

# SERVICE MANUAL



## DTS/AC3 TUNER PRE-AMPLIFIER

# GTP-740

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**FM SECTION**

AF Modulation: 1 kHz, 75kHz Deviation, MONO Mode  
Store Frequency: 98 MHz, 87.5 MHz, 108 MHz, 90 MHz, 106 MHz  
RF Level: 75-ohm Impedance, Open Circuit

**OSCILLATION TUNING VOLTAGE**

Connect DVM between M211 & GND.

For A16 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read  $3 \pm 0.5$  V.

Tune to 108 MHz, adjust FE4 (osc coil) to read  $20.5 \pm 0.5$  V.

For G55 or G58 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read  $1.6 \pm 0.5$  V.

Tune to 108 MHz, adjust FE4 (osc coil) to read  $8.0 \pm 0.5$  V.

**I.F.**

Connect DVM between M213 & M214.

Apply 10.7 MHz, 90 dBm via 1 kW resistor to M212.

Adjust L208 for  $0 \pm 50$ mV reading on DVM.

Adjust L209 for minimum distortion (THD).

Repeat adjustment until no further improvement.

**SYNTHESIZER I.F. TRACKING**

Maintain connection of DVM across M213 & M214.

Disconnect 10.7 MHz tap to M212.

Apply 98 MHz, 60 dBm to antenna input.

Tune to 98 MHz.

Adjust C212 FOR  $0 \pm 20$ mV reading on DVM.

Fine adjust L209 for minimum distortion.

Repeat adjustment until no further improvement.

**R.F.**

Apply 98 MHz, 7 dBm for AH, or 21 dBm for C, to antenna input.

Check THD.

If THD > 3%, adjust FE1, FE2 & FE3 in the front-end module with non-metallic tool for minimum THD.

Check THD at 90 MHz & 106 MHz with 8 dBm input for AH, or 22 dBm for C.

FM Stereo: 1 kHz, 67.5 kHz devi., 60 dBmV, Pilot signal 19 kHz, 7.5 kHz devi.

**STEREO SEPARATION & PILOT SUPPRESSION**

Set modulated signal to Left only.

Adjust R263 for minimum output at right channel.

Set modulated signal to Right only.

Adjust R263 for minimum output at left channel.

Repeat until readings are the same.

Turn off modulating signal, leaving the pilot tone.

Adjust L211 & L212 for minimum outputs on right and left channels respectively.

**AM SECTION**

AF Modulation: 400 Hz, 30%.

For AH version, store frequencies 603, 999, 1404 kHz.

For C & B versions, store frequencies 600, 1000, 1400 kHz.

Connect 22 pF ceramic to capacitor between signal generator and antenna terminal.

**OSCILLATION TUNING VOLTAGE**

Connect DVM between M211 & GND.

Tune to 603/600 kHz.

Adjust L205 for  $1.75 \pm 0.05$  V reading on DVM.

**I.F.**

Apply 999/1000 kHz, set 45 dBm to antenna input.

Tune to 999/1000 kHz.

Adjust L207 for maximum output.

**R.F.**

Apply 603/600 kHz, 45 dBm.

tune to 603/600 kHz.

Adjust L206 for maximum output.

Apply 1404/1400 kHz, 45 dBm.

Adjust C220 for maximum output.

Repeat until no further improvement.

REF NO.	DESCRIPTION	PART NO.
<b>AC3 ASSY</b>		
<b>PC BOARD</b>		
1700	AC3 PCB ASSY (A0150C)	PCB-A0150C-AC3
<b>PCB</b>		
	AC3 PCB (A0150C)	1723-038A-0000
<b>CAPACITOR</b>		
J003(G)/CHA	CC 25V 0.01U 20% RL	150E-103M-5-IF
C065	CC 25V 0.47uF +80/-20% 0	150E-474Z-J-BD
C007,C036,C039	CC 50V 100pF 5% 0805 1.2	150F-101J-J-BD
C104,C110,C116,C198	CC 50V 0.01U 10% 0805	150F-103K-J-BD
C001,C002,C005,C006,C008-C012,C015,C016, C018,C021,C046,C060-C062,C111-C113,C115, C117,C120,C121,C154,C155,C156,C160,C168, C170,C175,C177,C197,C199,C200	CC 50V 0.1uF 20% 0805 1.	150F-104M-J-BD
C150	CC 50V 15pF 5% 0805 1.2x	150F-150J-J-BD
C130,C134,C138,C142,C146,C152	CC 50V 220pF 10% 0805 1.	150F-221K-J-BD
C047	CC 50V 2200pF 10% 0805 1	150F-222K-J-BD
C151	CC 50V 33pF 5% 0805 1.2x	150F-330J-J-BD
C048,C063,C064	CC 50V 330pF 10% 0805 1.	150F-331K-J-BD
C129,C133,C137,C141,C145,C149	CC 50V 3900PF 10% 0805	150F-392K-J-BD
C101,C103,C106	CC 50V 0.47U 20% RM	150F-474M-7-IJ
C128,C132,C136,C140,C144,C148	CC 50V 5600pF 10% 0805	150F-562K-J-BD
C102	CC 50V 82pF 5% 0805 1.2x	150F-820J-J-BD
C150/U101	TRIMCAP 5.2-30P	1551-0210-0
C108	CE 10V 100uF 20% RL 5x11	157C-107M-5-IU
u050(1)/gnd	CE 10V 1000U 20% RL 8x16	157C-108M-5-O5A
C014	CE 10V 470uF 20% RL 8x12	157C-477M-5-OW
C080,C126,C127,C131,C135,C139,C143,C147, C157	CE 16V 10uF 20% RL 4x7	157D-106M-5-GM
C013,C019	CE 16V 100uF 20% RL 5x11	157D-107M-5-IU
C022	CE 16V 22uF 20% RL 5x5	157D-226M-5-II
C107	CE 16V 47uF 20% RL 5x11	157D-476M-5-IU
R094/	CE 25V 1000uF 20% RL	157E-108M-5-X&
C180,C181	CE 25V 47uF 20% RL 5x11	157E-476M-5-IU
C017,C038	CE 50V 1uF 20% RL 4x7	157F-105M-5-GM
C003	CTC 0/60 10pF 5% 0805	15CH-100J-J-BDL
<b>COIL</b>		
L002	COIL 10UH 10% BL7.0	1801-100K-M
L100	COIL 68UH 20% BL7	1801-680M-M
<b>WAFER/SOCKET</b>		
J001A,J002A	WAFER 10PIN P2.54 DUAL	2101-0831-0
U022	PLCC SOCKET 44 PIN (4X11)	2101-0841-0
J019	3 PIN ST. WAFER	2102-031S-004
J009,J012,J022	4P ST.WAFER	2102-041S-004
J004	5P ST.WAFER	2102-051S-004
J011,J020	6P ST. WAFER	2102-061S-004
J001	WF T8 DE 7PIN COULOMB	2102-071S-004

REF NO.	DESCRIPTION	PART NO.
J010	WAFER 8P P2.5 ST.	2102-081S-004
<b>JACK</b>		
J110,J112	1P RCA JACK BK AU HQ032-	2113-1169-1
<b>CRYSTAL</b>		
M103	X'TAL 12.288MHZ +/-	2300-1520-0
M150	X'TAL 46.080MHZ +/-	2300-1540-0
M111	X'TAL 18.432MHZ +-30PPM	2300-2670-0
<b>SCREW</b>		
	SCREW M3X6 BINDING (BLK)	2904-3006-3000
<b>IC</b>		
U105,U109	IC UPC4560C-DUAL OP. AMP	3130-2010-0
U090,U111,U112,U113	IC AD712	3130-3830-0
U013,U107	IC 74HC04 HEX INVERTERS	3130-5840-0
Q111	IC M51943A SYSTEM RESET	3130-5860-0
U021	IC MC68HC11A1 8-BIT	3130-6220-0
U104	IC MC14577 VIDEO OP AMP	3130-6230-0
U019	IC 74HC393 DUAL 4-BIT	3130-6260-0
U050	IC PD4606A AC3 RF	3130-6270-0
U010	IC CS4226 20 BITS AD &	3130-6280-0
U051	IC CY7C188 32KX9 STATIC	3130-6320-0
U101	IC MAX903 HS VOLT.	3130-6340-0
U022	IC PSD312 FIELD PGM UCOM	3130-7890-0
U012	IC SN74HC04 (T.I.)	3130-8720-0
<b>RESISTOR</b>		
C020,R065,R067,R078,R084,R086,R119,R125	RMG 1/10W 0R 5% 0805	4720-000J-J
R166,R179	RMG 1/10W 1R 5% 0805	4720-010J-J
R118,R127	RMG 1/10W 100R 5% 0805	4720-101J-J
R001,R008,R015,R022,R029,R036,R068,R089, R100,R105,R110,R114,R128,R130,R138,R155, R174,R175,R178,R183,R184	RMG 1/10W 1K 5% 0805	4720-102J-J
R000,R054,R059,R101,R102,R111,R112,R113, R116,R123,R139,R141,R142,R143,R148,R153, R156,R177,R181,R193,R194,R195,R196,R197	RMG 1/10W 10K 5% 0805	4720-103J-J
C004	RMG 1/10W 100K 1% 0805	4720-104A-J
R007,R014,R021,R028,R035,R042,R172,R200	RMG 1/10W 100K 5% 0805	4720-104J-J
R151	RMG 1/10W 1M 5% 0805	4720-105J-J
R180	RMG 1/10W 120R 5% 0805	4720-121J-J
R004,R011,R018,R025,R032,R039	RMG 1/10W 1.2K 5% 0805	4720-122J-J
R003,R010,R017,R024,R031,R038,R122	RMG 1/10W 12K 5% 0805	4720-123J-J
R107	RMG 1/10W 150R 5% 0805	4720-151J-J
R088,R171	RMG 1/10W 1.5K 5% 0805	4720-152J-J
R103,R115,R117	RMG 1/10W 220R 5% 0805	4720-221J-J
//C199,R043-R048,R108,R124,R140,R182,R198	RMG 1/10W 2.2K 5% 0805	4720-222J-J
R049,R150	RMG 1/10W 22K 5% 0805	4720-223J-J
R120,R121,R199	RMG 1/10W 220K 5% 0805	4720-224J-J
R187,R189	RMG 1/10W 24K 5% 0805	4720-243J-J

REF NO.	DESCRIPTION	PART NO.
R109	RMG 1/10W 330R 5% 0805	4720-331J-J
R002,R009,R016,R023,R030,R037	RMG 1/10W 3.9K 5% 0805	4720-392J-J
R055	RMG 1/10W 47R 5% 0805	4720-470J-J
R005,R006,R012,R013,R019,R020,R026,R027, R033,R034,R040,R041,R079,R173,R191	RMG 1/10W 470R 5% 0805	4720-471J-J
R051,R090,R093,R094,R106,R190	RMG 1/10W 4.7K 5% 0805	4720-472J-J
R050,R060,R063,R095,R126,R131,R132,R145,R192	RMG 1/10W 47K 5% 0805	4720-473J-J
R071-R077	RMG 1/10W 5.1K 5% 0805	4720-512J-J
R176	RMG 1/10W 68R 5% 0805	4720-680J-J
R188	RMG 1/10W 6.8K 5% 0805	4720-682J-J
R144	RMG 1/10W 68K 5% 0805	4720-683J-J
R061,R064	RMG 1/10W 75R 5% 0805	4720-750J-J
R092,R129	RMG 1/10W 7.5K 5% 0805	4720-752J-J
R104	RMG 1/10W 82R 5% 0805	4720-820J-J
<b>DIODE</b>		
Q110//Q109	DIODE IN4001 AL	4804-0010-1
D101	DIODE 1N4148 ATS	4804-1480-C
D003	DZ 1/2W 5.45-5.73 ROHM	4837-5B61-2
D103,D104	RLS-73 DIODE	4840-1080-3
D102	VARICAP DIODE BB729	4840-1490-0
<b>TRANSISTOR</b>		
Q100-Q107	TR 9014C HFE 200-600	4859-014C-5
Q108,Q112	TR SS8050 C/D SAMSUNG RL	4860-0050-5
Q109,Q110	TR SS8550 C/D SAMSUNG RL	4860-0060-5
<b>SWITCH</b>		
J109	DPDT SLIDE	5200-3171-0-01
<b>MISCELLANEOUS</b>		
U110	BAND PASS FILTER	2704-0070-0
	WSER FIBRA 1103A D3.3	2848-0032-0
	HEX STANDOFF M3X11	4132-7131-0
J111	LIGHT RX UNIT GPIF32R	4811-F32R-3
<b>AUDIO ASSY</b>		
<b>PC BOARD</b>		
1000	AUDIO PCB ASSY A0150C	PCB-A0150C-ADO
<b>PCB</b>		
1001	PCB AUDIO/PSU/JACK	1722-780A-0101
<b>CAPACITOR</b>		
C401-C410,C436,C438,C440,C442,C454,C456, C464,C470,C477,C479,C482,C485	CC 50V 100pF 10% AT 3.5x	150F-101K-2-FC
C735	CC 50V 0.01uF 10% RL 5x5	150F-103K-5-II
C411,C413,C415,C417,C428,C429,C458,C493, C727,C731	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C487,C490	CC 50V 220pF 10% AT 3.5x	150F-221K-2-FC

REF NO.	DESCRIPTION	PART NO.
C462,C468,C474	CM 50V 2200PF 5% RL 5X7	153F-222J-5-IM
C710	CM 50V 0.022UF 5% RL	153F-223J-5-LQ
C461,C467,C475	CM 50V 3900pF 10% RL 6x1	153F-392K-5-KW
C733,C734,C736	CE 10V 1000uF 20% RL	157C-108M-5-S5
C488,C491	CE 16V 100uF 20% RL 5x11	157D-107M-5-IU
C728,C732	CE 25V 2200UF 20% RL	157E-228M-5-X&K
C443/D409	CE 50V 1uF 20% RL 4x7	157F-105M-5-GM
C709	CE 50V 1uF 20% RL 5x11	157F-105M-5-IU
C412,C414,C416,C418-C427,C430,C431,C433, C435,C437,C439,C441,C443-C446,C447-C453, C455,C457,C459,C460,C463,C465,C466,C469, C471-C473,C476,C478,C481,C484,C486,C489, C492,C494-C499,C701-C708,C713-C724	CE 50V 10uF 20% RL 4x7	157F-106M-5-GM
C711,C712	CE 50V 10uF 20% RL 5x11	157F-106M-5-IU
C725,C730	CE 3300UF 50V 20% RL	8910-0008-0
<b>COIL</b>		
L401	FERRITE COIL 22UH BL8.5	1807-220J-P
<b>WAFER</b>		
J763	2P ST.WAFER	2102-021S-004
J473,J477,J743,J744	3 PIN ST. WAFER	2102-031S-004
J444,J480,J733,J737,J740,J742,J770,J795	4P ST.WAFER	2102-041S-004
J735,J736	5P ST.WAFER	2102-051S-004
J738,J739	6P ST. WAFER	2102-061S-004
J478	WF T8 DE 7PIN COULOMB	2102-071S-004
J741	WAFER 8P P2.5 ST.	2102-081S-004
J765	9-PIN WAFER	2102-091S-004
J731,J732	12P ST.WAFER	2102-121S-004
J481,J483,J484,J486	2P RCA R/W (GOLD PLATE)	2103-9202-0
<b>JACK</b>		
J482,J485,J487	4P RCA R/W AU	2113-0104-0
J488	1P RCA JACK BK AU HQ032-	2113-1169-1
J489	2P RCA JACK BK/BK AU	2113-1174-0
<b>SCREW</b>		
U426/427	SCREW M3X8 (BLK)	2904-3008-3000
U426/427	SCREW BH 2.6X6 BLACK	2954-2606-3000
<b>IC</b>		
U426,U427	IC 7805 REG 5V 1.5A	3130-2020-3
U419	IC 4094 8-BIT SIPO SR 3S	3130-3600-0
U403	IC TC9176 ELECTRONIC	3130-3690-0
U401	IC TC9163AN HV ANALOG SW	3130-3710-1
U402,U411	IC TC9164AN HV ANALOG SW	3130-3730-1
U404-U408,U412-U418,U422-U425	IC AD712	3130-3830-0
U420,U421	IC 74HC573 8X D-TYPE	3130-6140-0
<b>RELAY</b>		
M401	RELAY 2P2T BT-12S 12VDC	4500-0200-1

REF NO.	DESCRIPTION	PART NO.
<b>RESISTOR</b>		
R401,R403,R405,R407,R409,R411,R413,R415, R417,R419,R422,R428,R429,R431,R432,R434, R435,R437,R438,R711,R716,R723	RMF 1/8W 1K 1% AT	4711-102A-2
R423,R441,R442,R445,R451,R457,R459,R460, R462,R468,R472,R474,R475,R479,R486,R488, R490,R491,R499,R722,R724,R727,R729,R733, R734,R735,R756-R767	RMF 1/8W 10K 1% ATS	4711-103A-C
R731	RMF 100K 1/8W 1% AT	4711-104A-2
R443,R465,R481,R495	RMF 1/8W 100K 1% ATS	4711-104A-C
R710,R715,R725,R730,R776,R777	RMF 1/8W 12K 1% AT	4711-123A-2
R402,R404,R406,R408,R410,R412,R414,R416, R418,R420	RMF 1/8W 20K 1% AT	4711-203A-2
R741	RMF 1/8W 22R 1% ATS	4711-220A-C
R448,R454,R732	RMF 1/8W 2.2K 1% ATS	4711-222A-C
R449,R455,R456,R458,R470,R471,R473,R477, R487,R489,R493,R702,R704,R706,R713,R718, R751,R768-R773,R778-R781	RMF 1/8W 22K 1% AT	4711-223A-2
R421,R424,R427,R430,R433,R436,R439,R440, R444,R450,R461,R466,R478,R484,R497,R707, R721	RMF 1/8W 220K 1% AT	4711-224A-2
R467,R485,R498	RMF 1/8W 3.9K 1% AT	4711-392A-2
R742-R747	RMF 1/8W 470R 1% ATS	4711-471A-C
R425,R712,R717,R749,R753,R754	RMF 1/8W 4.7K 1% ATS	4711-472A-C
R720,R748,R750,R804	RMF 1/8W 47K 1% ATS	4711-473A-C
R447,R453,R469,R476,R492,R701,R703,R705	RMF 1/8W 560R 1% ATS	4711-561A-C
R464,R482,R496	RMF 1/8W 56K 1% AT	4711-563A-2
R463,R480,R494	RMF 1/8W 68K 1% AT	4711-683A-2
R752	RMF 1/8W 7.5K 1% AT	4711-752A-2
R446,R452	RMF 1/8W 91K 1% AT	4711-913A-2
J713-J715,J718,J721-J723	RMF 1/4W 1R 1% AT	4715-010A-2
R782	RMF 1/4W 220R 1% AT	4715-221A-2
R714,R719	RMF 1/2W 120R 1% AT	4717-121A-2
<b>DIODE</b>		
D401,D403	DIODE 1N4001 AT	4804-0010-2
D409,D410	DIODE 1N4148 AT	4804-1480-2
J487/	DIODE 1N4148 ATS	4804-1480-C
D404,D407	DZ 1/2W 9.94~10.44V ROHM	4837-10D1-2
D408	DZ 1/2W 3.16~3.38V ROHM	4837-3A31-2
<b>TRANSISTOR</b>		
Q403-Q405,Q407-Q414	TR SS8050 C/D SAMSUNG RL	4860-0050-5
Q406,Q415,Q416	TR SS8550 C/D SAMSUNG RL	4860-0060-5
Q402	TR 2SA1015 (G.R.) RL	4860-0660-5
Q401	TR 2SC1815 (G.R.) RL	4860-0700-5
<b>HEATSINK</b>		
U426	HEATSINK 23.5X17X35	5400-1611-0
U427	HEATSINK 23.5X17X50	5400-1702-0



REF NO.	DESCRIPTION	PART NO.
<b>MISCELLANEOUS</b>		
J487/J	ANTENNA WASHER	4131-7701-0
	SOLDER TAG	4132-1061-0
<b>CPU ASSY</b>		
<b>PC BOARD</b>		
	CPU PCB ASSY (A0150C)	PCB-A0150C-CPU
<b>PCB</b>		
	DSP PCB (A0150C)	1723-039A-0000
<b>CAPACITOR</b>		
C060,C159,C161-C166,C169,C171,C172,C178, C188-C194	CC 50V 0.1uF 20% 0805 1.	150F-104M-J-BD
C053,C054	CM 50V 4700pF 5% RL 6x7	153F-472J-5-KM
C179	CE 10V 330uF 20% RL 8x12	157C-337M-5-OW
C195,C196	CE 10V 47uF 20% RL 5x11	157C-476M-5-IU
<b>CONNECTOR/SOCKET</b>		
J001B,J002B	10 PIN P2.54 CONNECTOR	2101-0821-0
0001	DIP SOCKET 28PIN W0.60	2101-0931-0
<b>CRYSTAL</b>		
M151	CRYSTAL 8MHZ	2300-1420-0
<b>IC</b>		
U023,U027,U028	IC TC74HC00AP DIGITAL	3130-4160-0
U018	IC MC56009/88 DSP	3130-6200-0
U017	IC CY7C109A 128KX8	3130-6310-0
U024	IC 74HC74 DUAL D-TYPE	3130-6590-0
U020	IC MC56007/66 DSP	3130-6670-0
U003	IC 27C512-12 512K OTP	3130-7440-0
<b>RESISTOR</b>		
R137,R146,R147	RMG 1/10W 0R 5% 0805	4720-000J-J
R062,R066	RMG 1/10W 1K 5% 0805	4720-102J-J
R057,R152,R165,R170,R182,R185,R186	RMG 1/10W 10K 5% 0805	4720-103J-J
R052,R053,R088,R096-R099,R133-R136, R149,R154,R157-R164,R167	RMG 1/10W 220R 5% 0805	4720-221J-J
<b>HEATSINK</b>		
0002,0003	HEATSINK IC ANODISED	5400-4071-0
<b>MISCELLANEOUS</b>		
U003	AL. FOIL 10x10mm	3100-0601-0
<b>PHONE ASSY</b>		
<b>PC BOARD</b>		
1800	PHONE PCB ASSY	PCB-A0150C-PHO

REF NO.	DESCRIPTION	PART NO.
<b>PCB</b>		
1801	PCB AUDIO/PSU/JACK	1722-780A-0101
<b>WAFER</b>		
J491	4P ST.WAFER	2102-041S-004
<b>JACK</b>		
J490	PHONE JACK	2113-1011-0
<b><u>S.VIDEO ASSY</u></b>		
<b>PC BOARD</b>		
1300	S.VIDEO PCB ASSY A0150C	PCB-A0150C-SVDO
<b>PCB</b>		
1301	PCB VIDEO/S-VIDEO/VOL	1722-790A-0102
<b>CAPACITOR</b>		
C343	CC 25V 0.068uF 10% RL 8x	150E-683K-5-OG
C316,C319,C328,C331,C335,C341,C352,C354,C385	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C339,C340	CC 50V 22pF 5% RL 5x3.5	150F-220J-5-IF
C348	CC 50V 560pF 10% RL 4x4	150F-561K-5-GG
C342	CC 50V 680pF 10% RL 4x4	150F-681K-5-GG
C349	CM 50V 1000pF 10% RL 6x1	153F-102K-5-KW
C324,C359,C360,C381,C388	CE 10V 100uF 20% RL 5x11	157C-107M-5-IU
C329,C355	CE 10V 470UF 20% RL 8X11	157C-477M-5-OU
C358	CE 16V 100uF 20% RL 5x11	157D-107M-5-IU
C386	CE 16V 33uF 20% RL 5x11	157D-336M-5-IU
C336	CE 25V 3.3uF 20% RL 4x7	157E-335M-5-GM
C338	CE 50V 1uF 20% RL 4x7	157F-105M-5-GM
C301-C315,C317,C318,C320-C323,C325-C327, C330,C332-C334,C337,C345-C347,C350,C351, C353,C356,C357	CE 50V 10uF 20% RL 4x7	157F-106M-5-GM
C344	CE 50V 2.2uF 20% RL 4x7	157F-225M-5-GM
<b>WAFER</b>		
J316	WAFER 2P P2.5 RIGHT	2102-021R-004
J321	4P ST.WAFER	2102-041S-004
J346	WAFER 7P P2.5 RIGHT	2102-071R-004
J326	WAFER 9P P2.5 RIGHT	2102-091R-004
<b>CONNECTOR</b>		
J701-J712	1P DIN CONNECTOR HDC-050	2113-1183-0
<b>CRYSTAL</b>		
M325	X'TAL 3.58MHZ HC-49/U	2300-0930-0
<b>RESISTOR</b>		
R341,R626	RMF 1/8W 1K 1% AT	4711-102A-2
R316,R317,R324,R332,R337,R338,R350,R352, R353,R387,R395-R398	RMF 1/8W 10K 1% ATS	4711-103A-C

REF NO.	DESCRIPTION	PART NO.
R335,R336,R384	RMF 1/8W 100K 1% ATS	4711-104A-C
R322	RMF 1/8W 1M 1% ATS	4711-105A-C
R326	RMF 1/8W 1.2K 1% ATS	4711-122A-C
R319,R331	RMF 1/8W 12K 1% AT	4711-123A-2
R315	RMF 1/8W 180R 1% AT	4711-181A-2
R325,R349	RMF 1/8W 2K 1% AT	4711-202A-2
R359	RMF 1/8W 20K 1% AT	4711-203A-2
R348,R383	RMF 1/8W 2.2K 1% AT	4711-222A-2
R318,R321,R333	RMF 1/8W 2.2K 1% ATS	4711-222A-C
R360	RMF 1/8W 22K 1% AT	4711-223A-2
R320	RMF 1/8W 30K 1% AT	4711-303A-2
R327	RMF 1/8W 3.3K 1% AT	4711-332A-2
R328	RMF 1/8W 3.9K 1% AT	4711-392A-2
R358,R627	RMF 1/8W 47R 1% AT	4711-470A-2
R630	RMF 1/8W 470R 1% ATS	4711-471A-C
R399	RMF 1/8W 4.7K 1% AT	4711-472A-2
R329,R351	RMF 1/8W 4.7K 1% ATS	4711-472A-C
R340,R343,R346,R628,R629	RMF 1/8W 47K 1% ATS	4711-473A-C
R339	RMF 1/8W 5K 1% AT	4711-502A-2
R631	RMF 1/8W 56R 1% AT	4711-560A-2
R323	RMF 1/8W 560R 1% ATS	4711-561A-C
R390,R391	RMF 1/8W 68R 1% AT	4711-680A-2
R330	RMF 1/8W 6.8K 1% AT	4711-682A-2
R301-R314,R388,R389	RMF 1/8W 75R 1% ATS	4711-750A-C
R342,R345	RMF 1/8W 7.5K 1% AT	4711-752A-2
R344,R347	RMF 1/4W 150R 1% AT	4715-151A-2
<b>IC</b>		
U306	IC NJM2217 VIDEO	3130-3760-0
U305	IC PCA8515P/009 OSD	3130-4130-0
U302,U304,U310-U313	IC BA7612N VIDEO SIGNAL	3130-6290-0
U301,U303	IC BA7645N VIDEO SIGNAL	3130-6300-0
U307,U308,U309	IC BA7602 VIDEO SW.3X2CH	3130-6450-0
<b>SVR</b>		
R334	SVR 47K H3 10X10	4756-4730-3-11
<b>DIODE</b>		
D301-D307	DIODE 1N4148 AT	4804-1480-2
J378	DZ 1/2W 3.16~3.38V ROHM	4837-3A31-2
<b>TRANSISTOR</b>		
Q308	TR 2SA1015-Y HFE120-240	4851-015Y-5
Q301-Q303,Q306,Q309,Q311	TR 2SC930E HFE 100-200	485C-930E-5
<b>SWITCH</b>		
M311	DPDT SLIDE	5200-3171-0-01
<b>MISCELLANEOUS</b>		
J374,J375	SOLDER TAG	4132-1061-0

REF NO.	DESCRIPTION	PART NO.
<b>VIDEO ASSY</b>		
<b>PC BOARD</b>		
1200	VIDEO PCB ASSY A0150C	PCB-A0150C-VDO
<b>PCB</b>		
1201	PCB VIDEO/S-VIDEO/VOL	1722-790A-0102
<b>CAPACITOR</b>		
C628	CC 50V 100pF 10% RL 5x3.	150F-101K-5-IF
C616,C617	CC 50V 1000pF 10% RL 5x5	150F-102K-5-II
C372,C376,C379,C620,C629	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C611	CC 50V 2200pF 10% RL 6.5	150F-222K-5-LF
C614	CC 50V 0.022uF +80/-20%	150F-223Z-5-UG
C623,C624	CC 50V 47pF 5% RL 5x3.5	150F-470J-5-IF
C369,C382,C387,C390,C627	CE 10V 100uF 20% RL 5x11	157C-107M-5-IU
C389	CE 10V 330uF 20% RL 8x12	157C-337M-5-OW
C383,C613,C619,C631	CE 10V 47uF 20% RL 5x11	157C-476M-5-IU
C368,C370	CE 10V 470UF 20% RL 8X11	157C-477M-5-OU
C384	CE 16V 10uF 20% RL 4x7	157D-106M-5-GM
C612,C615,C626	CE 50V 1uF 20% RL 5x11	157F-105M-5-IU
C361-C367,C371,C373-C375,C377,C378,C380	CE 50V 10uF 20% RL 4x7	157F-106M-5-GM
C625	CE 50V 2.2uF 20% RL 5x11	157F-225M-5-IU
C618	CE 50V 3.3uF 20% RL 5x11	157F-335M-5-IU
C621,C622	CTC 0/60 39pF 5% RL	15CH-390J-5-IG
C632	CTC 0/60 56pF 5% RL 6x4	15CH-560J-5-KG
<b>WAFER</b>		
J348	WAFER 3P P2.5 RIGHT	2102-031R-004
J726	WAFER 4P P2.5 RIGHT	2102-041R-004
J388	WF T8 DE 7PIN COULOMB	2102-071S-004
J347	WAFER 9P P2.5 RIGHT	2102-091R-004
<b>JACK/CONNECTOR</b>		
J725	DIN CONNECTOR 5 PIN	2113-1168-0
J713-J719	1P RCA JACK YL AU	2113-1170-0
J717,J720,J721	2P RCA JACK YL/YL AU	2113-1171-0
J722,J723,j724,J728	PHONE JACK D3.5 BK	2113-1179-0
<b>COIL</b>		
L301	FERRITE COIL 22UH BL8.5	1807-220J-P
<b>CRYSTAL</b>		
M326	X'TAL 14.318MHZ +/-30PPM	2300-2680-0
<b>IC</b>		
U318,U319	IC 4094 8-BIT SIPO SR 3S	3130-3600-0
U315,U316,U317	IC BA7612N VIDEO SIGNAL	3130-6290-0
U314	IC BA7645N VIDEO SIGNAL	3130-6300-0
U321	IC BA7046F VIDEO SIGNAL	3130-9070-0
U323	IC BU2762AL NTSC/PAL	3130-9080-0
U322	IC NJM2220S VIDEO	3130-9090-0

REF NO.	DESCRIPTION	PART NO.
<b>RESISTOR</b>		
R641	RMF 1/8W 100R 1% AT	4711-101A-2
R638	RMF 1/8W 1K 1% AT	4711-102A-2
R633,R634	RMF 1/8W 10K 1% AT	4711-103A-2
R374,R612,R615,R639,R642,U322/U	RMF 1/8W 10K 1% ATS	4711-103A-C
R375	RMF 1/8W 100K 1% ATS	4711-104A-C
R624	RMF 1/8W 130K 1% AT	4711-134A-2
R378,R379	RMF 1/8W 150R 1% ATS	4711-151A-C
R376	RMF 1/8W 1.5K 1% AT	4711-152A-2
R635,R636	RMF 1/8W 2K 1% AT	4711-202A-2
R355,R622	RMF 1/8W 20K 1% AT	4711-203A-2
R621	RMF 1/8W 220R 1% AT	4711-221A-2
R357	RMF 1/8W 2.2K 1% AT	4711-222A-2
R369	RMF 1/8W 2.2K 1% ATS	4711-222A-C
R356	RMF 1/8W 22K 1% AT	4711-223A-2
R617	RMF 1/8W 2.7K 1% AT	4711-272A-2
R616	RMF 1/8W 30K 1% AT	4711-303A-2
R614,R620	RMF 1/8W 330R 1% ATS	4711-331A-C
R381	RMF 1/8W 33K 1% AT	4711-333A-2
R382,R632	RMF 39K 1/8W 1% AT	4711-393A-2
R354,R392,R619,R640	RMF 1/8W 470R 1% ATS	4711-471A-C
R637	RMF 1/8W 4.7K 1% AT	4711-472A-2
R618	RMF 1/8W 4.7K 1% ATS	4711-472A-C
R370	RMF 1/8W 47K 1% ATS	4711-473A-C
R611,R613	RMF 1/8W 470K 1% AT	4711-474A-2
R368,R393	RMF 1/8W 68R 1% AT	4711-680A-2
R380	RMF 1/8W 6.8K 1% AT	4711-682A-2
R623	RMF 1/8W 68K 1% AT	4711-683A-2
R361-R367,R394	RMF 1/8W 75R 1% ATS	4711-750A-C
R385	RMF 1/4W 100R 1% AT	4715-101A-2
R371	RMF 1/4W 150R 1% AT	4715-151A-2
R386	RMF 1/4W 510R 1% AT	4715-511A-2
R372,R373,R377	RMF 1/2W 10R 5% AL	4717-100J-1-P
<b>DIODE</b>		
D309,D310,D311,D312	DIODE 1N4148 AT	4804-1480-2
D308	DZ 1/2W 12.2-12.7V AT	4837-9A30-2
<b>TRANSISTOR</b>		
Q316,Q317	TR 2SD1012F/G HFE	4851-012F-5
Q313	TR 2SA1015-Y HFE120-240	4851-015Y-5
Q304,Q305,Q307,Q310,Q312,Q314	TR 2SC930E HFE 100-200	485C-930E-5
<b>MISCELLANEOUS</b>		
J730	TERMINAL PIN	4132-1071-0
M301	BRACKET, GROUNDING	4132-6221-0
<b>VOL ASSY</b>		
<b>PC BOARD</b>		
1400	VOL PCB ASSY A0150C	PCB-A0150C-VOL

REF NO.	DESCRIPTION	PART NO.
<b>PCB</b>		
1401	PCB VIDEO/S-VIDEO/VOL	1722-790A-0102
<b>CAPACITOR</b>		
C602,C603	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C601,C605,C606	CE 16V 10uF 20% RL 4x7	157D-106M-5-GM
<b>WAFER</b>		
J602	3 PIN ST. WAFER	2102-031S-004
J601	WAFER 5 PIN P2.5	2102-051R-004
<b>IC</b>		
U601	IC LB1642 MOTOR DRIVER	3130-3410-0
<b>VR</b>		
R601	VR RK16312MCL 50K	4750-6196-0
<b>KEYBOARD ASSY</b>		
<b>PC BOARD</b>		
1500	KEYBOARD PCB ASSY A0151C	PCB-A0151C-KEY
<b>PCB</b>		
1505	PCB KEYBOARD	1722-900A-0002
<b>CAPACITOR</b>		
C502	CC 25V 0.033uF 20% RL	150E-333M-5-OG
C501	CC 50V 0.01uF 10% RL 5x5	150F-103K-5-II
C503,C505,C511,C513,C515,C517,C519,C521	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C507	CM 50V 0.01u 5% RL 5X7	153F-103J-5-IM
C504,C512,C514,C516,C518,C520,C522	CE 16V 10uF 20% RL 4x7	157D-106M-5-GM
C523	CE 16V 100uF 20% RL 5x11	157D-107M-5-IU
C506	CE 16V 47uF 20% RL 5x11	157D-476M-5-IU
C508	CE 50V 0.47uF 20% RL 4x7	157F-474M-5-GM
<b>COIL</b>		
L502	COIL 100UH 10%	1801-101K-M
<b>TRANSFORMER</b>		
L501	TRANSFORMER STEP-UP 5V	1806-2320-0
<b>IC</b>		
U508	IC NJM78L05A 826	3130-0640-0
U502-U507	IC 4094 8-BIT SIPO SR 3S	3130-3600-0
U501	IC MSM9006-02 LCD DRIVER	3130-6350-0
<b>LED</b>		
D512-D515,D517-D532	LED SP 3X5.5 L0.5 RD	3700-2380-R
D501-D511,D516	LED RT 5X2X7MM RED	3700-5577-R

REF NO.	DESCRIPTION	PART NO.
<b>RESISTOR</b>		
R535,R546	RMF 1/8W 1K 1% AT	4711-102A-2
R534,R536,R539,R540,R545	RMF 1/8W 10K 1% ATS	4711-103A-C
R542	RMF 1/8W 150R 1% ATS	4711-151A-C
R538	RMF 1/8W 22K 1% AT	4711-223A-2
R541	RMF 1/8W 27K 1% ATS	4711-273A-C
R501-R532,R543,R544,R547	RMF 1/8W 560R 1% ATS	4711-561A-C
<b>DIODE</b>		
D536-D543	DIODE 1N4148 AT	4804-1480-2
D534	DZ 1/2W 4.55~4.80V ROHM	4837-4B71-2
<b>TRANSISTOR</b>		
Q504	TR KTC3228 'O' RANGE	4853-228O-5
Q501,Q502,Q505	TR 9014C HFE 200-600	4859-014C-5
Q503	TR SS8050 C/D SAMSUNG RL	4860-0050-5
<b>SWITCH</b>		
M501-M527	SWITCH, TACT SKHHBY 7MM	5200-3538-0
<b>WIRE</b>		
J504	CN ASSY 3P P2.5 L60	7009-9920-0
J502	CONN. ASSY 12P P2.5 L=70	7712-1070-2004
<b>MISCELLANEOUS</b>		
1501	EL LIGHT BLUE (A1 TYPE)	2450-1156-0
1502	LCD DISPLAY GTP-740	2460-1280-0
1501	WSER FIBRA 1103A D3.3	2848-0032-0
1504	HOLDER LED	4132-6601-0
	CHSHION D20X2	4152-1061-0
1503	LCD HOLDER GTP-740	4152-4181-0
1505	CUSHION	4152-4561-0
D533	IR SENSOR PIC-26043TM2	4816-043T-3
<b>TUNER ASSY</b>		
<b>PC BOARD</b>		
1600	TUNER PCB ASSY A0151C	PCB-A0151C-TUN
<b>PCB</b>		
1601	PCB TUNER	1722-890A-0102
<b>TUNER</b>		
M201	FM TUNER MODULE	1300-0606-0
<b>CAPACITOR</b>		
C221,C234,C241	CC 25V 0.022uF 10% RL	150E-223K-5-MG
C224,C225,C229,C233,C235,C237,C251	CC 25V 0.047uF 10% RL	150E-473K-5-OG
C268	CC 50V 2pF 0.25pF RL 4x4	150F-020C-5-GG
C206,C227,C228,C238,C266	CC 50V 100pF 10% RL 5x3.	150F-101K-5-IF
C202	CC 50V 1000pF 10% RL 5x3	150F-102K-5-IF

REF NO.	DESCRIPTION	PART NO.
C245/CHA,C263,C265	CC 50V 0.01uF 10% RL 5x5	150F-103K-5-II
C203,C204,C213-C219,C226,C245,J202(1)/GND	CC 50V 0.01uF 10% RL 11x	150F-103K-5-UU
C210,C244,C264	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C211,C222	CC 50V 22pF 10% RL 4x4	150F-220K-5-GG
C267	CC 50V 33pF 5% RL 4x4	150F-330J-5-GG
C236	CC 50V 47pF 5% RL 5x3.5	150F-470J-5-IF
C223	CC 50V 470pF 10% RL 9.5x	150F-471K-5-RG
C261,C262	CM 50V 1500pF 5% RL 6x12	153F-152J-5-KW
C212,C220	TRIMCAP 5.2-30P	1551-0210-0
C209	CE 6.3V 100uF 20% RL 6x7	157B-107M-5-KM
C230,C243,C255,C256,C259,C260	CE 16V 10uF 20% RL 5x11	157D-106M-5-IU
C242,C246	CE 16V 100uF 20% RL 6x12	157D-107M-5-KW
C253	CE 16V 47uF 20% RL 5x11	157D-476M-5-IU
C254	CE 50V 0.1uF 20% RL 5x11	157F-104M-5-IU
C247,C249,C250	CE 50V 1uF 20% RL 5x11	157F-105M-5-IU
C208	CE 50V 100uF 20% RL 8x12	157F-107M-5-OW
C248	CE 50V 0.22uF 20% RL	157F-224M-5-IU
C207,C232,C239	CE 50V 3.3uF 20% RL 5x11	157F-335M-5-IU
C201	CE 50V 0.47uF 20% RL	157F-474M-5-IU
C231	CE 50V 4.7uF 20% RL 5x11	157F-475M-5-IU
C205	CE 35V 0.47uF 20% RL	157Q-474M-5-IU
C240	CP 50V 100pF 5% RL 6x12	158F-101J-5-KW
C257,C258	CP 50V 270pF 5% RL 6X12	158F-271J-5-KW
C252	CP 50V 390pF 5% RL 6x12	158F-391J-5-KW
<b>COIL</b>		
I201,I203	COIL 2.2UH 20% AL BL7	1801-2R2M-M
I204	COIL 68UH 20% BL7	1801-680M-M
<b>TRANSFORMER</b>		
L213	BALUN TRANSFORMER 300 TO	1806-2201-0
<b>WAFER</b>		
J204	3 PIN ST. WAFER	2102-031S-004
J202	5P ST.WAFER	2102-051S-004
J201	9-PIN WAFER	2102-091S-004
<b>CONNECTOR/TERMINAL</b>		
J205	PUSH TERMINAL 4P	2113-1175-0
J206	DIN CONNECTOR FOR ANT	2113-1191-0
<b>CRYSTAL</b>		
M206	CRYSTAL 7.2MHZ 20PPM	2300-0440-0
<b>CERAMIC FILTER</b>		
M205	CF 450.5+-1 SFZ450G3LI	2701-0066-0
M202,M203,M204	CF 10.7MHZ SFELA10M7JAXE	2701-0556-1-0
L202	BAND PASS FILTER	2701-0609-4
<b>IC</b>		
U205	IC NJM78L05A 826	3130-0640-0



REF NO.	DESCRIPTION	PART NO.
U202	IC LA1266 FM/AM TUNER	3130-3390-0
U204	IC LA3401 PLL MPX	3130-3400-0
U201	IC LM7000 DTS SANYO	3130-3430-0
<b>RESISTOR</b>		
R280	RMF 1/8W 10K 1% ATS	4711-103A-C
R278,R279	RMF 1/8W 2.7K 1% AT	4711-272A-2
R208	RMF 1/4W 100R 1% AT	4715-101A-2
R221,R229	RMF 1/4W 1K 1% AT	4715-102A-2
R207,R210,R233,R244-R248,R253,R254,R262,R264	RMF 1/4W 10K 1% AT	4715-103A-2
R204,R231,R232,R255	RMF 1/4W 100K 1% AT	4715-104A-2
R257	RMF 1/4W 1.2K 1% AT	4715-122A-2
R219,R227	RMF 1/4W 1.5K 1% AT	4715-152A-2
R241,R277	RMF 1/4W 15K 1% AT	4715-153A-2
R209	RMF 1/4W 150K 1% AT	4715-154A-2
R265,R266	RMF 1/4W 180K 1% AT	4715-184A-2
R239	RMF 1/4W 20R 1% AT	4715-200A-2
R202,R236,R237	RMF 1/4W 20K 1% AT	4715-203A-2
R222,R230,R243,R259	RMF 1/4W 22R 1% AT	4715-220A-2
R212,R256	RMF 1/4W 220R 1% AT	4715-221A-2
R206	RMF 1/4W 2.2K 1% AT	4715-222A-2
R234,R242,R269,R271	RMF 1/4W 2.7K 1% AT	4715-272A-2
R238	RMF 1/4W 30K 1% AT	4715-303A-2
R215,R216,R223,R224	RMF 1/4W 330R 1% AT	4715-331A-2
R240,R260	RMF 1/4W 3.3K 1% AT	4715-332A-2
R261	RMF 1/4W 33k 1% AT	4715-333A-2
R213	RMF 1/4W 39R 1% AT	4715-390A-2
R211	RMF 1/4W 390R 1% AT	4715-391A-2
R201	RMF 1/4W 39K 1% AT	4715-393A-2
R267,R268	RMF 1/4W 390K 1% AT	4715-394A-2
R203,R205,R275,R276	RMF 1/4W 4.7K 1% AT	4715-472A-2
R220,R228	RMF 1/4W 510R 1% AT	4715-511A-2
R235	RMF 1/4W 5.1K 1% AT	4715-512A-2
R214,R217,R225	RMF 1/4W 680R 1% AT	4715-681A-2
R270,R272	RMF 1/4W 6.8K 1% AT	4715-682A-2
R218,R226	RMF 1/4W 75R 1% AT	4715-750A-2
R273,R274	RMF 1/4W 820R 1% AT	4715-821A-2
<b>SVR</b>		
R263	SVR 47K H3 10X10	4756-4730-3-11
<b>DIODE</b>		
D201,D202	GERMANIUM DIODE 1N60P AL	4801-N60P-1
D205	DIODE 1N4148 ATS	4804-1480-C
D203,D204	SVC321-D AM CAR. DIODE	484C-321D-5
<b>TRANSISTOR</b>		
Q204-Q208	TR 2SC930E HFE 100-200	485C-930E-5
Q209,Q213	TR 2SA1015 (G.R.) RL	4860-0660-5
Q201-Q203,Q210-Q212	TR 2SC1815 (G.R) RL	4860-0700-5

REF NO.	DESCRIPTION	PART NO.
<b>RF COIL</b>		
L211,L212	19KHZ FILTER COIL	5600-2236-S
L207	AMZFT COIL (5565105200)	5600-2246-S
L208	FM COIL PRIMARY	5600-2256-S
L209	FM COIL SECONDARY	5600-2266-S
L206	AM COIL 5564102600	5600-2276-S
L205	AM OSC COIL 5564312800	5600-2286-S
L210	AM OSC COIL	5600-2296-S
<b>MISCELLANEOUS</b>		
M207	CR RESONATOR	2703-0020-0
J202(1)/GND,TUN	SOLDER TAG	4132-1061-0
M211,M212,M213,M214	TERMINAL PIN	4132-1071-0
ANT.,COP. SIDE	RF COAXIAL WIRE 100MM	8612-1000-0
<b>DTS ASSY</b>		
<b>PC BOARD</b>		
1900	PCB ASSY DTS A0152C	PCB-A0152C-DTS
<b>PCB</b>		
0000	PCB DTS A0152C	1724-320A-0000
<b>CAPACITOR</b>		
C1,C3,C6-C12,C14,C18-C20,	CC 50V 0.1uF 20% 0805 1.	150F-104M-J-BD
C2	CE 10V 47uF 20% RL 5x11	157C-476M-5-IU
C13,C15,C16,C17	CE 16V 10uF 20% RL 4x7	157D-106M-5-GM
<b>WAFERS/SOCKET/CONNECTOR</b>		
J2,J4	10 PIN P2.54 CONNECTOR	2101-0821-0
J1,J3	WAFER 10PIN P2.54 DUAL	2101-0831-0
0006	32 PIN DIP IC SOCKET	2101-1971-0
<b>CRYSTAL</b>		
OSC1	X'TAL 1.000MHZ CCO-21S	2300-3000-0
<b>SCREW</b>		
1111	SCREW M3X6	2904-3006-0000
<b>IC</b>		
U101	IC M51943A SYSTEM RESET	3130-5860-0
U1	IC MC56009/88 DTS	3130-8600-0
U3	IC KM68257C-15 32KX8	3130-8610-0
U4	IC HC373	3130-8630-0
U5	IC 74HC14 SOP PACKAGE	3130-8680-0
U6	IC 74HC4053M SOP PACKAGE	3130-8700-0
U2	IC AM27C010-150DC EEPROM	3130-9250-0
<b>LED</b>		
D2	LED RT 5X2X7MM RED	3700-5577-R

REF NO.	DESCRIPTION	PART NO.
<b>RESISTOR</b>		
R3,R4	RCFA 1/8W 20K 5% RL 9	4701-203J-5-09
R1,R2,R11-R14,R17-R19, R21	RMG 1/10W 22K 5% 0805	4720-223J-J
	RMG 1/10W 330R 5% 0805	4720-331J-J
R10,R5,R6,R7,R8,R9	RMG 1/10W 47R 5% 0805	4720-470J-J
<b>DIODE</b>		
D1	DUAL DIODE KDS226 KEC	480S-2260-3
<b>TRANSISTOR</b>		
Q1	TR 2SC2814 HFE 90-180	4852-8144-3
<b>SWITCH</b>		
S1	SW 4 POLES DIP	5200-4711-0
<b>HEATSINK</b>		
0001	HEATSINK IC ANODISED	5400-4071-0
<b>MISCELLANEOUS</b>		
0002	HEX STANDOFF M3X11	4132-7131-0
<b>POWER ASSY</b>		
<b>PC BOARD</b>		
1100	POWER PCB ASSY A0153C	PCB-A0153C-PWR
<b>PCB</b>		
	PCB PSU/JACK A0160C	1724-090A-0102
<b>CAPACITOR</b>		
C802,C806,C807,C809,C810,C813,C814,C816,C818, C820,C822,C824,C825,C827,C829,C830,C834	CC 50V 0.1uF 10% RL 5x5	150F-104K-5-II
C832	CE 16V 1000uF 20% RL	157D-108M-5-S5
C826,C831	CE 16V 470uF 20% RL	157D-477M-5-SY
C823	CE 25V 1000uF 20% RL	157E-108M-5-X&
C821,C828	CE 25V 2200UF 20% RL	157E-228M-5-X&K
C815	CE 25V 470uF +80/-20% RL	157E-477Z-5-S5
C812	CE 50V 1000uF 20% RL	157F-108M-5-W9
C803	CE 50V 220uF 20% RL	157F-227M-5-S5
C804	CE 50V 330uF 20% RL	157F-337M-5-S9
C805	CE 35V 220uF 20% RL	157Q-227M-5-OV
C811	CE 35V 2200uF 20% RL	157Q-228M-5-5&
C808,C817	CE 3300UF 50V 20% RL	8910-0008-0
C801,C819	CAP400V 4700P	8910-0049-0
<b>TRANSFORMER</b>		
L801	TRANSFORMER GTP-750	1806-2319-1
L802	EI-35 TRANSFORMER GTP750	1806-2501-0
<b>WAFER</b>		
J808,J809	4 PIN HEADER W/HOOK JST	2101-1981-0

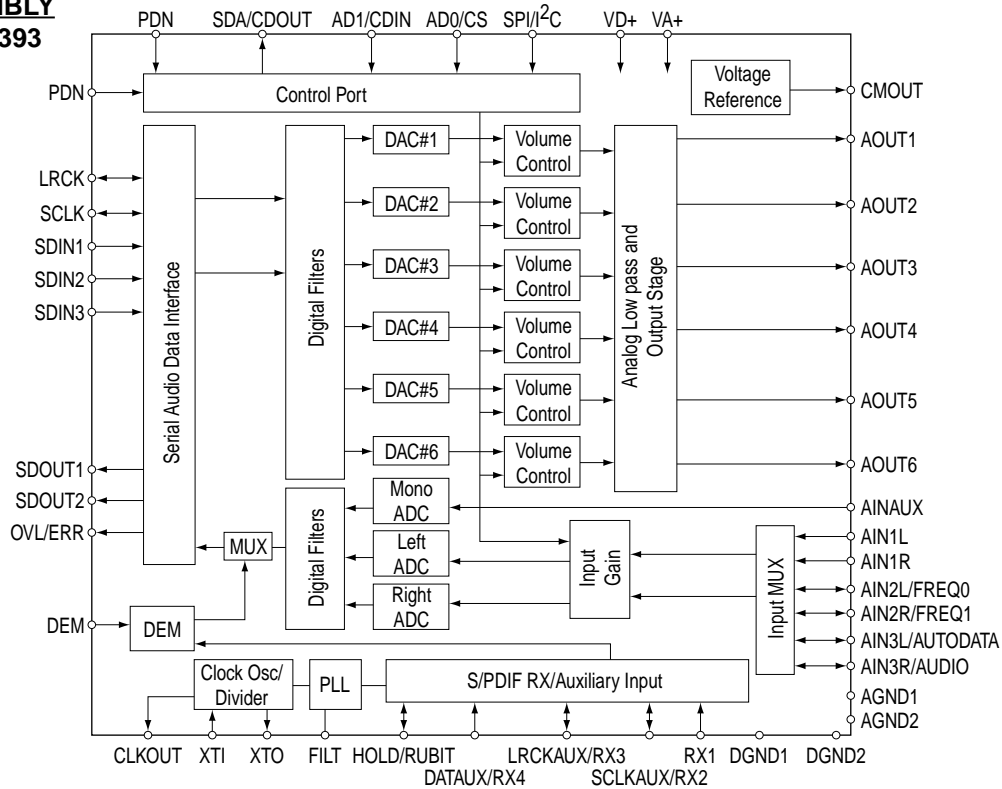
REF NO.	DESCRIPTION	PART NO.
J851	4P ST.WAFER	2102-041S-004
J829	12P ST.WAFER	2102-121S-004
<b>SCREW</b>		
0002	SCREW M3X8 (BLK)	2904-3008-3000
1108	SCREW BH 2.6X6 BLACK	2954-2606-3000
0001	T3X8MM SELF TAPPING	2954-3008-3000
<b>IC</b>		
U804,U806,U807	IC 7805 REG 5V 1.5A	3130-2020-3
U802	IC 7812 12V REGULATOR	3130-2520-3
U803	IC LM7915CT REGULATOR	3130-3020-0
U801	IC LM78L24 REGL SMALL	3130-4810-0
U805	IC 7905 -5V REG 1.5A	3130-6360-0
<b>RELAY</b>		
M801	RELAY 12V DC TAIKO	4500-0110-0
<b>RESISTOR</b>		
R801	RMF 1/8W 5.1K 1% AT	4711-512A-2
R802	RMF 1/2W 10R 1% AT	4717-100A-2
<b>DIODE</b>		
D801,D802,D803	DIODE RECT IN4002 AL	4804-0020-1
D1,D2,D3	DIODE 1N4148 ATS	4804-1480-C
D806,D807,D808,D812	BRIDGE RECTIFIER RS102	4840-0470-0
D804	BRIDGE RECTIFIER RB152	4840-0490-0
D805	BRIDYE DIODE RS203L	4840-1120-0
<b>TRANSISTOR</b>		
Q801	TR 2SC1815 (G.R) RL	4860-0700-5
<b>FUSE</b>		
M804	FUSE F500MA/250V 5X20MM	5120-0059-0
<b>SWITCH</b>		
M805	DPST PUSH SW.SDDFA3066A	5200-3181-0-01
<b>HEATSINK</b>		
1105	HEATSINK	5400-0831-0
1104,1106	HEATSINK 23.5X17X50	5400-1702-0
<b>WIRE</b>		
SW1,SW2	CN. ASSY L=250 AWG#18	7009-8880-0
1120	POWER CONNECTOR A 4P	7010-9480-0
1121	POWER CONNECTOR B 2P	7010-9490-0
<b>MISCELLANEOUS</b>		
	INSULATING BOOT (ID=14)	1660-0700-0
1103	TERMINAL WRAP	4131-9321-0
1102	FUSE HOLDER	4132-1011-0

REF NO.	DESCRIPTION	PART NO.
M802	500MA/250V VDE/SEMKO	5100-5010-1B
<b><u>PACKING ASSY</u></b>		
0001	GIFT BOX	1476-3001-2
0002	POLYFOAM	1490-1753-2
0021	300-OHM T ANTENNA	2107-0661-1
0022	AM LOOP ANTENNA	2113-1155-0
0009	DATE CODE LABEL	3000-3544-0
0013	LABEL- YELLOW	3000-3724-0
0014	S/N LABEL SET GTP-740BE	3000-4307-0
0023	RCA CABLE YEL AU L=1.0M	7010-2010-0
0024	RCA CABLE W/R AU L=1.0M	7010-2020-0
<b><u>CASING ASSY</u></b>		
0104	TOP COVER W/O VENT,	1402-3541-0
0102	BOTTOM CHASSIS A0150C	1402-6630-2
0103	REAR PANEL A0151C	1402-6692-1
0101	FRONT PANEL, A0150C	1402-6700-1
0106	TUNER BRACKET GTP-740	1402-6710-0
0105	SUBFASCIA GTP-740	1402-6760-1
0128	AC INLET SOCKET	2113-0300-0
0113	POWER KNOB	2438-8301-0
0114	POWER KNOB HOLDER	2438-8401-0
0115	POWER KNOB-LED CAP	2438-8501-0
0109	KNOB,VOLUME GTP-740	2441-8200-0
0119	KNOB SPACER	2441-9500-0
0120	FUNCTION KNOB W/O LIGHT	2441-9600-0
0121	FUNCTION KNOB W/ LIGHT	2441-9700-0
0122	KNOB TUNER	2441-9800-0
0116	SPRING	2510-2031-0
162	METAL WASHER M3X0.4X8 BZ	2600-3004-0803
0220	I/T WASHER M3X0.5X6.4 WZ	2606-3005-0642
0164	SPRING WASHER	2607-3007-0550
0165	SPRING WASHER M4X1X7 BZ	2607-4010-0703
0161	M4 NUT (BLK)	2640-4030-0703
0132	M/C SCREW M3X8, CS SMALL	2901-3008-3001
0156,0158	SCREW M3X6 BINDING (BLK)	2904-3006-3000
0140,0141,0142,0146,0153,0154	SCREW M3X8 (BLK)	2904-3008-3000
0160	SCREW M3X10 (BLK)	2904-3010-3000
0160	SCREW M4X10 (BLK)	2904-4010-3000
0162	SELF TAPPING SCREW 3X6	2941-3006-3000
0137	SELF TAPPING SCREW 3X	2941-3008-3000
0134,0138	3X6MM B-TITE (BLK.ZN)	2954-3006-3000
0133,0135,0136,0139,0143,0144,0145,0147, 0148,0150,0159,0164,	T3X8MM SELF TAPPING	2954-3008-3000
<b><u>JACK</u></b>		
0187	"FOR FUTURE USE" LABEL	3000-8811-0
0126	LED DUAL COLORS	3700-2500-RG

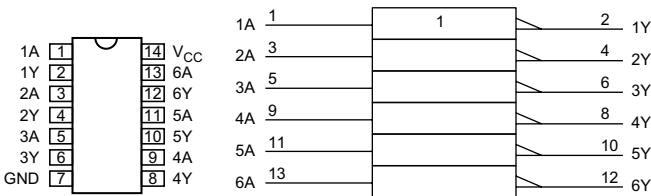
REF NO.	DESCRIPTION	PART NO.
0117	POWER KNOB LENS	3714-4906-0
0110	LENS,VOLUME GTP-740	3715-4100-0
0123	REMOTE LENS	3715-4506-0
0108	DISPLAY LENS GTP-740	3715-4700-0
0118	LENS BUTTON ACTUATOR	3715-4800-0
0124	LENS,LEDX8	3715-4900-0
0125	LENS LEDX4	3715-5000-0
0151	HEX STANDOFF M3X30.4	4132-6691-0
0152	HEX STANDOFF M3X53.4	4132-6701-0
0185	UP/DOWN KNOB ADAPTOR	4134-0151-0
0130	PLASTIC FOOT	4152-0481-0
0163	RUBBER PIN	4152-0501-0
0129	FOAM STRIP 80X10X1MM	4152-0661-0
0107	DISPLAY BEZEL GTP-740	4152-4191-0
0193	LCD COVER SHEET	4152-6111-0
0191	RUBBER PAD 12X18X13MM	4152-9061-0
0197	IR JACK PLASTIC PLUG	4152-9071-0
0198	FIBRE SHEET FOR A0150C	4152-9091-0
0127	AC CORD 10/16A 250V 3X	7009-5470-0
0184	CONN. ASSY 8P P2.5 L=50	7010-1030-0
0183	CONN. ASSY 4P P2.5 L=130	7010-1040-0
0171	CONN. ASSY 3P P2.5 L=110	7010-1050-0
0179	CONN ASSY 9P P2.5 L=60	7010-1470-0
0178	CONN ASSY 7P P2.5 L=70	7010-1480-0
0168	CONN ASSY 2P P2.5 L=140	7010-1490-0
0173	CONN ASSY 4P P2.5 L=150	7010-1500-0
0189	CONN. ASSY 4P 2.5P L=50	7010-1510-0
0177	CONN ASSY 6P P2.5 L=50	7010-1520-0
0169	CONN ASSY 3P P2.5 L=50	7010-1530-0
0174	CONN ASSY 5P P2.5 L=50	7010-1540-0
0192	CONN ASSY 5P P2.5 L=90	7010-1550-0
0182	CONN ASSY 12P P2.5 L=60	7010-1560-0
0180	CONN ASSY 9P P2.5 L=90	7010-1570-0
0170	CONN ASSY 3P P2.5 L=90	7010-1580-0
0176	CONN ASSY 4P P2.5 L=110	7010-1590-0
0172	CONN. ASSY 4P P2.5 L=50	7704-1050-2004
0175	CONN ASSY 5P P2.5 L=120	7705-1120-2004

- NOTE:** - The components identified by  $\triangle$  mark are critical for risk of fire and electrical shock.  
 Replace only with part number specified.
- \*U : USA model only.
  - \*C : European model only.
  - Capacitors : CP-Polystyrene, CM-Mylar, CE-Electrolytic, CC-Ceramic.
  - Resistors : RMF-Metal Film.

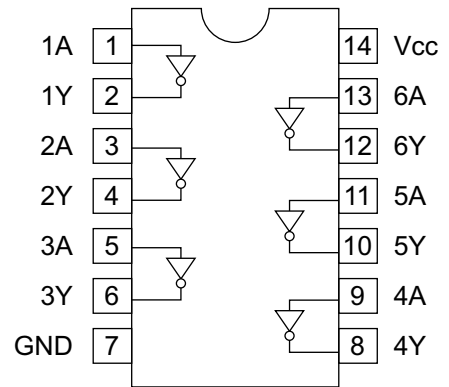
**AC3 ASSEMBLY**  
**U010: 74HC393**



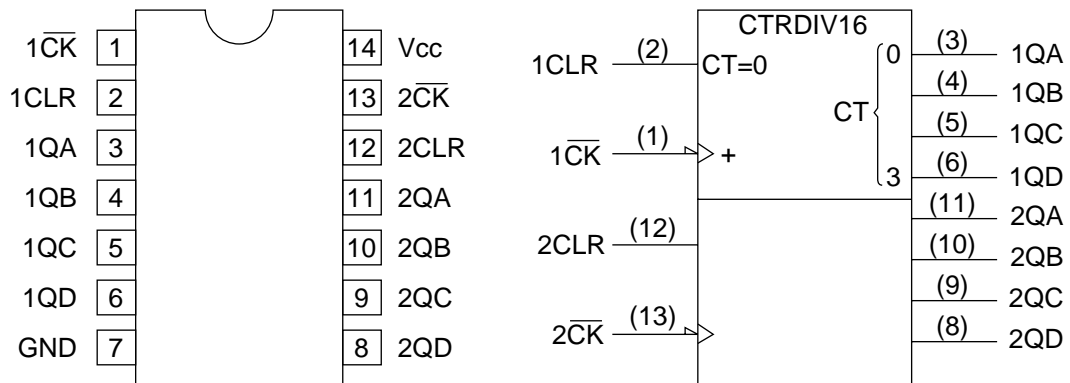
**AC3 ASSEMBLY**  
**U012: SN74HC04**



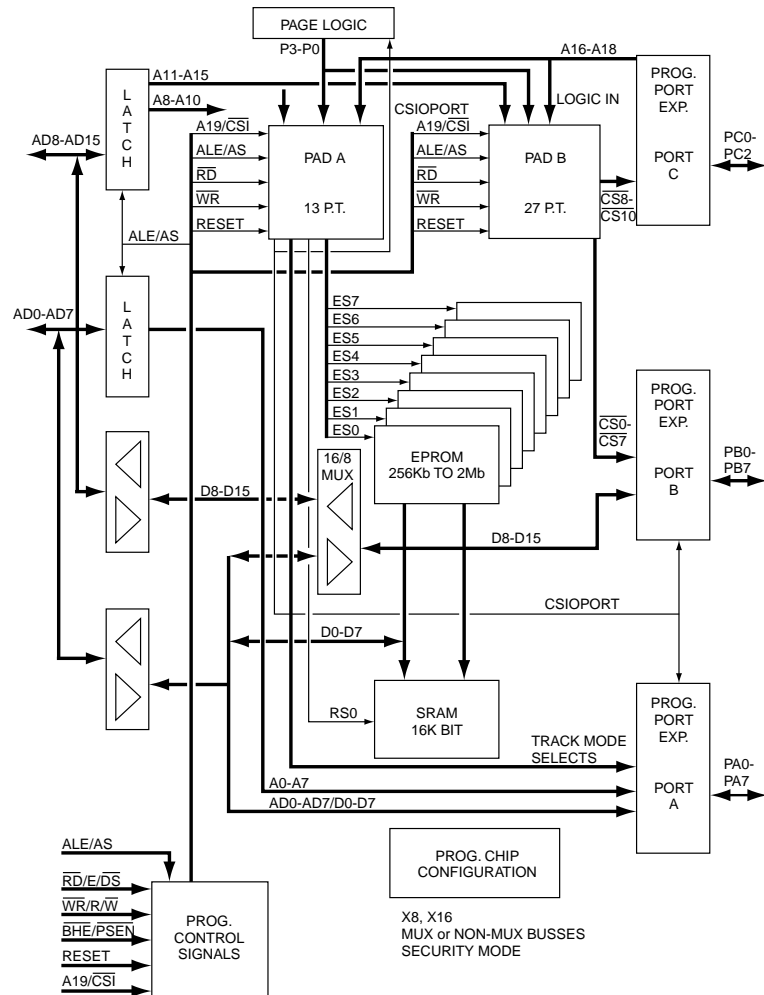
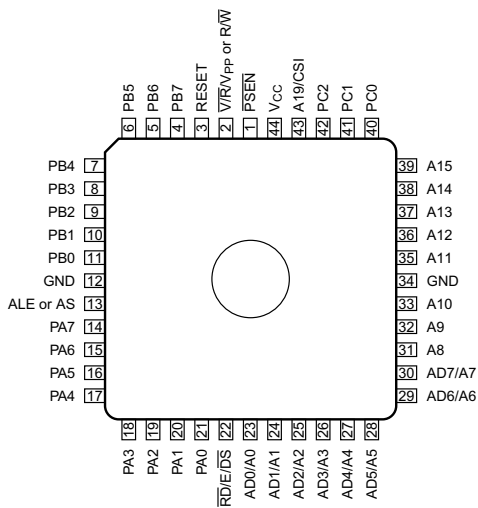
**AC3 ASSEMBLY**  
**U013, U107: 74HC04**



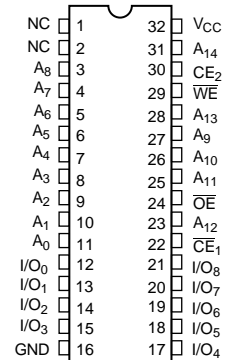
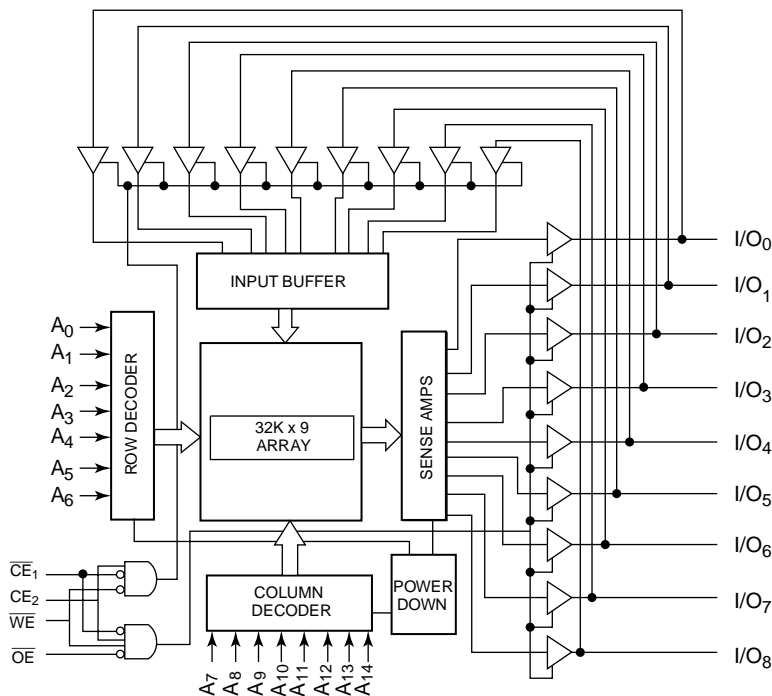
**AC3 ASSEMBLY**  
**U019: 74HC393**



## AC3 ASSEMBLY U022: PSD312

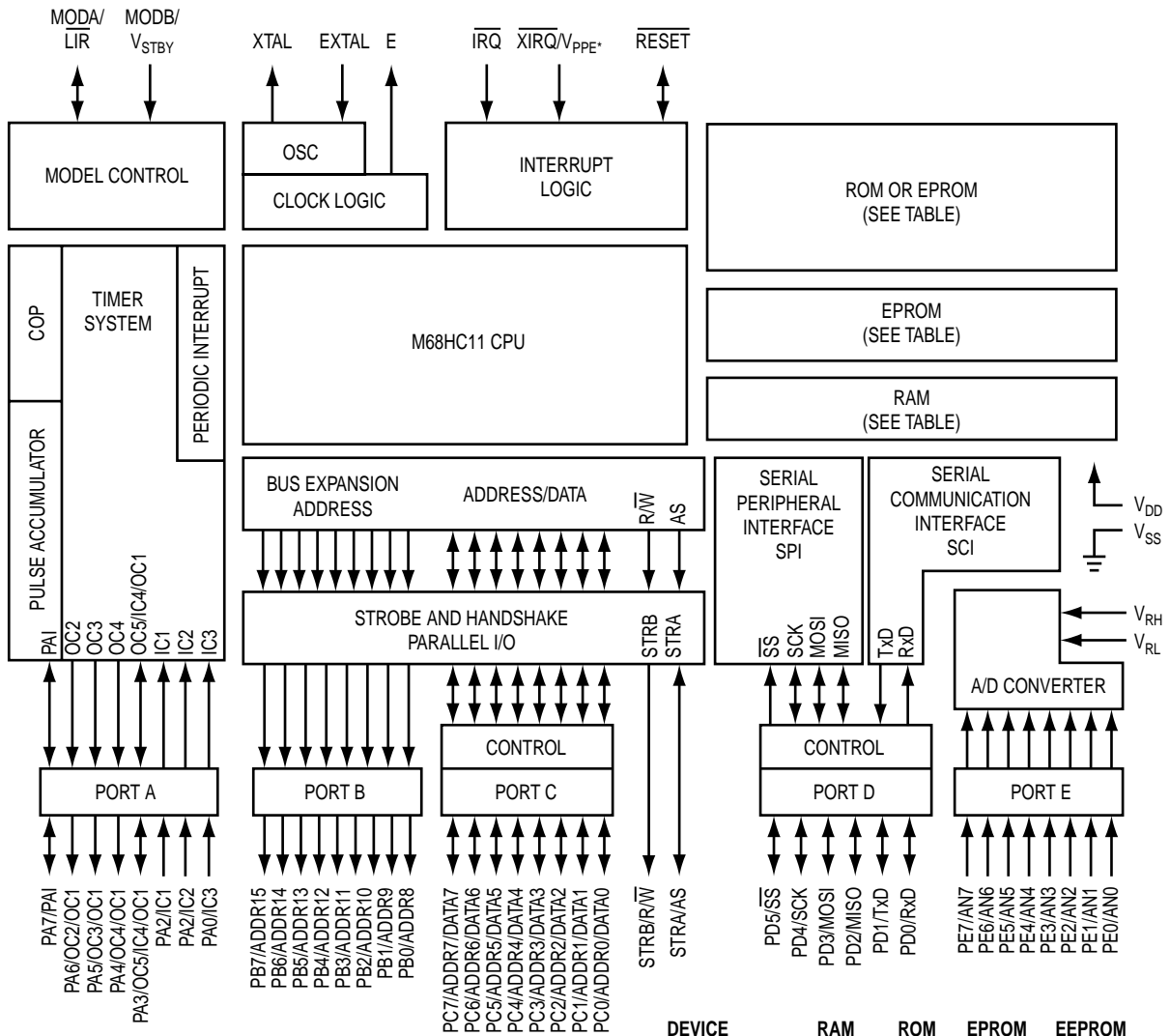


## AC3 ASSEMBLY U051: CY7C188





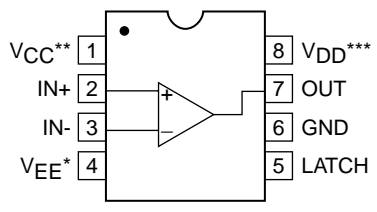
## AC3 ASSEMBLY U021: MC68HC11A



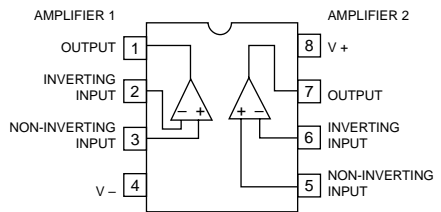
DEVICE	RAM	ROM	EPROM	EEPROM
MC68HC11E0	512	-	-	-
MC68HC11E1	512	-	-	512
MC68HC11E9	512	12 K	-	512
MC68HC711E9	512	-	12 K	512
MC68HC11E20	768	20 K	-	512
MC68HC711E20	768	-	20 K	512
MC68HC811E2	256	-	-	2048

\* V<sub>ppe</sub> applies only to devices with EPROM/OTPROM.

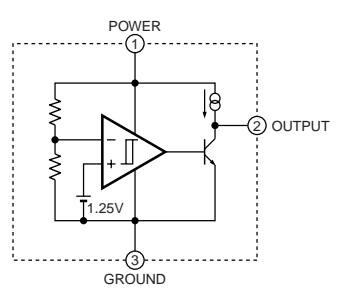
## AC3 ASSEMBLY U101: MAX903



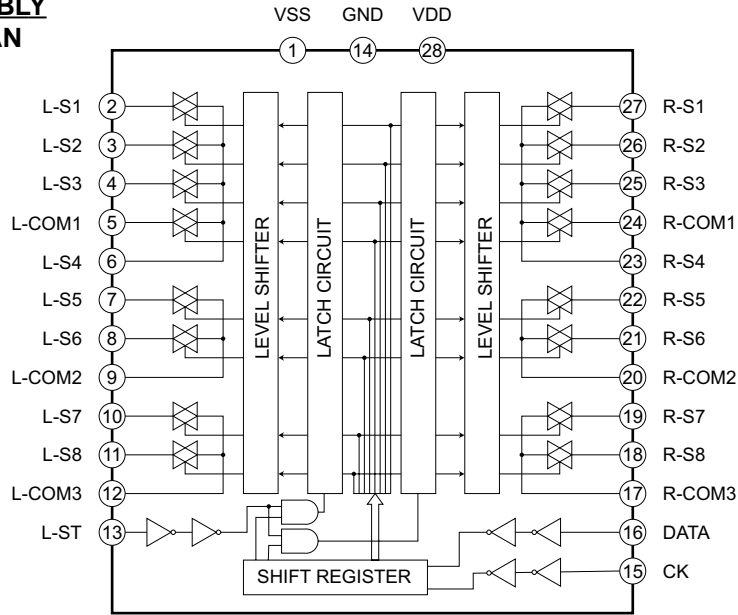
## AC3 ASSEMBLY U105, U109: UPC4560C



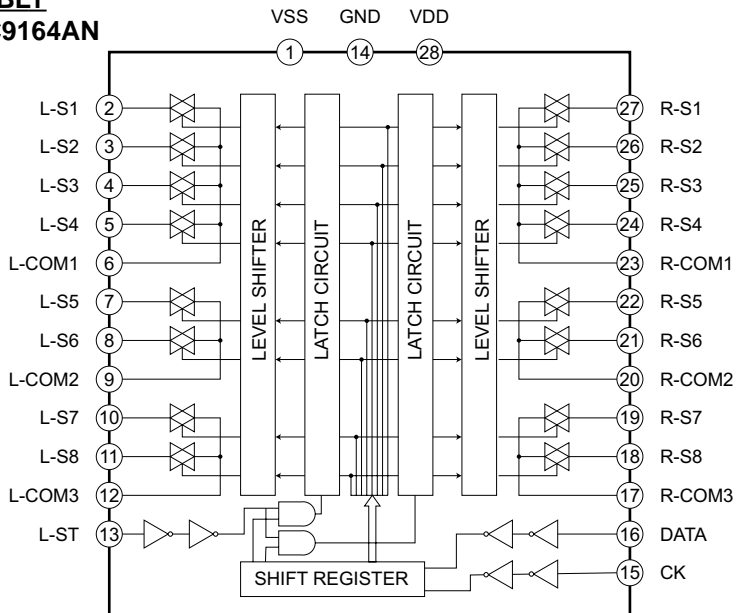
## AC3 ASSEMBLY Q111: M51943A



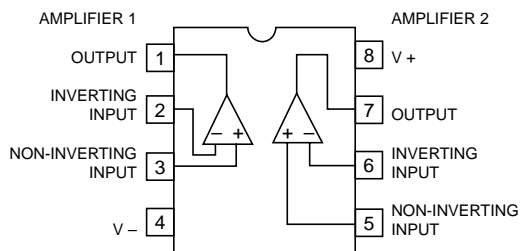
**AUDIO ASSEMBLY**  
U401: TC9163AN



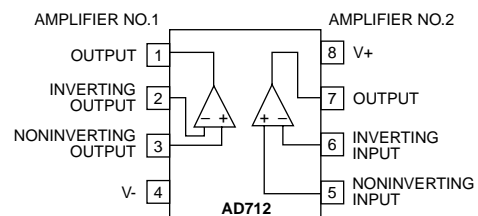
**AUDIO ASSEMBLY**  
U402, U411: TC9164AN



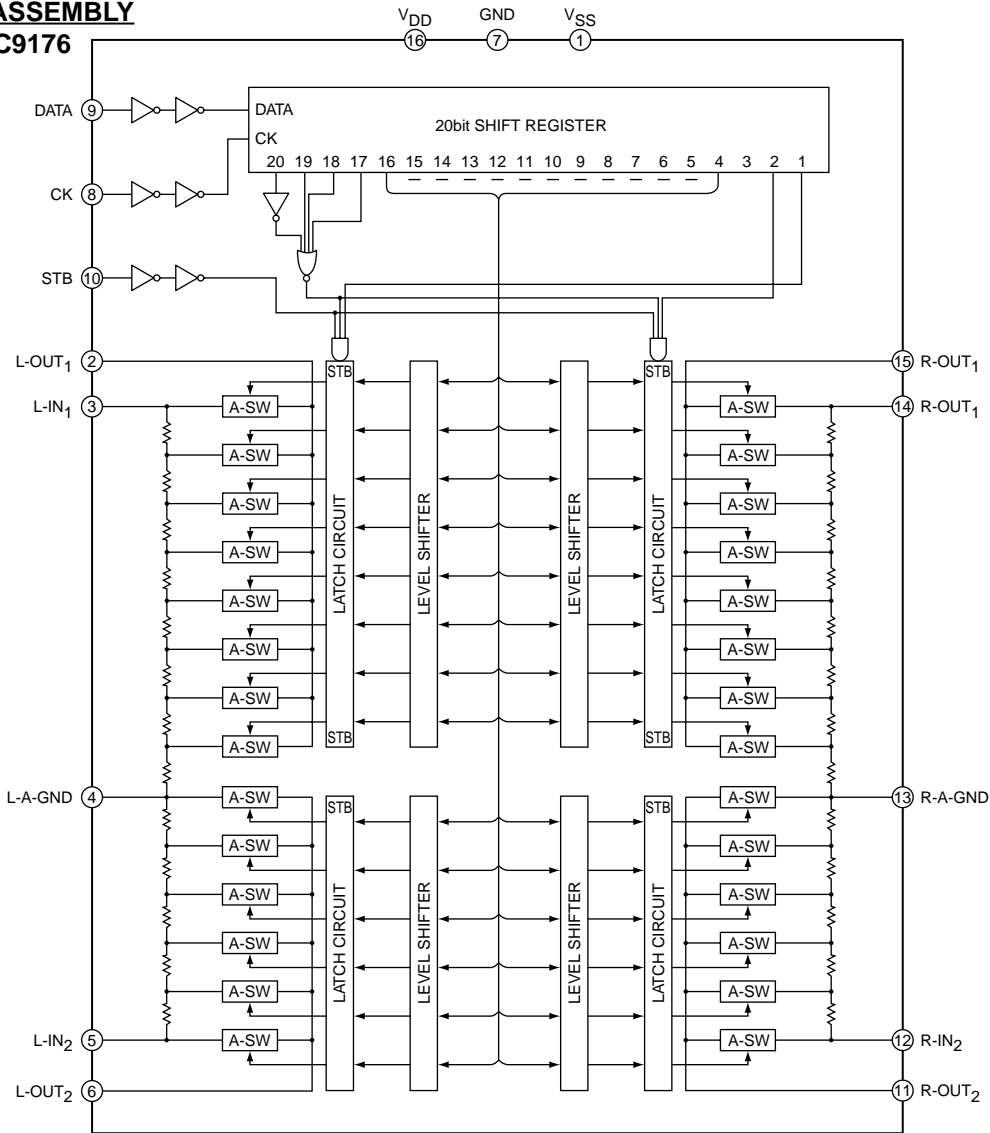
**AUDIO ASSEMBLY**  
U426, U427: 7805



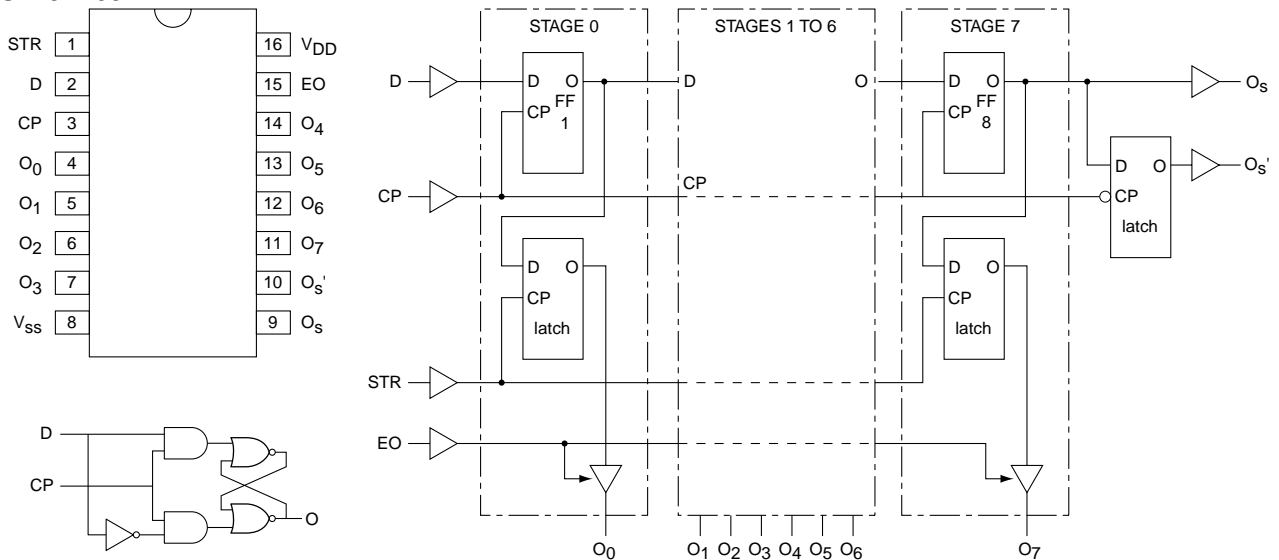
**AUDIO ASSEMBLY**  
U404-U408, U412, U418, U422-U425:  
AD712



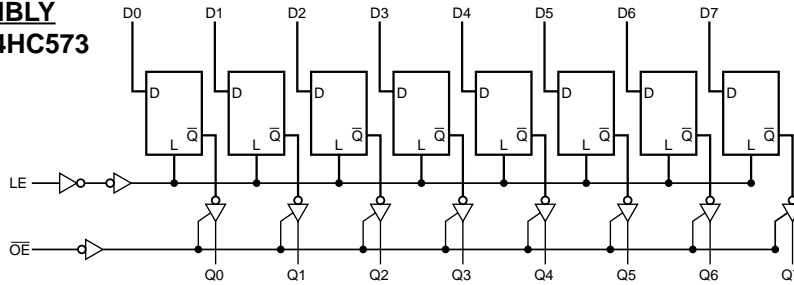
## AUDIO ASSEMBLY U403: TC9176



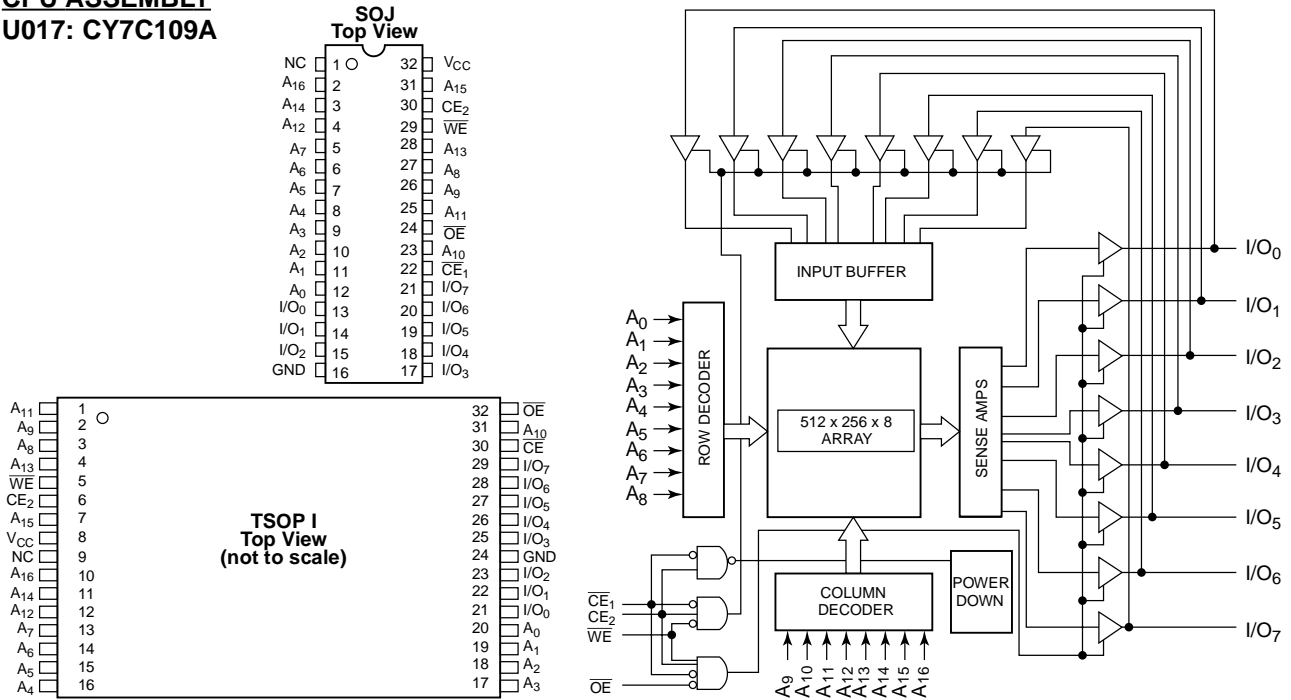
## AUDIO ASSEMBLY U419: 4094



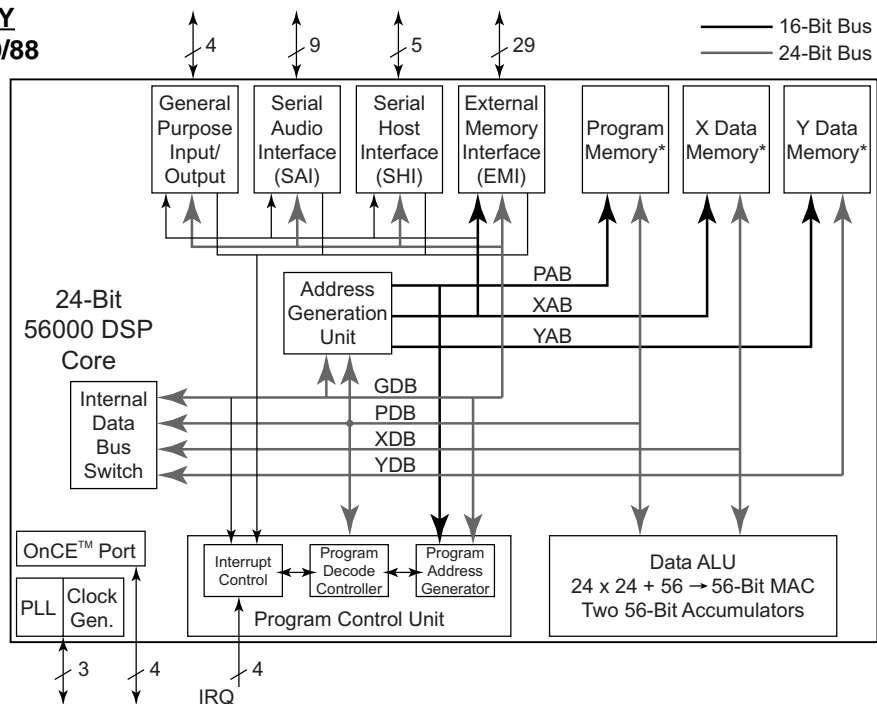
## AUDIO ASSEMBLY U420, U421: 74HC573



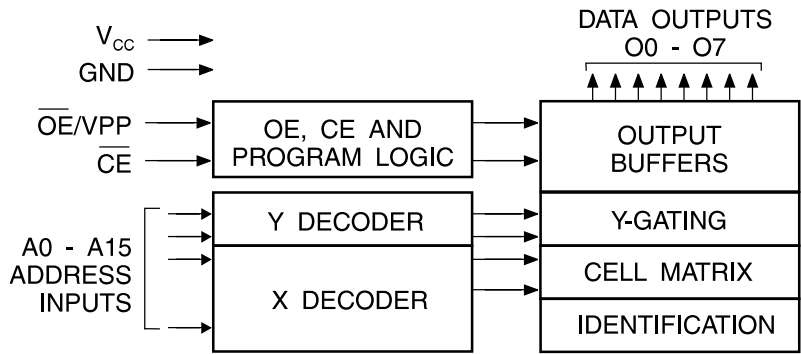
## CPU ASSEMBLY U017: CY7C109A



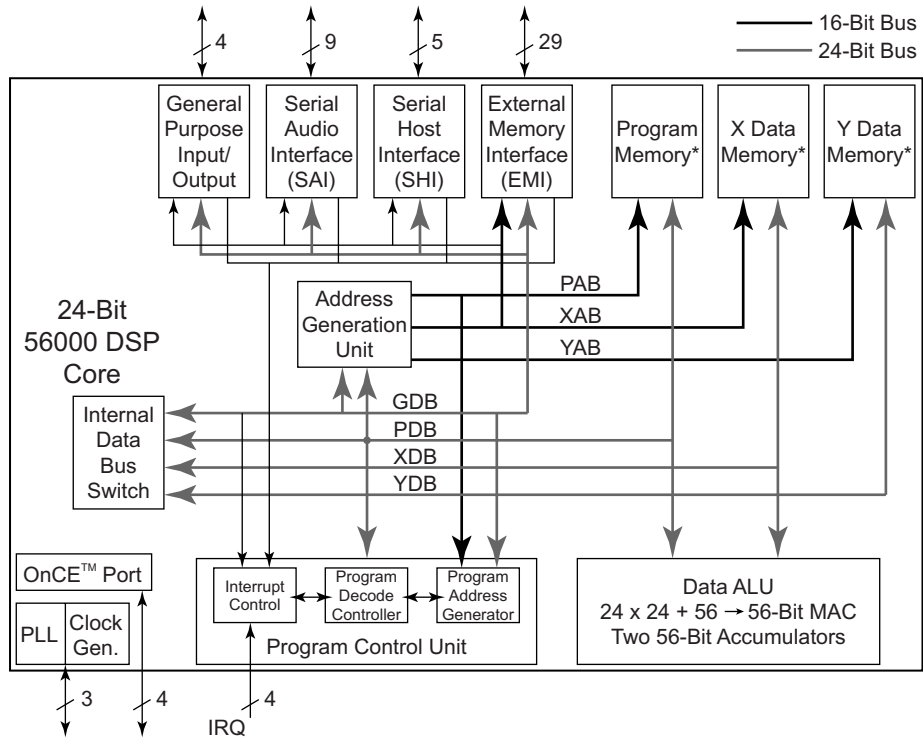
## CPU ASSEMBLY U018: MC56009/88



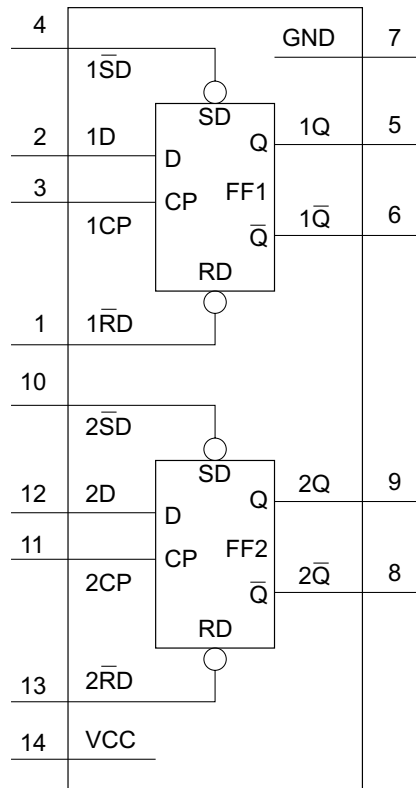
**CPU ASSEMBLY**  
**U003: 27C512-12**



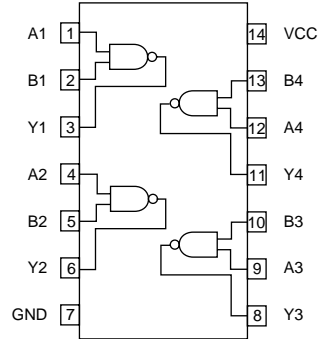
**CPU ASSEMBLY**  
**U020: MC56007/66**



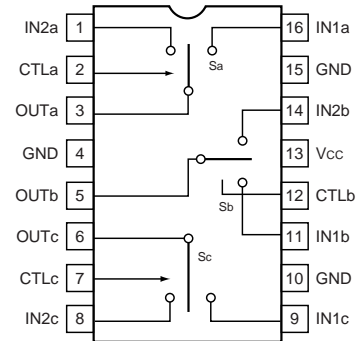
**CPU ASSEMBLY**  
U024: 74HC74



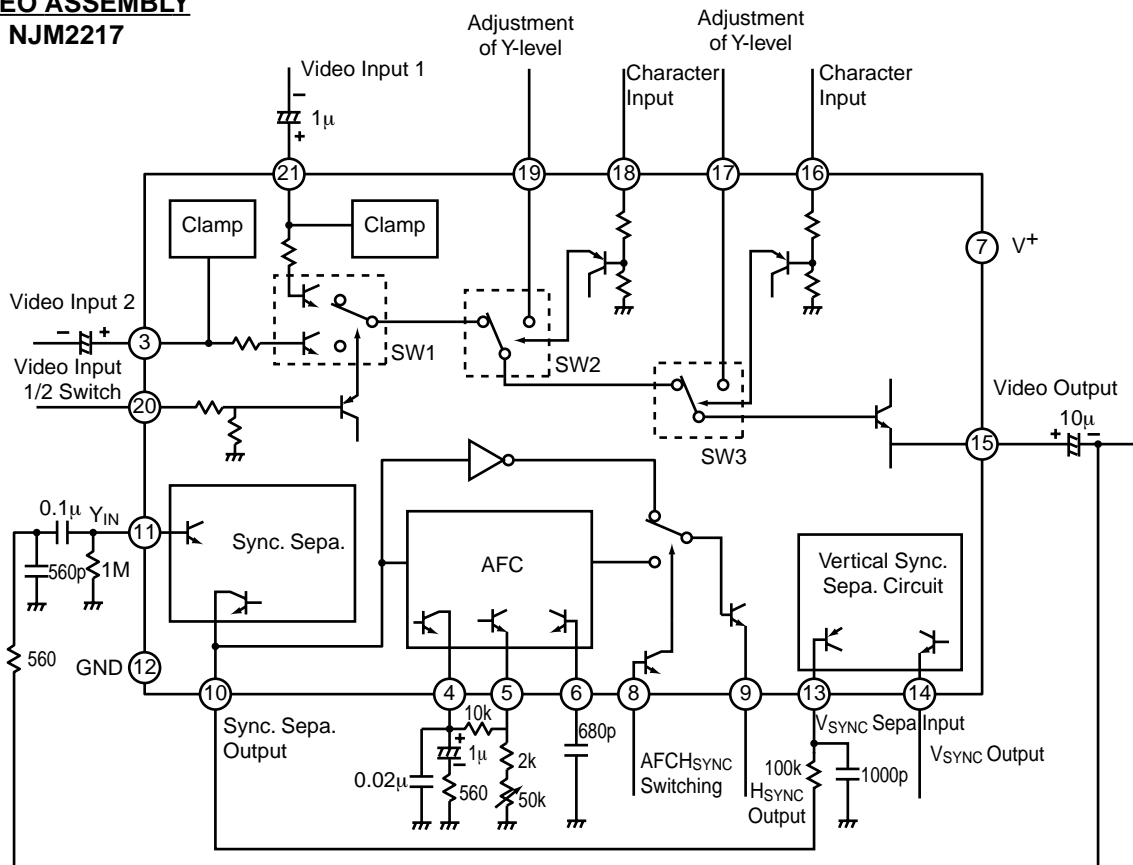
**CPU ASSEMBLY**  
U023, U027, U028: TC74HC00AP



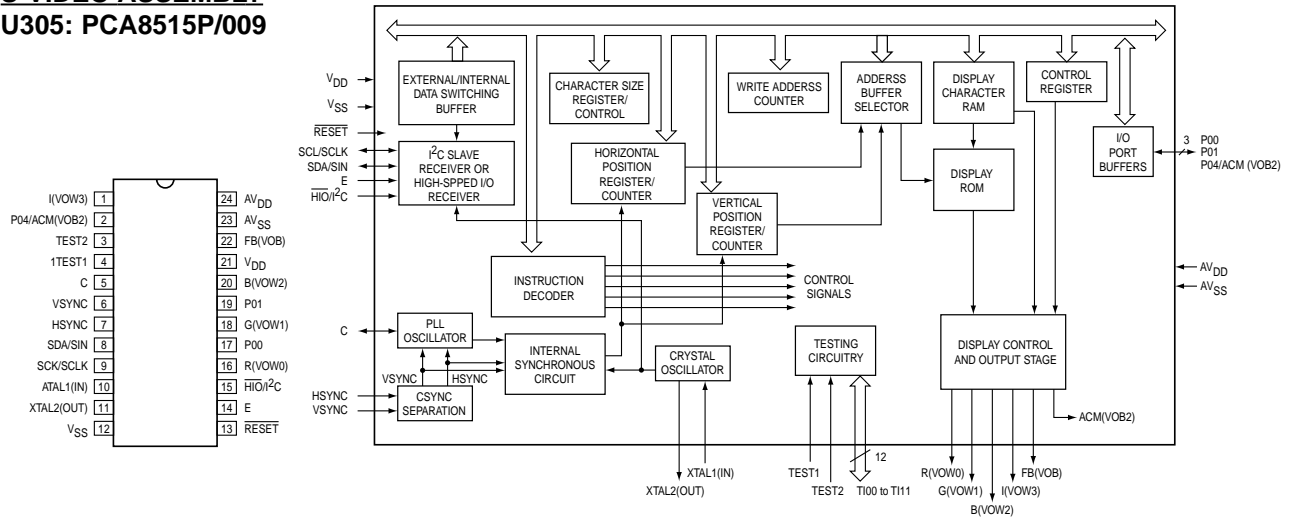
**S-VIDEO ASSEMBLY**  
U307-U309: BA7602



**S-VIDEO ASSEMBLY**  
U306: NJM2217

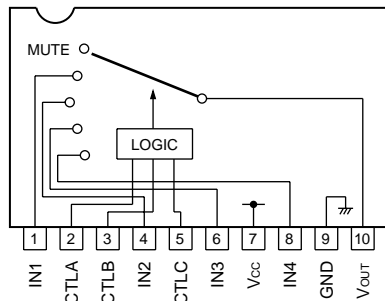


## S-VIDEO ASSEMBLY U305: PCA8515P/009



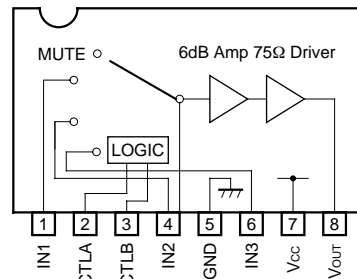
## S-VIDEO ASSEMBLY U301, U303: BA7645N

## VIDEO ASSEMBLY U314: BA7645N

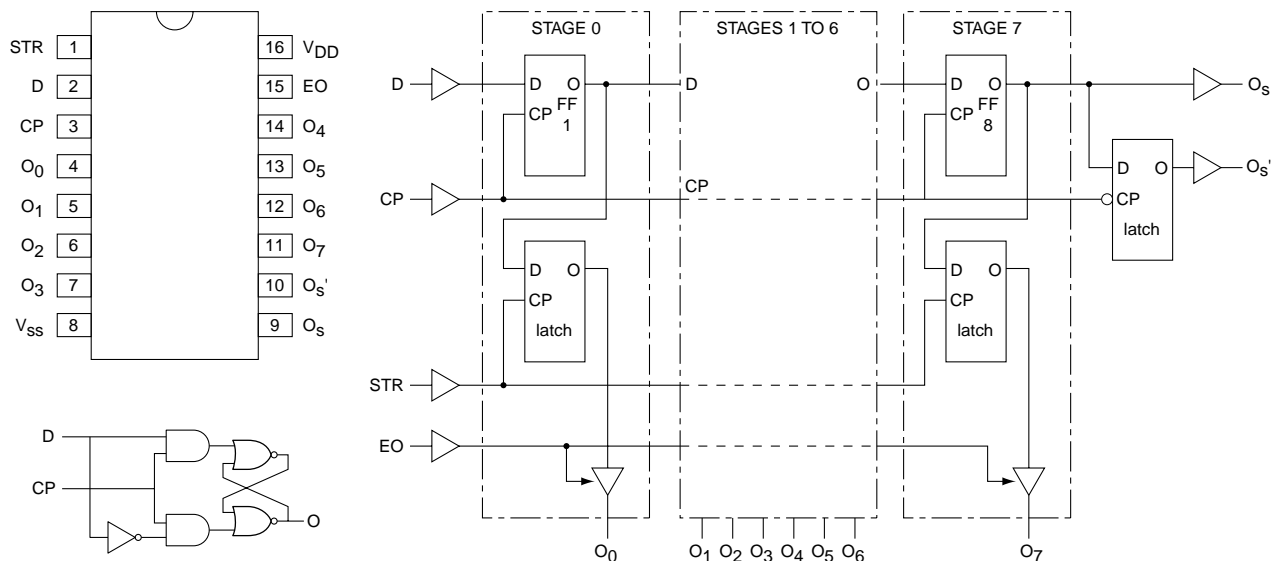


## S-VIDEO ASSEMBLY U302, U304, U310-U313: BA7612N

## VIDEO ASSEMBLY U315-U317: BA7612N

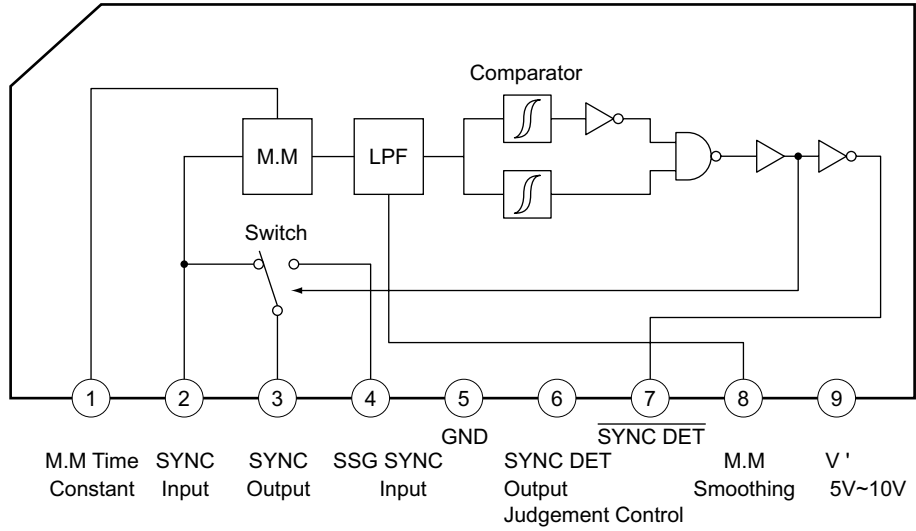


## VIDEO ASSEMBLY U318, U319: 4094



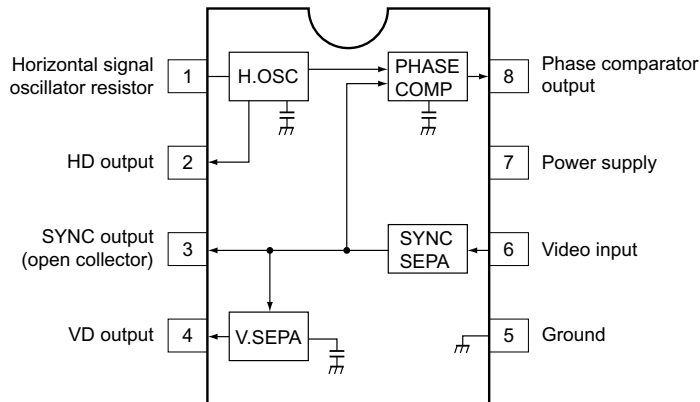
**VIDEO ASSEMBLY**

U322: NJM2220S



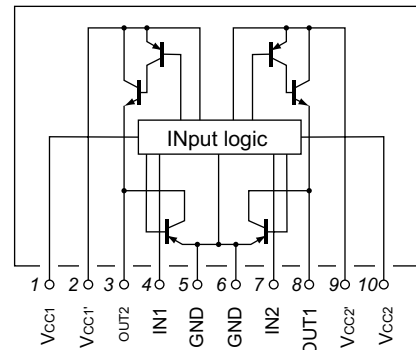
**VIDEO ASSEMBLY**

U321: BA7046F



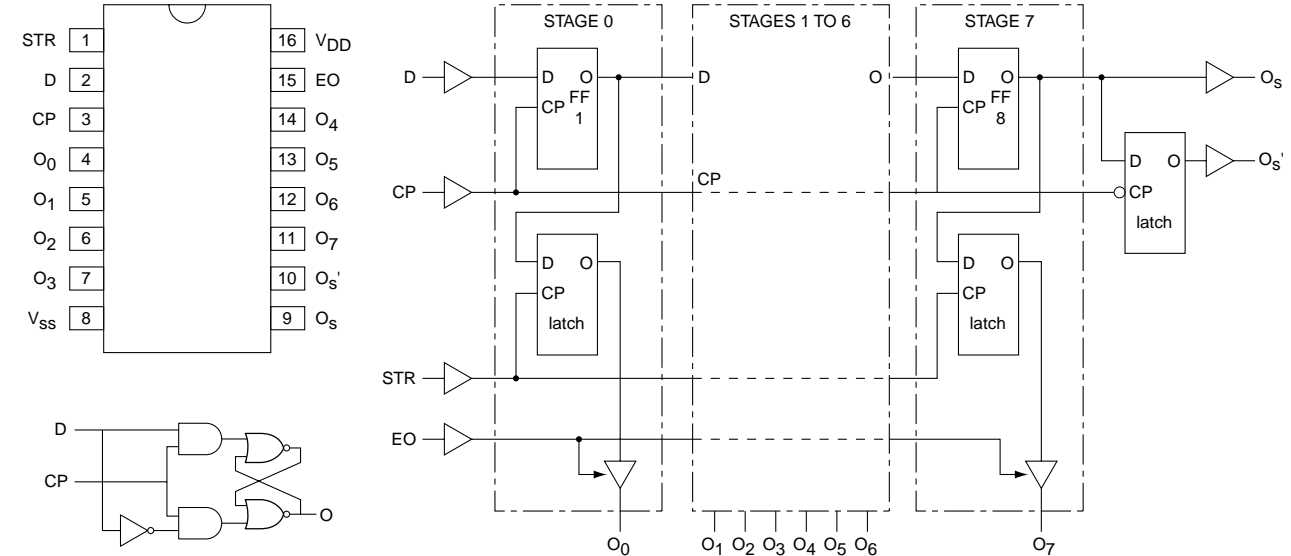
**VOL ASSEMBLY**

U601: LB1642



**KEYBOARD ASSEMBLY**

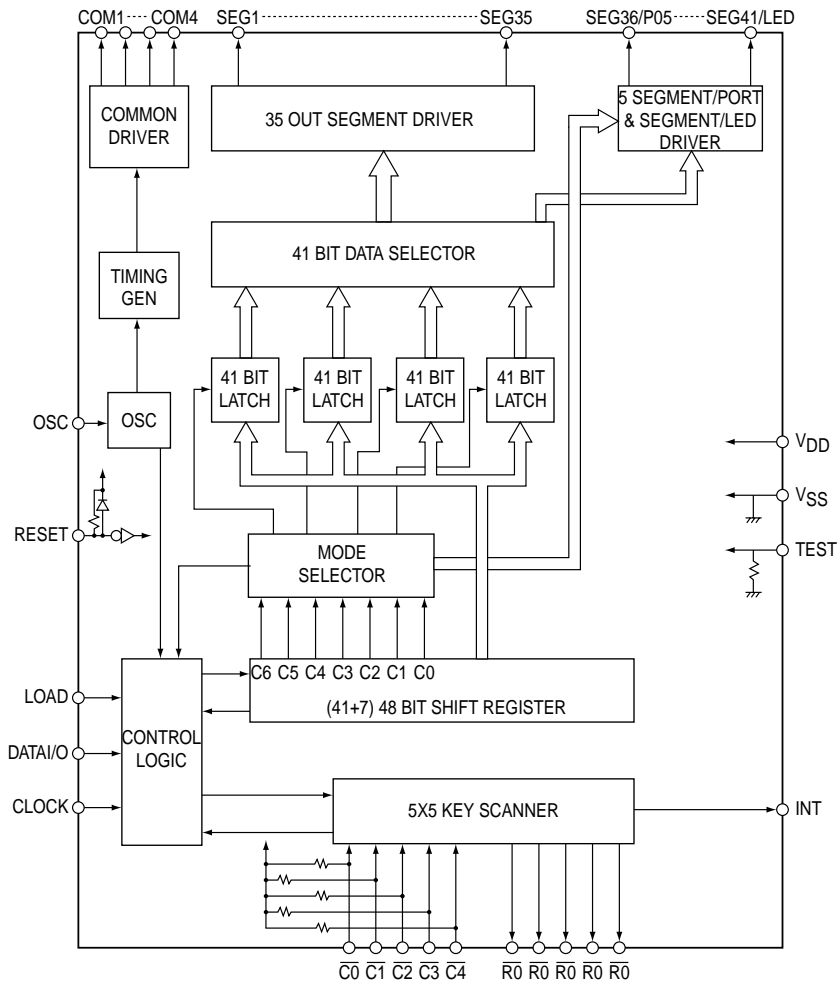
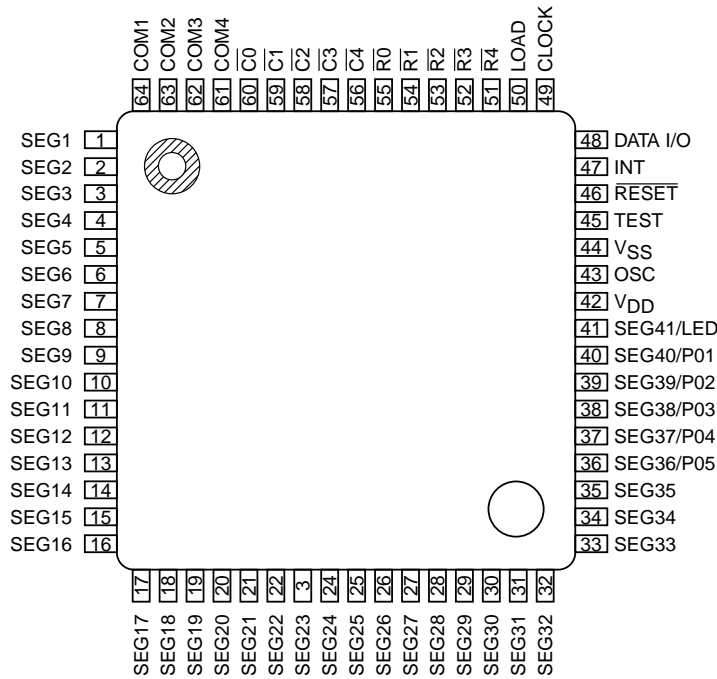
U502-U507: 4094





## KEYBOARD ASSEMBLY

U501: MSM9006-02

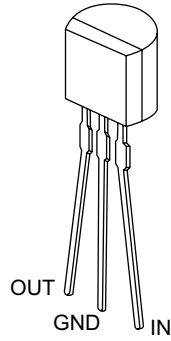


## KEYBOARD ASSEMBLY

U508: NJM78L05A

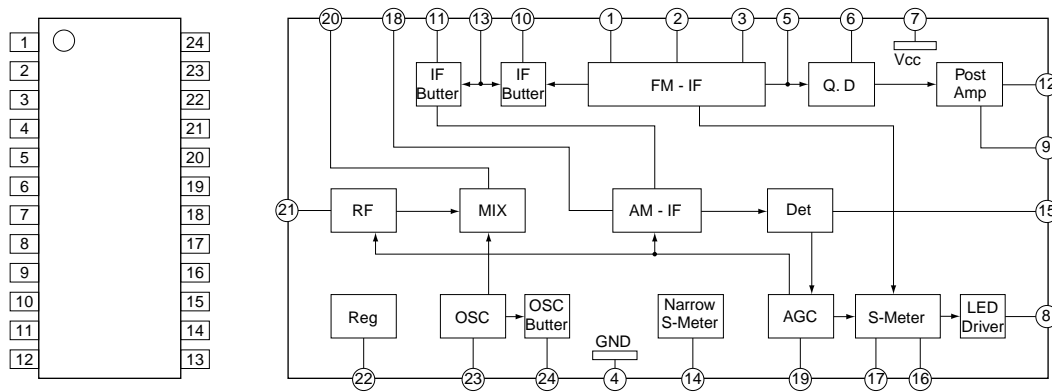
## TUNER ASSEMBLY

U205: NJM78L05A



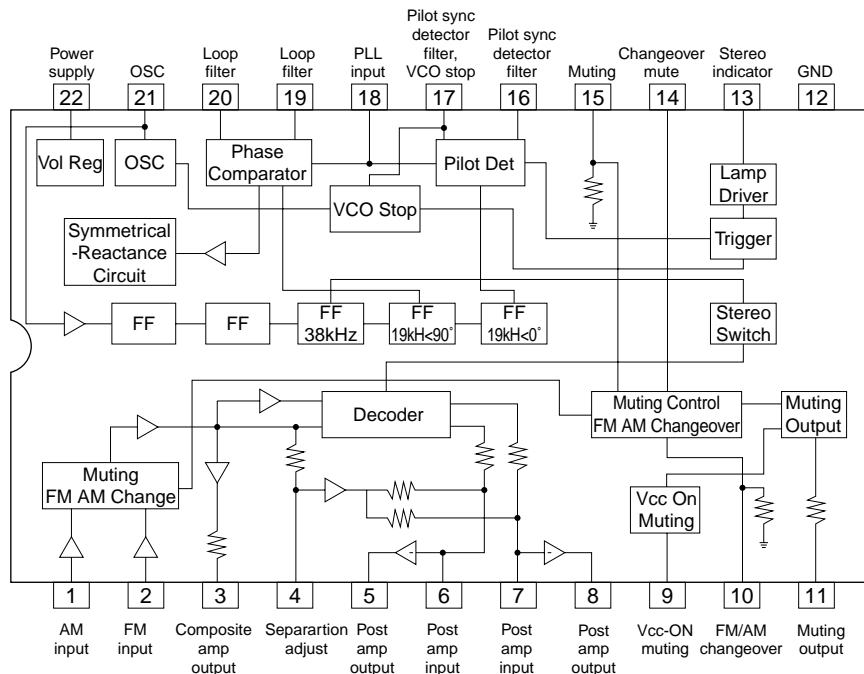
## TUNER ASSEMBLY

U202: LA1266

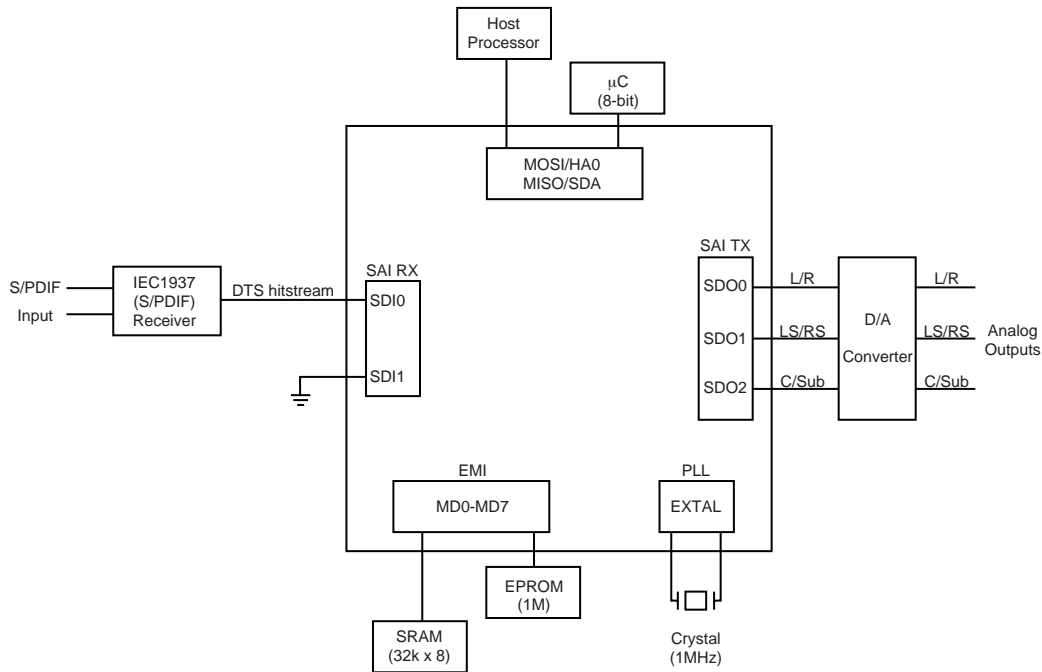
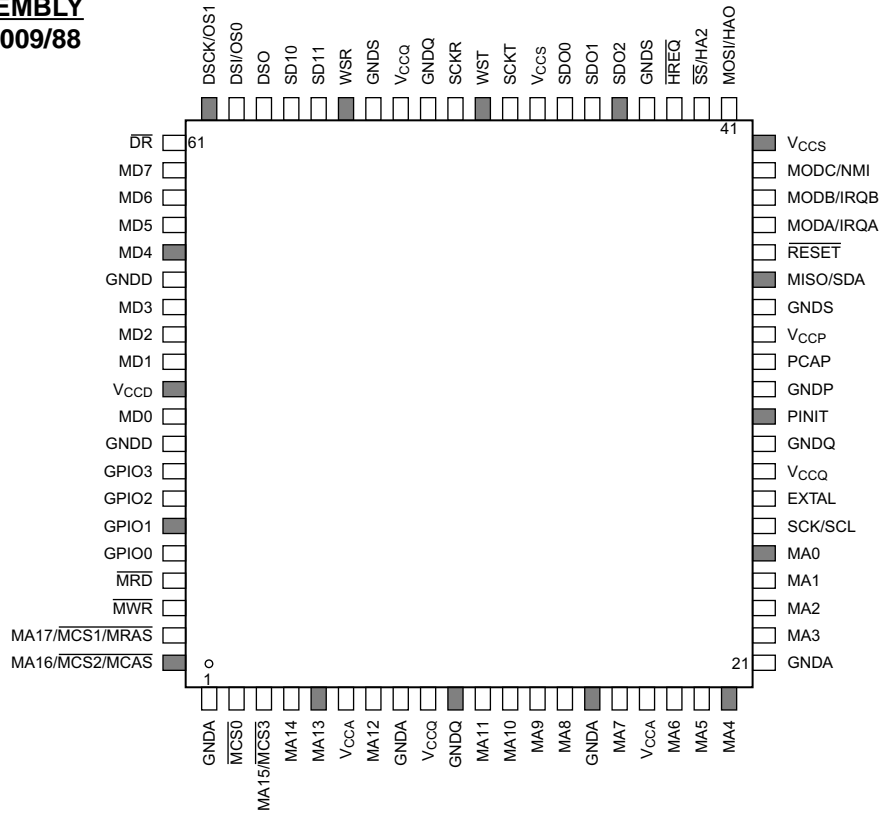


## TUNER ASSEMBLY

U204: LA3401

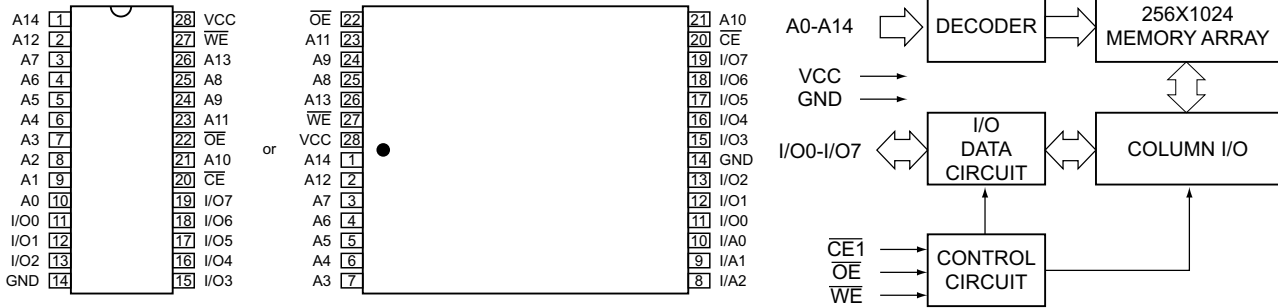


**DTS ASSEMBLY**  
**U1: MC56009/88**



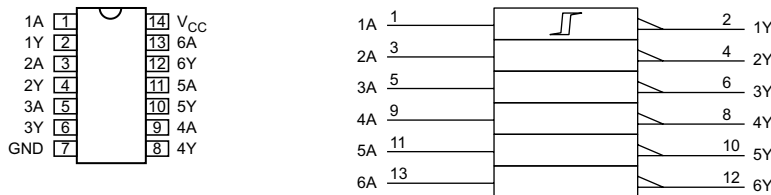
## DTS ASSEMBLY

### U3: KM68257C-15



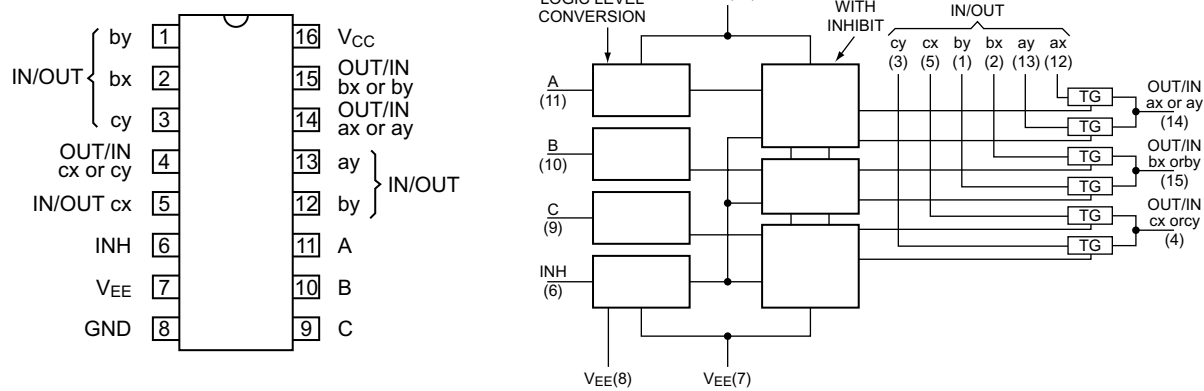
## DTS ASSEMBLY

### U5: 74HC14



## DTS ASSEMBLY

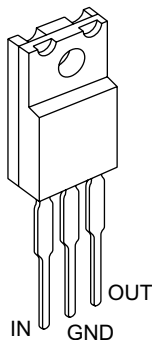
### U6: 74HC4053M



## POWER ASSEMBLY

### U801: LM78L24

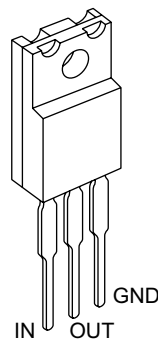
### U802, U804, U806, U807: 78XX

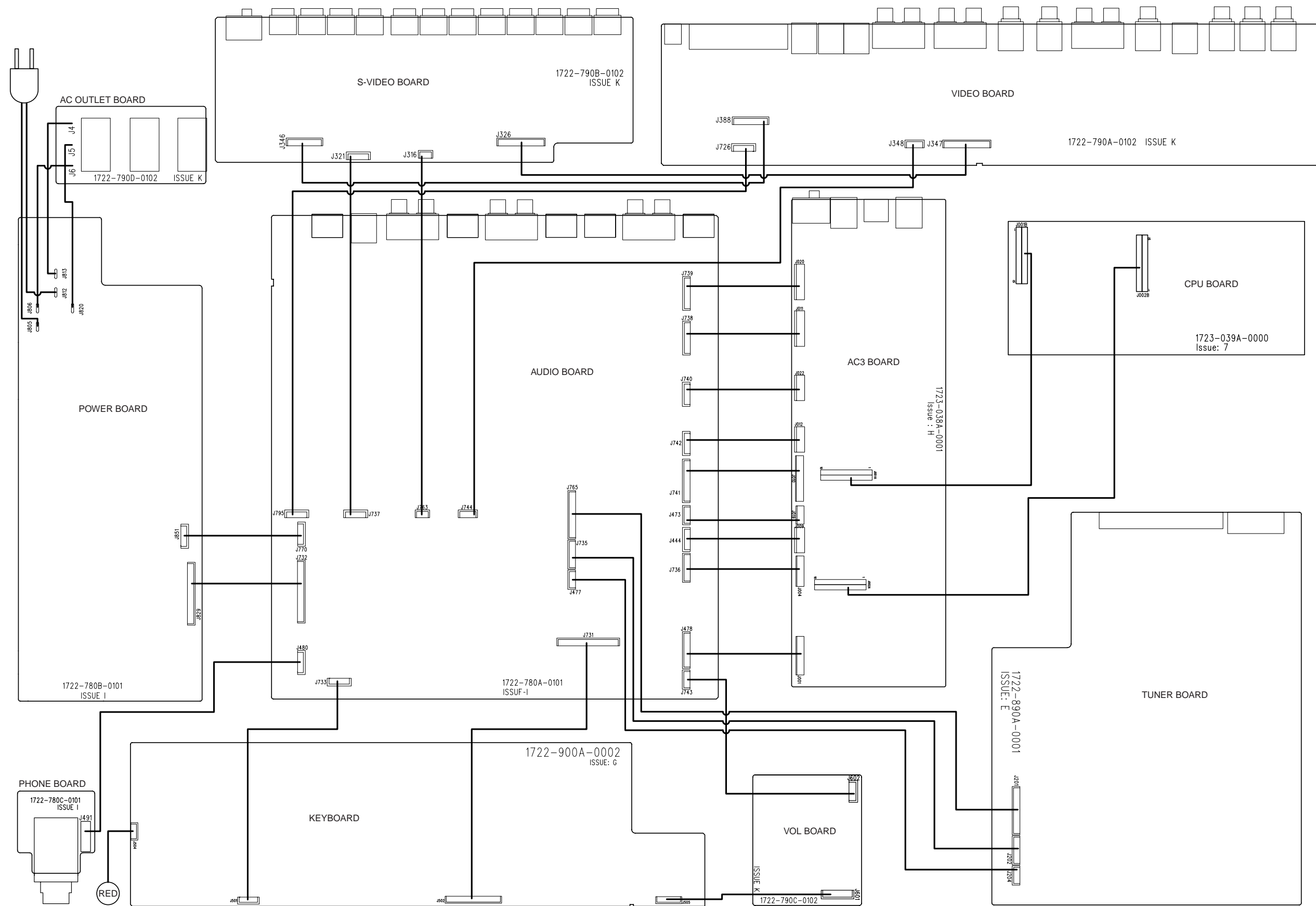


## POWER ASSEMBLY

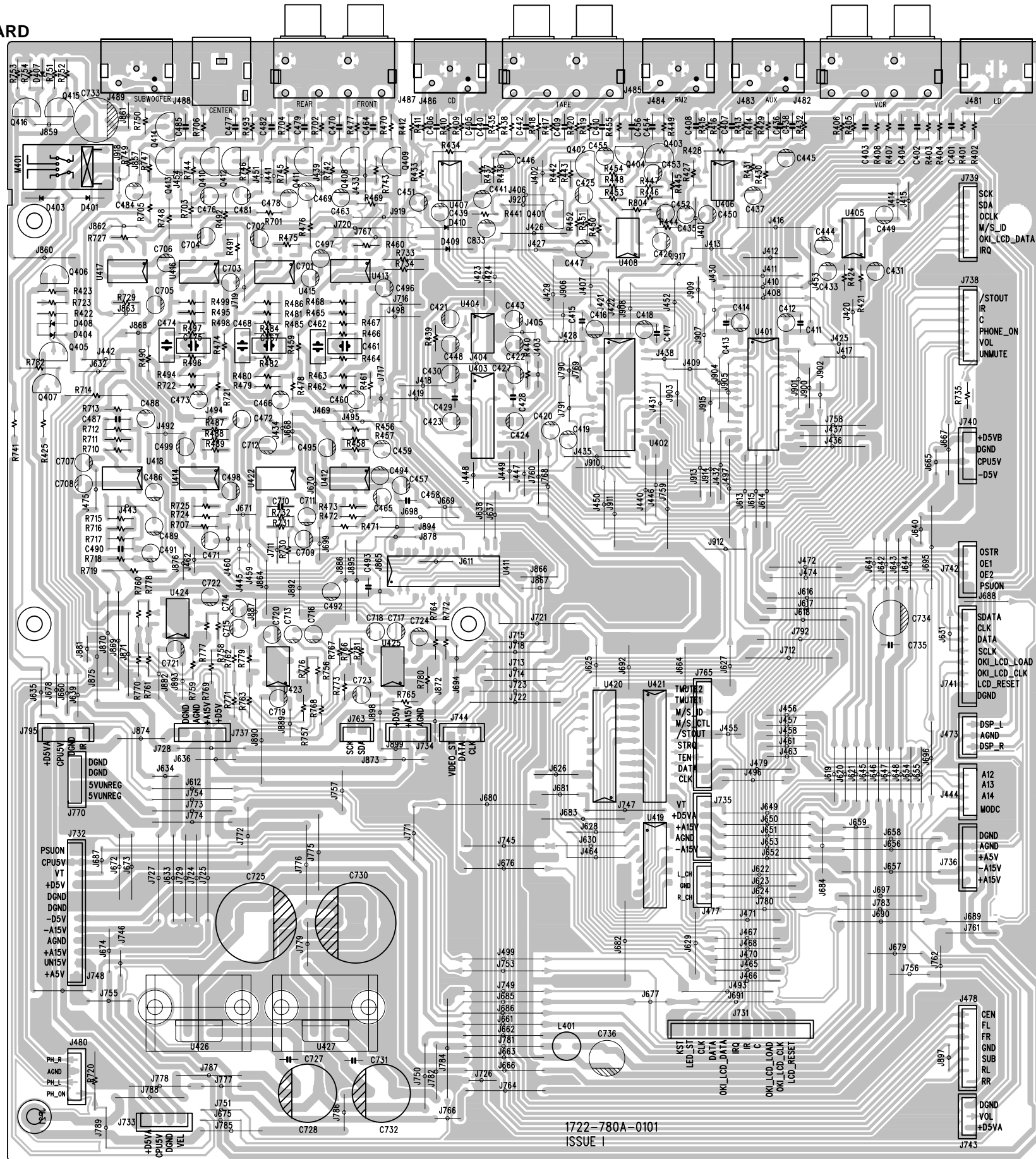
### U803: LM7915CT

### U805: 7905

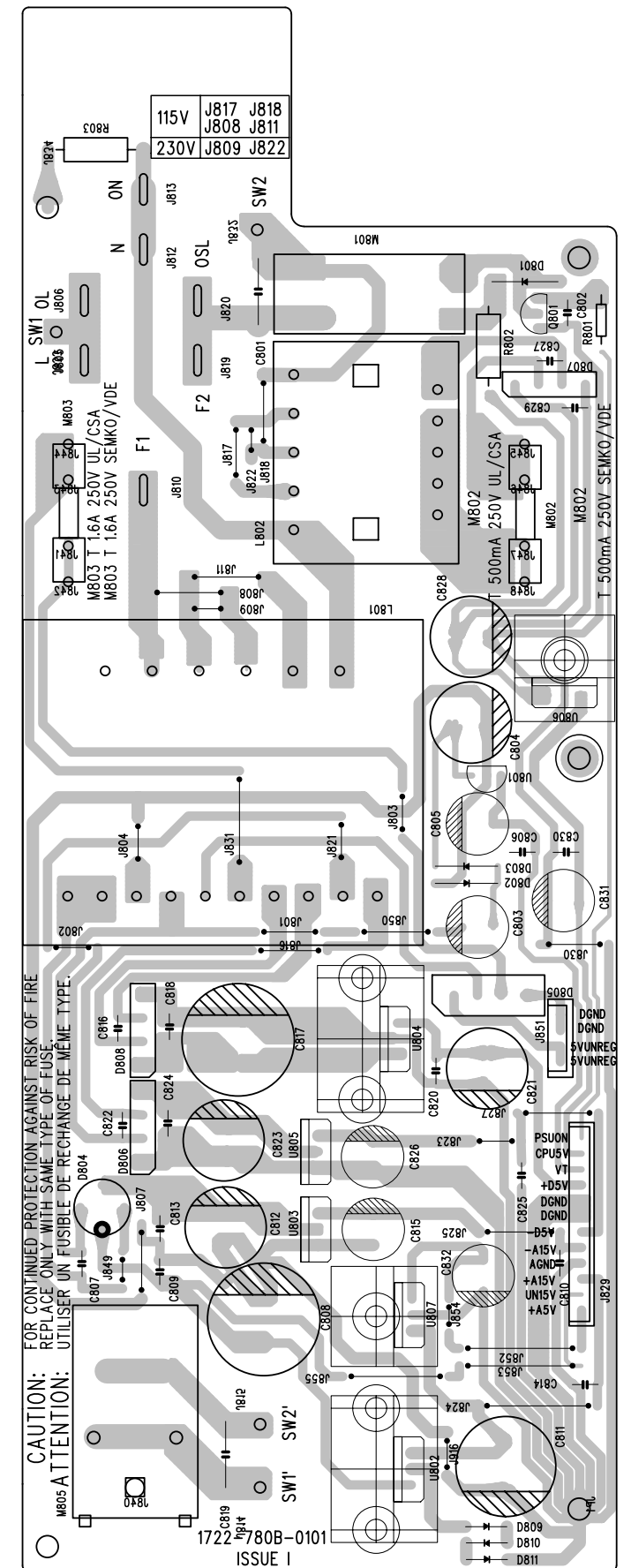




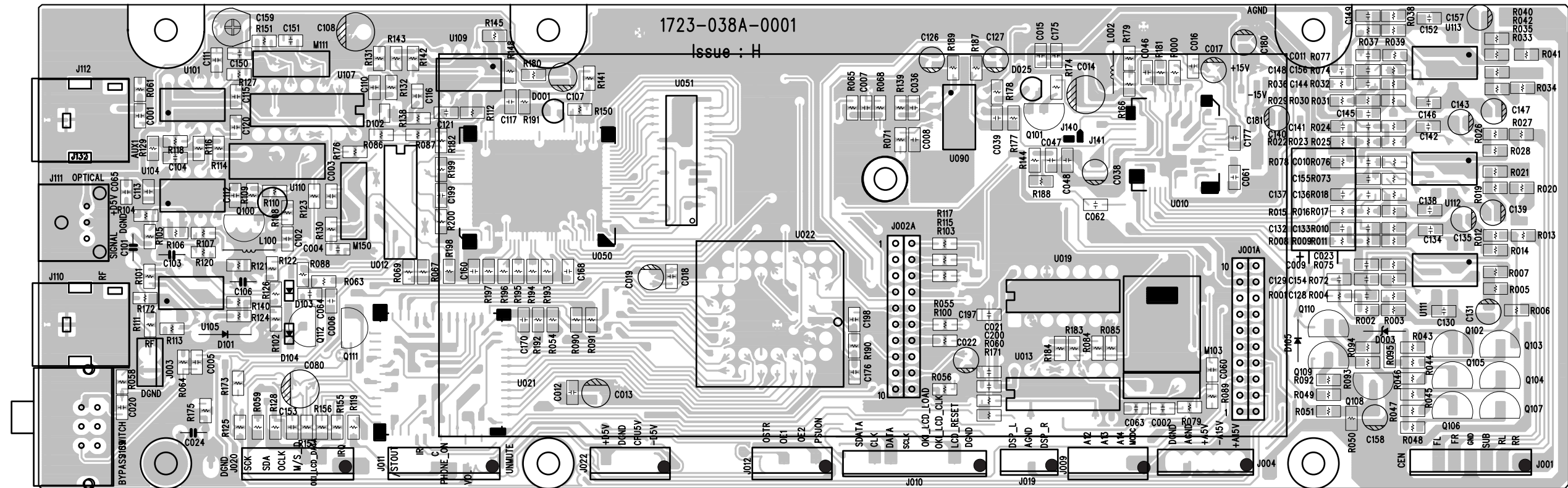
AUDIO BOARD



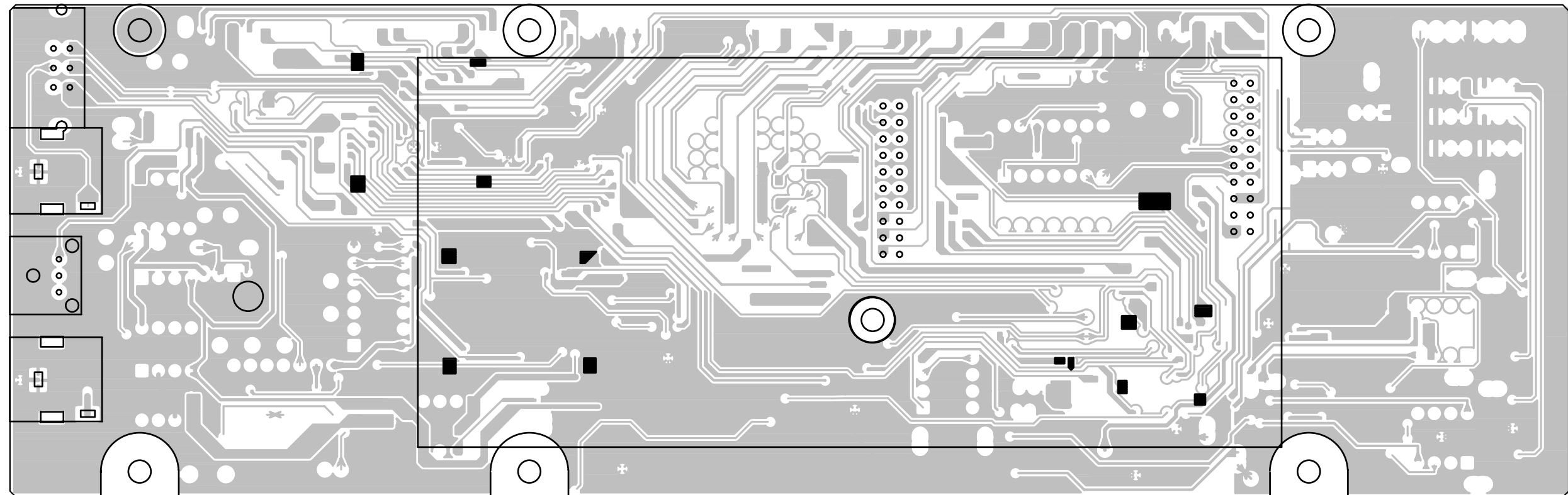
POWER BOARD



AC3 BOARD - Top View

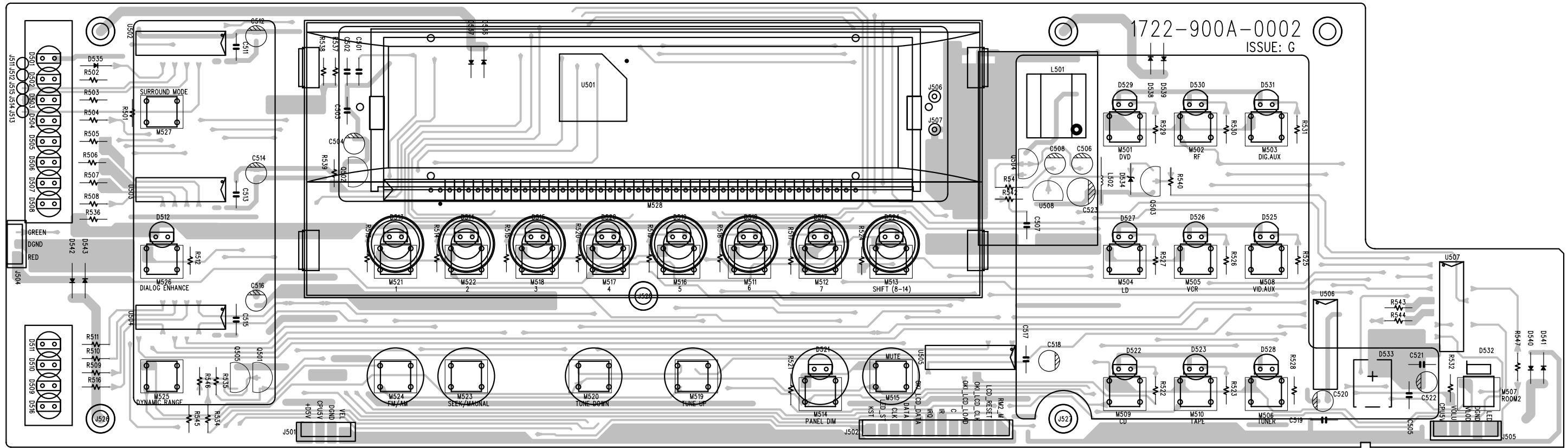


AC3 BOARD - Bottom View

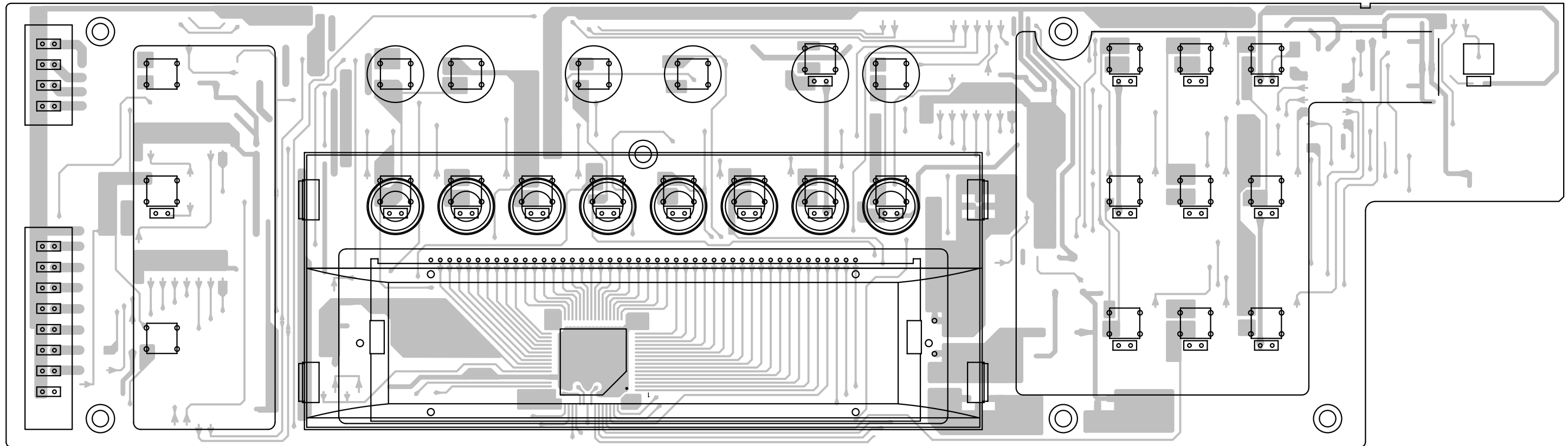




KEYBOARD - Top View

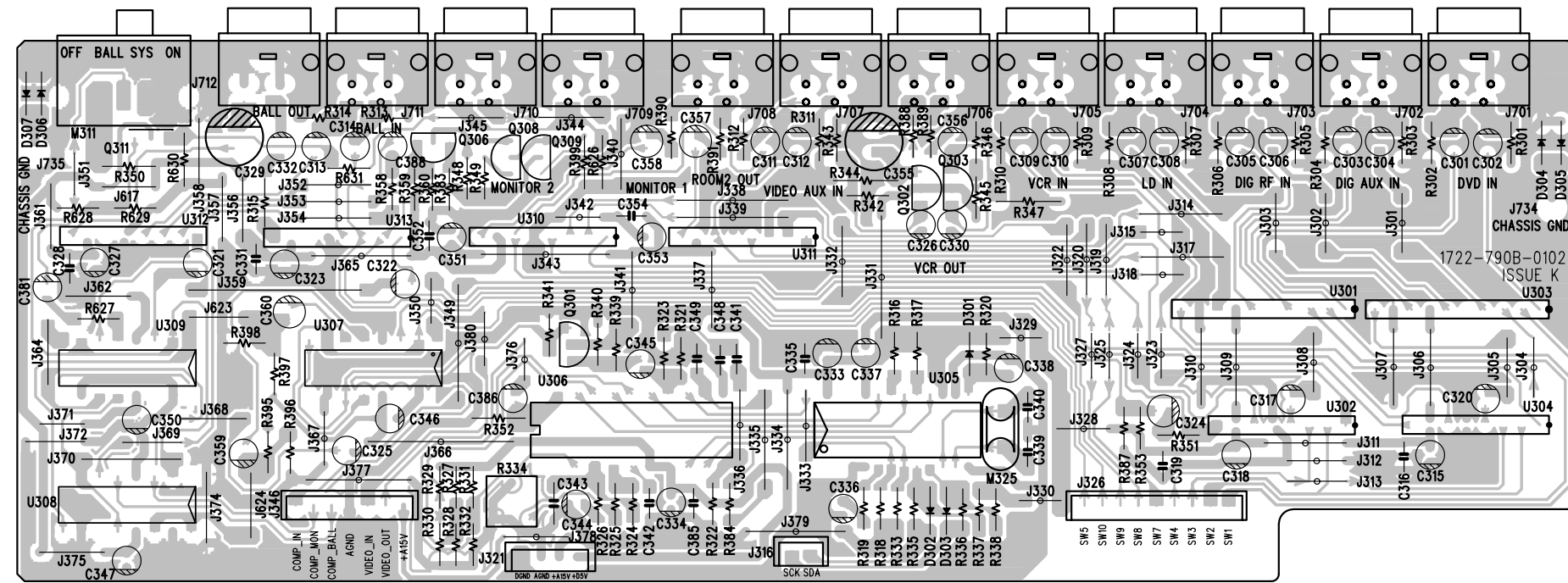


KEYBOARD - Bottom View

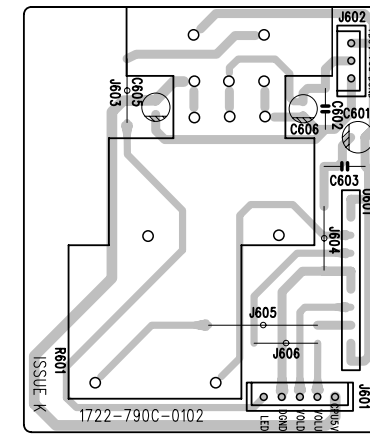




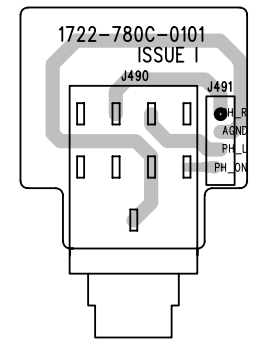
S-VIDEO BOARD



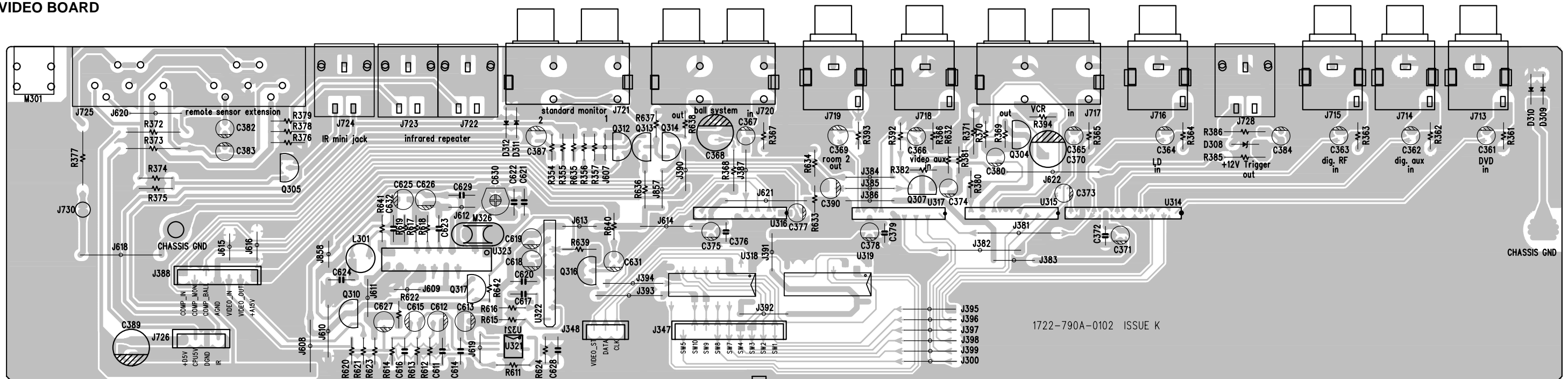
VOL BOARD



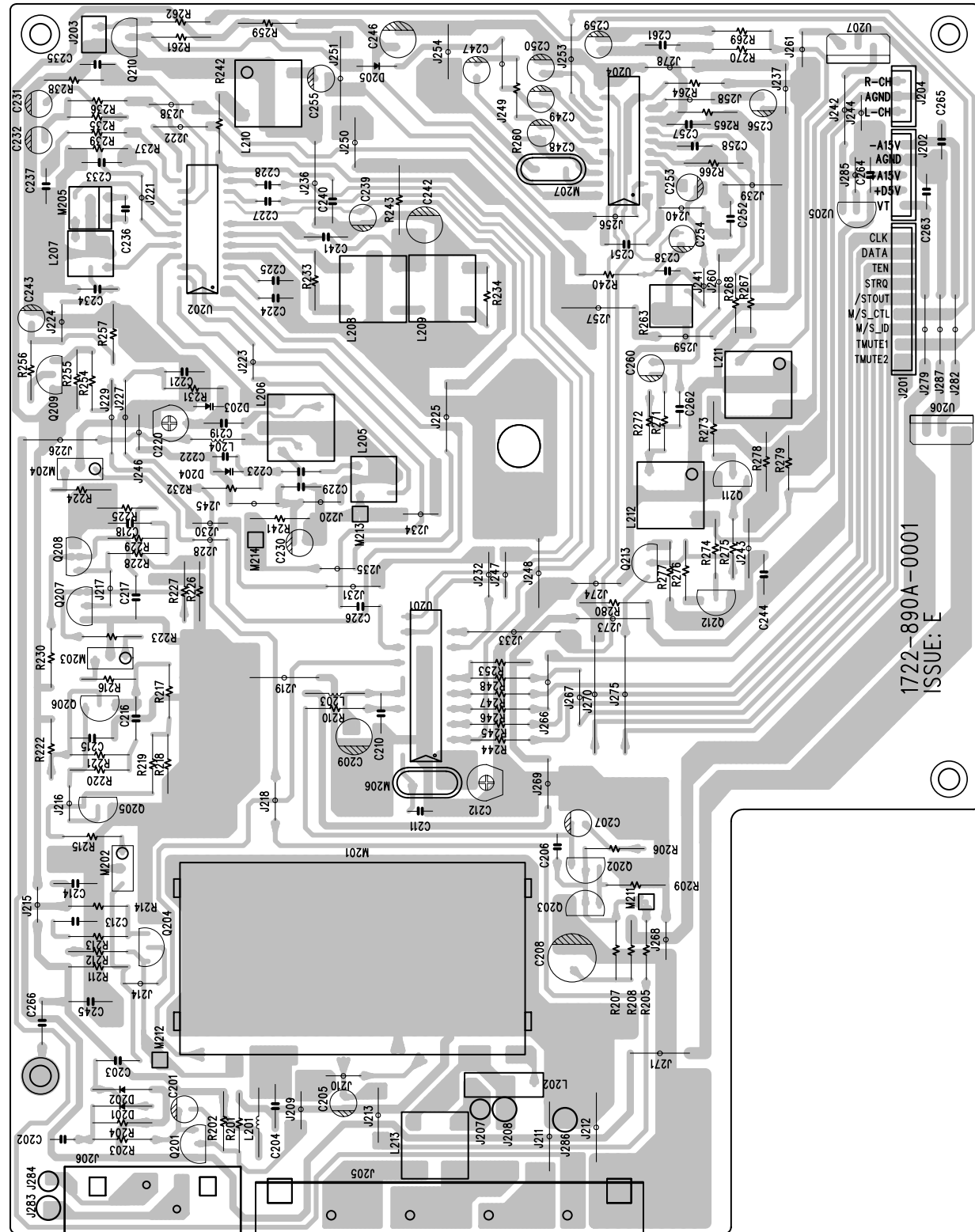
PHONE BOARD



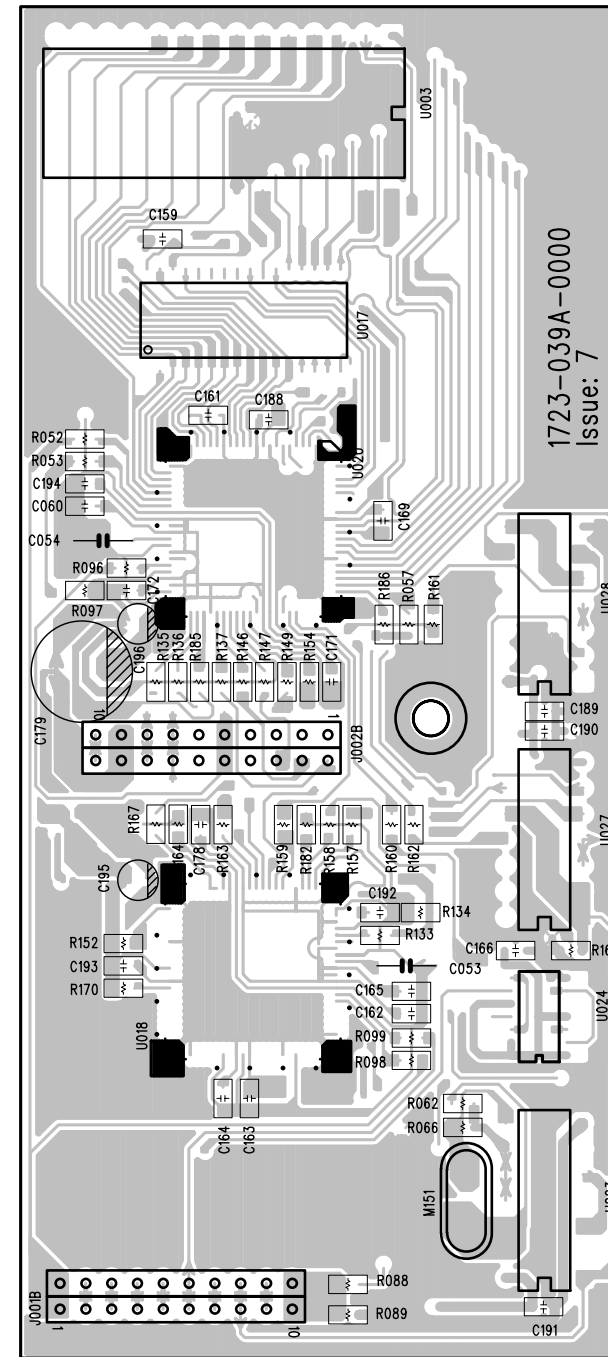
VIDEO BOARD



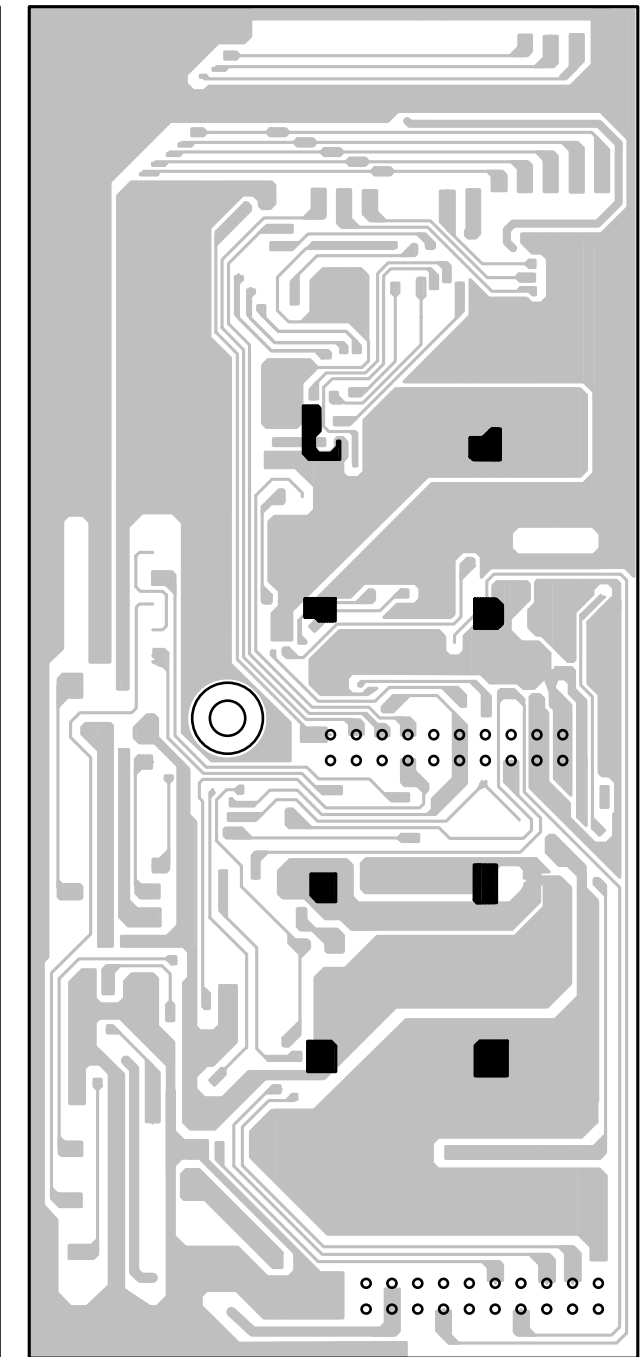
TUNER BOARD



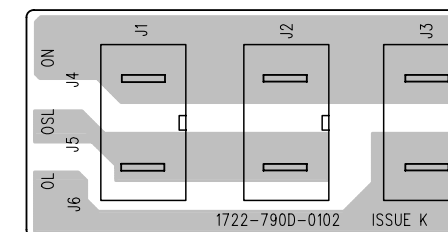
CPU BOARD - Top View



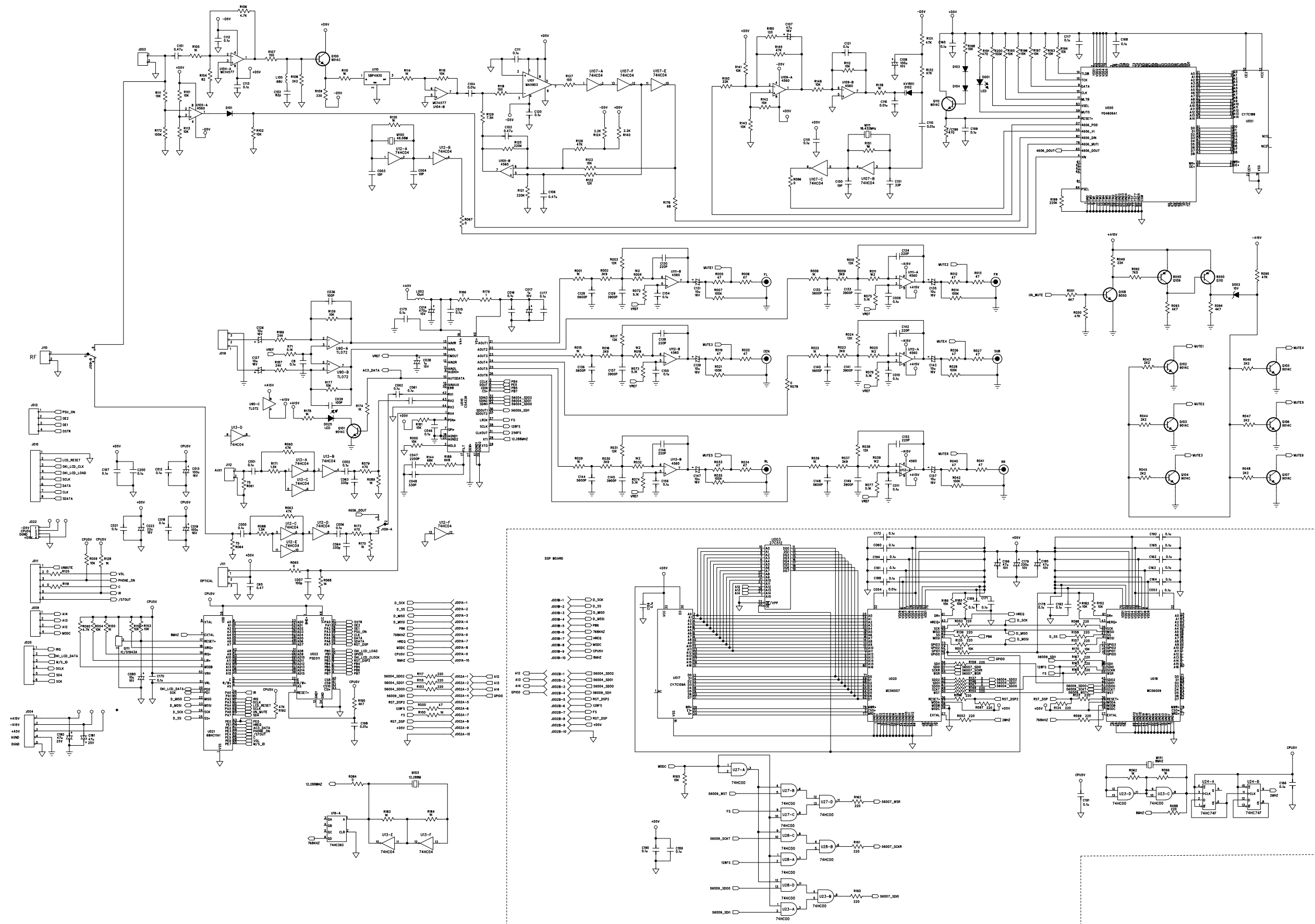
CPU BOARD - Bottom View



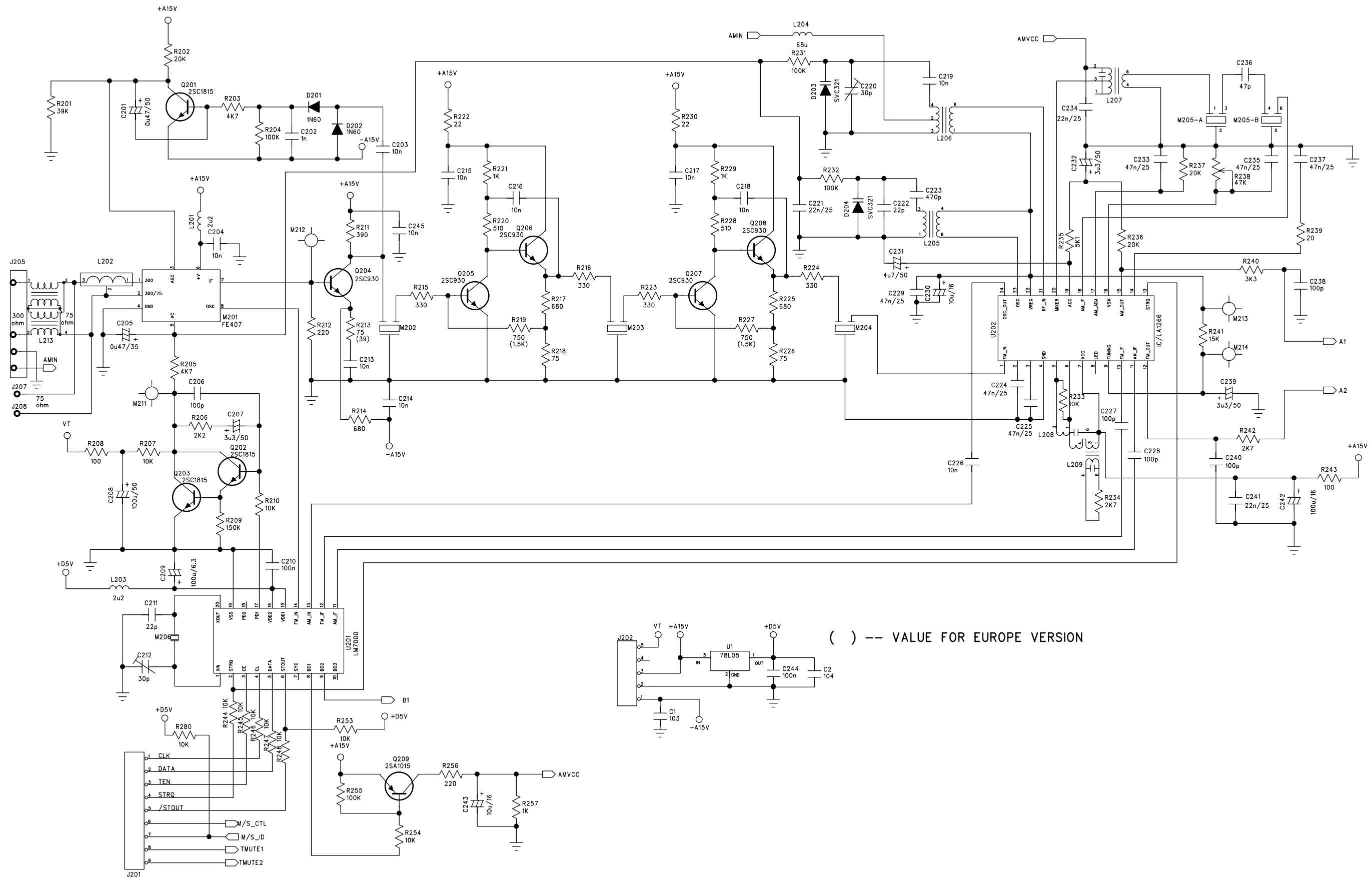
AC OUTLET BOARD



AC3 & DSP



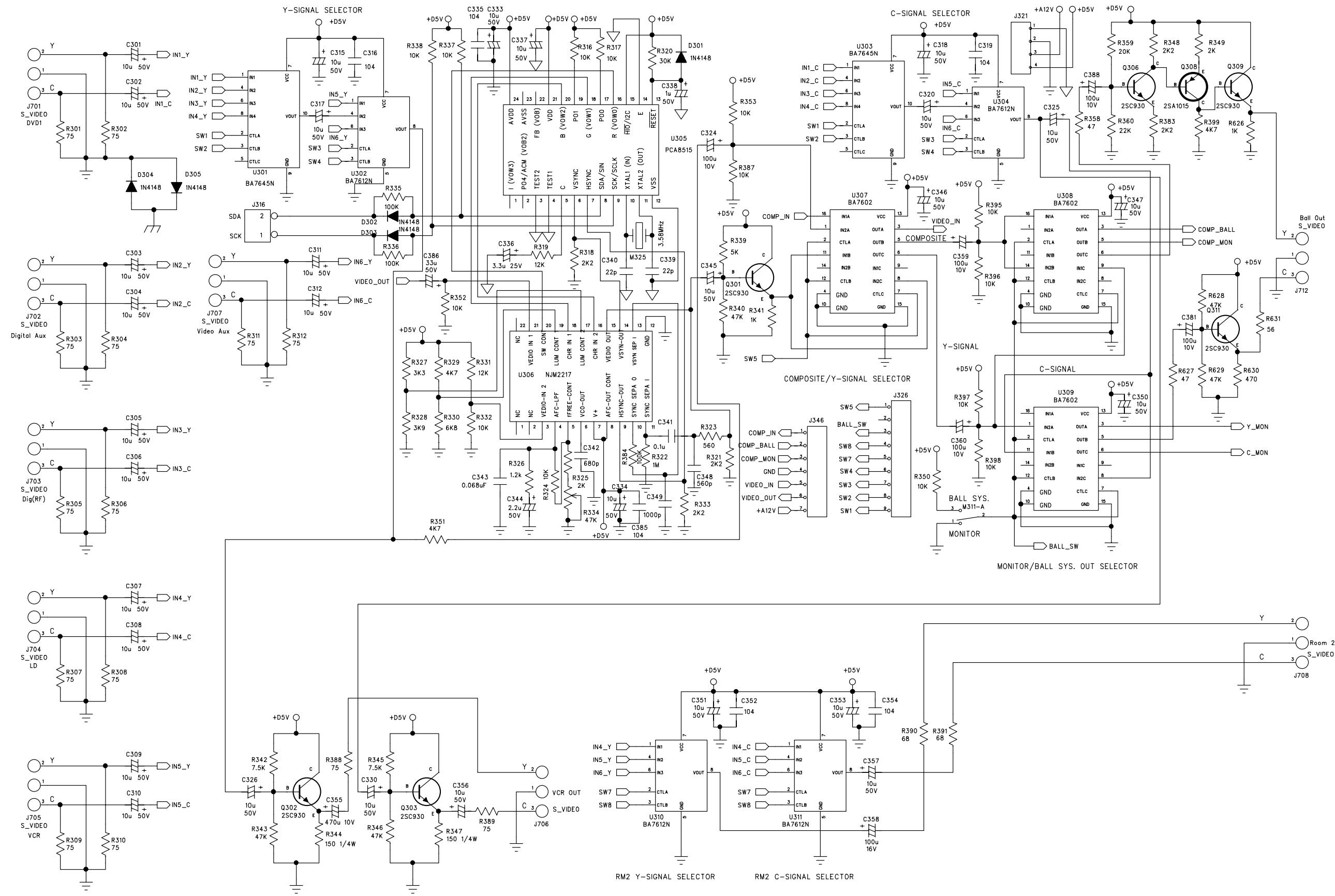
TUNER (Front End & Data Ports)



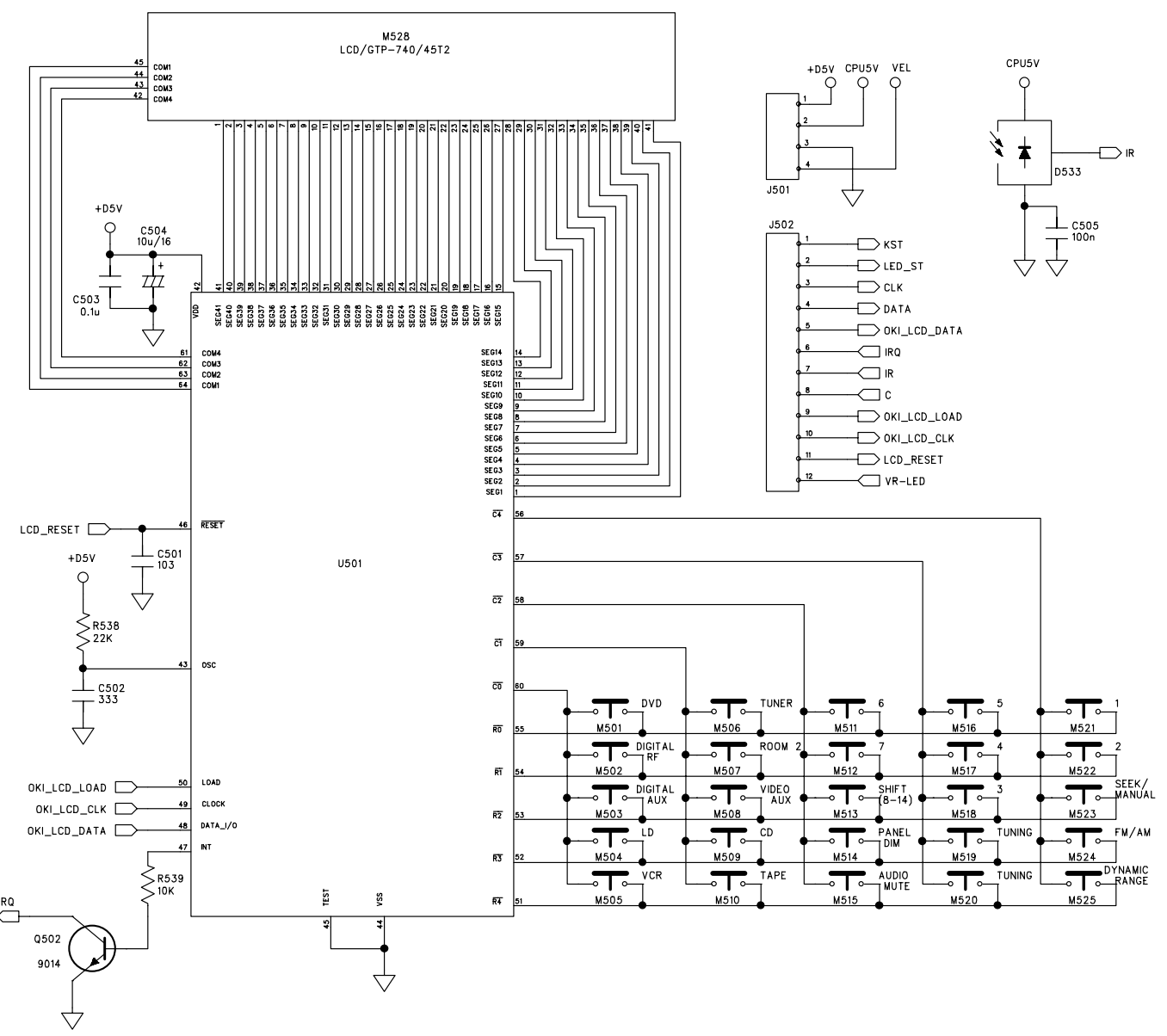
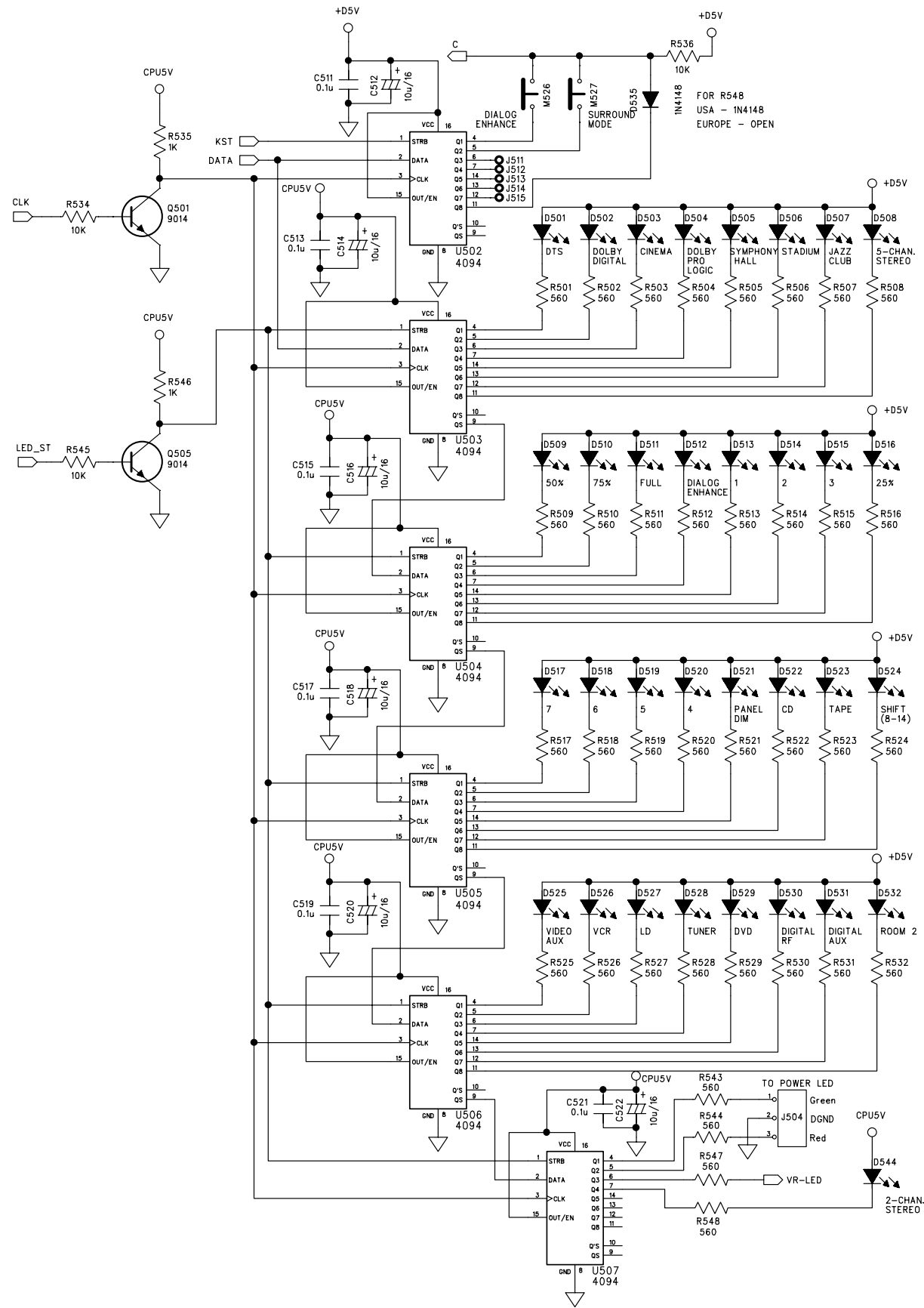
( ) -- VALUE FOR EUROPE VERSION



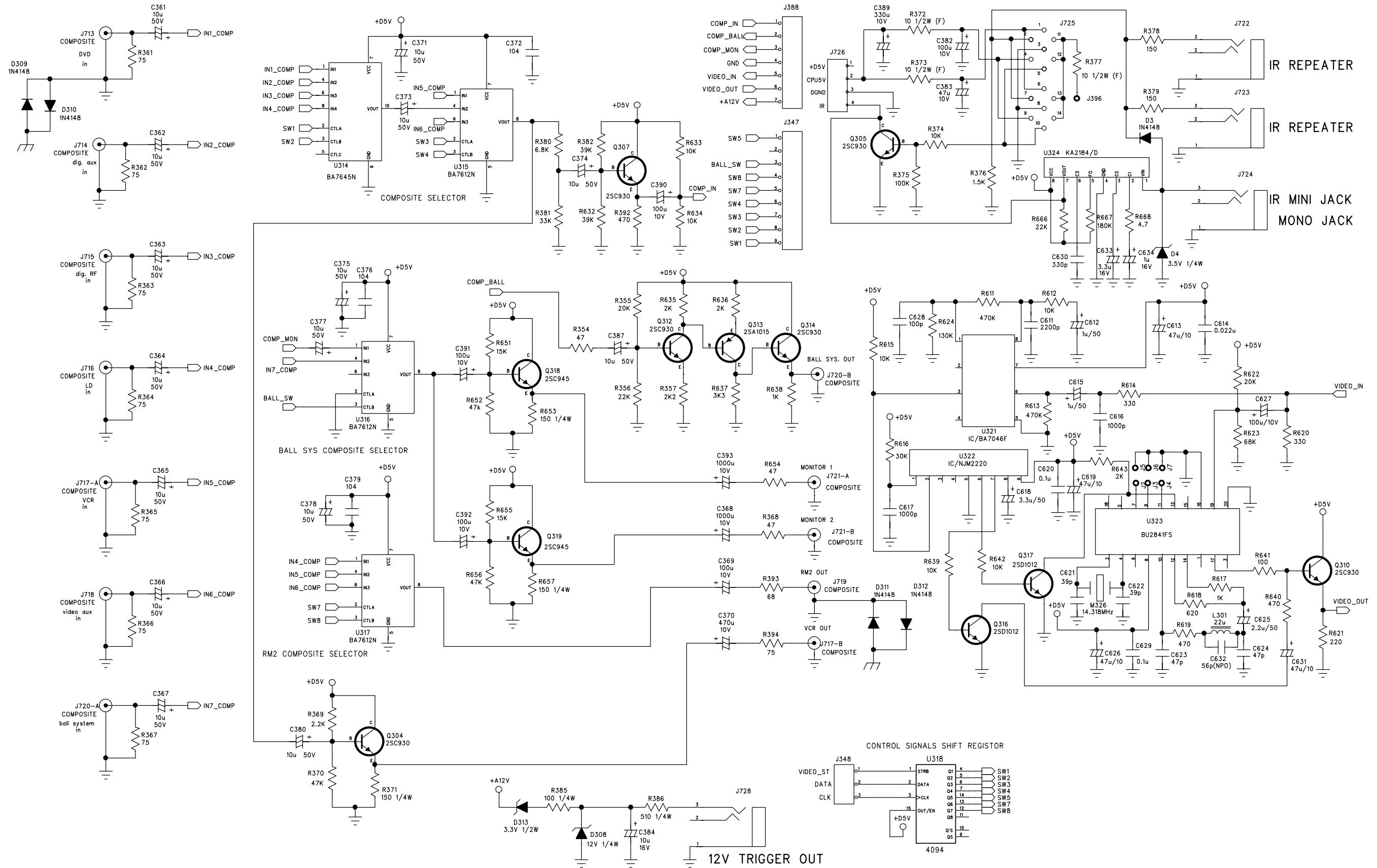
S\_VIDEO INPUTS SELECTOR & OSD CONTROLLER



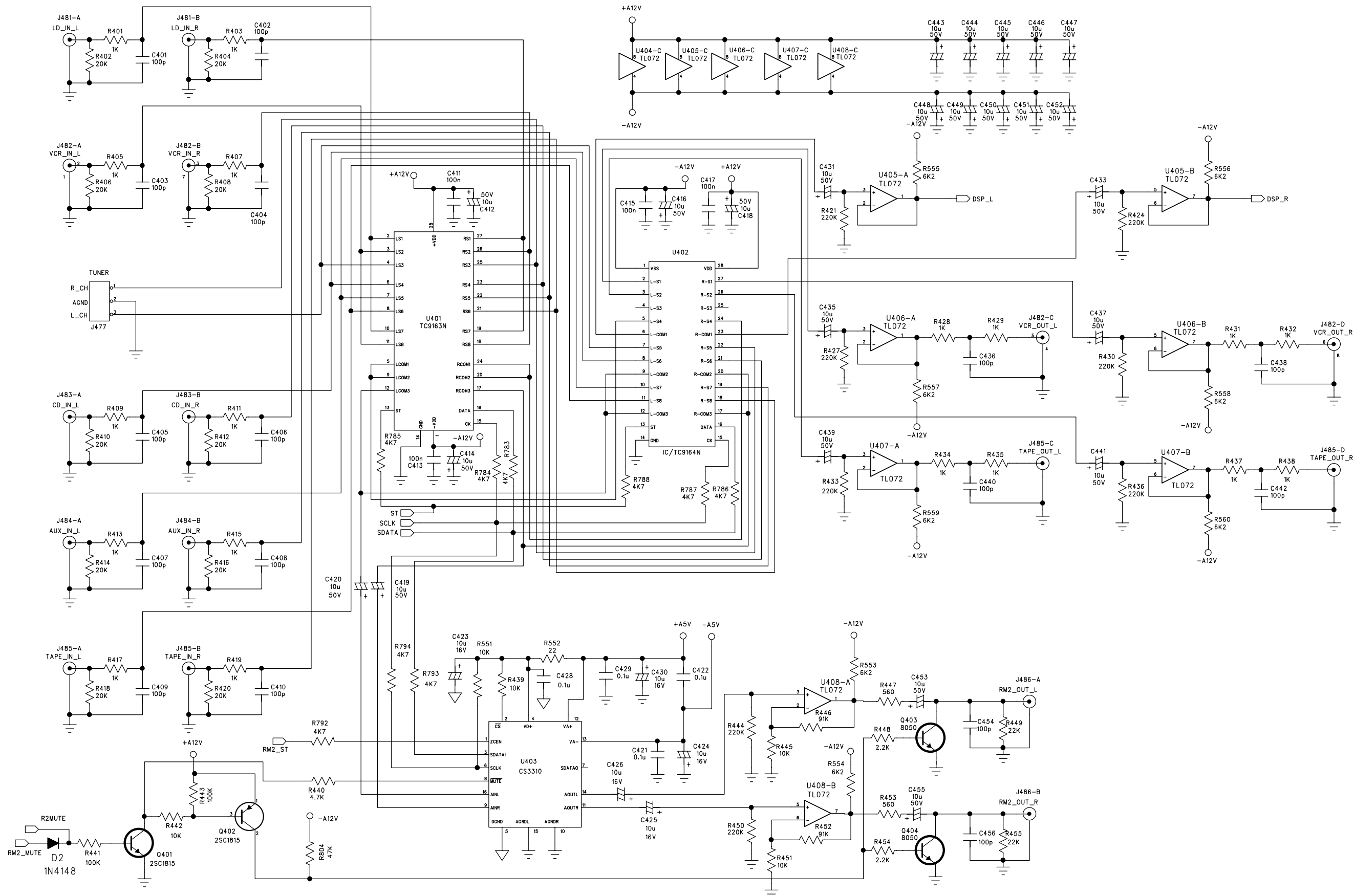
KEYBOARD



COMPOSITE VIDEO & REMOTE

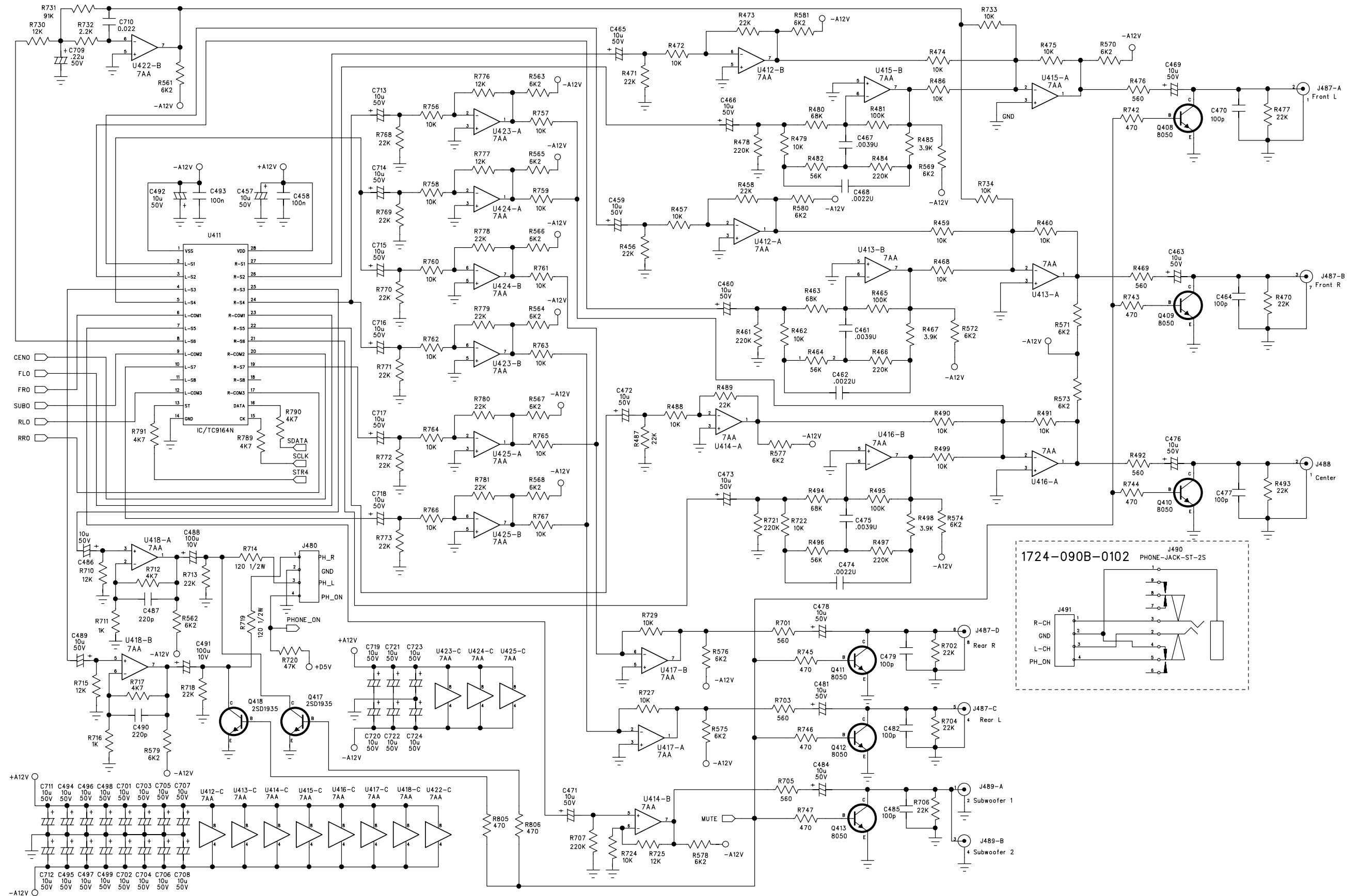


AUDIO I/O

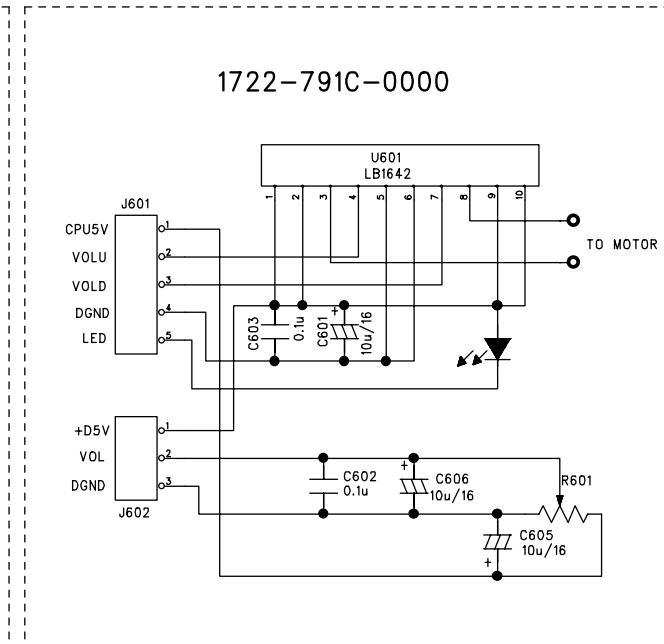
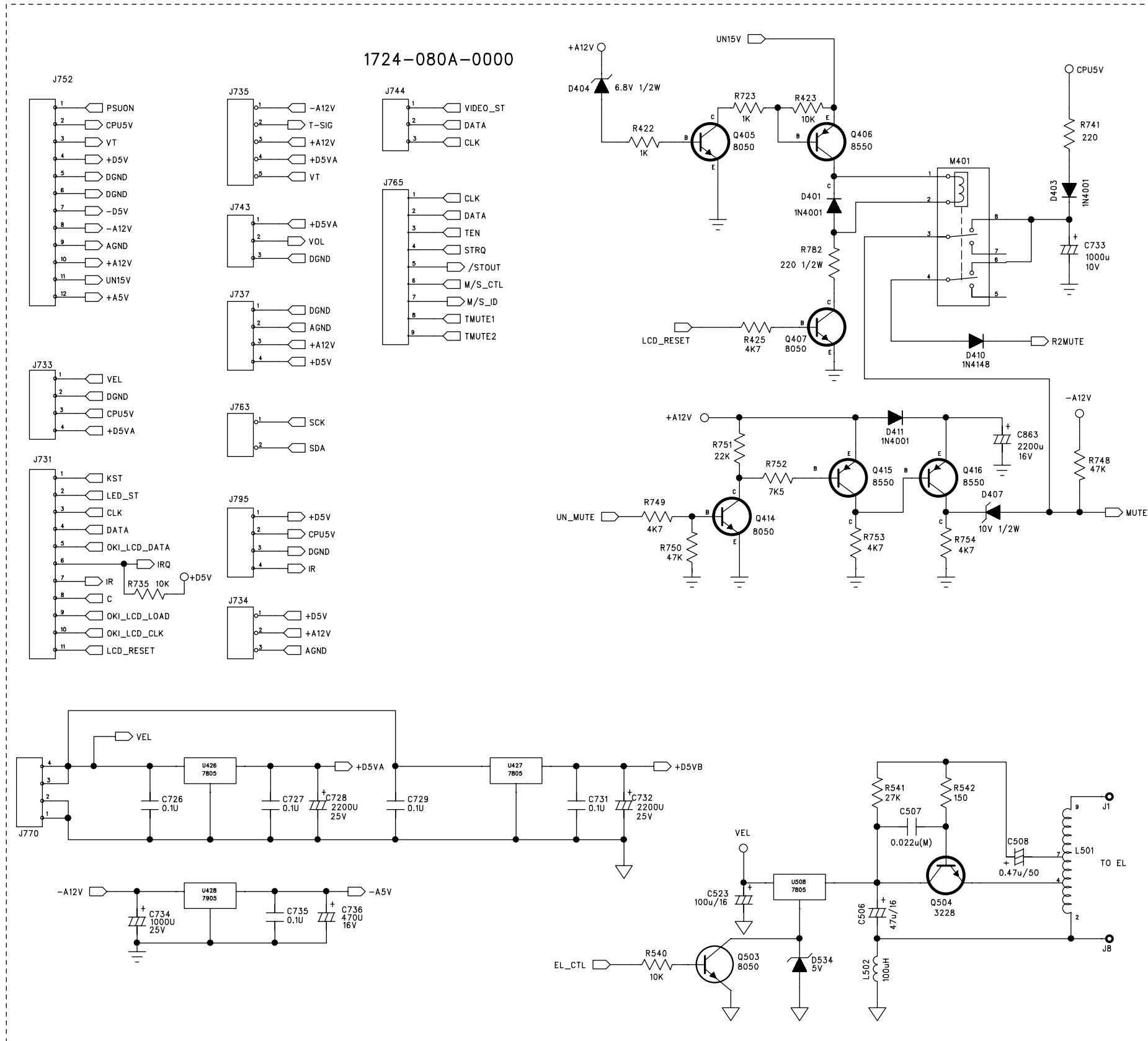




CHANNELS OUTPUT

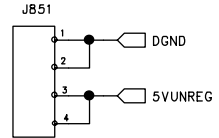
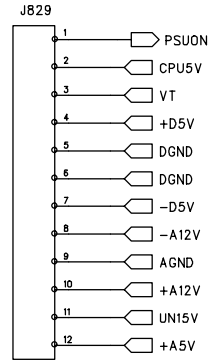
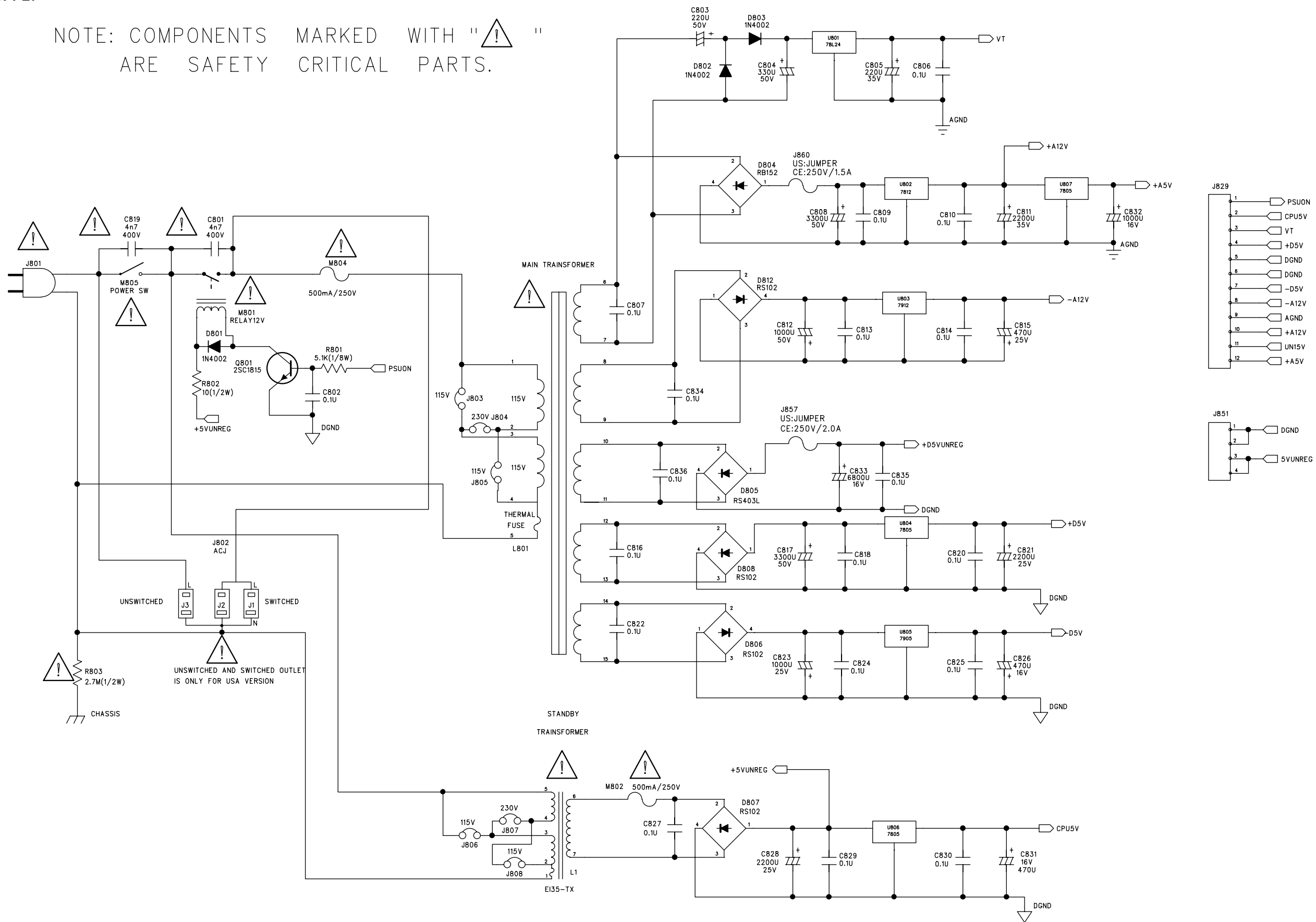


AUDIO BOARD VOLUME MOTOR PORT

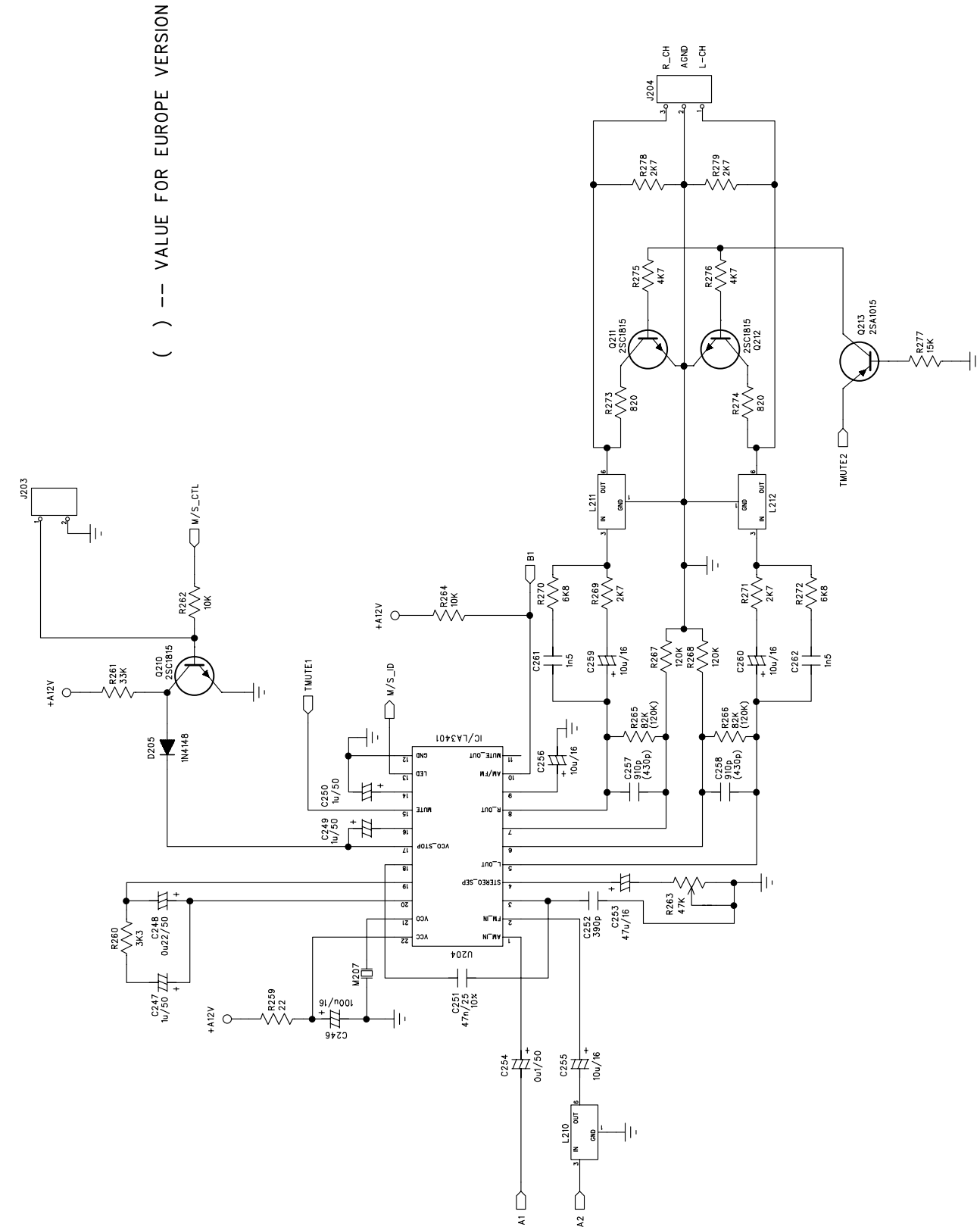


POWER SUPPLY

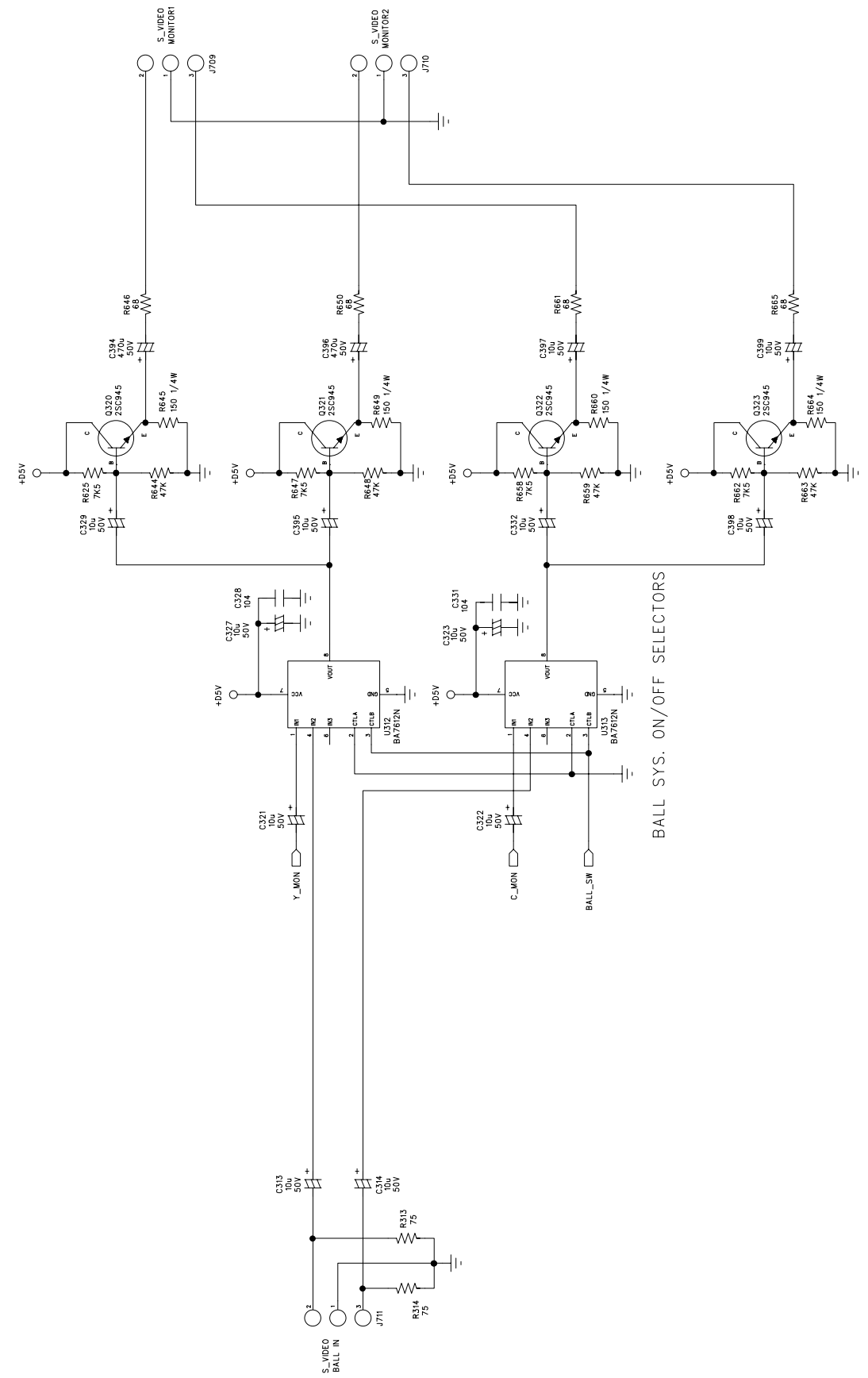
NOTE: COMPONENTS MARKED WITH "!" ARE SAFETY CRITICAL PARTS.



TUNER (Audio Outputs)



S-VIDEO BALL SYSTEM ON/OFF SELECTOR



## FM SPECIFICATION

Frequency Range: 87.5 to 108.1±0.02MHz

	<b>Specification Details</b>	<b>Freq.</b>	<b>Unit</b>	<b>Limit(AH)</b>	<b>Limit(C)</b>
1.	Input sensitivity (1KHz, 3% THD) (U: mod. 75KHz) (C: mod. 40KHz)	97.7MHz	dBμ	≤17	≤27
2.	50dB quieting Stereo	97.7MHz	dBμ	≤43	≤437
	(mod. 75KHz) Mono	97.7MHz	dBμ	≤20	≤28
3.	S/N Ratio (mod. 75KHz) (60dBf IHF wtd) Stereo	97.7MHz	dB	≥62	≥57
	Mono	97.7MHz	dB	≥70	≥70
4.	THD (60dBμ IHF wtd) Stereo	97.7MHz	%	≤0.40	≤0.40
	(U: Mod. 75KHz) L+R				
	(C: Mod. 40KHz) L-R	97.7MHz	%	≤0.70	≤0.70
5.	IF Rejection (10.7MHz) (U: mod. 75KHz)	97.7MHz	dB	≥65	≥75
	(C: mod. 40KHz)				
6.	Image Rejection (119.4MHz) (U: mod. 75KHz)	97.7MHz	dB	≥58	≥65
	(C: mod. 40KHz)				
7.	Capture ratio (45dBf) (U: mod. 75KHz)	97.7MHz	dB	≤2	≤1
	(C: mod. 40KHz)				
8.	AM suppression @60dBf mod. 75KHz	97.7MHz	dB	≥55	≥50
9.	Pilot suppression L	97.7MHz	dB	≥55	≥55
	(mod. 75KHz) R	97.7MHz	dB	≥55	≥55
10.	Frequency response In In between 30Hz & 15kHz (1kHz Ref, 75usec). (U: mod 75KHz)		dB	0±1	
	(1kHz Ref, 50usec). (U: mod 40KHz)		dB		0±1.5
11.	Channel Separation 30Hz	97.7MHz	dB	≥30	≥30
	(@60dBμ) 1kHz		dB	≥35	≥32
	(U: mod. 75KHz) 10kHz		dB	≥30	≥27
12.	Alternate channel selectivity. (@45dBf) (U: mod. 75KHz) +400KHz		dB	≥55	≥65
	(C: mod. 40KHz) -400KHz			≥55	≥65
13.	Auto-search sensitivity (U: mod. 75KHz)		dBμ	18 to 32	18 to 32
	(C: mod. 40KHz)				

Remark: The TUNER measurement will be taken from the TAPE output for FM/AM.

## 2AM BAND SPECIFICATION

Frequency Range: 520KHz - 1720KHz Set 10KHz

	<b>Spec</b>	<b>Freq.</b>	<b>Unit</b>	<b>Limit</b>
1.	Input Sensitivity (10% THD)	1000kHz	dBμ	≤24
2.	S/N Ratio (@2mV 66dBμ input)	1000kHz	dB	≥45
3.	THD (30% mod@ 1KHz 66dBμ)	1000kHz	%	≤3
4.	Image Rejection (LO + 2*IF)	1900KHz	dB	≥30

5.	IF Rejection	450KHz	dB	≥35
6.	Selectivity (+/-10KHz avg2)	1050KHz	dB	≥20
7.	Search tuning Sensitivity	1000kHz	dBμ	20±7

**GENERAL AUDIO SPECIFICATION - 1**

CD (SONY YEDS7)

Surround Mode: FL /FR\_2channel stereo

Input source: Digital input

<b>Specification Details</b>		<b>Track</b>	<b>Unit</b>	<b>Limit</b>	
1.	Output level (Vol max.) Input - 20dB signal	19 (1KHz)	Vrms	1.29±0.2	
2.	L/R channel difference	19 (1KHz)	dB	+ / -0.5	
3.	Frequency response (Track 1, 1KHz 0dB for reference, 2Vrms output)	2-13	dB	+ / -0.5	
4.	Volume control tracking (Track 1, 1KHz 0dB for reference) 2Vrms output, insert 20KHz LPF.	14 (0dB)	dB	0±0.01	
		19 (-20dB)	dB	-20±0.1	
		20 (-60dB)	dB	-60±0.3	
5.	Harmonic distortion (insert Audio LPF) (2Vrms output)	1 (1KHz)	%	≤0.08	
		4 (100hz0)	%	≤0.08	
		10 (10Khz0)	%	≤0.08	
6.	Signal to noise ratio Output level: 2Vrms	STOP	Audio LPF	dB	≥85
			A-WTD LPF	dB	≥85
		PAUSE	Audio LPF	dB	≥85
			A-WTD LPF	dB	≥85
		Play 23	Audio LPF	dB	≥85
			A-WTD LPF	dB	≥85
			CCIR/ARM	dB	≥85
		Play 24	Audio LPF	dB	≥85
			A-WTD LPF	dB	≥85
	CCIR/ARM	dB	≥85		
8.	Channel separation (insert 20 KHz L.P.F.), Output level: 2Vrms	30,34 (1KHz)	dB	≥75	

**GENERAL AUDIO SPECIFICATION - 2**

LD (DOLBY ver. 2.0)

Input source: Digital RF

<b>Specification Details</b>		<b>Track</b>	<b>Unit</b>	<b>Limit</b>
1.	Output level (Vol max.) (FL, FR, C, SL, SR) at config 1	B, 4	Vrms	1.29±0.2
2.	Channel difference (FL, FR, C, SL, SR) at config 1	B, 4	dB	±1.2
3.	Frequency response (set B4) at config 0 (set B4) (set B4) at config 1 (set B4)	SL. B34 (200-20KHz)	dB	±0.8
		SR. B36 (200-20KHz)	dB	±0.8
		C. B30 (200-20KHz)	dB	±0.8
		LFE. B38 (20-80Hz)	dB	±4.0
4.	Harmonic distortion at 0.2Vrms (insert Audio LPF) at config 1.  at config 2	SL. B4 (997Hz)	%	≤0.08
		SR. B4 (997Hz)	%	≤0.08
		C. B4 (997Hz)	%	≤0.08
		LFE. A41 (30Hz)	%	≤0.03

5.	Signal to noise ratio (B, 6 for output) 100mV and play A27 config 1 and 2.) (FL, FR, C, SL, SR)	CCIR/ARM 200Hz Notch and 400Hz HPF.	dB	≥65
	PAUSE	Audio LPF	dB	≥70
		A-Wtd	dB	≥70
6.	Channel separation (insert 20KHz L.P.F.)	A, 31 (997Hz)	dB	≥75
7.	Set config 2 at 1Vrms output (sub) as ref. and measure FL/FR output center and rear delay set to 0ms	A71 (30Hz)	dB	+10.5±1.0

**GENERAL AUDIO SPECIFICATION - 3**

DVD (DOLBY 1.0)

Input source: Digital input

	<b>Specification Details</b>	<b>Track</b>	<b>Unit</b>	<b>Limit</b>
1.	Output level (Vol max.) (FL, FR, C, SL, SR) at config 1	30	Vrms	1.29±0.2
2.	Channel difference, FL set ref. (FL, FR, C, SL, SR) at config 1	30	dB	±1.2
3.	Frequency response (set 30) at config 0	SL. 46 (200-20KHz) SR. 47 (200-20KHz) C. 44 (200-20KHz)	dB dB dB	±0.8 ±0.8 ±0.8
	at config 0 (set 30Hz)	LFE. 48 (20-80)	dB	±4.0
4.	Harmonic distortion at 0.2Vrms (insert Audio LPF) at config 1.	SL. 30 (997Hz) SR. 30 (997Hz) C. 30 (997Hz)	% % %	≤0.08 ≤0.08 ≤0.08
	at 2Vrms	LFE. 70 (30Hz)	%	≤0.03
5.	Signal to noise ratio (31 for output) 100mV and play 63 config 1 and 2.) (FL, FR, C, SL, SR)	CCIR/ARM 200Hz Notch and 400Hz HPF.	dB	≥65
	PAUSE	Audio LPF	dB	≥70
		A-Wtd	dB	≥70
6.	Channel separation (insert 20KHz L.P.F.)	65 (997Hz)	dB	≥75
7.	Set config 2 at 1Vrms output (sub) as ref. and measure FL/FR output center and rear delay set to 0ms	70 (30Hz)	dB	+10.5±1.0

**GENERAL AUDIO SPECIFICATION - 4**

Surround mode: 2 channels (FL & FR channels)

Input source: Analog input (audio analyser)

Input level: 2.0V unless specified.

	<b>Specification Details</b>	<b>Freq.</b>	<b>Unit</b>	<b>Limit</b>
1.	THD w/ 20kHz LPF, output=2Vrms	1kHz	%	≤0.08
2.	S/N ratio A-wtd w/1K termination, output=2Vrms	1kHz	db	≥70
3.	Sensitivity input level=400mV, max vol.	1kHz	V	2.25±0.2
4.	Channel separation 80kHz LPF w/ 1K termination	1kHz	dB	≥60
	output=2Vrms	10kHz	dB	≥40

5.	Channel difference (L-ch & R-ch)	1kHz	dB	0±0.65
6.	Frequency response input=2V, output=2Vrms, 1kHz ref.	20Hz	dB	0±0.8
		20kHz	dB	0±0.8
7.	Headphone THD input=2Vrms, output=4Vrms w/20KHz LPF	1kHz	%	≤0.08
8.	Headphone level output level (L-ch & R-ch) max. vol input=150mV	1kHz	V	2.0±0.2

**GENERAL AUDIO SPECIFICATION - 5**

DTS (CD Music Demonstration and Set-up Disc)

Input source: Digital input

Volume: Max. vol

	<b>Specification Details</b>	<b>Track.</b>	<b>Unit</b>	<b>Limit</b>
1.	Output level (FL, FR, C, SL, SR) at config.1	6 (1kHz)	Vrms	2.0±0.2
2.	Channel difference, FL set ref. (FR, C, SL, SR) at config.1	6 (1kHz)	dB	±1.0
3.	Harmonic distortion (FL, FR, C, SL, SR) at config.1 W/ 20 KHz LPF	6 (1kHz)	%	≤0.06
4.	Frequency response (20Hz to 20kHz) (FL, FR, C, SL, SR) at config.0	15	dB	±0.08
5.	Subwoofer output level (set 1kHz as ref at FL) at config.1	6 (1kHz)	dB	-1.2±0.5

**SURROUND MODES**

Surround mode: prologic (FL, FR, C, SL and SR channels)

Input source: Analog input

Speak size: preset 1

Input level: 2.0Vrms

Output level: 4.0±0.5Vrms

	<b>Specification Details</b>	<b>Freq.</b>	<b>Unit</b>	<b>Channel</b>	<b>Limit</b>
1.	Channel separation Input mode: L, R Measure output at unexpected output channel	1kHz	dB	R, L	≥45
		1kHz	dB	C	≥30
		1kHz	dB	SL, SR	≥35
	Input mode: L=-R Measure output at unexpected	1kHz	dB	R, L	≥30
		1kHz	dB	C	≥30
		1kHz	dB	L, R	≥20
	Input mode: L=R Measure output at unexpected	1kHz	dB	SL, SR	≥30
		1kHz	dB		
2.	Frequency Response Input mode: L, R input level=2V (1kHz ref.)	20Hz	dB	L, R	0±0.8
		20kHz	dB	L, R	0±0.8



	Input mode: L=R				
	input level=2V	300Hz	dB	C	0±0.8
		20kHz	dB	C	0±0.8
	Input mode: L=-R				
	input level=2V	30Hz	dB	SL, SR	-1.0±1.0
3.	THD				
	Input voltage 2.0V				
	w/ 80kHz LPF	1kHz	%		≤0.08
4.	S/N ratio				
	Input level=2.0V, (A-WTD w/1k termination)				
	Input mode: L, R	1kHz	dB	L, R	≥70
	Input mode: L=R	1kHz	dB	C	≥70
	Input mode: L=-R	1kHz	dB	SL, SR	≥70

**ROOM2 FUNCTION**

Surround mode: 2 channels (FL & FR channels)  
 Input source: Analog input (audio analyser) - CD input  
 Room2 level: -10 unless specified  
 Input level: 2.0V

	<b>Specification Details</b>	<b>Freq.</b>	<b>Unit</b>	<b>Limit</b>
1.	THD+N			
	Adjust the input level, @5.0Vrms output			
	w/ 80kHz LPF	1kHz	%	≤0.08
2.	S/N ratio			
	A-wtd w/ 1K termination	1kHz	dB	≥80
3.	Sensitivity			
	Input level=1V	1kHz	V	5.4±0.5
4.	Output level			
	Adjust the input level, THD=0.1%	1kHz	V	≥5.5
5.	Channel difference	1kHz	dB	0±1.0
6.	Frequency response			
	Input=2V, 1kHz ref.	20Hz	dB	0±0.5
		20kHz	dB	0±0.5

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