



# SERVICE MANUAL

# T 744

A/V Receiver

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A/V Receiver


# SAFETY INFORMATION

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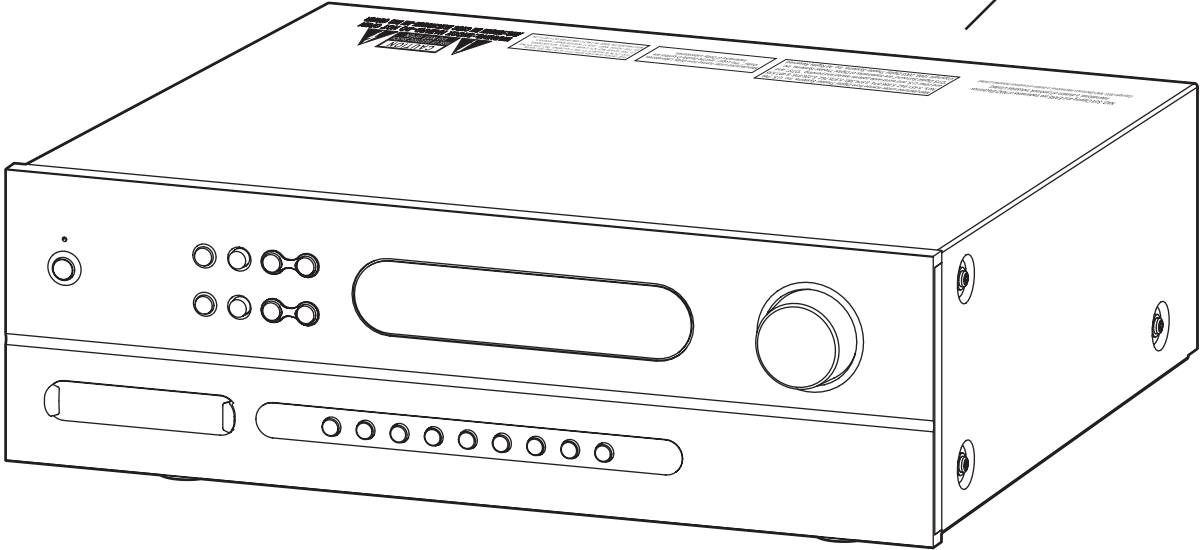
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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:  
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.  
(2) THIS DEVICE MUST ACCEPT INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

 **CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN

**WARNING: SHOCK HAZARD - DO NOT OPEN**  
**AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR**








# SERVICE SAFETY PRECAUTIONS

## 1. Replacing the fuses

### CAUTION:

FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE REPLACE ONLY WITH SAME TYPE OF FUSE.


Reference Designator		Database Part Number	Description
F751*AH		20-001-0075-90	FUSE TIME-LAG 7A 250V 5 X 20mm SIC UL/CSA (RoHS)
F752*AH		20-001-0076-90	FUSE 1.6A 250V TIME LAG LBC 5x20mm TSD UL/CSA/VDE/SEMKO (RoHS)
F751*C,CT		20-001-0071-90	FUSE TIME-LAG 4A/250V 5 X 20mm VDE/UL TSD (RoHS)
F752*C,CT		20-001-0069-90	FUSE 800mA 250V TIME LAG LBC 5x20mm TSD UL/CSA/VDE/SEMKO (RoHS)
FH751-FH752		20-002-0030-90	FUSE CLIP 0.05mm WL-210A

**NOTE:** <\*AH > : USA, CANADIAN MODEL ONLY.  
<\*C,\*CT > : EUROPEAN MODEL ONLY.

## 2. Safety check out

(Only U.S.A. model)

Before returning the product to the customer, make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from supply circuit.

Parts marked with the symbol  are critical with regard to the risk of fire and electric shock. Replace only with parts recommended by the manufacturer.

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# SPECIFICATIONS

## POWER AMPLIFIER SECTION

Rated distortion	(Rated power level into 8 ohms, THD 20 Hz-20 kHz FL/C/FR) (Rated power level into 8 ohms, THD 20 Hz-20 kHz SL/SR/BS)	$\leq 0.1 \%$ $\leq 0.1 \%$
Input Sensitivity	(ref. 8 ohms, 1 kHz)	<b>260 <math>\pm</math> 20mV</b>
S/N Ratio	(A-wtd, 1kHz, 1 W, 8 ohm, SL/SR/BL)	<b><math>\geq -75</math> dB</b>
Frequency Response	(20 Hz - 20 kHz)	<b>0 <math>\pm</math> 1.0 dB</b>
Channel Balance	(1 dB to -40 dB, 1 kHz) (-41 dB to -50 dB, 1 kHz)	$\leq 2$ dB $\leq 3$ dB
Audio muting at 1 kHz		<b><math>\geq 55</math> dB</b>
Subwoofer out, 500 mV in	(THD at 2 V O/P, 100 Hz)	$\leq 0.5 \%$
Crosstalk	(500 mV input, 10 W, 1 kHz)	<b><math>\geq -57</math> dB</b>
<b>Controls</b>		
Bass	(at 500 mV in, 1 W out, 100 Hz)	<b><math>\pm 10</math> dB <math>\pm 2</math> dB</b>
Treble	(at 500 mV in, 1 W out, 10 kHz)	<b><math>\pm 10</math> dB <math>\pm 2</math> dB</b>

## DOLBY DIGITAL SECTION

Channel Difference(FL ref. Track 30)		<b><math>\pm 1.2</math> dB</b>
Frequency Response at Dolby config.2	SL Track 46 200 - 20 kHz SR Track 47 200 - 20 kHz C Track 44 200 - 20 kHz	<b><math>\pm 0.8</math> dB</b> <b><math>\pm 0.8</math> dB</b> <b><math>\pm 0.8</math> dB</b>
Harmonic Distortion	(1 W, Audio LPF, Dolby Congfig 1) FL Track 65 997 Hz FR Track 67 997 Hz SL Track 68 997 Hz SR Track 69 997 Hz C Track 66 997 Hz	$\leq 0.08 \%$ $\leq 0.08 \%$ $\leq 0.08 \%$ $\leq 0.08 \%$ $\leq 0.08 \%$
S/N Ratio	(TRACK 30 for O/P 1 W, FAUSE) CCIR / ARM Audio LPF A-WTD	<b><math>\geq 65</math> dB</b> <b><math>\geq 70</math> dB</b> <b><math>\geq 70</math> dB</b>
Channel Separation	(1 W, A-WTD FILTER) Track 65 997 Hz	<b><math>\geq 60</math> dB</b>

## DOLBY PRO LOGIC II SECTION

### **Frequency Response**

I/P mode : L, R	: 1 V in, 1 W, Ch L/R	40 Hz 20 kHz	<b>0 <math>\pm</math> 2.0 dB</b> <b>0 <math>\pm</math> 2.0 dB</b>
I/P mode : L=R	: 1 V in, 1 W, Ch /L/R Ch C	40 Hz 20 kHz	<b>0 <math>\pm</math> 2.0 dB</b> <b>0 <math>\pm</math> 2.0 dB</b>
I/P mode : L=-R	: 1 V in, 1 W, Ch SL/SR	40 Hz 20 kHz	<b>0 <math>\pm</math> 2.0 dB</b> <b>0 <math>\pm</math> 2.0 dB</b>
S/N Ratio (200 mV in, 1 W, A-WTD w/ 1 k termination)			
I/P mode : L, R	: 1 kHz, Ch L/R		<b><math>\geq 65</math> dB</b>
I/P mode : L=R	: 1 kHz, Ch C		<b><math>\geq 65</math> dB</b>
I/P mode : L=-R	: 1 kHz, Ch SL/SR		<b><math>\geq 65</math> dB</b>
THD (2.2 V in, 1 W, w/ 80 kHz LPF, 1 kHz)			<b><math>\leq 0.2 \%</math></b>



## **DTS SECTION**

Output Level (Vol 0 dB) : FL/FR/C/SL/SR	Track 6 1 kHz	<b>2.5 ± 0.2 W</b>
Channel Difference (FL ref): FL/FR/C/SL/SR	Track 6 1 kHz	<b>± 1.0 dB</b>
Harmonic Distortion (Audio Filter) : FL/FR/C/SL/SR	Track 10-14 1 kHz	<b>≤ 0.08 %</b>
Frequency Response (20 Hz to 20 kHz)	Track 26-30	<b>+2/-1.5</b>
Subwoofer Output Level 1 kHz ref at pre-out (FL)	Play Track 10, charge to 15	<b>12.5 ± 2 dB</b>

## **AM TUNER SECTION**

Input level is expressed as the reading in open circuit of 75-ohm source impedance signal generator

Usable sensitivity (999/1000 kHz)	<b>≤ 30 dBμV</b>
S/N Ratio (5 mV in)	<b>≥ 38 dB</b>
THD (5 mV in)	<b>≤ 3 %</b>
IF Rejection (450 kHz)	<b>≥ 36 dB</b>
Image Rejection (F+2xIF)	<b>≥ 28 dB</b>
Selectivity	<b>≥ 17 dB</b>
Output	<b>170 ± 20 mV</b>
Loop sensitivity (20 dB S/N)	
999/1000 kHz	<b>≤ 66 dB</b>
603/600 kHz	<b>≤ 66 dB</b>
1404/1400 kHz	<b>≤ 66 dB</b>
Frequency Response (100 - 2.3 kHz, 5 mV)	<b>± 6 dB</b>

## **FM TUNER SECTION**

**\*C,\*CT**

**\*AH,\*AHT**

Input level is expressed as the reading in open circuit of 75-ohm source impedance signal generator

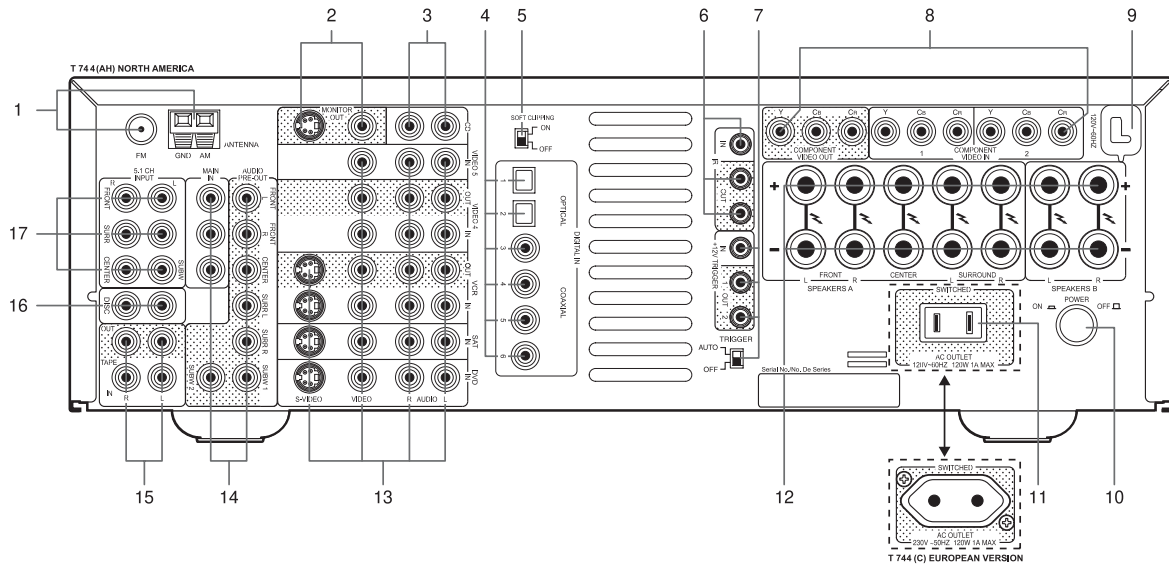
Usable sensitivity (98 MHz)		<b>≤ 15 dBμ</b>	<b>≤ 15 dBμv</b>
S/N Ratio (60 dB, IHF wtd)	Mono	<b>≥ 63 dB</b>	<b>≥ 63 dB</b>
	Stereo	<b>≥ 63 dB</b>	<b>≥ 63 dB</b>
Frequency Response (20 Hz - 15 kHz, 60 dBμ)		<b>0 ± 1.5 dB</b>	<b>0 ± 1.5 dB</b>
Channel Separation (60 dBμ)	100 Hz	<b>≥ 30 dB</b>	<b>≥ 30 dB</b>
	1 k	<b>≥ 38 dB</b>	<b>≥ 38 dB</b>
	10 kHz	<b>≥ 30 dB</b>	<b>≥ 30 dB</b>
Alternate Channel Selectivity (40 dBμ, ± 400 kHz)		<b>≥ 60 dB</b>	<b>≥ 45 dB</b>
Capture Ratio (40 dBμ)		<b>≤ 3 dB</b>	<b>≤ 3 dB</b>
AM Suppression (60 dBμ, 100% Mod. FM, 30% Mod. AM)		<b>≥ 48 dB</b>	<b>≥ 48 dB</b>
Image Rejection (119.4 MHz)		<b>-</b>	<b>≥ 65 dB</b>
I.F. Rejection (10.7 MHz)		<b>≥ 78 dB</b>	<b>-</b>
Pilot Suppression (98 MHz)		<b>≥ 60 dB</b>	<b>≥ 60 dB</b>
THD (60 dBμ, L=R 75 kHz for AH, 40 kHz Dev for C)	Mono	<b>≤ 0.25 %</b>	<b>≤ 0.25 %</b>
	Stereo	<b>≤ 0.35 %</b>	<b>≤ 0.35 %</b>
Auto-Search Sensitivity	On	<b>≥ 24 dBμ</b>	<b>≥ 24 dBμ</b>
	Off	<b>≤ 15 dBμ</b>	<b>≤ 15 dBμ</b>
RDS decode Sensitivity		<b>≤ 26 dBμ</b>	<b>-</b>

## **PHYSICAL SPECIFICATIONS**

Dimensions (Width x Height x Depth)	<b>435 x 150 x 390 mm</b>
Net Weight	<b>13.3 Kg (29.30 lbs)</b>
Shipping Weight	<b>16.9 Kg (37.20 lbs)</b>

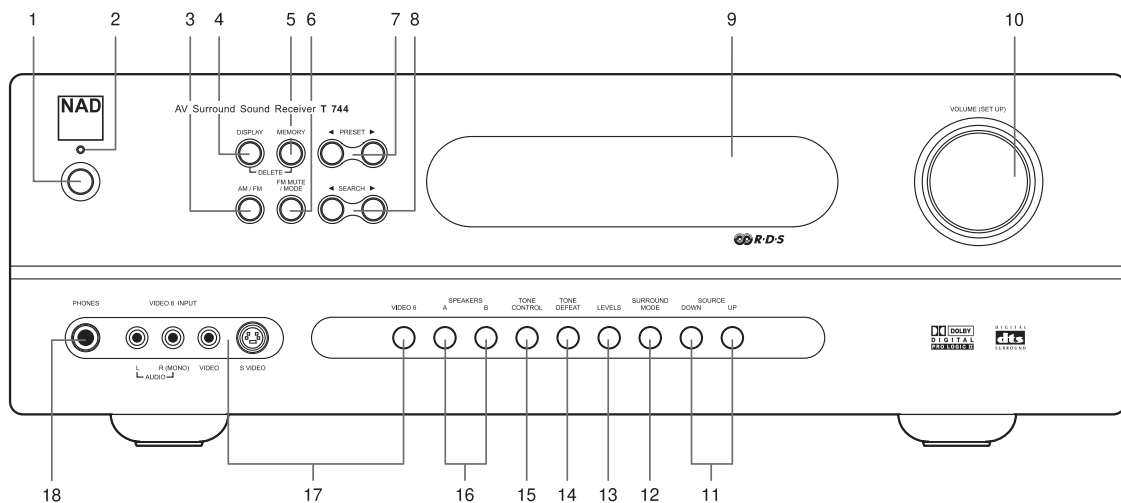
# REAR PANEL / FRONT PANEL VIEW

## REAR PANEL



- |   |  |
|---|--|
| 1. FM & AM ANTENNA                            | 9. AC POWER CORD                             |
| 2. MONITOR OUT                                | 10. POWER SWITCH                             |
| 3. CD INPUT                                   | 11. SWITCHED AC OUTLETS                      |
| 4. DIGITAL AUDIO INPUT & DIGITAL AUDIO OUTPUT | 12. SPEAKERS A & B                           |
| 5. SOFT CLIPPING ON/OFF                       | 13. DVD, SAT, VCR, VIDEO 4 & VIDEO 5         |
| 6. IR INPUT & OUTPUT                          | 14. MAIN IN / AUDIO PRE-OUTS / SUBWOOFER OUT |
| 7. +12V TRIGGER INPUT & OUTPUT                | 15. TAPE INPUT & OUTPUT                      |
| 8. COMPONENT VIDEO IN & COMPONENT VIDEO OUT   | 16. DISC INPUT                               |
|   | 17. 5.1 CH. INPUTS                           |

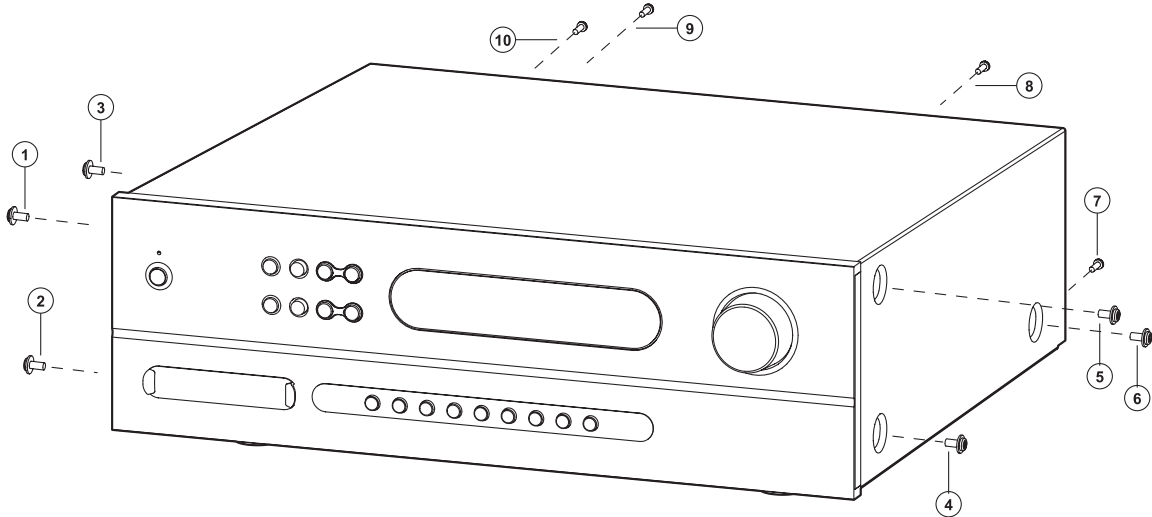
## FRONT PANEL



- |                   |                      |                    |
|-------------------|----------------------|--------------------|
| 1. STANDBY SWITCH | 7. PRESET DOWN / UP  | 13. LEVELS         |
| 2. STANDBY LED    | 8. SEARCH DOWN / UP  | 14. TONE DEFEAT    |
| 3. AM / FM        | 9. VFL DISPLAY       | 15. TONE CONTROLS  |
| 4. DISPLAY        | 10. VOLUME (SETUP)   | 16. SPEAKERS A & B |
| 5. MEMORY         | 11. SOURCE DOWN / UP | 17. VIDEO 6 INPUT  |
| 6. FM MUTE / MODE | 12. SURROUND MODE    | 18. PHONES         |

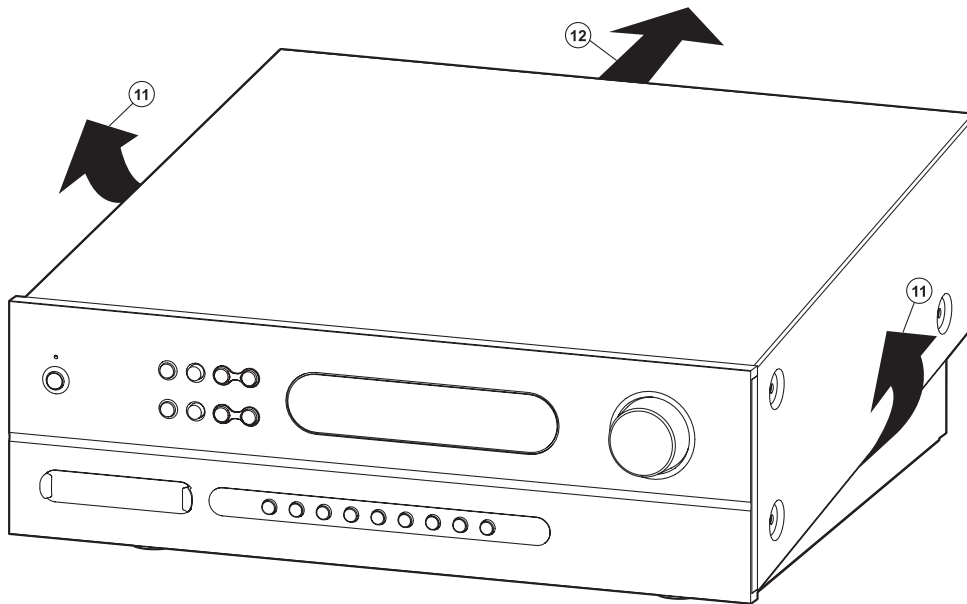
# DISASSEMBLY INSTRUCTIONS

1. Remove machine screws M4.0 x 8.0 (1 to 6) from the side panels. Remove tapping screw 3.0 x 8.0 (7 to 10) from the back panel. Refer to **Figure No. 1**.



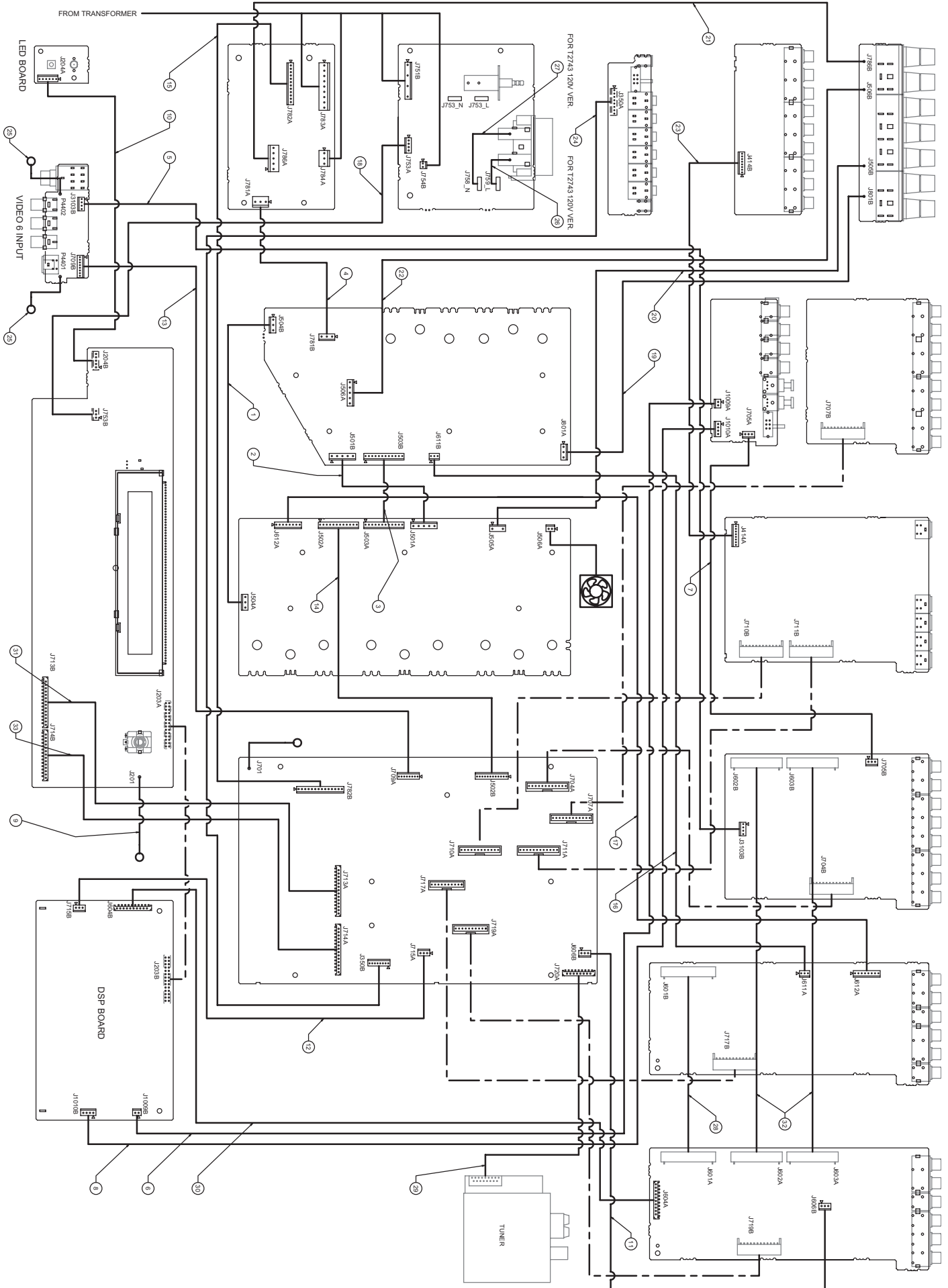
**Figure No. 1**

2. Pull both sides of the TOP COVER slightly outwards 11 and tilt approx. 35 ° and then remove in the direction as indicated by the arrow 12. Refer to **Figure No. 2**.



**Figure No. 2**

# WIRING DIAGRAM

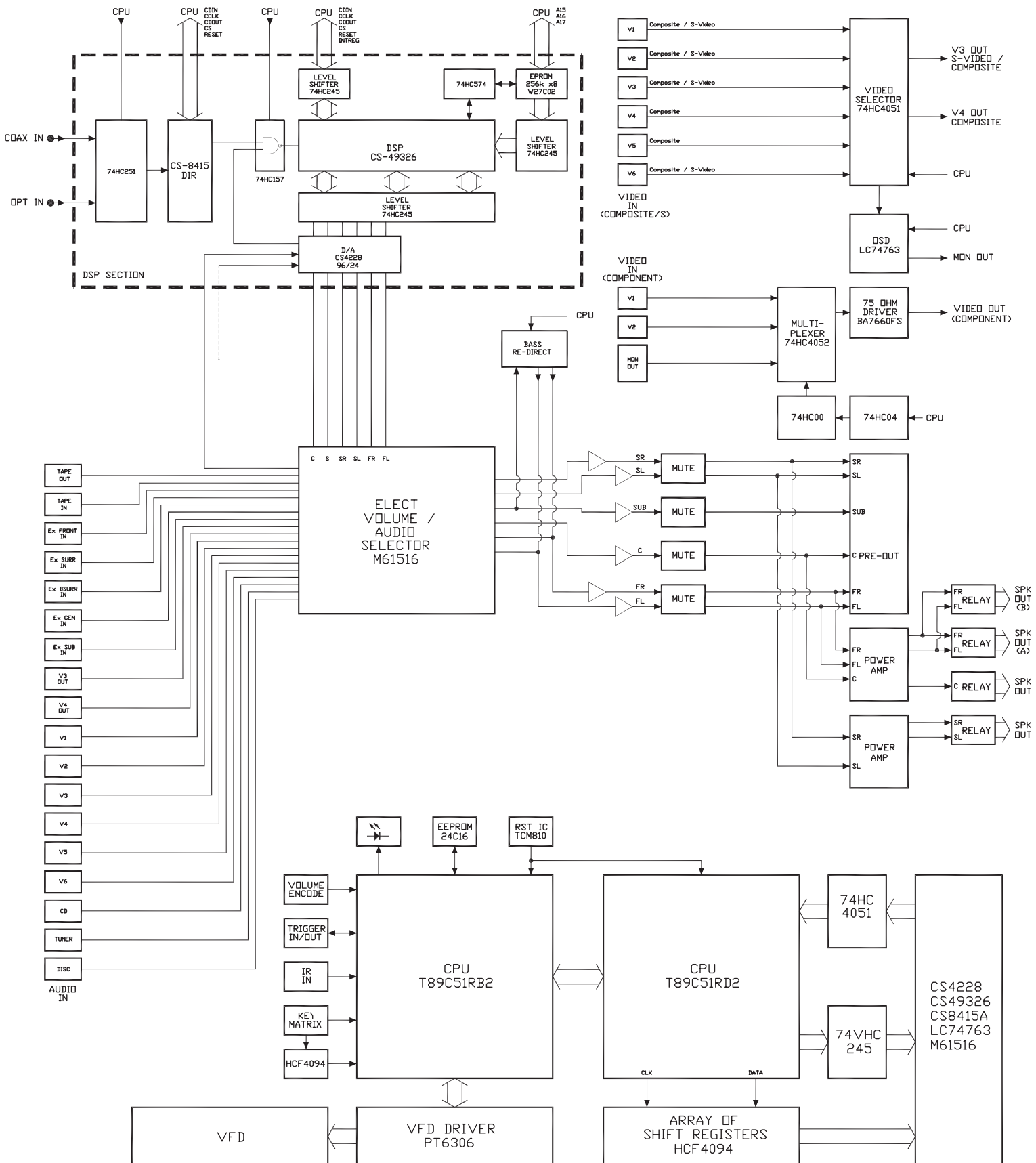


## WIRING DIAGRAM PARTS LIST

Item	Database Part Number	Description	Remark
1	17-012-2959-90	CABLE ASSY 3 WAYS AWG=18 3.96P UL1007 L=180mm	AMP1 BD-J504A
2	17-012-2969-90	CABLE ASSY 5 WAYS P3.96 AWG18 UL1007 L=200mm	AMP1 BD-J501A
3	17-012-2976-90	CABLE ASSY 12 WAYS AWG=26 2.5P UL2877 L=120mm	AMP1 BD-J503A
4	17-012-2959-90	CABLE ASSY 3 WAYS AWG=18 3.96P UL1007 L=180mm	AMP2 BD-J781B
5	17-012-2966-90	CABLE ASSY 4 WAYS AWG26 2.5P UL1533 L=450MM (ROHS)	AUDIO BD-J3103A
6	17-012-2957-90	CABLE ASSY 2 WAYS AWG=26 2.5P UL1533 L=540mm (ROHS)	DIGIT BD- J1009A
7	17-012-2961-90	CABLE ASSY 3 WAYS AWG=26 X2C P=2.5 UL2854 L=110mm C33110 (RoHS)	DIGITAL BD- J705A
8	17-012-2967-90	CABLE ASSY 4 WAYS AWG=26 2.5P UL2877 L=500mm (RoHS)	DIGITAL BD- J1010A
9	17-012-2956-90	CABLE ASSY 1 WAY AWG18 UL1007 BLACK L=100mm W/ RING TERMINAL (RoHS)	KEYBOARD- J201
10	17-012-3404-90	CABLE ASSY 5 WAYS AWG26 2.5P UL1007 L=160mm (RoHS)	LED BD- J204A
11	17-012-2963-90	CABLE ASSY 3 WAYS AWG=26 2.5P L=110mm	MAIN BD- J606B
12	17-012-2964-90	CABLE ASSY 3 WAYS AWG26X2C UL2547 L=210mm (UL LABEL) (RoHS)	MAIN BD- J715A
13	17-012-2974-90	CABLE ASSY 8 WAYS AWG=26X3C L=480mm (RoHS)	MAIN BD- J709A
14	17-012-2977-90	CABLE ASSY 12 WAYS AWG26 2.5P UL2468 L=230mm (UL LABEL) (RoHS)	MAIN BD- J502A
15	17-012-2978-90	CABLE ASSY 14 WAYS AWG=26 2.5P UL1007 L=440mm (UL LABEL) (RoHS)	MAIN BD- J782B
16	17-012-2962-90	CABLE ASSY 3 WAYS AWG=26 2.5P UL2854 L=420mm (RoHS)	PO BD- J611A
17	17-012-2972-90	CABEL ASSY 6 WAYS AWG=26 2.5P UL1533X1C L=350mm (RoHS)	PO BD- J612A
18	17-012-2965-90	CABLE ASSY 4 WAYS AWG26 2.5P UL2468 L=400mm (ROHS)	PS BD- J753A
19	17-012-2958-90	CABLE ASSY 3 WAYS AWG=18 3.96P UL1007 L=120mm	SPK BD-J801B
20	17-012-2960-90	CABLE ASSY 3 WAYS AWG=18 3.96P UL1015 L=320mm	SPK BD- J505B
21	17-012-2968-90	CABLE ASSY 5 WAYS AWG=18 3.96P UL1007 L=350mm	SPK BD- J786B
22	17-012-2970-90	CABLE ASSY 5 WAYS AWG18 UL1007 L=300mm (V/B/Y) (UL LABEL) (RoHS)	SPK BD- J506B
23	17-012-2973-90	CABLE ASSY 8 WAYS AWG=26 2.5P UL1007 L=380mm (RoHS)	SV BD- J414A
24	17-012-2975-90	CABLE ASSY 8 WAYS AWG=26 2.5P UL1007 L=540mm (UL LABEL) (RoHS)	TR BD- J350A
25	17-012-2956-90	CABLE ASSY 1 WAY AWG18 UL1007 BLACK L=100mm W/ RING TERMINAL (RoHS)	V6 BD- P4401,P4402
26	17-012-2948-90	CABLE ASSY 1 WAY AWG=16 UL1672 BROWN L=100mm	J759
27	17-012-2874-90	CABLE ASSY 1 WAY AWG=16 UL1672 BLUE L=100mm	J758
28	17-010-0032-90	FFC CABLE 30 PINS P1.25 L=70mm W/SHIELD	J601A

<b>Item</b>	<b>Database Part Number</b>	<b>Description</b>	<b>Remark</b>
29	17-010-0033-90	FFC CABLE 17 PINS P1.25 L=200mm W/ SHIELD	J720C
30	17-010-0069-90	FFC CABLE 20 PINS P1.25 L=120mm W/ SHIELD	J604C
31	17-010-0035-90	FFC CABLE 20 PINS P1.25 L=200mm W/ SHIELD	J713C
32	17-010-0036-90	FFC CABLE 28 PIN P1.25 L=160mm W/ SHIELD	J602C,J603C
33	17-010-0037-90	FFC CABLE 28 PINS P1.25 L=200mm W/SHIELD	J714C

# BLOCK DIAGRAM

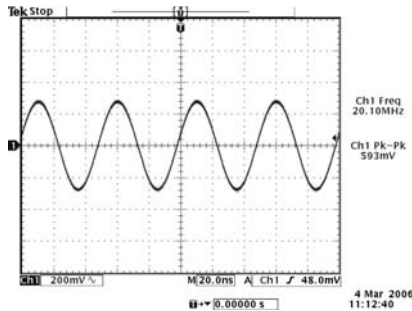


# SPECIAL FUNCTION

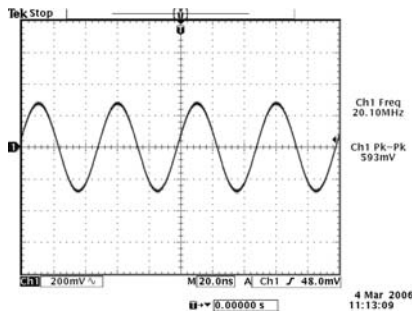
FEATURE	KEYS PRESS ON FRONT PANEL
RESET FOR AH VERSION	VIDEO 6 + SOURCE UP
RESET FOR C VERSION	VIDEO 6 + SOURCE DOWN
NTSC / PAL SELECTION	VIDEO 6 + MEMORY
VFD ALL DISPLAY	VIDEO 6 + TONE DEFEAT
AM FREQ. STEP	AM/FM + FM MUTE
VERSION CHECK	VIDEO 6 + TONE CONTROL

## DETAILS & WAVEFORMS ON SYSTEM TEST & DEBUGGING

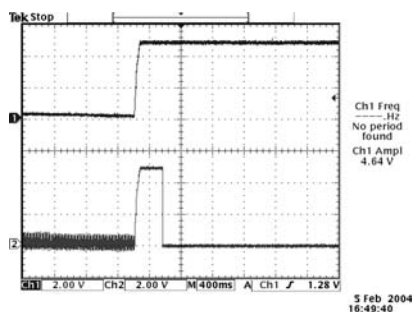
T89C51RB2 (U202) main clock is at 20MHz (X202)



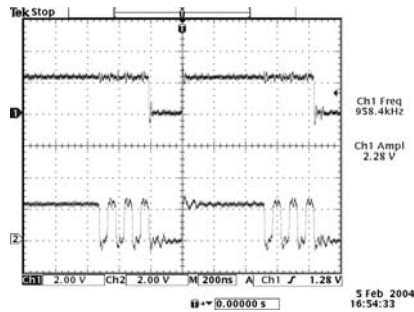
T89C51RD2 (U201) main clock is at 20MHz (X201)



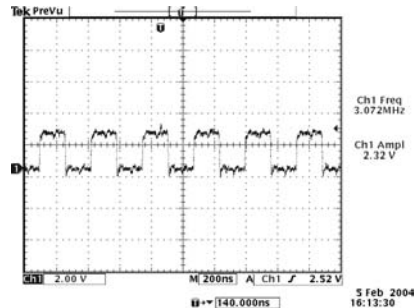
UPPER - +5V supply to KEYBOARD when power up  
LOWER - RESET line (TCM810LENB713) when power up



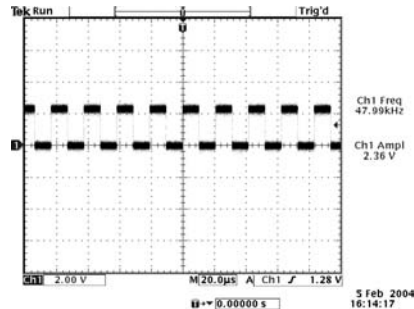
UPPER - OUTPUT ENABLE (pin 24) of EPROM (W27C02) when changing SURROUND MODES  
LOWER - CHIP ENABLE (pin 22) of EPROM (W27C02) when changing SURROUND MODES



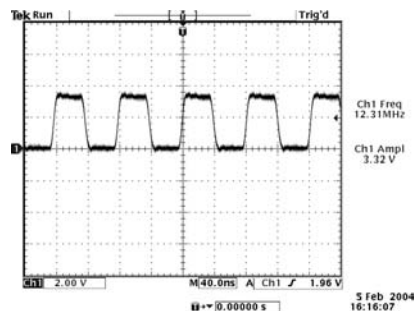
SCLK (pin 43 of CS49326)



LRCLK (pin 42 of CS49326)



MCLK (pin 30 of CS49326)

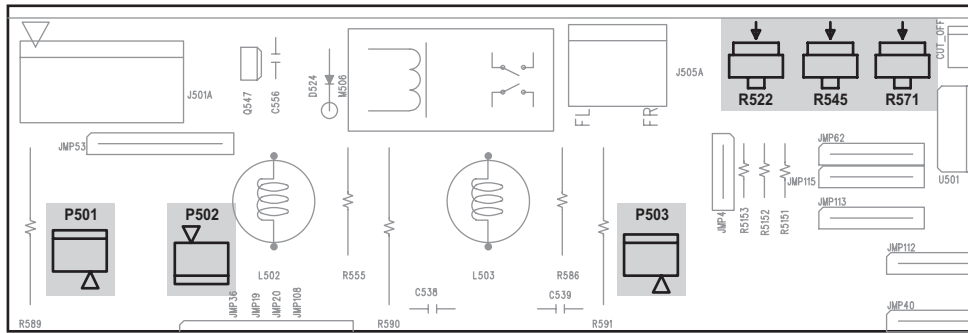


**NOTE:** The waveforms are based on software version V2.12.

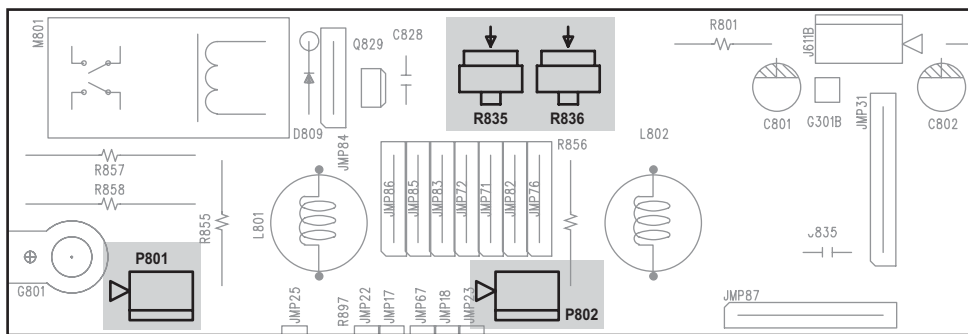


# ADJUSTMENT POINT DIAGRAM

## FRONT/CENTER AMPLIFIER BOARD



## SURROUND AMPLIFIER BOARD



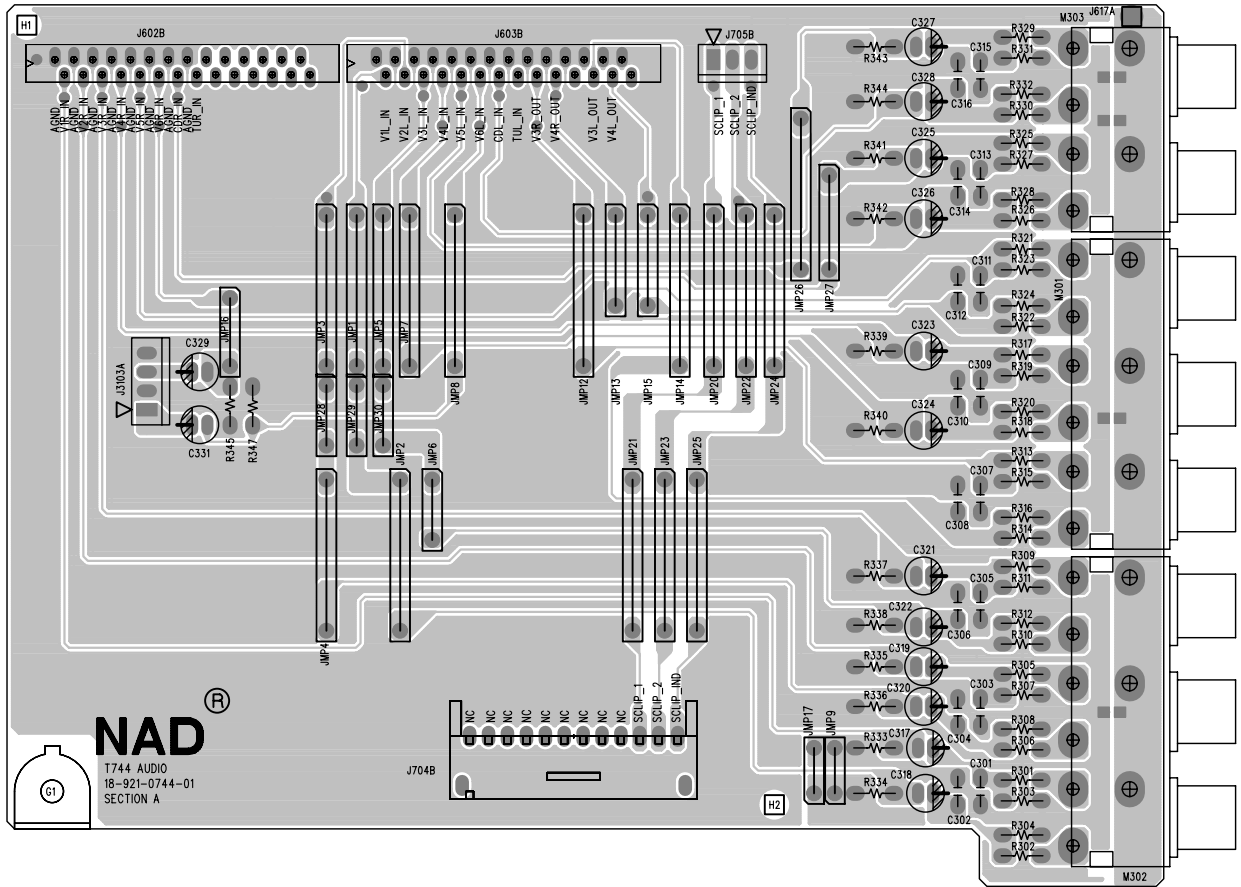
# AMPLIFIER ADJUSTMENT

## Idle Current

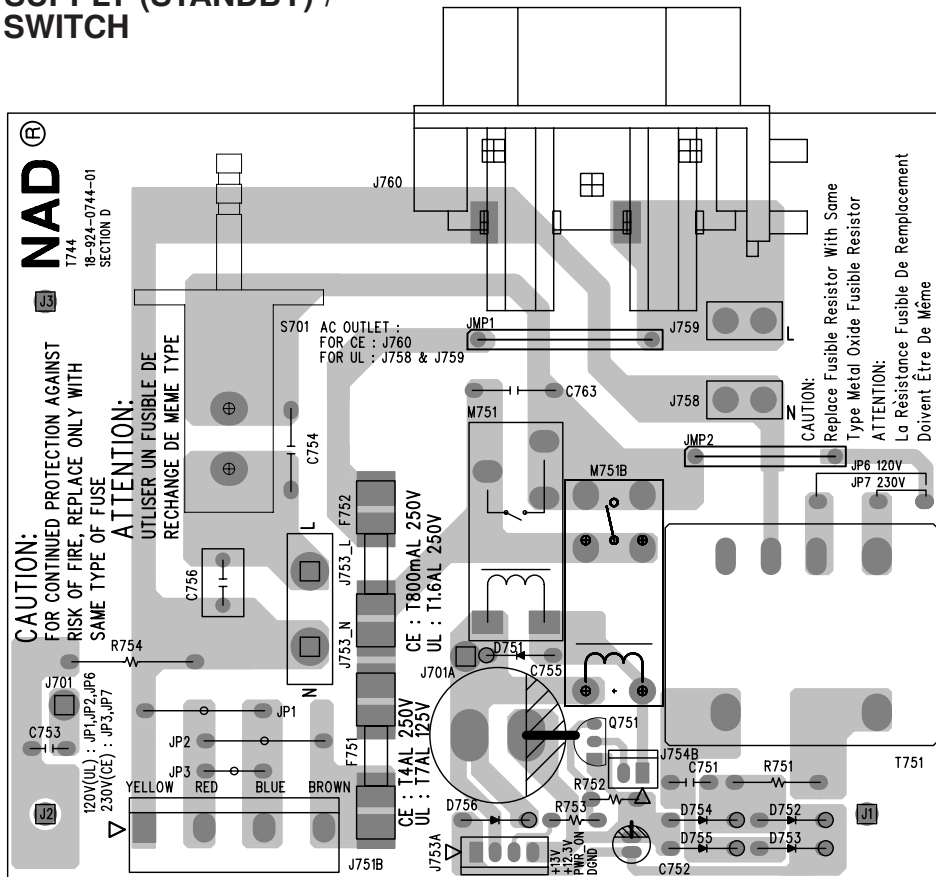
1. Rotate R522 fully clockwise.
2. Connect DC millivoltmeter to P501 (i.e. Across half of R523, 0.22 Ohm resistor).
3. Turn on the unit.
4. Adjust R522 for 1mV reading on voltmeter.
5. Leave power on for at least 5 min, and check for idle current again.
6. Repeat for other channels.

<b>CHANNEL</b>	<b>JUMPER</b>	<b>VR</b>
FL	P501	R522
FR	P502	R545
C	P503	R571
SL	P801	R835
SR	P802	R836

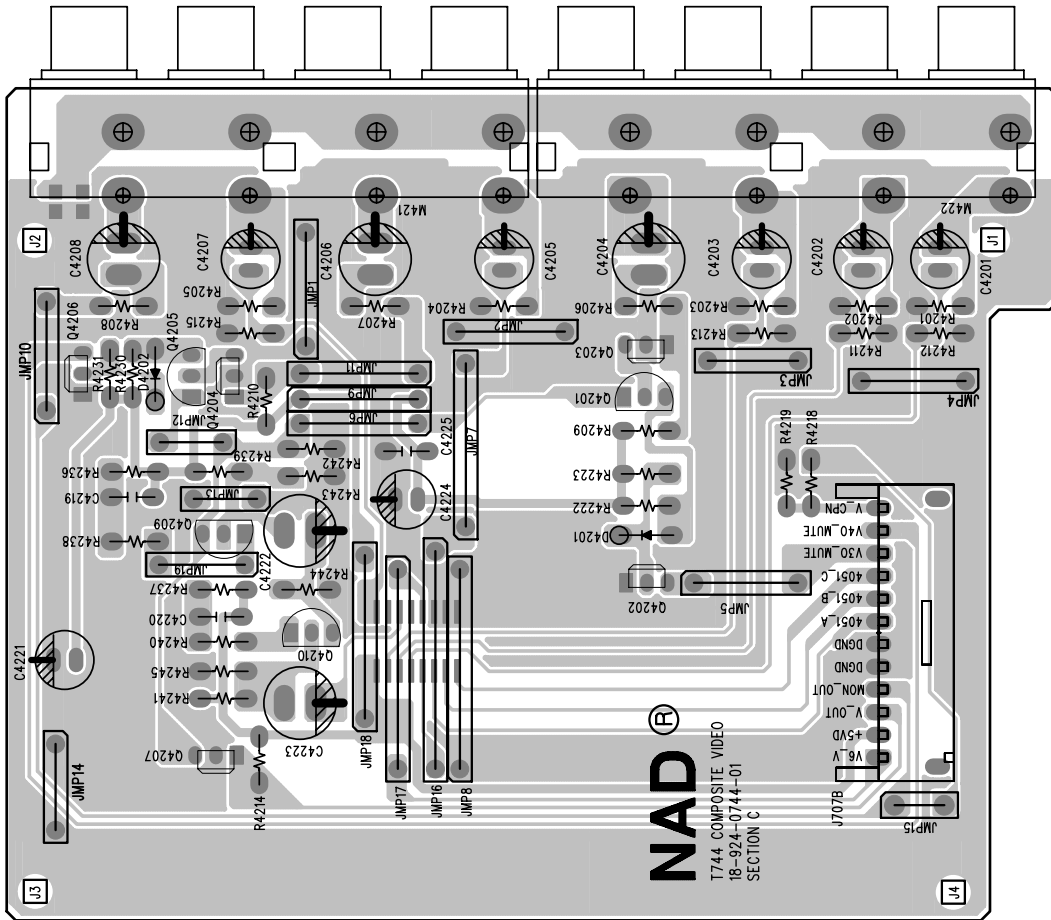
# PCB LAYOUT AUDIO BOARD



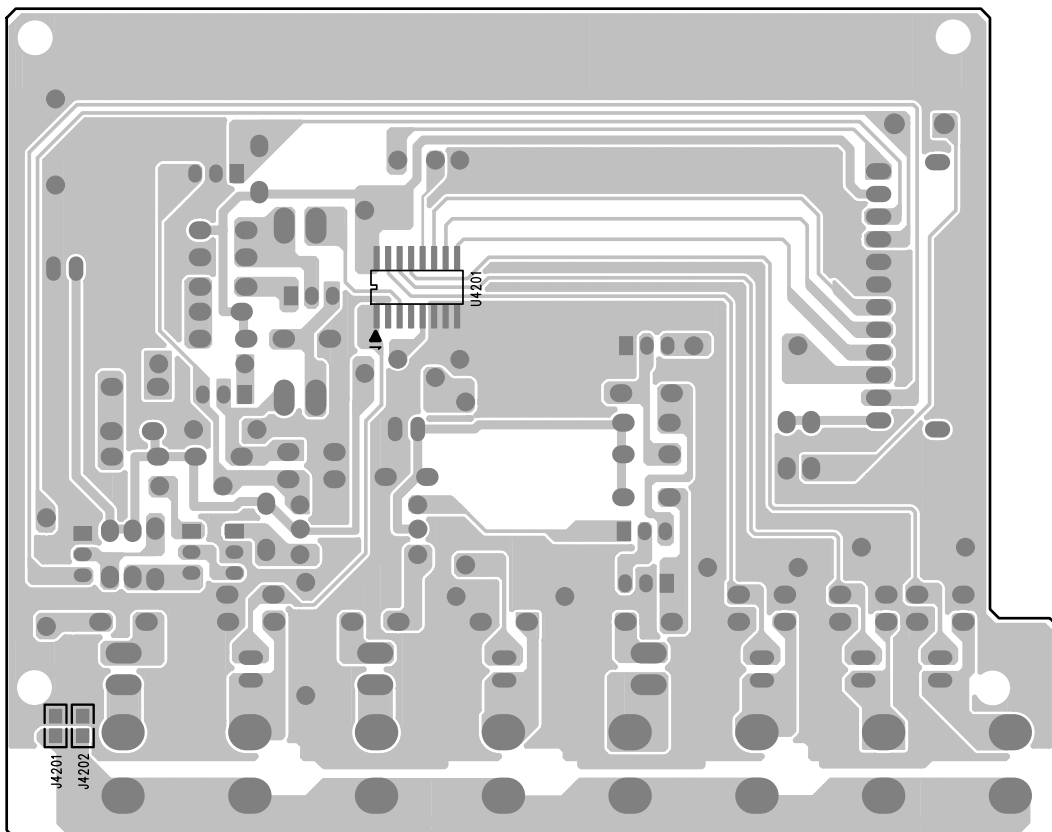
# POWER SUPPLY (STANDBY) / POWER SWITCH



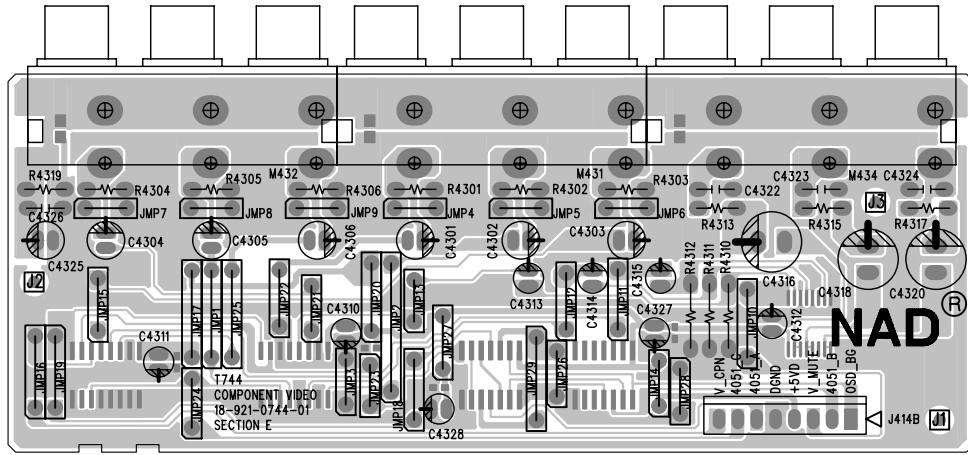
# COMPOSITE VIDEO BOARD - COMPONENT SIDE



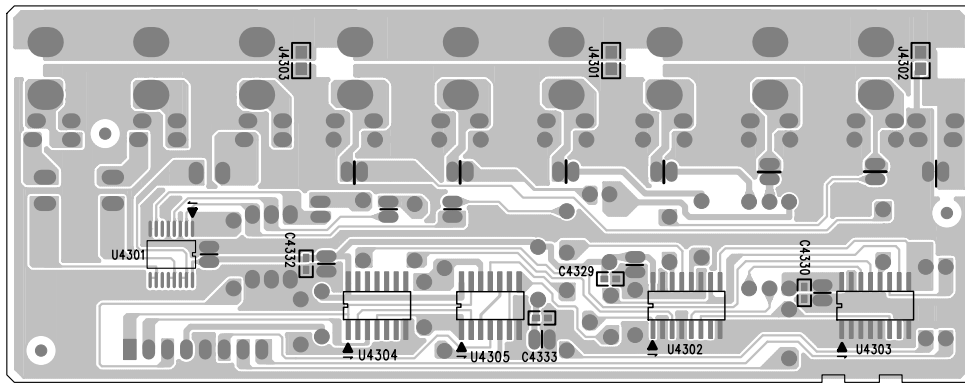
# COMPOSITE VIDEO BOARD - COPPER SIDE



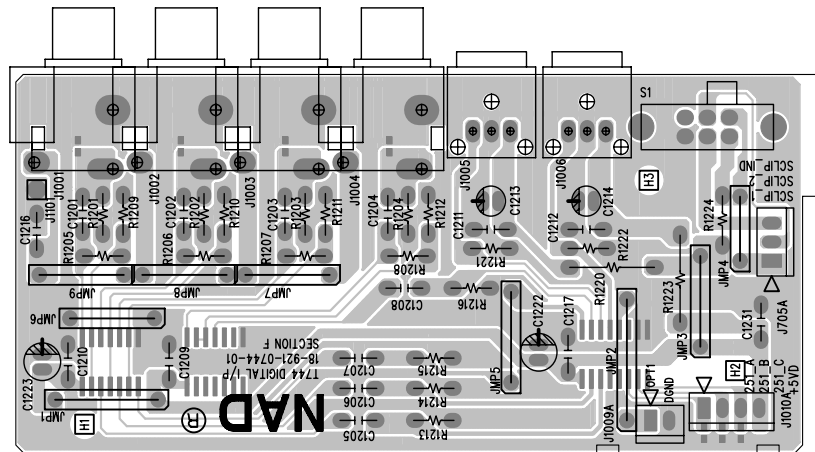
### COMPONENT VIDEO BOARD - COMPONENT SIDE



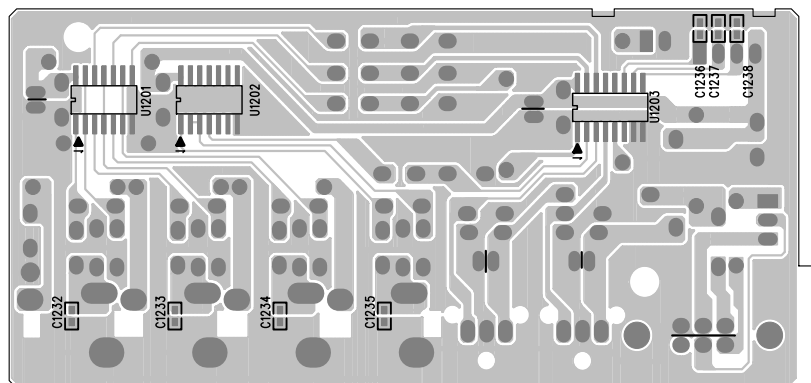
### COMPONENT VIDEO BOARD - COPPER SIDE



### DIGITAL BOARD - COMPONENT SIDE

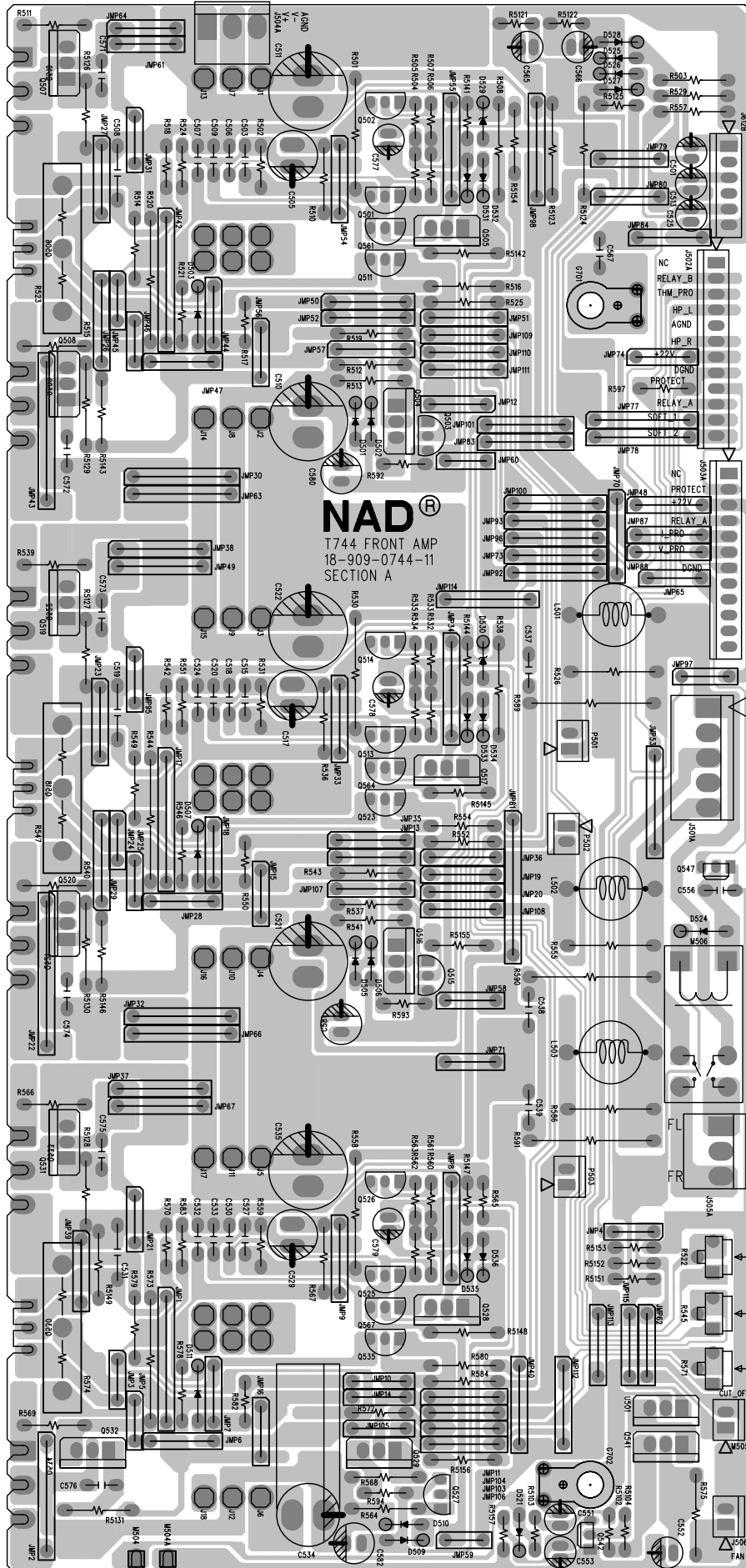


### DIGITAL BOARD - COPPER SIDE



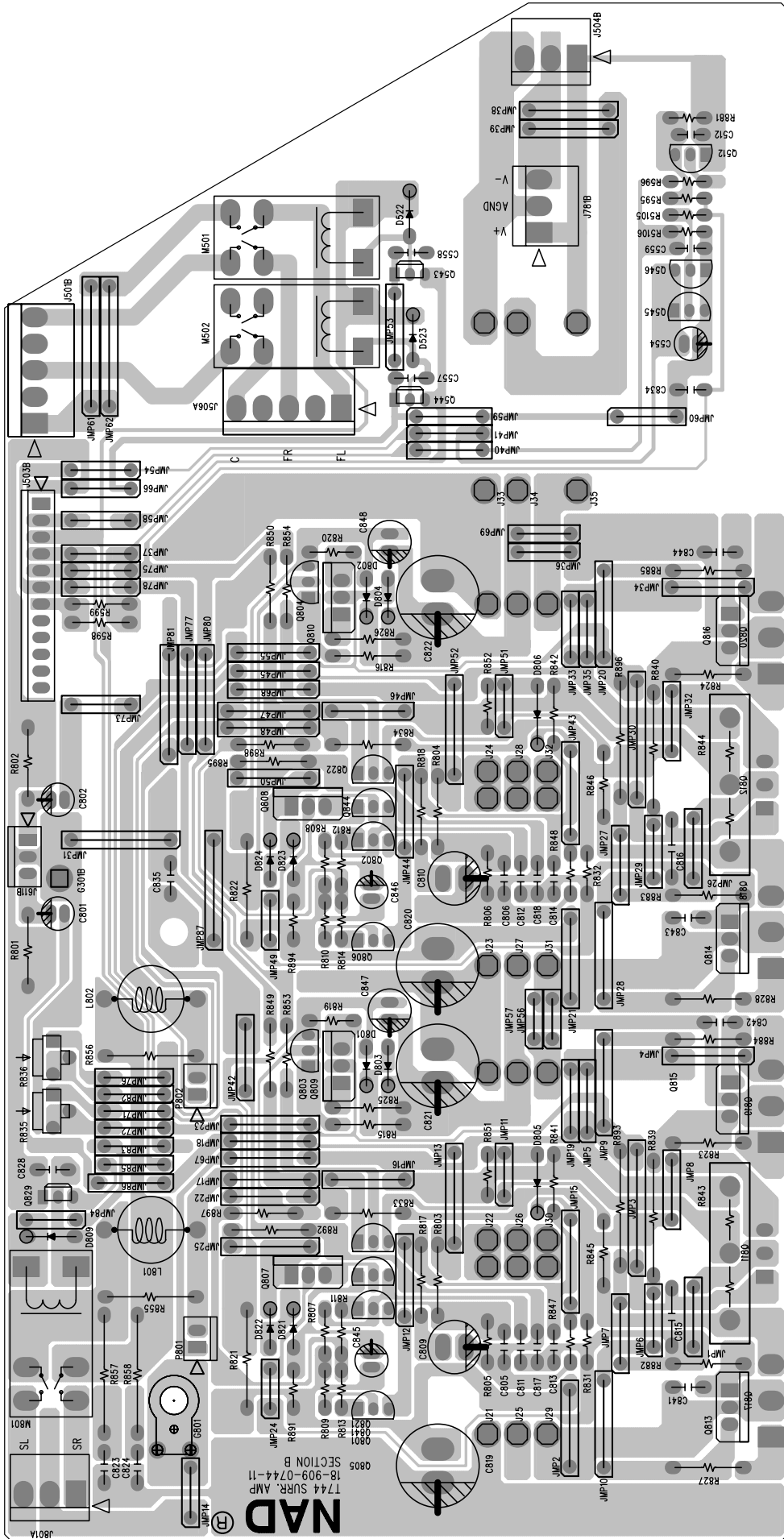


# FRONT / CENTER AMPLIFIER BOARD

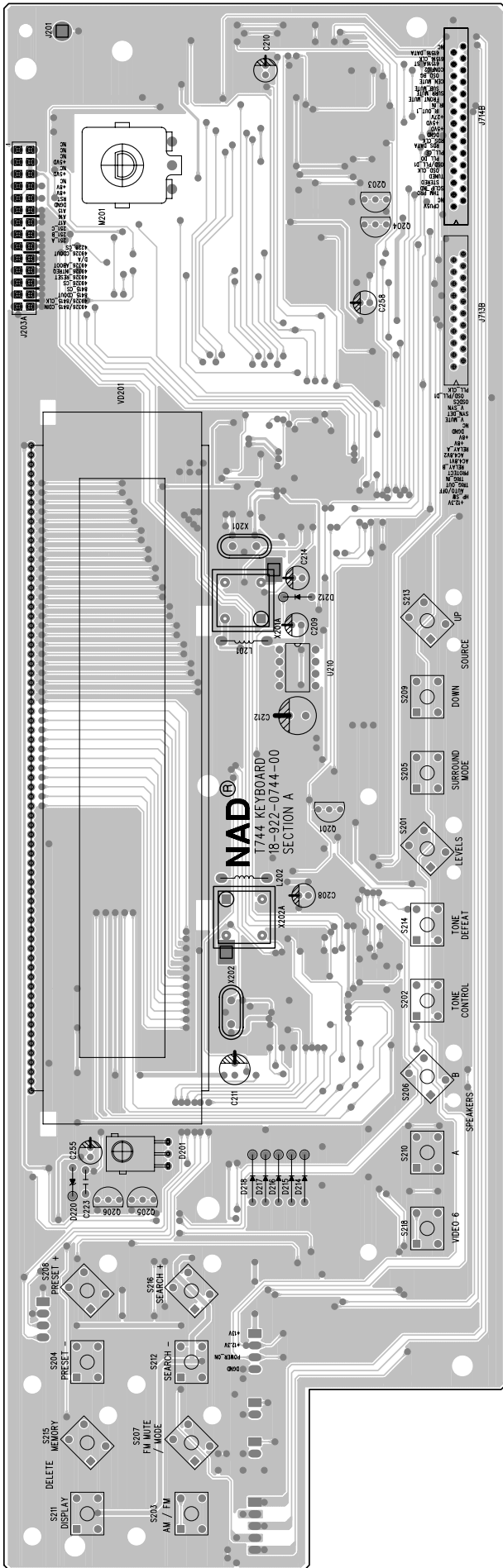




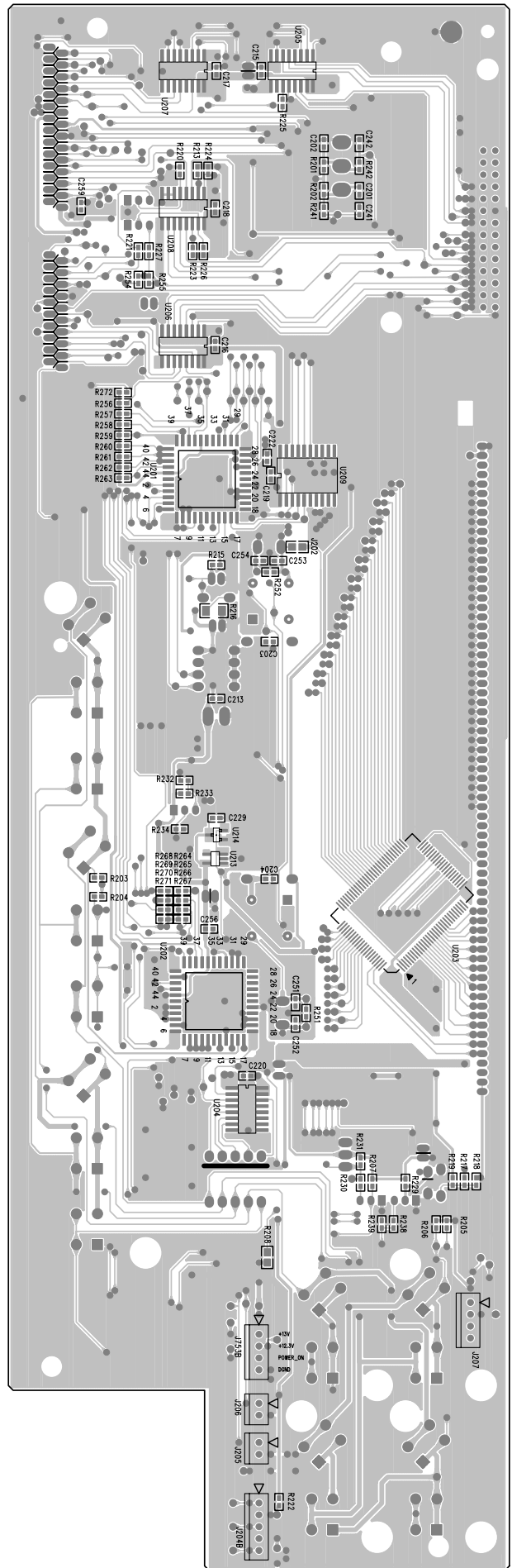
# SURROUND AMPLIFIER BOARD



# KEYBOARD - COMPONENT SIDE

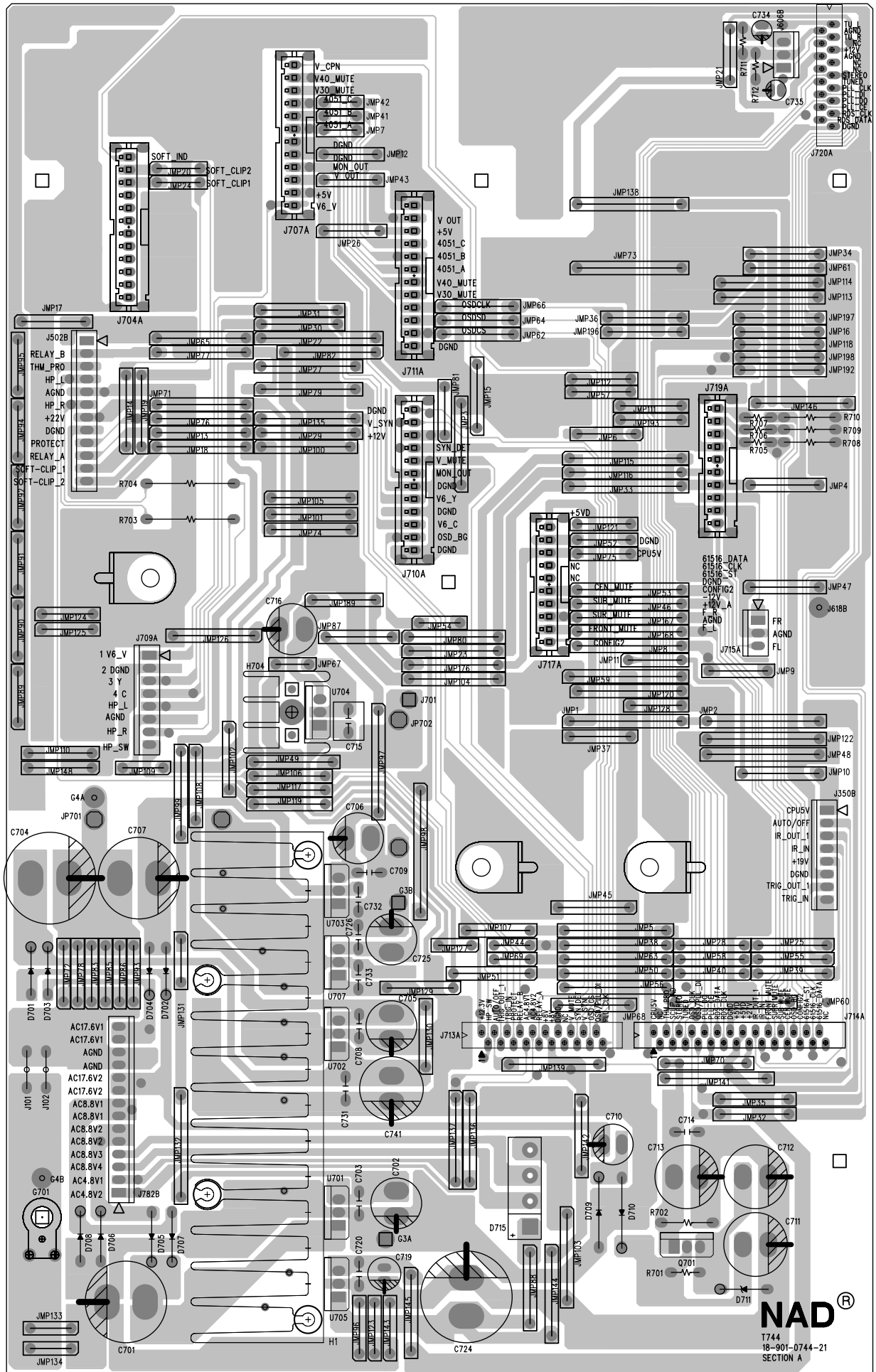


# - COPPER SIDE

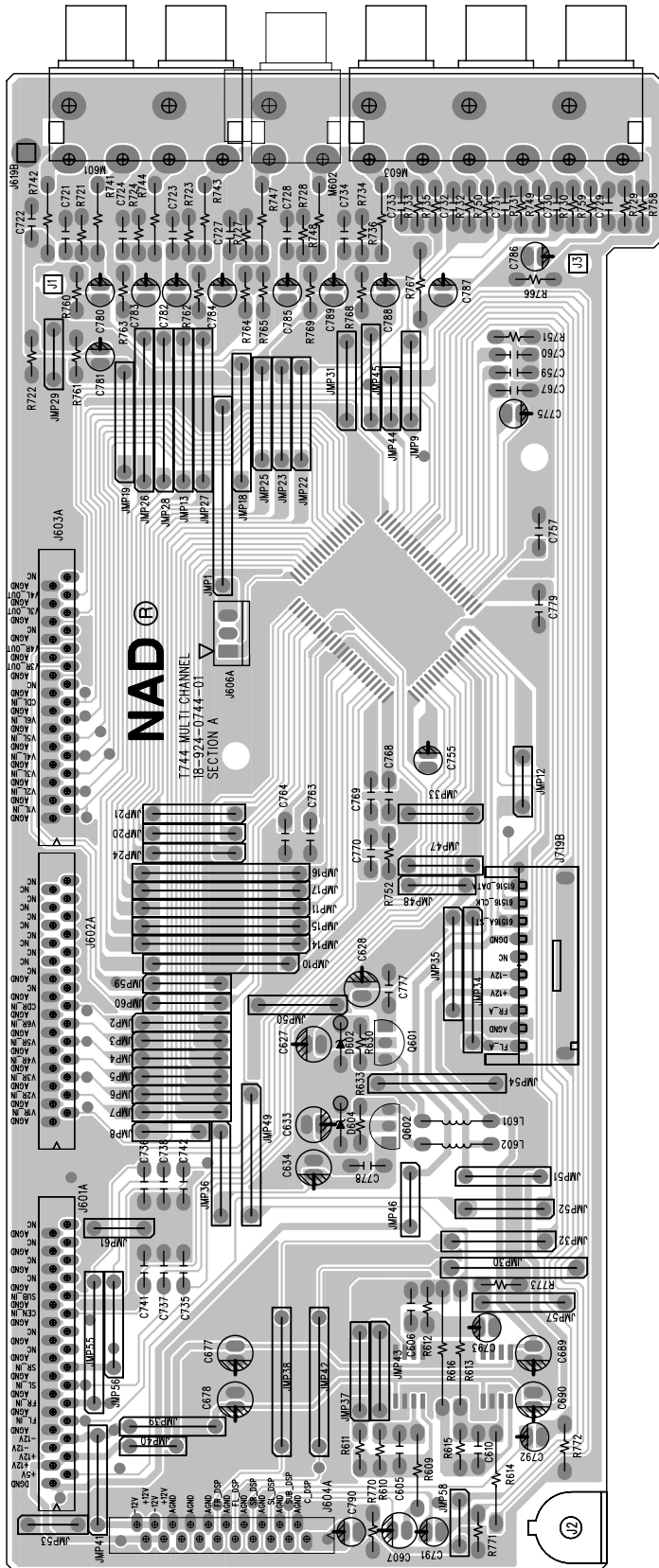




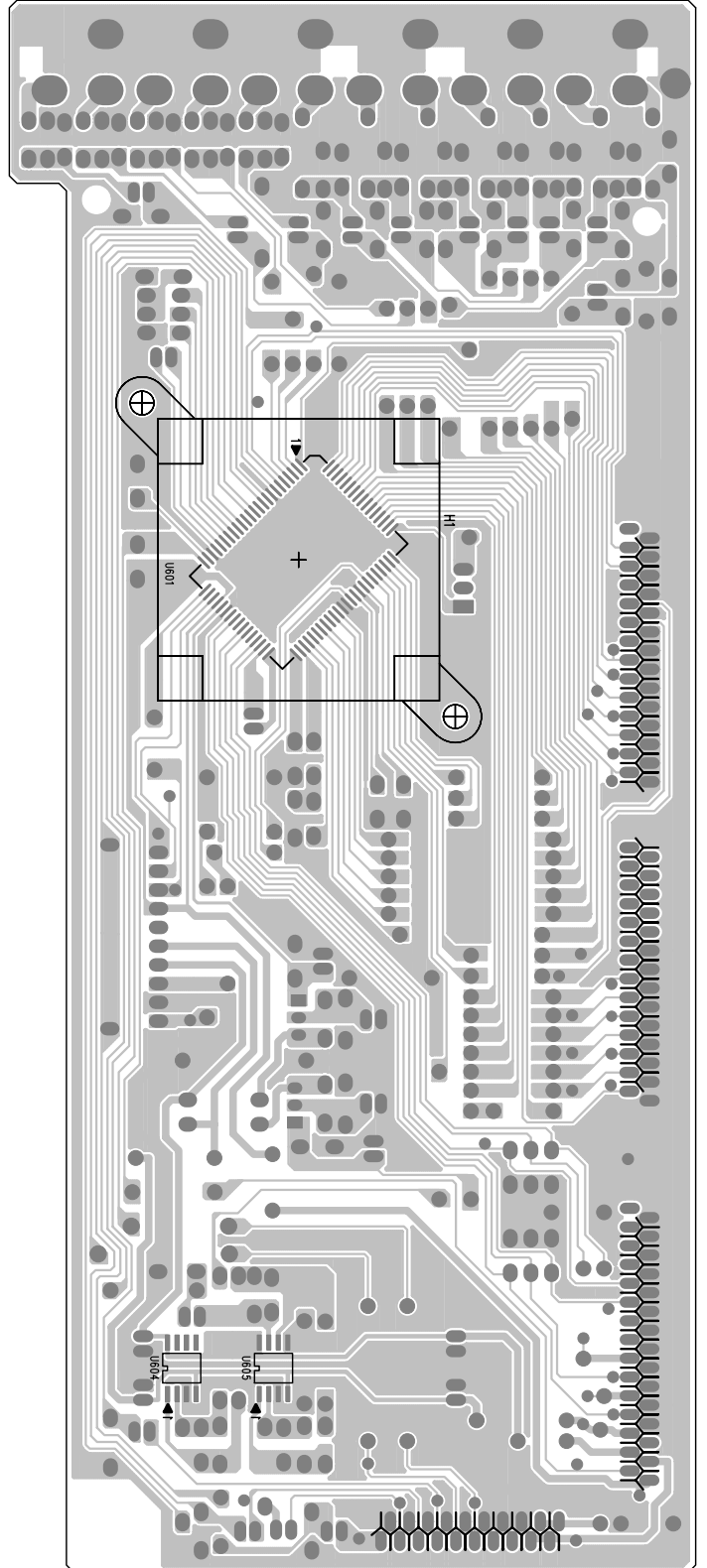
# MAIN BOARD



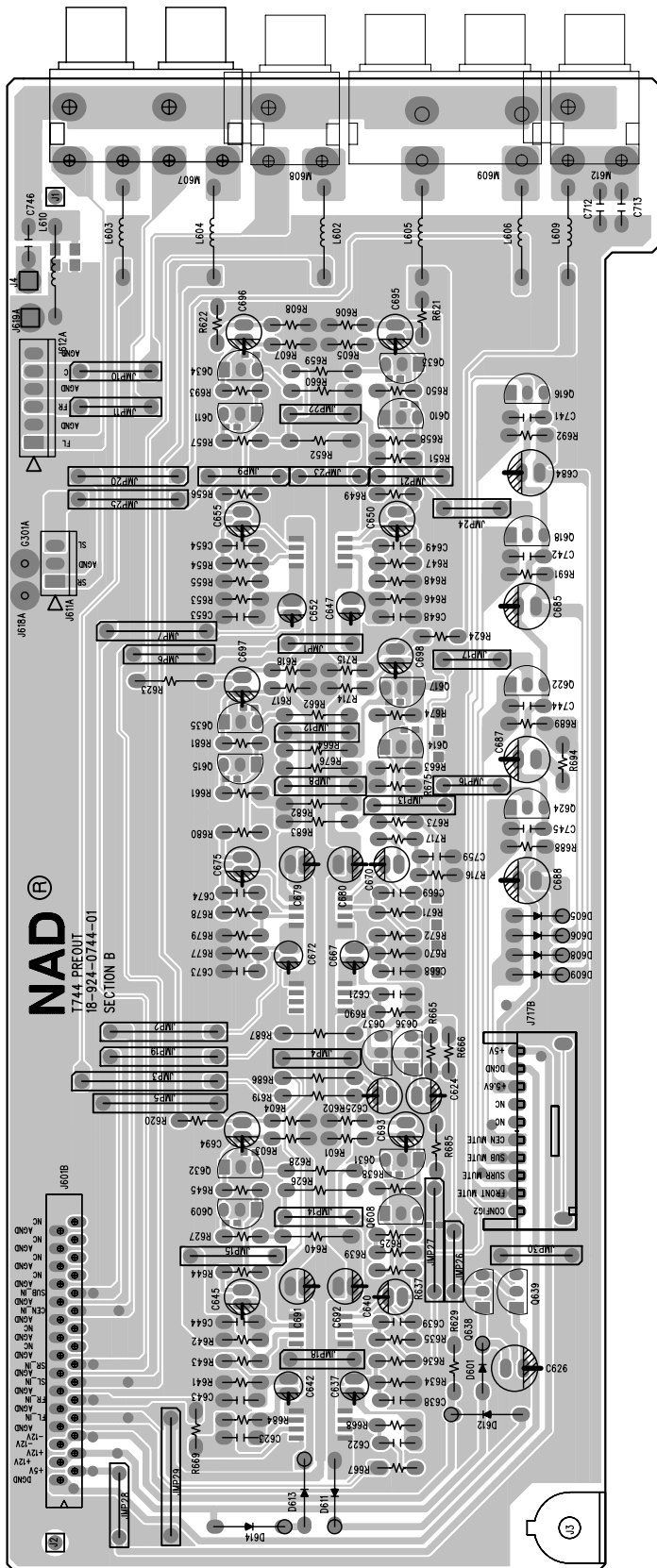
# MULTI-CHANNEL BOARD - COMPONENT SIDE



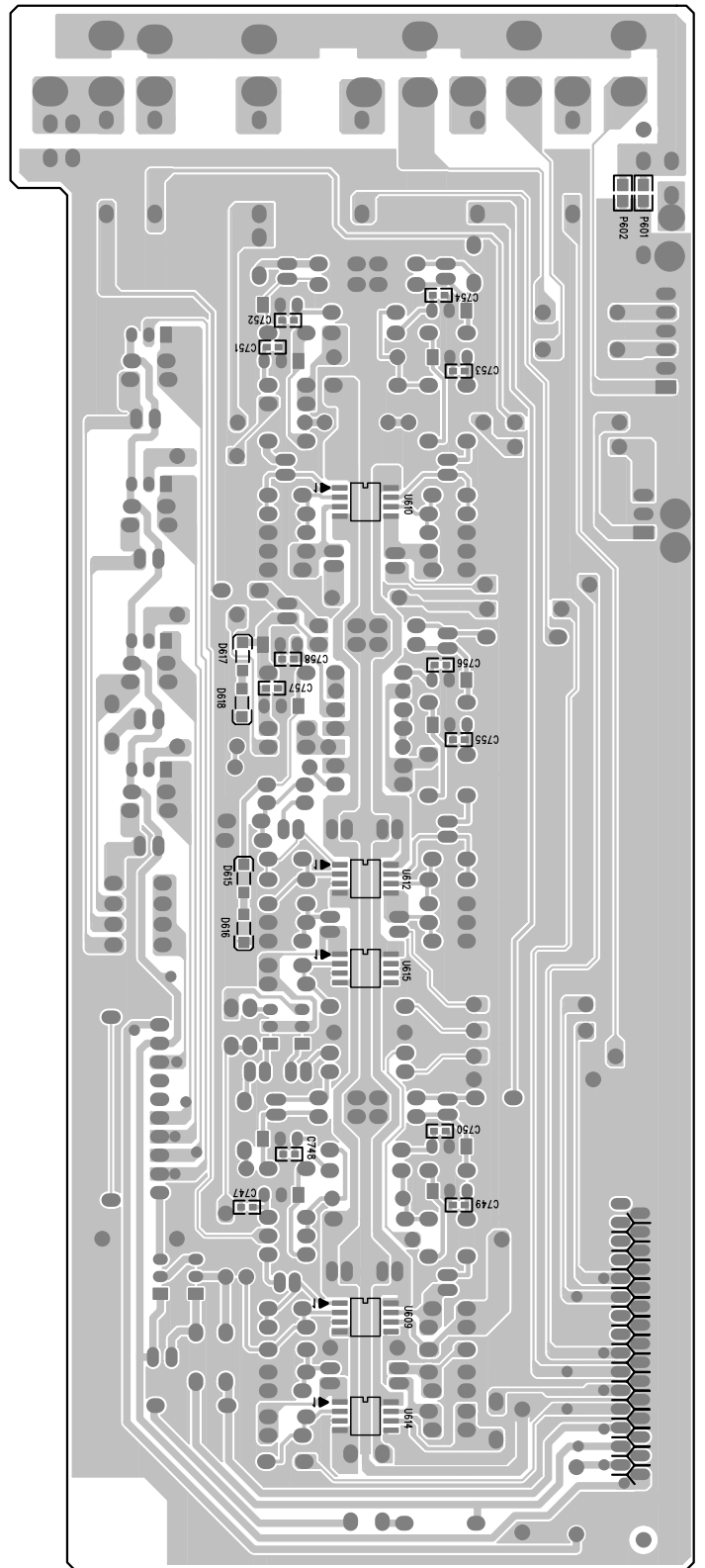
# - COPPER SIDE



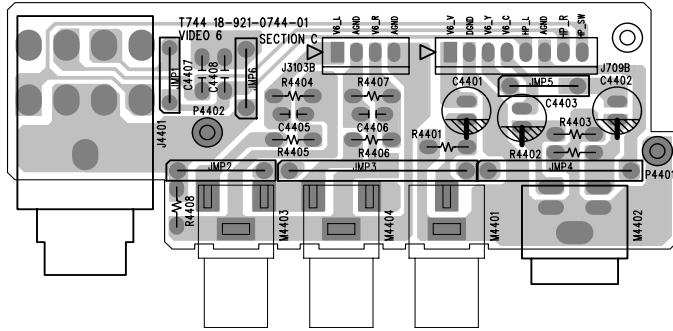
**PRE-OUT BOARD  
- COMPONENT SIDE**



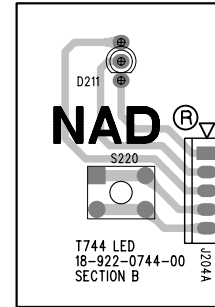
**- COPPER SIDE**



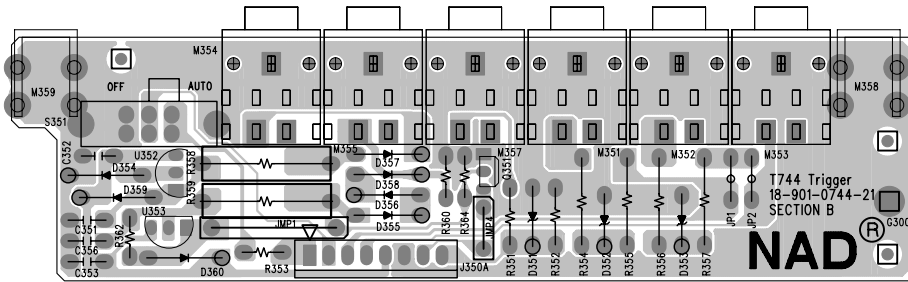
## VIDEO 6 BOARD



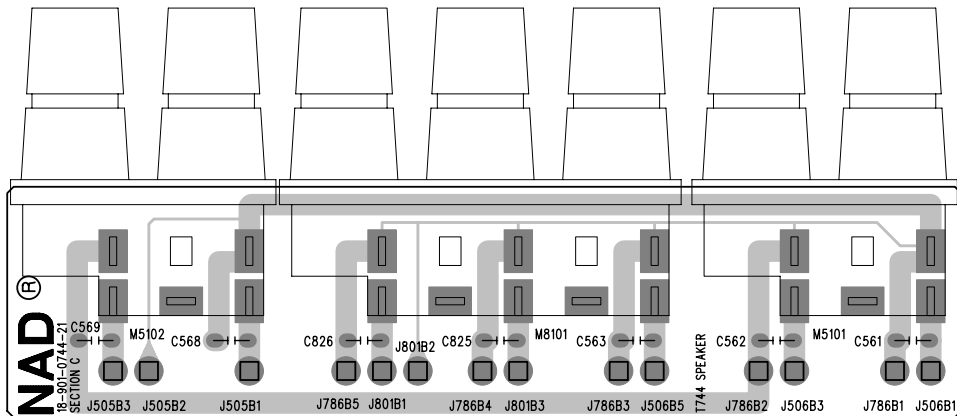
## LED BOARD



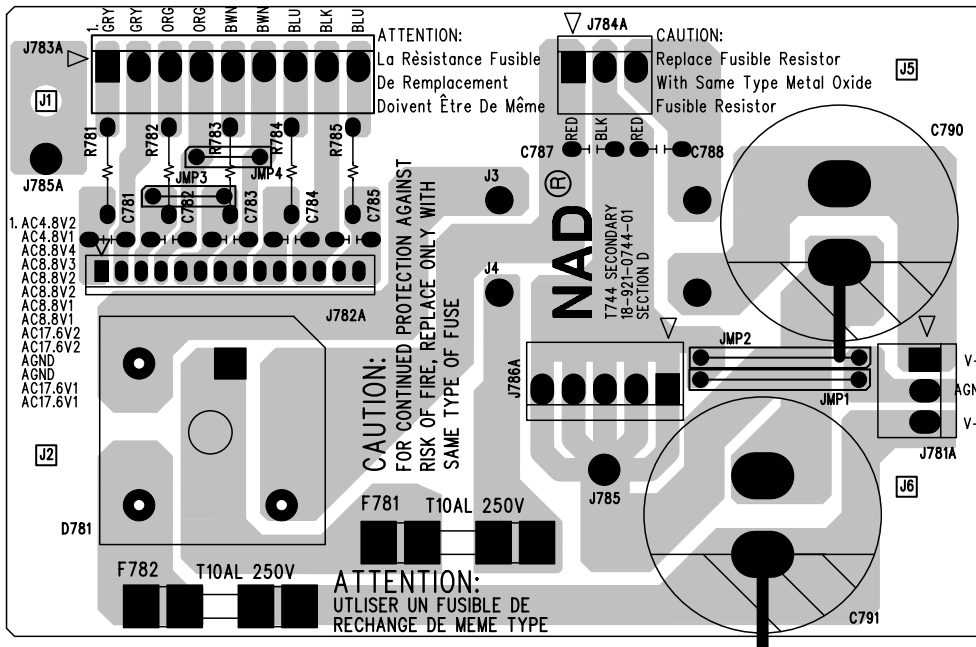
## TRIGGER BOARD



## SPEAKER TERMINAL BOARD

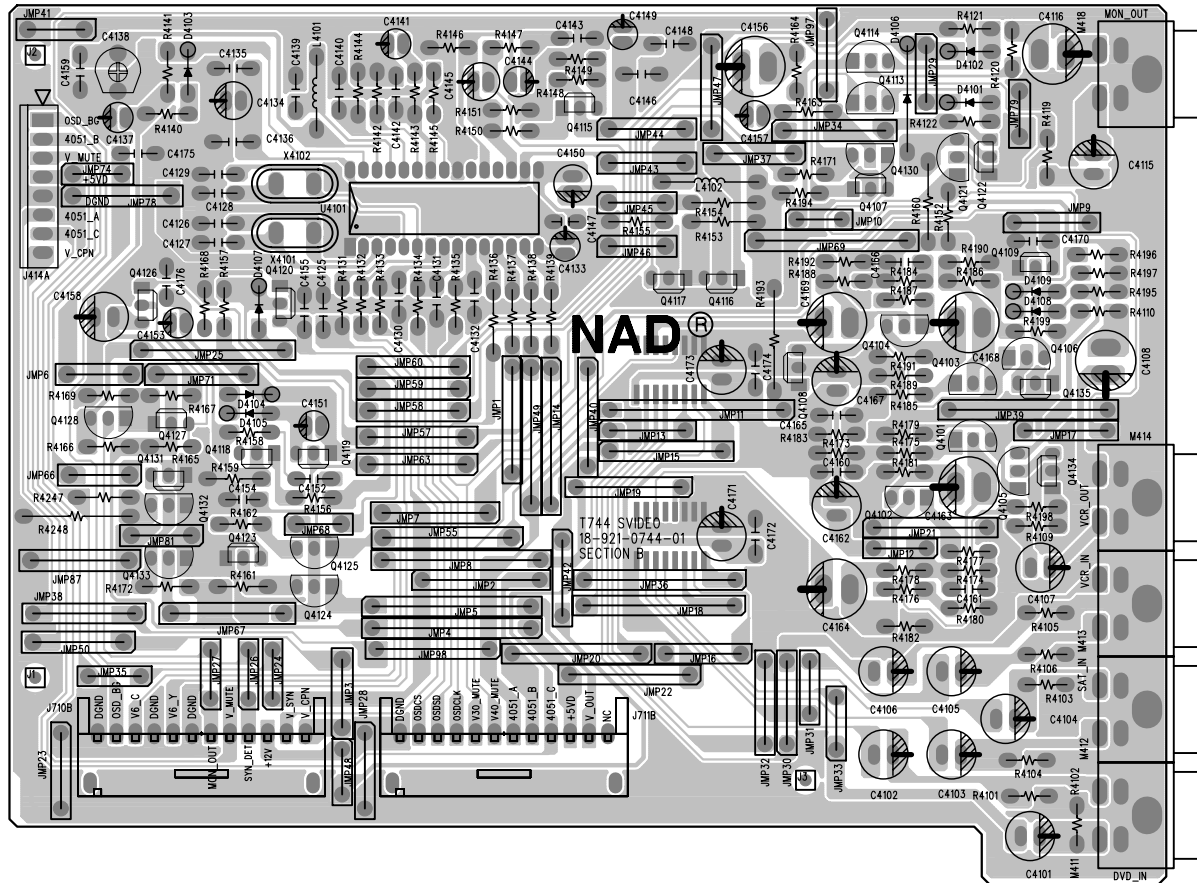


## POWER SUPPLY (SECONDARY)

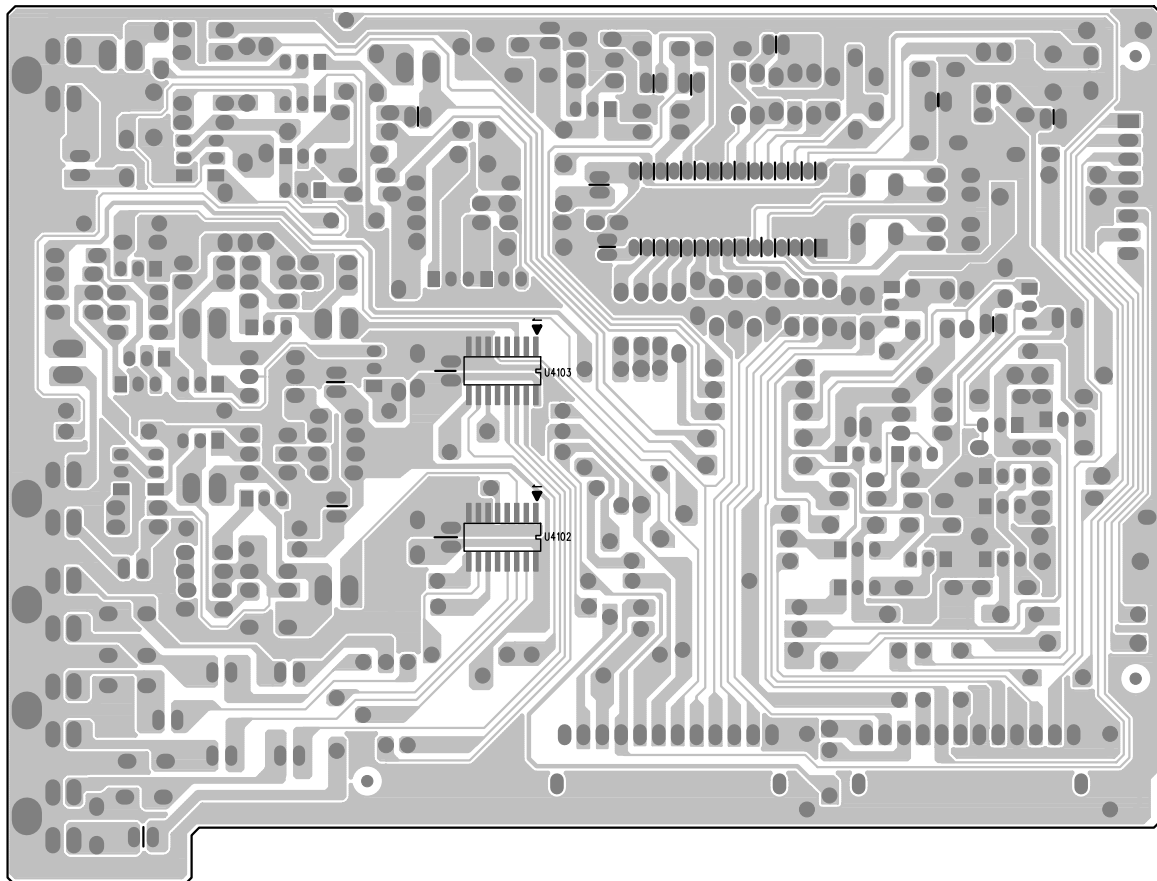




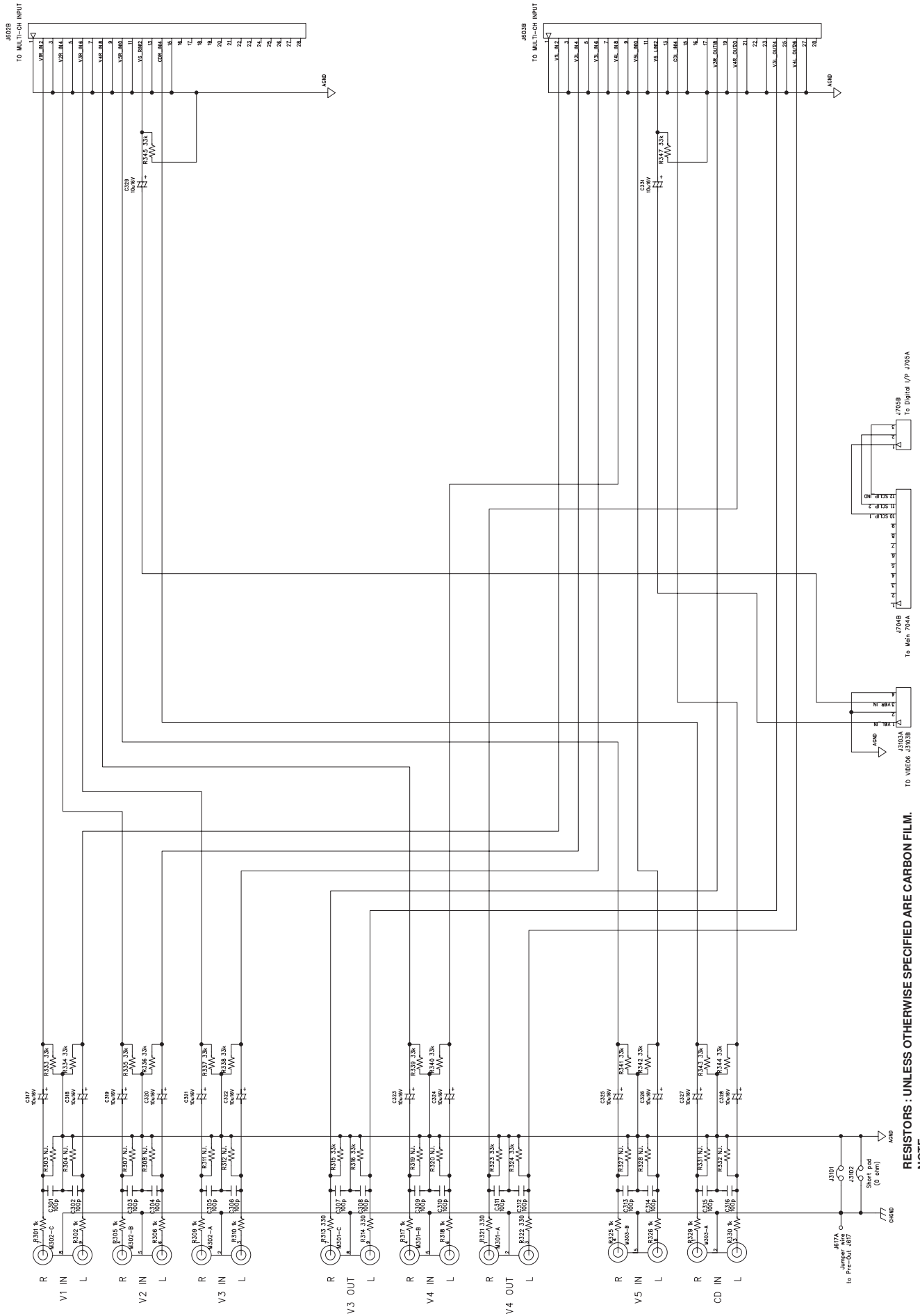
## S-VIDEO BOARD - COMPONENT SIDE



## S-VIDEO BOARD - COPPER SIDE



# SCHEMATIC DIAGRAM AUDIO SWITCH

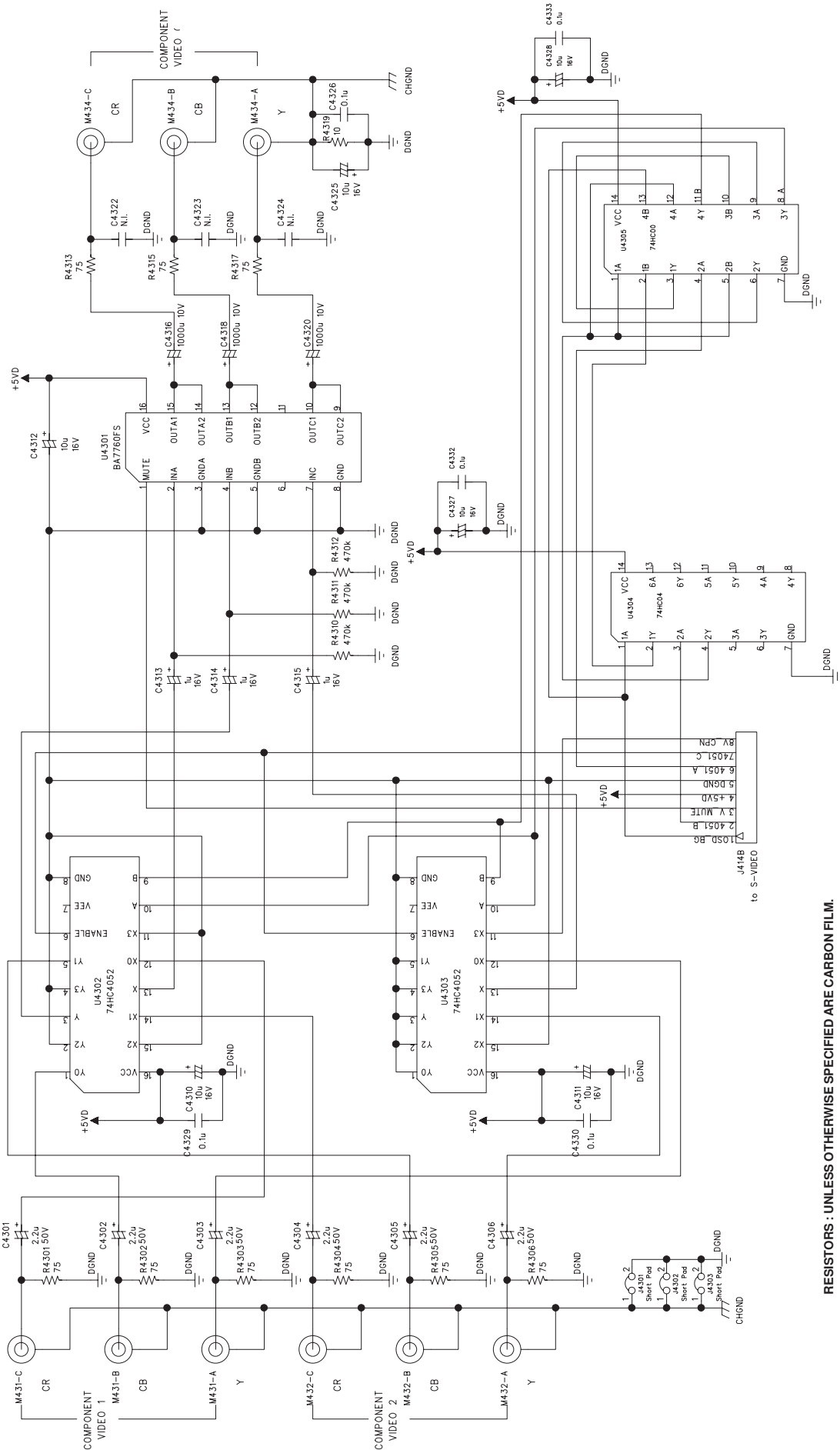


RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

NOTE:

1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# COMPONENT VIDEO

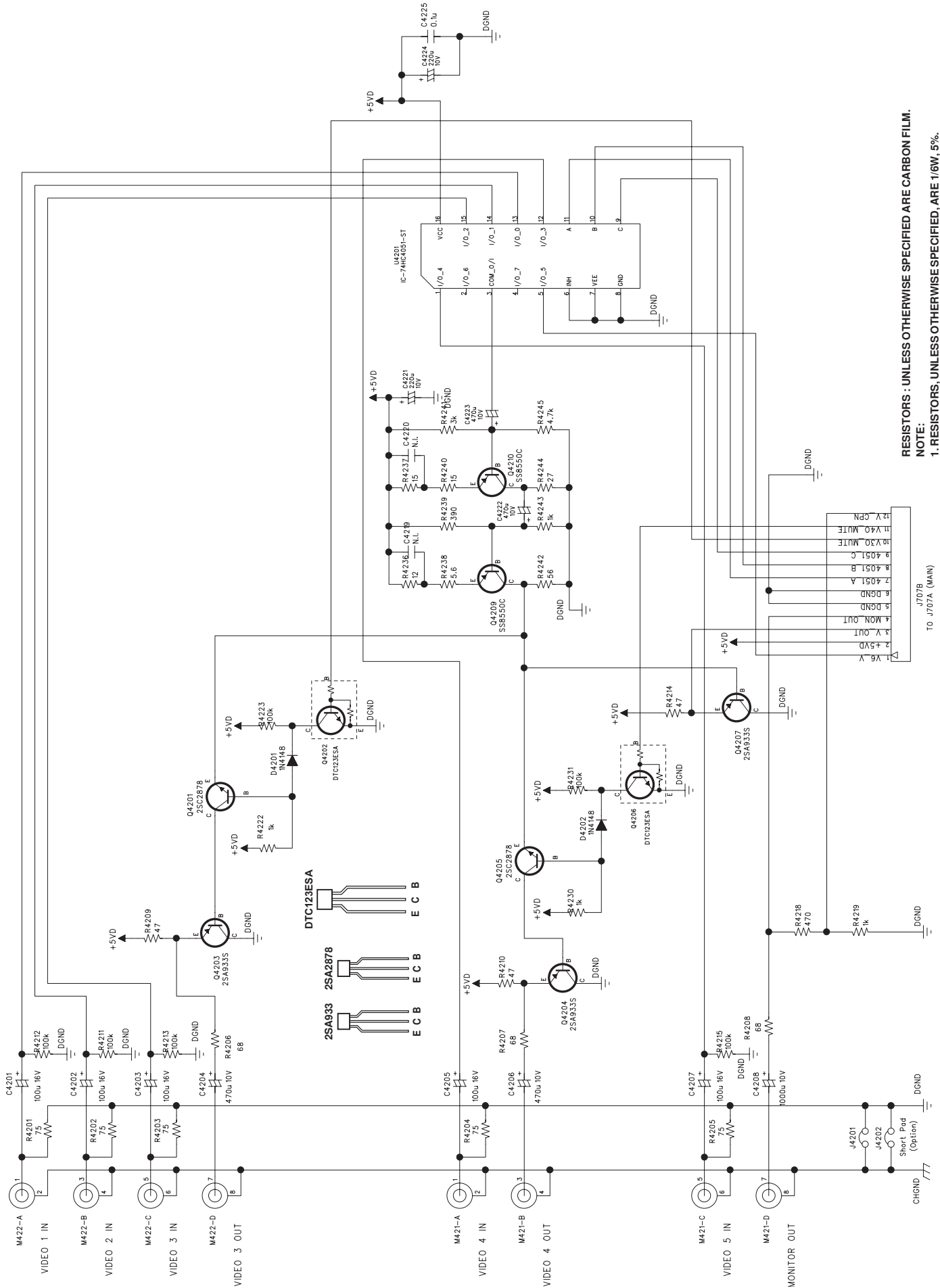


RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

NOTE:

1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

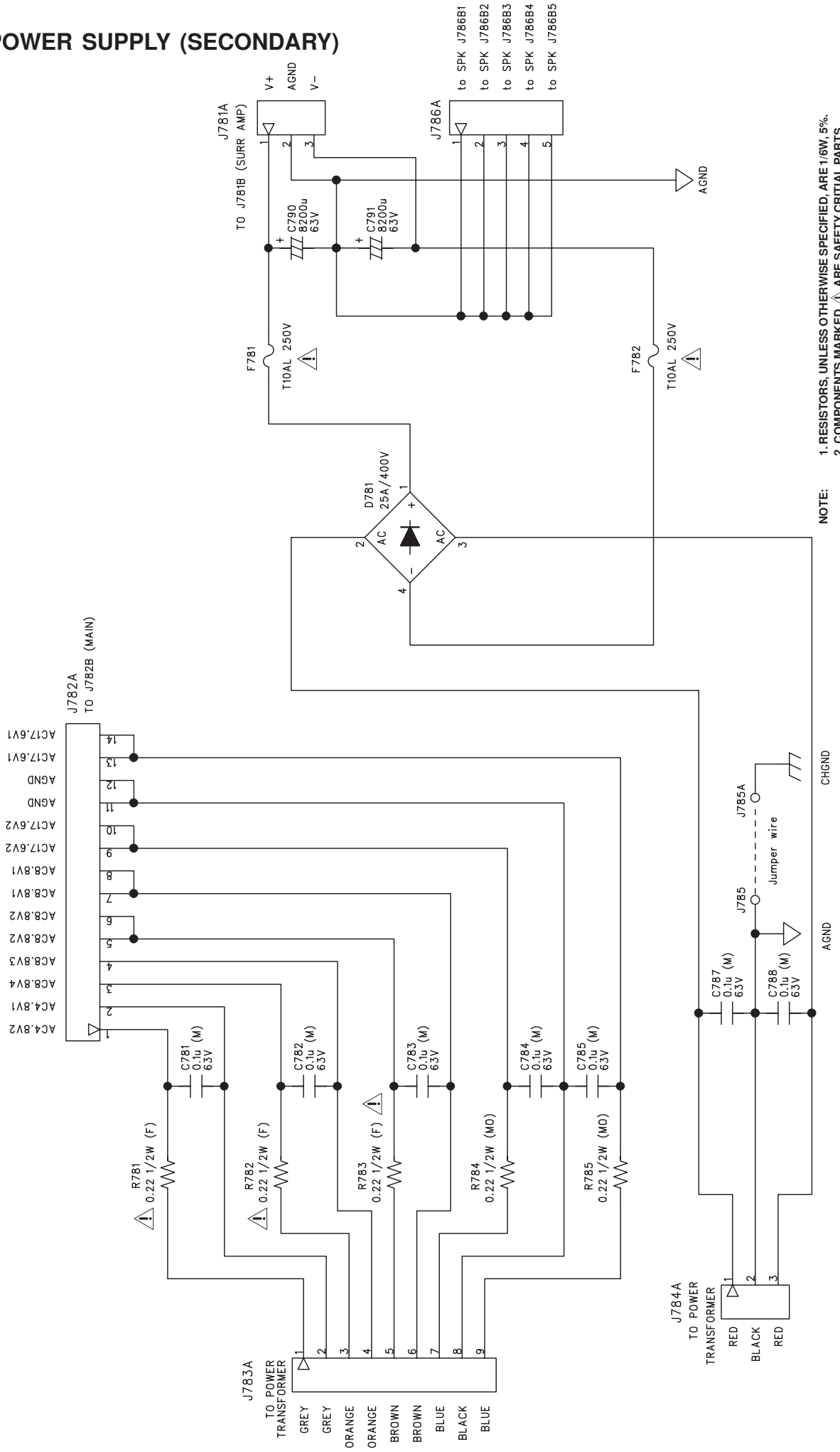
# COMPOSITE VIDEO



RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.  
 NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

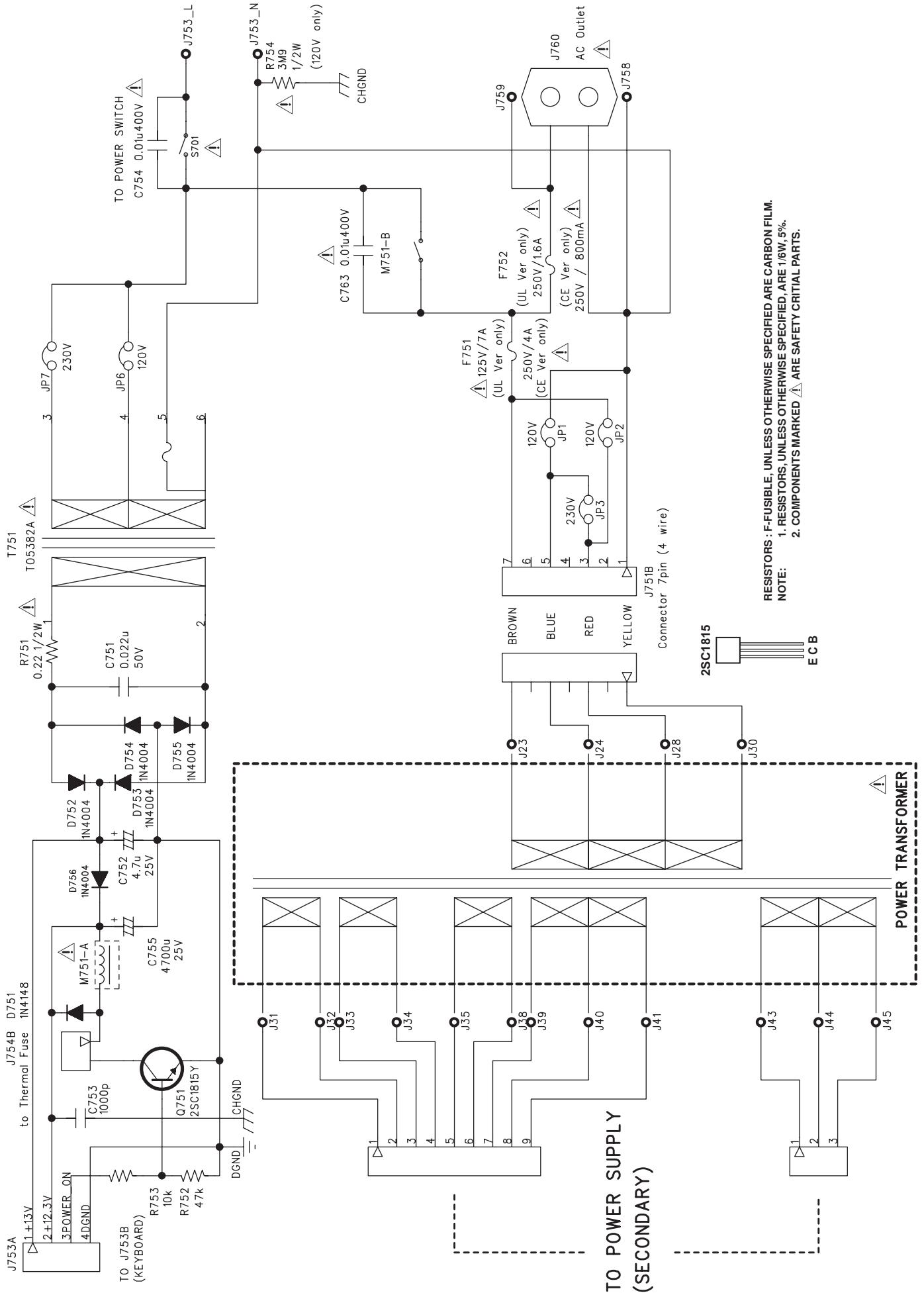


# POWER SUPPLY (SECONDARY)

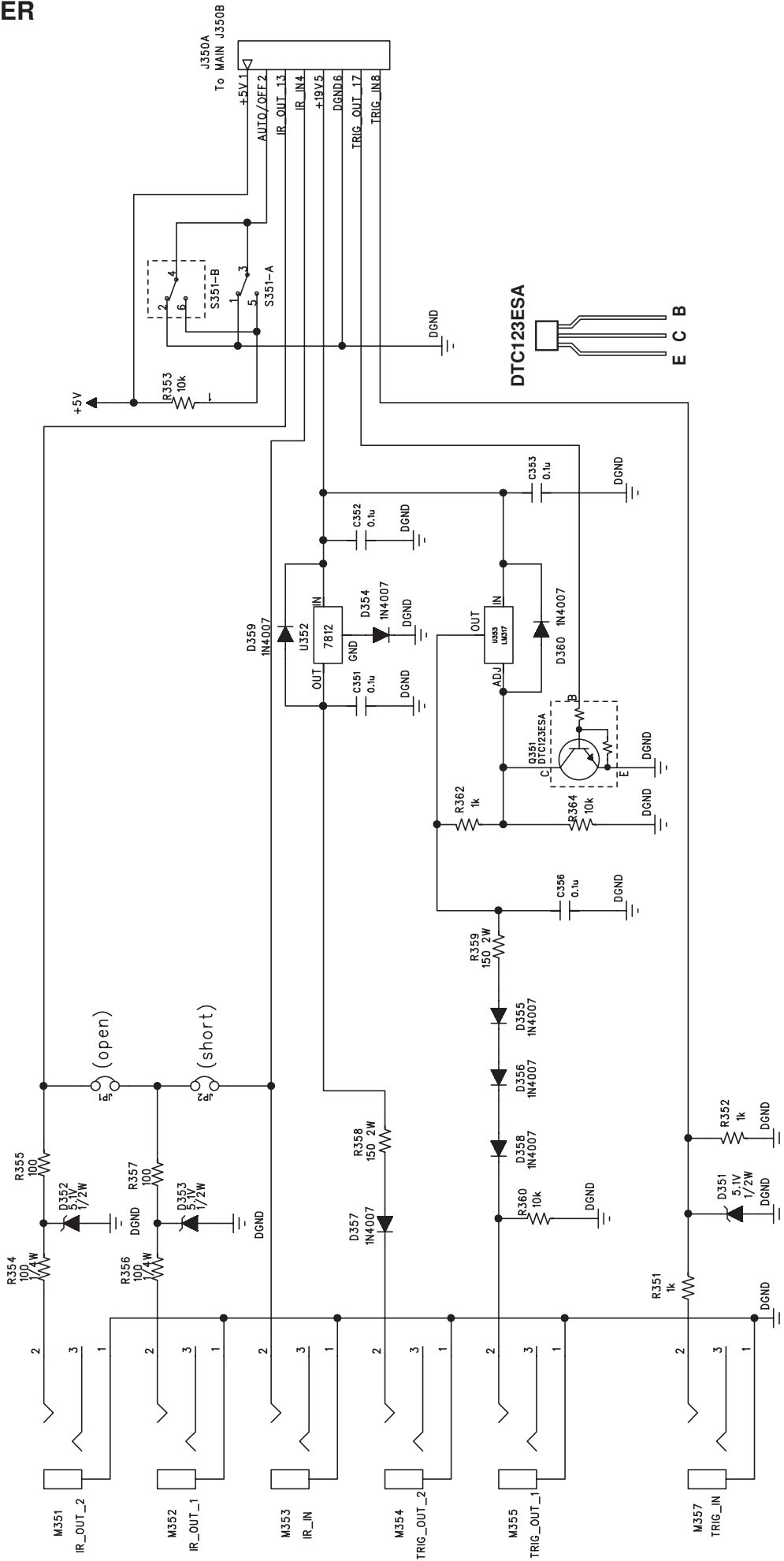


**NOTE:** 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
2. COMPONENTS MARKED ⚠ ARE SAFETY CRITICAL PARTS.

# POWER SUPPLY (STAND BY)

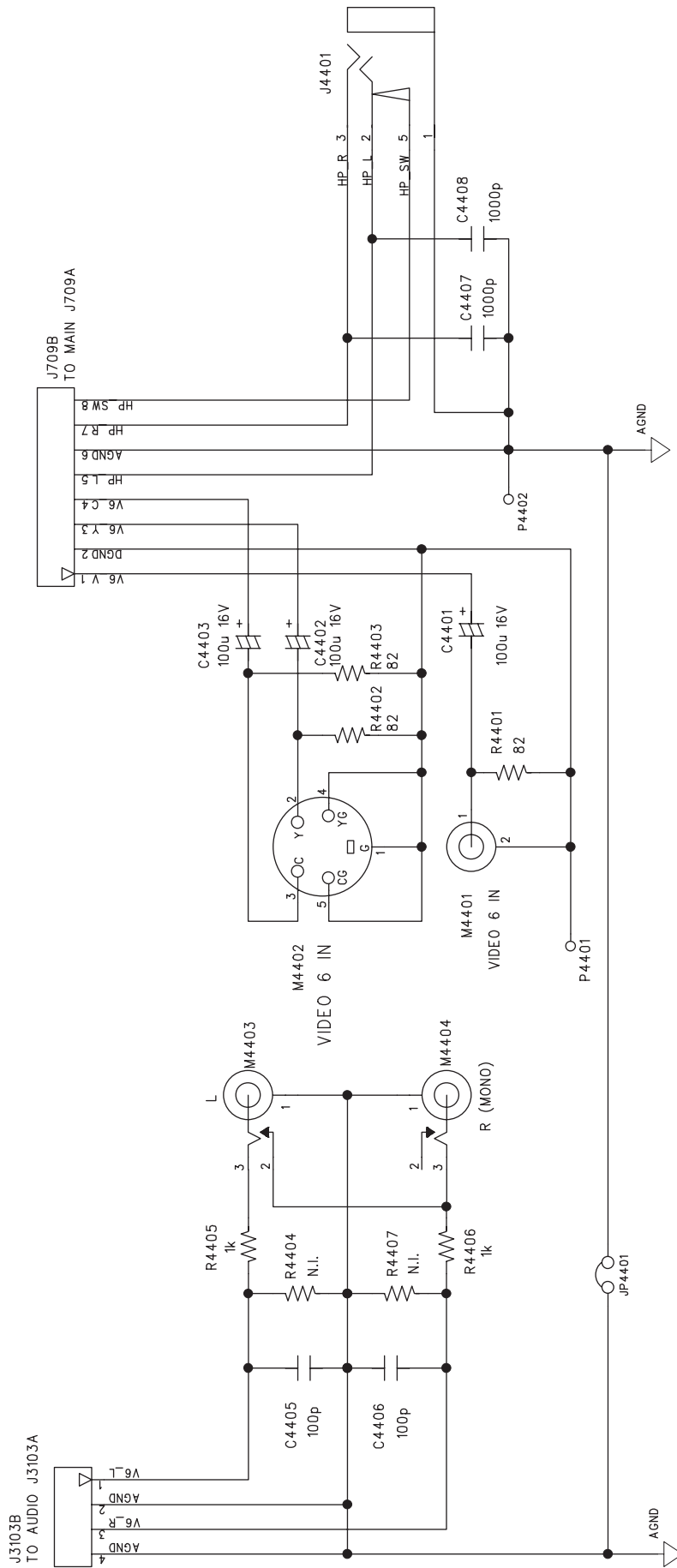


# TRIGGER



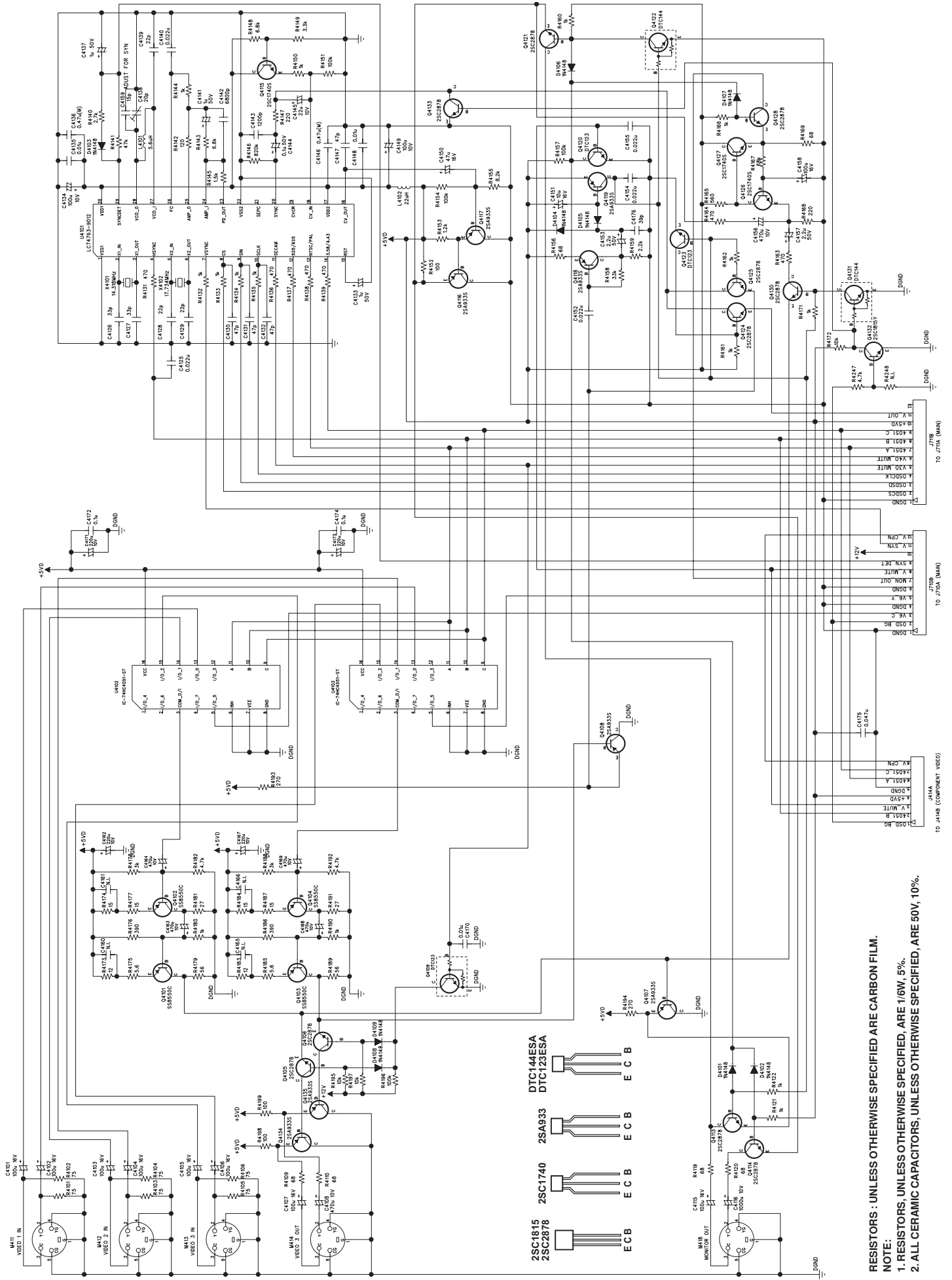
RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.  
 NOTE: 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# VIDEO 6



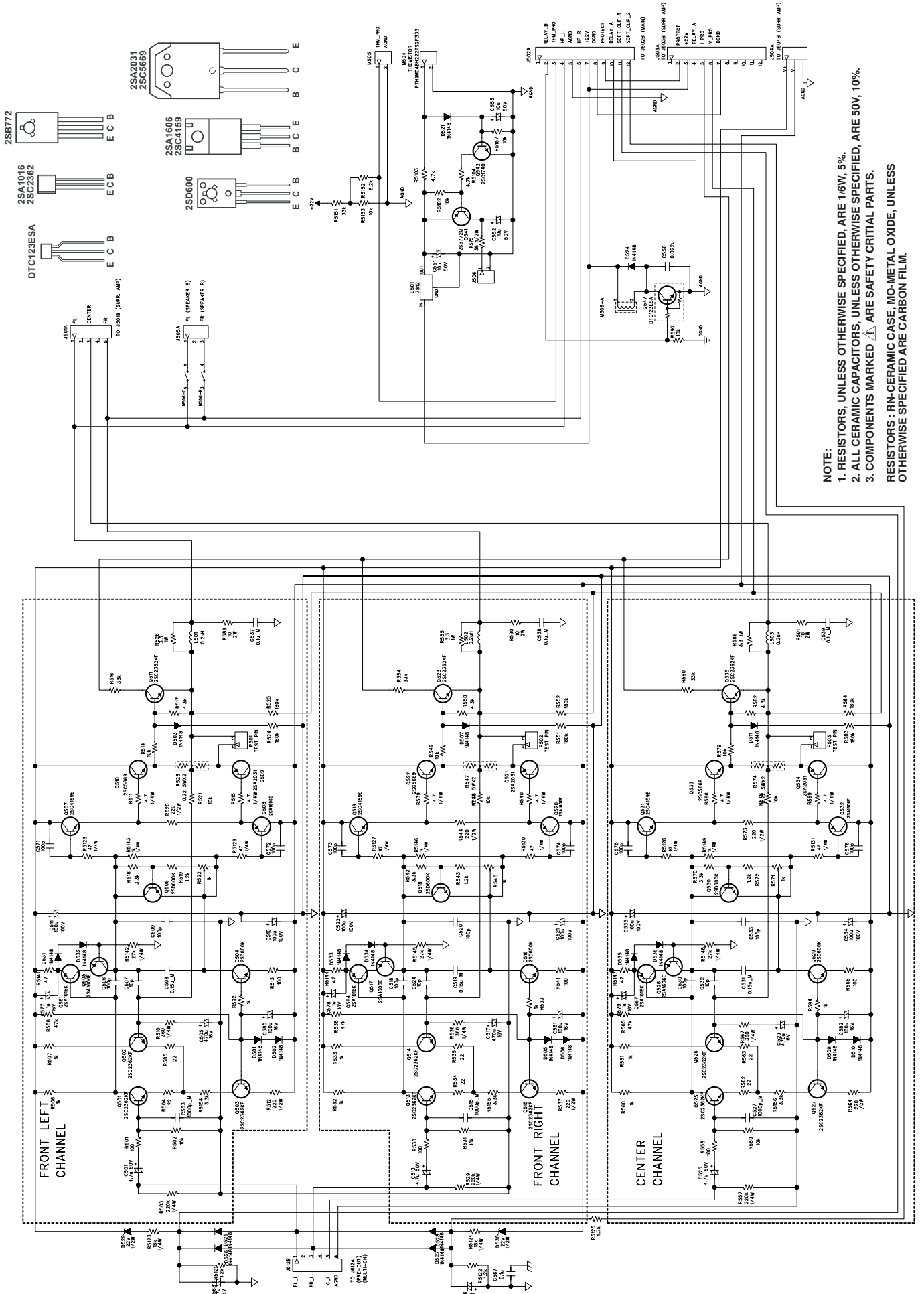
RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.  
 NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# S-VIDEO



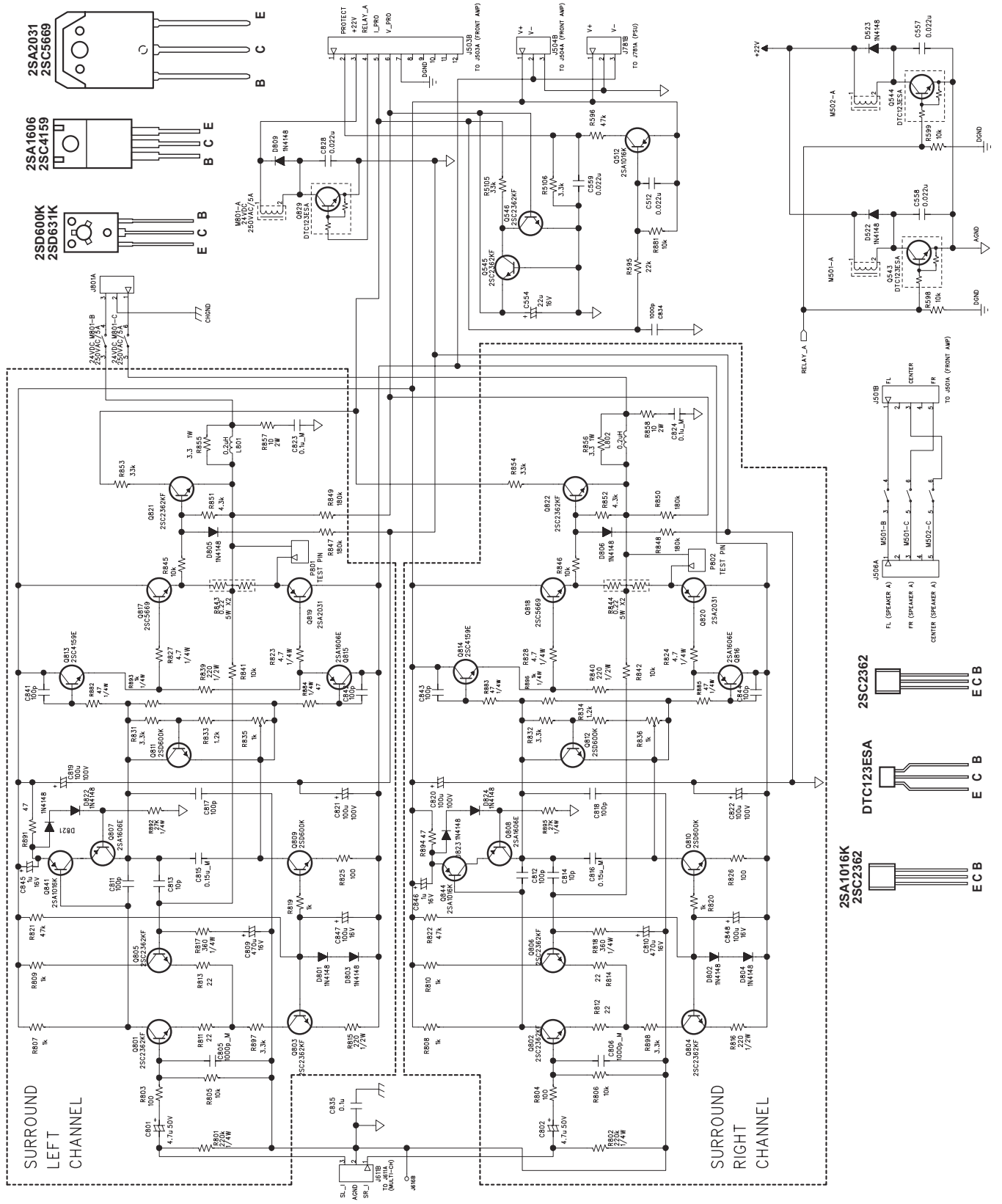
RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.  
 NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# FRONT / CENTER AMPLIFIER



- NOTE:**
1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5%,
  2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.
  3. COMPONENTS MARKED  $\triangle$  ARE SAFETY CRITICAL PARTS.
- RESISTORS : RN-CERAMIC CASE, MO-METAL OXIDE, UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

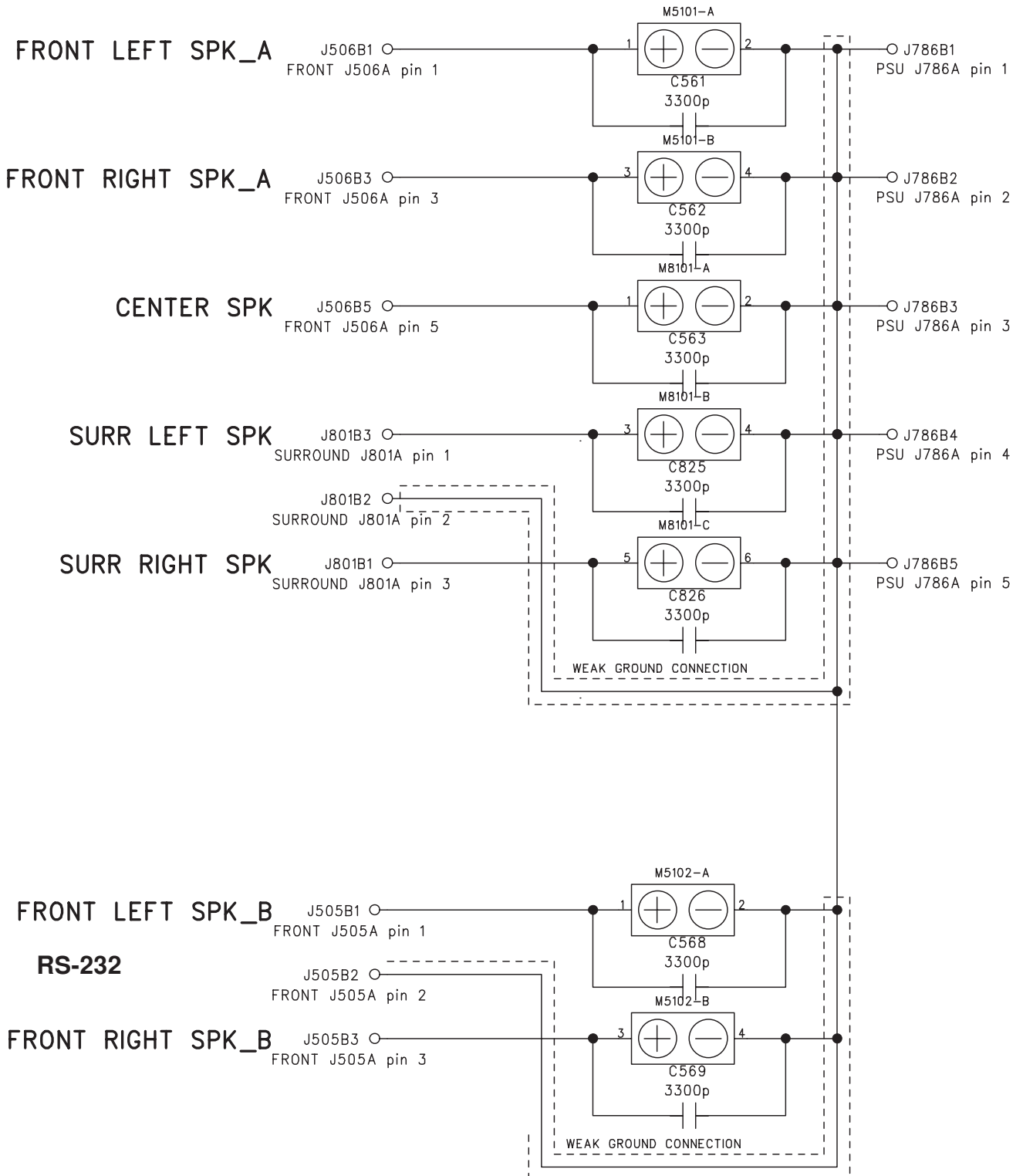
# SURROUND AMPLIFIER



- NOTE:**
1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
  2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.
  3. COMPONENTS MARKED  $\Delta$  ARE SAFETY CRITICAL PARTS.

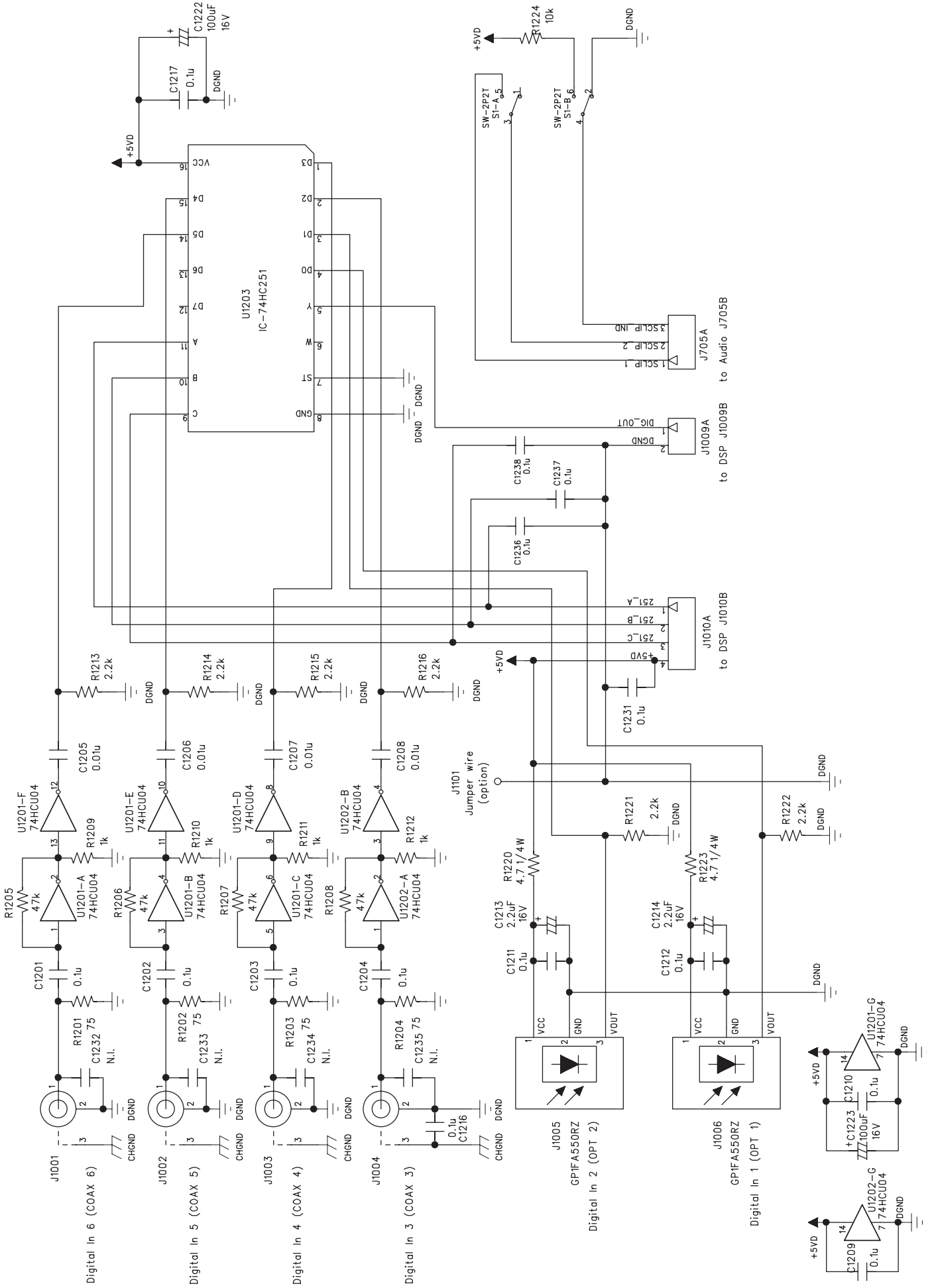
RESISTORS: RN-CERAMIC CASE, MO-METAL OXIDE, UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.

# SPEAKER A & B

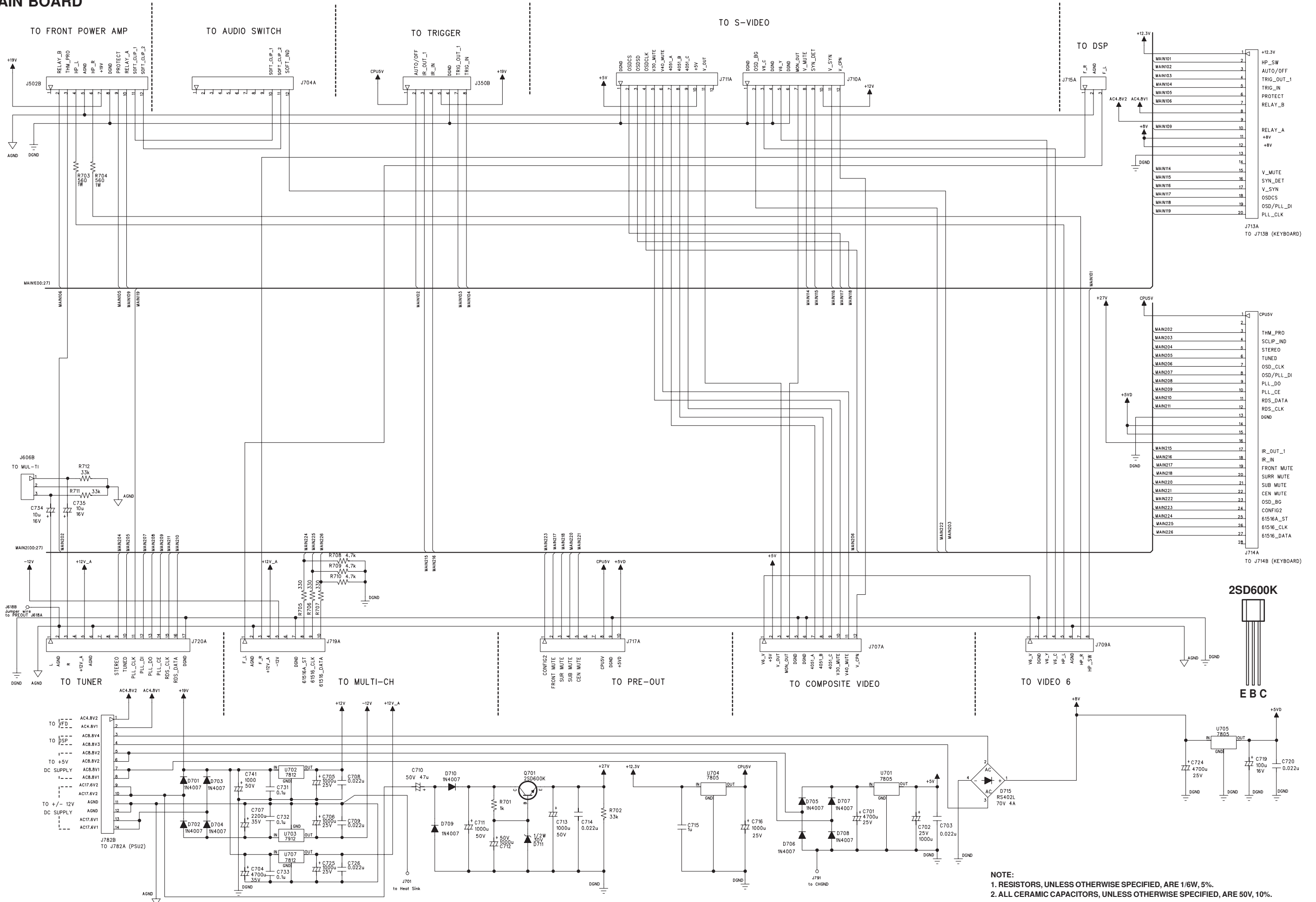




# DIGITAL IN & OUT

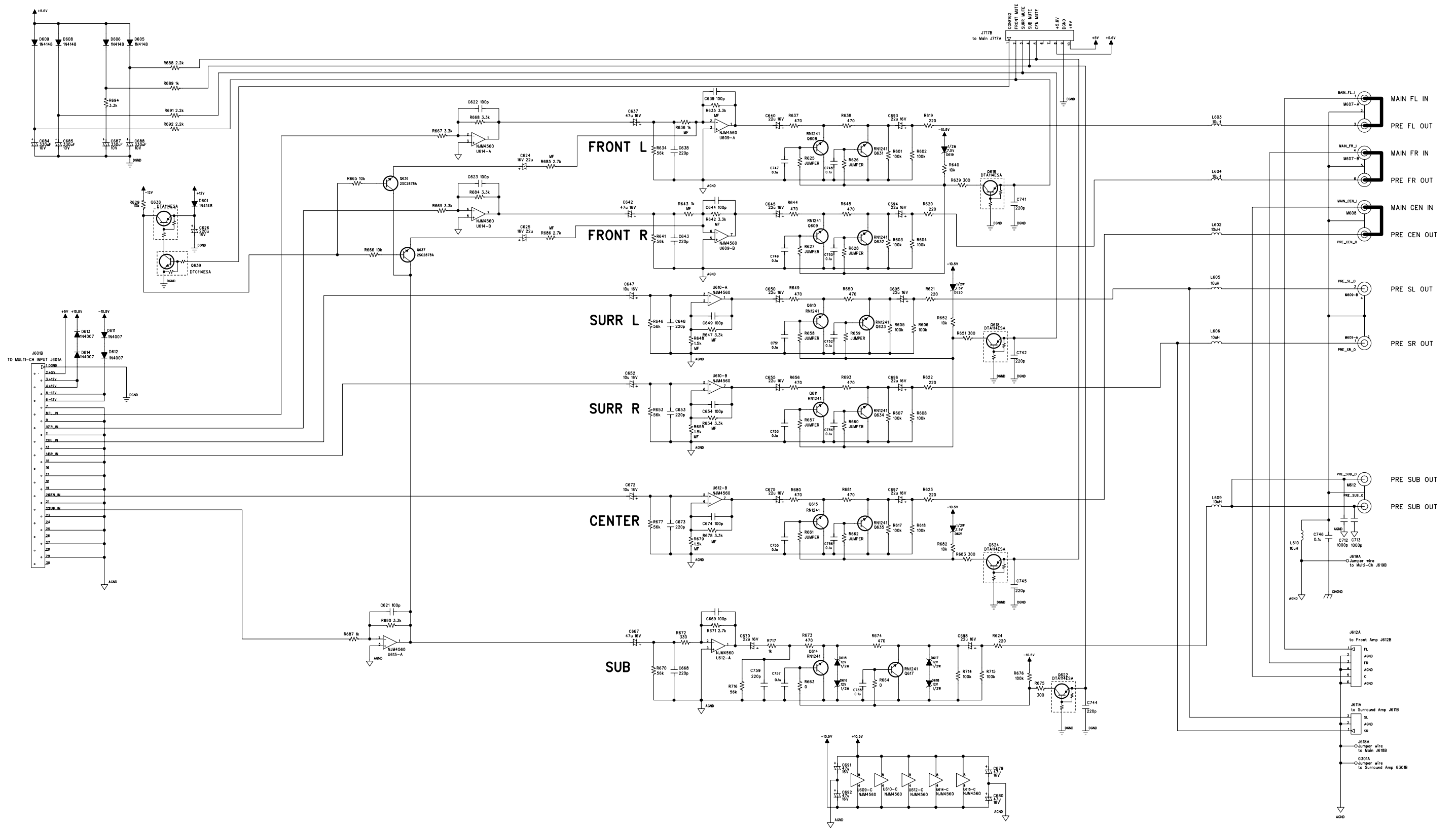


# MAIN BOARD



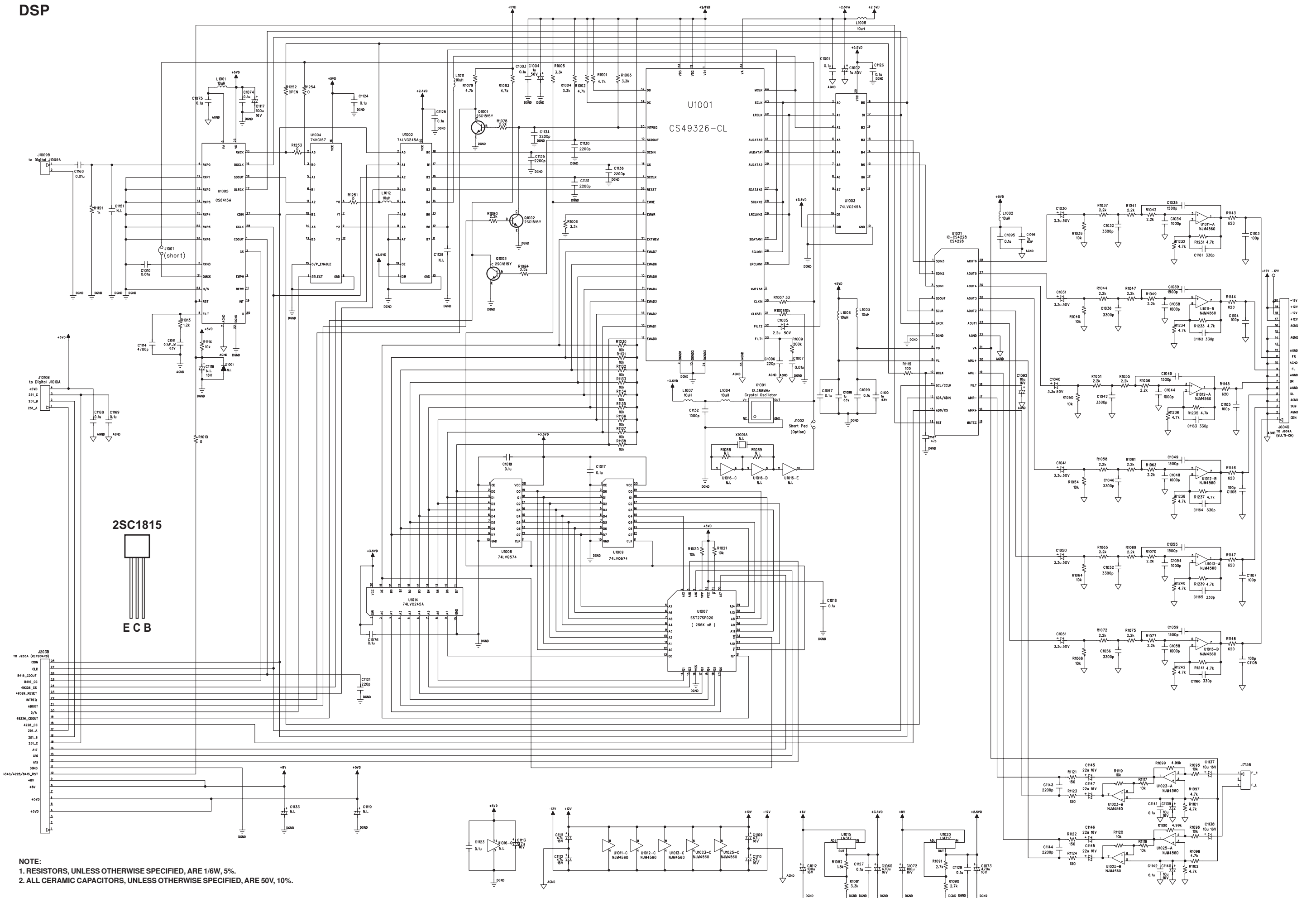
**NOTE:**  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# PRE-OUT



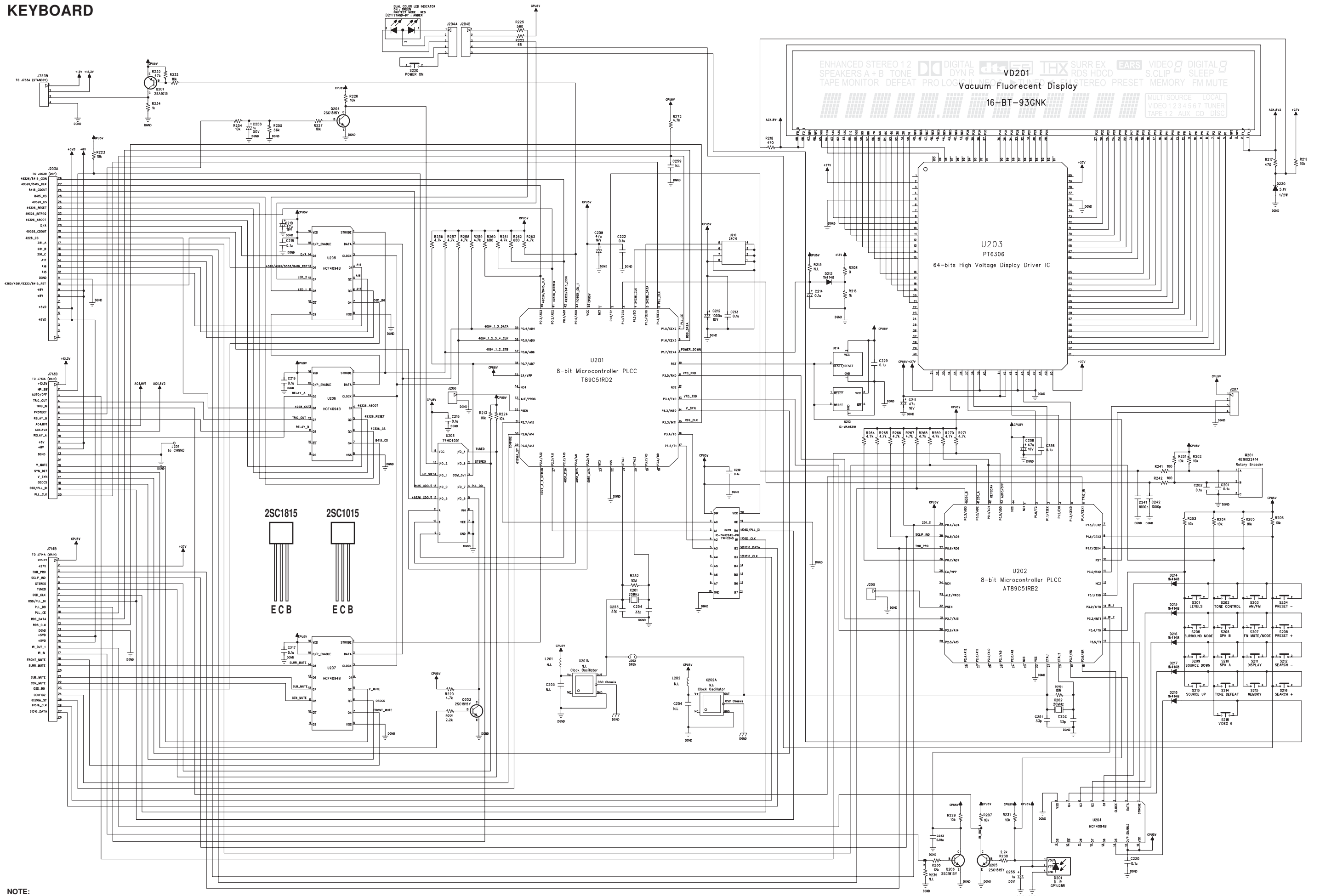
NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# DSP



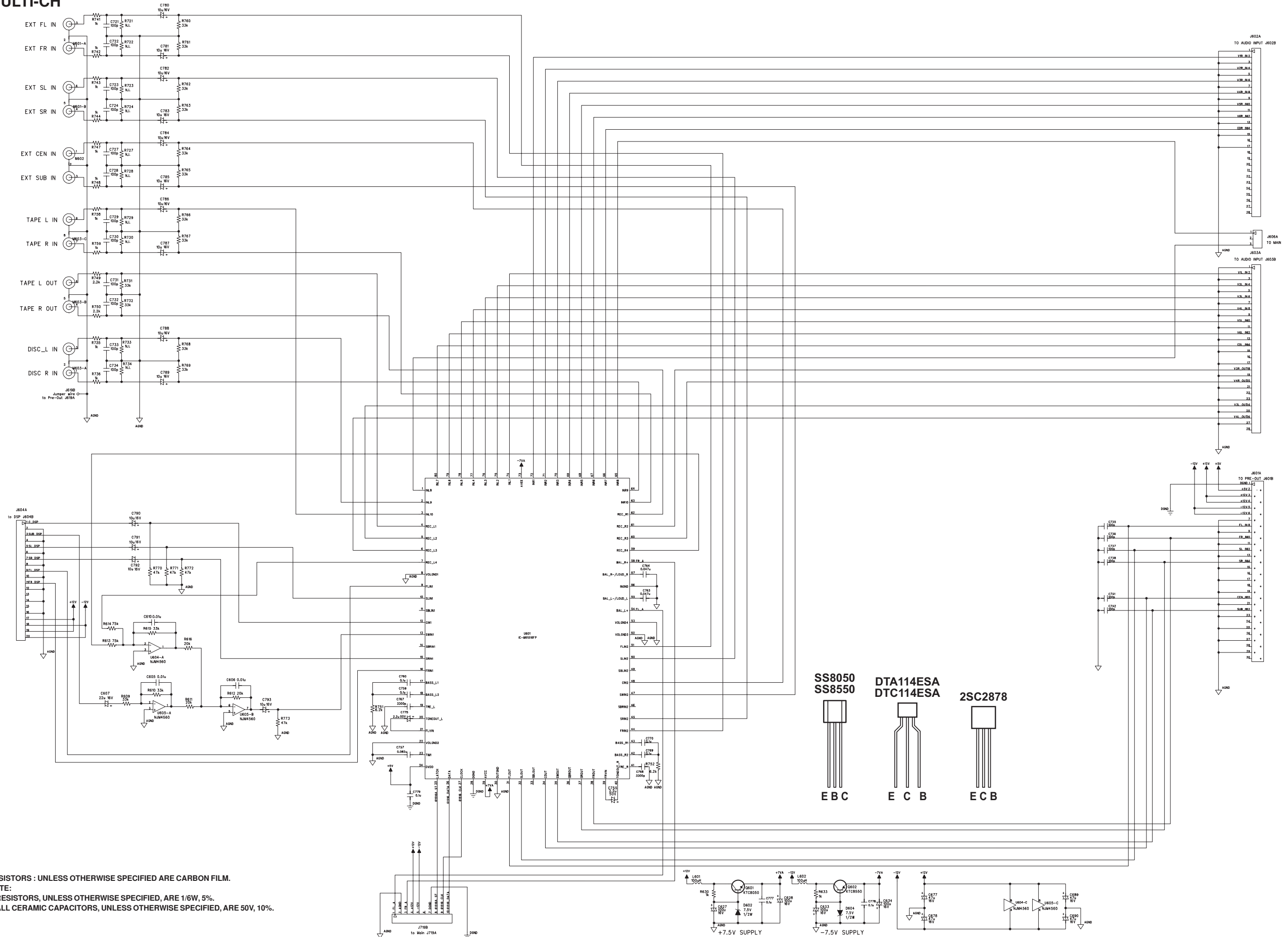
NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

# KEYBOARD



NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 5%.

# MULTI-CH



RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.  
 NOTE:  
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.  
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

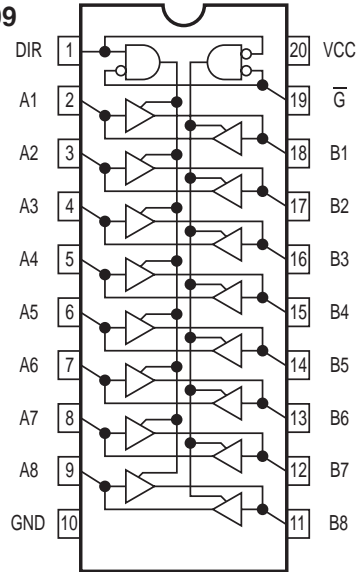
# IC BLOCK DIAGRAM

## 74LVC245

DSP BOARD: U1002, U1003, U1014

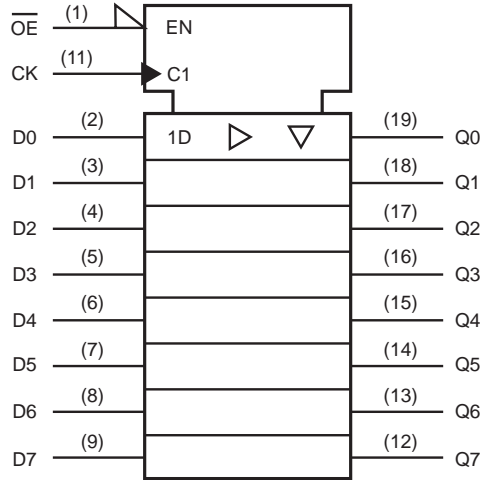
## 74VHC245

KEYBOARD: U209



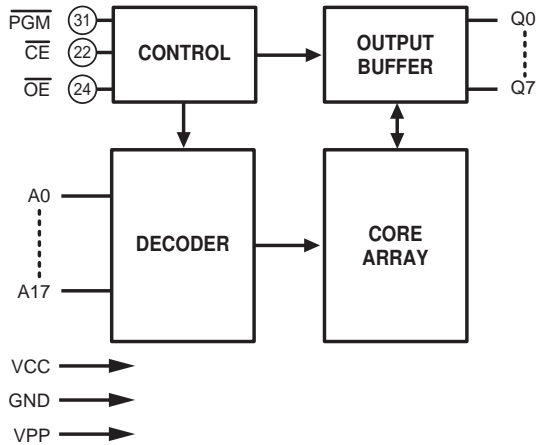
## 74LVQ574

DSP BOARD: U1008, U1009



## W27C020

DSP BOARD: U1007

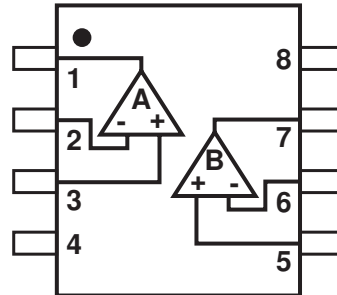


## NJM4560

DSP BOARD: U1011~U1013, U1023 & U1025

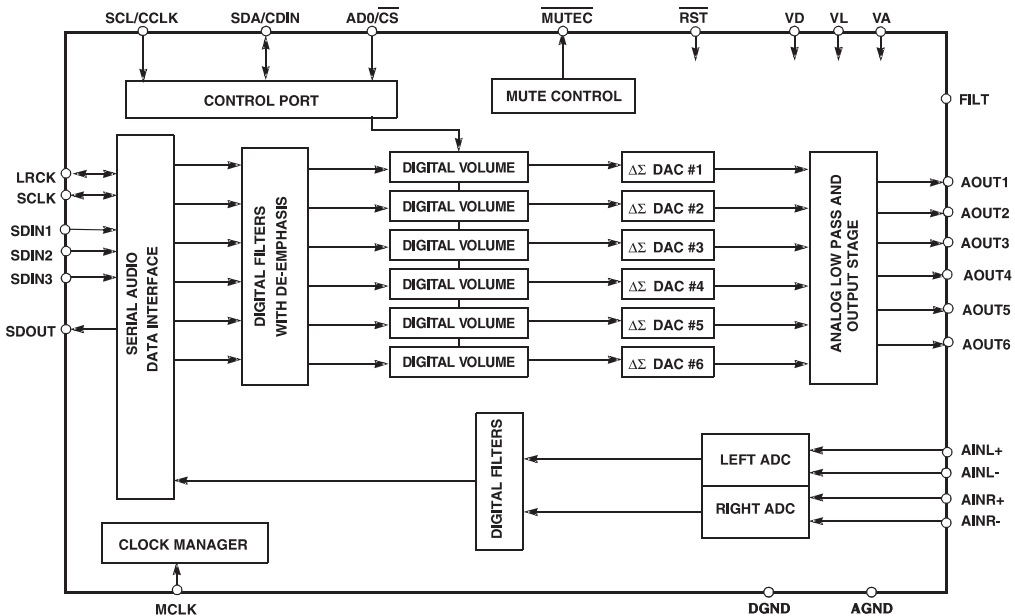
MULTI-CHANNEL: U604, U605

PRE-OUT BOARD: U609, U610, U612, U614, U615

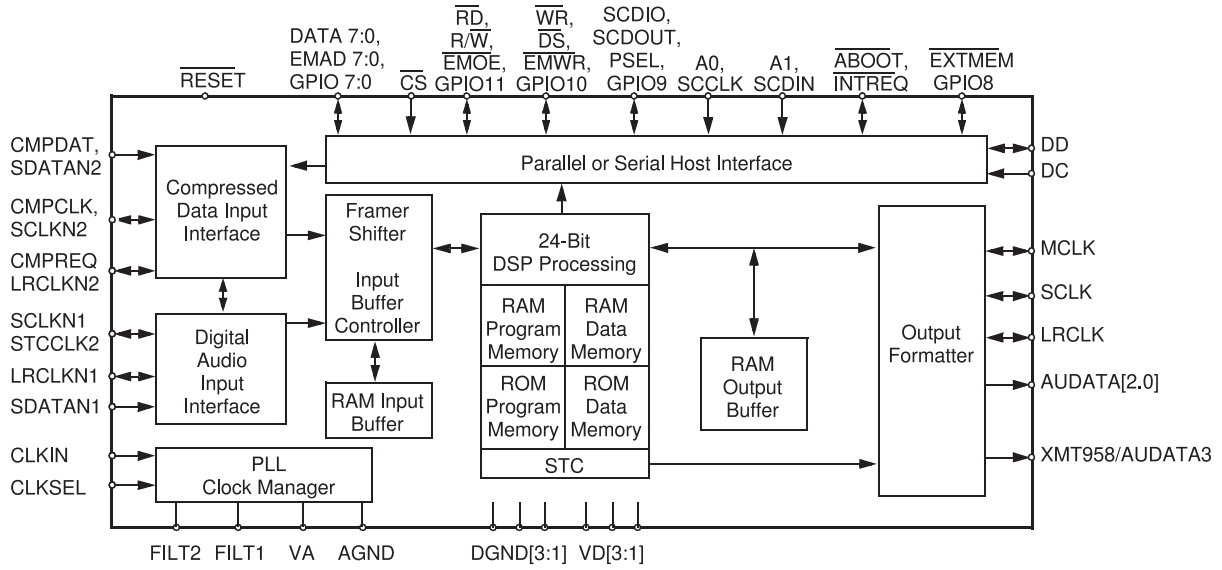


## CS4228AKS

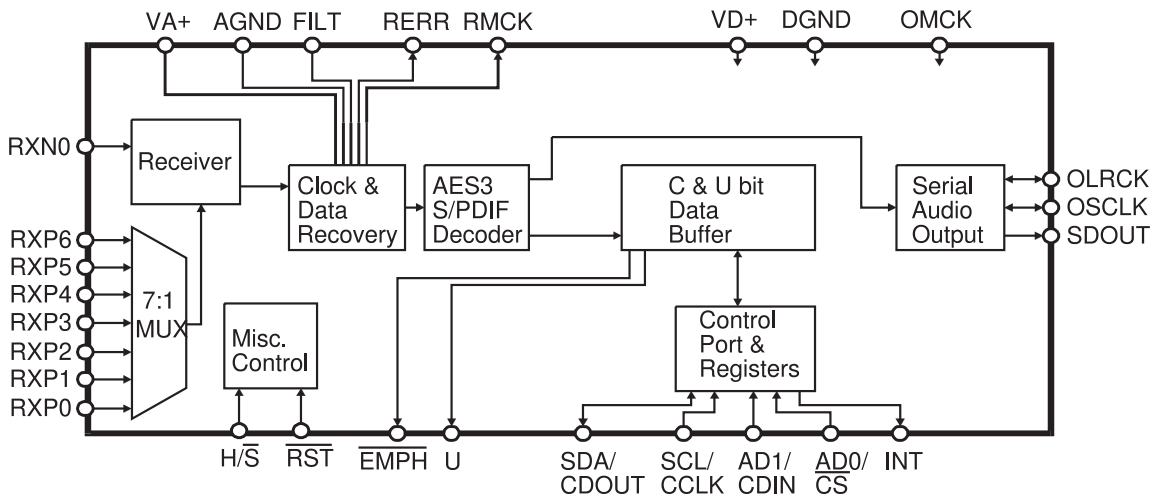
DSP BOARD: U1021



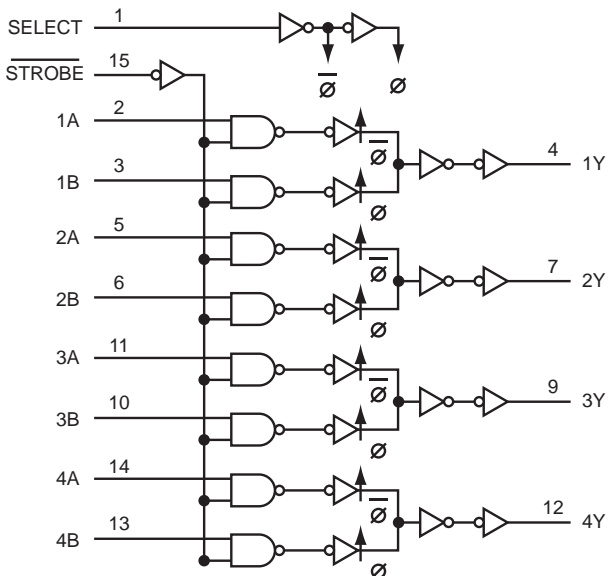
**CS49326**  
**DSP BOARD: U1001**



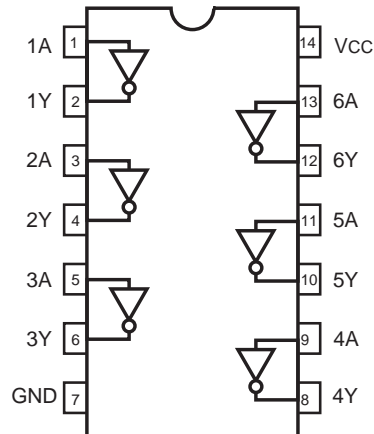
**74HC157**  
**DSP BOARD: U1004**



**74HC157**  
**DSP BOARD: U1004**

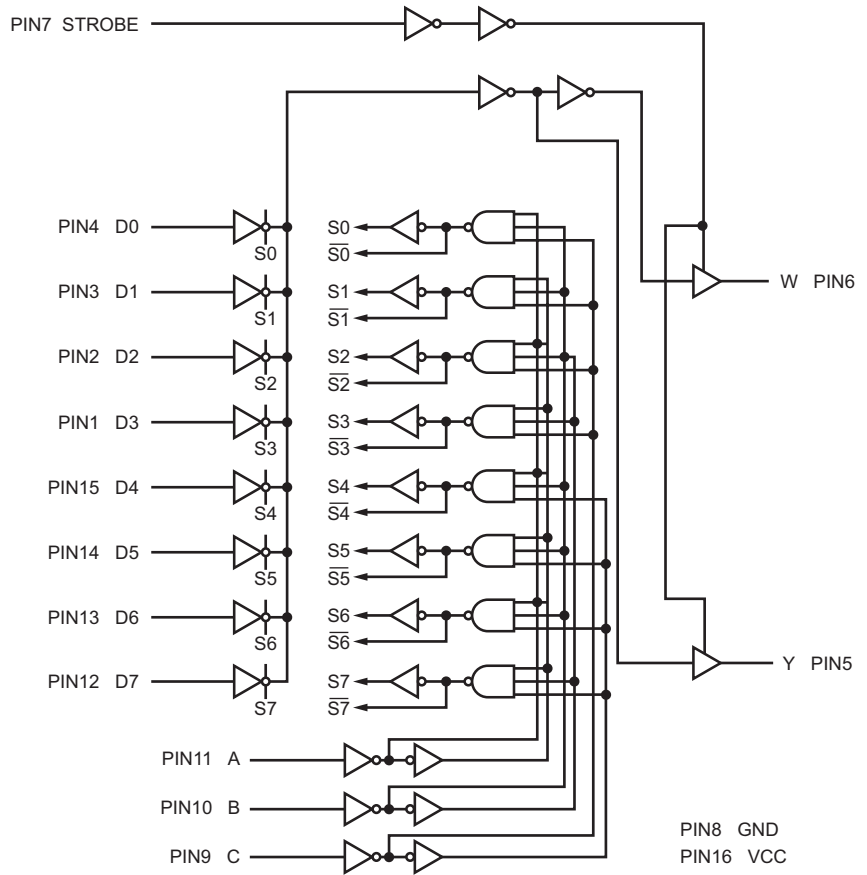


**74HCU04**  
**DIGITAL BOARD: U1201 & U1202**  
**COMPONENT VIDEO: U4304**





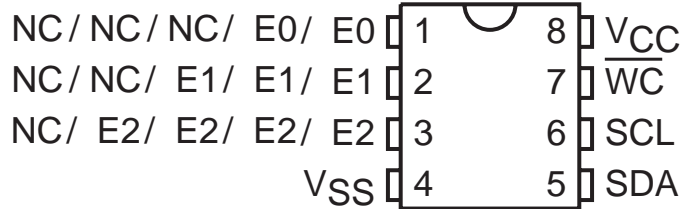
**74HC251**  
DIGITAL BOARD: U1203



**AT24C16**  
KEYBOARD: U210

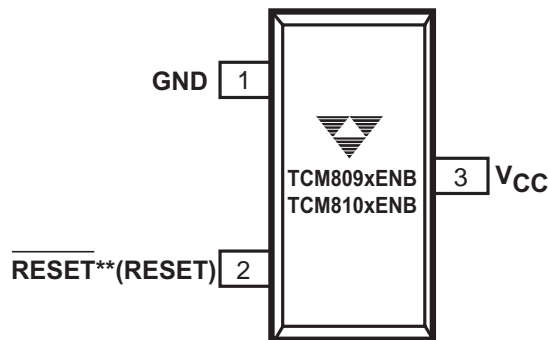
M24Cxx

16Kb/8Kb/4Kb/2Kb/1Kb



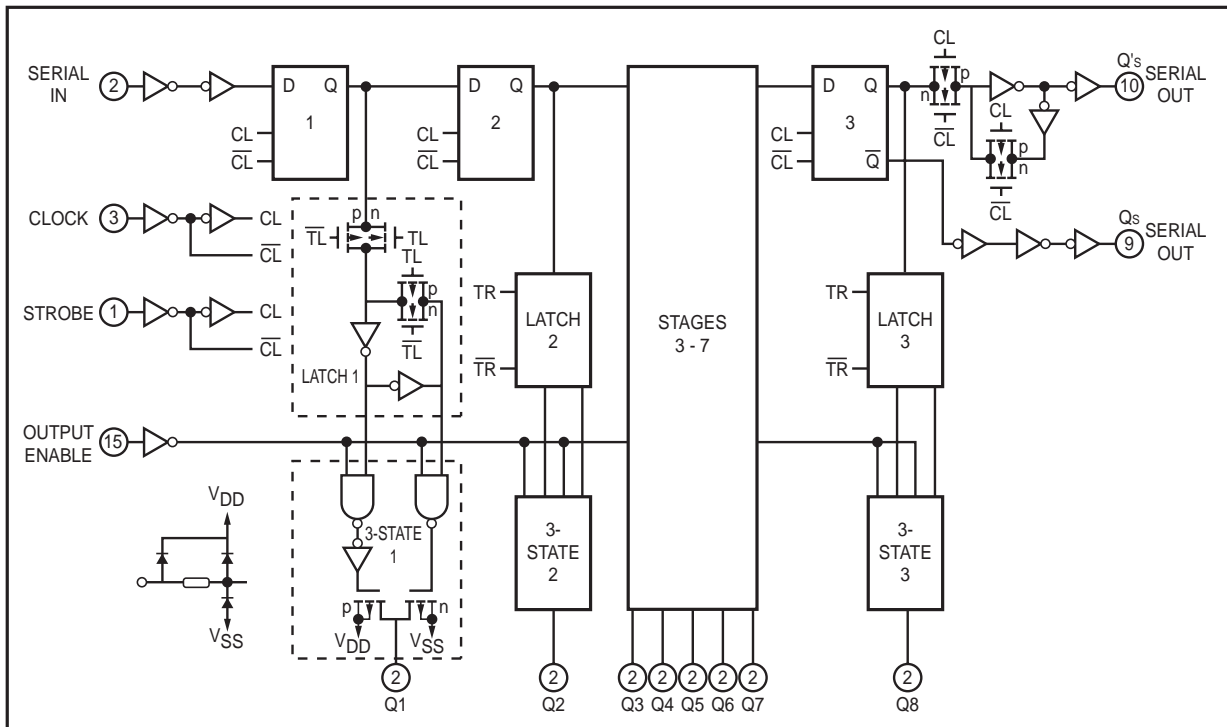
**TCM810**  
KEYBOARD: U214

\*3-Pin SOT-23B

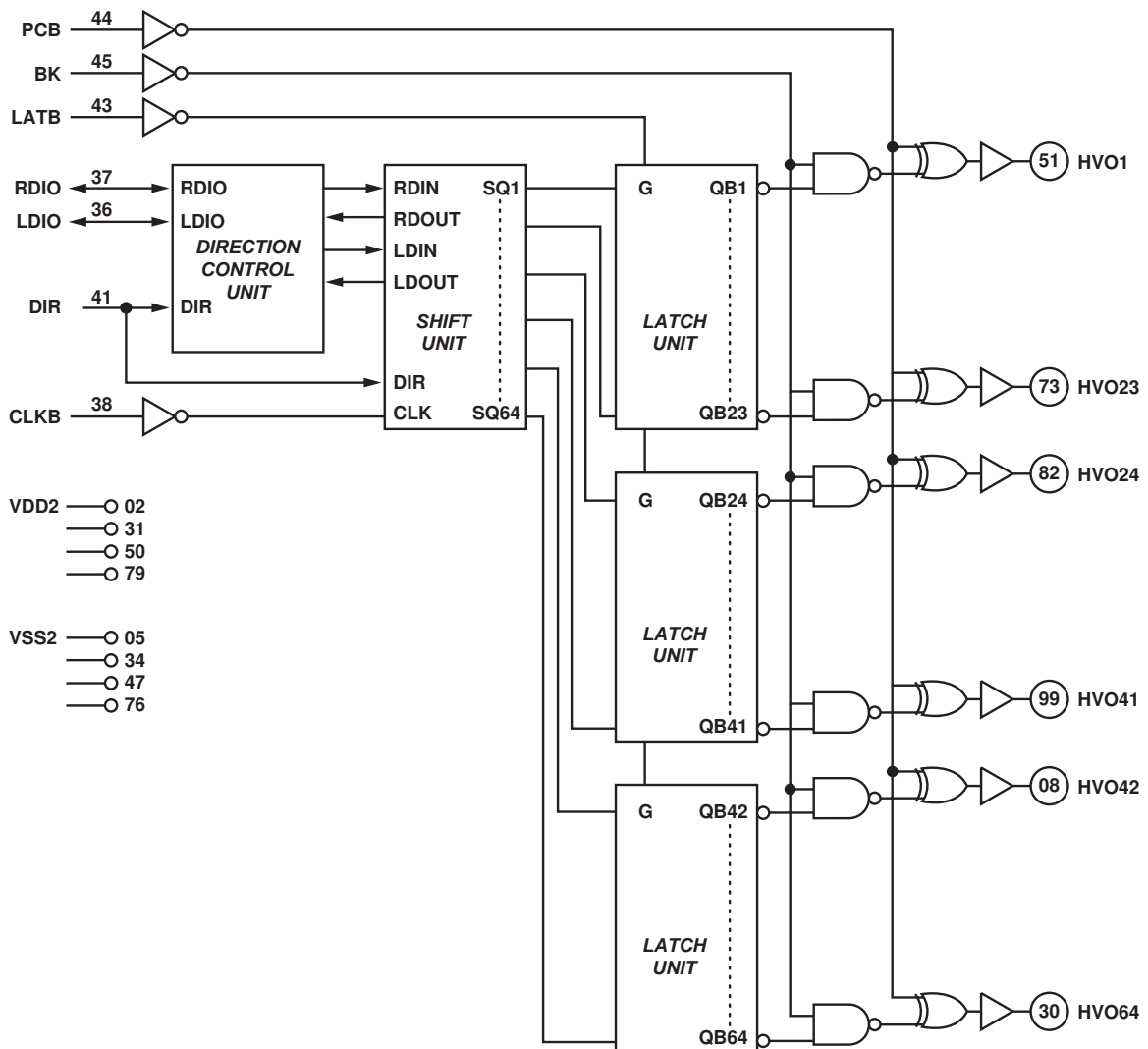


NOTE: \*3-Pin SOT-23B is equivalent to JEDEC TO-236  
\*\* () is for TCM810

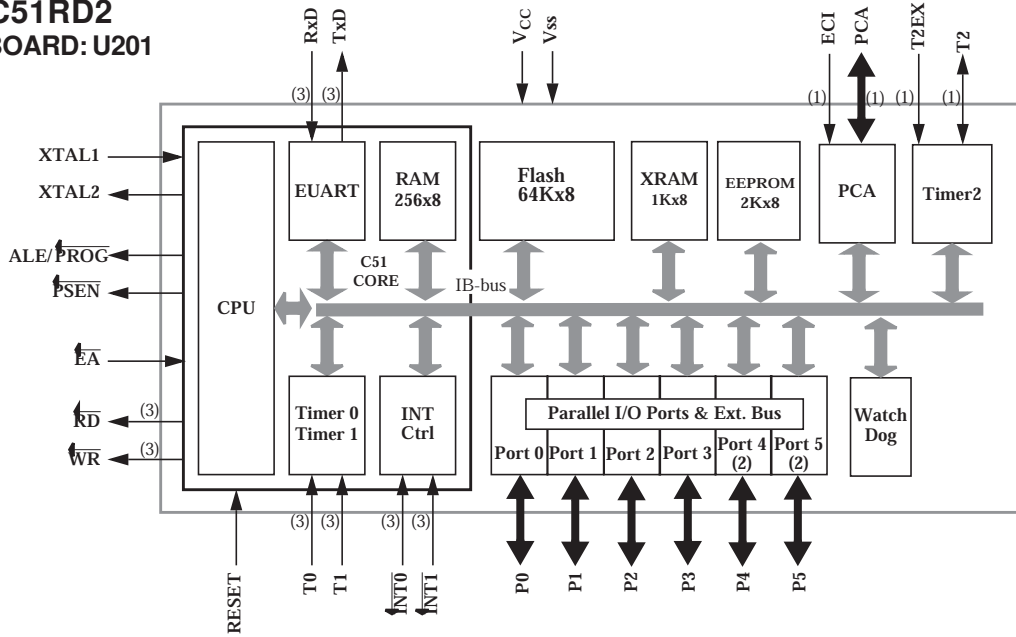
**HCF4094B**  
KEYBOARD: U204~U207



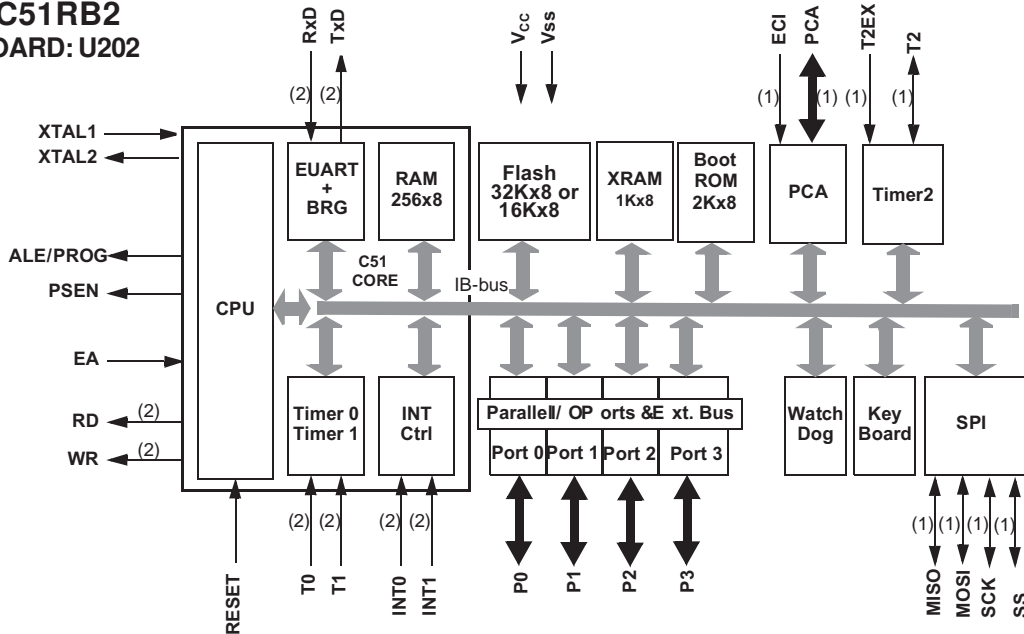
**PT6306**  
KEYBOARD: U203



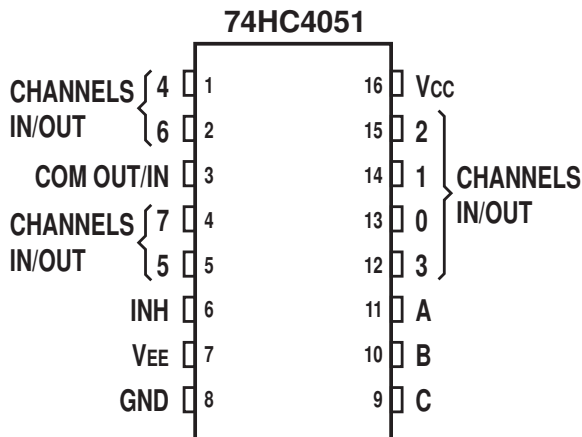
**T89C51RD2**  
KEYBOARD: U201



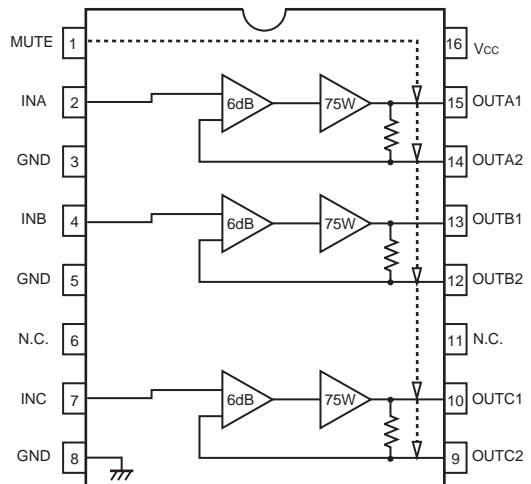
**AT89C51RB2**  
KEYBOARD: U202



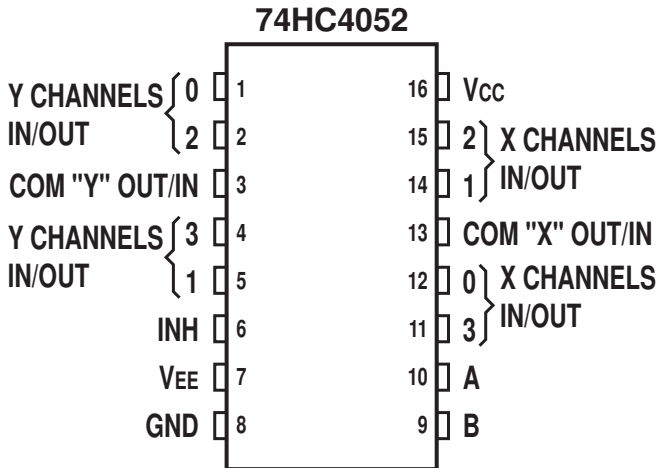
**74HC4051**  
KEYBOARD: U208  
S-VIDEO BOARD: U4102, U4103  
COMPOSITE VIDEO: U4201



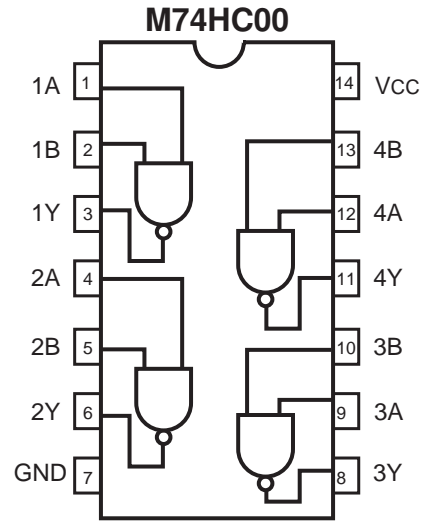
**BA7660FS**  
COMPONENT VIDEO BOARD: U4301



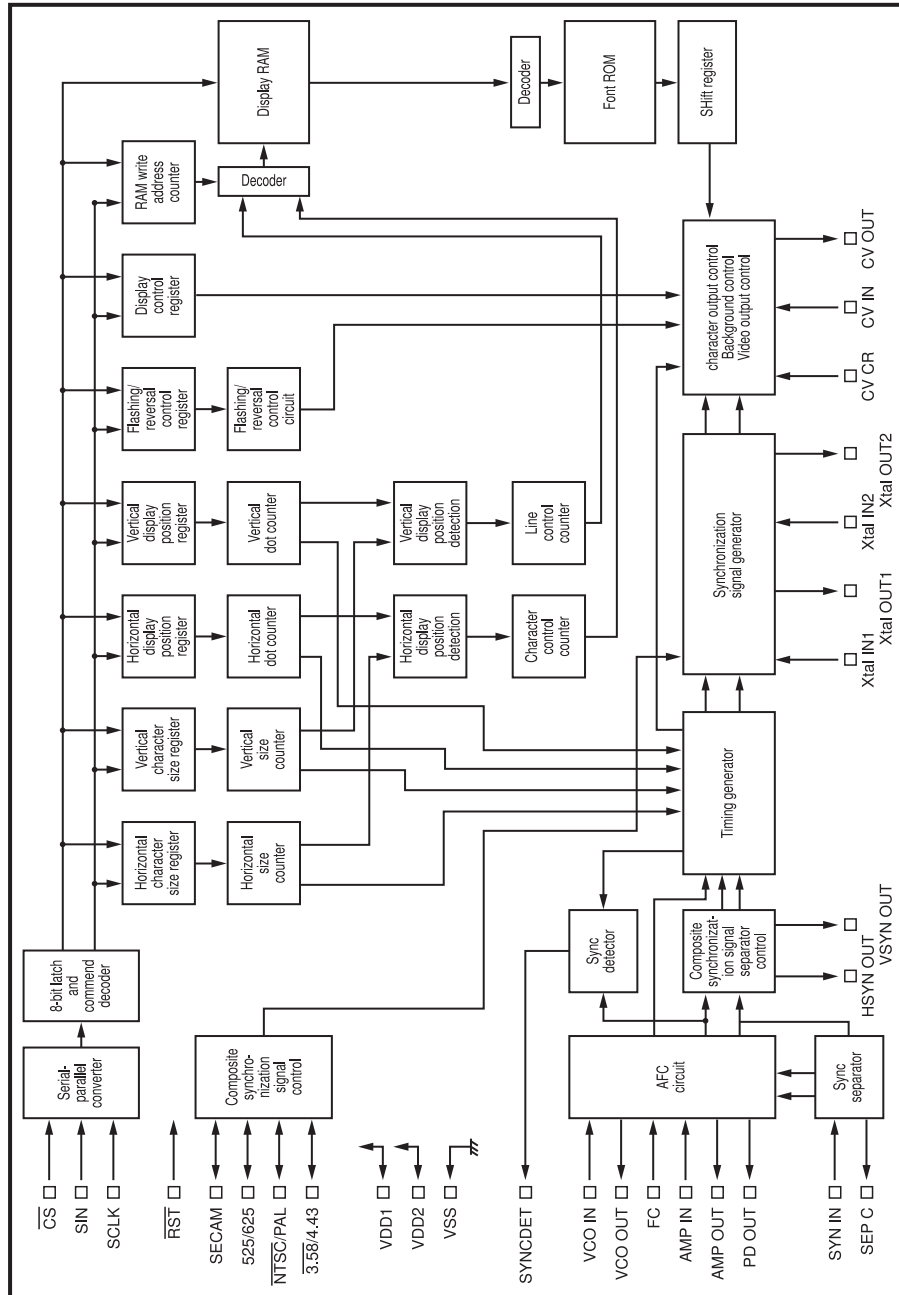
**74HC4052**  
COMPONENT VIDEO BOARD: U4302 & U4303



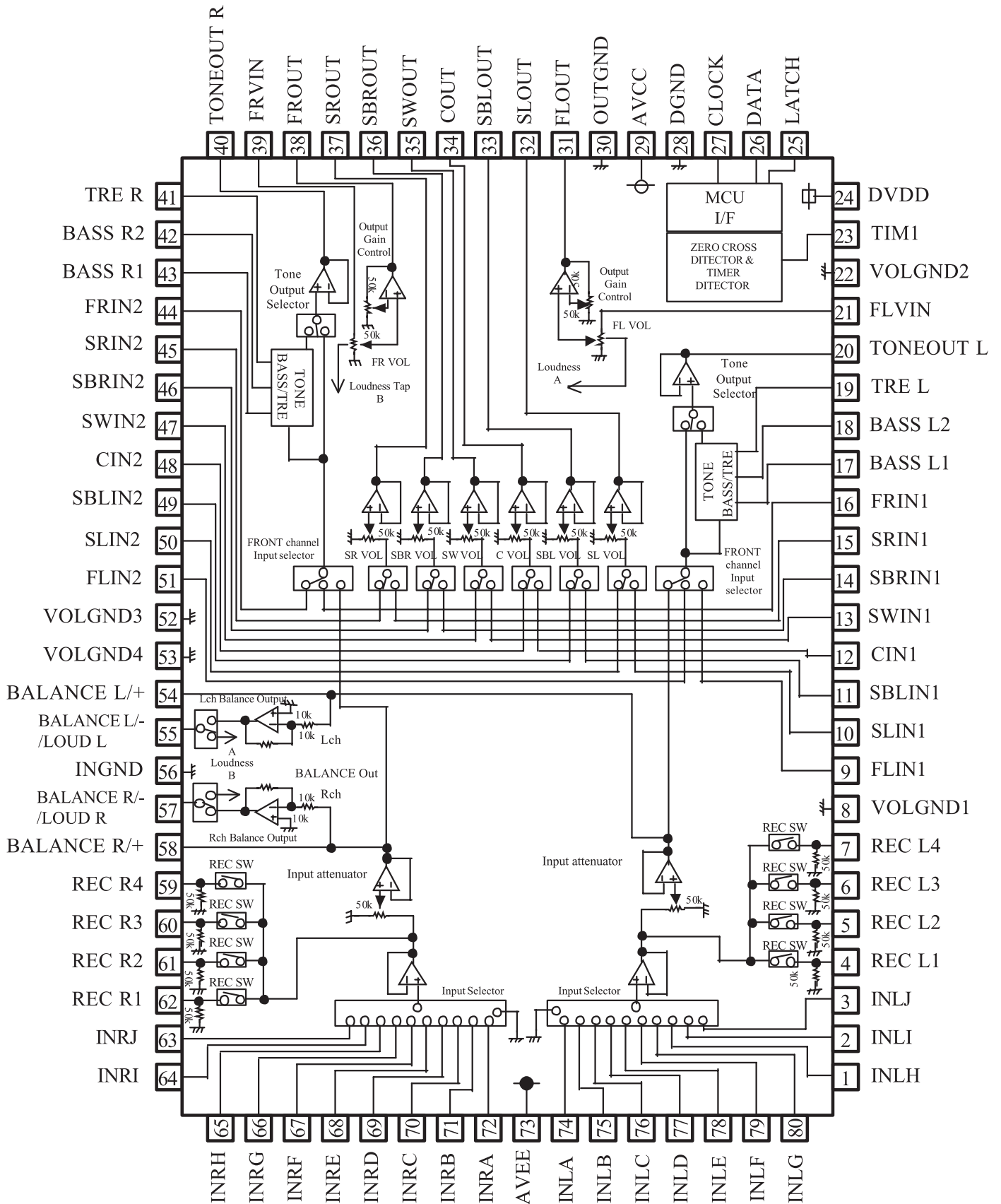
**74HC00**  
COMPONENT VIDEO BOARD: U4304



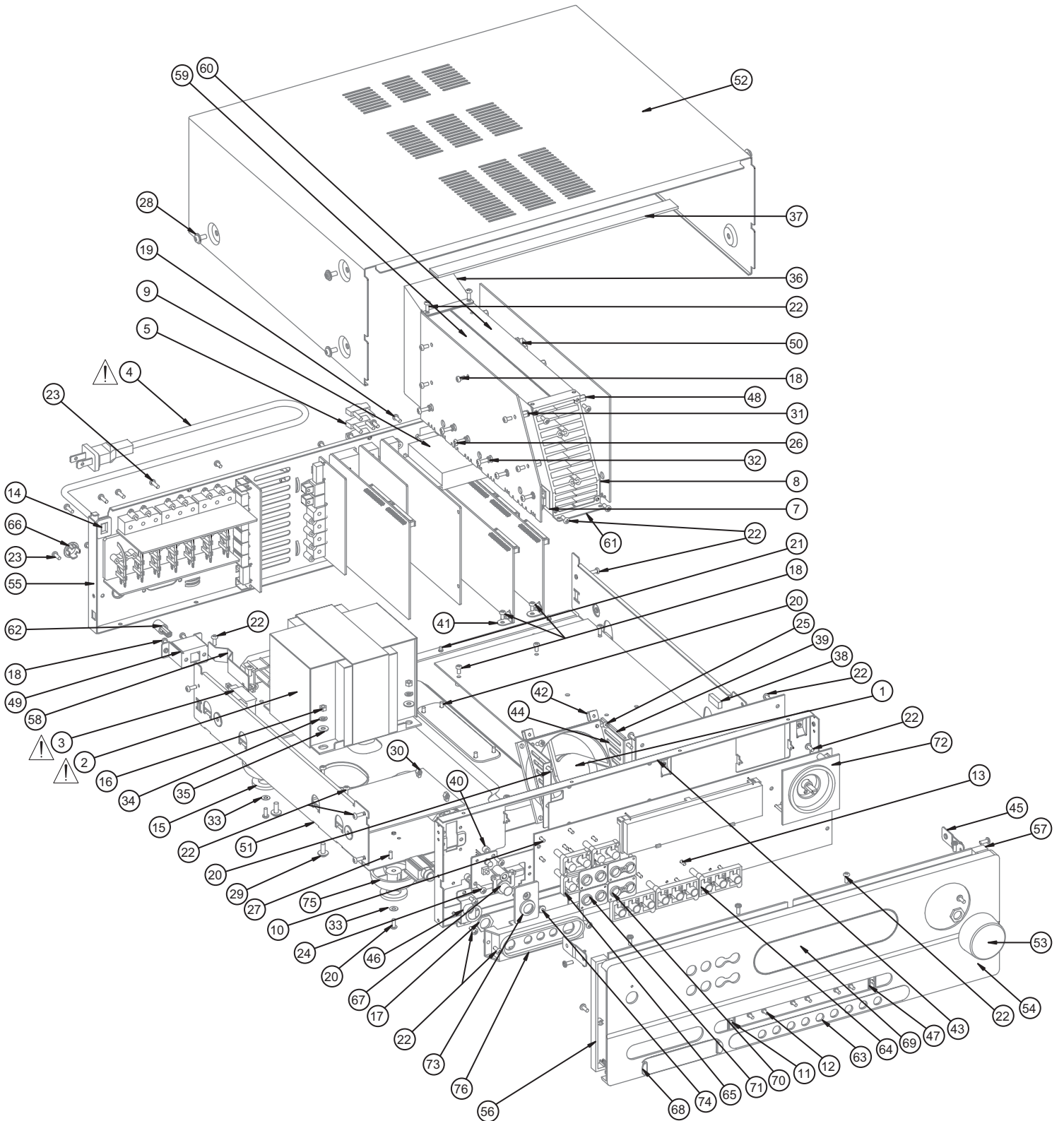
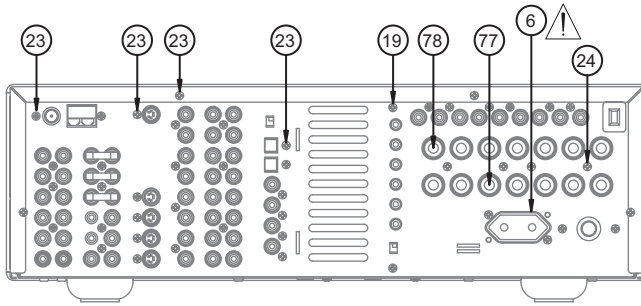
**LC74763**  
S-VIDEO BOARD:  
U4101



**M61516FP**  
**MULTI-CHANNEL BOARD: U601**



# EXPLODED VIEW



# EXPLODED VIEW PARTS LIST

Item	Database Part Number	Description	Qty
1	08-002-0042-00	FAN DC 80 X 80 X 25 12V 0.15A 2700rpm DF128025BB W/360mm	1
2	10-005-0187-90	XFORMER PW EI-96 115V/230V T744 T96-0313002-21 ISSUE 6	1
3	11-001-0061-90	POWER SWITCH TV-8 10A/250VAC UL/CSA/VDE/F/D/S PS3-22SPA-P7CZ BABY BLUE HN	1
4	17-004-0009-90	POWER CORD UL/CSA 125V VDE LF L=6'7" LP-5W NISPT-2 AWG18 2C 2T [FOR 120V VER.]	1
	17-004-0014-90	POWER CORD 250V EURO-PLUG 2.5A/250V VDE L=6'11" LP-21 H03 VVH2-F 2C 2T [FOR 230V VER.]	1
5	17-016-0078-90	JUMPER PLUG PITCH 14mm	3
6	15-004-0079-90	AC OUTLET US POLARIZED SS-6C [FOR 120V VER.]	1
	15-004-0076-90	AC OUTLET EURO CEE 7 2.5A/250V A302D0060P [FOR 230V	1
7	25-020-0338-00	SILICONE RUBBER INSULATOR L18 X W13 X T0.3 W/HOLE	5
8	25-020-0347-90	INSULATOR TO-3P MICA 1.5KV 22 X 27 X 0.125 SK023A	10
9	15-016-0001-90	AM/FM TUNER MODULE KST-MB114MA0-23 [FOR 120V VER.]	1
	15-016-0002-90	AM/FM TUNER MODULE KST-MB114MA1-23 [FOR 230V VER.]	
10	22-003-0138-90	SELF TAPPING SCREW 2X5 WASHER HEAD TYPE "B" NI PLT	8
11	22-003-0139-90	SELF TAPPING SCREW DIA2.6 X 5 P/H TYPE "A" NI PLT	2
12	22-003-0126-00	SELF TAPPING SCREW DIA2.6 X 6 P/H TYPE "A" NI PLT	6
13	22-003-0145-90	SELF TAPPING SCREW DIA2.6 X 8 B/H TYPE "A" NI PLT	16
14	25-017-0269-90	BUSHING SQ 11.5 X 16 1.6mm THK. BLK NYLON SB4F-4	1
15	25-014-0030-90	RUBBER FOOT I/D14 X O/D26 X 3 PORON HH-48C	4
16	22-007-0082-90	NUT M5X3.4 NI PLT	4
17	22-007-0083-90	NUT ZINC PLATED M9.0 X 2.2mm 11p	1
18	22-001-0367-00	MACHINE SCREW M3 X 6 P/H NI PLT	23
19	22-001-0376-90	MACHINE SCREW M3 X 6 P/H BLK	4
20	22-003-0149-90	MACHINE SCREW M3.0 X 6.0 B/H TAP TYPE NICKEL PLT	12
21	22-003-0141-90	TAPTITE SCREW 3 X 6 B/H TYPE "B" BLK	4
22	22-003-0030-00	SELF TAPPING SCREW DIA3 X 8 B/B ZINC PLATED TAPTITE-	38
23	22-003-0049-00	TAPTITE SCREW DIA3 X 8 B/H TYPE "B" BLK PLT	39
24	22-003-0143-90	TAPTITE SCREW DIA3 X 10 P/H TYPE "B" BLK	6
25	22-001-0378-90	MACHINE SCREW M3 X 10 B/H BLK	4
26	22-001-0372-00	MACHINE SCREW M3 X 12 B/H NI-PLT	15
27	22-003-0144-90	TAPTITE SCREW 3.5 X 8.0 B/H TYPE "B" NI PLT	5
28	22-001-0379-90	MACHINE SCREW M4 X 8 WASHER HEAD BLK	6
29	22-001-0380-90	HEX HEAD SCREW M5 X 12 NI PLT	4
30	25-006-0043-90	PCB SUPPORTER "KSS" (H=9.6mm PCB HOLE 4mm) CS-0610	3
31	22-008-0024-00	INTERNAL TOOTH WASHER M3 X 0.4mm	4
32	22-005-0032-00	WASHER SPRING I/D 3.2 X O/D 5.6 0.9mm THK	15
33	22-006-0081-00	WASHER STEEL I/D 3.5 X O/D 8.0 0.4mm THK. ZINC PLT.	4
34	22-005-0036-90	WASHER SPRING I/D 5.2 X O/D 8 X 1.2 THK ZINC PLT.	4
35	22-006-0085-90	WASHER STEEL I/D 5.6 X O/D 12 X 1 THK. NI PLT.	8
36	25-020-0348-90	FIBRE INSULATOR	1
37	25-016-0025-90	FOAM 9 X 240 X 1.5mm BLACK (UL GRADE) W/NITTO 500	1
38	25-016-0026-90	FOAM 30x25x6mm	1
39	25-020-0349-90	FIBRE PAPER 60X26X0.8mm	1
40	25-022-1238-90	METAL SPACER OD6 X ID3.2 X 4.5mm	2
41	25-022-1239-90	L BRACKET R.1	3
42	25-022-1210-90	FAN SCREW BRACKET	4
43	25-022-1233-90	SUBFASCIA T752 R.5	1
44	25-022-1240-90	FAN MOUNTING BRACKET T752 R.2	1
45	25-022-1241-90	SIDE MOUNTING BRACKET T752	2
46	25-022-1231-90	PHONE BRACKET	1
47	25-022-1232-90	DUMMY BRACKET	2
48	25-005-0118-90	HEX SPACER AF5.5 H8+6	10
49	25-022-1242-90	POWER BUTTON BRACKET H=24.8mm	1
50	25-022-1243-90	CLIP THERMAL SWITCH	1
51	23-235-0001-90	BOTTOM CHASSIS T744 R.7	1
52	23-236-0001-90	TOP COVER T744 (GREY) R.4 [FOR GREY VER.]	1
	23-236-0002-90	TOP COVER T744 (PAINTED TITANIUM) R.4 [FOR TITANIUM	1



<b>Item</b>	<b>Database Part Number</b>	<b>Description</b>	<b>Qty</b>
53	21-001-0025-90	VOLUME KNOB ASSY (D. GREY) [FOR GREY VER.]	1
	21-001-0026-90	VOLUME KNOB ASSY (TITANIUM) [FOR TITANIUM VER.]	1
54	23-237-0020-90	FASCIA T744 (GREY) R.1 [FOR GREY VER.]	1
	23-237-0020-92	FASCIA T744 (GRAPHITE) R.2 [FOR GREY VER.]	1
	23-237-0022-90	FASCIA T744 (TITANIUM) R.1 [FOR TITANIUM VER.]	1
	23-237-0022-92	FASCIA T744 (NEW TITANIUM) R.2 [FOR TITANIUM VER.]	1
55	23-237-0003-90	REAR PANEL T744 (AH) R.3 [FOR 120V VER.]	1
	23-237-0004-91	REAR PANEL T744 (C) R.3 [FOR 230V VER.]	1
56	25-022-1220-90	SIDE CAP L T744 (GREY) R.1 [FOR GREY VER.]	1
	25-022-1220-92	SIDE CAP L T744 (GRAPHITE) R.2 [FOR GREY VER.]	1
	25-022-1222-90	SIDE CAP L T744 (PAINTED TITANIUM) R.1 [FOR TITANIUM	1
	25-022-1222-92	SIDE CAP L T744 (NEW TITANIUM) R.2 [FOR TITANIUM VER.]	1
57	25-022-1221-90	SIDE CAP R T744 (GREY) R.1 [FOR GREY VER.]	1
	25-022-1221-92	SIDE CAP R T744 (GRAPHITE) R.2 [FOR GREY VER.]	1
	25-022-1223-90	SIDE CAP R T744 (PAINTED TITANIUM) R.1 [FOR TITANIUM	1
	25-022-1223-92	SIDE CAP R T744 (NEW TITANIUM) R.2 [FOR TITANIUM VER.]	1
58	25-022-1272-90	SHIELD CAP T744 [FOR 230V VER.]	1
59	19-001-0083-90	EXTRUDED HTSK L T752 BLACK ANODISE R.2	1
60	19-001-0084-90	EXTRUDED HTSK R T752 BLACK ANODISE R.2	1
61	25-022-1244-90	HEATSINK MOUNTING BRACKET	4
62	21-001-0027-90	POWER BUTTON BLACK	1
63	21-002-0148-90	INPUT BUTTON LOZENGE T752 (GREY) [FOR GREY VER.]	1
	21-002-0148-92	INPUT BUTTON LOZENGE T752 (GRAPHITE) R.1 [FOR GREY	1
	21-002-0149-90	INPUT BUTTON LOZENGE T752 (PAINTED TITANIUM) [FOR	1
	21-002-0149-92	INPUT BUTTON LOZENGE T752 (NEW TITANIUM) R.1 [FOR	1
64	21-002-0150-90	INPUT BUTTON (GREY) R.4 [FOR GREY VER.]	3
	21-002-0150-92	INPUT BUTTON (GRAPHITE) R.5 [FOR GREY VER.]	3
	21-002-0151-90	INPUT BUTTON (PAINTED TITANIUM) R.4 [FOR TITANIUM VER.]	3
	21-002-0151-92	INPUT BUTTON (NEW TITANIUM) R.5 [FOR TITANIUM VER.]	3
65	25-024-0309-90	DUO BUTTON (GREY) R.1 [FOR GREY VER.]	4
	25-024-0309-92	DUO BUTTON (GRAPHITE) R.2 [FOR GREY VER.]	4
	25-024-0310-90	DUO BUTTON (PAINTED TITANIUM) R.1 [FOR TITANIUM VER.]	4
	25-024-0310-92	DUO BUTTON (NEW TITANIUM) R.2 [FOR TITANIUM VER.]	4
66	21-002-0147-90	POWER BUTTON BEZEL	1
67	21-002-0152-90	POWER BUTTON TACT ACTIVATE (GREY) R.1 [FOR GREY VER.]	1
	21-002-0152-92	POWER BUTTON TACT ACTIVATE (GRAPHITE) R.2 [FOR GREY	1
	21-002-0153-90	POWER BUTTON TACT ACTIVATE (PAINTED TITANIUM) R.1	1
	21-002-0153-92	POWER BUTTON TACT ACTIVATE (NEW TITANIUM) R.2 [FOR	1
68	25-024-0305-90	VIDEO COVER (GREY) [FOR GREY VER.]	1
	25-024-0305-92	VIDEO COVER (GRAPHITE) R.1 [FOR GREY VER.]	1
	25-024-0306-90	VIDEO COVER (PAINTED TITANIUM) [FOR TITANIUM VER.]	1
	25-024-0306-92	VIDEO COVER (NEW TITANIUM) R.1 [FOR TITANIUM VER.]	1
69	25-008-0402-90	WINDOW LENS	1
70	25-024-0311-90	LINKED GOGGLE BEZEL (GREY) [FOR GREY VER.]	2
	25-024-0311-92	LINKED GOGGLE BEZEL (GRAPHITE) R.1 [FOR GREY VER.]	2
	25-024-0312-90	LINKED GOGGLE BEZEL (PAINTED TITANIUM) [FOR TITANIUM	2
	25-024-0312-92	LINKED GOGGLE BEZEL (NEW TITANIUM) R.1 [FOR TITANIUM	2
71	25-024-0313-90	DUO GOGGLE BEZEL (GREY) R.1 [FOR GREY VER.]	2
	25-024-0313-92	DUO GOGGLE BEZEL (GRAPHITE) R.2 [FOR GREY VER.]	2
	25-024-0314-90	DUO GOGGLE BEZEL (PAINTED TITANIUM)R.1 [FOR TITANIUM	2
	25-024-0314-92	DUO GOGGLE BEZEL (NEW TITANIUM) R.2 [FOR TITANIUM	2
72	25-024-0307-90	VOLUME BEZEL (GREY) [FOR GREY VER.]	1
	25-024-0307-92	VOLUME BEZEL (GRAPHITE) R.1 [FOR GREY VER.]	1
	25-024-0308-90	VOLUME BEZEL (PAINT TITANIUM) [FOR TITANIUM VER.]	1
	25-024-0308-92	VOLUME BEZEL (NEW TITANIUM) R.1 [FOR TITANIUM VER.]	1



<b>Item</b>	<b>Database Part Number</b>	<b>Description</b>	<b>Qty</b>
73	21-002-0154-90	POWER BUTTON BEZEL (GREY) R.1 [FOR GREY VER.]	1
	21-002-0154-92	POWER BUTTON BEZEL (GRAPHITE) R.2 [FOR GREY VER.]	1
	21-002-0163-90	POWER BUTTON BEZEL (PAINTED TITANIUM) R.1 [FOR TITANIUM VER.]	1
	21-002-0163-92	POWER BUTTON BEZEL (NEW TITANIUM) R.2 [FOR TITANIUM VER.]	1
74	25-008-0403-90	LED LENS ROUND	1
75	25-024-0315-90	PLASTIC FOOT DOME SHAPE	4
76	25-024-0317-90	VIDEO HOUSING	1
77	25-020-0350-90	BANANA PLUG BLACK PT#10.B [FOR 230V VER.]	7
78	25-020-0351-90	BANANA PLUG RED PT#10.R [FOR 230V VER.]	7

# ELECTRICAL PARTS LIST

Reference No.	Database Part No.	Description
<b>POWER AMP MODULE</b>		
	50-940-0744-90	T744 POWER AMP MODULE
<b>FRONT &amp; CENTER AMP BOARD PCB ASSEMBLY</b>		
	27-909-0744-90	T744AH (US) Front and Center Amp Board
<b>REGULATOR</b>		
U501	01-004-0049-00	IC VOLT REG 12V 1A TO-220 NJM7812 ISOWATT
<b>RESISTORS</b>		
R523,R574,R547	02-005-0072-00	RES RN 0.22 OHM 5% 5W SIL STRAIGHT LEADS 3 PIN COMMON PIN2 WW
R571,R545,R522	06-004-0016-90	VR SEMI-FIX RES CF 1K OHM B 30% 6mm VER RM- 063-1K
<b>CAPACITORS</b>		
C505,C517,C529	03-002-0014-00	CAP ELEC GR 470uF 16V 20% 85C RAD ST5
C552,C553,C551	03-002-0131-00	CAP ELEC SS 10uF 50V 20% 85C RAD HEIGHT= 7mm MAX
C580,C581,C582	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C522,C535,C534,C521,C511,C510	03-002-0134-00	CAP ELEC GR 100uF 100V 20% RAD
C577,C578,C579	03-002-0137-00	CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT= 7mm MAX
C565,C566	03-002-0143-00	CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C501,C513,C525	03-002-0148-00	CAP ELEC SS 4.7uF 50V 20% 85C RAD HEIGHT=7mm MAX
C537-C539	03-004-0031-00	CAP MPF 0.1uF 63V +/-5% MEM
C503,C527,C515	03-006-0046-00	CAP MYLAR 1000P 100V 10% ST4.0
C508,C519,C531	03-006-0047-00	CAP MYLAR 150nF 100V 10% ST7.5
<b>TRANSISTORS</b>		
Q516,Q518,Q529,Q530,Q504,Q506	05-001-0065-00	XTR PW NPN 1A/100V TO-126 2SD600KE
Q505,Q508,Q517	05-001-0068-00	XTR PW PNP 1.5A/160V TO-220ML 2SA1606E
Q541	05-001-0069-00	XTR PW 3A/60V TO-126 2SB772Q
Q547	05-001-0076-00	XTR SS NPN HFE20 250MHz DTC123ESATP
Q542	05-001-0077-00	XTR SS NPN HFE270-560 180MHz 2SC1740STPS
Q527,Q501,Q502,Q503,Q511,Q513,Q5 14,Q515,Q523,Q526,Q535,Q525	05-001-0079-00	XTR SS NPN HFE160-320 130MHz 2SC2362KF
Q567,Q561,Q564	05-001-0083-00	XTR SS PNP HFE 280-560 110MHz 2SA1016KG-AA
Q509,Q521,Q534	05-001-0100-90	TRANSISTOR PW DARLINGTON PNP 10A/150V TO- 3PB 2SB1560
Q533,Q522,Q510	05-001-0101-90	TRANSISTOR PW DARLINGTON NPN 10A/150V TO- 3PB 2SD2390
<b>COILS</b>		
L502,L503,L501	07-002-0136-90	AIR COIL 0.2uH +/-10% 1 X 9 X 13.5 TURNS
<b>RELAY</b>		
M506	07-005-0039-90	RELAY POWER DC24V 5A/250V 2P1T PCB ME- 7C024-2HS
<b>JUMPER BARS</b>		
J1-J18	17-016-0043-90	JUMPER BAR DIA1.5 X 25 R.1
Q507B/E, Q508B/E, Q519B/E,Q520B/E, Q531B/E, Q532B/E	17-016-0080-90	Jumper Wire Dia. 0.5mm For L Smaller than 14mm Roll

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>THERMISTOR</b>		
M504	20-004-0039-00	THERMISTOR PTC 100 OHM PTH9MO4BH471TS2F333
<b>THERMAL PROTECTOR</b>		
M505	20-004-0043-90	THERMAL CUT OFF SWITCH 90C ST-22
<b>DIODES</b>		
D501-D503,D505-D507,D509-D511, D521,D524-D528, D531-D536	04-001-0001-00	DIODE SW 4NS DO35 1N4148
D529,D530	04-002-0046-90	DIODE ZENER BZX55 22V 1/2W 5% DO-35 BZX-C22
<b>SURROUND AMP BOARD PCB ASSEMBLY</b>	27-910-0744-90	T744AH (US) Surround Amp Board Assembly
<b>RESISTORS</b>		
R843,R844	02-005-0072-00	RES RN 0.22 OHM 5% 5W SIL STRAIGHT LEADS 3 PIN COMMON PIN2 WW
R836,R835	06-004-0016-90	VR SEMI-FIX RES CF 1K OHM B 30% 6mm VER RM- 063-1K
<b>CAPACITORS</b>		
C809,C810	03-002-0014-00	CAP ELEC GR 470uF 16V 20% 85C RAD ST5
C554	03-002-0073-00	CAP ELEC GS 22uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C847,C848	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C820,C819,C821,C822	03-002-0134-00	CAP ELEC GR 100uF 100V 20% RAD
C845,C846	03-002-0137-00	CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT= 7mm MAX
C801,C802	03-002-0148-00	CAP ELEC SS 4.7uF 50V 20% 85C RAD HEIGHT = 7mm MAX
C823-C824	03-004-0031-00	CAP MPF 0.1uF 63V +/-5% MEM
C806,C805	03-006-0046-00	CAP MYLAR 1000P 100V 10% ST4.0
C815,C816	03-006-0047-00	CAP MYLAR 150nF 100V 10% ST7.5
<b>TRANSISTORS</b>		
Q809,Q811,Q810,Q812	05-001-0065-00	XTR PW NPN 1A/100V TO-126 2SD600KE
Q807,Q808	05-001-0068-00	XTR PW PNP 1.5A/160V TO-220ML 2SA1606E
Q543,Q544,Q829	05-001-0076-00	XTR SS NPN HFE20 250MHz DTC123ESATP
Q805,Q545,Q546,Q801,Q802,Q804,Q8 06,Q821,Q822,Q803	05-001-0079-00	XTR SS NPN HFE160-320 130MHz 2SC2362KF
Q844,Q512,Q841	05-001-0083-00	XTR SS PNP HFE 280-560 110MHz 2SA1016KG-AA
Q820,Q819	05-001-0100-00	TRANSISTOR PW DARLINGTON PNP 10A/150V TO- 3PB 2SB1560
Q818,Q817	05-001-0101-00	TRANSISTOR PW DARLINGTON NPN 10A/150V TO- 3PB 2SD2390
<b>COILS</b>		
L801,L802	07-002-0136-90	AIR COIL 0.2uH +/-10% 1 X 9 X 13.5 TURNS
<b>RELAYS</b>		
M501,M502,M801	07-005-0039-90	RELAY POWER DC24V 5A/250V 2P1T PCB ME- 7C024-2HS
<b>JUMPER BARS</b>		
J21-J35	17-016-0043-90	JUMPER BAR DIA1.5 X 25 R.1
Q813B/E, Q814B/E, Q815B/E,Q816B/E	17-016-0080-90	Jumper Wire Dia. 0.5mm For L Smaller than 14mm

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>DIODES</b> D522,D523,D801-D806,D809,D821-D824	04-001-0001-00	DIODE SW 4NS DO35 1N4148
<b>AUDIO BOARD</b> <i>PCB ASSEMBLY</i>	27-919-0744-90	T744AH (US) Audio Board Assembly
<b>CAPACITORS</b> C317-C319,C320-C329,C331	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT =7mm MAX
<b>JACKS</b> M303	15-003-0027-90	RCA JACK 4 R-R/W-W PCB MOUNT GOLD
M302,M301	15-003-0029-90	RCA JACK 6 R-R/R/W-W-W PCB MOUNT GOLD RCA-653D-04 (W/COVER)
<b>SMD RESISTORS</b> J3101-J3104	02-007-0089-00	RES SMD 0 OHM +/-5% 1/10W 0805
<b>COMPONENT VIDEO BOARD</b> <i>PCB ASSEMBLY</i>	27-932-0744-90	T744AH (US) Component Video Board Assembly
<b>CAPACITORS</b> C4310-C4312,C4325,C4327-C4328	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT =7mm MAX P =1.5
C4316,C4318,C4320	03-002-0135-00	CAP ELEC GS 1000uF 10V 20% 85C RAD ST5
C4313,C4314,C4315	03-002-0137-00	CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT=7mm MAX P =1.5
C4304,C4305,C4303,C4302,C4301,C4306	03-002-0157-00	CAP ELEC SS 2.2uF 50V 20% 85C RAD HEIGHT=7mm MAX
<b>JACKS</b> M431,M432,M434	15-003-0025-90	RCA 3 G-BL-R PCB MOUNT GOLD (W/COVER)
<b>ICS</b> U4305	01-012-0059-00	IC LOGIC QUAD 2-INPUT NAND GATE SOP
U4304	01-012-0066-00	IC LOGIC HEX INVERTER SMD SOP 74HCU04DT
U4302,U4303	01-012-0067-00	IC LOGIC ANALOG MULTIPLEXER/DEMULTIPLEXER SMD SOIC-16
U4301	01-026-0001-90	IC VIDEO 3-CHANNEL 75 OHM DRIVER SSOP BA7660FS
<b>SMD CAPACITORS</b> C4329,C4330,C4332,C4333	03-009-0075-00	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
<b>DIGITAL INPUT BOARD</b> <i>PCB ASSEMBLY</i>	27-921-0744-90	T744AH (US) Digital Input Board Assembly
<b>CAPACITORS</b> C1222,C1223	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT =7mm MAX
C1213,C1214	03-002-0157-00	CAP ELEC SS 2.2uF 50V 20% 85C RAD HEIGHT=7mm MAX
<b>OPTICAL FIBRE</b> J1005,J1006	04-009-0001-90	FIBER OPTIC RECEIVING MODULE 650nm 180ns 5V MOF-R3C2

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>SLIDE SWITCH</b> S1	11-002-0042-90	SW SLIDE 2P2T RIGHT L=9
<b>RCA JACKS</b> J1001,J1002,J1003,J1004	15-003-0021-90	RCA JACK 1 BLACK PCB MOUNT GOLD
<b>SMD ICS</b> U1203 U1201,U1202	01-012-0061-00 01-012-0066-00	IC LOGIC 8-CHANNEL MULTIPLEXER SOP IC LOGIC HEX INVERTER SMD SOP 74HCU04D
<b>SMD CAPACITORS</b> C1236-C1238	03-009-0075-00	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
<b>DSP BOARD PCB ASSEMBLY</b>	27-918-0744-90	T744AH (US) DSP Board Assembly
<b>CAPACITORS</b> C1148,C1147,C1145,C1146 C1012,C1072,C1092,C1137-C1140 C1117 C1004,C1002 C1040,C1030,C1031,C1051,C1050,C1041 C1112,C1111,C1110,C1109,C1113 C1060,C1073 C1005 C1011 C1096,1098,C1100	03-002-0073-00 03-002-0129-00 03-002-0133-00 03-002-0137-00 03-002-0142-00 03-002-0143-00 03-002-0145-00 03-002-0157-00 03-004-0031-00 03-004-0090-00	CAP ELEC GS 22uF 16V 20% 85C RAD HEIGHT = 7mm MAX CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT = 7mm MAX CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT= 7mm MAX CAP ELEC SS 3.3uF 50V 20% 85C RAD HEIGHT = 7mm MAX CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX CAP ELEC GR 470uF 10V 20% 85C RAD ST5 CAP ELEC SS 2.2uF 50V 20% 85C RAD HEIGHT=7mm MAX CAP MPF 0.1uF 63V +/-5% MEM CAP MPF 1uF 63V +/-5% MEM
<b>TRANSISTORS</b> Q1003,Q1001,Q1002	05-001-0072-00	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
<b>INDUCTORS</b> L1001-L1007,L1011-L1012	07-002-0132-90	IND CHOKE 10uH 10% EC36 EC36-100K
<b>CRYSTAL</b> X1001	14-003-0011-00	CRYSTAL CLOCK OSCILLATOR 12.288MHz 50ppm 4PIN HALF-SIZE CO22B12.2880NNS
<b>ICS</b> U1007 U1020,U1015 U1008-U1009 U1004 U1002-U1003,U1014 U1011-U1013,U1023,U1025 U1001	01-002-0052-00 01-004-0054-90 01-012-0058-00 01-012-0060-00 01-012-0068-90 01-014-0027-00 01-027-0001-90	I.C.EEPROM 256X8 BYTE 70nS PDIL SST27SF020 IC REG 1A TO-220(T) LM317T (ST) IC LOGIC OCTAL D-FLIP FLOPS WITH 3-STAGE OUTPUT SMD SN74LV57 4A IC LOGIC QUAD 2-INPUT MULTIPLEXER 74HC157D IC LOGIC OCTAL BUS TRANSCEIVER WITH 3-STATE OUTPUTS TSSOP SN74LVC245APWR IC NJM4560M SO 8 PIN DUAL OP AMP SMD NJM4560M IC MULTI-STANDARD AUDIO DECODER 44PIN PLCC CS493263-CLZ

Reference No.	Database Part No.	Description
U1021	01-027-0002-90	IC 24BIT 96KHz SURROUND SOUND CODE SSOP CS4228AKS
U1005	01-027-0003-90	IC 96KHz DIGITAL AUDIO INTERFACE RECEIVER SMD CS8415A-CSZ
<b>SMD RESISTORS</b>		
R1151	02-007-0042-00	RES SMD 1K OHM 5% 1/16W 0603
R1090,R1091	02-007-0135-00	RES SMD 2.7K OHM 5% 1/16W 0603
R1115	02-007-0141-00	RES SMD 100 OHM 5% 1/16W 0603
R1021,R1114,R1131- R1138,R1020,R1008,R1230	02-007-0148-00	RES SMD 10K OHM 5% 1/16W 0603
R1082	02-007-0149-00	RES SMD 1.8K OHM 5% 1/16W 0603
R1003-R1006,R1081	02-007-0150-00	RES SMD 3.3K OHM 5% 1/16W 0603
R1036,R1040,R1050,R1054,R1064,R1068,R1095,R1096,R1117-R1120	02-007-0157-00	RES SMD 10K OHM +/-1% 1/16W 0603
R1010,J1001,R1251,R1253,R1254	02-007-0288-00	RES SMD 0 OHM 5% 1/16W 0603
R1013	02-007-0290-00	RES SMD 1.2K OHM 5% 1/16W 0603
R1121-R1124	02-007-0291-00	RES SMD 150 OHM 5% 1/16W 0603
R1072,R1065,R1058,R1051,R1044,R1037,R1061,R1077,R1075,R1070,R1063,R1056,R1055,R1049,R1047, R1042,R1041,R1069,R1078,R1080,R1084	02-007-0292-00	RES SMD 2.2K OHM 1% 1/16W 0603
R1007	02-007-0293-00	RES SMD 33 OHM 5% 1/16W 0603
R1001- R1002,R1079,R1083,R1097,R1098,R1101-R1102,R1231-R1242	02-007-0295-00	RES SMD 4.7K OHM +/-1% 1/16W 0603
R1099,R1100	02-007-0296-00	RES SMD 4.99K OHM +/-1% 1/16W 0603
R1009	02-007-0300-00	RES. SMD 200K OHM +/-5% 1/16W 0603
R1143-R1148	02-007-0301-00	RES. SMD 620 OHM +/-5% 1/16W 0603
<b>SMD CAPACITORS</b>		
C1001,C1003,C1017- C1019, C1074- C1076,C1095, C1097, C1099, C1123- C1128,C1141-C1142, C1168, C1169 C1167	03-009-0075-00	CAP CER SMD 0.1uF 50V 20% Y5V 0603
C1103-C1108	03-009-0078-00	CAP CER SMD 47pF 50V 10% NPO 0603
C1034,C1038,C1044,C1048,C1054, C1058,C1132	03-009-0111-00	CAP CER SMD 100pF 50V 10% X7R 0603
C1010,C1007,C1160	03-009-0112-00	CAP CER SMD 1nF 50V 10% X7R 0603
C1006,C1121	03-009-0113-00	CAP CER SMD 10nF 50V 10% X7R 0603
C1130,C1131,C1134,C1135,C1136, C1143,C1144	03-009-0114-00	CAP CER SMD 220pF 50V 10% X7R 0603
C1161-C1166	03-009-0115-00	CAP CER SMD 2.2nF 50V 10% X7R 0603
C1032,C1036,C1042,C1046,C1052, C1056	03-009-0117-00	CAP CER SMD 330pF 50V 10% X7R 0603
C1114	03-009-0118-00	CAP CER SMD 3.3nF 50V 10% X7R 0603
C1035,C1039,C1045,C1049,C1055, C1059	03-009-0119-00	CAP CER SMD 4.7nF 50V 10% X7R 0603
	03-009-0120-00	CAP CER SMD 1.5 nF 50V +/-10 % X7R 0603

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>KEY BOARD AND LED BOARD PCB ASSEMBLY</b>	50-951-0744-90	T744 KEYBOARD AND LED ASSEMBLY
<b>KEY BOARD PCB ASSEMBLY</b>	27-922-0744-90	T744AH (US) Keyboard Board Assembly
<b>CAPACITORS</b>		
C212	03-002-0135-00	CAP ELEC GS 1000uF 10V 20% 85C RAD ST5
C255,C258	03-002-0137-00	CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT = 7mm MAX
C214	03-002-0138-00	CAP ELEC SS 0.1uF 50V 20% 85C RAD
C211,C210,C209,C208	03-002-0143-00	CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX
<b>DIODES</b>		
D212,D214-D218	04-001-0001-00	DIODE SW 4NS DO35 1N4148
D220	04-002-0040-00	DIODE ZENER BZX79 5.1V 1/2W 5% DO35 BZX79-C 5.1V
<b>IR</b>		
D201	04-004-0008-91	IR RX 940nm 37.9KHz SHIELD ST PIC-37143TE5-H
<b>TRANSISTORS</b>		
Q204,Q205,Q203,Q206	05-001-0072-00	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
Q201	05-001-0080-00	XTR SS PNP HFE 100 200MHz TO-92 A1015Y
<b>ENCODER</b>		
M201	06-006-0009-90	ENCODER ROTATRY STD L=20MM VERT. W/O CLICK EC162102F2B-HA1-002
<b>TACT SWITCHES</b>		
S201-S216,S218	11-007-0060-90	SW TACT NO 1P1T 50mA/12V VER H=7mm
<b>VFD</b>		
VD201	12-005-0028-00	VFD 16-BT-132-GNK 16 GRIDX36 ANODE 2
<b>CRYSTALS</b>		
X201,X202	14-002-0023-00	CRYSTAL 20.000MHz 30ppm 32pF HC-49/S 01- CR1-02-20M000-32-3030
<b>ICS</b>		
U210	01-002-0053-00	IC EEPROM 2K BYTE 250ns PDIL ENDURANCE AT 24C16
U202	01-010-0022-00	IC MCU 8 Bit 16KROM 1024 Byte Xram Plcc AT89C51RB2-SL
U201	01-010-0023-00	IC MCU 8 BITS 64K ROM 1792 BYTES RAM PLCC AT89C51RD2
U208	01-012-0062-00	IC LOGIC 8-CHANNEL ANALOG MUX/DEMUX SMD 74HC4051D
U209	01-012-0064-00	IC LOGIC OCTAL BUS TRANSCEIVER 3-STATE SOP 74AHC245D
U204-U207	01-012-0065-00	IC LOGIC 8-STAGE SHIFT-AND-STORE BUS REGISTER SMD SO16 HEF4094BT
U203	01-015-0004-00	IC VFD DRIVER SMD QFP PT6306
U214	01-026-0002-90	IC MICROCONTROLLER RESET MONITORS MAX810LTR

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>SMD RESISTORS</b>		
R234	02-007-0042-00	RES SMD 1K OHM 5% 1/16W 0603
R208	02-007-0089-00	RES SMD 0 OHM +/-5% 1/10W 0805
R216	02-007-0094-00	RES SMD 1K OHM 1% 1/4W 1206
R238	02-007-0132-00	RES SMD 12K OHM 5% 1/16W 0603
R220,R256-R259,R261,R263-	02-007-0139-00	RES SMD 4.7K OHM 5% 1/16W 0603
R233	02-007-0140-00	RES SMD 47K OHM 5% 1/16W 0603
R241-R242	02-007-0141-00	RES SMD 100 OHM 5% 1/16W 0603
R221,R230	02-007-0144-00	RES SMD 2.2K OHM 5% 1/16W 0603
R201-R207,R213,R219,R223-	02-007-0148-00	RES SMD 10K OHM 5% 1/16W 0603
R224,R226-R227,R229,R231-		
R255	02-007-0268-00	RES SMD 56K OHM 5% 1/16W 0603
R222,R225	02-007-0288-00	RES SMD 0 OHM 5% 1/16W 0603
R217,R218	02-007-0294-00	RES SMD 470 OHM 5% 1/16W 0603
R225	02-007-0297-00	RES SMD 560 OHM +/-1% 1/16W 0603
R251,R252	02-007-0299-00	RES SMD 10M OHM +/-5% 1/16W 0603
<b>SMD CAPACITORS</b>		
C201,C202,C213,C215-	03-009-0075-00	CAP CER SMD 0.1uF 50V 20% Y5V 0603
C220,C222,C229,C256		
C241,C242	03-009-0112-00	CAP CER SMD 1nF 50V 10% X7R 0603
C251-C254	03-009-0116-00	CAP CER SMD 33pF 50V 10% X7R 0603
<b>LED BOARD</b>		
<b>PCB ASSEMBLY</b>	27-915-0744-90	T744AH (US) LED Board Assembly
<b>TRANSISTORS</b>		
Q213	05-001-0078-00	Transistor SS NPN HFE30 250MHs SPT
Q211,Q212	05-001-0082-00	Transistor SS PNP HFE30 250MHs SPT
<b>TACT SWITCH</b>		
S220	11-007-0060-90	SW TACT NO 1P1T 50mA/12V VER H=7mm
<b>LED</b>		
D211	12-006-0156-90	LED GRN-AMB-RED CIRCULAR 5X8.7MM BL-BG0A0D13C4V COMMON CATHODE
<b>DIODES</b>		
D221,D222	04-001-0001-00	Diode 1N4148 DO-35 0.15A/100 Signal Switching Diode
<b>LED BOARD</b>		
<b>PCB ASSEMBLY</b>	27-901-0744-90	PCB Assy T744AH (US) Normal Main Board
<b>CAPACITORS</b>		
C701,C724	03-002-0057-00	CAP ELEC EGH 4700uF 25V 20% 105C RAD ST7.5
C702,C705,C706,C716,C725	03-002-0066-00	CAP ELEC KM 1000uF 25V 20% 105C 10X20
C707	03-002-0078-00	CAP ELEC KM 2200uF 35V 20% 105C VER
C711-C713,C741	03-002-0090-00	CAP ELEC KM 1000uF 50V 20% 105C RAD
C734,C735	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT =7mm MAX
C719	03-002-0130-00	CAP ELEC KM 100uF 16V 20% 105C RAD ST5
C710	03-002-0144-00	CAP ELEC SS 47uF 50V 20% 85C RAD 8 X 9mm
C704	03-002-0147-00	CAP ELEC 4700uF 35V 105C RAD
C715	03-004-0090-00	CAP MPF 1uF 63V +/-5% MEM



<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>DIODES</b>		
D701-D710	04-001-0003-00	DIODE RECT 1A/1000V DO41 WIN4007 REEL
D715	04-005-0020-90	DIODE BRI 4A/70V RS402L
D711	04-002-0045-90	DIODE ZENER BZX55 30V 1/2W 5% DO35 BZX55-
<b>TRANSISTORS</b>		
Q701	05-001-0065-00	XTR PW NPN 1A/100V TO-126 2SD600KE
<b>REGULATORS</b>		
U705,U704,U701	01-004-0048-00	IC VOLT REG 5V 1A TO-220 NJM7805FA ISOWATT
U702,U707	01-004-0049-00	IC VOLT REG 12V 1A TO-220 NJM7812 ISOWATT
U703	01-004-0051-00	IC VOLT REG TO-220F NJM7912
<b>JUMPER BARS</b>		
JP701-JP702	17-016-0043-90	JUMPER BAR DIA1.5 X 25 R.1
<b>MULTI-CHANNEL BOARD PCB ASSEMBLY</b>		
	27-923-0744-90	T744AH (US) Multi-Channel Board Assembly
<b>CAPACITORS</b>		
C607	03-002-0073-00	CAP ELEC GS 22uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C755,C775	03-002-0102-00	CAP ELEC 2.2uF 50V 20% NON-POLAR 99NPO2020
C780-C793	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C627,C628,C633,C634	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C677,C678,C689,C690	03-002-0143-00	CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C759,C760,C769,C770,C777,C778,C77	03-004-0031-00	CAP MPF 0.1uF 63V +/-5% MEM
C767,C768	03-004-0116-00	CAP MPF 0.0033uF 100V +/-5% MEM
C763,C764	03-004-0117-00	CAP MPF 0.047uF 100V +/-5% MEM
C757	03-004-0118-00	CAP MPF 0.082uF 100V +/-5% MEM
<b>TRANSISTORS</b>		
Q601	05-001-0094-90	TRANSISTOR 8050C NPN TO-92 HFE 120-200 1.5A 40V
Q602	05-001-0095-90	XTR SS PNP HFE 120-200 200MHz TO-92 8550C
<b>INDUCTORS</b>		
L601,L602	07-002-0133-90	IND CHOKE 100uH +/-10% EC24-101K
<b>RCA JACKS</b>		
M602	15-003-0023-90	RCA JACK 2 B/B PCB MOUNT GOLD (W/SHIELD)
M601	15-003-0027-90	RCA JACK 4 R-R/W-W PCB MOUNT GOLD
M603	15-003-0029-90	RCA JACK 6 R-R-R/W-W-W PCB MOUNT GOLD RCA-653D-04 (W/COVER)
<b>ICS</b>		
U601	01-028-0001-90	IC SOUND PROCESSOR 7.1CH VOL+TONE SMD QFP M61516FP
U604,U605	01-014-0027-00	IC NJM4560M SO 8 PIN DUAL OP AMP SMD NJM4560M
<b>RESISTORS</b>		
R611,R612,R616	02-002-0131-00	RES MF 20K OHM 1% 1/6W
R609,R610,R615	02-002-0135-00	RES MF 33K OHM 1% 1/6W
R613,R614	02-002-0136-00	RES MF 75K OHM 1% 1/6W

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>DIODES</b>		
D602,D604	04-002-0047-90	DIODE ZENER BZX55 7.5V 1/2W 5% DO35 BZX55-C7.5V
<b>PRE-OUT BOARD PCB ASSEMBLY</b>		
	27-924-0744-90	T744AH (US) Pre-Out Board Assembly
<b>CAPACITORS</b>		
C624-C625,C640, C645,C650,C655, C670, C675,C693-C698	03-002-0073-00	CAP ELEC GS 22uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C647,C652,C672	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C687,C684,C685,C688	03-002-0141-00	CAP ELEC GR 330uF 16V 20% 85C RAD
C637,642,C667,C692,C691,C679,C680	03-002-0143-00	CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C626	03-002-0150-00	CAP ELEC SS 220uF 16V 20% 85C 8x9mm RAD
<b>DIODES</b>		
D611-D614	04-001-0003-00	DIODE RECT 1A/1000V DO41 WIN4007
D601,D605,D606,D608,D609	04-001-0001-00	DIODE SW 4NS DO35 1N4148
D619-D621	04-002-0047-90	DIODE ZENER BZX55 7.5V 1/2W 5% DO35
<b>RESISTORS</b>		
R636,R643,R687	02-002-0129-00	RES MF 1K OHM 1% 1/6W
R648,R655,R679	02-002-0130-00	RES MF 1.5K OHM 1% 1/8W
R671,R686,R685	02-002-0132-00	RES MF 2.7K OHM 1% 1/6W
R672	02-002-0133-00	RES MF 330 OHM 1% 1/6W
R667-R669,R684, R690,R678,R642, R654,R647,R635	02-002-0134-00	RES MF 3.3K OHM 1% 1/6W
<b>JUMPERS</b>		
R625-R628, R657-R662	17-016-0080-90	JUMPER WIRE DIS 0.5MM FOR L SMALLER THAN 14MM ROLL
<b>TRANSISTORS</b>		
Q608-Q611,Q614-Q615,Q617,Q631- Q635	05-001-0074-00	TRANSISTOR SS NPN HFE200-700 30MHz SPT RN1241A
Q636,Q637	05-001-0075-00	TRANSISTOR SS NPN HFE200-700 30MHz
Q639	05-001-0078-00	TRANSISTOR SS NPN HFE30 250MHz SPT DTC114ESATP
Q616,Q618,Q622,Q624,Q638	05-001-0082-00	TRANSISTOR SS PNP HFE 30 250MHz SPT DTA114ESATP
<b>INDUCTORS</b>		
L602-L606,L609,L610	07-002-0132-90	IND CHOKE 10uH 10% EC36 EC36-100K
<b>RCA JACKS</b>		
M608,M612	15-003-0022-90	RCA JACK 2 B/B PCB MOUNT GOLD RS-213G-
M609	15-003-0024-90	RCA JACK 2 R-W PCB MOUNT GOLD (W/O COVER)
M607	15-003-0028-90	RCA JACK 4 R-W/R-W PCB MOUNT GOLD
<b>ICS</b>		
U609,U610,U612,U614,U615	01-014-0027-00	IC NJM4560M SO 8 PIN DUAL OP AMP SMD NJM4560M
<b>SMD RESISTORS</b>		
P601, P602	02-007-0089-00	SMD R 0 OHM 1/8W 0805 5%

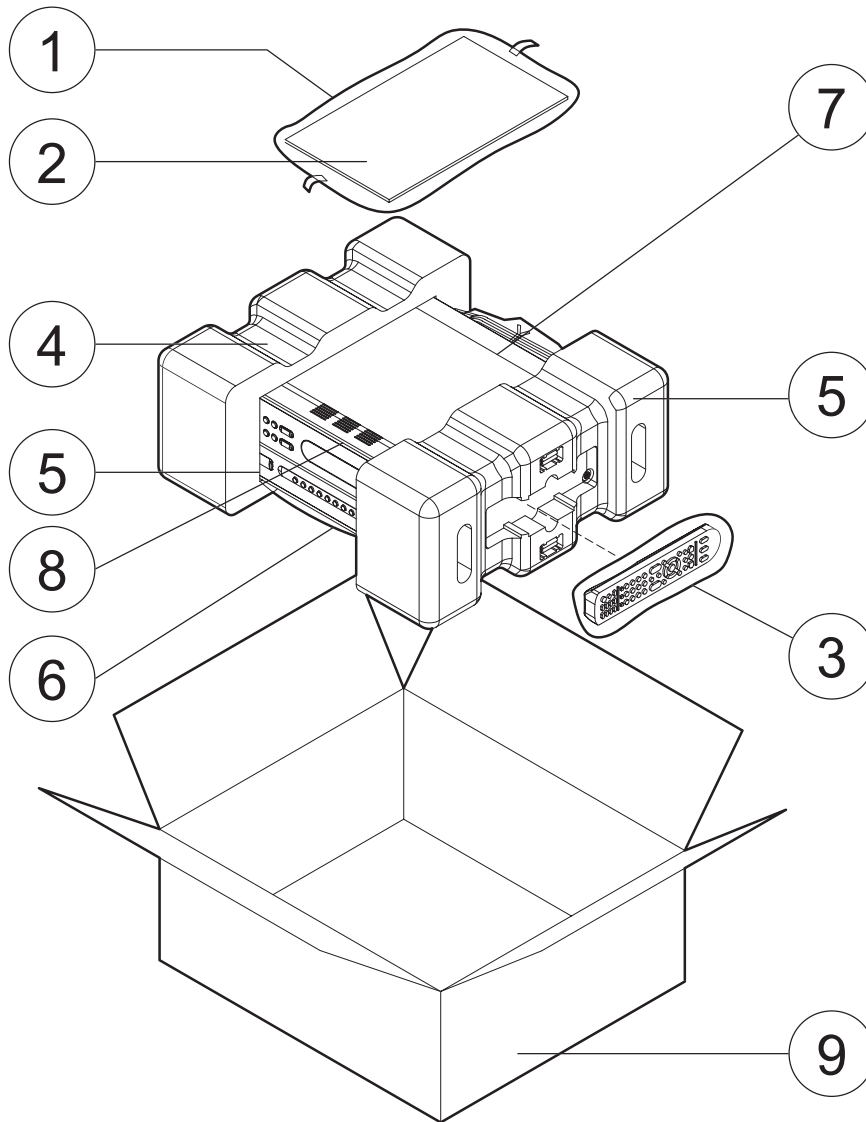
<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>SMD CAPACITORS</b> C747-C758	03-009-0075-00	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
<b>SMD DIODES</b> D615-D638	04-007-0039-90	DIODE ZENER SMD 12V 500mW 5% SOD123
<b>POWER SUPPLY BOARD</b> <b>PCB ASSEMBLY*AH,</b> <b>PCB ASSEMBLY*C,CT</b>	27-903-0744-90 27-904-0744-90	PCB Assy T744AH (US) Power Supply Board PCB Assy T744C (CE) Power Supply Board
<b>RESISTOTRS</b> R754*AH R751	02-001-0451-00 02-004-0014-00	RES CONDUCTIVE PATH 3.9M OHM 1/2W 5% 250V RES FUSIBLE 0.22 OHM 10% 1/2W
<b>CAPACITORS</b> C755 C752 C753 C754,C763	03-002-0146-00 03-002-0148-00 03-004-0115-00 03-007-0014-00	CAP ELEC GR 4700uF 25V 20% 85C RAD CAP ELEC SS 4.7uF 50V 20% 85C RAD HEIGHT=7mm MAX CAP MpF 0.001uF 63V 5% DMF 5 SERIES HC CER CAP 0.01uF/250VAC ±20% Y5V RAD JY16F103MK02 UL/CSA/VDE
<b>DIODES</b> D751-D756	04-001-0003-00	DIODE RECT 1A/1000V DO41 WIN4007 REEL
<b>TRANSISTORS</b> Q751	05-001-0072-00	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
<b>RELAY</b> M751B	07-005-0038-90	RELAY POWER DC12V 20A 220VAC 1P1T PCB ME-14FW-012-HS UL/CUL
<b>STANDBY TRANSFORMER</b> T751	10-005-0186-90	TRANSFORMER PW EI-35 100V/220V T05382B ISS 2
<b>FUSES</b> F751*AH F751*C,CT F752*AH F752*C,CT	20-001-0075-90 20-001-0071-90 20-001-0076-90 20-001-0069-90	FUSE TIME-LAG 7A 250V 5 X 20mm SIC UL/CSA FUSE TIME-LAG 4A 250V 5 X 20mm TSD UL/CSA/VDE/CCC WALTER FUSE 1.6A 250V TIME LAG LBC 5x20mm TSD UL/CSA/VDE/SEMKO FUSE TIME-LAG 800mA 250V 5x20mm TSD UL/CSA/VDE/CCC WALTER
<b>JUMPERS</b> JP1,JP,JP6,JMP1,JMP2*AH JP3,JP7,JMP1,JMP2*C,CT	17-016-0077-00 17-016-0077-00	Jumper wire Dia. 0.5mm L=52.0mm Jumper wire Dia. 0.5mm L=52.0mm

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b><u>SECONDARY BOARD</u></b> <b><i>PCB ASSEMBLY</i></b>	27-926-0744-90	PCB Assy T744AH (US) Normal Secondary Board
<b><i>RESISTORS</i></b> R781-R785	02-010-0011-00	RES MO 0.22 OHM 5% 1/2W
<b><i>CAPACITORS</i></b> C790,C791 C781-C785,C787-C788	03-002-0149-00 03-004-0031-00	CAP ELEC LP 8200uF 63V 20% 85C RAD CAP MPF 0.1uF 63V +/-5% MEM
<b><i>DIODES</i></b> D781	04-005-0015-00	BRIDGE RECTIFIER 25A 400V BR254W BR-25W
<b><i>JUMPER BARS</i></b> J3,J4	17-016-0043-90	JUMPER BAR DIA1.5 X 25 R.1
<b><i>FUSES</i></b> F781,F782	20-001-0077-90	FUSE TIME-LAG 10A/250VAC 5 X 20mm UL/VDE 5D
<b><u>SPEAKER BOARD</u></b> <b><i>PCB ASSEMBLY</i></b>	27-927-0744-90	T744AH (US) Speaker Board Assembly
<b><i>CAPACITORS</i></b> C563,C825,C562,C561,C826,C568,C56	03-001-0066-00	CAP CER HIK 3.3nF 50V 10% B RAD ST7.5
<b><i>SPEAKER TERMINAL</i></b> M8101	16-001-0429-90	SPEAKER TERMINAL 6P BINDING R/B W/O PLUG KF-J5000-06
M5101,M5102	16-001-0430-90	SPEAKER TERMINAL 4P BINDING R/B W/O PLUG KF-J5000-04
<b><u>S-VIDEO BOARD</u></b> <b><i>PCB ASSEMBLY</i></b>	27-929-0744-90	T744AH (US) S-Video Board Assembly
<b><i>CAPACITORS</i></b> C4145	03-002-0073-00	CAP ELEC GS 22uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C4151	03-002-0129-00	CAP ELEC SS 10uF 16V 20% 85C RAD HEIGHT =7mm MAX
C4149,C4134	03-002-0132-00	CAP ELEC SS 100uF 10V 20% 85C RAD HEIGHT = 7mm MAX
C4101,C4102,C4103,C4104,C4105,C4 106,C4107,C4115,C4158	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C4116	03-002-0135-00	CAP ELEC GS 1000uF 10V 20% 85C RAD ST5
C4141,C4133,C4137	03-002-0137-00	CAP ELEC SS 1uF 50V 20% 85C RAD HEIGHT= 7mm MAX
C4144	03-002-0138-00	CAP ELEC. SS 0.1uF 50V 20% 85C RAD
C4162,C4167,C4171,C4173	03-002-0139-00	CAP ELEC SS 220uF 10V 20% 85C RAD
C4150	03-002-0143-00	CAP ELEC SS 47uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C4108,C4156,C4163,C4164,C4168,C4 169	03-002-0145-00	CAP ELEC GR 470uF 10V 20% 85C RAD ST5
C4153,C4157	03-002-0157-00	CAP ELEC SS 2.2uF 50V 20% 85C RAD

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
C4146,C4136	03-004-0049-00	CAP MpF 0.47uF 63V +/-5% DMF 5 SERIES
C4175	03-004-0117-00	CAP MPF 0.047uF 100V +/-5% MEM
C4138	03-011-0001-00	CAP TRIMMER 20pF 20% SEALED HORI. PITCH=5mm CVN620
<b><i>TRANSISTORS</i></b>		
Q4132	05-001-0072-00	TRANSISTOR SS NPN HEF 100 200MHz TO-92
Q4122,Q4131	05-001-0073-00	TRANSISTOR SS NPN HFE 68 30MHz SPT DTC144ESATP
Q4105,Q4106,Q4133,Q4128,Q4130,Q4113,Q4114,Q4121,Q4124,Q4125	05-001-0075-00	TRANSISTOR SS NPN HFE200-700 30MHz 2SC2878A
Q4109,Q4120,Q4123	05-001-0076-00	TRANSISTOR SS NPN HFE20 250MHz
Q4115,Q4126,Q4127	05-001-0077-00	TRANSISTOR SS NPN HFE270-560 180MHz 2SC1740STPS
Q4107,Q4108,Q4116-Q4119,Q4134,Q4135	05-001-0081-00	TRANSISTOR SS PNP HFE 270-560 140MHz 2SA933ASTPS
Q4101-Q4104	05-001-0095-90	TRANSISTOR SS PNP HFE 120-200 200MHz TO-92 8550C
<b><i>INDUCTORS</i></b>		
L4102	07-002-0134-90	IND CHOKE 22uH 10% EC24-220K
L4101	07-002-0135-90	IND CHOKE 5.6uH +/-10% EC24-5R6K
<b><i>CRYSTALS</i></b>		
X4101	14-002-0019-00	CRYSTAL 14.31818MHz 30ppm 32pF HC-49S 01- CR1-02-14M318-32
X4102	14-002-0021-00	CRYSTAL 17.734475MHz 30ppm 32pF HC-49/S 01- CR1-02-17M734475-32-3050
<b><i>DIN JACKS</i></b>		
M411,M412,M413,M414,M418	15-017-0001-90	DIN JACK 1 BLACK PCB MOUNT MD-113
<b><i>ICS</i></b>		
U4101	01-023-0001-90	IC OSD DIP30SD LC74763-9012
U4102,U4103	01-012-0062-00	IC LOGIC 8-CHANNEL ANALOG MUX/DEMUX SMD 74HC4051D
<b><i>DIODES</i></b>		
D4101-D4109	04-001-0001-00	DIODE SW 4NS DO35 1N4148
<b><u>TRIGGER BOARD</u></b>		
<b><i>PCB ASSEMBLY</i></b>	27-930-0744-90	T744AH (US) Trigger Board Assembly
<b><i>REGULATORS</i></b>		
U353	01-004-0047-00	I.C. REG 0.1A TO-92 AZ317LZ
U352	01-004-0050-00	IC VOLT REG 12V 100mA TO-92 ML78L12A
<b><i>RESISTORS</i></b>		
R358,R359	02-010-0012-00	RES MO 150 OHM 5% 2W
<b><i>DIODES</i></b>		
D354-D360	04-001-0003-00	DIODE RECT 1A/1000V DO41 WIN4007 REEL
<b><i>TRANSISTOR</i></b>		
Q351	05-001-0076-00	TRANSISTOR SS NPN HFE20 250MHz
<b><i>SLIDE SWITCH</i></b>		
S351	11-002-0042-90	SW SLIDE 2P2T RIGHT L=9 JSK022N09-G09

<u>Reference No.</u>	<u>Database Part No.</u>	<u>Description</u>
<b>PHONE JACKS</b> M351,M352,M353,M354,M355,M357	15-002-0028-90	PHONE JACK 1 BLACK PCB MOUNT 3.5mm RIGHT
<b>DIODES</b> D351-D353	04-002-0040-00	DIODE ZENER BZX79 5.1V 1/2W 5% DO35 BZX79-C 5.1V
<b>VIDEO -6 BOARD PCB ASSEMBLY</b>	27-931-0744-90	T744AH (US) Video-6 Board Assembly
<b>CAPACITORS</b> C4401,C4402,C4403	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
<b>JACKS</b> J4401	15-002-0029-90	PHONE JACK D6.3 1 PCB MOUNT GOLD
M4401	15-003-0018-90	RCA JACK 1 YELLOW PCB MOUNT GOLD (W/O COVER)
M4404	15-003-0019-90	RCA JACK 1 RED PCB MOUNT GOLD (W/O COVER)
M4403	15-003-0020-90	RCA JACK 1 WHITE PCB MOUNT GOLD
M4402	15-017-0001-90	DIN JACK 1 BLACK PCB MOUNT MD-113
<b>COMPOSITE VIDEO BOARD PCB ASSEMBLY</b>	27-920-0744-90	PCB Assy T744AH (US) Composite Video Board Assembly
<b>CAPACITORS</b> C4201,C4202,C4203,C4205,C4207	03-002-0133-00	CAP ELEC SS 100uF 16V 20% 85C RAD HEIGHT = 7mm MAX
C4208	03-002-0135-00	CAP ELEC GS 1000uF 10V 20% 85C RAD ST5
C4221,C4224	03-002-0139-00	CAP ELEC SS 220uF 10V 20% 85C RAD
C4204,C4206,C4222,C4223	03-002-0145-00	CAP ELEC GR 470uF 10V 20% 85C RAD ST5
<b>TRANSISTORS</b> Q4201,Q4205	05-001-0075-00	TRANSISTOR SS NPN HFE200-700 30MHz
Q4202,Q4206	05-001-0076-00	TRANSISTOR SS NPN HFE20 250MHz
Q4203,Q4204,Q4207	05-001-0081-00	TRANSISTOR SS PNP HFE 270-560 140MHz 2SA933ASTPS
Q4209,Q4210	05-001-0095-90	TRANSISTOR SS PNP HFE 120-200 200MHz TO-92 8550C
<b>RCA JACKS</b> M421,M422	15-003-0026-90	RCA JACK 4 Y-Y/Y-Y PCB MOUNT GOLD RS-454-03 (W/SHIELD)
<b>IC</b> U4201	01-012-0062-00	IC LOGIC 8-CHANNEL ANALOG MUX/DEMUX SMD 74HC4051D
D4201,D4202	04-001-0001-00	DIODE SW 4NS DO35 1N4148
<b>SMD RESISTORS</b> J4201,J4202	02-007-0089-00	RES SMD 0 OHM +/-5% 1/10W 0805

# PACKING DIAGRAM & PARTS LIST



Item	Database Part No.	Description	Qty.
1	24-003-0122-90	POLYBAG MANUAL	1
2	25-027-0001-90	FM WIRE ANTENNA L=2700mm W/Y-TERMINALS (RoHS)	1
2	25-027-0002-90	AM LOOP ANTENA W/STAND	1
2	15-015-0001-90	300 TO 75 OHM ANTENNA ADAPTER	1
2	24-004-1934-90	T744 OWNERS MANUAL GB/F/D/NL W/WEEE R.2	1
2	24-004-1935-90	T744 OWNERS MANUAL E/I/P/S W/WEEE R.2	1
3	24-004-1936-90	WARRANTY CARD (AH VERSION ONLY)	1
3	28-008-0001-90	REMOTE CONTROLLER NAD HTR-2A W/BATTERY P:V1.14 L:V1 Graphite Yellow LED	1
4	24-006-0716-90	POLYFOAM ENDCAP LEFT T744	1
5	24-006-0717-90	POLYFOAM ENDCAP RIGHT T744 R.1	1
6	24-003-0119-90	POLYBAG MAIN UNIT	1
7	24-005-0890-90	A3 WHITE PAPER 80G	1
8	24-003-0129-90	PROTECTIVE COVER T744	1
9	24-001-0629-90	MASTER CARTON BOX T744 R.1	1



# SERVICE MANUAL

**T 744**

**A/V Receiver**