



MVP851

DVD AUDIO/VIDEO PLAYER



CONTENTS

Performance Specifications	2	A/V/Power Supply Schematic and PCB	9 - 14
Notes	3	Mechanism	15 - 16
Safety Information	4	Module	15 - 16
Rear Panel	5	Display Schematic and PCB	17 - 20
Section Location	5	Parts List	19 - 22
Block Diagram	6	Exploded View and Parts List	23 - 24
Interconnection Diagram	7 - 8	Repacking Instructions	25

SERVICE MANUAL

PERFORMANCE SPECIFICATIONS

Audio Specifications

Number of Channels

2 and 5.1

Output Level

2.0Vrms Balanced (2 Channel Output)

2.0Vrms Unbalanced (2 Channel Output and 5.1 Channels)

Output Impedance

600 ohms Balanced (2 Channel Output)

600 ohms Unbalanced (2 Channel Output and 5.1 Channels)

Audio Frequency Response (DVD-Video)

4Hz to 22,000Hz (48kHz Sampling, Linear Audio)

4Hz to 44,000Hz (96kHz Sampling, Linear Audio)

Audio Frequency Response (DVD-Audio)

4Hz to 88,000Hz (192kHz Sampling)

CD Frequency Response

4Hz to 20,000Hz

CD Signal to Noise Ratio

Better than 100dB (A-weighted)

Dynamic Range (DVD)

Better than 100dB (Linear Audio)

Dynamic Range (CD)

Better than 98dB

Harmonic Distortion

0.003% (1,000Hz)

Channel Separation

Better than 110dB (1,000Hz)

Video Specifications

Signal System

NTSC

Component Video Output Level

Y Output Level 1.0Vp-p (75 ohm)

P Output Level 0.7Vp-p (75 ohm)

P_B_R Output Level 0.7Vp-p (75 ohm)

S-Video Y Output Level

1Vp-p (75 ohm)

S-Video C Output Level

0.286Vp-p (75 ohm) (NTSC)

Video Output Level

1Vp-p (75 ohm)

General Specifications

Digital Output

Optical: -15dbm to -21dbm

Coaxial: 0.5V p-p/75 ohm

Digital Signal Format

Sampling Frequencies: 44,100Hz, 48,000Hz and 96,000Hz

Transport

Laser Beam Wavelength: 658nm/790nm

Laser Power: CLASS IIa/ CLASS I

Power Requirements

100 Volts, 50/60Hz at 30 watts

110 Volts, 50/60Hz at 30 watts

120 Volts, 50/60Hz at 30 watts

220 Volts, 50/60Hz at 30 watts

230 Volts, 50/60Hz at 30 watts

240 Volts, 50/60Hz at 30 watts

Note: Refer to the rear panel of the MVP851 for the correct voltage.

Overall Dimensions


Front Panel: 17-1/2 inches (44.5cm) wide, 5-3/8 inches (13.7cm) high. Depth behind front mounting panel is 15 inches (38.1cm) including clearance for connectors. Panel clearance required in front of mounting panel is 3/4 inch (1.9cm).

Note: When the DVD/CD tray is opened, the panel clearance required in front of mounting panel is 6-3/4 inches (17.2cm).

Weight

20 pounds (9.1kg) net, 34 pounds (15.4kg) in shipping carton

NOTES

1. The heavy notes 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. Unless otherwise specified:
 - a. Resistor values are in ohms.
 - b. Capacitor values are microfarads (uF).
 - c. Inductor values are in microhenries (uH).
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.
6. Use McIntosh Remote Control Model HR040 with the MVP851.

SAFETY INFORMATION

CAUTION: The use of optical instruments with this product will increase eye hazard.

This product utilizes a Class I laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on.

1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.
6. Replace optical pickup only with manufacturers specified type.

Laser output: CLASS IIa/CLASS I
Wavelength: 658nm/790nm

This product utilizes an embedded Class IIa laser (IEC825).

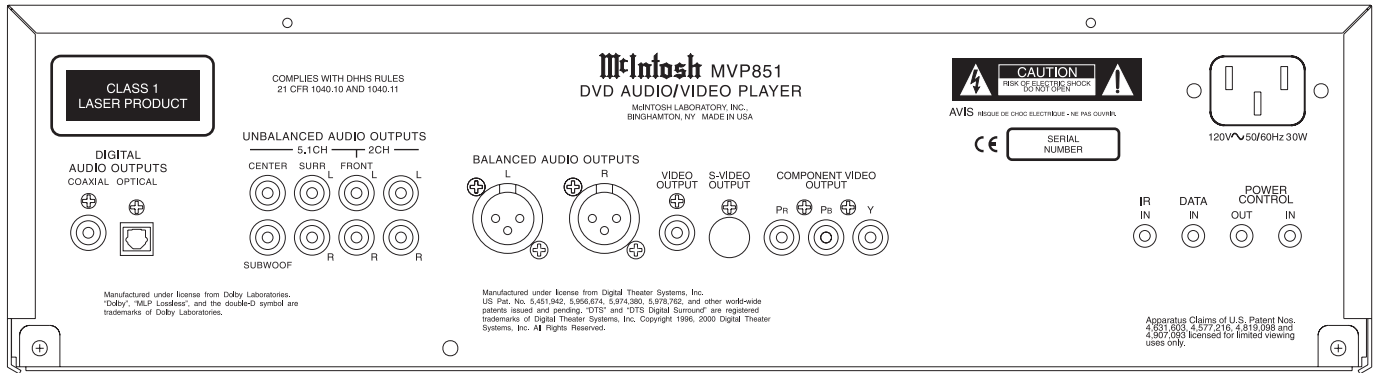
LUOKAN 1 LASERLAITE KLASS 1 LASER APPARAT

VAROITUS! Laitteen käyttäminen muulla kuin tassa käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING! Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

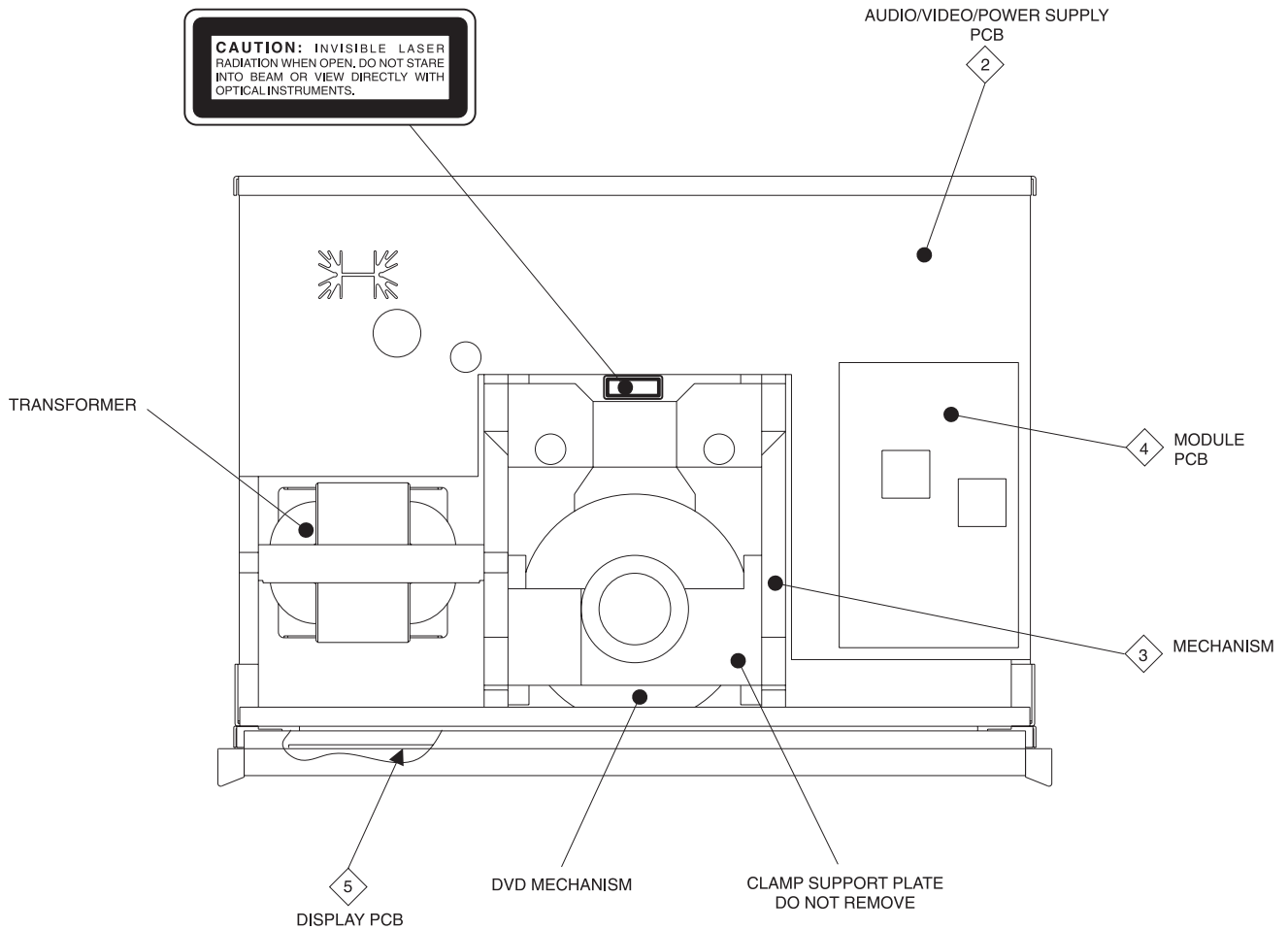
NOTES

REAR PANEL

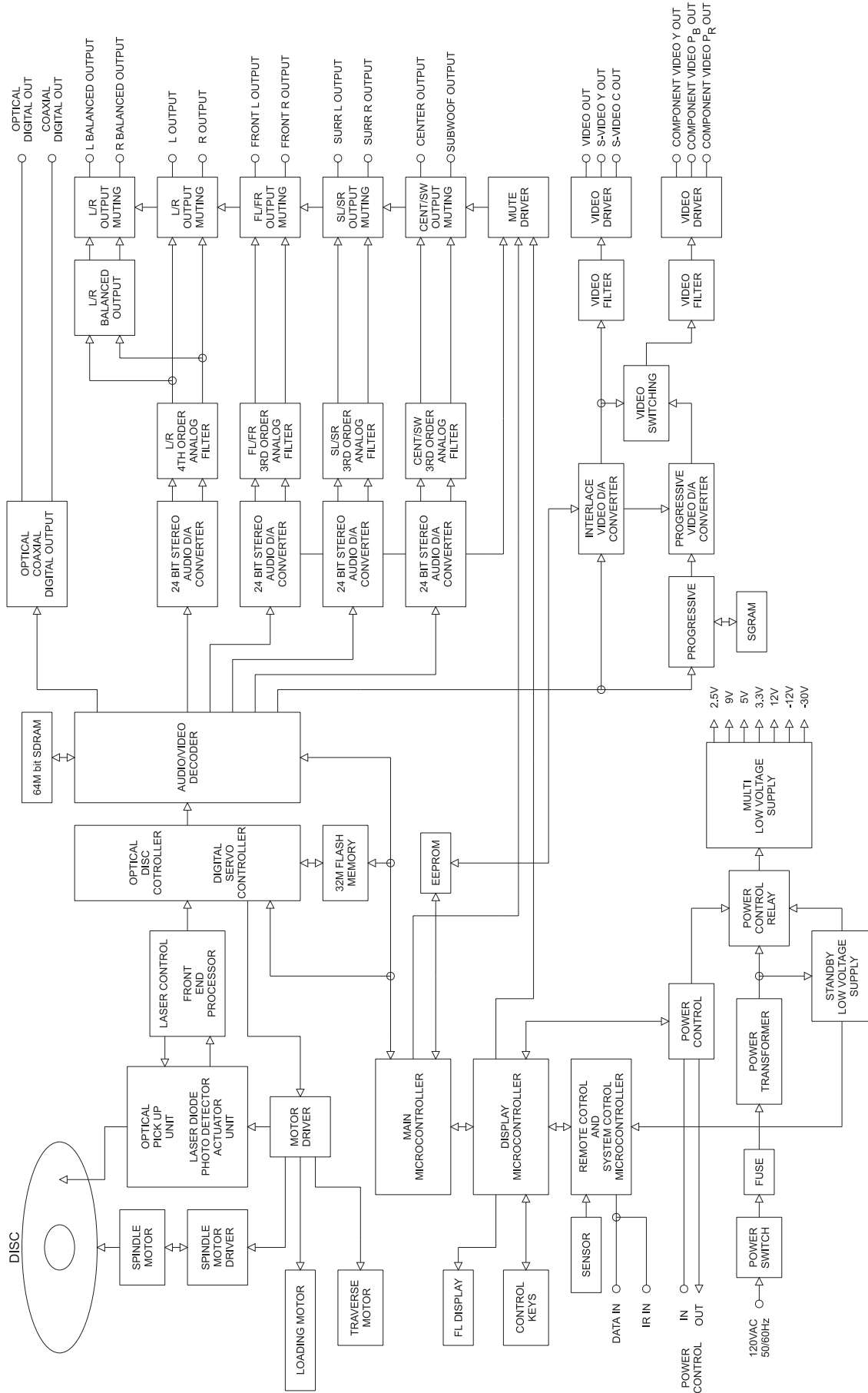


SECTION LOCATIONS

TOP VIEW WITH COVER REMOVED

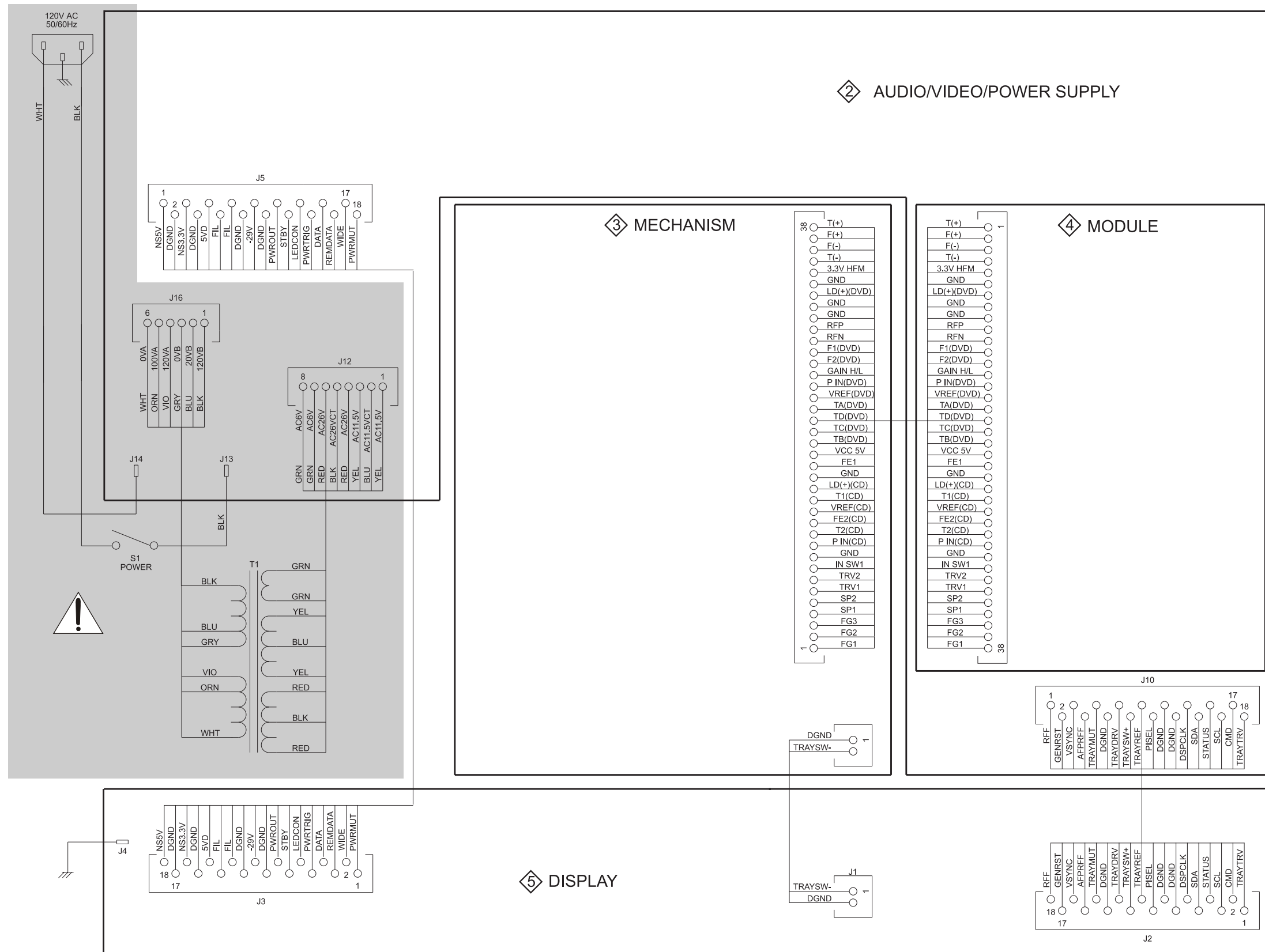


BLOCK DIAGRAM

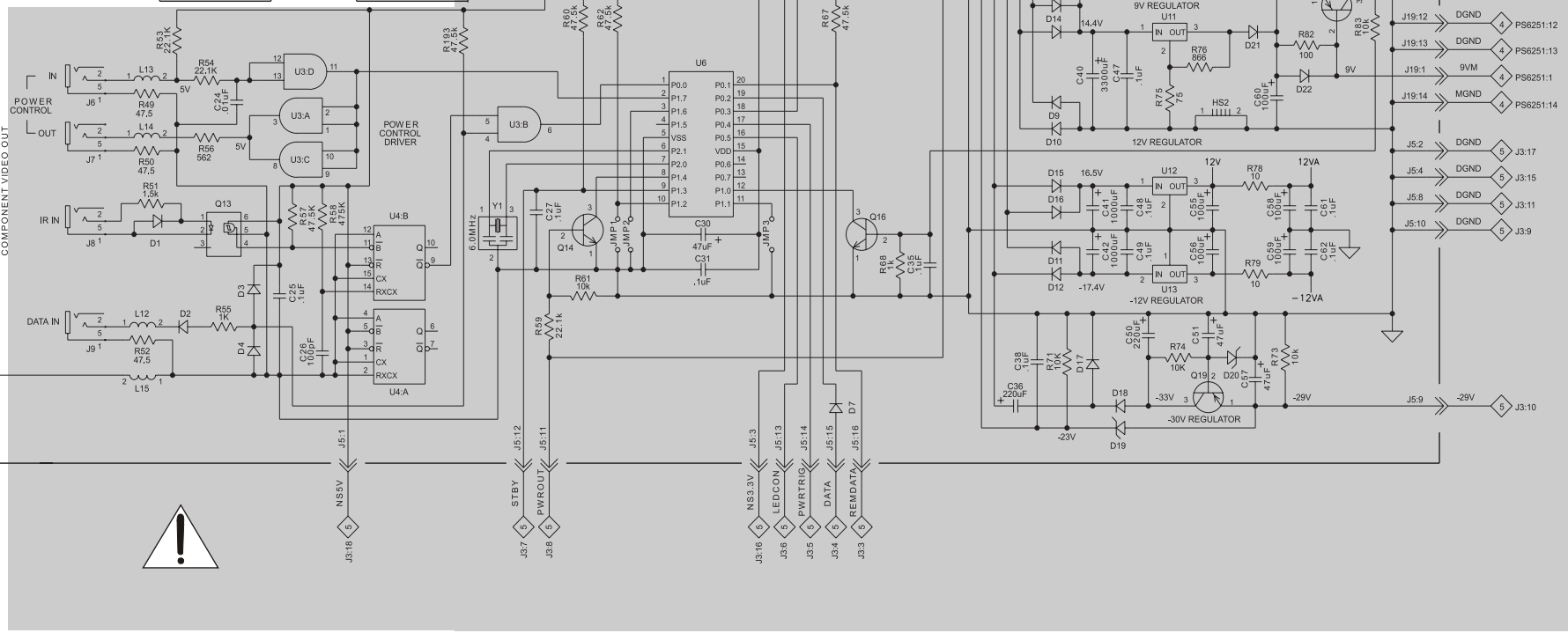
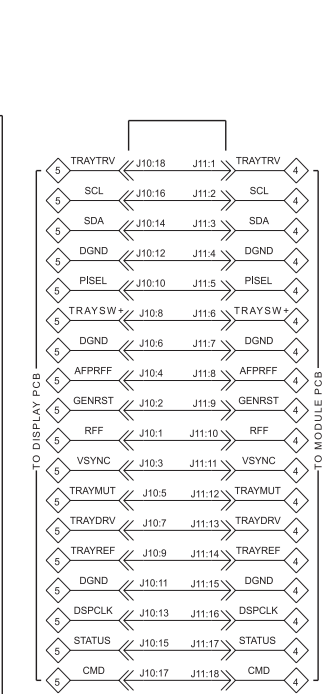
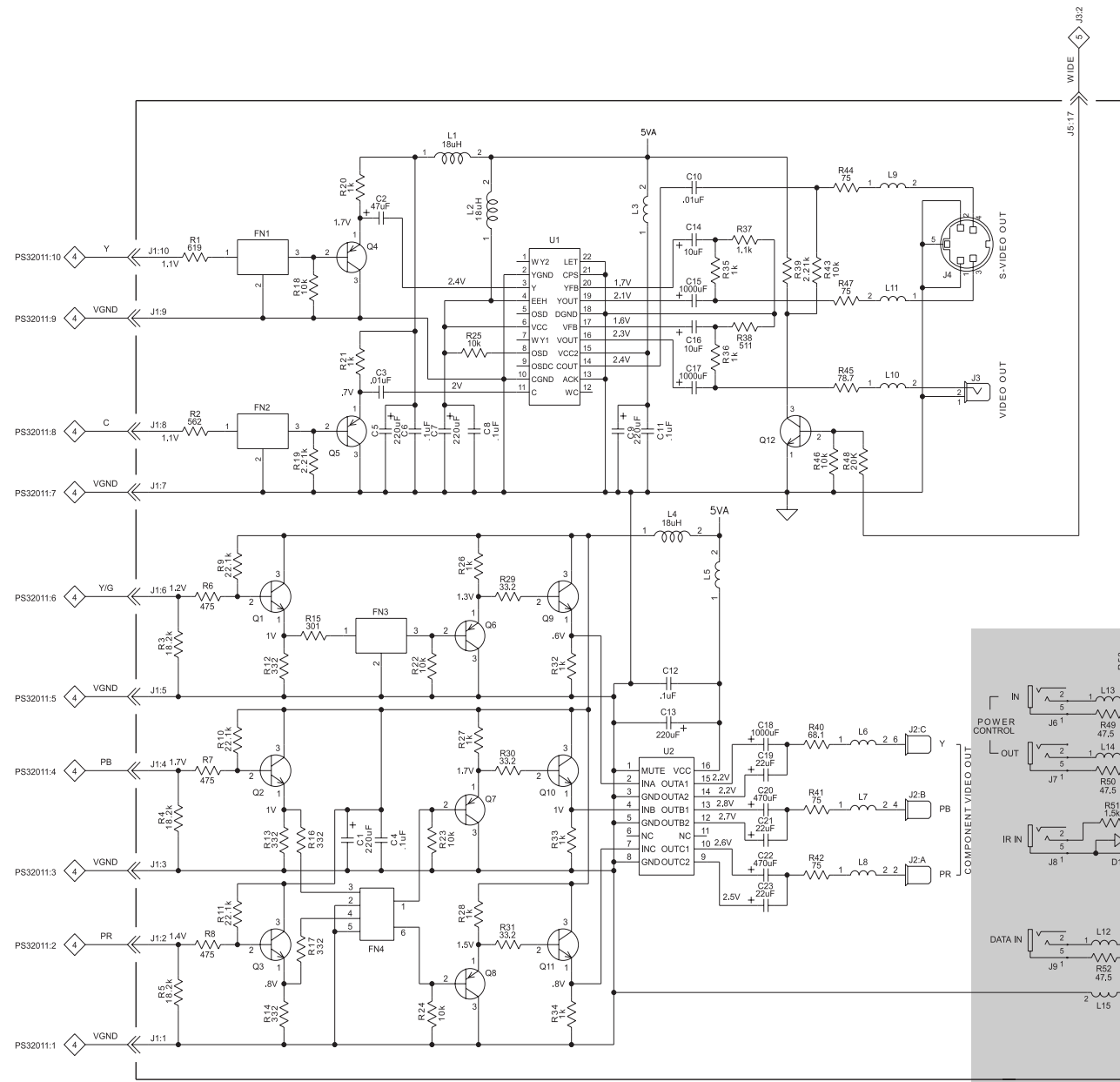


INTERCONNECT

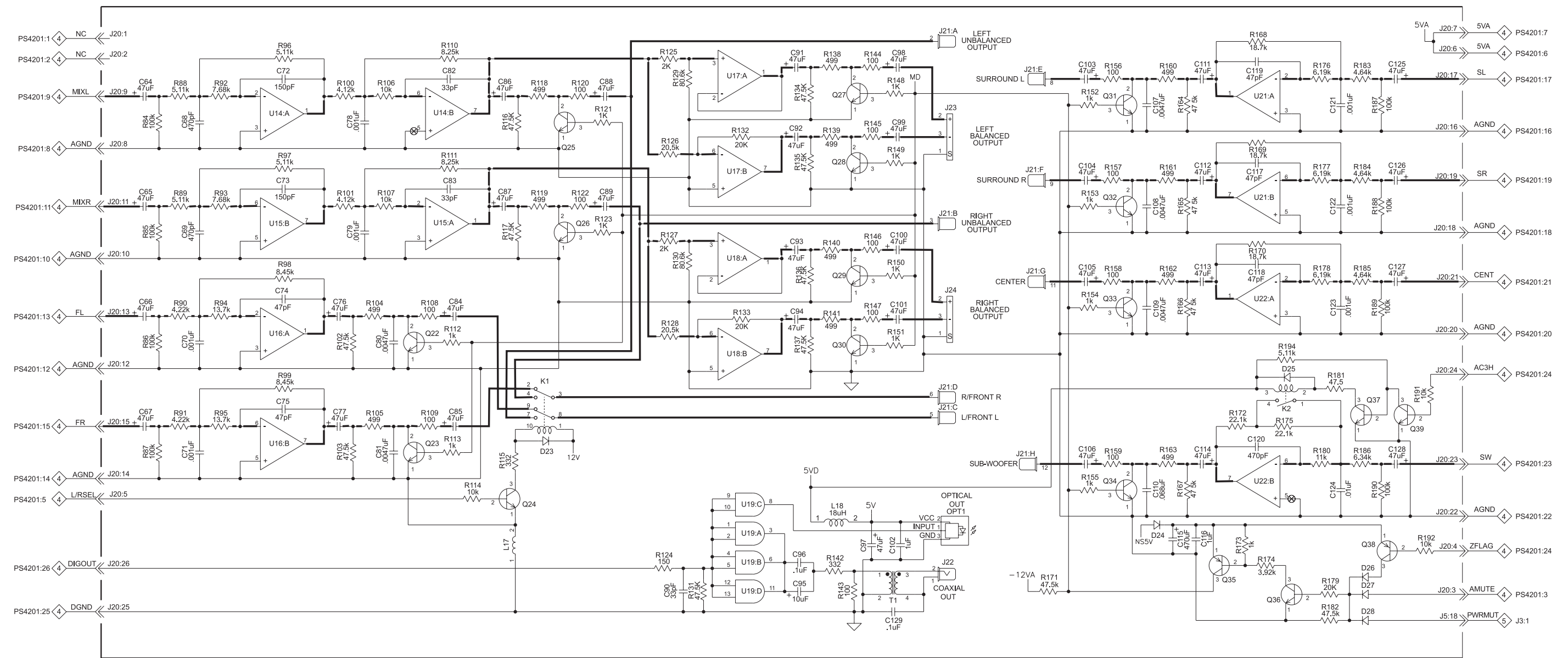
! WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.

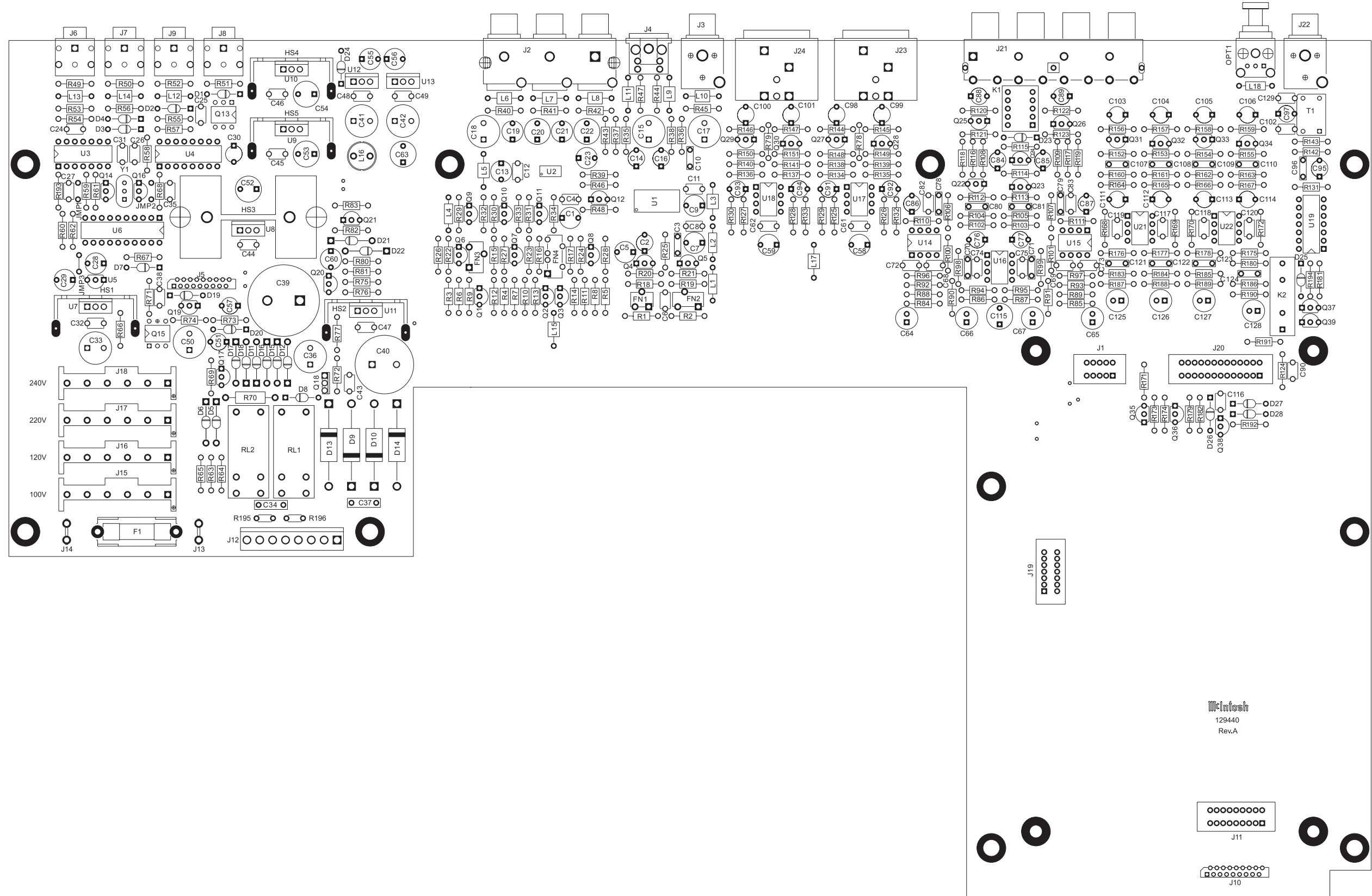


WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.

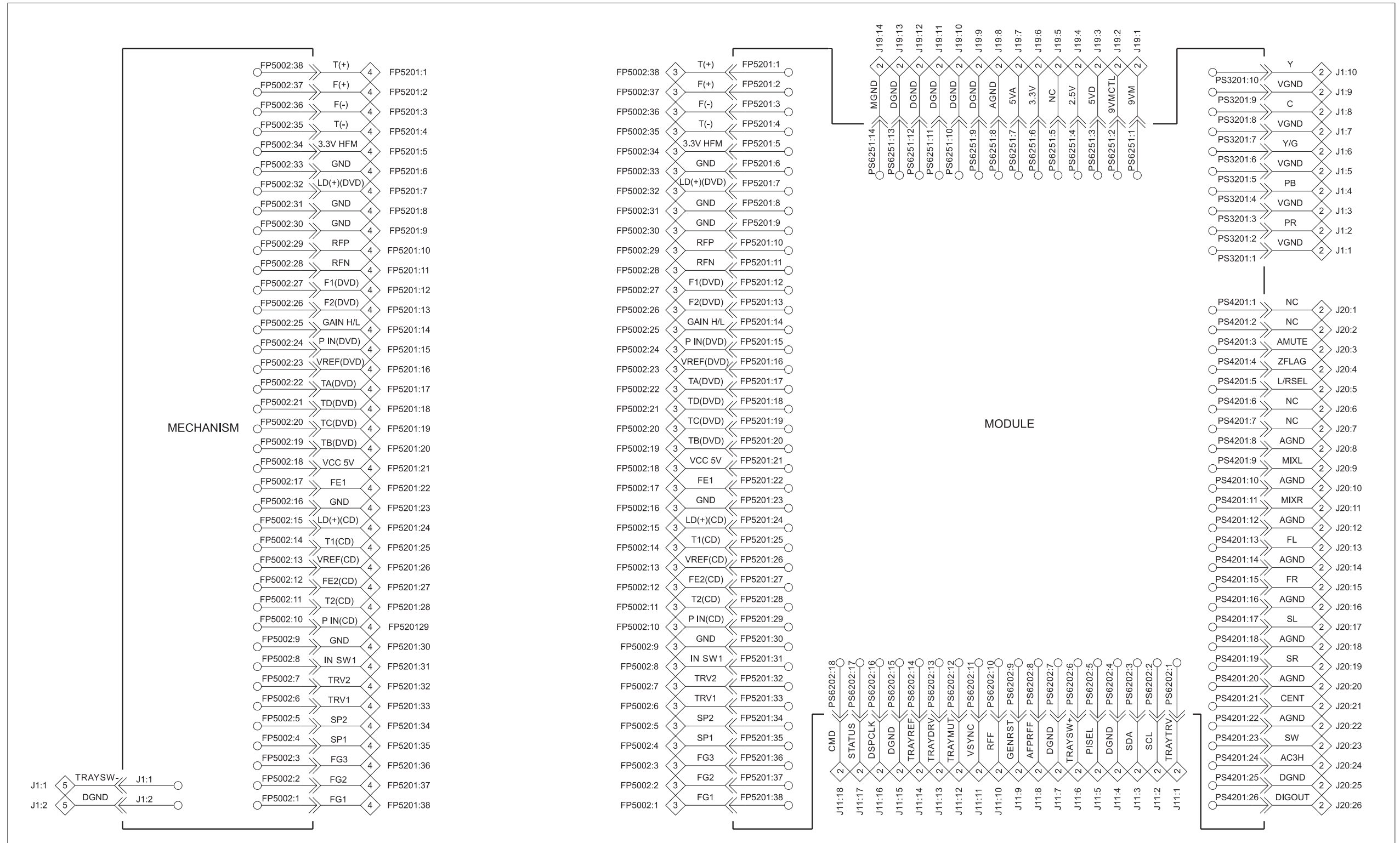


2 AUDIO/VIDEO POWER SUPPLY 049773

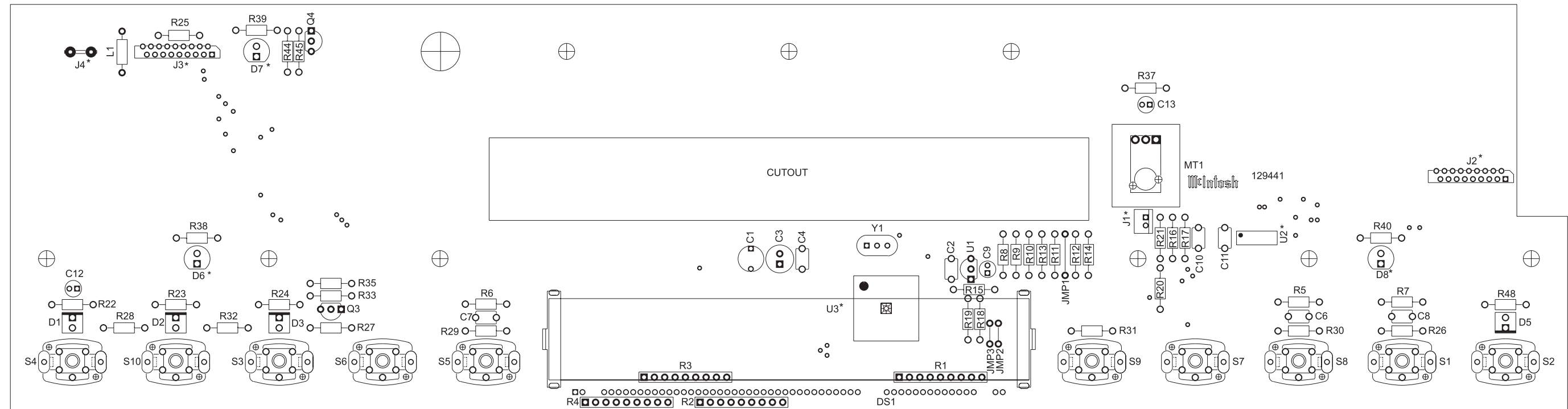




MECHANISM 320119 AND MODULE 320118



5 DISPLAY 049774



*DENOTES COMPONENTS ON THE REVERSE OR BACKSIDE OF PCB

PARTS LIST

Ref No.	Description	Part No.
② AUDIO/VIDEO/POWER SUPPLY 049773		
C1 C5 C7 C9 C13	CAP ELECT 220UF 25V	06650700
C2 C30 C51 C57 C76 C77 C84 C85 C86	CAP ELECT 47UF 35V	06644600
C3 C10 C12A	CAP MPF 0.01UF 5% 63VDC	06431200
C4 C6 C8 C11 C12 C25 C27 C31 C32 C35	CAP MONO .1UF 50V 20% Z5U	06130500
C14 C16 C95	CAP ELECT 10UF 50V	06644500
C15 C17 C18 C33 C41 C42	CAP ELECT 1000UF 25V	06651300
C19 C21 C23	CAP ELECT 22UF 100V	06650600
C20 C22 C52 C53 C54 C63 C115	CAP ELECT 470UF 16V	06650800
C24	CAP MONO .01UF 50V 20% X7R	06130400
C26	CAP MONO 100PF 100V 10% NPO	06130000
C28 C29 C55 C56 C58 C59 C60	CAP ELECT 100UF 16V OR 25V	06644700
C34 C37	CAP MPF 0.033UF 100V 10%	06442700
C36 C50	CAP ELECT 220UF 50V 20%	06625400
C38 C43 C44 C45 C46 C47 C48 C49 C61	CAP MONO .1UF 50V 20% Z5U	06130500
C39	CAP ELECT 18000UF 16V	06646000
C40	CAP ELECT 3300UF 35V	06636000
C62 C102 C116 C129	CAP MONO .1UF 50V 20% Z5U	06130500
C64 C65 C66 C67 C125 C126 C127 C128	CAP ELECT 47UF 16V 6.3X5 CASE	06638000
C68 C69 C120	CAP MONO 470PF 100V 10% NPO	06130200
C70 C71 C78 C79 C121 C122 C123	CAP PF 0.001UF 5% 63VDC	06430000
C72 C73	CAP MONO 150PF 200V 5%	06131000
C74 C75 C117 C118 C119	CAP MONO 47PF 200V 10% NPO	06129900
C80 C81 C107 C108 C109	CAP MPF 0.0047UF 5% 63VDC	06430800
C82 C83 C90	CAP MONO 33PF 200V 5%NPO T&R	06130700
C87 C88 C89 C91 C92 C93 C94 C97 C98	CAP ELECT 47UF 35V	06644600
C96	CAP MPF 0.1UF 5% 63VDC	06432500
C99 C100 C101 C103 C104 C105 C106	CAP ELECT 47UF 35V	06644600
C110	CAP MPF 0.068UF 5% 63VDC	06432300
C111 C112 C113 C114	CAP ELECT 47UF 35V	06644600
D1 D2 D3 D4 D7 D8 D23 D24 D25 D26	DIODE SILICON	07004700
D5 D6 D11 D12 D15 D16 D17 D18 D21 D22	DIODE RECTIFIER	07013100
D9 D10 D13 D14	DIODE 200V 3A	07012600
D19	DIODE ZENER 6.2V 5% 500MW	07008500
D20	DIODE ZENER 30V 1/2W 5%	07016100
D27 D28	DIODE SILICON	07004700
F1	FUSE 0.5A SLO-BLO 5X20 IEC	08909200
F1	HOLDER FUSE 5X20MM PCB MOUNT	17815900
FN1	FILTER VIDEO Y	31032600
FN2	FILTER VIDEO C	31032700
FN3	FILTER VIDEO Y/G	31032800
FN4	FILTER VIDEO B/R	31032900
HS1 HS2 HS4 HS5	HEATSINK TO-220	08001600
HS3	HEATSINK TO-220	08001700
J1	HEADER 10 POSITION	11780500
J2	JACK RCA 3 POS R-B-G	11780300
J3	JACK RCA YELLOW	11780200
J4	CONN MINI DIN	11741700
J5 J10	CONN FFC 18PIN	11776500

PARTS LIST con't

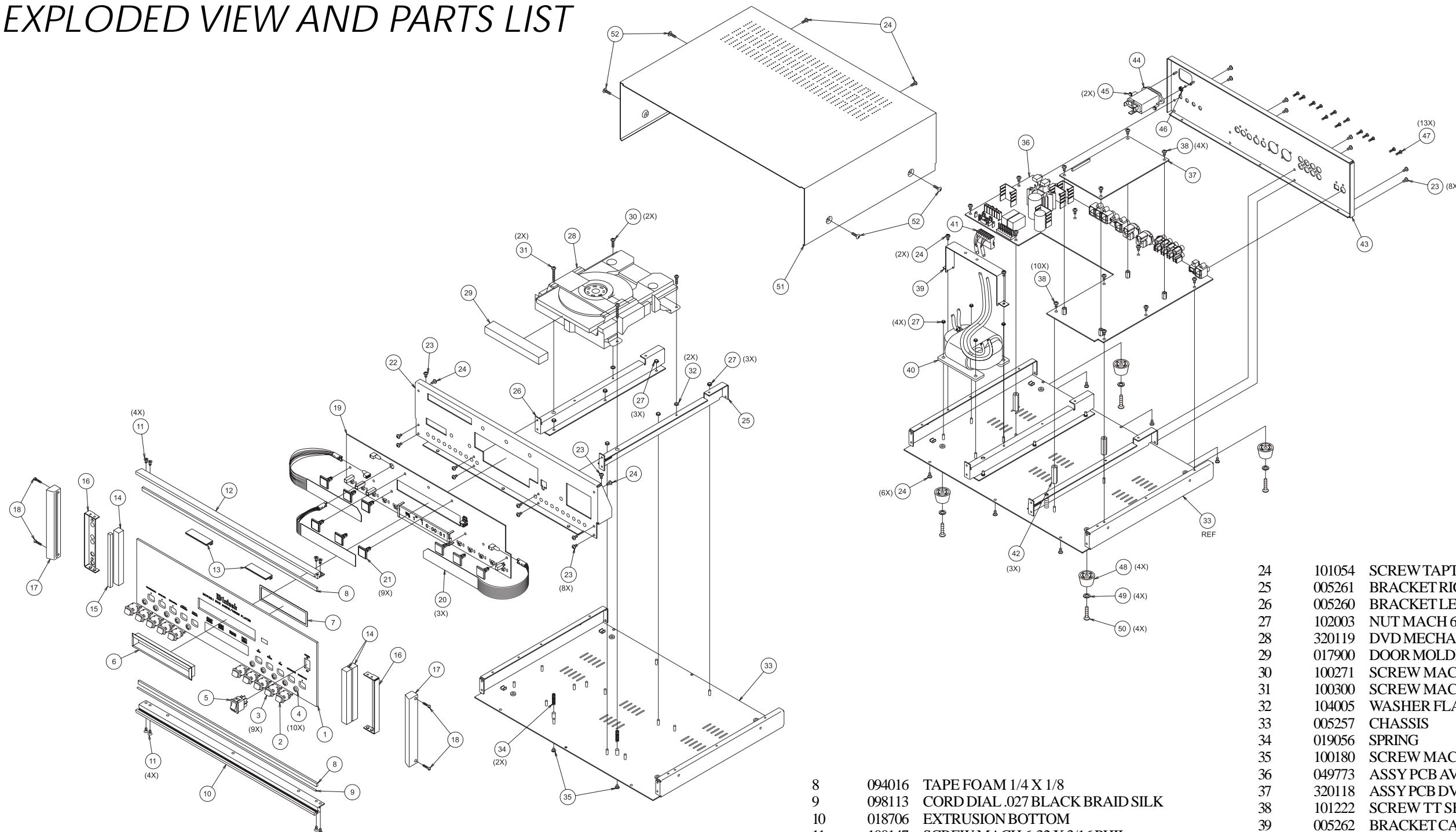
J6 J7 J8 J9	JACK HEADPHONE STEREO 1/8IN	11775900
J11	HEADER 18 POSITION	11780700
J12	HEADER 8 PIN MTA-156	11771700
J13 J14	BLADE FASTON W/FEET	11770800
J16	CONN PCB MOUNT POWER RED	11771900
J19	HEADER 14 POSITION	11780600
J20	CONN 26 PIN 2MM PITCH	11777100
J21	JACK RCA 8 POSITION	11780900
J22	RCA JACK ORANGE WITH GOLD	11779800
J23 J24	RECEPTACLE XLR MALE	11768600
K1	RELAY 9V DPDT	31032400
K2	RELAY REED FORM 1A 5V 500 OHMS	08705000
L1 L2 L4 L18	CHOKE 18UH 5%-10%	12222400
L15 L17	BEADS FERRITE LEADED	07601900
L16	INDUCTOR 100UH POWER	12231200
L3 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14	BEADS FERRITE LEADED	07601900
OPT1	TRANSMITTER FIBER OPTIC	05815700
Q1 Q2 Q3 Q9 Q10 Q11 Q12 Q14 Q16 Q20	TRANSISTOR NPN 2K/REEL	13222300
Q4 Q5 Q6 Q7 Q8 Q21 Q35 Q38	TRANSISTOR PNP	13222400
Q13	COUPLER OPTICAL SCHMITT OUTPUT	13102300
Q15	TRIAC DRIVER OPTOCOUPLER 600V	13102200
Q17	TRANSISTOR NPN SILICON	13217100
Q18	TRANSSTOR P CHANNEL PWR MOSFET	13229300
Q19	TRANSISTOR PNP SILICON	13217200
Q22 Q23 Q25 Q26 Q27 Q28 Q29 Q30 Q31	TRANSISTOR SI NPN 25V	13225700
Q24 Q36 Q37 Q39	TRANSISTOR NPN 2K/REEL	13222300
Q32 Q33 Q34	TRANSISTOR SI NPN 25V	13225700
R1	RES MF 619 1/4W 1%	14448500
R12 R13 R14 R16 R17 R115 R142	RES MF 332 OHM 1% 1/4W	14444600
R15	RES MF 301 1/4W 1%	14448400
R18 R22 R23 R24 R25 R43 R46 R61 R71	RES MF 10K 1% 1/4W	14405300
R19 R39	RES MF 2.21K 1% 1/4W	14429800
R2 R56	RES MF 562 OHM 1% 1/4W	14440800
R3 R4 R5	RES MF 18.2K 1% 1/4W	14418100
R6 R7 R8 R63 R64	RES MF 475 OHM 1% 1/4W	14408600
R9 R10 R11 R53 R54 R59 R172 R175	RES MF 22.1K 1% 1/4W	14418700
R20 R21 R26 R27 R28 R32 R33 R34 R35	RES MF 1K 1% 1/4W	14409000
R29 R30 R31	RES MF 33.2 OHM 1/4W	14444500
R36 R55 R68 R77 R112 R113 R121 R123	RES MF 1K 1% 1/4W	14409000
R37	RES MF 1.1K 1% 1/4W	14409100
R38	RES 511 OHM 1% 1/4W	14412300
R40	RES MF 68.1 OHM 1% 1/4W	14408200
R41 R42 R44 R47 R75	RES MF 75 OHM 1% 1/4W	14444400
R45	RES MF 78.7 OHM 1% 1/4W	14422200
R48 R132 R133 R179	RES MF 20K 1% 1/4W	14410400
R49 R50 R52 R181	RES MF 47.5 OHM 1% 1/4W	14444200
R51	RES MF 1.5K 1% 1/4W	14412800
R57 R60 R62 R67 R102 R103 R116 R117	RES MF 47.5K 1% 1/4W	14410800
R58	RES MF 475K 1% 1/4W	14436400
R65	180046000 OHM 5% 1/4W	13702500
R66	RES MF 681 OHM 1% 1/4W	14419500
R69	RES MF 2.55K 1% 1/4W	14430200
R70	RES CF 68 OHM 5% 1/2W	14120800
R72 R84 R85 R86 R87 R187 R188 R189	RES MF 100K 1% 1/4W	14411300
R73 R74 R81 R83 R106 R107 R114 R191	RES MF 10K 1% 1/4W	14405300
R76	RES MF 866 OHM 1% 1/4W	14402800
R78 R79	RES MF 10 OHM 1% 1/4W	14415700
R80 R88 R89 R96 R97 R194	RES MF 5.11K 1% 1/4W	14408300
R82 R108 R109 R120 R122 R143 R144	RES MF 100 OHM 1% 1/4W	14419600
R90 R91	RES MF 4.22K 1/4W 1%	14447600
R92 R93	RES MF 7.68K 1/4W 1%	14448000
R94 R95	RES MF 13.7K 1% 1/4W	14434200
R98 R99	RES MF 8.45K 1/4W 1%	14448100
R100 R101	RES MF 4.12K 1/4W 1%	14447500
R104 R105 R118 R119 R138 R139 R140	RES MF 499 OHM 1% 1/4W	14408700
R110 R111	RES MF 8.25K 1% 1/4W	14415300
R124	RES MF 150 OHM 1% 1/4W	14412200
R126 R127	RES MF 2K 1% 1/4W	14409400
R126 R128	RES MF 20.5K 1/4W 1%	14448300
R129 R130	RES MF 80.6K 1% 1/4W	14411100

R131 R134 R135 R136 R137 R164 R165	RES MF 47.5K 1% 1/4W	14410800
R141 R160 R161 R162 R163	RES MF 499 OHM 1% 1/4W	14408700
R145 R146 R147 R156 R157 R158 R150	RES MF 100 OHM 1% 1/4W	14419600
R148 R149 R150 R151 R152 R153 R154	RES MF 1K 1% 1/4W	14409000
R155 R173	RES MF 1K 1% 1/4W	14409000
R166 R167 R171 R182 R193	RES MF 47.5K 1% 1/4W	14410800
R168 R169 R170	RES MF 18.7K OHM 1/4W	14438900
R174	RES MF 3920 OHM 1% 1/4W	14419800
R176 R177 R178	RES MF 6.19K 1/4W 1%	14447900
R180	RES MF 11K 1% 1/4W	14410100
R183 R184 R185	RES MF 4.64K 1/4W 1%	14447700
R186	RES MF 6.34K 1% 1/4W	14430600
R190	RES MF 100K 1% 1/4W	14411300
R192	RES MF 10K 1% 1/4W	14405300
R195 R196	RES POLYSWITCH RXE030	14424000
RL1 RL2	RELAY 12VDC DPST	08705900
T1	TRANSFORMER DIGITAL INTERFACE	15928500
U1	MODULE VIDEO DRIVER	31029700
U2	IC VIDEO DRIVER TRIPLE	13337100
U3	IC AND 2 INPUT X 4	13317500
U4	IC MONOSTB MULTIVIB X 2	13318200
U5	IC 3.3V LOW DROP REGULATOR	13346400
U6	PROGRAMMED VERSION OF 133336	13346900
U6	SOCKET 20-PIN IC	17812400
U7	IC REGULATOR 5V	13325000
U8	IC 2.5V LOW DROP REGULATOR	13346200
U9	IC REGULATOR 3.3V LOW DROPOUT	13339300
U10	IC REGULATOR 5V 1.5A LOW DROP	13336500
U11	IC VOLTAGE REGULATOR 9V 1.5A	13334000
U12	IC REGULATOR 12V	13315600
U13	IC REGULATOR -12V	13315500
U14 U15 U16 U17 U18 U21 U22	IC DUAL OPERATIONAL AMPLIFIER	13326000
U19	IC QUAD AND GATE	13337200
Y1	RESONATOR CERAMIC 6.0MHZ W/CAP	18003900

5 DISPLAY 049774

C1	CAP ELECT 10UF 50V LOW ESR	06643700
C2 C4 C10 C11	CAP MONO .1UF 50V 20% Z5U	06130500
C3	CAP ELECT 47UF 16V 6.3X5 CASE	06638000
C6 C7 C8	CAP MONO .01UF 50V 20% X7R	06130400
C9 C12 C13	CAP ELECT 10UF 16V 4X5 CASE	06638200
D1 D2 D3 D5	SPACER LED 3/16IN L	01764200
D1 D2 D3 D5	LED SQUARE RED	05810900
D6 D7 D8	LED GRN 5MM HI-INTENSITY	05816500
DS1	DISPLAY VFL DVD	31032300
J1	HEADER 2 POSITION	11780400
J2 J3	CONN FFC 18PIN	11776500
J4	BLADE FASTON W/FEET	11770800
L1	CHOKE 18UH 5%-10%	12222400
MT1	SENSOR IR 38KHZ	12104600
Q3	TRANSISTOR NPN	13222300
Q4	TRANSISTOR PNP	13222400
R1 R2 R3 R4	RES NETWORK 9 X 47K BUS	14425000
R5 R6 R7 R10 R11 R12 R33 R45	RES MF 10K 1% 1/4W	14405300
R8 R9 R19 R20 R21 R25	RES MF 47.5K 1% 1/4W	14410800
R13	RES MF 8.25K 1% 1/4W	14415300
R14 R26 R29 R30	RES MF 1.21K 1% 1/4W	14419100
R15 R37	RES MF 10 OHM 1% 1/4W	14415700
R16 R17	RES MF 1K 1% 1/4W	14409000
R18	RES MF 30.1K 1% 1/4W	14422500
R22 R23 R24 R48	RES MF 365 OHM 1% 1/4W	14407100
R27 R31	RES MF 1.5K 1% 1/4W	14412800
R28	RES MF 5.62K OHM 1% 1/4W	14444700
R32	RES MF 16.9K OHM 1/4W	14438700
R35	RES MF 33.2K 1% 1/4W	14401500
R38 R39 R40	RES MF 100 OHM 1% 1/4W	14419600
R44	RES MF 4.75K 1% 1/4W	14409700
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10	SWITCH TACT	15005800
U1	IC ACTIVE LOW RESET 2.7V	13346300
U2	IC 8 BIT DRIVER	13346100
U2	IC MICROCONTROLLER DVD	31032200
Y1	CERAMIC RESONATOR 8MHZ	18004900

EXPLODED VIEW AND PARTS LIST



Ref No.	Part No.	Description
1	016482	GLASS
2	017531	PUSHBUTTON ASSY RED
3	017517	PUSHBUTTON ASSY BLK
4	078033	O-RING
5	148073	SWITCH DPDT ROCKER
6	017781	BEZEL FRONT
7	092419	FILTER DISPLAY

8	094016	TAPE FOAM 1/4 X 1/8
9	098113	CORD DIAL .027 BLACK BRAID SILK
10	018706	EXTRUSION BOTTOM
11	100147	SCREW MACH 6-32 X 3/16 PHIL
12	018585	EXTRUSION TOP
13	017906	GUIDE PCB
14	094360	TAPE FOAM 1/2 X 1/2
15	094017	TAPE FOAM 1/4 X 1/4
16	005090	BRACKET EXTRUSION
17	018611	ENDCAP 5"
18	101042	SCREW TS 4-40 X 1/2 SLOT FILLISTER
19	049774	ASSY PCB DISPLAY
20	017901	LOGO PUSHBUTTON BACKLIGHT
21	017902	SUPPORT PCB LOCKING ADHESIVE BASE
22	005258	SUBPANEL
23	101196	SCREW TAP SEMS 6-32 X 1/4 PH PN

24	101054	SCREW TAPTITE 6-32 X 1/4 PH PN BLK
25	005261	BRACKET RIGHT ZEE
26	005260	BRACKET LEFT ZEE
27	102003	NUT MACH 6-32 W/LOCK
28	320119	DVD MECHANISM
29	017900	DOOR MOLDING MVP851
30	100271	SCREW MACH 6-32 X 1/4 PH PN
31	100300	SCREW MACH SEMS 6-32 X 1 PH PN
32	104005	WASHER FLAT STEEL 6 X 3/8 X .032
33	005257	CHASSIS
34	019056	SPRING
35	100180	SCREW MACH 6-32 X 1/8 PH PN
36	049773	ASSY PCB AV-PWR
37	320118	ASSY PCB DVD MODULE
38	101222	SCREW TT SEMS 6-32 X 1/4 PH PN
39	005262	BRACKET CABLE
40	159334	TRANSFORMER R-CORE POWER
41	117800	MTA CONNECTOR 8 PIN .156
42	112083	STANDOFF 6-32 X 1.250
43	005259	REAR PANEL
44	117755	RECEPTACLE INPUT & LINE FILTER
45	102001	NUT KEP 4-40 CADMIUM PLATE
46	102020	NUT MACH 6-32 SELF LOCK
47	101197	SCREW HI-LO 4-24 X 3/8 PH RD BLK
48	017218	FOOT PLASTIC BLACK
49	104083	WASHER #10 PLATED 104062
50	100159	SCREW MACH 10-32 X 3/4 PH PN BLK
51	005102	COVER TOP
52	101078	SCREW TAP 8-32 X 5/16 PH PN BLK

REPACKING INSTRUCTIONS

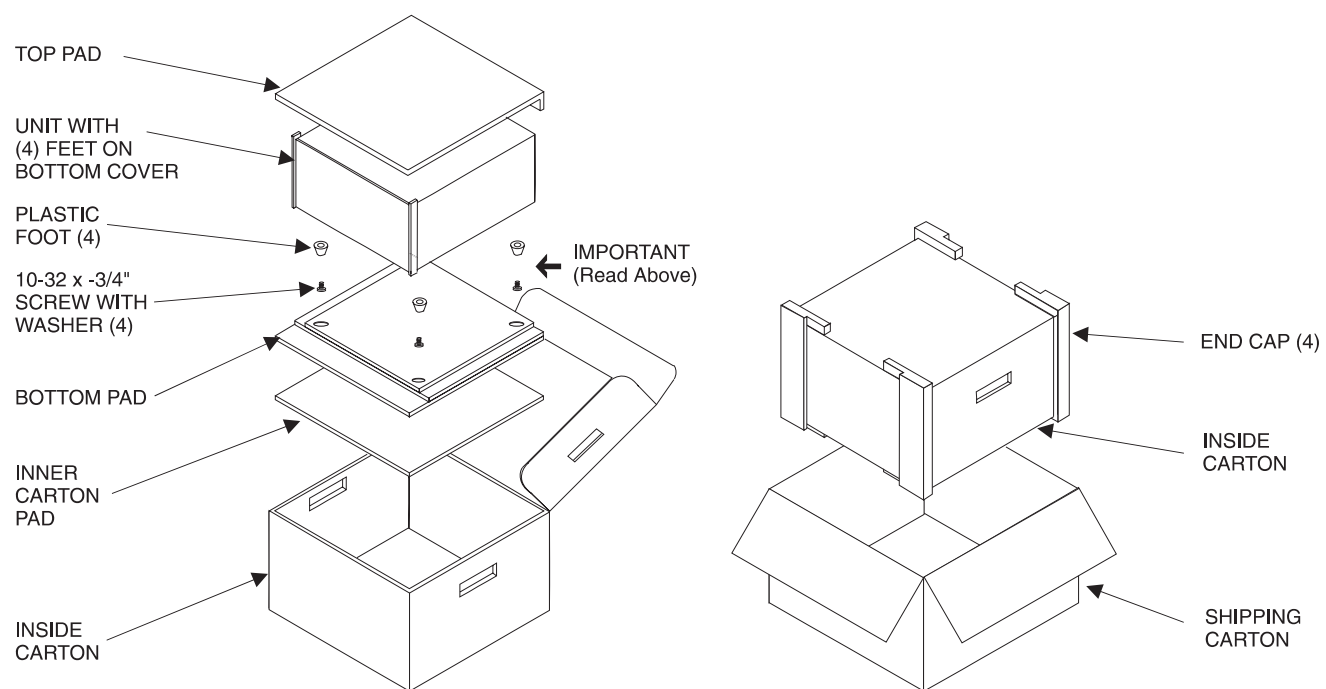
In the event it is necessary to repack the unit for shipment, the unit must be packed exactly as shown below.

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	034075	Shipping carton only
4	033837	Foam end cap
1	034076	Inside carton only
1	033726	Top pad
1	034036	Bottom pad
1	034077	Inner carton pad
4	017218	Plastic foot
4	100159	#10-32 x 3/4" Machine screw
4	104083	#10 x 7/16" Flat washer
1	049270	Shipping carton complete with all the above parts.



MVP851

DVD AUDIO/VIDEO PLAYER

SERVICE MANUAL



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