

64FS_CLK
CODEC_MCLK
GND2
R111 4.75K 1%
FS_CLK
+3.3V

IOVDD 5 15 31 41 50 55 65 74 85 90 96 107 129 139 150 179 191 203
VDD 1 11 19 24 33 43 52 53 72 79 87 104 105 118 127 138 141 152 154 156 158 160 161 162 167 181 193 208
AVDD 81

GUITAR_IN_ADC_SDATA 178 DAI1
UNBALOUT_DAC_SDATA 176 DAI2
AUX/MIC_IN_ADC_SDATA 177 DAI3
175 DAI4
149 DAI5
147 DAI6
148 DAI7
145 DAI8
R185 30.1R 1% 146 DAI9
64FS_CLK
CODEC_MCLK
FS_CLK 144 DAI10
SPDIF_TXD 143 DAI11
R127 40.2 1% 137 DAI12
136 DAI13
C197 135 DAI14
33pF *DNI 134 DAI15
133 DAI16
132 DAI17
131 DAI18
CLK_225792 130 DAI19
CLK_24576A 125 DAI20

SPI_MOSI 199 DPI1
SPI_MISO 200 DPI2
SPI_CLK 198 DPI3
SPI_SS_DSP 197 DPI4
196 DPI5
I2C_SCL 195 DPI6
I2C_SDA 190 DPI7
189 DPI8
USB_FLAGC 188 DPI9
USB_MCU/DSP_WDOG 187 DPI10
CODEC_RESET 186 DPI11
DSP_TO_MCU_INT 185 DPI12
184 DPI13
183 DPI14

CLK_24576 84 XTAL2
83 CLKIN
201 CLKOUT
RESET_DSP 202 RESET

169 CLK_CFG0
171 CLK_CFG1
CLK_CFG0 = 0, CLK_CFG1 = 0 on reset = CORE to CLKIN ratio of 6:1
170 BOOTCFG0
173 BOOTCFG1
BOOTCFG0 = 0, BOOTCFG1 = 0 on reset = SPI SLAVE BOOT using DPI1..4
R137 4.75K 1%

U18
15-86-3369
ADSP-21369KSWZ-2A

DATA0 48 DSP_DATA00
DATA1 49 DSP_DATA01
DATA2 46 DSP_DATA02
DATA3 47 DSP_DATA03
DATA4 44 DSP_DATA04
DATA5 45 DSP_DATA05
DATA6 40 DSP_DATA06
DATA7 39 DSP_DATA07
DATA8 38 DSP_DATA08
DATA9 37 DSP_DATA09
DATA10 36 DSP_DATA10
DATA11 35 DSP_DATA11
DATA12 30 DSP_DATA12
DATA13 29 DSP_DATA13
DATA14 28 DSP_DATA14
DATA15 27 DSP_DATA15
DATA16 26 DSP_DATA16
DATA17 21 DSP_DATA17
DATA18 18 DSP_DATA18
DATA19 17 DSP_DATA19
DATA20 14 DSP_DATA20
DATA21 13 DSP_DATA21
DATA22 12 DSP_DATA22
DATA23 9 DSP_DATA23
DATA24 8 DSP_DATA24
DATA25 7 DSP_DATA25
DATA26 6 DSP_DATA26
DATA27 3 DSP_DATA27
DATA28 2 DSP_DATA28
DATA29 207 DSP_DATA29
DATA30 205 DSP_DATA30
DATA31 206 DSP_DATA31
DSP_DATA[00:31]

ADDR0 56 DSP_ADDR00
ADDR1 58 DSP_ADDR01
ADDR2 57 DSP_ADDR02
ADDR3 60 DSP_ADDR03
ADDR4 59 DSP_ADDR04
ADDR5 61 DSP_ADDR05
ADDR6 66 DSP_ADDR06
ADDR7 67 DSP_ADDR07
ADDR8 68 DSP_ADDR08
ADDR9 69 DSP_ADDR09
ADDR10 70 DSP_ADDR10
ADDR11 75 DSP_ADDR12
ADDR12 76
ADDR13 77
ADDR14 88
ADDR15 91
ADDR16 92
ADDR17 93 DSP_ADDR17
ADDR18 94 DSP_ADDR18
ADDR19 97
ADDR20 98
ADDR21 99
ADDR22 101
ADDR23 100
DSP_ADDR[00:18]

MS0 103 DSP_MS0
MS1 102 DSP_MS1
F2/IRQ2/MS2 122 USB_SYNC_OUT
FLAG3/MS3 121
FLAG0/IRQ0 124 USB_FLAGA
FLAG1/IRQ1 123 USB_FLAGB

WR 112 DSP_WR
RD 119 DSP_RD
ACK 120

SDCAS 108 R187 30.1R 1% DSP_SDCAS
SDRAS 109 R188 30.1R 1% DSP_SDRAS
SDCKE 110 R189 30.1R 1% DSP_SDCKE
SDWE 111 R190 30.1R 1% DSP_SDWE
SDA10 113 DSP_SDA10
SDCLK0 116
R113 30.1R 1% DSP_SDCLK0

GND 4 10 16 20 23 25 32 34 42 51 54 62 64 71 73 78 82 86 89 95 106 114 117 126 128 140 142 151 153 155 159 165 180 182 192 194 204 EPAD 209
AVSS 80
A

DSP EMULATOR JTAG I/F
J9 14X2 *DNI
GND 1
EMU 2
<KEY> no pin 3
GND 4
BTMS/ VDDIO 5
TMS 6
BTCK 7
TCK 8
BTRST 9
TRST 10
BTDI 11
TDI 12
GND 13
TDO 14
R144 4.75K 1%
+3.3V
163 TDI
164 TRST
165 TCK
168 TMS
172 EMU
174 TDO
R146 0 1% GND
R145 10.0K 1% GND

Note:
Remove R146 for DSP JTAG emulation

+3.3V
C63 0.1uF C68 1nF
Y2 11-01-2458 24.576MHZ
OE VCC GND OUTPUT
R105 30.1R 1% CLK_24576
R195 121 1% CLK_24576A

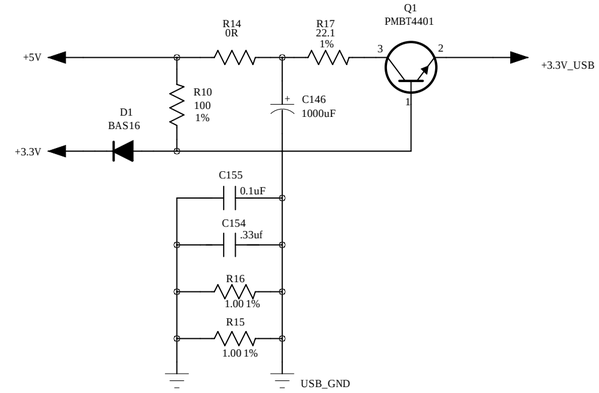
+3.3V
C92 0.1uF C93 1nF
Y3 11-01-2258 22.5792MHZ
OE VCC GND OUTPUT
R120 30.1R 1% CLK_225792

DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN DSP	
		PROGRAM: PADS LOGIC 2007	REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
		SCALE: 1:1 SIZE: C PART NUMBER: 35-00-0394	SHEET: 3 OF 11

USB SECTION

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

USB POWER

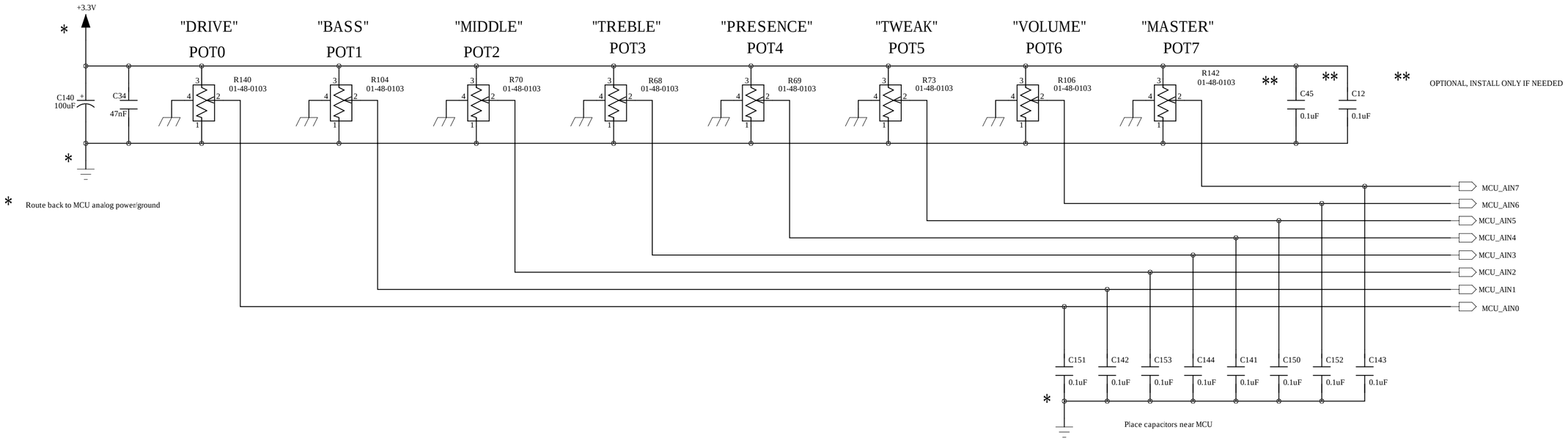


DRAWN: CED	DATED: 03.30.2011		
CHECKED: review panel	DATED: 07.16.2010		
COMPANY: LINE 6			
TITLE: P19-1 POD HD BEAN MAIN USB			
PROGRAM: PADS LOGIC 2007			REV: C
FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch			
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 4 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

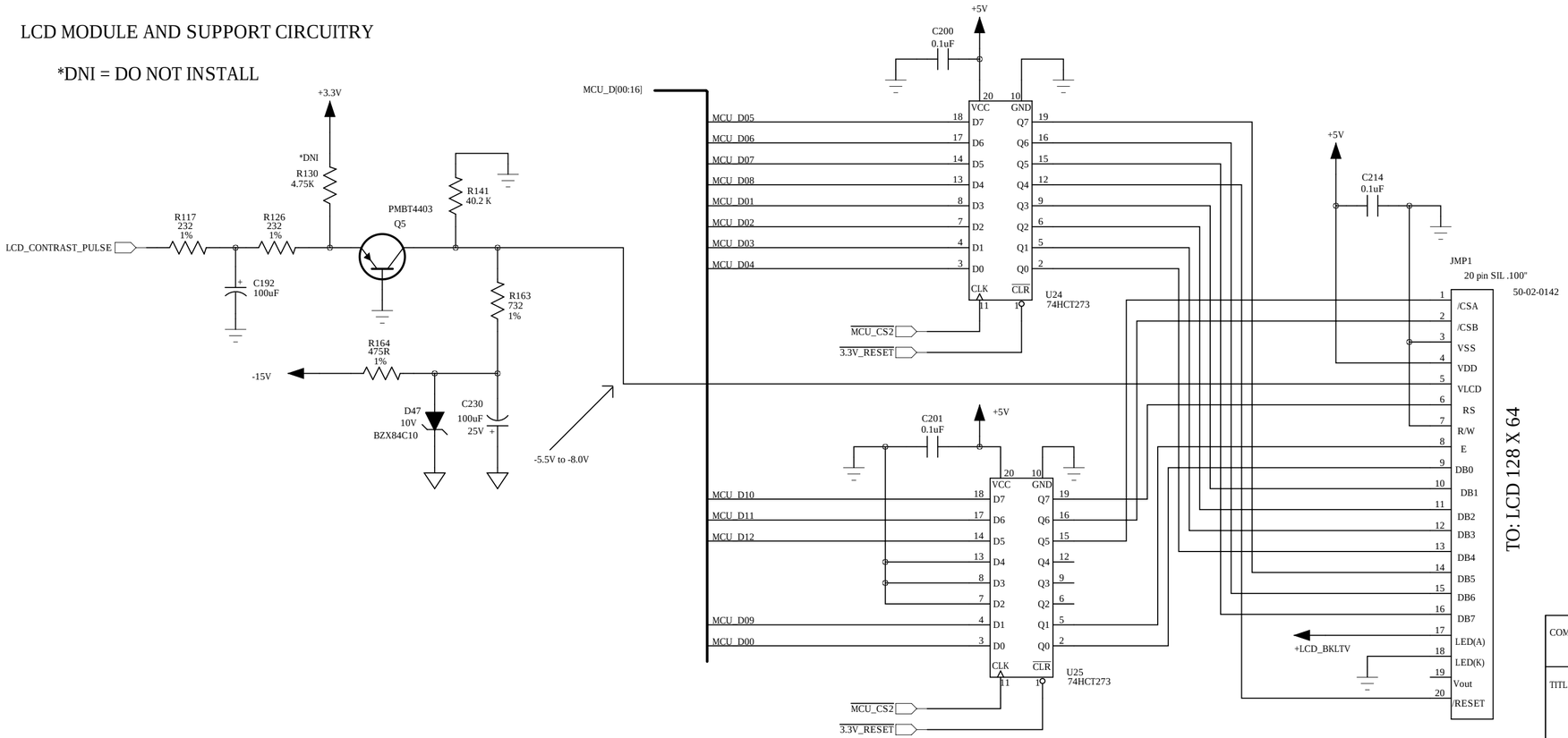
POTENTIOMETERS

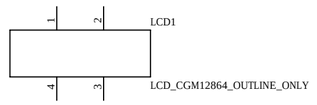
ALL POTS



LCD MODULE AND SUPPORT CIRCUITRY

*DNI = DO NOT INSTALL





MCU TO LCD CONTROLS

MCU_DXX	LCD	LCD PIN
D0	DB0	9
D1	DB1	10
D2	DB2	11
D3	DB3	12
D4	DB4	13
D5	DB4	14
D6	DB6	15
D7	DB7	16
D8	/RESET	20
D9	E	8
D10	RS	6
D11	/CSB	2
D12	/CSA	1

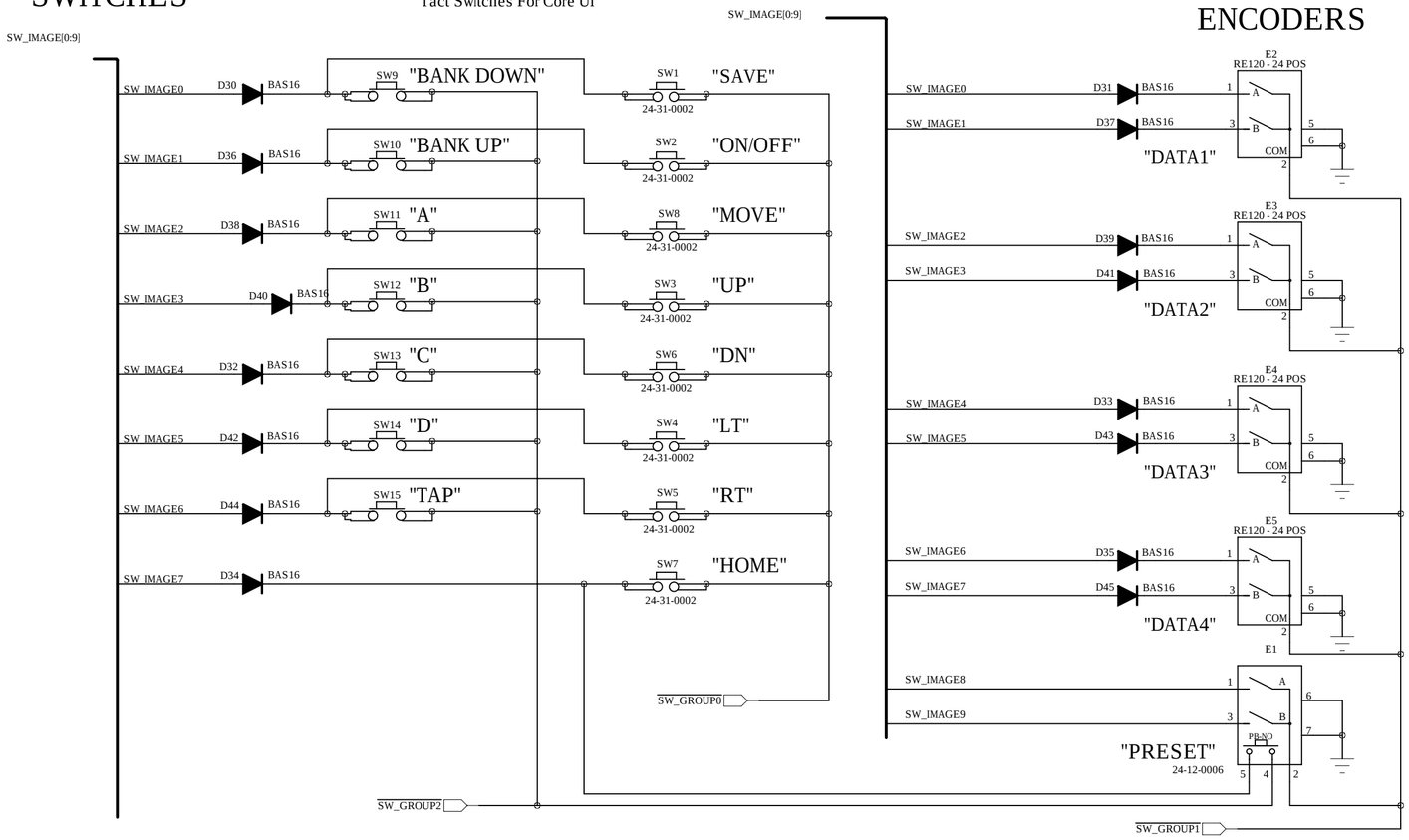
DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN USER_INTERFACE1	
		PROGRAM: PADS LOGIC 2007	REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 5 OF 11

Pulup resistors are not needed because the LPC2220
has built in pullup resistors in its I/O pins

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

SWITCHES

Tact Switches For Core UI

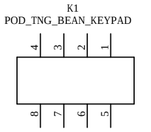


ENCODERS

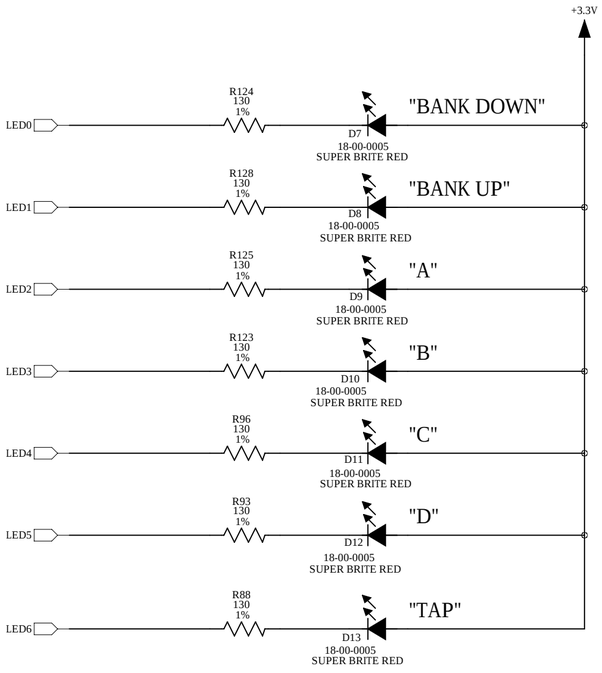
SWITCH MATRIX 10 X 4

	SW_GROUP0	SW_GROUP1	SW_GROUP2
SW_IMAGE0	SAVE	E1-A	BANK DOWN
SW_IMAGE1	ON/OFF	E1-B	BANK UP
SW_IMAGE2	MOVE	E2-A	A
SW_IMAGE3	UP	E2-B	B
SW_IMAGE4	DN	E3-A	C
SW_IMAGE5	LT	E3-B	D
SW_IMAGE6	RT	E4-A	TAP
SW_IMAGE7	HOME	E4-B	E5 PB
SW_IMAGE8	-	E5-A	-
SW_IAMGE9	-	E5-B	-

PB=push button



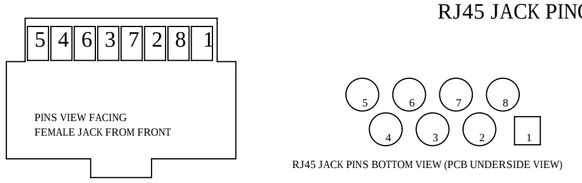
LEDS



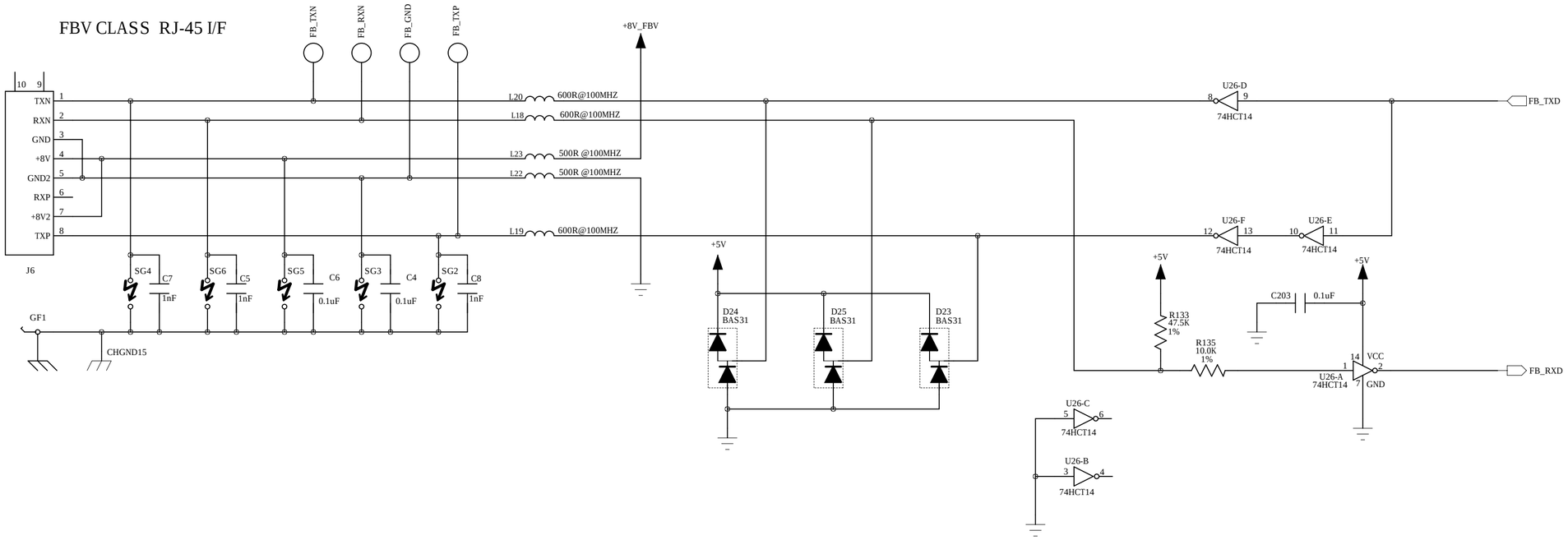
DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN USER_INTERFACE2	
		PROGRAM: PADS LOGIC 2007	REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
		SCALE: 1:1 / SIZE: C / PART NUMBER: 35-00-0394	SHEET: 6 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

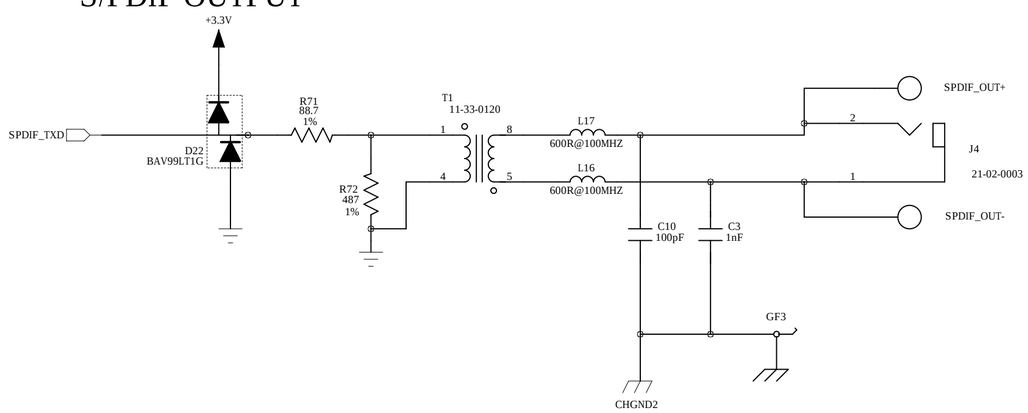
RJ45 JACK PINOUT



FBV CLASS RJ-45 I/F



S/PDIF OUTPUT



S/PDIF OUTPUT

Vout = .5Vpp NOM
Zout = 75ohm NOM

DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	REV: C
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN INTERFACE	
		PROGRAM: PADS LOGIC 2007	
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 7 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

* DNI= DO NOT INSTALL

GUITAR INPUT

15Vpp when Guitar IN = 8Vpp

CODEC inputs are
2.82Vp-p Single Ended /
5.65Vp-p differential

CODEC1

ANALOG TO DIGITAL GROUND CONNECTION AT CODEC

++ PLACE C318 and C321 CLOSE TO CODEC PINS

Codec outputs are:
2.4Vpp Max / 4.8Vpp diff Max

COMPANY: LINE 6			
TITLE: P19-1 POD HD BEAN MAIN ANALOG1			
PROGRAM: PADS LOGIC 2007			REV: C
FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch			
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 8 OF 11
DRAWN: CED	DATED: 03.30.2011		
CHECKED: review panel	DATED: 07.16.2010		

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

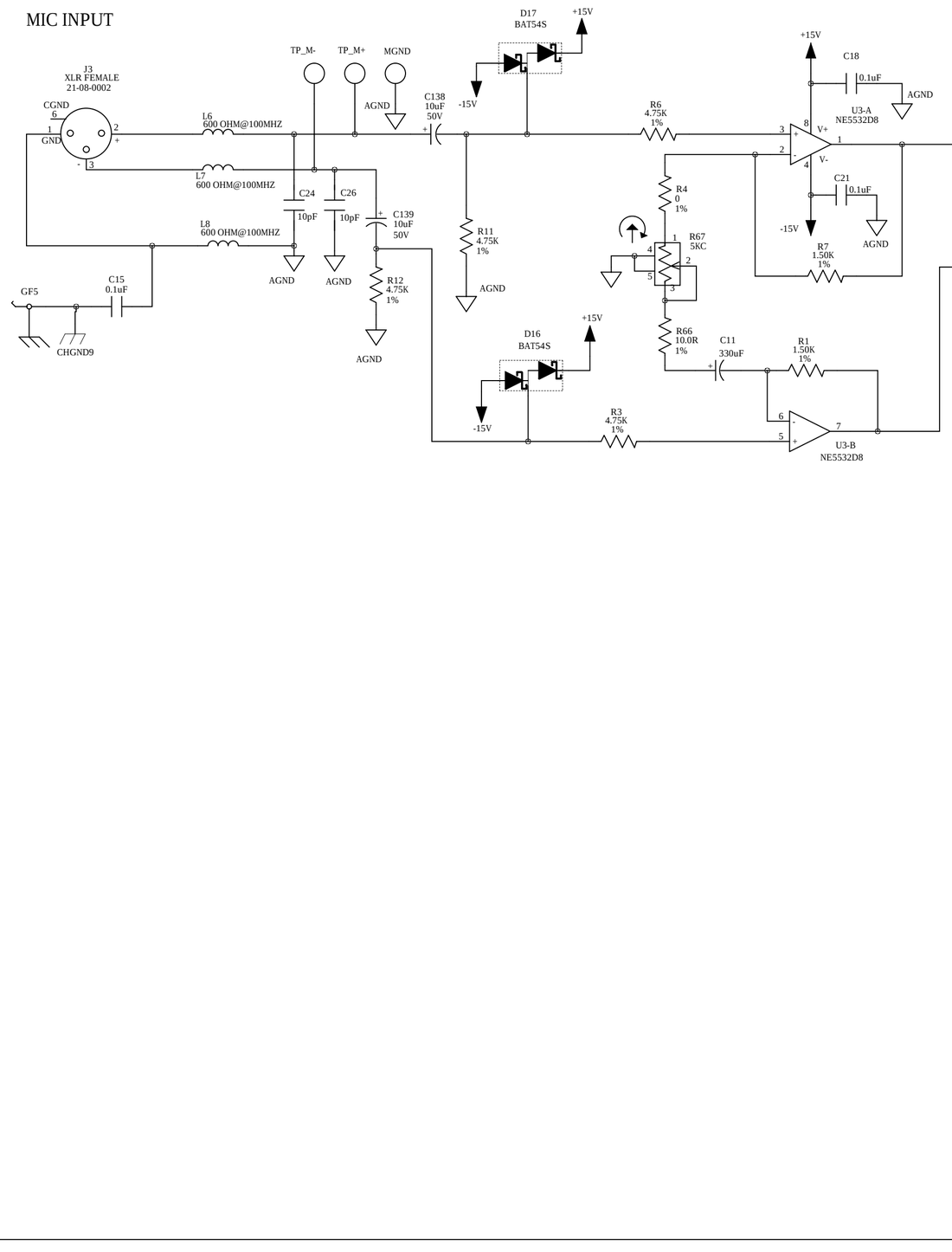
CODEC1_LOUT-
CODEC1_LOUT+
2.4Vpp Max / 4.8Vpp diff Max
R115 2.00K 1%
R116 2.00K 1%
R102 2.00K 1%
R103 2.00K 1%
R109 8.87K 1%
R110 8.87K 1%
C179 390pF
C183 2.7nF
C180 390pF
U12-B TLO74
R112 47.5 1%
HEADPHONE_L
21.288Vpp MAX
R9 1.00K 1%
L10 600R@100MHZ
L13 600R@100MHZ
C27 1nF
C19 1nF
SG9
CHGND6
+BL
-BL
J5 21-00-6616
BALANCED OUT LEFT
C13
0.1uF
GF6
CHGND6
L11 600R@100MHZ
BL_GND
C162 100pF
R87 20.0K 1%
R92 20.0K 1%
U12-C TLO74
21.288Vpp MAX
R8 1.00K 1%
L9 600R@100MHZ
L12 600R@100MHZ
C25 1nF
C14 1nF
SG7
CHGND6
OUTPUT LEVEL = +4dBu NOM Balanced
= +19dBu MAX Balanced
Zout = 672 Ohm NOM
CODEC1_ROUT-
CODEC1_ROUT+
2.4Vpp Max / 4.8Vpp diff Max
R76 2.00K 1%
R75 2.00K 1%
R85 2.00K 1%
R84 2.00K 1%
R79 8.87K 1%
R78 8.87K 1%
C164 390pF
C158 2.7nF
C163 390pF
U12-D TLO74
R101 47.5 1%
HEADPHONE_R
21.288Vpp MAX
R5 1.00K 1%
L2 600R@100MHZ
L5 600R@100MHZ
C20 1nF
C17 1nF
SG8
CHGND6
J1 21-00-6616
BALANCED OUT RIGHT
C2
0.1uF
GF4
CHGND6
L3 600R@100MHZ
C181 100pF
R107 20.0K 1%
R100 20.0K 1%
+15V
-15V
U12-A TLO74
21.288Vpp MAX
R2 1.00K 1%
L1 600R@100MHZ
L4 600R@100MHZ
C16 1nF
C9 1nF
SG1
CHGND6
C54 0.1uF
C119 0.1uF
C124 0.1uF
C51 0.1uF
C116 0.1uF
C121 0.1uF
AGND
HEADPHONE_L
HEADPHONE_R
U27-A TLO74
U27-B TLO74
U27-C TLO74
U27-D TLO74
U21-A TLO74
U21-B TLO74
U21-C TLO74
U21-D TLO74
R149 47.5 1%
R159 47.5 1%
R160 47.5 1%
R162 47.5 1%
R129 47.5 1%
R134 47.5 1%
R138 47.5 1%
R143 47.5 1%
R156 10.0K 1%
R151 4.75K 1%
R132 10.0K 1%
R131 4.75K 1%
HP_L
HP_R
HP_GND
L28 600R@100MHZ
L29 600R@100MHZ
J10 21-00-6616
HEADPHONE OUTPUT
C231 0.1uF
GF7
CHGND4
JP1 0R
R161 15 1%
C224 47nF
R139 15 1%
C208 47nF
+3.3V
R55 20.0K 1%
R60 20.0K 1%
HEADPHONE_SENSE
HP_SENSE
Headphone AGND , +15V, and -15V run
Separately back to +-15V circuits

HEADPHONE AMPLIFIER

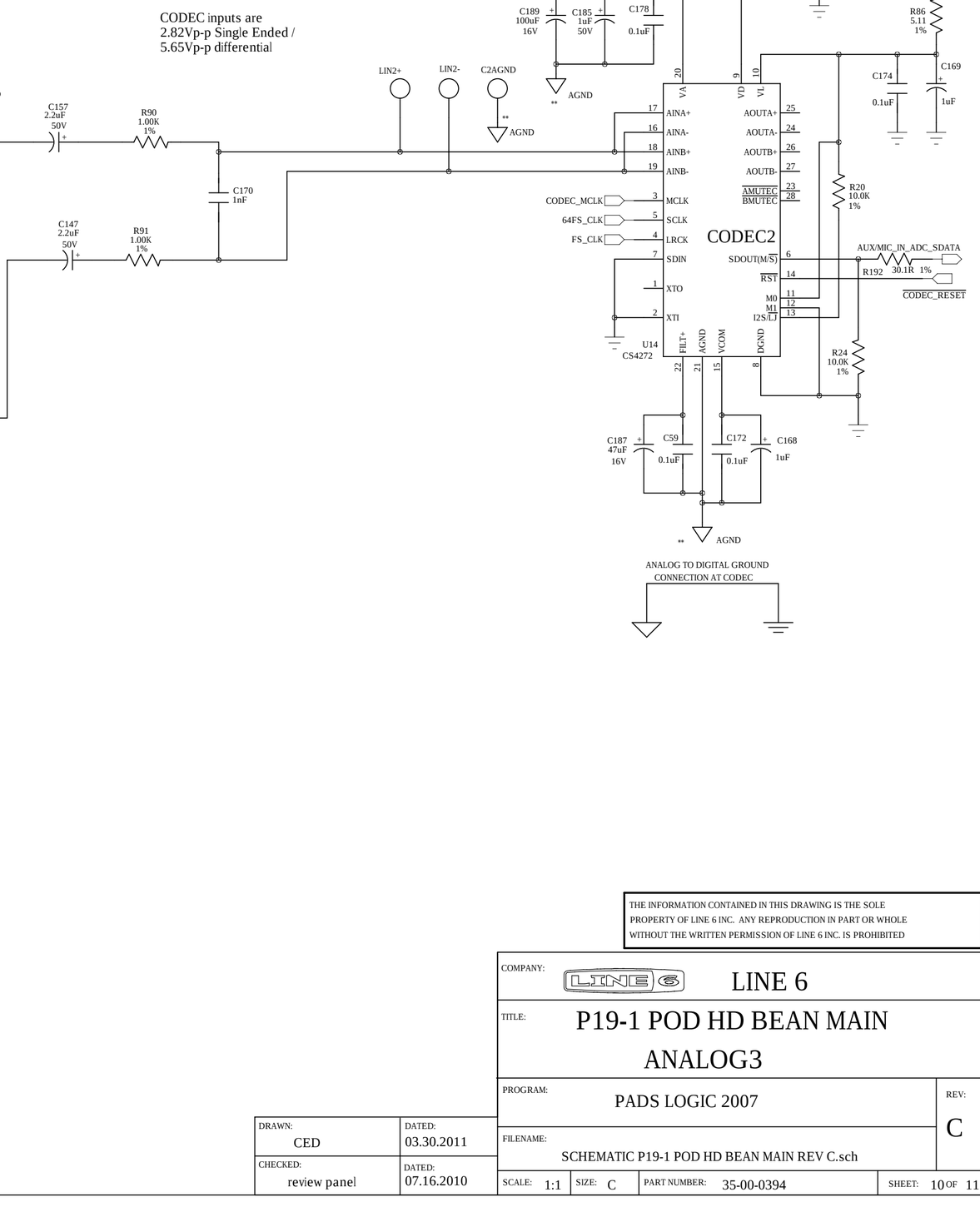
DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6	
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN ANALOG2	
		PROGRAM: PADS LOGIC 2007	REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch	
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 9 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

MIC INPUT



CODEC inputs are
2.82Vp-p Single Ended /
5.65Vp-p differential



ANALOG TO DIGITAL GROUND
CONNECTION AT CODEC

DRAWN: CED	DATED: 03.30.2011	COMPANY: LINE 6			
CHECKED: review panel	DATED: 07.16.2010	TITLE: P19-1 POD HD BEAN MAIN ANALOG3			
		PROGRAM: PADS LOGIC 2007			REV: C
		FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch			
		SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 10 OF 11

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
-	-	-
-	-	-

9VDC

J7 21-00-0014

R194 *DNI 5% 0

PSW1 Switch rocker R-2107A 24-24-2107

L24 3 turns

L21 3 turns

R193 *DNI 5% 0

0.22uF C148

D19 B340B

TP_GND

TP_+9V

+9V_RAW

C175 1000uF 16V

R108 0.221R 1% 0.25W

C182 470uF 16V

C84 0.1uF

R29 0.270R 1% 0.25W

L27 150uH 04-01-0004

*DNI = NOT INSTALLED

D5 B130/B

U2 NJM 2392A 15-68-2392

R32 182R 1%

C85 220pF

R30 28.0K 1%

R33 2.49K 1%

C94 220pF

C106 0.1uF

C199 470uF 25V

R40 100K 1%

Q4 DMP3098L

1% 221 R41

L15 10uH 1.15A

TP_+15V

+15V

C210 1000uF 25V

1% 0R R39

Q3 PMBT4401

C198 470uF 25V

R38 100K 1%

25V 1000uF C205

C191 470uF 25V

D4 B340LA

D6 B340LA

L14 10uH 1.15A

-15V

TP_-15V

Power supply filter for guitar inputs

R64 22.1 1%

R65 22.1 1%

C241 100uF 16V

C240 100uF 16V

TP_+15V_IN

TP_GND_IN

TP_-15V_IN

Ground run separately back to +/- supply filter caps

*DNI = DO NOT INSTALL

R28 0.221R 1% 0.25W

R25 0.221R 1% 0.25W

R21 75.0 1%

R19 301 1%

Q2 NSS60600M24T1G

C184 470uF 16V

C69 0.1uF

U1 NJM 2392A 15-68-2392

C64 220pF

L26 150uH 04-01-0004

D2 B130/B

C72 220pF

R27 1.65K

R26 1.00K 1%

C48 0.1uF

C167 1000uF 6.3V

TP_+3_3V

+3.3V

60mW

D18 BAS16 *DNI

U4 LM1117-1.8 12-52-1118

C136 10uF 50V

C156 100uF 10V

+1_8V

+1.8V (MCU)

R31 0.221R 1%

TP_+1_25V

U17 LM1117 12-52-1119

0.8W

C193 1000uF 6.3V

C186 0.1uF

*DNI R319 1.69K 1%

R114 0 1%

C118 0.1uF

C194 470uF 6.3V

+1.25V (DSP)

R35 0R

D3 BAS16 *DNI

U19 LM1086-ADJ

7.5V

C190 47nF *DNI

R36 510 1%

R37 100R 1%

C188 10uF 50V *DNI

+8V_FBV

R42 1.00R 1%

0.84W

D27 *DNI BAS16

U23 12-52-0003 NJM2885DL1-05

TP_+5V

+5V

C209 100uF 16V

C211 0.1uF

C120 0.1uF

C206 4700uF 6.3V

R34 1.00R 1%

0.8W

D26 *DNI BAS16

U22 12-52-0003 NJM2885DL1-05

TP_+5VA

+5VA

C196 470uF 16V

C202 0.1uF

C204 0.1uF

C207 4700uF 6.3V

R48 1% 220R

R43 1% 220R

R47 1% 220R

R46 1% 220R

R45 1% 220R

R44 1% 220R

+LCD_BKLTV

MT1 C159 47nF AGND

MT8 C232 47nF GND

MT9 C234 47nF AGND

1% 0R R184

MT2 C137 47nF GND

DRAWN: CED	DATED: 03.30.2011		
CHECKED: review panel	DATED: 07.16.2010		
COMPANY: LINE 6			
TITLE: P19-1 POD HD BEAN MAIN POWER			
PROGRAM: PADS LOGIC 2007			REV: C
FILENAME: SCHEMATIC P19-1 POD HD BEAN MAIN REV C.sch			
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0394	SHEET: 11 OF 11

BOM Report99-060-1705 - POD HD US P19-1

Level	Item	Part Number	Qty	Refdes	Rev	Description
1	1	11-30-8621	1.0		A	XFMR WALL 100-240VAC 50-60HZ 9VDC 3000MA DC-3G
1	2	21-34-2000	1.0			CBL USB HIGH SPEED 2 METER BLK
1	3	40-00-0295	1.0		D	MANUAL USER POD HD BEAN P19-1
1	4	40-00-1000	1.0		H	CARD WARRANTY LINE 6
1	5	40-01-0016	1.0		D	CARD LICENSE-AGREEMNT END-USER ALL-PRODUCTS
1	6	40-03-2000	1.0		G	CARD REGISTRATION US
1	7	40-03-2000-1	1.0		A	CARD REGISTRATION EUROPE
1	8	40-10-0399	1.0		B	CARTON GIFT POD HD BEAN P19-1
2	1	41-10-0008	1.0		B	ARTWORK CARTON GIFT POD HD BEAN P19-1
1	9	40-10-0409	0.2		A	CARTON SHIPPING POD HD BEAN P19-1
1	10	40-15-0124	1.0		A	INNER BOARD RIGHT PART P19-1
1	11	40-15-0125	1.0		A	INNER BOARD LEFT PART P19-1
1	12	40-20-0011	1.0		A	BAG PLASTIC 10 x 16 2 mil
1	13	40-20-0070	1.0		A	BAG PLASTIC SHIPPING 9" x 12" 2-MIL
1	14	40-25-0024	1.0		B	STICKER ART SEAL EULA
1	15	40-25-0082	1.0		A	LABEL ROUND 1.75" TRANSPARENT
1	16	40-25-0233	0.2		C	LABEL MASTER CARTON MATTE WHITE
1	17	40-30-0013	1.0		A	LABEL SERIAL NUMBER/ PART NUMBER STANDARD MATTE WHITE
1	18	59-00-0079	1.0		E	ASSY UNIT-COMPLETE POD HD BEAN P19-1
2	1	30-00-1632	4.0			SCREW 6-32 x 3/8IN PPB TAP-TITE STL
2	2	30-15-0038	4.0			SPACER ENCDR SPRT .44 OD x .33ID x .32 LG BLACK ABS P10-1
2	3	30-27-0207-1	1.0		C	BEZEL DISPLAY 5.8 X 3.3 X .08 CLEAR PC P19
3	1	41-00-0322	0.0		B	ARTWORK SILKSCREEN BEZEL POD HD BEAN P19-1
2	4	30-27-0208-3	1.0		D	BUTTON DOUBLE LEFT 1.6 X 1.3 X .78 ABS PLASTIC P19
3	1	41-00-0323	0.0		A	ARTWORK SILKSCREEN BUTTON LEFT POD HD BEAN P19-1
2	5	30-27-0208-4	1.0		D	BUTTON DOUBLE RIGHT 1.6 X 1.3 X .78 ABS PLASTIC P19
3	1	41-00-0324	0.0		A	ARTWORK SILKSCREEN BUTTON RIGHT POD HD BEAN P19-1
2	6	30-27-0217-1	1.0		G	BUTTON 4 WAY TOP .8 DIA x .4 HT ABS NO PLTG
2	7	30-27-0218	1.0		A	BUTTON 4 WAY BOTTOM .8 DIA x 0.5 HT ABS
2	8	30-27-0221	1.0		B	4-WAY SW PIVOT PIN .37 x .200 DIA NYLON 6/6 WHITE
2	9	30-45-0036	5.0		C	KNOB ENCODER W/O INDICATOR. 0.625 INCH ABS BLACK P18-1
2	10	30-45-0041	8.0		A	KNOB LARGE WITH INDICATOR 0.61INCH ABS BLACK P19
2	11	30-48-0010	4.0			FOOT RUBBER w/ADHESIVE 3M BUMPON SJ-5012 (OR EQUIV)
2	12	30-51-0275-1	1.0		D	CHASSIS TOP 11.0 X 7.4 X 1.0 ALUMINUM P19
3	1	41-00-0313	0.0		C	ARTWORK SILKSCREEN CHASSIS TOP POD HD BEAN P19-1
2	13	30-51-0276-1	1.0		F	CHASSIS BOTTOM 11.0 X 7.4 X 2.0 ALUMINUM P19-1
2	14	30-51-0277	6.0			PUSH RETAINING FOR 3.0MM SHAFT STEEL BLACK P10-1
2	15	30-60-0006	1.0		A	LOGO LINE 6 SML 38.35 x 7.98MM w/ADHSV BRUSHED/BLK FINISH AL
2	16	30-63-0028	1.0		A	FOAM RING 4-WAY SW RET PU .75 OD x .40 ID x .18 HT BLK
2	17	30-63-0600-4	1.0		E	FOAM W/ADHESIVE 0.6" X 0.25" X 0.06" VOLARAPOLOLEFIN
2	18	30-65-0038	1.0		A	PET TAPE/WITH 3M ADHESIVE INSULATOR FOR RCA JACK 16MM X 16MM X 0.2MM BLACK
2	19	30-75-0048-1	1.0		D	KEYPAD RUBBER 5.3 X .7 X .7" P19
3	1	41-00-0325	0.0		A	ARTWORK SILKSCREEN KEYPAD POD HD BEAN P19-1
2	20	40-25-0020	1.0		A	LABEL INSPECTION QUALITY
2	21	40-25-0330	1.0		A	LABEL COMPLIANCE POD HD BEAN P19-1
2	22	40-30-0013	1.0		A	LABEL SERIAL NUMBER/ PART NUMBER STANDARD MATTE WHITE
2	23	50-02-0394	1.0		F	PCBA MAIN POD HD BEAN P19-1
3	1	01-24-0000	5.0	JP1,R14,R35,R39,R184	A	RES 0R 1% 1/8W 0805
3	2	01-24-1000	1.0	R10	A	RES 100R 1% 1/8W 0805
3	3	01-24-1001	4.0	R2,R5,R8-R9	A	RES 1.00K 1% 1/8W 0805
3	4	01-24-1002	2.0	R132,R156	A	RES 10.0K 1% 1/8W 0805
3	5	01-24-10R0	2.0	R18,R83	A	RES 10.0R 1% 1/8W 0805
3	6	01-24-1210	1.0	R195		RES 121R 1% 1/8W 0805

3	7	01-24-1300	7.0	R88,R93,R96,R123-R125,R128	A	RES 130R 1% 1/8W 0805
3	8	01-24-1502	1.0	R181	A	RES 15.0K 1% 1/8W 0805
3	9	01-24-15R0	2.0	R139,R161	A	RES 15R 1% 1/8W 0805
3	10	01-24-1R00	2.0	R15-R16	A	RES 1.0R 1% 1/8W 0805
3	11	1-24-2002	8.0	R55,R60,R87,R92,R100,R107,R172-R173	A	RES 20.0K 1% 1/8W 0805
3	12	01-24-22R1	1.0	R17	A	RES 22.1R 1% 1/8W 0805
3	13	01-24-30R1	11.0	R105,R113,R120,R185-R192	A	RES 30.1R 1% 1/8W 0805
3	14	01-24-40R2	1.0	R127		RES 40.2R 1% 1/8W 0805
3	15	1-24-4751	2.0	R131,R151		RES 4.75K 1% 1/8W 0805
3	16	1-24-4752	1.0	R133		RES 47.5K 1% 1/8W 0805
3	17	01-24-47R5	10.0	R101,R112,R129,R134,R138,R143,R149,R159-R160,R162		RES 47.5R 1% 1/8W 0805
3	18	1-24-4870	1.0	R72		RES 487R 1% 1/8W 0805
3	19	01-24-5R11	2.0	R86,R157		RES 5.11R 1% 1/8W 0805
3	20	1-24-8871	4.0	R78-R79,R109-R110		RES 8.87K 1% 1/8W 0805
3	21	01-24-88R7	1.0	R71		RES 88.7R 1% 1/8W 0805
3	22	01-25-0000	3.0	R4,R114,R146	A	RES 0R 1% 1/10W 0603
3	23	01-25-01R0	2.0	R34,R42	A	RES 1.0R 1% 1/10W 0603
3	24	01-25-0221	6.0	R43-R48		RES 220R 1% 1/10W 0603
3	25	01-25-1001	12.0	R26,R57-R58,R61-R62,R90-R91,R150,R158,R175,R177,R182	A	RES 1.00K 1% 1/10W 0603
3	26	01-25-1002	14.0	R13,R20,R24,R56,R77,R81,R135,R145,R152,R154,R178-R180,R183	A	RES 10.0K 1% 1/10W 0603
3	27	01-25-1003	3.0	R38,R40,R63	A	RES 100K 1% 1/10W 0603
3	28	01-25-10R0	1.0	R66	A	RES 10.0R 1% 1/10W 0603
3	29	01-25-1151	1.0	R174	A	RES 1.15K 1% 1/10W 0603
3	30	01-25-1183	1.0	R168	A	RES 118K 1% 1/10W 0603
3	31	01-25-1244	1.0	R167	A	RES 1.24M 1% 1/10W 0603
3	32	01-25-1400	2.0	R89,R95	A	RES 140R 1% 1/10W 0603
3	33	01-25-1501	4.0	R1,R7,R50,R53	A	RES 1.50K 1% 1/10W 0603
3	34	01-25-1651	1.0	R27	A	RES 1.65K 1% 1/10W 0603
3	35	01-25-1820	1.0	R32	A	RES 182R 1% 1/10W 0603
3	36	1-25-2001	12.0	R74-R76,R80,R84-R85,R98-R99,R102-R103,R115-R116	A	RES 2.00K 1% 1/10W 0603
3	37	1-25-2151	2.0	R147-R148	A	RES 2.15K 1% 1/10W 0603
3	38	1-25-2210	1.0	R41	A	RES 221R 1% 1/10W 0603
3	39	1-25-2212	1.0	R166	A	RES 22.1K 1% 1/10W 0603
3	40	1-25-2213	1.0	R165	A	RES 221K 1% 1/10W 0603
3	41	01-25-22R1	2.0	R64-R65	A	RES 22.1R 1% 1/10W 0603
3	42	1-25-2320	2.0	R117,R126	A	RES 232R 1% 1/10W 0603
3	43	1-25-2491	1.0	R33	A	RES 2.49K 1% 1/10W 0603
3	44	1-25-2802	1.0	R30	A	RES 28.0K 1% 1/10W 0603
3	45	1-25-4022	1.0	R141	A	RES 40.2K 1% 1/10W 0603
3	46	1-25-4750	1.0	R164	A	RES 475R 1% 1/10W 0603
3	47	1-25-4751	16.0	R3,R6,R11-R12,R22-R23,R94,R97,R111,R118-R119,R121-R122,R136-R137,R144	A	RES 4.75K 1% 1/10W 0603
3	48	1-25-4752	6.0	R51,R54,R59,R169-R171	A	RES 47.5K 1% 1/10W 0603
3	49	1-25-4872	1.0	R155	A	RES 48.7K 1% 1/10W 0603
3	50	1-25-4994	1.0	R176	A	RES 4.99M 1% 1/10W 0603
3	51	1-25-6490	2.0	R49,R52	A	RES 649R 1% 1/10W 0603
3	52	1-25-6982	1.0	R153	A	RES 69.8K 1% 1/10W 0603
3	53	1-25-7320	1.0	R163	A	RES 732R 1% 1/10W 0603
3	54	01-25-75R0	1.0	R21	A	RES 75R 1% 1/10W 0603
3	55	1-28-3010	1.0	R19	A	RES 301R 1% 1/4W 1206
3	56	01-28-R221	4.0	R25,R28,R31,R108	A	RES 0.22R 1% 1/4W 1206
3	57	01-28-R270	1.0	R29	A	RES 0.270R 1% 1/4W 1206
3	58	01-48-0025	1.0	R67		POT SINGLE 5KC LOG TAPER RIGHT ANGLE 25MM SHAFT
3	59	01-48-0103	8.0	R68-R70,R73,R104,R106,R140,R142	A	POT MONO 10KB LINEAR TAPER 25MM D-SHAFT
3	60	03-10-0331	1.0	C11		CAP ELEC 330uF 10V 20% RADIAL 6.3/11.2/5

3	61	03-10-0478	2.0	C206-C207		CAP ELEC 4700uF 6.3V 20% RADIAL 12.5/20/5
3	62	03-10-1107	2.0	C160,C192		CAP ELEC 100uF 6.3V 20% RADIAL 5/11/5
3	63	3-10-6108	1.0	C146		CAP ELEC 1000uF 6.3V 20% RADIAL 8/11.5/5
3	64	03-12-0107	2.0	C140,C189		CAP ELEC 100uF 16V 20% RADIAL 6.3/11/5
3	65	03-12-0108	1.0	C175		CAP ELEC 1000uF 16V 20% RADIAL 10/16/5
3	66	03-12-0228	1.0	C229		CAP ELEC 2200uF 16V 20% RADIAL 12.5/20/5
3	67	03-12-0476	2.0	C187,C233		CAP ELEC 47uF 16V 20% RADIAL 6.3/11.2/5
3	68	03-14-0107	1.0	C230		CAP ELEC 100uF 25V 20% RADIAL 6.3/11.2/5
3	69	03-14-0108	2.0	C205,C210		CAP ELEC 1000uF 25V 20% RADIAL 10/20/5
3	70	03-18-0105	6.0	C168-C169,C185,C212,C220,C225		CAP ELEC 1uF 50V 20% RADIAL 5/11/5
3	71	03-18-0106	9.0	C138-C139,C213,C215,C218,C222-C223,C227,C237		CAP ELEC 10uF 50V 20% RADIAL 5/11/5
3	72	03-18-0225	2.0	C147,C157	A	CAP ELEC 2.2UF 50V 20% RADIAL 5/11/5
3	73	03-36-0224	1.0	C148		CAP ESTR 0.22uF 50V 5% TH 11/6/11.5/7.5
3	74	03-50-0120	2.0	C22-C23		CAP NPO 12pF 50V 5% 0805
3	75	03-50-0272	2.0	C158,C183		CAP NPO 2.7nF 50V 5% 0805
3	76	03-50-0391	4.0	C163-C164,C179-C180		CAP NPO 390pF 50V 5% 0805
3	77	03-50-0561	2.0	C47,C50		CAP NPO 560pF 50V 5% 0805
3	78	03-52-0102	8.0	C9,C14,C16-C17,C19-C20,C25,C27		CAP X7R 1nF 50V 10% 0805
3	79	03-52-0104	2.0	C28,C155		CAP X7R 0.1uF 50V 10% 0805
3	80	03-52-0334	1.0	C154		CAP X7R 0.33uF 25V 10% 0805
3	81	03-52-0473	7.0	C34,C137,C159,C208,C224,C232,C234		CAP X7R 47nF 50V 10% 0805
3	82	03-56-0100	2.0	C24,C26		CAP NPO 10pF 50V 5% 0603
3	83	03-56-0101	7.0	C10,C129,C161-C162,C181,C238-C239		CAP NPO 100pF 50V 5% 0603
3	84	03-56-0102	4.0	C3,C170,C217,C221		CAP NPO 1nF 50V 5% 0603
3	85	03-56-0221	4.0	C64,C72,C85,C94		CAP NPO 220pF 50V 5% 0603
3	86	03-56-0470	1.0	C236		CAP NPO 47pF 50V 5% 0603
3	87	03-58-0102	28.0	C5,C7-C8,C53,C57,C61-C62,C68,C73,C75,C77,C79,C83,C86,C90-C91,C93,C95,C99-C100,C104-C105,C107,C109,C111,C113,C176,C195		CAP X7R 1nF 50V 10% 0603
3	88	03-58-0103	4.0	C30-C31,C36,C173		CAP X7R 10nF 50V 10% 0603
3	89	03-58-0104	107.0	C1-C2,C4,C6,C12-C13,C15,C18,C21,C29,C32-C33,C35,C37-C46,C48-C49,C51-C52,C54-C56,C58-C60,C63,C65-C67,C69-C71,C74,C76,C78,C80-C82,C84,C87-C89,C92,C96-C98,C101-C103,C106,C108,C110,C112,C114-C128,C130-C135,C141-C144,C150-C153,C165-C166,C171-C172,C174,C178,C186,C200-C204,C211,C214,C216,C219,C231		CAP X7R 0.1uF 25V 10% 0603
3	90	03-80-0107	1.0	C156		CAP ELEC 100uF 10V 20% SM 6.3/5.4/7.8
3	91	03-80-0108	2.0	C167,C193		CAP ELEC 1000uF 6.3V 20% SM 10/10.2/12
3	92	03-80-0109	1.0	C177		CAP ELEC 100UF 10V 20% SM 5.0/5.4/6.5
3	93	03-80-1477	1.0	C194		CAP ELEC 470uF 6.3V 20% VS SM
3	94	03-82-0106	2.0	C145,C149		CAP ELEC 10uF 16V 20% SM 4/5.4/5.5
3	95	03-82-0107	3.0	C209,C240-C241		CAP ELEC 100uF 16V 20% VS SM
3	96	03-82-0477	3.0	C182,C184,C196		CAP ELEC 470uF 16V 20% SM 10/10.2/12
3	97	03-84-0477	3.0	C191,C198-C199		CAP ELEC 470uF 25V 20% SM 10/10.2/12
3	98	03-88-0105	1.0	C235		CAP ELEC 1uF 50V 20% VS SM
3	99	03-88-0106	1.0	C136		CAP ELEC 10uF 50V 20% VS SM
3	100	04-01-0004	2.0	L26-L27		INDUCTOR CHOKE 150UH 20% 0.28R 1A SM SHIELDED
3	101	04-01-0100	2.0	L14-L15		INDUCTOR DRUM-CORE 10uH @ 2.52MHz 1.15A SM
3	102	04-04-0001	2.0	L21,L24		FERRITE BEAD 3 TURN 600R @ 100MHz MATERIAL 61 RADIAL TH
3	103	06-20-0099	5.0	D22-D25,D46		DIODE GEN PUR DUAL 70V 215mA 6nS SOT-23 SM
3	104	06-23-0054	6.0	D16-D17,D20-D21,D28-D29		DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM
3	105	06-23-0340	2.0	D4,D6		DIODE SCHOTTKY 3A 40V SMA SM
3	106	06-28-0001	3.0	D14-D15,D47	X0	DIODE ZENER 10V 2% 250MW TO-236AB SM
3	107	06-32-0130	2.0	D2,D5		DIODE SCHOTTKY 1A 30V SMB SM
3	108	06-32-0340	1.0	D19		DIODE SCHOTTKY 3A 40V SMB SM
3	109	06-34-0016	17.0	D1,D30-D45		DIODE SWITCHING 75V 200mA 6nS SOT-23 SM

3	110	09-10-0600	1.0	Q2		TRANS PNP 60V 6.0A 100MHZ SOT-223 SM
3	111	9-10-4401	5.0	Q1,Q3,Q6-Q8		TRANS NPN SMALL SIGNAL SOT-23 SM
3	112	9-10-4403	1.0	Q5		TRANS PNP SMALL SIGNAL SOT-23 SM
3	113	9-14-3098	1.0	Q4		TRANS MOSFET P-CHAN 30V 3.8A SOT-23 SMD
3	114	11-00-0003	1.0	Y1		CRYSTAL 24MHz 2 PIN LOW PROFIL E METAL CAN AT49 TH
3	115	11-1-2258	1.0	Y3		OSCILLATOR 22.5792MHz 3.3V W/3 -S HCMOS OUT 4 PIN HS-DIP8
3	116	11-1-2458	1.0	Y2		OSCILLATOR 24.576MHz 3.3V W/3- S HCMOS OUT 4 PIN HS-DIP8
3	117	11-10-0501	2.0	L22-L23		FERRITE BEAD 500R @100MHz 2.5A 1206 SM
3	118	11-10-2012	22.0	L1-L13,L16-L20,L25,L28-L30		FERRITE BEAD 600R @ 100MHz 300 mA 0805 SM
3	119	11-33-0120	1.0	T1		XFMR AUDIO DIGITAL X-MISSION 1:1
3	120	12-52-0003	2.0	U22-U23	A	IC REG LINEAR LDO +5V 500mA SM
3	121	12-52-1118	1.0	U4		IC REG 1.8V LDO LINEAR 800mA S OT-223 SM
3	122	12-52-1119	1.0	U17	A	IC VREG LINEAR LDO ADJ 800MA LM1117 DPAK TO-252 SMD
3	123	12-54-0074	3.0	U12,U21,U27		IC OP AMP TL074 SM
3	124	12-54-0134	1.0	U31		IC OP AMP OPA134 SO-8 SM
3	125	12-54-5538	3.0	U3,U30,U32		IC OP AMP DUAL LO NOISE SO-8 S M
3	126	12-62-4051	1.0	U29		IC SWITCH ANALOG 8-CHAN TSSOP-16 SM
3	127	12-64-4272	2.0	U14,U28		IC STEREO AUDIO CODEC 24 BIT 192 KHz CS4272 SM
3	128	15-64-0014	1.0	U26		IC 74HCT14 HEX INVERTER 6 SM
3	129	15-64-0273	2.0	U24-U25		IC 74HCT273 OCTAL D-TYPE FLIP FLOP 8 BIT SO-20 SM
3	130	15-65-0000	1.0	U8		IC 74LCX00 LOW VOLTAGE QUAD 2 INPUT NAND GATE 5V SO-14 SM
3	131	15-65-0002	1.0	U10		IC 74LCX02 LOW VOLTAGE QUAD 2 INPUT NOR GATE 5V SO-14 SM
3	132	15-65-0015	1.0	U9		IC SN74LVC14AD LOW VOLTAGE CMO S INV HEX SCHMITT TRIG SO-14
3	133	15-68-2392	2.0	U1-U2	A	IC CONTROLLER JRC NJM2392 DMP-8 SMD
3	134	15-68-6801	1.0	U5		IC CONTROLLER USB 2.0 w/8052 MCU SSOP-56 SM
3	135	15-70-0002	2.0	U15,U20		IC SDRAM 3.3V 64MBIT 1M X 16 X 4 TSOP-54 SM
3	136	15-78-0256	1.0	U6		IC EEPROM 256K 2.5V 400KHz CMO S SOIC-8 SM
3	137	15-79-0088	1.0	U7		IC MEMORY SECURE WITH AUTHENTI CATION SO-8 SM
3	138	15-84-2220	1.0	U13		IC MCU 16/32 BIT ARM W/64K ADC LPC2220 LQFP144 SM
3	139	15-86-3369	1.0	U18		IC DSP SHARC PROCESSOR 32 BIT 333MHZ ADSP-21369KSWZ-2A LQFP208EP SMD
3	140	15-92-5809	1.0	U11	A	IC RESET 3 PIN 3.3V ACTIVE LOW OUTPUT SO
3	141	18-00-0005	7.0	D7-D13	A	LED RED SUPER BRIGHT T-1 3M M TH
3	142	21-00-0014	1.0	J7		JACK BARREL PCB MT 2.5MM DC PO WER 3 PIN TH
3	143	21-00-6616	4.0	J1,J5,J10-J11	B	JACK 1/4" TRS PCB MOUNT 6 PIN HORIZONTAL TH
3	144	21-02-0003	1.0	J4		JACK RCA 2 PIN RT ANGLE PCB MO UNT
3	145	21-08-0002	1.0	J3		JACK XLR FEMALE PCB MOUNT RT ANGLE W/NO RELEASE TAB TH
3	146	21-16-0045	1.0	J6		JACK RJ-45 MOD 8/8 RT/A FEMALE PCB 50AU
3	147	21-21-0001	1.0	J2		JACK USB SERIES B SHIELDED PCB MNT BLACK
3	148	24-12-0001	4.0	E2-E5		ENCODER 24 STEP w/25MM SHFT TH
3	149	24-12-0006	1.0	E1		ENCODER 20 STEP w/SWITCH 15MM D-SHAFT METAL V-MNT PCB
3	150	24-24-2107	1.0	PSW1		SWITCH ROCKER ON/OFF 2 PIN HOR IZONTAL MNT
3	151	24-31-0002	8.0	SW1-SW8		SWITCH TACT 6MM SQ 4 PIN W/RND 3.5MM ACTUATOR SM
3	152	30-00-0266	4.0		A	SCREW #3-48 UNC X 1/2" SOCKET HEAD STEEL
3	153	30-06-0018	4.0		A	NUT HEX #3-48 STL
3	154	30-15-0007	1.0			INSULATOR XTAL 4.9MM C-C 11.8 x 5.6MM MYLAR
3	155	30-15-4030	4.0		A	SPACER 4MM HEIGHT NYLON
3	156	30-18-3030	8.0	GF1-GF8		CLIP GROUND PCB .30 x .30 x .0 7
3	157	30-65-0034	1.0		A	RUBBER TAPE/ADHESIVE FOR INSULATOR PCBA 2.68IN X 2.48IN X 0.008IN GRAY
3	158	35-00-0394	1.0		C	PCB MAIN POD HD BEAN P19-1
3	159	40-30-2000	1.0			LABEL ESN 38.10 X 6.35MM THERMAL XFR MATTE WHITE
3	160	45-02-0066	1.0	U16	V1.33.0(	IC PROGRAMMED FLASH/MCU POD HD BEAN P19-1
4	1	15-78-6401	1.0			IC FLASH 64Mb 3.3V 70nS TSOP-4 8 SM
3	161	50-02-0147	1.0		C	PCBA DISPLAY LCD 128X64 GRAPHIC 6:00 WHITE STRANDED TINNED
4	1	18-30-0011-2	1.0		A	DISPLAY LCD MODULE 128X64 POS GRAPHIC 6-OCLOCK XFLECT WHITE P18-1
4	2	21-30-0073	1.0		B	CBL RIBBON SIL 20 PIN 26AWG 0.100 PITCH STRANDED TINNED AND TINNED TIPS

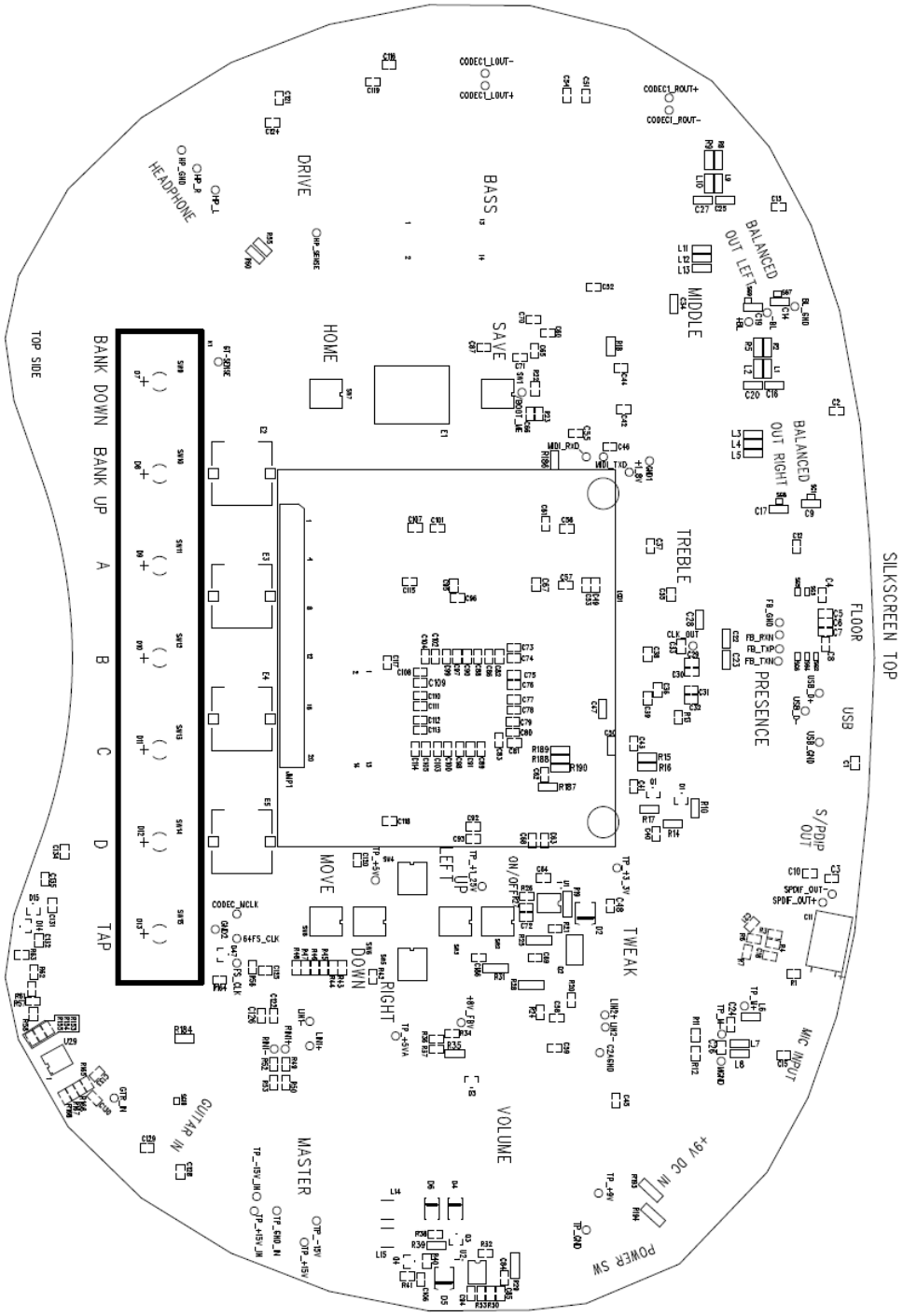
Engineering

Confidential

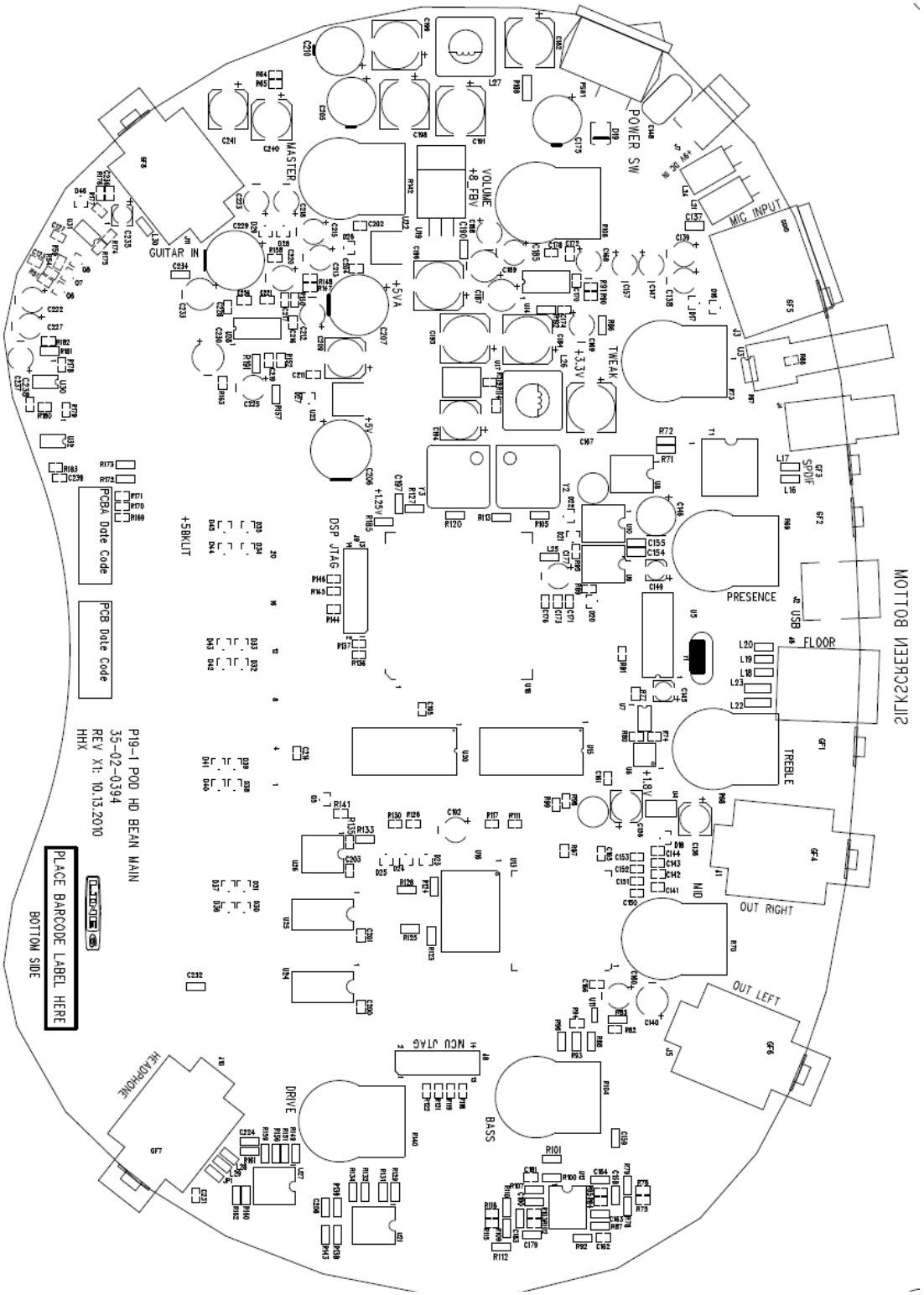
P19-1 POD HD BEAN PCBA Assembly Instructions Rev D

MAIN PCBA: 50-02-0394

TOP ASSEMBLY



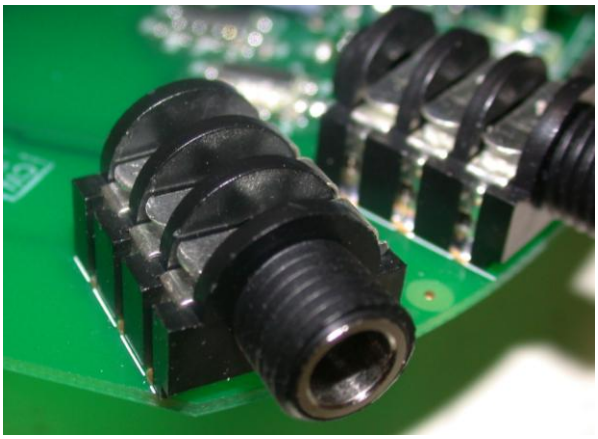
BOTTOM ASSEMBLY



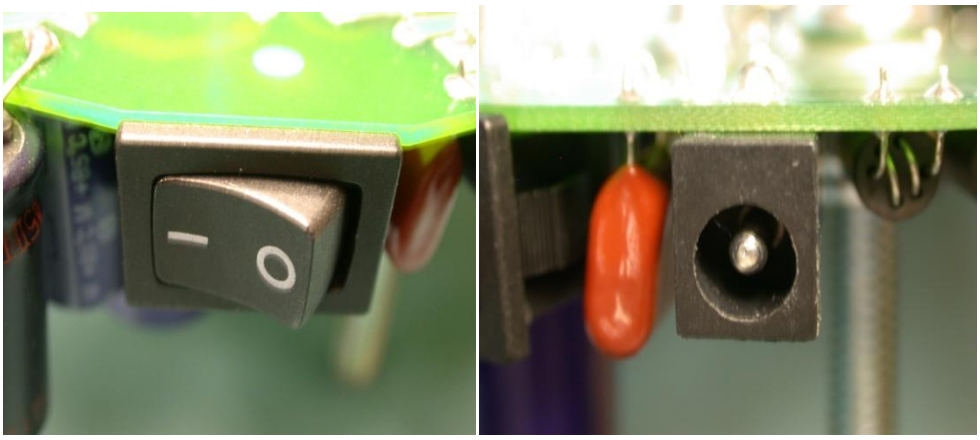
1. **“NOT INSTALLED” COMPONENTS:** Do not install the following components:

R82, R37, R319, R130, R36, R193, R194, C188, C197, C190, C226, C228, D3, D18, D26, U19, J8, and J9

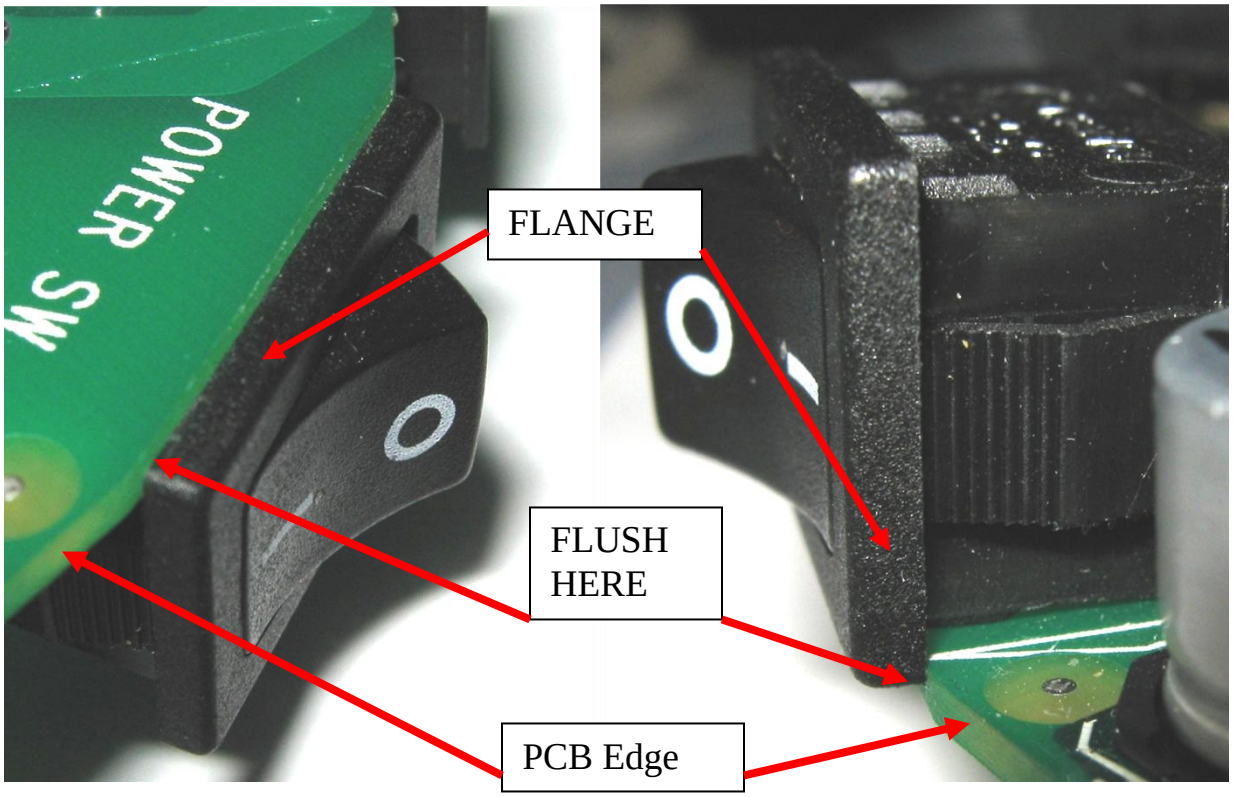
2. **JACKS**: Make sure ALL jacks J1, J5, J10, and J11 (P/N 21-00-6616) are mounted flush against the PCB and lined up with silkscreen outline within +/-1 degree of accuracy. **ALL jacks are mounted on the bottom side of the PCB.**



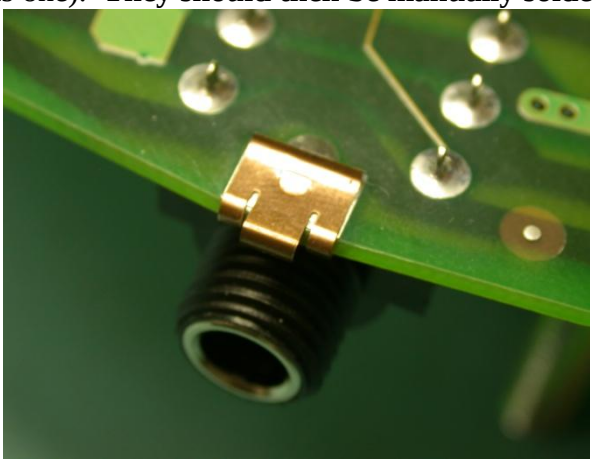
3. **POWER SWITCH and POWER JACK:** Power switch PSW1 (P/N 24-24-2107) and the power jack J7 (P/N 21-00-0014) are both mounted on the bottom side of the PCB with the switch and jack mounted flush to the PCB.

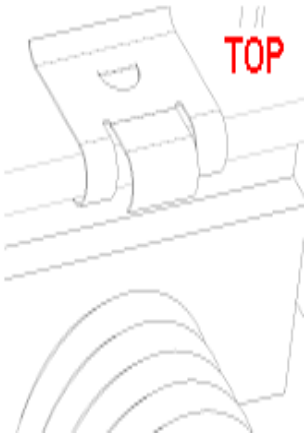


The switch flange fits flush against the PCB edge.


POWER SW
FLANGE
FLUSH HERE
PCB Edge

4. **GROUNDING FINGERS:** ALL grounding fingers (GF1-8) 30-18-3030 are mounted flush against the PCB edge. They are mounted with their center clip hole on the TOP side of the PCB (all jacks are on the bottom side) see drawing below. The "curl" of the grounding finger should curve toward the bottom side (toward the corresponding jack if there is one). **They should then be manually soldered on the TOP side.**

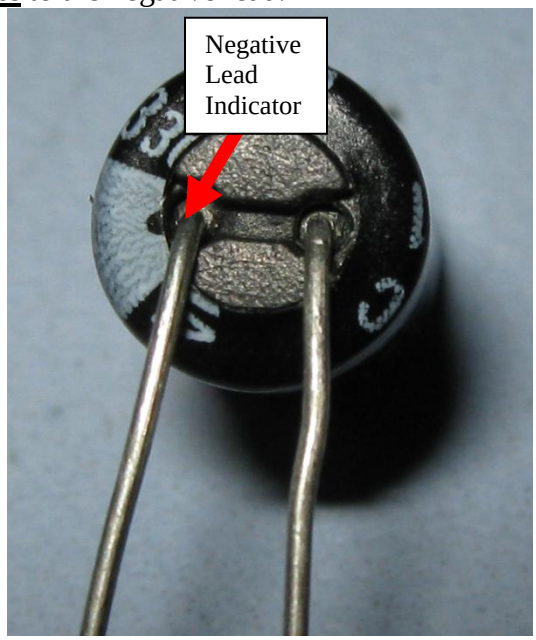


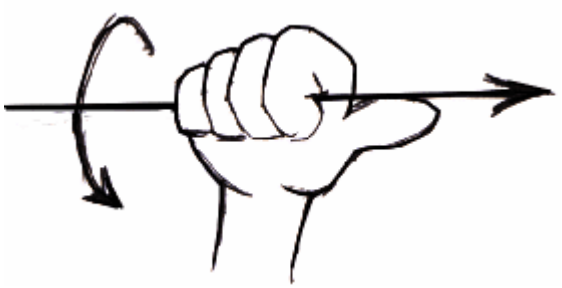


5. **METAL CAN OSCILLATOR:** Y2 (P/N 11-01-2458) and Y3 (P/N 11-01-2258) Metal can oscillator are to be mounted flush on the Bottom Side of the PCB. Make sure to check pin 1 orientation before installing. Add Insulator (P/N 30-15-0007) between the PCB and Y1 (P/N 11-00-0003) before mounting onto the Top Side of the PCB.

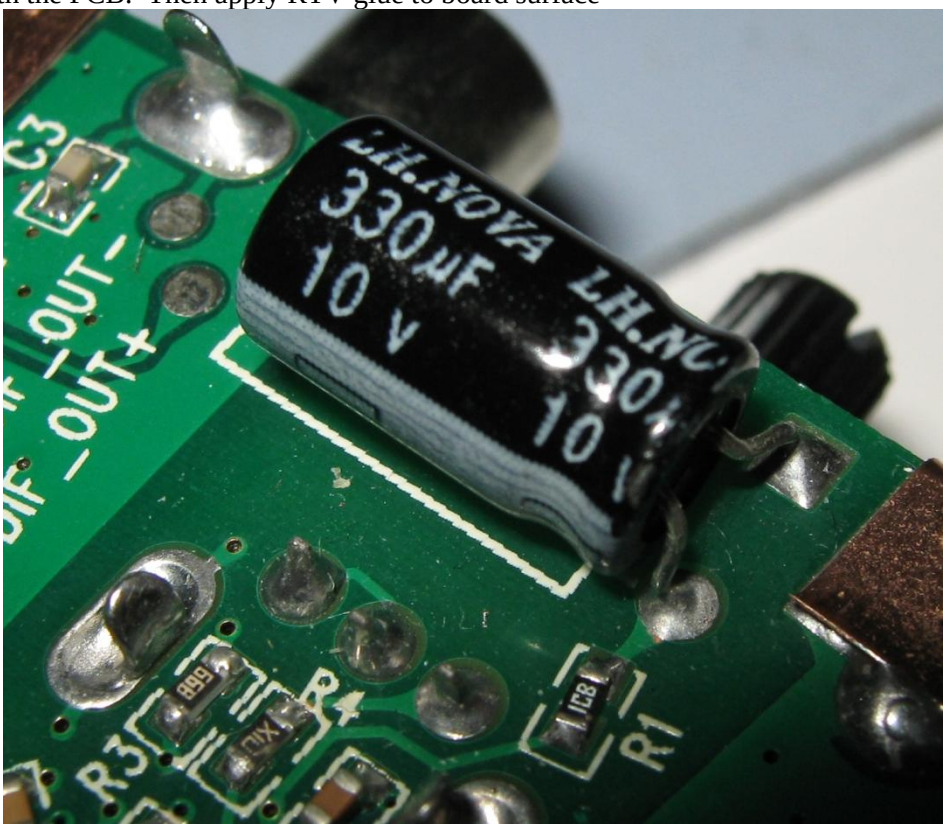
6. **ELECTROLYTIC CAPACITORS:** Clip All through hole capacitor leads to .060 from the PCB. All large capacitors are mounted flush against the PCB on the Bottom Side of the PCB: C175, C205, C206, C207, C210, and C229

C11, (P/N 03-10-0331) Bend the capacitor lead to a 90º angle. Make sure the leads are bent in the correct direction. Using the right hand rule, your thumb should point in the direction **opposite** to the negative lead.

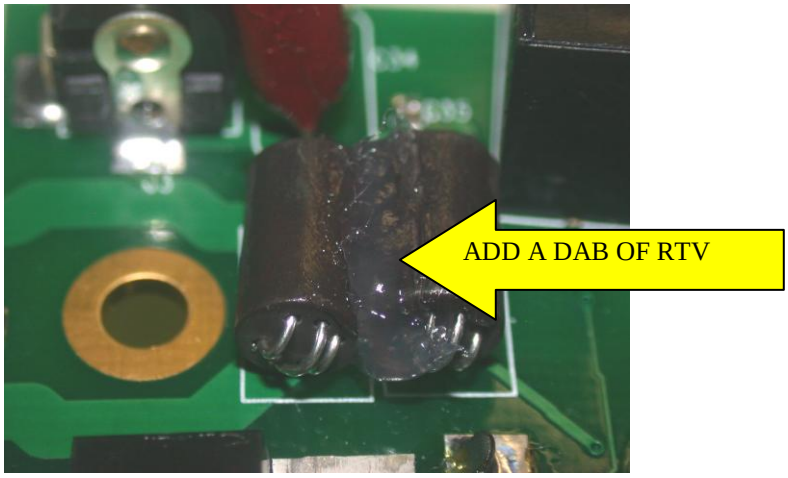




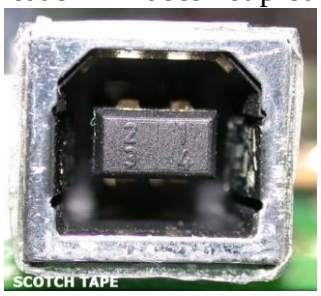
Install C11 on the Top side of the PCB with the negative lead closest to R1. Fully insert C11 so that it is flush with the PCB. Then apply RTV glue to board surface

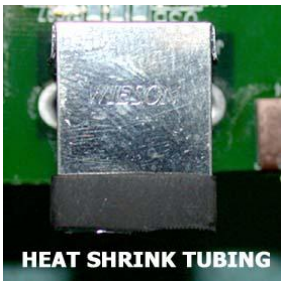


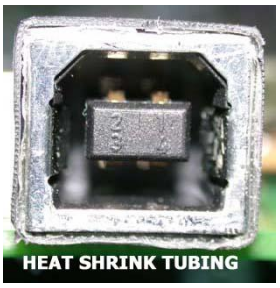
7. **THRU HOLE FERRITE BEADS:** L15 and L24 (P/N 04-04-0001) must be mounted on its side flush against the PCB and lined up with silkscreen outline. Clip leads to .060" on the TOP side of PCB. Make sure to apply a dab of RTV between L15 and L24, see picture below.



8. **USB JACK:** Mount the USB Jack flush on the Bottom Side of the PCB. Use scotch tape, electrical tape, or heat shrink tubing to prevent the USB jack J2 (P/N 21-21-0001) from shorting to the chassis. Place it around the front edges of the USB jack as shown below. For cosmetic reasons please apply tape or heat shrink as accurately as possible so that the tape or heat shrink does not protrude too far out from the jack.

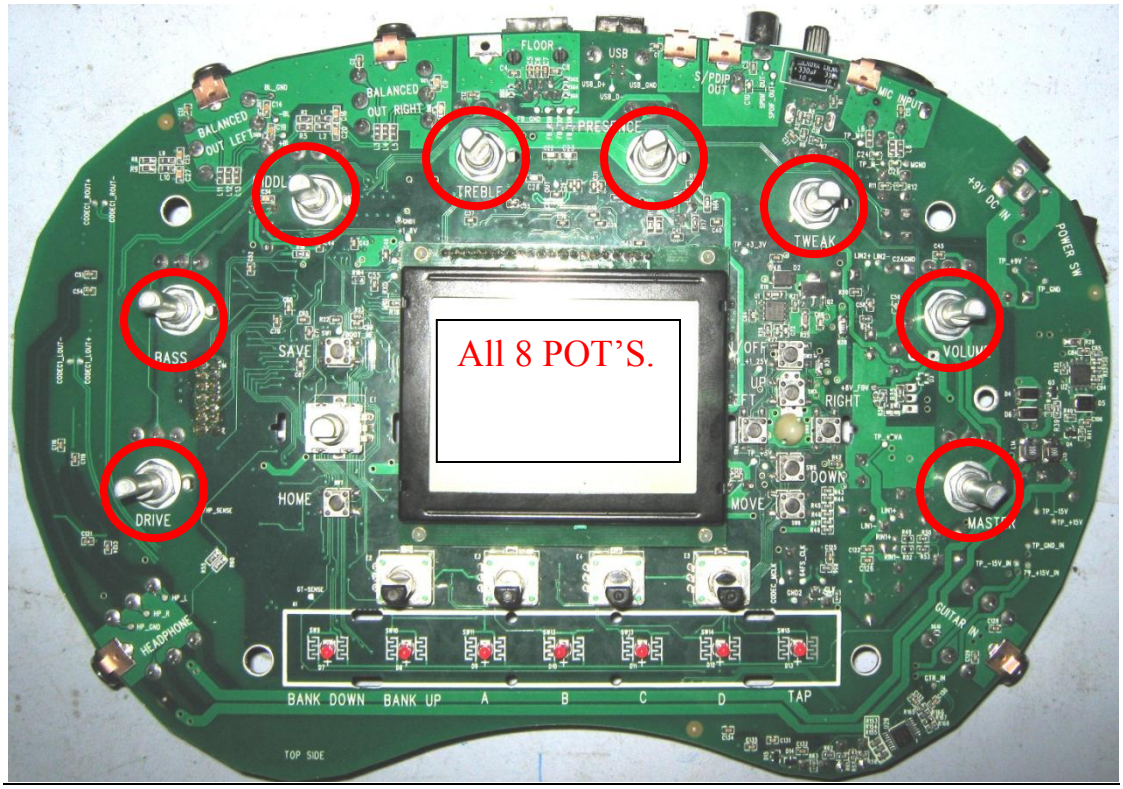


OR


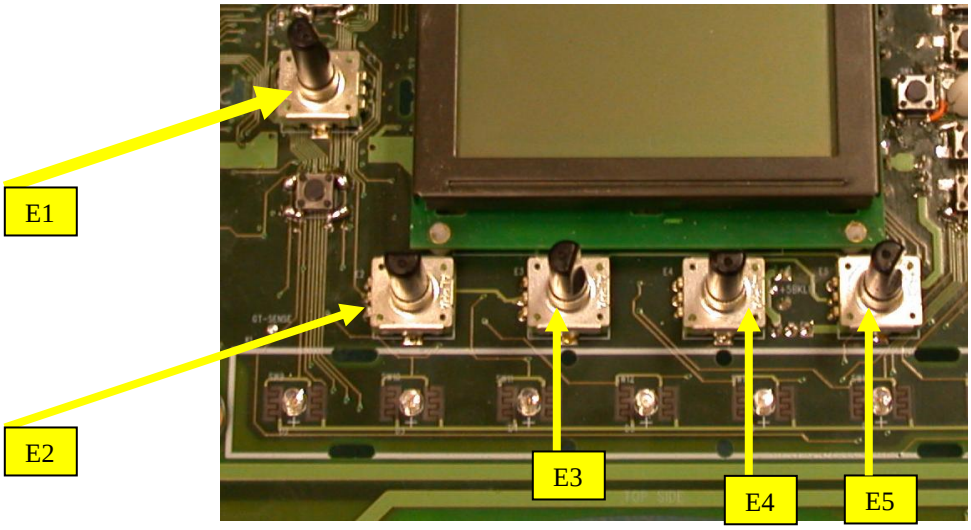


POTENTIOMETERS: Potentiometers R68, R69, R70, R73, R104, R106, R140, and R142 are mounted on the bottom side of the PCB:

- Insert the shaft of the pot through the through-hole from the bottom side of the board. The pot shaft will sit perpendicular to the board when the pot is mounted flush to +/-1 degree. Ensure that the 3 soldering leads and side pin extend through the board. **DO NOT SOLDER AT THIS POINT.** Secure the pot to the board using the supplied hexagonal nut and washer. Tighten until snug.
- After securing the potentiometer using the hex nut and washer, solder the 3 terminal leads.



9. **ENCODERS:** Encoders E2-E5 are 24-step (24-12-0001). Encoder E1, is a 20 step with push switch (24-12-0006). ALL encoders are mounted on the TOP side of the PCB (See picture below). Each encoder should be mounted flush to the PCB within +/- 1 degree of accuracy. See picture below:



10. **THRU HOLE LED's:** Install LED's D7-13 (P/N 18-00-0005) on the Top Side of the PCB, making sure orientation is correct. Solder LEDs on the BOTTOM SIDE of the PCB.
11.

LCD MODULE ASSEMBLY (P/N 50-02-0147):

Step 1 –Solder the 20 pin female staked cable (P/N 21-30-0073) to the LCD Module. See Figure# 24.

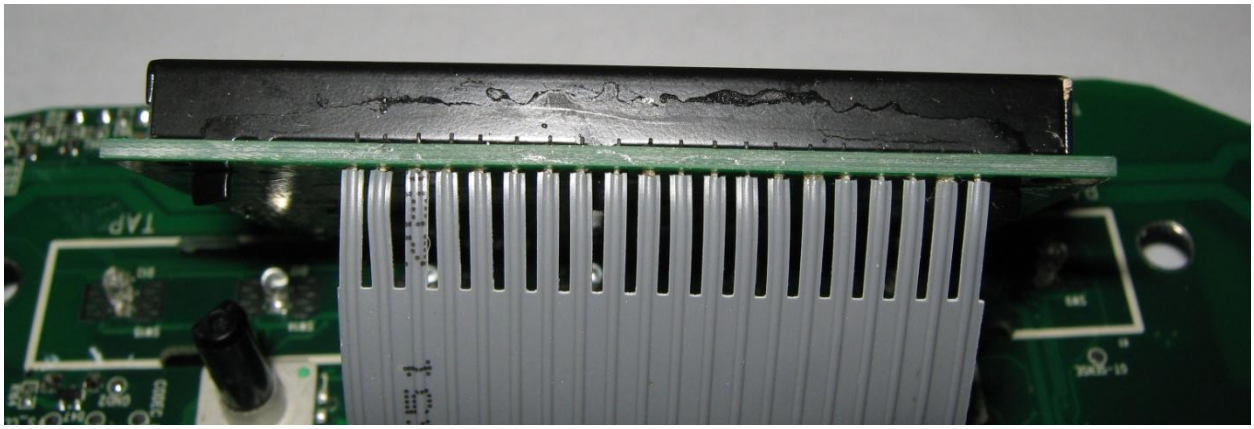


Figure # 24

Step2 – Solder the opposite side of the 20 pin cable (P/N 21-30-0073) to the Main PCBA. See Figure# 25.

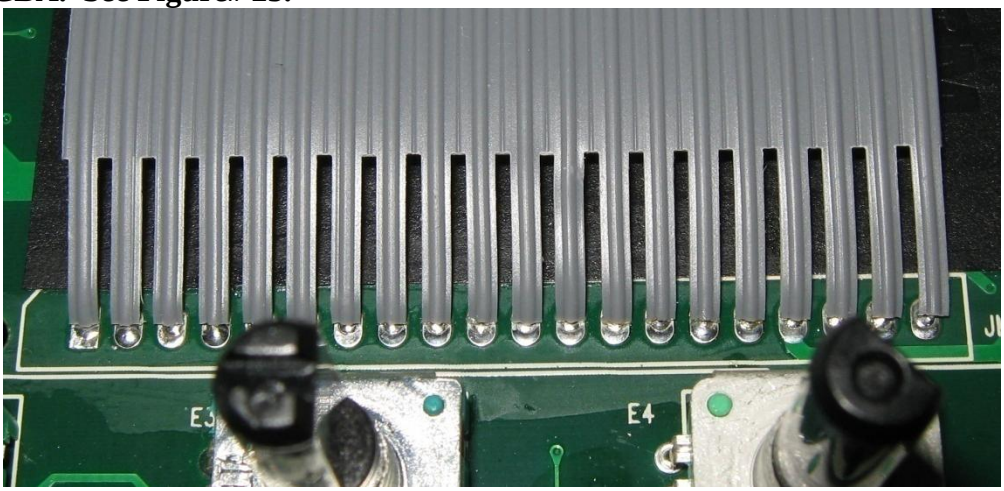
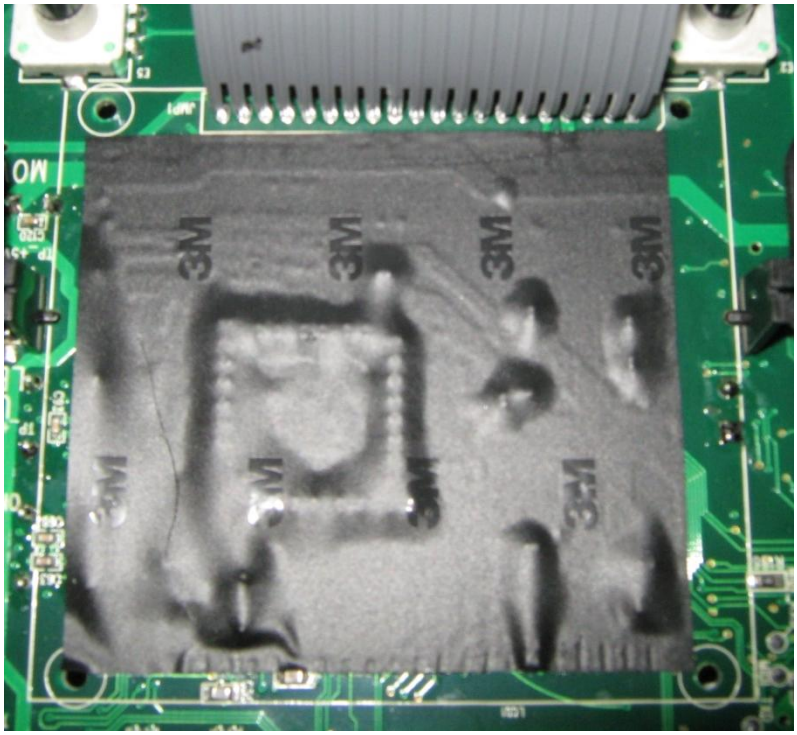


Figure # 25

Step3 – Install the Rubber Tape (P/N 30-65-0034) to the Main PCBA. See Figure# 26.



Figures # 26

Step 4-Install 4 each, Spacer (30-15-4030) Nut (30-06-0018) and Screw (30-00-0266) for fixing LCD. See Figure# 27. Notes: 1) Align the LCD to the silkscreen outline (square) on the PCB. The module must be aligned (straight) within the square on the PCBA.

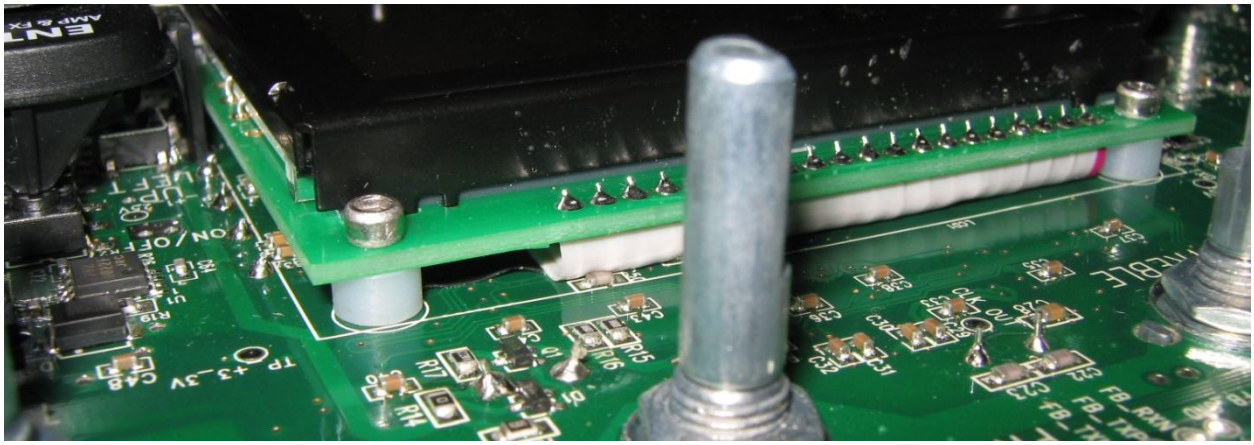
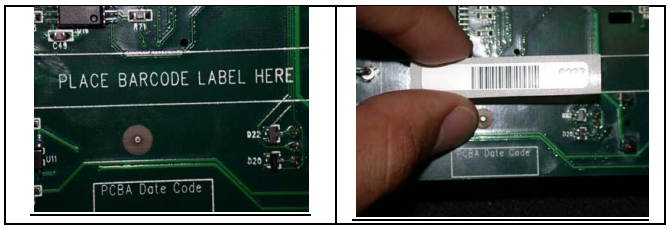


Figure # 27

12. **BARCODE LABEL:** Place barcode label **40-30-2000** on BOTTOM side of PCB in the box labeled "**PLACE BARCODE LABEL HERE**" (see picture below).



13. **PCBA Identification:** Place the appropriate date code in its location

POD TNG PCB Assembly Revisions

10/14/10	Rev. X1	PCBA ASSEMBLY INSTRUCTION	Shawn McConomy
11/3/10	Rev. A	Changed the LCD sub assembly install No RTV, different spacers, and Ribbon cable	Shawn McConomy
1/3/11	Rev B	Added steps for the LCD rubber bumpers	Shawn McConomy
1/5/11	Rev C	Changed the orientation of the screws That mount the LCD	Shawn McConomy
4/8/11	RevD	Removed the Rubber bumpers for the LCD	Matt Baum