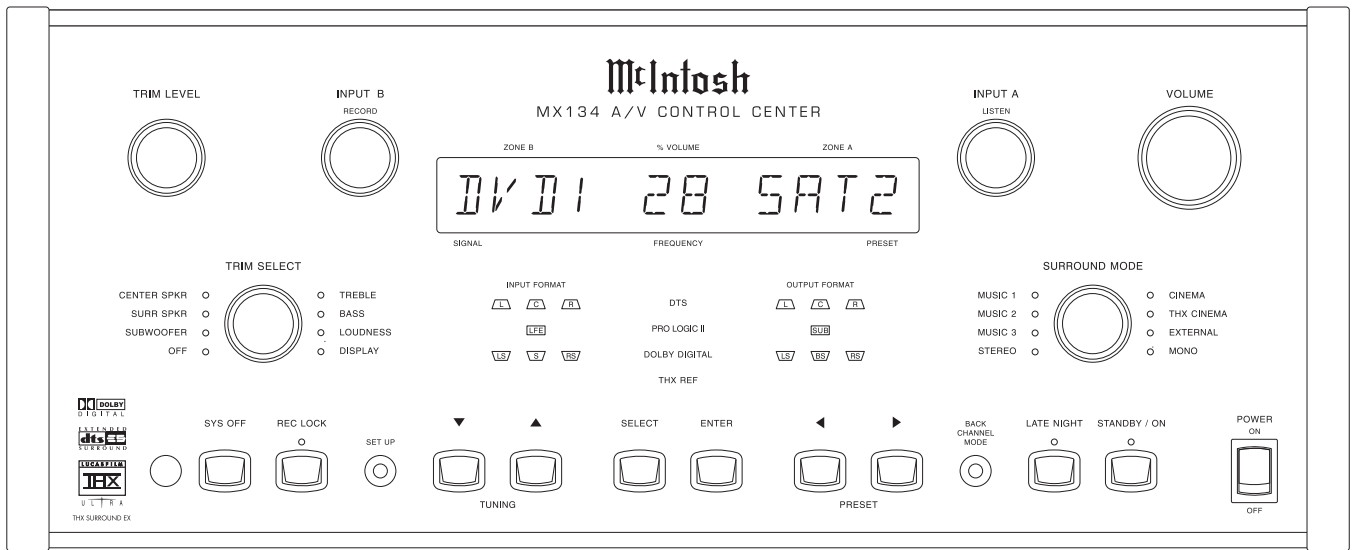




MX134

A/V CONTROL CENTER



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SERVICE MANUAL

PERFORMANCE SPECIFICATIONS

FM Tuner

Useable Sensitivity

14dBm which is 1.4µV across 75 ohms

50dB Quieting Sensitivity

Mono: 19dBm which is 2.4µV across 75 ohms

Stereo: 35dBm which is 15µV across 75 ohms

Signal To Noise Ratio

Mono: 75dB

Stereo: 70dB

Frequency Response

Mono: +0, -1dB from 20 to 15,000Hz

Stereo: +0, -1dB from 20 to 15,000Hz

Harmonic Distortion

Mono: 0.3% at 100Hz, 0.3% at 1,000Hz, 0.3% at 10,000Hz

Stereo: 0.45% at 100Hz, 0.45% at 1,000Hz, 0.65% at 10,000Hz

Intermodulation Distortion

Mono: 0.25%

Stereo: 0.45%

Capture Ratio

1.2dB

Alternate Channel Selectivity

75dB

Spurious Response

100dB

Image Response

75dB

RF Intermodulation

65dB

Stereo Separation

45dB at 100Hz, 45dB at 1,000Hz, 35dB at 10,000Hz

SCA Rejection

65dB

AM Tuner

Sensitivity

20µV external antenna input

Signal To Noise Ratio

48dB at 30% modulation

58dB at 100% modulation

Harmonic Distortion

0.5% maximum at 50% modulation

Frequency Response

50Hz to 6kHz NRSC

Adjacent Channel Selectivity

45dB minimum IHF

Image Rejection

65dB minimum from 540 to 1600kHz

IF Rejection

80dB minimum

Audio

Frequency Response

Stereo:

Left and Right Small speakers: 80Hz-20,000Hz

Subwoofer: 20Hz-80Hz

Left and Right Large speakers: 20Hz-20,000Hz

Subwoofer: OFF

Pro-Logic II: (*Movie Processing Mode*)

Left, Center, Right, Small speakers: 80Hz-20,000Hz

Surround Small speakers: 80Hz-7kHz

Subwoofer: 20Hz-80Hz

(*Music Processing Mode*)

Left, Center, Right, Large speakers: 20Hz-20,000Hz

Surround Large speakers: 20Hz-20,000Hz

Subwoofer: OFF

Dolby Digital and DTS:

Left, Center, Right, Large speakers: 80Hz-20,000Hz

Surround Large speakers: 20Hz-20,000Hz

Subwoofer: OFF

Left, Center, Right Large speakers: 20Hz-20,000Hz

Surround Large speakers: 20Hz-20,000Hz

Subwoofer: 20Hz-80Hz

External Input

Left, Center, Right, Left Surround, Right Surround:
20Hz-20,000Hz

Subwoofer: 20Hz-20kHz (no LP filtering)

Rated Output

All Modes: 2.0Vrms for full bit digital input

Input Impedance

22k ohms

PERFORMANCE SPECIFICATIONS *con't*

Output Impedance

47 ohms at all outputs

Maximum Output Voltage

9.5 Vrms

Total Harmonic Distortion

0.005% at all outputs

Sensitivity

Analog Input: 400mV for 2.0V output

Signal To Noise Ratio – All Outputs

Greater than 90dB un-weighted. Greater than 100dB A weighted. Greater than 98dB CCIR.

Maximum Input Signal

Analog Input: 6Vrms

Voltage Gain

Analog Input to Output: 14Db

Frequency Response

+0, -0.5dB from 20Hz to 20,000Hz

Tone Controls

+12dB, -12dB from flat setting

General Specifications**Power Requirements**

100 Volts, 50/60Hz at 65 watts

110 Volts, 50/60Hz at 65 watts

120 Volts, 50/60Hz at 65 watts

220 Volts, 50/60Hz at 65 watts

230 Volts, 50/60Hz at 65 watts

240 Volts, 50/60Hz at 65 watts

NOTE: Refer to the rear panel of the MX134 for the correct voltage.


Overall Dimensions

Front Panel: 17-1/2 inches (44.5cm) wide, 7-5/8 inches (19.37cm) high. Depth behind front mounting panel is 21 inches (53.3cm) including clearance for connectors. Panel clearance required in front of mounting panel is 1-1/8 inches (2.9cm).

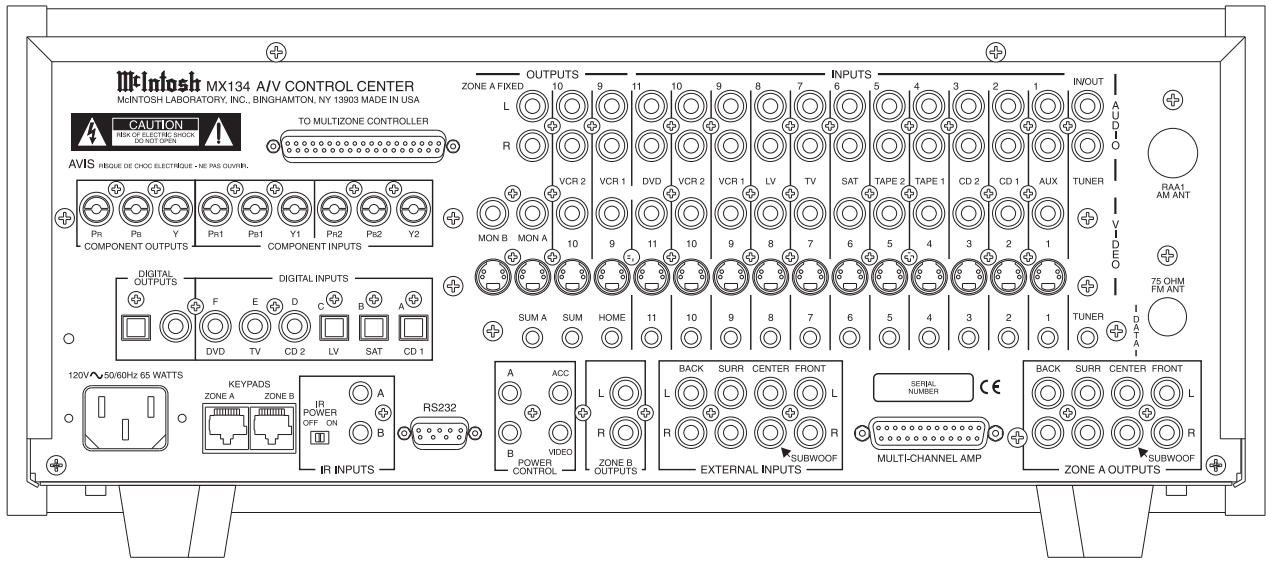
Weight

32.5 pounds (14.8kg) net, 51.5 pounds (23.4kg) shipping weight

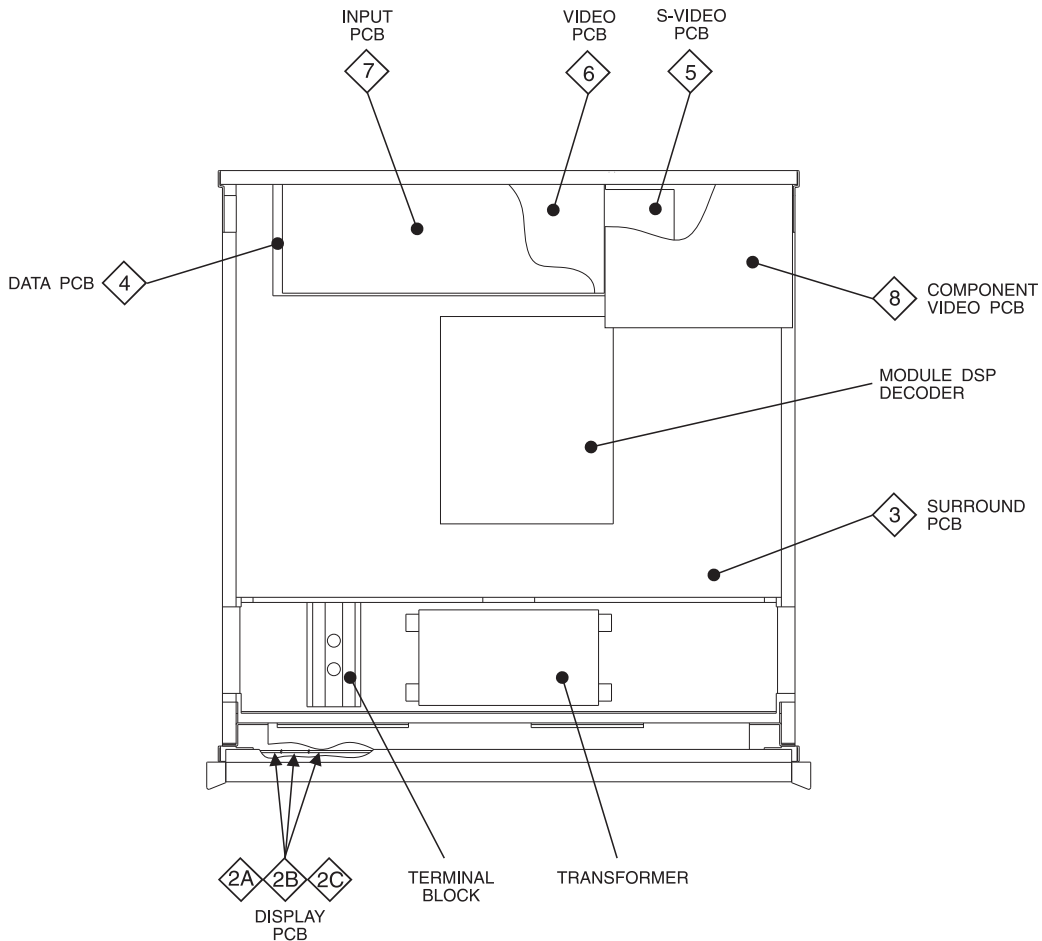
NOTES

1. The heavy lines on the schematic denote the primary signal path.
2. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
 - a. AC input at 120 volts, 50/60Hz.
 - b. All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
4. On PC board drawings, Square pad indicates:
 - a. Polarized Capacitors - Positive
 - b. Diodes - Cathode
 - c. Others - Pin 1
5. **WARNING**
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.

REAR PANEL

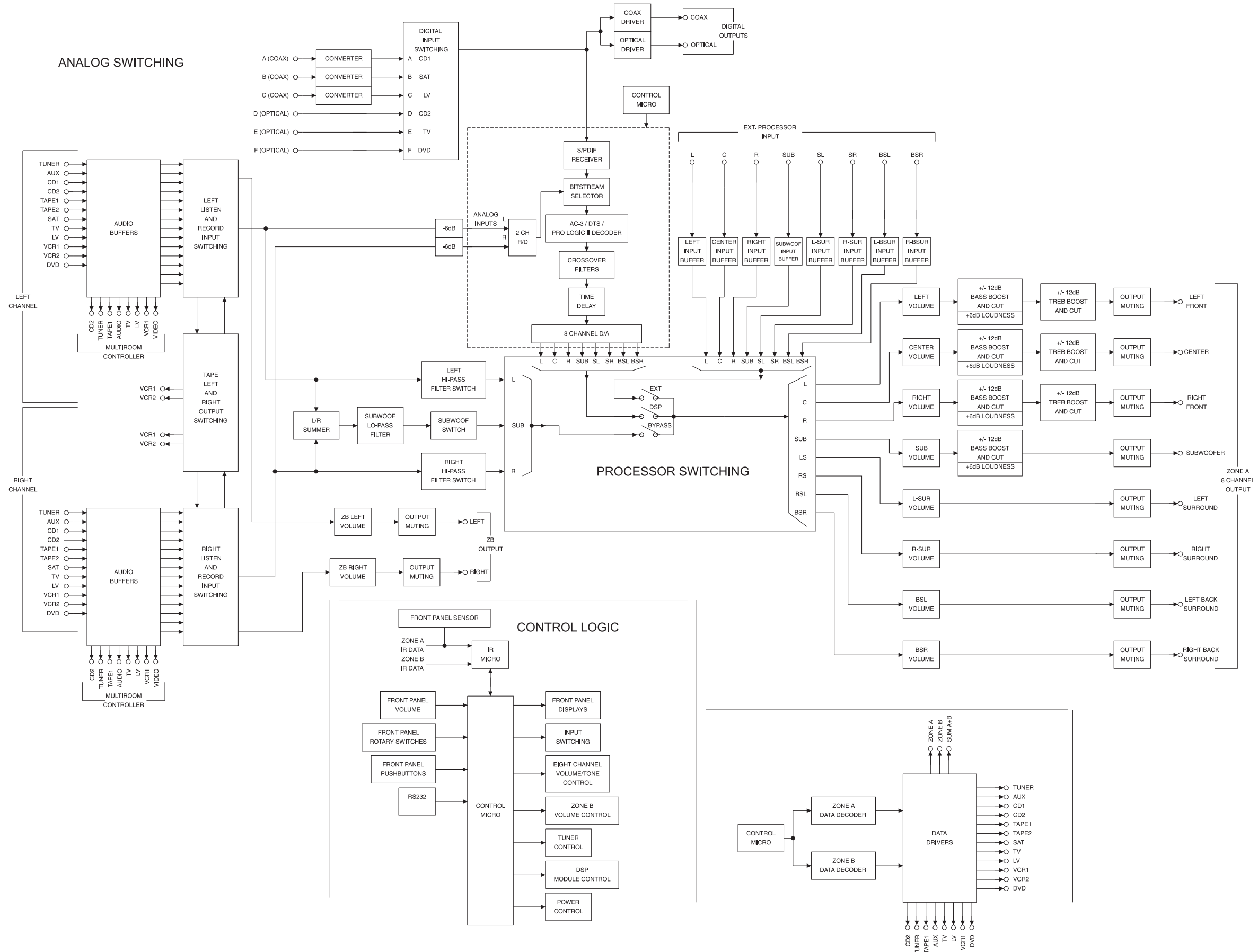


SECTION LOCATIONS

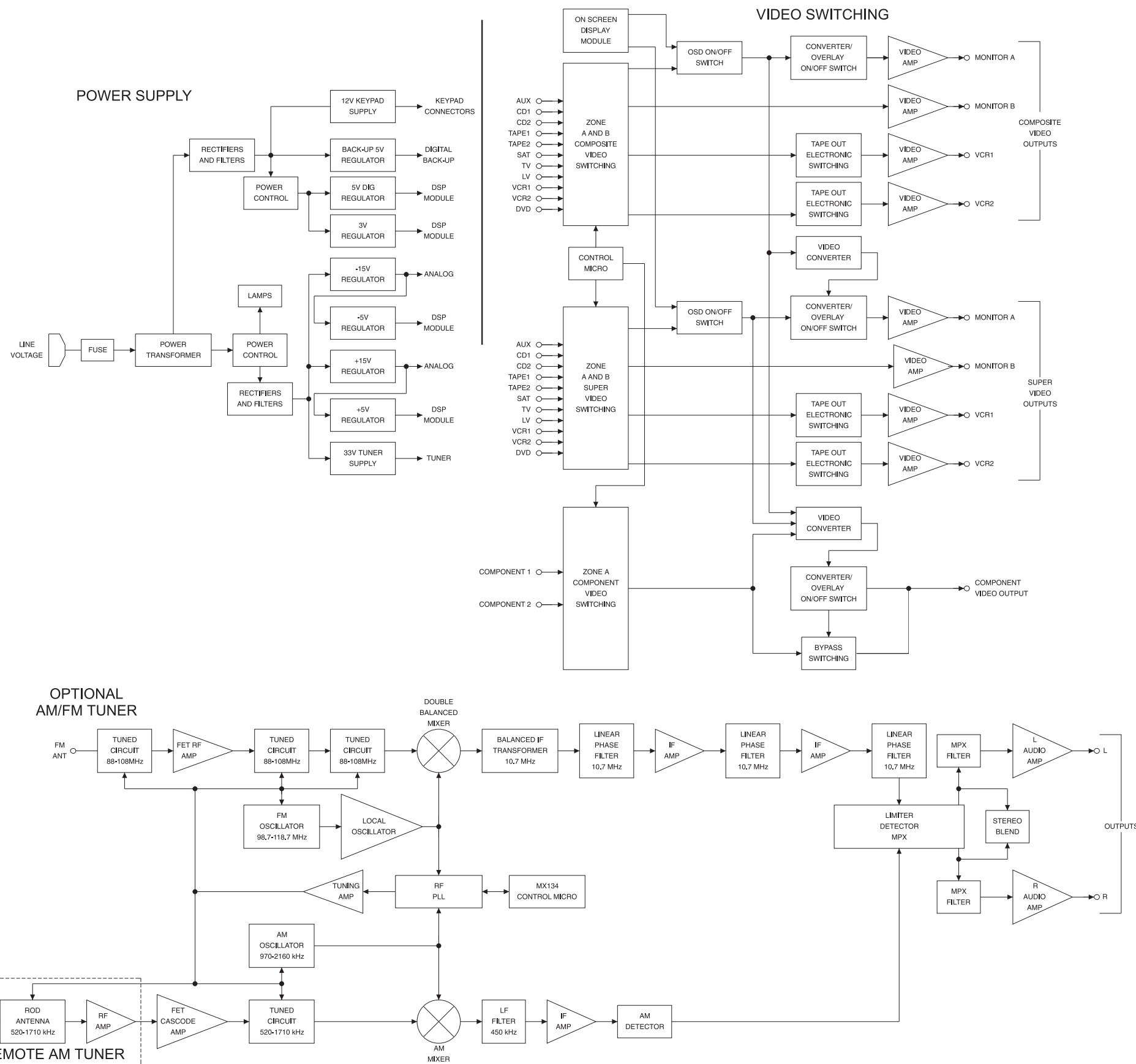


TOP VIEW WITH COVER REMOVED

BLOCK DIAGRAM

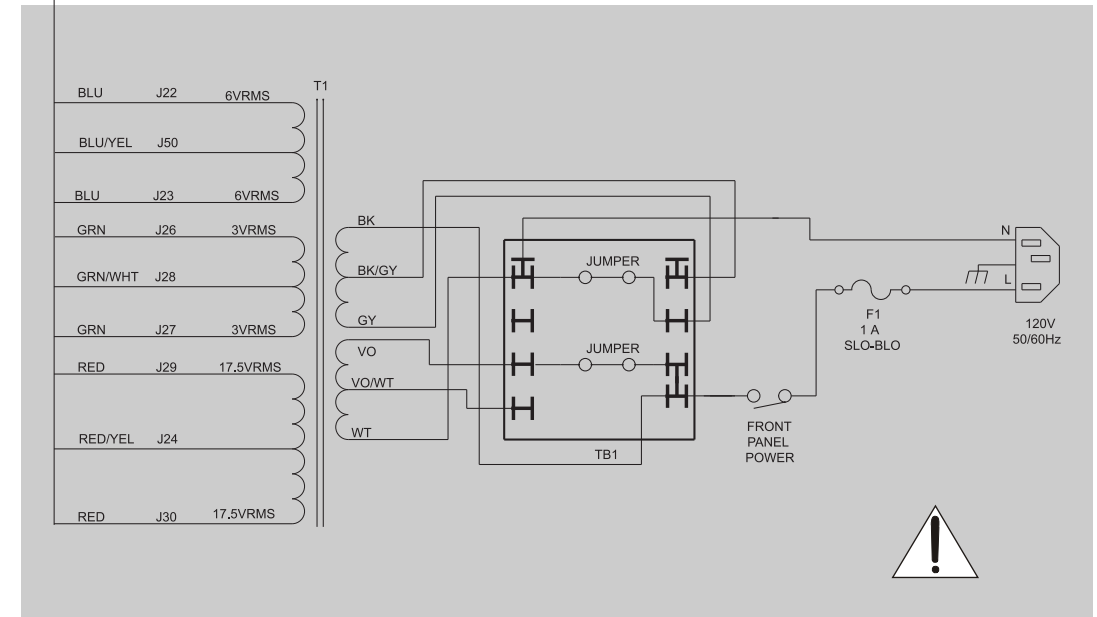
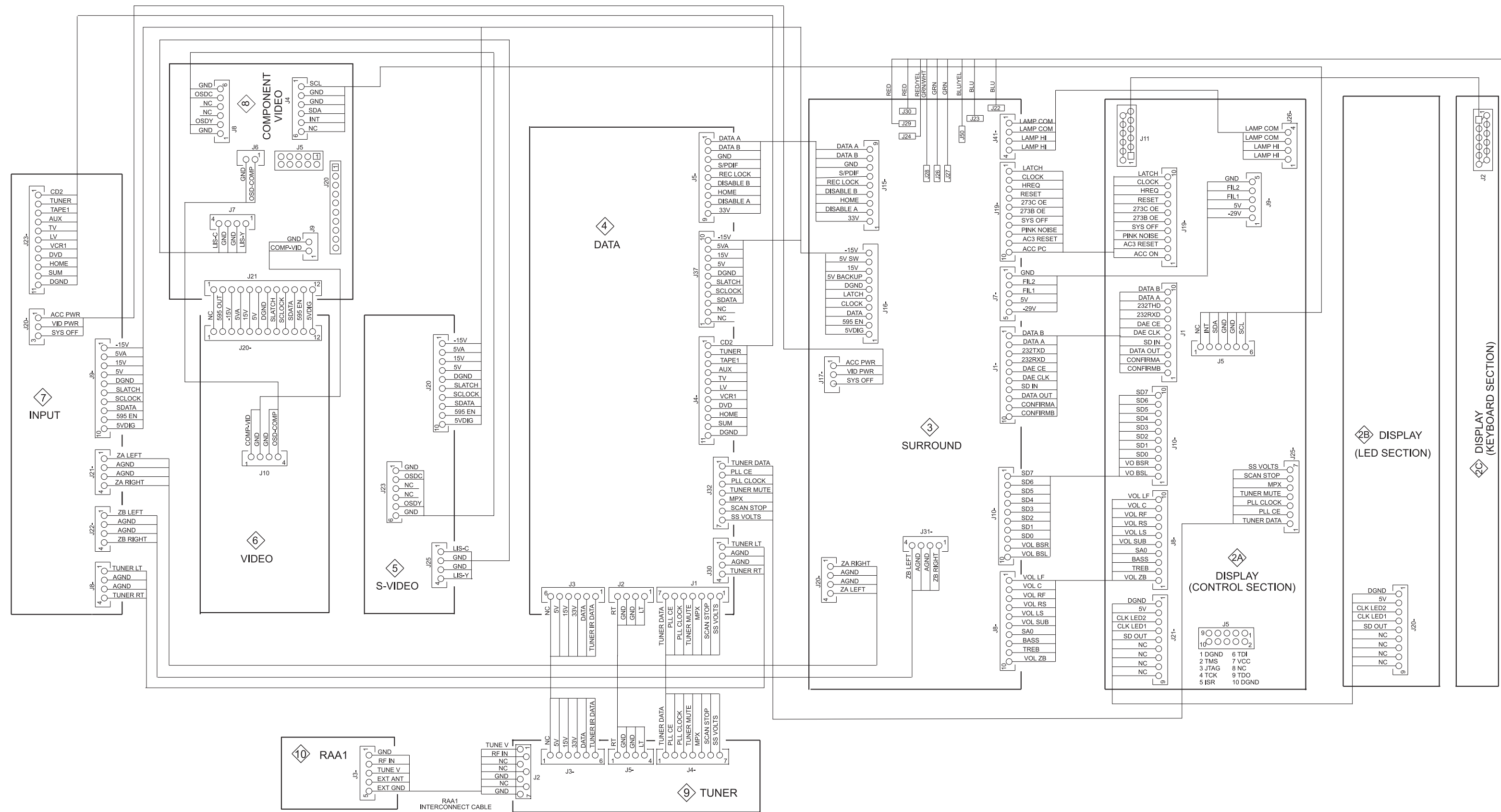


BLOCK DIAGRAM con't

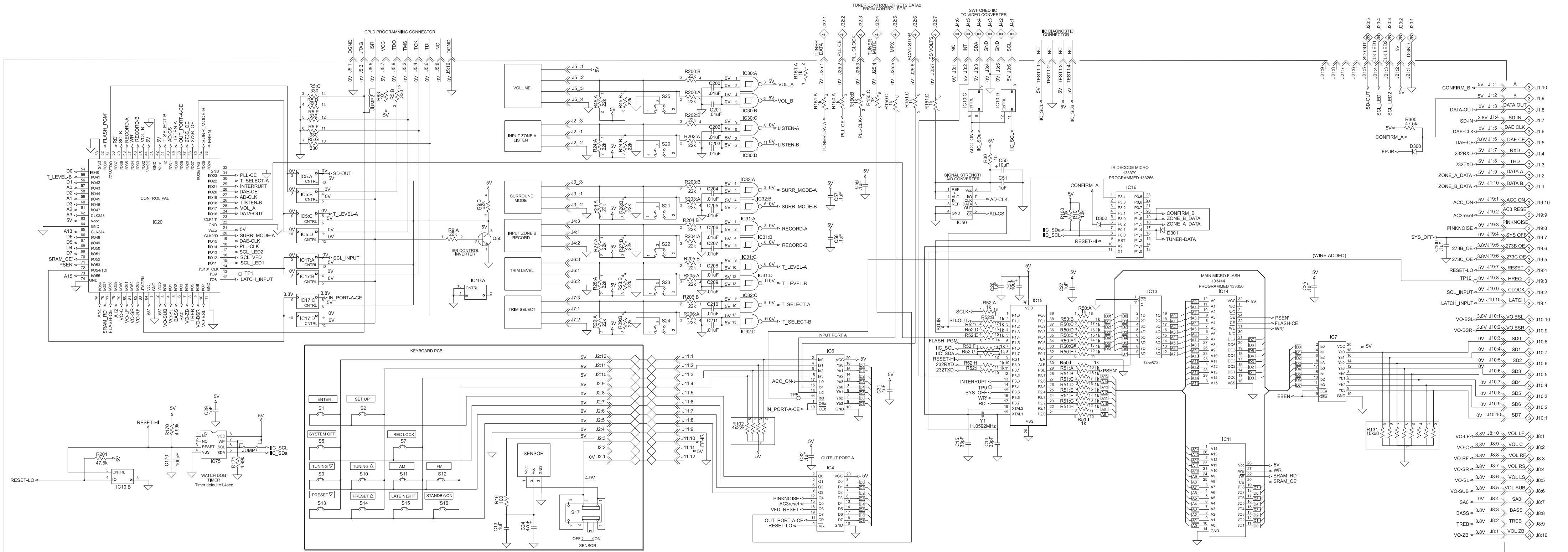


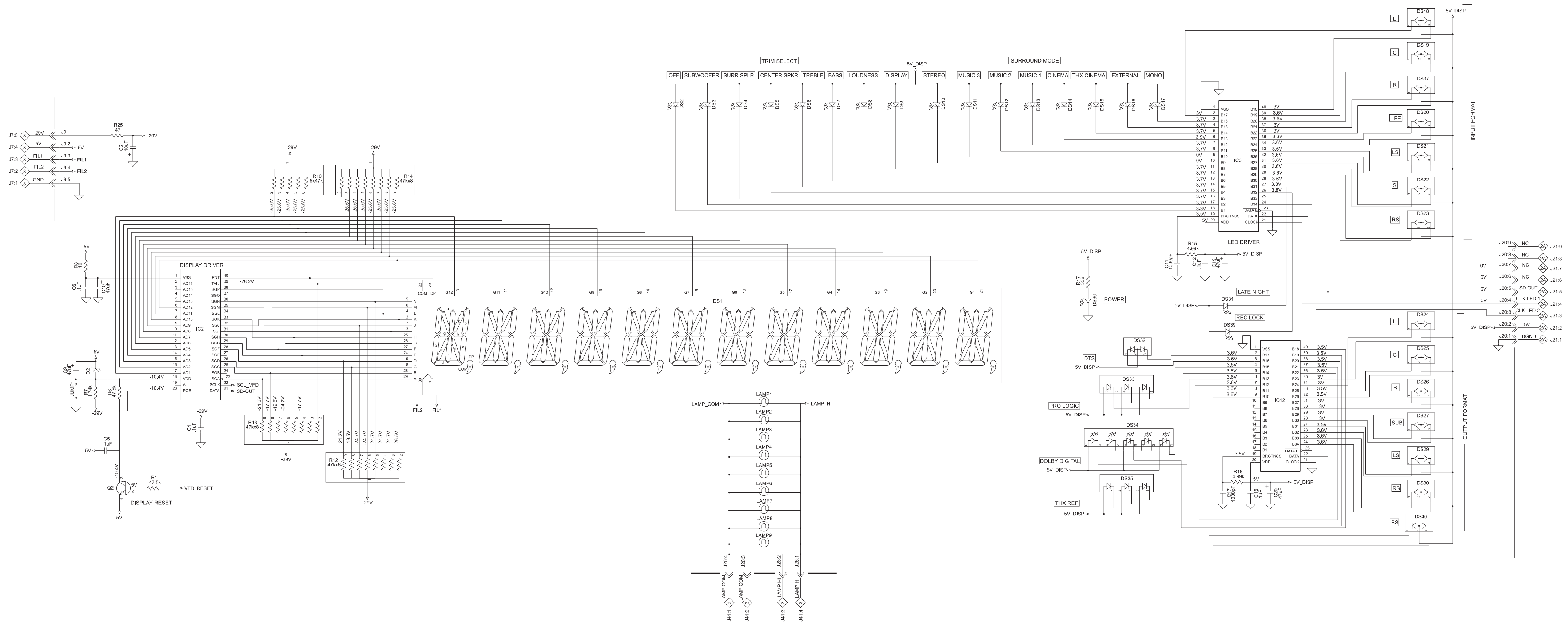
1 INTERCONNECT

MX134



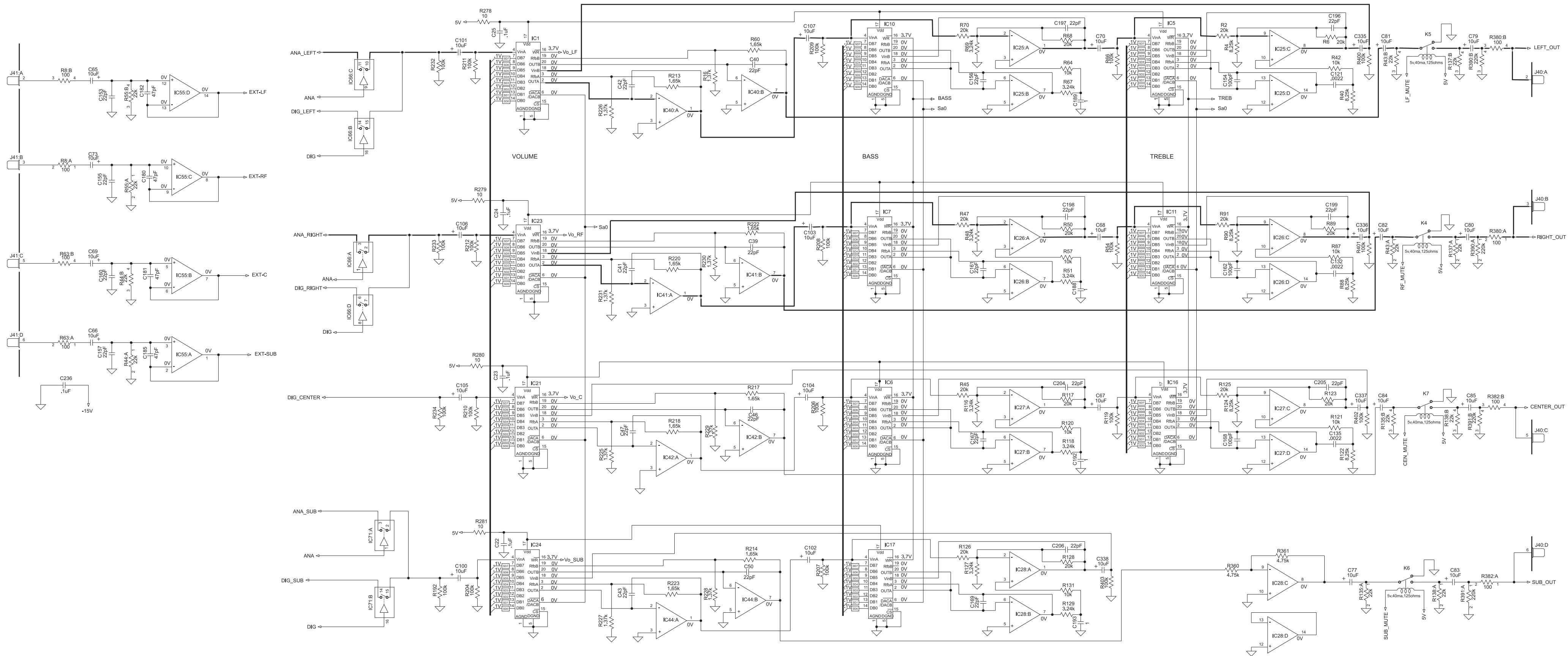
WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.

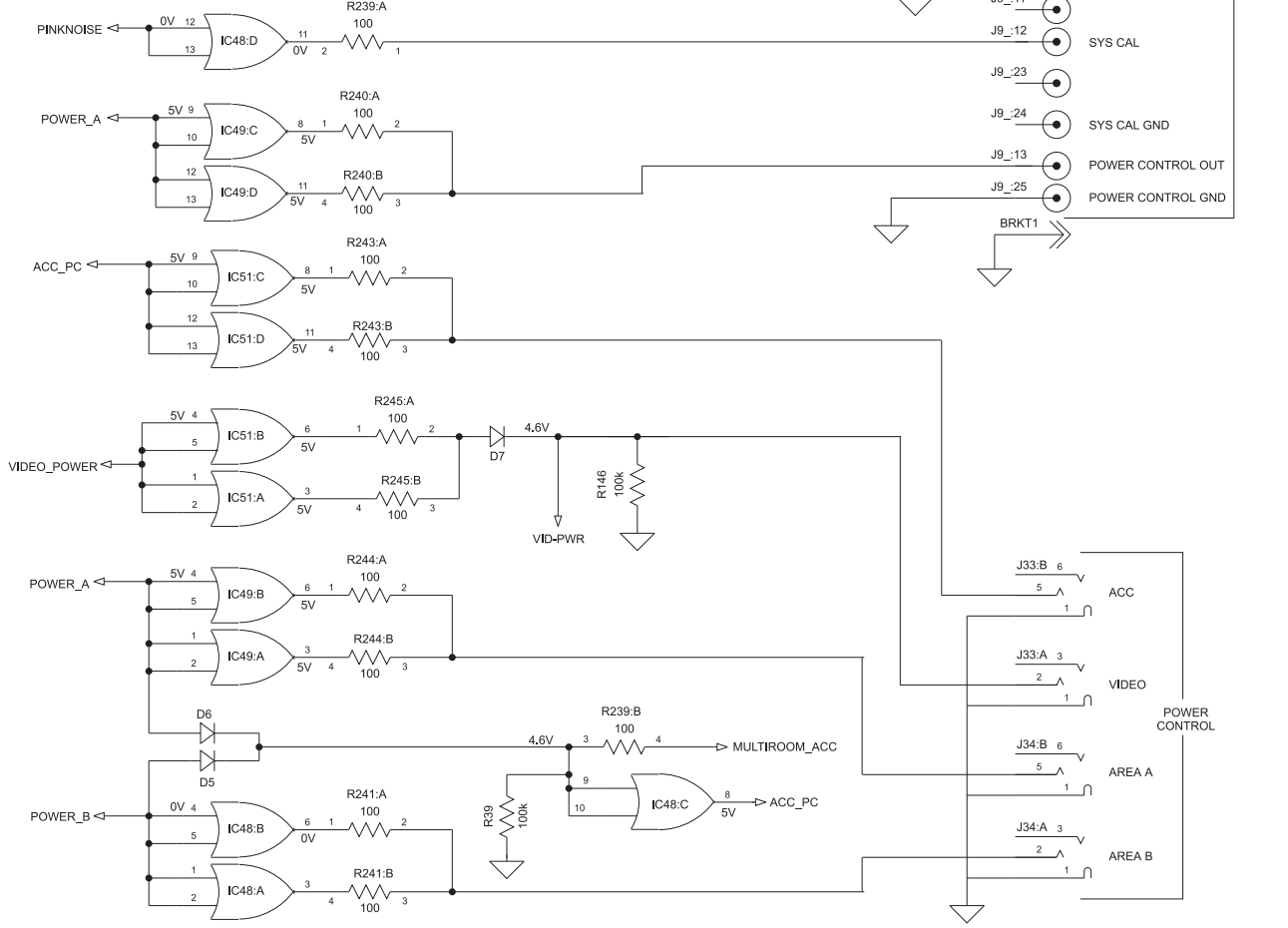
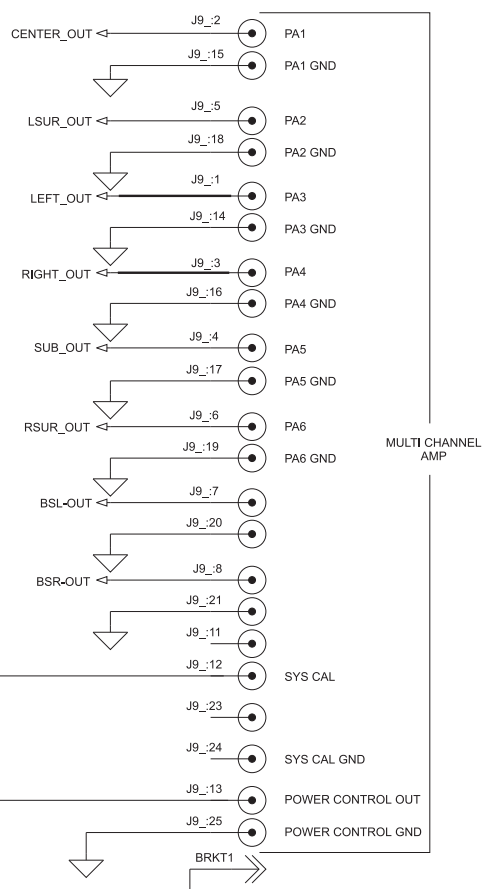
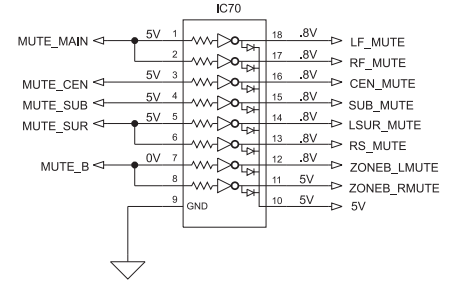
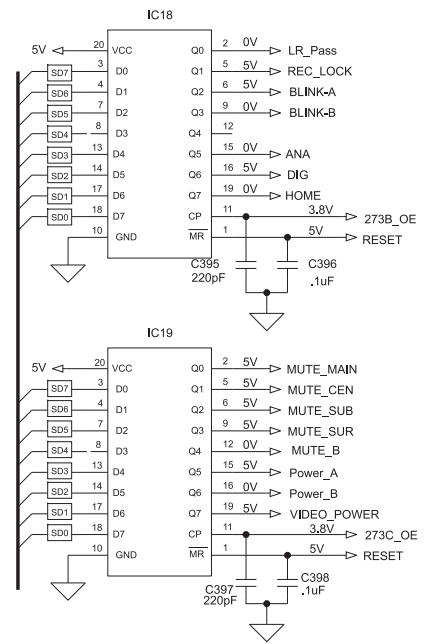
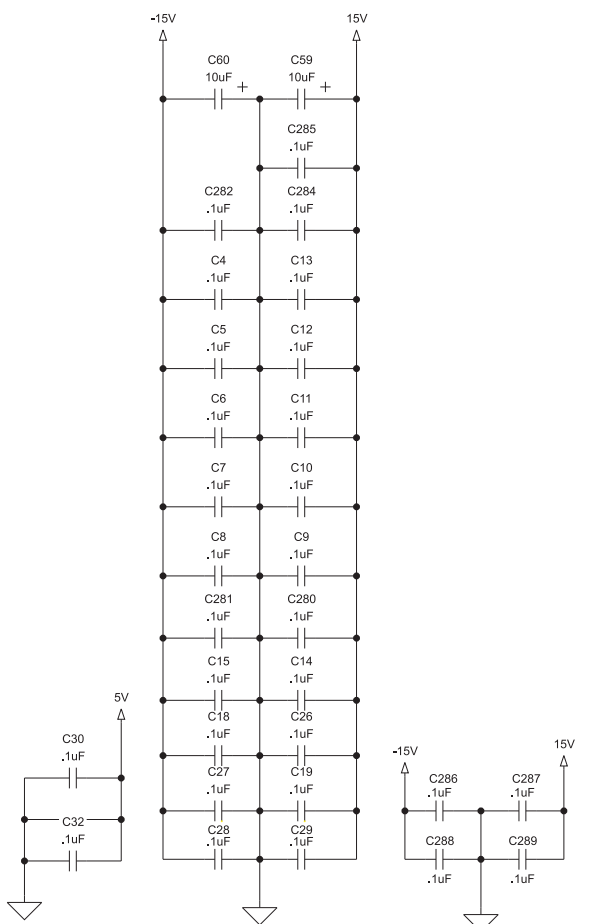
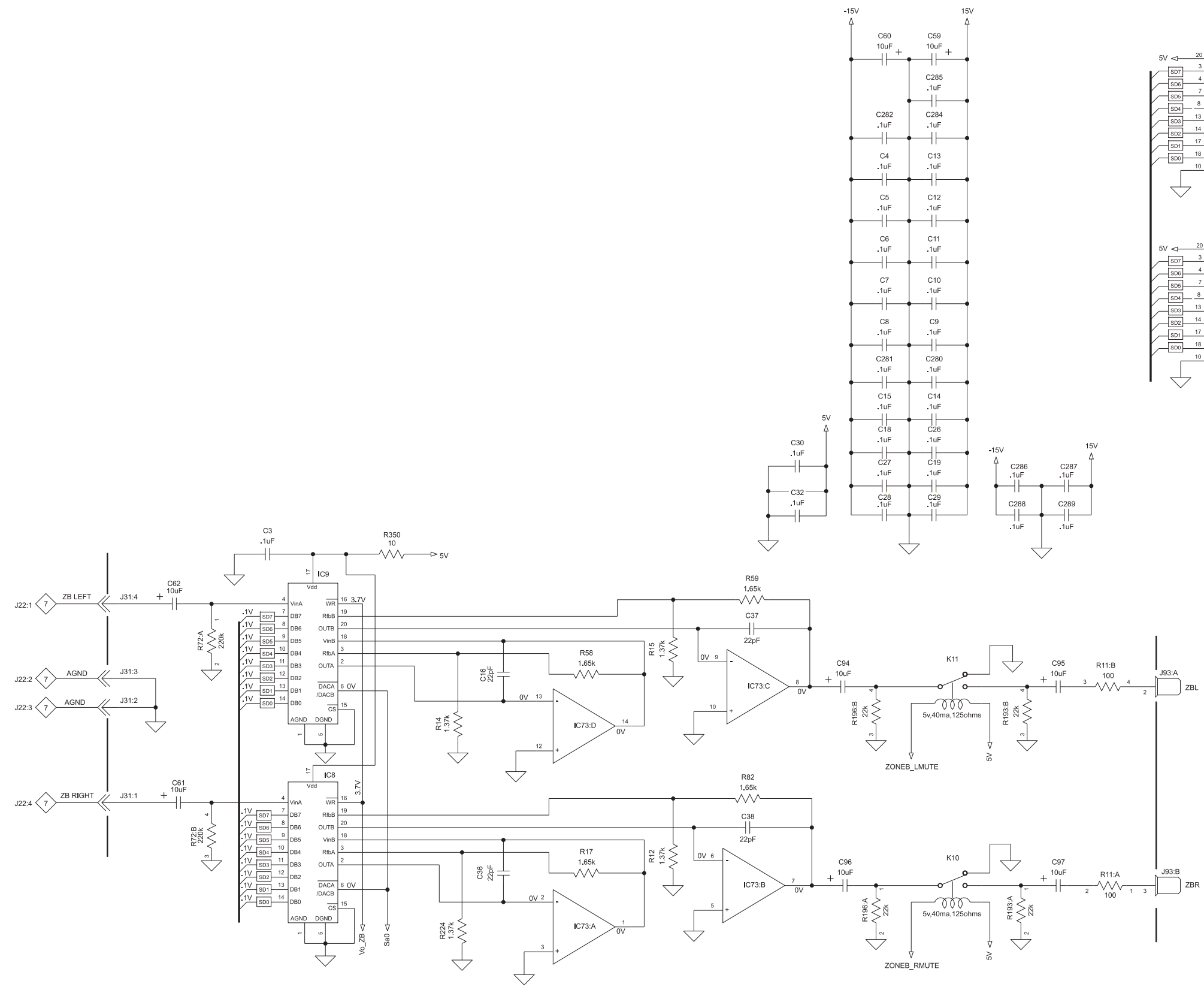


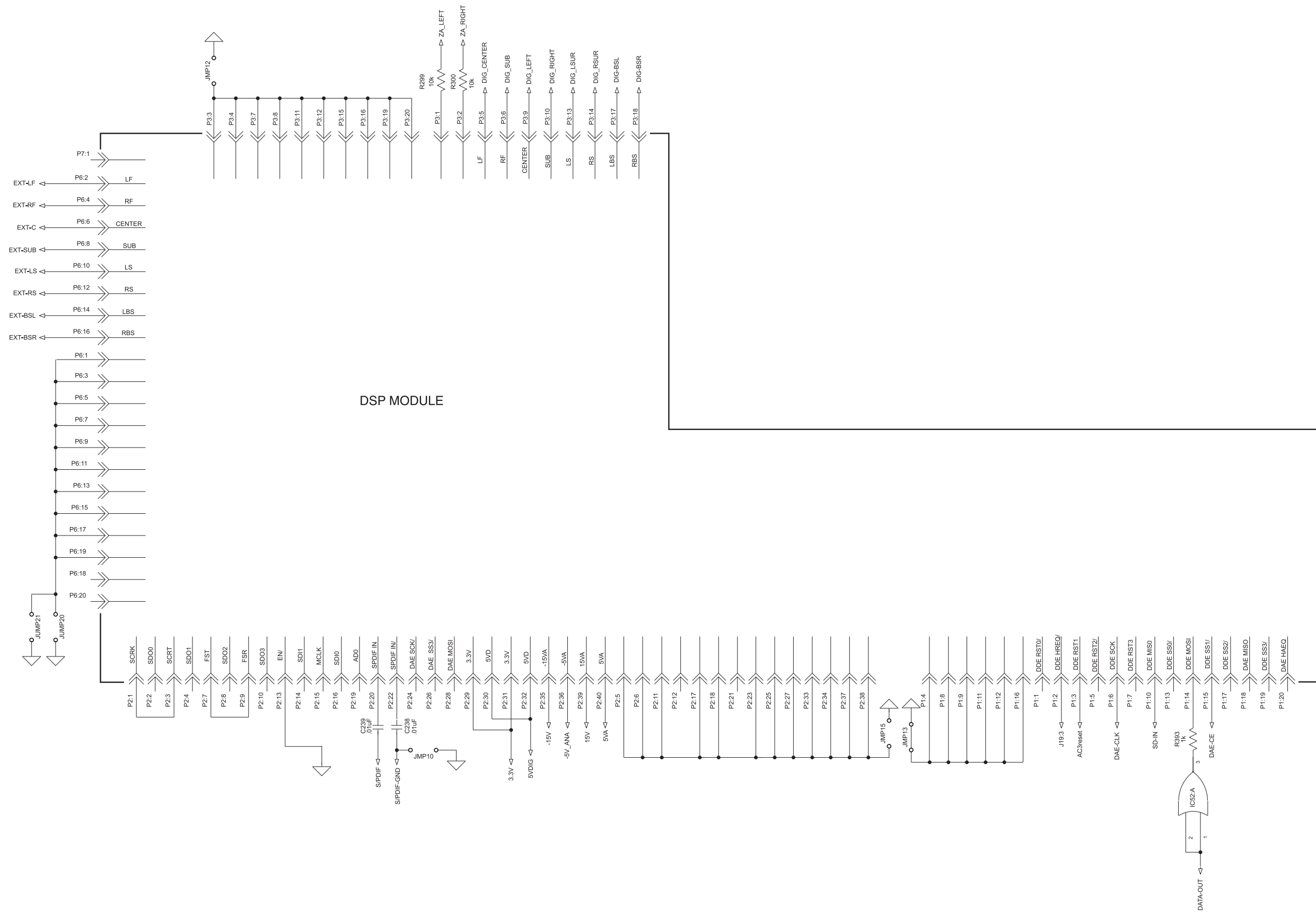


3 SURROUND 049627 SH 2 OF 6

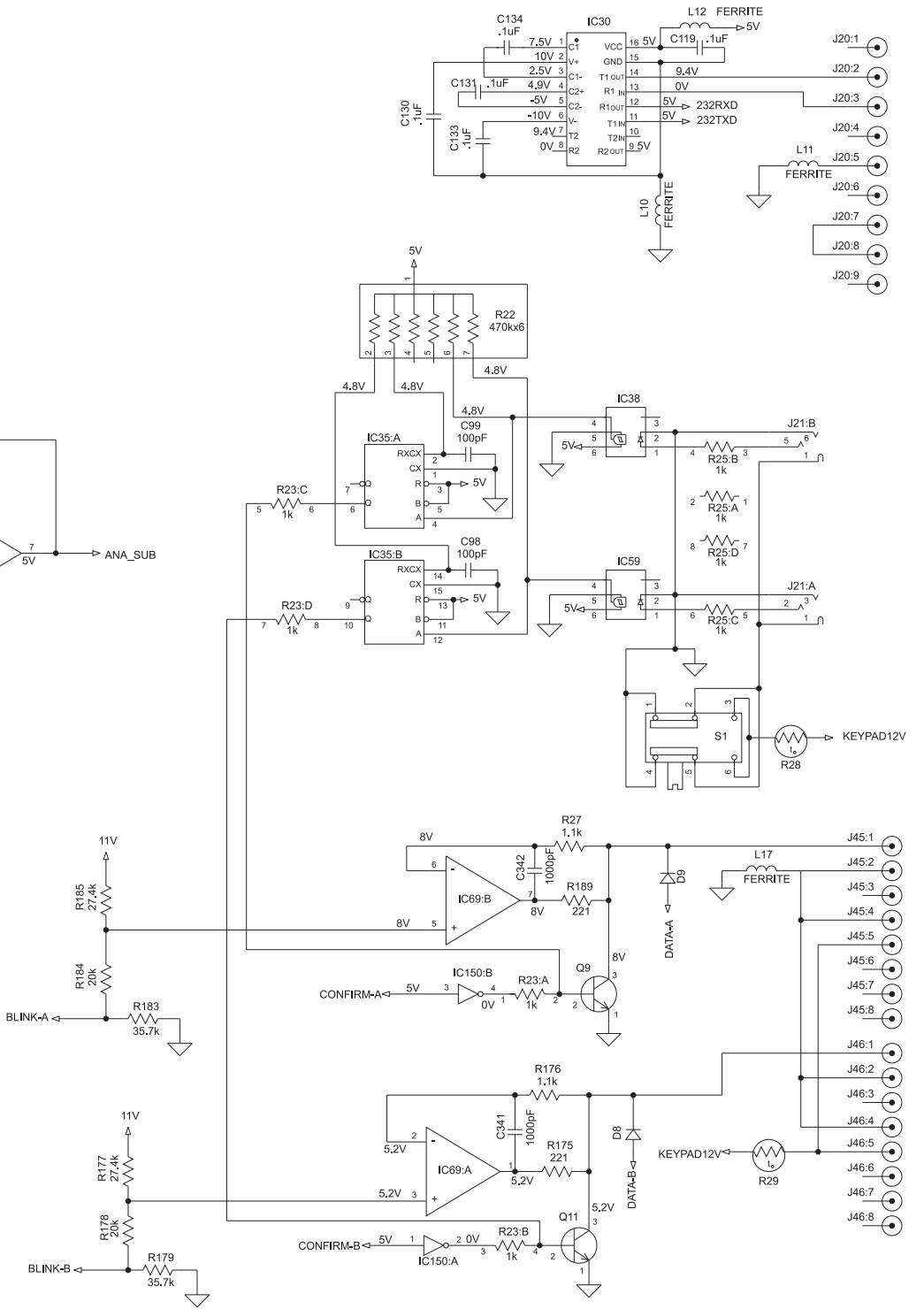
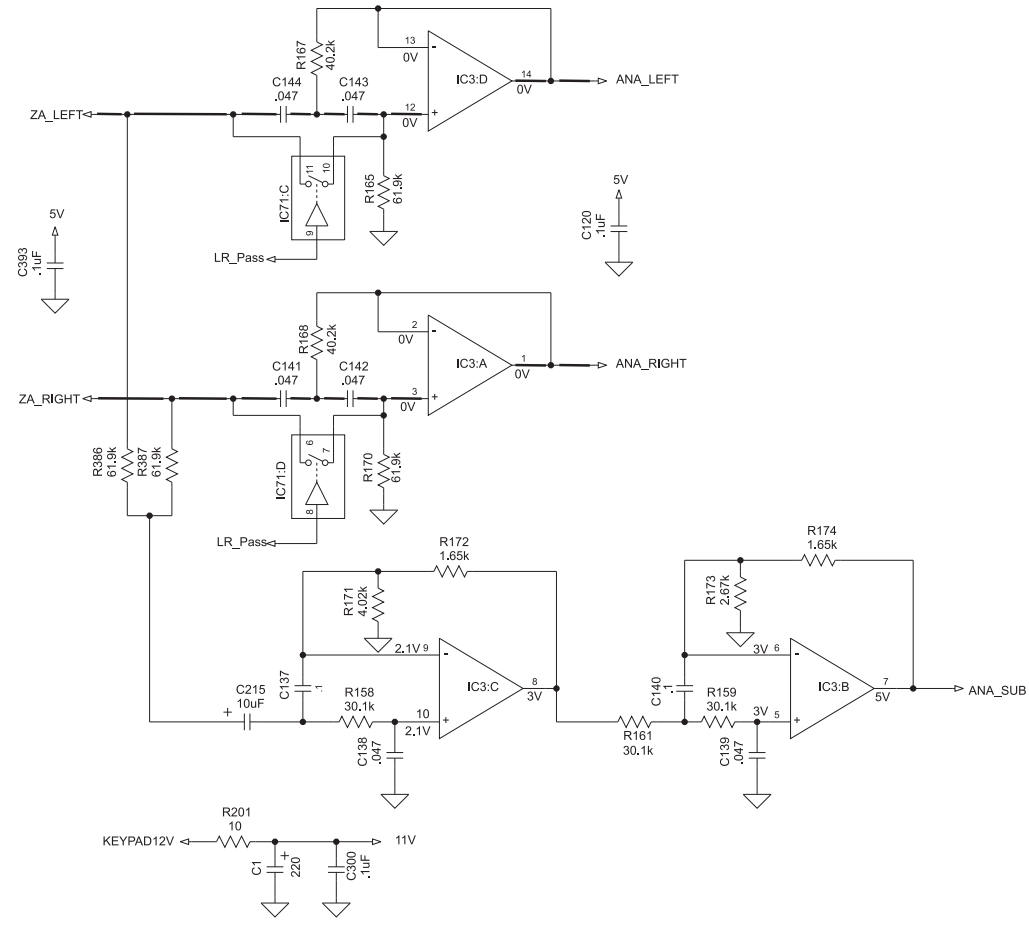
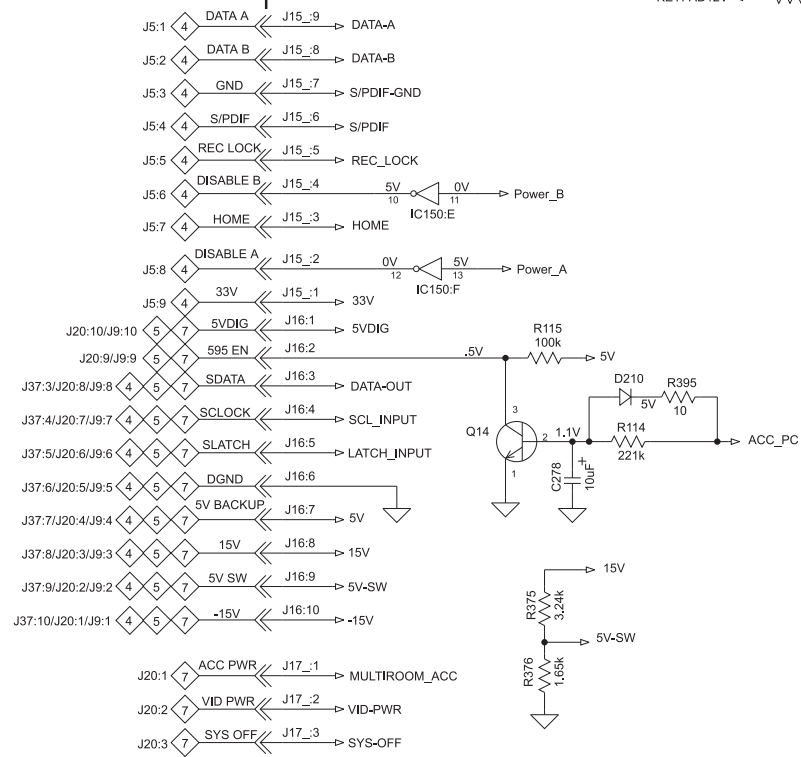
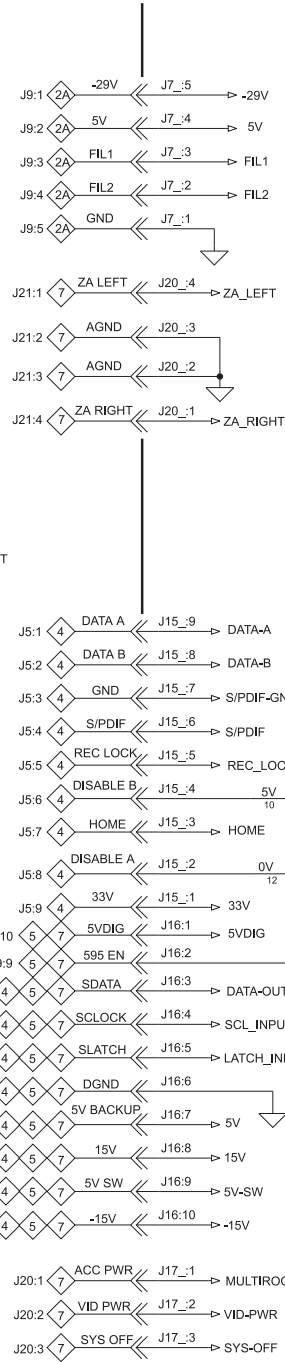
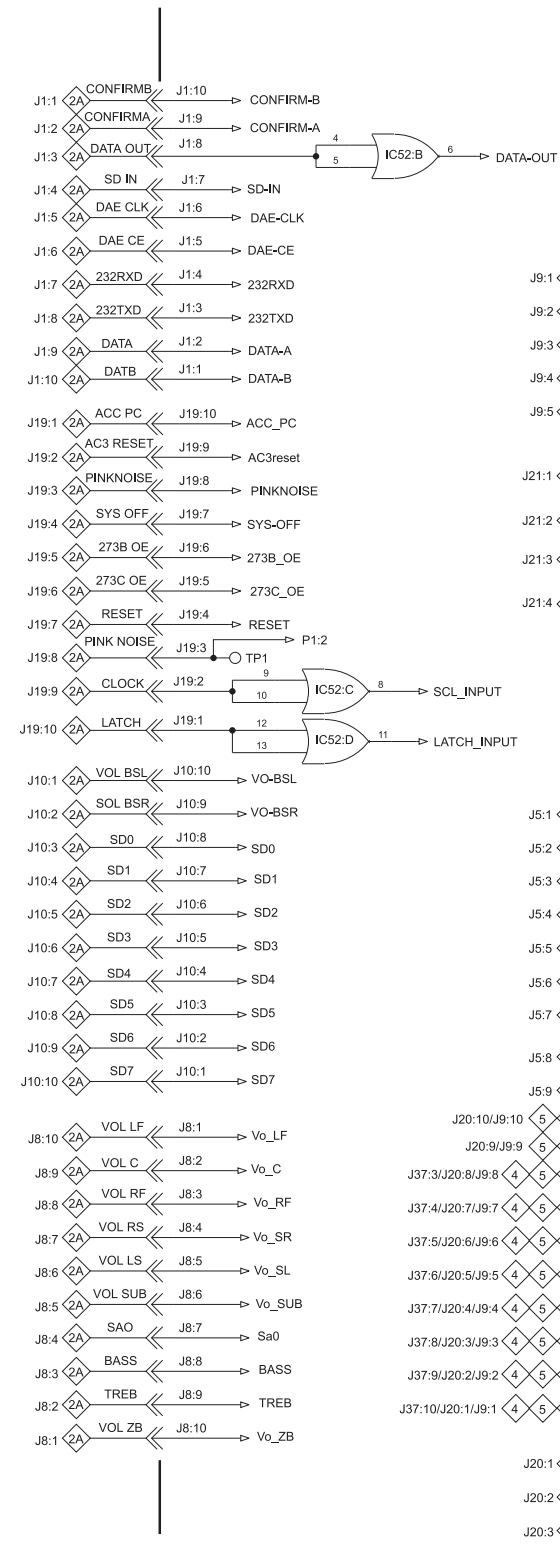
MX134



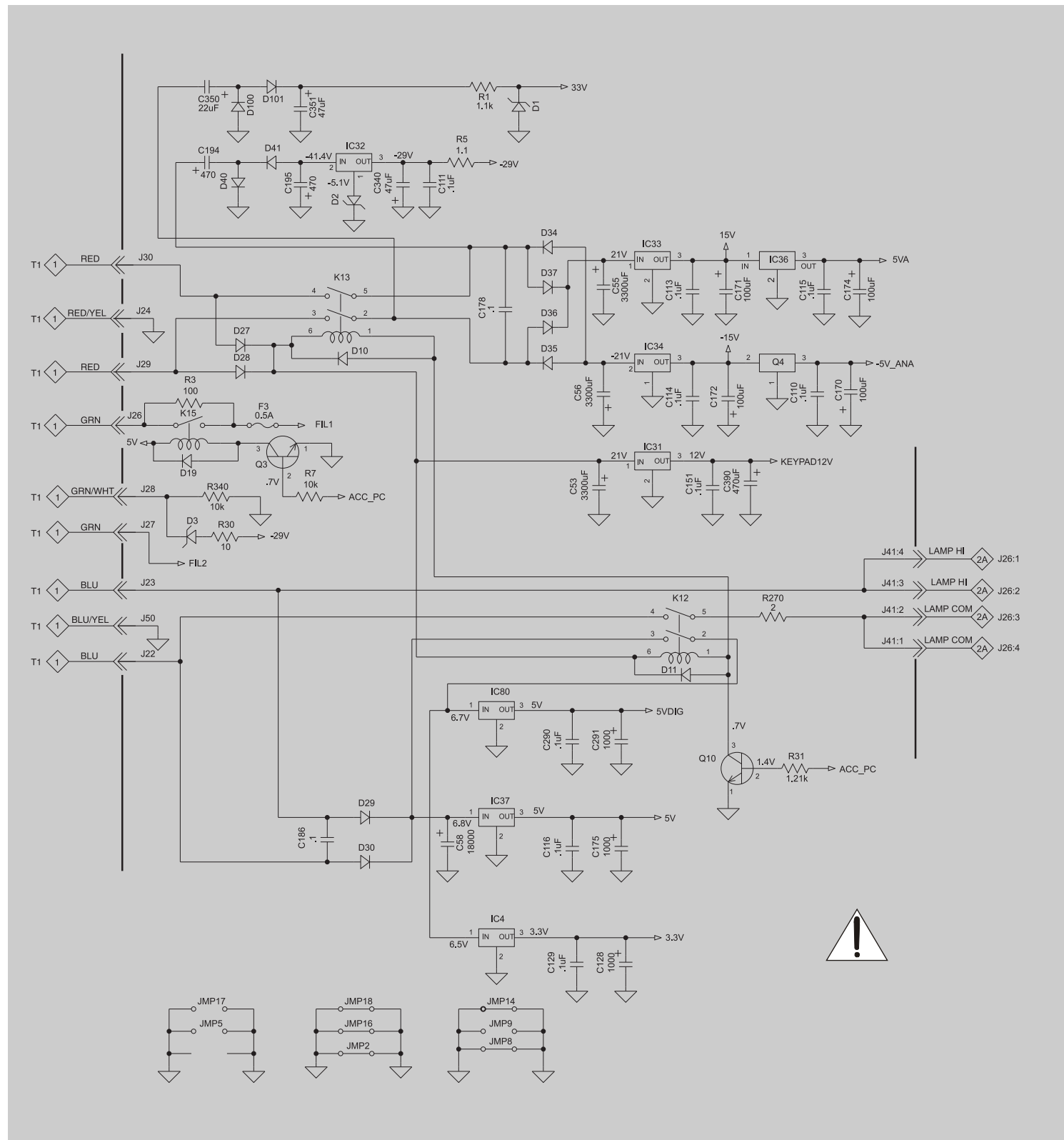




3 SURROUND 049710 SH 5 OF 6

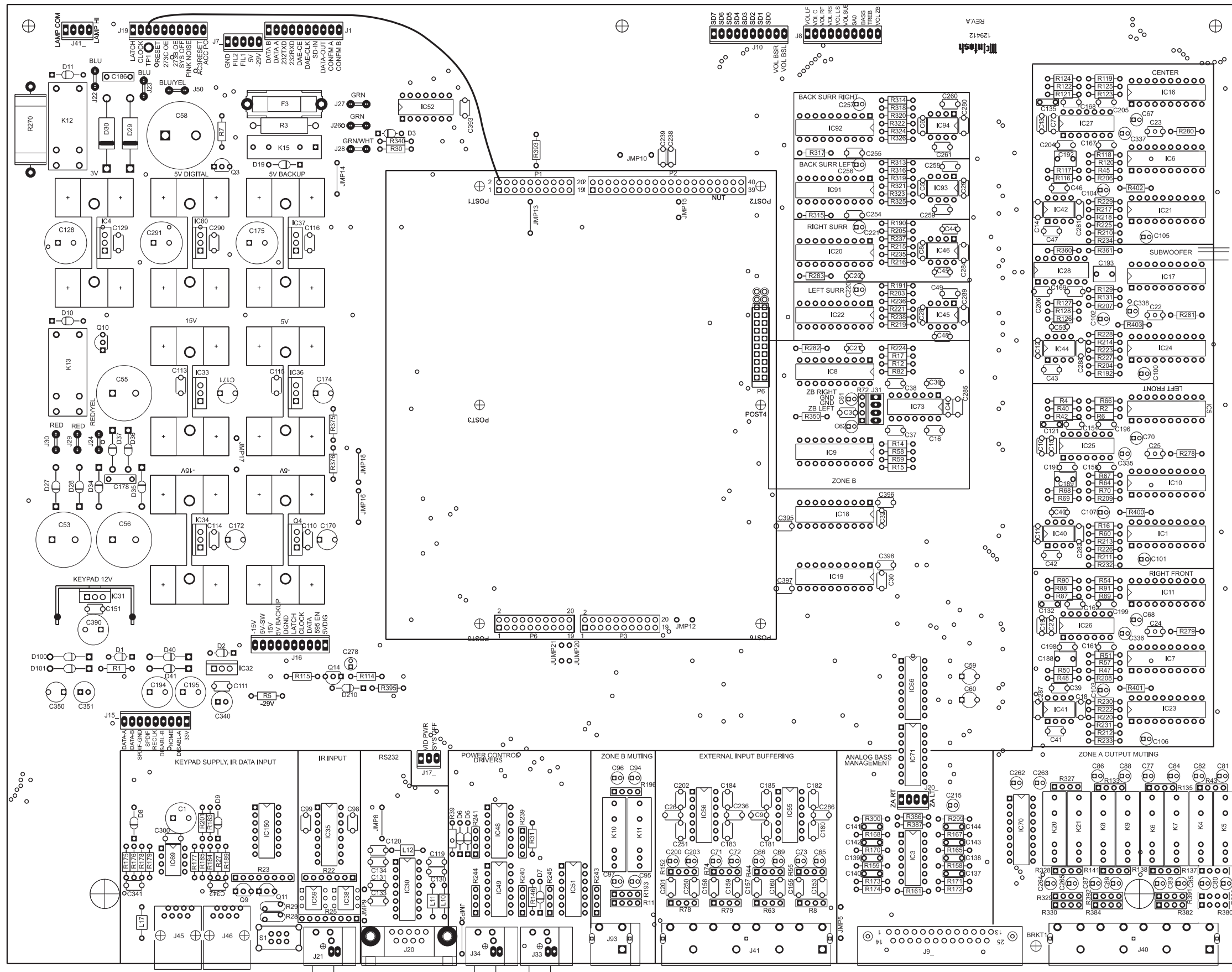


3 SURROUND 049627 SH 6 OF 6



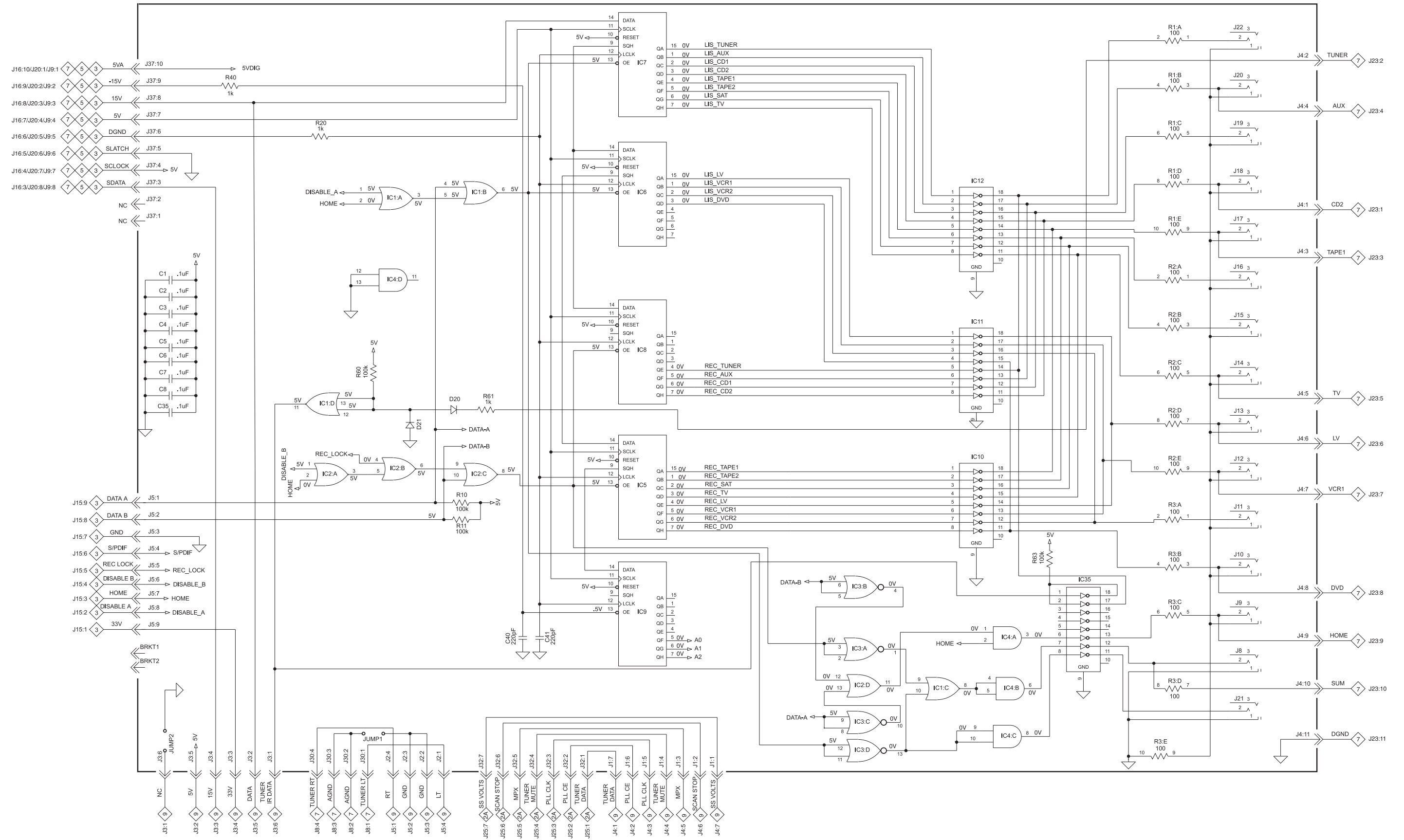
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3 SURROUND 049627

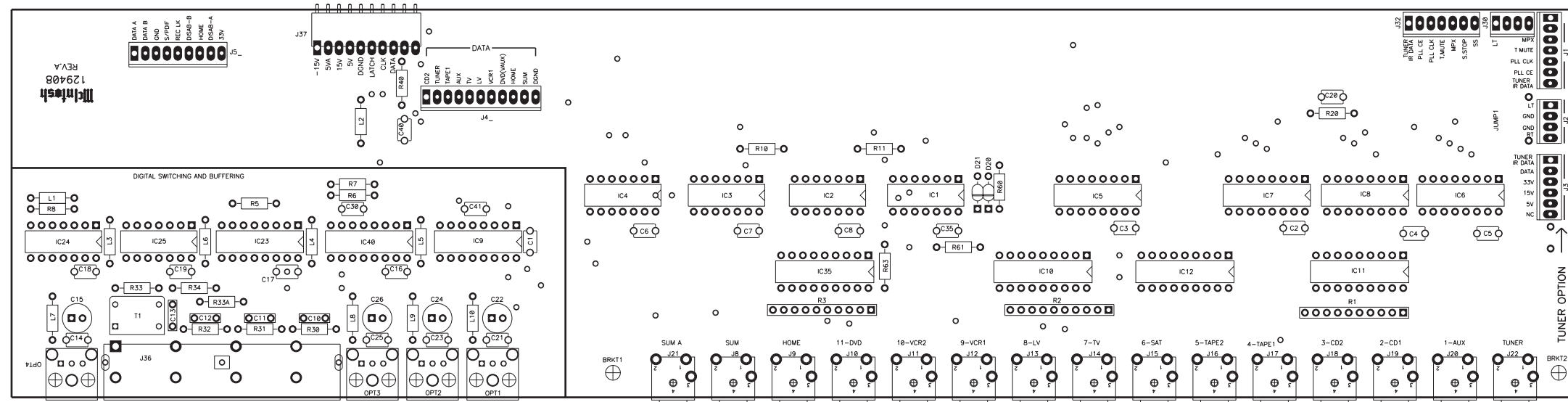
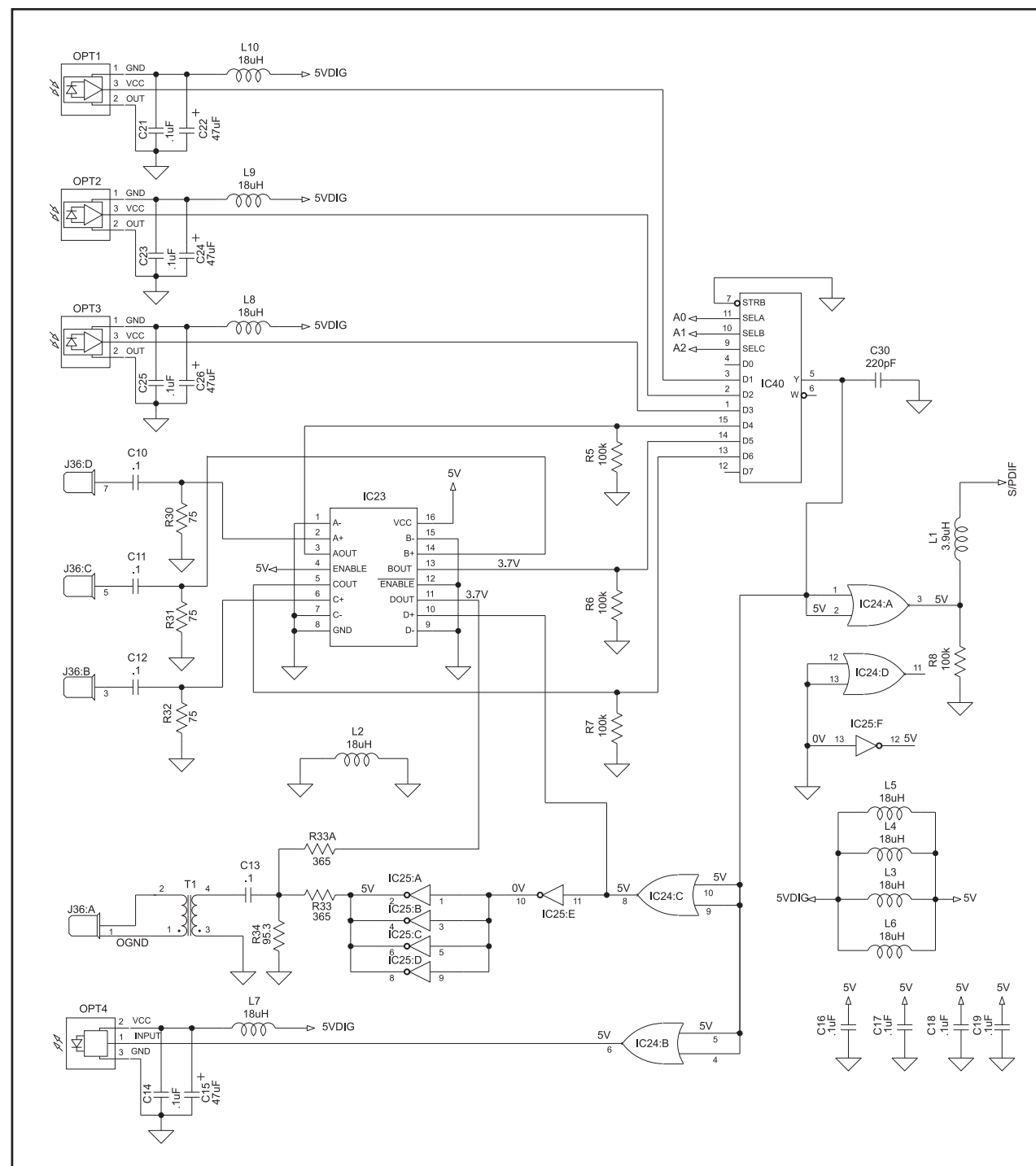


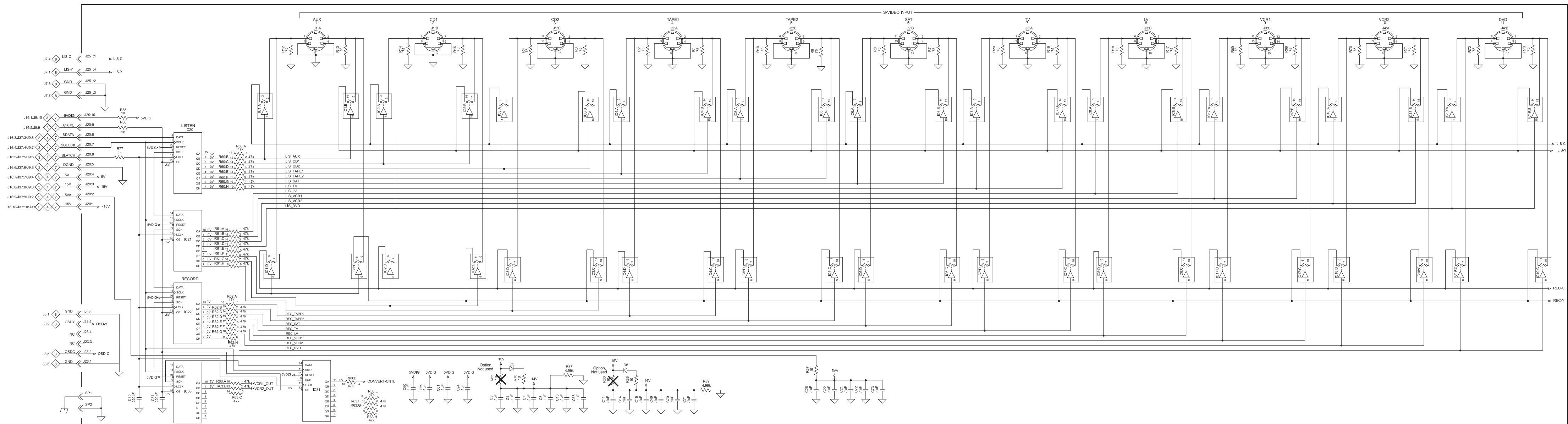
4 DATA 049622 SH 1 OF 2

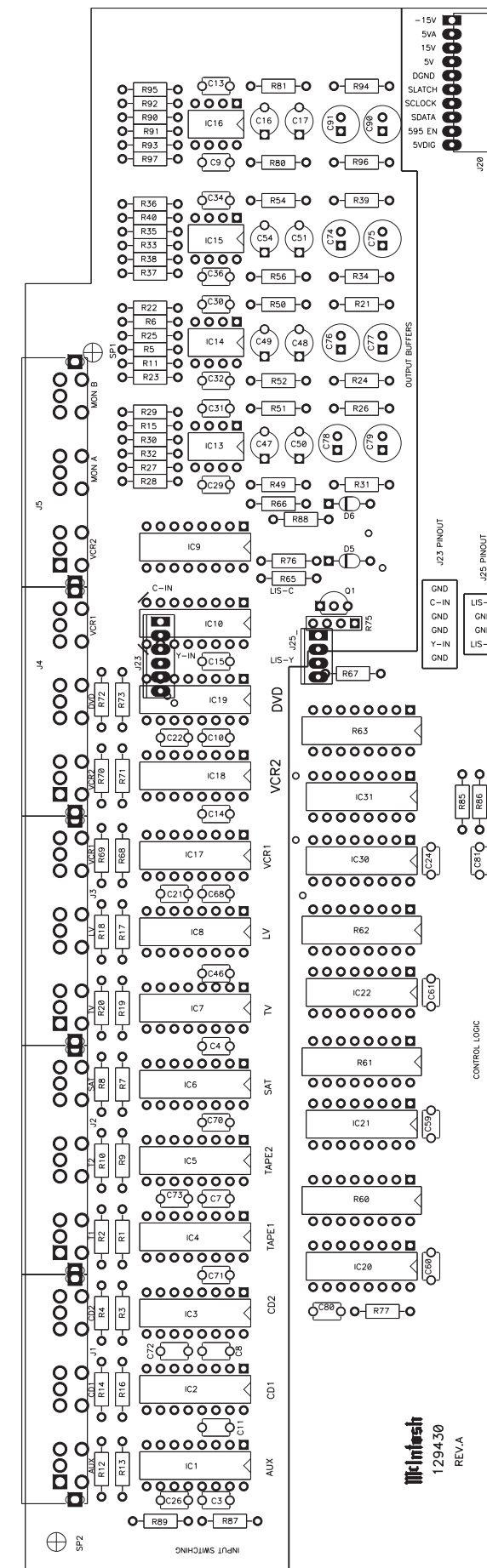
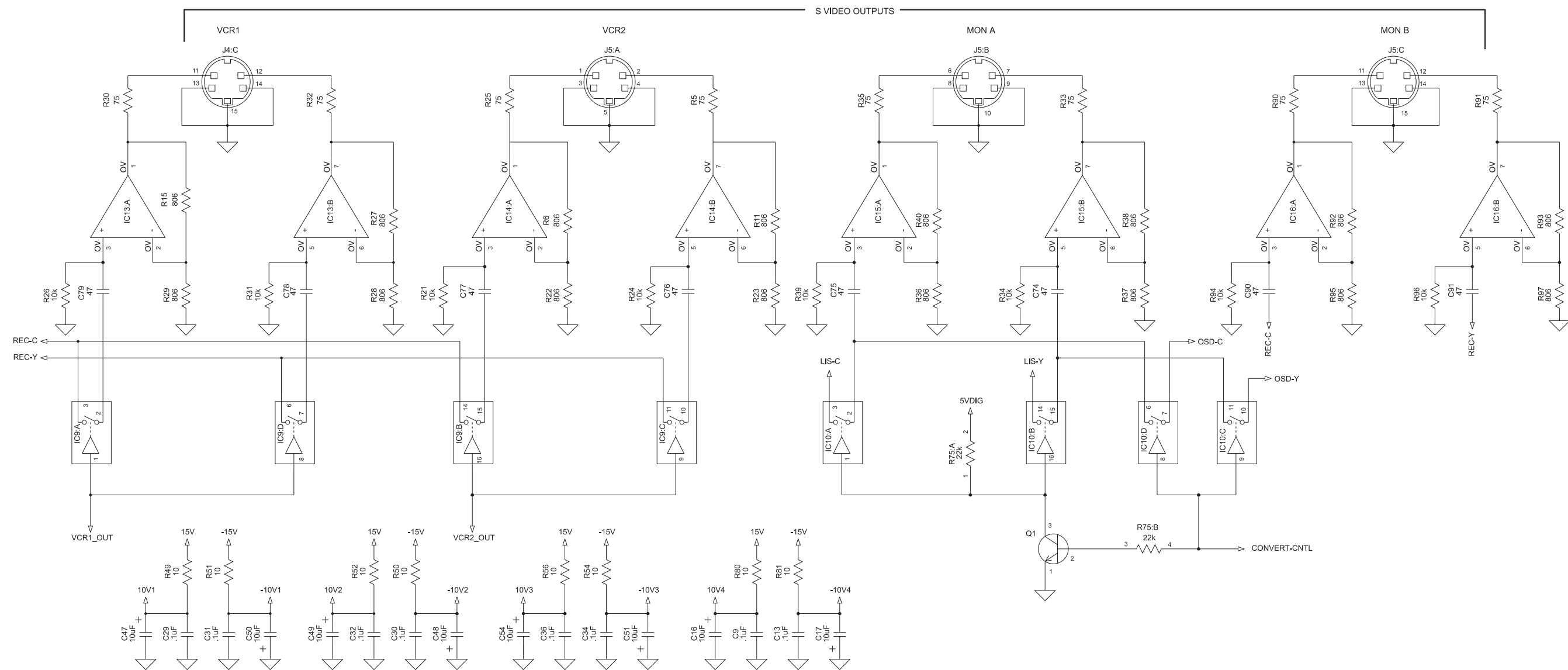
MX134

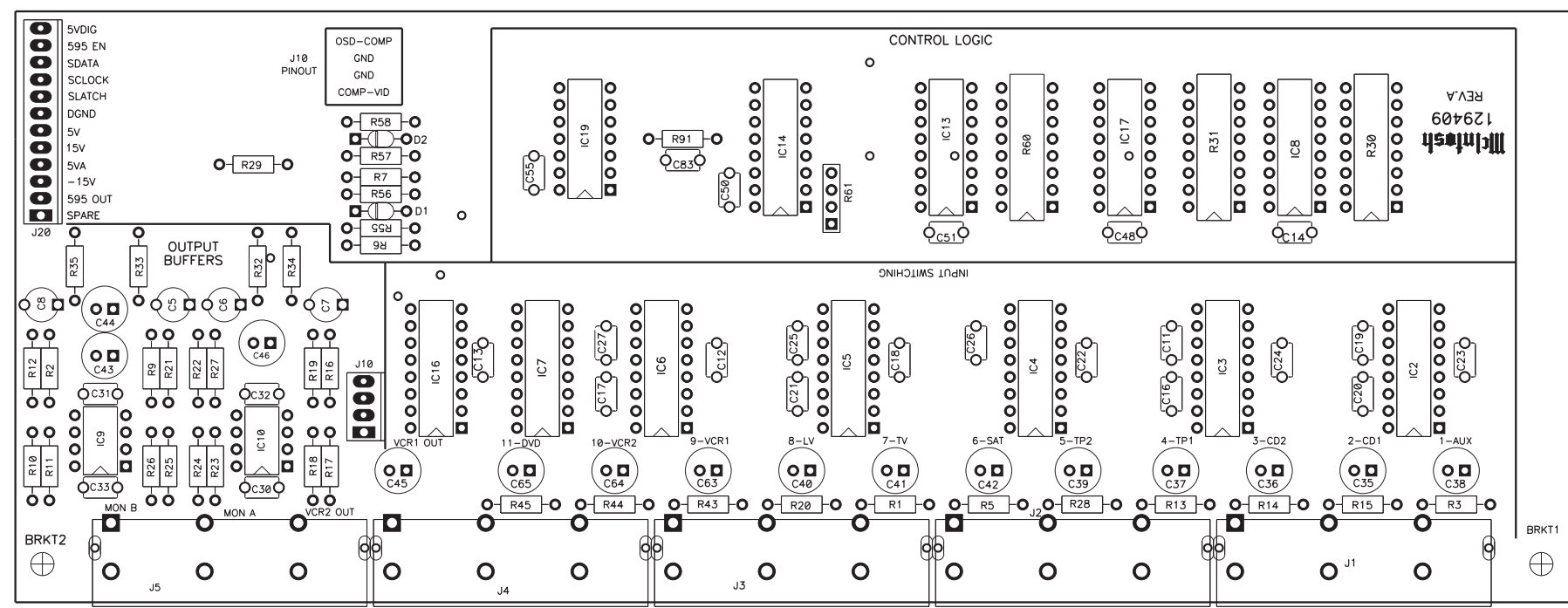
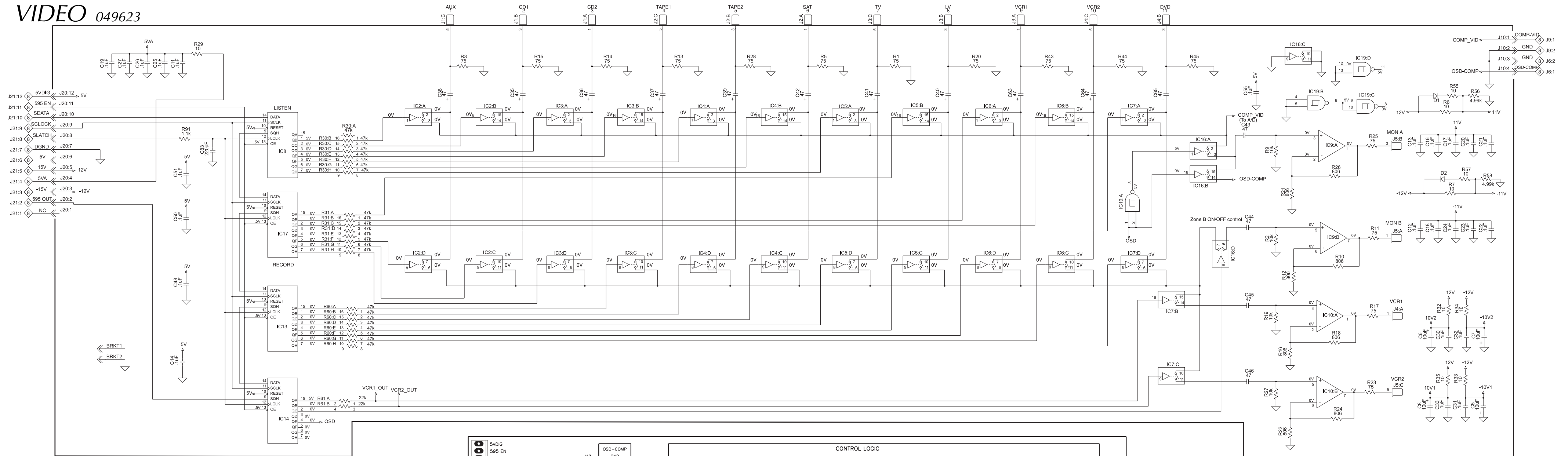


NOTES

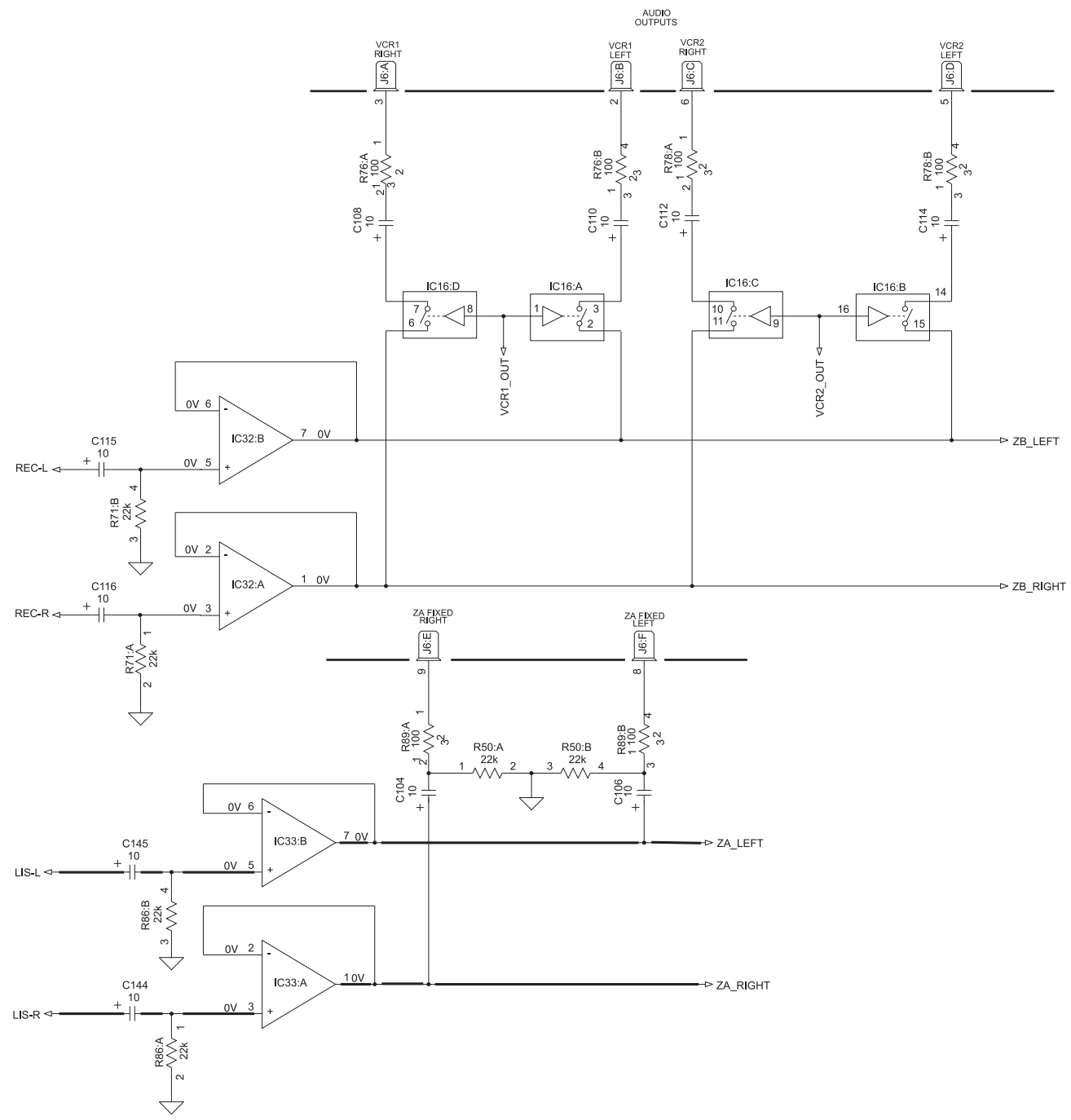
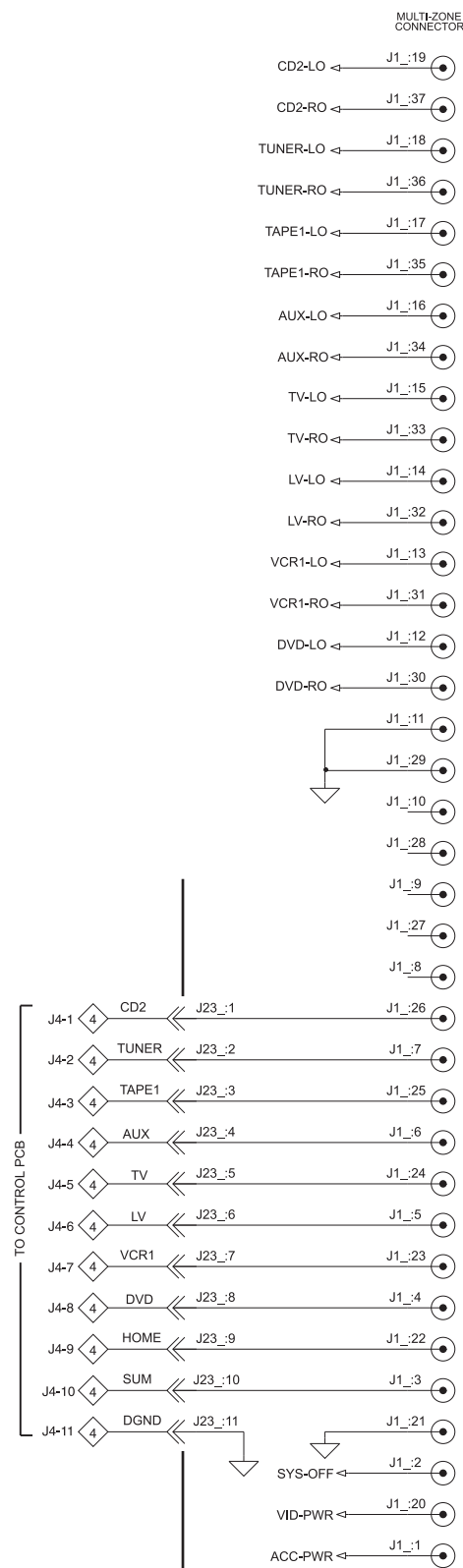




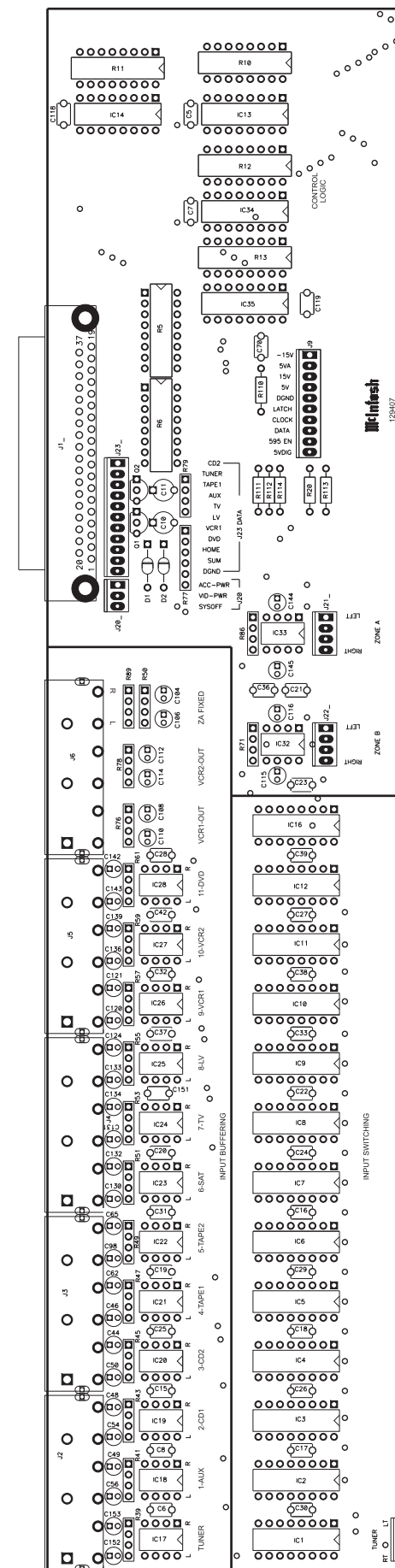




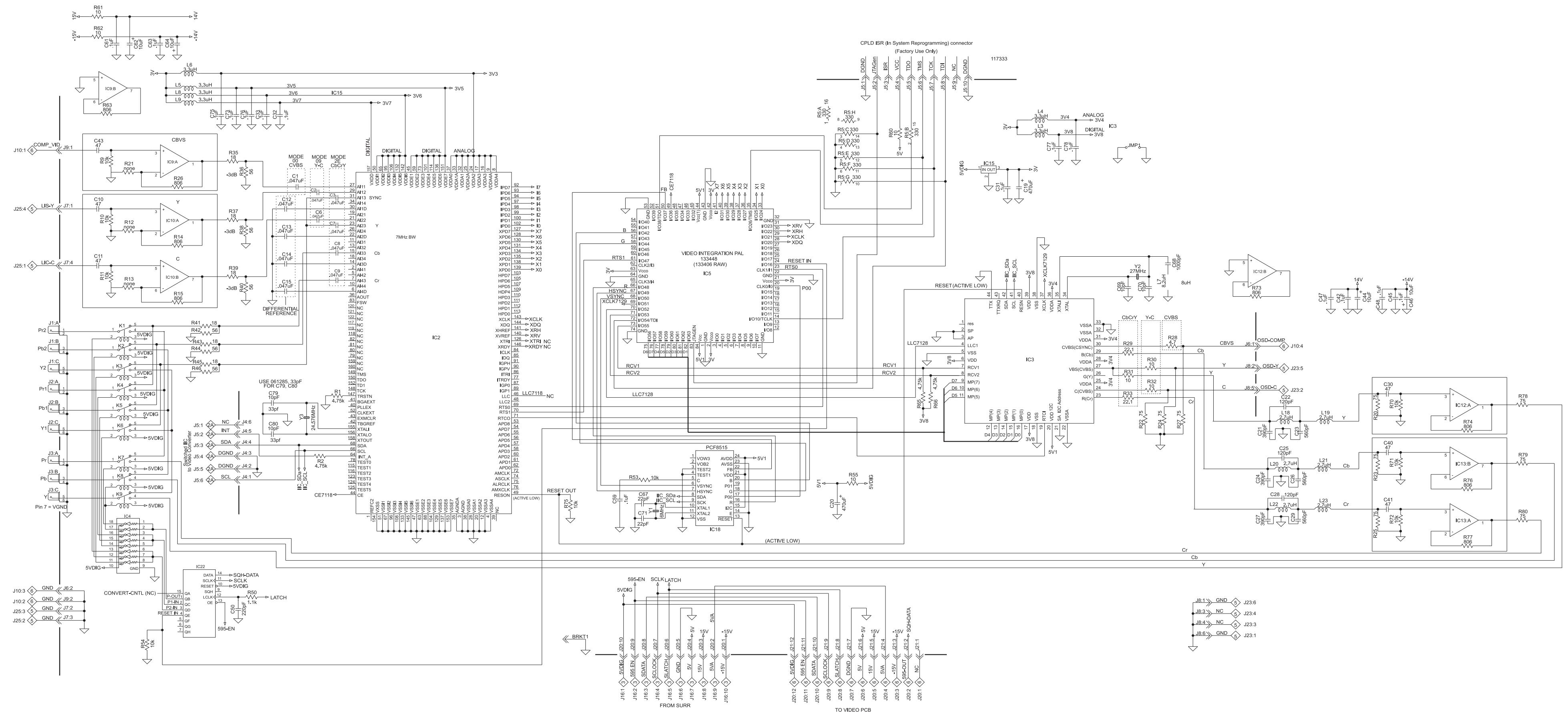
7 INPUT 049621 SH 2 OF 2



7 INPUT 049621



8 COMPONENT VIDEO 049706



TUNER ALIGNMENT PROCEDURE

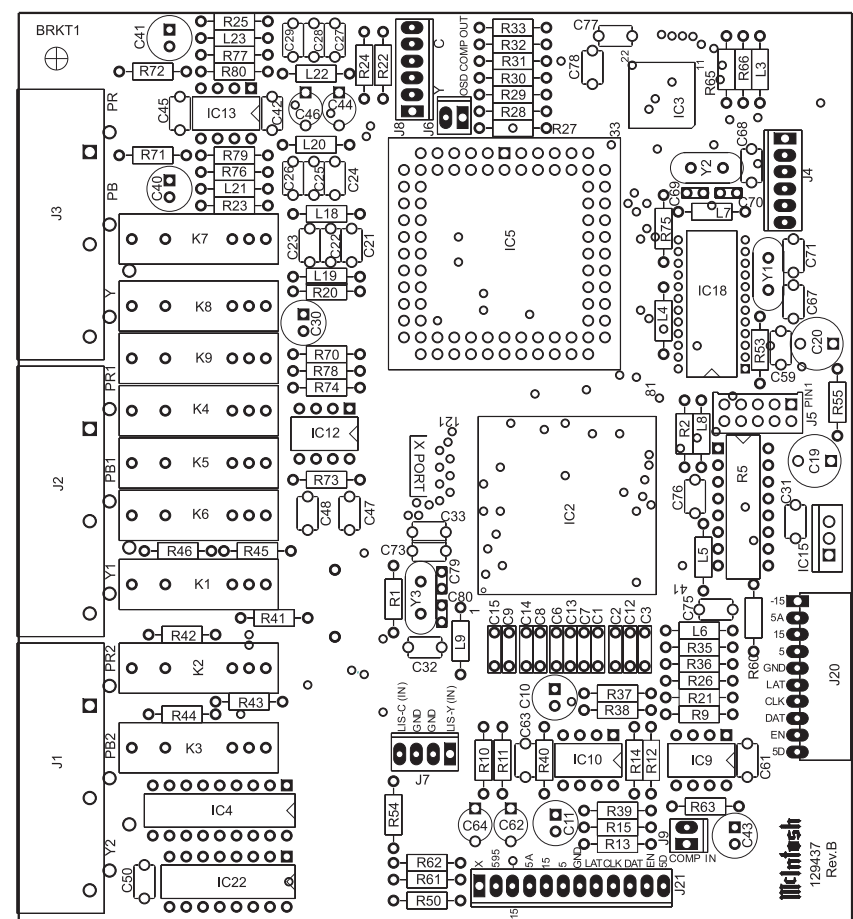
Note: Refer to Figure 1 while reading the below procedure.

FM ALIGNMENT PROCEDURE

1. Connect an FM Signal Generator to Antenna Input.
2. Connect Distortion Analyzer to the TUNER IN/OUT RCA jacks.
3. Remove Top Cover and AM/FM TUNER Cover. Turn On the AC rocker switch. Press the red Standby button to turn the unit On.
4. Select Tuner with the Zone A selector knob. Put Tuner into FM mode and tune to 87.5MHz.
5. Adjust L5 (FM OSC Coil) for 3.5VDC at R46.
6. Tune to 108.5MHz and adjust C59 (FM OSC Trimmer Capacitor) for 24.5VDC at R46.
7. Repeat steps 4, 5 and 6 as necessary for a tuning range of 3.5VDC to 24.5VDC at R46.
8. Tune the Generator and Tuner to 90MHz and adjust Coils: L2 (FM MIX), L3 (FM RF) and L4 (FM ANT) for best sensitivity.
9. Tune the Generator and Tuner to 104MHz and adjust Trimmer Capacitors: C60 (FM MIX), C62 (FM RF) and C63 (FM ANT) for best sensitivity.
10. Repeat 8 and 9 until no improvement in sensitivity is noted.
11. Tune Tuner to 90MHz with no RF Input and adjust T9 (FM DETector Primary) for zero volts between TP1 and TP2 relative (connector J6).
12. Tune the Generator to 90MHz and adjust the RF Output to 1000uV and 100% MONO modulation at 1000Hz. Then adjust T8 (FM DETector SECondary) for lowest distortion.
13. Reduce the Generator Output to minimum and detune the Generator so the Receiver picks up only noise, then recheck the voltage between TP1 and TP2 (connector J6). Adjust T8 and C65 if needed. If it is not 0+/- 0.2VDC, repeat steps 11 and 12. If there is interference from a station on this frequency, tune the Tuner to a nearby frequency free from interference for this measurement.
14. Tune the Generator to 90MHz with a 1000uV output. Then switch the Generator to stereo (left only) and adjust T10 (FM IF Transformer) for the lowest distortion at the TUNER IN/OUT RCA jacks.
15. Switch the Analyzer to the right channel TUNER IN/OUT jack and adjust R71 (MPX SEParation Pot) for best separation (minimum output).
16. Switch the Generator to the Right Channel and the Analyzer to the Left Channel. Adjust R71 (MPX SEParation Pot) and check for best separation (minimum output).
17. Disconnect voltmeter from TP1 and TP2 (J6). Reduce the generator output to 5uV and adjust R73 (STEREO SWITCH Pot) so the MPX light (Dot next to Signal Strength number) just comes on.

AM ALIGNMENT PROCEDURE

1. Connect an AM Signal Generator to the RAA1 "EXT ANT" pin of the 5 pin connector. (Refer to Page 66.) Connect a Distortion Analyzer to the MX134 rear panel TUNER IN/OUT RCA jacks.
2. Tune to bottom of band, and adjust T11 (AM OSC Coil) for 3.0VDC at R46.
3. Tune to top of band and adjust C64 (AM OSC Trimmer Capacitor) for 26.0VDC at Connector R46.
4. Repeat steps 2 and 3 as necessary for a Tuning Voltage Range of 3.0 to 26.0VDC.
5. Tune the Generator and Tuner to 600kHz, then adjust Coils: T101 (AM ANT) and T12 (AM RF) for best sensitivity. *Note: Coil T101 (AM ANT) is located on the RAA1. It is labeled "L1".*
6. Tune the Generator and Tuner to 1400kHz, then adjust Trimmer Capacitors: C106 (AM ANT) and C61 (AM RF) for best sensitivity. *Note: Trimmer Capacitor C106 (AM ANT) is located on the RAA1. It is labeled "C1".*
7. Repeat 5 and 6 until no improvement in sensitivity is noted.
8. Note the initial position of R70, and then adjust R70 fully counter clockwise. Tune the Generator and Tuner to 1400kHz (20uV, 30% modulation), then Adjust T7 (AM IF) for maximum signal.
9. Tune the Generator and Tuner to 1400kHz (100mV, 30% modulation). Slowly adjust R70 clockwise until the MX134 front panel signal strength display reads "9".
10. Check both channels for signal to noise performance, and re-adjust R70 and as needed.



IC2 AND IC3 ARE SURFACE MOUNT COMPONENTS AND ARE ADDED ON ASSEMBLY #M49741

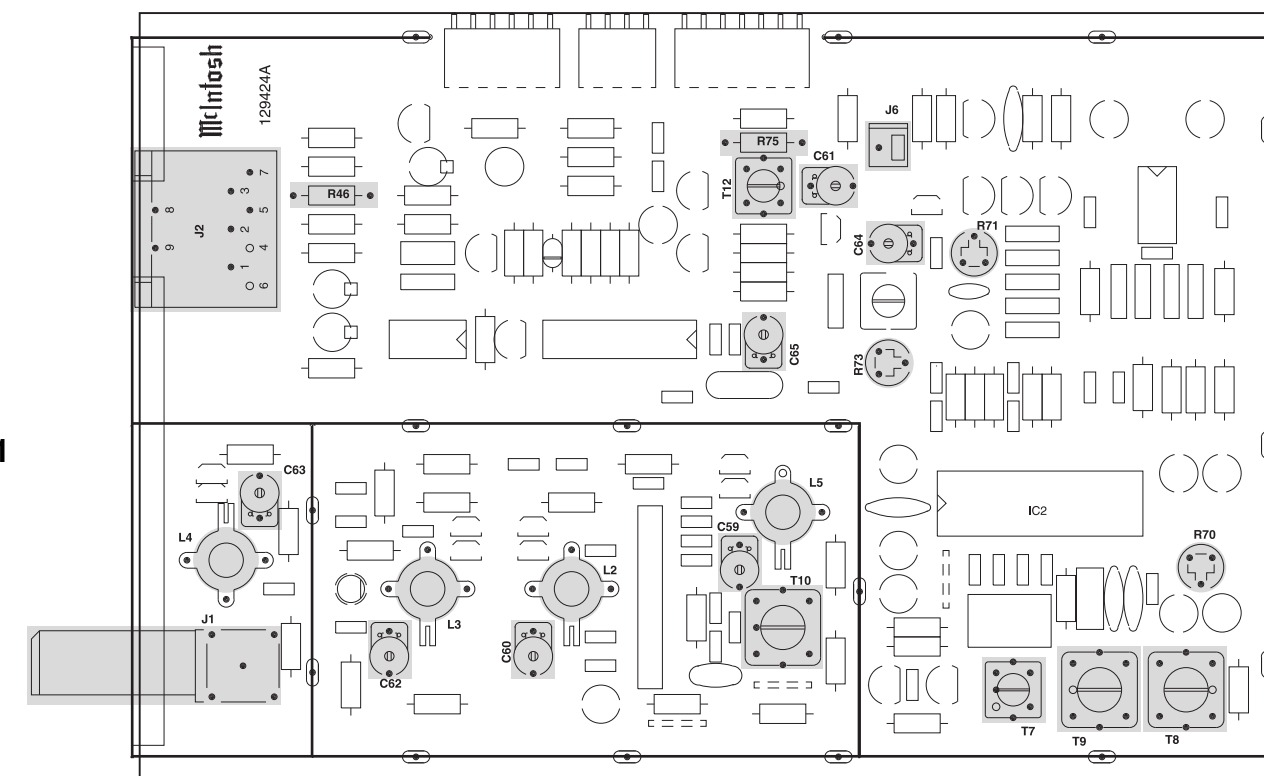
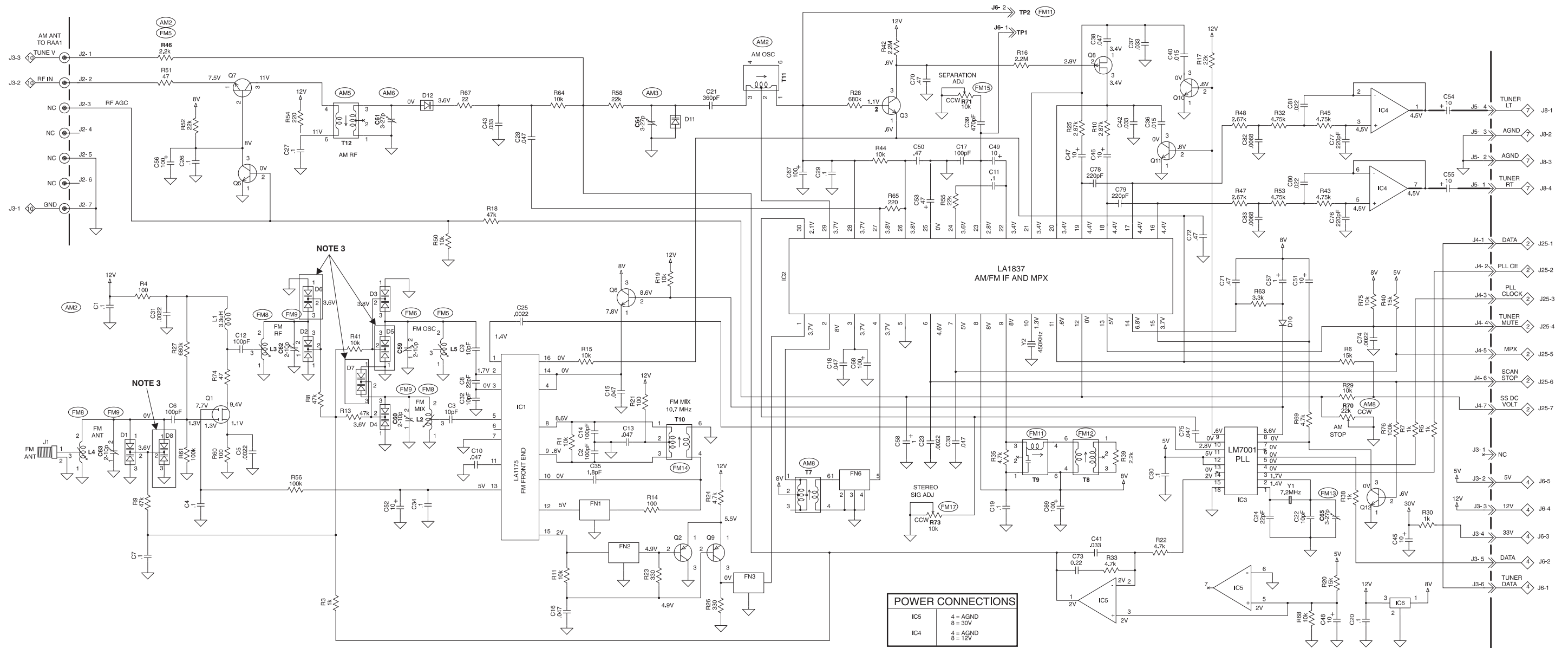


Figure 1

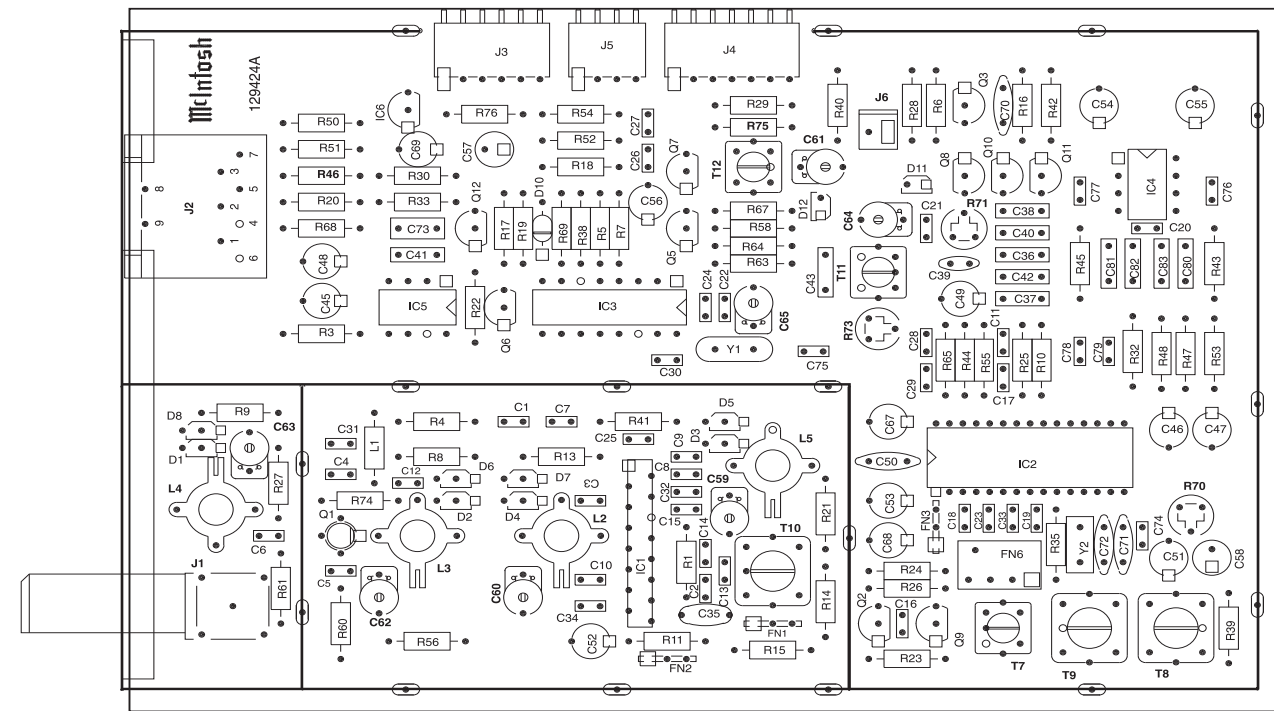
9 TUNER 049084

MX134



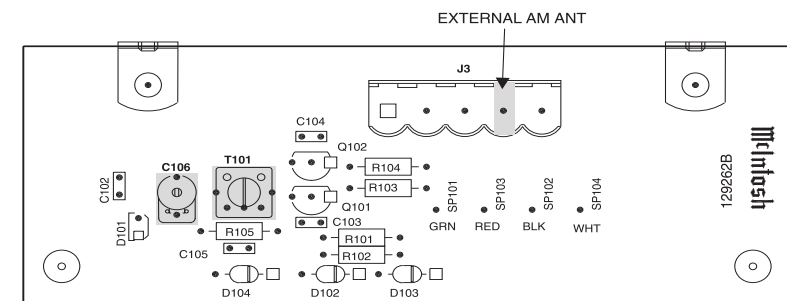
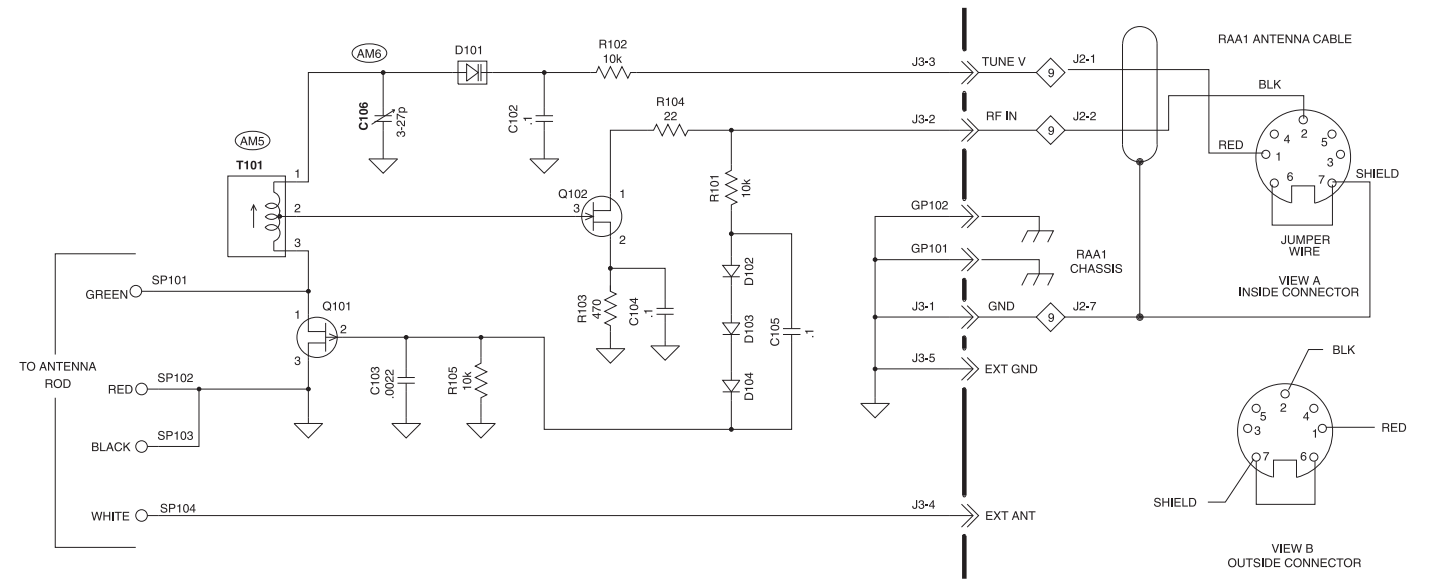
NOTES: SEE PAGE 61 - 62 FOR TUNER ALIGNMENT PROCEDURES.
 (FM1) THROUGH (FM17) REFER TO STEPS IN THE FM ALIGNMENT PROCEDURE.
 (AM1) THROUGH (AM10) REFER TO STEPS IN THE AM ALIGNMENT PROCEDURE.
 NOTE 3: FOR JAPANESE CONVERSION, VARACTORS D5, D6, D7 AND D8 ARE ADDED IN PARALLEL WITH D1, D2, D3 AND D4.

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NOTE: SEE PAGE 61 - 62 FOR TUNER ALIGNMENT PROCEDURE.

10 RAA1 SECTION



PARTS LIST

Ref No.	Description	Part No.		Description	Part No.
R7	RES MF 1.74K 1% 1/4W	14435100		IC13 IC14 IC15 IC16	13328600
R8 R30	RES MF 10 1% 1/4W	14415700		IC17 IC18 IC19	13342600
R9 R24 R26 R27 R28 R29 R45 R200	RES NET 2 X 22K ISOLATED	14436600		IC20 IC21 IC22 IC30 IC31	13318600
R10	RES NETWORK 5X47K BUSSED	14425400		J1 J2 J3 J4 J5	11777900
R12 R13 R14	RES NETWORK 9 X 47K BUS	14425000		J20	11726000
R15 R18 R170 R171	RES MF 4.99K 1% 1/4W	14409800		J23	11721800
R16	RES MF 100 1% 1/4W	14419600		J25-	11721500
R17	RES MF 332 OHM 1% 1/4W	14444600		Q1	13222300
R25	RES FP 47 OHM 5% 1/4W	13704200		R1 R2 R3 R4 R5 R7 R8 R9 R10 R12 R13	RES MF 75 OHM 1% 1/4W
R50 R51 R52	RES NETWORK 9X1K ISO	14428000		R6 R11 R15 R22 R23 R27 R28 R29 R36	RES MF 806 1% 1/4W
R83	RES FP 10 OHMS 5% 1/4W	13702500		R14 R16 R17 R18 R19 R20 R25 R30 R32	RES MF 75 OHM 1% 1/4W
R100 R101	RES MF 10K 1% 1/4W	14405300		R21 R24 R26 R31 R34 R39 R94 R96	RES MF 10K 1% 1/4W
R102	RES NETWORK 4 X 22K BUS	14423400		R33 R35 R68 R69 R70 R71 R72 R73 R90 R91	RES MF 75 OHM 1% 1/4W
R131	RES NETWORK 8X10K BUSSED	14425300		R37 R38 R40 R92 R93 R95 R97	RES MF 806 1% 1/4W
R150 R151	RES NETWORK 4X1K ISO	14427600		R49 R50 R51 R52 R54 R56 R67 R76 R80	RES FP 10 OHMS 5% 1/4W
R202 R203 R204 R205 R206	RES NET 2 X 22K ISOLATED	14436600		R60 R61 R62 R63	RES NETWORK 8X47KI
S1 S2	SWITCH TACT	15005900		R75	RES NET 2 X 22K ISOLATED
S5 S7 S9 S10 S11 S12 S13 S14 S15 S16	SWITCH TACT	15005800		R77 R86	RES MF 1K 1% 1/4W
S17	SWITCH SLIDE	14805900		R81 R85 R88	RES FP 10 OHMS 5% 1/4W
S20 S21 S22 S23 S24	SWITCH ROTARY ENCODER 12 DTNT	14625500		R87 R89	RES MF 4.99K
S25	SWITCH ROTARY ENCODER 24 PULSE	14625600		SP1 SP2	BRACKET PCB CARD MOUNTING
Y1	CRYSTAL 11.0592MHZ	18005100			00361100
DATA PCB 049622			6 VIDEO PCB 049623		
BRKT1 BRKT2	BRACKET PCB CARD MOUNTING	00361100	BRKT1 BRKT2	BRACKET PCB CARD MOUNTING	00361100
C1 C2 C3 C4 C5 C6 C7 C8 C14 C16 C17	CAP MONO .1UF 50V 20% Z5U	06130500	C5 C6 C7 C8	CAP ELECT 10UF 50V	06644500
C10 C11 C12 C13	CAP M POLY .1UF 5% 63VDC	06432500	C11 C12 C13 C14 C16 C17 C18 C19 C20	CAP MONO .1UF 50V 20% Z5U	06130500
C15 C22 C24 C26	CAP ELECT 47UF 50V	06621500	C21 C22 C23 C24 C25 C26 C27 C30 C31	CAP MONO .1UF 50V 20% Z5U	06130500
C18 C19 C21 C23 C25 C35	CAP MONO .1UF 50V 20% Z5U	06130500	C32 C33 C48 C50 C51 C55	CAP MONO .1UF 50V 20% Z5U	06130500
C30 C40 C41	CAP MONO 220PF 100V 10% NPO	06130100	C35 C36 C37 C38 C39 C40 C41 C42 C63	CAP ELECT 47UF 50V	06621500
D20 D21	DIODE SILICON	07004700	C43 C44 C45 C46	CAP ELECT 47UF 10V BP	06637800
IC1 IC2 IC24	IC 2 INPUT X 4	13316700	C64 C65	CAP ELECT 47UF 50V	06621500
IC3	IC NOR 2 INPUT X 4	13317600	C83	CAP MONO 220PF 100V 10% NPO	06130100
IC4	IC AND 2 INPUT X 4	13317500	D1 D2	DIODE SIL SIGNAL 400MA	07009800
IC5 IC6 IC7 IC8 IC9	IC SHFT REG SER-PAR	13318600	IC2 IC3 IC4 IC5 IC6 IC7 IC16	IC SPST QUAD FET SWITCHES N O	13342600
IC10 IC11 IC12 IC35	IC 8 LN DRIVER ARRAY	13318000	IC8 IC13 IC14 IC17	IC SHFT REG SER-PAR	13318600
IC10 IC11 IC12 IC35	SOCKET IC 18-PIN DIP	17810900	IC9 IC10	IC 100MA I FEEDBACK AMP	13328600
IC23	IC LINE RECEIVER QUAD	13342800	IC19	IC NAND SCHMIT 2-IN X 4	13319200
IC25	IC HEX UNBUF INVERTER	13317300	J1 J2 J3 J4 J5	JACK RCA 3X1 YELLOW 14MM	11777700
IC40	IC 8-INPUT SEL/MULTI	13321900	J10	CONN 4 PIN	11721500
J1 J32	CONN MALE 7 PIN	11721700	J20	CONN MALE 12 POS ASSY	11722000
J2 J30	CONN 4 PIN	11721500	R1 R3 R5 R11 R13 R14 R15 R17 R20 R23	RES MF 75 OHM 1% 1/4W	14444400
J3	CONN MALE 6 POS FRICTION LOCK	11721800	R2 R9 R19 R27	RES MF 10K 1% 1/4W	14405300
J4-	CONN 11 POS MALE	11727900	R10 R12 R16 R18 R21 R22 R24 R26	RES MF 806 1% 1/4W	14408900
J5-	CONN MALE 9 POS FRICTION LOCK	11724400	R25 R28 R43 R44 R45	RES MF 75 OHM 1% 1/4W	14444400
J8 J9 J10 J11 J12 J13 J14 J15 J16 J17 J18	JACK MINI	11749400	R29 R32 R33 R34 R35 R55 R57	RES FP 10 OHMS 5% 1/4W	13702500
J19 J20 J21 J22	JACK MINI	11749400	R30 R31 R60	RES NETWORK 8X47KI	14445700
J36	JACK RCA 4X11 ORANGE 14MM	11777800	R56 R58	RES MF 4.99K 1% 1/4W	14409800
J37	CONN MALE 10 POS RIGHT ANGLE	11726000	R61	RES NET 2 X 22K ISOLATED	14436600
L1	CHOKE 3.9UH 10C391J	12225500	R91	RES MF 1.1K 1% 1/4W	14409100
L2 L3 L4 L5 L6 L7 L8 L9 L10	CHOKE 18UH 5%-10%	12222400			
OPT1 OPT2 OPT3	FIBER OPTIC RECEIVER	05815600	INPUT PCB 049621		
OPT4	TRANSMITTER FIBER OPTIC	05815700	C5 C6 C7 C8 C15 C16 C17 C18 C19 C20	CAP MONO .1UF 50V 20% Z5U	06130500
R1 R2 R3	RES NETWORK 5 X 100 ISO	14426000	C10	CAP ELECT 4.7UF 50V	06651200
R5 R6 R7 R8 R10 R11 R60 R63	RES MF 100K 1% 1/4W	14411300	C11	CAP ELECT 1UF 50V	06651000
R20 R40 R61	RES MF 1K 1% 1/4W	14409000	C21 C22 C23 C24 C25 C26 C27 C28 C29	CAP MONO .1UF 50V 20% Z5U	06130500
R30 R31 R32	RES MF 75 OHM 1% 1/4W	14444400	C30 C31 C32 C33 C36 C37 C38 C39 C42	CAP MONO .1UF 50V 20% Z5U	06130500
R33	RES MF 365 1% 1/4W	14407100	C44 C46 C48 C49 C50 C54 C56 C62 C65	CAP ELECT 10UF 16V (4X5 CASE)	06638200
R34	RES MF 95.3 1% 1/4W	14422000	C70	CAP MONO 220PF 100V 10% NPO	06130100
T1	TRANSFORMER DIGITAL INTERFACE	15928500	C98 C104 C106 C108 C110 C112 C114	CAP ELECT 10UF 16V (4X5 CASE)	06638200
			C115 C116 C120 C121 C124 C130 C131	CAP ELECT 10UF 16V (4X5 CASE)	06638200
			C118 C119 C151	CAP MONO .1UF 50V 20% Z5U	06130500
			C132 C133 C134 C136 C139 C142 C143	CAP ELECT 10UF 16V (4X5 CASE)	06638200
			C144 C145 C152 C153	CAP ELECT 10UF 16V (4X5 CASE)	06638200
			D1 D2	DIODE SILICON	07004700
			IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10	IC SPST QUAD FET SWITCHES N O	13342600
			IC11 IC12 IC16	IC SPST QUAD FET SWITCHES N O	13342600
			IC13 IC14 IC34 IC35	IC SHFT REG SER-PAR	13318600
			IC17 IC18 IC19 IC20 IC21 IC22 IC23 IC24	IC OPERATIONAL AMPLIFIER	13318900
			IC25 IC26 IC27 IC28 IC32 IC33	IC OPERATIONAL AMPLIFIER	13318900
			J1-	CONN SUB D MINIATURE 37PIN	11755000
			J2 J3 J4 J5 J6	RCA JACK 3X2 WHT/RED 14MM	11779000
			J8 J21- J22-	CONN 4 PIN	11721500
			J9	CONN MALE 10 POS	11721900
			J20-	CONN MALE 3 POS MTS100 NORMAL	11721400
			J23-	CONN 11 POS MALE	11727900
			Q1	TRANSISTOR PNP	13222400
S-VIDEO PCB 049624					
C3 C4 C7 C8 C9 C10 C11 C13 C14 C15 C21	CAP MONO .1UF 50V 20% Z5U	06130500			
C16 C17 C47 C48 C49 C50 C51 C54	CAP ELECT 10UF 50V	06644500			
C22 C24 C26 C29 C30 C31 C32 C34 C36	CAP MONO .1UF 50V 20% Z5U	06130500			
C46 C59 C60 C61 C68 C70 C71 C72 C73	CAP MONO .1UF 50V 20% Z5U	06130500			
C74 C75 C76 C77 C78 C79 C90 C91	CAP ELECT 47UF 10V BP	06637800			
C80 C81	CAP MONO 220PF 100V 10% NPO	06130100			
D5 D6	DIODE SIL SIGNAL 400MA	07009800			
IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10	IC SPST QUAD FET SWITCHES N O	13342600			

PARTS LIST con't

RefNo.	Description	Part No.
Q2	TRANSISTOR NPN	13222300
R5 R6	RES NETWORK 8X100 ISO	14427500
R10 R11 R12 R13	RES NETWORK 8X47K1	14445700
R20 R111 R112 R113 R114	RES FP 10 OHMS 5% 1/4W	13702500
R39 R41 R43 R45 R47 R49 R50 R51 R53	RES NET 2 X 22K ISOLATED	14436600
R55 R57 R59 R61 R71 R79 R86	RES NET 2 X 22K ISOLATED	14436600
R76 R78 R89	RES NETWORK 2X100 OHM ISOLATED	14426600
R77	RES NET 3 X 100K OHM ISOLATED	14432600
R110	RES MF 1K 1% 1/4W	14409000

COMPONENT VIDEO PCB 049706

RefNo.	Description	Part No.
BRKT1	BRACKET PCB CARD MOUNTING	00361100
C1 C2 C3 C6 C7 C8 C9 C12 C13 C14 C15	CAP MPF 0.047UF 5% 63VDC	06432000
C10 C11 C30 C40 C41 C43	CAP ELECT 47UF 10V BP	06637800
C19 C20	CAP ELECT 470UF 16V	06650800
C21 C24 C27	CAP MONO 390P 5% 200V	06131400
C22 C25 C28	CAP MONO 120P 5% 200V	06131300
C23 C26 C29	CAP MONO 560PF 200V 5%	06130800
C31 C32 C33 C42 C45 C47 C48 C59 C61	CAP MONO .1UF 50V 20% Z5U	06130500
C44 C46 C62 C64	CAP ELECT 10UF 50V	06644500
C50	CAP MONO 220PF 100V 10% NPO	06130100
C63 C73 C75 C76 C77 C78	CAP MONO .1UF 50V 20% Z5U	06130500
C67 C71	CAP MONO 22PF 200V 10% NPO	06129800
C68	CAP MONO 1000PF 50V 10% NPO	06130300
C69 C70	CAP MONO 10PF 10% 100V	06128800
C79 C80	CAP MONO 33PF	06128500
IC2	IC COMP VIDEO INPUT PROCESSOR	13343400
IC3	IC DIGITAL VIDEO ENCODER	13343500
IC4	IC OCTAL DAR TRNS ARRY W/DIODE	13336000
IC5	IC PROGRAMMED VRSION OF 133406	13344800
IC5	SOCKET IC PLCC 84 PIN	17817400
IC9 IC10 IC12 IC13	IC 100MA I FEEDBACK AMP	13328600
IC15	IC REGULATOR 3.3V LOW DROPOUT	13339300
IC18	IC DISPLAY ON-SCREEN	13335400
IC22	IC SHFT REG SER-PAR	13318600
J1 J2 J3	JACK RCA 3X1 R B G 14MM	11778200
J4 J8	CONN MALE 6 POS FRICTION LOCK	11721800
J5	CONN HEADER 10 POS	11733300
J6 J9	CONN 2 PIN MALE	11721300
J7	CONN 4 PIN	11721500
J20	CONN MALE 10 POS RIGHT ANGLE	11726000
J21	CONN MALE 12 POS ASSY	11722000
K1 K2 K3 K4 K5 K6 K7 K8 K9	RELAY REED FORM 1C 5V 125 OHM	08705600
L3 L4 L5 L6 L8 L9	CHOCHE RF 3.3UH 10%	12222900
L7	CHOCHE 8.2UF 5% CC	12223500
L18 L19 L20 L21 L22 L23	INDUCTOR 2.7UH	12235500
R1 R2 R65 R66	RES MF 4.75K 1% 1/4W	14409700
R5	RES NETWORK 8X330 ISO	14426300
R9 R10 R11 R53 R54 R70 R71 R72 R75	RES MF 10K 1% 1/4W	14405300
R14 R15 R26 R63 R73 R74 R76 R77 R81	RES MF 806 OHM 1% 1/4W	14408900
R20 R22 R23 R24 R25 R27 R78 R79 R80	RES MF 75 OHM 1% 1/4W	14444400
R28	RES MF 4.75 OHM 1/4W 1%	14446900
R29 R33	RES MF 22.1 OHM 1% 1/4W	14416000
R30 R31 R32 R55	RES MF 10 OHM 1% 1/4W	14415700
R35 R37 R39 R41 R43 R45	RES MF 18.2 OHM 1/4W 1%	14447000
R36 R38 R40 R42 R44 R46	RES MF 56.2 OHM 1/4W 1%	14447100
R50	RES MF 1.1K 1% 1/4W	14409100
R60 R61 R62	RES FP 10 OHM 5% 1/4W	13702500
R82 R83	RES MF 806 OHM 1% 1/4W	14408900
Y1	CRYSTAL 6MHZ	18005000
Y2	CRYSTAL 27MHZ 3RD HARMONIC	18005200
Y3	CRYSTAL 24.576MHZ	18004500

TUNER/RAA1 SECTION PCB 049084

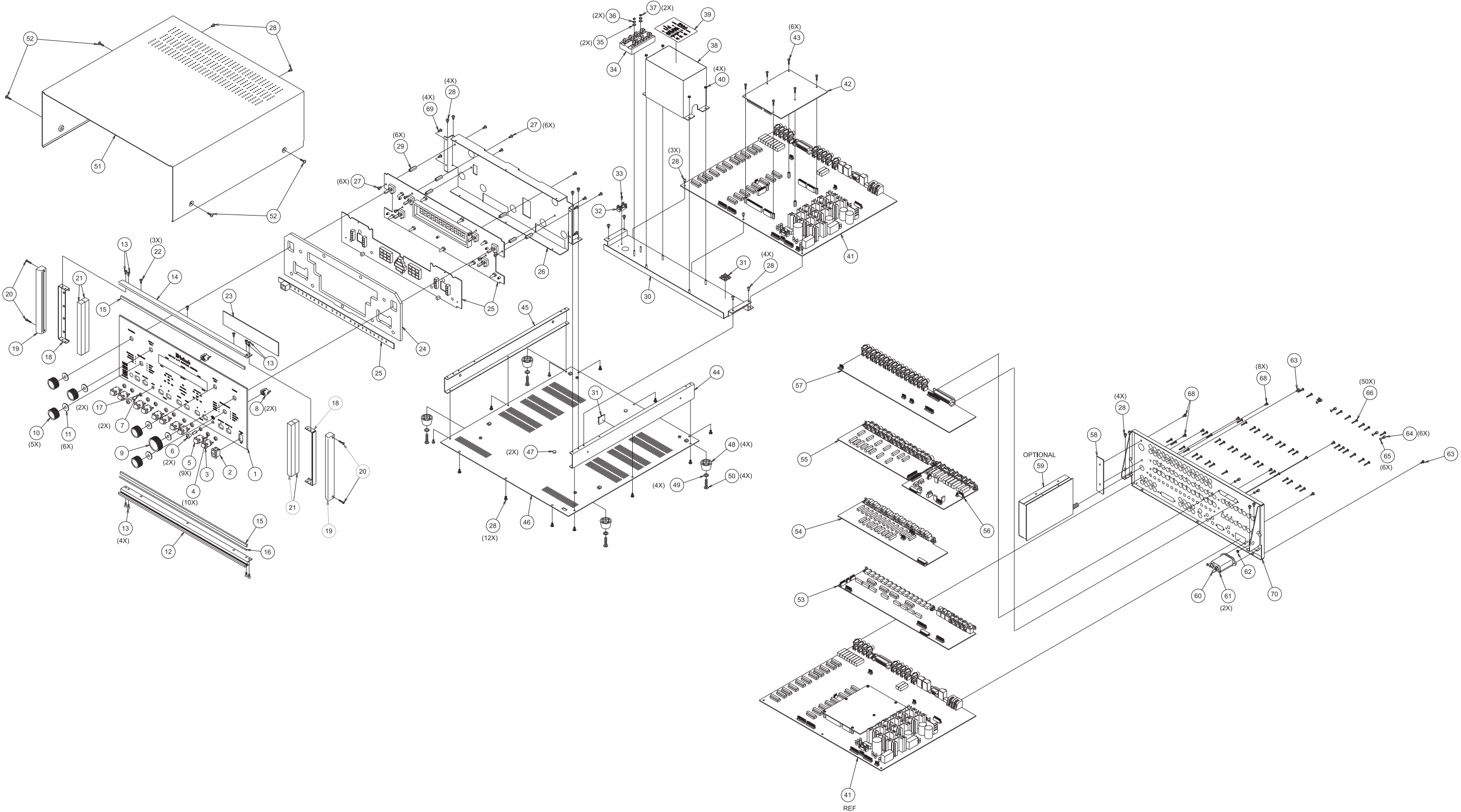
RefNo.	Description	Part No.
C1 C4 C7 C11 C19 C20 C26 C27 C29 C30	MONO CAP 0.1MF 20% 50V	06127700
C2 C6 C12 C14 C17	MONO CAP 100PF 5% 100V NPO	06127500
C3 C9 C22 C32	MONO CAP 10PF 10% 100V	06128800
C5 C23 C25 C31 C74 C103	MONO CAP .0022UF 10% 50V RADI	06128700
C8 C24	22PF 10% 100V CAPACITOR	06128200
C10 C13 C15 C16 C18 C28 C33 C75	MONO CAP .047UF 10% 50V RADIA	06128600
C21	360PF 5% 100V	06125700

C34 C102 C104 C105	C35	C36 C40	C37 C41 C42 C43	C38	C39	C45 C46 C47 C48 C49 C51 C52 C54 C55	C50 C70 C71 C72	C53	C56 C67 C68 C69	C57 C58	C59 C60 C62 C63	C61 C64 C65 C106	C73	C76 C77 C78 C79	C80 C81	C82 C83	D1 D2 D3 D4 (D5 D6 D7 D8) ALL 8 DIODES USED ON JAPANESE VERSION	D10 D102 D103 D104	D11 D12 D101	FN1 FN2 FN3	FN6	IC1	IC2	IC3	IC4 IC5	IC6	J1	J2	J3	J4	J5	J6	J101-	L1	L2 L3	L4 L5	Q1	Q2 Q9	Q3 Q5 Q6 Q7 Q10 Q11 Q12	Q8 Q101	Q102	R1 R11 R15 R19 R29 R41 R44 R50 R64	R3 R5 R7 R30 R38	R4 R14 R21 R60	R6 R20 R40	R8 R9 R13 R18	R10 R25	R16 R42	R17 R52 R55 R58	R22 R24 R33 R35 R69	R23 R26	R27 R28	R32 R43 R45 R53	R39 R46	R47 R48	R51 R74	R54 R65	R56 R61 R76	R63	R67 R104	R68 R75 R101 R102 R105	R70	R71 R73	R103	T7	T8	T9	T10	T11 T101	T12	Y1	Y2
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MONO CAP 0.1MF 20% 50V	06127700
DISC CAP 1.8PF +/- .25PF NPO	06100200
M POLY CAP .015UF 5% 63V DC	06431400
M POLY CAP .033UF 5% 63V DC	06431800
M POLY CAP .047UF 5% 63V DC	06432000
M CAP .470PF 5% 100V	06125600
ELECT CAP 10MF 50V AMMO PACK	06644500
DISC CAP 47UF 50V MONOLITHIC	06124900
ELECT CAP 47MF 35V AMMO PACK	06644600
ELECT CAP 100MF 16V AMMO PACK	06644700
CAP ELECT 1UF 10% 50V	06626900
TRIM CAP 2-10PF	06002700
3-27PF TRIMMER CAPACITOR	06002900
M POLY CAP 0.22UF 5%	06432900
220PF 5% 100V NPO	06127300
M POLY CAP .022UF 5% 63V DC	06431600
M POLY CAP .0068MF 10% 63 VDC	06431000
DIODE TUNING	07012200

SILICONE DIODE 1N4148 T&R	07004700
TUNING DIODE	07012500
FILTER CERAMIC 10.7MHZ	18005600
FILTER 450KHZ	18005500
LA1175 FM FRONT END	13323100
AM-FM MPX TUNER IC	13338100
IC DIRECT PLL FREQ SYNTHESIZER	13327000
IC OPERATIONAL AMPLIFIER	13318900
MC78L08ACP +8V REG	13314700
GOLD F CONNECTOR RIGHT ANGLE	11766100
DIN CONN 7-PIN	11738300
MALE CONN 6 PIN RT ANGLE	11722300
CONN RT ANGLE 7 POS	11731900
4 PIN RT ANGLE	11724000
2-PIN MALE CONNECTOR	11721300
HEADER 5 PIN	11766700
RF CHOKE 3.3YH 10%	12222900
MIXER COIL	12225000
ANT COIL	12224900
#3SK114Y (Q1) D MOS FET	13225600
TRANSISTOR PNP SI MPS4126	13222400
TRANSISTOR NPN MPS4124	13222300
TRANSISTOR 1-4V PNC OFF 250 OH	13222000
TRANSISTOR RF FET J-310 FET	13217800
RES CF 10K 5% 1/4W	14107200
RES CF 1.0K 5% 1/4W	14104900
RES CF 100 5% 1/3W	14102500
RES CF 15K 5% 1/4W	14107600
RES CF 47K 5% 1/4W	14108800
METAL FILM RES 2.87K 1% 1/4W	14414200
RES CF 2.2M 5% 1/4W	14112400
RES CF 22K 5% 1/4W	14108000
RES CF 4.7K 5% 1/4W	14106400
RES CF 330 5% 1/4W	14103700
RES CF 680K 5% 1/4W	14111600
METAL FILM RES 4.75K 1% 1/4W	14409700
RES CF 2.2K 5% 1/4W	14105700
METAL FILM RES 2.67K 1% 1/4W	14412100
RES CF 47 5% 1/4W	14115200
RES CF 220 5% 1/4W	14103300
RES CF 100K 5% 1/4W	14109600
RES CF 3.3K 5% 1/4W	14106000
RES CF 22 5% 1/4W	14114400
RES CF 10K 5% 1/4W	14107200
TRIMPOT 22K	13440600
POTENTIOMETER 10K OHM	13441400
RES CF 470 5% 1/4W	14104100
TRANSFORMER (MATCHING)	16211300
TRANSFORMER QUAD DET SEC	16210300
TRANSFORMER QUAD DET PRIM	16210200
10.7MHZ MIXER TRANSFORMER	16211400
AM OSC COIL	16211500
AM RF TRANSFORMER	16211700
CRYSTAL 7.2MHZ	18003600
CERAMIC RESONATOR 450KHZ	18004600

MX134 EXPLODED VIEW



EXPLODED VIEW PARTS LIST

RefNo.	Part No.	Description
1	016453	GLASS
2	148073	SWITCH DPDT ROCKER
3	017531	PUSHBUTTON ASSY RED
4	078033	O-RING
5	017517	PUSHBUTTON ASSY BLK
6	017739	BEZEL PUSHBUTTON
7	017852	PUSHBUTTON BLK
8	017741	RECEPTACLE PUSHBUTTON
9	049637	ASSY KNOB 34 METRIC NO INDEX
10	049724	ASSY KNOB 25.5 METRIC NO INDEX
11	104017	WASHER FELT BLK 3/4 X 1/4 X 1/16
12	018588	EXTRUSION BOTTOM
13	100149	SCREW TC 6-32 X 1/4 PH FL U/C
14	018587	EXTRUSION TOP
15	094016	TAPE FOAM 1/4 X 1/8
16	098113	DIAL CORD
17	078032	O-RING
18	004899	BRACKET EXTRUSION
19	018612	ENDCAP 7"
20	101042	SCREW TS 4-40 X 1/2 SLOT FILLISTER
21	094360	TAPE FOAM 1/2 X 1/2
22	101172	SCREW TC 6-32 X 1/4 PH FL U/C
23	017738	PLEXI FILTER
24	017856	PLEXIGLAS PANEL
25	049625	DISPLAY PCB ASSY
26	005171	SUBPANEL
27	100157	SCREW MACH 6-32 X 1/4 PHIL PAN
28	101054	SCREW TAPTITE 6-32 X 1/4 PH PN BLK
29	021117	STANDOFF 1/4 X 3/4
30	005178	TRAY CHASSIS
31	017518	HOLDER CABLE TIE
32	178160	HOLDER FUSE
33	100284	SCREW SEMS 2-56 X 1/4 PHIL PAN
34	074091	TERMINAL BLOCK AC
35	104001	WASHER FLAT STEEL 4 X 9/32 X .025
36	104004	WASHER LOCK 5 X .255 INT STAR
37	102022	NUT MACH 4-40 X 3/16 X 1/16
38	049104	POTTED TRANSFORMER
39	126400	DECAL TRANSFORMER
40	102045	NUT KEP 6-32 SPECIAL
41	049627	SURROUND PCB ASSY
42	320103	MODULE DSP DECODER
43	100260	SCREW MACH 4-40 X 1/4 PHIL PAN
44	004859	PANEL SIDE RIGHT
45	004858	PANEL SIDE LEFT
46	005176	BOTTOM COVER
47	017091	BUMPER BUTTON
48	017218	FOOT PLASTIC BLACK
49	104080	WASHER FLAT #10 CLEAR ZINC
50	100159	SCREW 10-32 X 3/4 PH PN BLK
51	004863	COVER TOP
52	101078	SCREW TAP 8-32 X 5/16 PH PAN BLK
53	049622	DATA PCB ASSY
54	049624	S-VIDEO PCB ASSY
55	049623	VIDEO PCB ASSY
56	049706	COMPONENT VIDEO PCB ASSY
57	049621	INPUT PCB ASSY
58	005167	REAR PANEL PLUG
59	049082	TM1 TUNER MODULE (OPTIONAL)
60	117755	RECEPTACLE INPUT & LINE FILTER
61	102001	NUT KEP 4-40 CADMIUM PLATE
62	102020	NUT MACH 6-32 SELF-LOCK
63	101109	SCREW TAP 6-32 X 5/16 PH PN BLK
64	112015	STANDOFF
65	104142	WASHER LOCK 2.5mm INT STAR ZINC
66	101114	SCREW SM 4-24 X 1/2 PH PN TYPE A
67		
68	100250	SEMS MS 6-32 X 1/4 PHIL PAN
69	104007	LK WASH: 6 X .288 INT STAR

NOTES

REPACKING INSTRUCTION

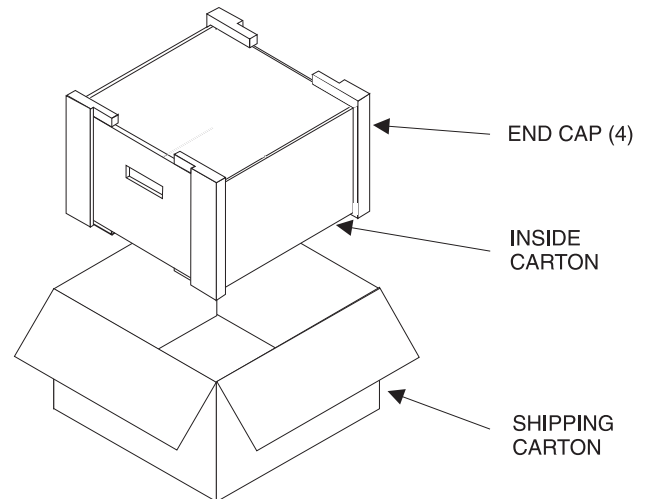
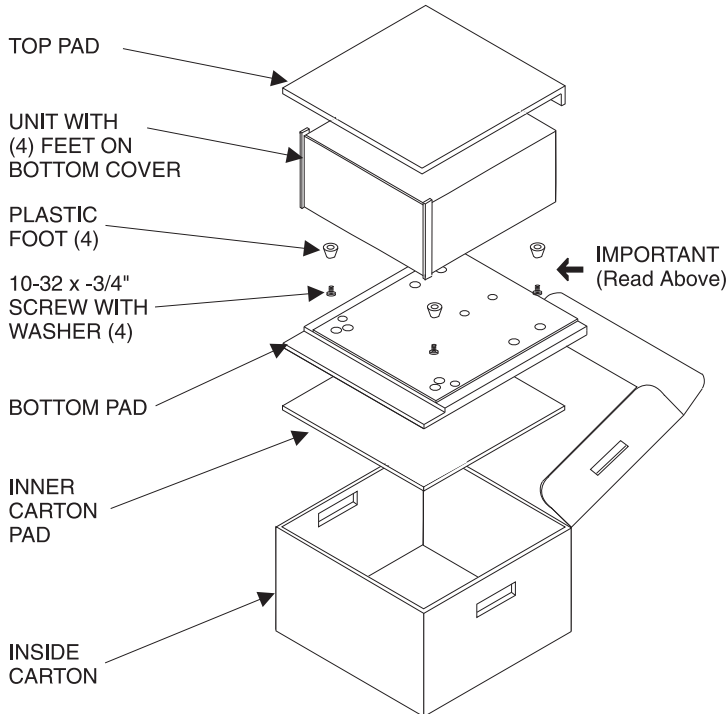
In the event it is necessary to repack the unit for shipment, the unit must be packed exactly as shown below.

IMPORTANT - The four plastic feet must be attached to the bottom of the unit so they will locate in the four holes of the bottom pad. Failure to do this will result in shipping damage.

If a shipping carton or any of the interior parts is needed, please call or write the Customer Service Department of McIntosh Laboratory. Order parts from the accompanying list by part number.

Use the original shipping carton and interior parts only if they are in good serviceable condition.

Qty.	Part No.	Description
1	033888	Shipping carton only
4	033887	Foam end cap
1	033697	Inside carton only
1	033725	Top pad
1	034008/ 034194	Bottom pad
1	034037	Inner carton pad
4	017218	Plastic foot
4	100159	#10-32 x 3/4" Machine screw
4	104083	#10 x 7/16" Flat washer



MX134

A/V CONTROL CENTER

SERVICE MANUAL



The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated, who reserve the right to improve design without notice. Because of the constant upgrading of McIntosh products' circuitry and components, the Company cannot insure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.