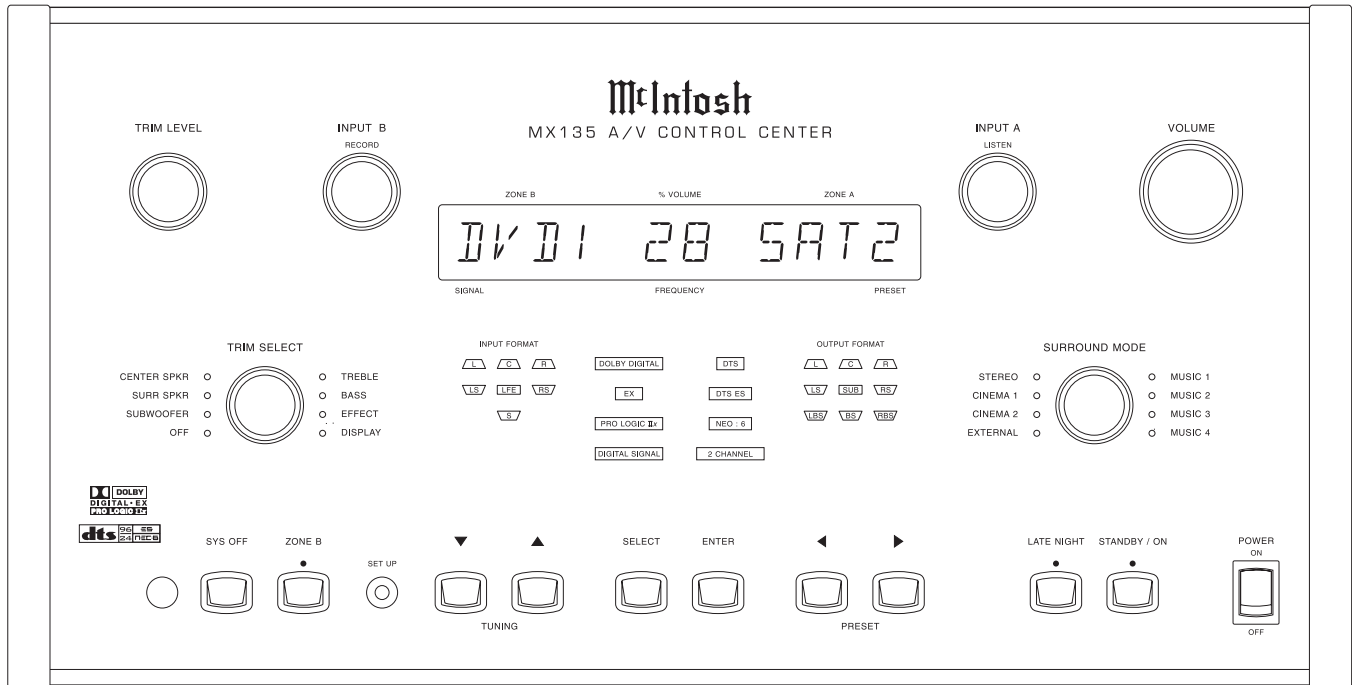




MX135

A/V CONTROL CENTER



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SERVICE MANUAL

PERFORMANCE SPECIFICATIONS

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 IIx: (*Movie Processing Mode*)

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

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

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

FM Tuner (TM1 option)

Useable Sensitivity

14dBm which is 1.4uV across 75 ohms

50dB Quieting Sensitivity

Mono: 19dBm which is 2.4uV across 75 ohms

Stereo: 35dBm which is 15uV 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

PERFORMANCE SPECIFICATIONS *con't*

AM Tuner (TM1 option)

Sensitivity

20uV 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

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 MX135 for the correct voltage.


Overall Dimensions

Front Panel: 17-1/2 inches (44.5cm) wide, 9-7/16 inches (23.97cm) high. Depth behind front mounting panel is 19 inches (48.26cm) including clearance for connectors. Panel clearance required in front of mounting panel is 1-1/8 inches (2.9cm).

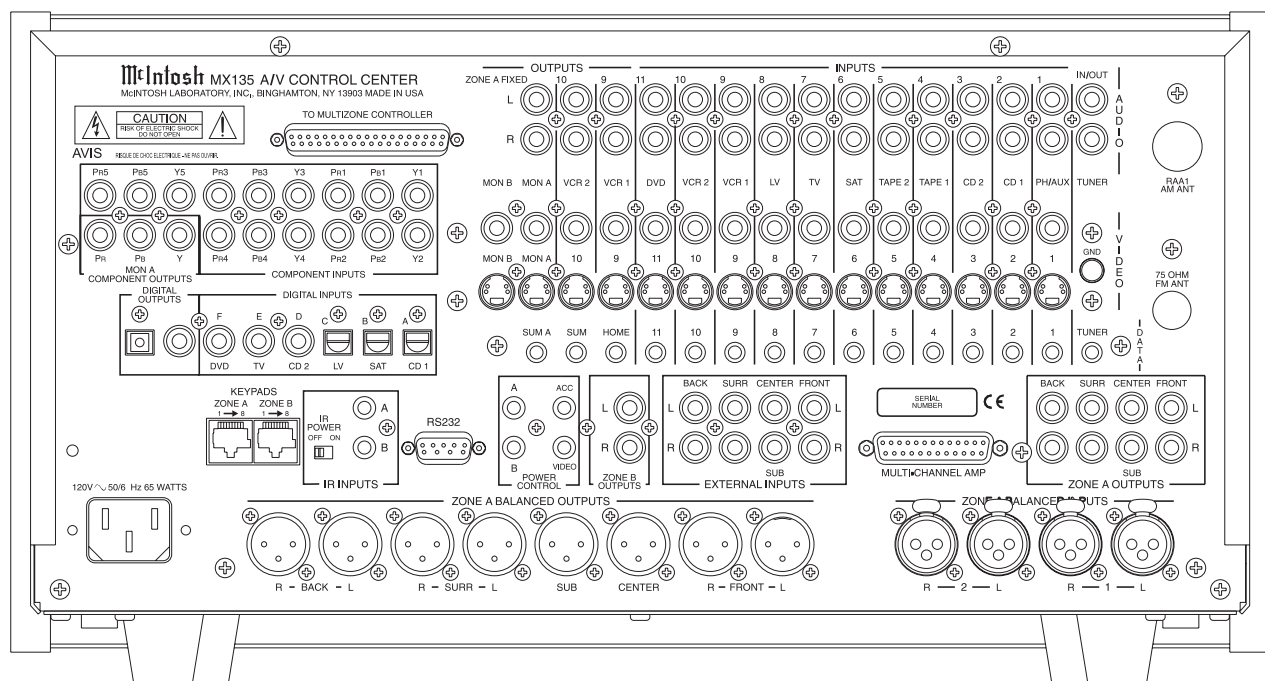
Weight

31.5 pounds (14.3kg) net, 55 pounds (25kg) shipping weight

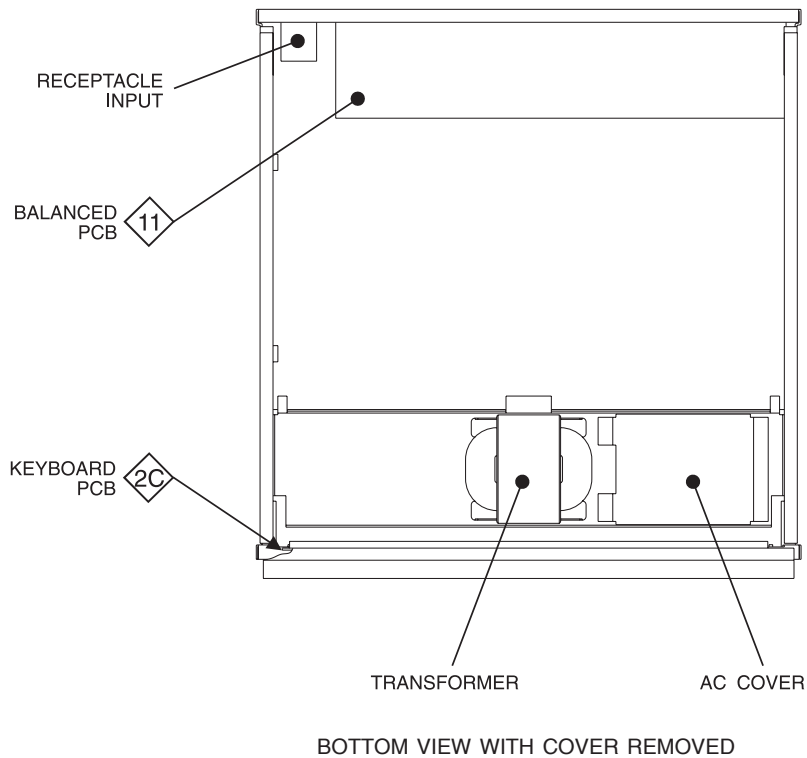
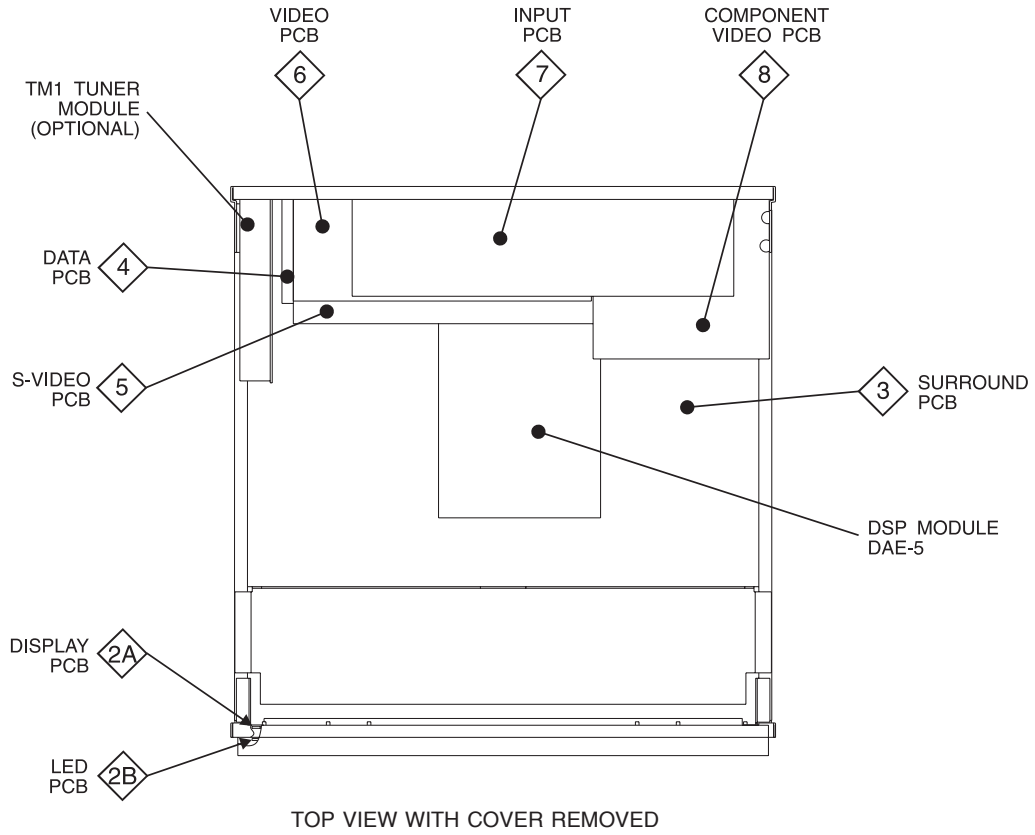
NOTES

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.
3. On PC board drawings, Square pad indicates:
 - a. Polarized Capacitors - Positive
 - b. Diodes - Cathode
 - c. Others - Pin 1
4. **WARNING**
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.

REAR PANEL

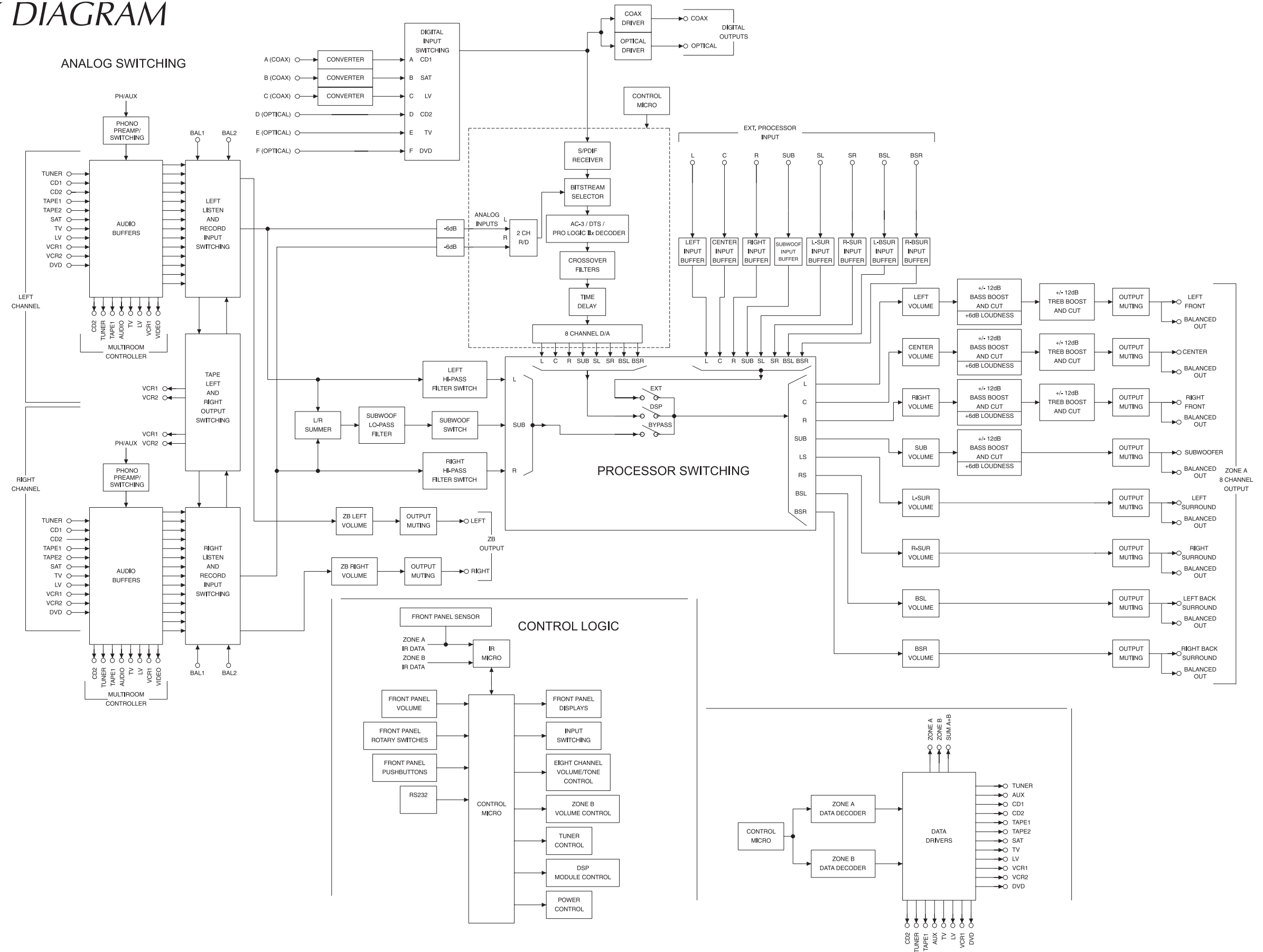


SECTION LOCATIONS

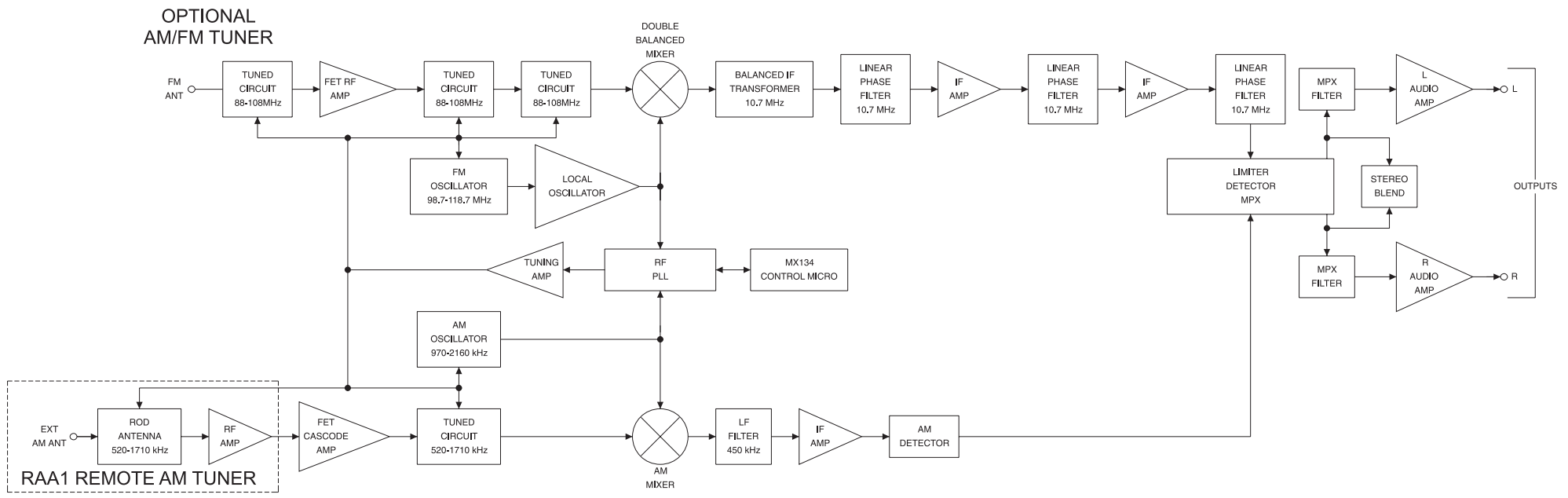
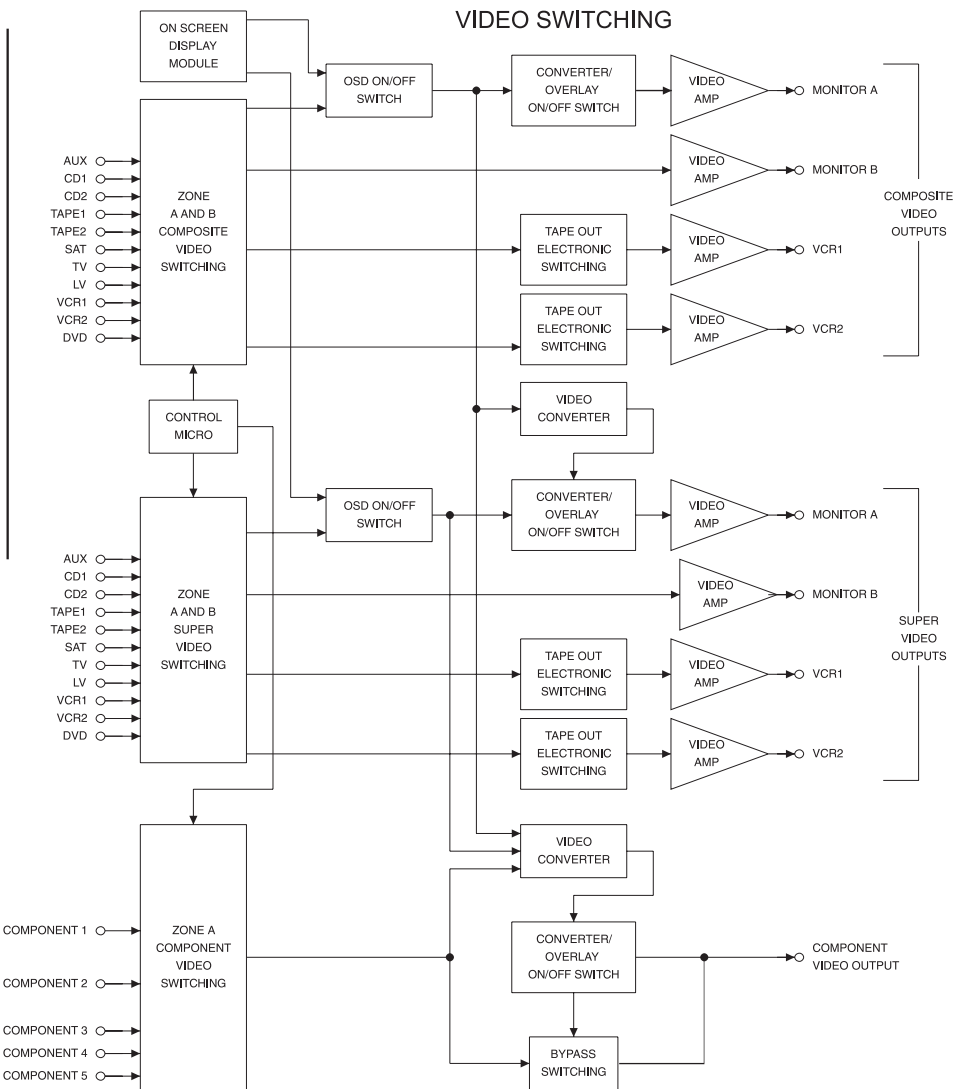
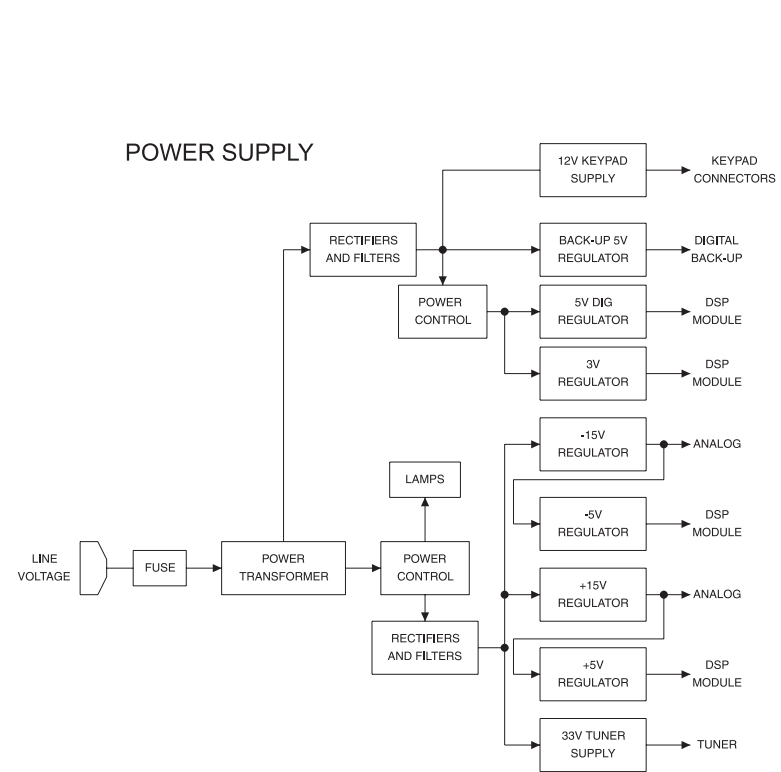


BLOCK DIAGRAM

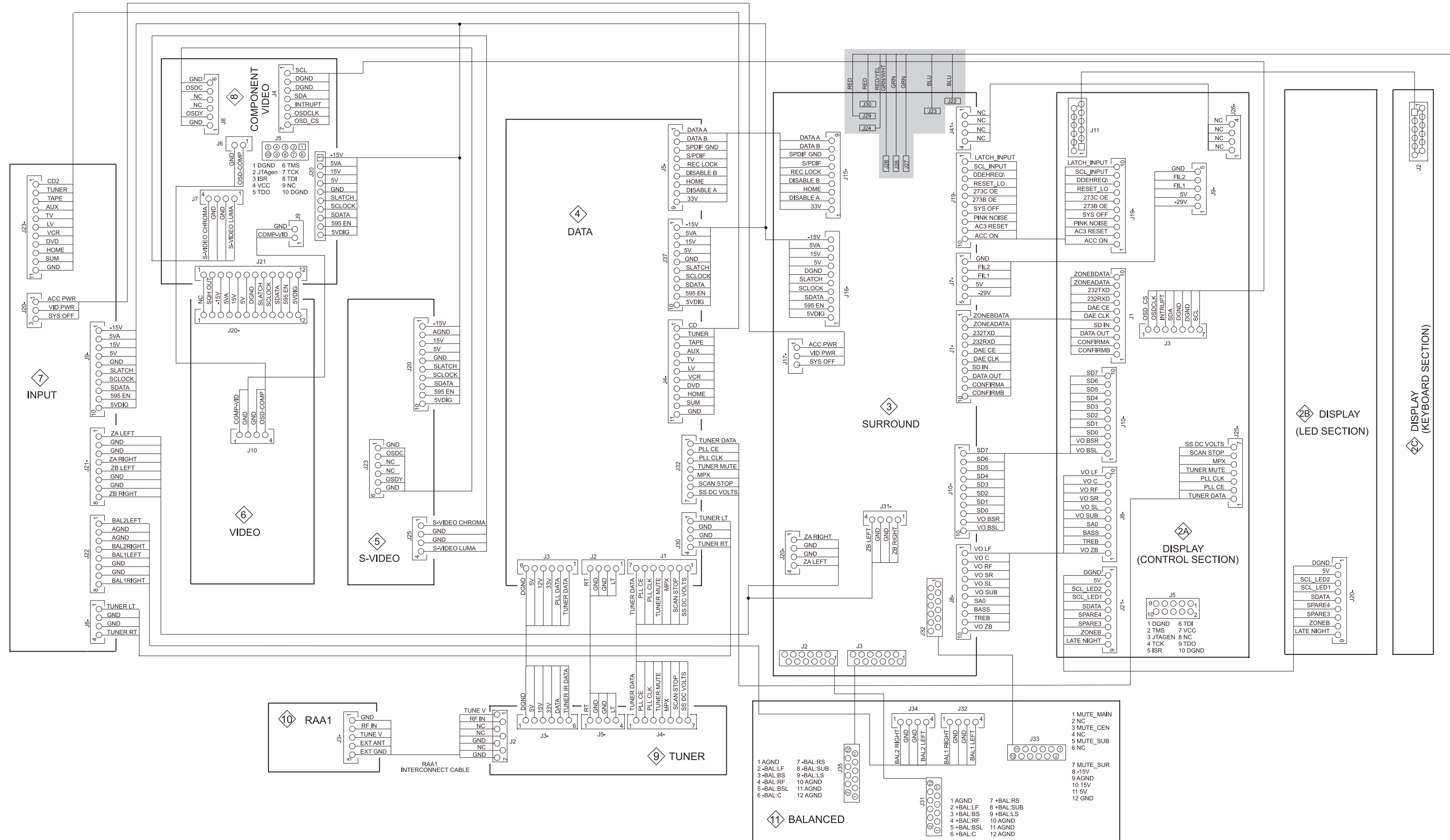
MX135



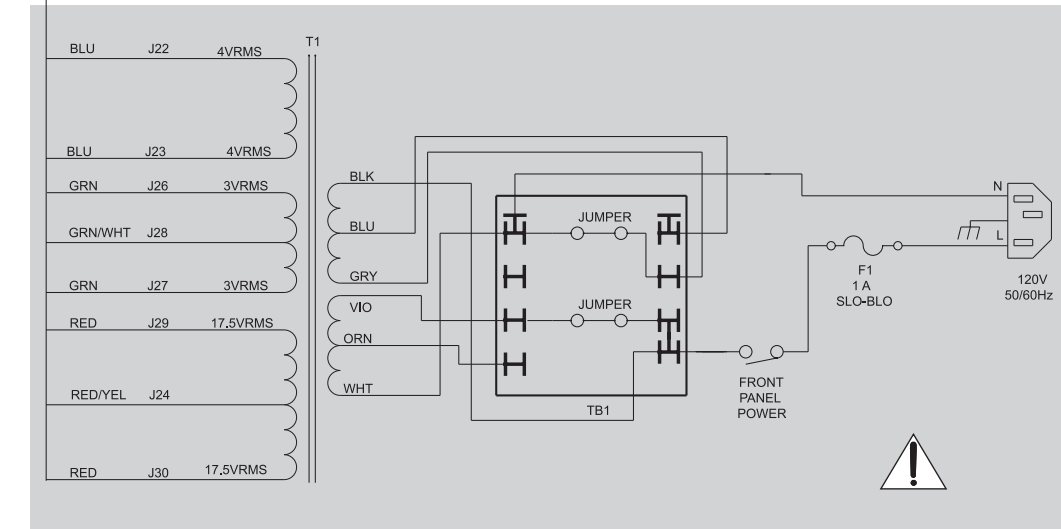
BLOCK DIAGRAM con't

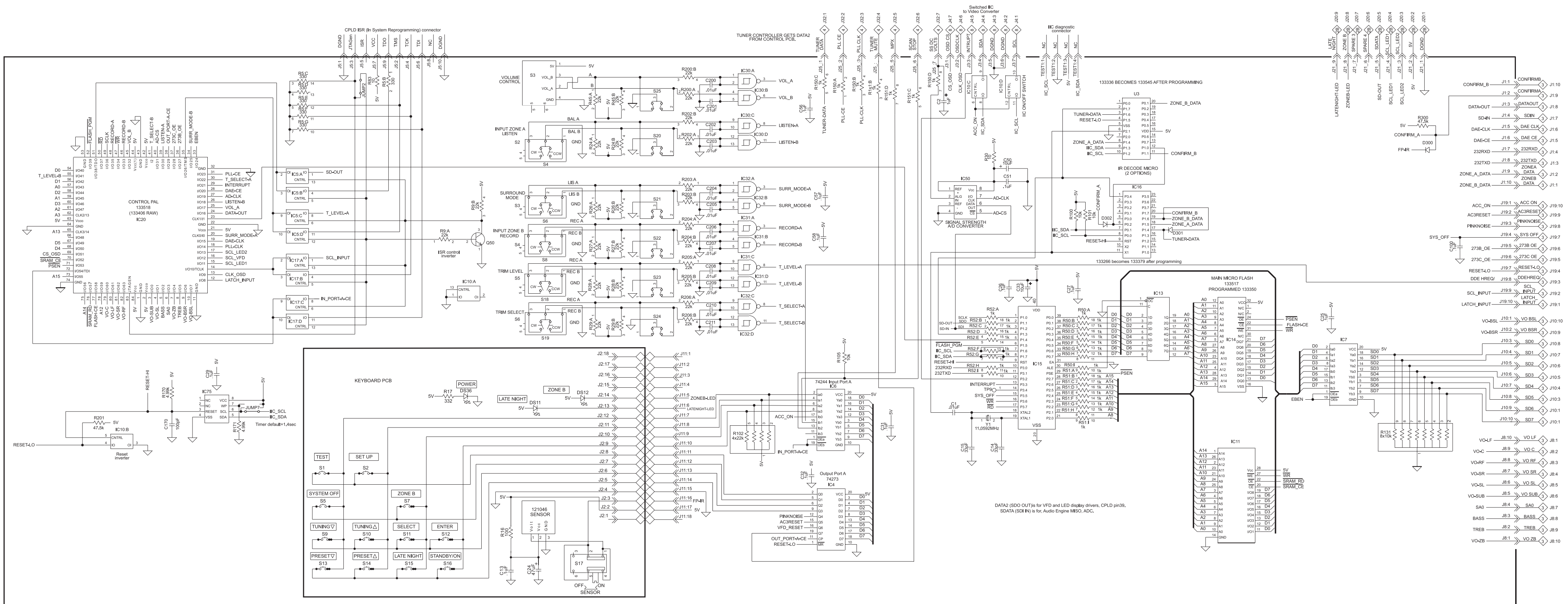


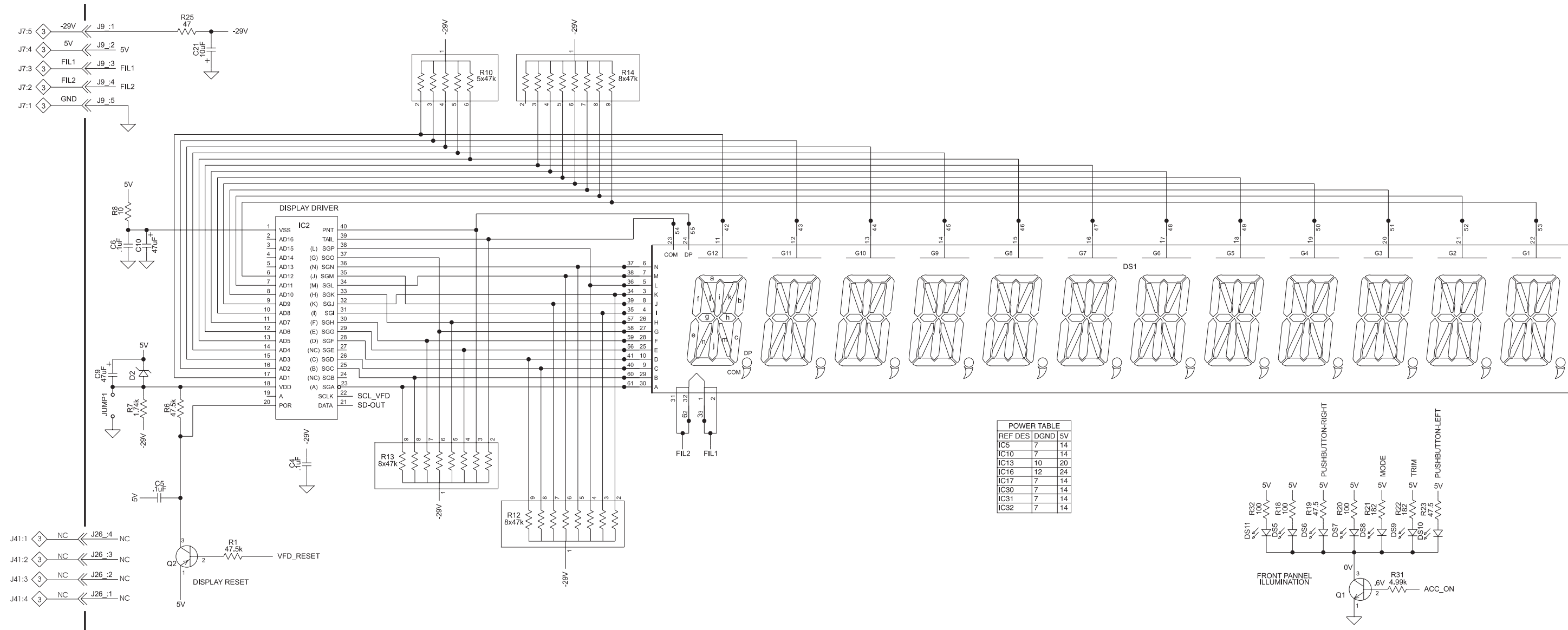
1 INTERCONNECT

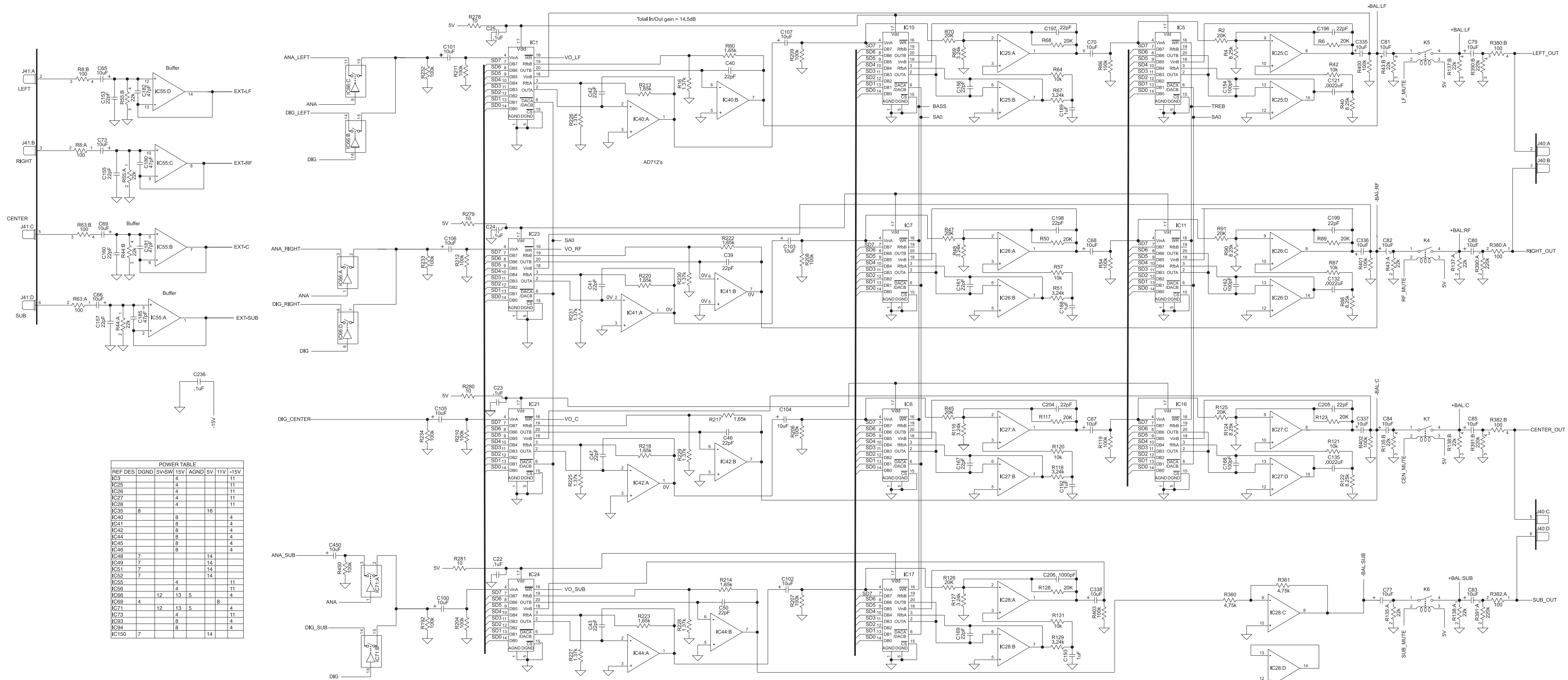


WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.



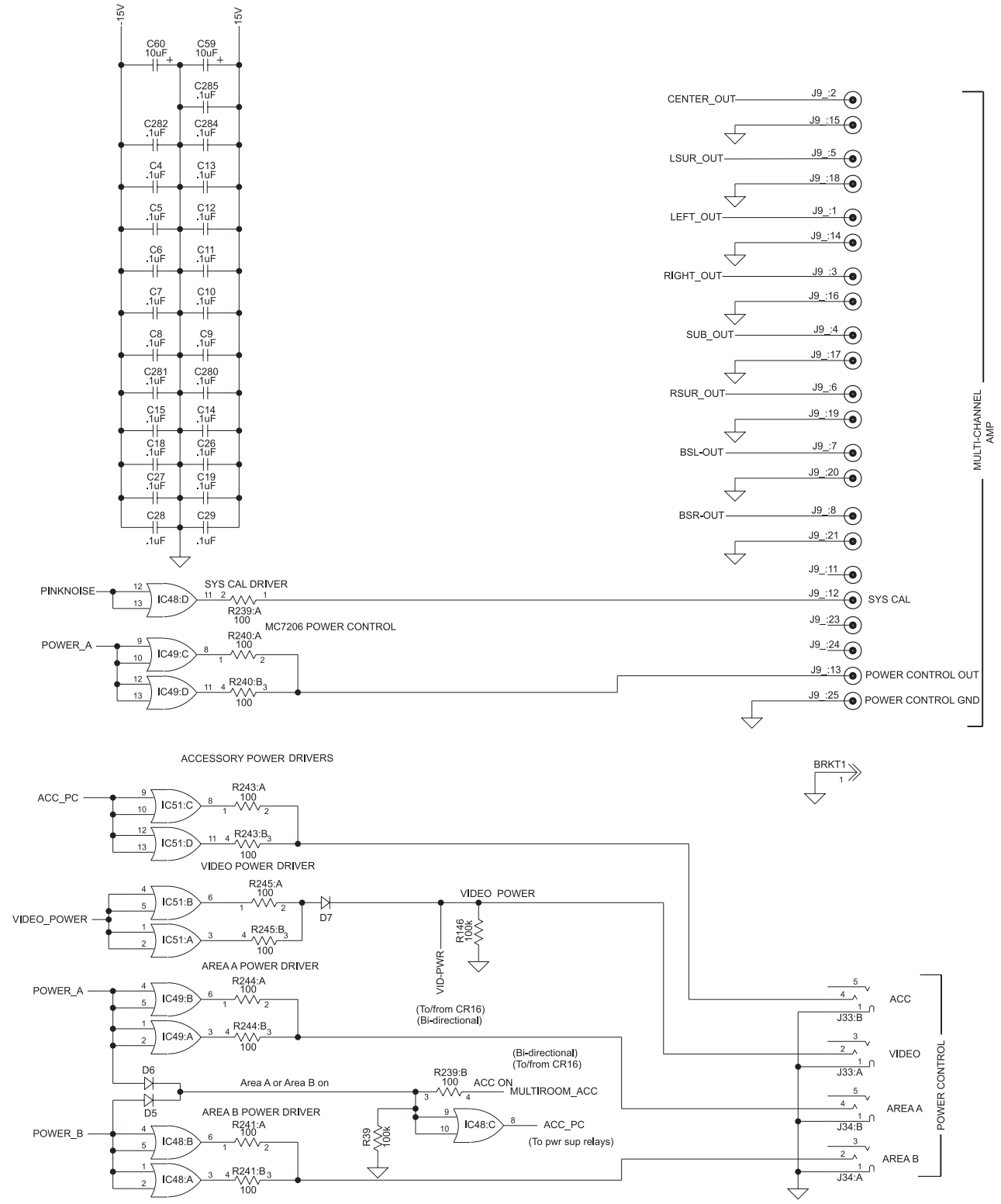
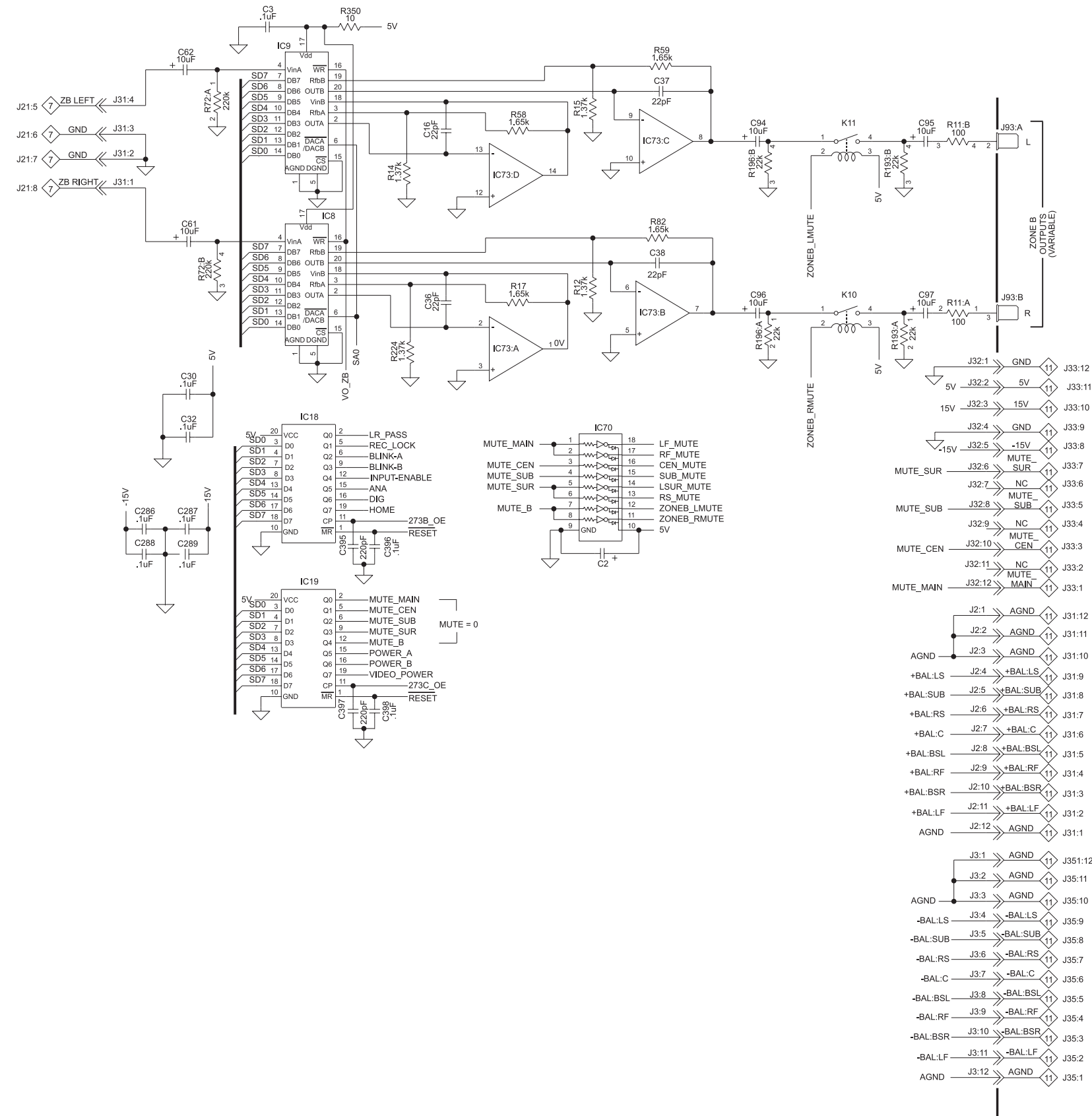


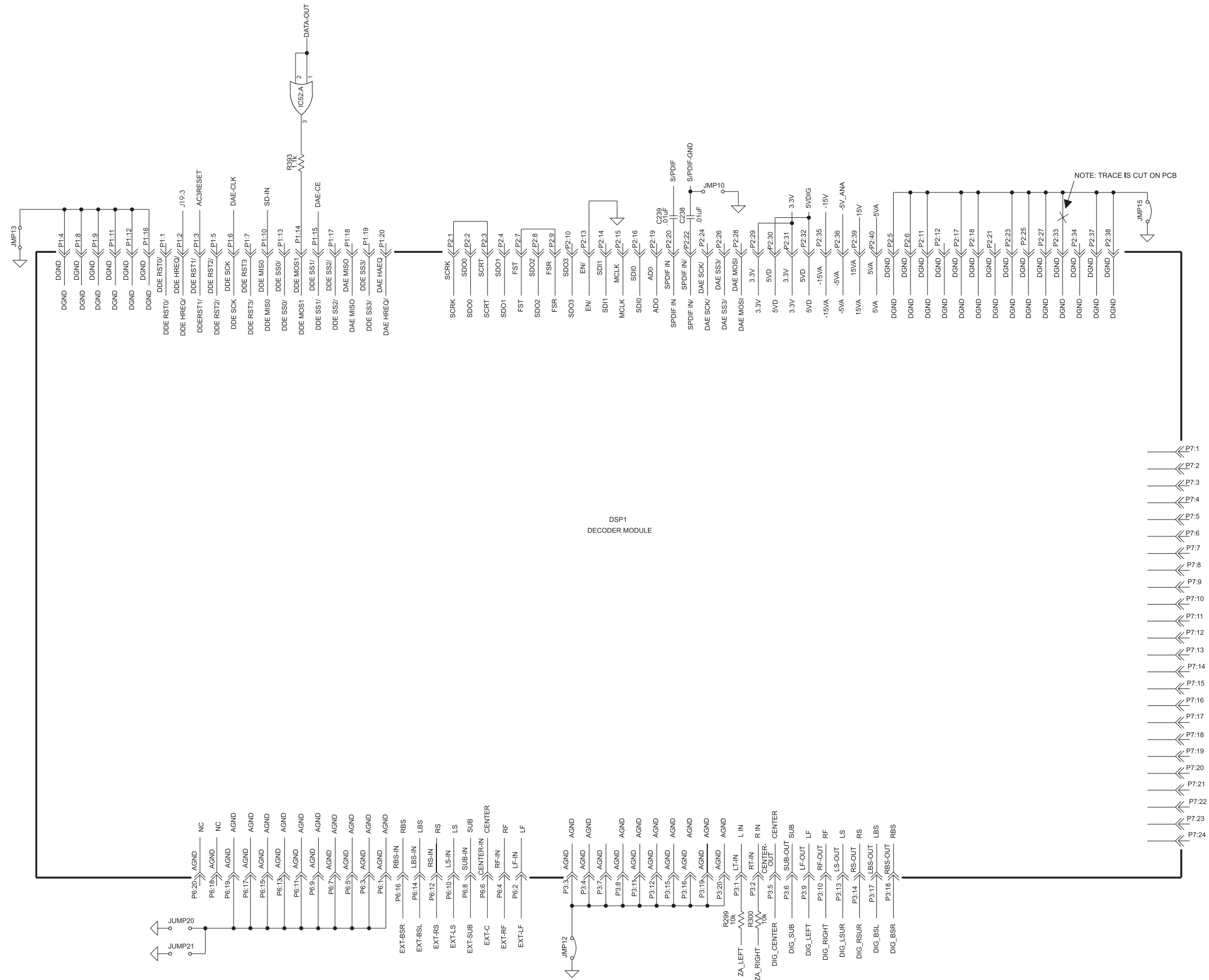




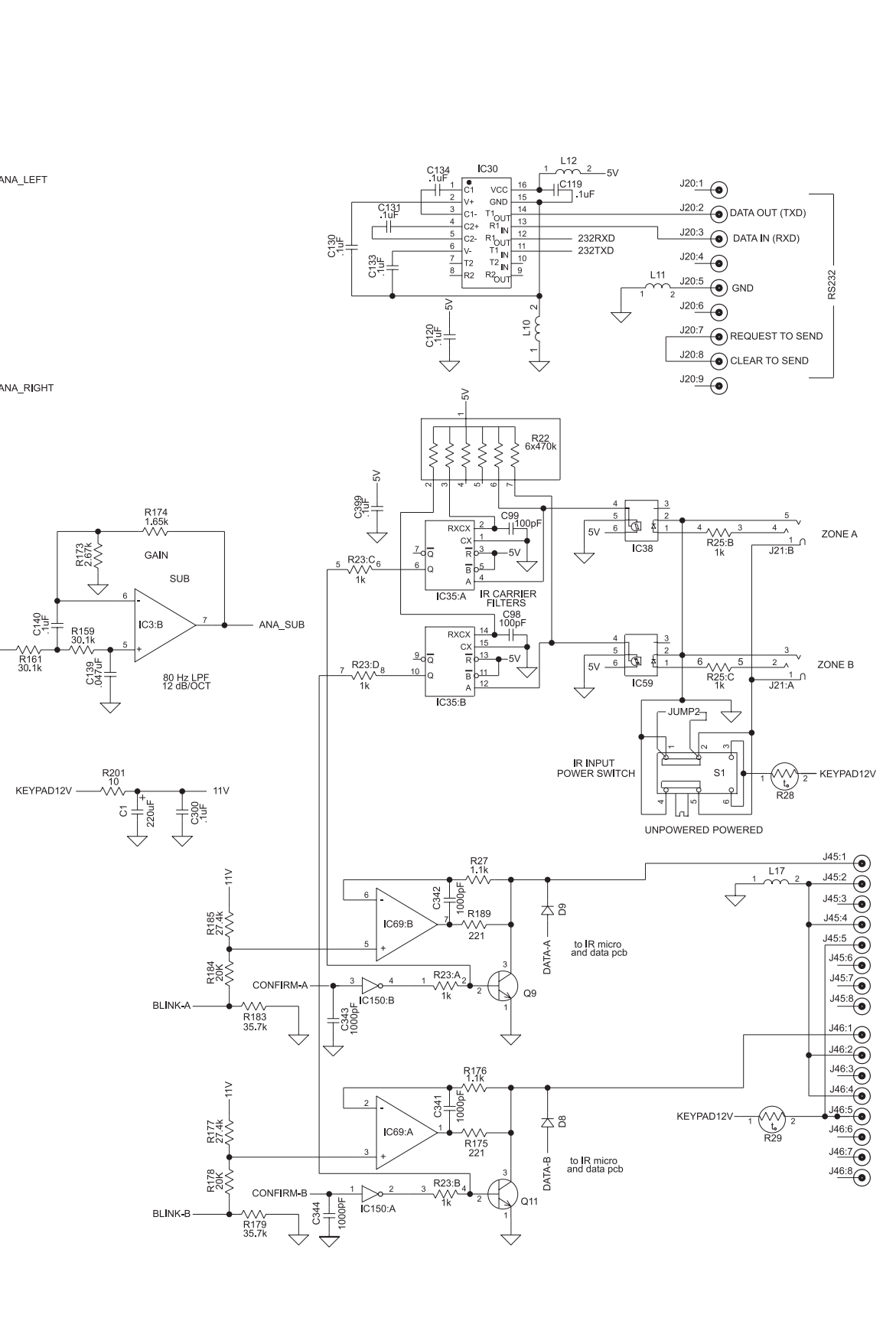
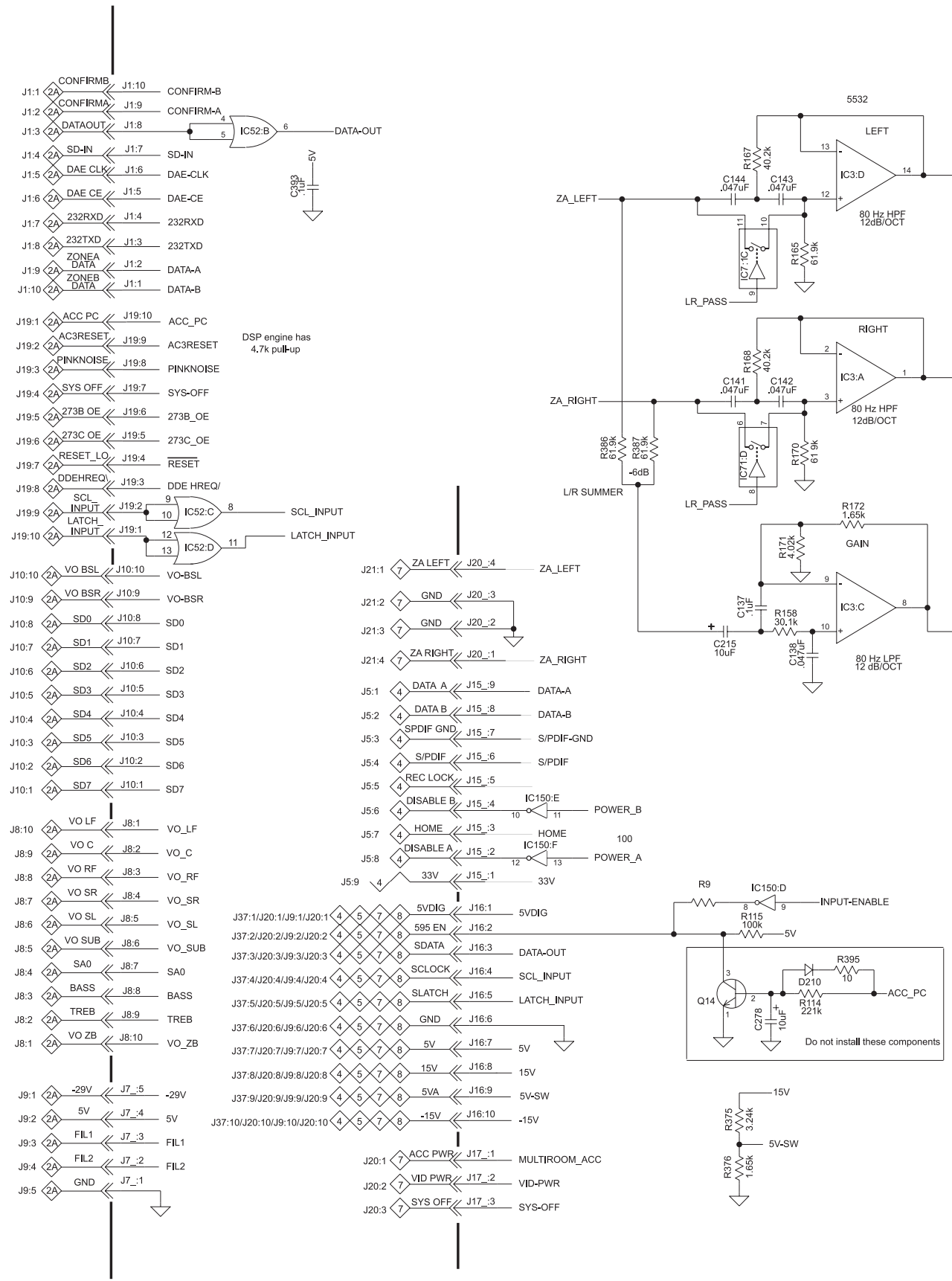
POWER TABLE

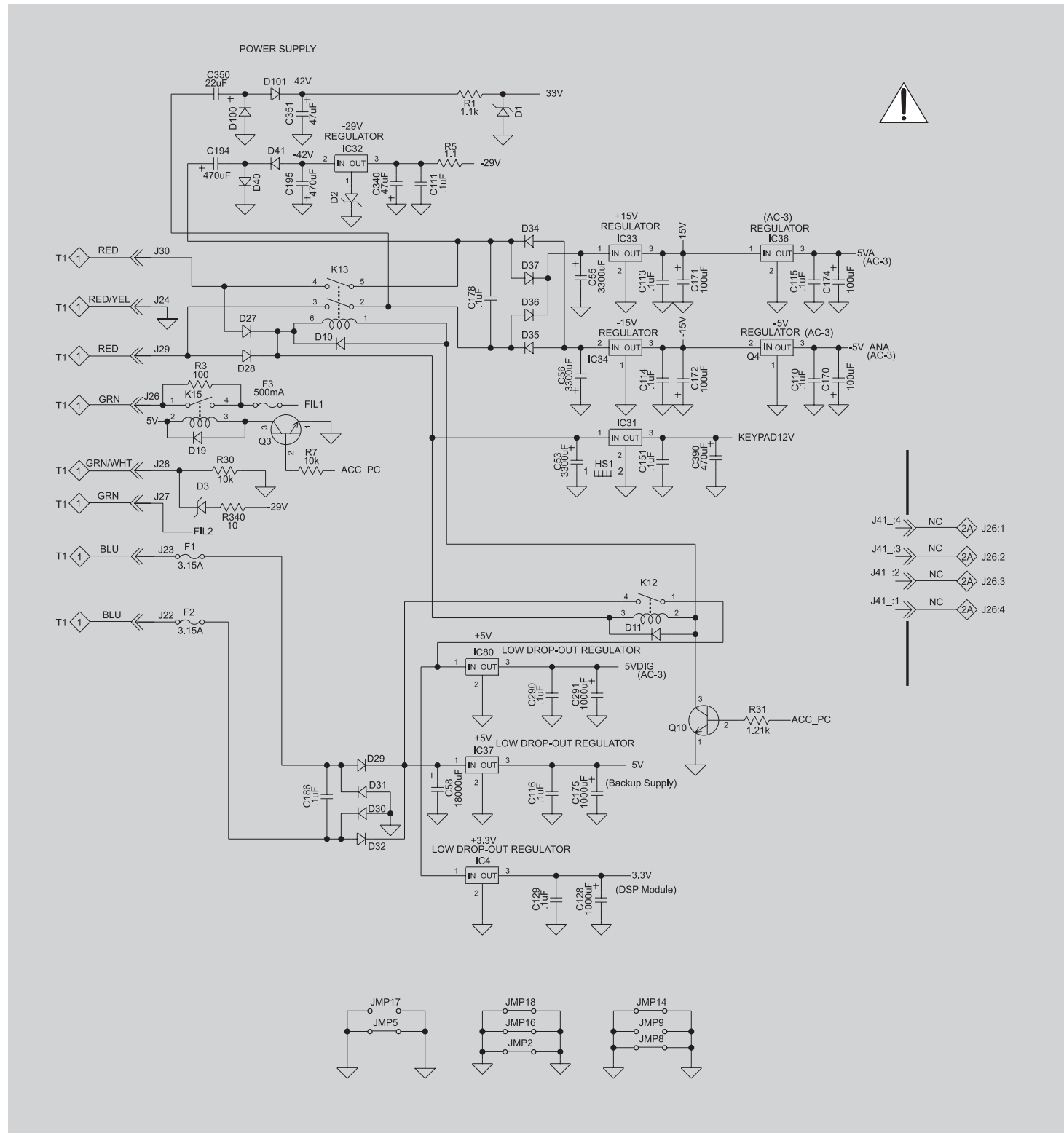
REF DES	DGND	5V-SW	15V	AGND	5V	11V	-15V
IC3		4					11
IC25		4					11
IC26		4					11
IC27		4					11
IC28		4					11
IC35	8					16	
IC40							4
IC41							4
IC42							4
IC44							4
IC45							4
IC46							4
IC48	7						14
IC49	7						14
IC51	7						14
IC52	7						14
IC55			4				11
IC56			4				11
IC66	12	13	5				4
IC69	4						8
IC71	12	13	5				4
IC73			4				11
IC93			8				4
IC94			8				4
IC150	7						14





3 SURROUND 050037 SH 5 OF 6

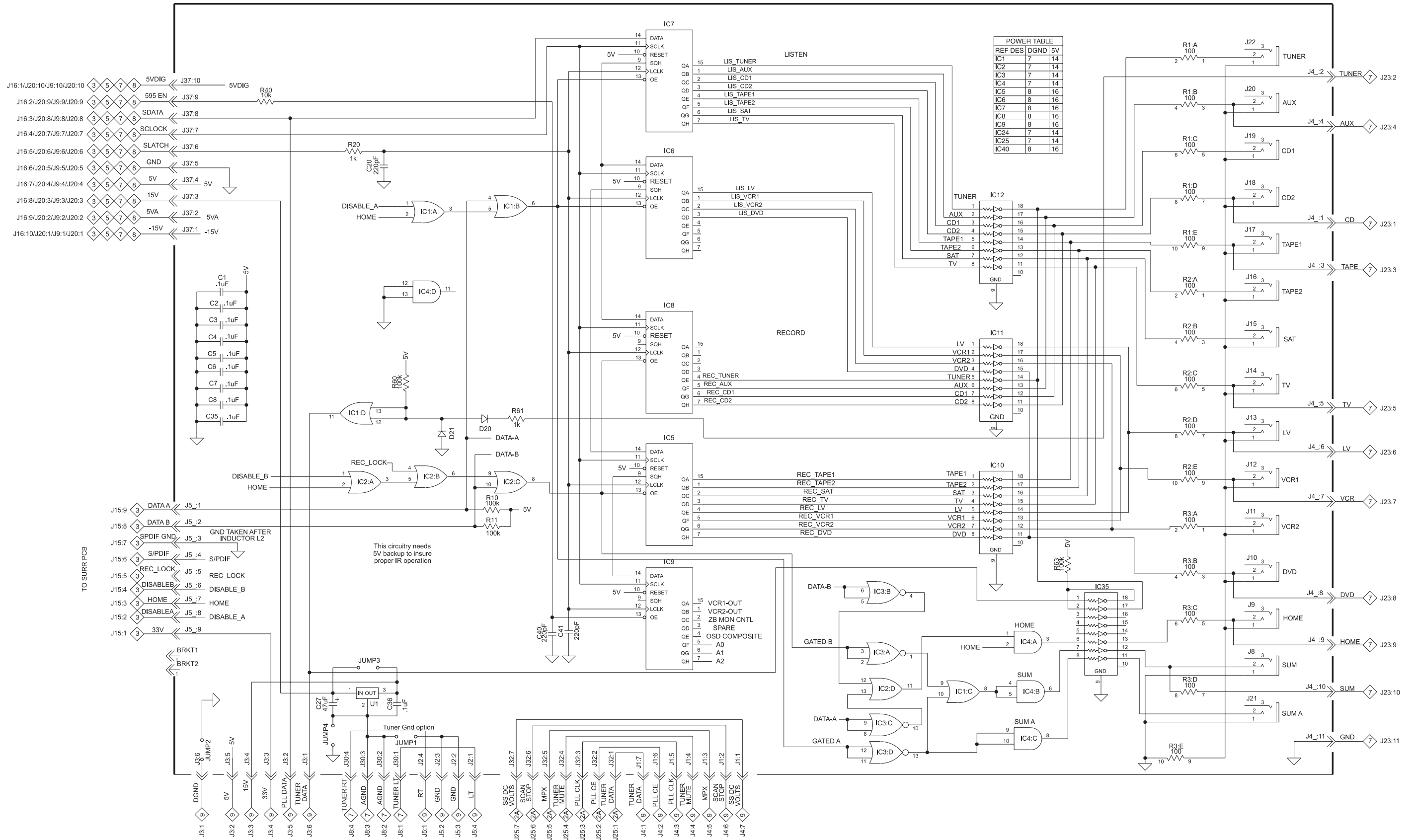


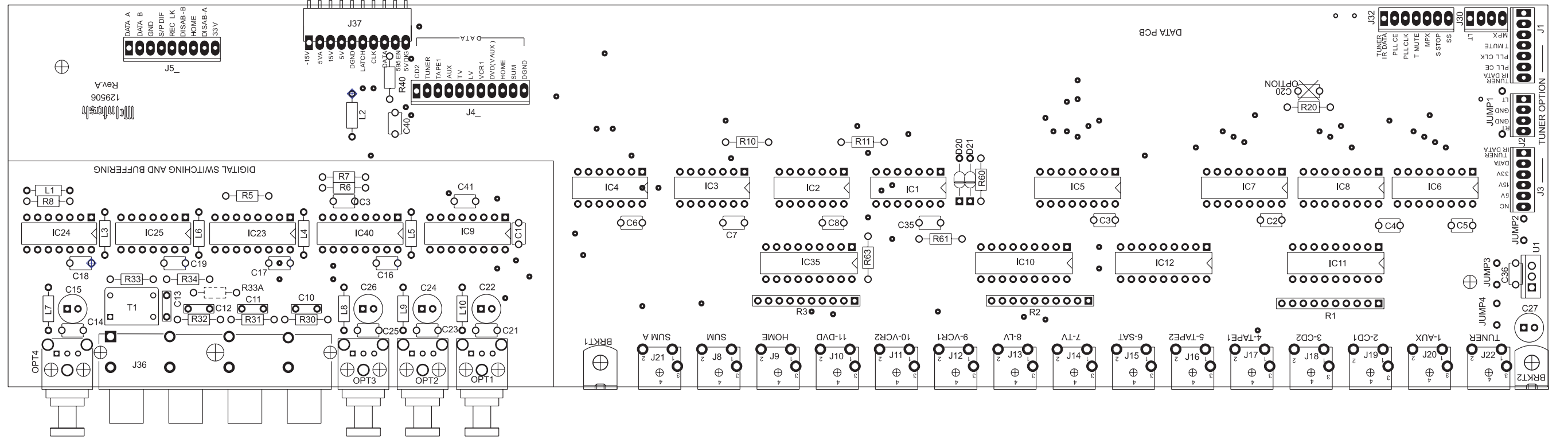
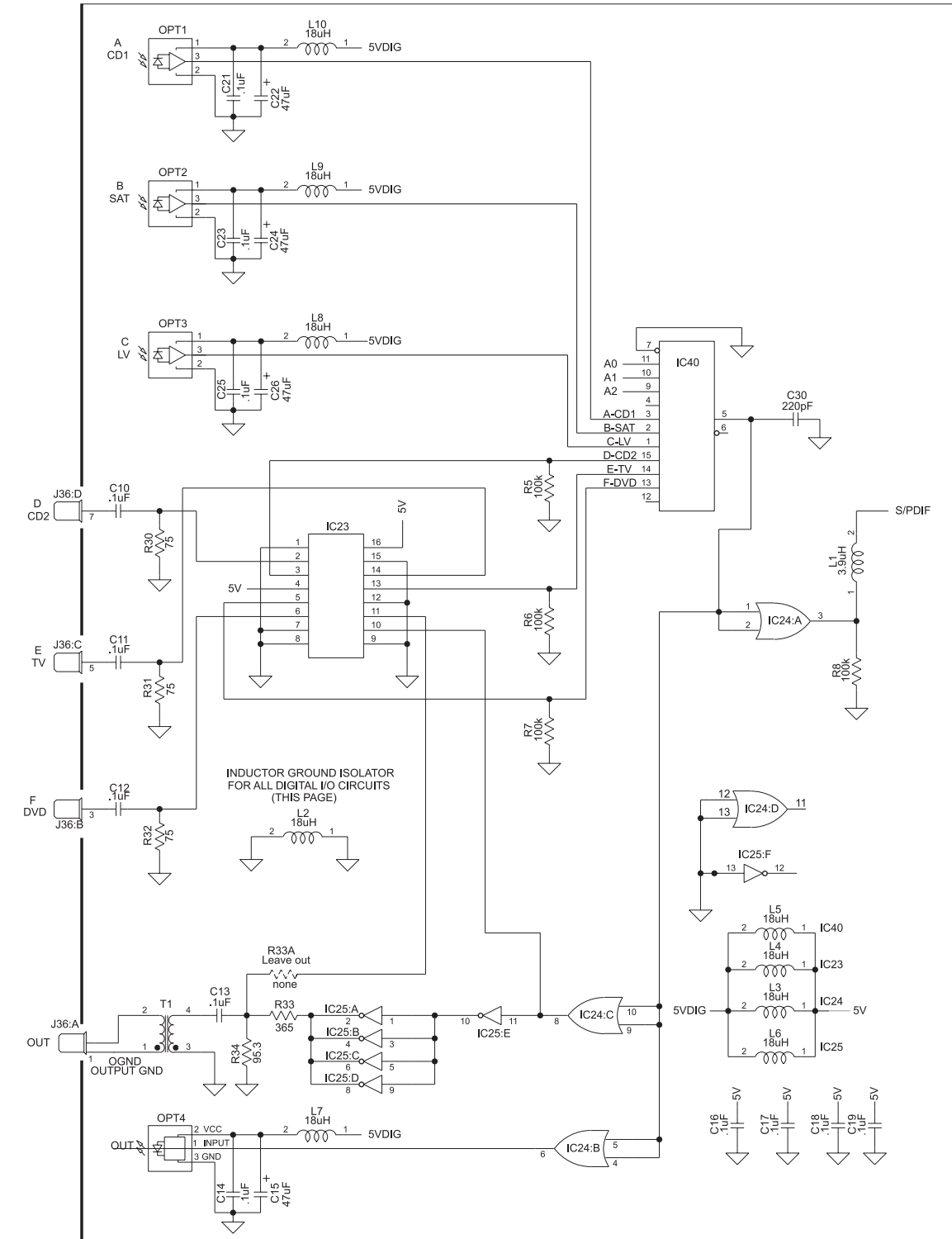


! WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.

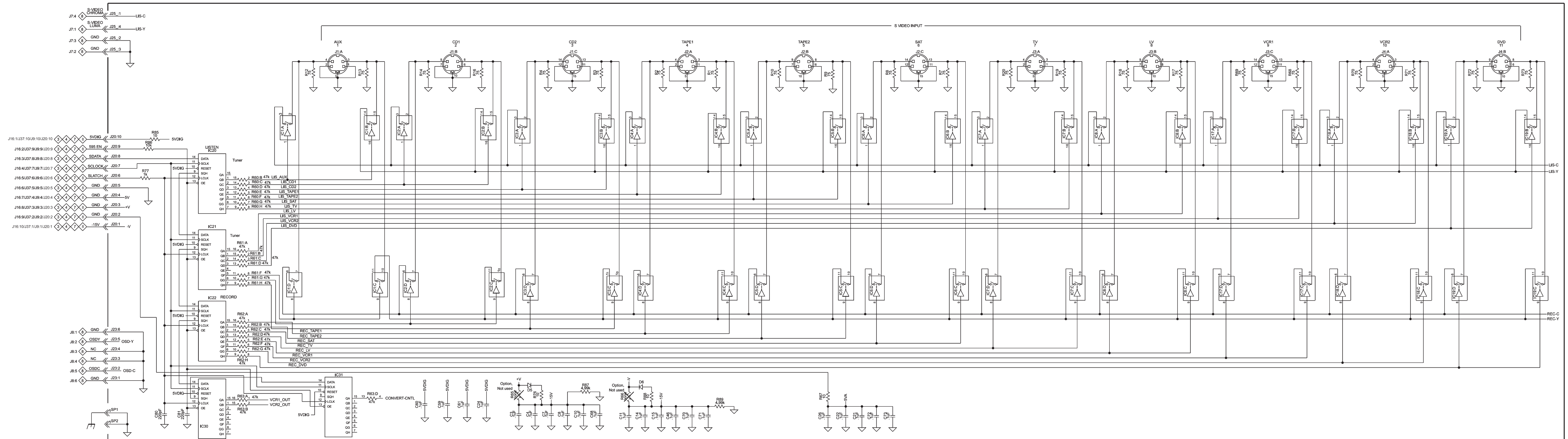
NOTES

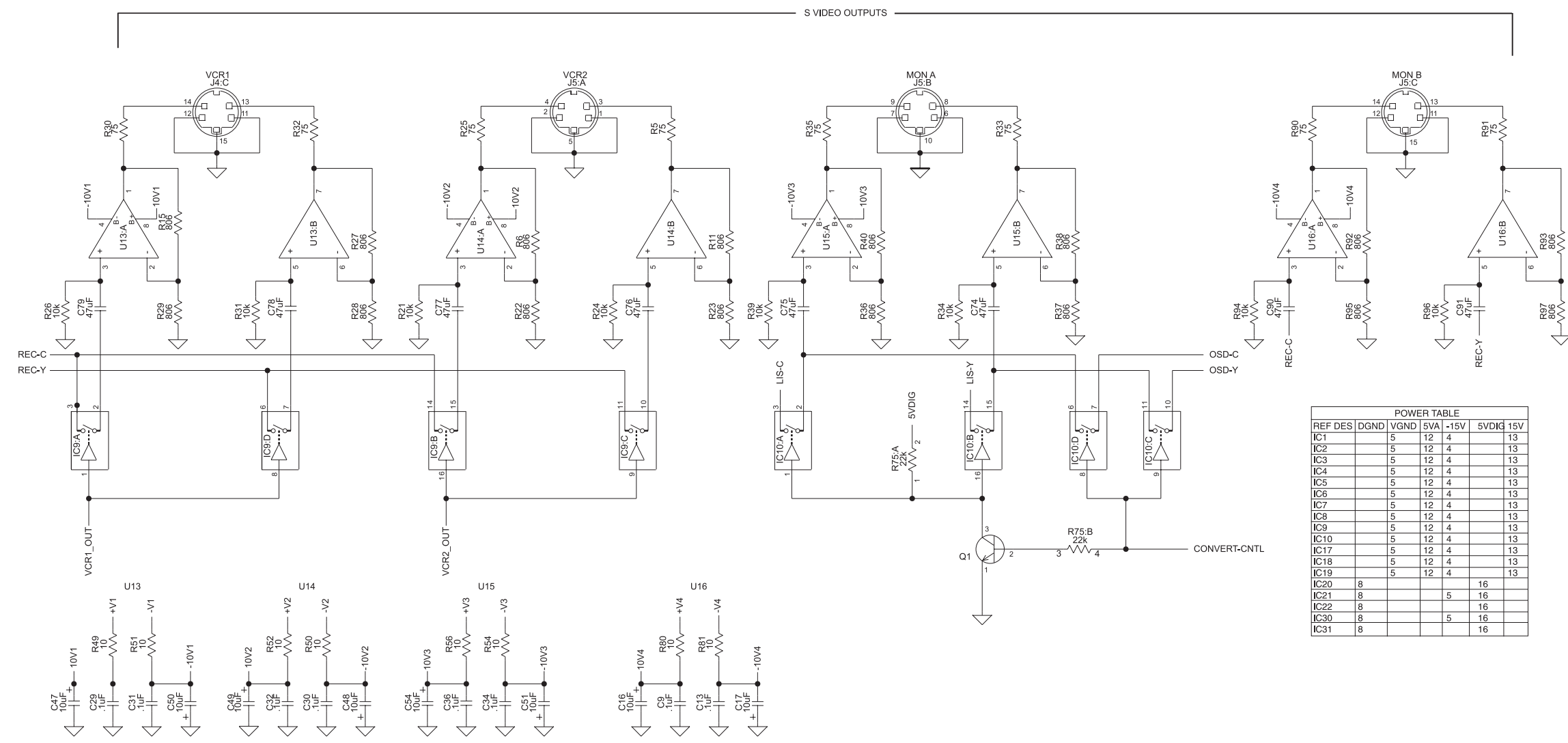
MX135



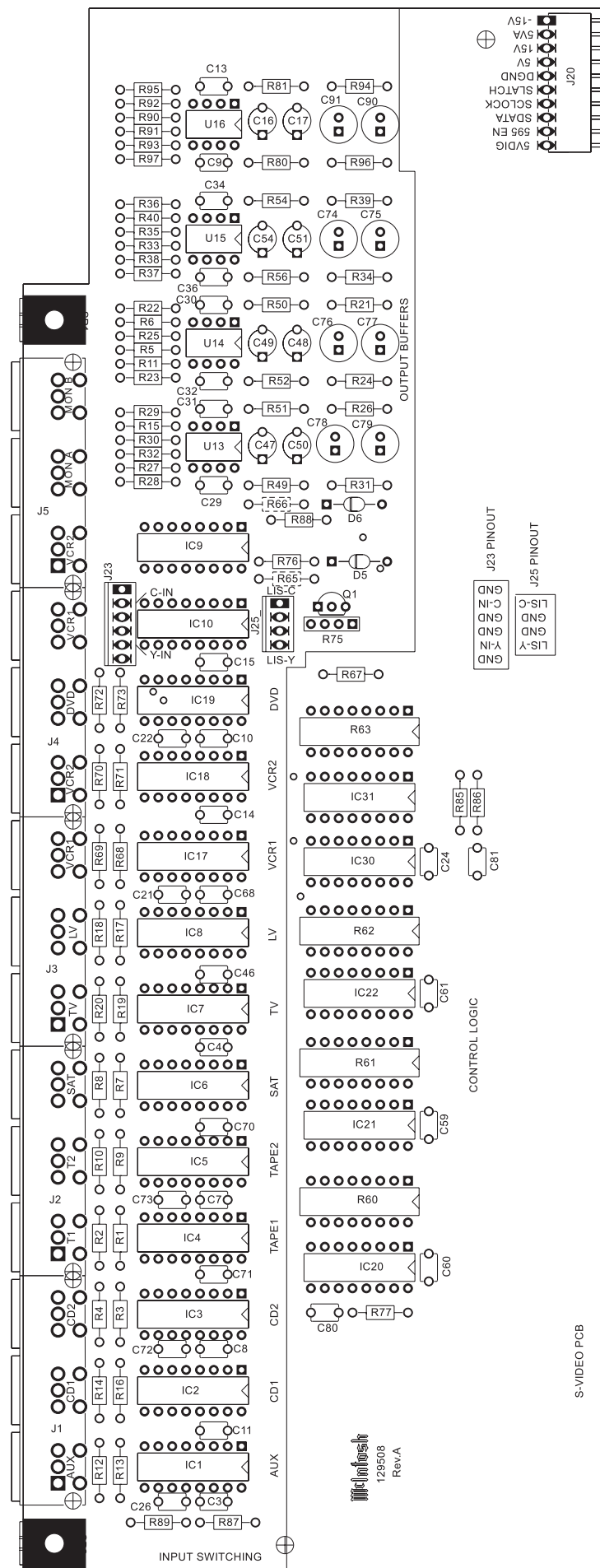


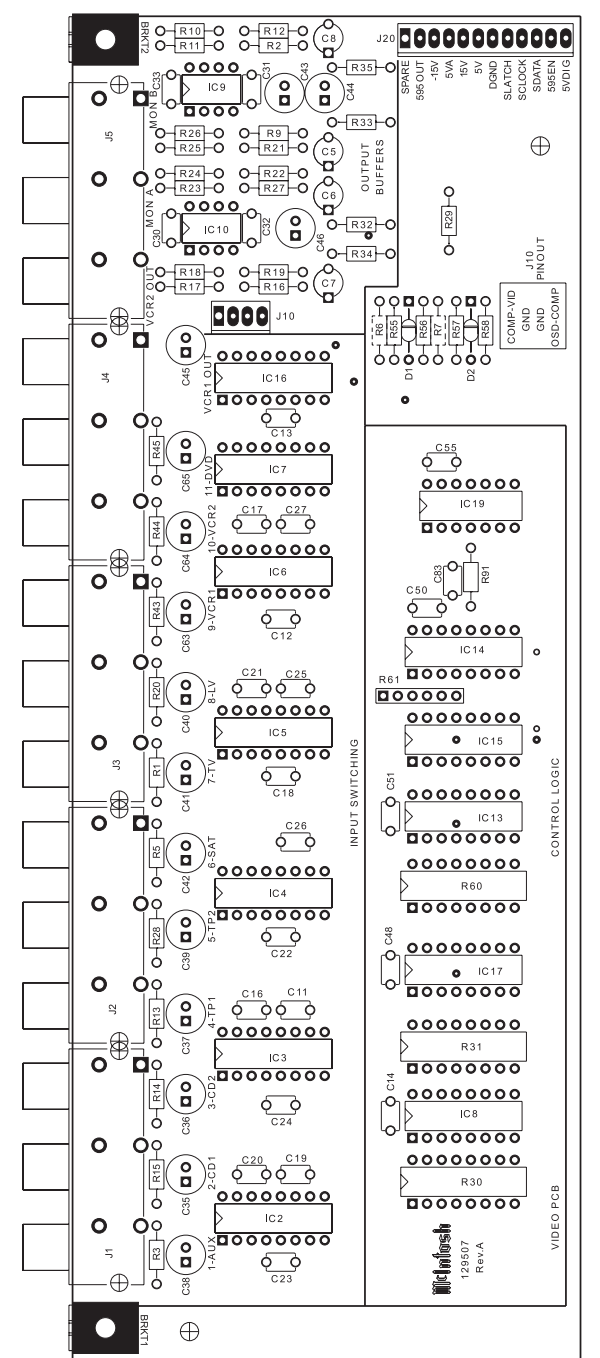
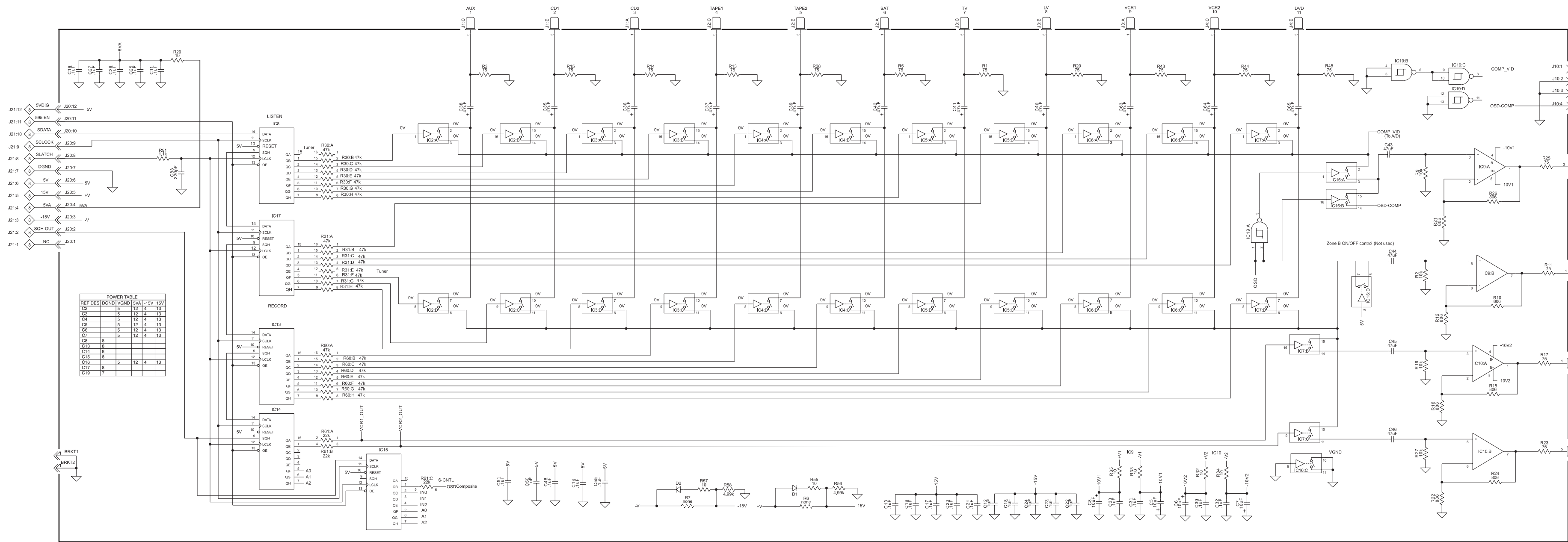
5 S-VIDEO 050035 SH 1 OF 2



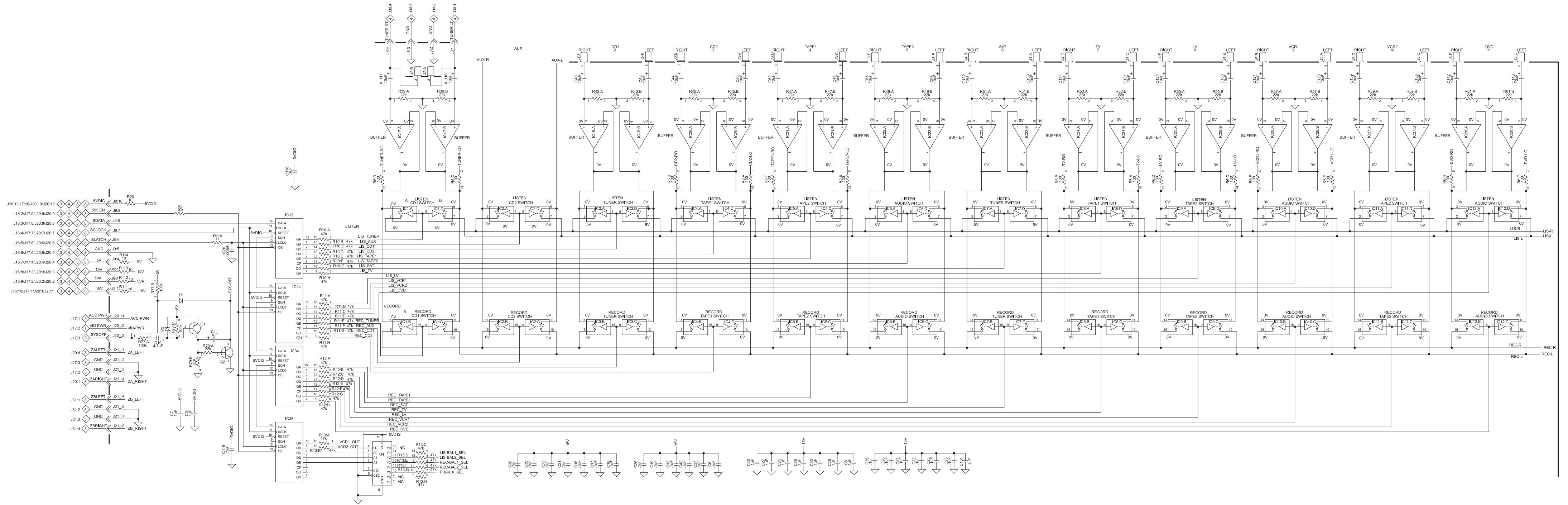


REF DES	DGND	VGND	5VA	-15V	5VDIG	15V
IC1		5	12	4		13
IC2		5	12	4		13
IC3		5	12	4		13
IC4		5	12	4		13
IC5		5	12	4		13
IC6		5	12	4		13
IC7		5	12	4		13
IC8		5	12	4		13
IC9		5	12	4		13
IC10		5	12	4		13
IC17		5	12	4		13
IC18		5	12	4		13
IC19		5	12	4		13
IC20	8				16	
IC21			5		16	
IC22	8				16	
IC30	8		5		16	
IC31	8				16	

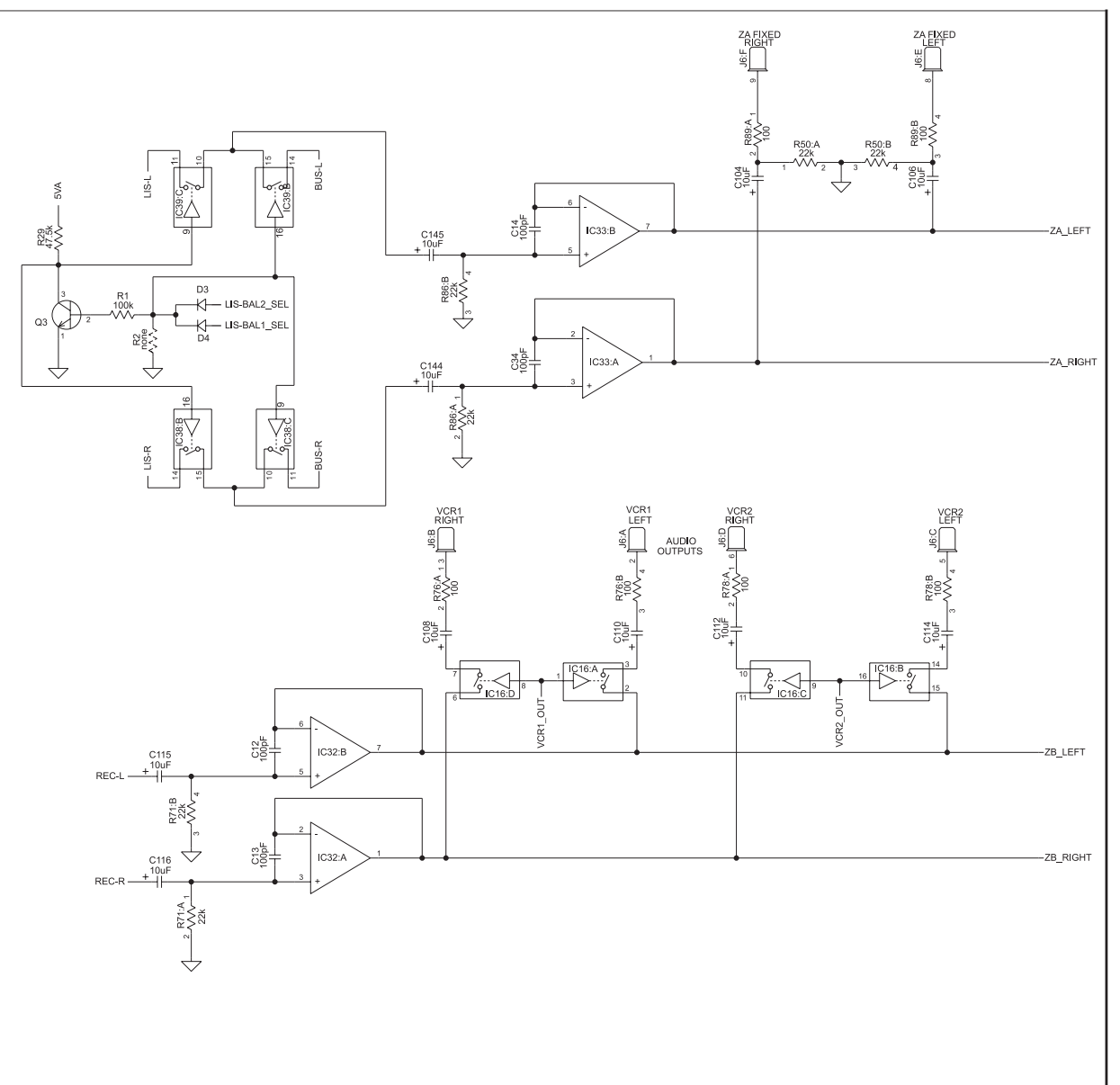
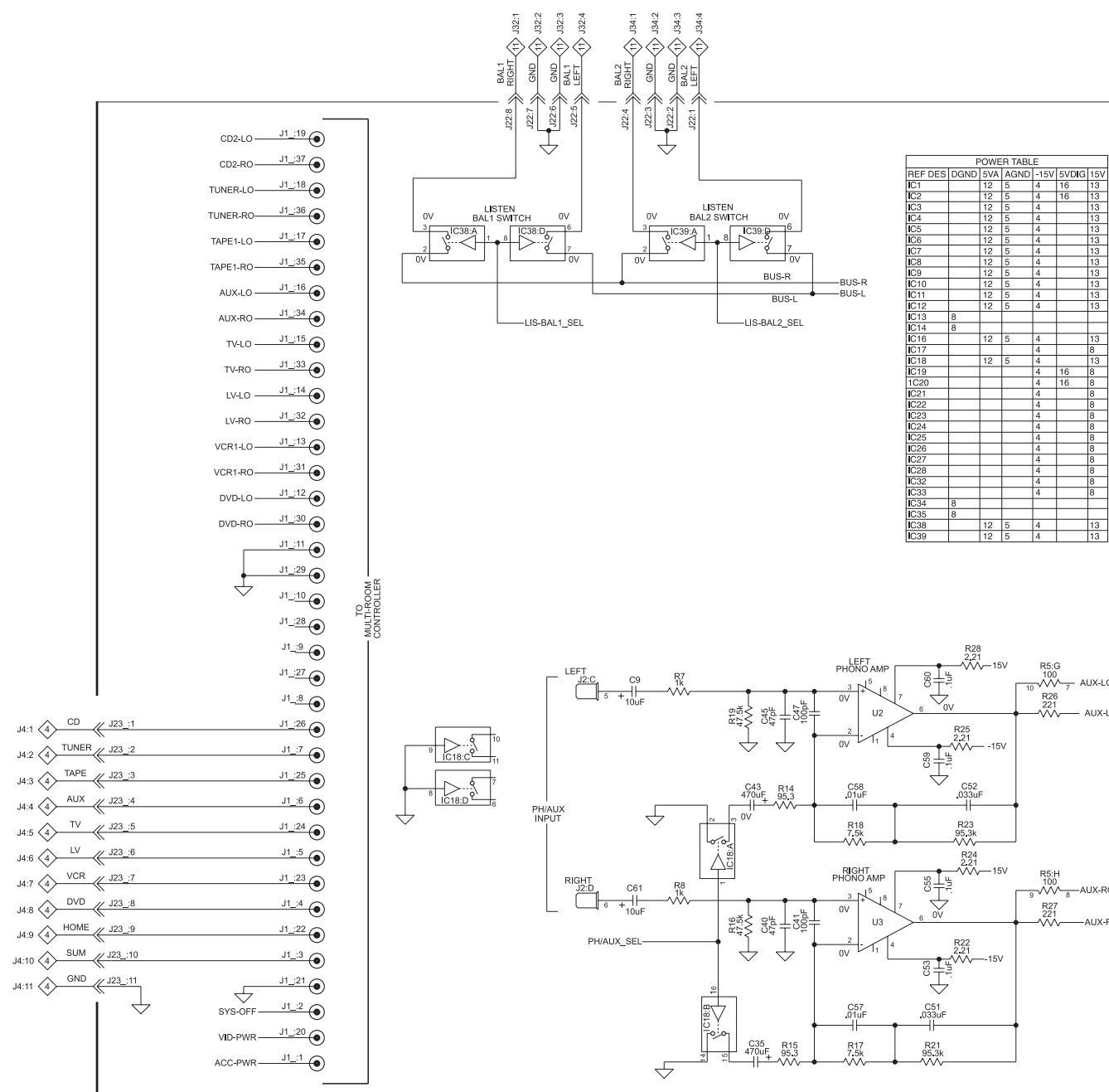




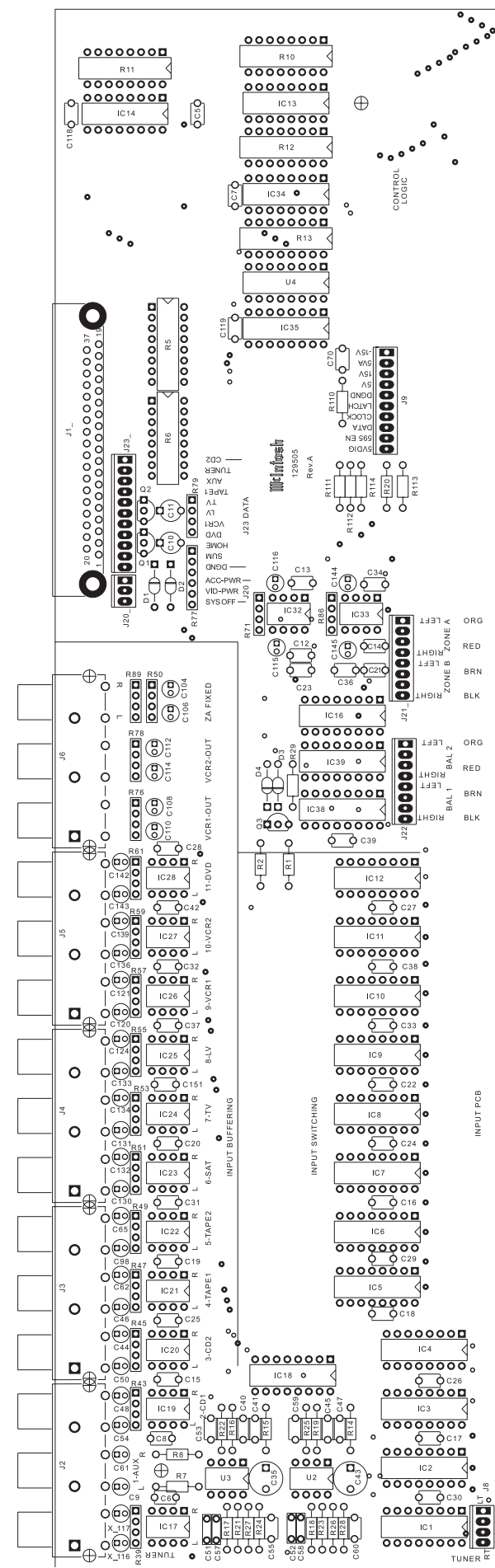
7 INPUT 050032 SH 1 OF 2



7 INPUT 050032 SH 2 OF 2



7 INPUT 050163



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 MX135 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 4 and 5 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 AMT) is located on the RAA1. It is labeled "C1".
7. Repeat 8 and 9 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 MX135 front panel signal strength display reads "9".
10. Check both channels for signal to noise performance, and re-adjust R70 and as needed.

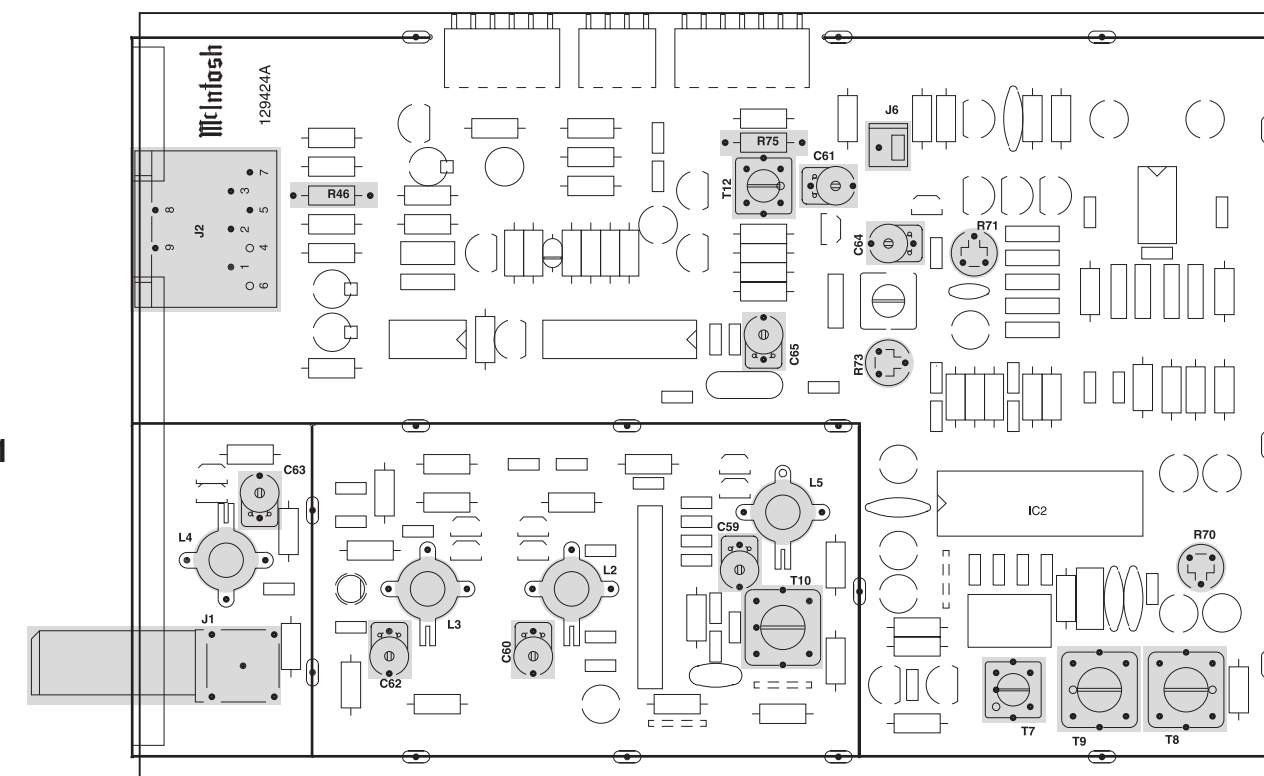
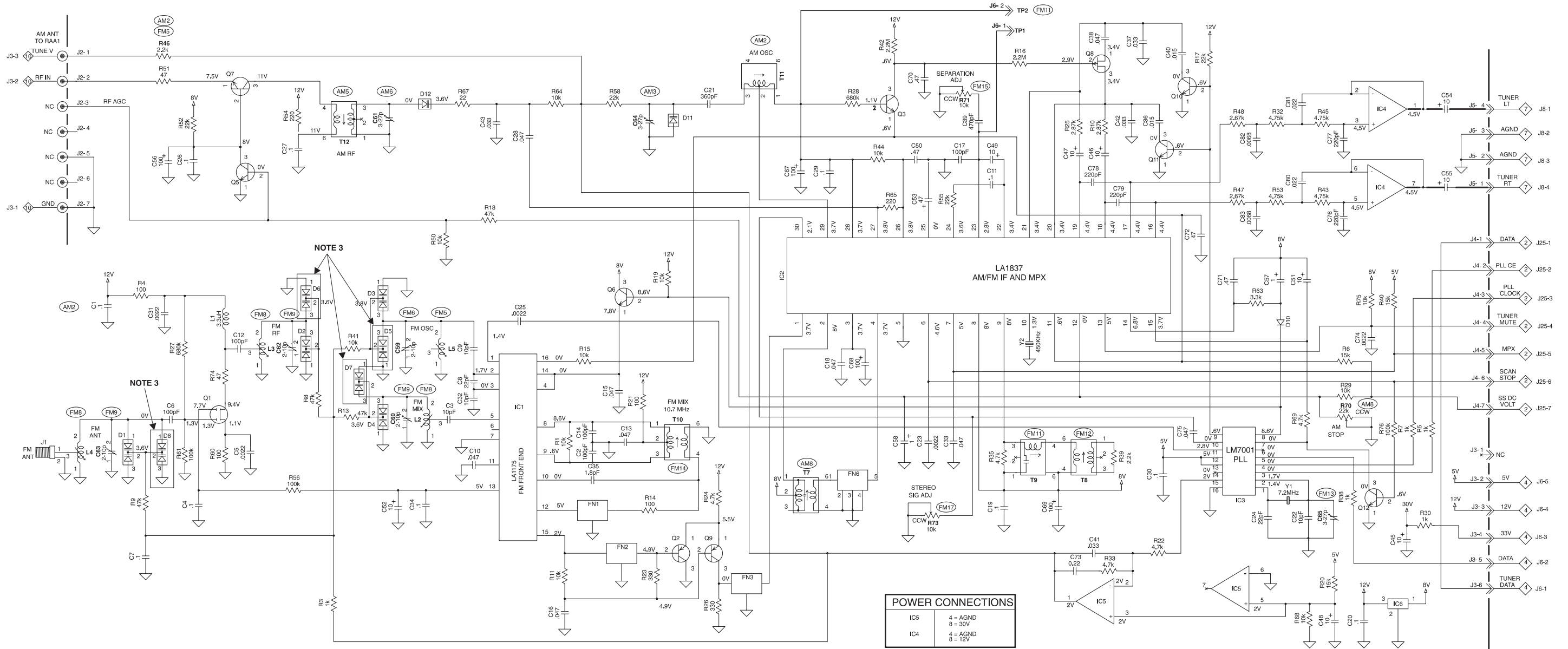
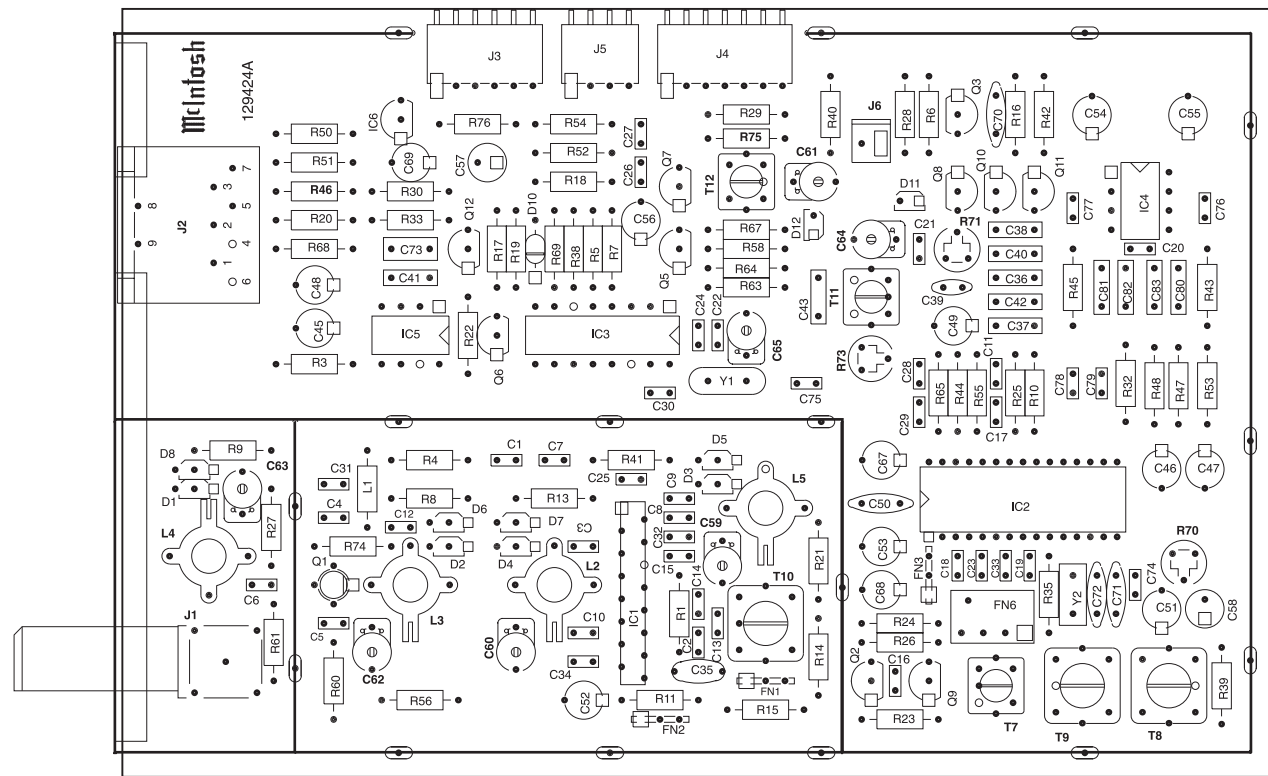


Figure 1



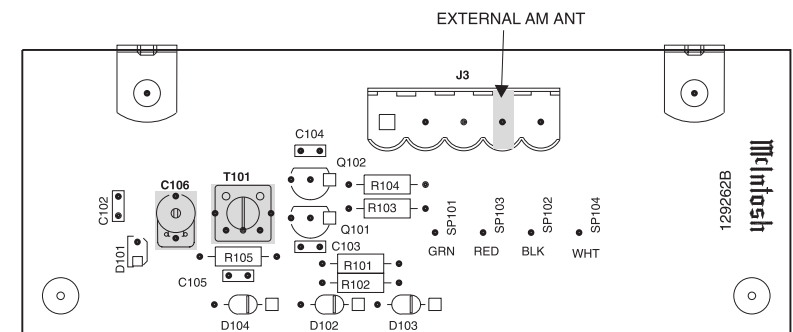
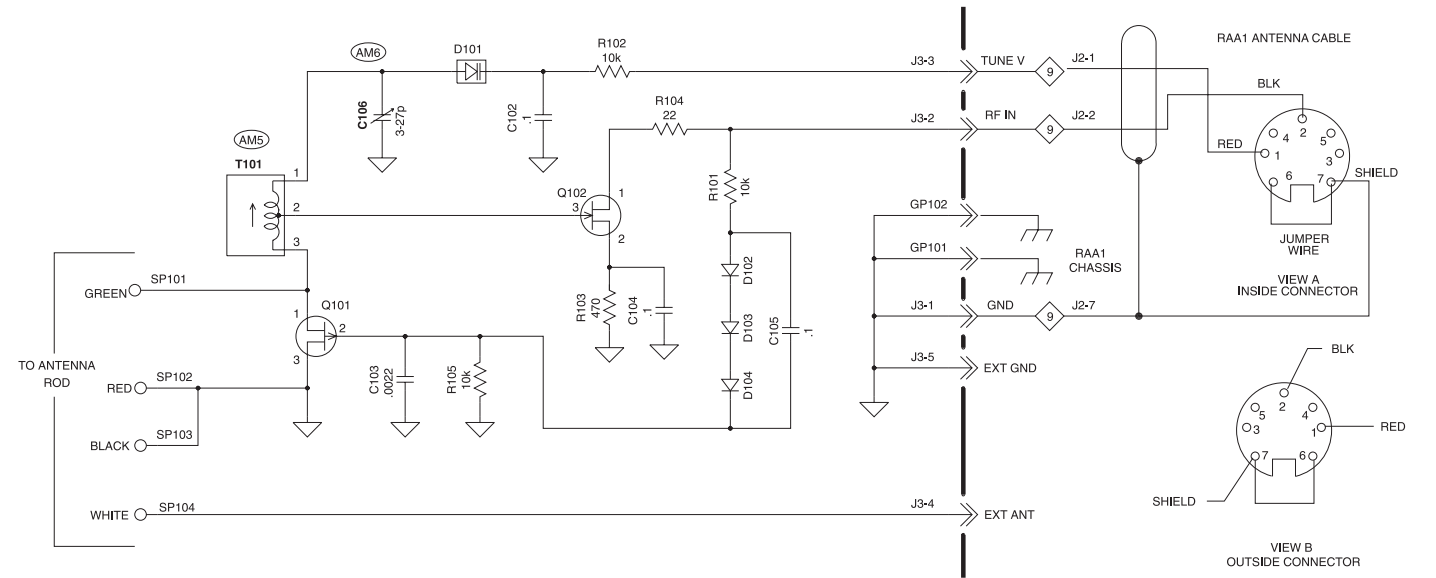
NOTES: SEE PAGE 61 - 62 FOR TUNER ALIGNMENT PROCEDURES.
 (FM1) THROUGH (FM17) REFER TO STEPS IN THE FM ALIGNMENT PROCEDURE.
 (AM1) THROUGH (AM10) REFER TO STEPS IN THE AM ALIGNMENT PROCEDURE.
 NOTE 3: FOR JAPANESE CONVERSION, VARACTORS D5, D6, D7 AND D8 ARE ADDED IN PARALLEL WITH D1, D2, D3 AND D4.

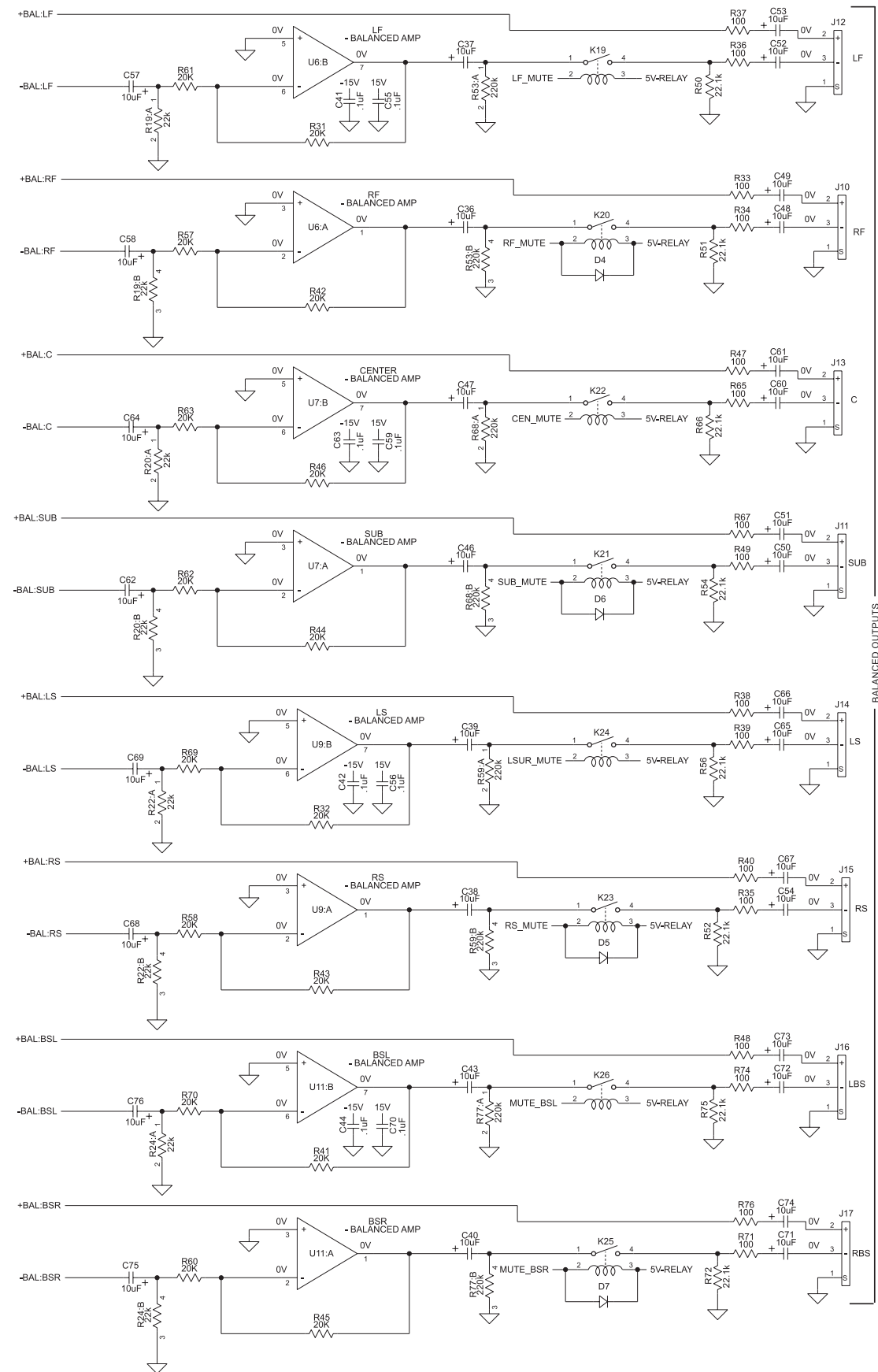
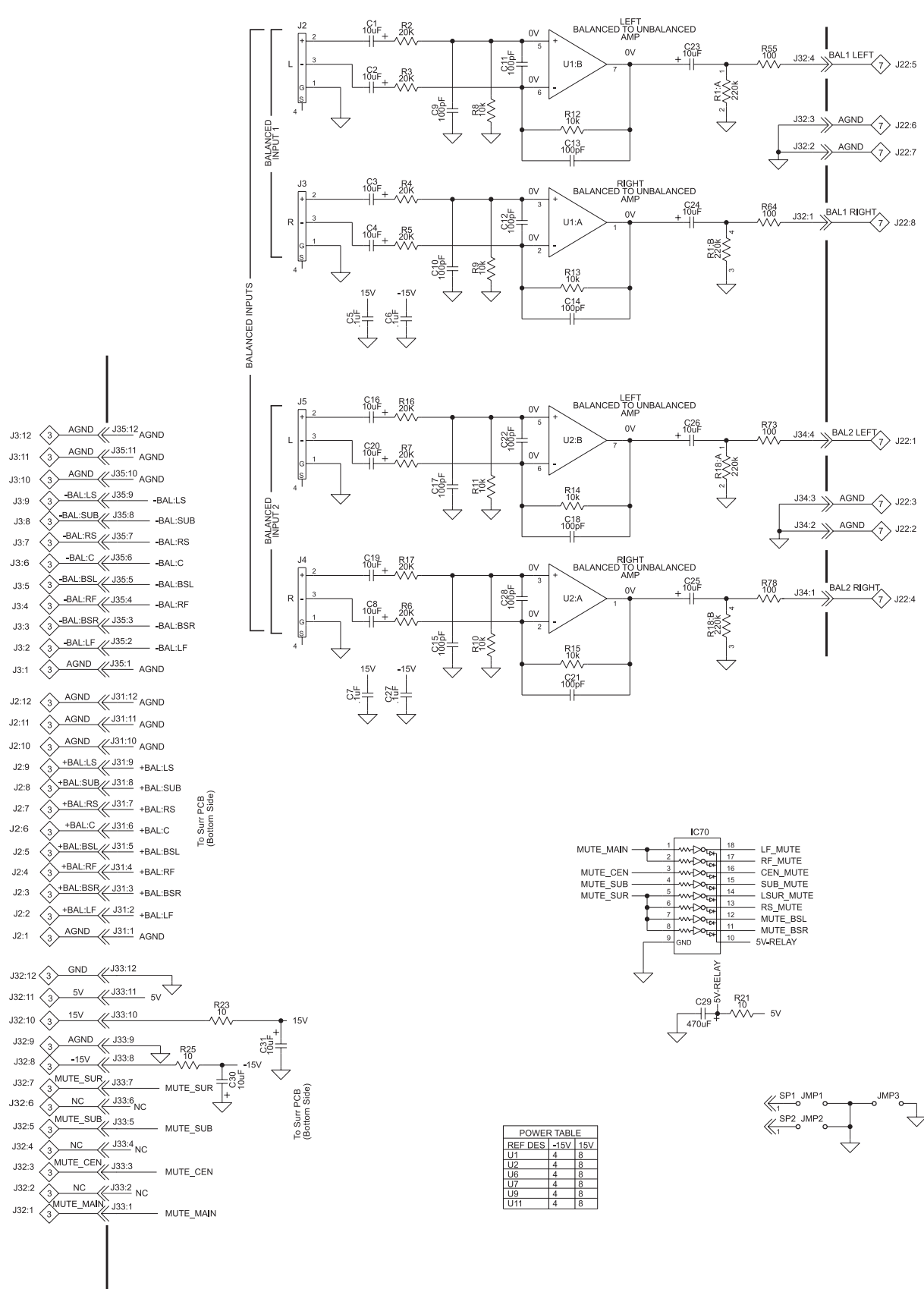
9 TUNER 049084

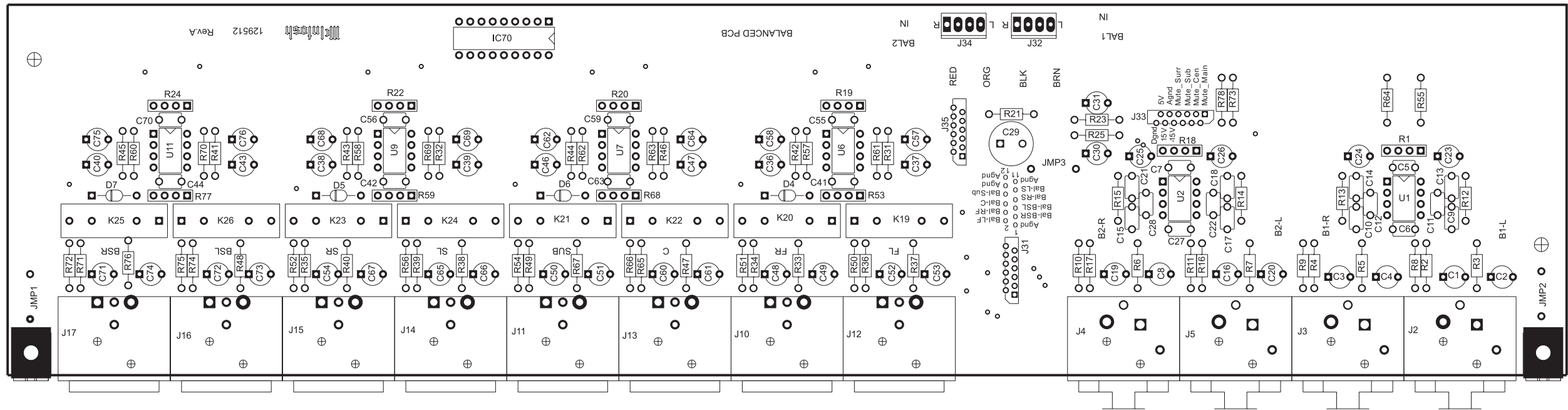


NOTE: SEE PAGE 61 - 62 FOR TUNER ALIGNMENT PROCEDURE.

10 RAA1 SECTION







PARTS LIST

RefNo.	Description	Part No.	RefNo.	Description	Part No.	RefNo.	Description	Part No.
1	INTERCONNECT		IC30	IC NAND SCHMIT 2-IN X 4	133192	S23	POT ROTARY SWITCH QUADRATURE	146255
F1	FUSE, 1A SLO-BLO 5 X 20	089107	IC31	IC NAND SCHMIT 2-IN X 4	133192	S24	POT ROTARY SWITCH QUADRATURE	146255
TB1	AC TERMINAL BLOCK	074091	IC32	IC NAND SCHMIT 2-IN X 4	133192	S25	POT ROTARY SWITCH QUADRATURE	146256
T1	POWER TRANSFORMER	159302	IC50	IC 8 BIT A/D SERIAL OUTPUT	133366	TEST1	CONN 4 PIN	117215
			IC75	IC CPU SUPERVISOR	133424	U3	PROGRAMMED 133336 (OPTION)	133469
2A	DISPLAY PCB 050036		J1	CONN MALE 10 POS	117219	Y1	Crystal 11.0592MHz	180051
C1	CAP MONO .01UF 50V 20% X7R	061304	J3	CONN MALE 7 PIN	117217			
C4	CAP MONO .1uF 50V 20% Z5U	061305	J5	SOCKET STRIP .025 SQ 20 PIN	117642			
C5	CAP MONO .1uF 50V 20% Z5U	061305	J8	CONN MALE 10 POS	117219			
C6	CAP MONO .1uF 50V 20% Z5U	061305	J9_	CONN MALE 5 PIN 0.1 POST ASSY	117216	2B	LED PCB 050054	
C9	CAP ELECT 47UF 35V	066446	J10	CONN MALE 10 POS	117219	C11	CAP MONO 1000PF 50V 10% NPO	061303
C10	CAP ELECT 47UF 35V	066446	J11	CONN FFC 18PIN	117765	C12	CAP MONO .1uF 50V 20% Z5U	061305
C14	CAP MONO 33PF 200V 5%NPO T&R	061307	J19	CONN MALE 10 POS	117219	C16	CAP MONO .1uF 50V 20% Z5U	061305
C15	CAP MONO 33PF 200V 5%NPO T&R	061307	J21_	CONN 9 PIN FEMALE	117694	C17	CAP MONO 1000PF 50V 10% NPO	061303
C21	CAP ELECT 10UF 16V 4X5 CASE	066382	J25_	CONN MALE 7 PIN	117217	C19	CAP ELECT 47UF 35V	066446
C25	CAP MONO .1uF 50V 20% Z5U	061305	J26_	CONN 4 PIN	117215	C20	CAP ELECT 47UF 35V	066446
C26	CAP MONO .1uF 50V 20% Z5U	061305	Q1	TRANSISTOR NPN SILICON	132171	DS2	LED SQUARE RED	058109
C27	CAP MONO .1uF 50V 20% Z5U	061305	Q2	TRANSISTOR PNP	132224	DS3	LED SQUARE RED	058109
C29	CAP MONO .1uF 50V 20% Z5U	061305	Q50	TRANSISTOR NPN	132223	DS4	LED SQUARE RED	058109
C31	CAP MONO .1uF 50V 20% Z5U	061305	R1	RES MF 47.5K 1% 1/4W	144108	DS5	LED SQUARE RED	058109
C32	CAP MONO .1uF 50V 20% Z5U	061305	R5	RES NETWORK 8X330 ISO	144263	DS6	LED SQUARE RED	058109
C33	CAP ELECT 10UF 16V 4X5 CASE	066382	R6	RES MF 47.5K 1% 1/4W	144108	DS7	LED SQUARE RED	058109
C50	CAP ELECT 10UF 16V 4X5 CASE	066382	R7	RES MF 1.74K 1% 1/4W	144351	DS8	LED SQUARE RED	058109
C51	CAP MONO .1uF 50V 20% Z5U	061305	R8	RES MF 10 OHM 1% 1/4W	144157	DS9	LED SQUARE RED	058109
C56	CAP MONO .1uF 50V 20% Z5U	061305	R9	RES NET 2 X 22K ISOLATED	144366	DS10	LED SQUARE RED	058109
C57	CAP MONO .1uF 50V 20% Z5U	061305	R10	RES NETWORK 5X47K BUSSED	144254	DS11	LED SQUARE RED	058109
C58	CAP MONO .1uF 50V 20% Z5U	061305	R12	RES NETWORK 9 X 47K BUS	144250	DS12	LED SQUARE RED	058109
C100	CAP MONO .1uF 50V 20% Z5U	061305	R13	RES NETWORK 9 X 47K BUS	144250	DS13	LED SQUARE RED	058109
C170	CAP MONO 100PF 100V 10% NPO	061300	R14	RES NETWORK 9 X 47K BUS	144250	DS14	LED SQUARE RED	058109
C200	CAP MONO .01UF 50V 20% X7R	061304	R18	RES MF 100 OHM 1/4W	144196	DS15	LED SQUARE RED	058109
C201	CAP MONO .01UF 50V 20% X7R	061304	R19	RES MF 100 OHM 1/4W	144196	DS16	LED SQUARE RED	058109
C202	CAP MONO .01UF 50V 20% X7R	061304	R20	RES MF 100 OHM 1/4W	144196	DS17	LED SQUARE RED	058109
C203	CAP MONO .01UF 50V 20% X7R	061304	R21	RES MF 100 OHM 1/4W	144196	DS18	LED 2 SEGMENT YELLOW BAR	058146
C204	CAP MONO .01UF 50V 20% X7R	061304	R22	RES MF 100 OHM 1/4W	144196	DS19	LED 2 SEGMENT YELLOW BAR	058146
C205	CAP MONO .01UF 50V 20% X7R	061304	R23	RES MF 100 OHM 1/4W	144196	DS20	LED 2 SEGMENT YELLOW BAR	058146
C206	CAP MONO .01UF 50V 20% X7R	061304	R24	RES NET 2 X 22K ISOLATED	144366	DS21	LED 2 SEGMENT YELLOW BAR	058146
C207	CAP MONO .01UF 50V 20% X7R	061304	R25	RES FP 47 OHM 5% 1/4W	137042	DS22	LED 2 SEGMENT YELLOW BAR	058146
C208	CAP MONO .01UF 50V 20% X7R	061304	R26	RES NET 2 X 22K ISOLATED	144366	DS23	LED 2 SEGMENT YELLOW BAR	058146
C209	CAP MONO .01UF 50V 20% X7R	061304	R27	RES NET 2 X 22K ISOLATED	144366	DS24	LED 2 SEGMENT YELLOW BAR	058146
C210	CAP MONO .01UF 50V 20% X7R	061304	R28	RES NET 2 X 22K ISOLATED	144366	DS25	LED 2 SEGMENT YELLOW BAR	058146
C211	CAP MONO .01UF 50V 20% X7R	061304	R29	RES NET 2 X 22K ISOLATED	144366	DS26	LED 2 SEGMENT YELLOW BAR	058146
D2	DIODE ZENER 15V 1W	070061	R30	RES MF 10 OHM 1% 1/4W	144157	DS27	LED 2 SEGMENT YELLOW BAR	058146
D300	DIODE SILICON	070047	R31	RES MF 4.99K 1/4W	144098	DS29	LED 2 SEGMENT YELLOW BAR	058146
D301	DIODE SILICON	070047	R32	RES MF 100 OHM 1/4W	144196	DS30	LED 2 SEGMENT YELLOW BAR	058146
D302	DIODE SILICON	070047	R45	RES NET 2 X 22K ISOLATED	144366	DS34	LED ARRAY(5) YELLOW RECTANGLE	058127
DS1	DISPLAY 12 CHARACTER	058168	R50	RES NETWORK 9X1K ISO	144280	DS37	LED 2 SEGMENT YELLOW BAR	058146
DS5	LED GREEN 5MM HI-INTENSITY	058165	R51	RES NETWORK 9X1K ISO	144280	DS38	LED ARRAY(5) YELLOW RECTANGLE	058127
DS6	LED GREEN 5MM HI-INTENSITY	058165	R52	RES NETWORK 9X1K ISO	144280	DS40	LED 2 SEGMENT YELLOW BAR	058146
DS7	LED GREEN 5MM HI-INTENSITY	058165	R83	RES FP 10 OHM 5% 1/4W	137025	DS41	LED ARRAY(5) YELLOW RECTANGLE	058127
DS8	LED GREEN 5MM HI-INTENSITY	058165	R100	RES MF 10K 1% 1/4W	144053	DS42	LED ARRAY(5) YELLOW RECTANGLE	058127
DS10	LED GREEN 5MM HI-INTENSITY	058165	R101	RES MF 10K 1% 1/4W	144053	DS43	LED ARRAY(5) YELLOW RECTANGLE	058127
DS11	LED GREEN 5MM HI-INTENSITY	058165	R102	RES NETWORK 4 X 22K BUS	144234	DS44	LED ARRAY(5) YELLOW RECTANGLE	058127
IC2	IC VF ALPHANUMERIC CONTROLLER	133347	R105	RES MF 10K 1% 1/4W	144053	DS45	LED ARRAY(5) YELLOW RECTANGLE	058127
IC4	IC PAGE MODE EEPROM	133348	R131	RES NET 10K X8 RES B	144253	DS46	LED ARRAY(5) YELLOW RECTANGLE	058127
IC5	IC PROGRAMMED VRSION OF 133343	133342	R150	RES NETWORK 4X1K ISO	144276	DS47	LED 2 SEGMENT YELLOW BAR	058146
IC6	IC PROGRAMMED VRSION OF 133351	133349	R151	RES NETWORK 4X1K ISO	144276	DS48	LED 2 SEGMENT YELLOW BAR	058146
IC7	IC PROGRAMMED VRSION OF 133351	133349	R170	RES MF 4.99K 1% 1/4W	144098	IC3	IC DISPLAY DRIVER 4 DIGIT LED	133268
IC10	IC PROGRAMMED VRSION OF 133343	133342	R171	RES MF 4.99K 1% 1/4W	144098	IC12	IC DISPLAY DRIVER 4 DIGIT LED	133268
IC11	SRAM	133227	R200	RES NET 2 X 22K ISOLATED	144366	J20_	CONN 9 PIN MALE	117695
IC13	IC OCT 3-STT NONINVERTING	133222	R201	RES MF 47.5K 1% 1/4W	144108	MOLD1	FUNCTION LED MOLD	017948
IC14	133350 BCMS 133517 AFTER PRGRMMNG	133350	R202	RES NET 2 X 22K ISOLATED	144366	MOLD2	FUNCTION LED MOLD	017714
IC15	IC MICRO ROMLESS	133386	R203	RES NET 2 X 22K ISOLATED	144366	MOLD3	INDICATOR LED MOLD	017715
IC16	IC PROGRAMMED VRSION OF 133266	133379	R204	RES NET 2 X 22K ISOLATED	144366	MOLD4	FUNCTION LED MOLD	017948
IC17	IC PROGRAMMED VRSION OF 133343	133342	R205	RES NET 2 X 22K ISOLATED	144366	MOLD5	FUNCTION LED MOLD	017948
IC20	133406 BCMS 133518 AFTER PRGRMMNG	133406	R206	RES NET 2 X 22K ISOLATED	144366	MOLD6	FUNCTION LED MOLD	017948
			R300	RES MF 47.5K 1% 1/4W	144108	MOLD7	FUNCTION LED MOLD	017948
			S3	ENCODER OPTICAL ROTARY	146246	MOLD8	FUNCTION LED MOLD	017948
			S20	POT ROTARY SWITCH QUADRATURE	146255	MOLD9	FUNCTION LED MOLD	017948
			S21	POT ROTARY SWITCH QUADRATURE	146255	MOLD10	FUNCTION LED MOLD	017948
			S22	POT ROTARY SWITCH QUADRATURE	146255	MOLD11	INDICATOR LED MOLD	017715
						MOLD12	INDICATOR LED MOLD	017715

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MOLD13	INDICATOR LED MOLD	017715
MOLD14	FUNCTION LED MOLD	017714
R15	RES MF 4.99K 1% 1/4W	144098
R18	RES MF 4.99K 1% 1/4W	144098

KEYBOARD PCB 050053

C13	CAP MONO .1uF 50V 20% Z5U	061305
C24	CAP ELECT 47UF 35V	066446
DS11	LED SQUARE RED	058109
DS12	LED SQUARE RED	058109
DS36	LED SQUARE RED	058109
J2	CONN FFC 18PIN	117765
R16	RES MF 100 OHM 1% 1/4W	144196
R17	RES MF 332 OHM 1/4W	144446
S1	SWITCH PB TACT	150059
S2	SWITCH PB TACT	150059
S5	SWITCH PB TACT	150058
S7	SWITCH PB TACT	150058
S9	SWITCH PB TACT	150058
S10	SWITCH PB TACT	150058
S11	SWITCH PB TACT	150058
S12	SWITCH PB TACT	150058
S13	SWITCH PB TACT	150058
S14	SWITCH PB TACT	150058
S15	SWITCH PB TACT	150058
S16	SWITCH PB TACT	150058
S17	SWITCH SLIDE	148059
SENSOR	SENSOR IR 38KHZ	121046

SURROUND PCB 050037

C1	CAP ELECT 220UF 50V 20%	066254
C2	CAP ELECT 100UF 25V	066529
C3	CAP MONO .1uF 50V 20% Z5U	061305
C4	CAP MONO .1uF 50V 20% Z5U	061305
C5	CAP MONO .1uF 50V 20% Z5U	061305
C6	CAP MONO .1uF 50V 20% Z5U	061305
C7	CAP MONO .1uF 50V 20% Z5U	061305
C8	CAP MONO .1uF 50V 20% Z5U	061305
C9	CAP MONO .1uF 50V 20% Z5U	061305
C10	CAP MONO .1uF 50V 20% Z5U	061305
C11	CAP MONO .1uF 50V 20% Z5U	061305
C12	CAP MONO .1uF 50V 20% Z5U	061305
C13	CAP MONO .1uF 50V 20% Z5U	061305
C14	CAP MONO .1uF 50V 20% Z5U	061305
C15	CAP MONO .1uF 50V 20% Z5U	061305
C16	CAP MONO 22PF 200V 10% NPO	061298
C18	CAP MONO .1uF 50V 20% Z5U	061305
C19	CAP MONO .1uF 50V 20% Z5U	061305
C20	CAP MONO .1uF 50V 20% Z5U	061305
C21	CAP MONO .1uF 50V 20% Z5U	061305
C22	CAP MONO .1uF 50V 20% Z5U	061305
C23	CAP MONO .1uF 50V 20% Z5U	061305
C24	CAP MONO .1uF 50V 20% Z5U	061305
C25	CAP MONO .1uF 50V 20% Z5U	061305
C26	CAP MONO .1uF 50V 20% Z5U	061305
C27	CAP MONO .1uF 50V 20% Z5U	061305
C28	CAP MONO .1uF 50V 20% Z5U	061305
C29	CAP MONO .1uF 50V 20% Z5U	061305
C30	CAP MONO .1uF 50V 20% Z5U	061305
C32	CAP MONO .1uF 50V 20% Z5U	061305
C36	CAP MONO 22PF 200V 10% NPO	061298
C37	CAP MONO 22PF 200V 10% NPO	061298
C38	CAP MONO 22PF 200V 10% NPO	061298
C39	CAP MONO 22PF 200V 10% NPO	061298

C40	CAP MONO 22PF 200V 10% NPO	061298
C41	CAP MONO 22PF 200V 10% NPO	061298
C42	CAP MONO 22PF 200V 10% NPO	061298
C43	CAP MONO 22PF 200V 10% NPO	061298
C44	CAP MONO 22PF 200V 10% NPO	061298
C45	CAP MONO 22PF 200V 10% NPO	061298
C46	CAP MONO 22PF 200V 10% NPO	061298
C47	CAP MONO 22PF 200V 10% NPO	061298
C48	CAP MONO 22PF 200V 10% NPO	061298
C49	CAP MONO 22PF 200V 10% NPO	061298
C50	CAP MONO 22PF 200V 10% NPO	061298
C53	CAP ELECT 3300UF 35V	066509
C55	CAP ELECT 3300UF 35V	066509
C56	CAP ELECT 3300UF 35V	066509
C58	CAP ELECT 1800UF 16V	066460
C59	CAP ELECT 10UF 50V	066445
C60	CAP ELECT 10UF 50V	066445
C61	CAP ELECT 10UF 16V 4X5 CASE	066382
C62	CAP ELECT 10UF 16V 4X5 CASE	066382
C65	CAP ELECT 10UF 16V 4X5 CASE	066382
C66	CAP ELECT 10UF 16V 4X5 CASE	066382
C67	CAP ELECT 10UF 16V 4X5 CASE	066382
C68	CAP ELECT 10UF 16V 4X5 CASE	066382
C69	CAP ELECT 10UF 16V 4X5 CASE	066382
C70	CAP ELECT 10UF 16V 4X5 CASE	066382
C71	CAP ELECT 10UF 16V 4X5 CASE	066382
C72	CAP ELECT 10UF 16V 4X5 CASE	066382
C73	CAP ELECT 10UF 16V 4X5 CASE	066382
C77	CAP ELECT 10UF 16V 4X5 CASE	066382
C79	CAP ELECT 10UF 16V 4X5 CASE	066382
C80	CAP ELECT 10UF 16V 4X5 CASE	066382
C81	CAP ELECT 10UF 16V 4X5 CASE	066382
C82	CAP ELECT 10UF 16V 4X5 CASE	066382
C83	CAP ELECT 10UF 16V 4X5 CASE	066382
C84	CAP ELECT 10UF 16V 4X5 CASE	066382
C85	CAP ELECT 10UF 16V 4X5 CASE	066382
C86	CAP ELECT 10UF 16V 4X5 CASE	066382
C87	CAP ELECT 10UF 16V 4X5 CASE	066382
C88	CAP ELECT 10UF 16V 4X5 CASE	066382
C89	CAP ELECT 10UF 16V 4X5 CASE	066382
C94	CAP ELECT 10UF 16V 4X5 CASE	066382
C95	CAP ELECT 10UF 16V 4X5 CASE	066382
C96	CAP ELECT 10UF 16V 4X5 CASE	066382
C97	CAP ELECT 10UF 16V 4X5 CASE	066382
C98	CAP MONO 100PF 100V 10% NPO	061300
C99	CAP MONO 100PF 100V 10% NPO	061300
C100	CAP ELECT 10UF 16V 4X5 CASE	066382
C101	CAP ELECT 10UF 16V 4X5 CASE	066382
C102	CAP ELECT 10UF 16V 4X5 CASE	066382
C103	CAP ELECT 10UF 16V 4X5 CASE	066382
C104	CAP ELECT 10UF 16V 4X5 CASE	066382
C105	CAP ELECT 10UF 16V 4X5 CASE	066382
C106	CAP ELECT 10UF 16V 4X5 CASE	066382
C107	CAP ELECT 10UF 16V 4X5 CASE	066382
C110	CAP MONO .1uF 50V 20% Z5U	061305
C111	CAP MONO .1uF 50V 20% Z5U	061305
C113	CAP MONO .1uF 50V 20% Z5U	061305
C114	CAP MONO .1uF 50V 20% Z5U	061305
C115	CAP MONO .1uF 50V 20% Z5U	061305
C116	CAP MONO .1uF 50V 20% Z5U	061305
C119	CAP MONO .1uF 50V 20% Z5U	061305
C120	CAP MONO .1uF 50V 20% Z5U	061305
C121	CAP MPF 0.0022UF 5% 63VDC	064304
C128	CAP ELECT 1000UF 25V	066404
C129	CAP MONO .1uF 50V 20% Z5U	061305
C130	CAP MONO .1uF 50V 20% Z5U	061305
C131	CAP MONO .1uF 50V 20% Z5U	061305
C132	CAP MPF 0.0022UF 5% 63VDC	064304
C133	CAP MONO .1uF 50V 20% Z5U	061305
C134	CAP MONO .1uF 50V 20% Z5U	061305

C135	CAP MPF 0.0022UF 5% 63VDC	064304
C137	CAP MPF 0.1UF 5% 63VDC	064325
C138	CAP MPF 0.047UF 5% 63VDC	064320
C139	CAP MPF 0.047UF 5% 63VDC	064320
C140	CAP MPF 0.1UF 5% 63VDC	064325
C141	CAP MPF 0.047UF 5% 63VDC	064320
C142	CAP MPF 0.047UF 5% 63VDC	064320
C143	CAP MPF 0.047UF 5% 63VDC	064320
C144	CAP MPF 0.047UF 5% 63VDC	064320
C151	CAP MONO .1uF 50V 20% Z5U	061305
C153	CAP MONO 22PF 200V 10% NPO	061298
C154	CAP MONO 100PF 100V 10% NPO	061300
C155	CAP MONO 22PF 200V 10% NPO	061298
C156	CAP MONO 22PF 200V 10% NPO	061298
C157	CAP MONO 22PF 200V 10% NPO	061298
C158	CAP MONO 22PF 200V 10% NPO	061298
C159	CAP MONO 22PF 200V 10% NPO	061298
C160	CAP MONO 22PF 200V 10% NPO	061298
C161	CAP MONO 22PF 200V 10% NPO	061298
C162	CAP MONO 100PF 100V 10% NPO	061300
C167	CAP MONO 22PF 200V 10% NPO	061298
C168	CAP MONO 100PF 100V 10% NPO	061300
C169	CAP MONO 22PF 200V 10% NPO	061298
C170	CAP ELECT 100UF 25V	066529
C171	CAP ELECT 100UF 25V	066529
C172	CAP ELECT 100UF 25V	066529
C174	CAP ELECT 100UF 25V	066529
C175	CAP ELECT 1000UF 25V	066404
C178	CAP MPF 0.1UF 100V	064338
C180	CAP MONO 47PF 200V 10% NPO	061299
C181	CAP MONO 47PF 200V 10% NPO	061299
C182	CAP MONO 47PF 200V 10% NPO	061299
C183	CAP MONO 47PF 200V 10% NPO	061299
C184	CAP MONO 47PF 200V 10% NPO	061299
C185	CAP MONO 47PF 200V 10% NPO	061299
C186	CAP MPF 0.1UF 100V	064338
C188	CAP MPF 0.1UF 100V	064337
C189	CAP MPF 0.1UF 100V	064337
C192	CAP MPF 0.1UF 100V	064337
C193	CAP MPF 0.1UF 100V	064337
C194	CAP ELECT 470UF 50V	066469
C195	CAP ELECT 470UF 50V	066469
C196	CAP MONO 22PF 200V 10% NPO	061298
C197	CAP MONO 22PF 200V 10% NPO	061298
C198	CAP MONO 22PF 200V 10% NPO	061298
C199	CAP MONO 22PF 200V 10% NPO	061298
C200	CAP ELECT 10UF 16V 4X5 CASE	066382
C201	CAP MONO 22PF 200V 10% NPO	061298
C202	CAP MONO 47PF 200V 10% NPO	061299
C203	CAP ELECT 10UF 16V 4X5 CASE	066382
C204	CAP MONO 22PF 200V 10% NPO	061298
C205	CAP MONO 22PF 200V 10% NPO	061298
C206	CAP MONO 1000PF 50V 10% NPO	061303
C215	CAP ELECT 10UF 16V 4X5 CASE	066382
C220	CAP ELECT 10UF 16V 4X5 CASE	066382
C221	CAP ELECT 10UF 16V 4X5 CASE	066382
C236	CAP MONO .1uF 50V 20% Z5U	061305
C238	CAP MONO .01UF 50V 20% X7R	061304
C239	CAP MONO .01UF 50V 20% X7R	061304
C250	CAP MONO 22PF 200V 10% NPO	061298
C251	CAP MONO 47PF 200V 10% NPO	061299
C254	CAP MONO .1uF 50V 20% Z5U	061305
C255	CAP MONO .1uF 50V 20% Z5U	061305
C256	CAP ELECT 10UF 16V 4X5 CASE	066382
C257	CAP ELECT 10UF 16V 4X5 CASE	066382
C258	CAP MONO 22PF 200V 10% NPO	061298
C259	CAP MONO 22PF 200V 10% NPO	061298
C260	CAP MONO 22PF 200V 10% NPO	061298
C261	CAP MONO 22PF 200V 10% NPO	061298
C262	CAP ELECT 10UF 16V 4X5 CASE	066382

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C263	CAP ELECT 10UF 16V 4X5 CASE	066382	HS1	HEATSINK TO-220	080016	J22	BLADE FASTON W/FEET	117708
C264	CAP ELECT 10UF 16V 4X5 CASE	066382	IC1	IC VOLUME CONTROL	133187	J23	BLADE FASTON W/FEET	117708
C265	CAP ELECT 10UF 16V 4X5 CASE	066382	IC3	IC QUAD OPERATIONAL AMPLIFIER	133238	J24	BLADE FASTON W/FEET	117708
C278	CAP ELECT 10UF 16V 4X5 CASE	066382	IC4	IC REGULATOR 3.3V LOW DROPOUT	133393	J26	BLADE FASTON W/FEET	117708
C280	CAP MONO .1uF 50V 20% Z5U	061305	IC5	IC VOLUME CONTROL	133187	J27	BLADE FASTON W/FEET	117708
C281	CAP MONO .1uF 50V 20% Z5U	061305	IC7	IC VOLUME CONTROL	133187	J28	BLADE FASTON W/FEET	117708
C282	CAP MONO .1uF 50V 20% Z5U	061305	IC8	IC VOLUME CONTROL	133187	J29	BLADE FASTON W/FEET	117708
C284	CAP MONO .1uF 50V 20% Z5U	061305	IC9	IC VOLUME CONTROL	133187	J30	BLADE FASTON W/FEET	117708
C285	CAP MONO .1uF 50V 20% Z5U	061305	IC10	IC VOLUME CONTROL	133187	J31	CONN 4 PIN	117215
C286	CAP MONO .1uF 50V 20% Z5U	061305	IC11	IC VOLUME CONTROL	133187	J32	CONN 12 PIN FFC	117720
C287	CAP MONO .1uF 50V 20% Z5U	061305	IC16	IC VOLUME CONTROL	133187	J33	JACK HEADPHONE DUAL BLACK 1/8	117549
C288	CAP MONO .1uF 50V 20% Z5U	061305	IC17	IC VOLUME CONTROL	133187	J34	JACK HEADPHONE DUAL BLACK 1/8	117549
C289	CAP MONO .1uF 50V 20% Z5U	061305	IC18	IC VOLUME CONTROL	133187	J40	JACK RCA 4X2 WHT/RED 14MM	117791
C290	CAP MONO .1uF 50V 20% Z5U	061305	IC19	IC VOLUME CONTROL	133187	J41	JACK RCA 4X2 WHT/RED 14MM	117791
C291	CAP ELECT 1000UF 25V	066404	IC20	IC VOLUME CONTROL	133187	J41_	CONN 4 PIN	117215
C300	CAP MONO .1uF 50V 20% Z5U	061305	IC21	IC VOLUME CONTROL	133187	J45	JACK RJ45	117780
C335	CAP ELECT 10UF 16V 4X5 CASE	066382	IC22	IC VOLUME CONTROL	133187	J46	JACK RJ45	117780
C336	CAP ELECT 10UF 16V 4X5 CASE	066382	IC23	IC VOLUME CONTROL	133187	J93	JACK RCA 1X2 WHT/RED 14MM	117788
C337	CAP ELECT 10UF 16V 4X5 CASE	066382	IC24	IC VOLUME CONTROL	133187	K4	RELAY REED FORM 1A 5V 500 OHMS	087050
C338	CAP ELECT 10UF 16V 4X5 CASE	066382	IC25	IC QUAD OPERATIONAL AMPLIFIER	133238	K5	RELAY REED FORM 1A 5V 500 OHMS	087050
C340	CAP ELECT 47UF 50V	066215	IC26	IC QUAD OPERATIONAL AMPLIFIER	133238	K6	RELAY REED FORM 1A 5V 500 OHMS	087050
C341	CAP MONO 1000PF 50V 10% NPO	061303	IC27	IC QUAD OPERATIONAL AMPLIFIER	133238	K7	RELAY REED FORM 1A 5V 500 OHMS	087050
C342	CAP MONO 1000PF 50V 10% NPO	061303	IC28	IC QUAD OPERATIONAL AMPLIFIER	133238	K8	RELAY REED FORM 1A 5V 500 OHMS	087050
C343	CAP MONO 1000PF 50V 10% NPO	061303	IC30	IC RS232 LINE DRIVER	133380	K9	RELAY REED FORM 1A 5V 500 OHMS	087050
C344	CAP MONO 1000PF 50V 10% NPO	061303	IC31	IC REGULATOR 12V	133119	K10	RELAY REED FORM 1A 5V 500 OHMS	087050
C350	CAP ELECT 22UF 100V	066506	IC32	IC NEG 24V REGULATOR	133306	K11	RELAY REED FORM 1A 5V 500 OHMS	087050
C351	CAP ELECT 47UF 50V	066215	IC33	IC REGULATOR +15 VOLT	133086	K12	RELAY POWER TV5 24V	087069
C390	CAP ELECT 470UF 50V	066469	IC34	IC VOLTAGE REGULATOR -15V	133087	K13	RELAY 24VDC 5A	087057
C393	CAP MONO .1uF 50V 20% Z5U	061305	IC35	IC MONOSTB MULTIVIB X 2	133182	K15	RELAY REED FORM 1A 5V 500 OHMS	087050
C394	CAP MONO .1uF 50V 20% Z5U	061305	IC36	IC REGULATOR +5V	133108	K20	RELAY REED FORM 1A 5V 500 OHMS	087050
C395	CAP MONO 220PF 200V 10% NPO	061301	IC37	IC REGULATOR 5V 1.5A LOW DROP	133365	K21	RELAY REED FORM 1A 5V 500 OHMS	087050
C396	CAP MONO .1uF 50V 20% Z5U	061305	IC38	COUPLER OPTICAL SCHMITT OUTPUT	131023	L10	BEADS FERRITE LEADED	076019
C397	CAP MONO 220PF 200V 10% NPO	061301	IC40	IC BIFET OP AMP	133310	L11	BEADS FERRITE LEADED	076019
C398	CAP MONO .1uF 50V 20% Z5U	061305	IC41	IC BIFET OP AMP	133310	L12	BEADS FERRITE LEADED	076019
C399	CAP MONO .1uF 50V 20% Z5U	061305	IC42	IC BIFET OP AMP	133310	L17	BEADS FERRITE LEADED	076019
C450	CAP ELECT 10UF 16V 4X5 CASE	066382	IC44	IC BIFET OP AMP	133310	Q3	TRANSISTOR NPN	132223
D1	DIODE ZENER 33V 5% 1/2W	070121	IC45	IC BIFET OP AMP	133310	Q4	IC VOLTAGE REGULATOR -5.2V	133088
D2	DIODE ZENER 5V	070132	IC46	IC BIFET OP AMP	133310	Q9	TRANSISTOR NPN	132223
D3	DIODE ZENER 6.2V 5% 500MW	070085	IC48	IC 2 INPUT X 4	133167	Q10	TRANSISTOR NPN DAR	132090
D5	DIODE SILICON	070047	IC49	IC 2 INPUT X 4	133167	Q11	TRANSISTOR NPN	132223
D6	DIODE SILICON	070047	IC51	IC 2 INPUT X 4	133167	Q14	TRANSISTOR NPN DAR	132090
D7	DIODE SILICON	070047	IC52	IC 2 INPUT X 4	133167	R1	RES MF 1.1K 1% 1/4W	144091
D8	DIODE SILICON	070047	IC55	IC QUAD OPERATIONAL AMPLIFIER	133238	R2	RES MF 20K 1% 1/4W	144104
D9	DIODE SILICON	070047	IC56	IC QUAD OPERATIONAL AMPLIFIER	133238	R3	RES WW 100 OHM 10% 2W BWH	139134
D10	DIODE SILICON	070047	IC59	COUPLER OPTICAL SCHMITT OUTPUT	131023	R4	RES MF 8.25K 1% 1/4W	144153
D11	DIODE SILICON	070047	IC66	IC SPST QUAD FET SWITCHES N O	133426	R5	RES FP 1.1 OHM 1/4W 5%	137002
D19	DIODE SILICON	070047	IC69	IC OPERATIONAL AMPLIFIER	133189	R6	RES MF 20K 1% 1/4W	144104
D27	DIODE RECTIFIER	070131	IC70	IC OCTAL DAR TRNS ARRY W/DIODE	133360	R7	RES MF 10K 1% 1/4W	144053
D28	DIODE RECTIFIER	070131	IC71	IC SPST QUAD FET SWITCHES N O	133426	R8	RES NETWORK 2X100 OHM ISOLATED	144266
D29	DIODE RECT SI 3A 100V	070041	IC73	IC QUAD OPERATIONAL AMPLIFIER	133238	R9	RES MF 100 OHM 1/4W	144196
D30	DIODE RECT SI 3A 100V	070041	IC80	IC REGULATOR 5V 1.5A LOW DROP	133365	R11	RES NETWORK 2X100 OHM ISOLATED	144266
D31	DIODE RECT SI 3A 100V	070041	IC91	IC VOLUME CONTROL	133187	R12	RES 1.37K 1% 1/4W	144092
D32	DIODE RECT SI 3A 100V	070041	IC92	IC VOLUME CONTROL	133187	R14	RES 1.37K 1% 1/4W	144092
D34	DIODE RECTIFIER	070131	IC93	IC BIFET OP AMP	133310	R15	RES 1.37K 1% 1/4W	144092
D35	DIODE RECTIFIER	070131	IC94	IC BIFET OP AMP	133310	R16	RES 1.37K 1% 1/4W	144092
D36	DIODE RECTIFIER	070131	IC150	IC HEX INVERTER	133193	R17	RES MF 1.65K 1% 1/4W	144093
D37	DIODE RECTIFIER	070131	J1	CONN MALE 10 POS	117219	R22	RES NETWORK 470KX6	144453
D40	DIODE RECTIFIER	070131	J2	CONN 12 PIN FFC	117720	R23	RES NETWORK 4X1K ISO	144276
D41	DIODE RECTIFIER	070131	J3	CONN 12 PIN FFC	117720	R25	RES NETWORK 4X1K ISO	144276
D100	DIODE RECTIFIER	070131	J7_	CONN MALE 5 PIN 0.1 POST ASSY	117216	R27	RES MF 1.1K 1% 1/4W	144091
D101	DIODE RECTIFIER	070131	J8	CONN MALE 10 POS	117219	R28	RES POLYSWITCH RXE030	144240
D210	DIODE SILICON	070047	J9_	CONN SUB-D 25 PIN	117818	R29	RES POLYSWITCH RXE030	144240
DSP1	6 POS CABLE ASSY P603	320045	J10	CONN MALE 10 POS	117219	R30	RES MF 10K 1% 1/4W	144053
F1	3.15A 5x20 fuse IEC	089098	J15_	CONN MALE 9 POS FRICTION LOCK	117244	R31	RES MF 1.21K 1% 1/4W	144191
F2	3.15A 5x20 fuse IEC	089098	J16	CONN MALE 10 POS	117219	R39	RES MF 100K 1% 1/4W	144113
F3	500ma 5x20 fuse IEC	089090	J17_	CONN 3 POS MALE MTS100 NORMAL	117214	R40	RES MF 8.25K 1% 1/4W	144153
			J19	CONN MALE 10 POS	117219	R42	RES MF 10K 1% 1/4W	144053
			J20	CONN SUB-D 9-PIN	117507	R43	RES NET 2 X 22K ISOLATED	144366
			J20_	CONN 4 PIN	117215	R44	RES NET 2 X 22K ISOLATED	144366
			J21	JACK HEADPHONE DUAL BLACK 1/8	117549	R45	RES MF 20K 1% 1/4W	144104

PARTS LIST con't

IC4	IC AND 2 INPUT X 4	133175
IC5	IC SHFT REG SER-PAR	133186
IC6	IC SHFT REG SER-PAR	133186
IC7	IC SHFT REG SER-PAR	133186
IC8	IC SHFT REG SER-PAR	133186
IC9	IC SHFT REG SER-PAR	133186
IC10	IC 8 LN DRIVER ARRAY	133180
IC11	IC 8 LN DRIVER ARRAY	133180
IC12	IC 8 LN DRIVER ARRAY	133180
IC23	IC LINE RECEIVER, QUAD	133428
IC24	IC 2 INPUT X 4	133167
IC25	IC HEX UNBUF INVERTER	133173
IC35	IC 8 LN DRIVER ARRAY	133180
IC40	IC 8-INPUT SEL/MULTI	133219
J1	CONN MALE 7 PIN	117217
J2	CONN 4 PIN	117215
J3	CONN MALE 6 POS FRICTION LOCK	117218
J4_	CONN 11 POS MALE	117279
J5_	CONN MALE 9 POS FRICTION LOCK	117244
J8	JACK MINI	117494
J9	JACK MINI	117494
J10	JACK MINI	117494
J11	JACK MINI	117494
J12	JACK MINI	117494
J13	JACK MINI	117494
J14	JACK MINI	117494
J15	JACK MINI	117494
J16	JACK MINI	117494
J17	JACK MINI	117494
J18	JACK MINI	117494
J19	JACK MINI	117494
J20	JACK MINI	117494
J21	JACK MINI	117494
J22	JACK MINI	117494
J30	CONN 4 PIN	117215
J32	CONN MALE 7 PIN	117217
J36	JACK RCA 4X11 ORANGE 14MM	117778
J37	CONN MALE 10 POS RIGHT ANGLE	117260
L1	CHOKE 3.9uH 5%-10%	122255
L2	CHOKE 18uH 5%-10%	122224
L3	CHOKE 18uH 5%-10%	122224
L4	CHOKE 18uH 5%-10%	122224
L5	CHOKE 18uH 5%-10%	122224
L6	CHOKE 18uH 5%-10%	122224
L7	CHOKE 18uH 5%-10%	122224
L8	CHOKE 18uH 5%-10%	122224
L9	CHOKE 18uH 5%-10%	122224
L10	CHOKE 18uH 5%-10%	122224
OPT1	FIBER OPTIC RECEIVER	058156
OPT2	FIBER OPTIC RECEIVER	058156
OPT3	FIBER OPTIC RECEIVER	058156
OPT4	TRANSMITTER FIBER OPTIC	058157
R1	RES NETWORK 5 X 100 ISO	144260
R2	RES NETWORK 5 X 100 ISO	144260
R3	RES NETWORK 5 X 100 ISO	144260
R5	RES MF 100K 1% 1/4W	144113
R6	RES MF 100K 1% 1/4W	144113
R7	RES MF 100K 1% 1/4W	144113
R8	RES MF 100K 1% 1/4W	144113
R10	RES MF 100K 1% 1/4W	144113
R11	RES MF 100K 1% 1/4W	144113
R20	RES MF 1K 1% 1/4W	144090
R30	RES MF 75 OHM 1% 1/4W	144444
R31	RES MF 75 OHM 1% 1/4W	144444
R32	RES MF 75 OHM 1% 1/4W	144444
R33	RES MF 365 OHM 1% 1/4W	144071

R34	RES MF 95.3 OHM 1% 1/4W	144220
R40	RES MF 10K 1% 1/4W	144053
R60	RES MF 100K 1% 1/4W	144113
R61	RES MF 1K 1% 1/4W	144090
R63	RES MF 100K 1% 1/4W	144113
T 1	TRANSFORMER DIGITAL INTERFACE	159285
U1	IC REGULATOR 12V	133156

Ⓢ S-VIDEO PCB 050035

C3	CAP MONO .1uF 50V 20% Z5U	061305
C4	CAP MONO .1uF 50V 20% Z5U	061305
C7	CAP MONO .1uF 50V 20% Z5U	061305
C8	CAP MONO .1uF 50V 20% Z5U	061305
C9	CAP MONO .1uF 50V 20% Z5U	061305
C10	CAP MONO .1uF 50V 20% Z5U	061305
C11	CAP MONO .1uF 50V 20% Z5U	061305
C13	CAP MONO .1uF 50V 20% Z5U	061305
C14	CAP MONO .1uF 50V 20% Z5U	061305
C15	CAP MONO .1uF 50V 20% Z5U	061305
C16	CAP ELECT 10UF 50V	066445
C17	CAP ELECT 10UF 50V	066445
C21	CAP MONO .1uF 50V 20% Z5U	061305
C22	CAP MONO .1uF 50V 20% Z5U	061305
C24	CAP MONO .1uF 50V 20% Z5U	061305
C26	CAP MONO .1uF 50V 20% Z5U	061305
C29	CAP MONO .1uF 50V 20% Z5U	061305
C30	CAP MONO .1uF 50V 20% Z5U	061305
C31	CAP MONO .1uF 50V 20% Z5U	061305
C32	CAP MONO .1uF 50V 20% Z5U	061305
C34	CAP MONO .1uF 50V 20% Z5U	061305
C36	CAP MONO .1uF 50V 20% Z5U	061305
C46	CAP MONO .1uF 50V 20% Z5U	061305
C47	CAP ELECT 10UF 50V	066445
C48	CAP ELECT 10UF 50V	066445
C49	CAP ELECT 10UF 50V	066445
C50	CAP ELECT 10UF 50V	066445
C51	CAP ELECT 10UF 50V	066445
C54	CAP ELECT 10UF 50V	066445
C59	CAP MONO .1uF 50V 20% Z5U	061305
C60	CAP MONO .1uF 50V 20% Z5U	061305
C61	CAP MONO .1uF 50V 20% Z5U	061305
C68	CAP MONO .1uF 50V 20% Z5U	061305
C70	CAP MONO .1uF 50V 20% Z5U	061305
C71	CAP MONO .1uF 50V 20% Z5U	061305
C72	CAP MONO .1uF 50V 20% Z5U	061305
C73	CAP MONO .1uF 50V 20% Z5U	061305
C74	CAP ELECT 47UF 25V 20% NP	066378
C75	CAP ELECT 47UF 25V 20% NPP	066378
C76	CAP ELECT 47UF 25V 20% NP	066378
C77	CAP ELECT 47UF 25V 20% NP	066378
C78	CAP ELECT 47UF 25V 20% NP	066378
C79	CAP ELECT 47UF 25V 20% NP	066378
C80	CAP MONO 220PF 100V 10% NPO	061301
C81	CAP MONO 220PF 100V 10% NPO	061301
C90	CAP ELECT 47UF 25V 20% NP	066378
C91	CAP ELECT 47UF 25V 20% NP	066378
D5	DIODE SIL SIGNAL 400MA	070098
D6	DIODE SIL SIGNAL 400MA	070098
IC1	IC SPST QUAD FET SWITCHES N O	133426
IC2	IC SPST QUAD FET SWITCHES N O	133426
IC3	IC SPST QUAD FET SWITCHES N O	133426
IC4	IC SPST QUAD FET SWITCHES N O	133426
IC5	IC SPST QUAD FET SWITCHES N O	133426
IC6	IC SPST QUAD FET SWITCHES N O	133426
IC7	IC SPST QUAD FET SWITCHES N O	133426
IC8	IC SPST QUAD FET SWITCHES N O	133426
IC9	IC SPST QUAD FET SWITCHES N O	133426
IC10	IC SPST QUAD FET SWITCHES N O	133426
IC17	IC SPST QUAD FET SWITCHES N O	133426

IC18	IC SPST QUAD FET SWITCHES N O	133426
IC19	IC SPST QUAD FET SWITCHES N O	133426
IC20	IC SHFT REG SER-PAR	133186
IC21	IC SHFT REG SER-PAR	133186
IC22	IC SHFT REG SER-PAR	133186
IC30	IC SHFT REG SER-PAR	133186
IC31	IC SHFT REG SER-PAR	133186
J1	JACK S-VIDEO 3X1 14MM	117779
J2	JACK S-VIDEO 3X1 14MM	117779
J3	JACK S-VIDEO 3X1 14MM	117779
J4	JACK S-VIDEO 3X1 14MM	117779
J5	JACK S-VIDEO 3X1 14MM	117779
J20	CONN MALE 10 POS RIGHT ANGLE	117260
J23	CONN MALE 6 POS FRICTION LOCK	117218
J25_	CONN 4 PIN	117215
Q1	TRANSISTOR NPN	132223
R1	RES MF 75 OHM 1% 1/4W	144444
R2	RES MF 75 OHM 1% 1/4W	144444
R3	RES MF 75 OHM 1% 1/4W	144444
R4	RES MF 75 OHM 1% 1/4W	144444
R5	RES MF 75 OHM 1% 1/4W	144444
R6	RES MF 806 OHM 1% 1/4W	144089
R7	RES MF 75 OHM 1% 1/4W	144444
R8	RES MF 75 OHM 1% 1/4W	144444
R9	RES MF 75 OHM 1% 1/4W	144444
R10	RES MF 75 OHM 1% 1/4W	144444
R11	RES MF 806 OHM 1% 1/4W	144089
R12	RES MF 75 OHM 1% 1/4W	144444
R13	RES MF 75 OHM 1% 1/4W	144444
R14	RES MF 75 OHM 1% 1/4W	144444
R15	RES MF 806 OHM 1% 1/4W	144089
R16	RES MF 75 OHM 1% 1/4W	144444
R17	RES MF 75 OHM 1% 1/4W	144444
R18	RES MF 75 OHM 1% 1/4W	144444
R19	RES MF 75 OHM 1% 1/4W	144444
R20	RES MF 75 OHM 1% 1/4W	144444
R21	RES MF 10K 1% 1/4W	144053
R22	RES MF 806 OHM 1% 1/4W	144089
R23	RES MF 806 OHM 1% 1/4W	144089
R24	RES MF 10K 1% 1/4W	144053
R25	RES MF 75 OHM 1% 1/4W	144444
R26	RES MF 10K 1% 1/4W	144053
R27	RES MF 806 OHM 1% 1/4W	144089
R28	RES MF 806 OHM 1% 1/4W	144089
R29	RES MF 806 OHM 1% 1/4W	144089
R30	RES MF 75 OHM 1% 1/4W	144444
R31	RES MF 10K 1% 1/4W	144053
R32	RES MF 75 OHM 1% 1/4W	144444
R33	RES MF 75 OHM 1% 1/4W	144444
R34	RES MF 10K 1% 1/4W	144053
R35	RES MF 75 OHM 1% 1/4W	144444
R36	RES MF 806 OHM 1% 1/4W	144089
R37	RES MF 806 OHM 1% 1/4W	144089
R38	RES MF 806 OHM 1% 1/4W	144089
R39	RES MF 10K 1% 1/4W	144053
R40	RES MF 806 OHM 1% 1/4W	144089
R49	RES FP 10 OHM 5% 1/4W	137025
R50	RES FP 10 OHM 5% 1/4W	137025
R51	RES FP 10 OHM 5% 1/4W	137025
R52	RES FP 10 OHM 5% 1/4W	137025
R54	RES FP 10 OHM 5% 1/4W	137025
R56	RES FP 10 OHM 5% 1/4W	137025
R60	RES NETWORK 8X47KI	144457
R61	RES NETWORK 8X47KI	144457
R62	RES NETWORK 8X47KI	144457
R63	RES NETWORK 8X47KI	144457
R67	RES FP 10 OHM 5% 1/4W	137025
R68	RES MF 75 OHM 1% 1/4W	144444
R69	RES MF 75 OHM 1% 1/4W	144444
R70	RES MF 75 OHM 1% 1/4W	144444

PARTS LIST con't

R71	RES MF 75 OHM 1% 1/4W	144444
R72	RES MF 75 OHM 1% 1/4W	144444
R73	RES MF 75 OHM 1% 1/4W	144444
R75	RES NET 2 X 22K ISOLATED	144366
R76	RES FP 10 OHM 5% 1/4W	137025
R77	RES MF 1K 1% 1/4W	144090
R80	RES FP 10 OHM 5% 1/4W	137025
R81	RES FP 10 OHM 5% 1/4W	137025
R85	RES FP 10 OHM 5% 1/4W	137025
R86	RES MF 10K 1% 1/4W	144053
R87	RES MF 4.99K 1% 1/4W	144098
R88	RES FP 10 OHM 5% 1/4W	137025
R89	RES MF 4.99K 1% 1/4W	144098
R90	RES MF 75 OHM 1% 1/4W	144444
R91	RES MF 75 OHM 1% 1/4W	144444
R92	RES MF 806 OHM 1% 1/4W	144089
R93	RES MF 806 OHM 1% 1/4W	144089
R94	RES MF 10K 1% 1/4W	144053
R95	RES MF 806 OHM 1% 1/4W	144089
R96	RES MF 10K 1% 1/4W	144053
R97	RES MF 806 OHM 1% 1/4W	144089
SP1	BRACKET PCB CARD MOUNTING	003611
SP2	BRACKET PCB CARD MOUNTING	003611
U13	IC 100MA I FEEDBACK AMP	133286
U14	IC 100MA I FEEDBACK AMP	133286
U15	IC 100MA I FEEDBACK AMP	133286
U16	IC 100MA I FEEDBACK AMP	133286

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C5	CAP ELECT 10UF 50V	066445
C6	CAP ELECT 10UF 50V	066445
C7	CAP ELECT 10UF 50V	066445
C8	CAP ELECT 10UF 50V	066445
C11	CAP MONO .1uF 50V 20% Z5U	061305
C12	CAP MONO .1uF 50V 20% Z5U	061305
C13	CAP MONO .1uF 50V 20% Z5U	061305
C14	CAP MONO .1uF 50V 20% Z5U	061305
C16	CAP MONO .1uF 50V 20% Z5U	061305
C17	CAP MONO .1uF 50V 20% Z5U	061305
C18	CAP MONO .1uF 50V 20% Z5U	061305
C19	CAP MONO .1uF 50V 20% Z5U	061305
C20	CAP MONO .1uF 50V 20% Z5U	061305
C21	CAP MONO .1uF 50V 20% Z5U	061305
C22	CAP MONO .1uF 50V 20% Z5U	061305
C23	CAP MONO .1uF 50V 20% Z5U	061305
C24	CAP MONO .1uF 50V 20% Z5U	061305
C25	CAP MONO .1uF 50V 20% Z5U	061305
C26	CAP MONO .1uF 50V 20% Z5U	061305
C27	CAP MONO .1uF 50V 20% Z5U	061305
C30	CAP MONO .1uF 50V 20% Z5U	061305
C31	CAP MONO .1uF 50V 20% Z5U	061305
C32	CAP MONO .1uF 50V 20% Z5U	061305
C33	CAP MONO .1uF 50V 20% Z5U	061305
C35	CAP ELECT 47UF 50V	066215
C36	CAP ELECT 47UF 50V	066215
C37	CAP ELECT 47UF 50V	066215
C38	CAP ELECT 47UF 50V	066215
C39	CAP ELECT 47UF 50V	066215
C40	CAP ELECT 47UF 50V	066215
C41	CAP ELECT 47UF 50V	066215
C42	CAP ELECT 47UF 50V	066215
C43	CAP ELECT 47UF 25V 20% NP	066378
C44	CAP ELECT 47UF 25V 20% NP	066378
C45	CAP ELECT 47UF 25V 20% NP	066378
C46	CAP ELECT 47UF 25V 20% NP	066378

C48	CAP MONO .1uF 50V 20% Z5U	061305
C50	CAP MONO .1uF 50V 20% Z5U	061305
C51	CAP MONO .1uF 50V 20% Z5U	061305
C55	CAP MONO .1uF 50V 20% Z5U	061305
C63	CAP ELECT 47UF 50V	066215
C64	CAP ELECT 47UF 50V	066215
C65	CAP ELECT 47UF 50V	066215
C83	CAP MONO 220PF 200V 10% NPO	061301
D1	DIODE SIL SIGNAL 400MA	070098
D2	DIODE SIL SIGNAL 400MA	070098
IC2	IC SPST QUAD FET SWITCHES N O	133426
IC3	IC SPST QUAD FET SWITCHES N O	133426
IC4	IC SPST QUAD FET SWITCHES N O	133426
IC5	IC SPST QUAD FET SWITCHES N O	133426
IC6	IC SPST QUAD FET SWITCHES N O	133426
IC7	IC SPST QUAD FET SWITCHES N O	133426
IC8	IC SHFT REG SER-PAR	133186
IC9	IC 100MA I FEEDBACK AMP	133286
IC10	IC 100MA I FEEDBACK AMP	133286
IC13	IC SHFT REG SER-PAR	133186
IC14	IC SHFT REG SER-PAR	133186
IC15	IC SHFT REG SER-PAR	133186
IC16	IC SPST QUAD FET SWITCHES N O	133426
IC17	IC SHFT REG SER-PAR	133186
IC19	IC NAND SCHMIT 2-IN X 4	133192
J1	JACK RCA 3X1 YELLOW 14MM	117777
J2	JACK RCA 3X1 YELLOW 14MM	117777
J3	JACK RCA 3X1 YELLOW 14MM	117777
J4	JACK RCA 3X1 YELLOW 14MM	117777
J5	JACK RCA 3X1 YELLOW 14MM	117777
J10	CONN 4 PIN	117215
J20	CONN MALE 12 POS ASSY	117220
R1	RES MF 75 OHM 1% 1/4W	144444
R2	RES MF 10K 1% 1/4W	144053
R3	RES MF 75 OHM 1% 1/4W	144444
R5	RES MF 75 OHM 1% 1/4W	144444
R9	RES MF 10K 1% 1/4W	144053
R10	RES MF 806 OHM 1% 1/4W	144089
R11	RES MF 75 OHM 1% 1/4W	144444
R12	RES MF 806 OHM 1% 1/4W	144089
R13	RES MF 75 OHM 1% 1/4W	144444
R14	RES MF 75 OHM 1% 1/4W	144444
R15	RES MF 75 OHM 1% 1/4W	144444
R16	RES MF 806 OHM 1% 1/4W	144089
R17	RES MF 75 OHM 1% 1/4W	144444
R18	RES MF 806 OHM 1% 1/4W	144089
R19	RES MF 10K 1% 1/4W	144053
R20	RES MF 75 OHM 1% 1/4W	144444
R21	RES MF 806 OHM 1% 1/4W	144089
R22	RES MF 806 OHM 1% 1/4W	144089
R23	RES MF 75 OHM 1% 1/4W	144444
R24	RES MF 806 OHM 1% 1/4W	144089
R25	RES MF 75 OHM 1% 1/4W	144444
R26	RES MF 806 OHM 1% 1/4W	144089
R27	RES MF 10K 1% 1/4W	144053
R28	RES MF 75 OHM 1% 1/4W	144444
R29	RES FP 10 OHM 5% 1/4W	137025
R30	RES NETWORK 8X47KI	144457
R31	RES NETWORK 8X47KI	144457
R32	RES FP 10 OHM 5% 1/4W	137025
R33	RES FP 10 OHM 5% 1/4W	137025
R34	RES FP 10 OHM 5% 1/4W	137025
R35	RES FP 10 OHM 5% 1/4W	137025
R43	RES MF 75 OHM 1% 1/4W	144444
R44	RES MF 75 OHM 1% 1/4W	144444
R45	RES MF 75 OHM 1% 1/4W	144444
R55	RES FP 10 OHM 5% 1/4W	137025
R56	RES MF 4.99K 1% 1/4W	144098
R57	RES FP 10 OHM 5% 1/4W	137025
R58	RES MF 4.99K 1% 1/4W	144098

7 INPUT PCB 050032

R60	RES NETWORK 8X47KI	144457
R61	RES NETWORK 3X22K ISO	144274
R91	RES MF 1.1K 1% 1/4W	144091
C5	CAP MONO .1uF 50V 20% Z5U	061305
C6	CAP MONO .1uF 50V 20% Z5U	061305
C7	CAP MONO .1uF 50V 20% Z5U	061305
C8	CAP MONO .1uF 50V 20% Z5U	061305
C9	CAP ELECT 10UF 16V 4X5 CASE	066382
C10	CAP ELECT 4.7UF 50V	066512
C11	CAP ELECT 1UF 50V	066510
C12	CAP MONO 100PF 100V 10PO	061300
C13	CAP MONO 100PF 100V 10PO	061300
C14	CAP MONO 100PF 100V 10PO	061300
C15	CAP MONO .1uF 50V 20% Z5U	061305
C16	CAP MONO .1uF 50V 20% Z5U	061305
C17	CAP MONO .1uF 50V 20% Z5U	061305
C18	CAP MONO .1uF 50V 20% Z5U	061305
C19	CAP MONO .1uF 50V 20% Z5U	061305
C20	CAP MONO .1uF 50V 20% Z5U	061305
C21	CAP MONO .1uF 50V 20% Z5U	061305
C22	CAP MONO .1uF 50V 20% Z5U	061305
C23	CAP MONO .1uF 50V 20% Z5U	061305
C24	CAP MONO .1uF 50V 20% Z5U	061305
C25	CAP MONO .1uF 50V 20% Z5U	061305
C26	CAP MONO .1uF 50V 20% Z5U	061305
C27	CAP MONO .1uF 50V 20% Z5U	061305
C28	CAP MONO .1uF 50V 20% Z5U	061305
C29	CAP MONO .1uF 50V 20% Z5U	061305
C30	CAP MONO .1uF 50V 20% Z5U	061305
C31	CAP MONO .1uF 50V 20% Z5U	061305
C32	CAP MONO .1uF 50V 20% Z5U	061305
C33	CAP MONO .1uF 50V 20% Z5U	061305
C34	CAP MONO 100PF 100V 10PO	061300
C35	CAP ELECT 470UF 16V	066508
C36	CAP MONO .1uF 50V 20% Z5U	061305
C37	CAP MONO .1uF 50V 20% Z5U	061305
C38	CAP MONO .1uF 50V 20% Z5U	061305
C39	CAP MONO .1uF 50V 20% Z5U	061305
C40	CAP MONO 47PF 200V 10PO	061299
C41	CAP MONO 100PF 100V 10PO	061300
C42	CAP MONO .1uF 50V 20% Z5U	061305
C43	CAP ELECT 470UF 16V	066508
C44	CAP ELECT 10UF 16V 4X5 CASE	066382
C45	CAP MONO 47PF 200V 10PO	061299
C46	CAP ELECT 10UF 16V 4X5 CASE	066382
C47	CAP MONO 100PF 100V 10PO	061300
C48	CAP ELECT 10UF 16V 4X5 CASE	066382
C50	CAP ELECT 10UF 16V 4X5 CASE	066382
C51	CAP MPF 0.033UF 5VDC	064318
C52	CAP MPF 0.033UF 5VDC	064318
C53	CAP MONO .1uF 50V 20% Z5U	061305
C54	CAP ELECT 10UF 16V 4X5 CASE	066382
C55	CAP MONO .1uF 50V 20% Z5U	061305
C57	CAP MPF 0.01UF 5% 63VDC	064312
C58	CAP MPF 0.01UF 5% 63VDC	064312
C59	CAP MONO .1uF 50V 20% Z5U	061305
C60	CAP MONO .1uF 50V 20% Z5U	061305
C61	CAP ELECT 10UF 16V 4X5 CASE	066382
C62	CAP ELECT 10UF 16V 4X5 CASE	066382
C65	CAP ELECT 10UF 16V 4X5 CASE	066382
C70	CAP MONO 220PF 200V 10% NPO	061301
C98	CAP ELECT 10UF 16V 4X5 CASE	066382
C104	CAP ELECT 10UF 16V 4X5 CASE	066382
C106	CAP ELECT 10UF 16V 4X5 CASE	066382
C108	CAP ELECT 10UF 16V 4X5 CASE	066382
C110	CAP ELECT 10UF 16V 4X5 CASE	066382
C112	CAP ELECT 10UF 16V 4X5 CASE	066382

PARTS LIST con't

C60	TRIM CAP 2-10PF	060027
C61	3-27PF TRIMMER CAPACITOR	060029
C62	TRIM CAP 2-10PF	060027
C63	TRIM CAP 2-10PF	060027
C64	3-27PF TRIMMER CAPACITOR	060029
C65	3-27PF TRIMMER CAPACITOR	060029
C67	ELECT CAP 100UF 25V	066447
C68	ELECT CAP 100UF 25V	066447
C69	ELECT CAP 100UF 25V	066447
C70	DISC CAP .47UF 50V MONOLITHIC	061249
C71	DISC CAP .47UF 50V MONOLITHIC	061249
C72	DISC CAP .47UF 50V MONOLITHIC	061249
C73	M POLY CAP 0.22UF 5%	064329
C74	MONO CAP .0022UF 10% 50V RADI	061287
C75	MONO CAP .047UF 10% 50V RADIA	061286
C76	CAP MONO 220PF 5% 100V NPO	061273
C77	CAP MONO 220PF 5% 100V NPO	061273
C78	CAP MONO 220PF 5% 100V NPO	061273
C79	CAP MONO 220PF 5% 100V NPO	061273
C80	M POLY CAP .022UF 5% 63V DC	064316
C81	M POLY CAP .022UF 5% 63V DC	064316
C82	CAP MPF 0.0068UF 10% 63VDC	064310
C83	CAP MPF 0.0068UF 10% 63VDC	064310
C102	MONO CAP 0.1MF 20% 50V	061277
C103	MONO CAP .0022UF 10% 50V RADI	061287
C104	MONO CAP 0.1MF 20% 50V	061277
C105	MONO CAP 0.1MF 20% 50V	061277
C106	3-27PF TRIMMER CAPACITOR	060029
D1	DIODE TUNING	070122
D2	DIODE TUNING	070122
D3	DIODE TUNING	070122
D4	DIODE TUNING	070122
(D5 D6 D7 D8)ALL 8 DIODES USED ON JAPANESE VERSION		
D10	SILICONE DIODE	070047
D11	TUNING DIODE	070125
D12	TUNING DIODE	070125
D101	TUNING DIODE	070125
D102	SILICONE DIODE	070047
D103	SILICONE DIODE	070047
D104	SILICONE DIODE	070047
FN1	FILTER CERAMIC 10.7MHZ	180056
FN2	FILTER CERAMIC 10.7MHZ	180056
FN3	FILTER CERAMIC 10.7MHZ	180056
FN6	FILTER 450KHZ	180055
IC1	IC FM FRONT END	133231
IC2	AM-FM MPX TUNER IC	133381
IC3	IC DIRECT PLL FREQ SYNTHESIZER	133270
IC4	IC OPERATIONAL AMPLIFIER	133189
IC5	IC OPERATIONAL AMPLIFIER	133189
IC6	IC +8V VOLTAGE REGULATOR	133147
J1	GOLD F CONNECTOR RIGHT ANGLE	117661
J2	CONN 7-PIN DIN	117383
J3	MALE CONN 6 PIN RT ANGLE	117223
J4	CONN RT ANGLE 7 POS	117319
J5	CONNECTOR 4 PIN RT ANGLE	117240
J6	CONNECTOR 2-PIN MALE	117213
J101-	CONTACT MALE 18-14AWG	117667
L1	RF CHOKE 3.3YH 10%	122229
L2	MIXER COIL	122250
L3	MIXER COIL	122250
L4	ANT COIL	122249
L5	ANT COIL	122249
Q1	TRANSISTOR "D" MOS FET	132256
Q2	TRANSISTOR PNP	132224
Q3	TRANSISTOR NPN	132223
Q5	TRANSISTOR NPN	132223

Q6	TRANSISTOR NPN	132223
Q7	TRANSISTOR NPN	132223
Q8	TRANSISTOR 1-4V PNC OFF 250 OH	132220
Q9	TRANSISTOR PNP	132224
Q10	TRANSISTOR NPN	132223
Q11	TRANSISTOR NPN	132223
Q12	TRANSISTOR NPN	132223
Q101	TRANSISTOR 1-4V PNC OFF 250 OH	132220
Q102	TRANSISTOR RF FET J-310 FET	132178
R1	RES CF 10K 5% 1/4W	141072
R3	RES CF 1.0K 5% 1/4W	141049
R4	RES CF 100 OHM 5% 1/4W	141025
R5	RES CF 1.0K 5% 1/4W	141049
R6	RES CF 15K 5% 1/4W	141076
R7	RES CF 1.0K 5% 1/4W	141049
R8	RES CF 47K 5% 1/4W	141088
R9	RES CF 47K 5% 1/4W	141088
R10	METAL FILM RES 2.87K 1% 1/4W	144142
R11	RES CF 10K 5% 1/4W	141072
R13	RES CF 47K 5% 1/4W	141088
R14	RES CF 100 OHM 5% 1/4W	141025
R15	RES CF 10K 5% 1/4W	141072
R16	RES CF 2.2M 5% 1/4W	141124
R17	RES CF 22K 5% 1/4W	141080
R18	RES CF 47K 5% 1/4W	141088
R19	RES CF 10K 5% 1/4W	141072
R20	RES CF 15K 5% 1/4W	141076
R21	RES CF 100 OHM 5% 1/4W	141025
R22	RES CF 4.7K 5% 1/4W	141064
R23	RES CF 330 5% 1/4W	141037
R24	RES CF 4.7K 5% 1/4W	141064
R25	METAL FILM RES 2.87K 1% 1/4W	144142
R26	RES CF 330 5% 1/4W	141037
R27	RES CF 680K 5% 1/4W	141116
R28	RES CF 680K 5% 1/4W	141116
R29	RES CF 10K 5% 1/4W	141072
R30	RES CF 1.0K 5% 1/4W	141049
R32	METAL FILM RES 4.75K 1% 1/4W	144097
R33	RES CF 4.7K 5% 1/4W	141064
R35	RES CF 4.7K 5% 1/4W	141064
R38	RES CF 1.0K 5% 1/4W	141049
R39	RES CF 2.2K 5% 1/4W	141057
R40	RES CF 15K 5% 1/4W	141076
R41	RES CF 10K 5% 1/4W	141072
R42	RES CF 2.2M 5% 1/4W	141124
R44	RES CF 10K 5% 1/4W	141072
R46	RES CF 2.2K 5% 1/4W	141057
R47	METAL FILM RES 2.67K 1% 1/4W	144121
R48	METAL FILM RES 2.67K 1% 1/4W	144121
R50	RES CF 10K 5% 1/4W	141072
R51	RES CF 47 OHM 5% 1/4W	141152
R52	RES CF 22K 5% 1/4W	141080
R54	RES CF 220 OHM 5% 1/4W	141033
R55	RES CF 22K 5% 1/4W	141080
R56	RES CF 100K 5% 1/4W	141096
R58	RES CF 22K 5% 1/4W	141080
R60	RES CF 100 OHM 5% 1/4W	141025
R61	RES CF 100K 5% 1/4W	141096
R63	RES CF 3.3K 5% 1/4W	141060
R64	RES CF 10K 5% 1/4W	141072
R65	RES CF 220 OHM 5% 1/4W	141033
R67	RES CF 22 OHM 5% 1/4W	141144
R68	RES CF 10K 5% 1/4W	141072
R69	RES CF 4.7K 5% 1/4W	141064
R70	TRIMPOT 22K	134406
R71	POTENTIOMETER 10K OHM	134414
R73	POTENTIOMETER 10K OHM	134414
R74	RES CF 47 OHM 5% 1/4W	141152
R75	RES CF 10K 5% 1/4W	141072
R76	RES CF 100K 5% 1/4W	141096

R101	RES CF 10K 5% 1/4W	141072
R102	RES CF 10K 5% 1/4W	141072
R103	RES CF 470 OHM 5% 1/4W	141041
R104	RES CF 22 OHM 5% 1/4W	141144
R105	RES CF 10K 5% 1/4W	141072
T7	TRANSFORMER (MATCHING)	162113
T8	TRANSFORMER QUAD DET SEC	162103
T9	TRANSFORMER QUAD DET PRIM	162102
T10	10.7MHZ MIXER TRANSFORMER	162114
T11	AM OSC COIL	162115
T12	AM RF TRANSFORMER	162117
T101	AM OSC COIL	162115
Y1	CRYSTAL 7.2MHZ	180036
Y2	CERAMIC RESONATOR 450KHZ	180046

◇ BALANCED PCB 050040

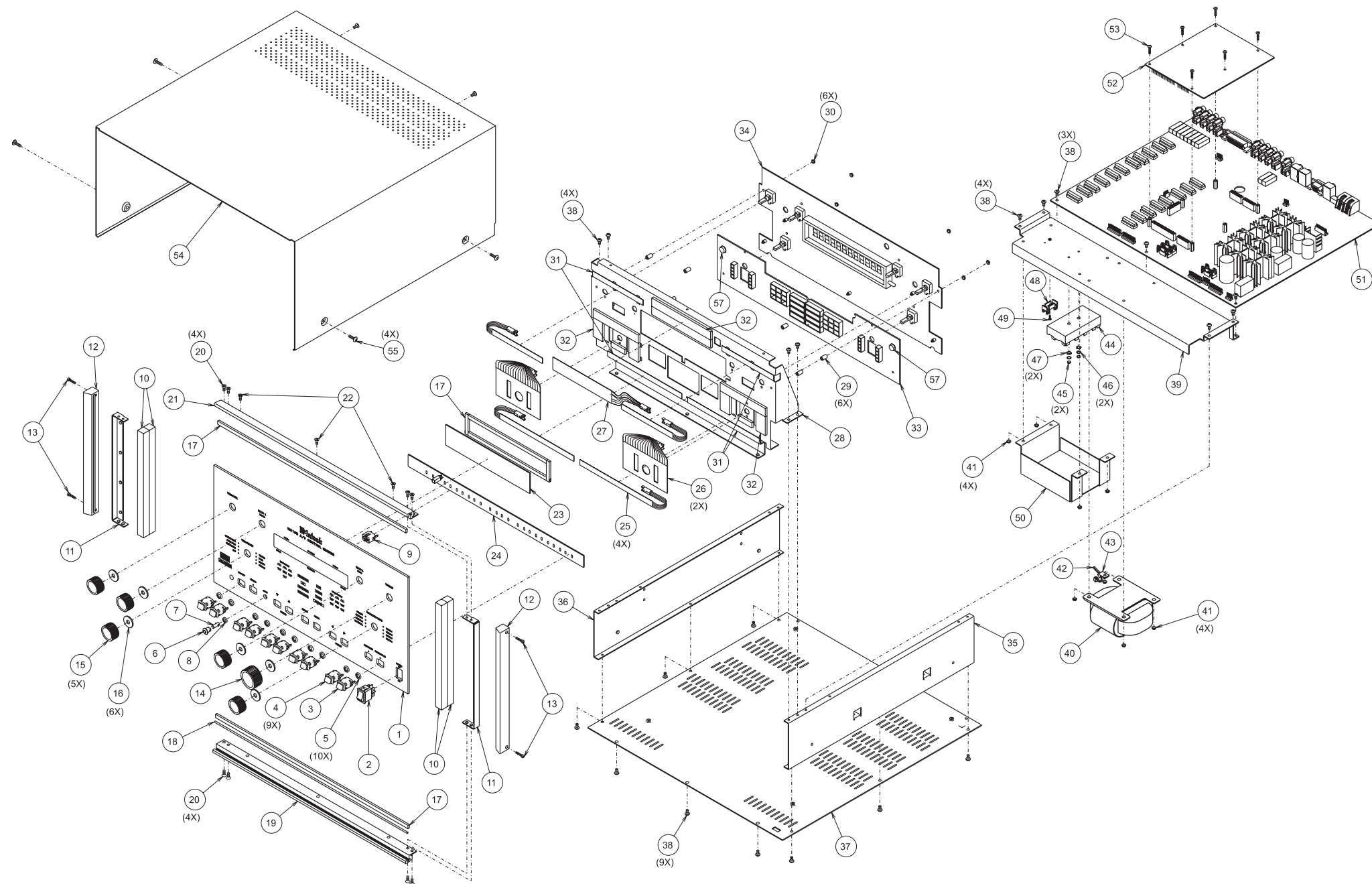
C1	CAP ELECT 10UF 50V	066445
C2	CAP ELECT 10UF 50V	066445
C3	CAP ELECT 10UF 50V	066445
C4	CAP ELECT 10UF 50V	066445
C5	CAP MONO .1uF 50V 20% Z5U	061305
C6	CAP MONO .1uF 50V 20% Z5U	061305
C7	CAP MONO .1uF 50V 20% Z5U	061305
C8	CAP ELECT 10UF 50V	066445
C9	CAP MONO 100PF 100V 10% NPO	061300
C10	CAP MONO 100PF 100V 10% NPO	061300
C11	CAP MONO 100PF 100V 10% NPO	061300
C12	CAP MONO 100PF 100V 10% NPO	061300
C13	CAP MONO 100PF 100V 10% NPO	061300
C14	CAP MONO 100PF 100V 10% NPO	061300
C15	CAP MONO 100PF 100V 10% NPO	061300
C16	CAP ELECT 10UF 50V	066445
C17	CAP MONO 100PF 100V 10% NPO	061300
C18	CAP MONO 100PF 100V 10% NPO	061300
C19	CAP ELECT 10UF 50V	066445
C20	CAP ELECT 10UF 50V	066445
C21	CAP MONO 100PF 100V 10% NPO	061300
C22	CAP MONO 100PF 100V 10% NPO	061300
C23	CAP ELECT 10UF 50V	066445
C24	CAP ELECT 10UF 50V	066445
C25	CAP ELECT 10UF 50V	066445
C26	CAP ELECT 10UF 50V	066445
C27	CAP MONO .1uF 50V 20% Z5U	061305
C28	CAP MONO 100PF 100V 10% NPO	061300
C29	CAP ELECT 470UF 50V	066469
C30	CAP ELECT 10UF 50V	066445
C31	CAP ELECT 10UF 50V	066445
C36	CAP ELECT 10UF 50V	066445
C37	CAP ELECT 10UF 50V	066445
C38	CAP ELECT 10UF 50V	066445
C39	CAP ELECT 10UF 50V	066445
C40	CAP ELECT 10UF 50V	066445
C41	CAP MONO .1uF 50V 20% Z5U	061305
C42	CAP MONO .1uF 50V 20% Z5U	061305
C43	CAP ELECT 10UF 50V	066445
C44	CAP MONO .1uF 50V 20% Z5U	061305
C46	CAP ELECT 10UF 50V	066445
C47	CAP ELECT 10UF 50V	066445
C48	CAP ELECT 10UF 50V	066445
C49	CAP ELECT 10UF 50V	066445
C50	CAP ELECT 10UF 50V	066445
C51	CAP ELECT 10UF 50V	066445
C52	CAP ELECT 10UF 50V	066445
C53	CAP ELECT 10UF 50V	066445
C54	CAP ELECT 10UF 50V	066445
C55	CAP MONO .1uF 50V 20% Z5U	061305
C56	CAP MONO .1uF 50V 20% Z5U	061305
C57	CAP ELECT 10UF 50V	066445
C58	CAP ELECT 10UF 50V	066445

PARTS LIST con't

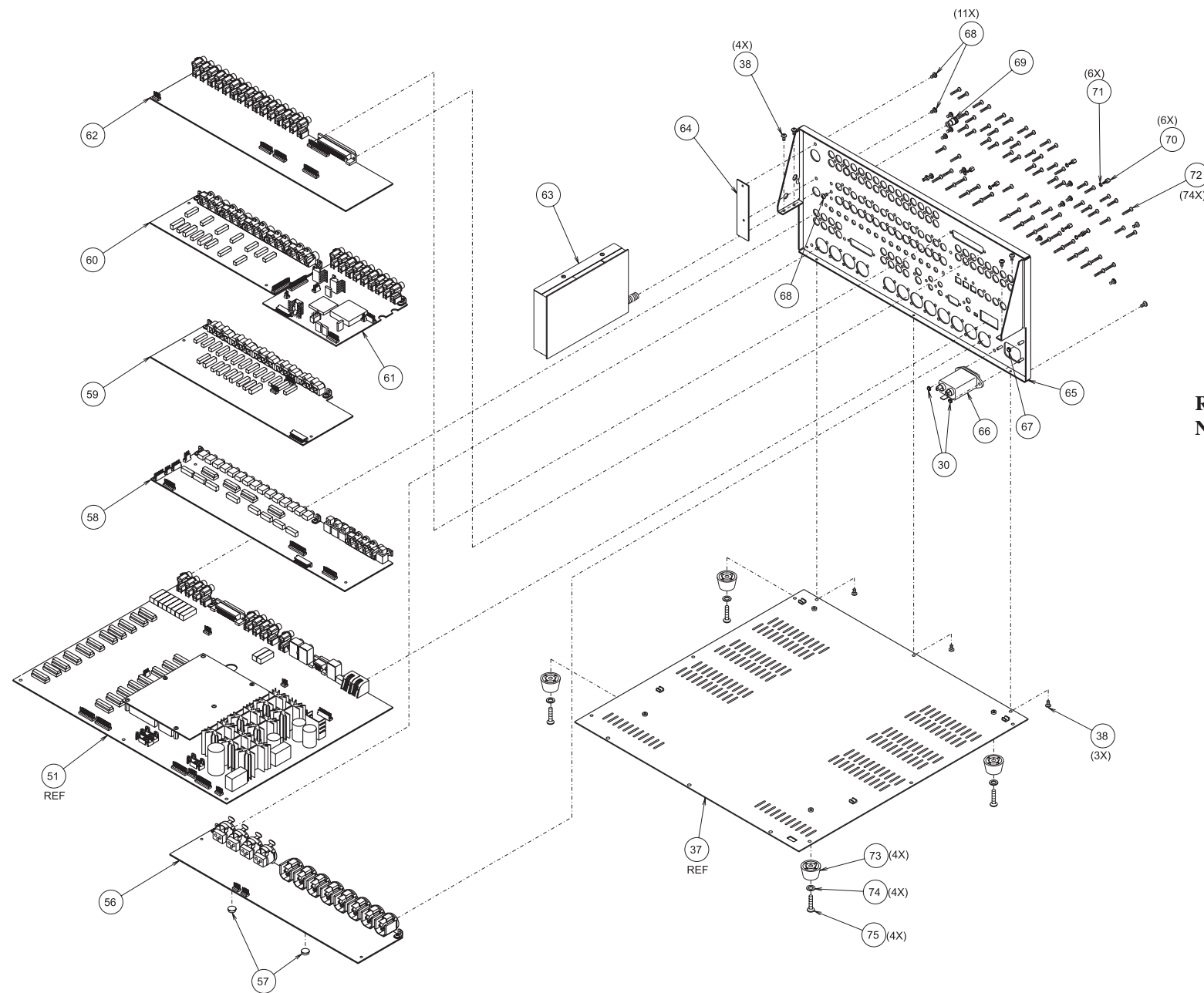
C59	CAP MONO .1uF 50V 20% Z5U	061305
C60	CAP ELECT 10UF 50V	066445
C61	CAP ELECT 10UF 50V	066445
C62	CAP ELECT 10UF 50V	066445
C63	CAP MONO .1uF 50V 20% Z5U	061305
C64	CAP ELECT 10UF 50V	066445
C65	CAP ELECT 10UF 50V	066445
C66	CAP ELECT 10UF 50V	066445
C67	CAP ELECT 10UF 50V	066445
C68	CAP ELECT 10UF 50V	066445
C69	CAP ELECT 10UF 50V	066445
C70	CAP MONO .1uF 50V 20% Z5U	061305
C71	CAP ELECT 10UF 50V	066445
C72	CAP ELECT 10UF 50V	066445
C73	CAP ELECT 10UF 50V	066445
C74	CAP ELECT 10UF 50V	066445
C75	CAP ELECT 10UF 50V	066445
C76	CAP ELECT 10UF 50V	066445
D4	DIODE SILICON	070047
D5	DIODE SILICON	070047
D6	DIODE SILICON	070047
D7	DIODE SILICON	070047
IC70	IC OCTAL DAR TRNS ARRY W/DIODE	133360
J2	XLR FEMALE HORIZ PCB WITH LATCH	117814
J3	XLR FEMALE HORIZ PCB WITH LATCH	117814
J4	XLR FEMALE HORIZ PCB WITH LATCH	117814
J5	XLR FEMALE HORIZ PCB WITH LATCH	117814
J10	RECEPTACLE XLR MALE	117686
J11	RECEPTACLE XLR MALE	117686
J12	RECEPTACLE XLR MALE	117686
J13	RECEPTACLE XLR MALE	117686
J14	RECEPTACLE XLR MALE	117686
J15	RECEPTACLE XLR MALE	117686
J16	RECEPTACLE XLR MALE	117686
J17	RECEPTACLE XLR MALE	117686
J31	CONN 12 PIN FFC	117720
J32	CONN 4 PIN	117215
J33	CONN 12 PIN FFC	117720
J34	CONN 4 PIN	117215
J35	CONN 12 PIN FFC	117720
K19	RELAY REED FORM 1A 5V 500 OHMS	087050
K20	RELAY REED FORM 1A 5V 500 OHMS	087050
K21	RELAY REED FORM 1A 5V 500 OHMS	087050
K22	RELAY REED FORM 1A 5V 500 OHMS	087050
K23	RELAY REED FORM 1A 5V 500 OHMS	087050
K24	RELAY REED FORM 1A 5V 500 OHMS	087050
K25	RELAY REED FORM 1A 5V 500 OHMS	087050
K26	RELAY REED FORM 1A 5V 500 OHMS	087050
R1	RES NETWORK 2X220K ISO	144262
R2	RES MF 20K 1% 1/4W	144104
R3	RES MF 20K 1% 1/4W	144104
R4	RES MF 20K 1% 1/4W	144104
R5	RES MF 20K 1% 1/4W	144104
R6	RES MF 20K 1% 1/4W	144104
R7	RES MF 20K 1% 1/4W	144104
R8	RES MF 10K 1% 1/4W	144053
R9	RES MF 10K 1% 1/4W	144053
R10	RES MF 10K 1% 1/4W	144053
R11	RES MF 10K 1% 1/4W	144053
R12	RES MF 10K 1% 1/4W	144053
R13	RES MF 10K 1% 1/4W	144053
R14	RES MF 10K 1% 1/4W	144053
R15	RES MF 10K 1% 1/4W	144053
R16	RES MF 20K 1% 1/4W	144104
R17	RES MF 20K 1% 1/4W	144104
R18	RES NETWORK 2X220K ISO	144262

R19	RES NET 2 X 22K ISOLATED	144366
R20	RES NET 2 X 22K ISOLATED	144366
R21	RES MF 10 OHM 1/4W	144157
R22	RES NET 2 X 22K ISOLATED	144366
R23	RES MF 10 OHM 1/4W	144157
R24	RES NET 2 X 22K ISOLATED	144366
R25	RES MF 10 OHM 1/4W	144157
R31	RES MF 20K 1% 1/4W	144104
R32	RES MF 20K 1% 1/4W	144104
R33	RES MF 100 OHM 1% 1/4W	144196
R34	RES MF 100 OHM 1% 1/4W	144196
R35	RES MF 100 OHM 1% 1/4W	144196
R36	RES MF 100 OHM 1% 1/4W	144196
R37	RES MF 100 OHM 1% 1/4W	144196
R38	RES MF 100 OHM 1% 1/4W	144196
R39	RES MF 100 OHM 1% 1/4W	144196
R40	RES MF 100 OHM 1% 1/4W	144196
R41	RES MF 20K 1% 1/4W	144104
R42	RES MF 20K 1% 1/4W	144104
R43	RES MF 20K 1% 1/4W	144104
R44	RES MF 20K 1% 1/4W	144104
R45	RES MF 20K 1% 1/4W	144104
R46	RES MF 20K 1% 1/4W	144104
R47	RES MF 100 OHM 1% 1/4W	144196
R48	RES MF 100 OHM 1% 1/4W	144196
R49	RES MF 100 OHM 1% 1/4W	144196
R50	RES MF 22.1K 1/4W	144187
R51	RES MF 22.1K 1/4W	144187
R52	RES MF 22.1K 1/4W	144187
R53	RES NETWORK 2X220K ISO	144262
R54	RES MF 22.1K 1/4W	144187
R55	RES MF 100 OHM 1% 1/4W	144196
R56	RES MF 22.1K 1/4W	144187
R57	RES MF 20K 1% 1/4W	144104
R58	RES MF 20K 1% 1/4W	144104
R59	RES NETWORK 2X220K ISO	144262
R60	RES MF 20K 1% 1/4W	144104
R61	RES MF 20K 1% 1/4W	144104
R62	RES MF 20K 1% 1/4W	144104
R63	RES MF 20K 1% 1/4W	144104
R64	RES MF 100 OHM 1% 1/4W	144196
R65	RES MF 100 OHM 1% 1/4W	144196
R66	RES MF 22.1K 1/4W	144187
R67	RES MF 100 OHM 1% 1/4W	144196
R68	RES NETWORK 2X220K ISO	144262
R69	RES MF 20K 1% 1/4W	144104
R70	RES MF 20K 1% 1/4W	144104
R71	RES MF 100 OHM 1% 1/4W	144196
R72	RES MF 22.1K 1/4W	144187
R73	RES MF 100 OHM 1% 1/4W	144196
R74	RES MF 100 OHM 1% 1/4W	144196
R75	RES MF 22.1K 1/4W	144187
R76	RES MF 100 OHM 1% 1/4W	144196
R77	RES NETWORK 2X220K ISO	144262
R78	RES MF 100 OHM 1% 1/4W	144196
SP1	BRACKET PCB CARD MOUNTING	003611
SP2	BRACKET PCB CARD MOUNTING	003611
U1	IC DUAL OPERATIONAL AMPLIFIER	133260
U2	IC DUAL OPERATIONAL AMPLIFIER	133260
U6	IC DUAL OPERATIONAL AMPLIFIER	133260
U7	IC DUAL OPERATIONAL AMPLIFIER	133260
U9	IC DUAL OPERATIONAL AMPLIFIER	133260
U11	IC DUAL OPERATIONAL AMPLIFIER	133260

MX135 EXPLODED VIEW



MX135 EXPLODED VIEW and PARTS LIST



Ref No.	Part No.	Description
1	016506	GLASS
2	148073	SWITCH DPDT ROCKER
3	017531	PUSHBUTTON ASSY RED
4	017517	PUSHBUTTON ASSY BLK
5	078033	O-RING
6	017938	PUSHBUTTON BEZEL
7	017852	PUSHBUTTON BLK
8	078032	O-RING
9	017741	RECEPTACLE PUSHBUTTON
10	094360	TAPE FOAM 1/2 X 1/2
11	004939	BRACKET EXTRUSION
12	018615	END CAP 9"
13	101042	SCREW TS 4-40 X 1/2 SLOT FILL
14	049637	ASSY KNOB 34 MTRC W/O INDEX
15	049724	ASSY KNOB 25.5 NO INDEX MTRC
16	104017	WASHER FELT BLK 3/4 X 1/4 X 1/16
17	094016	TAPE FOAM 1/4 X 1/8
18	098113	CORD DIAL .027 BLK BRAID SILK
19	018706	EXTRUSION BOTTOM
20	100149	SCREW MACH 6-32 X 1/4 FL U/H ST
21	018705	EXTRUSION TOP
22	101232	SCREW 6-32 X 1/4 PHIL FLAT
23	017738	PLEXI FILTER
24	050053	ASSY KEYBOARD PCB
25	017907	TITLE/PUSHBUTTON BACKLIGHT
26	017975	SELECTOR BACKLIGHT
27	017901	LOGO PUSHBUTTON BACKLIGHT
28	005379	SUBPANEL
29	112038	SPACER STEEL 4 X 3/8L NCKL PLT
30	102001	NUT KEP 4-40 CADMIUM PLATE
31	094431	TAPE FOAM 3/8W X 1/32 THK
32	094430	TAPE FOAM 1/2W X 1/8 THK
33	050054	ASSY LED PCB
34	050036	ASSY DISPLAY PCB
35	005380	PANEL SIDE RIGHT
36	005381	PANEL SIDE LEFT
37	005176	COVER BOTTOM
38	101054	SCREW TAPTITE 6-32 X 1/4 PH PN BLK
39	005382	TRAY
40	159340	TRANSFORMER R-CORE POWER
41	102045	KEP NUT 6-32 SPECIAL
42	017160	TAB MOUNTING .140 DIA MTG
43	017329	CABLE TIE HT5.9
44	074091	TERMINAL BLOCK AC
45	102022	NUT MACH 4-40 X 3/16 X 1/16
46	104004	WASHER LOCK 5 X .255 INT STAR
47	104001	WASHER FLAT STEEL 4 X 9/32 X .025
48	178160	HOLDER FUSE 5 X 20 CHASSIS MOUNT
49	100354	SCREW SEMS 2-65 X 3/16 PHIL PN
50	005422	AC COVER
51	050037	ASSY SURROUND PCB
52	320173	DSP MODULE DAE-5
53	100260	SCREW MACH 4-40 X 1/4 PH PN
54	005383	TOP COVER
55	101078	SCREW TAP 8-32 X 5/16 PH PN BLK
56	050040	ASSY BALANCED PCB
57	017191	BUMPER BUTTON
58	050033	ASSY DATA PCB
59	050035	ASSY S-VIDEO PCB
60	050034	ASSY VIDEO PCB
61	050039	ASSY COMPONENT VIDEO PCB
62	005032	ASSY INPUT PCB
63	049084	TM1 TUNER MODULE (OPTIONAL)
64	050078	REAR PANEL PLUG
65	005378	REAR PANEL
66	117755	RECEPTACLE INPUT & LINE FILTER
67	102020	NUT MACH 6-32 SELF-LOCK
68	100250	SCREW MACH SEMS 6-32 X 1/4 PH PN
69	084112	POST GROUND GOLD
70	112015	STANDOFF
71	104142	WASHER LOCK 2.5mm INT STAR ZINC
72	101197	SCREW HI/LO 4-24 X 3/8 PH RD BLK
73	017218	FOOT PLASTIC BLACK
74	104080	WASHER FLAT #10 CLEAR ZINC
75	100159	SCREW MACH 10-32 X 3/4 PH PN BLK

REPACKING INSTRUCTION

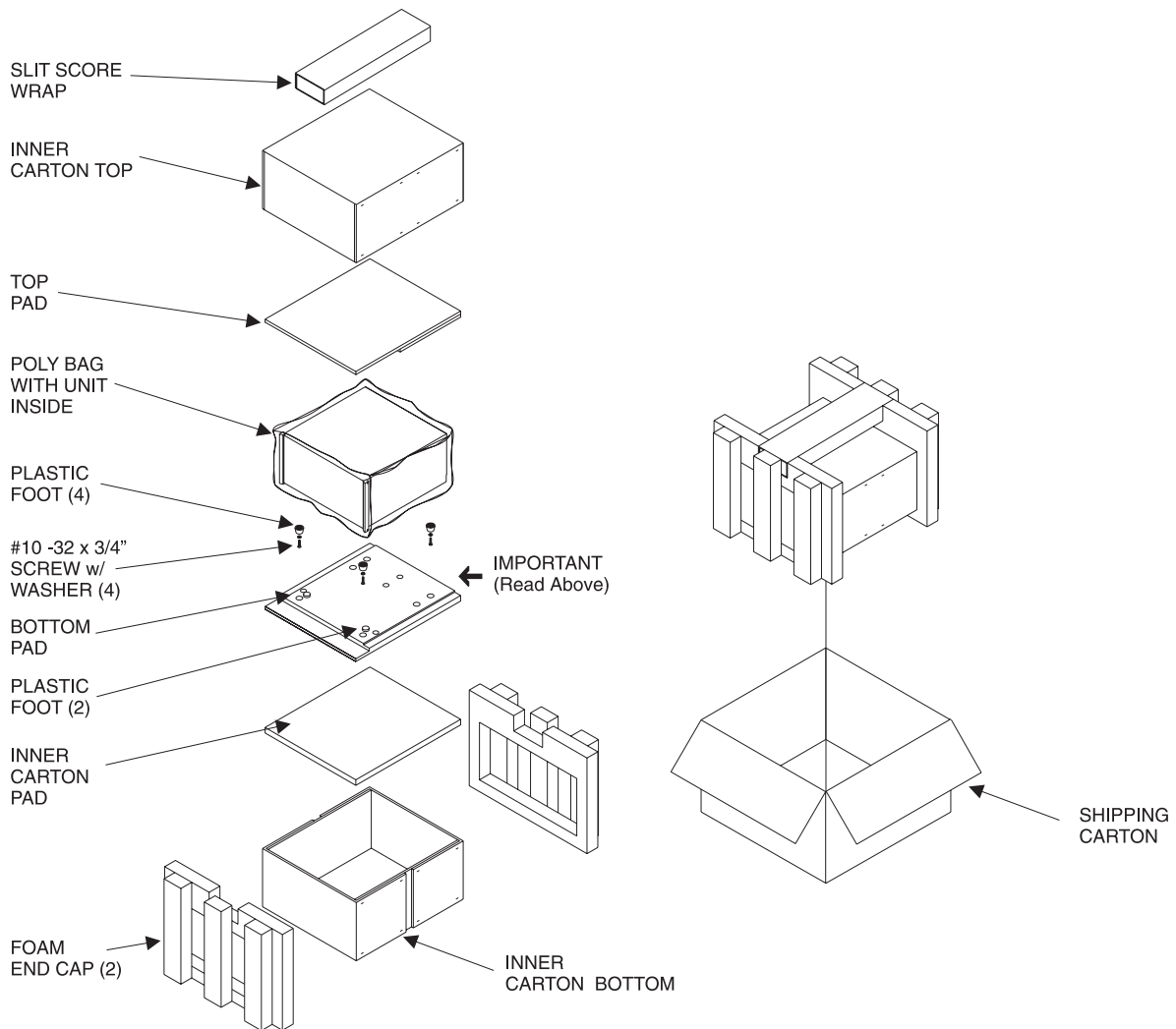
In the event it is necessary to repack the unit for shipment, the unit must be packed exactly as shown below.

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.

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	034269	Slit scored wrap
1	034198	Inner carton top
1	033725	Top pad
4	017218	Plastic foot (unit)
1	033739	Poly bag
4	100159	#10-32 x 3/4" Machine screw
4	104083	#10 x 7/16" Flat washer
1	034194	Bottom pad
2	034270	Foam end caps
1	034256	Shipping carton
1	034199	Inner carton bottom
1	034037	Inner carton pad



MX135

A/V CONTROL CENTER

SERVICE MANUAL



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