



# JM4 Looper

## Service Manual

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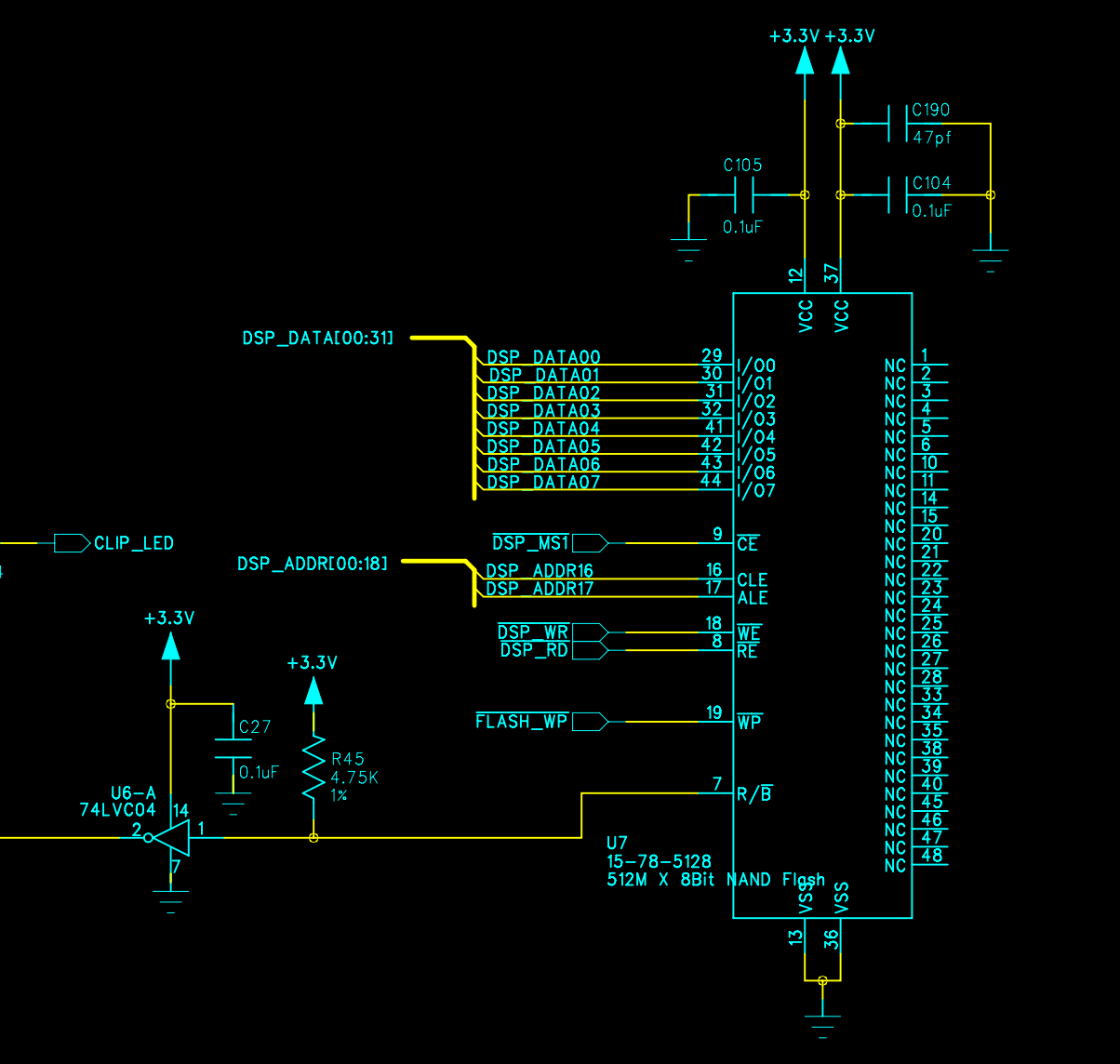
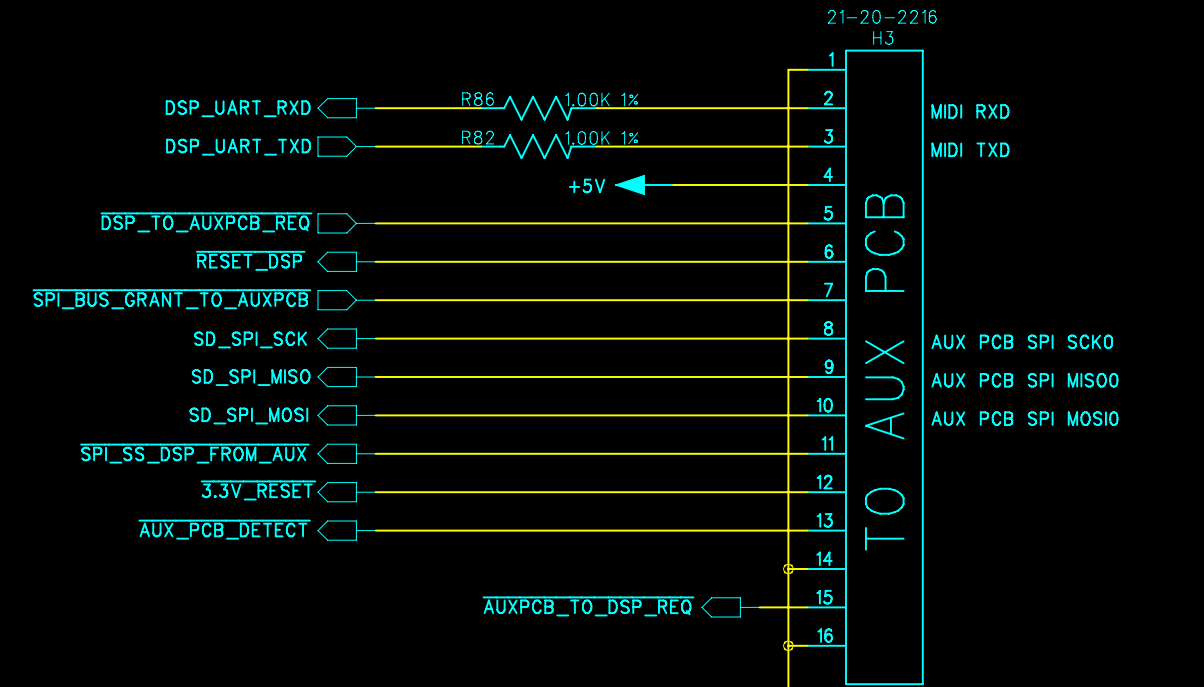
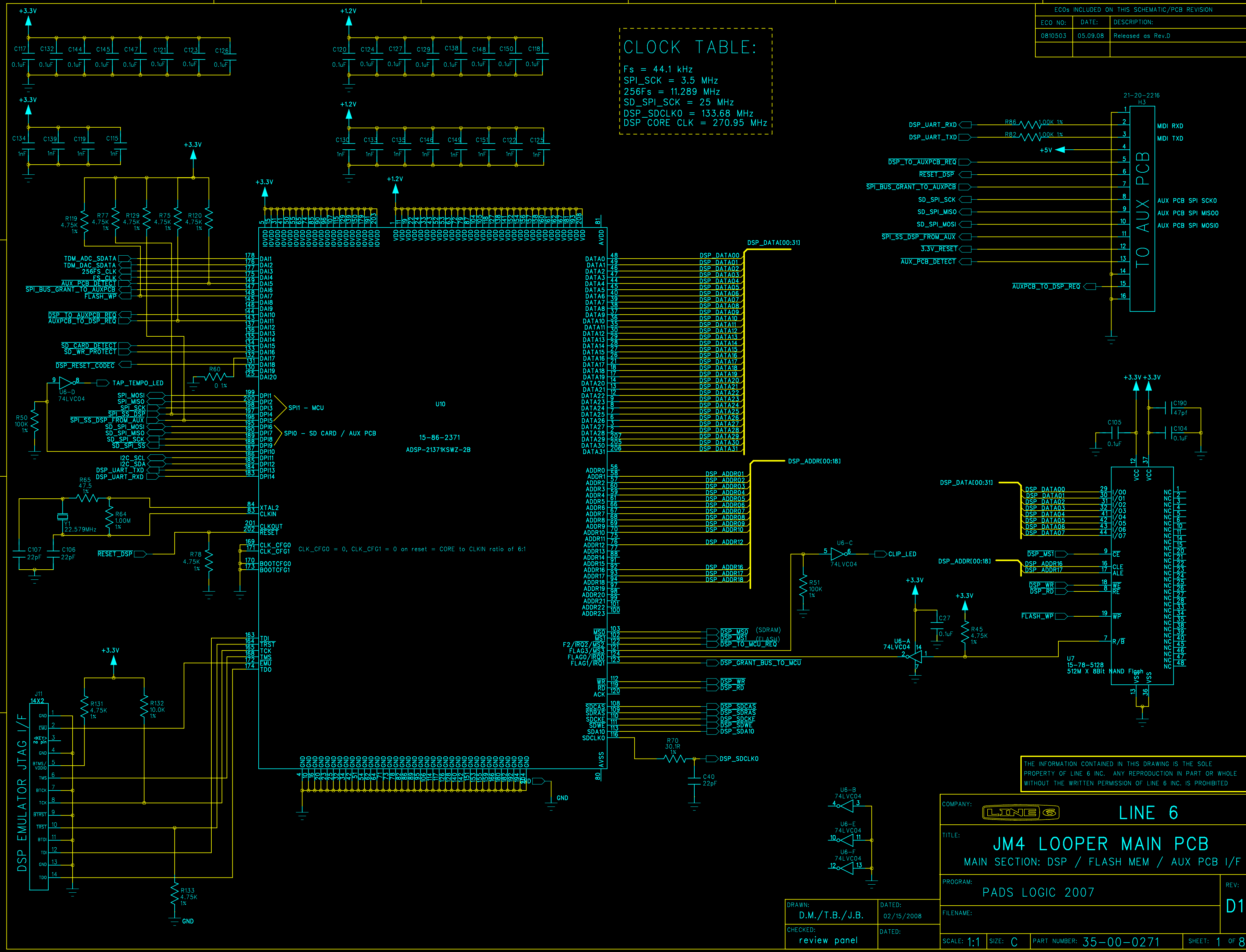
2

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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0810503	05.09.08	Released as Rev.D

**CLOCK TABLE:**

Fs = 44.1 kHz  
 SPI\_SCK = 3.5 MHz  
 256Fs = 11.289 MHz  
 SD\_SPI\_SCK = 25 MHz  
 DSP\_SDCLK0 = 133.68 MHz  
 DSP\_CORE\_CLK = 270.95 MHz



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COMPANY: **LINE 6**

TITLE: **JM4 LOOPER MAIN PCB**  
MAIN SECTION: DSP / FLASH MEM / AUX PCB I/F

PROGRAM: **PADS LOGIC 2007**

REV: **D1**

SCALE: 1:1 SIZE: C PART NUMBER: 35-00-0271 SHEET: 1 OF 8

DRAWN: D.M./T.B./J.B. DATED: 02/15/2008

CHECKED: review panel DATED:

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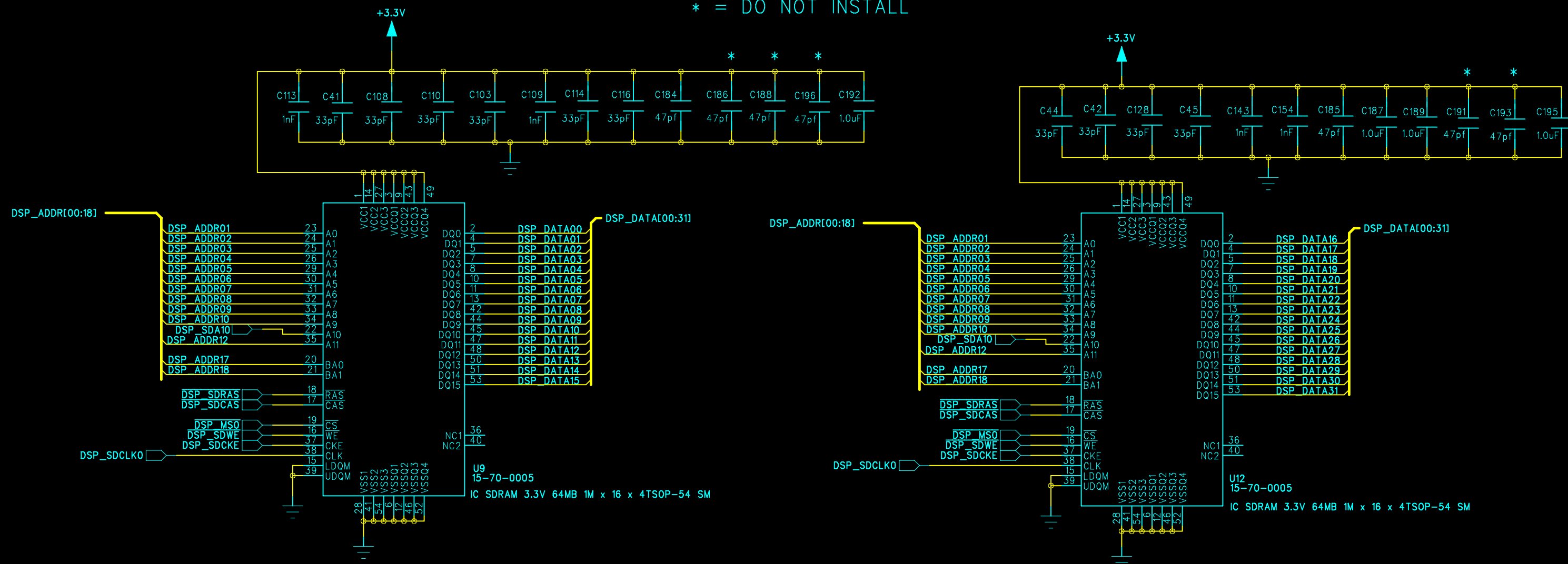
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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

CONFIGURED FOR DSP 32 BIT SDRAM ACCESS

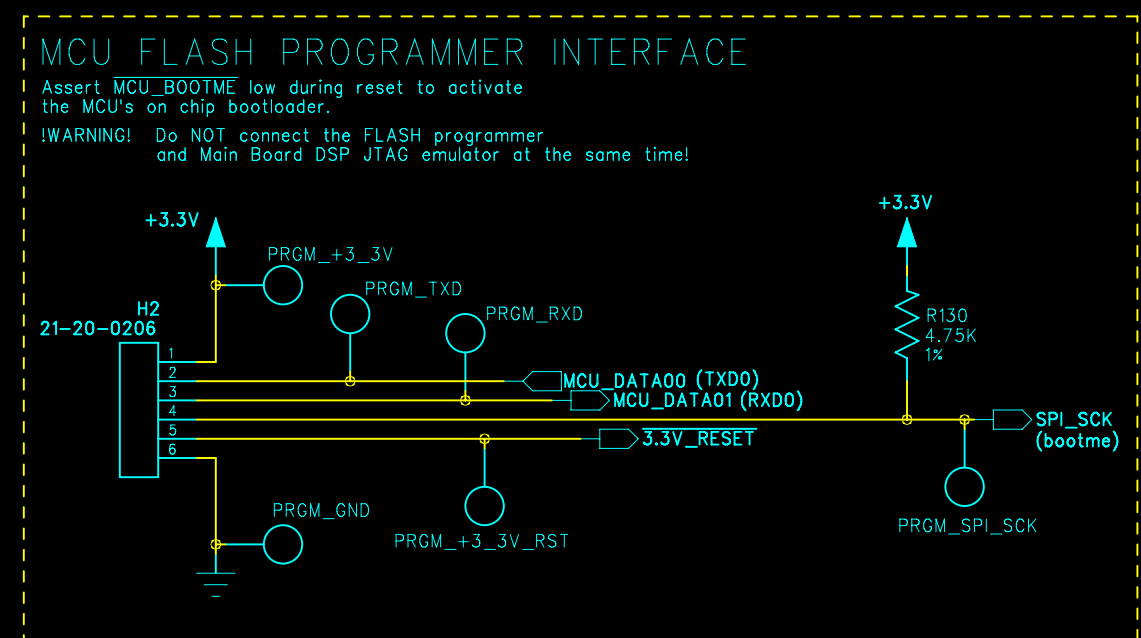
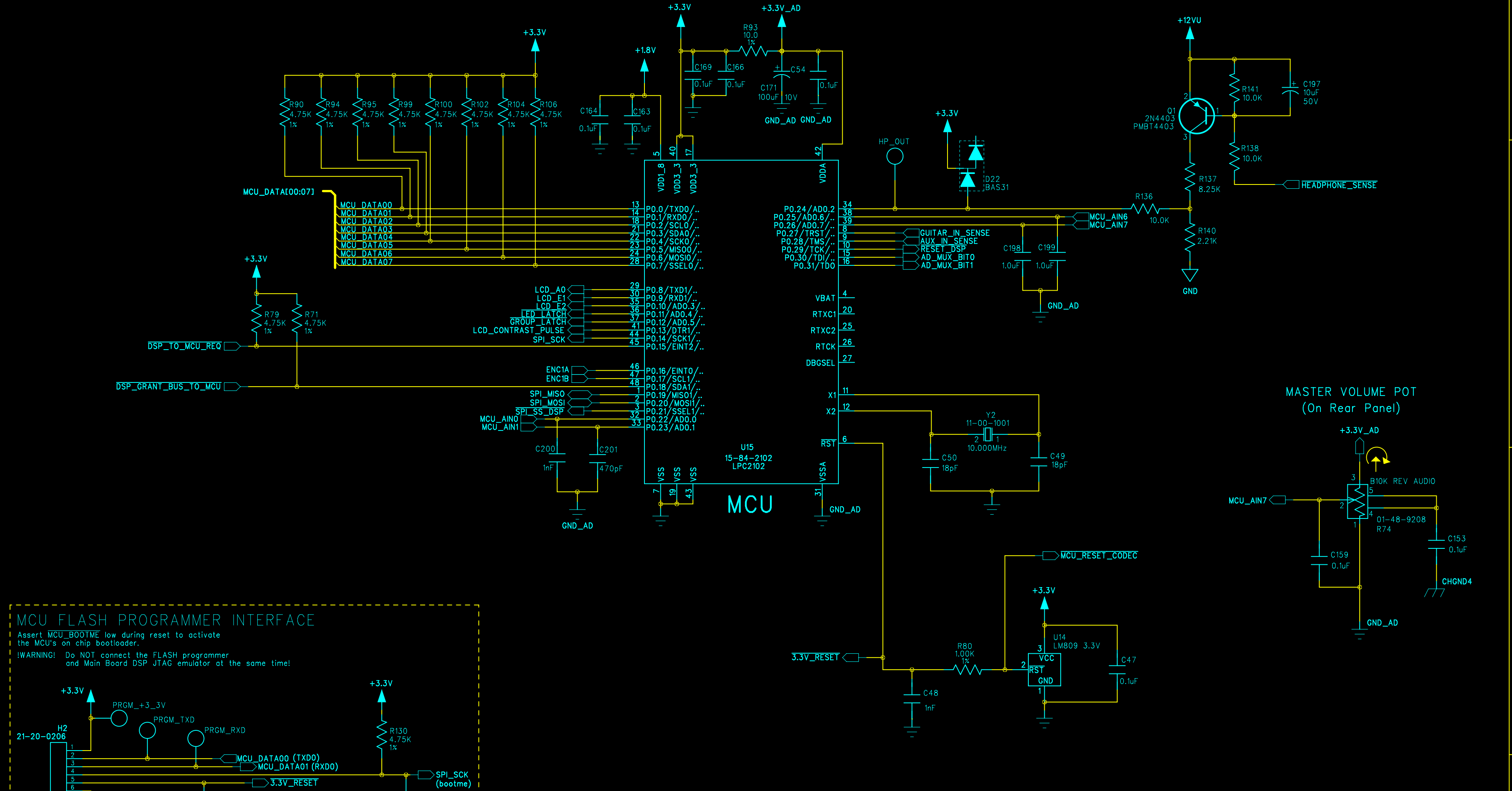
\* = DO NOT INSTALL



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COMPANY:	<b>LINE 6</b>	LINE 6
TITLE:	<b>JM4 LOOPER MAIN PCB</b> MAIN SECTION: DSP SDRAM	
PROGRAM:	PADS LOGIC 2007	REV: <b>D1</b>
DRAWN:	D.M. / T.B.	DATED: 8/13/2007
CHECKED:	review panel	DATED:
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0271
SHEET: 2		OF 8

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



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This board: All resistors are 1% Tolerance

COMPANY:	<b>LINE 6</b>	LINE 6
TITLE:	<b>JM4 LOOPER MAIN PCB</b> MCU / FLASH PROGRAMMER / MSTR VOL	
PROGRAM:	PADS LOGIC 2007	REV: <b>D1</b>
FILENAME:	Product Directory/PCBs/Board Directory/File.sch	
DRAWN:	J.Brennan	DATED: 12/00/07
CHECKED:	REVIEW PANEL	DATED: 03/11/2008
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0271
SHEET: 3		OF 8

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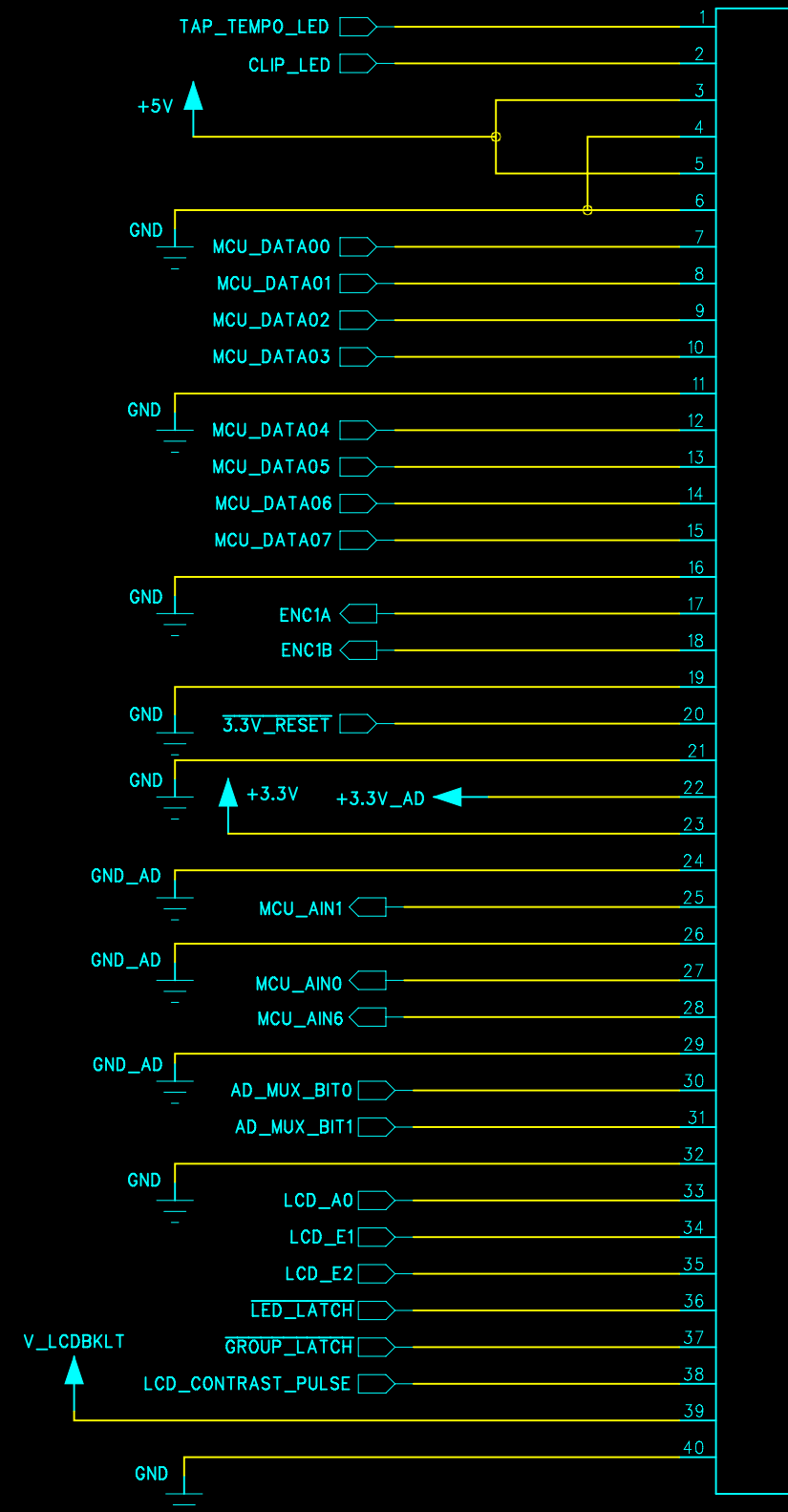
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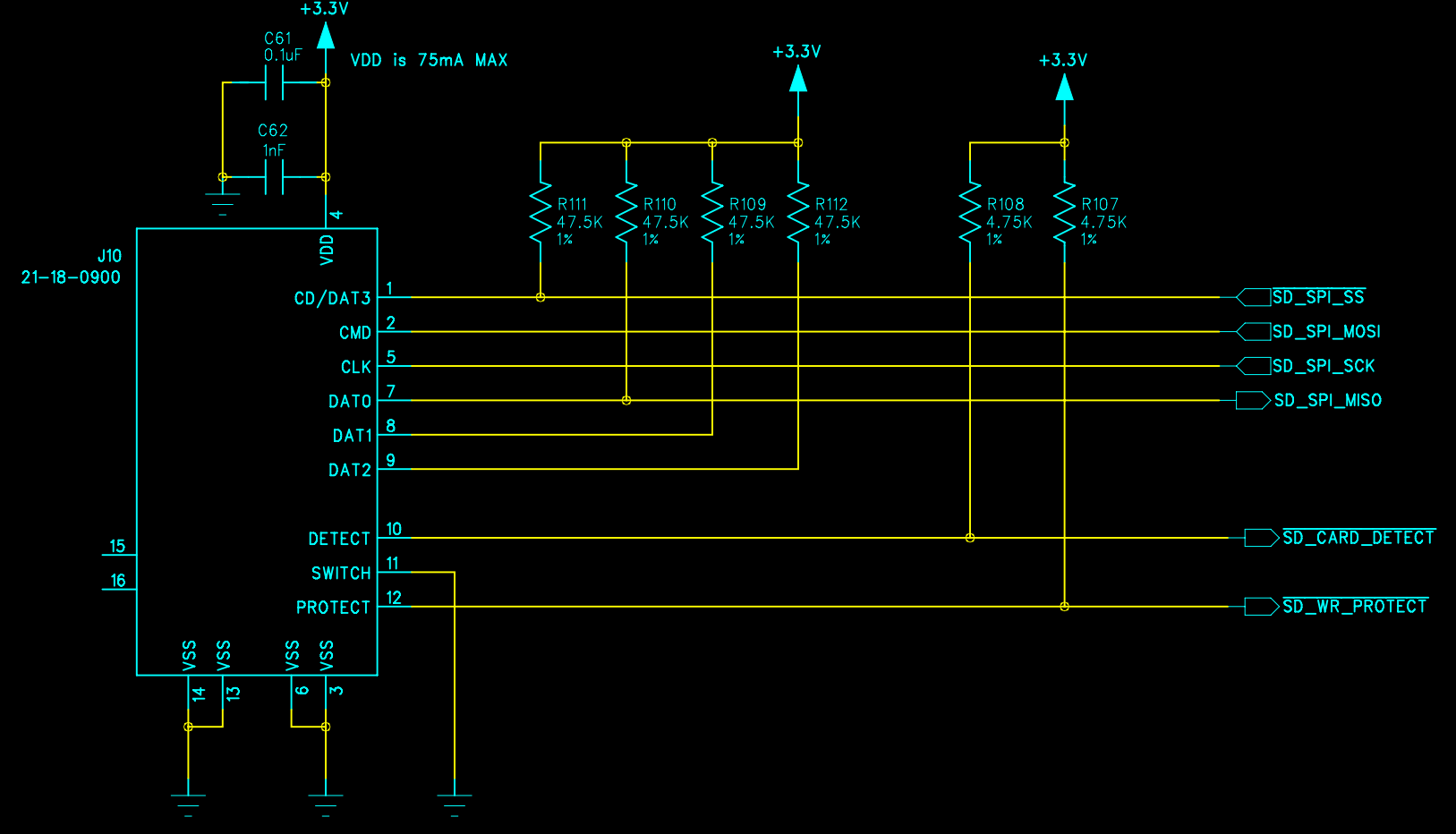
ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

MAKE HMxx a 2 X 20 X .100" header  
21-21-0040  
H1

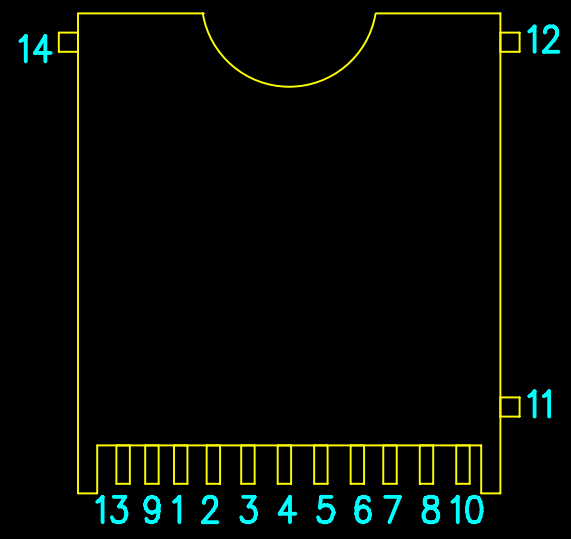


TO UI UPPER PCB

### SECURE DIGITAL MEMORY CARD SOCKET



### SD CARD SOCKET: TOP VIEW (NOT TO SCALE)



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COMPANY:	<b>LINE 6</b>		REV:
TITLE:	<b>JM4 LOOPER MAIN PCB UI INTERFACE / SD CARD SOCKET</b>		<b>D1</b>
PROGRAM:	PADS LOGIC 2007		SCALE: 1:1
FILENAME:	SIZE: C	PART NUMBER: 35-00-0271	SHEET: 4 OF 8

DRAWN: D.M./T.B./J.B.	DATED: 8/13/2007
CHECKED: review panel	DATED:

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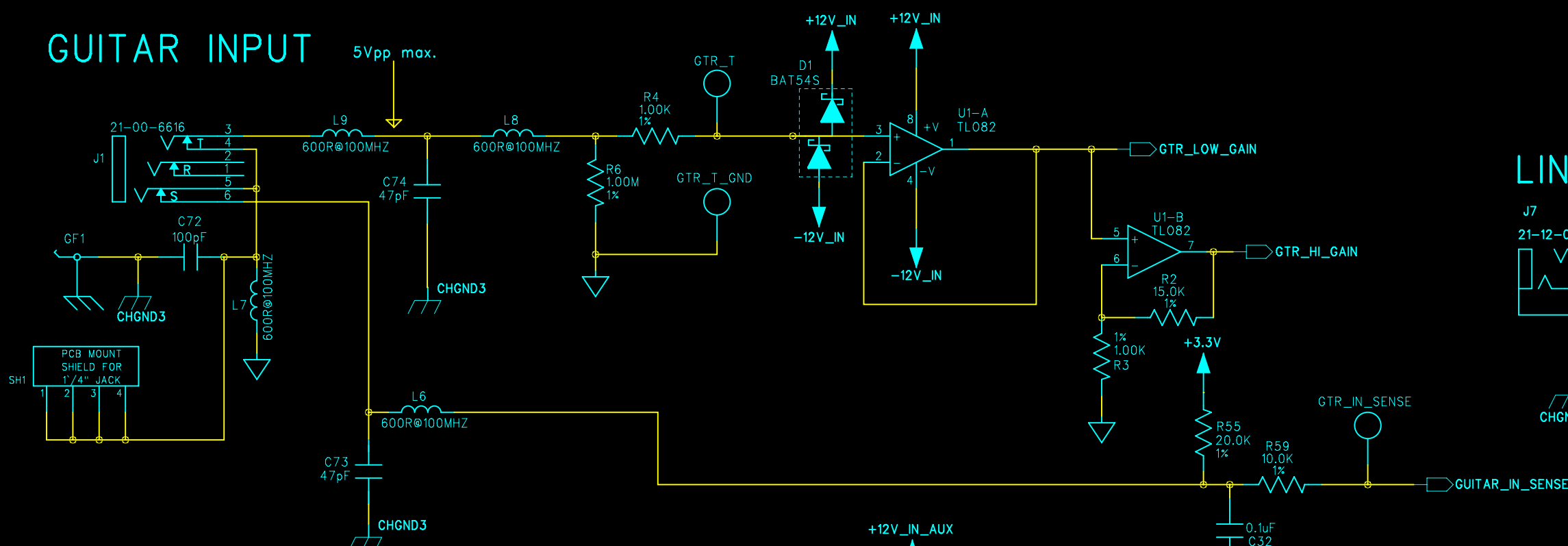
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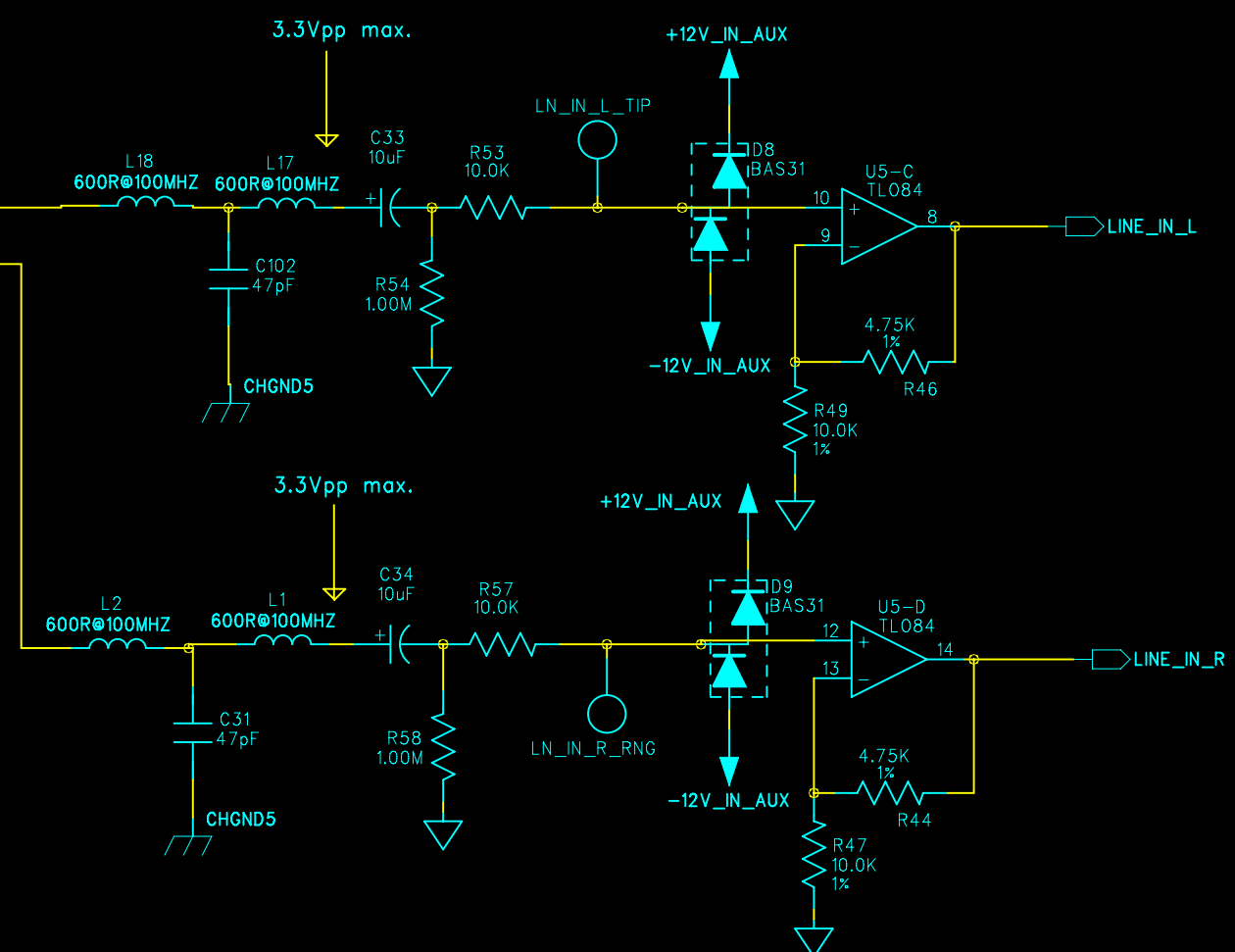
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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
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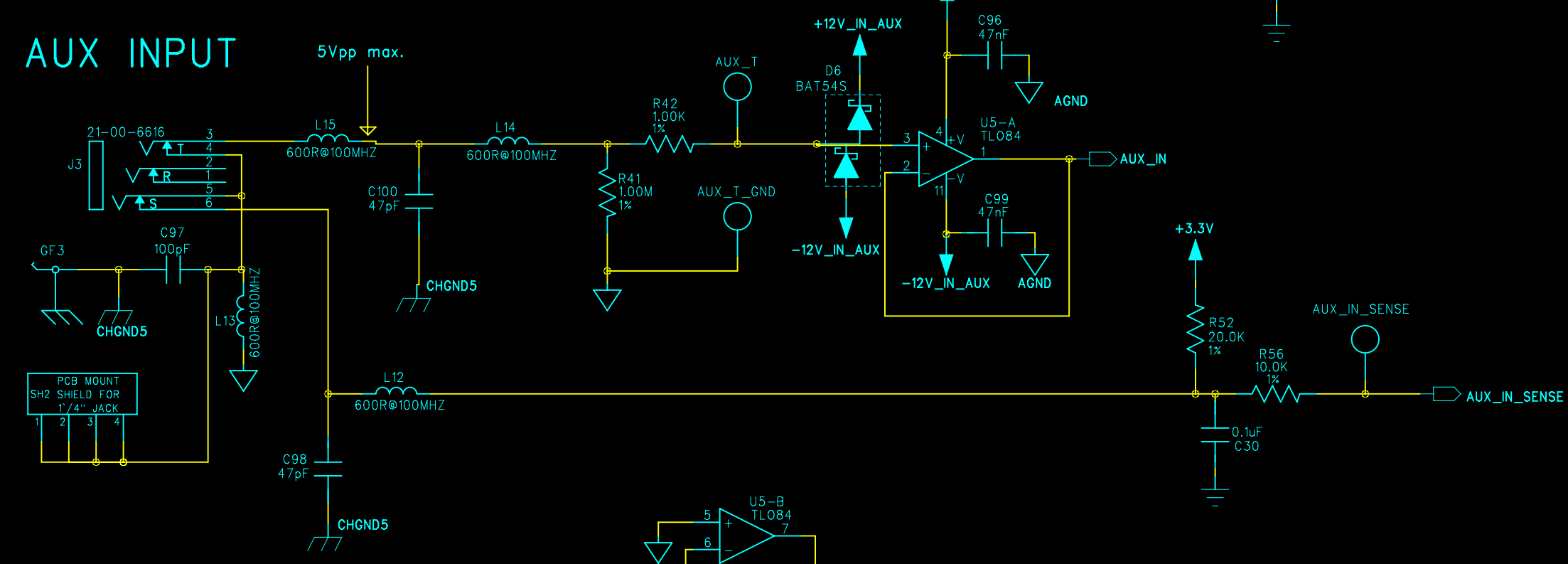
### GUITAR INPUT



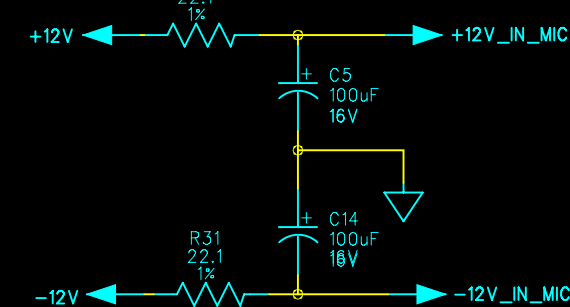
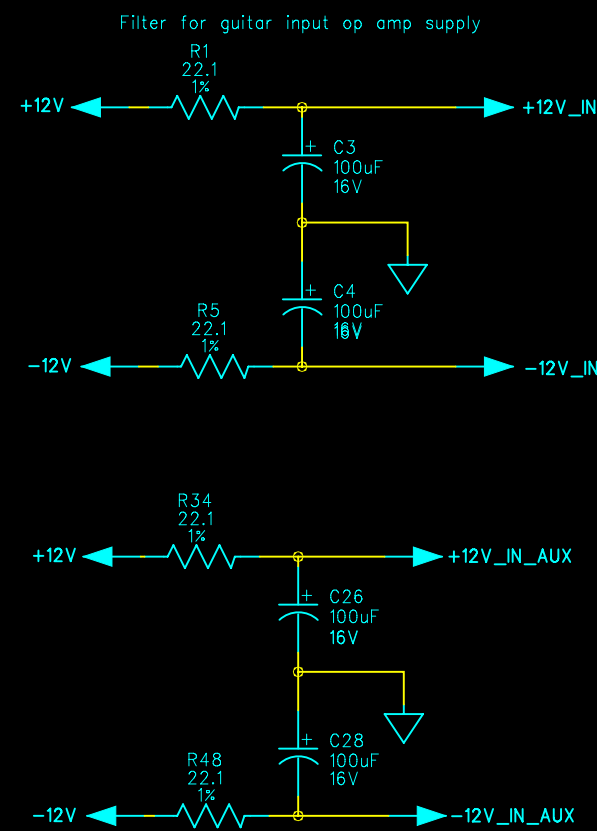
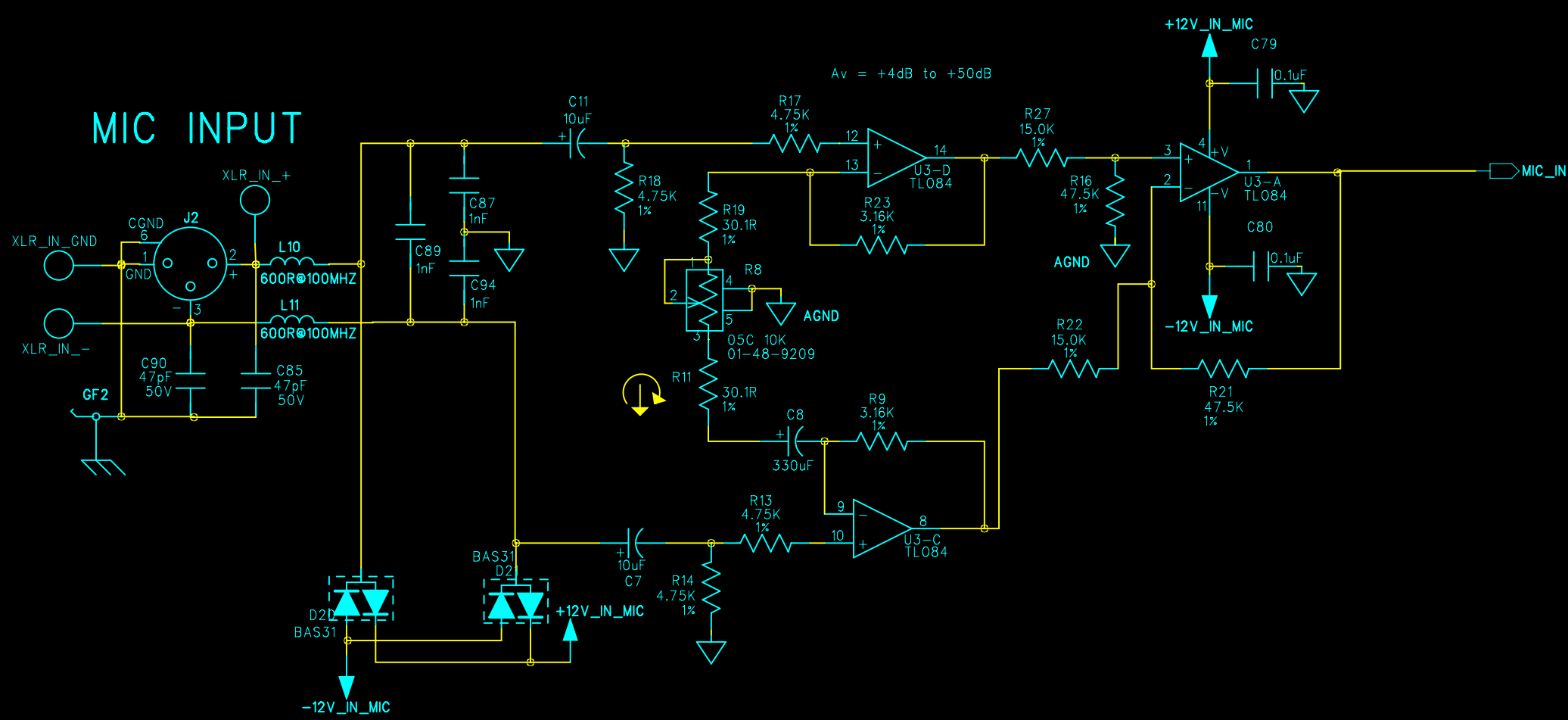
### LINE IN



### AUX INPUT



### MIC INPUT



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COMPANY:	<b>LINE 6</b>	LINE 6
TITLE:	<b>JM4 LOOPER MAIN PCB</b> GUITAR, AUX, MIC, & CD/MP3 INPUTS	
PROGRAM:	PADS LOGIC 2007	REV: <b>D1</b>
DRAWN:	D. MOLNAR	DATED: 8/13/2007
CHECKED:	review panel	DATED:
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0271
SHEET: 5 OF 8		

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

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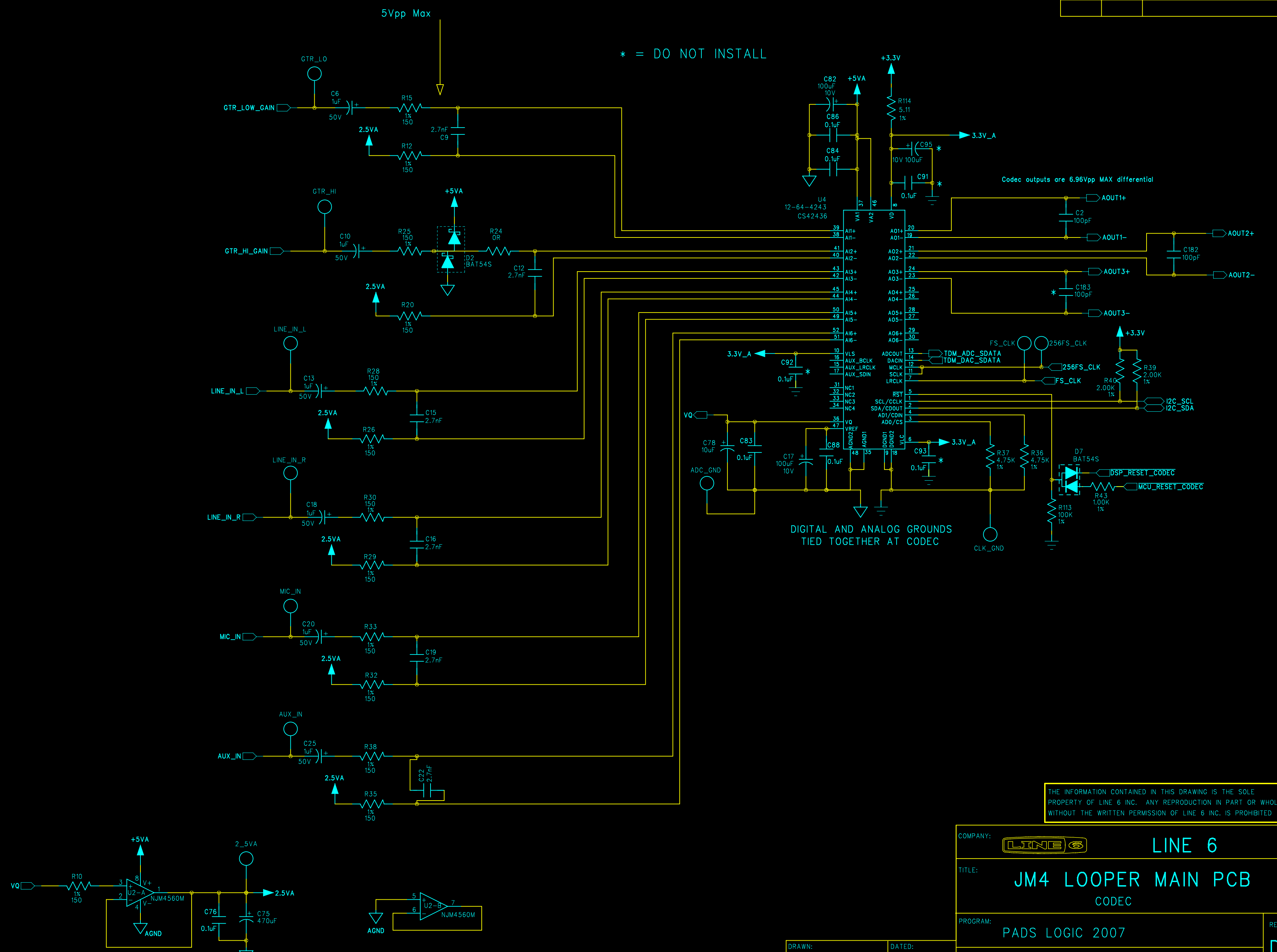
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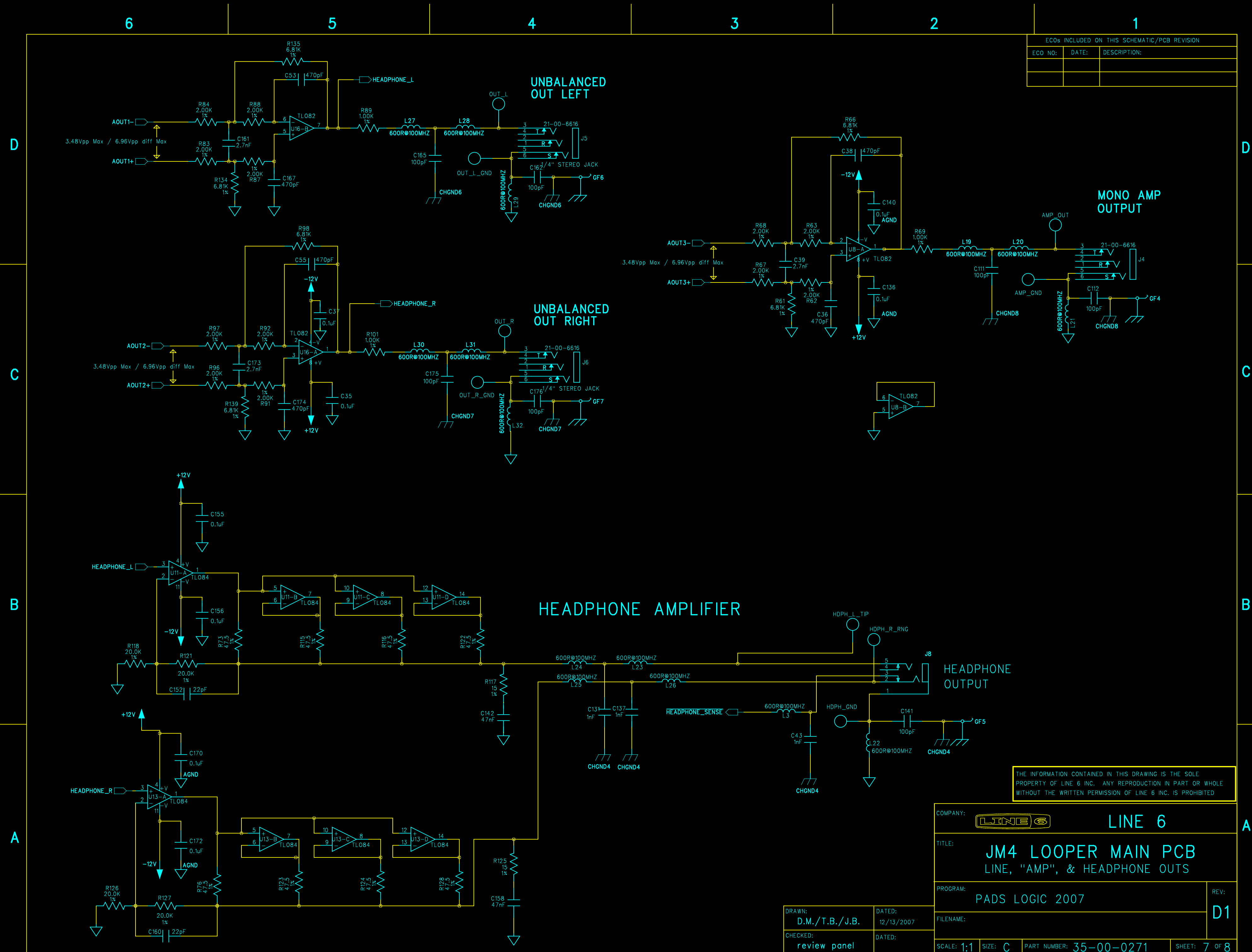


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COMPANY:	<b>LINE 6</b>	LINE 6
TITLE:	<b>JM4 LOOPER MAIN PCB</b> CODEC	
PROGRAM:	PADS LOGIC 2007	REV: <b>D1</b>
FILENAME:		
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0271
DRAWN: D.M./T.B./J.B.		DATED: 8/13/2007
CHECKED: review panel		DATED:
SHEET: 6		OF 8



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

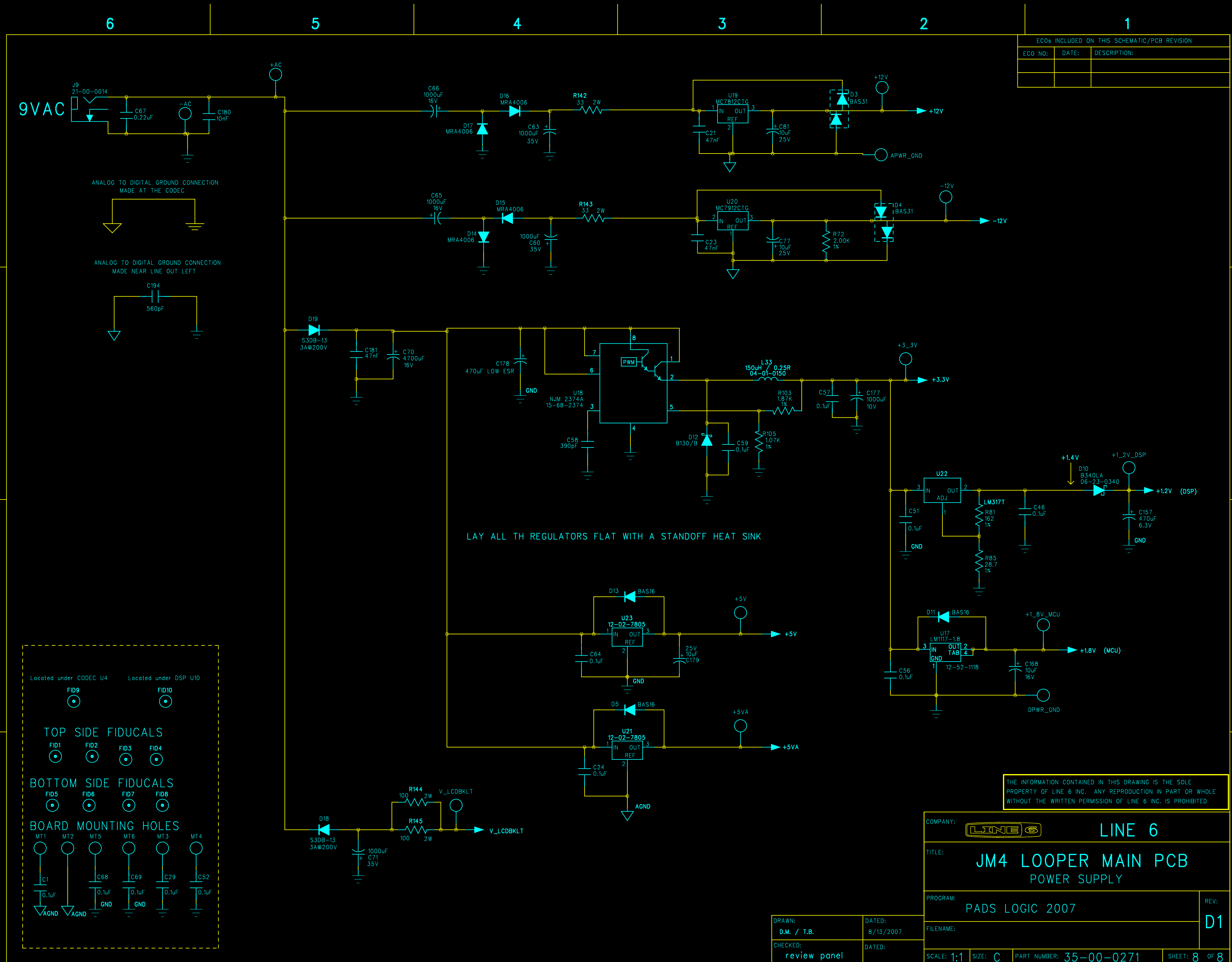


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COMPANY:	<b>LINE 6</b>	LINE 6
TITLE:	<b>JM4 LOOPER MAIN PCB</b> LINE, "AMP", & HEADPHONE OUTS	
PROGRAM:	PADS LOGIC 2007	REV: <b>D1</b>
FILENAME:		
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0271
DRAWN: D.M./T.B./J.B.		DATED: 12/13/2007
CHECKED: review panel		DATED:
		SHEET: 7 OF 8



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

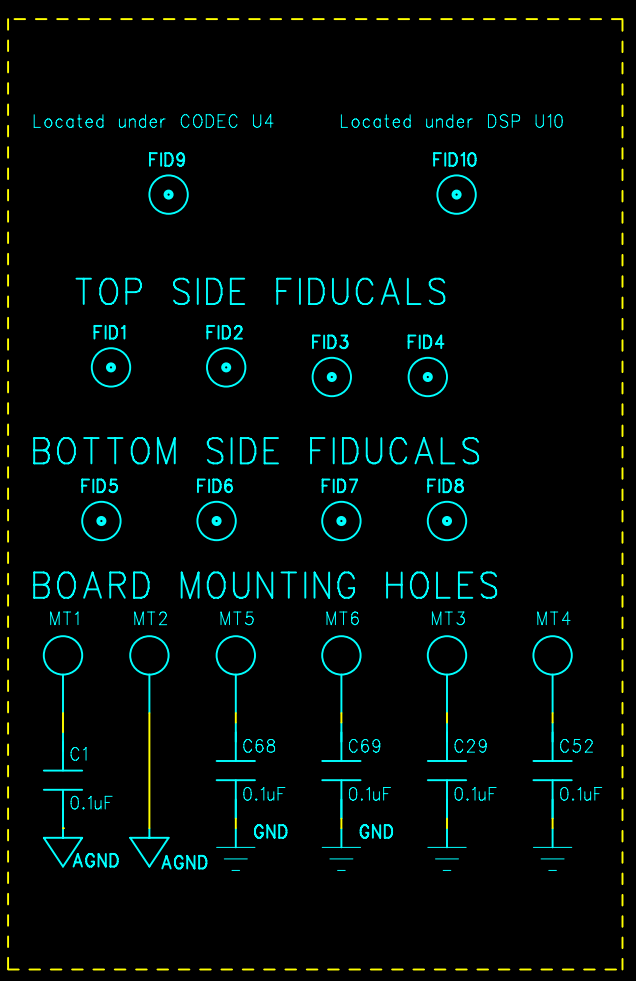


ANALOG TO DIGITAL GROUND CONNECTION  
MADE AT THE CODEC

ANALOG TO DIGITAL GROUND CONNECTION  
MADE NEAR LINE OUT LEFT

LAY ALL TH REGULATORS FLAT WITH A STANDOFF HEAT SINK

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COMPANY: <b>LINE 6</b>		LINE 6	
TITLE: <b>JM4 LOOPER MAIN PCB POWER SUPPLY</b>			
PROGRAM: <b>PADS LOGIC 2007</b>		REV: <b>D1</b>	
DRAWN: <b>D.M. / T.B.</b>		DATED: <b>8/13/2007</b>	
CHECKED: <b>review panel</b>		DATED: <b> </b>	
SCALE: <b>1:1</b>	SIZE: <b>C</b>	PART NUMBER: <b>35-00-0271</b>	SHEET: <b>8</b> OF <b>8</b>

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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0810603	04.15.08	Released as rev.C - PCB layout change only
0807305	03.17.08	PCB/gerber problem. Sch updated to rev.B

D

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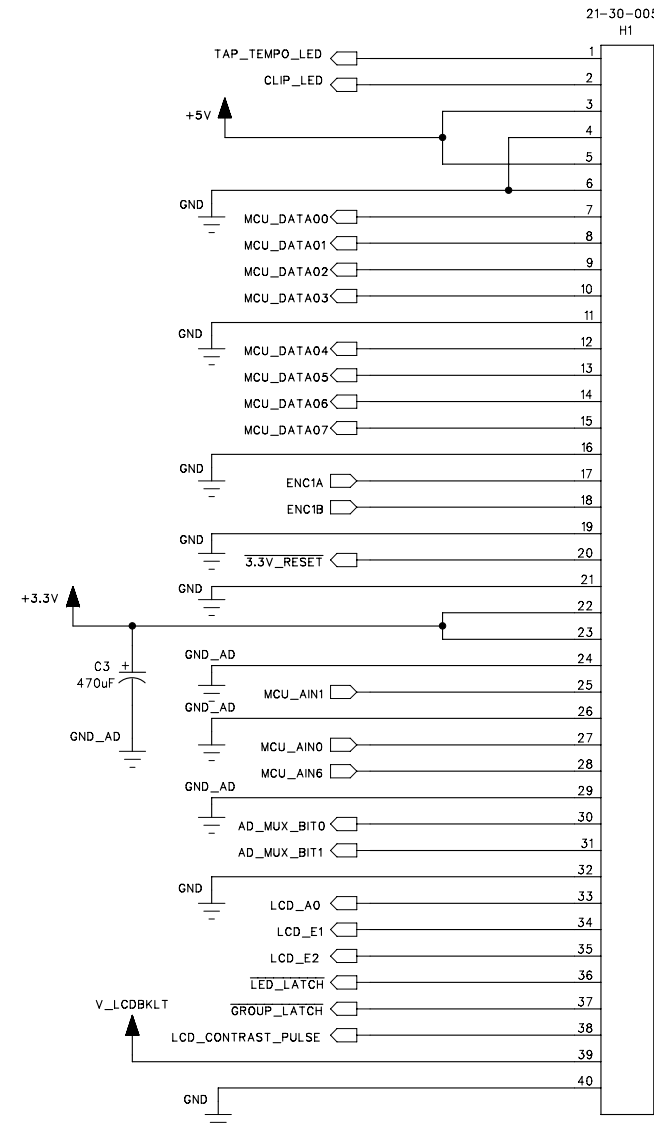
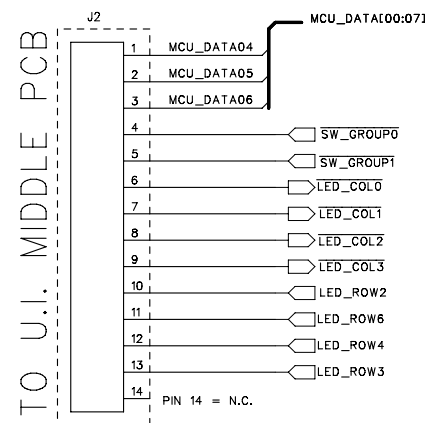
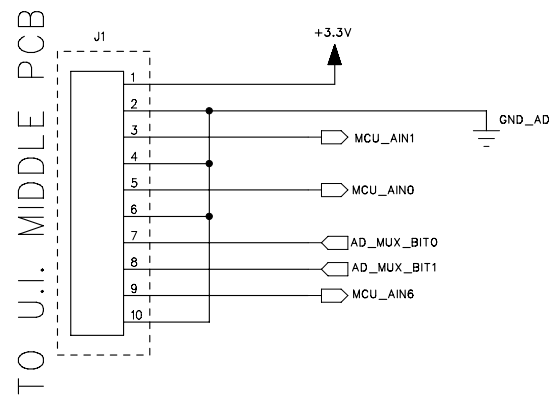
A

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A



TO U.I. MIDDLE PCB

TO U.I. MIDDLE PCB

TO UI UPPER PCB

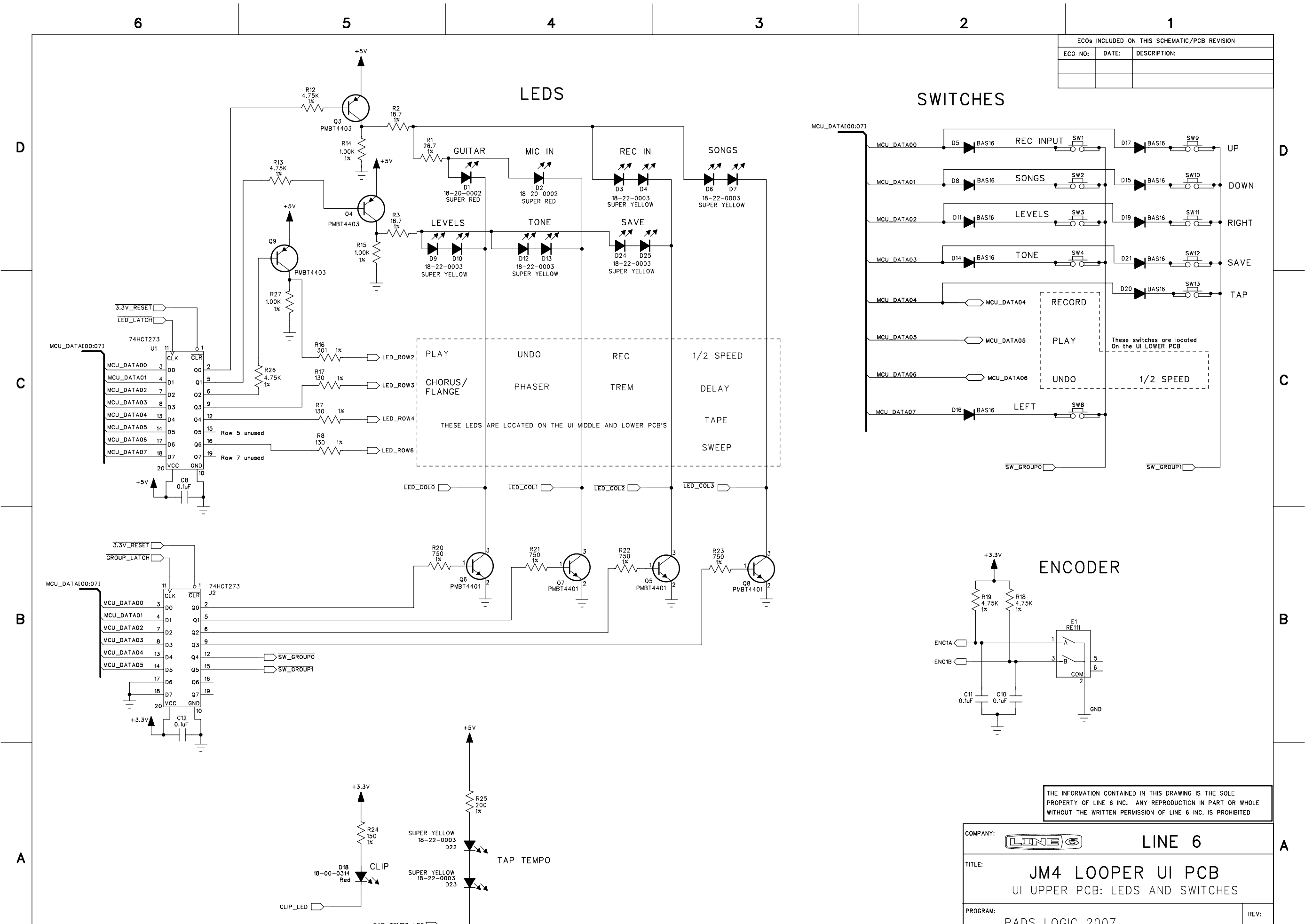
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COMPANY:		LINE 6	
TITLE: JM4 LOOPER UI PCB UI UPPER PCB: INTERFACE			
PROGRAM: PADS LOGIC 2007			REV: C
FILENAME:			
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0272	SHEET: 1 OF 4

This board: All resistors are 1% Tolerance

DRAWN: T.B. / D.M. / J.B.	DATED: 8/14/2007
CHECKED: review panel	DATED: 3/13/2008

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



COMPANY: <b>LINE 6</b>	
TITLE: <b>JM4 LOOPER UI PCB</b> UI UPPER PCB: LEDS AND SWITCHES	
PROGRAM: PADS LOGIC 2007	REV: <b>C</b>
FILENAME:	
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0272	SHEET: 2 OF 4

DRAWN: D. MOLNAR	DATED: 8/14/2007
CHECKED: review panel	DATED:

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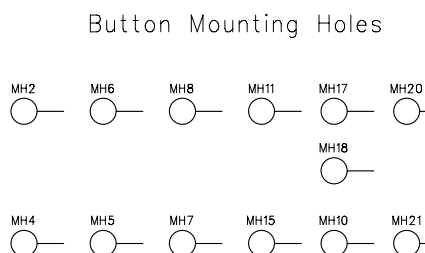
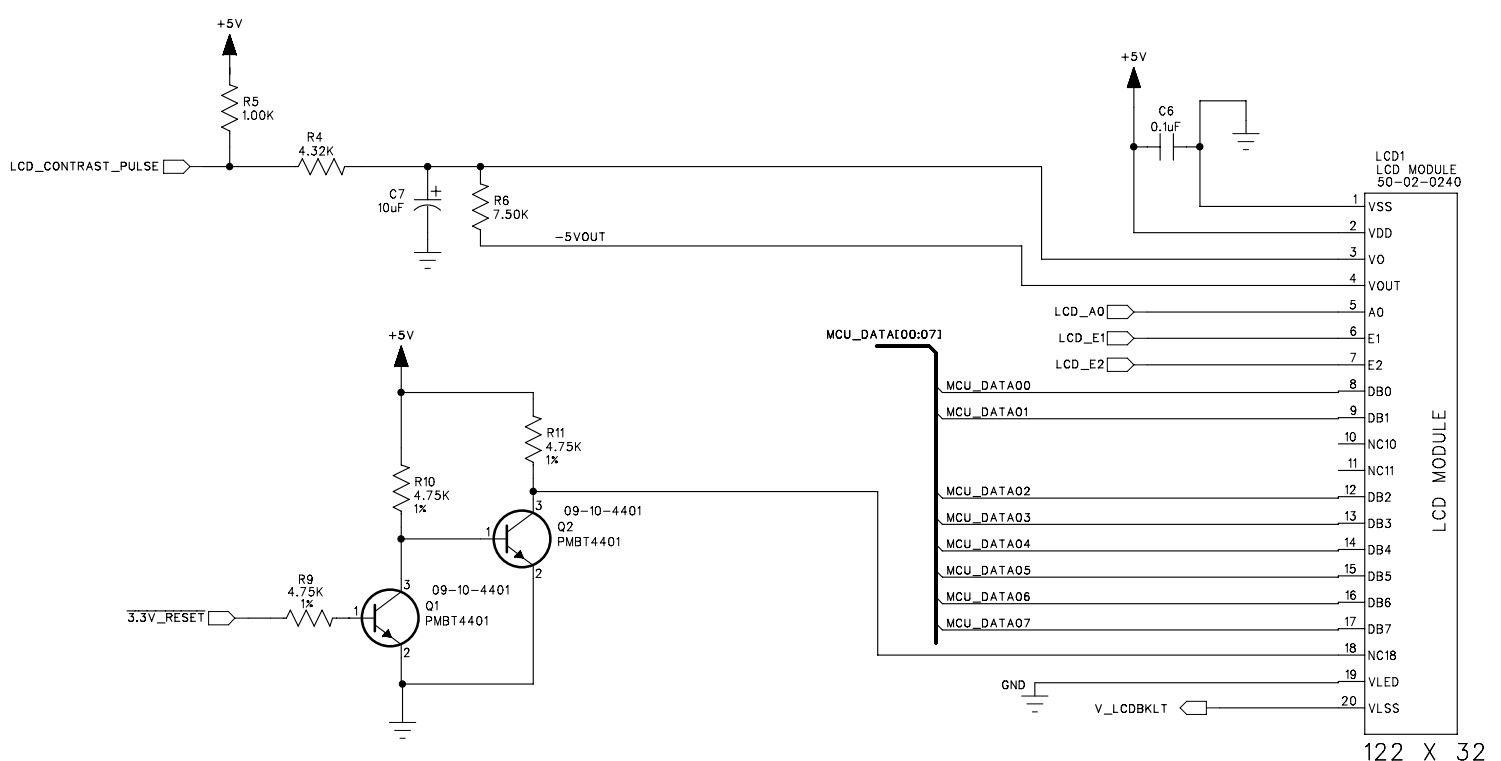
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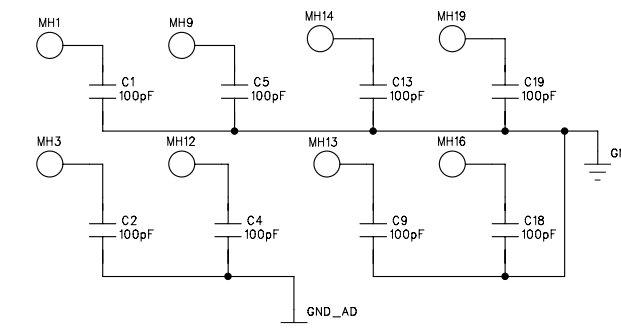
1

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

LCD MODULE AND SUPPORT CIRCUITRY



Chassis Mounting Holes



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COMPANY: **LINE 6**

TITLE: **JM4 LOOPER UI PCB**  
UI UPPER PCB: LCD

PROGRAM: PADS LOGIC 2007

FILENAME: **C**

DRAWN: T.B. / D. MOLNAR

DATED: 8/14/2007

CHECKED: review panel

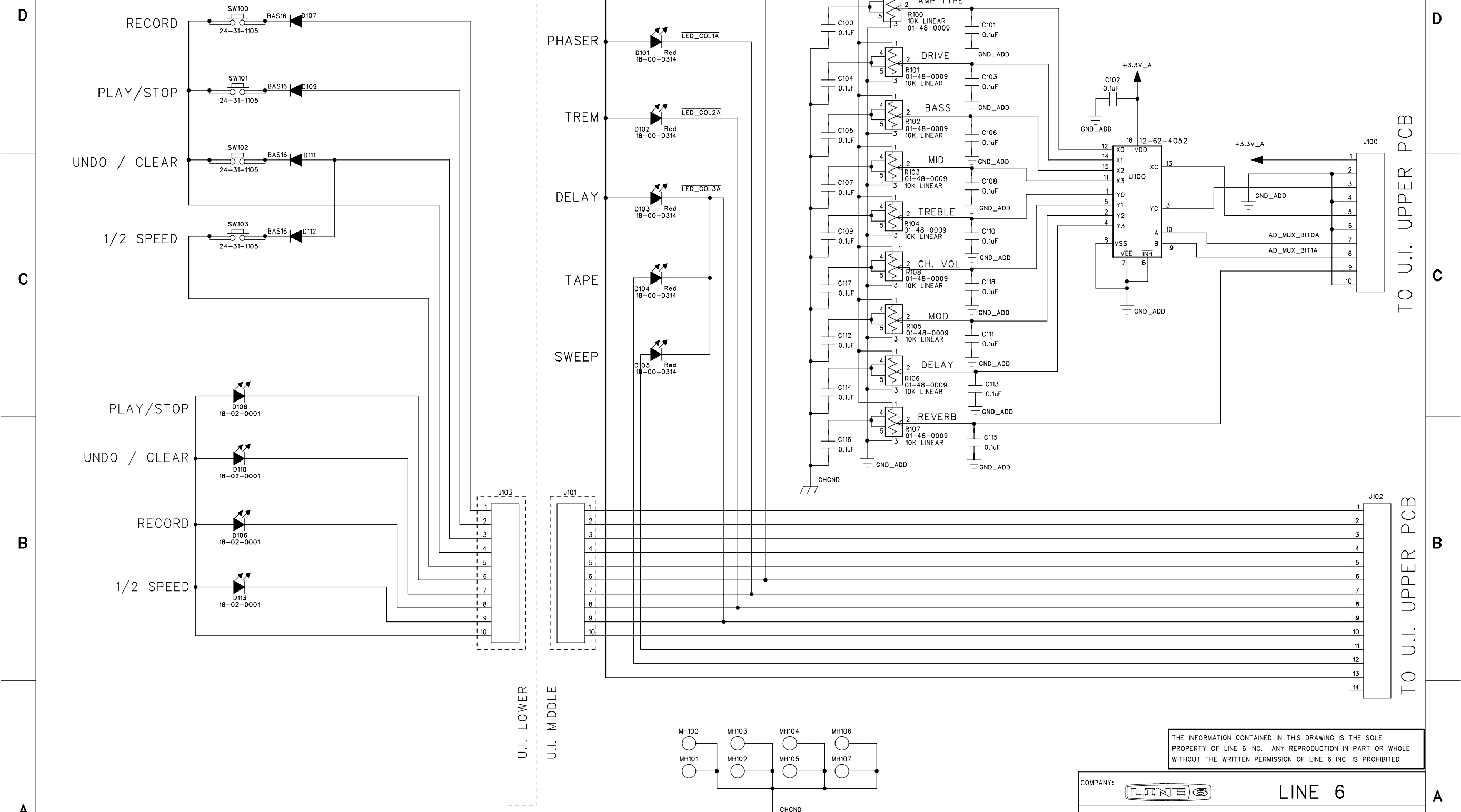
DATED:

SCALE: 1:1 SIZE: C PART NUMBER: 35-00-0272 SHEET: 3 OF 4

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

UI LOWER PCB FOOT SWITCHES & LED'S

UI MIDDLE PCB POT'S & LED'S



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COMPANY: **LINE 6**

TITLE: **JM4 LOOPER UI PCB**  
UI MIDDLE & LOWER PCB'S

PROGRAM: PADS LOGIC 2007

REV: **C**

FILENAME: \_\_\_\_\_

SCALE: 1:1 SIZE: C PART NUMBER: MIDDLE: 35-00-0272-1 LOWER: 35-00-0272-2 SHEET: 4 OF 4

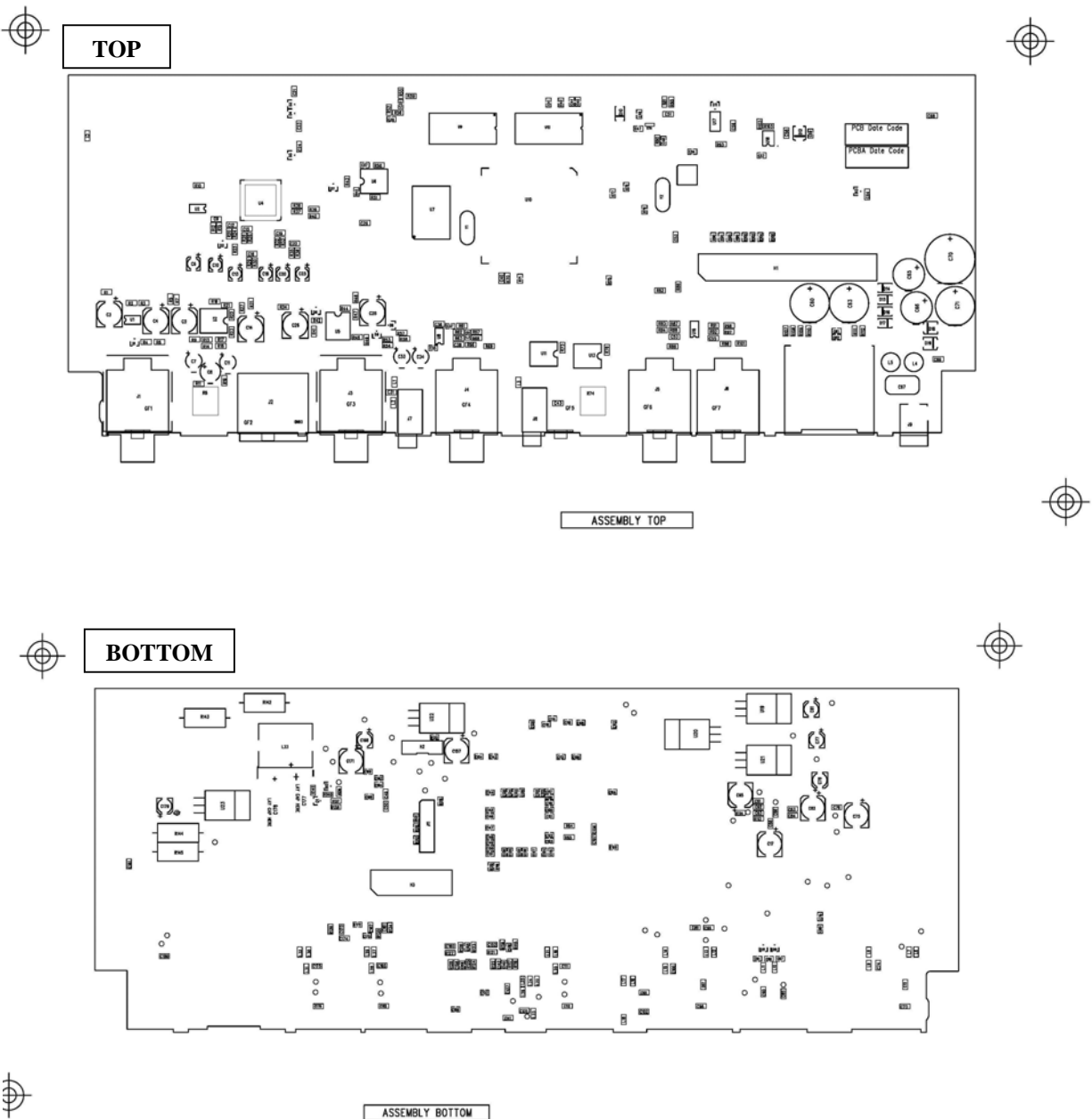
DRAWN: D. MOLNAR  
CHECKED: review panel

DATED: 8/14/2007  
DATED: \_\_\_\_\_

### FLOOR JAM MAIN PCBA ASSEMBLY INSTRUCTIONS

Rev. C

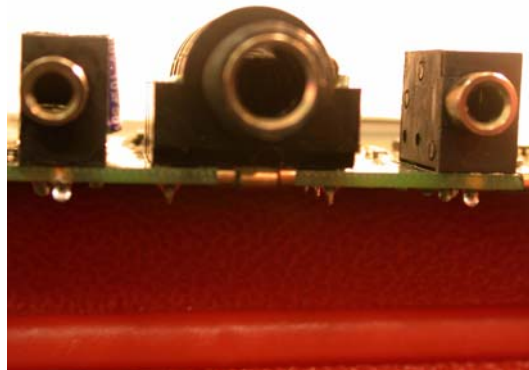
FLOOR JAM PCBA MAIN:50-02-0271  
(Refers to Main PCB, Rev.A: (35-00-0271))



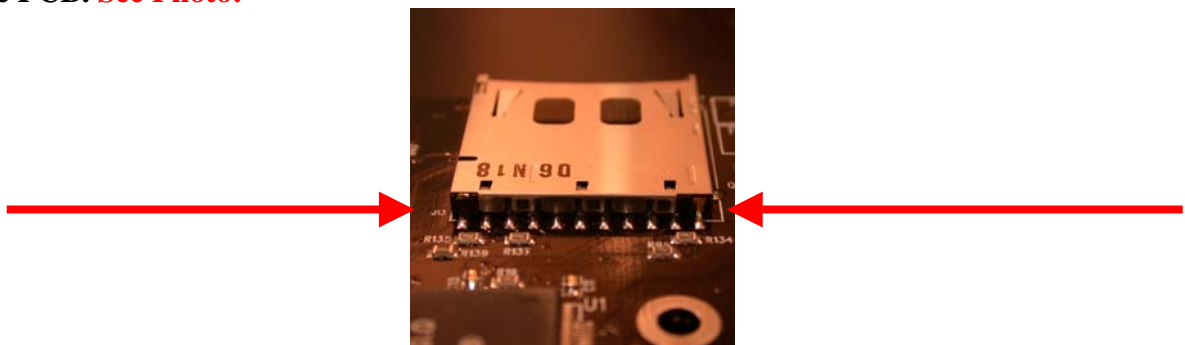
# LINE 6

## Engineering

1. **DO NOT WATER WASH THE BOARD:** The potentiometers and tact switches are sensitive to water washing. If wave soldering is preferred, we recommend using a no-clean flux wave soldering process, rather than a process that requires washing. The fluxing process wave must be controlled so as not to have flux migrate inside the switch through the top of the housing. Good venting is required. No-clean flux vapors can enter the switch if adequate venting is not available. The vapors will condense on the internal contacts and become an insulator when they solidify.
2. **“DO NOT INSTALL” COMPONENTS:** Do not install the following components: R117 R125 C158 C142 D3-5 D11 D13 H2-3 J11
3. **JACKS:** All Jacks, including J1, J3-6 (21-00-6616), J2 (21-08-0002), J7-8 (21-12-0035), and J9 (21-00-0014) must be mounted flush with the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. **ALL jacks are to be mounted on the TOP SIDE of the PCB. See Photo:**



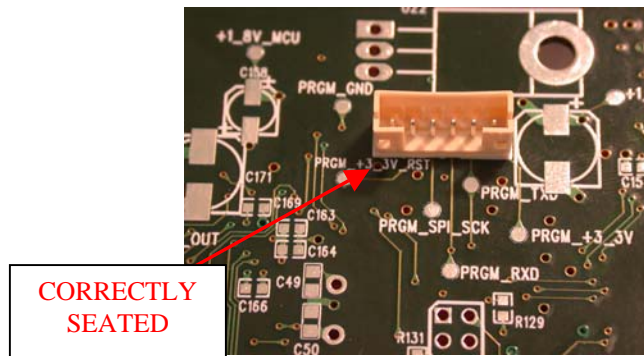
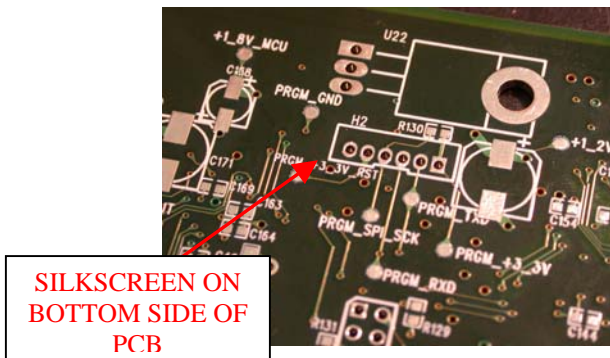
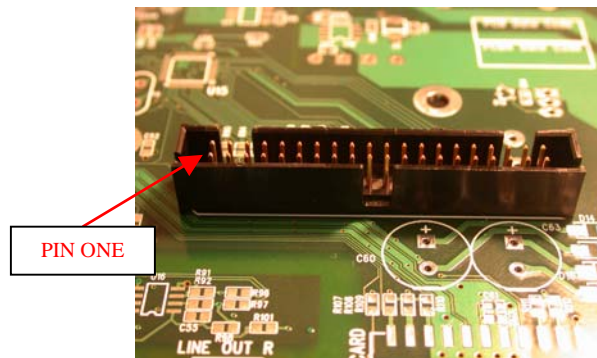
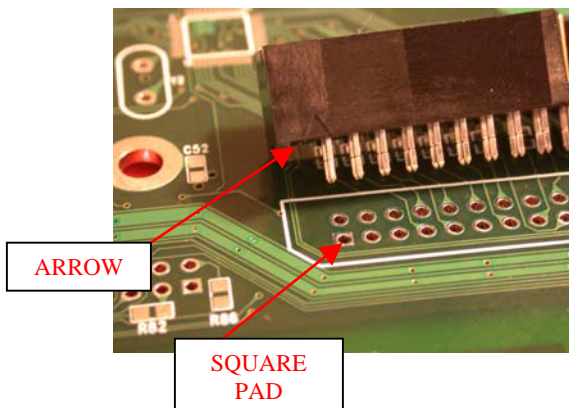
4. **SD CARD SOCKET:** J10 (21-18-0900) must be mounted flush with the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. **The SD Card is mounted on the TOP SIDE of the PCB. See Photo:**



Make sure SD Card is flush before soldering to PCB.



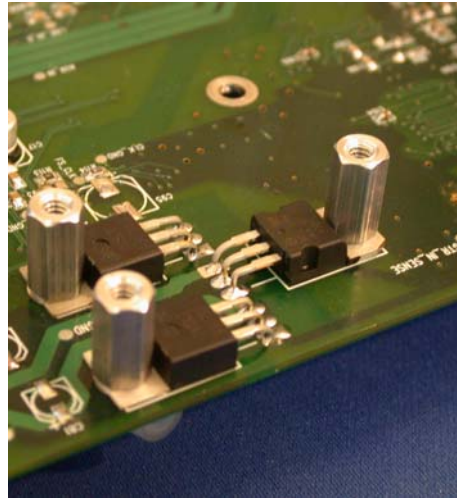
5. **HEADERS:** H1 (21-20-0040) and H2 (21-20-0206), are to be mounted flush against the PCB. Confirm that header H1 is installed correctly by ensuring that pin 1 on the header (indicated by arrow on header) lines up with pin one on PCB silkscreen (indicated by the square pad). Also, be sure H2 is installed on the **BOTTOM** side of PCB and is aligned with the silkscreen outline within +/-1 degree of accuracy. **See Photos.**



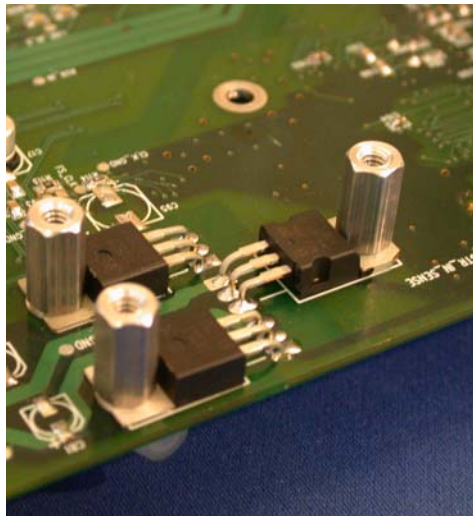
# LINE 6

## Engineering

6. **REGULATOR ICs:** U19 (12-02-7812), U20 (12-02-7912), U21 and U23 (12-02-7805), and U22 (12-00-0317) are to be installed with the case of each IC resting at a 90 degree angle, flush to the PCB. Be sure that the case of each regulator is lined up with the silkscreen outline within +/-1 degree of accuracy. **See Photo:**



7. **REGULATOR STANDOFFS:** Securely install HEX STANDOFF (30-12-0009 STANDOFF HEX .250 6-32 M-F 0.250-IN AL) at all regulators (U19-23) using Screw (30-00-0043) **See Photo:**

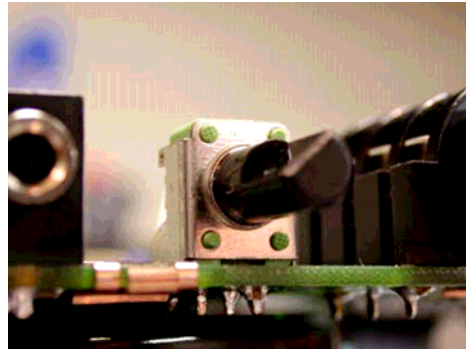


Standoffs are not to size – picture is for reference only.

# LINE 6

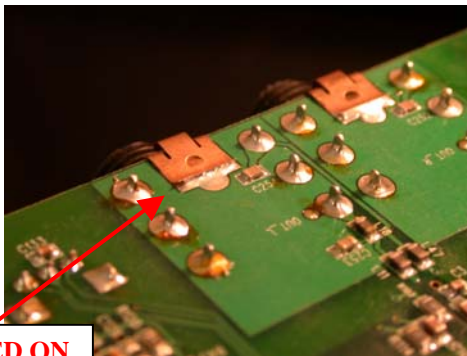
## Engineering

8. **POTS:** Be sure both horizontally mounted Pots (01-48-9208 and 01-48-9209) are installed flush to the PCB and are aligned with the silkscreen outline within +/-1 degree of accuracy. **See Photo.**



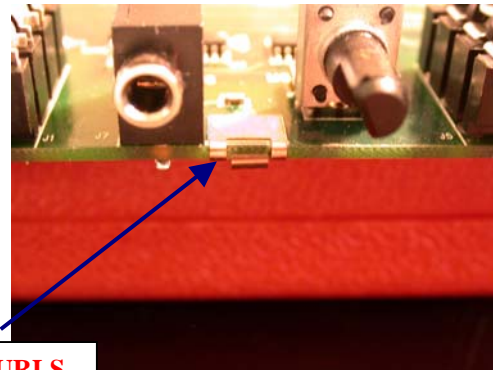
9. **GROUND FINGERS:** ALL grounding fingers are mounted flush against the PCB edge. They are mounted with their center clip hole on the **BOTTOM** side of the PCB. The “curl” of the grounding finger should curve toward the **TOP SIDE** (toward the jack). They should then be manually soldered on the **BOTTOM SIDE**.

**See Photos:**



**SOLDERED ON  
BOTTOM SIDE**

**BOTTOM SIDE**

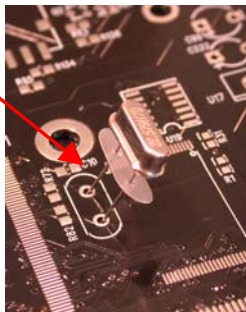


**TAB CURLS  
UPWARD**

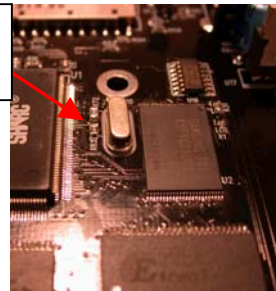
**TOP SIDE**

10. **CRYSTALS AND INSULATORS:** Crystals Y1 (P/N 11-00-1002) and Y2 (11-00-1001) are to be installed with insulator (30-15-0007) and must be mounted flush against PCB. **See Photos:**

**INSULATOR**



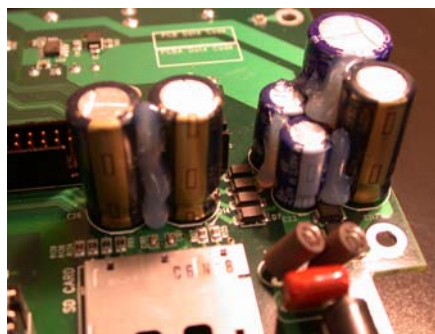
**CRYSTAL INSTALLED  
WITH INSULATOR**



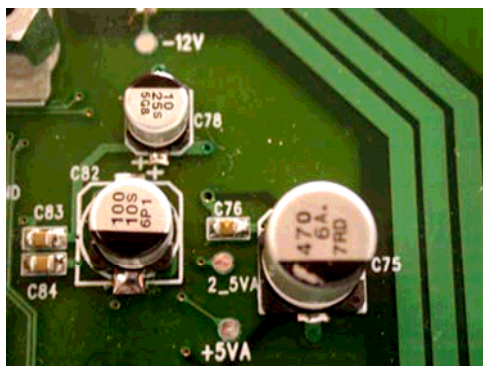
11. **RADIAL LEAD CAPACITORS:** Check orientation of all electrolytic capacitors. All radial lead capacitors are to be mounted perpendicular to the PCB within +/- 5 degree of accuracy. They are to be mounted as low as possible to the PCB without sacrificing the lead to package-body integrity. **RTV should be added as shown in photos below.**



**BOTTOM SIDE**



**TOP SIDE**



**SM RADIAL LEAD CAPACITORS**

**PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY**

REVISION	NOTES	DATE	RELEASED BY
A	Released for beta build and production, unless revised.	03/13/08	Anthony Pascuzzo
B	Updated to include Standoff Heatsinks.	03/27/08	Anthony Pascuzzo
C	Updated Standoffs (30-12-0009) to Heatsinks.	05/30/08	Mike Hatzinger



**FLOOR JAM USER INTERFACE BREAKAWAY PCBA**  
**ASSEMBLY INSTRUCTIONS**

Rev. **B** **C**

**USER INTERFACE UPPER PCBA: (50-02-0272)**

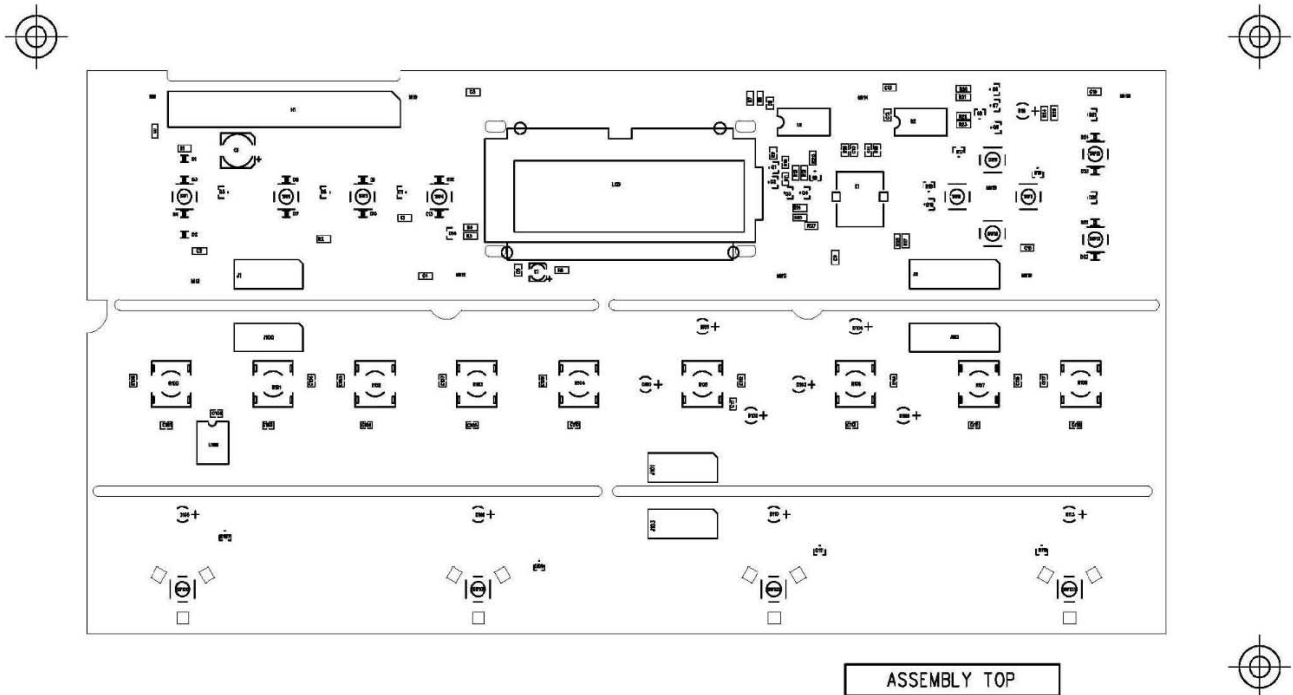
Refers to User Interface Upper PCB Rev. A: (35-00-0272)

**USER INTERFACE MIDDLE PCBA: (50-02-0272-1)**

Refers to User Interface Middle PCB Rev. A: (35-00-0272-1)

**USER INTERFACE LOWER PCBA: (50-02-0272-2)**

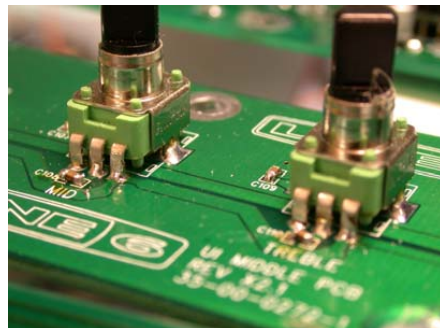
Refers to User Interface Lower PCB Rev. A PCB: (35-00-0272-2)



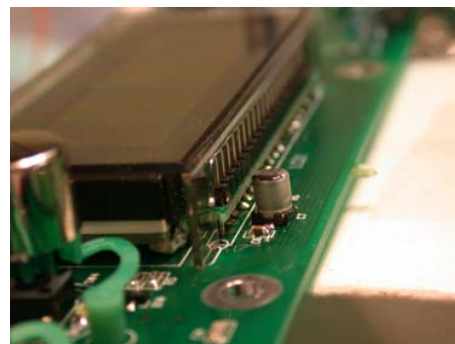
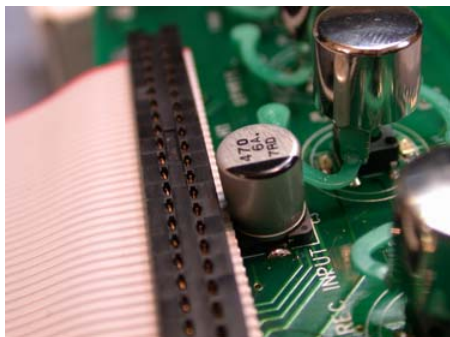
# LINE 6

## Engineering

1. **DO NOT WATER WASH THE BOARD:** The potentiometers and tact switches are sensitive to water washing. If wave soldering is preferred, we recommend using a no-clean flux wave soldering process, rather than a process that requires washing. The fluxing process wave must be controlled so as not to have flux migrate inside the switch through the top of the housing. Good venting is required. No-clean flux vapors can enter the switch if adequate venting is not available. The vapors will condense on the internal contacts and become an insulator when they solidify.
2. **BREAKAWAY PCB:** DO NOT BREAK APART THE FIVE SECTIONS OF THE PCB UNTIL AFTER WAVE SOLDER.
3. **DO NOT INSTALL PARTS: C10-11**
4. **POTENTIOMETERS:** All potentiometers are to be mounted on the **TOP SIDE** of the User Interface Lower PCB (35-00-0272-2). Potentiometers are to be flush to the PCB, and as straight as possible (Within +/- 1 degree). **See Photo.**

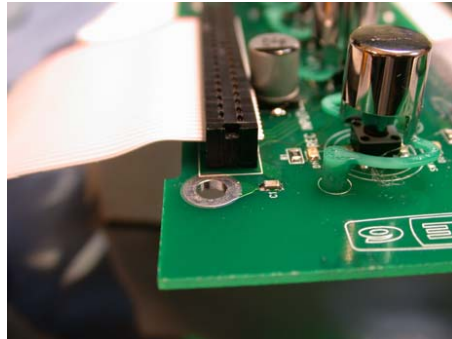


5. **RADIAL LEAD CAPACITORS:** **RADIAL LEAD SM CAPACITORS:** Check orientation of electrolytic capacitors C3 and C7 located on the UI Upper PCB (35-00-0272). Radial lead capacitors are mounted flush with the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. **See Photos.**

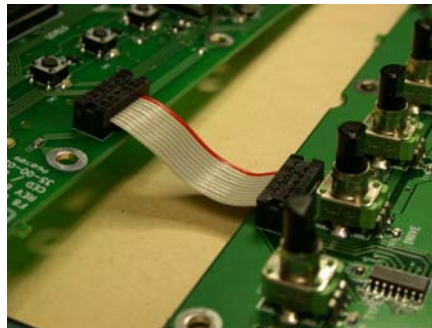


**6. RIBBON CABLES:**

1. **40-PIN RIBBON CABLE:** One 40-pin ribbon cable (21-30-0052) is to be staked flush on the **TOP SIDE** of the User Interface Upper breakaway PCB (35-00-0272) at H1. **See Photo.**



2. **10-Pin Ribbon Cable (21-30-0053-2)** should be staked from J100 on User Interface Middle PCB (35-00-0272-1) to J1 on UI Upper PCB (35-00-0272). **See Photo.**

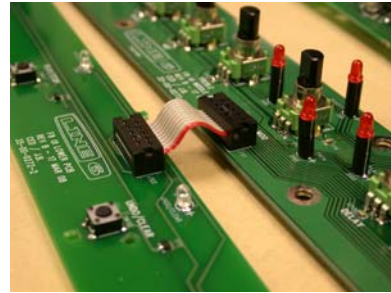


3. **14-Pin Ribbon Cable (21-30-0054)** should be staked from J102 on User Interface Middle PCB (35-00-0272-1) to J2 on UI Upper PCB (35-00-0272). **See Photo.**





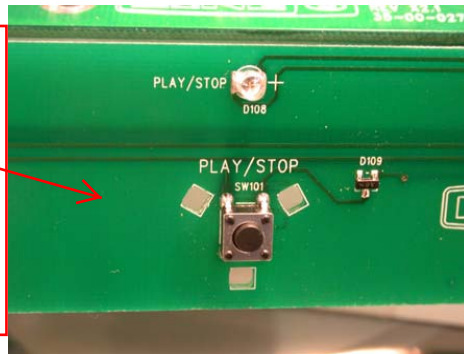
4. **10-Pin Ribbon Cable (21-30-0053-1)** should be staked from J10 on User Interface Lower PCB (35-00-0272-2) to J101 on UI Middle PCB (35-00-0272-1). **See Photos.**



5. **SWITCHES:** All tact switches are to be mounted flush and manually soldered on the bottom side of the User Interface Lower PCB (35-00-0272-2) and UI User Interface Upper PCB (35-00-0272). **See Photo**

All tact switches are surface mount and should be wave soldered.

Switches should be flush with the PCB and lined up with the silkscreen outline within +/- 1 degree of accuracy.



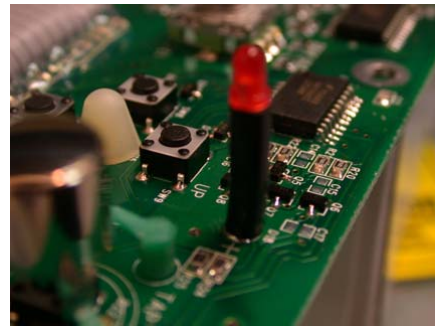
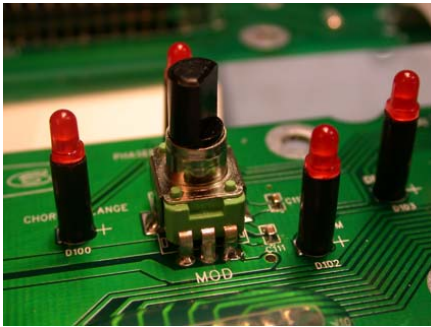
6. **4-WAY SWITCH NYLON PIVOT:** Install Nylon Pivot (PN 30-27-0221) into mounting hole on User Interface Upper PCB (35-00-0272). **See Photo**



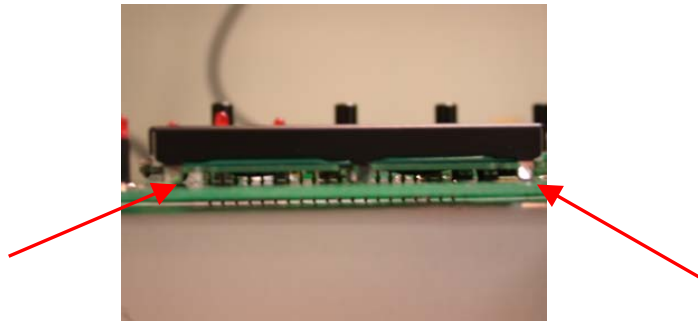
# LINE 6

## Engineering

7. **LED'S:** All LED's are to be mounted on the **TOP SIDE** of the PCBs  
Through-hole LEDs (D100-105) should be mounted to the UI Middle PCB (35-00-0272-1) using Spacer (30-15-0029-2).  
Through-hole LED (D18) should be mounted to the UI Upper PCB (35-00-0272) using Spacer (30-15-0029-3).  
Through-hole LEDs (D106 D108 D110 D113) should be mounted flush to the UI Lower PCB (35-00-0272-2). **See Photos.**



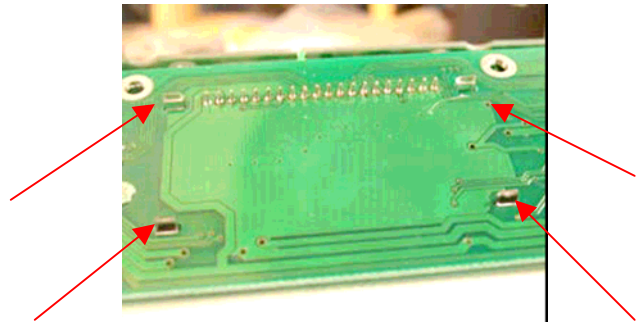
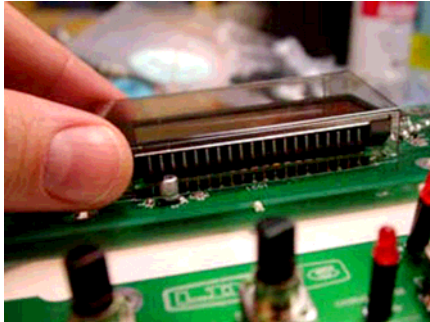
8. **LCD (50-02-0240):** LCD is to be installed flush to the User Interface Upper PCB (35-00-0272) using the metal bracing points located on the right, left, and middle section of the LCD Top region. All of these bracing points are to be seated flush to the User Interface Upper PCB (35-00-0272). **See Photos.**



9. **Installation of Buttons:** Chrome plated Buttons (30-27-0300) are to be heat-staked at all Tact Switch locations (SW1-4 SW8-13) on User Interface Upper PCB (35-00-0272). **See Photo.**



**10. Installation of LCD Bezel:** LCD Bezel (30-27-0298) should be snapped into place on User Interface Upper PCB (35-00-0272). Turn PCB upside down and visually confirm that the bezel's ends have all snapped through. See Photos.



***END OF USER INTERFACE BREAKAWAY PCBA ASSEMBLY INSTRUCTIONS***

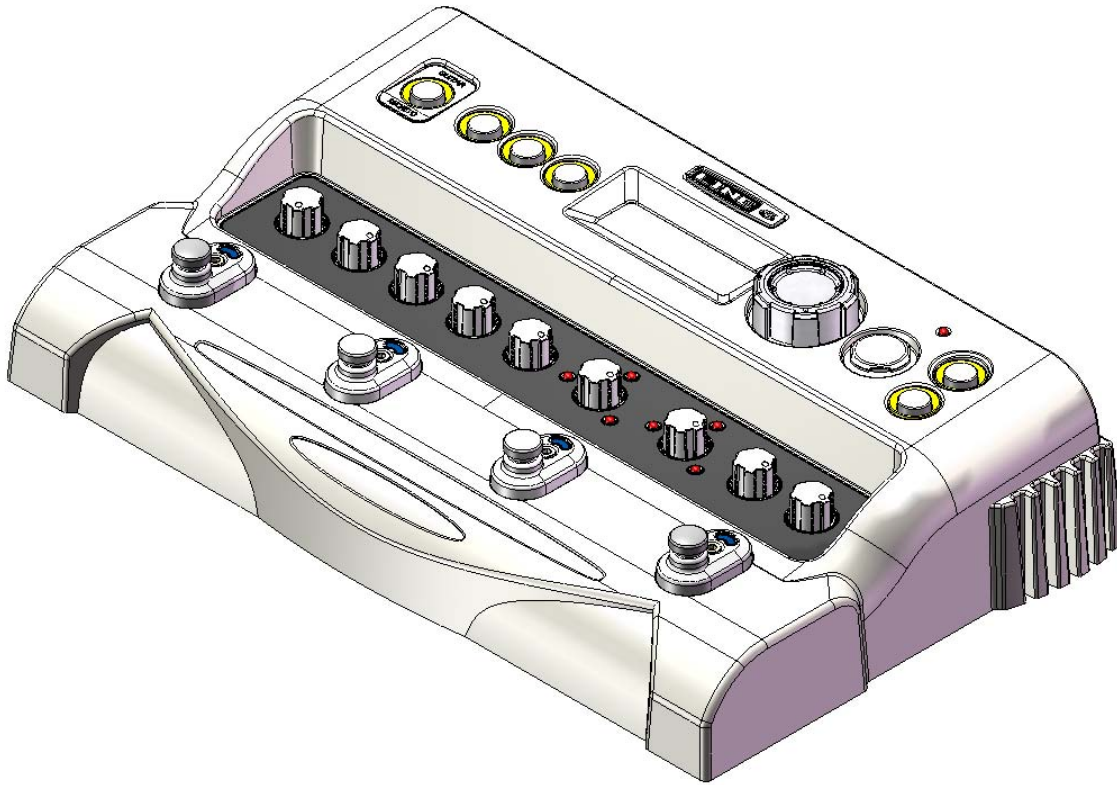
**PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY**

<b>REVISION</b>	<b>NOTES</b>	<b>DATE</b>	<b>RELEASED BY</b>
<b>A</b>	- Release for both Beta and Production, unless revised	<b>03/13/2008</b>	<b>ANTHONY PASCUZZO</b>
<b>B</b>	- Instruction updated to include Ribbon Cable Assemblies.	<b>03/27/2008</b>	<b>ANTHONY PASCUZZO</b>
<b>C</b>	- Instruction updated to correct the tact switch assembly instruction 4/4/08 A.P.		



## PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

<u>REVISION</u>	<u>NOTES</u>	<u>DATE</u>	<u>RELEASED BY</u>
X1	- Initial release based on Rev X1B UI Board FOR Rev X1 Prototype build.	02.21.2007	ANTHONY PASCUZZO



## Forward and Notes

The information in this booklet applies to the F8-1 Complete Unit. It is suggested that the steps for assembly follow the order presented in these instructions.

These instructions deal with the assembling of the major subassemblies, the final product, and quality/inspection considerations. See also the Related Electrical assembly documentation for major considerations in assembling the electrical components of the PCBs (through the soldering process and preparation of the board for addition of custom components).

*A note on the text: the illustrations in this book are for reference only. In some cases, color and geometry of illustrations may not accurately reflect the color or exact geometry of actual parts.*

- Unless otherwise noted, all dimensions are in inches.
- Drawings are not to scale.
- Torque value tolerance +/- .5 in.-lbs. Do not over tighten any components.
- For clarity, not all component details are shown. This is especially true with respect to cable assemblies. They are often omitted from views to provide a clearer picture of the material discussed. Do not be confused by the absence (or unexpected presence) of any component in the illustrations in this book.



Revision	Changes
A	Initial release. See ECO 0809301.
B	ECO 0814402. Step 10 - updated to include FOAM part number. Step 13 – removed 1 rubber foot from the assembly.



## **STEP 1**

P/N required:

1 each **30-51-0327** OVERLAY TOP 10.4 x 1.6 x .025 ALUMINUM F8

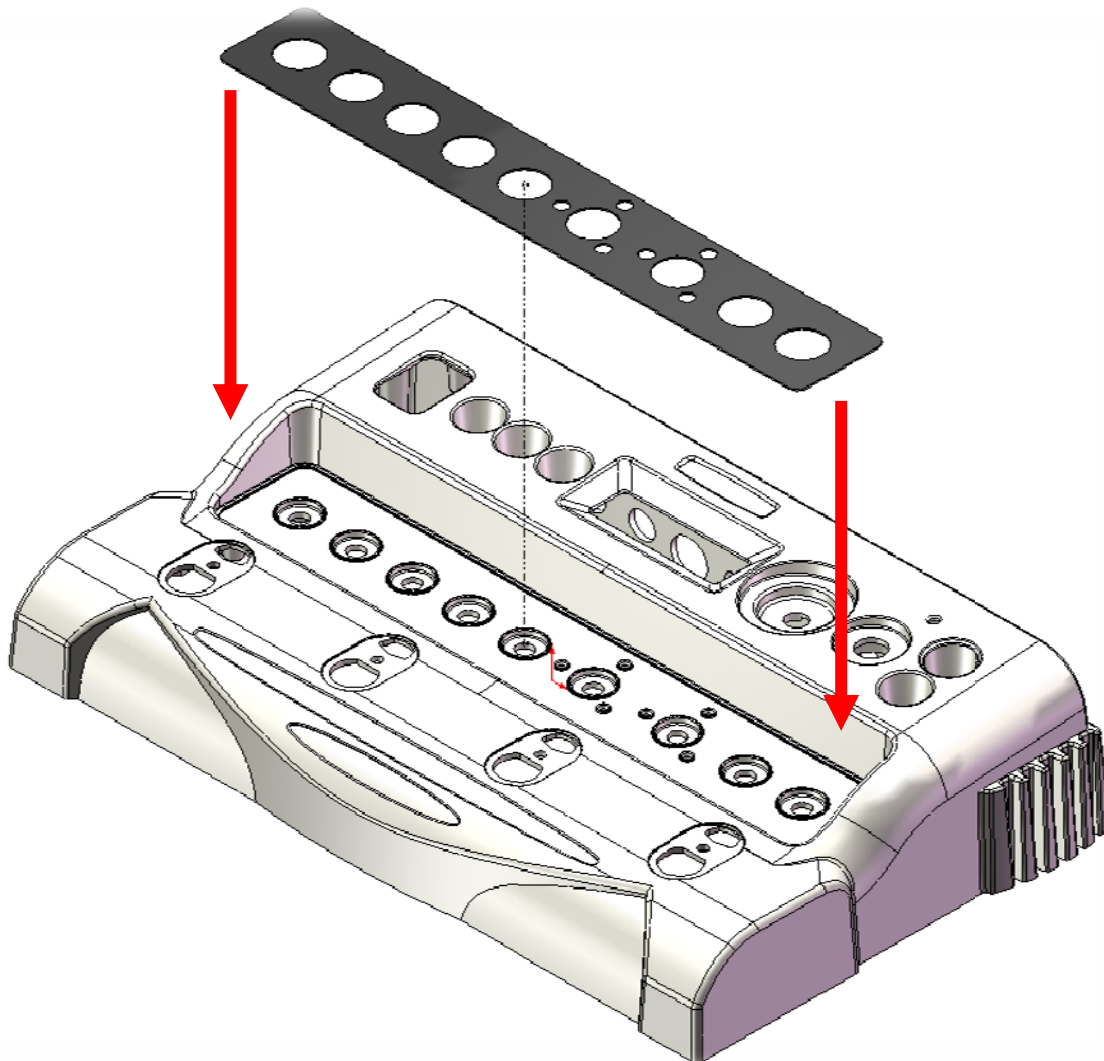
1 each **30-51-4007** CHASSIS TOP COVER 320 x 186 x 64 ALUMINUM TITANIUM F8-1

Remove the protective film from the OVERLAY.

**OVERLAY** holes shall be **CONCENTRIC** to **CHASSIS** holes.

Use a **GUIDE TOOL** to align holes.

Firmly press into the **CHASSIS**.





## STEP 2

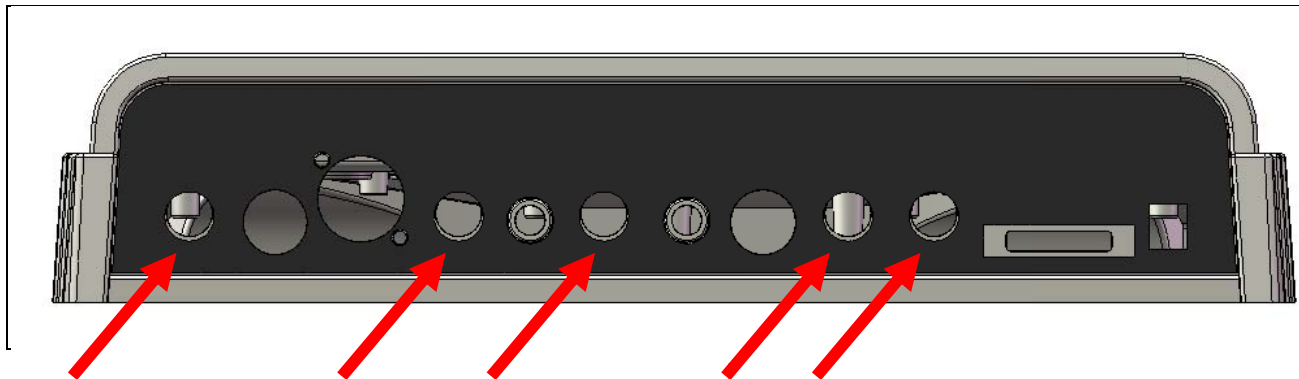
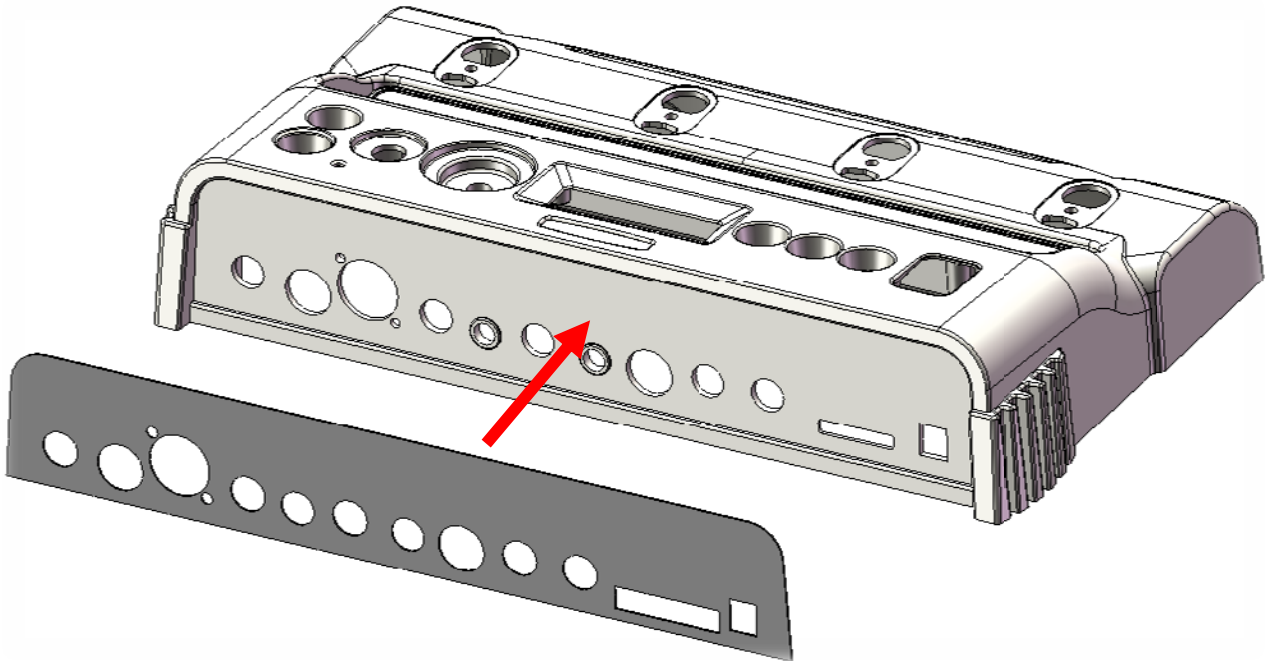
P/N required:

1 each **30-51-0328** OVERLAY REAR 11.5 x 1.9 x .03 ALUMINUM F8

Remove the protective film from the OVERLAY.

**OVERLAY holes shall be CONCENTRIC to CHASSIS holes.**  
Use a **GUIDE TOOL** to align holes.

Firmly press into the CHASSIS.



These 5 holes will NOT be concentric. This condition is acceptable.

**STEP 3**

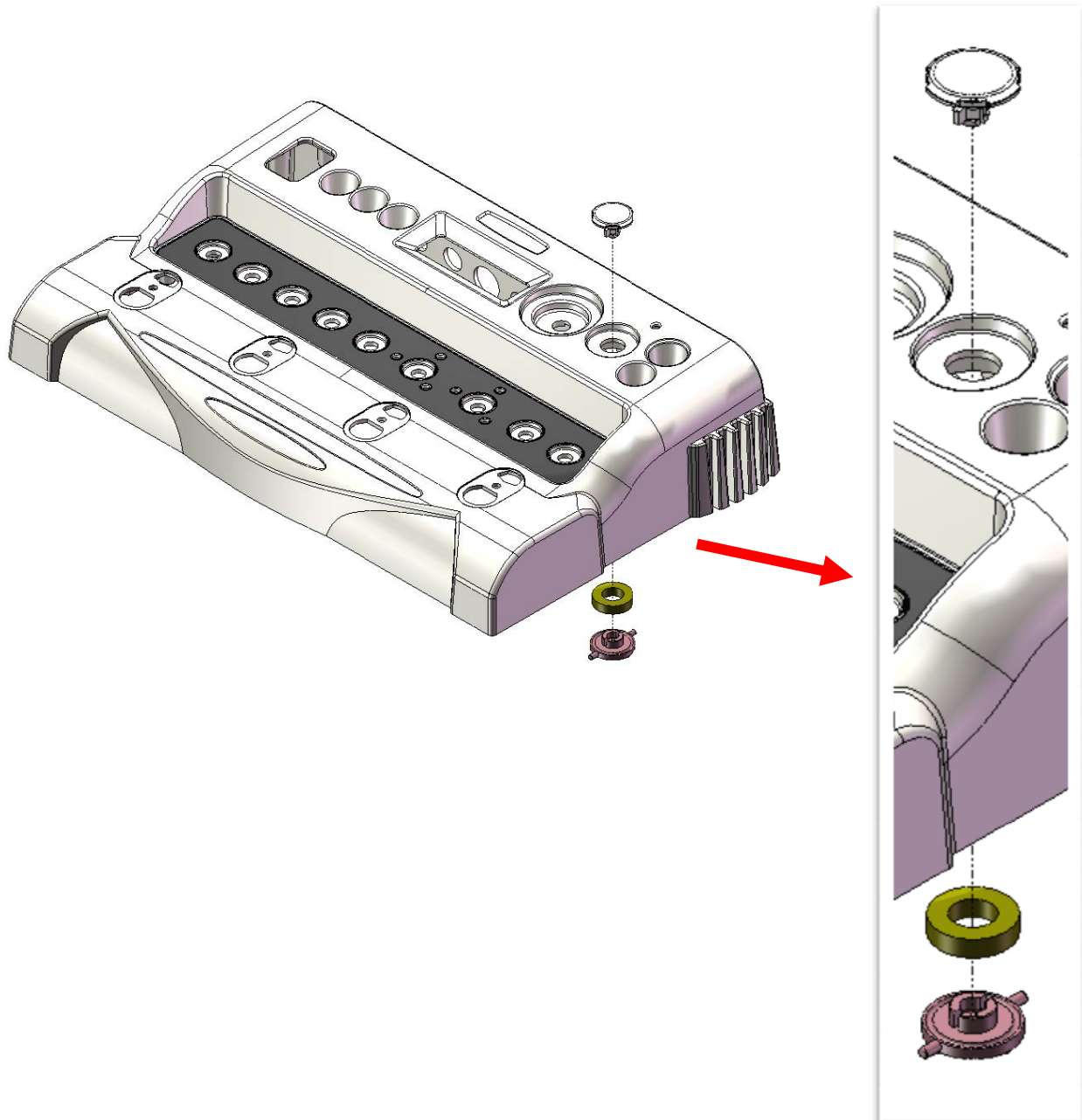
P/N required:

1 each **30-27-0217-2** BUTTON 4 WAY TOP .8 DIA x .4 HT ABS

1 each **30-63-0028** FOAM RING 4-WAY SW RET PU

1 each **30-27-0218** BUTTON 4 WAY BOTTOM .8 DIA x .5 HT ABS

Assemble the parts onto the CHASSIS as shown.

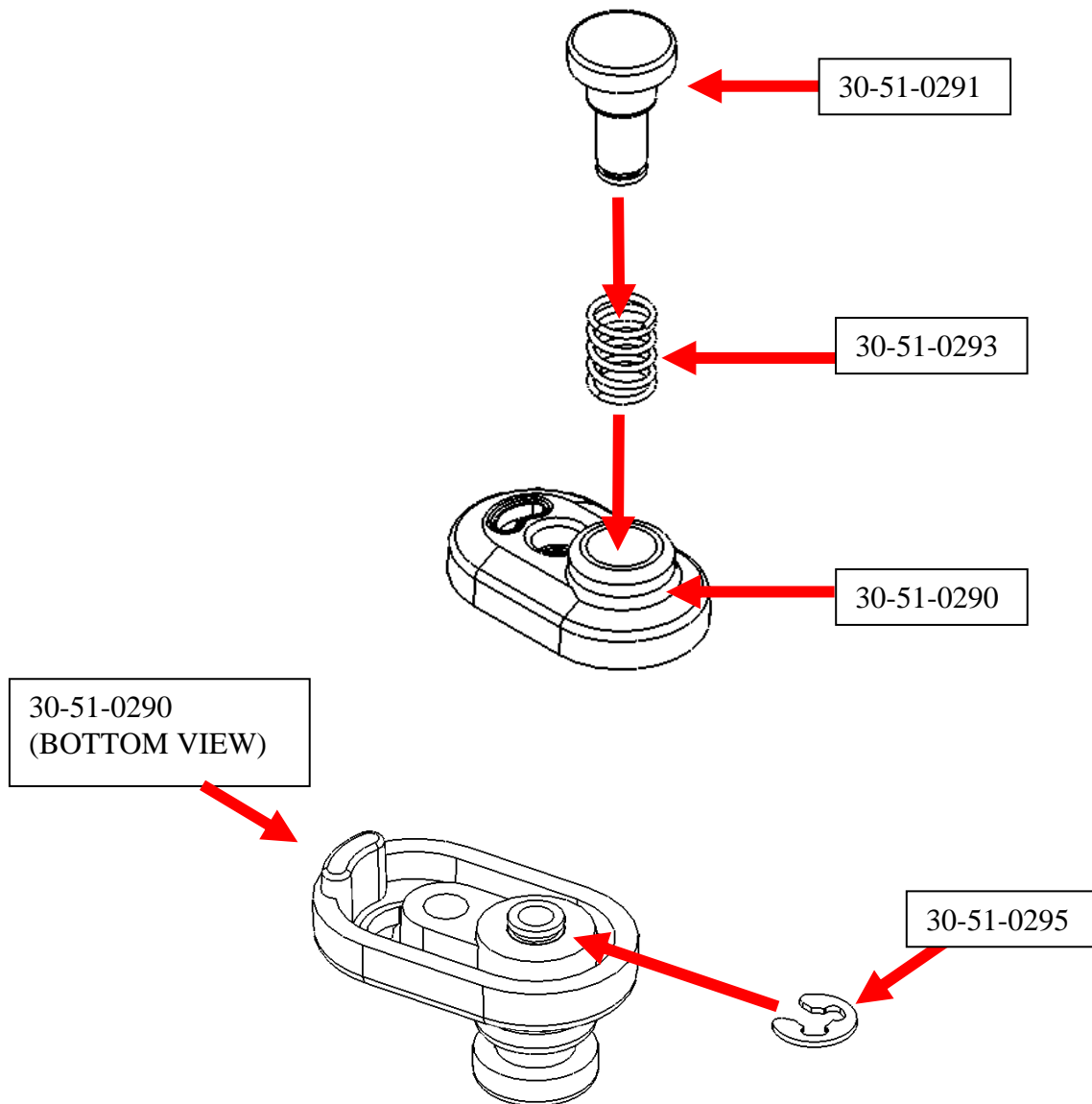


## STEP 4

P/N required:

- 1 each **30-51-0290** FOOTSWITCH BASE
- 1 each **30-51-0291** FOOTSWITCH PLUNGER
- 1 each **30-51-0293** FOOTSWICH SPRING, LARGE
- 1 each **30-51-0295** E-CLIP

Insert the FOOTSWITCH PLUNGER and the FOOTSWICH SPRING, LARGE into the large hole in the FOOTSWITCH BASE. Push the FOOTSWITCH PLUNGER all the way through the FOOTSWITCH BASE and secure it with the E-CLIP.



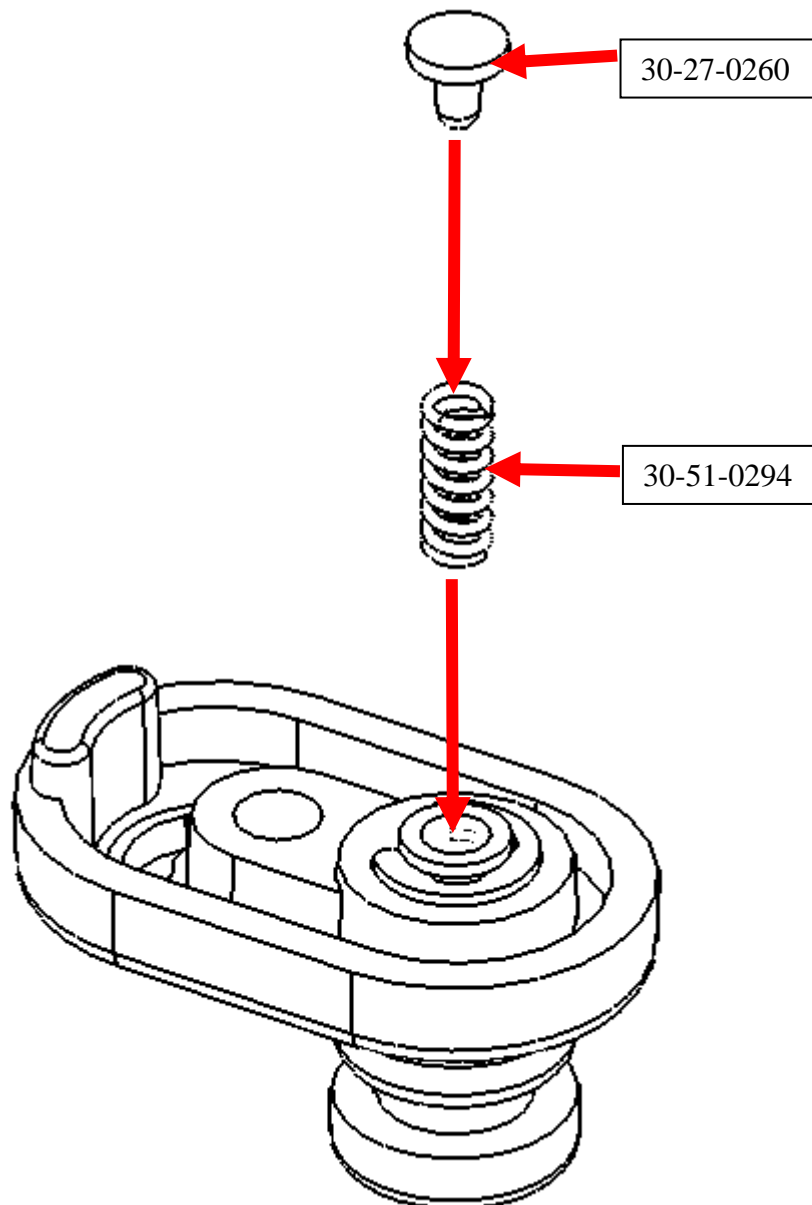
**STEP 5**

P/N required:

1 each **30-27-0260** FOOTSWITCH PUSH PIN

1 each **30-51-0294** FOOTSWITCH SPRING, SMALL

Insert the FOOTSWITCH PUSH PIN and the FOOTSWITCH SPRING, SMALL into the FOOTSWITCH PLUNGER.

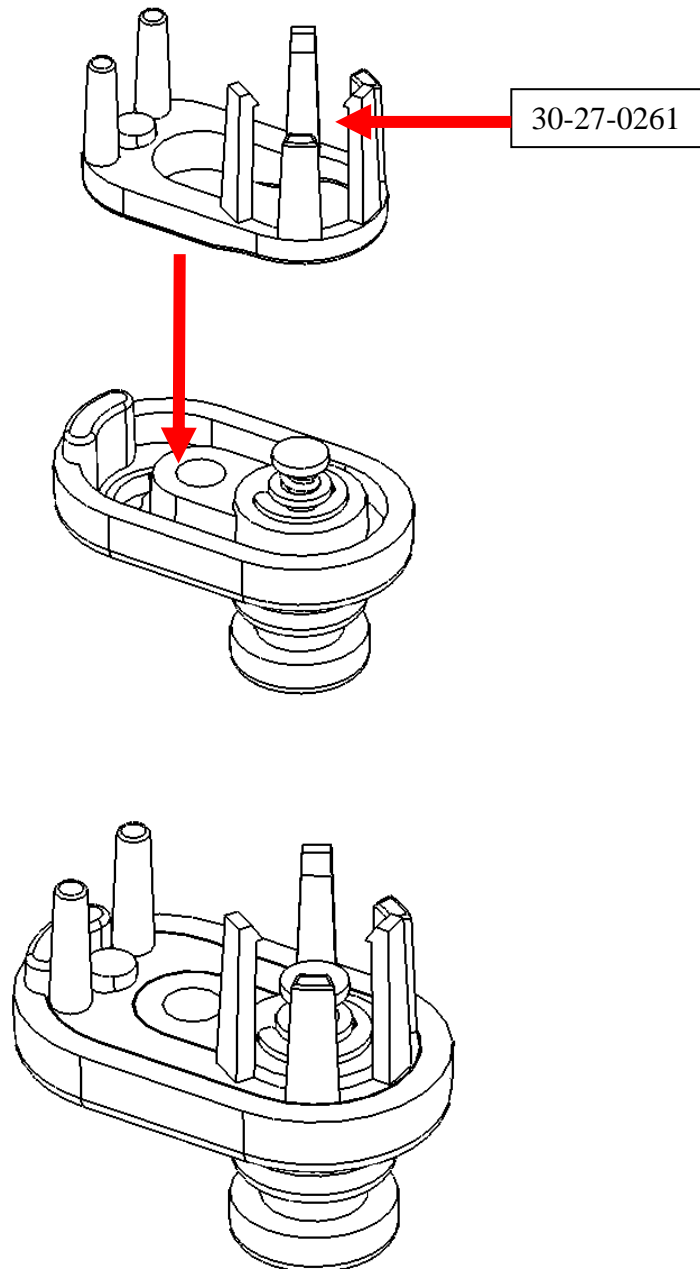


**STEP 6**

P/N required:

1 each **30-27-0261** FOOTSWITCH LIGHT PIPE

Insert the FOOTSWITCH LIGHT PIPE into the FOOTSWITCH BASE.



**REPEAT THE PREVIOUS 3 STEPS TO CREATE 4 SUBASSEMBLIES.**

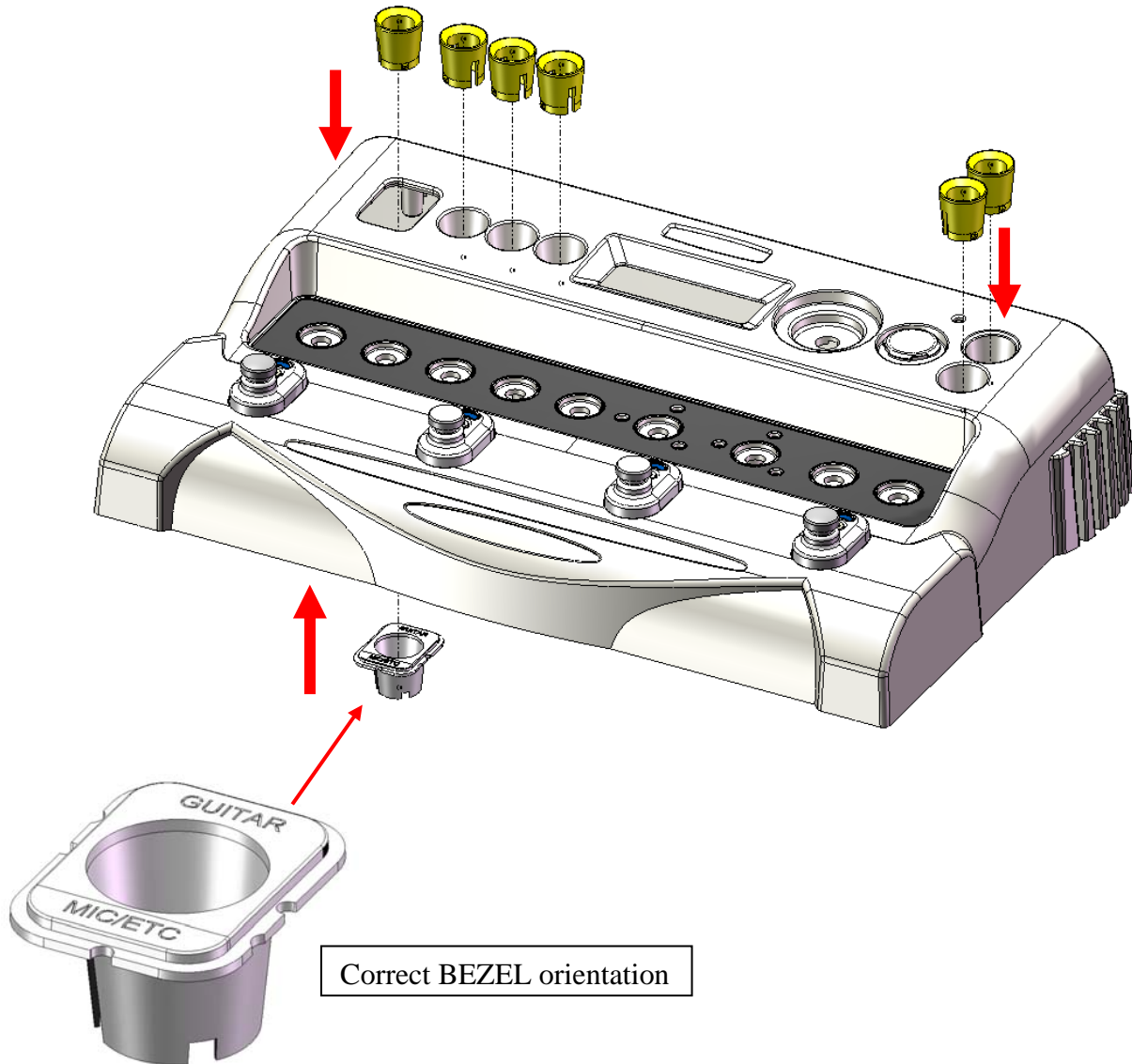
**STEP 7**

P/N required:

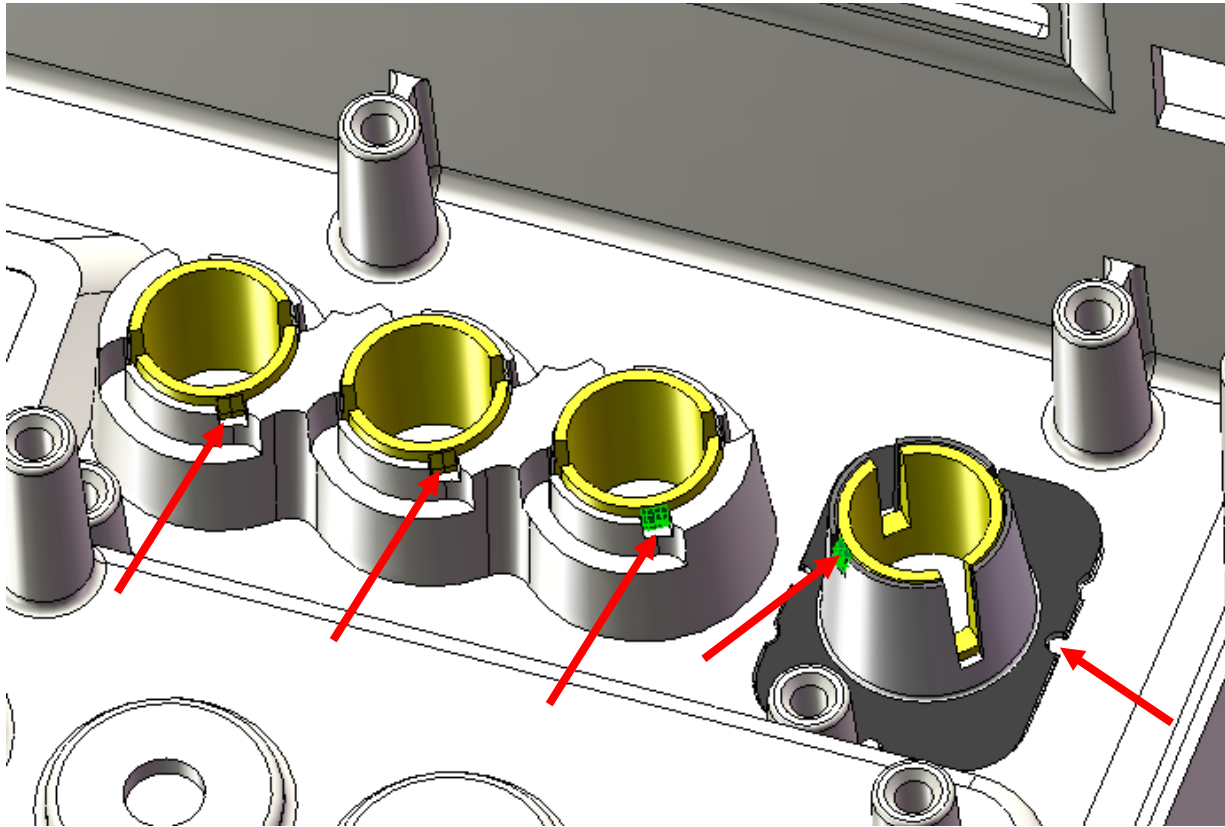
1 each **30-27-0249** BEZEL GUITAR MIC IN 2.5 x .38 PC CLEAR A11-1

6 each **30-27-0251** LIGHTPIPE .60 DIA x .75 ACRYLIC SEMI-TRANSPARENT

Install the LIGHT PIPES and BEZEL as shown.



**STEP 7 continued**



**Correct LIGHT PIPE and BEZEL orientation.  
Part clips into slots as shown.**



**STEP 8**

P/N required:

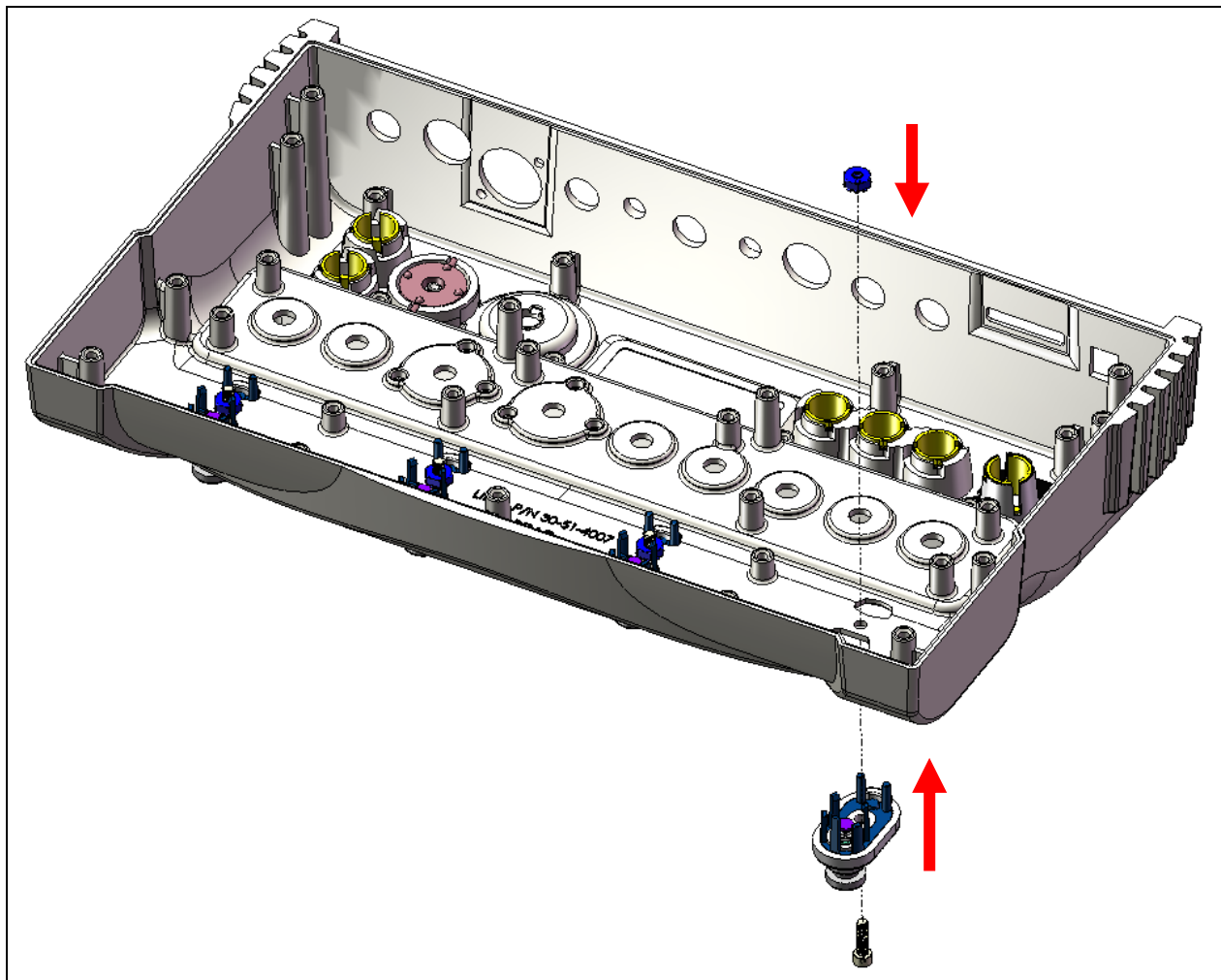
4 each **30-06-0623** NUT 6-32 WITH STAR WASHER

4 each **30-00-0405** SCREW 6-32 x 1/2" NICKEL PLATED

4 each **Footswitch Assembly from STEP 6**

Install one footswitch subassembly into each of the 4 locations on the CHASSIS.  
Secure with one SCREW 6-32 x 1/2" NICKEL PLATED and NUT 6-32 WITH STAR WASHER.

Torque the NUT 6-32 WITH STAR WASHER to 8 – 10 inch-pounds.



**VERIFY NUT does not interfere with switch operation.**

**Adjust as necessary if interference exists.**

**STEP 9**

P/N required:

16 each **30-00-0043** SCREW 6-32 x 5/16 w/LK WASH PPZ STL

1 each **50-02-0272** PCBA UI UPPER FLOOR JAM F8

1 each **50-02-0272-1** PCBA UI MIDDLE FLOOR JAM F8

1 each **50-02-0272-2** PCBA UI LOWER FLOOR JAM F8

VERIFY PIVOT PIN p/n 30-27-0221 installation in PCBA UI UPPER.

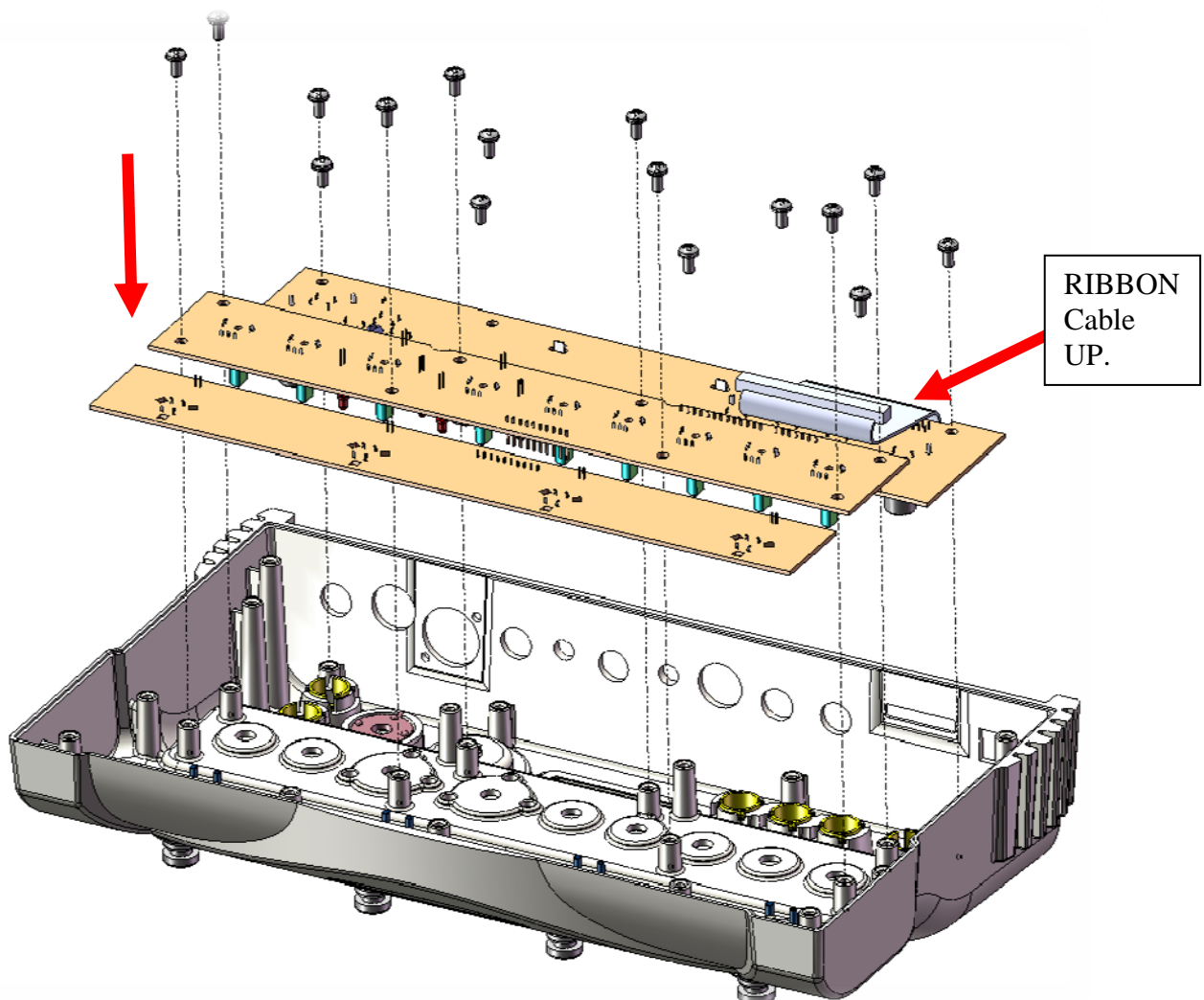
**FIRST** position PCBA UI MIDDLE into CHASSIS. **Do NOT install screws.**

**SECOND** position the PCBA UI UPPER and GENTLY GUIDE buttons into the LIGHT PIPES.

**THIRD** push PCBA UI LOWER onto LIGHT PIPE CLIPS.

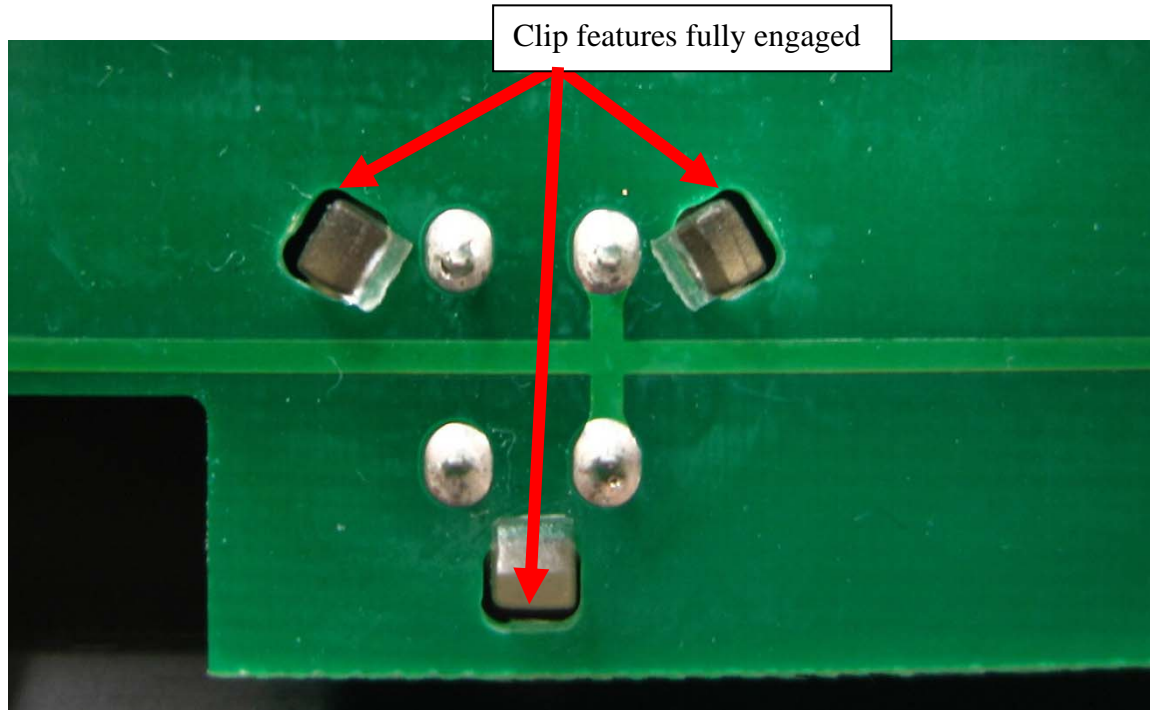
**VERIFY** all LEDs are aligned in CHASSIS. **Install all screws.**

Torque the NUT 6-32 WITH STAR WASHER to 8 – 10 inch-pounds.



**STEP 9 continued**

**Verify the FOOTSWITCH LIGHTPIPES clip features are fully engaged in PCBA UI LOWER.**

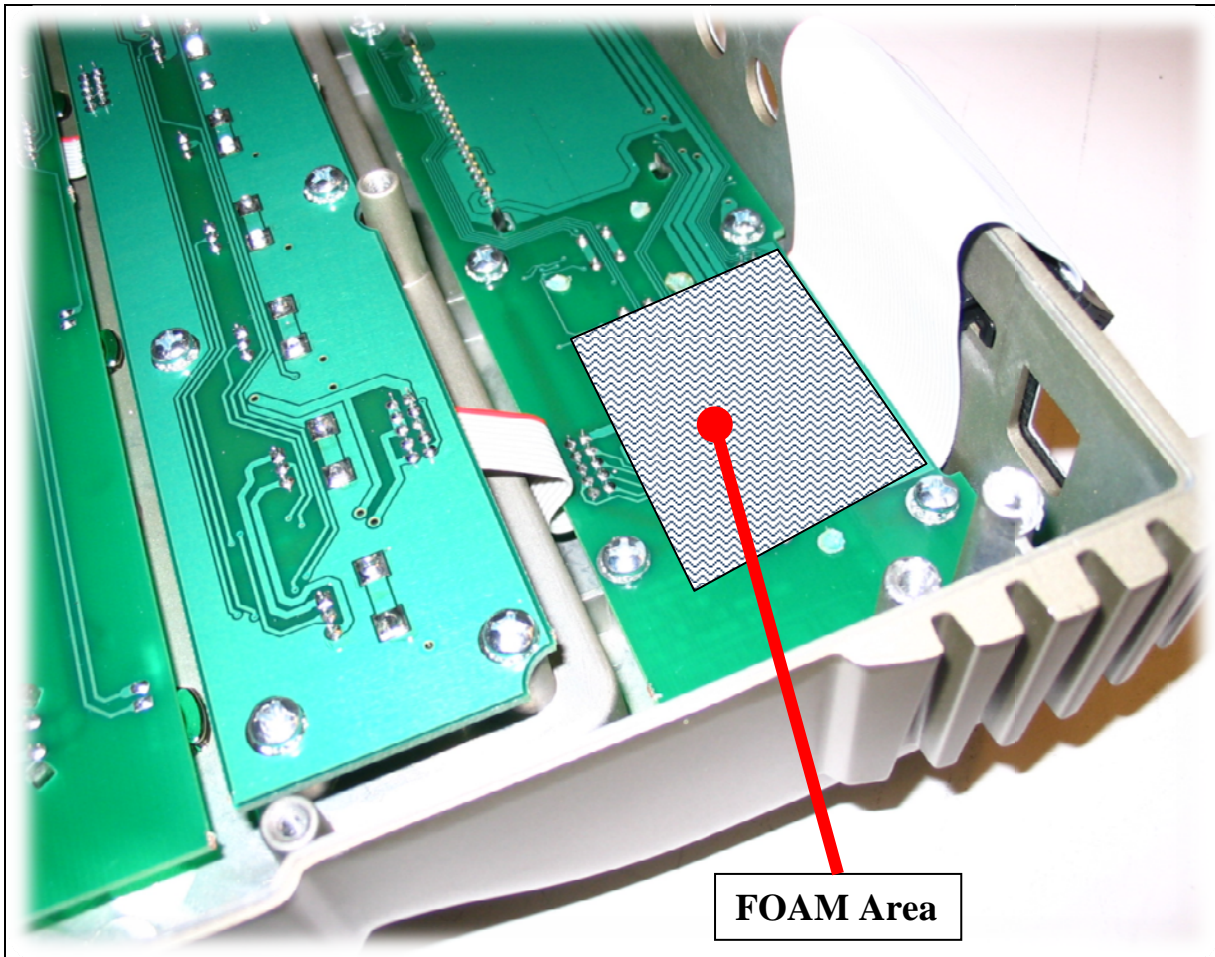


**STEP 10**

P/N required:

1 each **30-63-0041** FOAM EVE BLACK w/ADHSV 1 SIDE 57mm x 32mm x 2mm

Install FOAM on PCBA UI UPPER to COVER solder leads and protect Ribbon Cable.



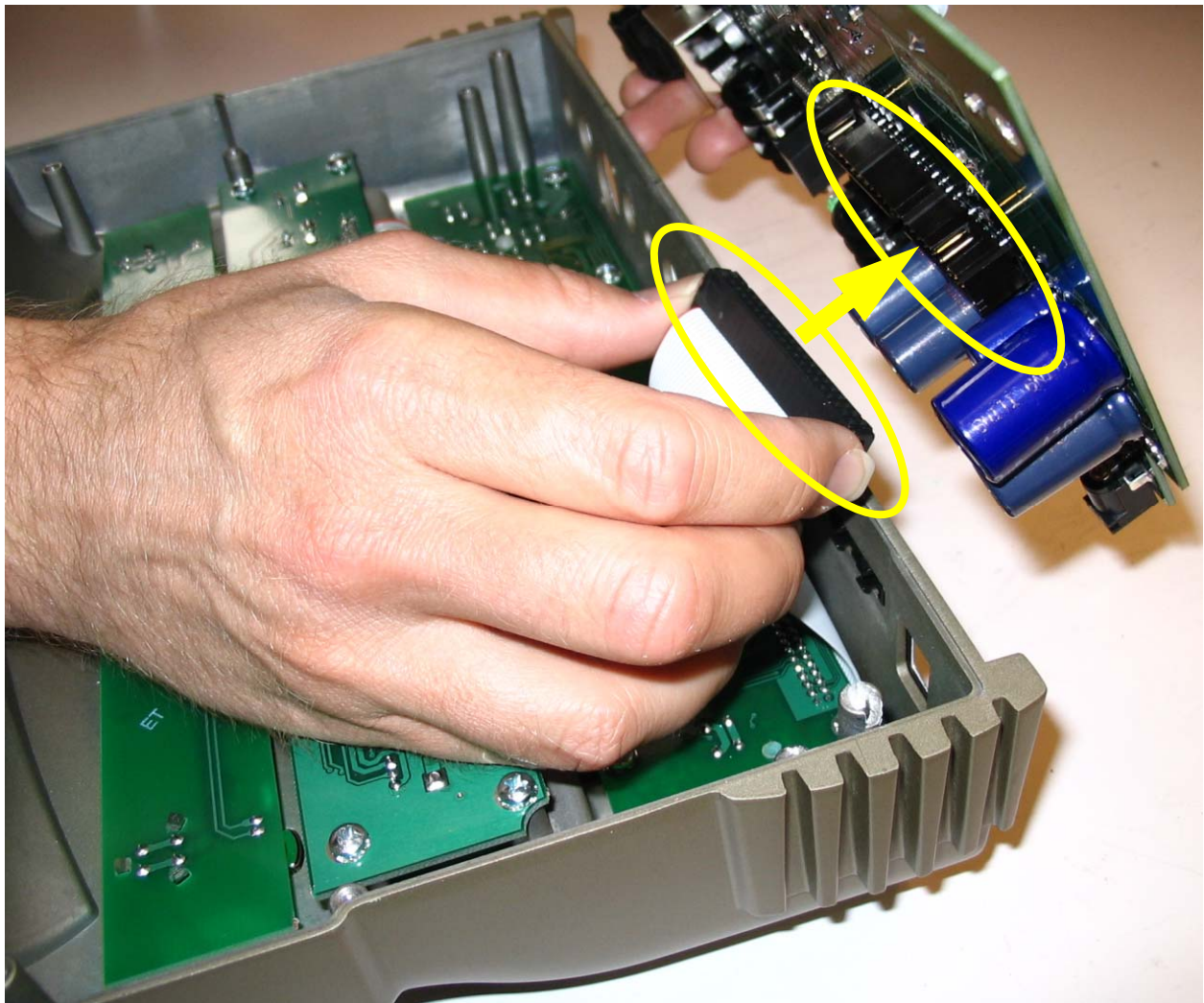


**STEP 11**

P/N required:

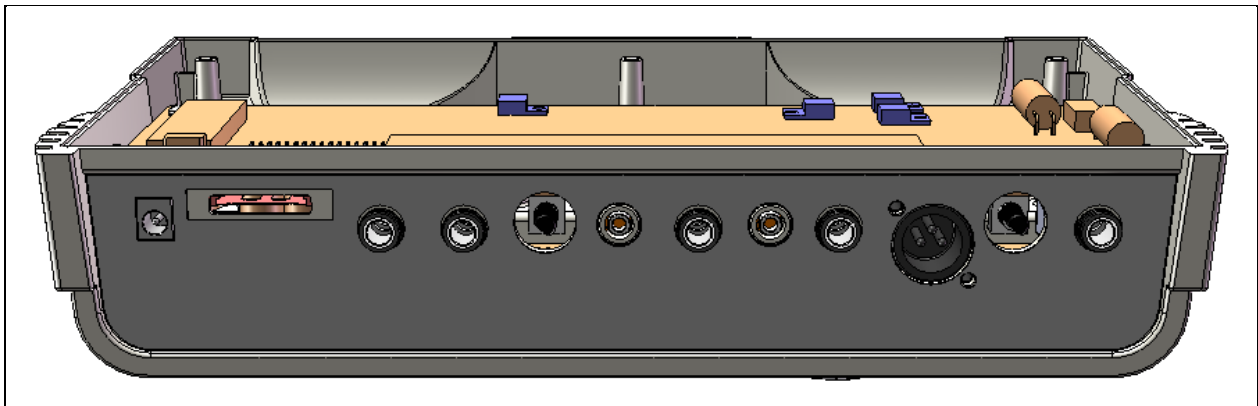
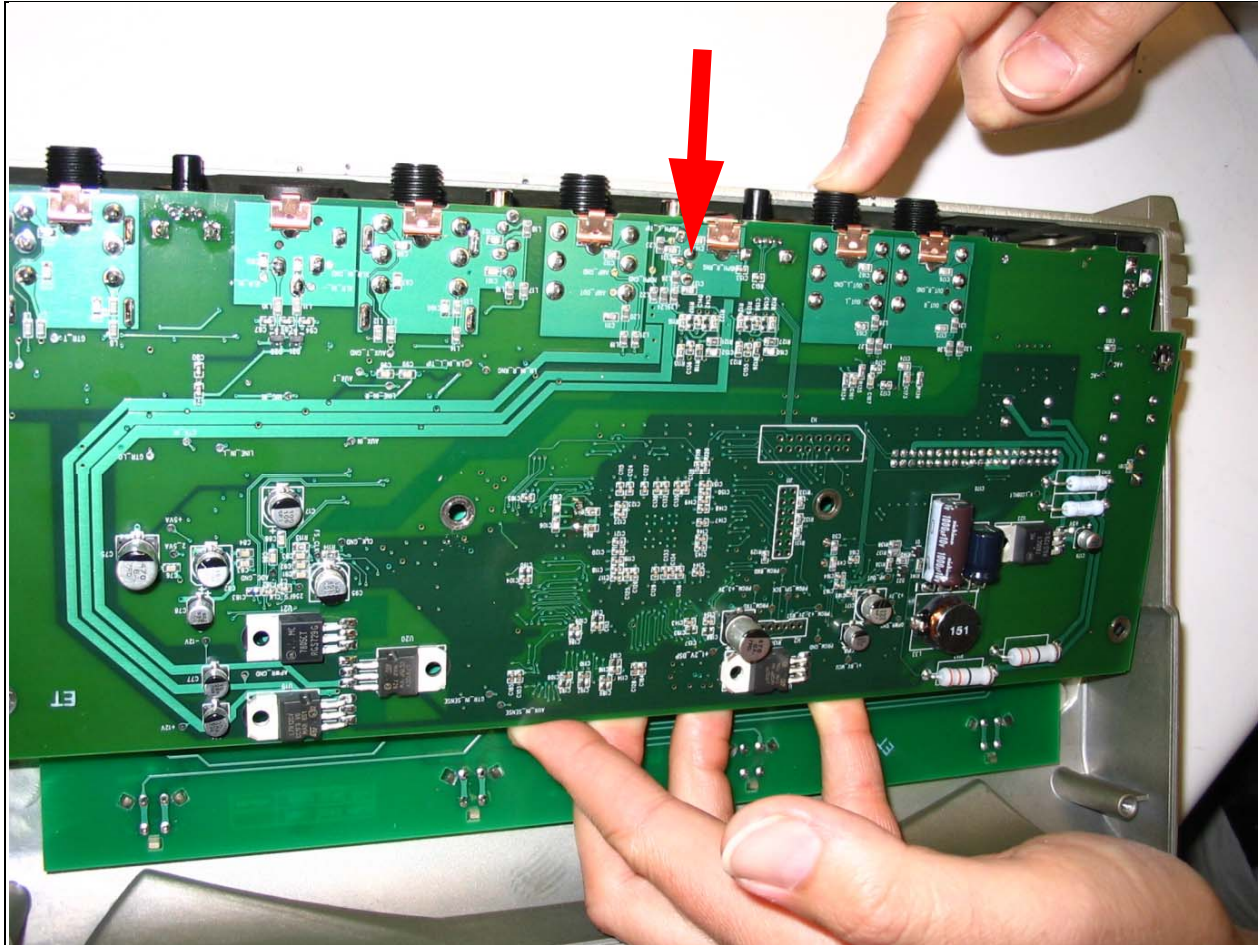
1 each **50-02-0271** PCBA MAIN FLOOR JAM F8

Insert Ribbon Cable CONNECTOR into HEADER.  
**VERIFY that CONNECTOR is FULLY inserted.**



**STEP 11 continued**

Install the PCBA into the CHASSIS.  
PUSH the PCBA to stretch the CABLE.



**STEP 11 continued**

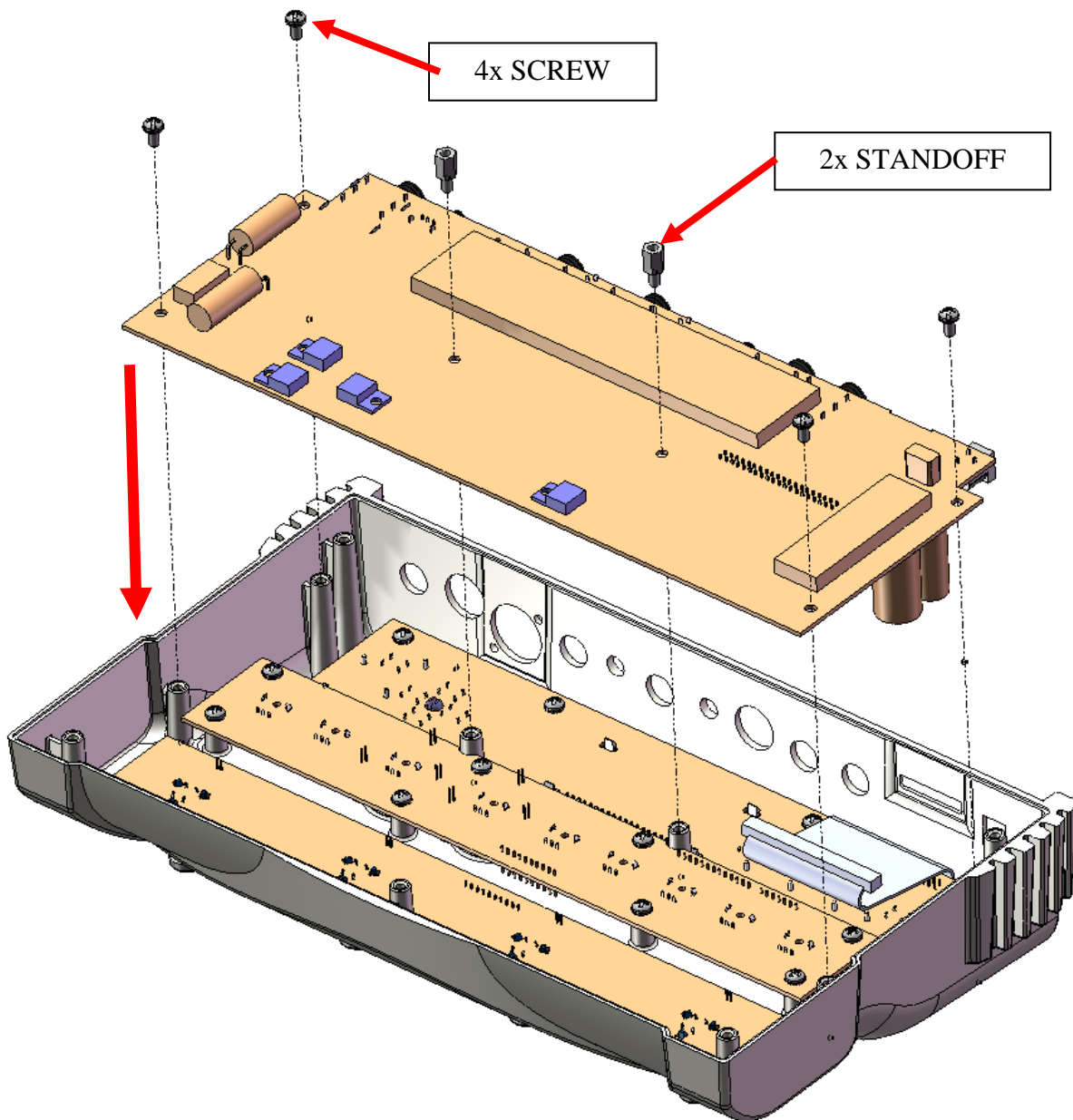
P/N required:

4 each **30-00-0043** SCREW 6-32 x 5/16 w/LK WASH PPZ STL

2 each **30-12-8415** STANDOFF HEX .250 6-32 M-F 11/32 INCH

Torque the SCREWS to 8 – 10 inch-pounds.

Torque the STANDOFF to 6 – 8 inch-pounds.

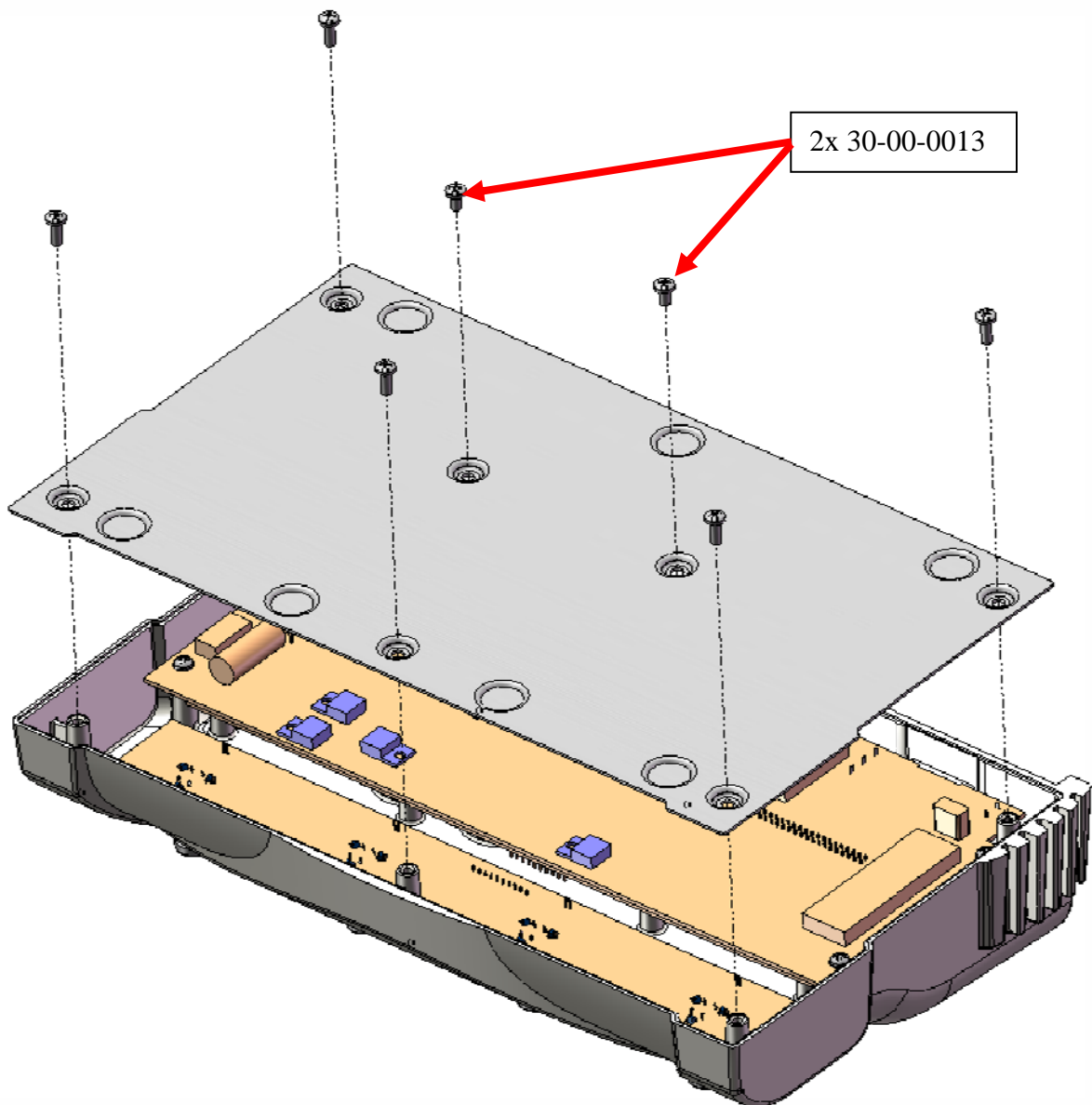




**STEP 12**

- 5 each **30-00-1632** SCREW 6-32 x 3/8IN PPB TAP-TITE STL
- 2 each **30-00-0013** SCREW 6-32 UNC x 0.250" PAN-HD STEEL BLACK-OXIDE
- 1 each **30-51-0326** BOTTOM PLATE METAL 12.2 x 7 x .031" F8

Torque the SCREWS to 8 – 10 inch-pounds.

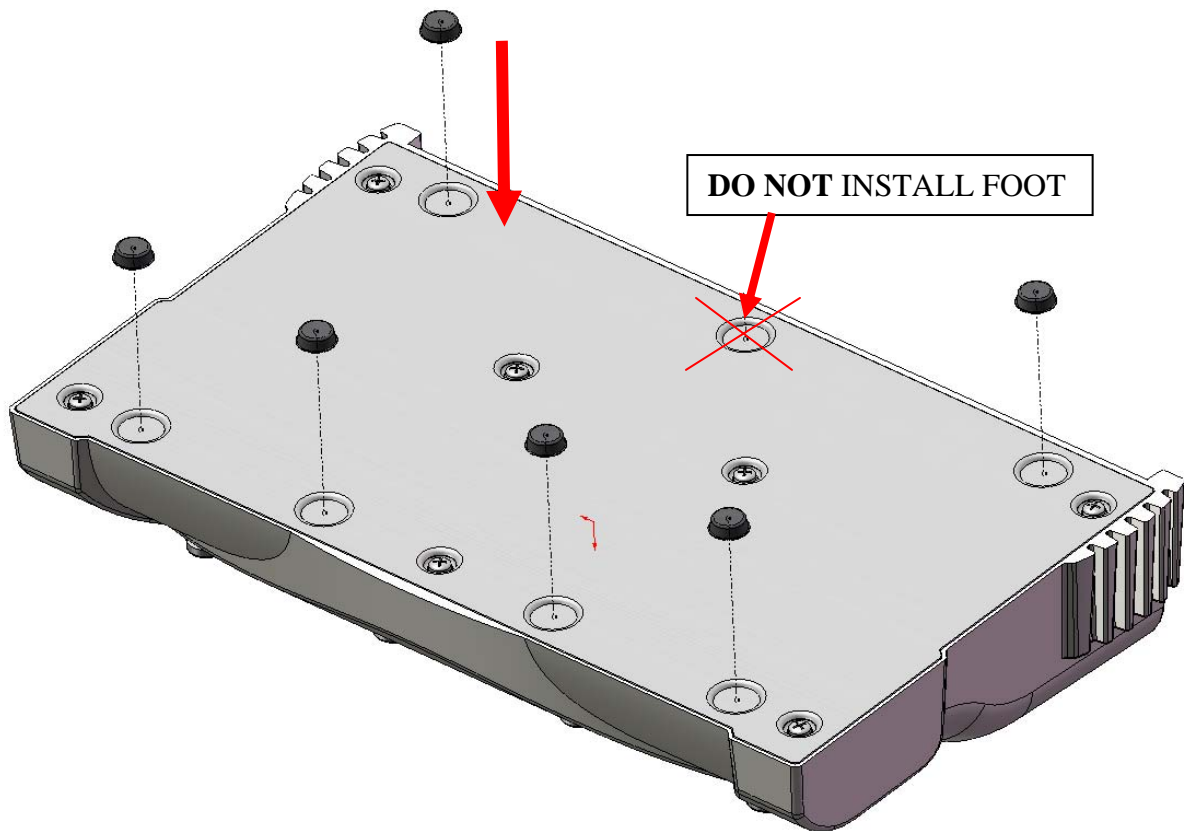


**STEP 13**

P/N required:

6 each **30-48-0010** RUBBER FOOT WITH ADHESIVE

Remove the protective film from the RUBBER FEET WITH ADHESIVE.  
Firmly press into the round recesses of the BOTTOM PLATE.



## STEP 14

P/N required:

1 each **30-60-0006** LOGO

9 each **30-45-0019** KNOB POT .55 DIA x .50 HT PLASTIC CHROME PLATED

1 each **30-45-0017** KNOB 1.4" OD x .21" ID x .51" HT CHROME PLATED

Remove the protective backing from the LOGO.

Firmly press into the recess in the CHASSIS as shown.

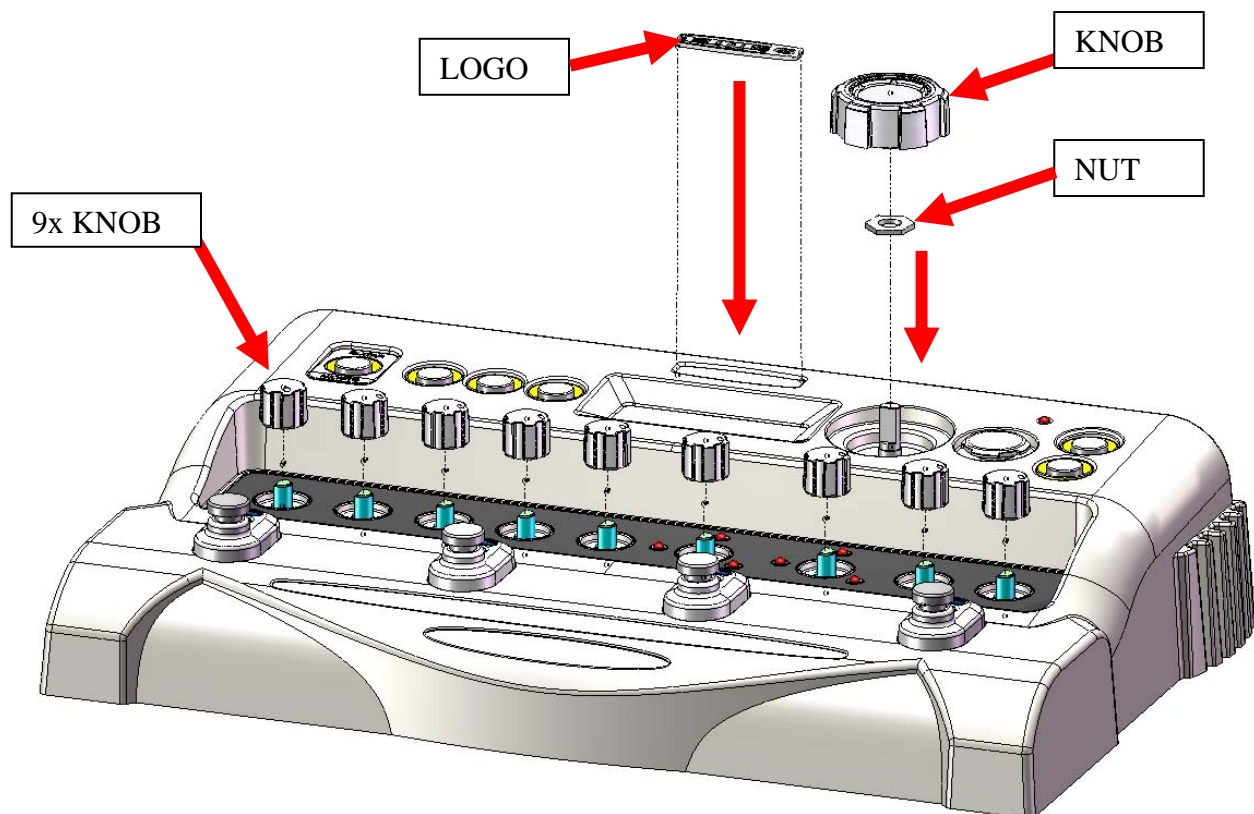
LOGO shall be oriented such that it is readable in the direction shown.

Press one KNOB fully onto the shaft of each of the nine potentiometers.

Install NUT onto ENCODER.

Tighten nut to 8 -10 in-lbs.

Press one KNOB onto the shaft of the encoder on the right side of the DISPLAY BEZEL.



**STEP 15**

P/N required:

1 each **30-27-0246** FRAME SD CARD 1.5 x .3 x .2 ABS BLACK

5 each PLASTIC NUT

2 each **30-45-0019** KNOB POT .55 DIA x .50 HT PLASTIC CHROME PLATED

2 each **30-00-0058** SCREW WOOD NO-4 x 3/8-IN PPB

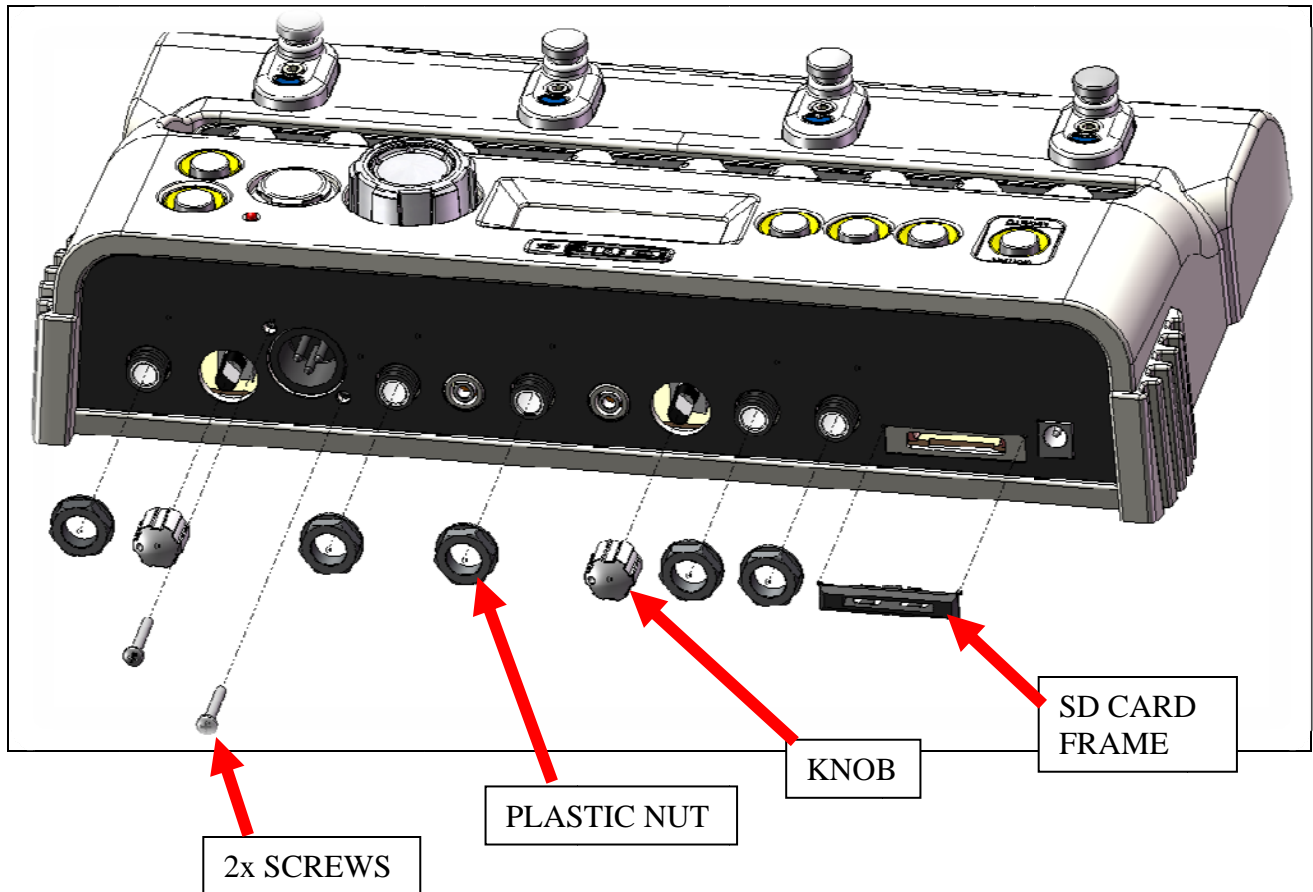
Install SD CARD SLOT FRAME into CHASSIS hole.

Press one KNOB fully onto the shaft of each of the 2 potentiometers.

Install plastic NUTs onto 1/4" JACKS.

**Tighten NUTs until fully seated. DO NOT OVER TIGHTEN.**

Install 2 SCREWS into the XLR JACK.



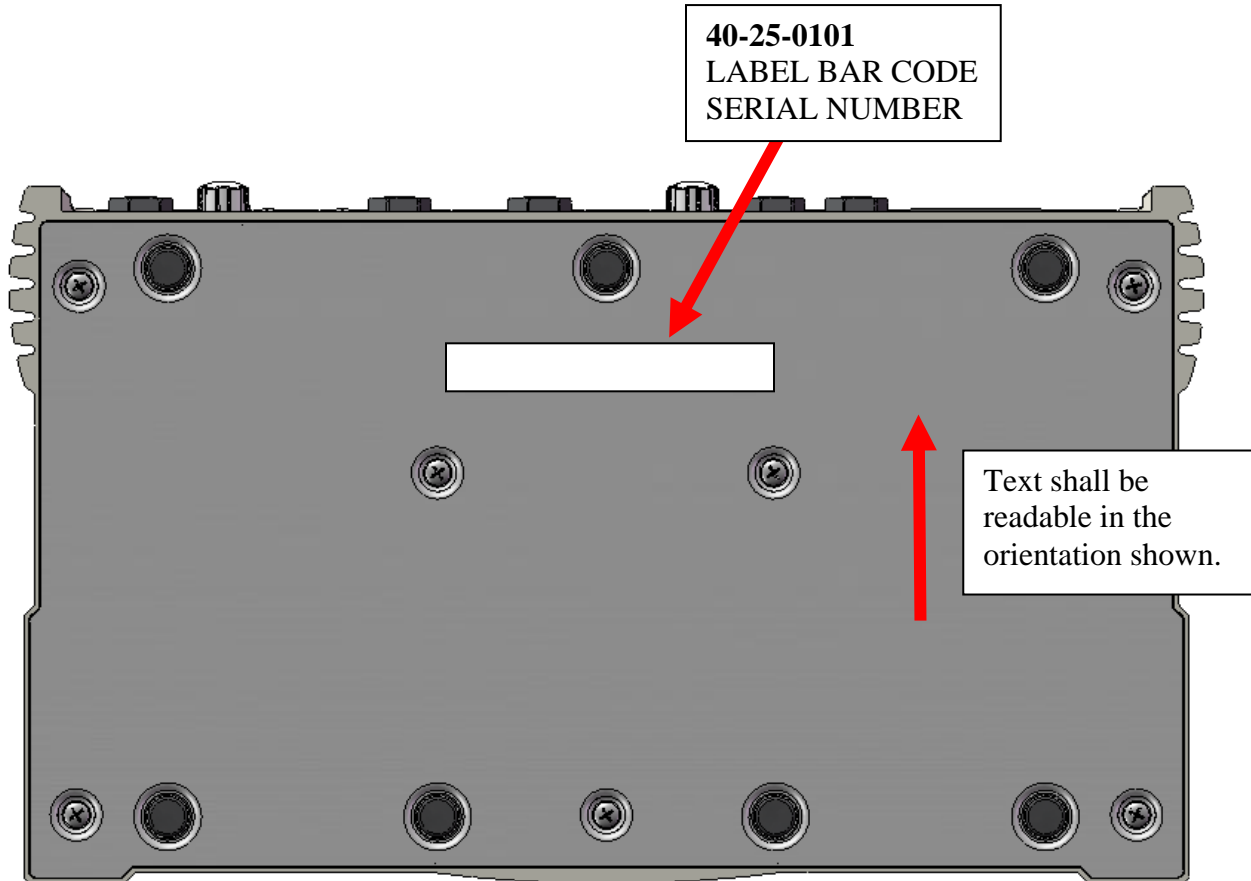


**STEP 16**

P/N required:

1 each **40-25-0101** LABEL BAR CODE SERIAL NUMBER

Apply the LABEL BAR CODE SERIAL NUMBER.  
The text shall be readable in the orientation shown.



99-060-1305 F8-1 JM LOOPER US			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
11-32-0000	XFMR PX2 120VAC/60Hz 9VAC/2A UL 2464 VW-1 6FT BLACK US	1	
40-00-0168	MANUAL USER FLOOR JAM F8-1	1	
40-00-1000	CARD WARRANTY LINE 6	1	
40-01-0016	CARD LICENSE-AGREEMNT END-USER ALL-PRODUCTS	1	
40-03-0031	CARD REGISTRATION UK	1	
40-03-2000	CARD REGISTRATION US	1	
40-03-2000-1	CARD REGISTRATION EUROPE	1	
40-10-0223	CARTON GIFT FLOOR JAM F8-1	1	
40-15-0027	ENDCAP FOAM SHIPPING CARTON FLOOR JAM F8-1	2	
40-20-0011	BAG PLASTIC 10 x 16 2 mil	1	
40-20-0070	BAG PLASTIC SHIPPING 9" x 12" 2-MIL	1	
40-25-0024	STICKER ART SEAL EULA	1	
40-25-0101	LABEL BAR CODE S/N 2-PNL LTX 16 1125502	1	
40-25-0123	LABEL CLING DEMO SPIDER JAM A11-1	1	
59-00-0331	ASSY UNIT COMPLETE FLOOR JAM F8-1	1	

59-00-0331 ASSY UNIT COMPLETE FLOOR JAM F8-1			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
30-00-0013	SCREW 6-32 UNC x 0.250" PAN-HD STEEL BLACK-OXIDE	2	
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	27	
30-00-0058	SCREW WOOD NO-4 x 3/8-IN PPB	2	
30-00-0405	SCREW 6-32 x .50" SHCS NICKEL PL P11-1	4	
30-00-1632	SCREW 6-32 x 3/8IN PPB TAP-TITE STL	7	
30-06-0623	NUT HEX 6-32 w/CAPTIVE STAR-WASHER	4	
30-12-8415	STANDOFF HEX .250 6-32 M-F 11/32 INCH, AL	2	
30-27-0217-2	BUTTON 4 WAY TOP .8 DIA x .4 HT ABS NICKEL PLTG	1	
41-00-0121	ARTWORK SILKSCREEN BUTTON NAV POD TNG BEAN P10-1	1	
30-27-0218	BUTTON 4 WAY BOTTOM .8 DIA x 0.5 HT ABS	1	
30-27-0221	4-WAY SW PIVOT PIN .37 x .200 DIA NYLON 6/6 WHITE	1	
30-27-0246	FRAME SD CARD 1.5 x .3 x .2 ABS BLACK A11-1	1	
30-27-0249	BEZEL GUITAR MIC IN 2.5 x .38 PC CLEAR A11-1	1	
41-00-0153	ARTWORK SILKSCREEN BEZEL INPUT SPIDER JAM A11-1	1	
30-27-0251	LIGHTPIPE .60 DIA x .75 ACRYLIC SEMI-TRANSPARENT A11-1	6	
30-27-0260	FOOTSWITCH PUSH PIN .15 DIA x .15 LONG ABS BLACK P11-1	4	
30-27-0261	LIGHT PIPE FOOTSWITCH 1.1 x .8 x .6 PC CLEAR P11-1	4	
30-27-0298	BEZEL LCD 2.75 x 1.27 x .65 POLYCARBONATE GREY TINT F8	1	
30-27-0300	BUTTON 1.00 x .50 x .94 H CHROME PLATED ABS F8-1	6	
30-45-0017	KNOB 1.4" OD x .21" ID x .51" HT CHROME PLATED ABS X-POD C7	1	
30-45-0019	KNOB POT .55 DIA x .50 HT PLASTIC CHROME PLATED	11	
30-48-0010	FOOT RUBBER w/ADHESIVE 3M BUMPON SJ-5012 (OR EQUIV)	6	
30-51-0290	FOOTSWITCH BASE 1.3 x .5 x .5 ADC P11-1	4	
30-51-0291	FOOTSWITCH PLUNGER 0.5 DIA x 0.76 LG SST P11-1	4	
30-51-0293	SPRING 9 COIL .30 DIA x .82 x .024 STEEL ZINC PLATE P11-1	4	
30-51-0294	SPRING 8 COIL .14 x .35 x .020 STEEL ZINC PLATE P11-1	4	



59-00-0331 ASSY UNIT COMPLETE FLOOR JAM F8-1			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
30-51-0295	CLIP E STYLE FOR 7/32" DIA SHAFT STEEL BLACK PHOS P11-1	4	
30-51-0326	BOTTOM PLATE METAL 12.2 x 7 x .031" F8	1	
41-00-0174	ARTWORK SILKSCREEN BOTTOM FLOOR JAM F8-1	1	
30-51-0327	OVERLAY TOP 10.4 x 1.6 x .025 ALUMINUM F8	1	
41-00-0171	ARTWORK SILKSCREEN OVERLAY TOP FLOOR JAM F8-1	1	
30-51-0328	OVERLAY REAR 11.5 x 1.9 x .03 ALUMINUM F8	1	
41-00-0172	ARTWORK SILKSCREEN OVERLAY BACK PANEL FLOOR JAM F8-1	1	
30-51-4007	CHASSIS TOP COVER 320 x 186 x 64 ALUMINUM TITANIUM F8-1	1	
41-00-0173	ARTWORK SILKSCREEN CHASSIS FLOOR JAM F8-1	1	
30-60-0006	LOGO LINE 6 SML 38.35 x 7.98MM w/ADHSV BRUSHED/BLK FINISH AL	1	
30-63-0028	FOAM RING 4-WAY SW RET PU .75 OD x .40 ID x .18 HT BLK	1	
30-63-0041	FOAM EVE BLACK w/ADHSV 1 SIDE 57mm x 32mm x 2mm	1	
50-02-0271	PCBA MAIN FLOOR JAM F8	1	
50-02-0272	PCBA UI UPPER FLOOR JAM F8	1	

50-02-0271 PCBA MAIN FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
01-22-0101	RES METAL OXIDE 100R 2W 5% TH	2	R144, R145
01-22-0330	RES METAL OXIDE 33R 2W 5% TH	2	R142, R143
01-24-0000	RES OR 1% 0805	2	R24,R60
01-24-1001	RES 1.00K 1% 0805	10	R3, R4,R42, R43,R69,R80,R82,R86,R89,R101
01-24-1002	RES 10.0K 1% 0805	9	R47,R49,R53,R56, R57,R59,R136,R138,R141
01-24-1003	RES 100K 1% 0805	3	R50, R51,R113
01-24-1004	RES 1.00M 1% 0805	5	R6,R41,R54,R58,R64
01-24-1071	RES 1.07K 1% 0805	1	R105
01-24-10R0	RES 10.0R 1% 0805	1	R93
01-24-1500	RES 150R 1% 0805	13	R10,R12,R15,R20,R25, R26,R28, R29, R30,R32, R33,R35,R38
01-24-1502	RES 15.0K 1% 0805	3	R2,R22,R27
01-24-1620	RES 162R 1% 0805	1	R81
01-24-1871	RES 1.87K 1% 0805	1	R103
01-24-2001	RES 2.00K 1% 0805	15	R39, R40,R62, R63,R67, R68,R72,R83, R84,R87, R88,R91, R92,R96, R97
01-24-2002	RES 20.0K 1% 0805	6	R52,R55,R118,R121,R126, R127
01-24-2211	RES 2.21K 1% 0805	1	R140
01-24-22R1	RES 22.1R 1% 0805	6	R1,R5,R7,R31,R34,R48
01-24-28R7	RES 28.7R 1% 0805	1	R85
01-24-30R1	RES 30.1R 1% 0805	3	R11,R19,R70
01-24-3161	RES 3.16K 1% 0805	2	R9,R23
01-24-4751	RES 4.75K 1% 0805	10	R13, R14,R17, R18,R36, R37,R44,R46,R107, R108
01-24-4752	RES 47.5K 1% 0805	6	R16,R21,R109, R110, R111, R112
01-24-47R5	RES 47.5R 1% 0805	9	R65,R73,R76,R115, R116,R122 R123, R124,R128
01-24-5R11	RES 5.11R 1% 0805	1	R114
01-24-6811	RES 6.81K 1% 0805	6	R61,R66,R98,R134, R135,R139
01-24-8251	RES 8.25K 1% 0805	1	R137
01-25-1002	RES 10.0K 1% 0603	1	R132

50-02-0271 PCBA MAIN FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
01-25-4751	RES 4.75K 1% 0603	20	R75,R77, R78, R79,R90,R94, R95,R99, R100,R102,R104,R129, R130, R131,R133,R106R119, R106R120,R45 R71
01-48-9208	POT SINGLE 10KC SINGLE LOG RIGHT ANGLE 15MM NYLON D-SHAFT	1	R74
01-48-9209	POT SINGLE 10K05C SINGLE LOG RIGHT ANGLE 15MM NYLON D-SHAFT	1	R8
03-11-0108	CAP ELEC 1000uF 10V 20% 105C LOW Z 0.06R RADIAL 10/20/5	1	C177
03-00-2105	CAP CER 1uF 25V X7R 10% TH 5mm L.S.	1	
03-00-4102	CAP CER 1nF 50V X7R 20% TH RADIAL 5.0mm L.S.	1	
03-00-4471	CAP CER 470pF 50V 10% TH RADIAL 5.0mm L.S.	1	
03-12-0108	CAP ELEC 1000uF 16V 20% RADIAL 10/16/5	2	C65, C66
03-12-0478	CAP ELEC 4700uF 16V 20% RADIAL	1	C70
03-13-0477	CAP ELEC 470uF 16V 20% 105C LOW Z 0.085R RADIAL 8/15/5	1	C178
03-16-2108	CAP ELEC 1000uF 35V 20% 105C LOW Z RADIAL 12.5/25/5	3	C60,C63,C71
03-36-0224	CAP ESTR 0.22uF 50V 5% TH 11/6/11.5/7.5	1	C67
03-50-0101	CAP NPO 100pF 50V 5% 0805	3	C111,C165,C175
03-50-0102	CAP NPO 1nF 50V 5% 0805	3	C43,C131,C137
03-50-0220	CAP NPO 22pF 50V 5% 0805	4	C106, C107,C152,C160
03-50-0272	CAP NPO 2.7nF 50V 5% 0805	9	C9,C12,C15, C16,C19,C22,C39,C161,C173
03-50-0391	CAP NPO 390pF 50V 5% 0805	1	C58
03-50-0470	CAP NPO 47pF 50V 5% 0805	8	C31,C73, C74,C85,C90,C98,C100,C102
03-50-0471	CAP NPO 470pF 50V 5% 0805	6	C36,C38,C53,C55,C167,C174
03-52-0101	CAP X7R 100pF 50V 10% 0805	7	C72,C97,C101,C112,C141,C162,C176
03-52-0103	CAP X7R 10nF 50V 10% 0805	1	C180
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	17	C29,C51, C52,C56,C64,C68-C69,C76,C83, C84,C86,C88,C91, C92, C93,C1 C24
03-52-0180	CAP X7R 18pF 50V 10% 0805	2	C49, C50
03-52-0220	CAP X7R 22pF 50V 10% 0805	1	C40
03-52-0473	CAP X7R 47nF 50V 10% 0805	5	C21,C23,C96,C99,C181
03-52-0561	CAP X7R 560pF 50V 10% 0805	1	C194
03-56-0101	CAP NPO 100pF 50V 5% 0603	2	C2,C182
03-58-0102	CAP X7R 1nF 50V 10% 0603	21	C48,C62,C87,C89,C94,C109,C113,C115,C119,C122,C125,C130,C133, C134, C135,C139,C143,C146,C149,C151,C154
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	43	C27,C30,C32,C35,C37,C46-C47,C54,C57,C59,C61,C79-C80,C104, C105,C117, C118,C120,C121,C123,C124,C126,C127,C129,C138,C140,C144,C145,C147,C148,C150,C153 ,C155,C156,C159,C163,C164,C166,C169,C170,C172,C132C136
03-58-0330	CAP X7R 33pF 50V 10% 0603	10	C41,C42,C44,C45,C103,C108,C110,C114,C116,C128
03-58-0470	CAP X7R 47pF 50V 10% 0603	2	C184,C185
03-80-0107	CAP ELEC 100uF 10V 20% SM 6.3/5.4/7.8	3	C17,C82,C171
03-80-0337	CAP ELEC 330uF 10V 20% VS SM	1	C8
03-80-1477	CAP ELEC 470uF 6.3V 20% VS SM	2	C75,C157
03-82-0107	CAP ELEC 100uF 16V 20% VS SM	6	C3-C5,C14,C26,C28
03-84-0106	CAP ELEC 10uF 25V 20% SM 5/5.4/6.5	5	C77,C78,C81,C168,C179
03-88-0105	CAP ELEC 1uF 50V 20% VS SM	6	C6,C10,C13,C20,C25
03-88-0106	CAP ELEC 10uF 50V 20% VS SM	5	C7,C11,C33,C34,C197
04-01-0150	INDUCTOR POWER 150uH 0.25 OHM	1	L33

50-02-0271 PCBA MAIN FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
06-20-0099	DIODE GEN PUR DUAL 70V 215mA 6nS SOT-23 SM	5	D8,D9,D20,D21,D22
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM	4	D1,D2,D6,D7
06-23-0340	DIODE SCHOTTKY 3A 40V SMA SM	1	D10
06-32-0130	DIODE SCHOTTKY 1A 30V SMB SM	1	D12
06-32-0313	DIODE RECTIFIER 200V 3A SMB SM	2	D18,D19
06-32-4006	DIODE RECTIFIER 800V 1A SMA SM	4	D14,D15,D16,D17
09-10-4403	TRANS PNP SMALL SIGNAL SOT-23 SM	1	Q1
11-00-1001	CRYSTAL 10MHz 2 PIN HC-49US TH	1	Y2
11-00-1002	CRYSTAL 22.5792MHz 2 PIN TH	1	Y1
11-10-2012	FERRITE BEAD 600R @ 100MHz 300 mA 0805 SM	30	L1,L2,L3,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,L16,L17,L18,L19,L20,L21,L22,L23,L24,L25,L26,L27,L28,L29,L30,L31,L32
12-00-0317	IC VREG ADJ 1.2V-37V 1.5 AMP TO-220 LM317 TH	1	U22
12-02-7805	IC REG +5V 1.5 AMP TH	2	U21,U23
12-02-7812	IC REG +12V 1.0AMP TO -220 TH	1	U19
12-02-7912	IC REG -12V 1.0AMP TO-220 TH	1	U20
12-52-1118	IC REG 1.8V LDO LINEAR 800mA S OT-223 SM	1	U17
12-54-0082	IC OP AMP DUAL TL082CD SO-8 SM	3	U1,U8,U16
12-54-0084	IC OP AMP QUAD TL084CD SM	4	U3,U5,U11,U13
12-54-4560	IC OP AMP DUAL HIGH OUTPUT NJM4560M DMP8 DUAL SUPPLY SM	1	U2
12-64-4243	IC CODEC TDM 108dB 192KHz 6- IN 6-OUT CS42436 SM	1	U4
15-65-0004	IC 74LVC04 LOW VOLTAGE HEX INV ERTER SO-14 SM	1	U6
15-68-2374	IC PWM DC/DC CONVERTER DMP8 SM	1	U18
15-70-0005	IC SDRAM 3.3V 64MB 1M x 16 x 4 EM638165TS-7G TSOP-54 SM	2	U9,U12
15-78-5128	IC FLASH 512M x 8 BIT TSOP-48 SM	1	U7
15-86-1371	IC DSP SHARC PROCESSOR ADSP-21 371	1	U10
15-92-5809	IC RESET 3 PIN 3.3V ACTIVE LOW OUTPUT SOT-23 SM	1	U14
21-00-0014	JACK BARREL PCB MT 2.5MM DC PO WER 3 PIN TH	1	J9
21-00-6616	JACK 1/4" TRS PCB MOUNT 6 PIN HORIZONTAL TH	5	J1,J3,J4,J5,J6
21-08-0002	JACK XLR FEMALE PCB MOUNT RT ANGLE W/NO RELEASE TAB TH	1	J2
21-12-0035	JACK 3.5MM STEREO 5 PIN CRIMPE D LEADS NON-THREADED	2	J7,J8
21-18-0900	CONN SD MEMORY CARD SOCKET PCB MNT SM	1	J10
21-21-0040	HDR DIL PCB-MT 40 PIN 2 x 20 x .100 MALE SHRD VERT MNT TH	1	H1
30-12-0012	STANDOFF HEX .250 6-32 F-F 0.375-IN AL	5	
30-15-0007	INSULATOR XTAL 4.9MM C-C 11.8 x 5.6MM MYLAR	2	Y1,Y2
30-18-3030	CLIP GROUND PCB .30 x .30 x .07	7	GF1,GF2,GF3,GF4,GF5,GF6,GF7
30-51-0146	SHIELD PCB MT FOR 1/4 JACK 1.00 Hx1.25Wx.013THK BERYL COP	2	SH1,SH2
35-00-0271	PCB MAIN FLOOR JAM F8-1 REV.D	1	
45-01-0040	IC PROGRAMMED MCU v2.07 FLOOR JAM F8-1	1	U15

50-02-0272 PCBA UI UPPER FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
01-24-1001	RES 1.00K 1% 0805	4	R5,R14,R15,R27
01-24-1300	RES 130R 1% 0805	3	R7,R8,R17
01-24-1500	RES 150R 1% 0805	1	R24
01-24-18R7	RES 18.7R 1% 0805	2	R2,R3
01-24-2000	RES 200R 1% 0805	1	R25
01-24-26R7	RES 26.7R 1% 0805	1	R1
01-24-3010	RES 301R 1% 0805	1	R16
01-24-4321	RES 4.32K 1% 0805	1	R4
01-24-4751	RES 4.75K 1% 0805	3	R12,R13,R26
01-24-7500	RES 750R 1% 0805	4	R20,R21,R22,R23
01-24-7501	RES 7.50K 1% 0805	1	R6
01-25-4751	RES 4.75K 1% 0603	5	R9,R10,R11,R18,R19
03-52-0101	CAP X7R 100pF 50V 10% 0805	8	C1,C2,C4,C5,C9,C13,C18,C19
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	3	C6,C8,C12
03-80-1477	CAP ELEC 470uF 6.3V 20% VS SM	1	C3
03-82-0106	CAP ELEC 10uF 16V 20% SM 4/5.4/5.5	1	C7
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM	10	D5,D8,D11,D14,D15,D16,D17,D19,D20,D21
09-10-4401	TRANS NPN SMALL SIGNAL SOT-23 SM	6	Q1,Q2,Q5,Q6,Q7,Q8
09-10-4403	TRANS PNP SMALL SIGNAL SOT-23 SM	3	Q3,Q4,Q9
15-64-0273	IC 74HCT273 OCTAL D-TYPE FLIP FLOP 8 BIT SO-20 SM	2	U1,U2
18-00-0314	LED RED DIFFUSED TH	1	D18
18-20-0002	LED RED SUPER 2MM x 1.25MM 660 nM 0805 SM	2	D1,D2
18-22-0003	LED YELLOW SUPER BRIGHT 2MM x 1.25MM SM	12	D3,D4,D6,D7,D9,D10,D12,D13,D22,D23,D24,D25
21-30-0052	CBL RIBBON DIL 40 PIN 95.2 MM STAKED TO FEMALE CONN (F8)	1	H1
24-12-0111	ENCODER 20 STEP TH	1	E1
24-31-1105	SWITCH TACT 6MM SQ 4 PIN TH	10	SW1,SW2,SW3,SW4,SW8,SW9,SW10,SW12,SW13
30-15-0029-3	SPACER LED .590 H x .170 O.D. PLASTIC	1	
35-00-0272	PCB UI UPPER FLOOR JAM F8-1 REV.D	1	
50-02-0240	PCBA DISPLAY LCD GRAPHIC W/20P MALE HDR 6-O'CLOCK XMIS POS	1	

50-02-0240 PCBA DISPLAY LCD GRAPHIC W/20P MALE HDR 6-O'CLOCK XMIS POS			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
21-20-0022	HDR SIL PCB-MT 20 PIN 1 x 20 x .10 MALE VERT MNT X-LG TH	1	
18-30-0006	DISPLAY LCD MODULE 122x32 POS GRAPHIC 6-O'CLOCK XMISSVE AMBR	1	

50-02-0272-1 PCBA UI MIDDLE FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
01-48-0009	POT MONO 10KB LINEAR TAPER 20MM w/9MM NUT D-SHAFT	9	R100,R101,R102,R103,R104,R105,R106,R107,R108
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	19	C100,C101,C102,C103,C104,C105,C106,C107,C108,C109,C110,C111,C112,C113,C114,C115,C116,C117,C118
12-62-4054	IC SWITCH ANALOG CD74HC4052M SO-16 SM	1	U100
18-00-0314	LED RED DIFFUSED TH	6	D100,D101,D102,D103,D104,D105
21-30-0053-2	CBL RIBBON DIL 10 PIN 50.8MM S TAKED BOTH ENDS (F8)	1	J100 to J1
21-30-0054	CBL RIBBON DIL 14 PIN 50.8MM S TAKED BOTH ENDS (F8)	1	J102 to J2
30-15-0029-2	SPACER LED .410 H x .170 O.D. PLASTIC	6	
35-00-0272-1	PCB UI MIDDLE FLOOR JAM F8-1 REV.D	1	
50-02-0272-2 PCBA UI LOWER FLOOR JAM F8			
PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR(S)
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM	4	D107,D109,D111,D112
18-02-0001	LED YELLOW SUPER BRIGHT T-1 3M M TH	4	D106,D108,D110,D113
21-30-0053-1	CBL RIBBON DIL 10 PIN 28 MM ST AKED BOTH ENDS (F8)	1	J101 to J103
24-31-1105	SWITCH TACT 6MM SQ 4 PIN TH	4	SW100,SW101,SW102,SW103
35-00-0272-2	PCB UI LOWER FLOOR JAM F8-1 REV.D	1	