

SERVICE MANUAL



T 163
AV Tuner Preamplifier

T 163
PHASE II & VC

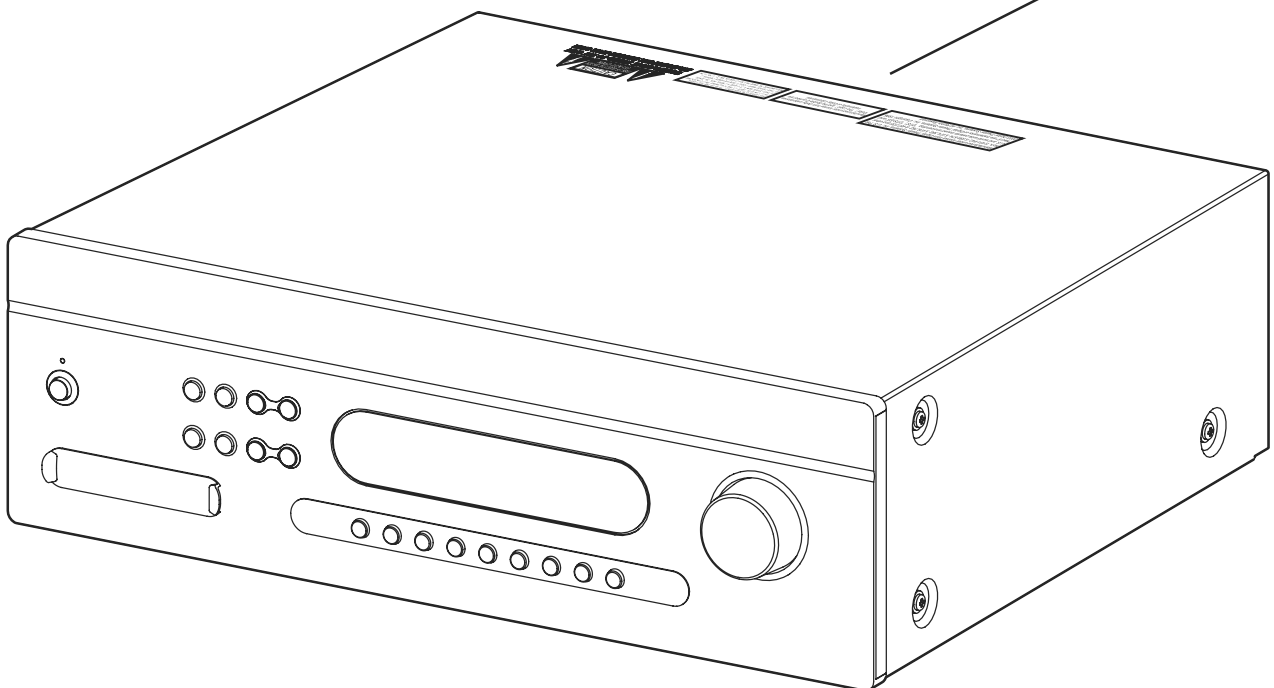
SAFETY INFORMATION

Manufactured under license from Digital Theater Systems, Inc. U.S. Pat. No's. 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,487,535 and other U.S. and world-wide patents issued and pending. "DTS", "DTS-ES" and "Neo:6" are trademarks of Digital Theater Systems, Inc. Copyright 1996, 2003 Digital Theater Systems, Inc. All Rights Reserved.

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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 OUVRI



SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses

CAUTION:

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

<u>Reference Designator</u>	<u>SCM</u>	<u>Part Number</u>	<u>Description</u>
F751 ⚠	370-015100-04(4)	33-0151009-00-88	FUSE 500mA 250VAC TIME-LAG 5X20mm 5T UL/CSA/VDE/SEMKO
F752 ⚠	370-011100-07(5)	33-0111009-00-88	FUSE 1A 250VAC TIME-LAG 5X20mm 5T UL/CSA/VDE/SEMKO

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

PRE AMPLIFIER SECTION

Rated distortion	(1 V@Pre-out, THD 20 Hz-20 kHz FL/C/FR)	≤ 0.1 %
	(1 V@Pre-out, THD 20 Hz-20 kHz SL/SR/BS)	≤ 0.1 %
Input Sensitivity	(1 V@Pre-out, 1 kHz)	390 ± 20 mV
S/N Ratio	(A-wtd, 1kHz, 1 V@Pre-out, FL/C/FR/SL/SR/BL)	≥ 80 dB
Frequency Response	(20 Hz - 20 kHz)	0 ± 1.0 dB
Channel Balance	(1 dB to -40 dB, 1 kHz)	≤ 2 dB
	(-41 dB to -50 dB, 1 kHz)	≤ 3 dB
Audio muting at 1 kHz		≥ 55 dB
Subwoofer out, 500 mV in	(THD at 2 V O/P, 100 Hz)	≤ 0.5 %
Crosstalk	(500 mV input, 1 V @Pre-out)	≥ 60 dB
Controls		
Bass	(at 500 mV in, 1 V @Pre-out, 100 Hz)	± 10 dB ± 2 dB
Treble	(at 500 mV in, 1 V @Pre-out, 10 kHz)	± 10 dB ± 2 dB

DOLBY DIGITAL SECTION

Channel Difference (FL ref. Track 30)		± 1.2 dB
Frequency Response at Dolby config.2	SL Track 46 200 - 20 kHz	± 0.8 dB
	SR Track 47 200 - 20 kHz	± 0.8 dB
	C Track 44 200 - 20 kHz	± 0.8 dB
Harmonic Distortion (1 V@Pre-out, Audio LPF, Dolby Congfig 1)	FL Track 65 997 Hz	≤ 0.08 %
	FR Track 67 997 Hz	≤ 0.08 %
	SL Track 68 997 Hz	≤ 0.08 %
	SR Track 69 997 Hz	≤ 0.08 %
	C Track 66 997 Hz	≤ 0.08 %
S/N Ratio	(TRACK 30 for O/P 100 mV, PAUSE) CCIR / ARM	≥ 65 dB
	Audio LPF	≥ 70 dB
	A-WTD	≥ 70 dB

DOLBY PRO LOGIC II SECTION

Frequency Response

I/P mode : L, R	: 1 V in, 100 mV @Pre-out, Ch L/R	40 Hz	0 ± 2.0 dB
		20 kHz	0 ± 2.0 dB
I/P mode : L=R	: 1 V in, 100 mV @Pre-out, Ch /L/R	40 Hz	0 ± 2.0 dB
		Ch C	20 kHz
			0 ± 2.0 dB
I/P mode : L=-R	: 1 V in, 100 mV @Pre-out, Ch SL/SR	40 Hz	0 ± 2.0 dB
		20 kHz	0 ± 2.0 dB
S/N Ratio (200 mV in, 100 mV @Pre-out, A-WTD w/ 1 k termination)			
I/P mode : L, R	: 1 kHz, Ch L/R		≥ 65 dB
I/P mode : L=R	: 1 kHz, Ch C		≥ 65 dB
I/P mode : L=-R	: 1 kHz, Ch SL/SR		≥ 65 dB
THD (2.2 V in, 100 mV @Pre-out, w/ 80 kHz LPF, 1 kHz)			≤ 0.2 %

DTS SECTION

Output Level (Vol 0 dB) : FL/FR/C/SL/SR	Track 6 1 kHz	70 ± 10 mV
Channel Difference (FL ref): FL/FR/C/SL/SR	Track 6 1 kHz	± 1.5 dB
Harmonic Distortion (Audio Filter) : FL/FR/C/SL/SR	Track 10-14 1 kHz	≤ 0.08 %
Frequency Response (20 Hz to 20 kHz)	Track 26-30	+2/-1.5
Subwoofer Output Level 1 kHz ref at pre-out (FL)	Play Track 10, charge to 15	12.5 ± 1.5 dB

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)	≤ 30 dBμV
S/N Ratio (5 mV in)	≥ 38 dB
THD (5 mV in)	≤ 3 %
IF Rejection (450 kHz)	≥ 36 dB
Image Rejection (F+2xIF)	≥ 28 dB
Selectivity	≥ 17 dB
Output	200 ± 20 mV
Loop sensitivity (20 dB S/N)	
999/1000 kHz	≤ 66 dB
603/600 kHz	≤ 66 dB
1404/1400 kHz	≤ 66 dB
Frequency Response (100 - 2.3 kHz, 5 mV)	± 6 dB

FM TUNER SECTION

*C

*AH

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

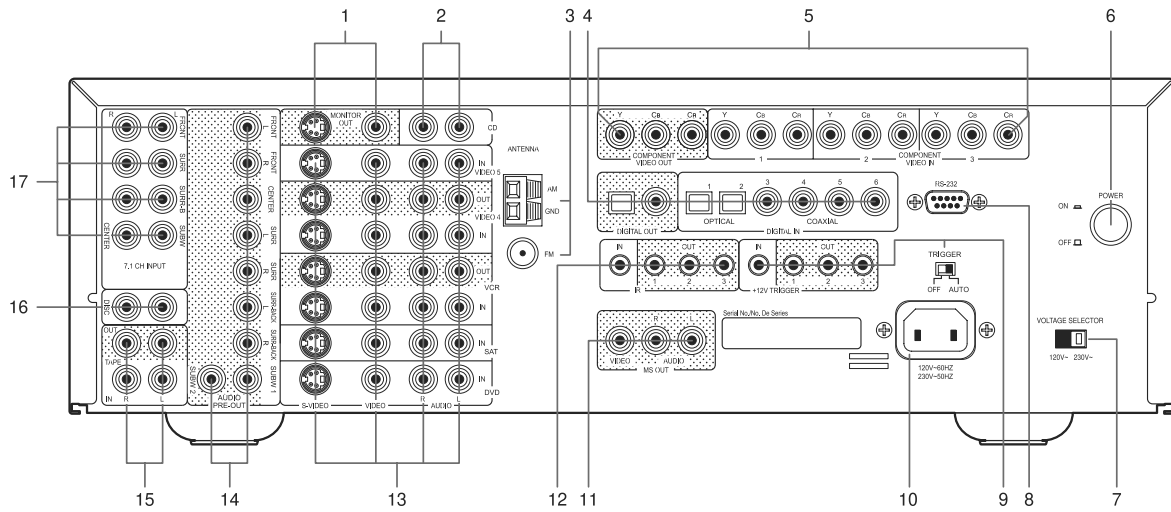
Usable sensitivity (98 MHz)		≤ 15 dBμ	≤ 15 dBμv
S/N Ratio (60 dB, IHF wtd)	Mono	≥ 63 dB	≥ 63 dB
	Stereo	≥ 63 dB	≥ 63 dB
Frequency Response (20 Hz - 15 kHz, 60 dB)		0 ± 1.5 dB	0 ± 1.5 dB
Channel Separation (60 dBμ)	100 Hz	≥ 30 dB	≥ 30 dB
	1 k	≥ 38 dB	≥ 38 dB
	10 kHz	≥ 30 dB	≥ 30 dB
Alternate Channel Selectivity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

PHYSICAL SPECIFICATIONS

Dimensions (Width x Height x Depth)	435 x 150 x 399 mm
Net Weight	8 Kg (17.60 lbs)
Shipping Weight	10.2 Kg (22.40 lbs)

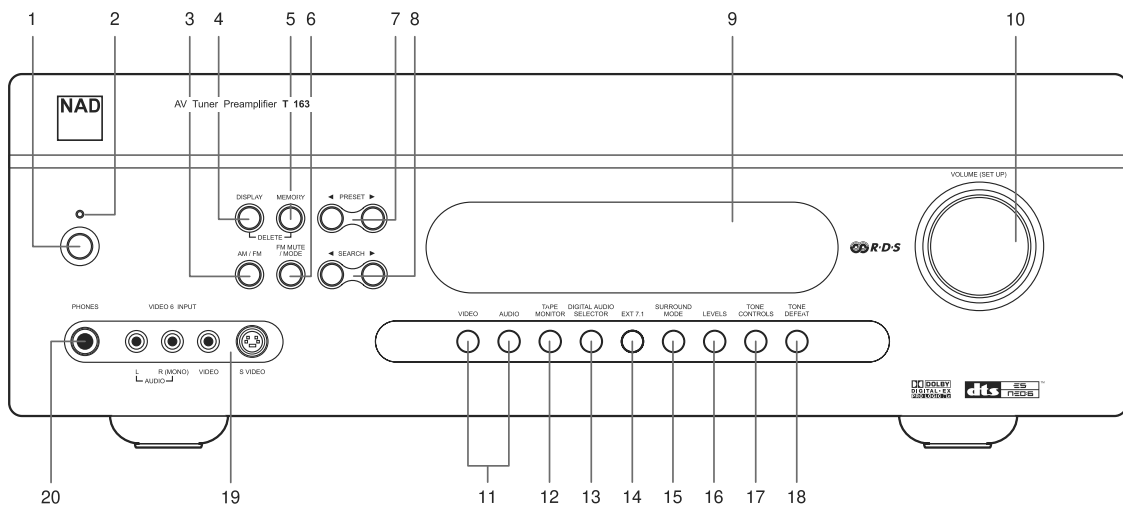
REAR PANEL / FRONT PANEL VIEW

REAR PANEL



- | | |
|---|--------------------------------------|
| 1. MONITOR OUT | 9. AUTO TRIGGER SWITCH |
| 2. CD INPUT | 10. AC POWER INLET |
| 3. FM & AM ANTENNA | 11. MS OUT (MULTISOURCE OUT) |
| 4. DIGITAL AUDIO INPUT & DIGITAL AUDIO OUTPUT | 12. IR INPUT & OUTPUT |
| 5. COMPONENT VIDEO IN & COMPONENT VIDEO OUT | 13. DVD, SAT, VCR, VIDEO 4 & VIDEO 5 |
| 6. POWER SWITCH | 14. PRE-OUTS / SUBWOOFER OUT |
| 7. 120V / 230V VOLTAGE SELECTOR | 15. TAPE INPUT & OUTPUT |
| 8. RS-232 | 16. DISC INPUT |
| | 17. 7.1 CH. INPUTS |

FRONT PANEL



- | | | |
|---------------------|----------------------------|-------------------|
| 1. STANDBY SWITCH | 8. SEARCH DOWN / UP | 15. SURROUND MODE |
| 2. STANDBY LED | 9. VFL DISPLAY | 16. LEVELS |
| 3. AM / FM | 10. VOLUME (SETUP) | 17. TONE CONTROLS |
| 4. DISPLAY | 11. VIDEO & AUDIO | 18. TONE DEFEAT |
| 5. MEMORY | 12. TAPE MONITOR | 19. VIDEO 6 INPUT |
| 6. FM MUTE / MODE | 13. DIGITAL AUDIO SELECTOR | 20. PHONES |
| 7. PRESET DOWN / UP | 14. EXT. 7.1 | |

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**.

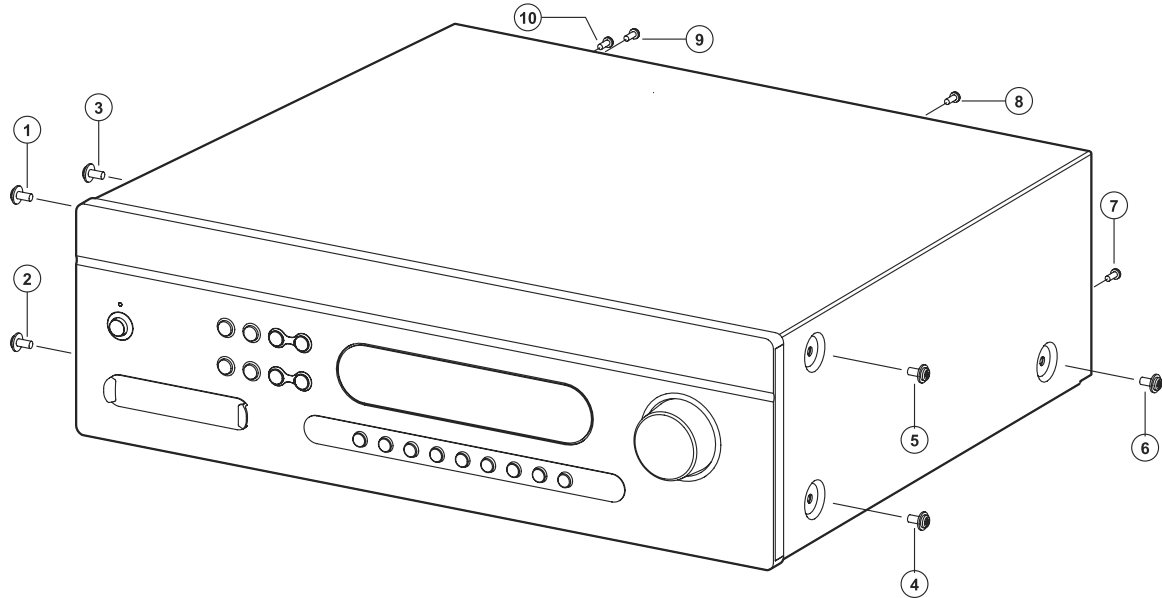


Figure No. 1

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**.

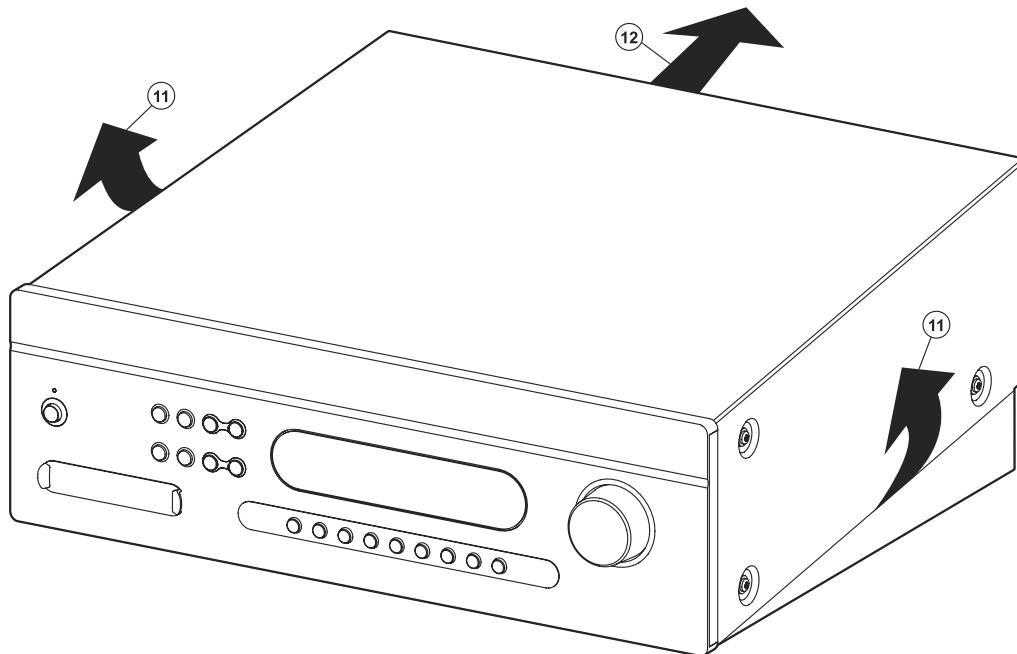
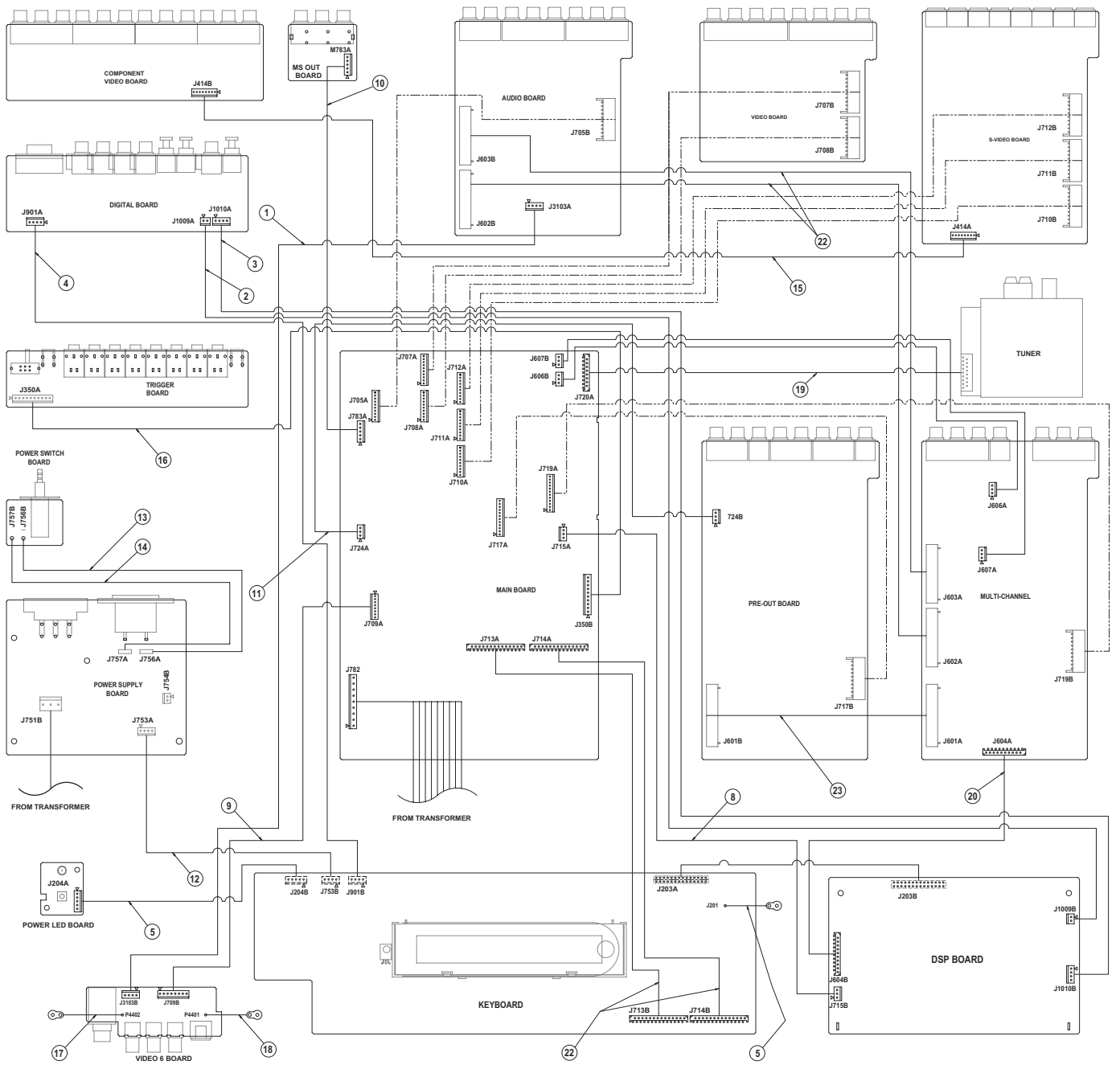


Figure No. 2

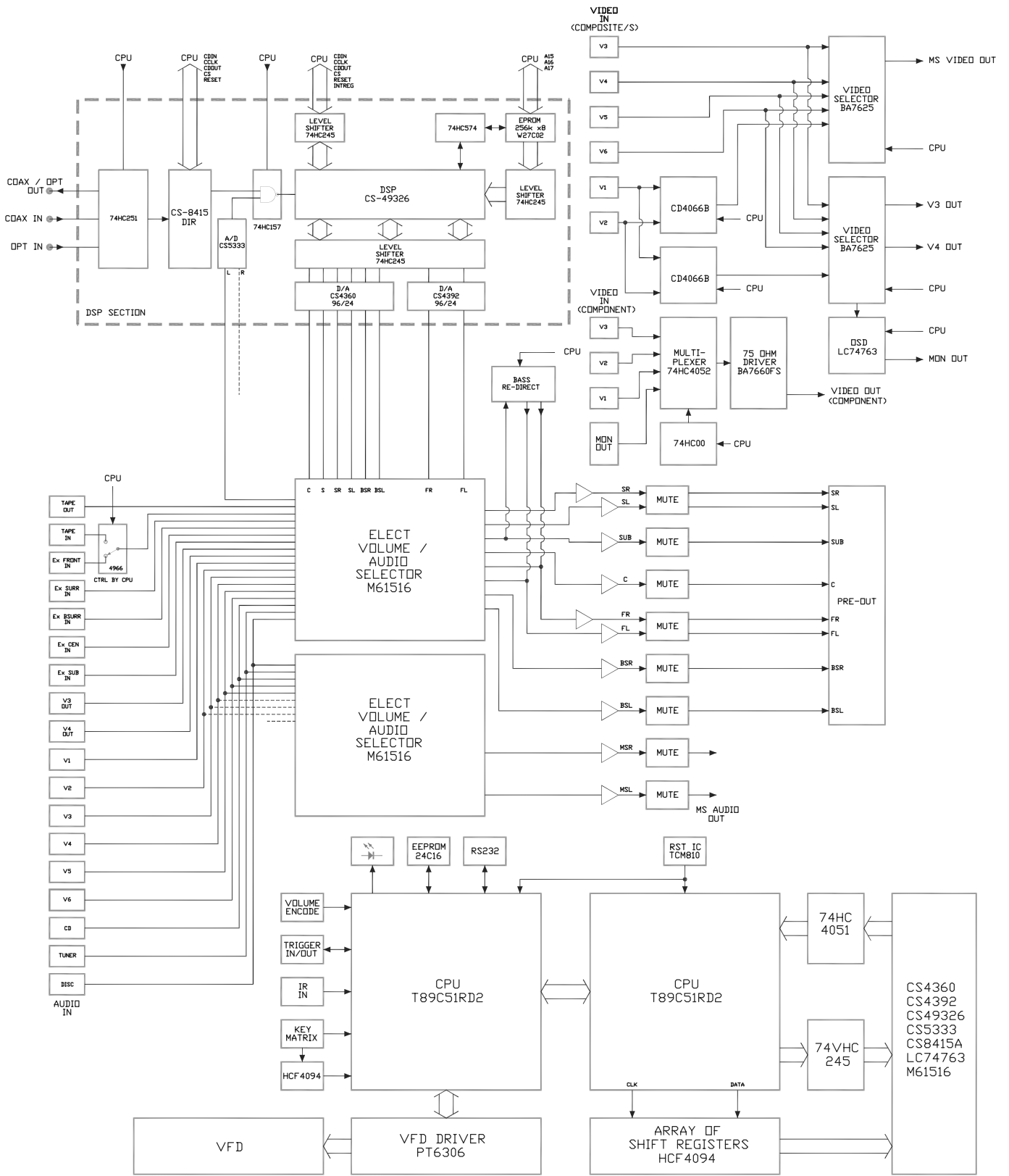
WIRING DIAGRAM



T163 PHASE II WIRE DIAGRAM REV.A DATE 12-7-2005

ITEM	PART NO.	DESCRIPTION	REMARK
1	276-042613-08	CABLE ASSY 4 WAYS AWG=26 2.5P L=450mm YB03091104-02	AUDIO BD-J3103A
2	276-022613-32	CABLE ASSY 2 WAYS AWG26X1C UL1533 L=360mm (UL LABEL)	DIGITAL BD-J1009A
3	276-042613-07	CABLE ASSY 4 WAYS AWG=26 2.5P UL2468 L=400mm	DIGITAL BD-J1010A
4	276-042613-10	CABLE ASSY 4 WAYS AWG=26 2.5P UL2877 L=430mm	DIGITAL BD-J901A
5	276-011843-01	CABLE ASSY 1 WAY AWG18 UL1007 BLACK L=100mm W/ RING TERMINAL	KEYBOARD-J201
6	276-052613-08	CABLE ASSY 5 WAYS #26 2.5P UL1007 L=160mm	LED BD-J204A
7	276-032613-18	CABLE ASSY 3 WAYS AWG=26 2.5P L=110mm	MAIN BD-J606B, J607B
8	276-032613-29	CABLE ASSY 3 WAYS AWG26X2C UL2547 L=210mm (UL LABEL)	MAIN BD-J715A
9	276-082613-22	CABLE ASSY 8 WAYS AWG=26X3C L=480mm	MAIN BD-J709A
10	276-052613-06	CABLE ASSY 5 WAYS AWG=26 2.5P UL2468 L=120MM	MS BD-M783B
11	276-032613-06	CABLE ASSY 3 WAYS AWG=26 2.5P UL2854 L=250mm	PO BD-J724B
12	276-042613-07	CABLE ASSY 4 WAYS AWG=26 2.5P UL2468 L=400mm	PSU BD-J753A
13	276-011643-04	CABLE ASSY 1 WAY AWG=16 UL1672 BROWN L=160mm	PW BD-J756A
14	276-011643-05	CABLE ASSY 1 WAY AWG=16 UL1672 BLUE L=160mm	PW BD-J757A
15	276-082613-20	CABLE ASSY 8 WAYS AWG=26 2.5P UL1007 L=380mm	SV BD-J414A
16	276-102613-12	CABLE ASSY 10 WAYS AWG=26 2.5P UL1007 L=540mm (UL LABEL)	TR BD-J350A
17	276-011643-06	CABLE ASSY 1 WAY AWG16 UL1007 BLACK L=70mm W/ RING TERMINAL	V6 BD-P4402
18	276-011843-01	CABLE ASSY 1 WAY AWG18 UL1007 BLACK L=100mm W/ RING TERMINAL	V6 BD-P4401
19	238-172829-00	FFC CABLE 17 PINS P1.25 UL2896 L=290mm W/ SHIELD	J720C
20	238-200012-00	FFC CABLE 20 PINS P1.25 L=120mm W/ SHIELD	J604C
21	238-280016-00	FFC CABLE 28 PIN P1.25 L=160mm W/ SHIELD	J602C,J603C
22	238-280120-00	FFC CABLE 28 PINS P1.25 L=200mm W/SHIELD	J713C,J714C
23	238-302807-00	FFC CABEL 30 PINS P1.25 L=70mm	J601C

BLOCK DIAGRAM



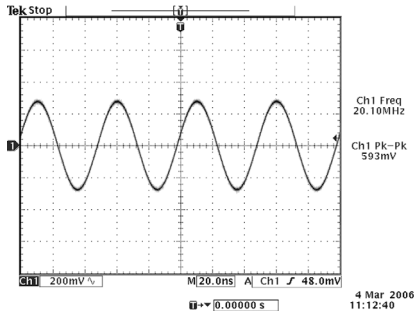
T163II Block Diagram
Issue : 01

SPECIAL FUNCTION

FEATURE	KEYS PRESS ON FRONT PANEL
RESET FOR AH VERSION RESET FOR C VERSION NTSC / PAL SELECTION VFD ALL DISPLAY AM FREQ. STEP COLOUR BAR GENERATOR (VC-version units only)	VIDEO + TONE DEFEAT VIDEO + TONE CONTROLS VIDEO + MEMORY AUDIO + TAPE MONITOR AM/FM + FM MUTE AUDIO + DIGITAL AUDIO (all monitor outputs will show the generated colour bar)

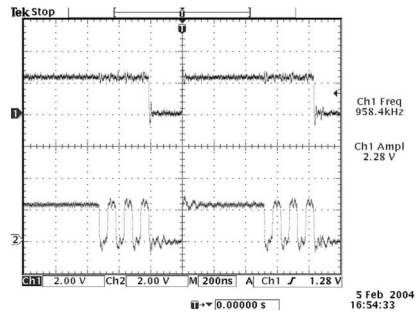
DETAILS & WAVEFORMS ON SYSTEM TEST & DEBUGGING

T89C51RD2 (U202) main clock is at 20MHz (X202)

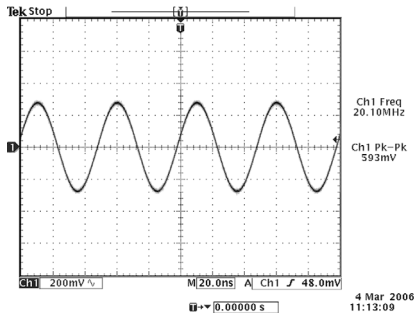


UPPER - OUTPUT ENABLE (pin 24) of EPROM (W27C02) when changing SURROUND MODES

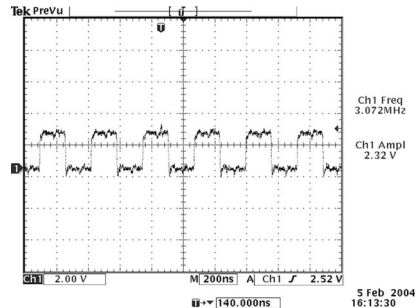
LOWER - CHIP ENABLE (pin 22) of EPROM (W27C02) when changing SURROUND MODES



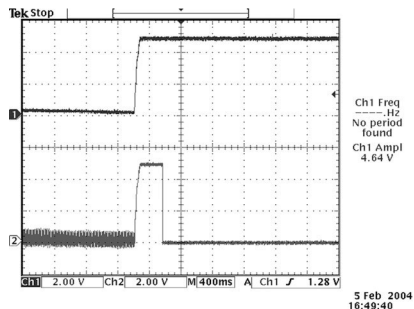
T89C51RD2 (U201) main clock is at 20MHz (X201)



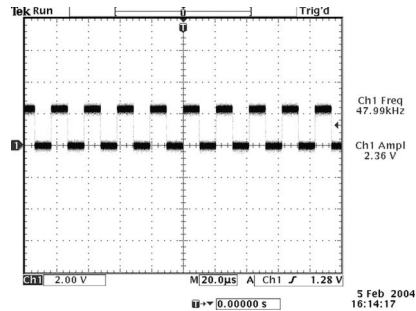
SCLK (pin 43 of CS49326)



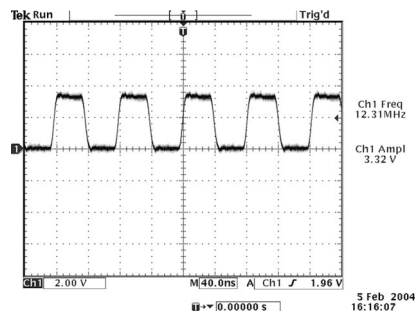
UPPER - +5V supply to KEYBOARD when power up
LOWER - RESET line (TCM810LENB713) when power up



LRCLK (pin 42 of CS49326)

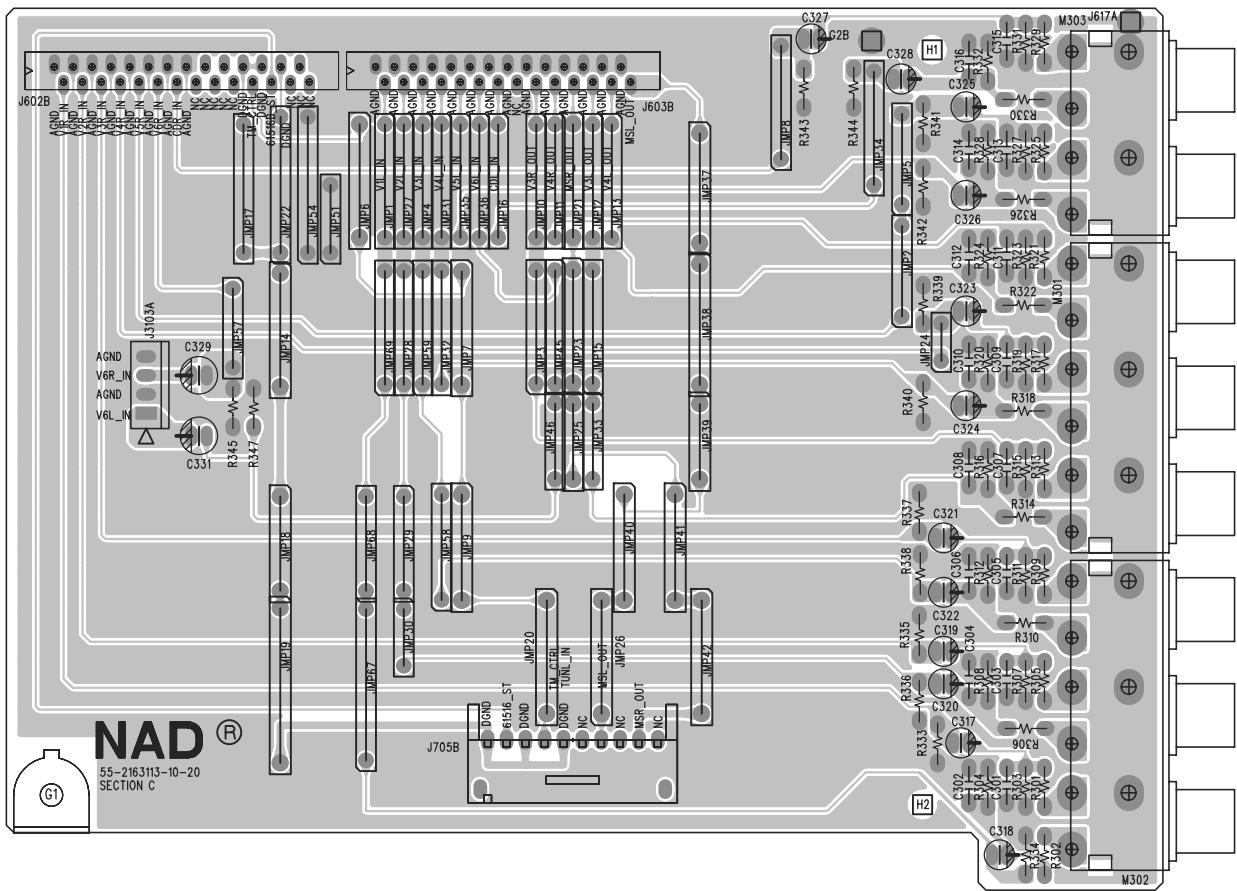


MCLK (pin 30 of CS49326)

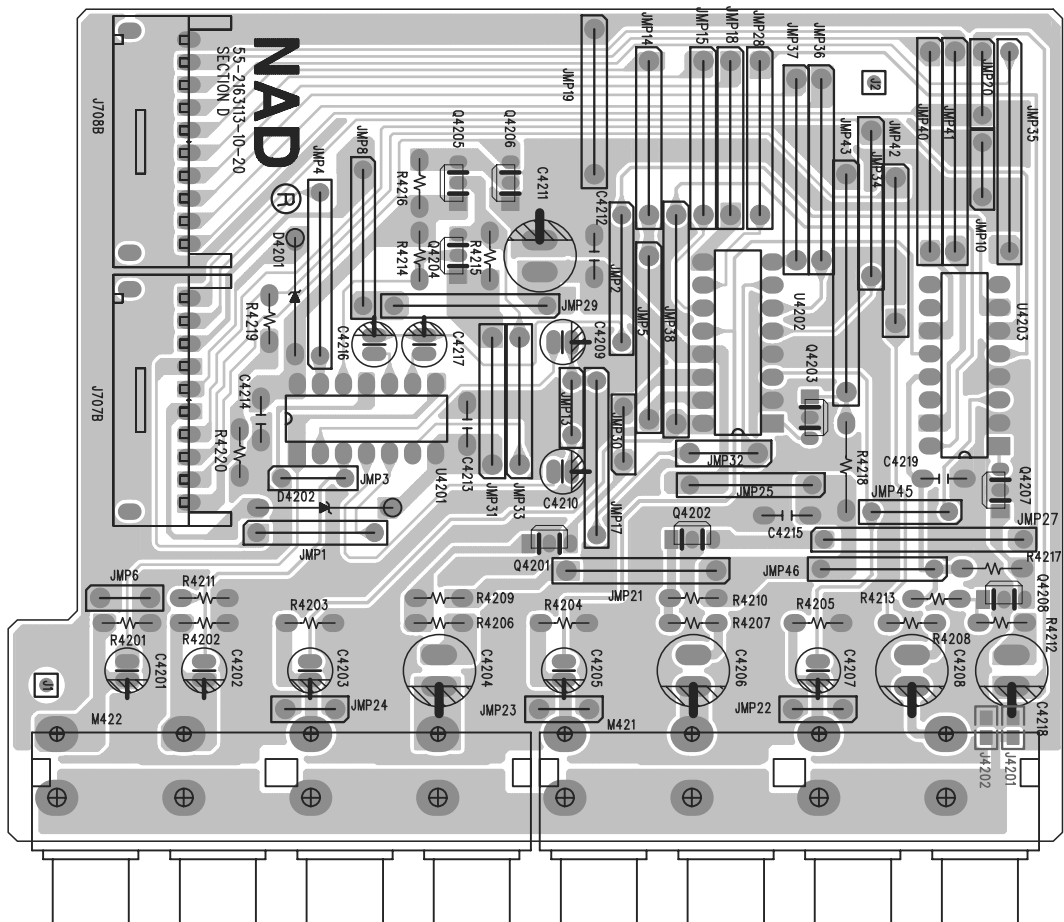


NOTE: The waveforms are based on software version V2.13V.

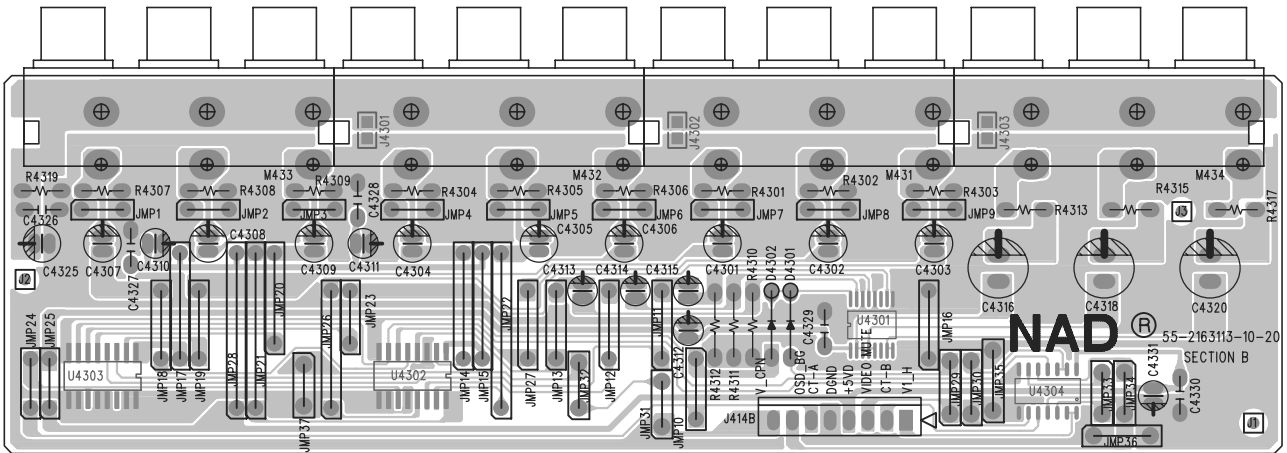
PCB LAYOUT AUDIO BOARD



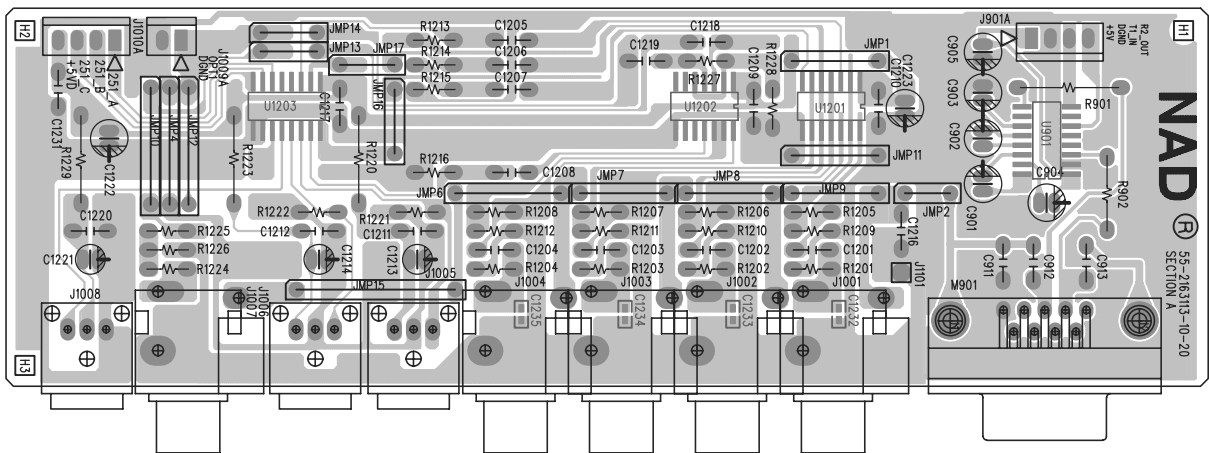
COMPOSITE VIDEO BOARD



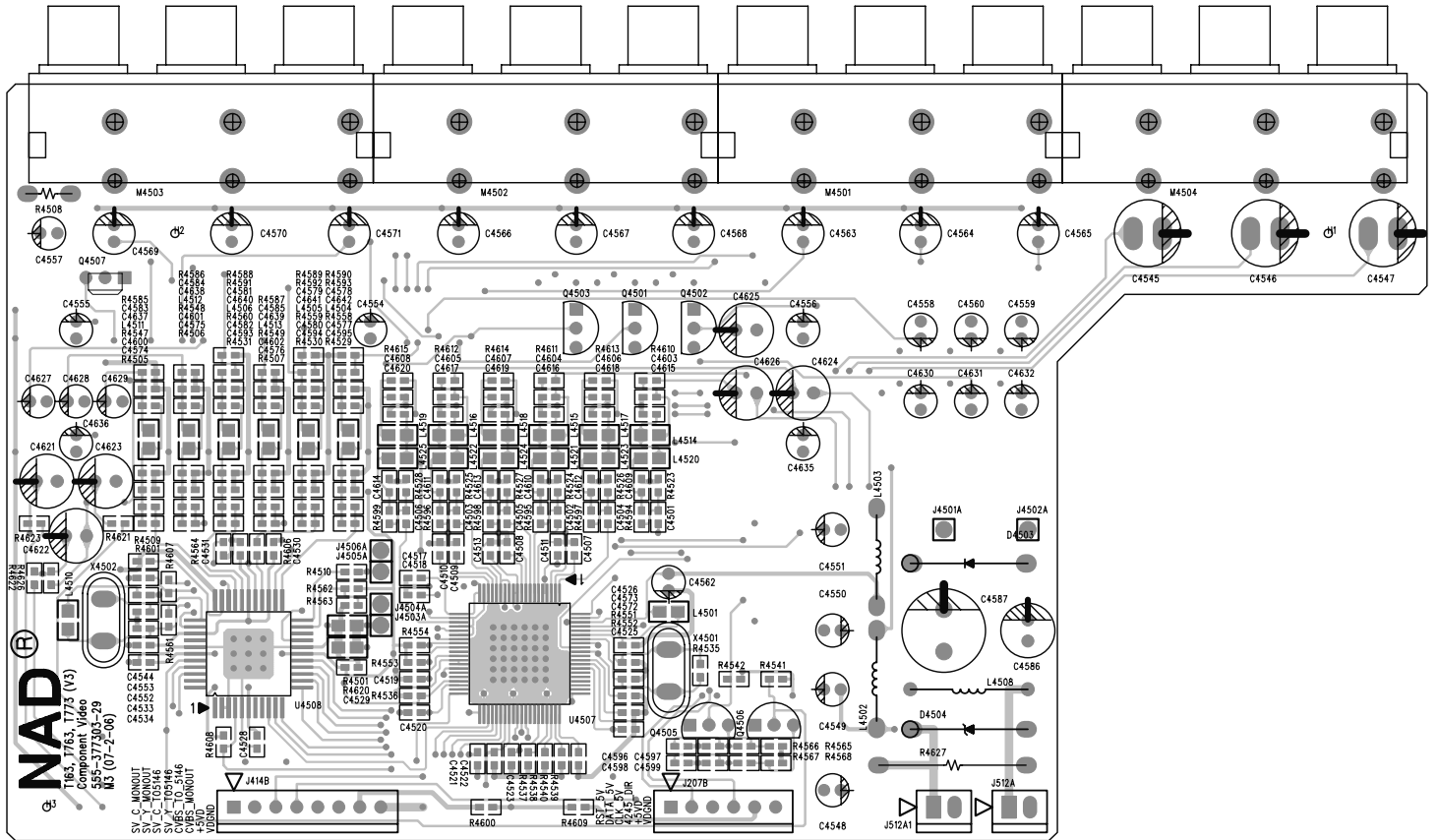
COMPONENT VIDEO BOARD



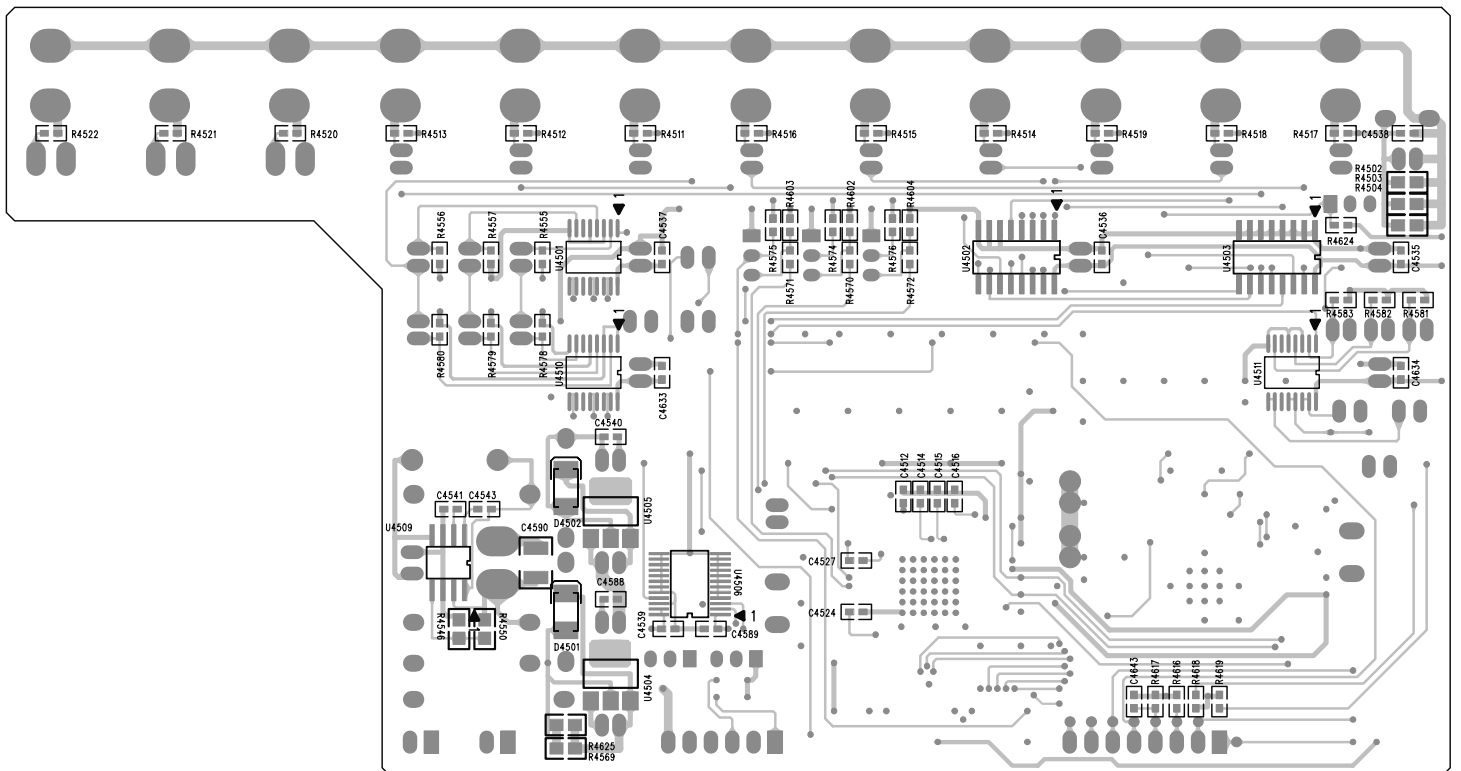
DIGITAL BOARD



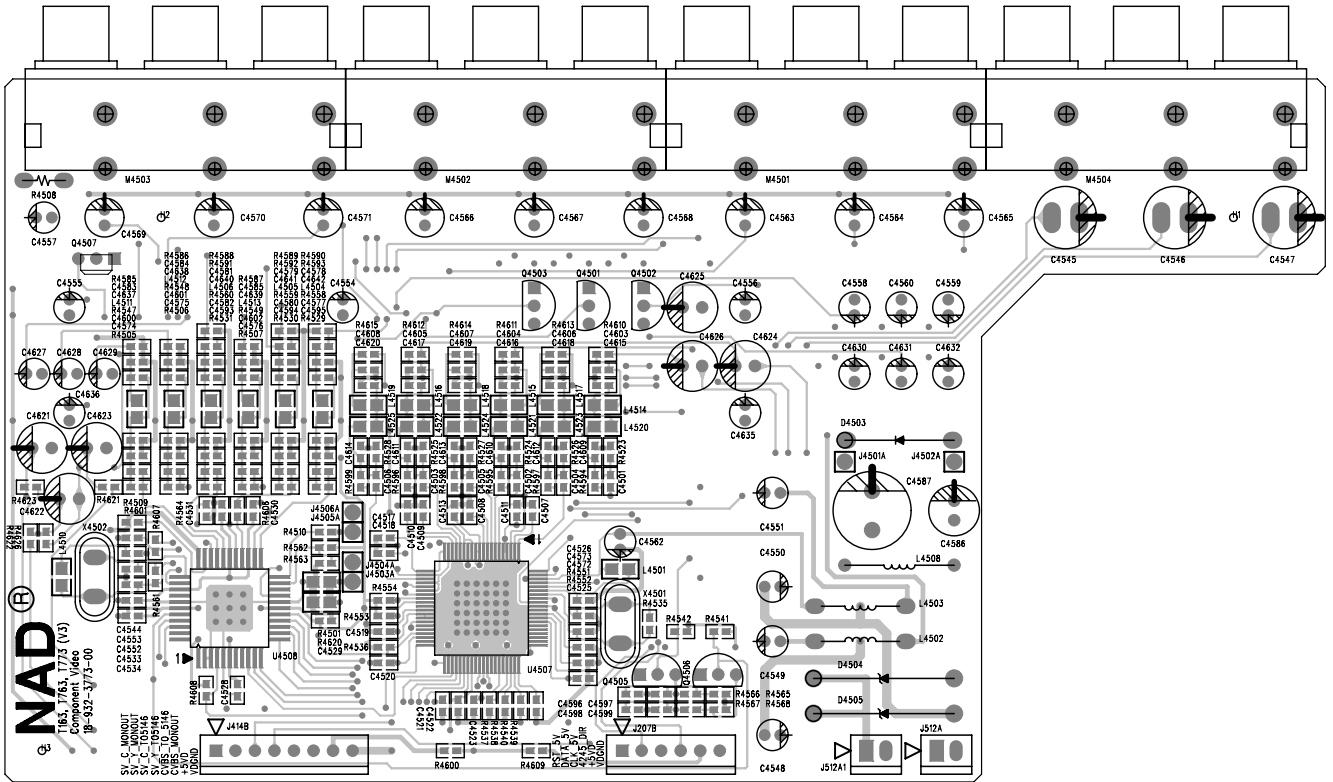
COMPONENT VIDEO BOARD - COMPONENT SIDE



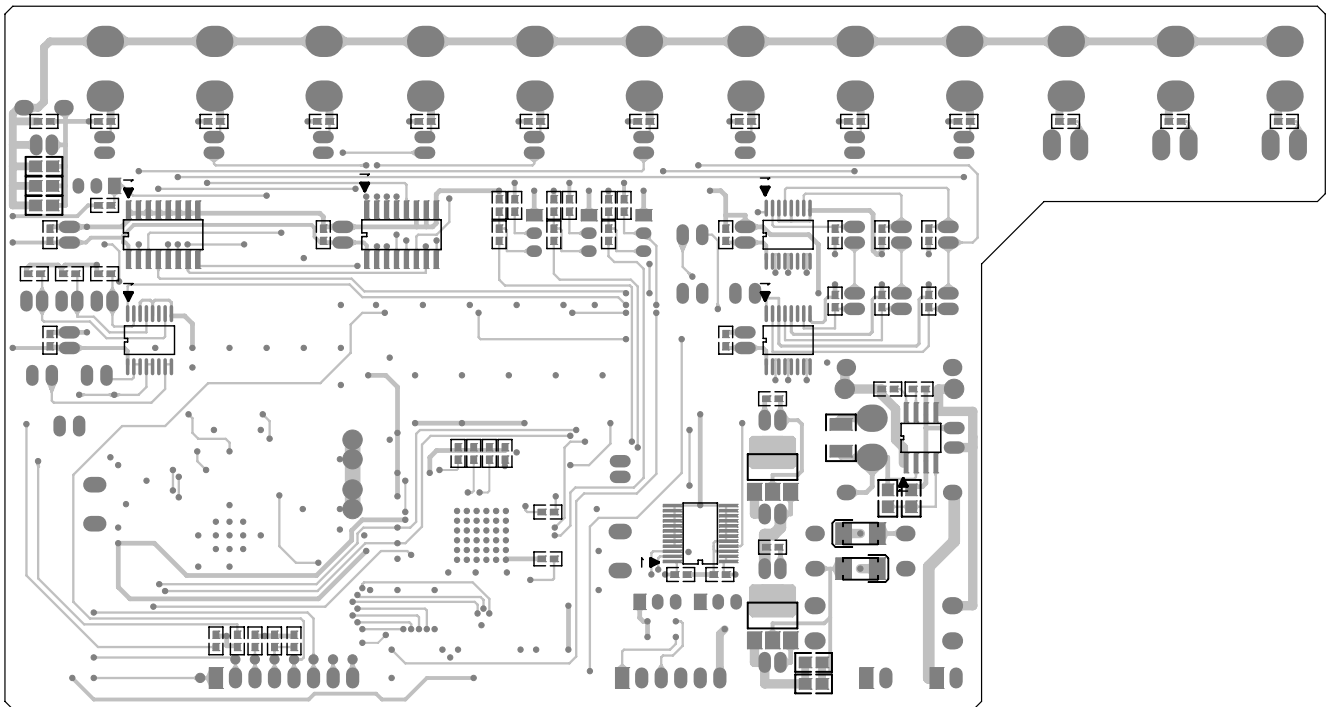
COMPONENT VIDEO BOARD - COPPER SIDE



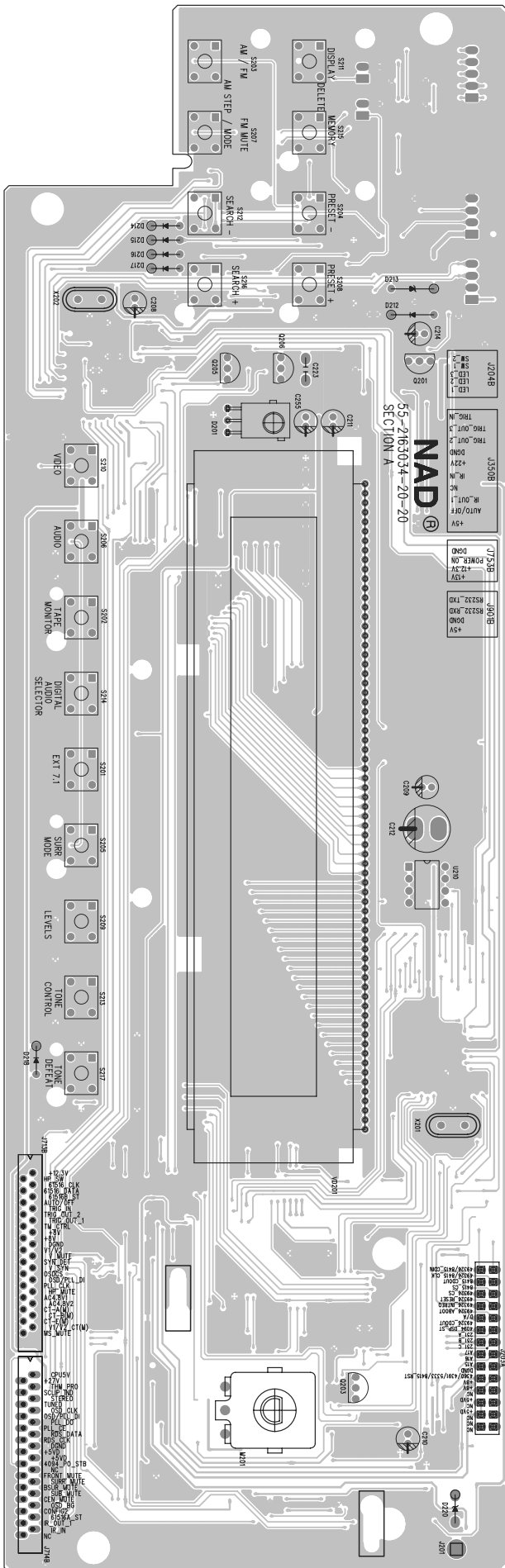
COMPONENT VIDEO BOARD revision 3 - COMPONENT SIDE



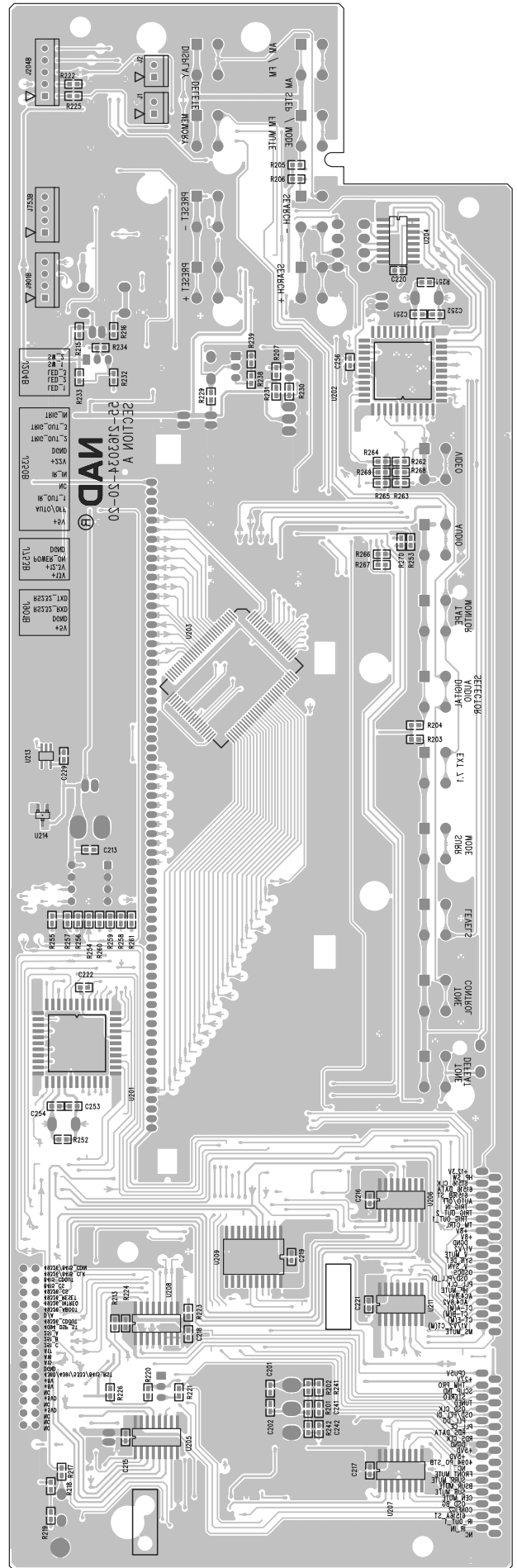
COMPONENT VIDEO BOARD revision 3 - COPPER SIDE



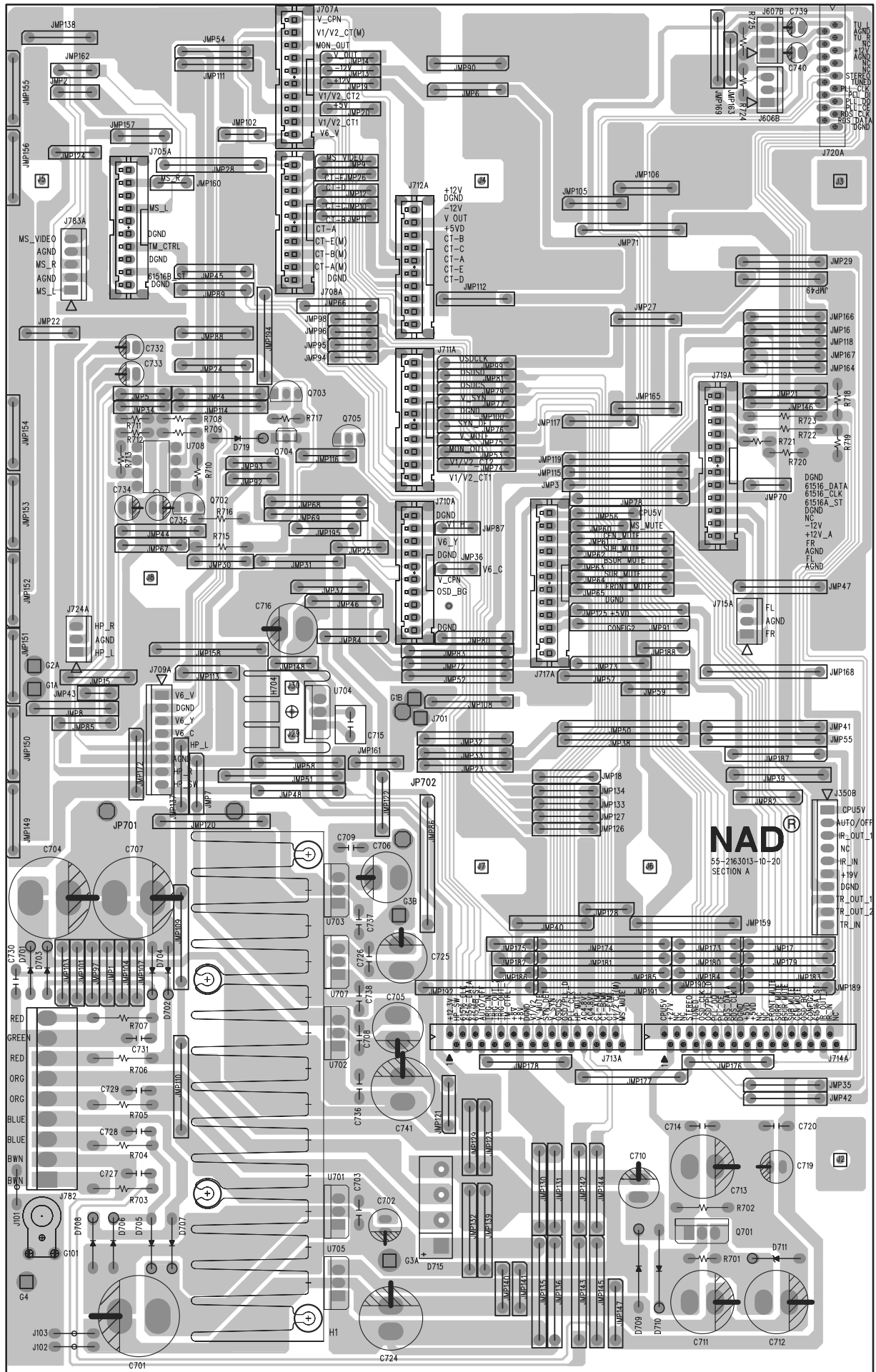
KEY BOARD / LED BOARD - COMPONENT SIDE



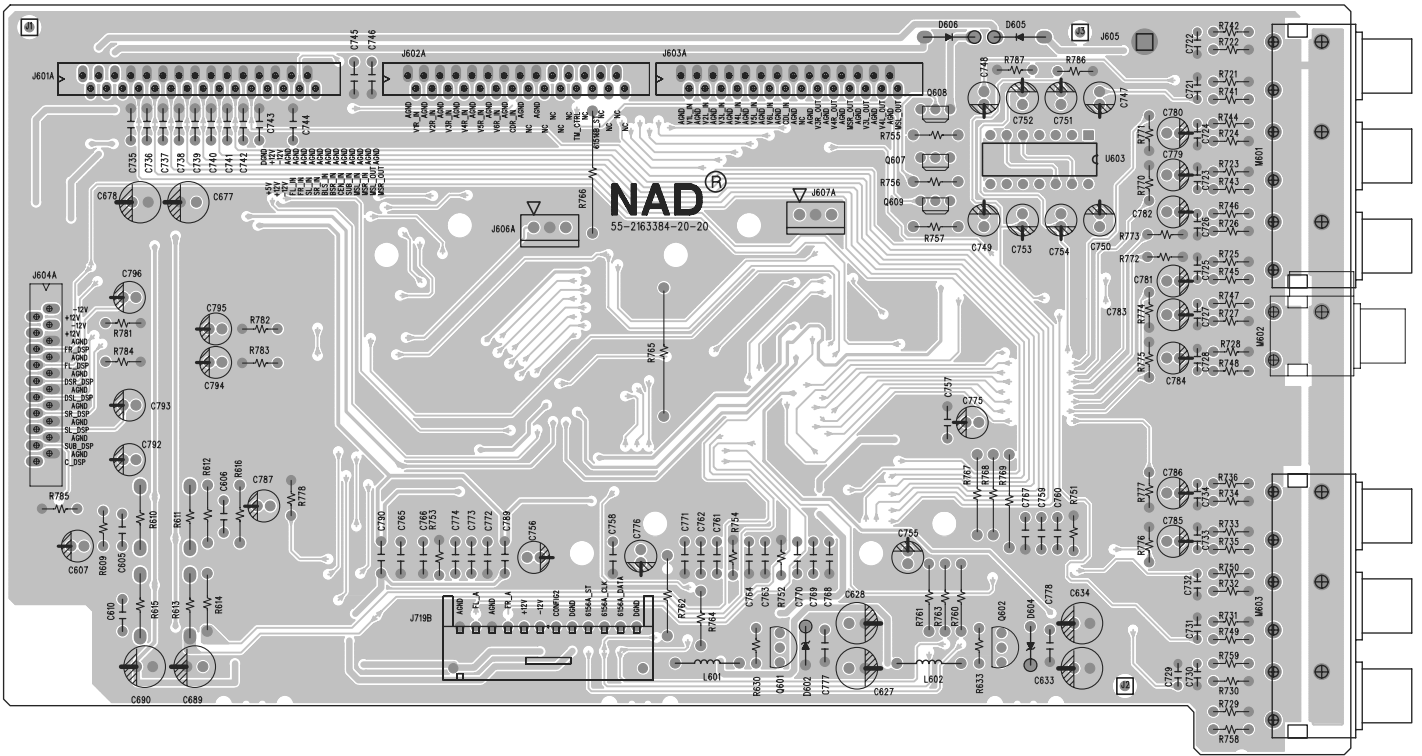
KEY BOARD / LED BOARD - COPPER SIDE



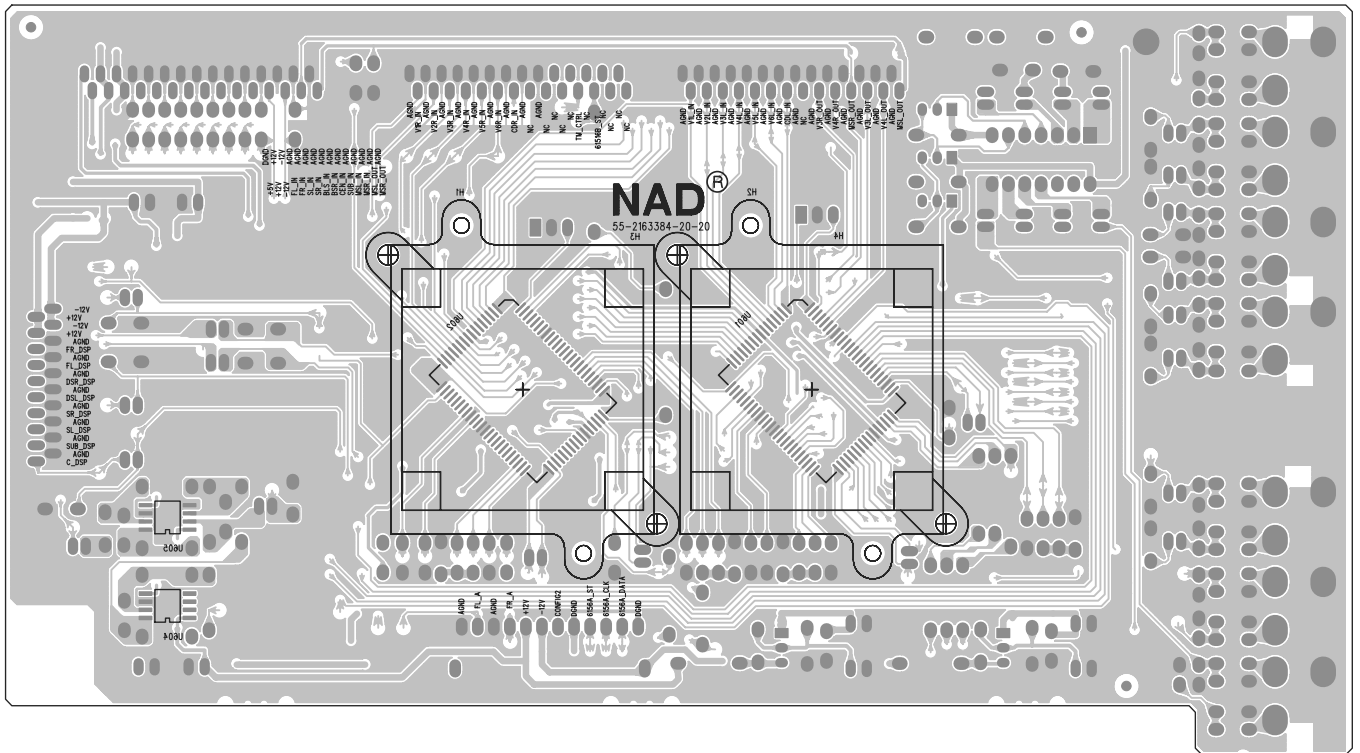
MAIN BOARD



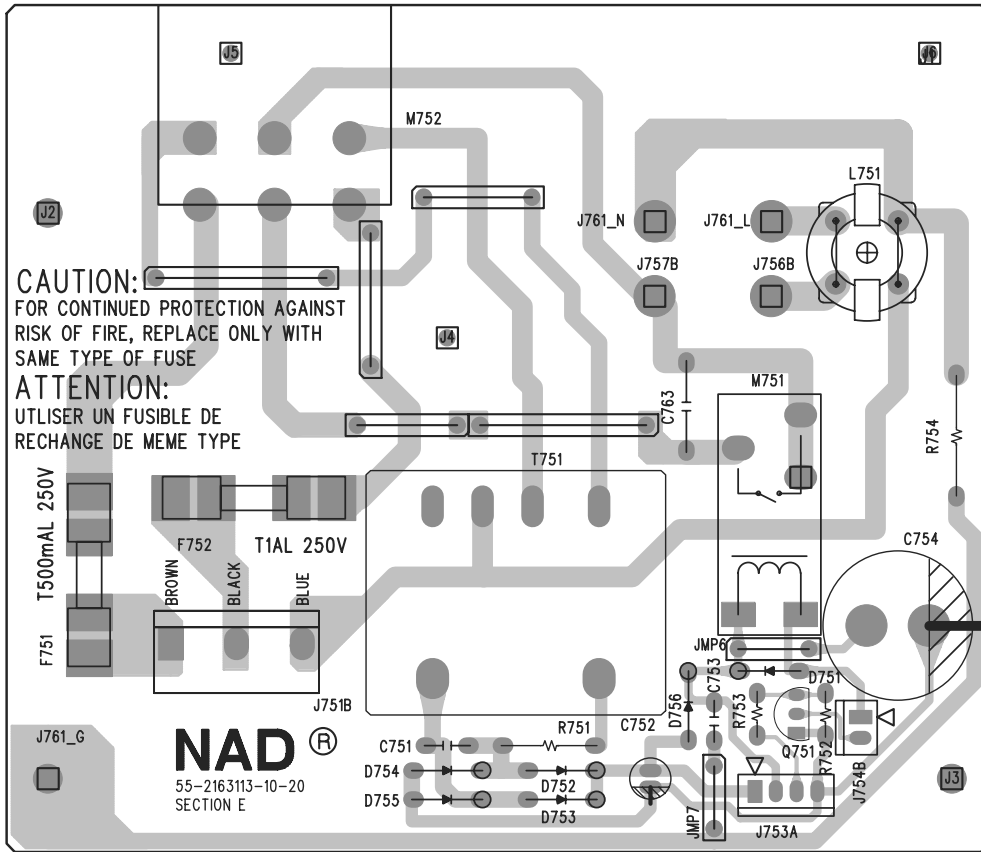
MULTI-CHANNEL BOARD - COMPONENT SIDE



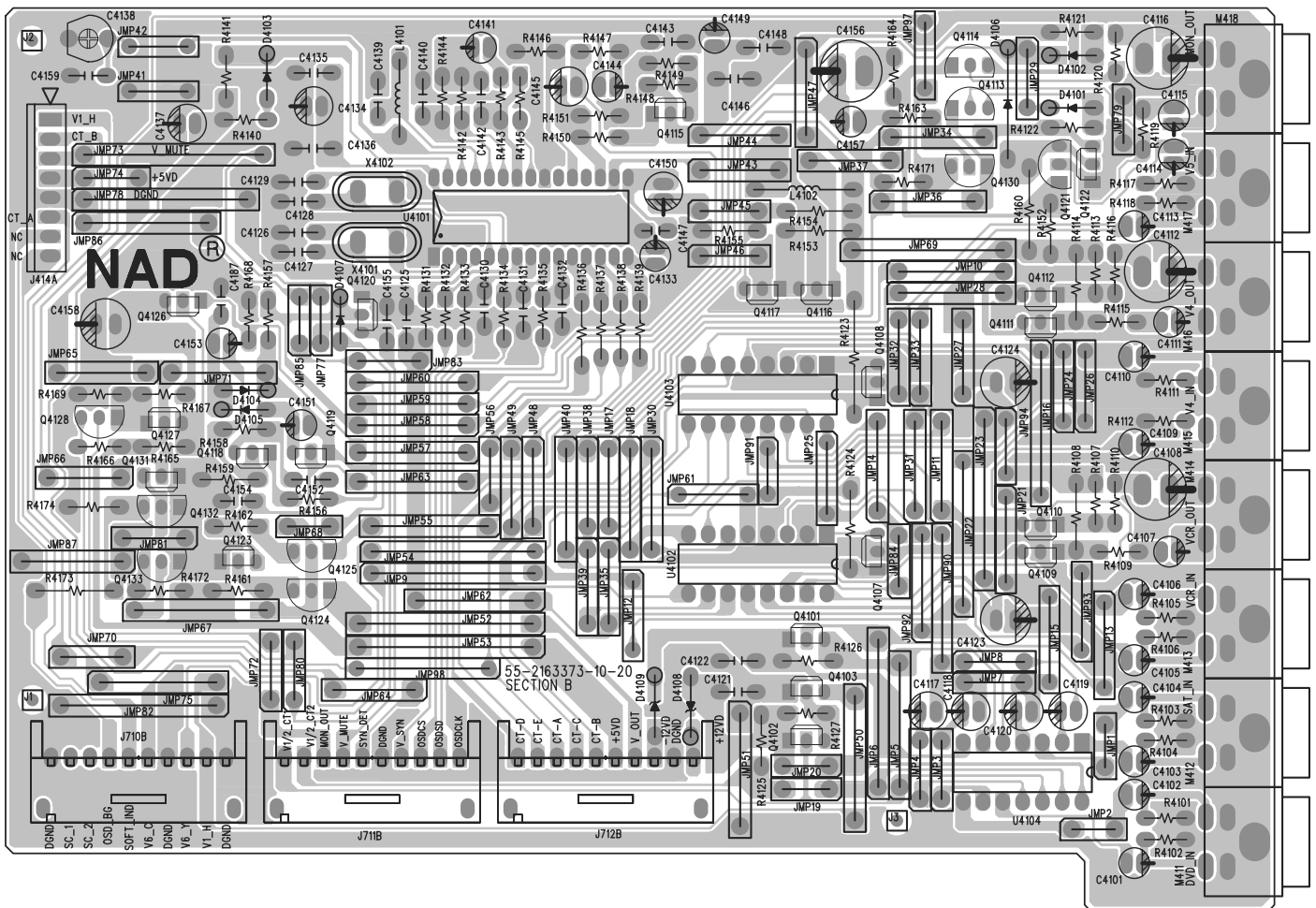
MULTI-CHANNEL BOARD - COPPER SIDE



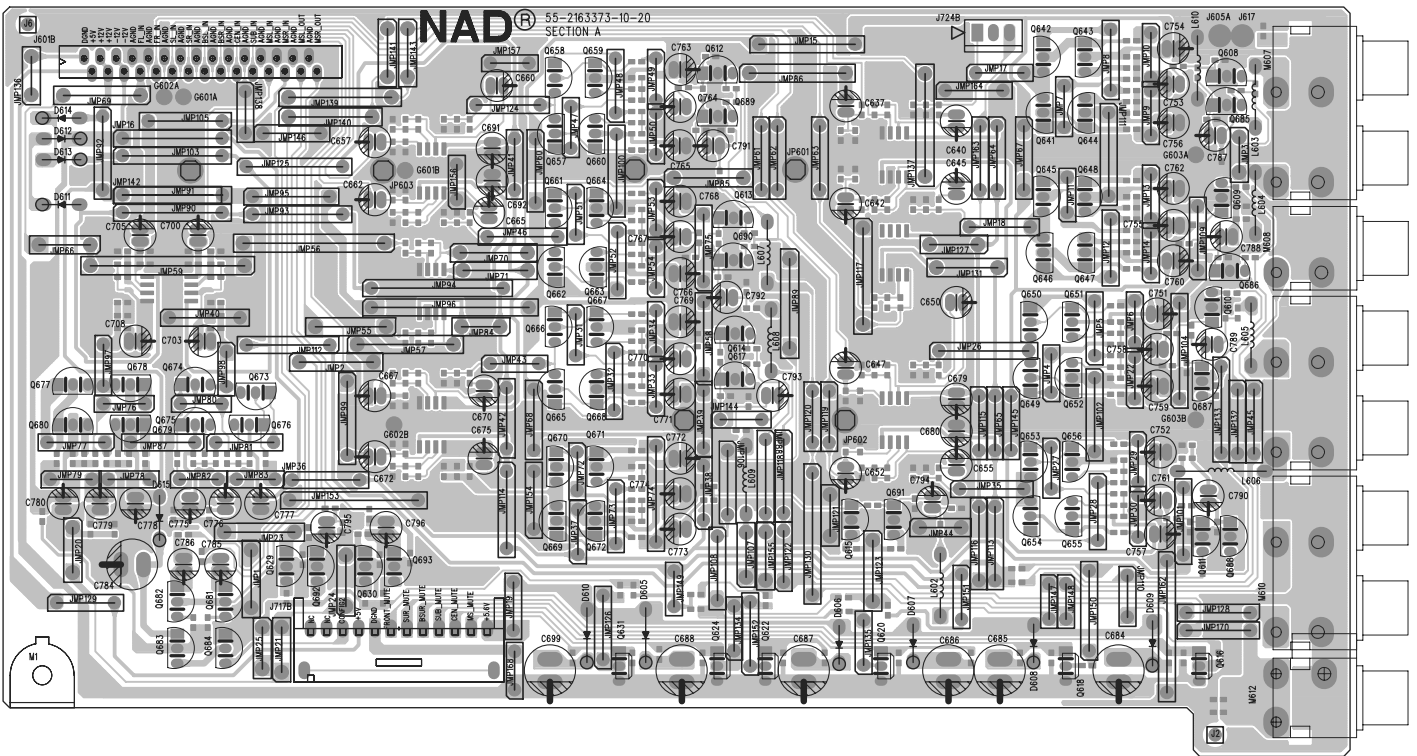
POWER SUPPLY (STANDBY)



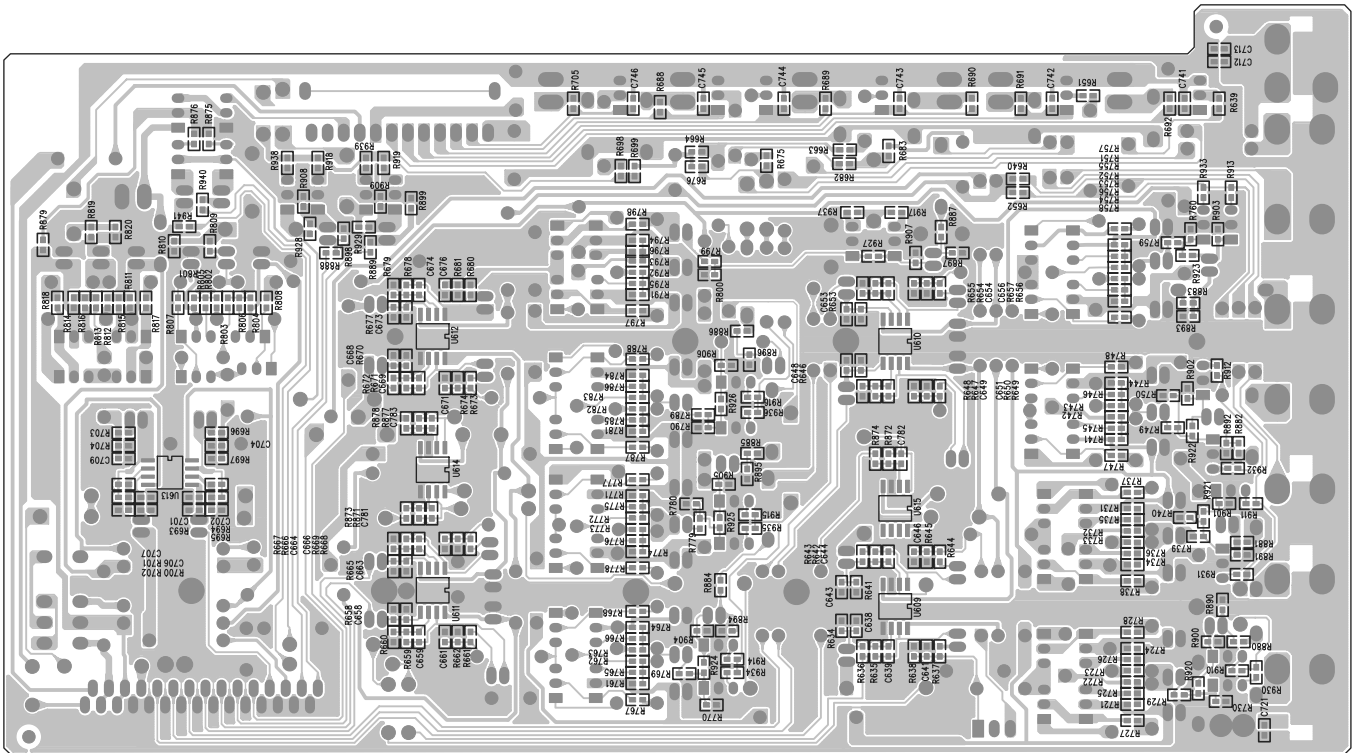
S-VIDEO BOARD



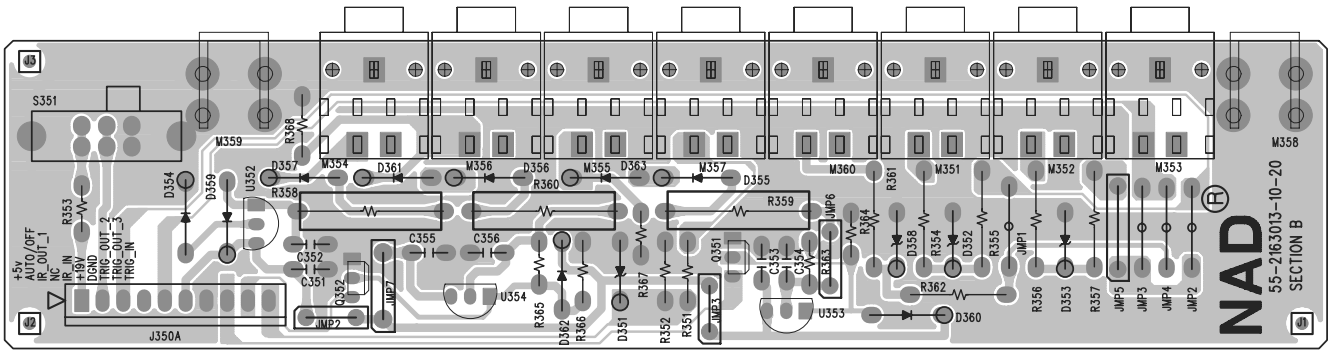
PRE-OUT BOARD - COMPONENT SIDE



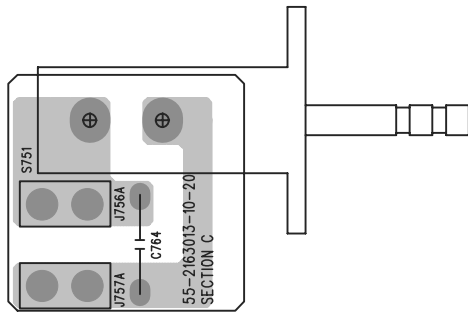
PRE-OUT BOARD - COPPER SIDE



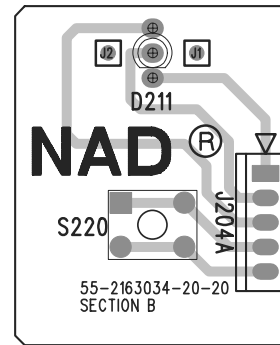
TRIGGER BOARD



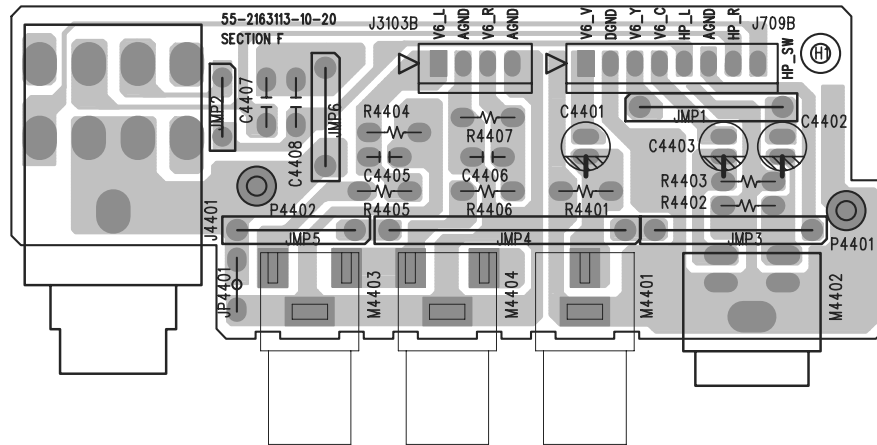
POWER SWITCH



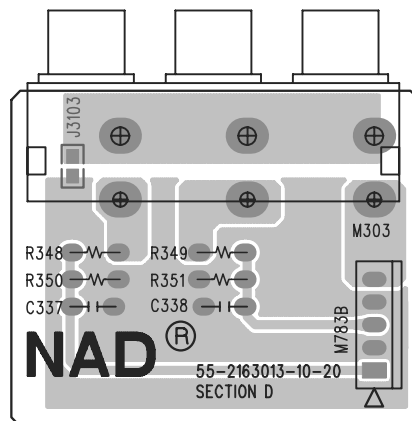
LED BOARD



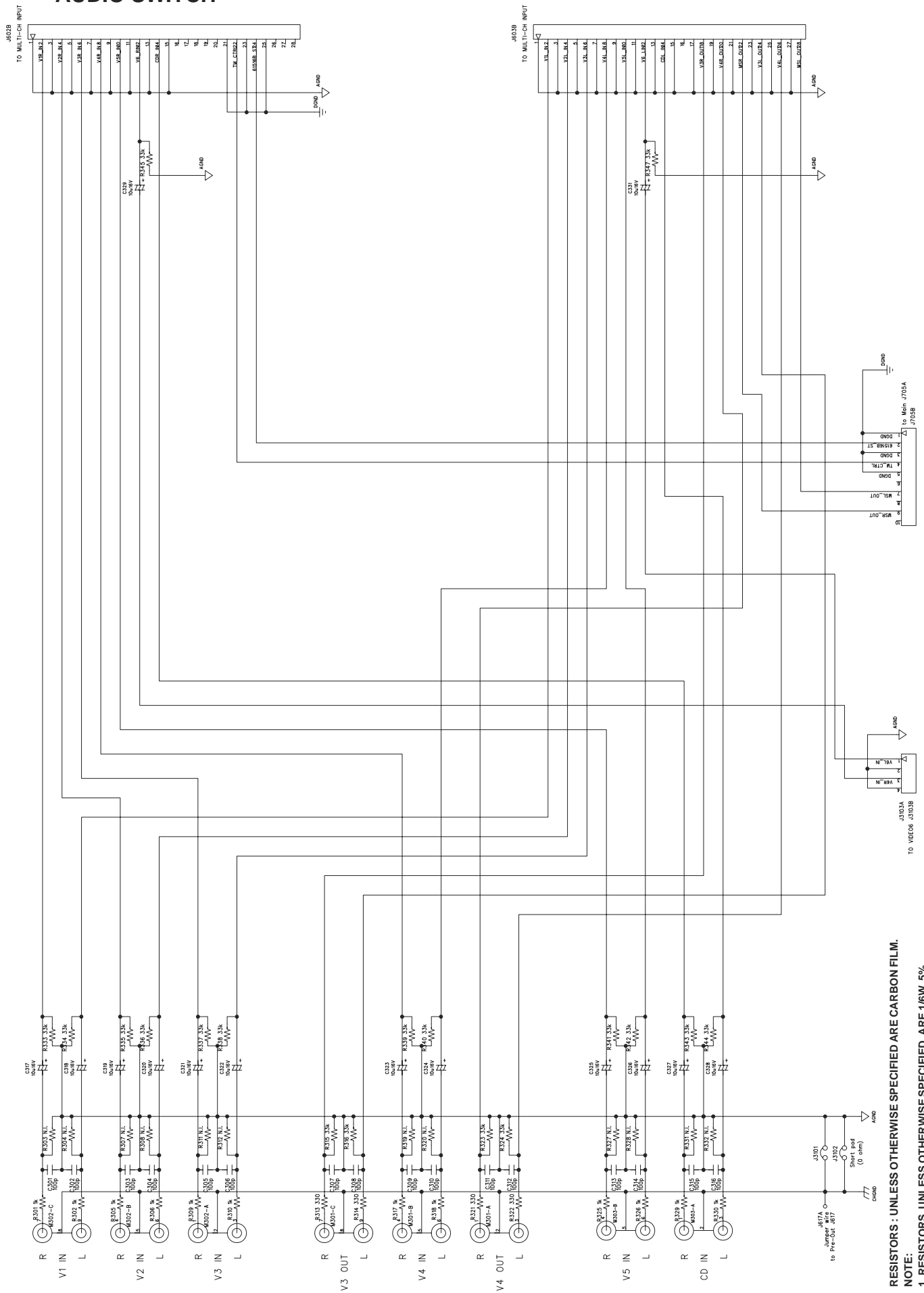
VIDEO 6 BOARD



MULTI SOURCE



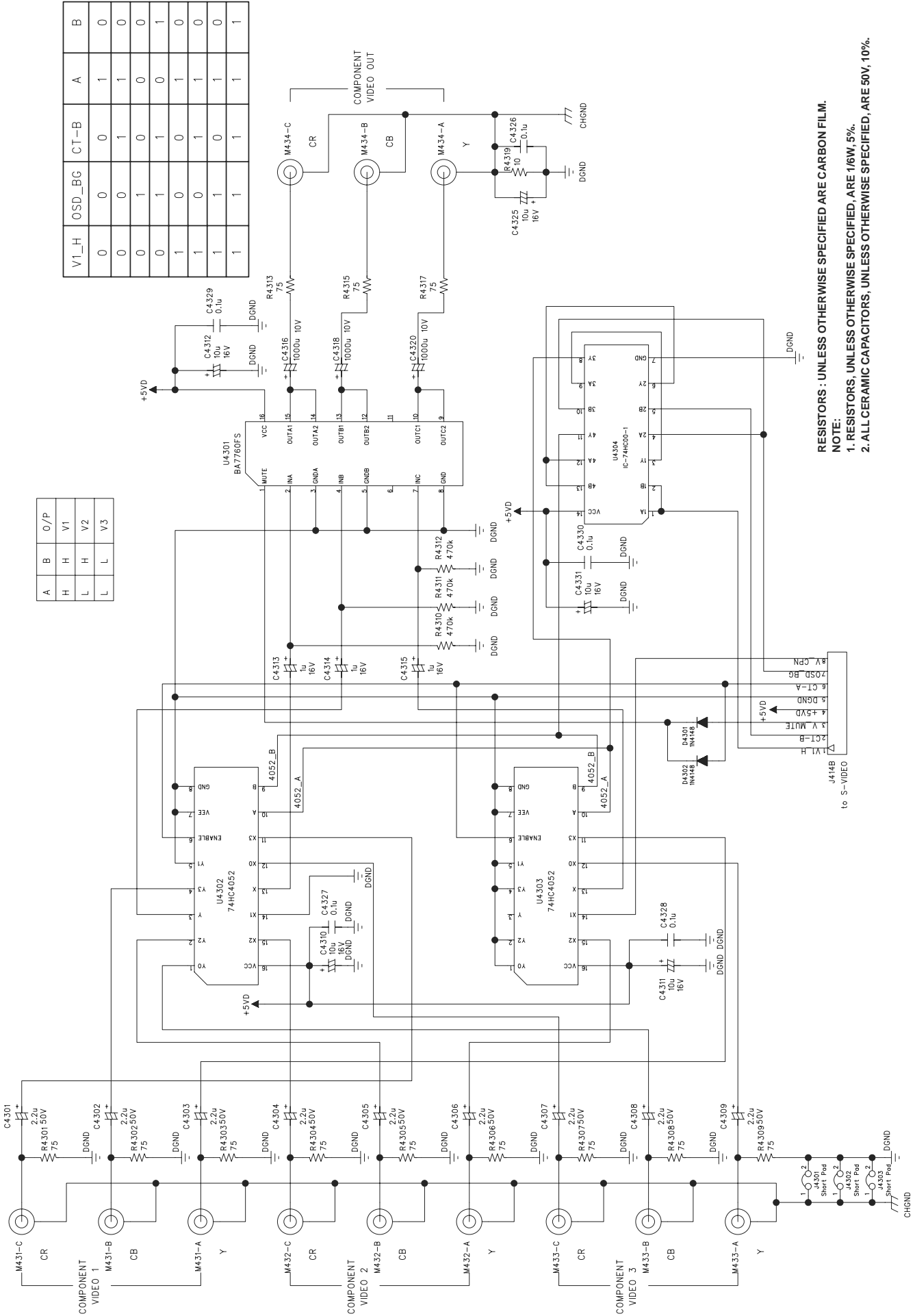
SCHEMATIC DIAGRAM AUDIO SWITCH



COMPONENT VIDEO

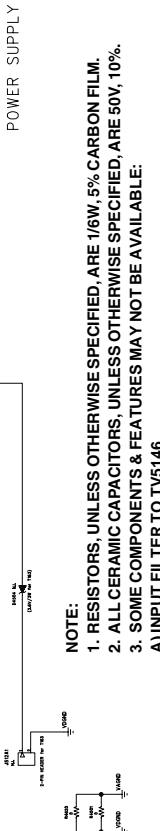
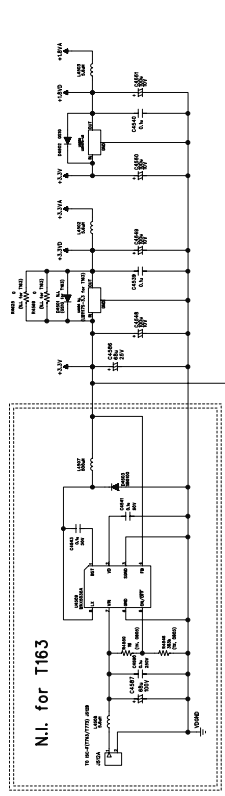
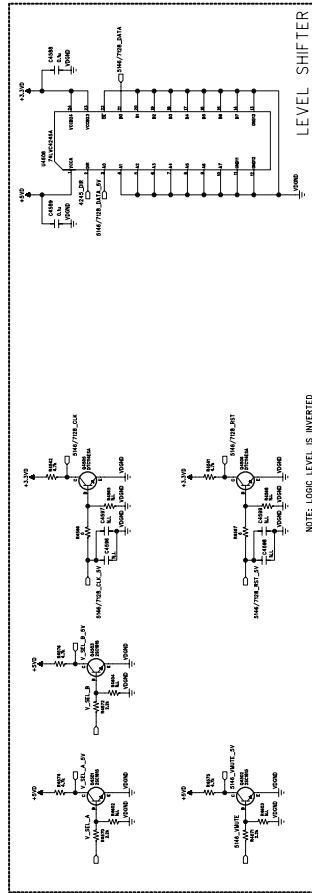
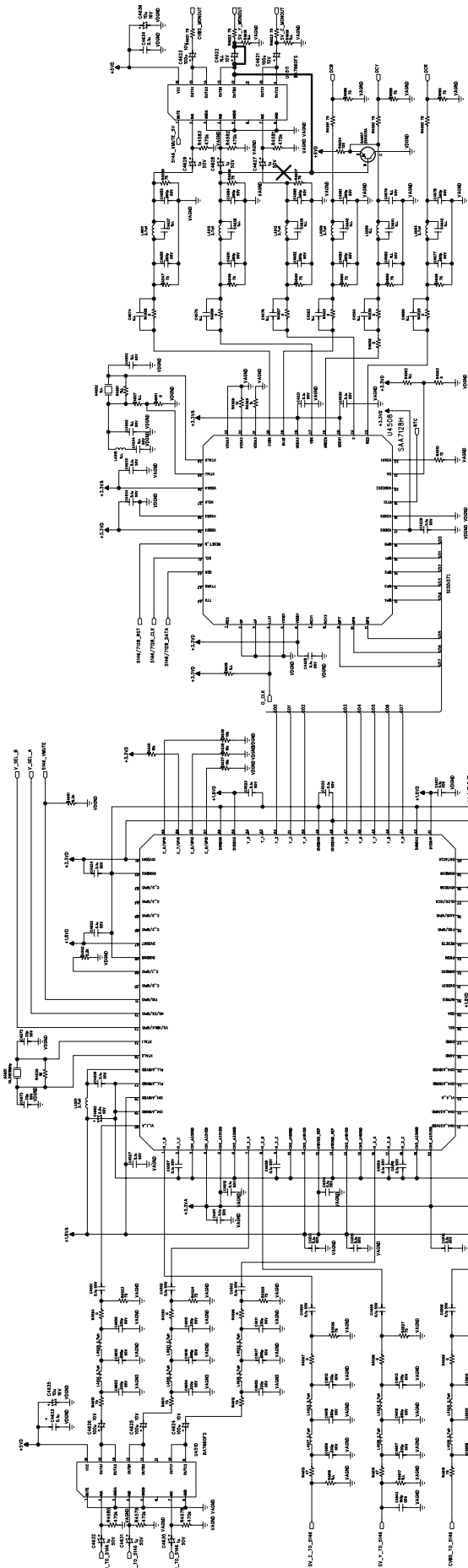
A	B	O/P
H	H	V1
L	H	V2
L	L	V3

V1_H	OSD_BG	CT-B	A	B
0	0	0	1	0
0	0	1	1	0
0	1	0	0	0
0	1	1	0	1
1	0	0	1	0
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

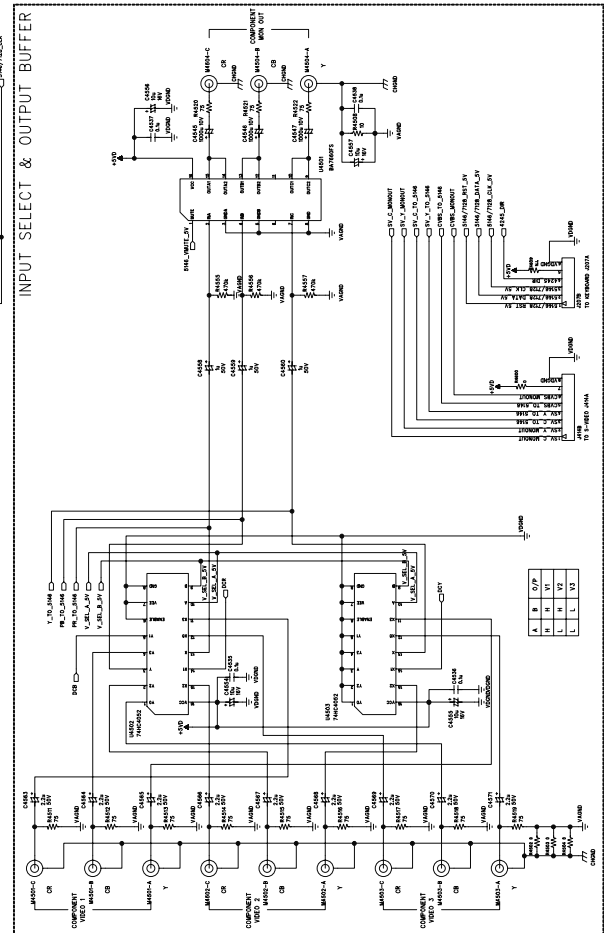


RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.
NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

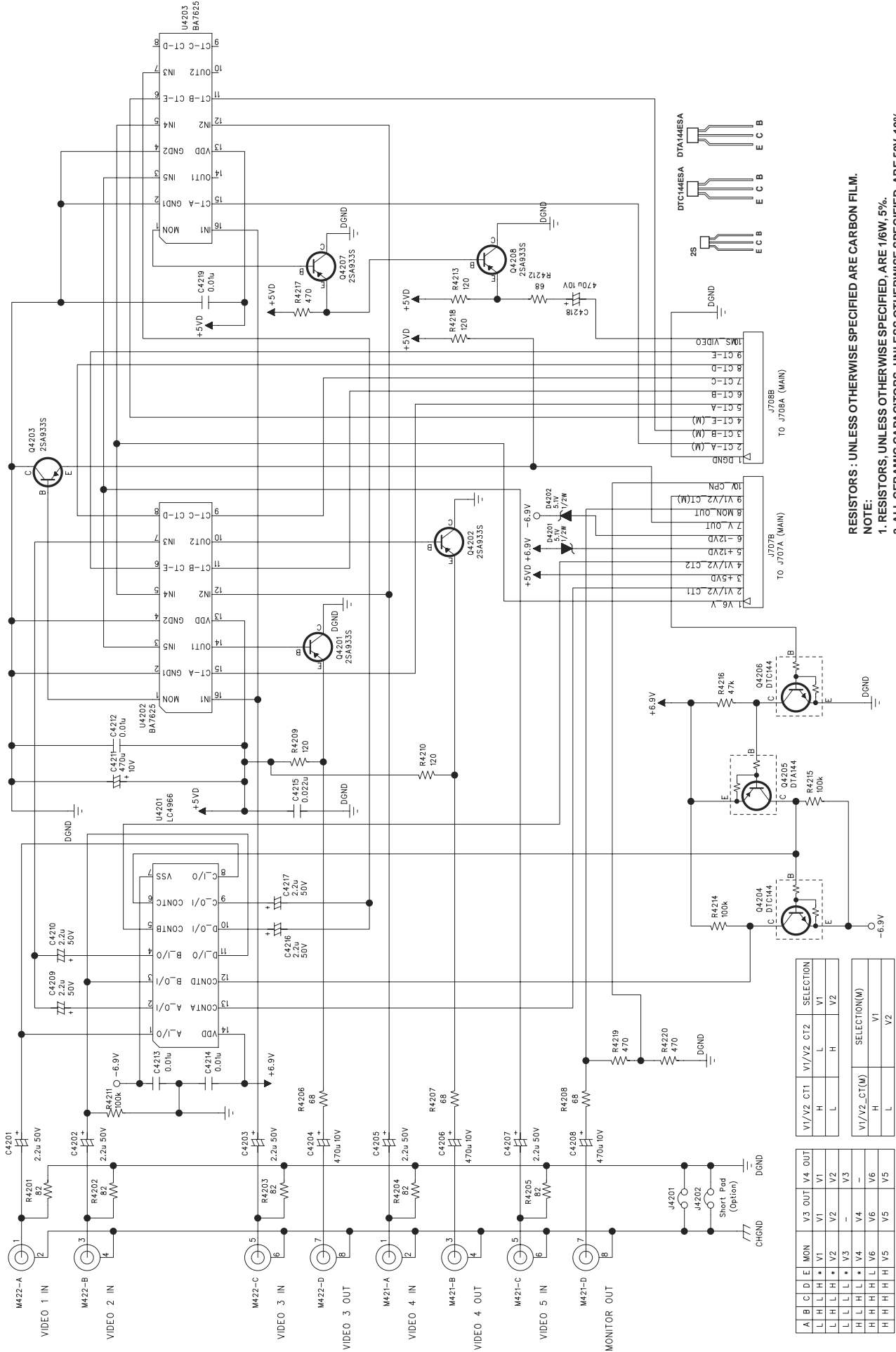
COMPONENT VIDEO



- NOTE:**
1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8W, 5% CARBON FILM.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.
 3. SOME COMPONENTS & FEATURES MAY NOT BE AVAILABLE:
- A) INPUT FILTER TO TV5146
 B) SIGNAL "5146_VMUTE" (previously named "RGB_MUTE"), WHICH EXTENDS THE MUTE SIGNAL TO BOTH THE S-VIDEO AND CVBS CIRCUITS



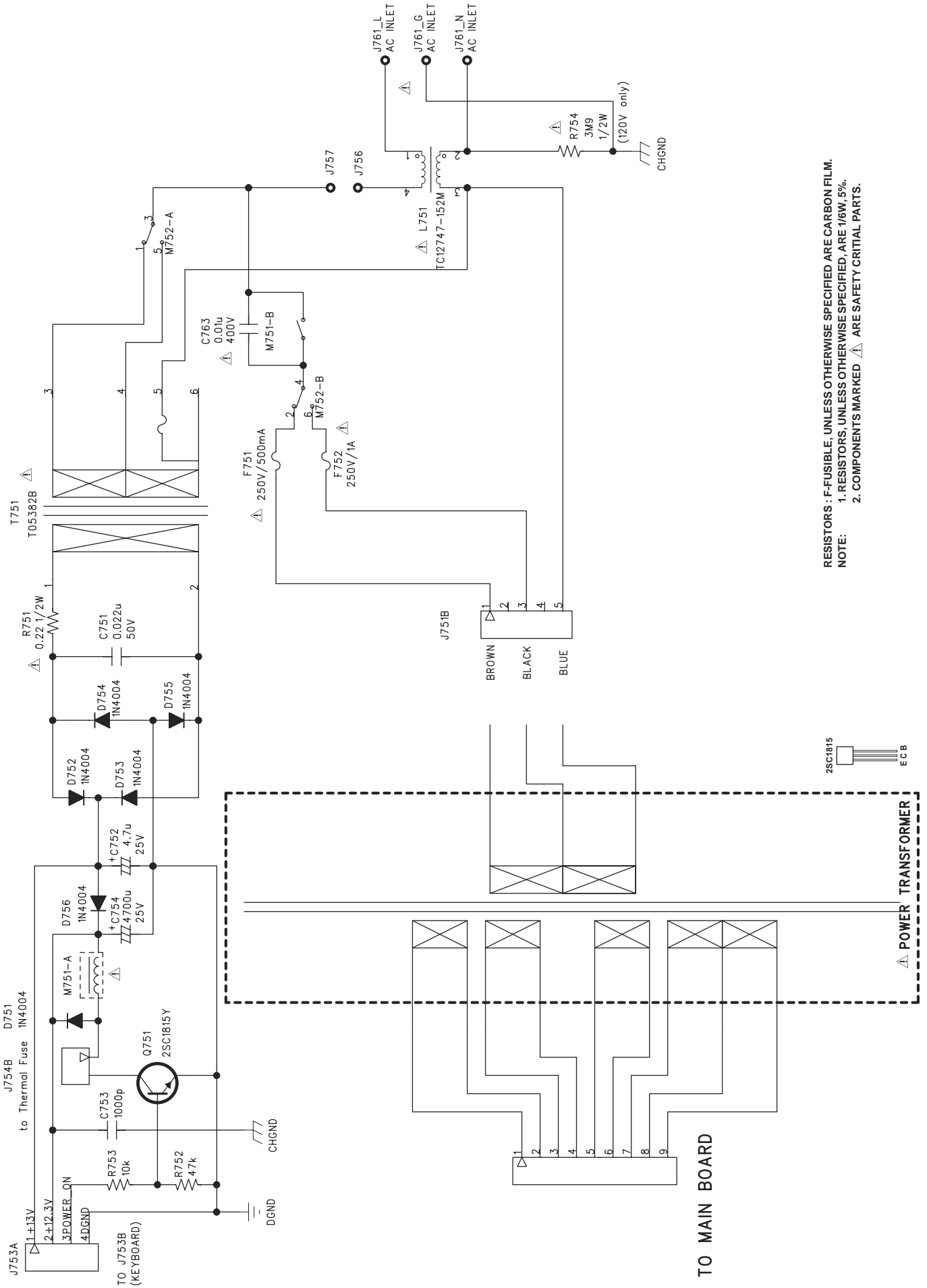
COMPOSITE VIDEO



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%.

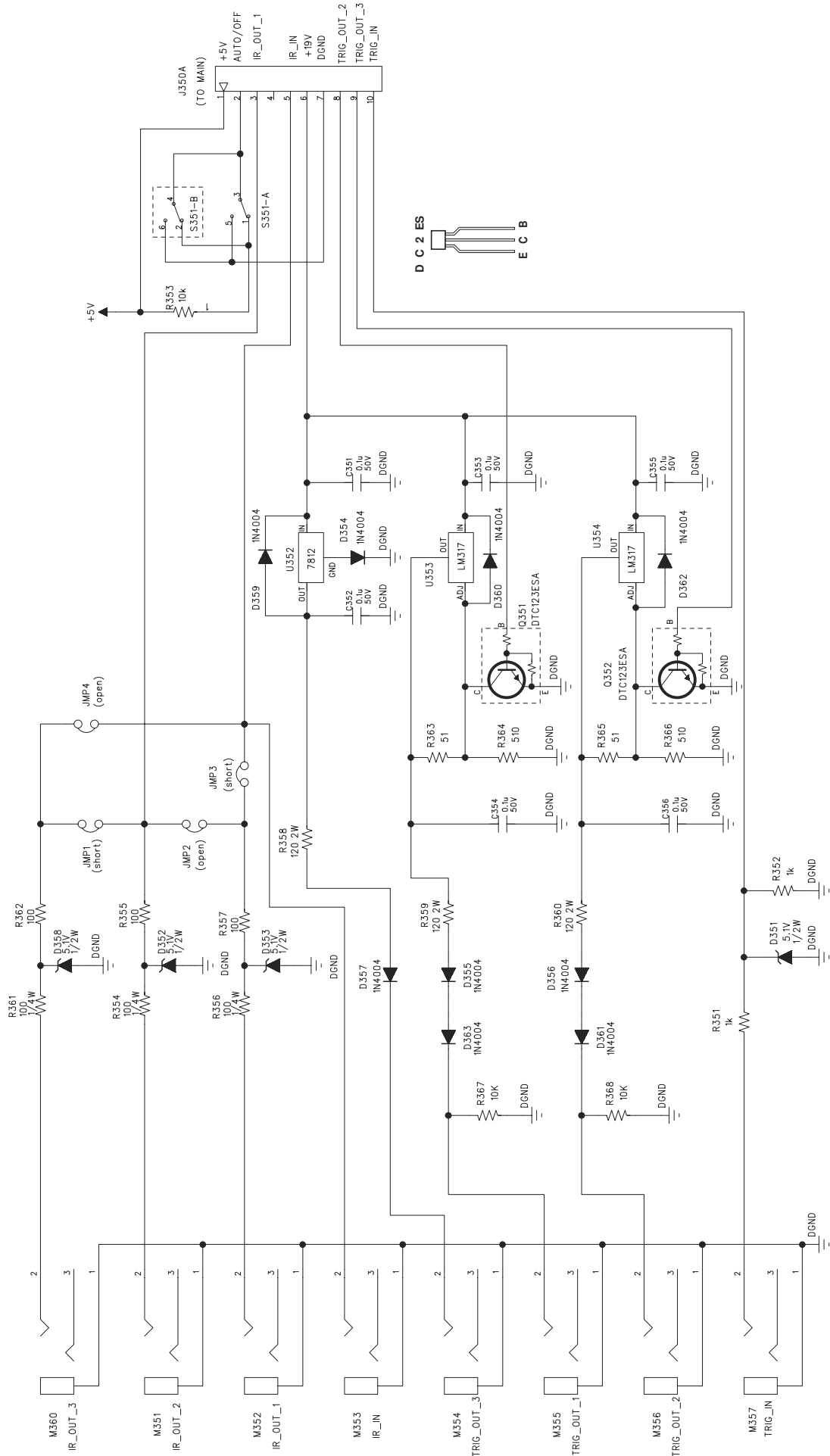
A	B	C	D	E	MON	V3	OUT	V4	OUT	SELECTION
L	H	L	H	L	H	V1	V1	V1	V1	V1
L	H	L	H	L	H	V2	V2	V2	V2	V2
L	H	L	H	L	H	V3	-	V3	-	V3
H	H	L	L	H	H	V4	-	V4	-	SELECTION(M)
H	H	L	L	H	H	V6	V6	V6	V6	V1
H	H	L	L	H	H	V5	V5	V5	V5	V2

POWER SUPPLY (STAND BY)



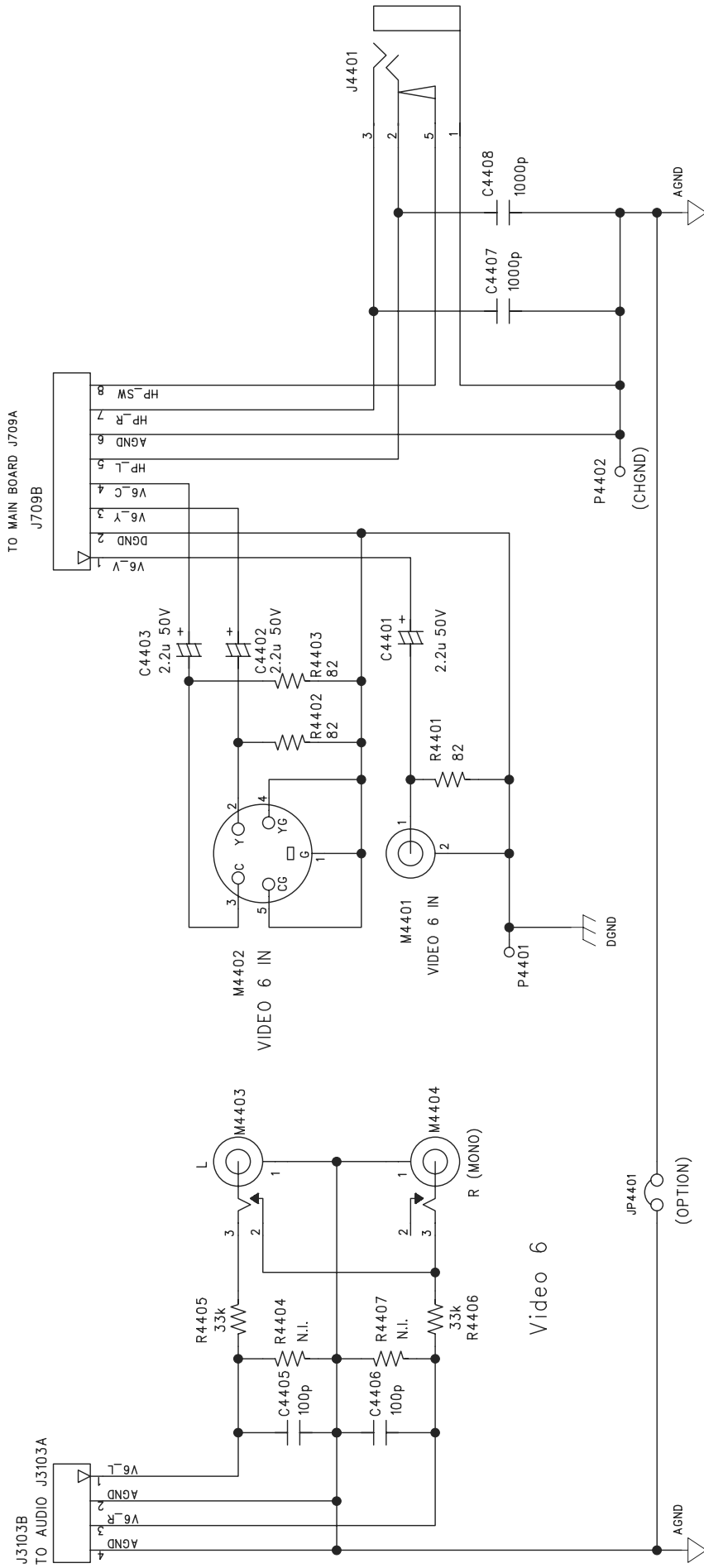
RESISTORS : F-FUSIBLE, UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.
 NOTE: 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. COMPONENTS MARKED Δ ARE SAFETY CRITICAL PARTS.

TRIGGER



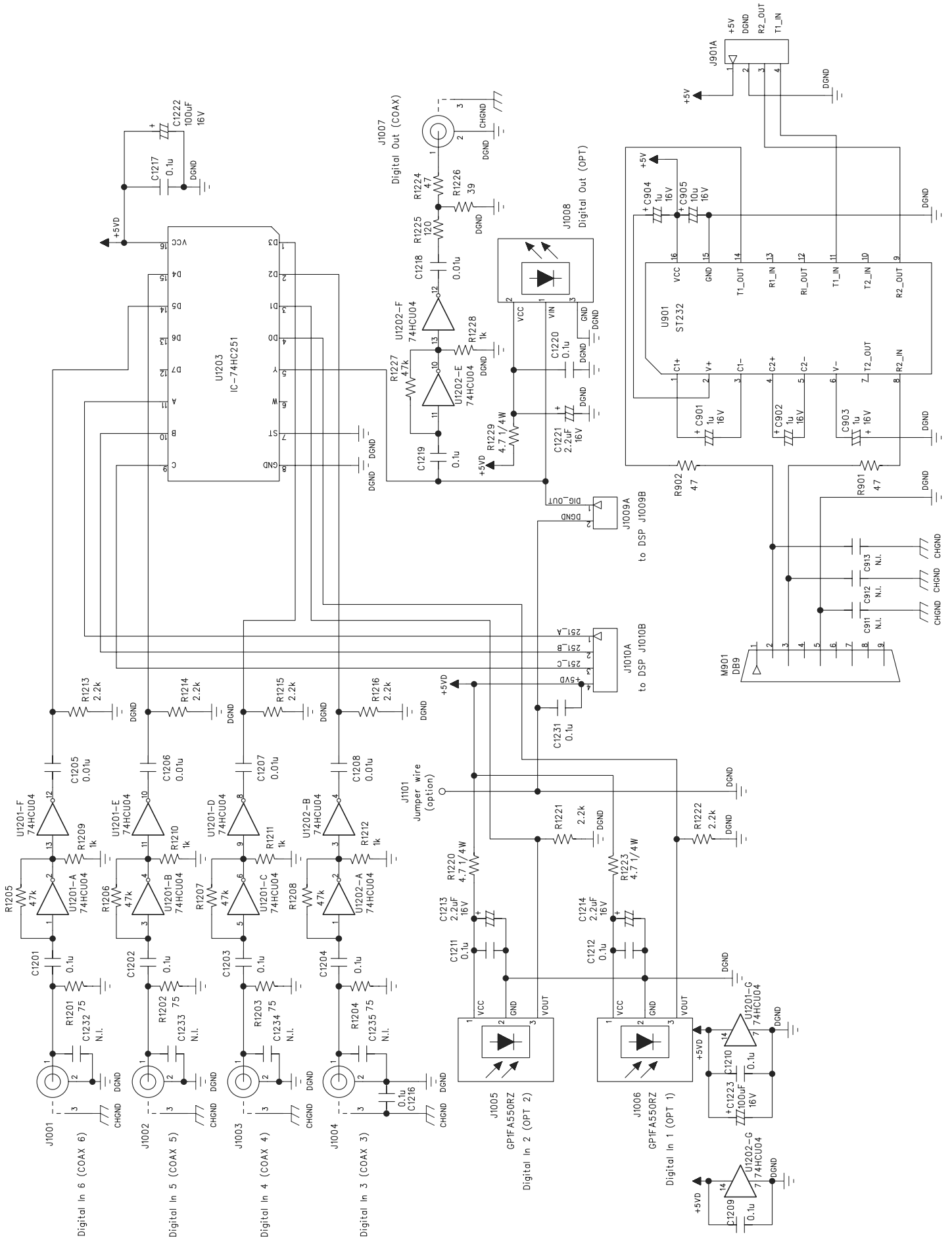
RESISTORS: UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.
 NOTE: 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

VIDEO 6

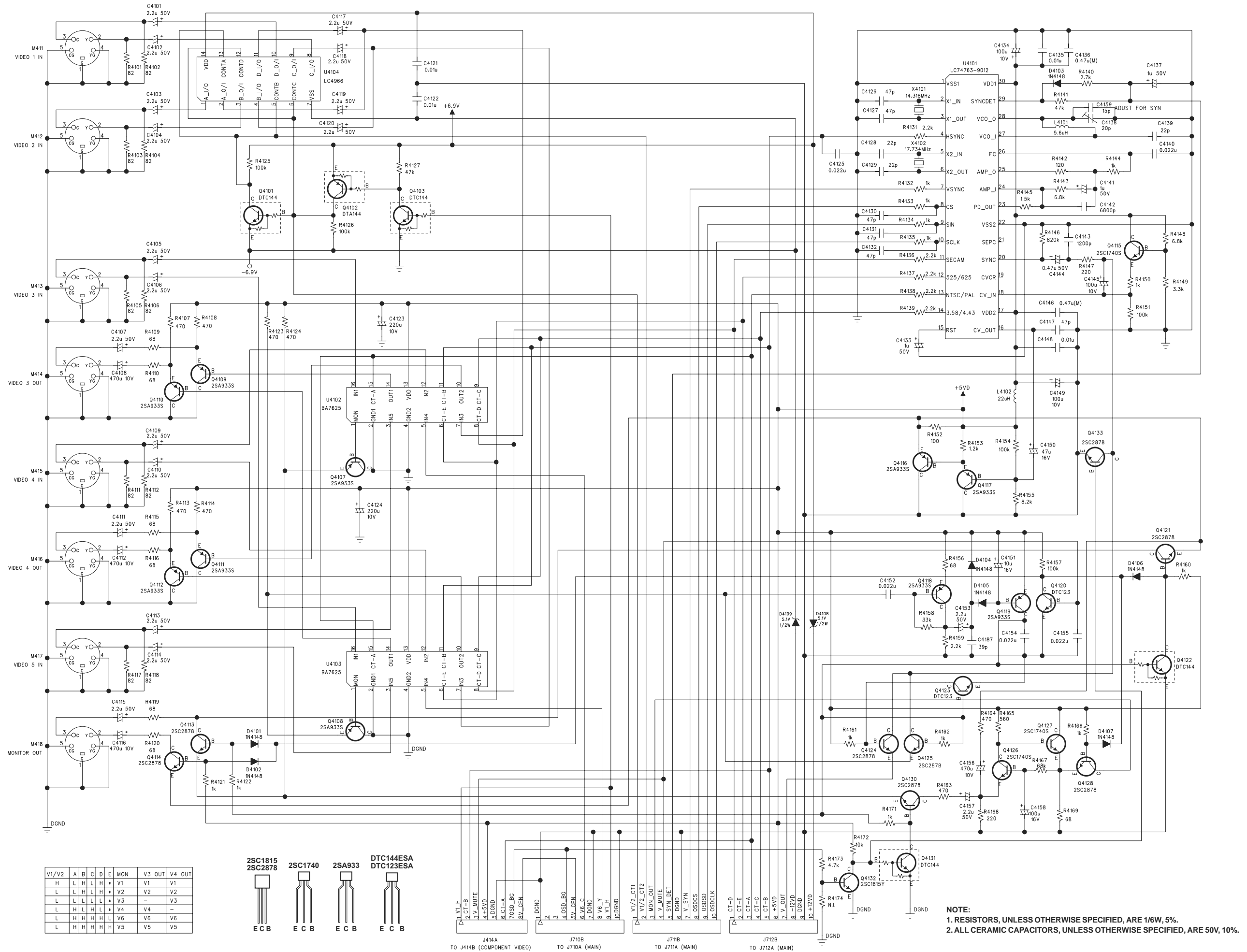


RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.
 NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

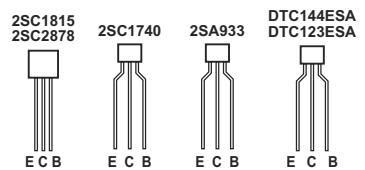
DIGITAL IN & OUT



S-VIDEO

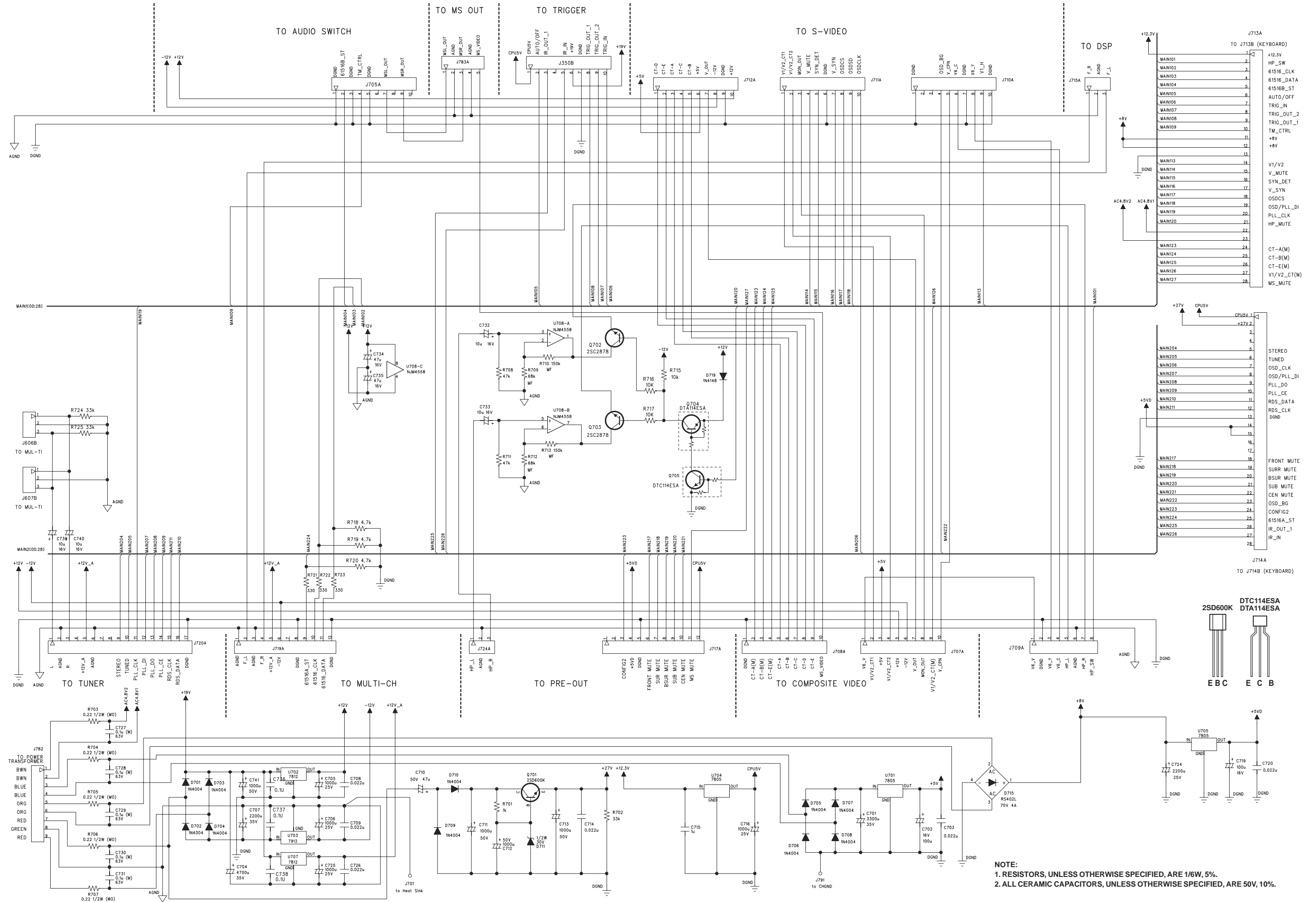


V1/V2	A	B	C	D	E	MON	V3 OUT	V4 OUT
H	L	H	L	H	L	V1	V1	V1
L	L	H	L	H	L	V2	V2	V2
L	L	L	L	L	L	V3	-	V3
L	H	L	L	L	L	V4	V4	-
L	H	H	H	H	L	V6	V6	V6
L	H	H	H	H	H	V5	V5	V5



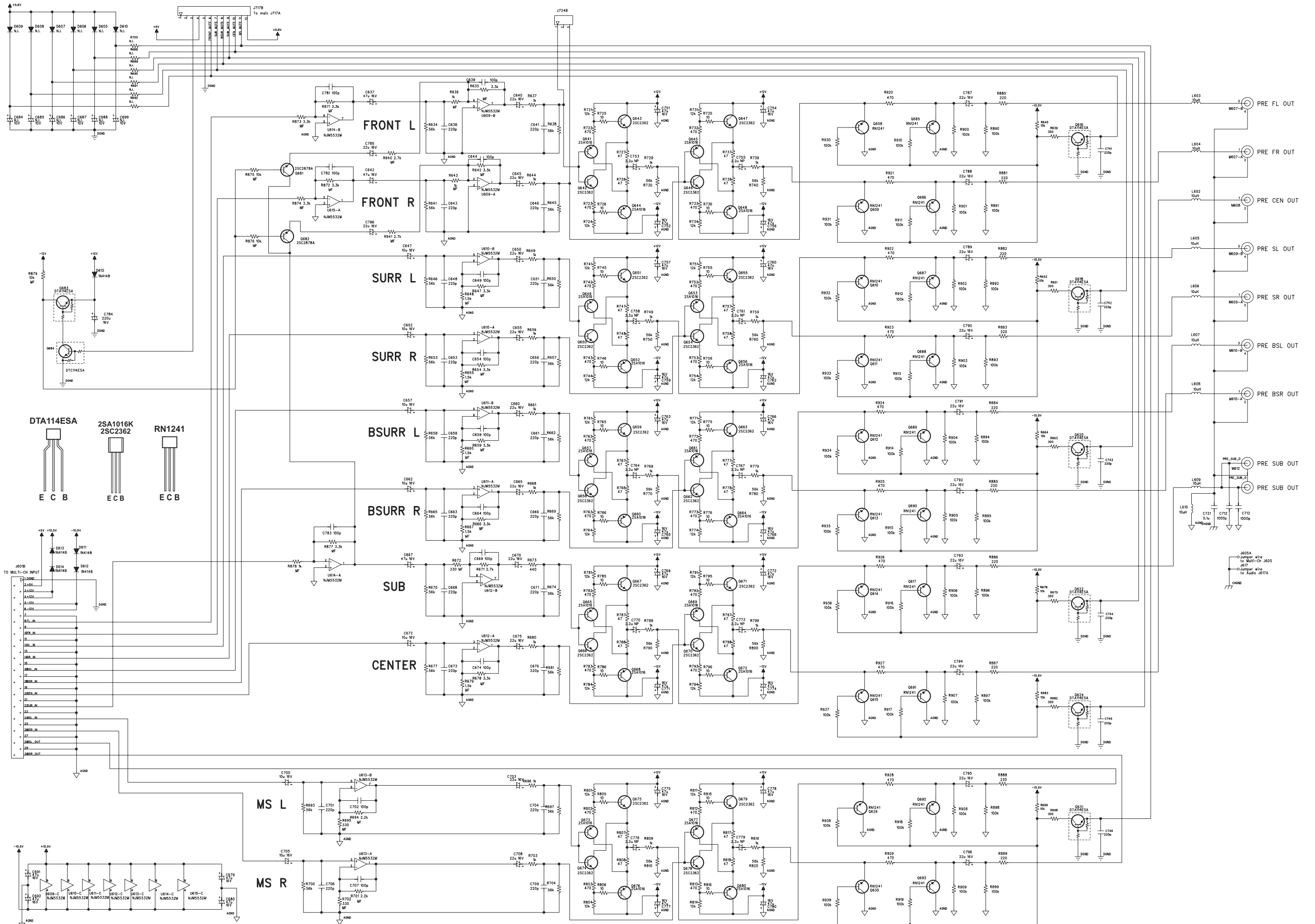
NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

MAIN BOARD



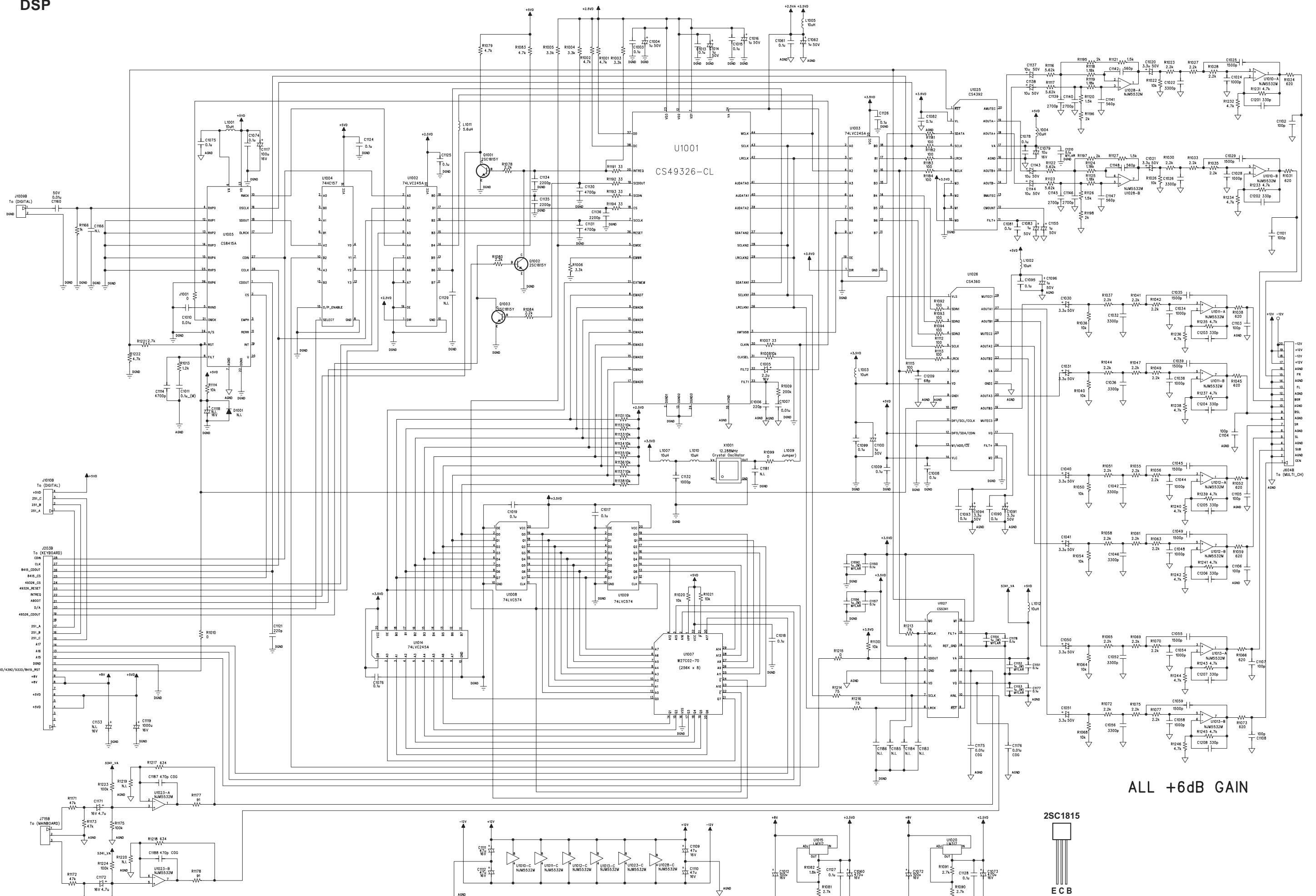
NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

PRE-OUT

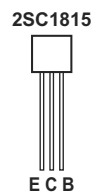


NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 5%.

DSP

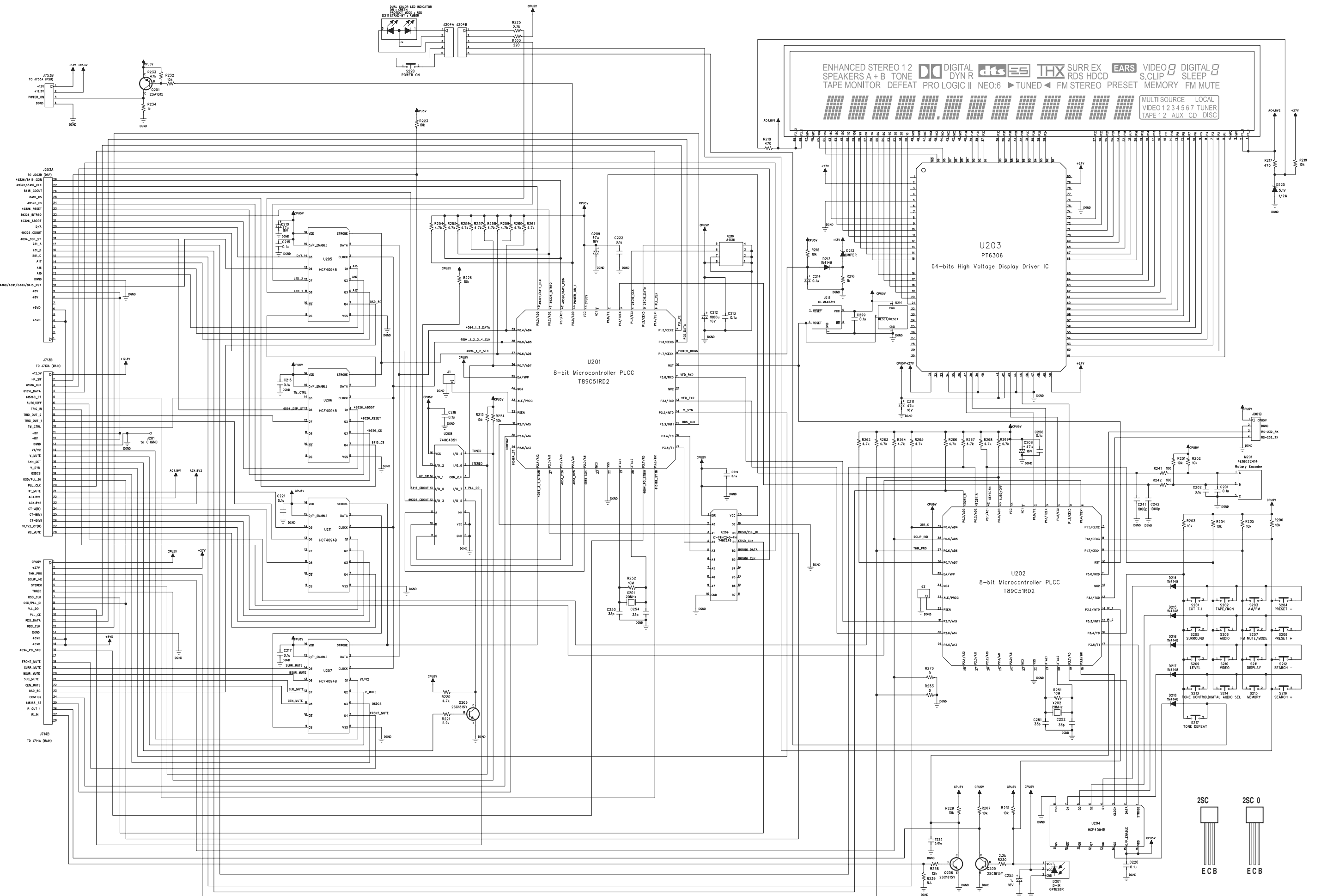


ALL +6dB GAIN



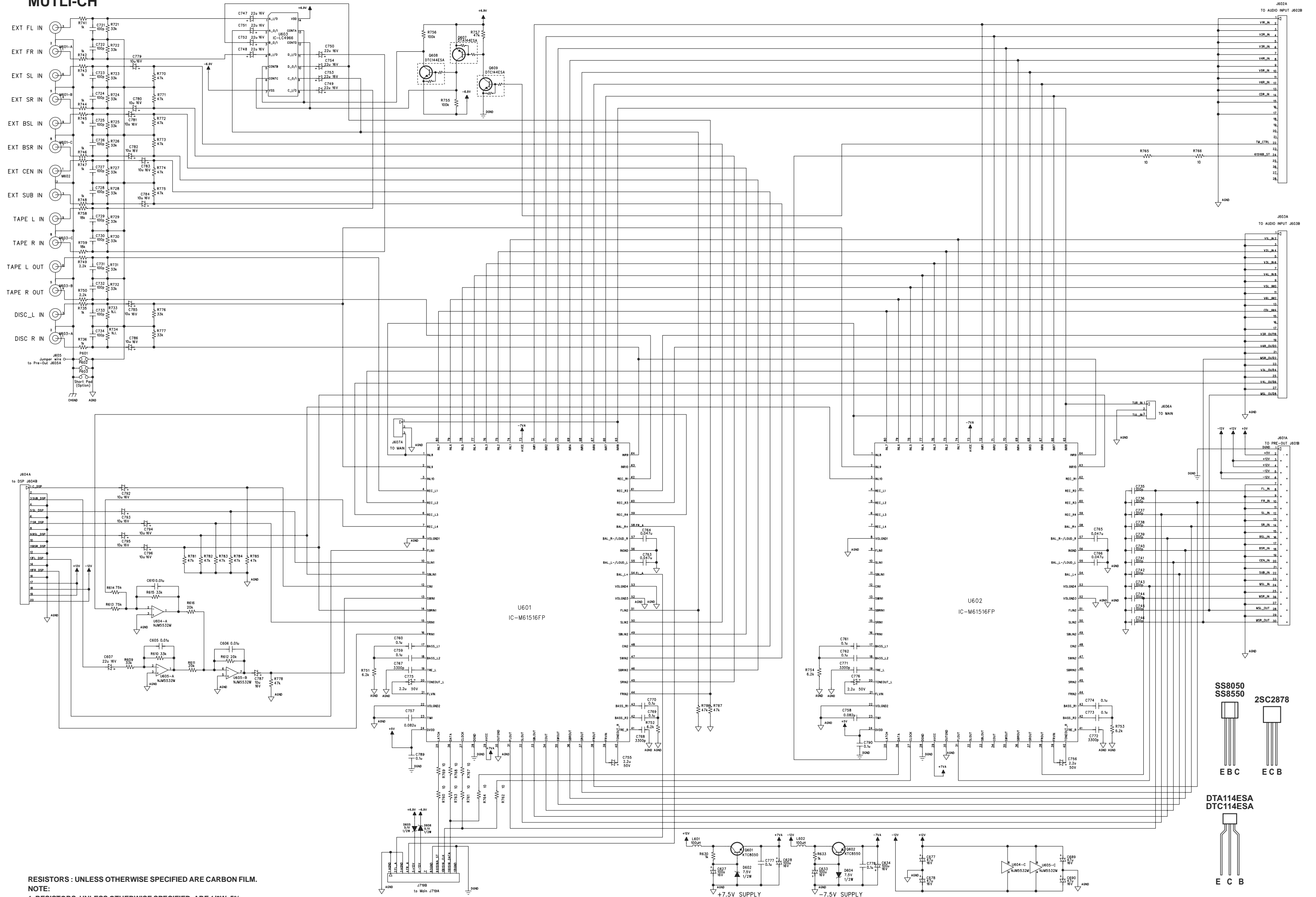
RESISTORS : UNLESS OTHERWISE SPECIFIED ARE CARBON FILM.
 NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.

KEYBOARD

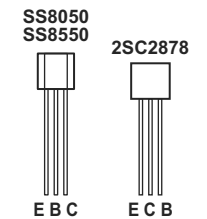


NOTE:
 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/6W, 5%.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V, 5%.

MUTLI-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%.



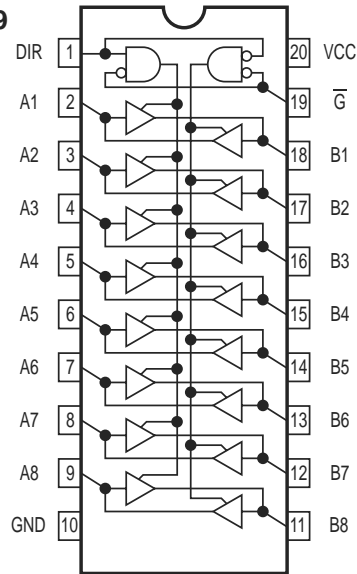
IC BLOCK DIAGRAM

74LVC245

DSP BOARD: U1002, U1003, U1014

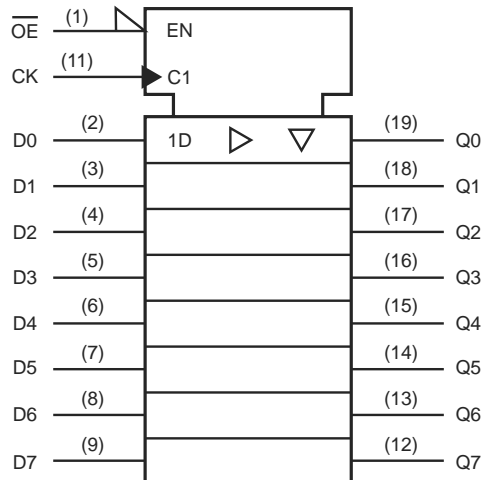
74VHC245

KEYBOARD: U209



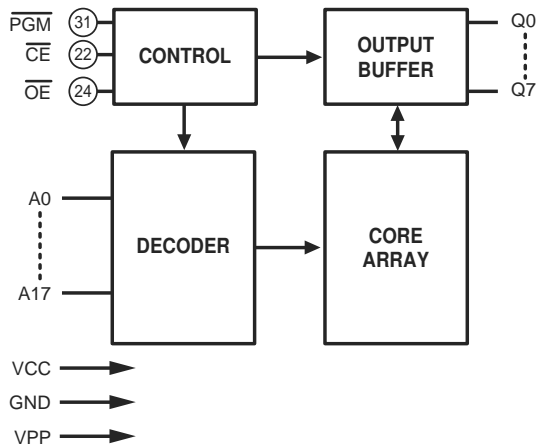
74LVQ574

DSP BOARD: U1008, U1009



W27C020

DSP BOARD: U1007



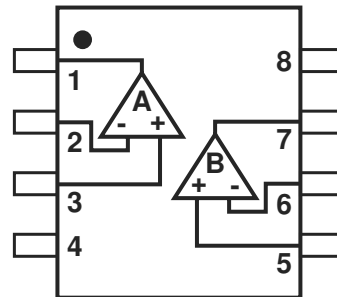
NJM5532 / NJM4558

DSP BOARD: U1011~U1013, U1023 & U1025

MULTI-CHANNEL: U604~U607

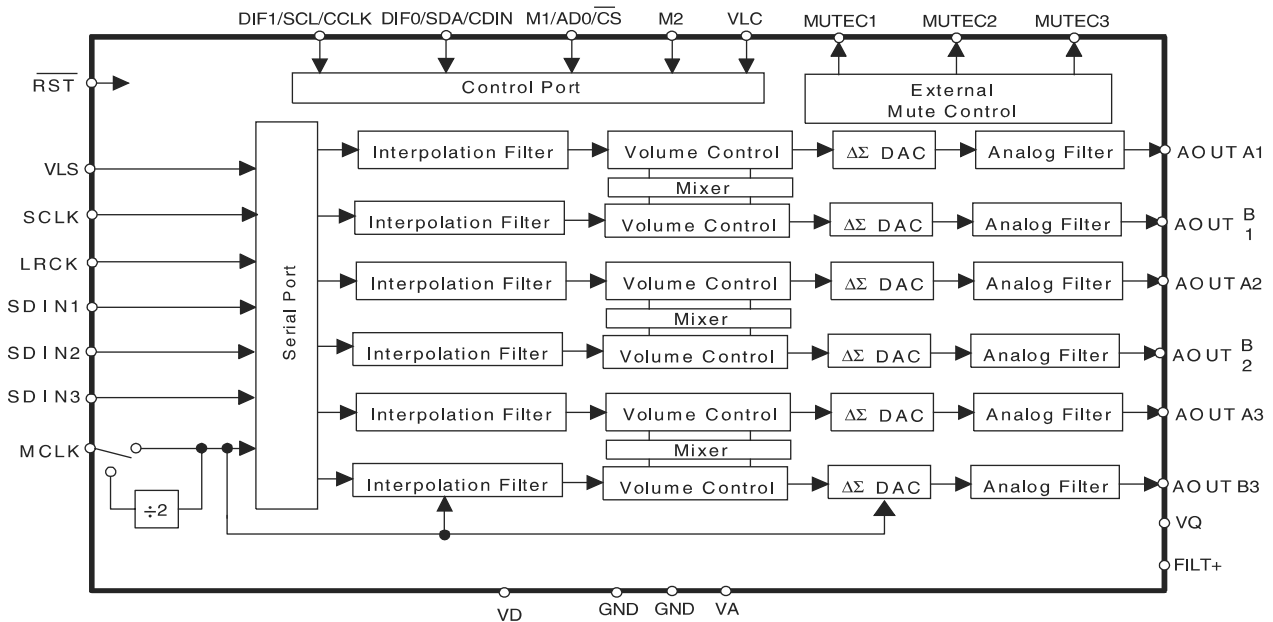
PRE-OUT BOARD: U609~U613

MAIN BOARD: U708

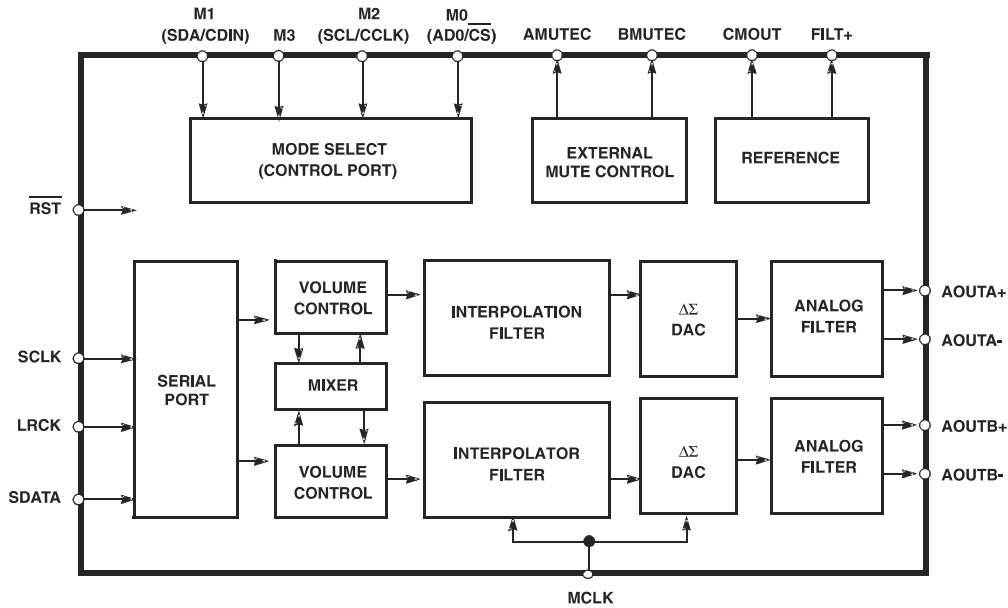


CS4360KZ

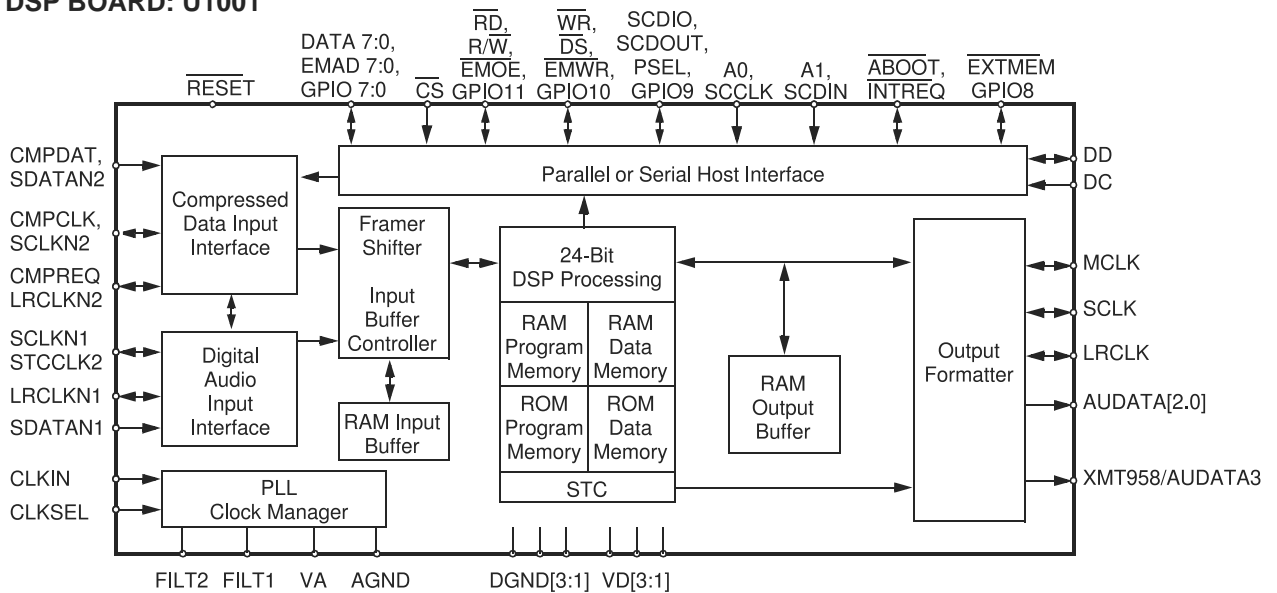
DSP BOARD: U1026



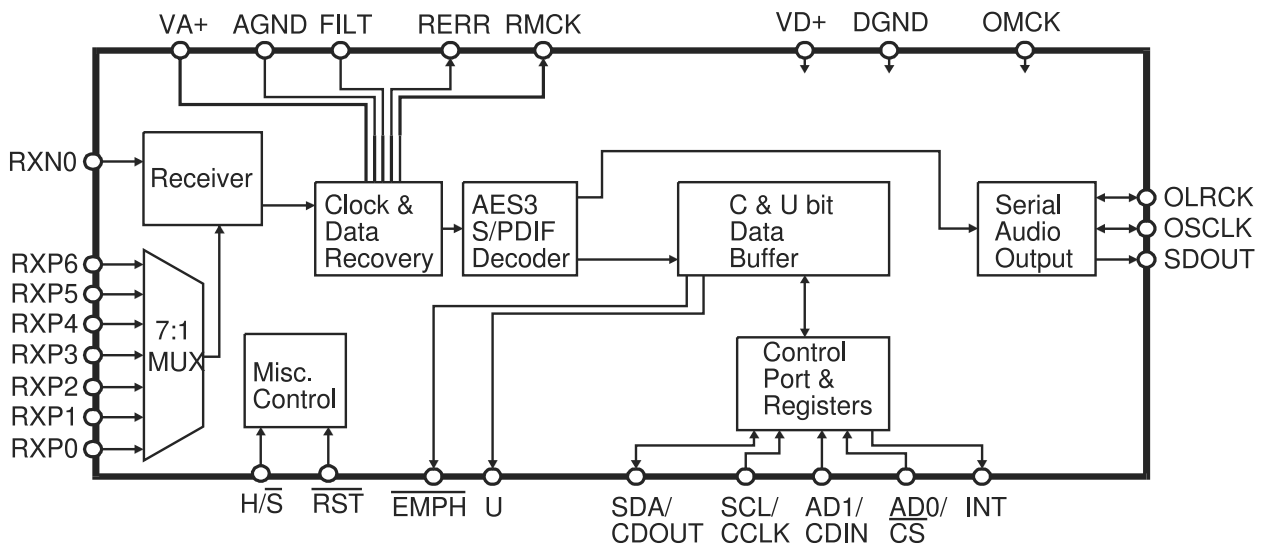
CS4392
DSP BOARD: U1025



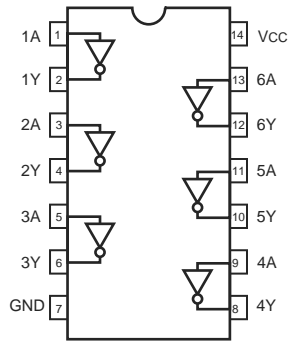
CS49326
DSP BOARD: U1001



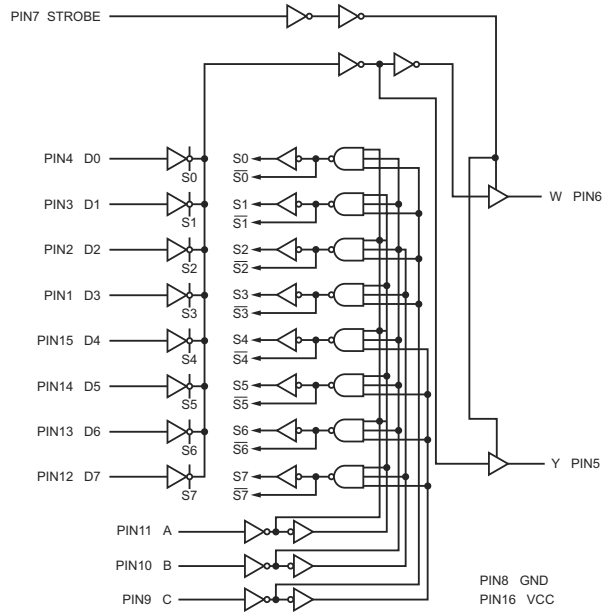
CS8415A
DSP BOARD: U1005



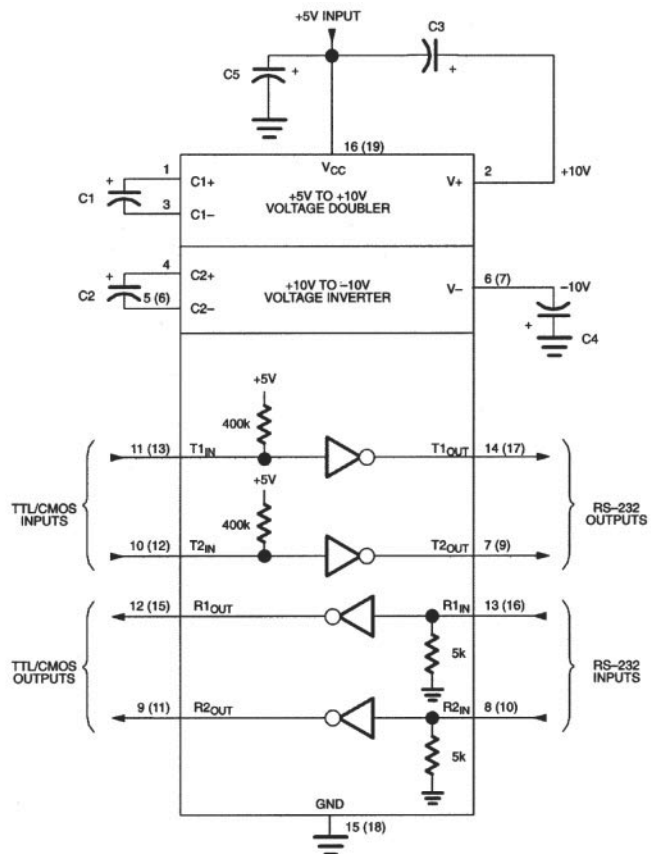
74HCU04
DIGITAL & RS232 BOARD:
U1201 & U1202



74HC251
DIGITAL & RS232 BOARD:
U1203

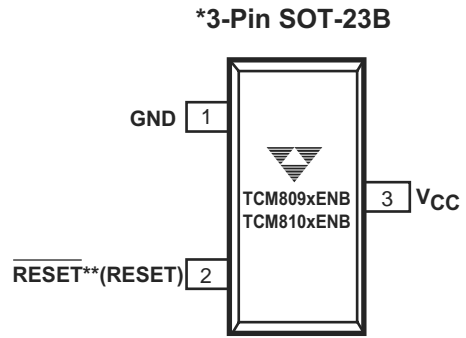
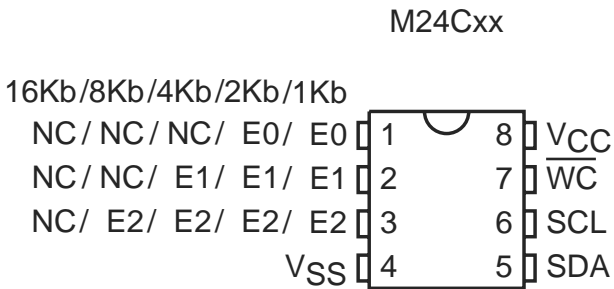


DS232A
DIGITAL & RS232 BOARD:
U901



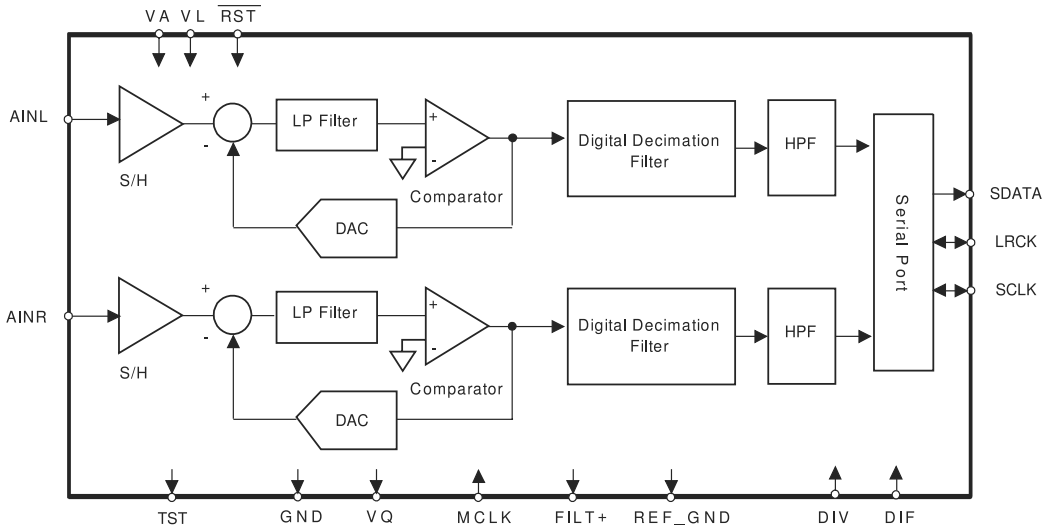
AT24C16
KEYBOARD: U210

TCM810
KEYBOARD: U214

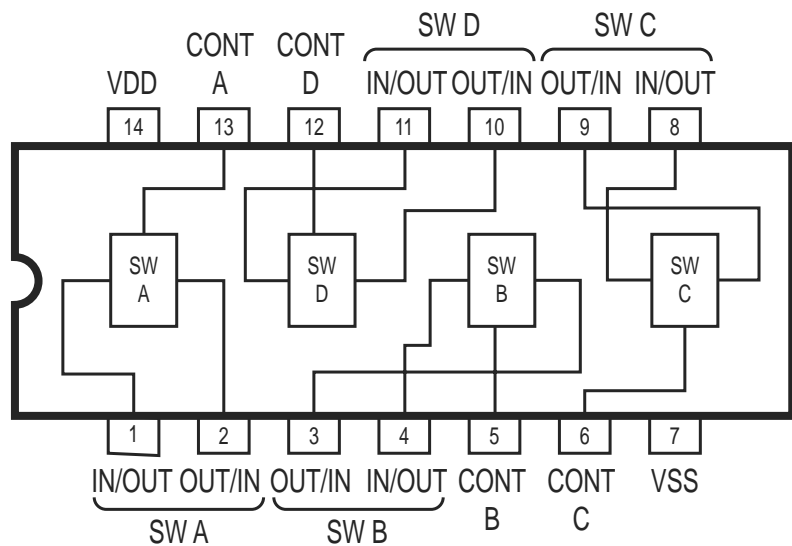


NOTE: *3-Pin SOT-23B is equivalent to JEDEC TO-236
** () is for TCM810

CS5333KZ
DSP BOARD: U1027



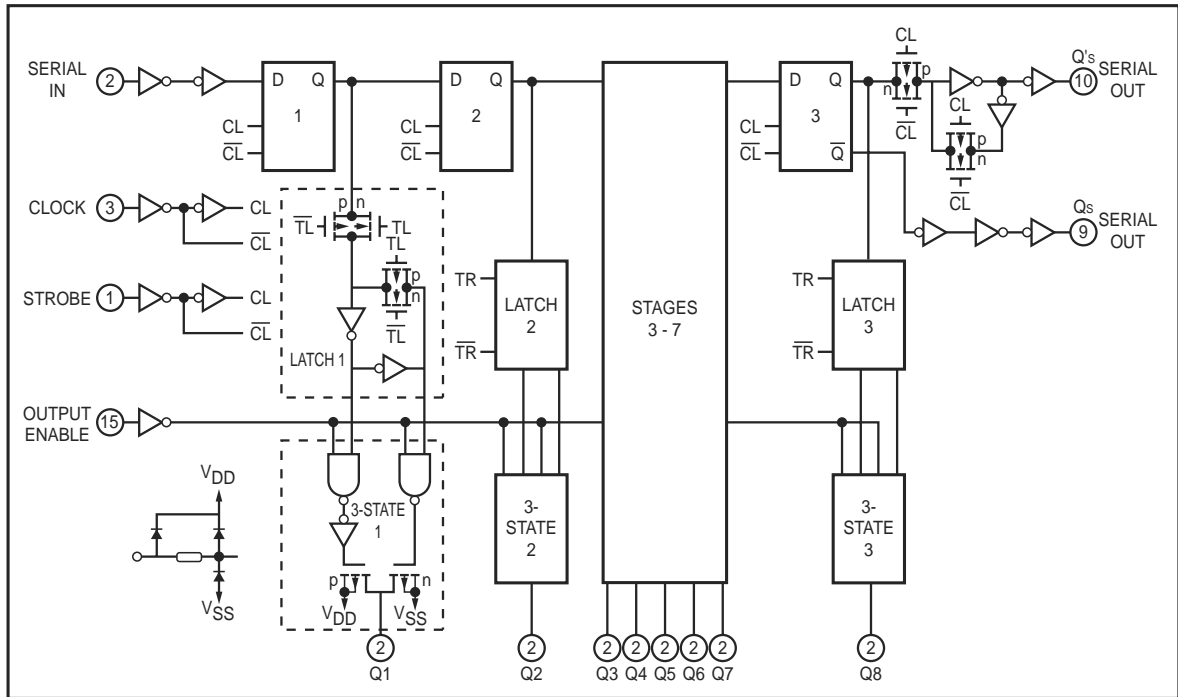
LC4966
COMPOSITE VIDEO: U4201
S-VIDEO BOARD: U4104
MULTI-CHANNEL: U6103



HCF4094B

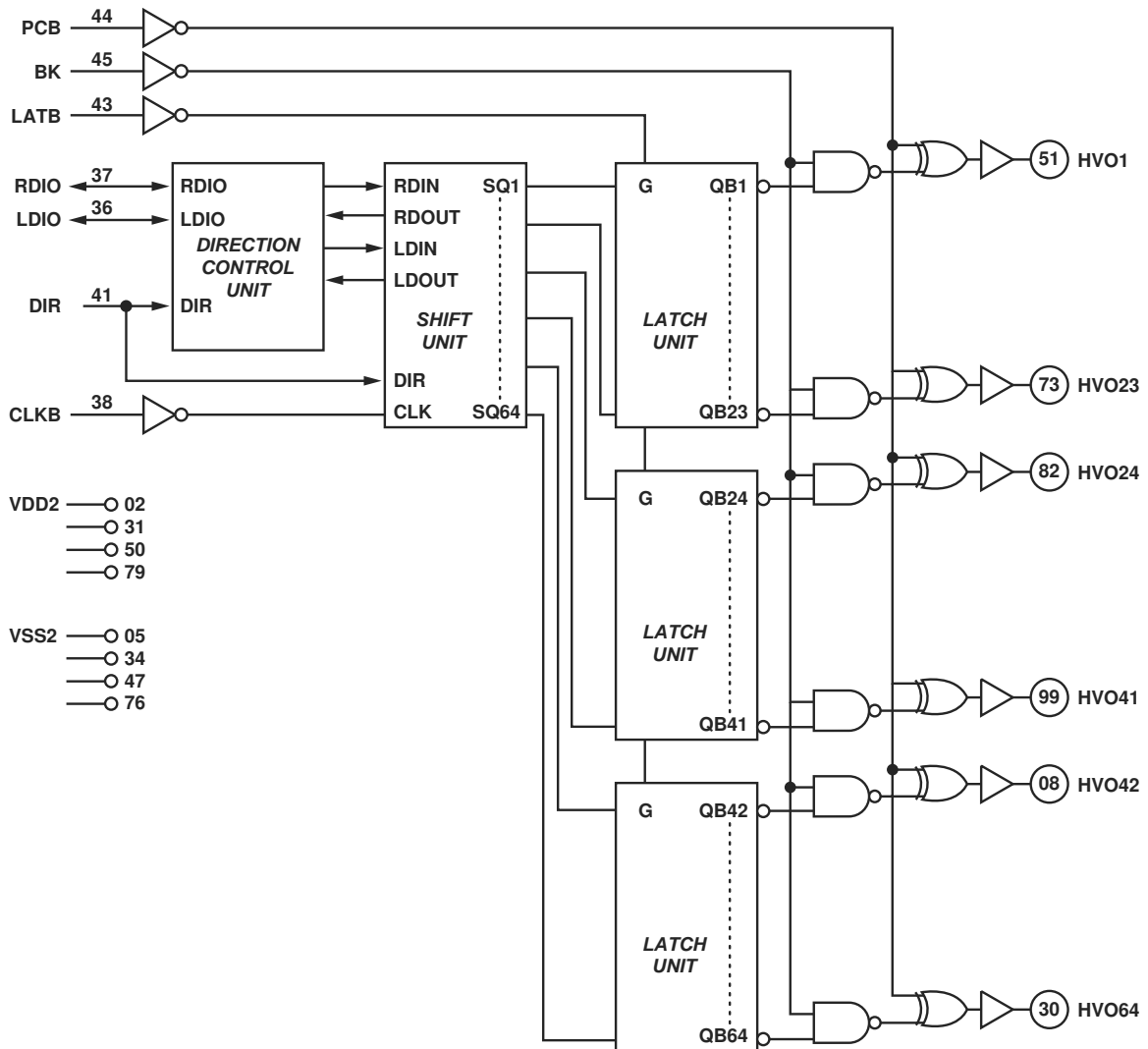
KEYBOARD: U204~U207, U211

DSP BOARD: U1029

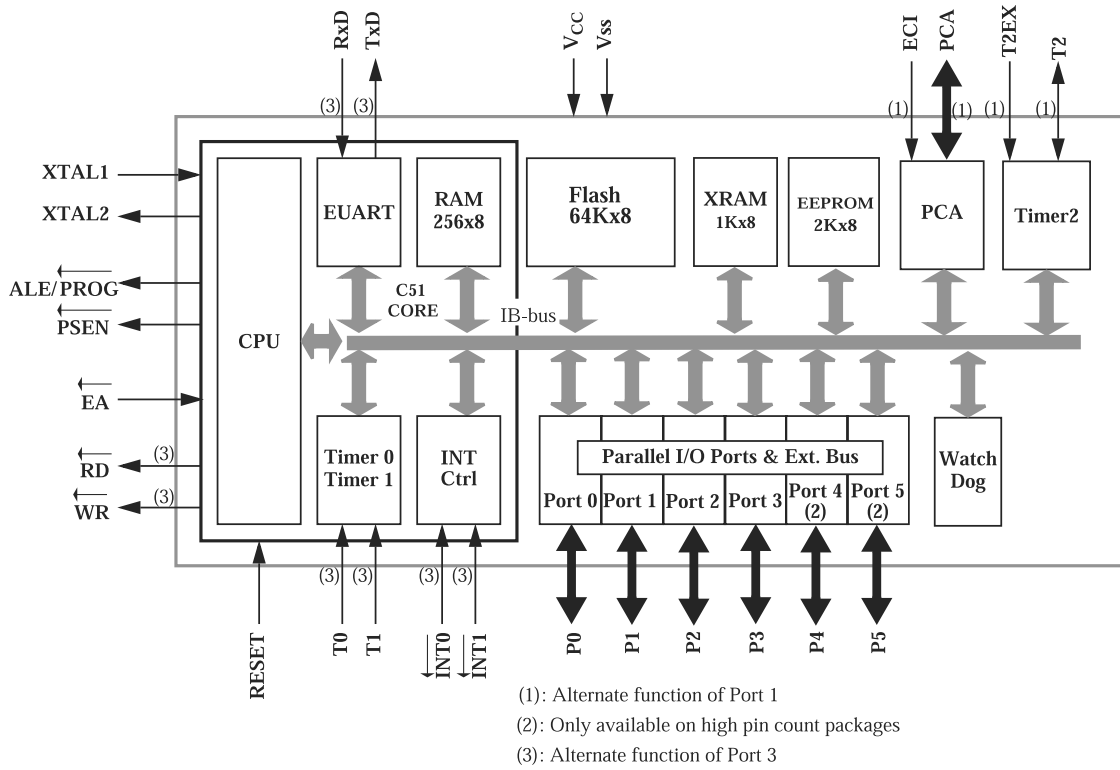


PT6306

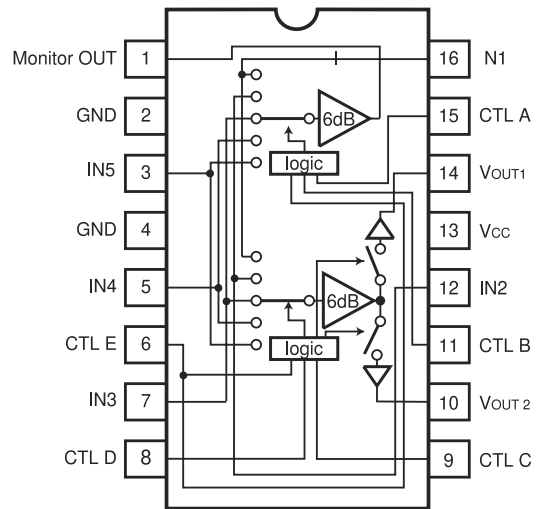
KEYBOARD: U203



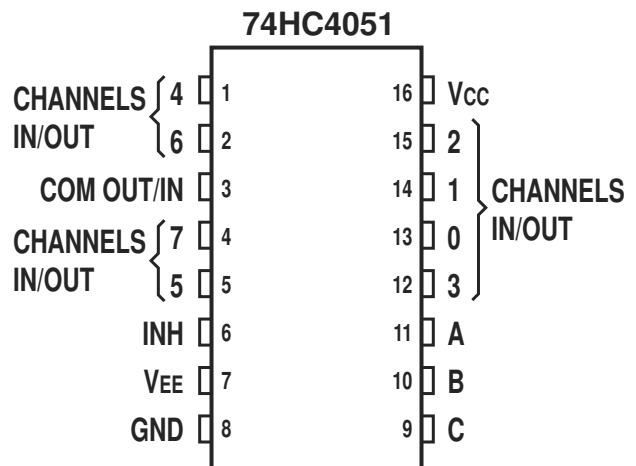
T89C51RD2
KEYBOARD: U201 & U202



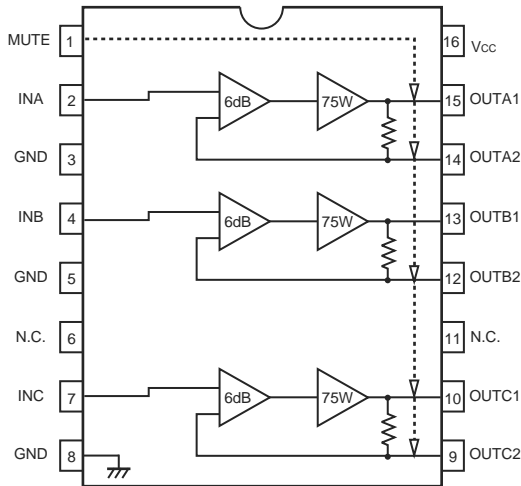
BA7625
COMPOSITE VIDEO BOARD: U4202 & U4203
S-VIDEO BOARD: U4102 & U4103



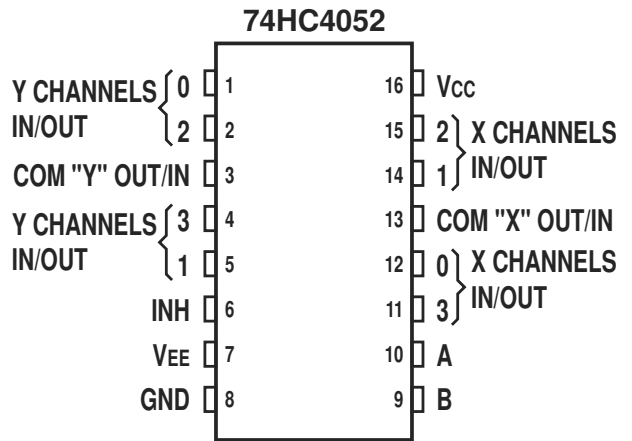
74HC4051
KEYBOARD: U208
S-VIDEO BOARD: U4102, U4103
COMPOSITE VIDEO: U4201



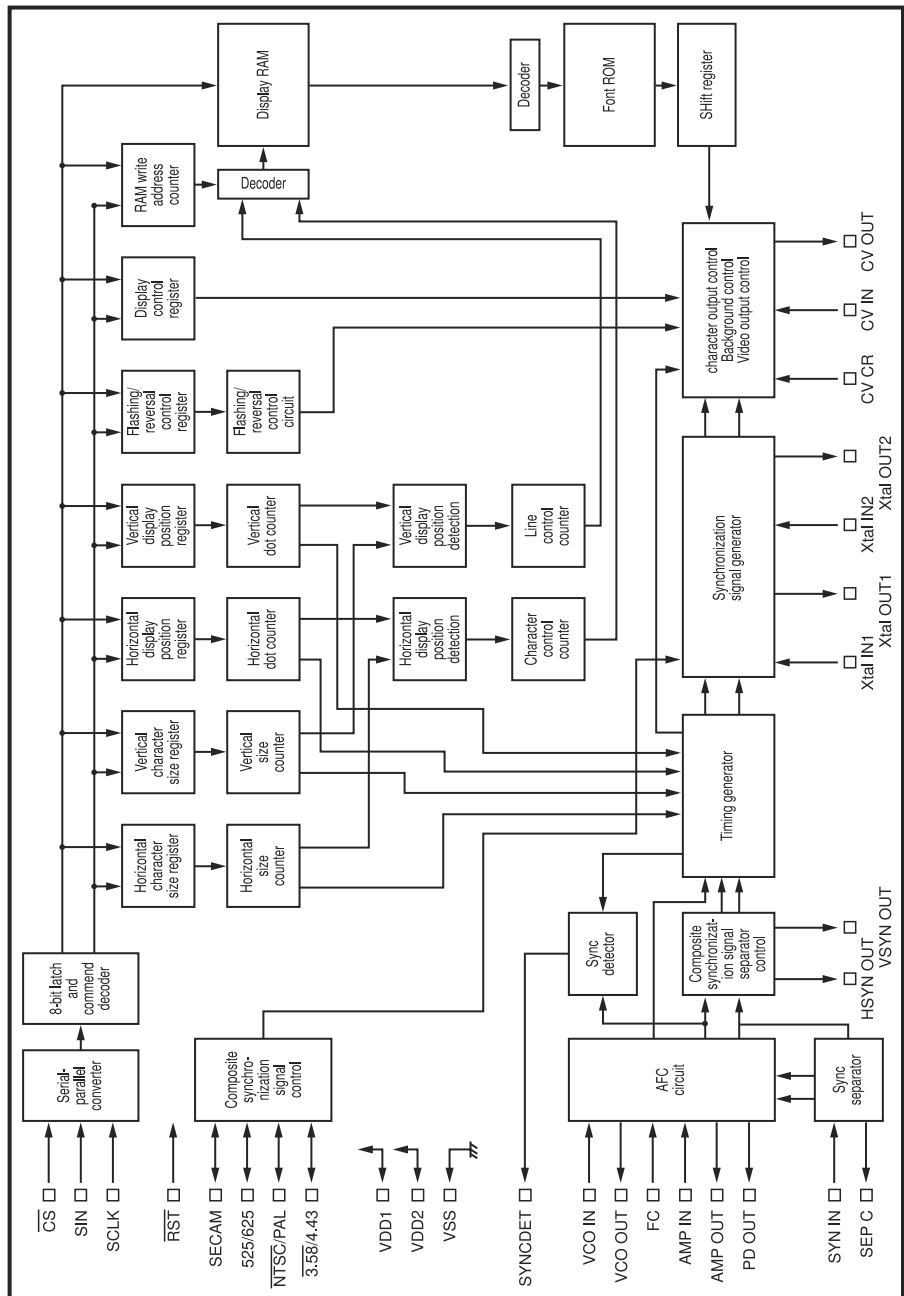
BA7660FS
COMPONENT VIDEO BOARD: U4301



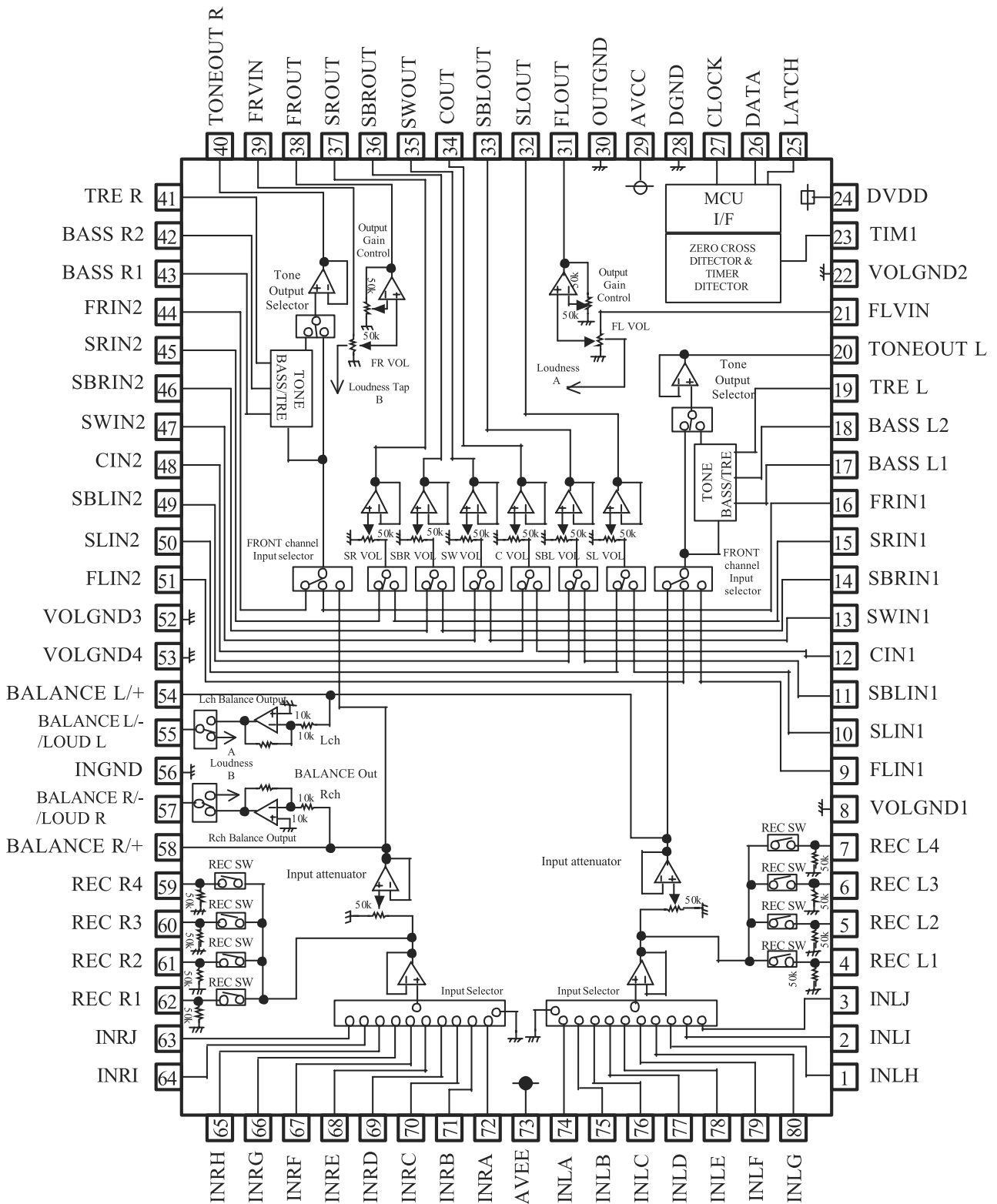
74HC4052
COMPONENT VIDEO BOARD: U4302 & U4303



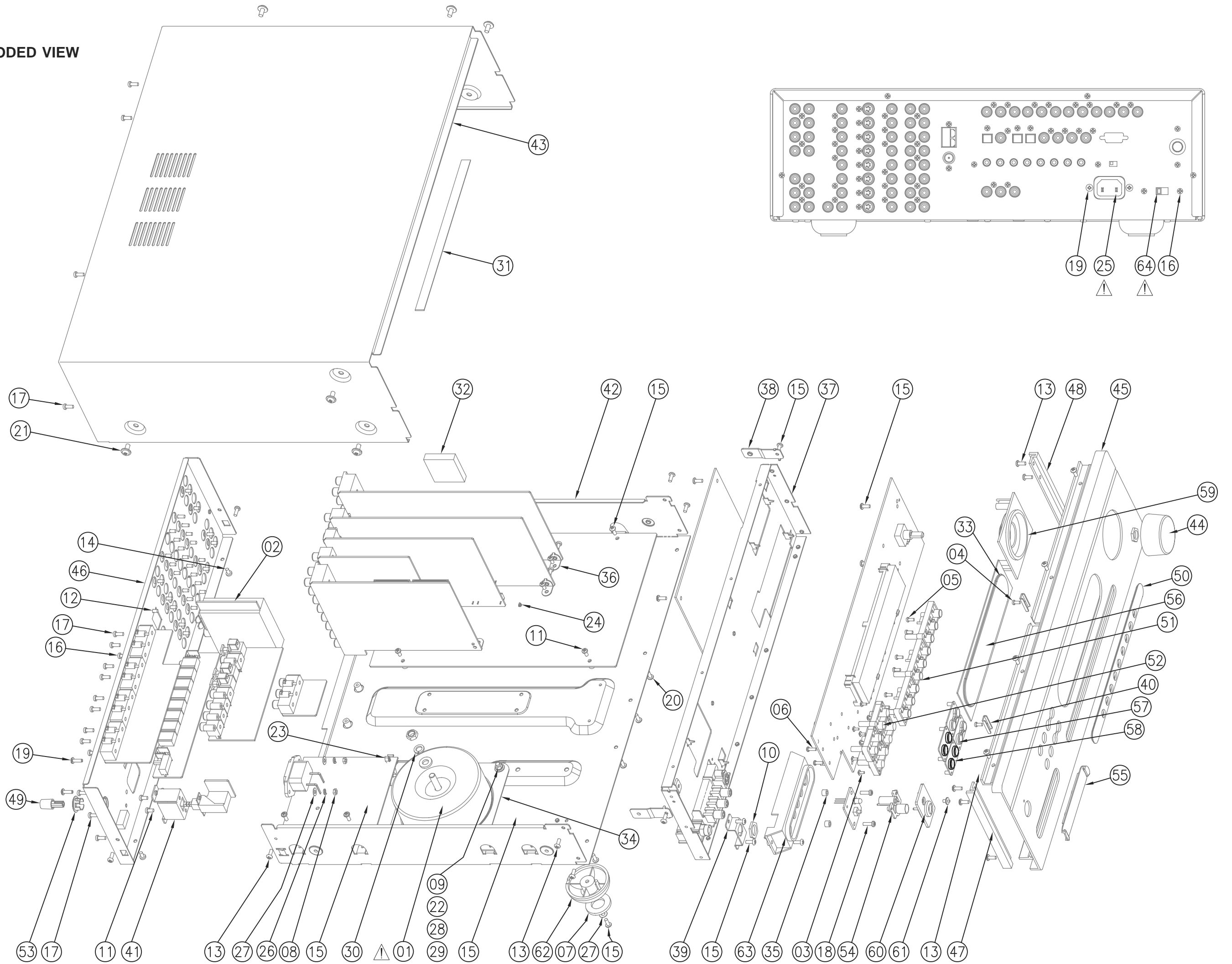
LC74763
S-VIDEO BOARD: U4101





M61516FP
MULTI-CHANNEL BOARD: U601 & U602



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

<u>Item</u>	<u>SCM.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1 	177-009006-01(8)	25-0090060-30-20	TRANSFORMER PW TOROIDAL 117V/234V	1
2 *AH	560-400000-02(7)	29-4000004-00-38	AM/FM TUNER MODULE KST-MB114MA0-23	1
*C	560-400000-00(5)	29-4000002-00-38	AM/FM TUNER MODULE KST-MB114MA1-23	1
3	601-020050-02(8)	13-0200502-22-00	SELF TAP SCREW 2X5 WASHER HEAD TYPE B NI PLT	8
4	601-026050-00(9)	13-0260500-02-00	SELF TAP SCREW 2.6 X 5 P/H TYPE A NI PLT	2
5	601-026060-00(7)	13-0260600-02-00	SELF TAP SCREW 2.6 X 6 P/H TYPE A NI PLT	6
6	601-026080-01(4)	13-0260803-02-00	SELF TAP SCREW 2.6 X 8 B/H TYPE A NI PLT	14
7	608-140260-01(6)	17-1402603-30-22	RUBBER FOOT I/D14 X O/D26 X 3 PORON HH-48C	4
8	610-030024-00(2)	15-0300240-05-20	NUT M3 X 2.4mm	2
9	610-050034-00(8)	15-0500340-08-20	NUT M5X3.4 NI PLT	4
10	610-090022-00(1)	15-0900220-11-30	NUT ZINC PLATED M9.0 X 2.2mm 11p	1
11	614-030060-00(6)	14-0300600-02-00	MACHINE SCREW M3 X 6 P/H NI PLT	11
12	614-030060-01(7)	14-0300600-04-00	MACHINE SCREW M3 X 6 P/H BLK	4
13	614-030060-03(9)	14-0300600-52-00	MACHINE SCREW M3.0 X 6.0 B/H TAP TYPE NICKEL PLT	14
14	614-030060-11(7)	14-0300603-54-00	TAPTITE SCREW 3 X 6 B/H TYPE B BLK	4
15	614-030080-05(7)	14-0300800-53-00	SELF TAP SCREW 3 X 8 B/B ZINC PLATED TAPTITE-TYPE	18
16	614-030080-10(2)	14-0300803-04-00	MACHINE SCREW M3 X 8 B/H BLACK	2
17	614-030080-13(5)	14-0300803-54-00	TAPTITE SCREW 3 X 8 B/H TYPE B BLK PLT	49
18	614-030100-04(1)	14-0301000-54-00	TAPTITE SCREW 3 X 10 P/H TYPE B BLK	2
19	614-030100-06(3)	14-0301003-04-00	MACHINE SCREW M3 X 10 B/H BLK	2
20	614-035080-04(4)	14-0350803-52-00	TAPTITE SCREW 3.5 X 8.0 B/H TYPE B NI PLT	5
21	614-040080-03(9)	14-0400802-04-00	MACHINE SCREW M4 X 8 WASHER HEAD BLK	6
22	614-050120-00(1)	14-0501205-02-02	HEX HEAD SCREW M5 X 12 NI PLT	4
23	616-050096-00(6)	17-0500960-00-01	PCB SUPPORTER(H=9.6mm PCB HOLE 4mm) CS-0610	1
24	616-118080-00(5)	17-1180800-00-01	PCB PLASTIC SPACER H=8.0mm PCB HOLE 4mm MBS-8	1
25 	275-010000-02(7)	34-0100002-00-70	AC INLET IEC 2 PIN 10A/250V PCB MOUNT 3516-T5C02	1
26	617-032056-00(9)	16-0320560-09-20	WASHER SPRING I/D 3.2 X O/D 5.6 0.9mm THK	2
27	617-035008-01(6)	16-0350080-04-35	WASHER STEEL I/D 3.5 X O/D 8.0 0.4mm THK. ZINC PLT.	6
28	617-052008-00(7)	16-0520080-12-30	WASHER SPRING I/D 5.2 X O/D 8 X 1.2 THK ZINC PLT.	4
29	617-056120-00(1)	16-0561200-10-20	WASHER STEEL I/D 5.6 X O/D 12 X 1 THK. NI PLT.	8
30	617-065105-00(8)	16-0651050-02-99	WASHER SPRING I/D 6.5 X O/D10.5 X 2.0mm THK.	1
31	622-009240-00(7)	17-0092401-15-20	FOAM 9 X 240 X 1.5mm BLACK W/NITTO 500	1
32	622-030025-00(6)	17-0300251-06-00	FOAM 30 X 25 X 6mm	1
33	622-075300-00(2)	12-0753009-70-00	STATIC COVER SHEET	1
34	659-016301-00(8)	11-0163015-00-00	TRANSFORMER BRACKET	1
35	659-016303-00(6)	11-0163035-80-00	METAL SPACER OD6 X ID3.2 X 4.5mm	2
36	659-057007-01(6)	11-0570075-80-01	L BRACKET	3
37	659-075202-05(7)	11-0752025-80-05	SUBFASCIA	1
38	659-075205-00(8)	11-0752055-80-00	SIDE MOUNTING BRACKET	2
39	659-075206-00(7)	11-0752065-80-00	PHONE BRACKET	1
40	659-075207-00(6)	11-0752075-80-00	DUMMY BRACKET	2
41	659-077309-00(2)	11-0773095-80-00	POWER BUTTON BRACKET H=24.8mm	1
42	660-075200-05(1)	11-0752004-80-06	BOTTOM CHASSIS	1
43	661-016300-01(4)	11-0163003-94-14	TOP COVER	1
44	664-075200-00(4)	11-0752002-72-00	VOLUME KNOB ASSY	1
45	665-016300-01(3)	11-0163000-95-12	FASCIA	1
46	666-016300-02(6)	/	REAR PANEL	1
47	667-016302-00(4)	11-0163028-95-00	SIDE CAP L	1
48	667-016303-00(3)	11-0163038-95-00	SIDE CAP R	1
49	684-075202-01(5)	10-0752022-02-00	POWER BUTTON BLACK	1

<u>Item</u>	<u>SCM.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
50	684-075203-07(1)	10-0752035-71-00	INPUT BUTTON LOZENGE	1
51	684-075203-09(3)	10-0752032-72-03	INPUT BUTTOM	3
52	684-075204-02(4)	10-0752042-72-01	DUO BUTTON	4
53	684-075204-05(7)	10-0752045-01-00	POWER BUTTON BEZEL	1
54	684-077202-02(7)	10-0772022-72-01	POWER BUTTON TACT ACTIVATE	1
55	688-075200-01(6)	10-0752007-72-00	VIDEO COVER	1
56	691-075200-00(1)	10-0752001-00-10	WINDOW LENS	1
57	694-016304-01(9)	10-0163045-72-00	LINKED GOGGLE BEZEL	2
58	694-016305-02(9)	10-0163055-72-01	DUO GOGGLE BEZEL	2
59	694-075200-01(8)	10-0752005-72-00	VOLUME BEZEL	1
60	694-077204-02(6)	10-0772045-72-01	POWER BUTTON BEZEL	1
61	695-077201-00(9)	10-0772011-00-00	LED LENS ROUND	1
62	698-016301-00(1)	10-0163017-01-00	PLASTIC FOOT DOME SHAPE	4
63	698-075206-00(9)	10-0752065-01-00	VIDEO HOUSING	1
64	⚠ 182-013221-00(3)	35-0132210-00-78	SWITCH MAINS VOLTAGE SELECTOR 2P2T 10A CULVDE	1

NOTE: THE COMPONENTS IDENTIFIED BY ⚠ MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

<*AH > : USA, CANADIAN MODEL ONLY.

<*C > : EUROPEAN MODEL ONLY.

Original P/N	Interim P/N	Final P/N with Description
80-0901630-02-00	800-KEBD16-00	50-922-0163-90 - T163 KEYBOARD ASSEMBLY
80-0901630-47-00	800-DGBD16-00	50-921-0163-90 - T163 DIGITAL INPUT BOARD ASSEMBLY
80-0901630-48-00	800-PWBD16-00	50-925-0163-90 - T163 POWER SWITCH BOARD ASSEMBLY
N/A	800-CVBD16-20	50-932-2163-90 - T163 PH II COMPONENT VIDEO BOARD ASSEMBLY
N/A	800-DGBD16-20	50-921-2163-90 - T163 PH II DIGITAL INPUT BOARD ASSEMBLY
N/A	800-KEBD16-20	50-922-2163-90 - T163 PH II KEYBOARD ASSEMBLY
N/A	800-POBD16-20	50-924-2163-90 - T163 PH II PRE-OUT BOARD ASSEMBLY
N/A	800-PSUD16-20	50-903-2163-90 - T163AH PH II PSU US BOARD ASSEMBLY
N/A	810-316300-22	50-922-3163-90 - T163AH V3 KEYBOARD ASSEMBLY
N/A	810-316300-29	50-932-3163-90 - T163AH V3 COMPONENT VIDEO BOARD ASSEMBLY

ELECTRICAL PARTS LIST

<u>Reference No.</u>	<u>SCM.</u>	<u>Part No.</u>	<u>Description</u>
AUDIO BOARD <i>PCB ASSEMBLY</i>	800-AUBD16-20	/	T163 Phase II Audio Board Assembly
CAPACITORS C317-C329,C331	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
RCA JACKS M303	265-404042-00(4)	34-4040420-00-60	RCA JACK 4 R-R/W-W PCB MOUNT GOLD RS-453G-04
M301,M302	265-406042-00(5)	34-4060420-00-60	RCA JACK 6 R-R-R/W-W-W PCB MOUNT GOLD RCA-653D-04
COMPONENT VIDEO BOARD <i>PCB ASSEMBLY</i>	800-CVBD16-20	/	T163 Phase II Component Video Board Assembly
CAPACITORS C4310-C4312,C4325,C4331	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C4316,C4318,C4320	130-103012-03(3)	22-3102012-00-00	CAP ELEC GS 1000uF 10V 20% 85C
C4313-C4315	130-107052-03(6)	22-3106052-00-43	CAP ELEC SS 1uF 50V 20% 85C
C4301-C4309	130-227052-04(9)	22-3226052-00-43	CAP ELEC SS 2.2uF 50V 20% 85C
RCA JACKS M431-M434	265-403202-00(1)	34-4032020-00-60	RCA 3 G-BL-R PCB MOUNT GOLD RS-354G-18
DIODES D4301,D4302	300-000000-08(2)	20-0000000-00-62	DIODE SW 4NS DO35 1N4148
SMD RESISTORS J4301,J4302,J4303	390-000036-20(9)	44-0000027-11-00	RES SMD 0 OHM 5% 1/10W 0805 TAPE
ICS U4304	500-010099-02(2)	27-0100990-25-00	IC QUAD 2-I/P NAND GATE SOP M74HC00RM13TR
U4302,U4303	500-744052-00(5)	/	IC LOGIC ANALOG MULTIPLEXER/ DEMULTIPLEXER SMD SOIC-16 74HC4052D
U4301	505-517660-00(3)	27-5176600-18-23	IC VIDEO 3-CH 75 OHM DRIVER SSOP BA7660FS
DIGITAL BOARD <i>PCB ASSEMBLY</i>	800-DGBD16-20	/	T163 Phase II Digital Input Board Assembly
CAPACITORS C905	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C1222,C1223	130-102022-06(8)	22-3101022-00-43	CAP ELEC SS 100uF 16V 20% 85C
C901-C904	130-107052-03(6)	22-3106052-00-43	CAP ELEC SS 1uF 50V 20% 85C
C1213,C1214,C1221	130-227052-04(9)	22-3226052-00-43	CAP ELEC SS 2.2uF 50V 20% 85C
JACKS& CONNECTOR J1001-J1004,J1007	265-401032-00(9)	34-4010320-00-60	RCA JACK 1 BLACK PCB MOUNT GOLD RS-146G/B
M901	274-500000-01(6)	34-5000007-00-79	DB9 FEMALE CONNECTOR PCB MOUNT RIGHT ANGLE

Reference No.	SCM.	Part No.	Description
FIBER OPTICAL			
J1008	320-669138-01(4)	26-6691386-00-16	FIBRE OPTIC TRANSMITTER GP1FA550TZ
J1005,J1006	320-670138-00(7)	26-6701380-01-16	FIBRE OPTIC RECEIVING UNIT GP1FA550RZ
ICS			
U1203	500-012519-00(2)	27-0125190-18-00	IC LOGIC 8-CH MULTIPLEXER-SSOP 74HC251M1R
U901	500-072320-00(3)	27-0723200-18-43	IC LOGIC DUAL RS-232 TRANSMITTER SMD SOIC DS232AR
U1201,U1202	500-080499-00(7)	27-0804990-18-00	IC LOGIC HEX INVERTER SMD SOP M74HCU04MIR
DSP BOARD			
PCB ASSEMBLY			
	800-DSBD63-20	/	T763 Phase II DSP Board Assembly
CAPACITORS			
C1011,C1210	106-104076-01(8)	22-4210402-00-71	CAP MPF 0.1uF 63V 5% MEM TYPE
C1056,C1092,C1152-C1154	106-105076-01(4)	22-4210502-00-71	CAP MPF 1uF 63V 5% MEM TYPE
C1012,C1072,C1079,C1137, C1138,C1143,C1144	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C1117	130-102022-06(8)	22-3101022-00-43	CAP ELEC SS 100uF 16V 20% 85C
C1004,C1014,C1016, C1062, C1083,C1096,C1100,C1155	130-107052-03(6)	22-3106052-00-43	CAP ELEC SS 1uF 50V 20% 85C
C1005	130-227052-04(9)	22-3226052-00-43	CAP ELEC SS 2.2uF 50V 20% 85C
C1020,C1021,C1030,C1031,C1040, C1050,C1051,C1091,C1041,C1094	130-337052-01(4)	22-3336052-00-43	CAP ELEC SS 3.3uF 50V 20% 85C
C1109-C1112	130-471022-03(1)	22-3470022-00-43	CAP ELEC SS 47uF 16V 20% 85C
C1060,C1073	130-472022-01(4)	22-3471022-00-28	CAP ELEC GR 470uF 16V 20% 85C
C1171,C1172	130-477052-04(8)	22-3476052-00-43	CAP ELEC SS 4.7uF 50V 20% 85C
INDUCTORS			
L1001-L1005,L1007,L1010, L1012-L1015	152-010012-02(3)	24-0100127-00-28	IND CHOKE 10uH 10% EC36 AXIAL EC36-100K
L1011	152-056910-03(7)	24-0569107-00-28	IND CHOKE 5.6uH 10% AXIAL EC24-5R6K
CRYSTAL			
X1001	290-512220-01(4)	28-5122200-04-19	CRYSTAL CLOCK OSC 12.288MHz 50ppm 4PIN HALF-SIZE
TRASNISTORS			
Q1001-Q1003	339-000001-01(6)	21-0000010-00-46	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
ICS			
U1007	502-027020-00(3)	27-2325607-00-61	I.C.EEPROM 256X8 BYTE 70nS PDIL SST27SF020
U1020,U1015	503-303171-00(8)	27-3031710-06-00	IC REG 1A TO-220(T) LM317T
U1004	500-011579-01(4)	27-0115790-25-00	IC LOGIC QUAD 2-INPUT SELECTOR SOIC 74HC157MIR
U1014,U1002,U1003	500-032459-00(5)	27-0324590-24-00	IC LOGIC OCTAL BIDIRECTIONAL TRANS CEIVER SMD 74LVC245ATTR
U1008,U1009	500-065749-00(7)	27-0657490-18-00	IC LOGIC OCTAL D-FLIP FLOPS WITH 3-STAGE OUTPUT SMD 74LVQ574 M
U1010-U1013,U1023,U1028	507-705532-01(7)	27-7055320-18-14	IC AUDIO LOW NOISE OP-AMP SMD NJM5532M

Reference No.	SCM.	Part No.	Description
U1026	509-943600-00(9)	27-9436000-24-53	IC 24BIT 192KHz 6 CH DAC CS4360KZ
U1025	509-943920-00(5)	27-9439200-24-53	IC 24BIT 192KHz STEREO DAC TSSOP CS4392-KZ
U1001	509-949326-00(2)	27-9493260-04-70	IC DD DTS & MPEG DECODER PLCC CS49326
U1027	509-953410-00(8)	27-9534100-18-47	IC AUDIO A/D CONVERTER 16PIN SMD TSSOP CS5341-CZZ
U1005	509-984150-00(8)	27-9841500-25-53	IC 96KHz DIGITAL AUDIO INTERFACE RECEIVER SMD CS8415A-CS
SMD CAPACITORS			
C1101-C1108	120-101527-50(3)	45-0101055-55-56	CAP CER SMD 100pF 50V 10% X7R 0603 TAPE
C1024,C1028,C1034,C1038,C1044,C1048,C1054,C1058,C1132	120-102527-50(8)	45-0102055-55-56	CAP CER SMD 1nF 50V 10% X7R 0603 TAPE
C1007,C1010,C1160,C1175,C1176	120-103527-51(5)	45-0103055-55-56	CAP CER SMD 10nF 50V 10% X7R 0603 TAPE
C1003,C1008,C1009,C1013,C1015,C1017-C1019,C1061,C1074-C1076,C1078,C1081,C1082,C1090,C1093,C1095,C1099,C1124-C1128,C1150,C1151,C1157,C1177,C1178	120-104528-71(9)	45-0104056-57-57	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
C1025,C1029,C1035,C1039,C1045,C1049,C1055,C1059	120-152527-50(1)	45-0152055-55-56	CAP CER SMD 1.5nF 50V 10% X7R 0603 TAPE
C1121,C1006	120-221527-50(5)	45-0221055-55-57	CAP CER SMD 220pF 50V 10% X7R 0603 TAPE
C1134-C1136	120-222527-50(1)	45-0222055-55-56	CAP CER SMD 2.2nF 50V 10% X7R 0603 TAPE
C1139,C1145,C1146,C1140	120-272527-51(4)	45-0272055-55-57	CAP CER SMD 2.7nF 50V 10% X7R 0603 TAPE
C1201-C1208	120-331527-50(3)	45-0331055-55-56	CAP CER SMD 330pF 50V 10% X7R 0603 TAPE
C1022,C1026,C1032,C1036,C1042,C1046,C1052,C1056	120-332527-50(8)	45-0332055-55-56	CAP CER SMD 3.3nF 50V 10% X7R 0603 TAPE
C1187,C1188	120-471526-20(5)	45-0471054-52-56	CAP CER SMD 470pF 50V 5% NPO 0603 TAPE
C1114,C1130,C1131	120-472527-50(9)	45-0472055-55-56	CAP CER SMD 4.7nF 50V 10% X7R 0603 TAPE
C1141,C1142,C1147,C1148	120-561527-50(3)	45-0561055-55-56	CAP CER SMD 560pF 50V+10% X7R 0603 TAPE
C1183,C1209	120-680527-50(9)	45-0680055-55-56	CAP CER SMD 68pF 50V 10% X7R 0603 TAPE
SMD RESISTORS			
J1001,R1215,R1010,R1099,R1247,R1249	390-000026-11(3)	44-0000020-51-00	RES SMD 0 OHM 5% 1/16W 0603 TAPE
R1092-R1094,R1112-R1113,R1115,R1181-R1184	390-100026-11(6)	44-0100020-51-00	RES SMD 100 OHM 5% 1/16W 0603 TAPE
R1166	390-100126-11(3)	44-0100120-51-00	RES SMD 1K OHM 5% 1/16W 0603 TAPE
R1008,R1020-R1022,R1026,R1036,R1040,R1050,R1054,R1064,R1068,R1114,R1130-R1138	390-100226-11(9)	44-0100220-51-00	RES SMD 10K OHM 5% 1/16W 0603 TAPE
R1175,R1176,R1223,R1224	390-100324-10(7)	44-0100310-51-00	RES SMD 100K OHM 1% 1/16W 0603 TAPE
R1118,R1119,R1124,R1125	390-118124-20(3)	44-0118117-51-00	RES SMD 1.18K OHM 1%1/10W 0603 TAPE
R1013	390-120126-12(3)	44-0120120-51-00	RES SMD 1.2K OHM 5% 1/16W 0603 TAPE
R1120,R1121,R1126,R1127	390-150126-11(5)	44-0150120-51-00	RES SMD 1.5K OHM 5% 1/16W 0603 TAPE
R1082	390-180124-10(9)	44-0180110-51-00	RES SMD 1.8K OHM 1% 1/16W 0603 TAPE
R1197,R1195,R1196,R1198	390-200126-12(7)	44-0200120-51-00	RES SMD 2K OHM 5% 1/16W 0603 TAPE
R1009	390-200326-10(8)	44-0200320-51-00	RES SMD 200K OHM 5% 1/16W 0603 TAPE
R1023,R1027,R1028,R1030,R1033,R1035,R1037,R1041,R1042,R1044,R1047,R1049,R1051,R1055,R1056,R1058,R1061,R1063,R1065,R1069,R1070,R1072,R1075,R1077,R1078,R1080,R1084	390-220126-11(5)	44-0220120-51-00	RES SMD 2.2K OHM 5% 1/16W 0603 TAPE
R1081,R1090,R1091,R1221	390-270124-10(8)	44-0270110-51-00	RES SMD 2.7K OHM 1% 1/16W 0603 TAPE

Reference No.	SCM.	Part No.	Description
R1003,R1004,R1005,R1006	390-330126-11(3)	44-0330120-51-00	RES SMD 3.3K OHM 5% 1/16W 0603 TAPE
R1007,R1191-R1194	390-330926-11(6)	44-0330920-51-00	RES SMD 33 OHM 5% 1/16W 0603 TAPE
R1001,R1002,R1079,R1083,R1222, R1231-R1246	390-470126-11(4)	44-0470120-51-00	RES SMD 4.7K OHM 5% 1/16W 0603 TAPE
R1171-R1174	390-470224-21(3)	44-0470217-51-00	RES SMD 47K OHM 1% 1/10W 0603 TAPE
R1117,R1116,R1123,R1122	390-562124-20(5)	44-0562117-51-00	RES SMD 5.62K OHM 1% 1/10W 0603 TAPE
R1024,R1031,R1038,R1045,R1052, R1059,R1073,R1066	390-620026-10(1)	44-0620020-51-00	RES SMD 620 OHM 5% 1/16W 0603 TAPE
R1217,R1218	390-634024-10(9)	/	RES SMD 634 OHM 1% 1/16W 0603 TAPE
R1213-R1214,R1216	390-750926-11(8)	44-0750920-51-00	RES SMD 75 OHM 5% 1/16W 0603 TAPE
R1177,R1178	390-910926-11(7)	44-0910920-51-00	RES SMD 91 OHM 5% 1/16W 0603 TAPE
KEYBOARD			
PCB ASSEMBLY	800-KEBD16-20	/	T163 Phase II Keyboard Board Assembly
CAPACITORS			
C212	130-103012-04(4)	22-3102012-00-28	CAP ELEC GR 1000uF 10V 20% 85C
C255	130-107052-03(6)	22-3106052-00-43	CAP ELEC SS 1uF 50V 20% 85C
C214	130-108052-01(9)	22-3107052-00-43	CAP ELEC SS 0.1uF 50V 20% 85C
C208-C211	130-471022-03(1)	22-3470022-00-43	CAP ELEC SS 47uF 16V 20% 85C
TACT SWITCHES			
S201-S217	182-100111-08(9)	35-1001117-00-67	SW TACT NO 1P1T 50mA/12V VER H=7mm TM114BFJ
ENCODER			
M201	254-600121-01(8)	35-6001219-00-47	ENCODER ROTATRY L=20MM VERT W/O CLICK EC16B243040F
CRYSTALS			
X201,X202	290-520020-02(5)	28-5200200-06-19	CRYSTAL 20.000MHz 30ppm HC-49S
DIODES			
D212,D214-D218	300-000000-08(2)	20-0000000-00-62	DIODE SW 4NS DO35 1N4148
D220	303-385190-00(9)	20-3851902-00-05	DIODE ZENER BZX79 5.1V 1/2W 5%
IR RECEIVER			
D201	320-094138-00(8)	26-0941380-00-00	IR RX 940nm 37.9KHz SHIELD ST FM-7138TE5
TRANSISTORS			
Q203,Q205,Q206	339-000001-01(6)	21-0000010-00-46	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
Q201	339-010010-01(9)	21-0100100-00-46	XTR SS PNP HFE 100 200MHz TO-92 A1015Y
VFD			
VD201	354-434010-00(4)	41-4340100-00-13	VFD 16-BT-93GNK
ICS			
U201,U202	501-108640-01(7)	27-1086401-04-25	IC MCU 8 BIT 64KROM 1024 BYTE SCRAM PLCC T89C51RD2-SL
U210	502-230022-08(2)	27-2300225-00-25	IC EEPROM 2K BYTE 250nS PDIL ENDURANCE : 1 MILLION CYCLES AT 24C16
U208	500-014051-00(9)	27-0140510-18-00	IC LOGIC SINGLE 8 CH ANALOG MUX/DEMUX SMD M74HC4051MIR








Reference No.	SCM.	Part No.	Description
U209	500-032459-03(8)	27-0324591-18-00	IC LOGIC OCTAL BUS TRANSCEIVER (3-STATE) 74VHC245M
U204-U207,U211	500-054094-01(6)	27-0540940-18-08	IC LOGIC 8-STAGE SHIFT-AND-STORE BUS REGISTER SMD SO16 HEF40 94BT
U203	509-963060-00(5)	27-9630600-14-62	IC VFD DRIVER SMD QFP PT6306
U214	509-981000-00(6)	27-9810000-28-36	IC MICROCONTROLLER RESET MONITORS TCM810LENB713
SMD CAPACITORS			
C241,C242	120-102527-51(9)	45-0102055-55-57	CAP CER SMD 1nF 50V 10% X7R 0603 TAPE
C201,C202,C213,C215-C222, C229,C256	120-104528-70(8)	45-0104056-57-56	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
C251-C254	120-330527-50(7)	45-0330055-55-57	CAP CER SMD 33pF 50V 10% X7R 0603 TAPE
SMD RESISTORS			
R253,R270	390-000026-11(3)	44-0000020-51-00	RES SMD 0 OHM 5% 1/16W 0603 TAPE
R222	390-068024-70(5)	44-0680910-51-00	RES SMD 68 ohm 1% 1/16W 0603 TAPE
R241,R242	390-100026-11(6)	44-0100020-51-00	RES SMD 100 OHM 5% 1/16W 0603 TAPE
R216,R234	390-100126-11(3)	44-0100120-51-00	RES SMD 1K OHM 5% 1/16W 0603 TAPE
R201-R207,R213,R219,R223,R224, R226,R229,R231,R232	390-100226-11(9)	44-0100220-51-00	RES SMD 10K OHM 5% 1/16W 0603 TAPE
R251,R252	390-100526-10(8)	44-0100520-51-00	RES SMD 10M OHM 5% 1/16W 0603 TAPE
R238	390-120226-11(8)	44-0120220-51-00	RES SMD 12K OHM 5% 1/16W 0603 TAPE
R221,R230	390-220126-11(5)	44-0220120-51-00	RES SMD 2.2K OHM 5% 1/16W 0603 TAPE
R217,R218	390-470026-11(7)	44-0470020-51-00	RES SMD 470 OHM 5% 1/16W 0603 TAPE
R220,R254-R269	390-470126-11(4)	44-0470120-51-00	RES SMD 4.7K OHM 5% 1/16W 0603 TAPE
R233	390-470226-11(1)	44-0470220-51-00	RES SMD 47K OHM 5% 1/16W 0603 TAPE
R225	390-560024-11(8)	44-0560010-51-00	RES SMD 560 OHM 1% 1/16W 0603 TAPE
LED BOARD			
PCB ASSEMBLY	800-LEBD16-20	/	T163 Phase II LED Board Assembly
LED			
D211	314-001258-05(7)	26-0012587-01-17	LED RED-GRN CIRCULAR 5X8.7MM 5RG9SW-2-A COM ANODE
MAINBOARD			
PCB ASSEMBLY	800-MABD16-20	/	T163 Phase II Normal Main Board Assembly
CAPACITORS			
C727-C731	106-104076-01(8)	22-4210402-00-71	CAP MPF 0.1uF 63V 5% MEM TYPE
C715	106-105076-01(4)	22-4210502-00-71	CAP MPF 1uF 63V 5% MEM TYPE
C732,C733,C739,C740	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C702,C719	130-101022-10(6)	22-3101022-30-13	CAP ELEC KM 100uF 16V 20% 105C
C705,C706,C716,C725	130-103032-80(5)	22-3102032-30-28	CAP ELEC KM 1000uF 25V 20% 105C
C711-C713,C741	130-103052-03(4)	22-3102052-30-28	CAP ELEC KM 1000uF 50V 20% 105C
C724	130-223032-08(6)	22-3222032-30-28	CAP ELEC KM 2200uF 25V 20% 105C
C707	130-223042-04(9)	22-3222042-30-49	CAP ELEC KM 2200uF 35V 20% 105C
C701	130-333042-05(8)	22-3332042-30-35	CAP ELEC KM 3300uF 35V 20% 105C
C734,C735	130-471022-03(1)	22-3470022-00-43	CAP ELEC SS 47uF 16V 20% 85C
C710	130-471052-70(1)	22-3470052-00-43	CAP ELEC SS 47uF 50V 20% 85C

Reference No.	SCM.	Part No.	Description
C704	130-473047-00(8)	22-3472042-30-35	CAP ELEC 4700uF 35V 105C
DIODES			
D719	300-000000-08(2)	20-0000000-00-62	DIODE SW 4NS DO35 1N4148
D701-D710	301-100110-10(3)	20-1001102-20-26	DIODE RECT 1A/1000V DO41 WIN4007
D711	303-320310-02(8)	20-3203102-00-01	DIODE ZENER BZX55 30V 1/2W 5%
D715	305-500470-00(2)	20-5004700-50-02	DIODE BRI 4A/70V RS402L
TRANSISTORS			
Q701	330-101121-00(6)	21-1011210-50-12	XTR PW NPN 1A/100V TO-126 2SD600KE
Q702,Q703	339-000036-00(3)	21-0000360-00-00	XTR SS NPN HFE200-700 30MHz 2SC2878A
Q705	339-000040-00(7)	21-0000400-70-14	XTR SS NPN HFE30 250MHz SPT DTC114ESATP
Q704	339-010039-00(4)	21-0100390-70-14	XTR SS PNP HFE 30 250MHz SPT DTA114ESATP
RESISTORS			
R703-R707,R714	383-022823-60(4)	23-2228232-00-00	RES MO 0.22 OHM 5% 1/2W
ICS			
U701,U704,U705	503-300050-14(5)	27-3000501-17-14	IC VOLT REG 5V 1A TO-220 NJM7805FA ISOWATT
U702,U707	503-300120-07(2)	27-3001201-17-14	IC VOLT REG 12V 1A TO-220 NJM7812 ISOWATT
U703	503-310120-01(9)	27-3101201-13-14	IC VOLT REG TO-220F NJM7912
U708	509-945580-00(6)	27-9455800-21-14	IC OPERATIONAL AMPLIFIER DIP NJM4558
MULTI-SOURCE BOARD PCB ASSEMBLY			
	800-MSBD16-20	/	T163 Phase II Normal Multi Source Board Assembly
RCA JACK			
M303	265-403080-01(3)	34-4030800-00-60	RCA JACK 3 Y-R-W PCB MOUNT GOLD RS-314G-06(R)
SMD RESISTOR			
J3103	390-000036-20(9)	44-0000027-11-00	RES SMD 0 OHM 5% 1/10W 0805 TAPE
MULTI-CH BOARD PCB ASSEMBLY			
	800-MUBD16-20	/	T163 Phase II Multi-Channel Board Assembly
CAPACITORS			
C759-C762,C769,C770,C773,C774, C777-C790	106-104076-01(8)	22-4210402-00-71	CAP MPF 0.1uF 63V 5% MEM TYPE
C767,C768,C771,C772	106-233076-00(8)	22-4233202-00-31	CAP MpF 0.0033uF 63V 5% DMF 5 SERIES
C763-C766	106-247076-01(6)	22-4247302-00-31	CAP MpF 0.047uF 63V 5% DMF 5 SERIES
C757,C758	106-282076-00(5)	22-4282302-00-31	CAP MpF 0.082uF 63V 5% DMF 5 SERIES
C779-C787,C792-C796	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C627,C628,C633,C634	130-102022-06(8)	22-3101022-00-43	CAP ELEC SS 100uF 16V 20% 85C
C607,C747-C754	130-221022-03(2)	22-3220022-00-43	CAP ELEC GS 22uF 16V 20% 85C
C755,C756,C775,C776	130-227052-09(5)	22-8226052-00-28	CAP ELEC 2.2uF 50V 20% NON-POLAR

Reference No.	SCM.	Part No.	Description
C677,C678,C689,C690	130-471022-03(1)	22-3470022-00-43	CAP ELEC SS 47uF 16V 20% 85C
INDUCTORS			
L601,L602	152-010110-03(3)	24-0101108-00-28	IND CHOKE 100uH 10% AXIAL EC24-101K
RCA JACKS			
M602	265-402032-00(5)	34-4020320-00-60	RCA JACK 2 B/B PCB MOUNT GOLD RS-253G-02
M601,M603	265-406042-00(5)	34-4060420-00-60	RCA JACK 6 R-R-R/W-W-W PCB MOUNT GOLD RCA-653D-04
DIODES			
D602,D604	303-327590-00(1)	20-3275902-00-01	DIODE ZENER BZX55 7.5V 1/2W 5%
D605,D606	303-385190-00(9)	20-3851902-00-05	DIODE ZENER BZX79 5.1V 1/2W 5%
TRANSISTORS			
Q608,Q609	339-000012-00(2)	21-0000120-70-14	XTR SS NPN HFE 68 30MHz SPT DTC144ESATP
Q601	339-000014-00(9)	21-0000140-00-01	XTR SS NPN HFE 120-200 190MHz TO-92 8050C
Q607	339-000045-00(2)	21-0000450-70-14	XTR SS NPN 68 250MHz SPT DTA144ESATP
Q602	339-010022-00(4)	21-0100220-00-01	XTR SS PNP HFE 120-200 200MHz TO-92 8550C
RESISTORS			
R611,R612,R616	381-200221-00(8)	/	RES MF 20K OHM 1% 1/6W AXIAL TAPE & REEL (GP) (52MM)
R609,R610,R615	381-330221-00(5)	/	RES MF 33K OHM 1% 1/6W AXIAL TAPE & REEL (GP) (52MM)
R613,R614	381-750221-00(7)	/	RES MF 75K OHM 1% 1/6W AXIAL TAPE & REEL (GP) (52MM)
ICS			
U603	500-054066-04(4)	27-0540660-00-94	IC LOGIC ANALOG PDIL CD4066B
U604,U605	507-705532-01(7)	27-7055320-18-14	IC AUDIO LOW NOISE OP-AMP SMD NJM5532M
U601,U602	507-766151-00(8)	27-7661516-14-01	IC SOUND PROCESSOR 7.1CH VOL+TONE SMD QFP M61516FP
PRE-OUT BOARD PCB ASSEMBLY	800-POBD16-20	/	T163 Phase II Pre-Out Board Assembly
CAPACTIORS			
C647,C652,C657,C662,C672,C700,C705	130-101022-02(8)	22-3100022-00-43	CAP ELEC SS 10uF 16V 20% 85C
C640,C645,C650,C655,C660,C665,C670,C675,C703,C708,C785-C796	130-221022-03(2)	22-3220022-00-43	CAP ELEC GS 22uF 16V 20% 85C
C753,C755,C758,C761,C764,C767,C770,C773,C776,C779	130-227052-09(5)	22-8226052-00-28	CAP ELEC 2.2uF 50V 20% NON-POLAR
C684-C688,C699	130-332022-02(4)	22-3331022-00-28	CAP ELEC GR 330uF 16V 20% 85C
C637,C642,C667,C679,C680,C691,C692,C751,C752,C754,C756,C757,C759,C760,C762,C763,C765,C766,C768,C769,C771,C772,C774,C775,C777,C778,C780	130-471022-03(1)	22-3470022-00-43	CAP ELEC SS 47uF 16V 20% 85C

Reference No.	SCM.	Part No.	Description
C784	133-222022-70(1)	/	CAP ELEC SS 220uF 16V 20% 85C
C639,C644,C649,C654,C659,C664, C669,C674,C702,C707,C781-C783	120-101527-50(3)	45-0101055-55-56	CAP CER SMD 100pF 50V 10% X7R 0603 TAPE
C712,C713	120-102527-50(8)	45-0102055-55-56	CAP CER SMD 1nF 50V 10% X7R 0603 TAPE
C721,C901-C920	120-104528-71(9)	45-0104056-57-57	CAP CER SMD 0.1uF 50V 20% Y5V 0603 TAPE
C638,C641,C643,C646,C648,C651, C653,C656,C658,C661,C663,C666, C668,C671,C673,C676,C701,C704, C706,C709,C741-C746	120-221527-01(6)	45-0221055-55-56	CAP CER SMD 220pF 50V+10% XTR 0603 TAPE
INDUCTORS			
L602-L610	152-010012-02(3)	24-0100127-00-28	IND CHOKE 10uH 10% EC36 AXIAL EC36-100K
RCA JACKS			
M608	265-401030-02(4)	34-4010300-01-60	RCA JACK 1 BLACK PCB MOUNT GOLD RS-116G/B
M612	265-402030-00(7)	34-4020300-00-60	RCA JACK 2 B/B PCB MOUNT GOLD RS-213G-02(W)
M607,M609,M610	265-402040-00(5)	34-4020400-00-60	RCA JACK 2 R-W PCB MOUNT GOLD RS-214G-04 (W)
DIODES			
D605-D610,D615	300-000000-08(2)	20-0000000-00-62	DIODE SW 4NS DO35 1N4148
D611-D614	301-100110-10(3)	20-1001102-20-26	DIODE RECT 1A/1000V DO41 WIN4007
TRANSISTORS			
Q608-Q615,Q617,Q629,Q630, Q685-Q693	339-000035-00(4)	21-0000350-70-00	XTR SS NPN HFE200-700 30MHz SPT RN1241A
Q681,Q682	339-000036-00(3)	21-0000360-00-00	XTR SS NPN HFE200-700 30MHz 2SC2878A
Q684	339-000040-00(7)	21-0000400-70-14	XTR SS NPN HFE30 250MHz SPT DTC114ESATP
Q642,Q643,Q646,Q647,Q650,Q651, Q654,Q655,Q658,Q659,Q662,Q663, Q666,Q667,Q670,Q671,Q674,Q675, Q678,Q679	339-000041-00(6)	21-0000410-00-12	XTR SS NPN HFE160-320 130MHz 2SC2362KF
Q616,Q618,Q620,Q622,Q624, Q631,Q683	339-010039-00(4)	21-0100390-70-14	XTR SS PNP HFE 30 250MHz SPT DTA114ESATP
Q641,Q644,Q645,Q648,Q649,Q652, Q653,Q656,Q657,Q660,Q661,Q664, Q665,Q668,Q669,Q672,Q673,Q676, Q677,Q680	339-010041-00(1)	21-0100410-00-12	XTR SS PNP HFE 280-560 110MHz 2SA1016KG-AA
RESISTORS			
R636,R643,R878	390-100124-11(5)	44-0100110-51-00	RES SMD 1K OHM 1% 1/16W 0603 TAPE
R637,R644,R649,R656,R661,R668, R680,R696,R703,R729,R739,R749, R759,R769,R779,R789,R799,R809, R819	390-100126-11(3)	44-0100120-51-00	RES SMD 1K OHM 5% 1/16W 0603 TAPE
R640,R652,R664,R676,R683,R699, R875,R876,R879	390-100226-11(9)	44-0100220-51-00	RES SMD 10K OHM 5% 1/16W 0603 TAPE
R890-R919,R930-R939	390-100326-11(6)	44-0100320-51-00	RES SMD 100K OHM 5% 1/16W 0603 TAPE
R725,R726,R735,R736,R745,R746, R755,R756,R765,R766,R775,R776, R785,R786,R795,R796,R805,R806, R815,R816	390-100926-11(6)	44-0100920-51-00	RES SMD 10 OHM 5% 1/16W 0603 TAPE

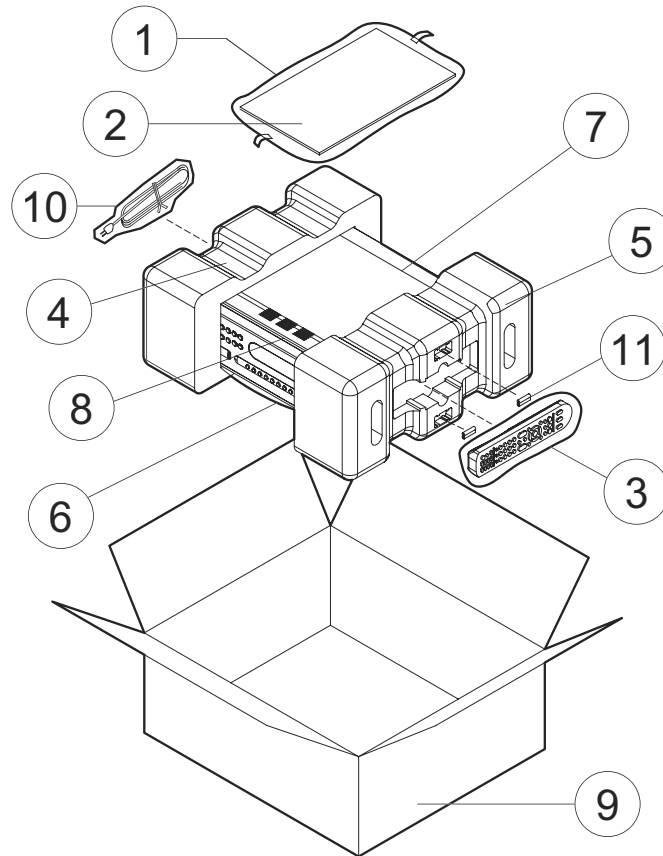
Reference No.	SCM.	Part No.	Description
R721,R724,R731,R734,R741,R744, R751,R754,R761,R764,R771,R774, R781,R784,R791,R794,R801,R804, R811,R814	390-120226-11(8)	44-0120220-51-00	RES SMD 12K OHM 5% 1/16W 0603 TAPE
R648,R655,R660,R667,R679	390-150124-10(6)	44-0150110-51-00	RES SMD 1.5K OHM 1% 1/16W 0603 TAPE
R880-R889	390-220026-11(8)	44-0220020-51-00	RES SMD 220 OHM 5% 1/16W 0603 TAPE
R688-R692,R694,R701,R705	390-220124-10(6)	44-0220110-51-00	RES SMD 2.2K OHM 1% 1/16W 0603 TAPE
R671,R940,R941	390-270124-10(8)	44-0270110-51-00	RES SMD 2.7K OHM 1% 1/16W 0603 TAPE
R639,R651,R663,R682,R675,R698	390-300026-10(2)	44-0300020-51-00	RES SMD 300 OHM 5% 1/16W 0603 TAPE
R672,R695,R702	390-330024-12(9)	44-0330010-51-00	RES SMD 330 OHM 1% 1/16W 0603 TAPE
R635,R642,R647,R654,R659,R666, R678,R871,R872,R873,R874,R877	390-330124-11(5)	44-0330110-51-00	RES SMD 3.3K OHM 1% 1/16W 0603 TAPE
R673	390-430026-10(8)	44-0430020-51-00	RES SMD 430 OHM 5% 1/16W 0603 TAPE
R722,R723,R732,R733,R742,R743, R752,R753,R762,R763,R772,R773, R782,R783,R792,R793,R802,R803, R812,R813,R920-R929	390-470026-11(7)	44-0470020-51-00	RES SMD 470 OHM 5% 1/16W 0603 TAPE
R727,R728,R737,R738,R747,R748, R757,R758,R767,R768,R777,R778, R787,R788,R797,R798,R807,R808, R817,R818	390-470926-11(7)	44-0470920-51-00	RES SMD 47 OHM 5% 1/16W 0603 TAPE
R634,R638,R641,R645,R646,R650, R653,R657,R658,R662,R665,R669, R670,R674,R677,R681,R693,R697, R700,R704,R730,R740,R750,R760, R770,R780,R790,R800,R810,R820	390-560226-11(9)	44-0560220-51-00	RES SMD 56K OHM 5% 1/16W 0603 TAPE
ICS U609-U615	507-705532-01(7)	27-7055320-18-14	IC AUDIO LOW NOISE OP-AMP SMD NJM5532M
PSU Board PCB ASSEMBLY	800-PSUD16-20	/	T163 Phase II PSU Assembly
CAPACITORS C753 C754 C752 C763 ⚠	106-102076-00(6) 130-473032-02(8) 130-477052-02(6) 100-103578-21(1)	22-4210202-00-31 22-3472032-00-28 22-3476052-00-00 22-1103960-37-71	CAP MPF 0.001uF 63V 5% DMF 5 SERIES CAP ELEC GR 4700uF 25V 20% 85C CAP ELEC GS 4.7uF 50V 20% 85C CAP CER 0.01uF 250VAC 20% Y5V
CHOKE COIL L751	155-540015-00(4)	24-5400151-00-28	LINE CHOKE 400uH 1.5A 250VAC UL TC12747-401MX2 BASE
STANDBY TRNASFORMER T751 ⚠	177-004005-01(2)	25-0040058-31-18	TRANSFORMER PW EI-35 100V/220V T05382B
VOLTAGE SELECTOR M752 ⚠	182-013221-00(3)	35-0132210-00-78	SWITCH MAINS VOLTAGE SELECTOR 2P2T 10A CUL/VDE EV-32
RELAY M751 ⚠	182-101210-02(6)	32-1012100-01-97	RELAY MINIATURE 12VDC/10A 1P1T VDE/BS SDT-SS-112DM TV-5(UL)

Reference No.	SCM.	Part No.	Description
DIODES D751-D756	301-100110-10(3)	20-1001102-20-26	DIODE RECT 1A/1000V DO41 WIN4007
TRANSISTOR Q751	339-000001-01(6)	21-0000010-00-46	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
FUSES F752 	370-011100-07(5)	33-0111009-00-88	FUSE TIME-LAG 1A/250VAC 5X20mm 5T UL/CSA/VDE/SEMKO
F751 	370-015100-04(4)	33-0151009-00-88	FUSE TIME-LAG 500mA/250VAC 5X20mm 5T UL/CSA/VDE/SEMKO
FH751-FH752 	371-100000-00(6)	33-1000000-00-27	FUSE CLIP 0.05mm FC-1001
RESISTORS R751  R754 	382-022834-60(8) 387-390453-60(9)	23-5228330-00-00 23-8395232-00-06	RES FUSIBLE 0.22 OHM 10% 1/2W AXIAL RES CONDUCTIVE PATH 3.9M OHM 1/2W 5%
POWER SWITCH BOARD PCB ASSEMBLY	800-PWBD16-20	/	T163 Phase II Power Switch Board Assembly
CAPACITOR C764 	100-103578-21(1)	22-1103960-37-71	CAP CER 0.01uF 250VAC 20% Y5V
POWER SWITCH S751 	182-010110-02(5)	35-0101109-00-78	POWER SWITCH TV-8 10A/250VAC PCB MOUNT
S-VIDEO BOARD PCB ASSEMBLY	800-SVBD16-20	/	T163 Phase II S-Video Board Assembly
CAPACITORS C4136,C4146 C4138 C4126,C4127 C4151 C4134,C4145,C4149 C4158 C4133,C4137,C4141 C4144 C4123,C4124 C4101-C4111,C4113-C4115, C4117-C4120,C4153,C4157 C4150 C4108,C4112,C4116,C4156	106-247076-04(9) 118-200078-00(2) 121-330577-01(9) 130-101022-02(8) 130-102012-03(7) 130-102022-06(8) 130-107052-03(6) 130-108052-01(9) 130-222012-03(9) 130-227052-04(9) 130-471022-03(1) 130-472012-02(7)	22-4247402-00-31 22-7200210-00-09 / 22-3100022-00-43 22-3101012-00-43 22-3101022-00-43 22-3106052-00-43 22-3107052-00-43 22-3221012-00-43 22-3226052-00-43 22-3470022-00-43 22-3471012-00-28	CAP MPF 0.47uF 63V 5% DMF 5 SERIES CAP TRIMMER 20pF 20% PITCH=5mm CAP CER 33PF 50V +/-10% NPO (GP) CAP ELEC SS 10uF 16V 20% 85C CAP ELEC SS 100uF 10V 20% 85C CAP ELEC SS 100uF 16V 20% 85C CAP ELEC SS 1uF 50V 20% 85C CAP ELEC SS 0.1uF 50V 20% 85C CAP ELEC SS 220uF 10V 20% 85C CAP ELEC SS 2.2uF 50V 20% 85C CAP ELEC SS 47uF 16V 20% 85C CAP ELEC GR 470uF 10V 20% 85C
CHOKE COILS L4102 L4101	152-022010-02(1) 152-056910-03(7)	24-0220107-00-28 24-0569107-00-28	IND CHOKE 22uH 10% IND CHOKE 5.6uH 10%K
JACKS M411-M418	266-411030-01(9)	34-4110300-00-60	DIN JACK 1 BLACK PCB MOUNT MD-113

Reference No.	SCM.	Part No.	Description
CRYSTALS			
X4101	290-514320-01(2)	28-5143200-06-19	CRYSTAL 14.318MHz 30ppm 32pF HC-49S
X4102	290-517720-01(5)	28-5177200-06-19	CRYSTAL 17.73447MHz 20ppm 30pF HC-49S
DIODES			
D4101-D4107	300-000000-08(2)	20-0000000-00-62	DIODE SW 4NS DO35 1N4148
D4108,D4109	303-385190-00(9)	20-3851902-00-05	DIODE ZENER BZX79 5.1V 1/2W 5%
TRANSISTORS			
Q4132	339-000001-01(6)	21-0000010-00-46	XTR SS NPN HEF 100 200MHz TO-92 C1815Y
Q4101,Q4103,Q4122,Q4131	339-000012-00(2)	21-0000120-70-14	XTR SS NPN HFE 68 30MHz SPT DTC144ESATP
Q4113,Q4114,Q4121,Q4124, Q4125,Q4128,Q4130,Q4133	339-000036-00(3)	21-0000360-00-00	XTR SS NPN HFE200-700 30MHz 2SC2878A
Q4120,Q4123	339-000038-00(1)	21-0000380-70-14	XTR SS NPN HFE20 250MHz DTC123ESATP
Q4115,Q4126,Q4127	339-000039-00(9)	21-0000390-70-14	XTR SS NPN HFE270-560 180MHz 2SC1740STPS
Q4102	339-000045-00(2)	21-0000450-70-14	XTR SS NPN 68 250MHz SPT DTA144ESATP
Q4107-Q4112,Q4116-Q4119	339-010037-00(6)	21-0100370-70-14	XTR SS PNP HFE 270-560 140MHz 2SA933ASTPS
ICS			
U4104	500-054066-04(4)	27-0540660-00-94	IC LOGIC ANALOG PDIL CD4066B
U4102,U4103	505-507625-00(2)	27-5076250-21-23	IC AV SWITCH DIP BA7625
U4101	505-557476-00(8)	27-5574763-21-02	IC OSD DIP30SD LC74763-9012
TRIGGER BOARD PCB ASSEMBLY			
	800-TRBD16-20	/	T163 Phase II Trigger Board Assembly
SLIDE SWITCH			
S351	182-410220-02(3)	35-4102209-00-67	SW SLIDE 2P2T RIGHT L=9 JSK022N09-G09
PHONE JACKS			
M351-M357,M360	270-431030-01(6)	34-4310300-00-60	PHONE JACK 1 BLACK PCB MOUNT 3.5mm
DIODES			
D354-D357,D359-D365	301-100110-10(3)	20-1001102-20-26	DIODE RECT 1A/1000V DO41 WIN4007
D351,D352,D353,D358	303-385190-00(9)	20-3851902-00-05	DIODE ZENER BZX79 5.1V 1/2W 5%
TRANSISTORS			
Q351,Q352	339-000038-00(1)	21-0000380-70-14	XTR SS NPN HFE20 250MHz DTC123ESATP
RESISTORS			
R358-R360	383-150033-80(4)	/	RES MO 150 OHM 5% 2W AXIAL
REGULATORS			
U353,U354	503-000317-00(2)	27-3031701-07-85	I.C. REG 0.1A TO-92 AZ317LZ
U352	503-300120-03(7)	27-3001201-07-85	IC VOLT REG 12V 0.1A TO-92 LM78L12
VIDEO-6 BOARD PCB ASSEMBLY			
	800-V6BD16-20	/	T163 Phase II Video-6 Board Assembly

Reference No.	SCM.	Part No.	Description
CAPACITORS C4401,C4402,C4403	130-227052-04(9)	22-3226052-00-43	CAP ELEC SS 2.2uF 50V 20% 85C
JACKS M4401	265-401000-01(9)	34-4010000-01-60	RCA JACK 1 YELLOW PCB MOUNT GOLD RS-105G/Y
M4404	265-401010-01(7)	34-4010100-01-60	RCA JACK 1 RED PCB MOUT GOLD RS-105AG/R
M4403	265-401020-01(5)	34-4010200-01-60	RCA 1 WHITE PCB MOUNT GOLD RS-105AG/W
M4402	266-411030-01(9)	34-4110300-00-60	DIN JACK 1 BLACK PCB MOUNT MD-113
J4401	270-451030-14(8)	34-4510302-01-80	PHONE JACK D6.3 1 PCB MOUNT GOLD KF-C9002-03
COMPOSITE VIDEO BOARD PCB ASSEMBLY	800-VEBD16-20	/	T163 Phase II Composite Video Board Assembly
CAPACITORS C4201-C4203,C4205,C4207,C4209, C4210,C4216,C4217	130-227052-04(9)	22-3226052-00-43	CAP ELEC SS 2.2uF 50V 20% 85C
C4204,C4206,C4208,C4211,C4218	130-472012-02(7)	22-3471012-00-28	CAP ELEC GR 470uF 10V 20% 85C
RCA JACKS M421,M422	265-404002-00(3)	34-4040020-00-60	RCA JACK 4 Y-Y/Y-Y PCB MOUNT GOLD RS-454-03
DIODES D4201,D4202	303-385190-00(9)	20-3851902-00-05	DIODE ZENER BZX79 5.1V 1/2W 5% DO35 BZX79-C 5.1V
TRANSISTORS Q4204,Q4206	339-000012-00(2)	21-0000120-70-14	XTR SS NPN HFE 68 30MHz SPT DTC144ESATP
Q4205	339-000045-00(2)	21-0000450-70-14	XTR SS NPN 68 250MHz SPT DTA144ESATP
Q4201-Q4203,Q4207,Q4208	339-010037-00(6)	21-0100370-70-14	XTR SS PNP HFE 270-560 140MHz 2SA933ASTPS
ICS U4201	500-054066-04(4)	27-0540660-00-94	IC LOGIC ANALOG PDIL CD4066B
U4202,U4203	505-507625-00(2)	27-5076250-21-23	IC AV SWITCH DIP BA7625
RESISTORS J4201,J4202	390-000036-20(9)	44-0000027-11-00	RES SMD 0 OHM 5% 1/10W 0805 TAPE

PACKING DIAGRAM & PARTS LIST



Item	SCM.	Part No.	Description	Qty.
1.	906-020000-05(7)	64-0200001-01-00	POLYBAG MANUAL 260 X 350 X 0.03mm W/SILKSCREEN RECYCLE R.0	1
2.	173-640752-00(6)	31-6407520-00-98	FM WIRE ANTENNA L=2700mm TRANSPARENCE W/Y-TERMINALS	1
	222-647280-00(1)	31-6472801-00-28	ANTENNA AM LOOP ASSY W/STAND 4910	1
	277-008100-02(8)	34-0081004-00-67	ANTENNA ADAPTER 300 TO 75 OHM AJ2010	1
	903-016300-07(2)	/	T163 OWNER MANUAL GB/F/D/NL W/ WEEE R.2	1
	903-016300-08(3)	/	T163 OWNER MANUAL E//P/SW/ WEEE R.2	1
	903-016300-06(1)	/	OM ADDENDUM BOOKLET T163 R.1	1
	223-076200-00(8)	83-0762000-00-04	REMOTE CONTROLLER NAD ZR-2	1
3.	223-075200-03(6)	/	REMOTE CONTROLLER NAD HTR-2A P:V1.08 L:V1.12	1
4.	901-075200-02(6)	63-0752001-00-02	POLYFOAM ENDCAP LEFT T752 R.2	1
5.	901-075200-06(1)	63-0752002-00-04	POLYFOAM ENDCAP RIGHT T752 R.4	1
6.	906-070000-01(5)	64-0700001-00-00	POLYBAG J700 W/SILKSCREEN MAIN UNIT (W600 X L600mm) HD PE (N EW S.S.)	1
7.	904-075207-00(3)	65-0752070-00-99	A3 WHITE PAPER 80G	1
8.	906-074300-00(6)	64-0743000-00-00	PROTECTIVE COVER T743	1
9.	911-016300-01(2)	67-0163000-11-99	MASTER CARTON BOX T163 R.1	1
10. *AH/⚠	234-206101-04(4)	36-2061010-08-15	POWER CORD 10A 125V UL/CSA AWG18 L=6 FT 7" LP-13W SVT 2C LS16 LF (UL LABEL)	1
*C/⚠	234-228311-00(1)	36-2283110-07-96	POWER CORD EURO-PLUG 10A/250V	1
11.	210-002020-02(2)	37-0020200-00-79	BATTERY AAA 1.5V ER03X	4

NOTE: THE COMPONENTS IDENTIFIED BY ⚠ MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

<*AH > : USA, CANADIAN MODEL ONLY.

<*C > : EUROPEAN MODEL ONLY.

SERVICE MANUAL

T 163

AV Tuner Preamplifier