

# AV RECEIVER

# HTR-5890

## SERVICE MANUAL

HTR-5890

### IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

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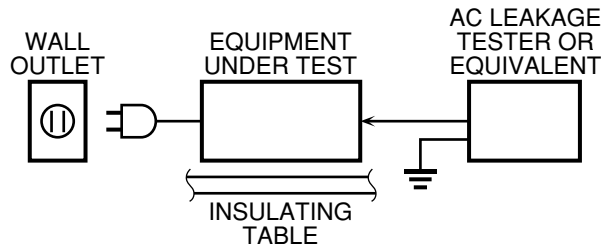
# YAMAHA

YAMAHA CORPORATION  
P.O.Box 1, Hamamatsu, Japan

'05.03

## ■ TO SERVICE PERSONNEL

- Critical Components Information**  
Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
- Leakage Current Measurement (For 120V Models Only)**  
When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.
  - Meter impedance should be equivalent to 1500 ohms shunted by 0.15μF.



- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



**“CAUTION”**

“F1, F2: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 10A, 125V FUSE.”

**CAUTION**

F1, F2: REPLACE WITH SAME TYPE 10A, 125V FUSE.

**ATTENTION**

F1, F2: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 10A, 125V.

## WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

**DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!**

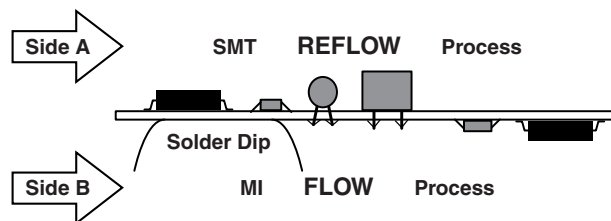
Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## About Lead Free Solder

The P.C.B.s installed in this unit are soldered using the following solder.

	Side A	Side B
<b>DSP P.C.B.</b>	Lead Solder	Lead Free Solder
<b>FUNCTION P.C.B.</b>	Lead Solder	Lead Free Solder
<b>OPERATION P.C.B.</b>	-	Lead Free Solder
<b>MAIN P.C.B.</b>	-	Lead Free Solder
<b>POWER PC.B.</b>	-	Lead Free Solder
<b>VIDEO P.C.B.</b>	-	Lead Free Solder
<b>CONVERSION P.C.B.</b>	Lead Solder	Lead Free Solder



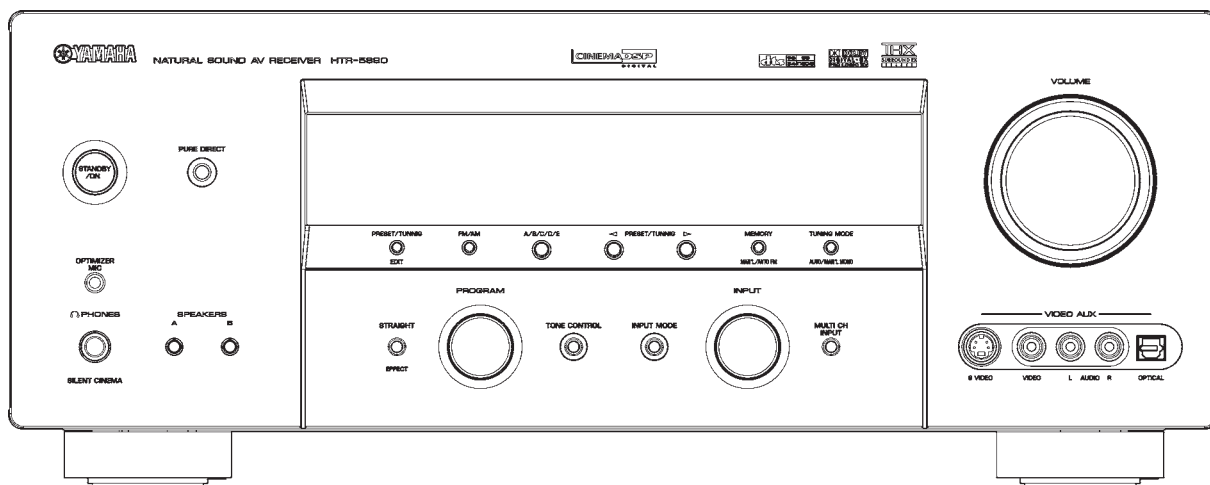
Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

**Caution:**

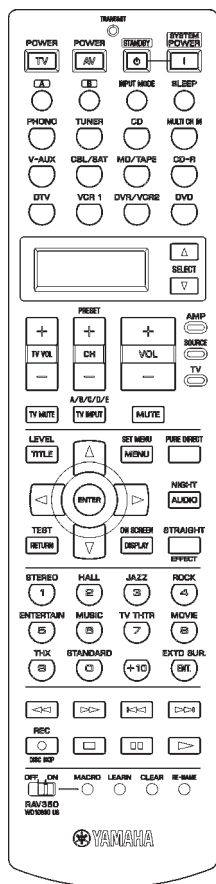
- As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.
- If lead solder must be used, be sure to remove lead free solder from each terminal section of the parts to be replaced and from the area around it completely before soldering, or make sure that the lead free solder and lead solder melt together fully.

## FRONT PANEL



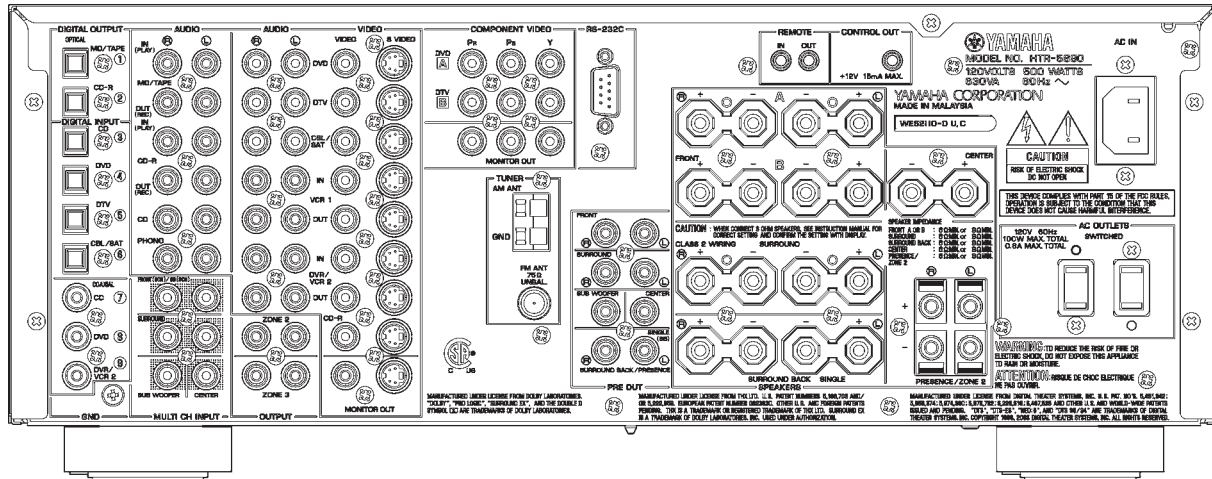
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## REMOTE CONTROL PANEL

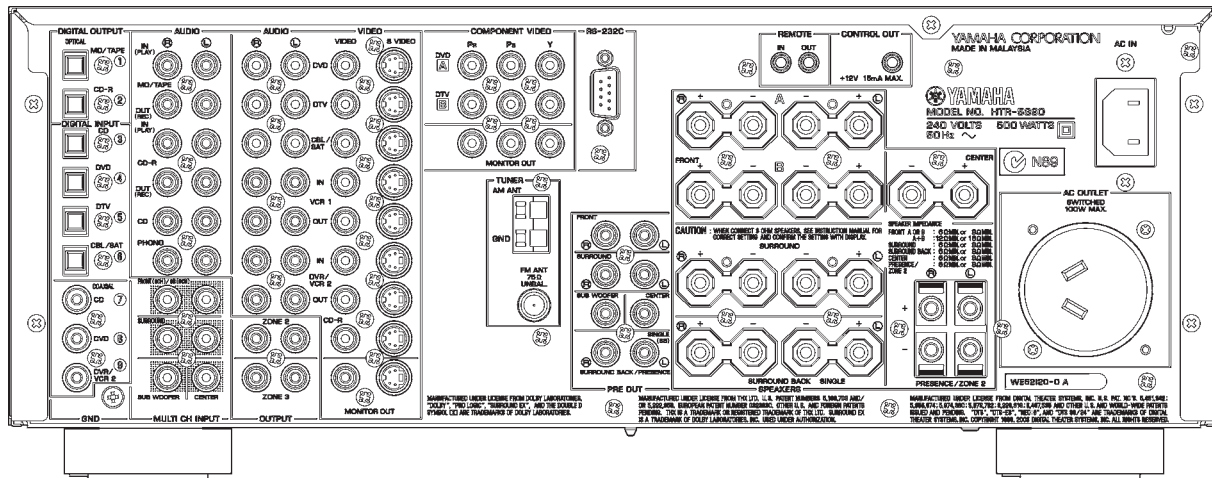


# REAR PANELS

U, C models



A model





## ■ SPECIFICATIONS

### ■ Audio Section

#### Minimum RMS Output Power (Power Amp. Section) (20 Hz to 20 kHz, 0.04% THD, 8 ohms)

FRONT L/R .....	120 W + 120 W
CENTER .....	120 W
SURROUND L/R .....	120 W + 120 W
SURROUND BACK L/R .....	120 W + 120 W

#### Dynamic Power Per Channel (IHF)

FRONT L/R (8/6/4/2 ohms) .....	155/195/250/330 W
--------------------------------	-------------------

#### Dynamic Headroom

8 ohms .....	1.11 dB
--------------	---------

#### Damping Factor (20 Hz to 20 kHz, SPEAKER-A, 8 ohms)

FRONT L/R .....	140 or more
-----------------	-------------

#### Input Sensitivity / Input Impedance (1 kHz 100 W / 8 ohms, Multi CH IN)

PHONO (MM) .....	3.5 mV / 47 k-ohms
CD, etc. ....	200 mV / 47 k-ohms
MULTI CH INPUT	
FRONT L/R, CENTER, SURROUND L/R, SUB WOOFER	
.....	200 mV / 47 k-ohms

#### Maximum Input Signal Level

PHONO (MM) (1 kHz, 0.1% THD) .....	100 mV or more
CD, etc. (1 kHz, 0.5% THD) .....	2.4 V or more

#### Output Level / Output Impedance

REC OUT .....	200 mV / 1.2 k-ohms
PRE OUT (FRONT L/R, CENTER, SURROUND L/R, SURROUND BACK L/R) .....	1.0 V / 500 ohms
SUB WOOFER (20 Hz) .....	2.0 V / 500 ohms
ZONE 2 OUT .....	1.0 V / 1.2 k-ohms
ZONE 3 OUT .....	1.0 V / 1.2 k-ohms

#### Frequency Response (10 Hz to 100 kHz)

CD, PURE Direct to FRONT L/R .....	+0 / -3.0 dB
------------------------------------	--------------

#### RIAA Equalization Deviation (20 Hz to 20 kHz)

PHONO (MM) .....	0 ± 0.5 dB
------------------	------------

#### Headphone Jack Rated Output / Impedance (1 kHz, 40 mV, 8 ohms)

CD, etc. INPUT .....	150 mV / 100 ohms
----------------------	-------------------

#### Total Harmonic Distortion (20 Hz to 20 kHz)

PHONO (MM) to REC OUT (1 V) .....	0.02 % or less
CD, etc. (STEREO) to FRONT L/R SP OUT (60 W, 8 ohms)	
.....	0.04 % or less

#### Signal to Noise Ratio (IHF-A Network)

PHONO (MM) (Input shorted) to SP OUT (5 mV)	
U, C models .....	86 dB or more
A model .....	81 dB or more
CD, etc. (Input shorted, STEREO) to SP OUT (250 mV)	
.....	100 dB or more

#### Residual Noise (IHF-A Network)

FRONT L/R SP OUT .....	150 µV or less
------------------------	----------------

#### Channel Separation (STEREO)

PHONO (Input shorted, 1 kHz / 10 kHz)	
.....	60 dB or more / 55 dB or more
CD, etc. (Input 5.1 k-ohms shorted, 1 kHz / 10 kHz)	
.....	60 dB or more / 45 dB or more

#### Tone Control Characteristics

BASS	
Boost/Cut .....	±6 dB (50 Hz)
Turnover Frequency .....	350 Hz
TREBLE	
Boost/Cut .....	±6 dB (20 kHz)
Turnover Frequency .....	3.5 kHz

#### Filter Characteristics

FRONT, CENTER, SURROUND, SURROUND BACK SP Small (H.P.F.)	
.....	fc=40/60/80/90/100/110/120/160/200 Hz / 12 dB oct.
SUBWOOFER (L.P.F.)	
.....	fc=40/60/80/90/100/110/120/160/200 Hz / 24 dB oct.

### ■ Video Section

#### Video Signal Type

(Gray Back)	
U, C models .....	NTSC
A model .....	PAL

#### (Video Conversion)

U, C models .....	NTSC
A model .....	NTSC/PAL

#### Composite Video Signal Level

.....	1 Vp-p / 75 ohms
-------	------------------

#### S-Video Signal Level

Y .....	1 Vp-p / 75 ohms
C .....	0.286 Vp-p / 75 ohms

#### Component Video Signal Level

Y .....	1 Vp-p / 75 ohms
Pb/Pr .....	0.7 Vp-p / 75 ohms

#### Video Maximum Input Level

.....	1.5 Vp-p or more
-------	------------------

#### Video Signal to Noise Ratio

.....	60 dB or more
-------	---------------

#### Monitor Out Frequency Response

Composite Video Signal, S-Video Signal	
.....	5 Hz to 10 MHz, -3 dB
Component Video Signal .....	5 Hz to 60 MHz, -3 dB

### ■ FM Section

#### Tuning Range

U, C models .....	87.5 to 107.9 MHz
A model .....	87.50 to 108.00 MHz

#### 50dB Quieting Sensitivity (IHF) (1kHz, 100% Mod.)

Mono .....	2.0 µV (17.3 dBf)
Stereo .....	25 µV (39.2 dBf)

#### Usable Sensitivity (IHF)

Mono .....	1.0 µV (11.2 dBf)
------------	-------------------

#### Selectivity

at 400 kHz .....	70 dB
------------------	-------

#### Signal to Noise Ratio (IHF)

Mono .....	76 dB
Stereo .....	70 dB

#### Harmonic Distortion (1 kHz)

Mono .....	0.2 %
Stereo .....	0.3 %

#### Stereo Separation (1 kHz)

.....	42 dB
-------	-------

#### Frequency Response (20 Hz to 15 kHz)

.....	+0.5 / -2 dB
-------	--------------

#### Antenna Input

.....	75 ohms unbalanced
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### ■ AM Section

#### Tuning Range

U, C models .....	530 to 1,710 kHz
A model .....	531 to 1,611 kHz

#### Usable Sensitivity

.....	300 µV/m
-------	----------

#### Antenna

.....	Loop Antenna
-------	--------------

### ■ General

#### Power Supply

U, C models .....	AC 120 V, 60 Hz
A model .....	AC 240 V, 50 Hz

#### Power Consumption

U, C models .....	500 W / 630 VA
A model .....	500 W

#### Standby Power Consumption (Reference Data)

.....	0.5 W or less
-------	---------------

#### AC Outlets

2 switched outlets	
U, C models .....	100 W max. total / 0.8 A max. total
1 switched outlet	
A model .....	100 W max. total

#### Dimensions (W x H x D)

.....	435 x 171 x 424 mm (17-1/8" x 6-3/4" x 16-11/16")
-------	---

#### Weight

.....	15.0 kg (33 lbs. 1 oz.)
-------	-------------------------

#### Finish

U model .....	Black color
C, A models .....	Silver color

#### Accessories / 付属品

Remote Control x 1, Batteries (Manganese Dry) x 4, Power Cable x 1, Indoor FM Antenna x 1, AM Loop Antenna x 1, Speaker Terminal Wrench x 1, Optimizer Microphone x 1,	
--	--

\* Specifications are subject to change without notice due to product improvements.

U .....	U.S.A. model	C .....	Canadian model
A .....	Australian model		



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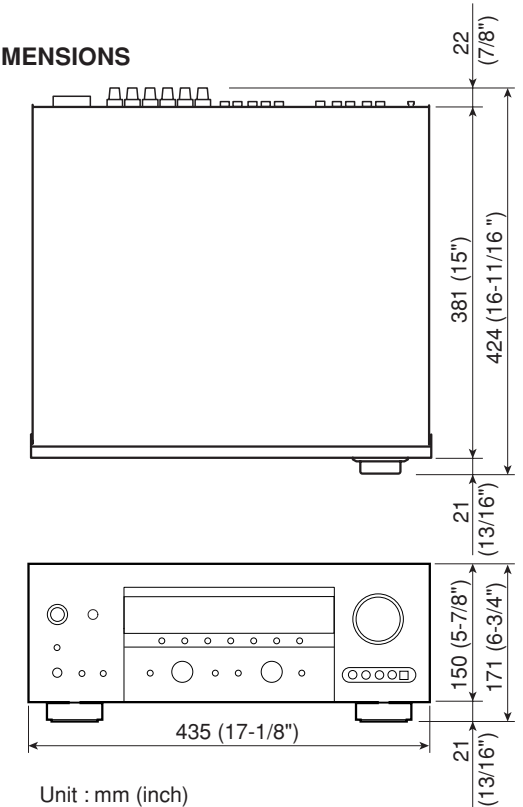


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### • DIMENSIONS



### • The variable range of the parameter (Min/Max/Step)

Parameter name	Pro Logic	Pro Logic II Movie/Game	Pro Logic II Music	Neo:6	2ch	DD/dts/AAC	6.1/ES	Unit
DSP LEVEL	-6/3/1	-	-	-	-6/3/1	-6/3/1	-6/3/1	dB
(P.) INIT. DLY	-	-	-	-	1/99/1	1/99/1	1/99/1	ms
(P.) ROOM SIZE	-	-	-	-	0.1/2.0/0.1	0.1/2.0/0.1	0.1/2.0/0.1	-
LIVENESS	-	-	-	-	0/10/1	0/10/1	0/10/1	-
S. INIT. DLY	10/25/1	-	-	-	-	1/49/1	1/49/1	ms
S. ROOM. SIZE	0.1/2.0/0.1	-	-	-	0.1/2.0/0.1	0.1/2.0/0.1	0.1/2.0/0.1	-
S. LIVENESS	0/10/1	-	-	-	0/10/1	0/10/1	0/10/1	-
SB. INT.DLY	-	-	-	-	-	-	1/49/1	ms
SB. ROOM, SIZE	-	-	-	-	-	-	0.1/2.0/0.1	-
SB. LIVENESS	-	-	-	-	-	-	0/10/1	-
REV. TIME	-	-	-	-	1.0/5.0/0.1	1.0/5.0/0.1	1.0/5.0/0.1	s
REV. DLY	-	-	-	-	0/250/1	0/250/1	0/250/1	ms
REV. LEVEL	-	-	-	-	0/100/1	0/100/1	0/100/1	%
PANORAMA	-	OFF	OFF/ON	-	-	-	-	-
DIMENSION	-	0 (STD)	-3/+3/1	-	-	-	-	-
CT WIDTH	-	0	0/7/1	-	-	-	-	-
C. IMAGE	-	-	-	0/0.5/0.1	-	-	-	-
DIALG. LIFT	-	-	-	-	0/5/1	0/5/1	0/5/1	-
PLII/PLIIX	-	PLII/PLIIX	PLII/PLIIX	-	-	-	-	-

7ch Stereo Parameter		Unit
CT LEVEL	0/100/1	%
SL LEVEL	0/100/1	%
SR LEVEL	0/100/1	%
SB LEVEL	0/100/1	%
PL LEVEL	0/100/1	%
PR LEVEL	0/100/1	%

THX Cinema Parameter	2ch	Unit
DEC	PRO LOGIC/PLII Movie/Neo:6 C	-

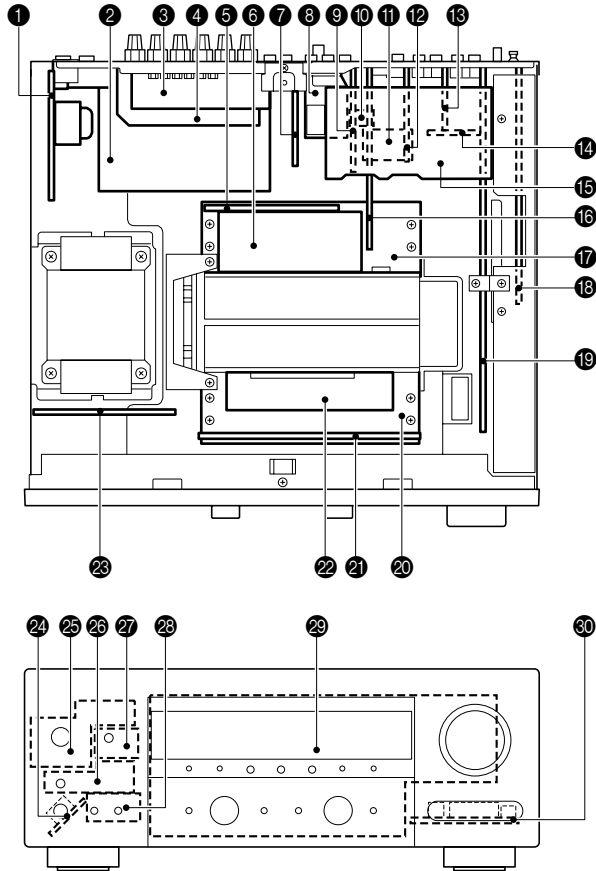
## • Set Menu Table

Main category	Sub-category	No.	Main Menu	Sub Menu	Initial Value	Setting Ranges		
AUTO SETUP	1 MENU		WIRING		CHECK	CHECK, SKIP		
			DISTANCE		CHECK	CHECK, SKIP		
			SIZE		CHECK	CHECK, SKIP		
			EQUALIZING		FLAT	SKIP, FRONT, FLAT, LOW, MID, HIGH		
			LEVEL		CHECK	CHECK, SKIP		
			SETUP		AUTO	AUTO, STEP		
			WIRING		--	--		
	2 CHECK			DISTANCE		--	--	
				SIZE		--	--	
				EQUALIZING		--	--	
				LEVEL		--	--	
		A	WIRING	L/C/R/SR/SBR/SBL/SL/SWFR/FL/FR			OK, NONE	
		B	DISTANCE	L/C/R/SR/SBR/SBL/SL/SWFR/FL/FR			xx.x m, xx.x ft	
		C	SIZE	L/C/R/SR/SBR/SBL/SL/SWFR/FL/FR			LARGE, SMALL, NONE	
		D	EQUALIZING	L/R/C/SR/SBR/SBL/SL/FL/FR				
		E	LEVEL	L/C/R/SR/SBR/SBL/SL/SWFR/FL/FR			-10~-0~+10 dB	
		F	EXIT		SET		SET, CANCEL	
MANUAL SETUP	1 BASIC MENU		ROOM SIZE		M	S, M, L		
			SUBWOOFER		YES	YES, NONE		
			PRESENCE SP		NONE	NONE, YES		
			Speakers (Advance to below steps when SET is selected.)		7	2, 3, 4, 5, 7, 8, 9		
			TEST TONE			Cancelled after initial setting		
			CONFIRM		YES	YES, NO (→ to SOUND_SP_LEVEL)		
		2 SOUND MENU	A SPEAKER SET		CENTER SP		SMALL	NONE, SMALL, LARGE
					FRONT SP		SMALL	SMALL, LARGE
					SURR. L/R SP		SMALL	NONE, SMALL, LARGE
					SURR B L/R SP		SMLx2	NONE, SMLx1, SMLx2, LRGx1, LRGx2
				PRESENCE SP		NONE	NONE/YES	
				LFE/BASS OUT		SWFR	SWFR, FRNT, BOTH	
				CROSS OVER		80 (THX)	40, 60, 80, 90, 100, 110, 120, 160, 200 Hz	
	B SPEAKER LEVEL	C SPEAKER DISTANCE		FL : FR	-----  -----	Center (±20 step)		
				FL : C	-----  -----	Center (±20 step)		
				FL : SL	-----  -----	Center (±20 step)		
				SL : SB	-----  -----	Center (±20 step)		
			SL : SR	-----  -----	Center (±20 step)			
			FL : SWFR	-----  -----	Center (±20 step)			
			F : PRES	-----  -----	Center (±20 step)			
			UNIT		feet	meters (m) / feet (ft)		
			m····FRONT L		3.0 m	0.3 to 24.0 m (0.1 m step)		
			m····FRONT R		3.0 m	0.3 to 24.0 m (0.1 m step)		
			m····CENTER		3.0 m	0.3 to 24.0 m (0.1 m step)		
			m····SURR. L		3.0 m	0.3 to 24.0 m (0.1 m step)		
			m····SURR. R		3.0 m	0.3 to 24.0 m (0.1 m step)		
			m····SBL		2.1 m	0.3 to 24.0 m (0.1 m step)		
			m····SBR		2.1 m	0.3 to 24.0 m (0.1 m step)		
			m····SWFR		3.0 m	0.3 to 24.0 m (0.1 m step)		
D GRAPHIC EQ			E LFE LEVEL		m····PRESENCE L		3.0 m	0.3 to 24.0 m (0.1 m step)
		m····PRESENCE R			3.0 m	0.3 to 24.0 m (0.1 m step)		
		feet··FRONT L			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··FRONT R			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··CENTER			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··SURR. L			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··SURR. R			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··SB L			7.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··SB R			7.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··SWFR			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··PRESENCE L			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		feet··PRESENCE R			10.0 feet	1.0 to 80 feet (0.5 feet step)		
		Channel			L	L, R, CT, SR L/R, SB L/R, PRES L/R		
		63 Hz			0 dB	±6 dB (0.5 dB step)		
		160 Hz			0 dB	±6 dB (0.5 dB step)		
		400 Hz			0 dB	±6 dB (0.5 dB step)		
		1 kHz			0 dB	±6 dB (0.5 dB step)		
	2.5 kHz		0 dB	±6 dB (0.5 dB step)				
	6.3 kHz		0 dB	±6 dB (0.5 dB step)				
	16 kHz		0 dB	±6 dB (0.5 dB step)				
E LFE LEVEL			SP LFE LEVEL		0 dB	-20 dB to 0 dB (1 dB step)		
			HP LFE LEVEL		0 dB	-20 dB to 0 dB (1 dB step)		
F DYNAMIC RANGE			SP DYNAMIC RANGE		MAX	MIN, STD, MAX		
			HP DYNAMIC RANGE		MAX	MIN, STD, MAX		
G LOW FREQ. TEST			TEST TONE		OFF	OFF, ON		
			OUTPUT		FRONT L/R	FRONT L/R, L, C, R, SR, SBL, SBR, SL, SWFR		
H HP TONE CTRL			FERQ.		88 Hz	35 Hz ... 88 Hz ... WIDE		
			HP BASS		0 dB	-6 dB to +6 dB (0.5 dB step)		
I AUDIO SET			HP TRBL		0 dB	-6 dB to +6 dB (0.5 dB step)		
			AUDIO MUTE		∞	∞, -20 dB		
			AUDIO DELAY			0 ~ 240 ms (1 ms step)		
			DIALG LIFT		OFF	OFF/ON		
			DUAL MONO (J)		MAIN	MAIN, SUB, ALL		
J PR/SB SELECT				SB	SB, PR			

3 INPUT MENU	A I/O ASSIGNMENT	[A] CV INPUT 1	DVD	
		[B] CV INPUT 2	DTV	
		(1) OPTICAL OUT 1	MD/TAPE	
		(2) OPTICAL OUT 2	CD-R	
		(3) OPTICAL IN 1	CD	
		(4) OPTICAL IN 2	DVD	
		(5) OPTICAL IN 3	DTV	
		(6) OPTICAL IN 4	CBL/SAT	
		(7) COAXIAL IN 1	CD	
	(8) COAXIAL IN 2	DVD		
	(9) COAXIAL IN 3	DVR/VCR2		
	B INPUT MODE	AUTO	AUTO, LAST	
	C INPUT RENAME	DVD → _ DVD _ _ _ _		
	D EXT INPUT SET	1 6ch/8ch	6ch	6 ch, 8 ch
		2. 8CH INPUT FRONT	DVD	
		3 CENTER to	CENTER	CENTER, FRONT
		4 SWFR to	SWFR	SWFR, FRONT
		5 SL/SR	SL/SR	SL/SR, FRONT
	A DISPLAY SET	DIMMER	0	-4 to 0 (1 step)
OSD SHIFT		0	0 ±5 (1 step)	
GRAY BACK		AUTO	AUTO, OFF	
V CONV.		ON	OFF, ON	
CMPNT OSD		ON	OFF, ON	
		OFF	OFF, ON	
B MEMORY GUARD				
C PARAM.INI	PARAM INIT	Parameters are initialized when keys of asterisk * marked numbers are pressed (0 to 9)		
D SP IMP.SET		8 ohms	8 ohms, 6 ohms	
	ZONE SET	FRONT	FRONT, ZONE B	
	ZONE2 SET	VAR.	VAR., FIX	
F ZONE2 SET	ZONE2 AMP	OFF	OFF, ON	

INTERNAL VIEW

HTR-5890



- ① POWER (5) P.C.B.
- ② MAIN (1) P.C.B.
- ③ POWER (7) P.C.B.
- ④ MAIN (5) P.C.B.
- ⑤ POWER (6) P.C.B.
- ⑥ MAIN (3) P.C.B.
- ⑦ VIDEO (4) P.C.B.
- ⑧ TUNER
- ⑨ CONVERSION P.C.B.
- ⑩ VIDEO (8) P.C.B.
- ⑪ VIDEO (7) P.C.B.
- ⑫ VIDEO (3) P.C.B.
- ⑬ VIDEO (5) P.C.B.
- ⑭ VIDEO (6) P.C.B.
- ⑮ VIDEO (2) P.C.B.
- ⑯ VIDEO (1) P.C.B.
- ⑰ MAIN (2) P.C.B.
- ⑱ DSP P.C.B.
- ⑲ FUNCTION P.C.B.
- ⑳ MAIN (4) P.C.B.
- ㉑ POWER (1) P.C.B.
- ㉒ POWER (3) P.C.B.
- ㉓ OPERATION (7) P.C.B.
- ㉔ OPERATION (5) P.C.B.
- ㉕ OPERATION (2) P.C.B.
- ㉖ OPERATION (4) P.C.B.
- ㉗ OPERATION (8) P.C.B.
- ㉘ OPERATION (6) P.C.B.
- ㉙ OPERATION (1) P.C.B.
- ㉚ OPERATION (3) P.C.B.

## DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)  
Disconnect the power cable from the AC outlet.

### 1. Removal of Top Cover

- Remove 2 screws (①), 4 screws (②) and 5 screws (③). (Fig. 1)
- Slide the Top Cover rearward to remove it. (Fig. 1)

### 2. Removal of Front Panel Unit

- Remove 9 screws (④) and then slide the Front Panel Unit forward. (Fig. 1)
- Remove CB25, CB505, CB509, CB512, CB861 ~ CB863 and then remove the Front Panel Unit. (Fig. 2)

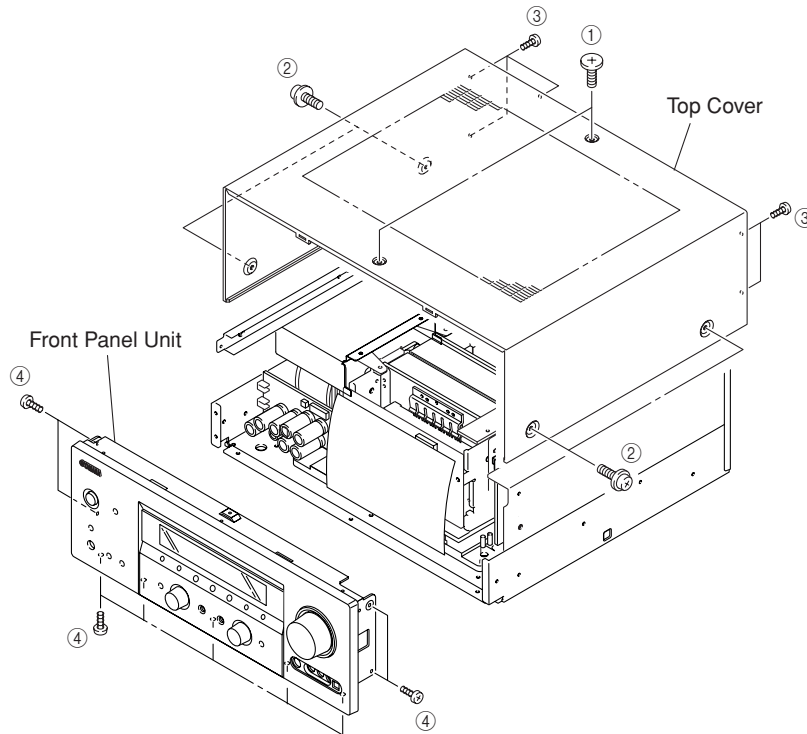


Fig. 1

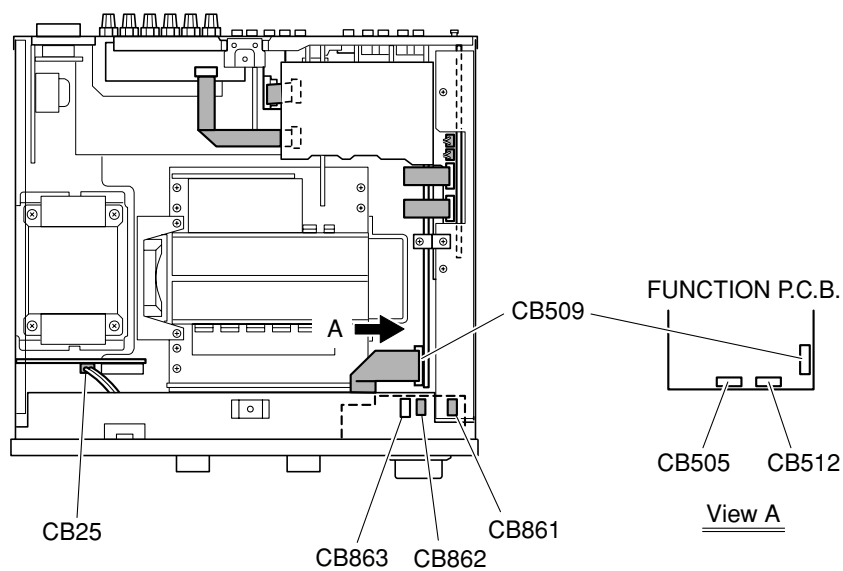
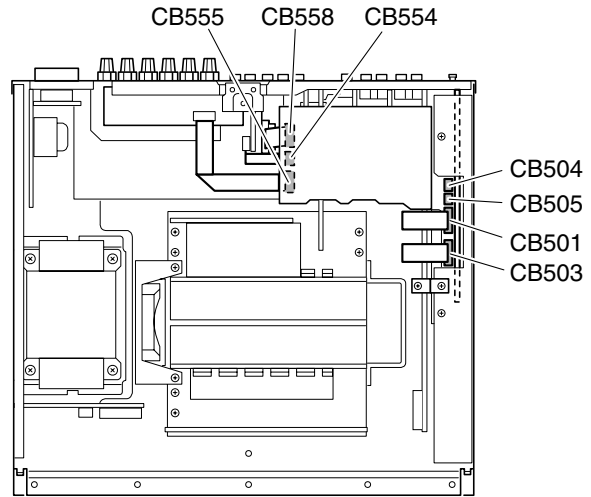


Fig. 2

**3. Removal of DSP P.C.B.**

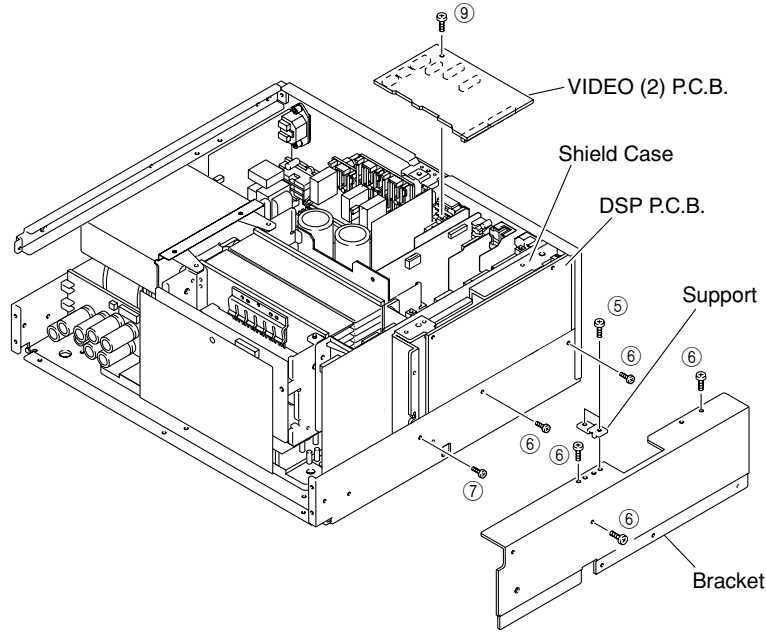
- a. Remove 2 screws (⑤) and then remove the Support. (Fig. 4)
- b. Remove 5 screws (⑥) and then remove the Bracket. (Fig. 4)
- c. Remove 1 screw (⑦). (Fig. 4)
- d. Remove 8 screws (⑧). (Fig. 5)
- e. Remove CB501, CB503 ~ CB505. (Fig. 3)
- f. Remove the DSP P.C.B. and Shield Case upward. (Fig. 4)



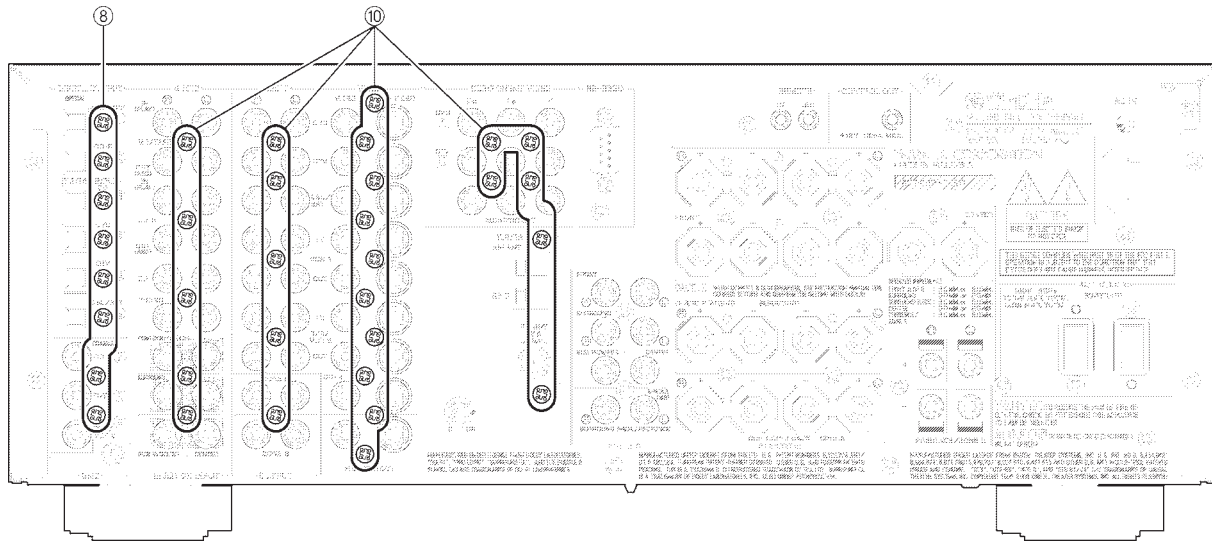
**Fig. 3**

**4. Removal of VIDEO (2) P.C.B.**

- a. Remove 1 screw (⑨). (Fig. 4)
- b. Remove CB554, CB555 and CB558. (Fig. 3)
- c. Remove the VIDEO (2) P.C.B. which is connected directly to the lower P.C.B. with connectors. (Fig. 4)



**Fig. 4**



**Fig. 5**

## 5. Removal of VIDEO (1), (3), (5) ~ (8), FUNCTION, CONVERSION P.C.B.s and Tuner

- a. Remove 26 screws (⑩). (Fig. 5)
- b. Remove VIDEO (1), (3), (5) ~ (8), FUNCTION, CONVERSION P.C.B.s and Tuner.

### When checking the P.C.B.:

- Put the Rubber Sheet and a Cloth over the equipment. Then place the P.C.B. upside down on the Cloth and check it. (Fig. 6)
- Reconnect all cables (connectors) that have been disconnected.

Be sure to use the extension cable for servicing for the following section.

FUNCTION P.C.B. CB505 – OPERATION (1) P.C.B. CB864:  
MF113500 (13P 500mm)

FUNCTION P.C.B. CB512 – OPERATION (1) P.C.B. CB852:  
MF115500 (15P 500mm)

- When connecting the flat cable, use care for the polarity.

- In this unit, the ground of P.C.B.s shown below is connected to the rear panel. When these P.C.B.s are removed from the rear panel, connect the ground to the rear panel or chassis, using a lead wire or the like. (Fig. 7)

DSP P.C.B.	: PJ501 (DIGITAL INPUT)
FUNCTION P.C.B.	: PJ504 (MULTI CH INPUT)
VIDEO (1) P.C.B.	: JK605 (S VIDEO)
VIDEO (3) P.C.B.	: PJ705 (VIDEO)
VIDEO (5) P.C.B.	: PJ503 (DVR/VCR 2)
CONVERSION P.C.B.:	PJ801 (COMPONENT VIDEO)

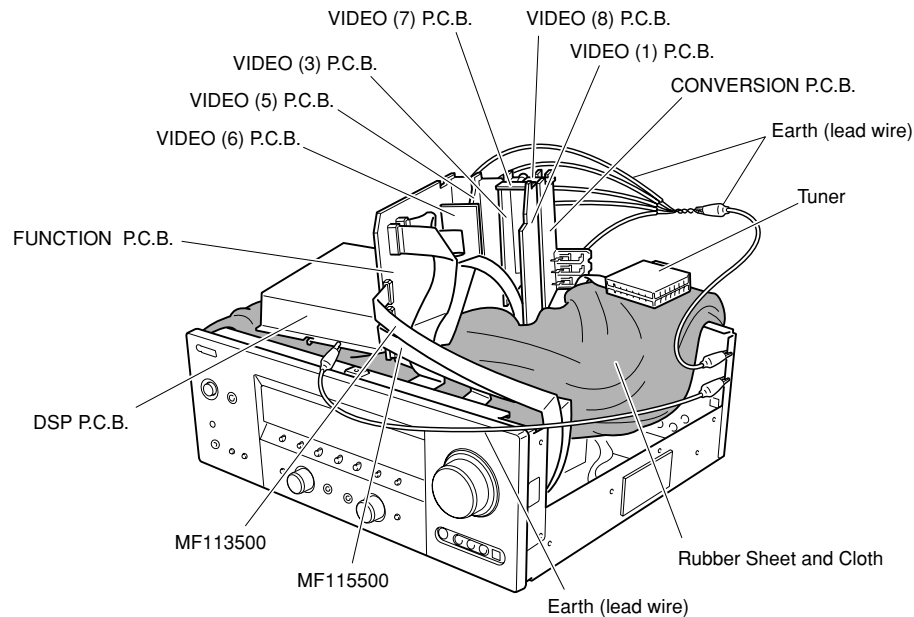


Fig. 6

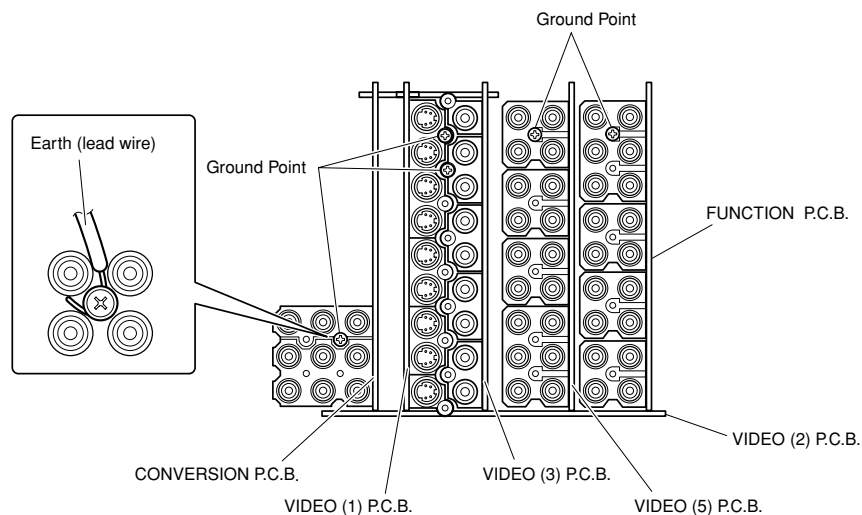


Fig. 7



**6. Removal of Fan**

- a. Remove 4 push rivets (11) and then remove the Cover. (Fig. 8)
- b. Remove CB32. (Fig. 8)
- c. Remove 2 screws (12) and 2 screws (13). (Fig. 8)
- d. Remove the Fan together with the frame by lifting them up. (Fig. 8)

**7. Removal of Amp Unit**

- a. Remove 2 push rivets (14) and then remove the Duct. (Fig. 8)
- b. Remove 4 screws (15) and 4 screws (16). (Fig. 8)
- c. Remove the Amp Unit. (Fig. 8)

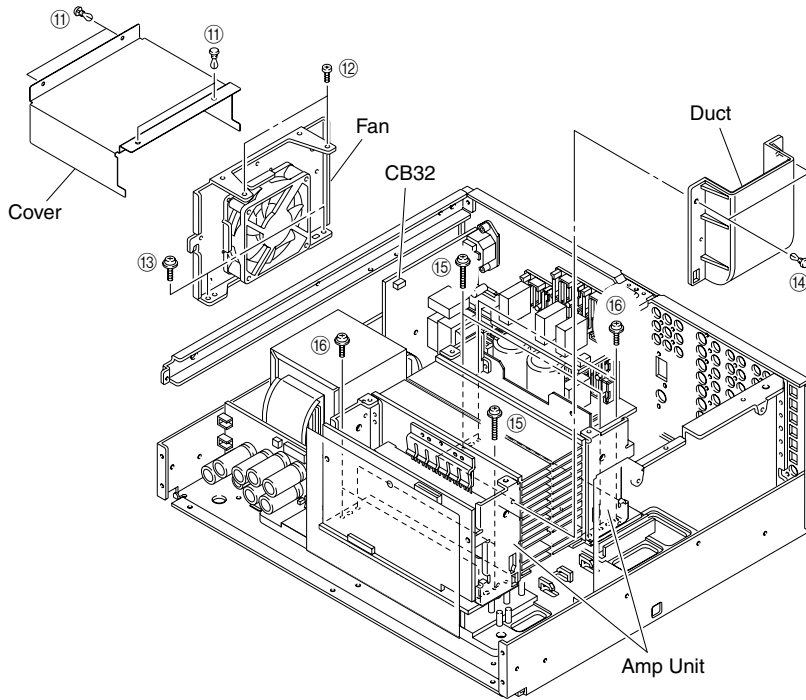
**When checking the Amp Unit:**

- Put the Amp Unit together with the heat sink upright on the art base and check them. (Fig. 9)
- Reconnect all cables (connectors) that have been disconnected.

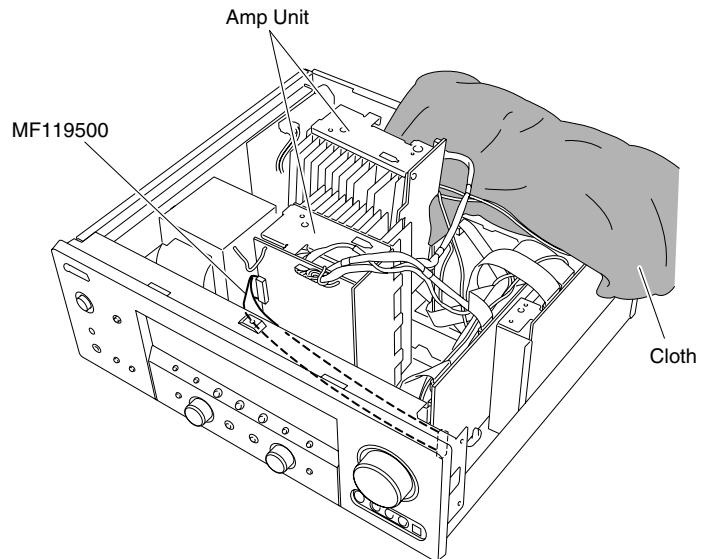
Be sure to use the extension cable for servicing for the following section.

FUNCTION P.C.B. CB507 – POWER (1) P.C.B. CB22: MF119500 (19P 500mm)

- When connecting the flat cable, use care for the polarity.



**Fig. 8**



**Fig. 9**

## ■ UPDATING FIRMWARE

After replacing the IC512 on the FUNCTION P.C.B. with the service part (X4678A00), update the firmware according to the following procedure.

### Equipment required

- PC with RS-232C serial port (OS: Windows98/Me/2000/XP)
- Firmware loading program (YAVBoot\_V518.exe)
- Firmware (V1500\_xxx.mot)
- RS-232C cross cable "D-Sub 9-pin Female".
 

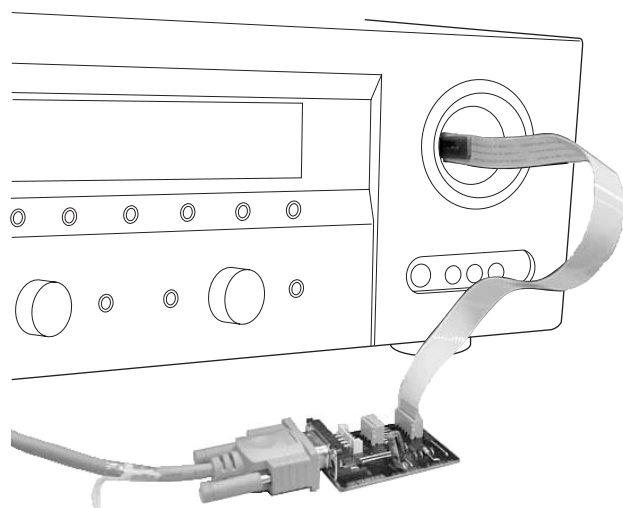
Pin No.2 RxD	X	Pin No.2 RxD
Pin No.3 TxD	X	Pin No.3 TxD
Pin No.5 GND	—	Pin No.5 GND
Pin No.7 RTS	X	Pin No.7 RTS
Pin No.8 CTS	X	Pin No.8 CTS

### Preparations

Download the firmware loading program and firmware from the specified download sources to the same directory of the PC for updating the firmware.

### Firmware updating procedure

1. With the power turned off, connect the RS-232C cross cable and RS-232C conversion adapter between the PC and the RS-232C port of the unit as shown below.



2. After executing the firmware loading program, select the program type and port settings as follows:

#### Program Type Select

Program Type: V1500

#### COM > SETTING Menu

#### Port Setting Dialog

Port: Select proper port #  
 Bits per second: 9600  
 Data bits: 8  
 Parity: None  
 Stop bits: 1  
 Flow control: Hardware

3. Turn on the power to the unit.
4. To connect the line, click the CONNECT button or the COM menu, then click the CONNECT.

#### COM > CONNECT Menu

After connecting, the "Connected" message is displayed in the status bar.

5. Click the File Change button and then select the file to be loaded.  
 To start loading, click the Program Macro button.

#### <CAUTION>

Never disconnect the power cable of the unit while loading the firmware, or the flash ROM data may be destroyed.

6. When the firmware loading is finished, the checksum information will be displayed on the information box.
7. To disconnect the line, click the BREAK button or click the COM menu, then click the BREAK.

#### COM > BREAK Menu

For more information, access to the "FIRMWARE UPDATE PROCEDURES" on the WEB SITE.

## ■ SELF DIAGNOSIS FUNCTION (DIAG)

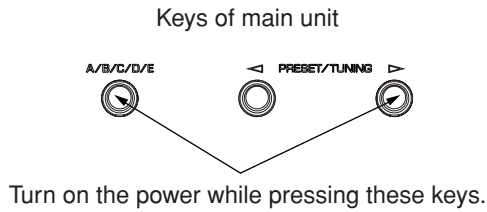
There are 18 DIAG menu items, each of which has sub-menu items. Listed in the table below are menu items and sub-menu items.

No	DIAG menu	sub-menu
1	DA601-YSS930 1.YSS 0dB	1. YSS 0dB
		2. YSS FULL BIT
2	BYPASS 2.ANALOG BYPAS	1. ANALOG BYPASS
		2. DSP BYPASS
3	RAM THROUGH 3.RAM 0dB	1. RAM 0dB
		2. MAIN ATT
4	PRO LOGIC / NEO6 4.PRO LOGIC I	1. PRO LOGIC I
		2. PRO LOGIC II
		3. NEO: 6
5	SPEAKER SET 5.FRNT:SML 0dB	1. FRONT: SMALL 0dB
		2. CENTER: NONE
		3. LFE/BASS: FRONT
		4. PRESS MIX: 5ch
		5. SURROUND B: MUTE
		6. SURROUND LR: MUTE
		7. SURROUND LR: NONE
6	EXTERNAL INPUT 6.6CH INPUT_6	1. 6CH INPUT_6OHMS
		2. 6CH INPUT_8OHMS
		3. 8CH INPUT_6OHMS
		4. 8CH INPUT_8OHMS
7	MIC CHECK 7.MIC CHECK	MIC CHECK
8	EFFECT OFF/ DISPLAY CHECK 8. VFD CHECK	1. VFD CHECK (Initial display)
		2. VFD DISP OFF (All segments OFF)
		3. VFD DISP ALL (All segments ON 100%)
		4. VFD DIMMER (All segments ON 50%)
		5. CHECKED PATTERN (ON in lattice)
9	MANUAL TEST 9.TEST ALL	1. TEST ALL
		2. TEST FRONT L
		3. TEST CENTER
		4. TEST FRONT R
		5. TEST SURROUND R
		6. TEST SURROUND BACK R
		7. TEST SURROUND BACK L
		8. TEST SURROUND L
		9. TEST PRESENCE L
		10. TEST PRESENCE R
		11. TEST LFE
10	RS-232C 10.TxRxData:xx	1. TX DATA
		2. HARD FLOW
11	FACTORY PRESET 11.PRESET INHI	1. PRESET INHIBIT (memory initialization inhibited)
		2. PRESET RESERVED (memory initialized)

No	DIAG menu	sub-menu
12	AD DATA CHECK /FAN TEST    DC:007 PS:025	1. DC/PS (protection)
		2. THM/FAN OUT
		3. REC-OUT
		4. IMP SW/POWER LIMIT
		5. K0/K1 (panel key)
		6. FAN DRIVE TEST: HIGH
		7. FAN DRIVE TEST: MID
		8. FAN DRIVE TEST: LOW
13	V CONV STATUS L:XXXXXXXX	1. LOW BYTE DATA
		2. HIGH BYTE DATA (Not applied to this model.)
14	IF STATUS    ISI:440308C000	1. IS 1 (5 Byte)
		2. IS 2 (4 Byte)
		3. CS 1 (5 Byte)
		4. CS 2 (5 Byte)
		5. CS 3 (5 Byte)
		6. CS 4 (5 Byte)
		7. CS 5 (4 Byte)
		8. BS1 (5 Byte)
		9. BS2 (5 Byte)
		10. BS3 (5 Byte)
		11. BS4 (5 Byte)
		12. BS5 (5 Byte)
		13. BS6 (5 Byte)
		14. BS7 (2 Byte)
		15. TI1 (5 Byte)
		16. TI2 (1 Byte)
		17. MTT (5 Byte)
15	DSP RAM CHECK YSS    BUS:NoEr	1. YSS930 BUS CHECK
		2. SECOND DECODER BUS CHECK
16	PROTECTION SET    PS_Lo:    XXXX	(Not applied to this model.)
17	SOFT SW    17.SW    :PCB	1. SW MODE
		2. MODEL SETTING
		3. TUNER DESTINATION
		4. TUNER EXIST
		5. RDS EXIST
		6. ZONE 2 EXIST
		7. VIDEO FORMAT
18	ROM VERSION/CHECK SUM/ PORT    VER.XXXXXXX	1. VERSION
		2. OPE/DSP VERSION
		3. SUM ALL/PROGRAM
		4. SUM 232C BOOT/MAKER BOOT
		5. PORT
		6. AAC PORT

**• Starting DIAG**

Press the “STANDBY/ON” key while simultaneously pressing those two keys of the main unit as indicated in the figure below.



**• Starting DIAG in the protection cancel mode**

If the protection function works and causes hindrance to trouble diagnosis, cancel the protection function as described below, and it will be possible to enter the DIAG mode. (The protection functions other than the excess current detect function will be disabled.)

Press the “STANDBY/ON” key while simultaneously pressing those two keys indicated in the figure above. At this time, keep pressing those two keys for 3 seconds or longer.

In this mode, the “SLEEP” segment of the FL display of the main unit flashes to indicate that the mode is DIAG mode with the protection functions disabled.

**CAUTION!**

Using this product with the protection function disabled may cause damage to itself. Use special care for this point when using this mode.

**• Canceling DIAG**

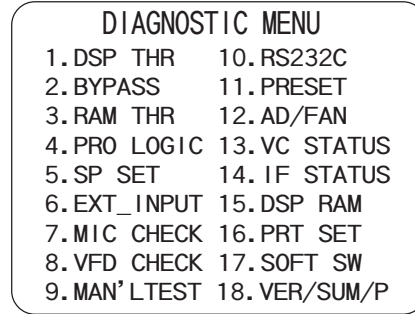
[1] Before canceling DIAG, execute setting for PRESET of DIAG menu No.11 (Memory initialization inhibited or Memory initialized).

\* In order to keep the user memory stored, be sure to select PRESET INHIBIT (Memory initialization inhibited). Any protection history will remain in memory.

[2] Turn off the power by pressing the “STANDBY/ON” key of the main unit or the “STANDBY” key of the remote controller.

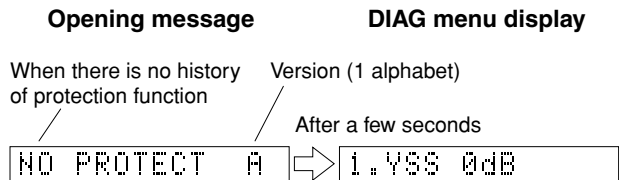
**• Display provided when DIAG started**

When the monitor is connected, DIAGNOSTIC MENU appears on its screen as shown in the figure. (It remains on display until DIAG is cancelled.)

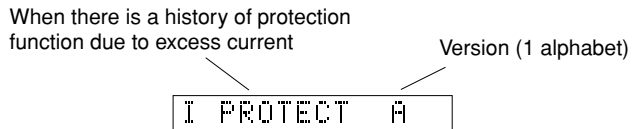


The FL display of the main unit displays the protection function history data and the version (1 alphabet) and then the DIAG menu [sub-menu (YSS 0dB) of DIAG menu No.1 DSP THROUGH] a few seconds later.

**When there is no history of protection function:**



**When there is a history of protection function:**

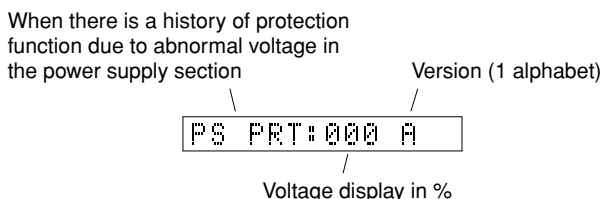


**Cause:** An excessive current flowed through the power amplifier.

Turning on the power without correcting the abnormality will cause the protection function to work immediately and the power supply will instantly be shut off.

**Note)**

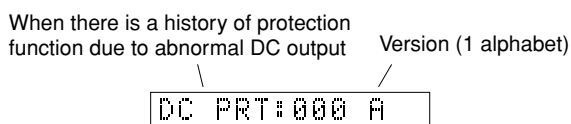
- Applying the power to a unit without correcting the abnormality can be dangerous and cause additional circuit damage.
- The output transistors in each amplifier channel should be checked for damage before applying any power.
- Amplifier current should be monitored by measuring across the emitter resistors for each channel.



**Cause:** The voltage in the power supply section is abnormal.

**Supplementary information:** The abnormal voltage is displayed in % based on 5V as 100%.

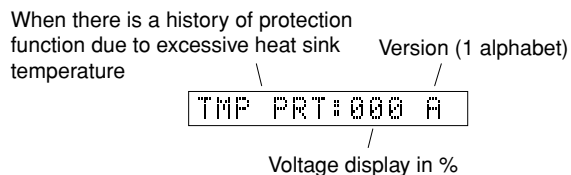
Turning on the power without correcting the abnormality will cause the protection function to work 1 second later and the power supply will be shut off.



**Cause:** DC output of the power amplifier is abnormal.

**Supplementary information:** The abnormal voltage is displayed in % based on 5V as 100%.

Turning on the power without correcting the abnormality will cause the protection function to work 3 seconds later and the power supply will be shut off.



**Cause:** The temperature of the heat sink is excessive high.

**Supplementary information:** The abnormal voltage is displayed in % based on 5V as 500%.

Turning on the power without correcting the abnormality will cause the protection function to work 1 second later and the power supply will be shut off.

- \* Additional causes of protection can be due to loose connections, associated components, CPU, etc.
- \* For the protection voltage value, refer to DIAG menu No.12 described later.

**• History of protection function**

When the protection function has worked, its history is stored in memory with a backup. Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.

The history of the protection function is cleared when DIAG is cancelled by selecting PRESET RESERVED (Memory initialized) of DIAG menu No. 11 or when the backup data is erased.

**• Display during menu operation**

During the DIAG operation, the menu list described in the section of the startup screen appears on the superimposed screen and the function at work is indicated on the FL indicator. The contents displayed during the function operation are described in the later section on details of functions.

**• Operation procedure of DIAG menu and SUB-MENU**

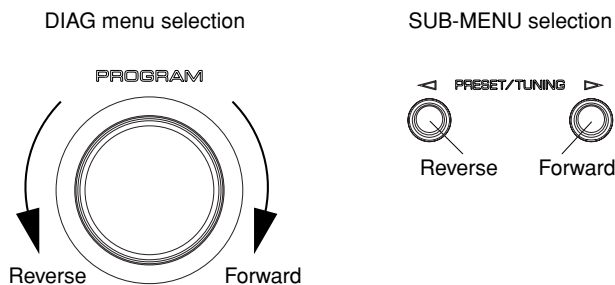
There are 18 MENU items, each of which has some SUB-MENU items.

**DIAG menu selection**

Select the menu using the PROGRAM knob.

**SUB-MENU selection**

Select the sub-menu using > (Forward) and < (Reverse) keys of PRESET/TUNING.



**• Functions in DIAG mode**

In addition to the DIAG menu items, functions as listed below are available.

- Input selection, Multi channel input
- Center/Surround/Surround Back/Sub-woofer level adjustment
- Muting
- Speaker relay A/B
- Power on/off
- Master volume

\* Functions related to the tuner and the set menu are not available.

\* It is possible to confirm Menu No.14 IF STATUS while keeping the signal process (operation status) of each DIAG menu by using the input mode key of the main unit.

**• Initial settings used to start DIAG**

The following initial settings are used when starting DIAG. When DIAG is canceled, these settings are restored to those before starting DIAG.

- Master volume: -20dB
- Input: DVD (MULTI CHANNEL INPUT OFF)
- Effect level: 0dB
- Audio mute: OFF
- Speaker relay A/B: ON
- Speaker setting: LARGE / BASS OUT = BOTH
- DIAG menu: DA601-YSS930 (1. YSS 0dB)

**• Details of DIAG menu**

With full-bit output specified in some modes, it is possible to execute 0dBFS output without head margin in each channel.

**1. DA601-YSS930**

This function is for YSS930 only. Main DSP of YSS930 is selected for FRONT output.

Using the sub-menu, it is possible to select 0dB output level or full-bit output.

**YSS 0dB**

- The signal is output including the head margin.

1. YSS 0dB

Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm



**YSS FULL BIT**

- The signal is output in digital full bit without including the head margin.
- The SWFR signal is output but not in digital full bit.

**1. YSS FULL BIT**

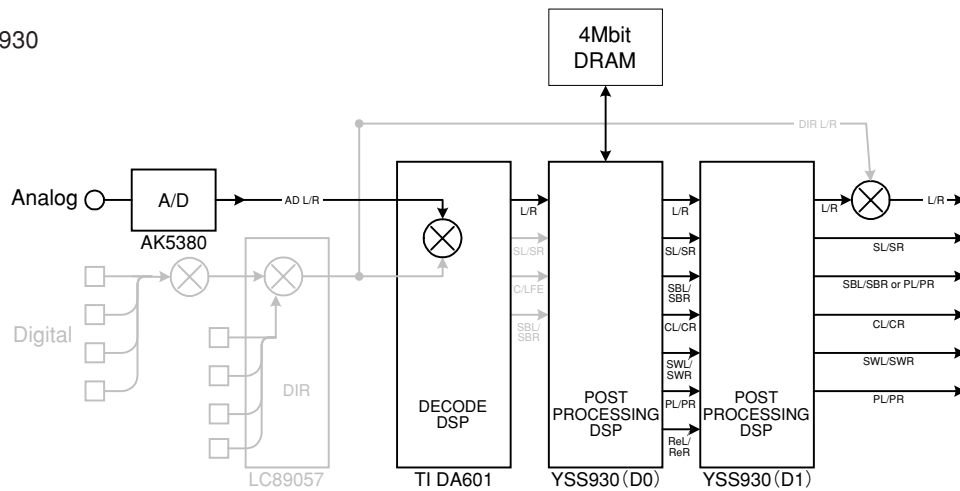
Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm

DA601-YSS930  
(ANALOG)



(Shaded items not used in this example)

**2. BYPASS**

**ANALOG BYPASS**

**2. ANALOG BYPASS**

Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	+13.5 dBm	- ∞	- ∞	- ∞	- ∞

DSP BYPASS

2. DSP BYPASS

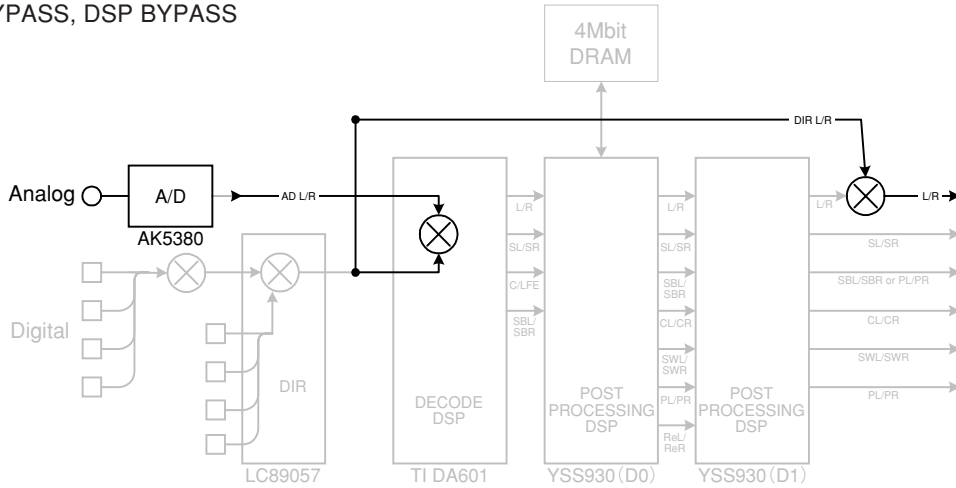
Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

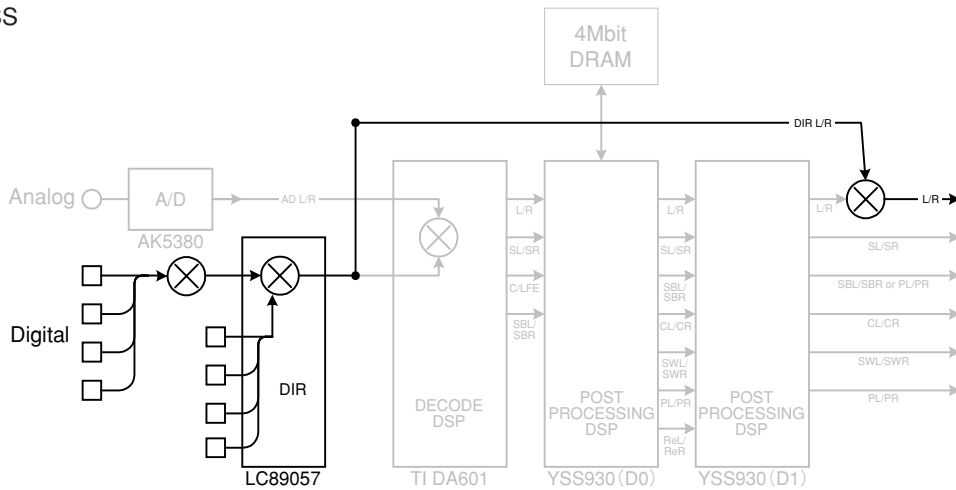
Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	- ∞	- ∞	- ∞	- ∞	- ∞

ANALOG BYPASS, DSP BYPASS  
(ANALOG)



(Shaded items not used in this example)

DSP BYPASS  
(DIGITAL)



(Shaded items not used in this example)

### 3. RAM THROUGH

Using the sub-menu, it is possible to select the full-bit output at 0dB output level.

#### RAM 0dB

3. RAM 0dB

Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm

#### MAIN ATT

- MAIN -9dB

3. MAIN ATT

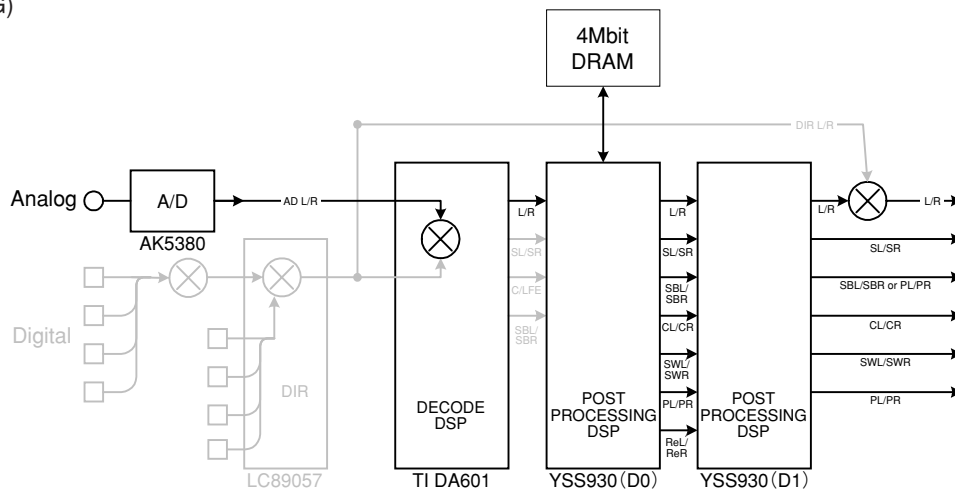
Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Both ch, -20 dBm	+6.5 dB	+4.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm

#### RAM THROUGH (ANALOG)



(Shaded items not used in this example)

4. PRO LOGIC / NEO6

PRO LOGIC I

4. PRO LOGIC I

Reference data  
 INPUT: DVD ANALOG  
 SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Each ch, -20 dBm	+6.5 dB	+13.5 dBm	- ∞	- ∞	- ∞	- ∞
Both ch, -20 dBm	+6.5 dB	- ∞	+16.5 dBm	- ∞	- ∞	- ∞

PRO LOGIC II

4. PRO LOGIC II

Reference data  
 INPUT: DVD ANALOG  
 SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Each ch, -20 dBm	+6.5 dB	+13.5 dBm	- ∞	- ∞	- ∞	- ∞
Both ch, -20 dBm	+6.5 dB	- ∞	+16.5 dBm	- ∞	- ∞	- ∞

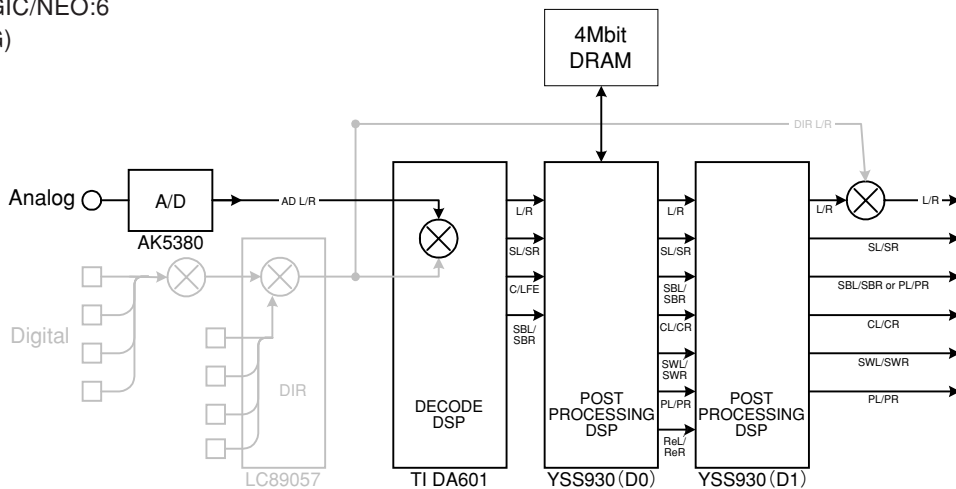
Neo:6

4. Neo:6

Reference data  
 INPUT: DVD ANALOG  
 SUBWOOFER: 50Hz, Others: 1kHz

Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
		FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
Each ch, -20 dBm	+6.5 dB	+13.5 dBm	- ∞	- ∞	- ∞	- ∞
Both ch, -20 dBm	+6.5 dB	- ∞	+16.5 dBm	- ∞	- ∞	- ∞

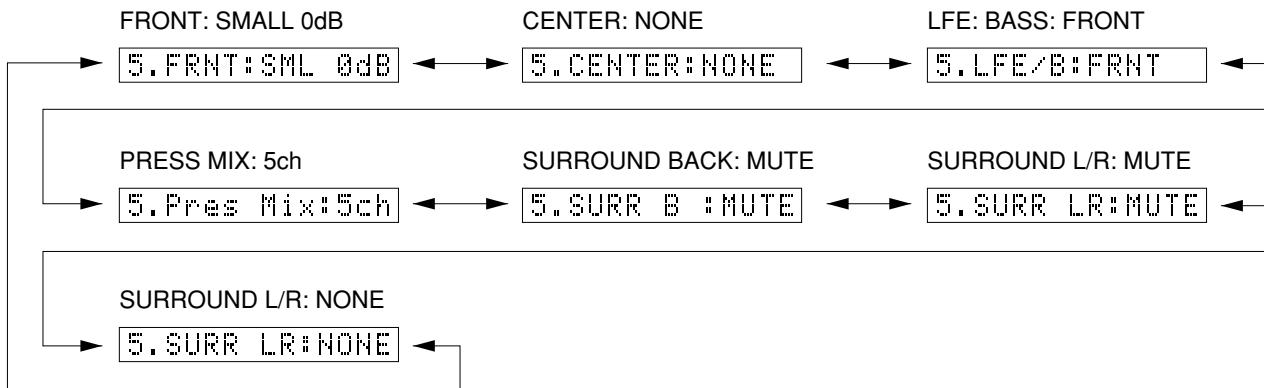
PRO LOGIC/NEO:6  
 (ANALOG)



(Shaded items not used in this example)

### 5. SPEAKERS SET

The input signal is automatically identified in the order of dts → DOLBY DIGITAL → AAC → PCM → Analog.  
 There are seven sub-menu items as follows. The signals output from the DSP block are the same as 1.  
 DA601-YSS930: YSS 0dB.



The analog switch settings for each sub-menu are as shown in the table below.

Sub-menu	CENTER SP	SURROUND SP	FRONT SP	LFE/BASS
1 FRONT: SMALL 0dB	LARGE	LARGE	SMALL	SWFR
2 CENTER: NONE	NONE	LARGE	LARGE	SWFR
3 LFE/BASS: FRONT	SMALL	SMALL	LARGE	MAIN
4 PRESS MIX: 5CH	LARGE	LARGE	LARGE	SWFR
5 SURROUND BACK: MUTE	LARGE	LARGE	LARGE	SWFR
6 SURROUND: MUTE	LARGE	LARGE	LARGE	SWFR
7 SURROUND: NONE	LARGE	NONE	LARGE	SWFR

**LARGE:** This mode is used with a speaker with high bass reproduction performance (a large unit). Full bandwidth signals are output.  
**SMALL:** This mode is used with a speaker with low bass reproduction performance (a small unit). The signals of 90Hz or less are mixed into the channel specified by LFE/BASS.

**NONE:** This mode is used with no center speaker. The center content is reduced by 3dB and distributed to FRONT L/R.

Reference data

INPUT: DVD ANALOG

SUBWOOFER: 50Hz, Others: 1kHz

Sub-menu	Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
			FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
1 FRONT: SMALL 0dB	1 kHz Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-3.0 dBm
2 CENTER: NONE	1 kHz Both ch, -20 dBm	+6.5 dB	+10.5 dBm	- ∞	+13.5 dBm	+13.5 dBm	-7.0 dBm
3 LFE/BASS: FRONT	1 kHz Both ch, -20 dBm	+6.5 dB	- ∞	+13.5 dBm	+13.5 dBm	+13.5 dBm	- ∞
	50 Hz Both ch, -20 dBm	+6.5 dB	+24.0 dBm	+4.5 dBm	+4.5 dBm	+4.5 dBm	-7.0 dBm
4 PRESS MIX: 5CH	1 kHz Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm
5 SURROUND BACK: MUTE	1 kHz Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm
6 SURROUND: MUTE	1 kHz Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	- ∞	+13.5 dBm	-7.0 dBm
7 SURROUND: NONE	1 kHz Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-7.0 dBm

**6. EXTERNAL INPUT**

It is possible to select the 6ch/8ch input and 6\_/8\_ by using the SUB menu.

**6CH\_INPUT\_6OHMS**

6.6CH INPUT\_6

**6CH\_INPUT\_8OHMS**

6.6CH INPUT\_8

**8CH\_INPUT\_6OHMS**

6.8CH INPUT\_6

**8CH\_INPUT\_8OHMS**

6.8CH INPUT\_8

Reference data

INPUT: MULTI CH INPUT

SUBWOOFER: 50Hz, Others: 1kHz

	Sub-menu	Input level	Volume	SPEAKER OUTPUT				SUBWOOFER OUTPUT
				FRONT L/R	CENTER	SURROUND L/R	SURROUND BACK	
1	6CH_INPUT_6ohms	Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	- ∞	-1.0 dBm
2	6CH_INPUT_8ohms	Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	- ∞	-1.0 dBm
3	8CH_INPUT_6ohms	Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-1.0 dBm
4	8CH_INPUT_8ohms	Both ch, -20 dBm	+6.5 dB	+13.5 dBm	+13.5 dBm	+13.5 dBm	+13.5 dBm	-1.0 dBm

**7. MIC CHECK**

The signals input through the microphone are output via A/D - D/A.

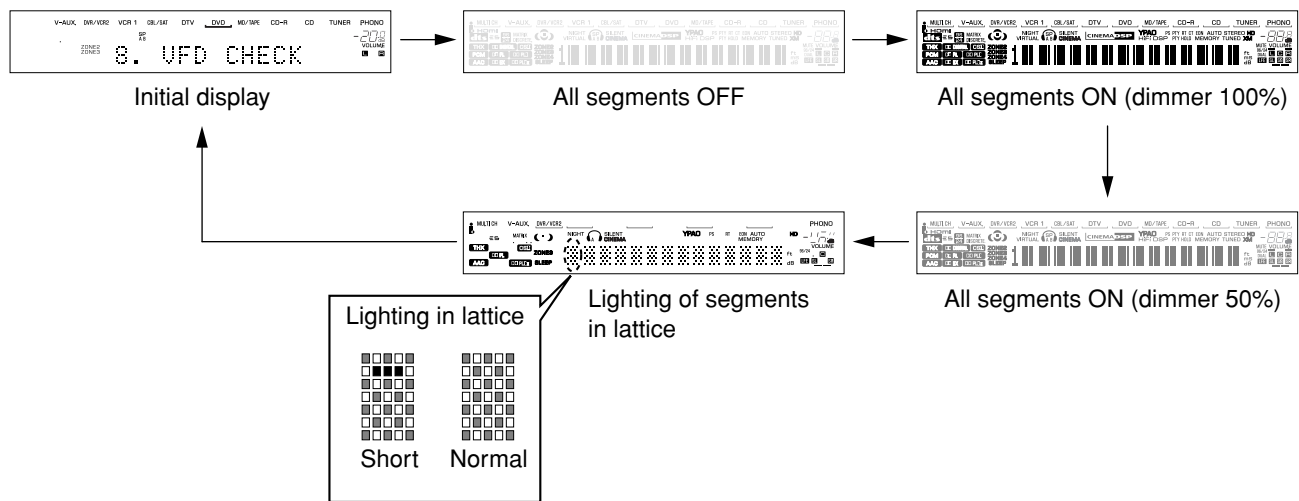
7.MIC CHECK

### 8. EFFECT OFF / DISPLAY CHECK

This program is used to check the FL display section. The display condition varies as shown below according to the sub-menu operation. The signals are processed using EFFECT OFF (The L/R signal is output using ANALOG MAIN BYPASS.)

The video signal internal/external synchronization switching is controlled by the microprocessor. When the initial message is displayed and all the FL segments light up, it is switched to the internal synchronization but other than that it is forced to the external synchronization setting.

Also, except for the initial display, 128 pictographs for checking the OSD driver are used for the video signal output display.

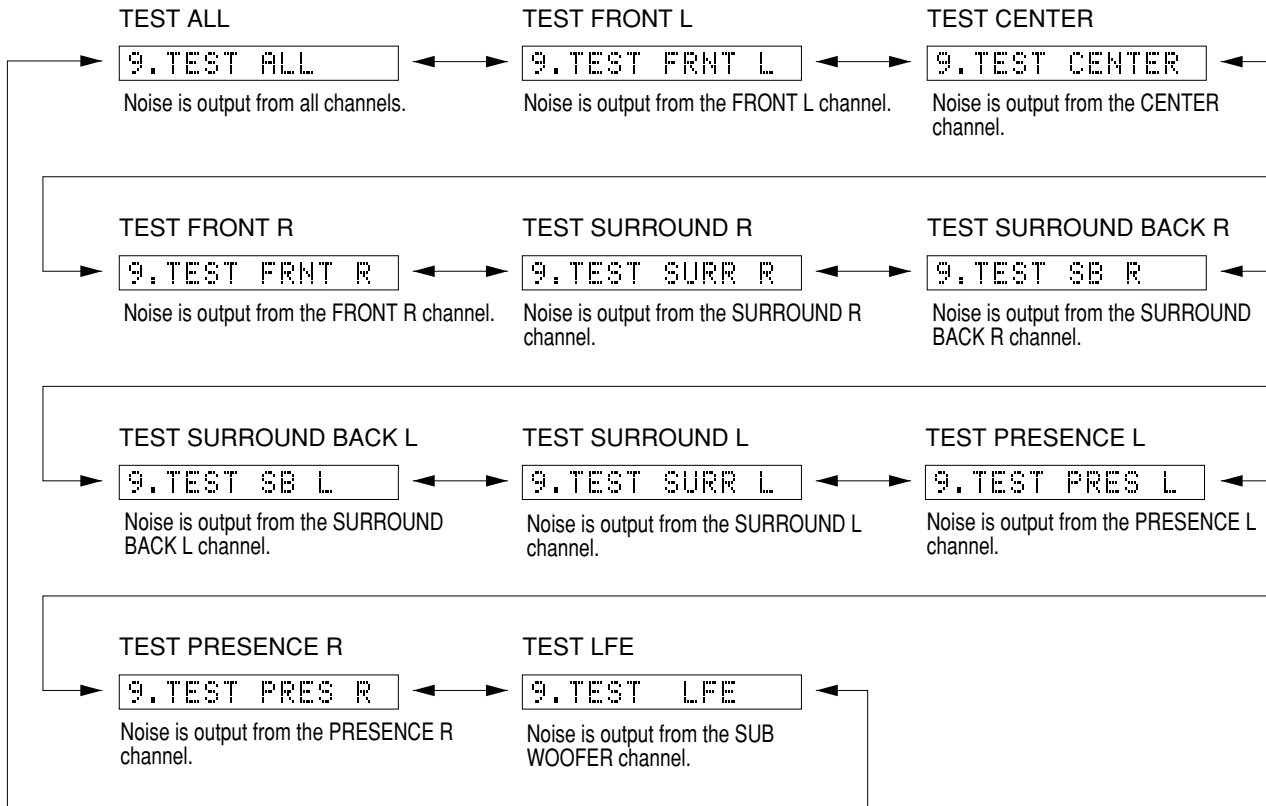


Segment conditions of the FL driver and the FL tube are checked by turning ON and OFF all segments. Next, the operation of the FL driver is checked by using the dimmer control. Then a short between segments next to each other is checked by turning ON and OFF all segments alternately (in lattice). (In the above example, the segments in the second row from the top are shorted.)



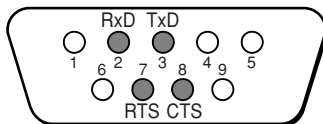
### 9. MANUAL TEST

The noise generator with a built-in DSP outputs the test noise through the channels specified by the sub-menu. The noise frequency for LFE is 35 to 250 Hz. Other than that, the center frequency is 800Hz.



### 10. RS-232C

This menu is used to check transmission of the data and the flow port of the hardware. With the power turned off, short between pins No.2 (RxD) and No.3 (TxD), and between pins No.7 (RTS) and No.8 (CTS) of the RS-232C terminal. (Be sure to turn off the power when shorting the pins.) Start DIAG and select the menu. There are two sub-menu items.



#### TxD/RxD DATA

The sub-menu is used to check transmission of the test data. "OK" appears when the data is transmitted properly and "NG" when it is not. In this mode, NULL command transmission is continued after the test command is transmitted.

```
10.TxRxData:XX
```

#### HARD FLOW

This sub-menu is used to check operation of the flow port of the hardware. "OK" appears when the check result is satisfactory and "NG" when it is not.

```
10.HardFlow:XX
```

### 11. FACTORY PRESET

This menu is used to reserve and inhibit initialization of the back-up RAM. The signals are processed using EFFECT OFF. (The L/R signal is output using ANALOG MAIN BYPASS.)

11.PRESET INHI

**PRESET INHIBIT** (Initialization inhibited)

RAM initialization is not executed. Select this sub-menu to protect the values set by the user.



11.PRESET RSRV

**PRESET RESERVED** (Initialization reserved)

Initialization of the back-up RAM is reserved. (Actually, initialization is executed the next time that the power is turned on.) Select this sub-menu to reset to the original factory settings or to reset the RAM. Any protection history will be cleared.

**CAUTION:** Before setting to the PRESET RESERVED, write down the existing preset memory content of the Tuner in a table as shown next page. (This is because setting to the PRESET RESERVED will cause the user memory content to be erased.)

Preset group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

#### • PRESET STATIONS

STATION		FM FACTORY PRESET DATA (MHz)	
PAGE	NO.	U, C	A
A/C/E	1	87.5	87.50
	2	90.1	90.10
	3	95.1	95.10
	4	98.1	98.10
	5	107.9	108.00
	6	88.1	88.10
	7	106.1	106.10
	8	107.9	108.00

STATION		AM FACTORY PRESET DATA (kHz)	
PAGE	NO.	U, C	A
B/D	1	630	630
	2	1080	1080
	3	1440	1440
	4	530	531
	5	1710	1611
	6	900	900
	7	1350	1350
	8	1400	1404

### 12. AD DATA CHECK / FAN TEST

This menu is used to display the A/D conversion value of the main CPU which detects panel keys of the main unit and protection functions in % using the sub-menu. During signal processing, the condition before execution is maintained.

When K0/K1 menu is selected, keys become non-operable due to detection of the values of all keys. However, it is possible to advance to the next sub-menu by turning the VOLUME of the main unit. When using this function, note that turning the VOLUME more than 1 click would cause the volume value to change.

**DC/PS** (protection detection)

DC: DC detect protection value

Normal value: 1 to 13 (Reference voltage: 5V=100% )

PS: Power supply voltage protection value

Normal value: 19 to 29 (Reference voltage: 5V=100% )

\* If DC or PS is out of the normal value range, the protection function works to turn off the power.

DC:007 PS:025

\* The figures in the diagram are given as reference only.

**THM/FAN OUT** (temperature detection/fan drive level)

THM: Temperature detected value

Normal value: 10 to 139 (Reference voltage: 5V=500% )

Fan: Current fan drive level on the left and the past fan drive history on the right.

THM:101 Fan\_/\_

Display	H	M	L
fan drive level	HIGH	MID	LOW

**REC-OUT** (Select position)

Not applied to this model.

REC-OUT:186

**IMP SW/POWER LIMIT** (Impedance/power limiter detection)

IMP: (Not applied to this model)

PL: Power limiter detection value

The voltage value of pin No. 135 of IC520 is displayed, using 5V/256 as standard.

Based on the input voltage value of pin No.135 of IC520, the output of pins No.6 (LC1) and No.7 (LC2) of IC505 is controlled.

IMP:0 PL:029

(Not applied to this model)

Speaker impedance setting		During normal operation	When limiter is operating	Value for starting limiter operation	Value for canceling limiter operation
6 ohms	7CH STEREO or EXT8CH_INPUT	LC1=L LC2=H	LC1=H LC2=H	184	157
	Other than those on the above	LC1=L LC2=H	LC1=H LC2=L	184	157
8 ohms	7CH STEREO or EXT8CH_INPUT	LC1=L LC2=L	LC1=H LC2=L	163	157
	Other than those on the above	LC1=L LC2=L	LC1=L LC2=H	163	157

**K0/K1** (Panel key of main unit)

A/D of the key fails to function properly when the standard value is deviated by  $\pm 4\%$ . In this case, check the constant of partial pressure resistor, solder condition, etc. Refer to table below.

(Reference voltage: 5V=100%)

K0:100 K1:100

Display	K0	K1
00±2	◀ PRESET/TUNING	-
10±2	PRESET/TUNING ▶	SPEAKERS A
20±2	PRESET/TUNING	SPEAKERS B
30±2	FM/AM	INPUT MODE
40±2	MEMORY	A/B/C/D/E
50±2	TUNING MODE	PURE DIRECT
60±2	-	TONE CONTROL
70±2	-	STRAIGHT/EFFECT
100	KEY OFF	KEY OFF

**FAN DRIVE TEST**

HIGH

FAN TEST.HIGH

**FAN DRIVE TEST**

MID

FAN TEST.MID

**FAN DRIVE TEST**

LOW

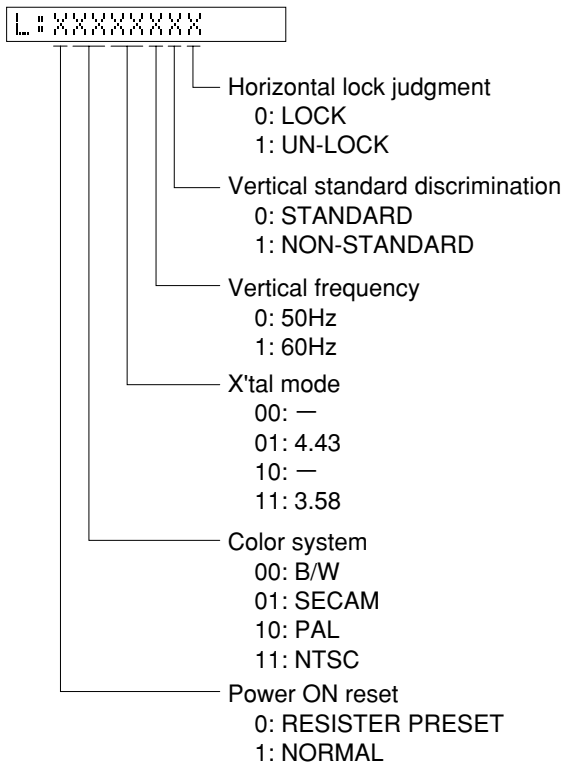
FAN TEST.LOW

**13. V CONV STATUS**

The data received from the video conversion IC (TA1270) is displayed.

**LOW BYTE DATA**

The status information of TA1270 is displayed in the binary notation.



**HIGH BYTE DATA**

Not applied to this model.

H:XXXXXXXX

**14. IF STATUS (Input function status)**

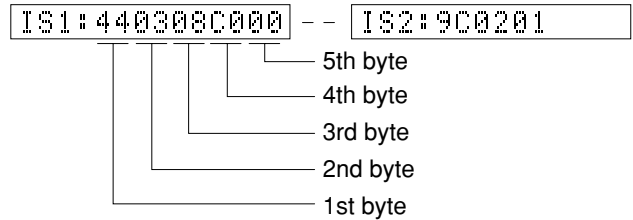
Using the sub-menu, the status data is displayed one after another in the hexadecimal notation.

During signal processing, the status before execution of this menu is maintained.

\* Numeric values in the figure example are for reference.

**IS1-2 (Internal status):**

Indicates the status information of the microprocessor.



<1st byte> Digital input/output setting value  
Upper 4 bits: REC OUT selected /  
lower 4 bits: INPUT selected

Value	Choice	Preset name
0	NONE	
1	OPT A	V-AUX
2	OPT B	CD
3	OPT C	DVD
4	OPT D	D-TV
6	OPT F	CBL/SAT
8	COAX A	CD
9	COAX B	DVD
A	COAX C	DVR/VCR2

<2nd byte> Fs information of reproduction signal

Display	00	01	02	03	04	05	06	0A	0B	0C	0D
Fs (kHz)	Analog	32	44.1	48	64	88.2	96	Unknown NRM	Unknown DBL	Unknown QUAD	Not defined

<3rd byte> Audio code mode information of reproduction signal

Display	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D
Audio Code	MULTI MONO	1+1	1/0	2/0	3/0	2/1	3/1	2/2	3/2	2/3	3/3	OVER 6.1	MULTI PCE	Unknown

<4th byte> Format information of reproduction signal

\*1: Analog processing used for digital reproduction is not possible because of a commercial bit or 4-ch audio reason.

Display	Signal format
00	Analog (Unlock)
01	Incorrect digital (*1)
10	PCM Audio
20	Digital Data
21	IEC1937 Data
22	None PCM
23	Unknown
50	dts
51	Red dts
54	dts-ES MATRIX
58	dts-ES DISCRETE
5C	dts-ES (Both flag)
60	AAC
C0	Dolby Digital
C1	D.D. Karaoke
C4	D.D.6.1 (D.D.EX)

<5th byte> Signal processing status information

\*2: With digital signals other than 32kHz, 44.1kHz and 48kHz, through processing method is used for reproducible signals.

bit7	MUTE request	bit3	-
bit6	Red dts flashing	bit2	Through & bypass (*2)
bit5	6.1/EX processing	bit1	-
bit4	FULL MUTE (ON: 1)	bit0	dts analog mute

MTT: Mute Trigger

MTT:0020000007

Byte No.	Function
1	Mute condition
2	Factor of the last mute
3	Error count of YSS930-FSCNT
4	Mute count by YSS930-FSCNT
5	Error factor of down load of CS49329

**CS1-5:** Indicates channel status information of the input signal (IEC60958).

CS1:0299000200 -- CS5:00000000

**BS1-7:** Indicates information of the bit stream included in the dts signal.

BS1:000070FFFF -- BS7:0000

**TI1-2:**

TI1:FFFFFFFFFF -- TI2:FF

## 15. DSP RAM CHECK

This menu is used to self-diagnose whether or not the bus connection for the YSS930 and the external RAM is made properly.

During signal processing, the status before execution of this menu is maintained.

The address bus and the data bus are checked and the connection condition is displayed.

When no error is detected, "NoEr" appears on display.

### YSS930 Bus Check

YSS BUS:NoEr

Display	Description
WAIT	Bus is being checked.
NoEr	No error detected.
DATA	Data bus shorted or open.
RSCS	/RAS or /CAS shorted, or open.
ADDR	Address bus shorted or open.

### SECOND DECODER (DA601) BUS CHECK

SD BUS:NoEr

Display	Description
Boot	Booting of DA601 being executed (When booting is continued, possibility is that there is a defective part or poor connection of the microprocessor DA601 SDRAM.)
NoEr	Booting of DA601 has been completed properly.

## 16. PROTECTION SET

Not applied to this model.

## 17. SOFT SW

This menu is used to switch the function settings on P.C.B. through the software so as to activate the product.

The operation mode can be changed by selecting the sub-menu and then using the STRAIGHT key. With SOFT selected for the SW mode, the settings become effective.

The protection function follows the P.C.B. settings. When connected to AC, the unit is initialized to the P.C.B. setting. Display of each function after initialization varies depending on settings on P.C.B.

### SW MODE

PCB or SOFT can be selected.

17.SW :PCB

### MODEL SETTING

V1500 (HTR-5890) model only.

17.MODEL:V1500

### TUNER DESTINATION

J, UC, AG or RL can be selected.

17.DEST :UC

### TUNER EXIST

NOT or EXIST can be selected.

17.TUNER:EXIST

### RDS EXIST

NOT or EXIST can be selected.

17.RDS :NOT

### ZONE 2 EXIST

NOT or EXIST can be selected.

17.ZONE2:EXIST

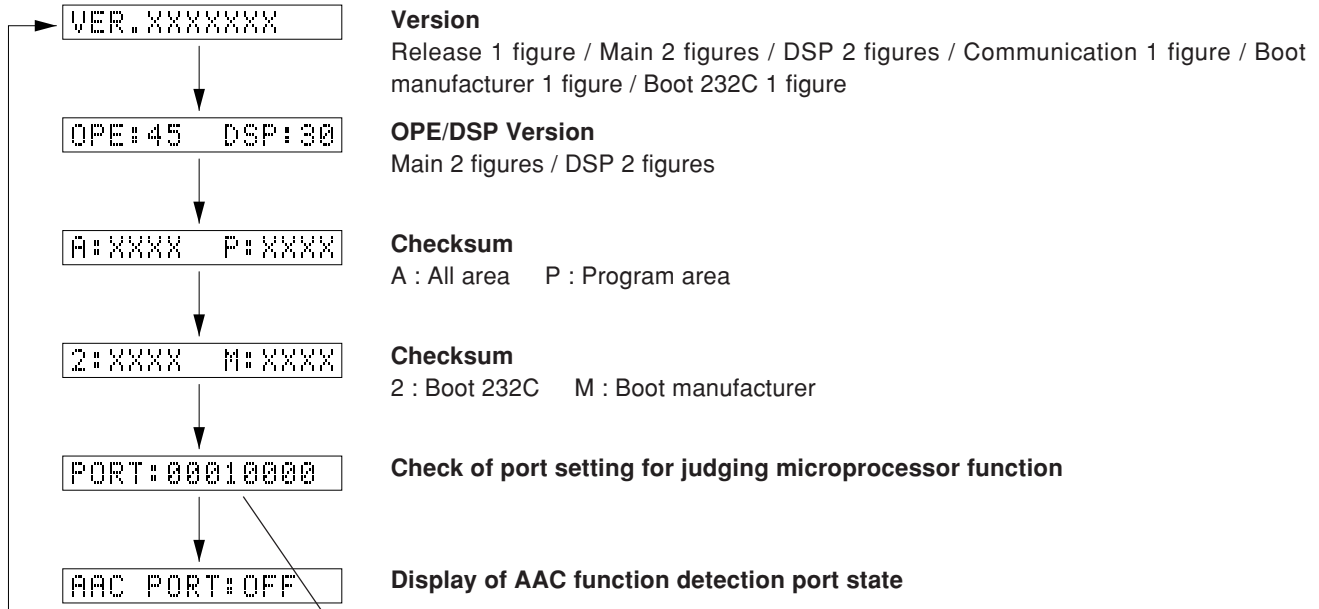
### VIDEO FORMAT

NTSC or PAL can be selected.

17.VIDEO:NTSC

### 18. MICROPROCESSOR INFORMATION

The version, checksum and the port specified by the microprocessor are displayed. The signal is processed using EFFECT OFF. The checksum is obtained by adding the data at every 16 bits for each program area and expressing the result as a 4-figure hexadecimal data.



“PORT:0 0 0 0 0 0 0”  
bit 7 6 5 4 3 2 1 0

- Model type 0 (\*1)
- Model type 1 (\*1)
- Tuner mode 0 (\*2)
- Tuner mode 1 (\*2)
- Tuner with (1) / without (0)
- RDS with (1) / without (0)
- ZONE2 with (1) / without (0)
- VIDEO format: PAL (1) / NTSC (0)

\*1 (Model type)

Type 0	Type 1	Model type
0	0	HTR-5890 (V1500)

\*2 (Tuner mode)

Tuner mode 0	Tuner mode 1	Tuner frequency
0	0	AM: 531-1611kHz/9kHz FM: 76.0-90.0MHz/100kHz
0	1	AM: 531-1611kHz/9kHz FM: 87.5-108.0MHz/50kHz
1	0	AM: 530-1710kHz/10kHz FM: 87.5-107.9MHz/200kHz
1	1	R destination, Port6: LOW AM: 530-1710kHz/10kHz FM: 87.5-108.0MHz/100kHz HIGH AM: 531-1611kHz/9kHz FM: 87.5-108.0MHz/50kHz



## ■ AMP ADJUSTMENT

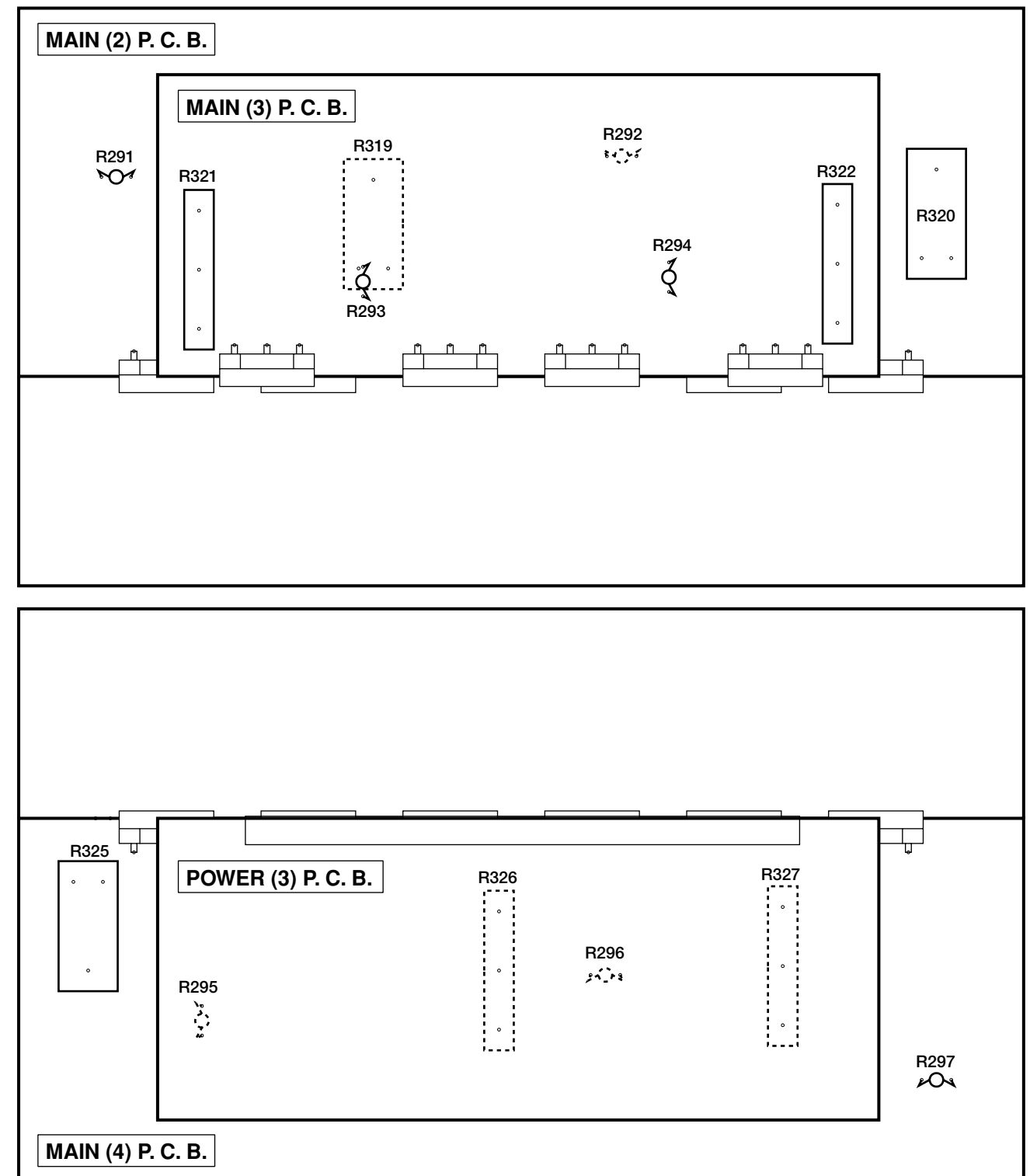
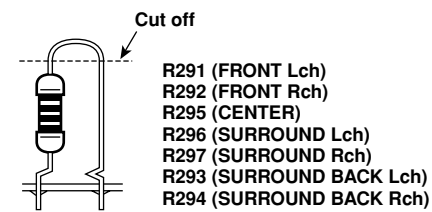
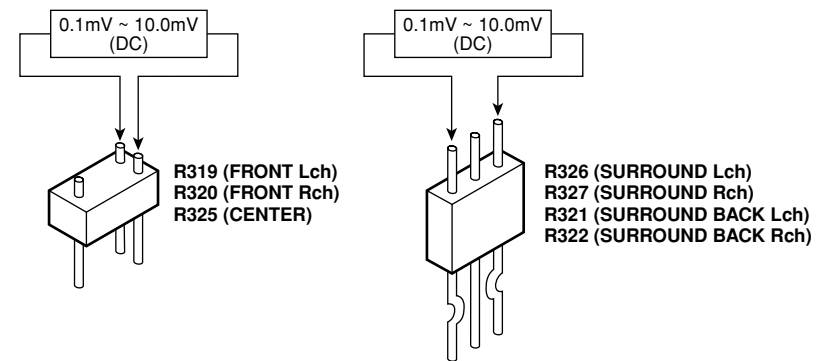
### Confirmation of Idling Current of Amp Unit

- Right after power is turned on, confirm that the voltage across the terminals of R319 (FRONT Lch), R320 (FRONT Rch), R325 (CENTER), R326 (SURROUND Lch), R327 (SURROUND Rch), R321 (SURROUND BACK Lch), R322 (SURROUND BACK Rch) are between 0.1mV and 10.0mV.
- If it exceeds 10.0mV, open (cutoff) R291 (FRONT Lch), R292 (FRONT Rch), R295 (CENTER), R296 (SURROUND Lch), R297 (SURROUND Rch), R293 (SURROUND BACK Lch), R294 (SURROUND BACK Rch) and reconfirm the voltage.

### Attention

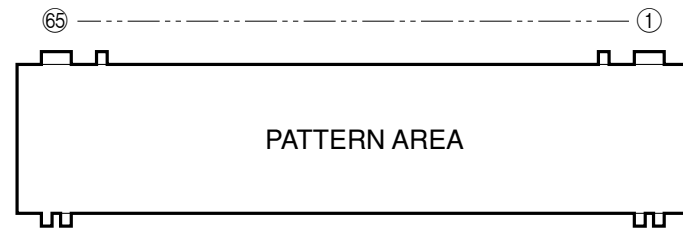
If the idle current exceeds 10.0mV after an amplifier repair, first check for a defective component before cutting the bias resistor.

- Confirm that the voltage is 0.2 mV ~ 15.0 mV after 60 minutes.



## ■ DISPLAY DATA

### ● V851 : 17-BT-23GNK (WD507500)

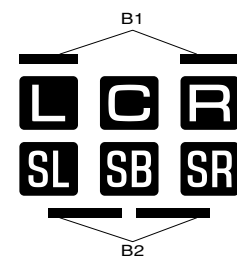
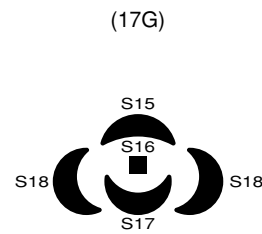
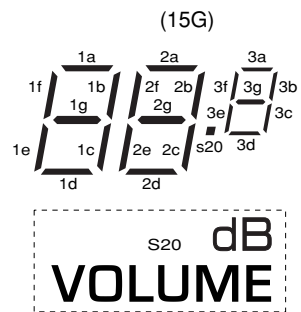
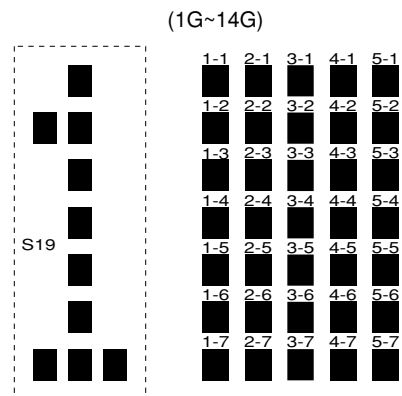
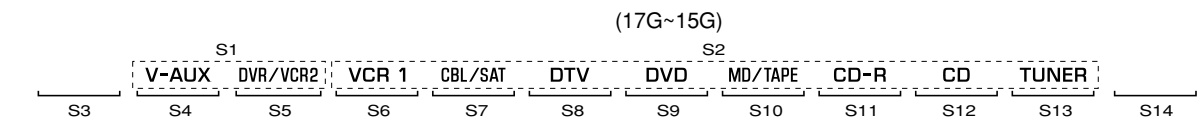
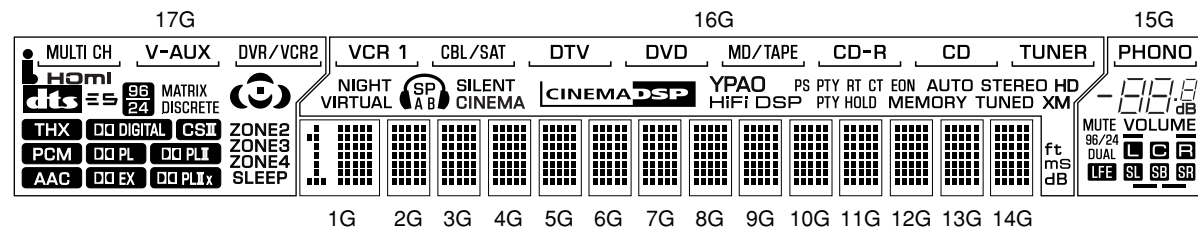


### ● PIN CONNECTION

Pin No.	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	
Connection	F2	NX	NP	NP	P37	P36	P35	P34	P33	P32	P31	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	
Pin No.	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	P9	P8	P7	P6	P5	P4	P3	P2	P1	NC	NC	NC	17G	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

Note : 1) F1, F2 ..... Filament 2) NP ..... No pin 3) NC ..... No connection 4) NX ..... No extended Pin 5) 1G ~ 17G ..... Grid

### ● GRID ASSIGNMENT

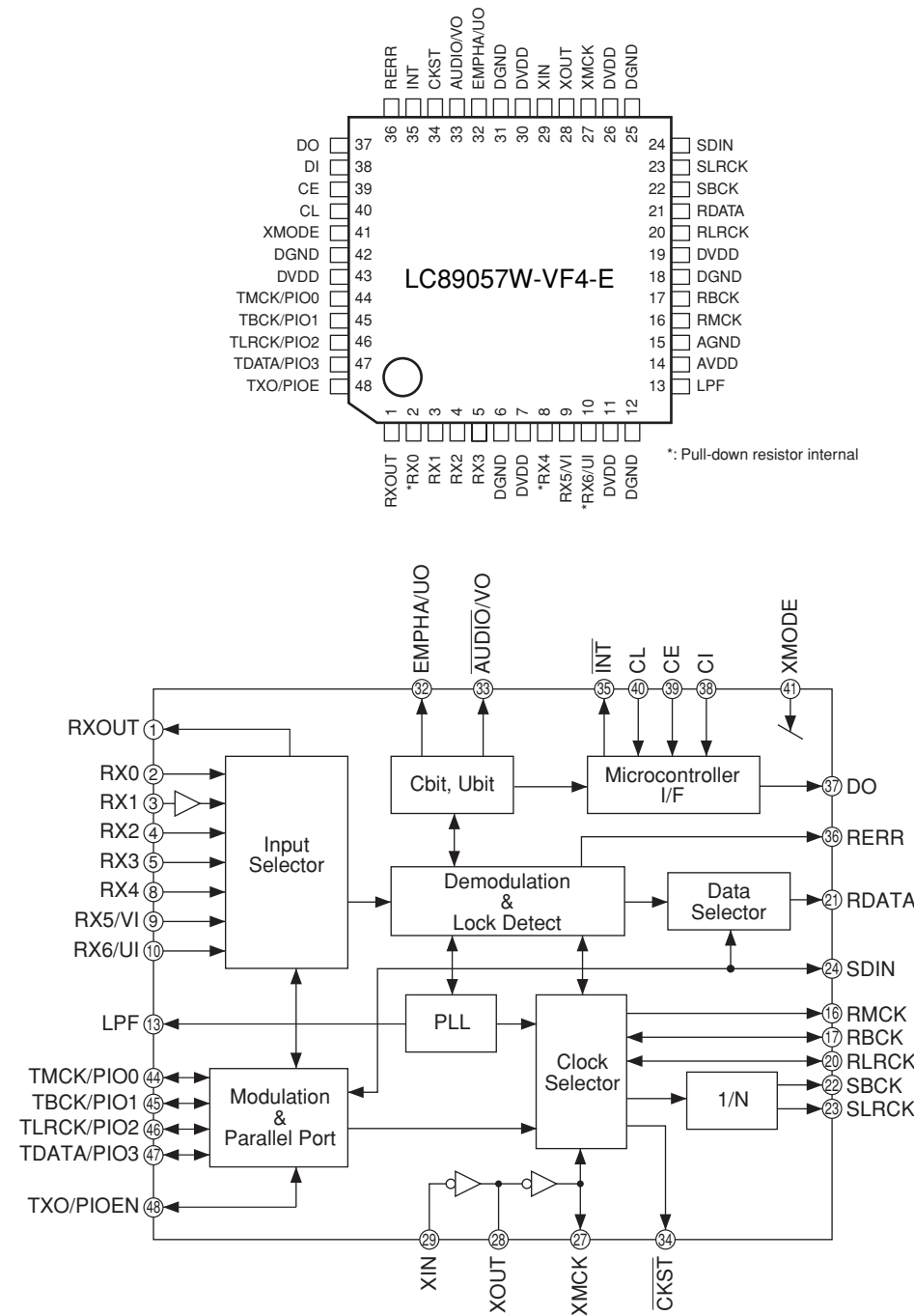


### ● ANODE CONNECTION

	17G	16G	15G	14G~2G	1G
P1		S2	PHONO	1-1	1-1
P2	HOMI	S6	S14	2-1	2-1
P3	MULTI CH	S7	—	3-1	3-1
P4	S3	S8	1a	4-1	4-1
P5	S1	S9	1b	5-1	5-1
P6	S4	S10	1c	1-2	1-2
P7	S5	S11	1d	2-2	2-2
P8		S12	1e	3-2	3-2
P9		S13	1f	4-2	4-2
P10		NIGHT	1g	5-2	5-2
P11	MATRIX	VIRTUAL	2a	1-3	1-3
P12	DISCRETE		2b	2-3	2-3
P13		SP	2c	3-3	3-3
P14		A	2d	4-3	4-3
P15		B	2e	5-3	5-3
P16		SILENT CINEMA	2f	1-4	1-4
P17			2g	2-4	2-4
P18		YPAO	3a	3-4	3-4
P19		HiFi DSP	3b	4-4	4-4
P20		PS	3c	5-4	5-4
P21		PTY	3d	1-5	1-5
P22	S15	RT	3e	2-5	2-5
P23	S16	CT	3f	3-5	3-5
P24	S17	EON	3g	4-5	4-5
P25	S18	PTY HOLD	S20	5-5	5-5
P26	ZONE2	AUTO	MUTE	1-6	1-6
P27	ZONE3	STEREO	96/24	2-6	2-6
P28	ZONE4	HD	DUAL	3-6	3-6
P29	SLEEP	XM		4-6	4-6
P30	—	MEMORY		5-6	5-6
P31	—	TUNED		1-7	1-7
P32	—	ft		2-7	2-7
P33	—	mS		3-7	3-7
P34	—	dB		4-7	4-7
P35	—	—		5-7	5-7
P36	—	—	B1	—	S19
P37	—	—	B2	—	—

■ IC DATA

IC509: LC89057W-VF4-E (DSP P.C.B)  
Digital Audio Interface Transceiver



IC509: LC89057W-VF4-E (DSP P.C.B)  
Digital Audio Interface Transceiver

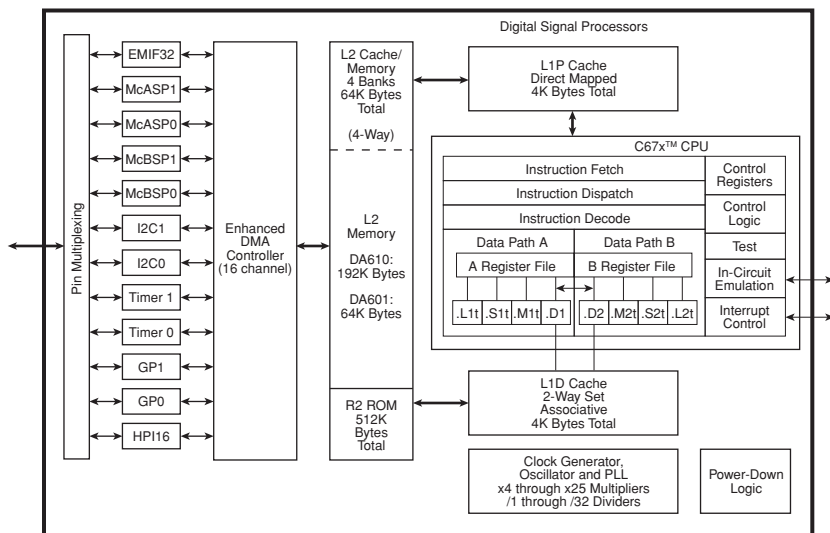
No.	Name	I/O	Function
1	RXOUT	O	Input bi-phase selection data output pin
2	RX0	Is	TTL-compatible digital data input pin
3	RX1	I	Coaxial-compatible digital data input pin with built-in amplifier
4	RX2	Is	TTL-compatible digital data input pin
5	RX3	Is	TTL-compatible digital data input pin
6	DGND		Digital GND
7	DVDD		Digital power supply
8	RX4	Is	TTL-compatible digital data input pin
9	RX5/VI	Is	TTL-compatible digital data / Validity flag input pin for modulation
10	RX6/UI	Is	TTL-compatible digital data / User data input pin for modulation
11	DVDD		PLL digital power supply
12	DGND		PLL digital GND
13	LPF	O	PLL loop filter connection pin
14	ACDD		PLL analog power supply
15	AGND		PLL analog GND
16	RMCK	O	R system clock output pin (256fs, 512fs, XIN, VCO)
17	RBCK	O/I	R bit clock input/output pin
18	DGND		Digital GND
19	DVDD		Digital power supply
20	RLRCK	O/I	R LR clock input/output pin (fs)
21	RDATA	O	Serial audio data input pin
22	SBCK	O	S bit clock output pin (32fs, 64fs, 128fs)
23	SLRCK	O	S LR clock output pin (fs/s, fs, 2fs)
24	SDIN	Is	Serial audio data input pin
25	DGND		Digital GND
26	DVDD		Digital power supply
27	XMCK	O	Oscillation amplifier output pin
28	XOUT	O	Crystal resonator connection output pin
29	XIN	I	Crystal resonator connection, external supply clock input pin (24.576 MHz or 12.288 MHz)
30	DVDD		Digital power supply
31	DGND		Digital GND
32	EMPHA/UO	I/O	Emphasis information / U data output / Chip address setting pin
33	AUDIO/VO	I/O	Non-PCM output / V flag output / Chip address setting pin
34	CKST	I/O	Clock switch transition period signal / Demodulation master or slave function switch pin
35	INT	I/O	Microcontroller interrupt output / Modulation or general-purpose I/O switch pin
36	RERR	O	PLL clock error, data error flag output
37	DO	O	Microcontroller I/F read data output pin (3-state)
38	DI	Is	Microcontroller I/F write data input pin
39	CE	Is	Microcontroller I/F chip enable input pin
40	CL	Is	Microcontroller I/F clock input pin
41	XMODE	Is	System reset input pin
42	DGND		Digital GND
43	DVDD		Digital power supply
44	TMCK/PIO0	I/O	Modulation 256fs system clock input / General-purpose I/O input/output pin
45	TBCK/PIO1	I/O	Modulation 64fs bit clock input / General-purpose I/O input/output pin
46	TLRCK/PIO2	I/O	Modulation fs clock input / General-purpose I/O input/output pin
47	TLRCK/PIO3	I/O	Modulation serial audio data input / General-purpose I/O input/output pin
48	TXO/PIOEN	O/I	Modulation data output / General-purpose I/O enable input pin

1) Input/output I or O = -0.3 to 3.6V, Is = -0.3 to 5.5V  
 2) Pins 32 and 33 are latch address setting input pins when pin 41 = "L".  
 3) Pin 34 is a demodulation function master or slave setting input pin when pin 41 = "L".  
 4) Pin 35 is a modulation function or general-purpose I/O function switch setting input pin when pin 41 = "L".  
 5) Perform ON/OFF for all power supplies with the same timing as a latch-up countermeasure.

IC512: D601A002PYP180 (DSP P.C.B)

Decoder

\* No service part available.



No.	Name	I/O	Function
1	GP0[4]/(EXT_INT4)	IOZ	General purpose I/O port 4
2	GP0[6]/(EXT_INT6)	IOZ	General purpose I/O port 6
3	CVDD	S	1.2V power supply
4	VSS	GND	Ground
5	DVDD	S	3.3V power supply
6	GP0[5]/(EXT_INT5)	IOZ	General purpose I/O port 5
7	GP0[7]/(EXT_INT7)	IOZ	General purpose I/O port 7
8	CLKS1	I	McBSP1 external clock source
9	DVDD	S	3.3V power supply
10	VSS	GND	Ground
11	CVDD	S	1.2V power supply
12	TINP1/AHCLKX0	I	Timer 1 Input
13	TOUT1/AXRO[4]/AXR1[11]	O	Timer 1 Output
14	CVDD	S	1.2V power supply
15	VSS	GND	Ground
16	CLKX0/ACLKX0	IOZ	McASP0 Transmission BCLK
17	TINP0/AXRO[3]/AXR1[12]	I	Timer 0 Input
18	TOUT0/AXRO[2]/AXR1[13]	O	Timer 0 Output
19	ACLKR0	IOZ	McASP0 Reception BCLK
20	AXRO[1]	IOZ	McASP0 Transmission/reception data 1
21	AFSX0	IOZ	McASP0 Transmission LRCLK
22	CVDD	S	1.2V power supply
23	VSS	GND	Ground
24	AFSR0	IOZ	McASP0 Reception LRCLK
25	DVDD	S	3.3V power supply
26	VSS	GND	Ground
27	AXRO[0]	IOZ	McASP0 Transmission/reception data 0
28	AHCLKR0	I	McASP0 Reception MCLK
29	CVDD	S	1.2V power supply
30	VSS	GND	Ground
31	FSX1	IOZ	McBSP1 Transmission Frame Sync (Input in SPI slave state)
32	DX1	O/Z	McBSP1 Transmission data
33	CLKX1	IOZ	McBSP1 Transmission clock (Input in SPI slave state)
34	VSS	GND	Ground
35	CVDD	S	1.2V power supply
36	CLKR1	IOZ	McBSP1 Reception clock
37	DR1	I	McBSP1 Reception data
38	FSR1	IOZ	McBSP1 Reception Frame Sync
39	VSS	GND	Ground
40	CVDD	S	1.2V power supply

IC512: D601A002PYP180 (DSP P.C.B)

Decoder

No.	Name	I/O	Function
41	SCL0	IOZ	12C0 clock
42	SDA0	IOZ	12C0 data
43	CVDD	S	1.2V power supply
44	DVDD	S	3.3V power supply
45	VSS	GND	Ground
46	CVDD	S	1.2V power supply
47	DVDD	S	3.3V power supply
48	VSS	GND	Ground
49	VSS	GND	Ground
50	CVDD	S	1.2V power supply
51	CVDD	S	1.2V power supply
52	VSS	GND	Ground
53	CVDD	S	1.2V power supply
54	VSS	GND	Ground
55	DVDD	S	3.3V power supply
56	ARDY	I	Asynchronous RAM Ready input
57	/CE3	O/Z	For external memory area, Enable 3
58	DVDD	S	3.3V power supply
59	VSS	GND	Ground
60	CVDD	S	1.2V power supply
61	/CE2	O/Z	For external memory area, Enable 2
62	EA2	O/Z	For external memory, Address 2
63	EA3	O/Z	For external memory, Address 3
64	EA4	O/Z	For external memory, Address 4
65	DVDD	S	3.3V power supply
66	VSS	GND	Ground
67	CVDD	S	1.2V power supply
68	EA5	O/Z	For external memory, Address 5
69	EA6	O/Z	For external memory, Address 6
70	EA7	O/Z	For external memory, Address 7
71	EA8	O/Z	For external memory, Address 8
72	DVDD	S	3.3V power supply
73	VSS	GND	Ground
74	EA9	O/Z	For external memory, Address 9
75	/SDRAS	O/Z	Asynchronous RAM OE / SDRAM RAS / SBS RAM OE
76	EA10	O/Z	For external memory, Address 10
77	ECLKOUT	O/Z	Clock output for EMIF
78	ECLKIN	I	Clock input for EMIF
79	/SDCAS	O/Z	Asynchronous RAM RE / SDRAM CAS / SBSRAM ADS
80	CVDD	S	1.2V power supply
81	VSS	GND	Ground
82	CLKOUT2/GP0[2]	O/Z	Half clock output of device Speed
83	/SDWE	O/Z	Asynchronous RAM WE / SDRAM WE / SBSRAM WE
84	DVDD	S	3.3V power supply
85	VSS	GND	Ground
86	EA11	O/Z	For external memory, Address 11
87	DVDD	S	3.3V power supply
88	VSS	GND	Ground
89	CVDD	S	1.2V power supply
90	EA14	O/Z	For external memory, Address 14
91	EA13	O/Z	For external memory, Address 13
92	EA16	O/Z	For external memory, Address 16
93	EA12	O/Z	For external memory, Address 12
94	EA15	O/Z	For external memory, Address 15
95	EA18	O/Z	For external memory, Address 18
96	CVDD	S	1.2V power supply
97	VSS	GND	Ground
98	DVDD	S	3.3V power supply

## IC512: D601A002PYP180 (DSP P.C.B)

## Decoder

No.	Name	I/O	Function
99	EA17	O/Z	For external memory, Address 17
100	EA19	O/Z	For external memory, Address 19
101	EA20	O/Z	For external memory, Address 20
102	/CE0	O/Z	For external memory area, Enable 0
103	/CE1	O/Z	For external memory area, Enable 1
104	CVDD	S	1.2V power supply
105	CVDD	S	1.2V power supply
106	VSS	GND	Ground
107	DVDD	S	3.3V power supply
108	/BE1	O/Z	For external memory, Byte Enable Control 1
109	EA21	O/Z	For external memory, Address 21
110	/BE0	O/Z	For external memory, Byte Enable Control 0
111	ED13	IOZ	For external memory, Data 13
112	ED15	IOZ	For external memory, Data 15
113	ED14	IOZ	For external memory, Data 14
114	DVDD	S	3.3V power supply
115	VSS	GND	Ground
116	CVDD	S	1.2V power supply
117	ED11	IOZ	For external memory, Data 11
118	ED12	IOZ	For external memory, Data 12
119	ED9	IOZ	For external memory, Data 9
120	ED10	IOZ	For external memory, Data 10
121	ED6	IOZ	For external memory, Data 6
122	ED7	IOZ	For external memory, Data 7
123	ED8	IOZ	For external memory, Data 8
124	CVDD	S	1.2V power supply
125	VSS	GND	Ground
126	DVDD	S	3.3V power supply
127	ED4	IOZ	For external memory, Data 4
128	ED5	IOZ	For external memory, Data 5
129	ED3	IOZ	For external memory, Data 3
130	ED2	IOZ	For external memory, Data 2
131	ED1	IOZ	For external memory, Data 1
132	ED0	IOZ	For external memory, Data 0
133	CVDD	S	1.2V power supply
134	VSS	GND	Ground
135	GP0[1]	IOZ	General purpose I/O0 port 1
136	BUSREQ	O/Z	For external memory, Bus request output
137	/HOLDA	O/Z	For external memory, Hold request approval to host
138	/HOLD	I	For external memory, Hold request from host
139	AFSR1	IOZ	McASP1 reception LRCLK
140	ACLKR1	IOZ	McASP1 reception BCLK
141	DVDD	S	3.3V power supply
142	VSS	GND	Ground
143	AXR1[0]	IOZ	McASP1 transmission/reception data 0
144	AXR1[1]	IOZ	McASP1 transmission/reception data 1
145	AXR1[2]	IOZ	McASP1 transmission/reception data 2
146	AXR18[3]	IOZ	McASP1 transmission/reception data 3
147	AXR1[4]	IOZ	McASP1 transmission/reception data 4
148	VSS	GND	Ground
149	CVDD	S	1.2V power supply
150	AXR1[5]	IOZ	McASP1 transmission/reception data 5
151	AXR1[6]	IOZ	McASP1 transmission/reception data 6
152	AXRO[8]/AXR1[7]	IOZ	McASP1 transmission/reception data 7
153	ACLKX1	IOZ	McASP1 transmission BCLK
154	AMUTE1	OZ	McASP1 MUTE output
155	AFSX1	IOZ	McASP1 transmission LRCLK
156	GP0[0]	IOZ	General purpose I/O0 port 0 (SPI ready signal output Active: H)

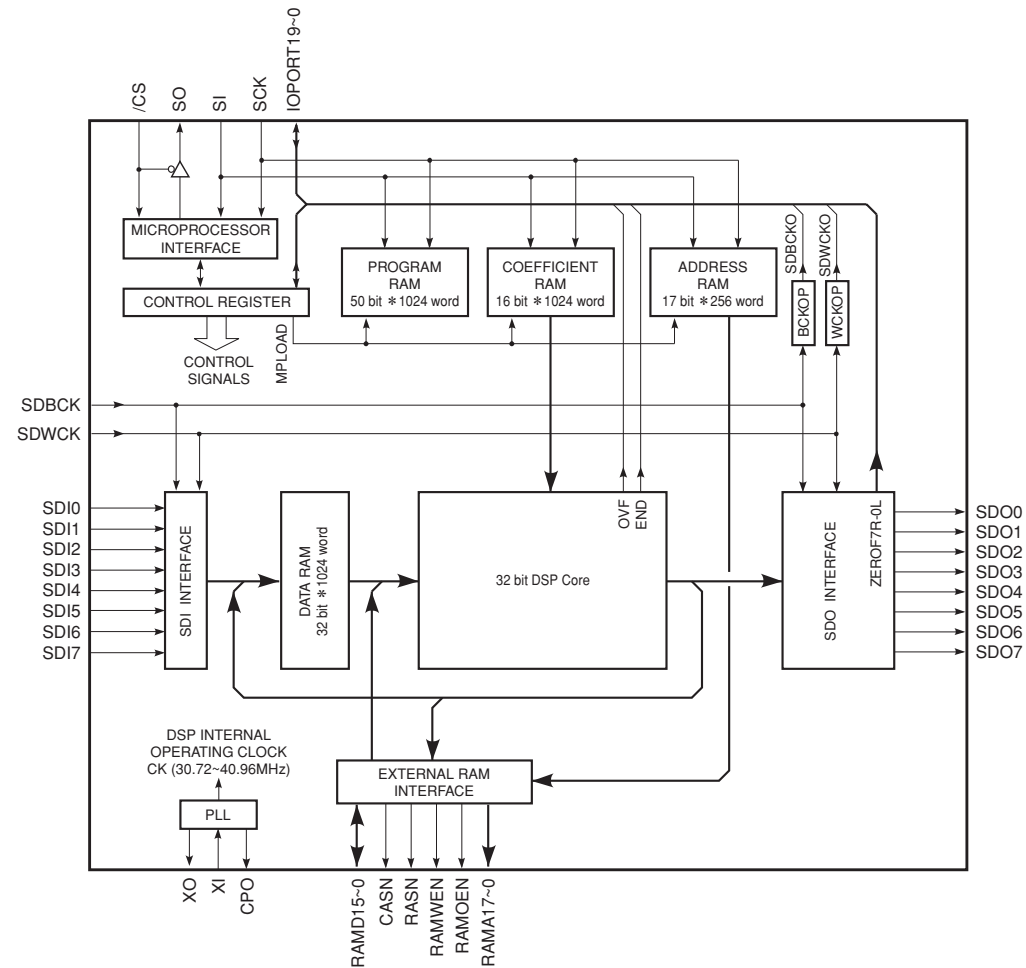
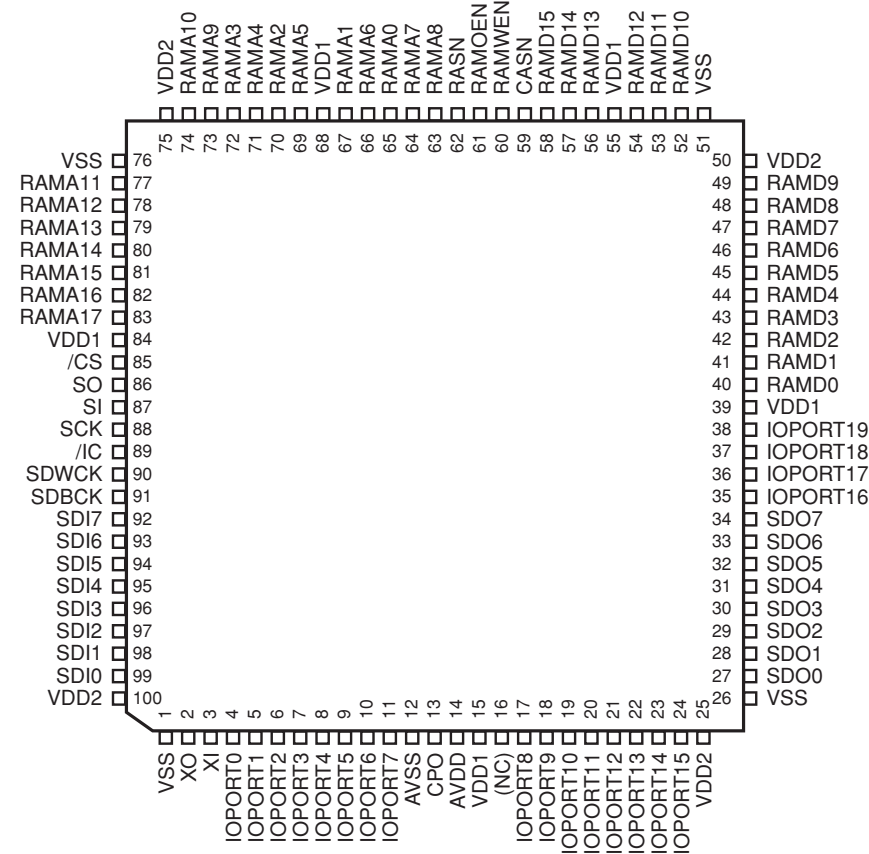
## IC512: D601A002PYP180 (DSP P.C.B)

## Decoder

No.	Name	I/O	Function
157	CVDD	S	1.2V power supply
158	VSS	GND	Ground
159	AHCLKX1	IOZ	General purpose I/O0 port 8
160	GP0[8]	IOZ	HPI data pin 8
161	AHCLKR1	IOZ	McASP1 reception MCLK
162	DVDD	S	3.3V power supply
163	VSS	GND	Ground
164	GP0[3]	IOZ	General purpose I/O0 port 3
165	GP0[9]	IOZ	General purpose I/O0 port 9
166	GP0[10]	IOZ	General purpose I/O0 port 10
167	GP0[11]	IOZ	General purpose I/O0 port 11
168	GP0[12]	IOZ	General purpose I/O0 port 12
169	CVDD	S	1.2V power supply
170	VSS	GND	Ground
171	CVDD	S	1.2V power supply
172	GP0[13]	IOZ	General purpose I/O0 port 13
173	GP0[14]	IOZ	General purpose I/O0 port 14
174	GP0[15]	IOZ	General purpose I/O0 port 15
175	NMI	I	Nonmaskable Interrupt ↑ edge
176	/RESET	I	Device reset
177	CVDD	S	1.2V power supply
178	OSCIN	I	X'tal input, Oscillation: 12 to 25MHz
179	OSCOU	O	X'tal output
180	OSCVSS	GND	X'tal GND internal connection
181	OSCVDD	S	X'tal 1.2V power supply internal connection
182	VSS	GND	Ground
183	DVDD	S	3.3V power supply
184	CLKOUT3	O	Programmable clock output up to 32 division of PLL
185	EMU1	IOZ	JTAG emulation pin 1 (1kΩ PD when boundary scanning)
186	EMU0	IOZ	JTAG emulation pin 0 (1kΩ PD when boundary scanning)
187	TDO	O/Z	JTAG Data Out
188	DVDD	S	3.3V power supply
189	VSS	GND	Ground
190	CVDD	S	1.2V power supply
191	TDI	I	JTAG Data In
192	TMS	I	JTAG Mode Select
193	TCK	I	JTAG Clock
194	VSS	GND	Ground
195	CVDD	S	1.2V power supply
196	CVDD	S	1.2V power supply
197	/TRST	I	JTAG Reset
198	RSV2	O/Z	Reserved (unconnected)
199	PLL	A	Analog GND for PLL
200	RSV0	A	Reserved (unconnected)
201	PLL	A	Analog 1.2V power supply for PLL
202	PLLHV	A	Analog 3.3V power supply for PLL
203	RSV1	I	Reserved (unconnected)
204	CLKIN	I	Clock input
205	CLKMODE0	I	PLL input clock selection: Clkin or X'tal
206	DVDD	S	3.3V power supply
207	VSS	GND	Ground
208	CVDD	S	1.2V power supply



IC516, 518: YSS930-SZ (DSP P.C.B.)  
DSP



IC516, 518: YSS930-SZ (DSP P.C.B.)  
DSP

No.	Name	I/O	Function
1	VSS	-	Digital ground terminal
2	XO	O	Terminal for connecting crystal oscillator
3	XI	I	Terminal for connecting crystal oscillator (12.288 ~ 15.0MHz)
4	IOPORT0	I+/O	General purpose input/output terminal, SDO0 Lch zero-flag output terminal, input/output terminal for branching program conditions
5	IOPORT1	I+/O	General purpose input/output terminal, SDO0 Rch zero-flag output terminal, input/output terminal for branching program conditions
6	IOPORT2	I+/O	General purpose input/output terminal, SDO1 Lch zero-flag output terminal, input/output terminal for branching program conditions
7	IOPORT3	I+/O	General purpose input/output terminal, SDO1 Rch zero-flag output terminal, input/output terminal for branching program conditions
8	IOPORT4	I+/O	General purpose input/output terminal, SDO2 Lch zero-flag output terminal, input/output terminal for branching program conditions
9	IOPORT5	I+/O	General purpose input/output terminal, SDO2 Rch zero-flag output terminal, input/output terminal for branching program conditions
10	IOPORT6	I+/O	General purpose input/output terminal, SDO3 Lch zero-flag output terminal, input/output terminal for branching program conditions
11	IOPORT7	I+/O	General purpose input/output terminal, SDO3 Rch zero-flag output terminal, input/output terminal for branching program conditions
12	AVSS	-	Analog ground terminal (for PLL)
13	CPO	A	Terminal for connecting PLL filter
14	AVDD	-	+2.5V digital power supply (for PLL)
15	VDD1	-	+3.3V digital power supply (for input/output terminal)
16	(NC)	-	(Unconnected)
17	IOPORT8	I+/O	General purpose input/output terminal, SD04 Lch zero-flag output terminal
18	IOPORT9	I+/O	General purpose input/output terminal, SD04 Rch zero-flag output terminal
19	IOPORT10	I+/O	General purpose input/output terminal, SD05 Lch zero-flag output terminal
20	IOPORT11	I+/O	General purpose input/output terminal, SD05 Rch zero-flag output terminal
21	IOPORT12	I+/O	General purpose input/output terminal, SD06 Lch zero-flag output terminal, input terminal 0 for chip address setting
22	IOPORT13	I+/O	General purpose input/output terminal, SD06 Rch zero-flag output terminal, input terminal 1 for chip address setting
23	IOPORT14	I+/O	General purpose input/output terminal, SD07 Lch zero-flag output terminal, input terminal 2 for chip address setting
24	IOPORT15	I+/O	General purpose input/output terminal, SD07 Rch zero-flag output terminal, input terminal 3 for chip address setting
25	VDD2	-	+2.5V digital power supply (for internal circuit)
26	VSS	-	Digital ground terminal
27	SDO0	O	PCM output terminal
28	SDO1	O	PCM output terminal
29	SDO2	O	PCM output terminal
30	SDO3	O	PCM output terminal
31	SDO4	O	PCM output terminal
32	SDO5	O	PCM output terminal
33	SDO6	O	PCM output terminal
34	SDO7	O	PCM output terminal
35	IOPORT16	I+/O	General purpose input/output terminal, overflow detect output terminal
36	IOPORT17	I+/O	General purpose input/output terminal, program end detect output terminal
37	IOPORT18	I+/O	General purpose input/output terminal, 64fs clock output terminal
38	IOPORT19	I+/O	General purpose input/output terminal, fs clock output terminal
39	VDD1	-	+3.3V digital power supply (for input/output terminal)
40	RAMD0	I+/O	Data input/output terminal 0 for external memory
41	RAMD1	I+/O	Data input/output terminal 1 for external memory
42	RAMD2	I+/O	Data input/output terminal 2 for external memory
43	RAMD3	I+/O	Data input/output terminal 3 for external memory
44	RAMD4	I+/O	Data input/output terminal 4 for external memory
45	RAMD5	I+/O	Data input/output terminal 5 for external memory
46	RAMD6	I+/O	Data input/output terminal 6 for external memory
47	RAMD7	I+/O	Data input/output terminal 7 for external memory
48	RAMD8	I+/O	Data input/output terminal 8 for external memory
49	RAMD9	I+/O	Data input/output terminal 9 for external memory
50	VDD2	-	+2.5V digital power supply (for internal circuit)
51	VSS	-	Digital ground terminal
52	RAMD10	I+/O	Data input/output terminal 10 for external memory
53	RAMD11	I+/O	Data input/output terminal 11 for external memory
54	RAMD12	I+/O	Data input/output terminal 12 for external memory
55	VDD1	-	+3.3V digital power supply (for input/output terminal)
56	RAMD13	I+/O	Data input/output terminal 13 for external memory

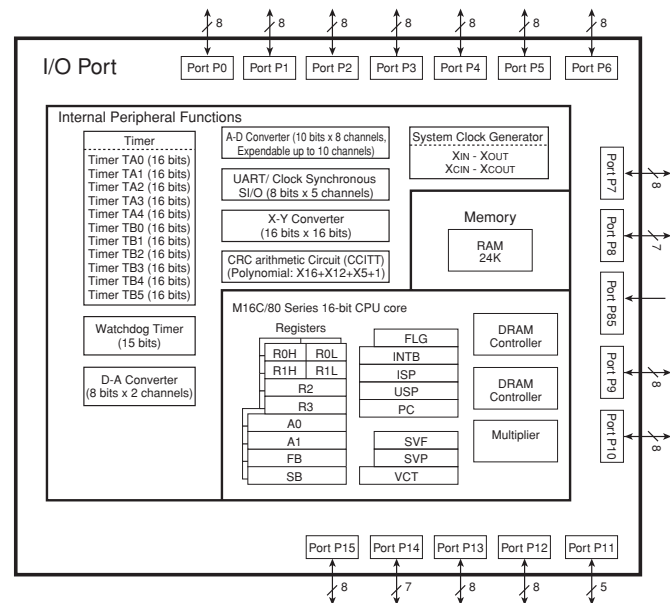
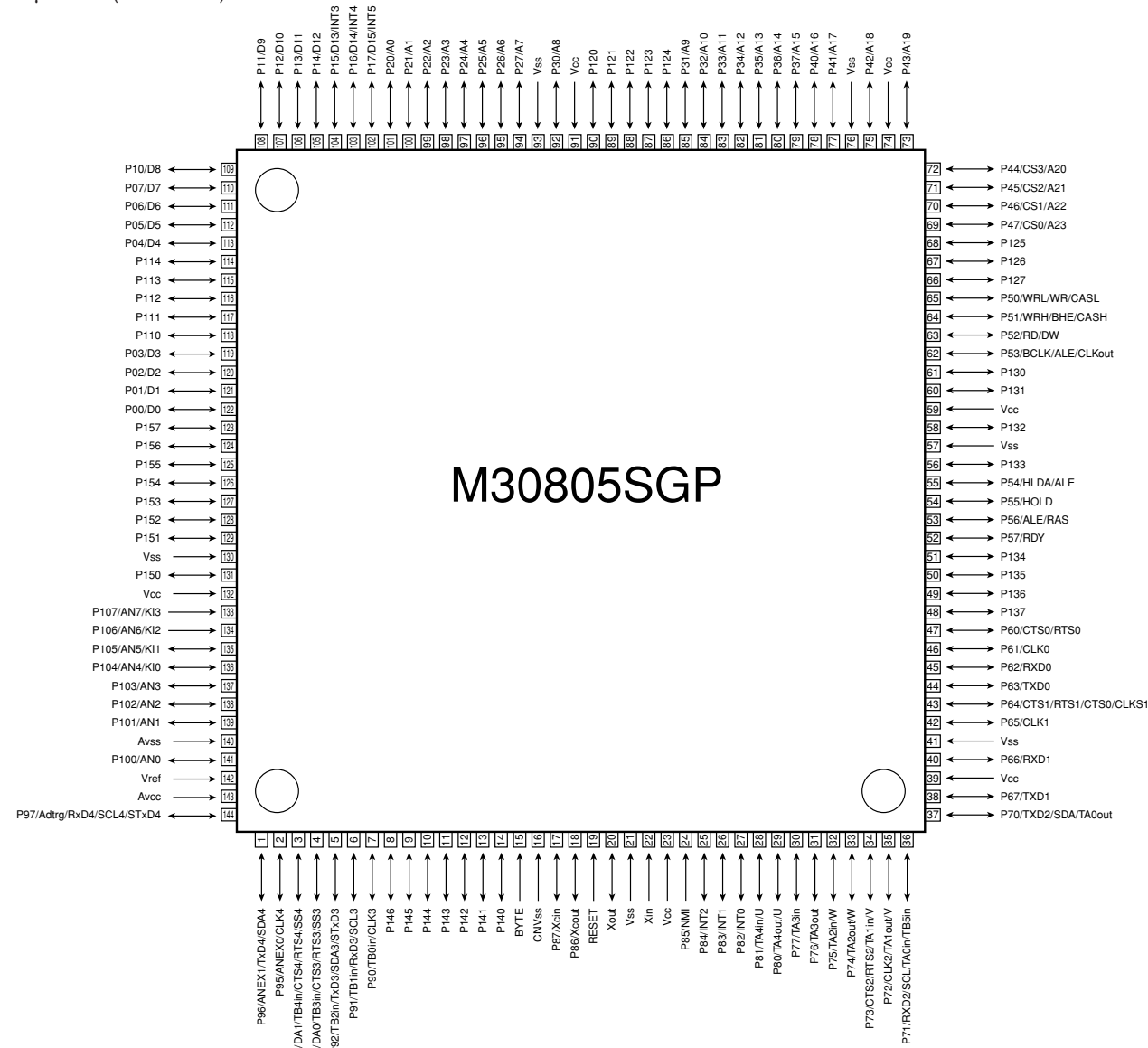
IC516, 518: YSS930-SZ (DSP P.C.B.)

DSP

No.	Name	I/O	Function
57	RAMD14	I+/O	Data input/output terminal 14 for external memory
58	RAMD15	I+/O	Data input/output terminal 15 for external memory
59	CASN	O	Column address strobe output terminal for external DRAM
60	RAMWEN	O	Write enable output terminal for external memory
61	RAMOEN	O	Output enable output terminal for external memory
62	RASN	O	Low address strobe output terminal for external DRAM
63	RAMA8	O	Address output terminal 8 for external memory
64	RAMA7	O	Address output terminal 7 for external memory
65	RAMA0	O	Address output terminal 0 for external memory
66	RAMA6	O	Address output terminal 6 for external memory
67	RAMA1	O	Address output terminal 1 for external memory
68	VDD1	-	+3.3V digital power supply (for input/output terminal)
69	RAMA5	O	Address output terminal 5 for external memory
70	RAMA2	O	Address output terminal 2 for external memory
71	RAMA4	O	Address output terminal 4 for external memory
72	RAMA3	O	Address output terminal 3 for external memory
73	RAMA9	O	Address output terminal 9 for external memory
74	RAMA10	O	Address output terminal 10 for external memory
75	VDD2	-	+2.5V digital power supply (for internal circuit)
76	VSS	-	Digital ground terminal
77	RAMA11	O	Address output terminal 11 for external memory
78	RAMA12	O	Address output terminal 12 for external memory
79	RAMA13	O	Address output terminal 13 for external memory
80	RAMA14	O	Address output terminal 14 for external memory
81	RAMA15	O	Address output terminal 15 for external memory
82	RAMA16	O	Address output terminal 16 for external memory
83	RAMA17	O	Address output terminal 17 for external memory
84	VDD1	-	+3.3V digital power supply (for input/output terminal)
85	/CS	Is	Microprocessor interface chip select input terminal
86	SO	Ot	Microprocessor interface data output terminal
87	SI	Is	Microprocessor interface data input terminal
88	SCK	Is	Microprocessor interface clock input terminal
89	/IC	Is	Initial clear input terminal
90	SDWCK	I	Word clock (fs) input terminal for SDI/SDO interface
91	SDBCK	Is	Bit clock (64fs) input terminal for SDI/SDO interface
92	SDI7	I	PCM input terminal
93	SDI6	I	PCM input terminal
94	SDI5	I	PCM input terminal
95	SDI4	I	PCM input terminal
96	SDI3	I	PCM input terminal
97	SDI2	I	PCM input terminal
98	SDI1	I	PCM input terminal
99	SDI0	I	PCM input terminal
100	VDD2	-	+2.5V digital power supply (for internal circuit)

Is: Schmidt trigger input terminal  
I+: Input terminal with pull-up resistor  
O: Digital output terminal  
Ot: 3-state digital output terminal  
A: Analog terminal

IC520 : M30805SGP (FUNCTION P.C.B)  
16bit μ-COM (Main CPU)



IC520 : M30805SGP (FUNCTION P.C.B)  
16bit μ-COM (Main CPU)

Pin	Pin function	Function	Name	Detail of function	I/O	On	Off	Backup
1	P96/ANEX1/TxD4/SDA4/SRxD4	TxD4	TXDR	232C TX data / YDC TX data	SO	O	OL	OL
2	P95/ANEX0/CLK4	CLK4	RTS	232C RTS / YDC clock	SCK	I/O	OL	OL
3	P94/DA1/TB4in/CTS4/RTS4/SS4	P94	CTS	232C CTS	I	I	I	OL
4	P93/DA0/TB3in/CTS3/RTS3/SS3	DA0	FAN	Fan control	DA-O	I	I	OL
5	P92/TB2in/TxD3/SDA3/SRxD3	TxD3	SDTN	None audio TX data	SO	SO	OL	OL
6	P91/TB1in/RxD3/SCL3/STxD3	RxD3	RXRDS	RDS RX data / Freq data (R ver)	SI	SI	I	OL
7	P90/TB0in/CLK3	CLK3	SCKN	None audio serial clock	SCK	SCK	OL	OL
8	P146	P146	CEB	BU2092 CE / ZONE2 function	O/I	O	OL	OL
9	P145	P145	CES	OSD CE / NTSC ? PAL format	O/I	O	OL	OL
10	P144	P144	RDSE	RDS CE / RDS function	O/I	O	OL	OL
11	P143	P143	CEF	FL CE / Model detect 0	O/I	O	OL	OL
12	P142	P142	/FLR	FL IC reset / Model detect 1	O/I	O	OL	OL
13	P141	P141	RDTP	PLL IC RX data	I	I	I	OL
14	P140	P140	SDTP	PLL IC TX data / Tuner exist	O/I	O	OL	OL
15	BYTE	BYTE	BYTE	16bit data bus: VSS	VSS	VSS	VSS	VSS
16	CNVss	CNVss	CNVss	Processor mode choice	VCC	VCC	VCC	VCC
17	P87/Xcin	P87	BT232C	232C boot signal / 6ch input key	I (PU)	I	I	OL
18	P86/Xcout	P86	BTYDC	YDC boot signal (Flash ROM write)	I	I	I	OL
19	RESET	RESET	/RES	Reset	I	-	-	-
20	Xout	Xout	XOUT	Clock out	OPEN	-	-	-
21	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
22	Xin	Xin	XIN	Clock in	12MHz	-	-	-
23	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
24	P85/NMI	NMI	NMI	Un-use (VCC with R)	VCC	VCC	VCC	VCC
25	P84/INT2	INT2	REM1	Remote controller pulse	INT (LoEdge)	I	I	OL
26	P83/INT1	INT1	PSW	Power SW	INT (HiEdge)	I	I	OL
27	P82/INT0	INT0	PDET	Power detect	INT (LoEdge)	I	I	I
28	P81/TA4in/U	TA4in	VSY	Vertical sync pulse	Lo Edge	I	I	OL
29	P80/TA4out/U	P80	/ICY	IC YSS IC	O	O	OL	OL
30	P77/TA3in	TA3in	RXRDR	232C RX data	Double Edge	I	I	OL
31	P76/TA3out	P76	DMT	Digital full mute	O	O	OL	OL
32	P75/TA2in/W	TA2in	INTDSP	DIR, TI (DA601) interrupt	INT (LoEdge)	I	I	OL
33	P74/TA2out/W	P74	VBIT	Digital full mute rear L/R	I	I	I	OL
34	P73/CTS2/RTS2/TA1in/V	CTS2	CEP	PLL IC CE / Tuner step 1	I/O	O	OL	OL
35	P72/CLK2/TA1out/V	P72	SCKP	PLL IC clock / Tuner step 0	I/O	O	OL	OL
36	P71/RxD2/SCL2/TA0in/TB5in	SCL2	SCL	IIC bus clock	I/O	I/O	OL	OL
37	P70/TxD2/SDA2/TA0out	SDA	SDA	IIC bus data	I/O	I/O	OL	OL
38	P67/TxD1	TxD1	SDM	DIR, TI (DA601), YSS930, DAC TX	SO	SO	OL	OL
39	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
40	P66/RxD1	RxD1	SDD	DIR, TI (DA601), YSS930, DAC RX	SI	SI	I	OL
41	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
42	P65/CLK1	CLK1	SCK	DIR, TI (DA601), YSS930, DAC clock	SCK	SCK	OL	OL
43	P64/CTS1/RTS1/CTS0/CLKS1	P64	/CSY	YSS930 CE	O	O	OL	OL
44	P63/TxD0	TxD0	DTEV	E-Volume TX data	SO	SO	OL	OL
45	P62/RxD0	P62	CEEV	E-Volume CE	O	O	OL	OL
46	P61/CLK0	CLK0	CKEV	E-Volume clock	SCK	SCK	OL	OL
47	P60/CTS0/RTS0	P60	/CSTI	TI (DA601) CE	O	O	OL	OL
48	P137	P137	/CSDIR	DIR CE	O	O	OL	OL
49	P136	P136	INTFCT	Interrupt factor DIR or TI (DA601)	I	I	I	OL
50	P135	P135	/RCLK	Recout SW control (ROHM) clock	O	O	OL	OL
51	P134	P134	/RTXD	Recout SW control (ROHM) data	O	O	OL	OL
52	P57/RDY	RDY	/RDY	+5V fix	VCC	VCC	VCC	VCC
53	P56/ALE/RAS	ALE	ALE	Open	OPEN	OPEN	OPEN	OPEN
54	P55/HOLD	HOLD	/HOLD	+5V fix	VCC	VCC	VCC	VCC
55	P54/HLDA/ALE	HLDA	HLDA	Open	OPEN	OPEN	OPEN	OPEN
56	P133	P133	/CSDAC	DAC CE	O	O	OL	OL
57	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
58	P132	P132	/MIC	Mic detect	I	I	I	OL
59	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
60	P131	P131	SPIRDY	TI (DA601) Serial Ready	I	I	I	OL
61	P130	P130	/ICD	IC DIR IC	O	O	OL	OL



IC520 : M30805SGP (FUNCTION P.C.B)  
16bit  $\mu$ -COM (Main CPU)

Pin	Pin function	Function	Name	Detail of function	I/O	On	Off	Backup
62	P53/BCLK/ALE/CLKout	BCLK	BCLK	Open	OPEN	OPEN	OPEN	OPEN
63	P52/RD/DW	RD	/RD	Flash ROM OE	O	-	-	-
64	P51/WRH/BHE/CASH	WRH	BHE	Open	OPEN	OPEN	OPEN	OPEN
65	P50/WRL/WR/CASL	WRL	/WR	Flash ROM WE	O	-	-	-
66	P127	P127	CPNTD	Component DVD signal detect	I	I	I	OL
67	P126	P126	SVIDD	S video signal detect	I	I	I	OL
68	P125	P125	/FMTS	Full mute SBL / SBR	O	O	OL	OL
69	P47/CS0/A23	CS0	CS0	Flash ROM CE	O	O	OL	OL
70	P46/CS1/A22	CS1	CS1	Open	OPEN	OPEN	OPEN	OPEN
71	P45/CS2/A21	CS2	CS2	Open	OPEN	OPEN	OPEN	OPEN
72	P44/CS3/A20(MA12)	CS3	CS3	Open	OPEN	OPEN	OPEN	OPEN
73	P43/A19(MA11)	A19	A19	External ROM address	-	-	-	-
74	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
75	P42/A18(MA10)	A18	A18	External ROM address	-	-	-	-
76	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
77	P41/A17(MA9)	A17	A17	External ROM address	-	-	-	-
78	P40/A16(MA8)	A16	A16	External ROM address	-	-	-	-
79	P37/A15(MA7)(D15)	A15	A15	External ROM address	-	-	-	-
80	P36/A14(MA6)(D14)	A14	A14	External ROM address	-	-	-	-
81	P35/A13(MA5)(D13)	A13	A13	External ROM address	-	-	-	-
82	P34/A12(MA4)(D12)	A12	A12	External ROM address	-	-	-	-
83	P33/A11(MA3)(D11)	A11	A11	External ROM address	-	-	-	-
84	P32/A10(MA2)(D10)	A10	A10	External ROM address	-	-	-	-
85	P31/A9(MA1)(D9)	A9	A9	External ROM address	-	-	-	-
86	P124	P124	/Z2MT	Zone2 mute	O	O	OL	OL
87	P123	P123	/HPMT	Headphone mute	O	O	OL	OL
88	P122	P122	/FMTSW	Full mute SW L / SW R / SW MONO	O	O	OL	OL
89	P121	P121	/FMTC	Full mute CENTER	O	O	OL	OL
90	P120	P120	/FMTC	Full mute MAIN L/R / RL / RR	O	O	OL	OL
91	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
92	P30/A8(MA0)(D8)	A8	A8	External ROM address	-	-	-	-
93	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
94	P27/A7(D7)	A7	A7	External ROM address	-	-	-	-
95	P26/A6(D6)	A6	A6	External ROM address	-	-	-	-
96	P25/A5(D5)	A5	A5	External ROM address	-	-	-	-
97	P24/A4(D4)	A4	A4	External ROM address	-	-	-	-
98	P23/A3(D3)	A3	A3	External ROM address	-	-	-	-
99	P22/A2(D2)	A2	A2	External ROM address	-	-	-	-
100	P21/A1(D1)	A1	A1	External ROM address	-	-	-	-
101	P20/A0(D0)	A0	A0	External ROM address	-	-	-	-
102	P17/D15/INT5	D15	D15	External ROM data	-	-	-	-
103	P16/D14/INT4	D14	D14	External ROM data	-	-	-	-
104	P15/D13/INT3	D13	D13	External ROM data	-	-	-	-
105	P14/D12	D12	D12	External ROM data	-	-	-	-
106	P13/D11	D11	D11	External ROM data	-	-	-	-
107	P12/D10	D10	D10	External ROM data	-	-	-	-
108	P11/D9	D9	D9	External ROM data	-	-	-	-
109	P10/D8	D8	D8	External ROM data	-	-	-	-
110	P07/D7	D7	D7	External ROM data	-	-	-	-
111	P06/D6	D6	D6	External ROM data	-	-	-	-
112	P05/D5	D5	D5	External ROM data	-	-	-	-
113	P04/D4	D4	D4	External ROM data	-	-	-	-
114	P114	P114	PRI	I protection detect	I	I	I	OL
115	P113	P113	PRY	Power relay	O	O	OL	OL
116	P112	P112	/Z3MT	Zone3 mute	O	O	OL	OL
117	P111	P111	PGB	Program selector B	I	I	I	OL
118	P110	P110	PGA	Program selector A	I	I	I	OL
119	P03/D3	D3	D3	External ROM data	-	-	-	-
120	P02/D2	D2	D2	External ROM data	-	-	-	-
121	P01/D1	D1	D1	External ROM data	-	-	-	-
122	P00/D0	D0	D0	External ROM data	-	-	-	-

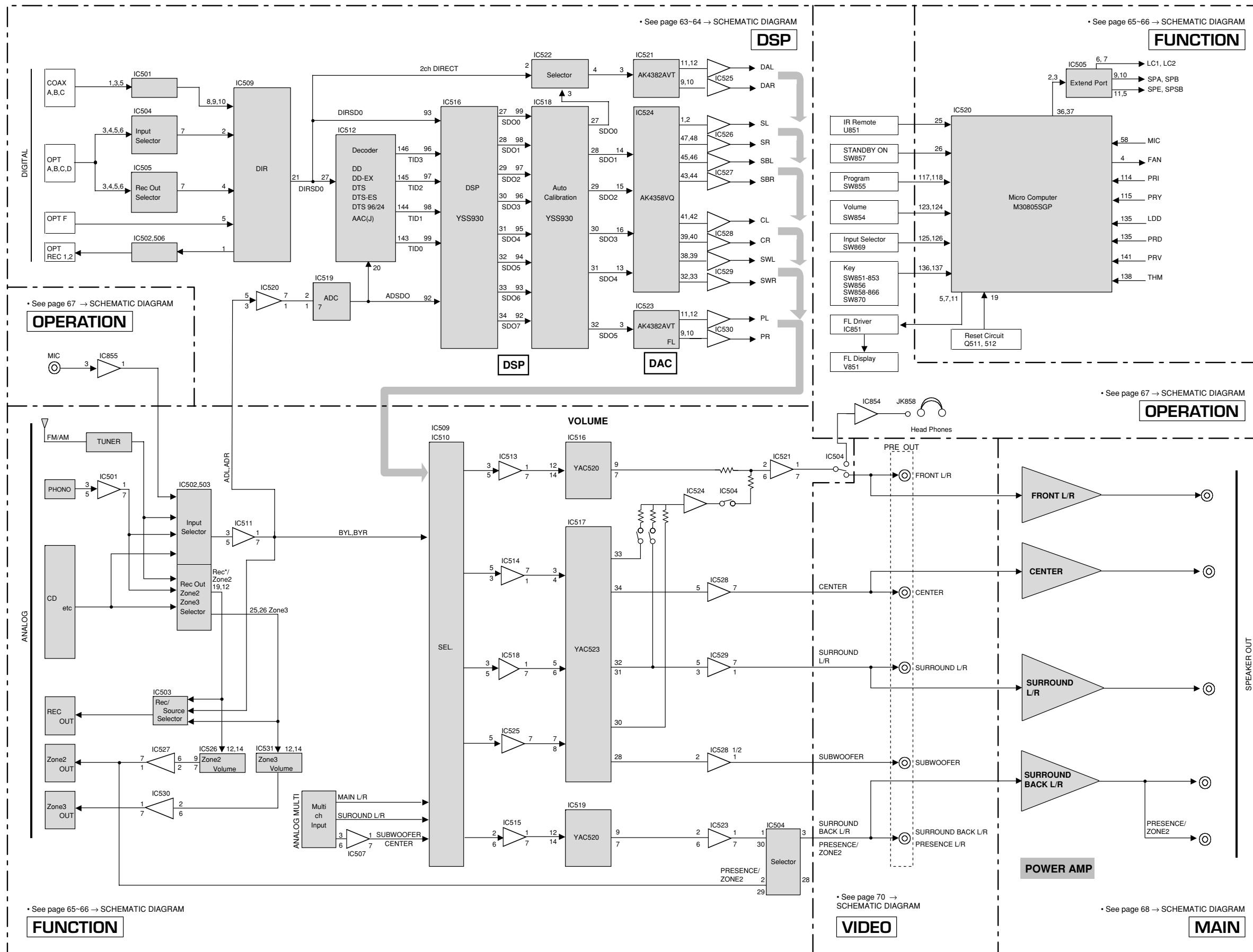
IC520 : M30805SGP (FUNCTION P.C.B)  
16bit  $\mu$ -COM (Main CPU)

Pin	Pin function	Function	Name	Detail of function	I/O	On	Off	Backup
123	P157	P157	VRB	Volume encoder B	I	I	I	OL
124	P156	P156	VRA	Volume encoder A	I	I	I	OL
125	P155	P155	ISB	Input selector B	I	I	I	OL
126	P154	P154	ISA	Input selector A	I	I	I	OL
127	P153	P153	SCKA	Audio IC clock	SCK	SCK	OL	OL
128	P152	P152	SDTA	Audio IC TX data	SO	SO	OL	OL
129	P151	P151	CEL	SANYO IC CE	O	O	OL	OL
130	Vss	Vss	VSS	Ground	VSS	VSS	VSS	VSS
131	P150	P150	/ICTI	IC TI (DA601)	O	O	OL	OL
132	Vcc	Vcc	VCC	+5V	VCC	VCC	VCC	VCC
133	P107/AN7/KI3	P107	/HP	Headphone detect	I	I	I	OL
134	P106/AN6/KI2	AN6	REC	Recout selector	AD	I	I	I
135	P105/AN5/KI1	AN5	PLMT	Power limiter detect	AD	I	I	I
136	P104/AN4/KI0	AN4	KY1	Key SW line 1	AD	I	I	I
137	P103/AN3	AN3	KY0	Key SW line 0	AD	I	I	I
138	P102/AN2	AN2	THM	Temperature detect	AD	I	I	I
139	P101/AN1	AN1	PRD	DC protection	AD	I	I	I
140	AVss	AVss	AVSS	AD ground	AVSS	AVSS	AVSS	AVSS
141	P100/AN0	AN0	PRV	PS protection	AD	I	I	I
142	Vref	Vref	VREF	AD reference	AVCC	AVCC	AVCC	AVCC
143	AVcc	AVcc	AVCC	AD +5V	AVCC	AVCC	AVCC	AVCC
144	P97/Adtrg/RxD4/SCL4/STxD4	RxD4	RXDR	232C / YDC RX data	SI	I	I	OL

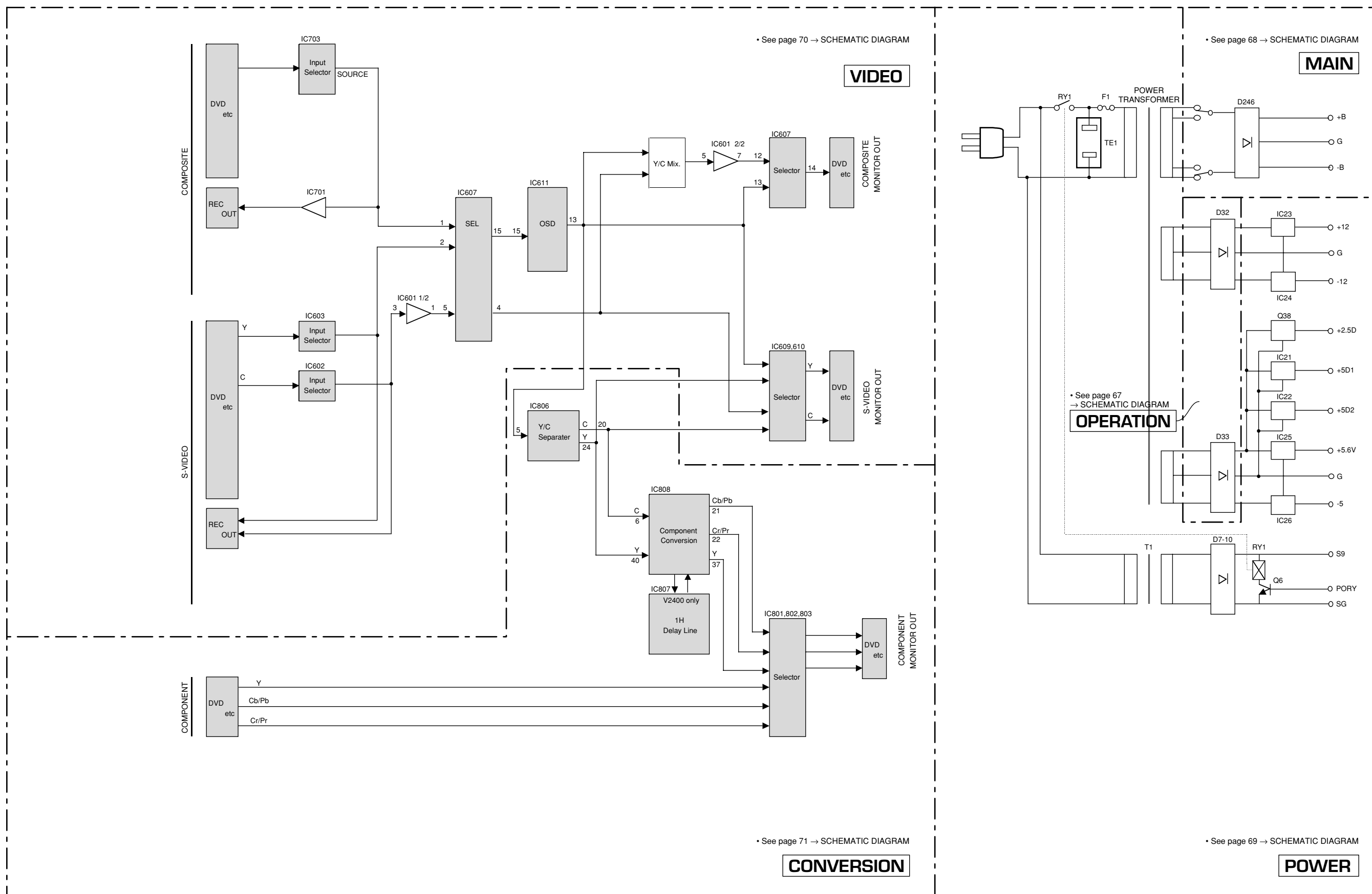
Key Input(A-D) Pull-Up Resistance 10 k-Ohms

Ohm	0 k	+ 1.2 k	+ 1.2 k	+ 1.8 k	+ 2.7 k	+ 3.3 k	+ 4.7 k	+ 8.2 k
V	~ 0.27	~ 0.75	~ 1.22	~ 1.76	~ 2.28	~ 2.76	~ 3.24	~ 3.76
KEY0	PRESET/TUNING <	PRESET/TUNING >	PRESET/TUNING EDIT	FM/AM	MEMORY	TUNING MODE	-	-
KEY1	-	SPEAKERS A	SPEAKERS B	INPUT MODE	A/B/C/D/E	PURE DIRECT	TONE CONTROL	STRAIGHT EFFECT

# BLOCK DIAGRAM (1/2)



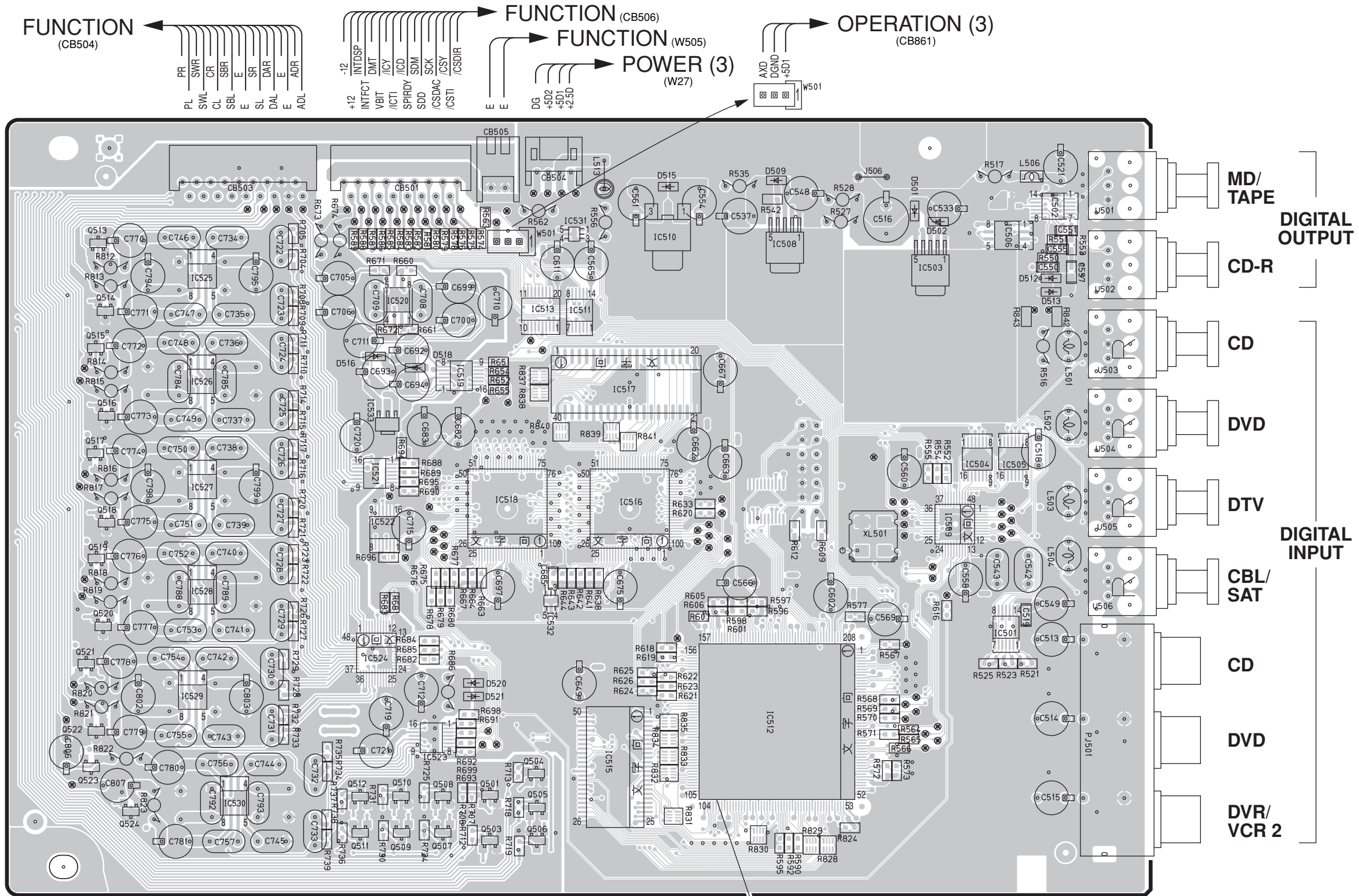
1 ■ BLOCK DIAGRAM (2/2)



PRINTED CIRCUIT BOARD (Foil side)

DSP P.C.B. (Side A) Lead Solder Used

• Semiconductor Location



Ref. No.	Location
D501	F3
D502	F3
D509	F3
D512	G3
D513	G3
D515	E3
D516	C4
D518	C4
D520	D6
D521	D6
IC501	G5
IC502	G3
IC503	F3
IC504	G4
IC505	G4
IC506	G3
IC508	F3
IC509	G5
IC510	E3
IC511	D3
IC512	E6
IC513	D3
IC515	E6
IC516	E4
IC517	E4
IC518	D4
IC519	D4
IC520	C3
IC521	C4
IC522	C5
IC523	B6
IC524	C5
IC525	B3
IC526	B4
IC527	B4
IC528	B5
IC529	B6
IC530	B6
IC531	D3
IC532	D5
Q501	D6
Q503	D6
Q504	D6
Q505	D6
Q506	D6
Q507	D6
Q508	D6
Q509	C6
Q510	C6
Q511	C6
Q512	C6
Q513	B3
Q514	B3
Q515	B4
Q516	B4
Q517	B4
Q518	B5
Q519	B5
Q520	B5
Q521	B5
Q522	B6
Q523	B6
Q524	B6

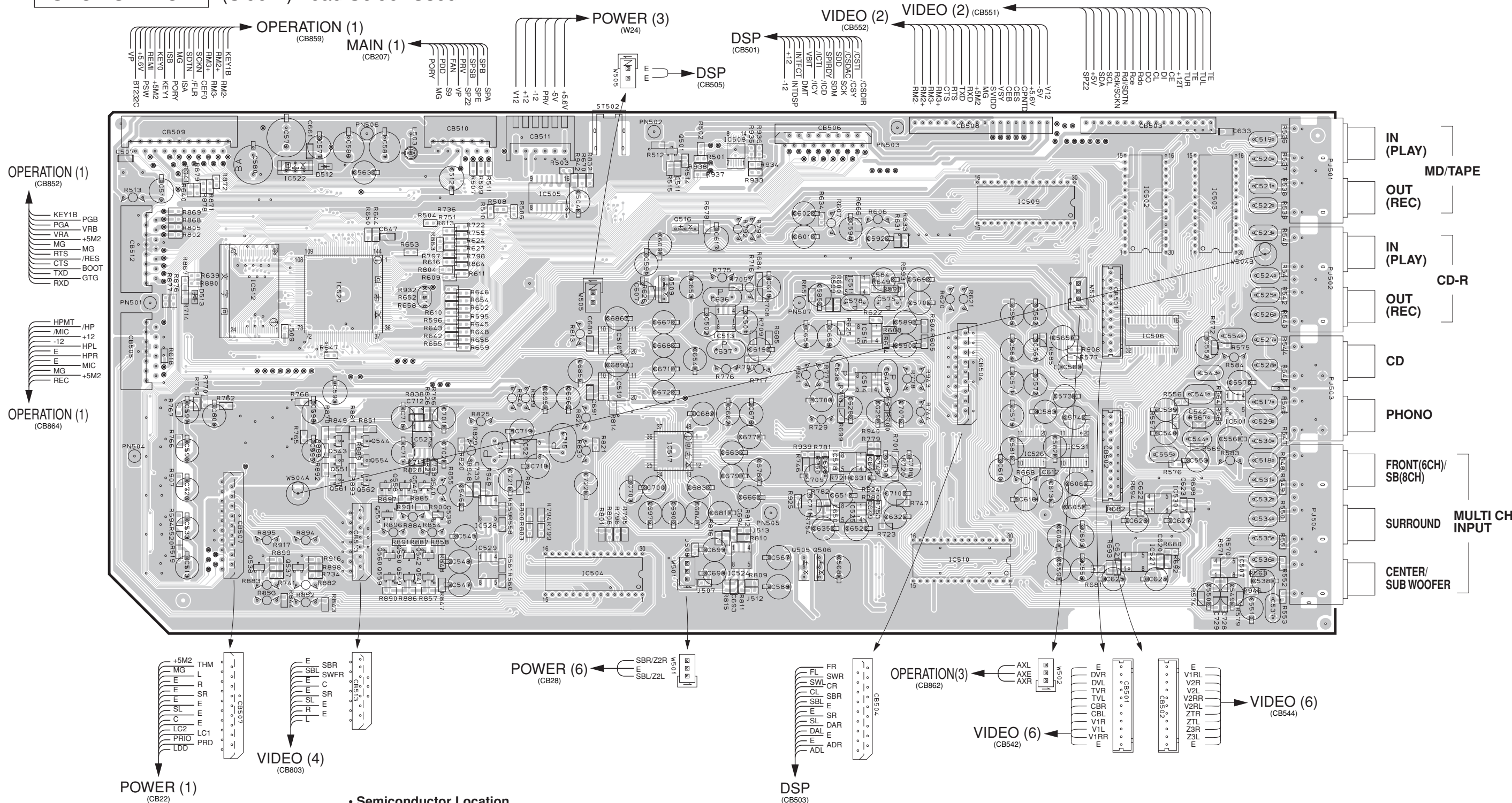
No service part available





PRINTED CIRCUIT BOARD (Foil side)

FUNCTION P.C.B. (Side A) Lead Solder Used



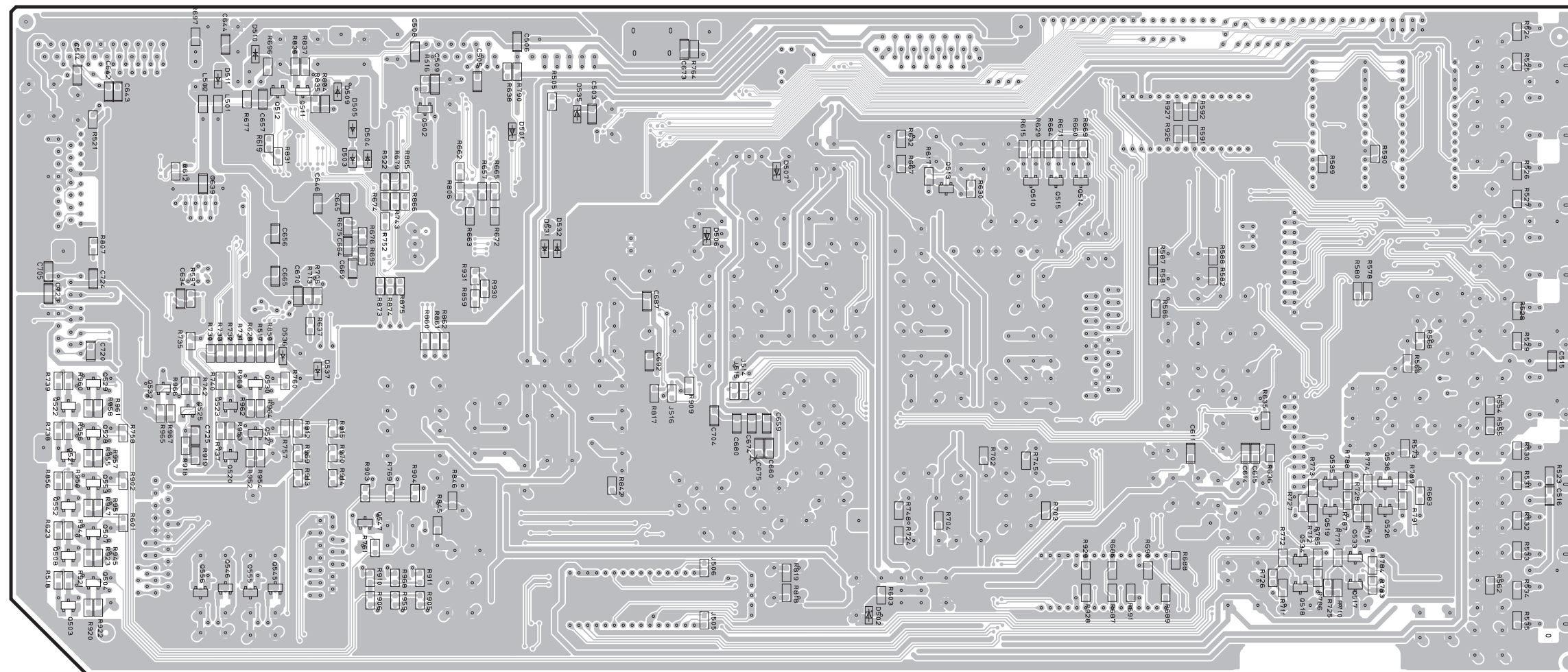
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D512	C3	IC505	D3	IC511	F3	IC517	E4	IC523	C4	IC529	D5	Q509	E3	Q541	C5	Q550	C5
D513	B3	IC506	H4	IC512	B3	IC518	F4	IC524	E5	IC530	H5	Q516	E3	Q542	C5	Q551	C4
IC501	H4	IC507	H5	IC513	E4	IC519	E4	IC525	F5	IC531	H4	Q537	C5	Q543	C4	Q554	C4
IC502	H3	IC508	E2	IC514	F4	IC520	C3	IC526	G4	Q501	E2	Q538	B5	Q544	C4	Q557	C5
IC503	H3	IC509	G3	IC515	F4	IC521	D4	IC527	H5	Q505	F5	Q539	D5	Q548	C5	Q558	C5
IC504	E5	IC510	G5	IC516	E4	IC522	C3	IC528	D5	Q506	F5	Q540	C5	Q549	C5	Q559	C5



1 ■ PRINTED CIRCUIT BOARD (Foil side)

FUNCTION P.C.B. (Side B) Lead Free Solder Used



• Semiconductor Location

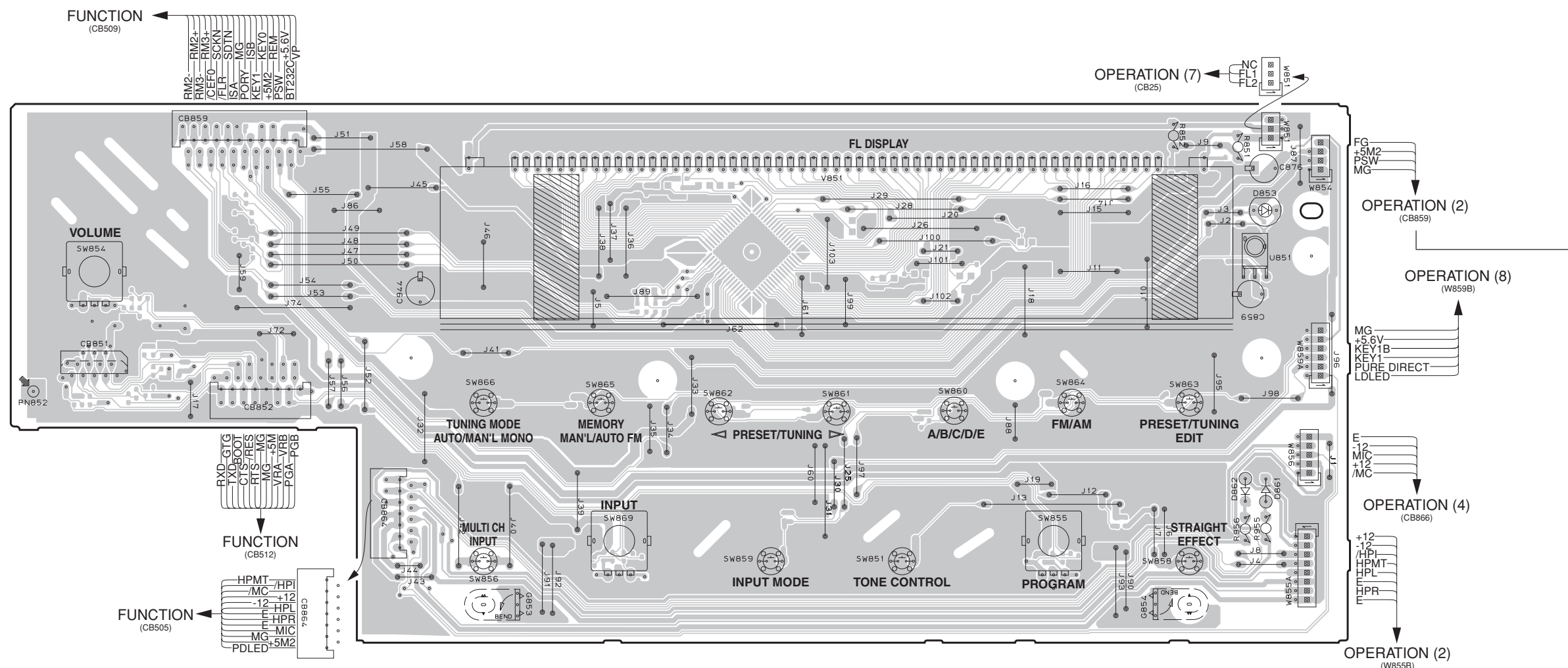
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D501	C2	D509	C2	D537	B4	Q511	B2	Q519	G4	Q527	B4	Q535	G4
D502	E5	D510	B2	Q502	C2	Q512	B2	Q520	B4	Q528	A4	Q536	H4
D503	C3	D511	B2	Q503	A5	Q513	F3	Q521	A4	Q529	A4	Q545	B5
D504	C3	D531	D3	Q504	A5	Q514	F3	Q522	A4	Q530	B4	Q546	B5
D505	C2	D532	D3	Q507	A4	Q515	F3	Q523	B4	Q532	B4	Q547	C4
D506	D3	D535	D2	Q508	A5	Q517	G5	Q525	B4	Q533	G5	Q552	A4
D507	E3	D536	B4	Q510	F3	Q518	G5	Q526	H4	Q534	G5	Q553	A4

Circuit No.	U, C	A
C517, 518	X	O

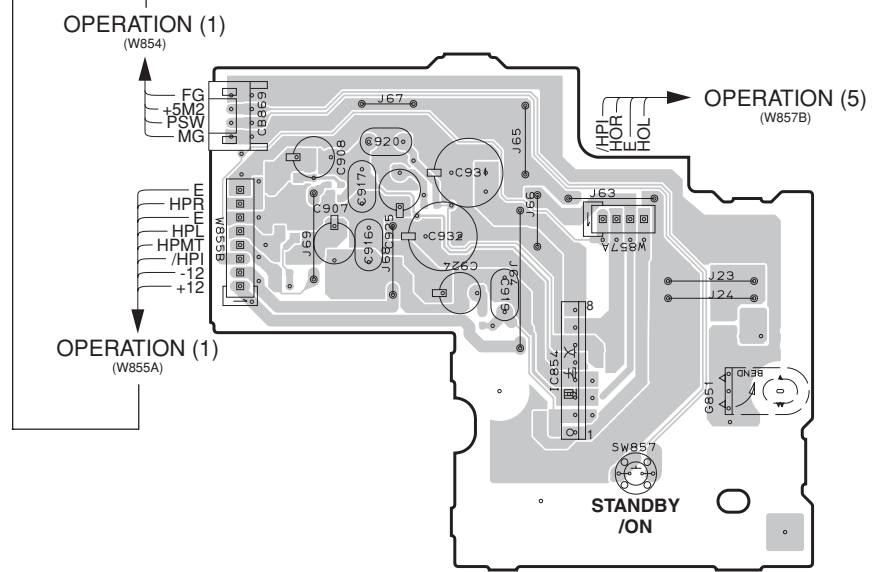
X : NOT USED  
O : USED / APPLICABLE

PRINTED CIRCUIT BOARD (Foil side)

OPERATION (1) P.C.B. (Side A)



OPERATION (2) P.C.B. (Side A)



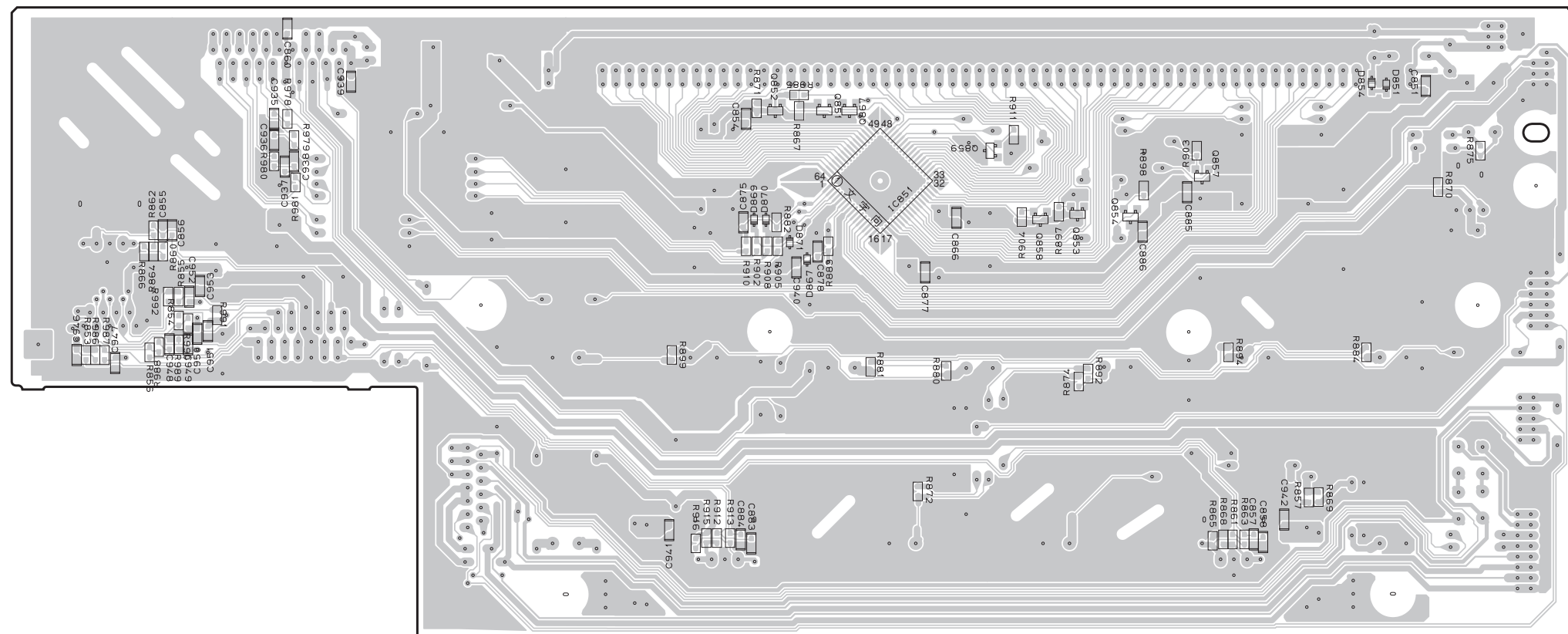
Semiconductor Location

Ref. No.	Location
D853	G3
D861	G4
D862	G4
IC854	I6

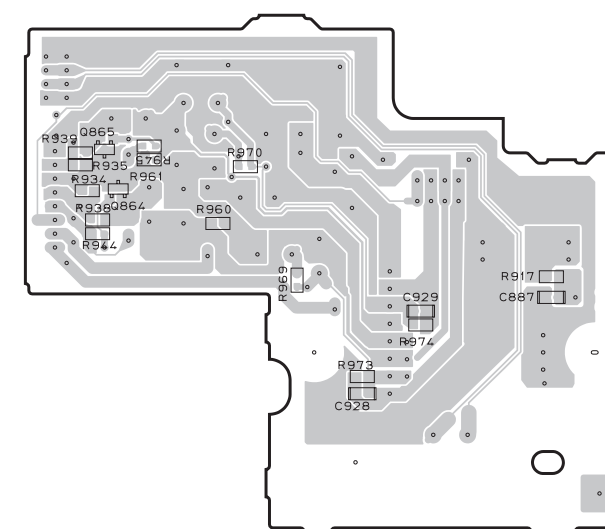


1 ■ PRINTED CIRCUIT BOARD (Foil side)

OPERATION (1) P.C.B. (Side B) Lead Free Solder Used



OPERATION (2) P.C.B. (Side B)  
Lead Free Solder Used



• Semiconductor Location

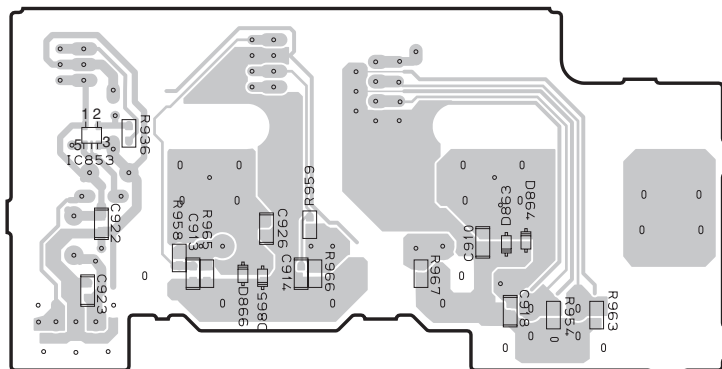
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D851	G2	D871	D3	Q854	F3	Q865	H6
D854	G2	IC851	E3	Q857	F3	Q867	E3
D867	D3	Q851	D2	Q858	F3		
D869	D3	Q852	D2	Q859	E3		
D870	D3	Q853	F3	Q864	H6		



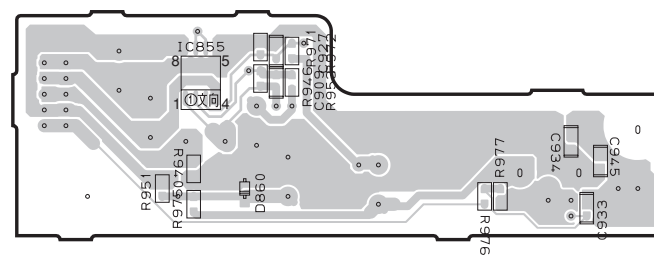
**PRINTED CIRCUIT BOARD (Foil side)**

**OPERATION (3) P.C.B.** (Side B)

Lead Free Solder Used

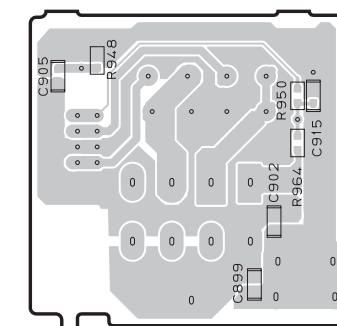


**OPERATION (4) P.C.B.** (Side B) Lead Free Solder Used



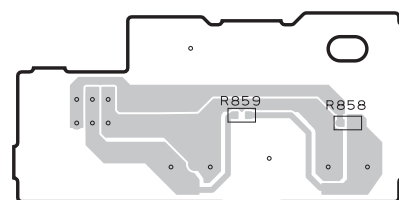
**OPERATION (5) P.C.B.** (Side B)

Lead Free Solder Used



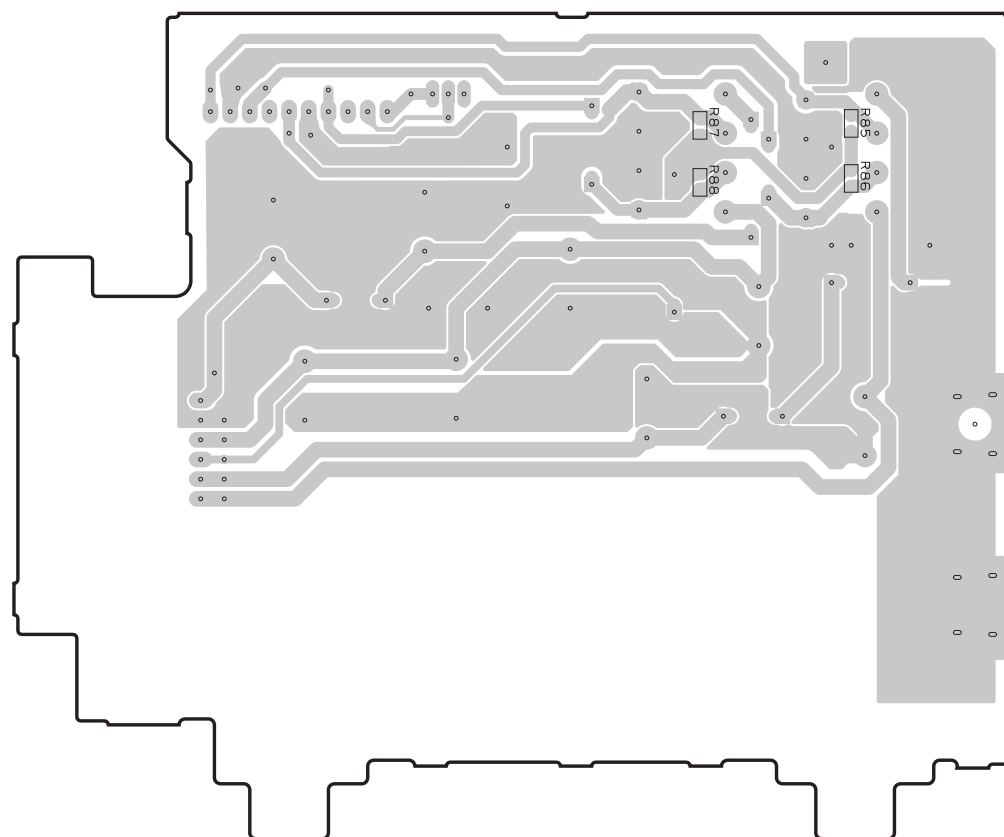
**OPERATION (6) P.C.B.** (Side B)

Lead Free Solder Used



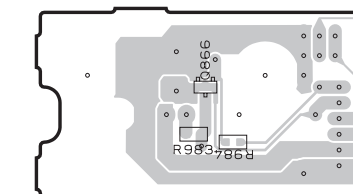
**OPERATION (7) P.C.B.** (Side B)

Lead Free Solder Used



**OPERATION (8) P.C.B.** (Side B)

Lead Free Solder Used

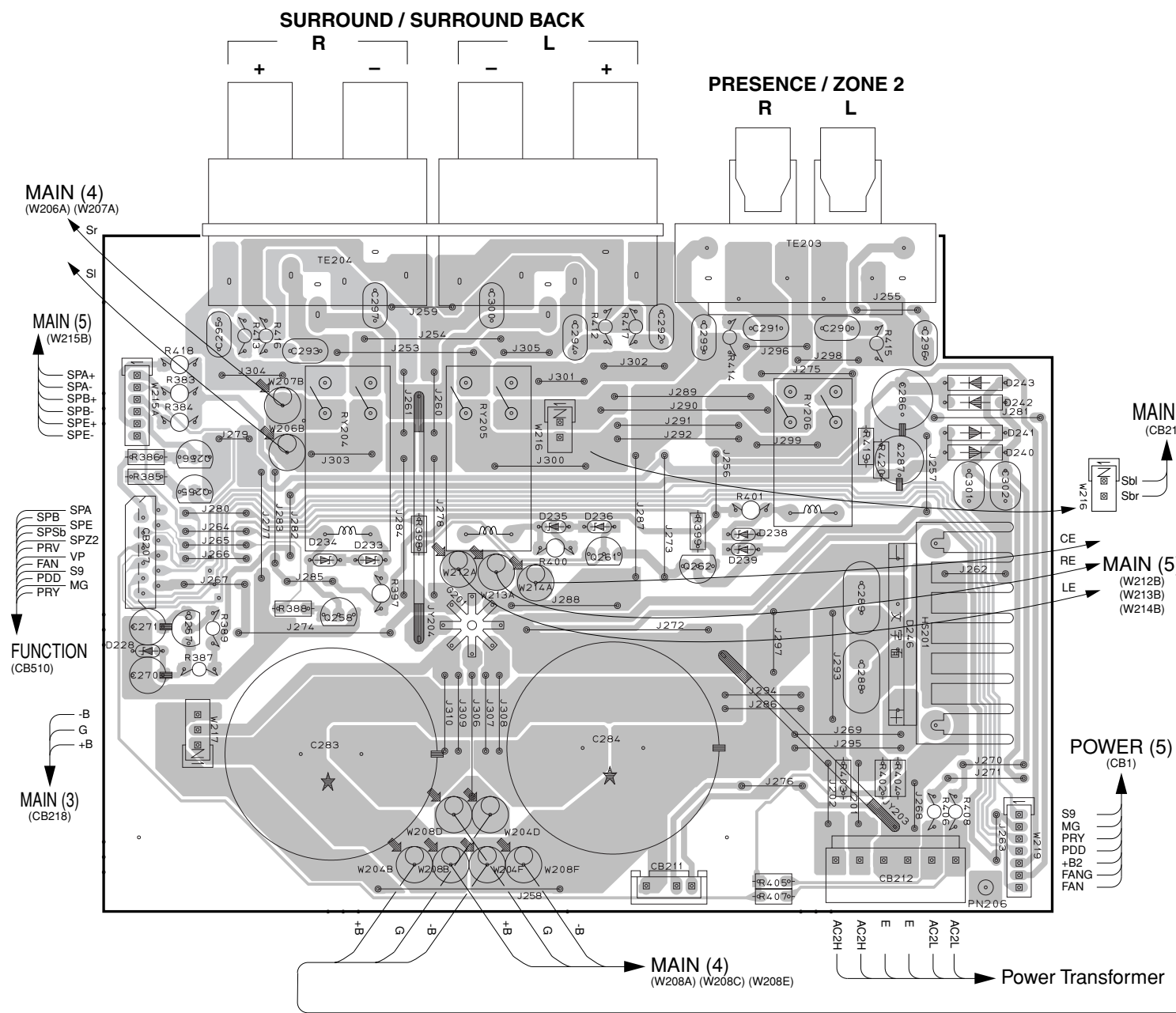


• Semiconductor Location

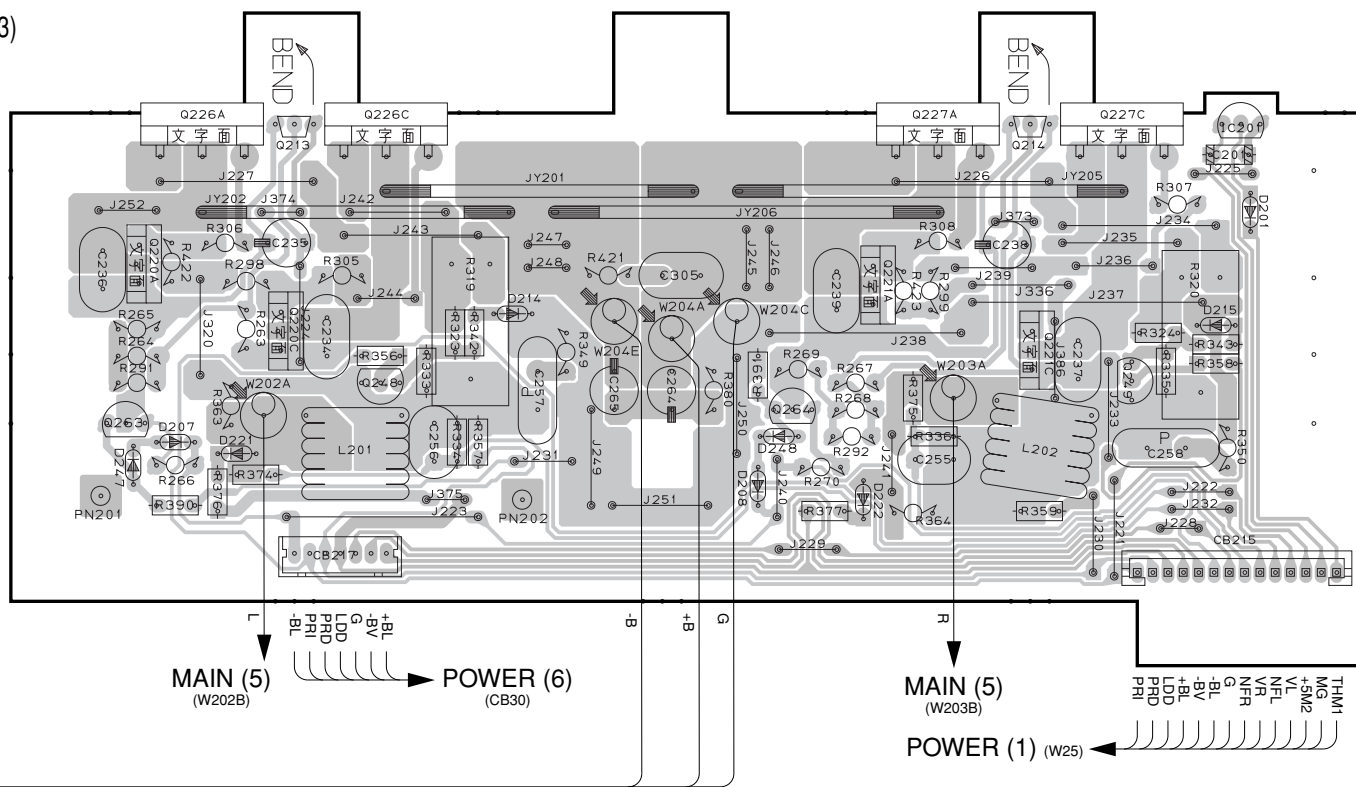
Ref. No.	Location	Ref. No.	Location
D860	F2	D866	B3
D863	C3	IC853	B2
D864	C3	IC855	F2
D865	B3	Q866	H5

PRINTED CIRCUIT BOARD (Foil side) Lead Free Solder Used

MAIN (1) P.C.B. (Side A)



MAIN (2) P.C.B. (Side A)



Semiconductor Location

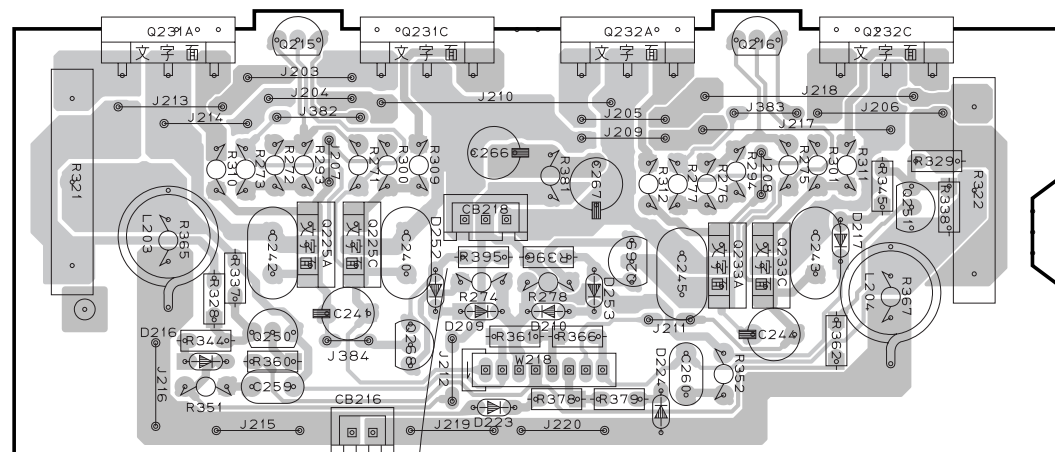
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D201	J4	D222	I5	D238	D4	D246	E4	Q221A	I4	Q248	G5	Q262	D4
D207	G5	D228	B4	D239	D4	IC201	J4	Q221C	I4	Q255	B4		
D208	I5	D233	C4	D240	E4	Q213	G4	Q226A	G4	Q256	B4		
D214	H4	D234	B4	D241	E3	Q214	I4	Q226C	G4	Q257	B4		
D215	J4	D235	C4	D242	E3	Q220A	F4	Q227A	I4	Q258	B4		
D221	G5	D236	C4	D243	E3	Q220C	G4	Q227C	J4	Q261	C4		

• Semiconductor Location

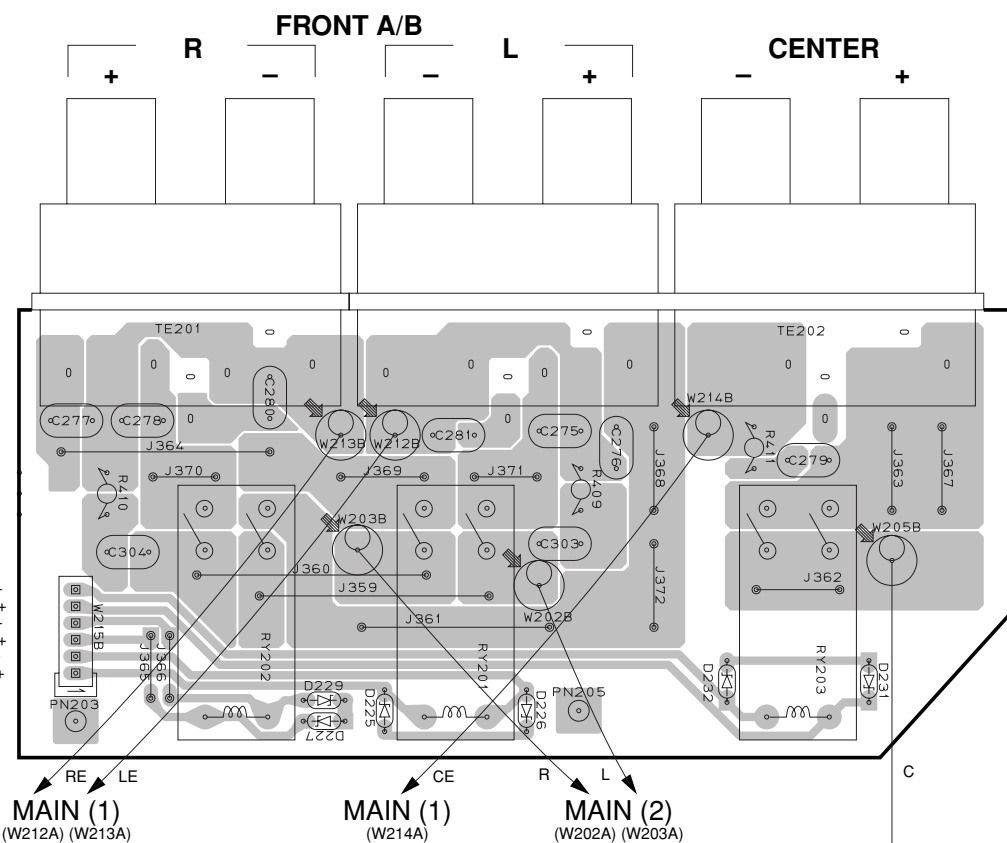
Ref. No.	Location
D206	A5
D209	B3
D210	C3
D211	D6
D212	B6
D213	A6
D216	B3
D217	D3
D218	E6
D219	D6
D220	B6
D223	B3
D226	G4
D227	F4
D229	F4
D231	H4
D232	G4
IC202	A5
Q215	B2
Q216	C2
Q217	E5
Q218	C5
Q219	B5
Q222A	E6
Q222C	E6
Q223A	B6
Q223C	C6
Q224A	A6
Q224C	B6
Q225A	B3
Q225C	B3
Q228A	D5
Q228C	E5
Q229A	C5
Q229C	D5
Q230A	B5
Q230C	B5
Q231A	A2
Q231C	B2
Q232A	C2
Q232C	D2
Q233A	C3
Q233C	C3
Q250	B3
Q251	D2
Q252	E6
Q253	D6
Q254	B6

■ PRINTED CIRCUIT BOARD (Foil side) Lead Free Solder Used

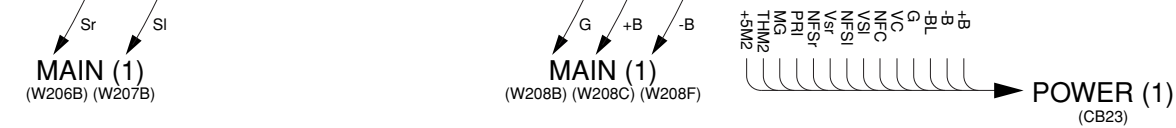
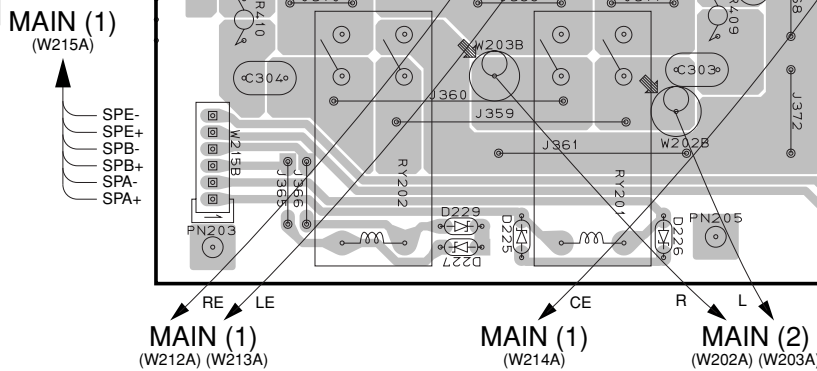
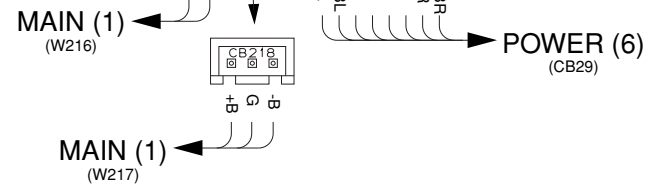
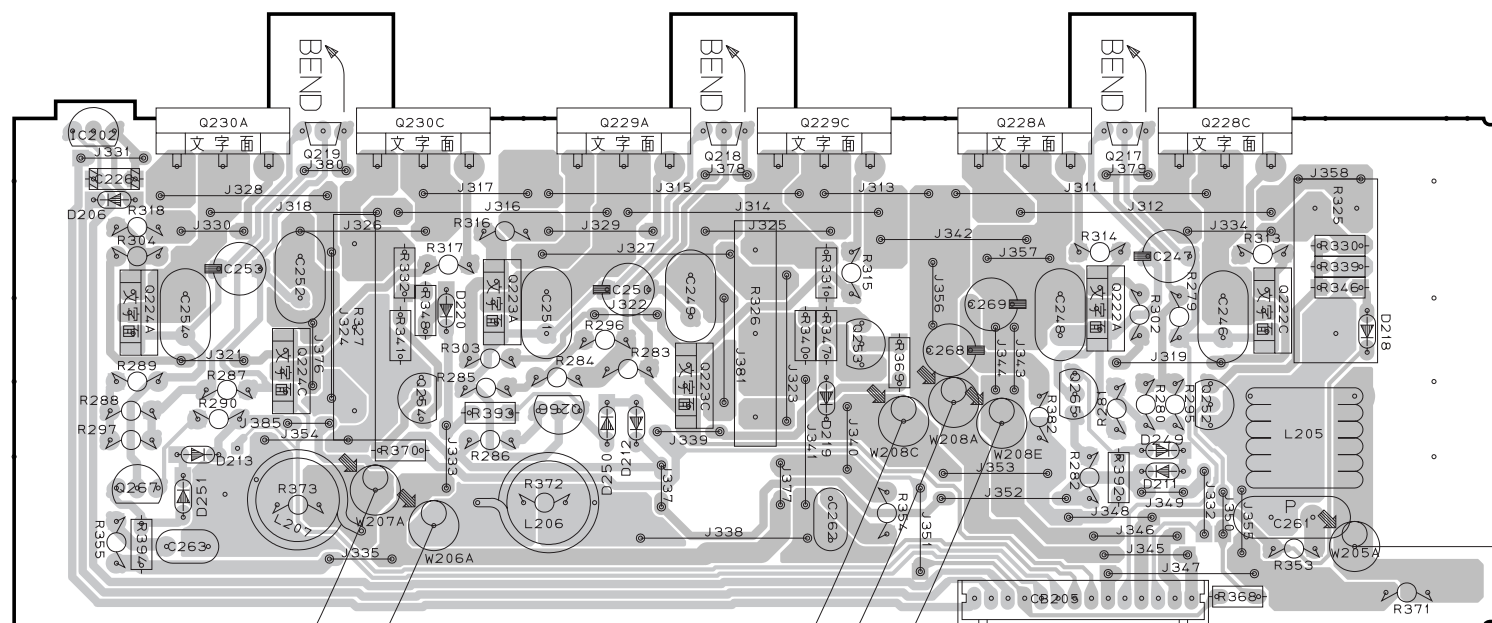
MAIN (3) P.C.B. (Side A)



MAIN (5) P.C.B. (Side A)



MAIN (4) P.C.B. (Side A)



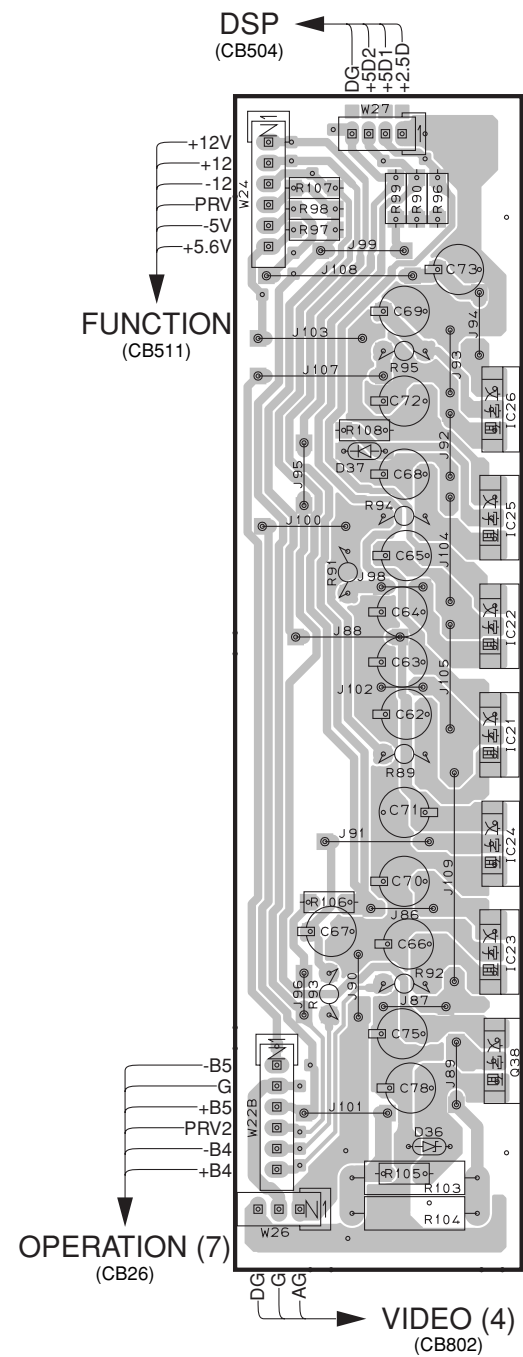
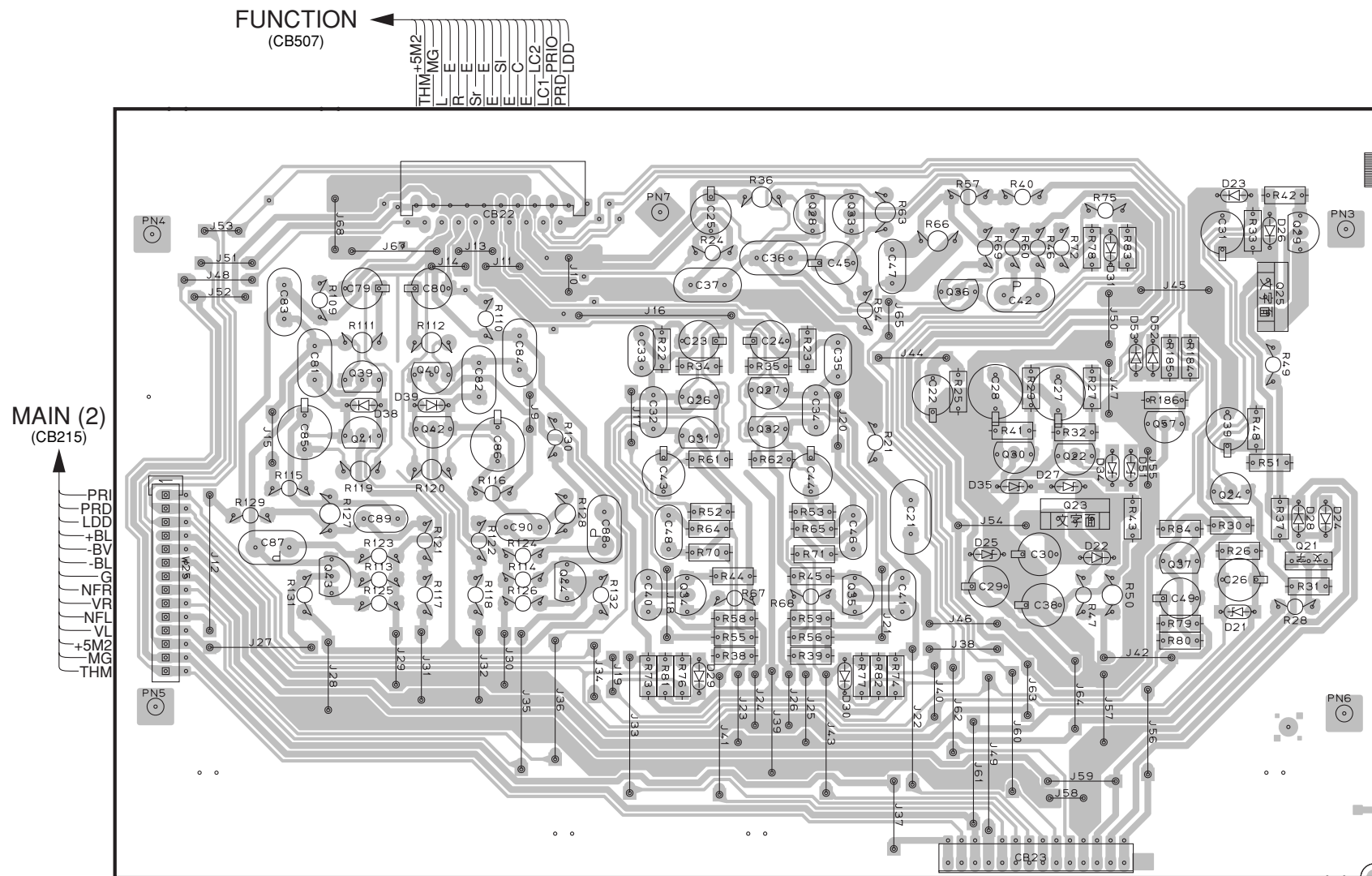
1  
2  
3  
4  
5  
6  
7



PRINTED CIRCUIT BOARD (Foil side) Lead Free Solder Used

POWER (1) P.C.B. (Side A)

POWER (3) P.C.B. (Side A)



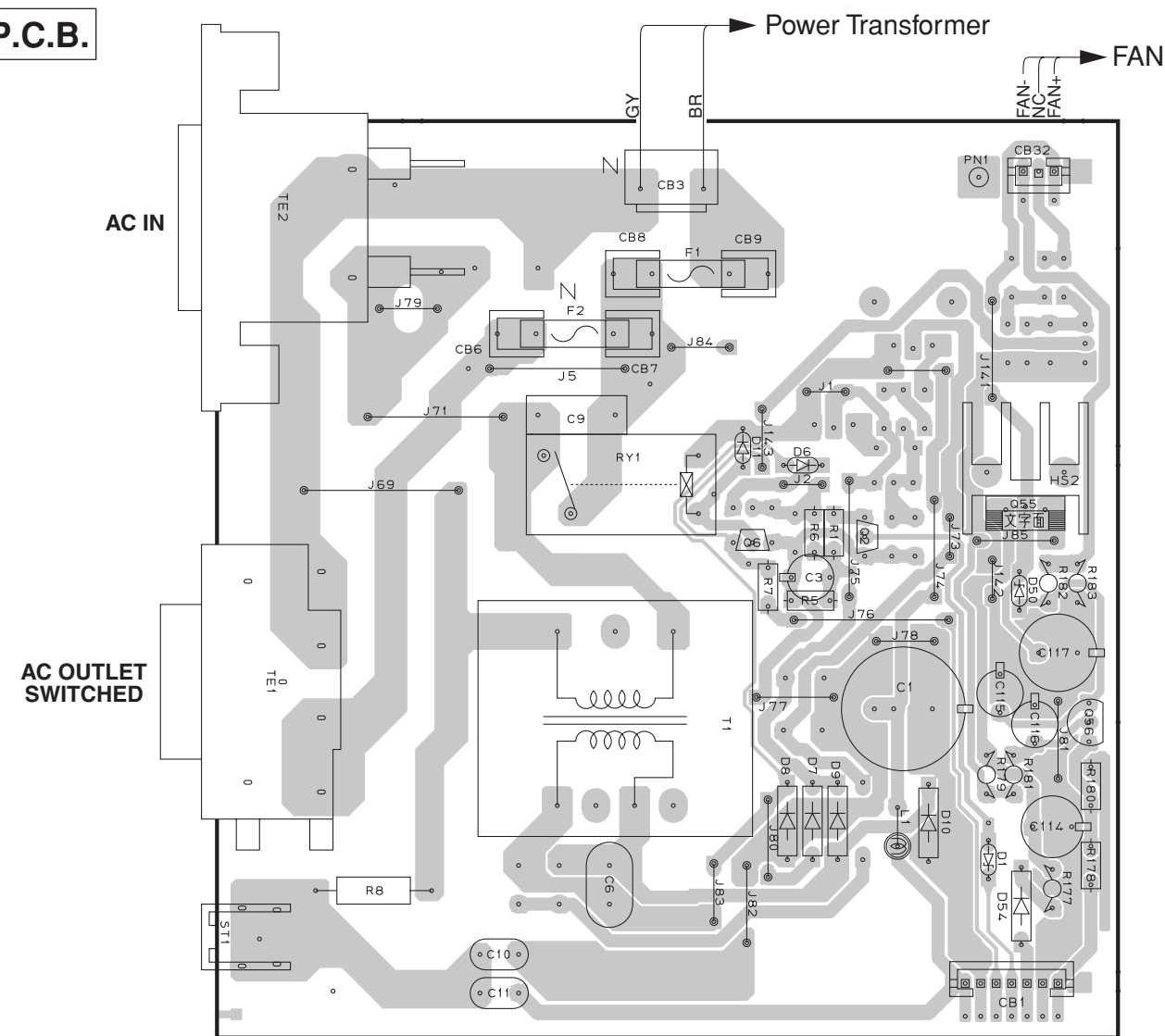
Semiconductor Location

Ref. no.	Location	Ref. no.	Location	Ref. no.	Location	Ref. no.	Location
D0021	F5	D0036	I6	Q0021	F4	Q0034	D4
D0022	E4	D0037	I3	Q0022	E4	Q0035	D4
D0023	F3	D0038	B4	Q0023	E4	Q0036	E3
D0024	F4	D0039	C4	Q0024	F4	Q0037	F4
D0025	E4	D0051	F4	Q0025	F3	Q0038	I5
D0026	F3	D0052	F3	Q0026	D4	Q0039	B4
D0027	E4	D0053	F3	Q0027	D4	Q0040	C4
D0028	F4	IC021	I4	Q0028	D3	Q0041	B4
D0029	D5	IC022	I4	Q0029	F3	Q0042	C4
D0030	D5	IC023	I5	Q0030	E4	Q0043	B4
D0031	E3	IC024	I5	Q0031	D4	Q0044	C4
D0034	E4	IC025	I4	Q0032	D4	Q0057	F4
D0035	E4	IC026	I3	Q0033	D3		

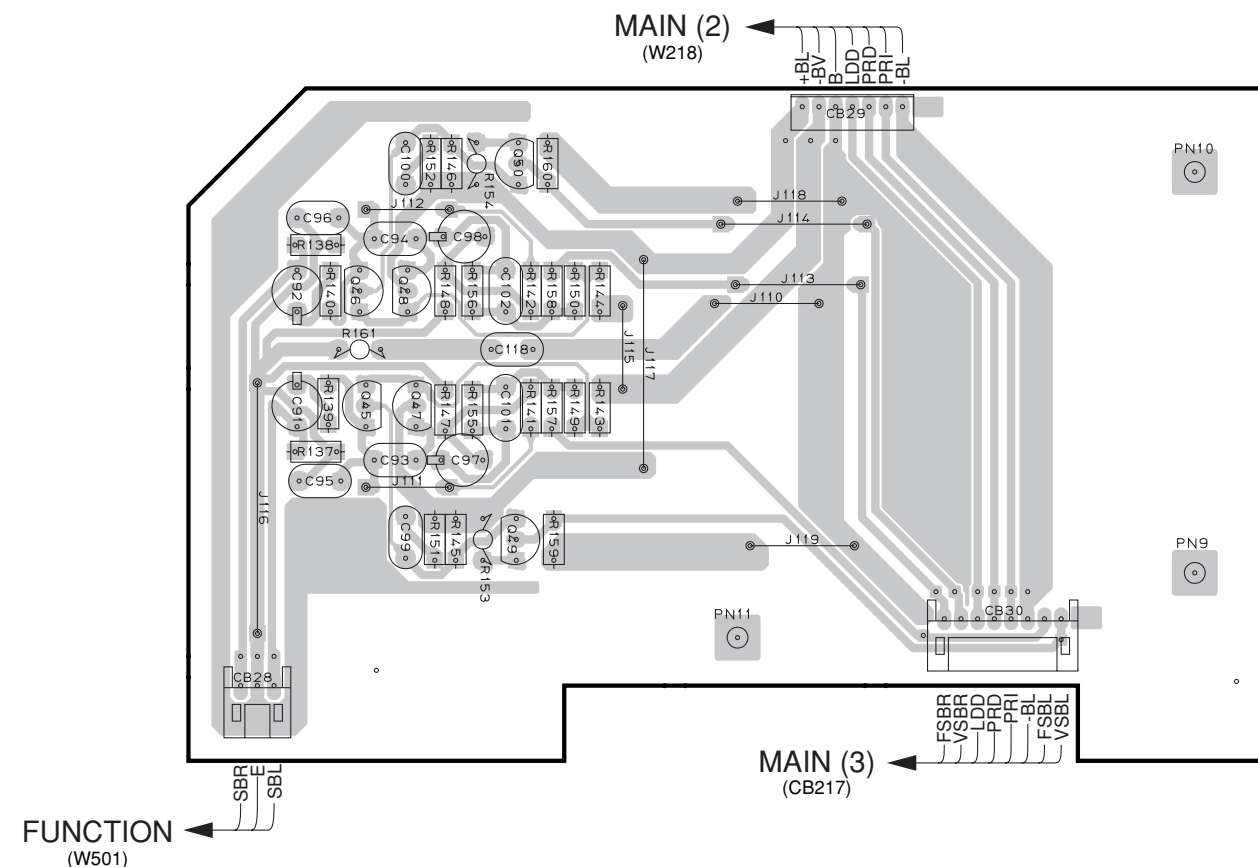
1 ■ PRINTED CIRCUIT BOARD (Foil side) Lead Free Solder Used

2 **POWER (5) P.C.B.**

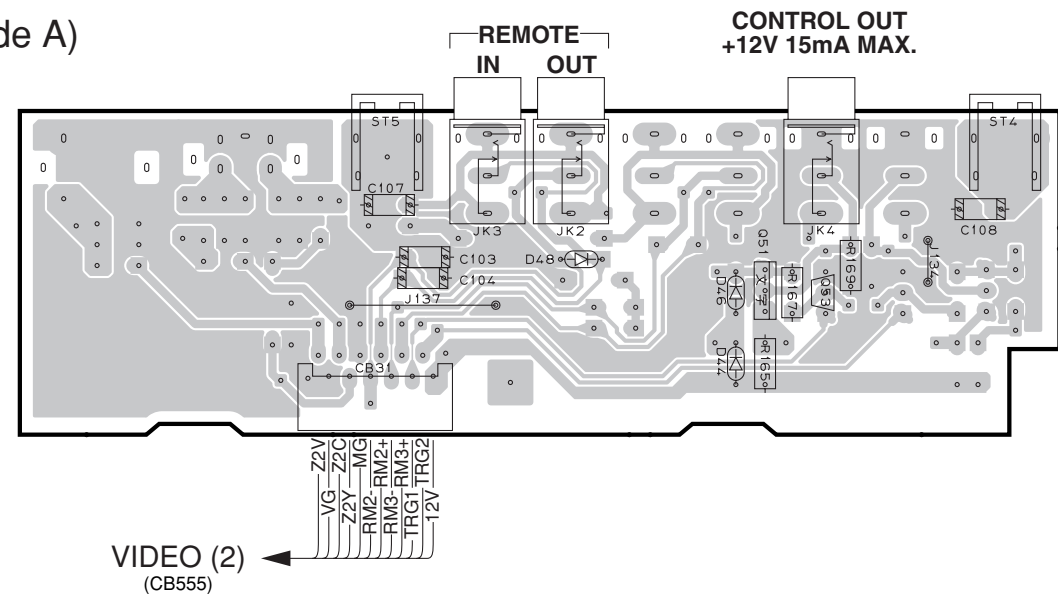
(Side A)



3 **POWER (6) P.C.B.** (Side A)



4 **POWER (7) P.C.B.** (Side A)



Circuit No.	U, C	A
CB6, 7	O	X
F2	O	X
J5	X	O
R8	O	X

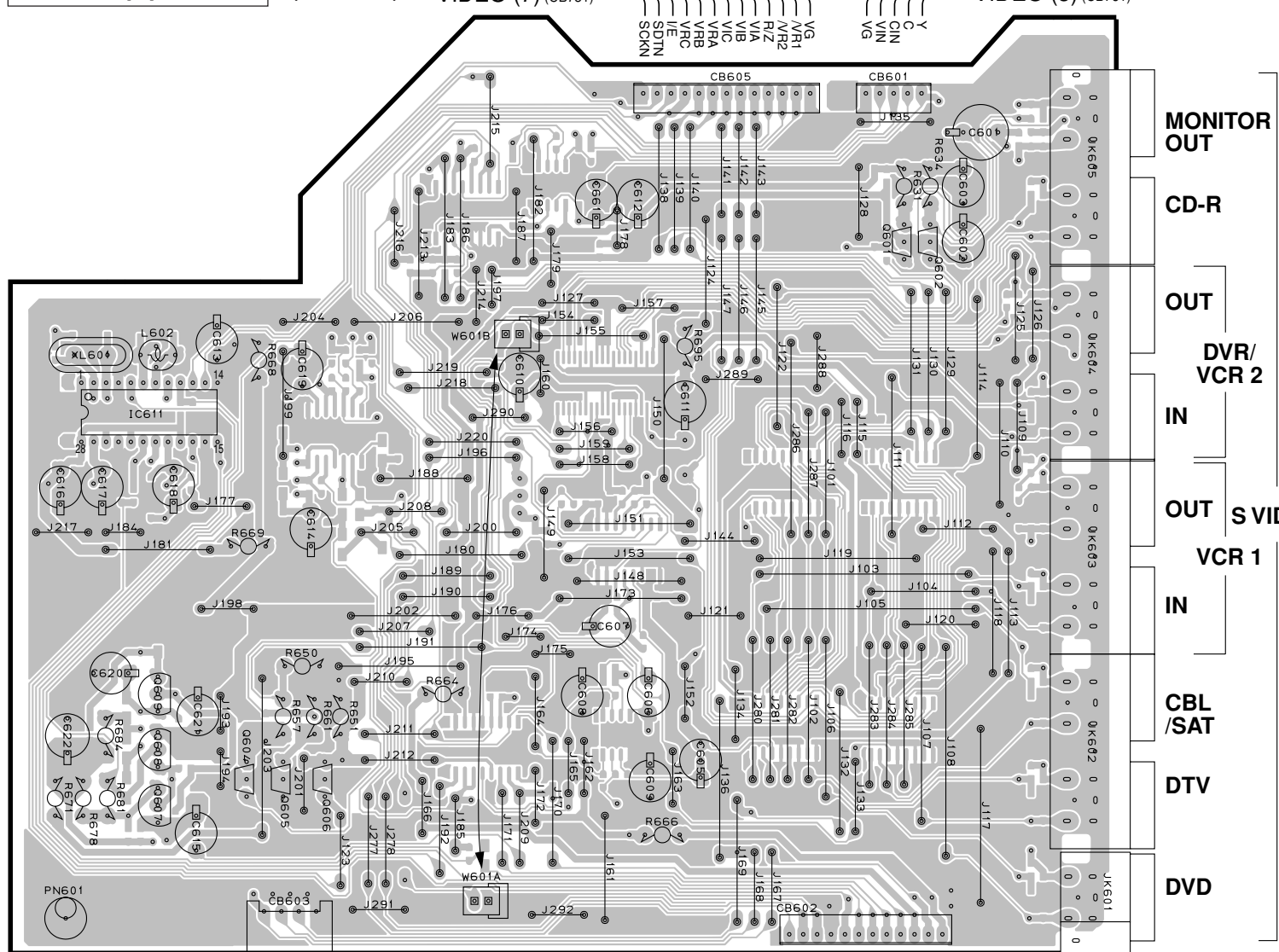
X: NOT USED  
O: USED / APPLICABLE

• Semiconductor Location

Ref. no.	Location	Ref. no.	Location
D0001	E4	Q0002	E3
D0006	D3	Q0006	D3
D0007	D4	Q0045	G3
D0008	D4	Q0046	G3
D0009	D4	Q0047	G3
D0010	E4	Q0048	G3
D0011	D3	Q0049	H3
D0044	E7	Q0050	H2
D0046	E6	Q0051	E6
D0048	E6	Q0053	F6
D0050	E3	Q0055	E3
D0054	E4	Q0056	E4

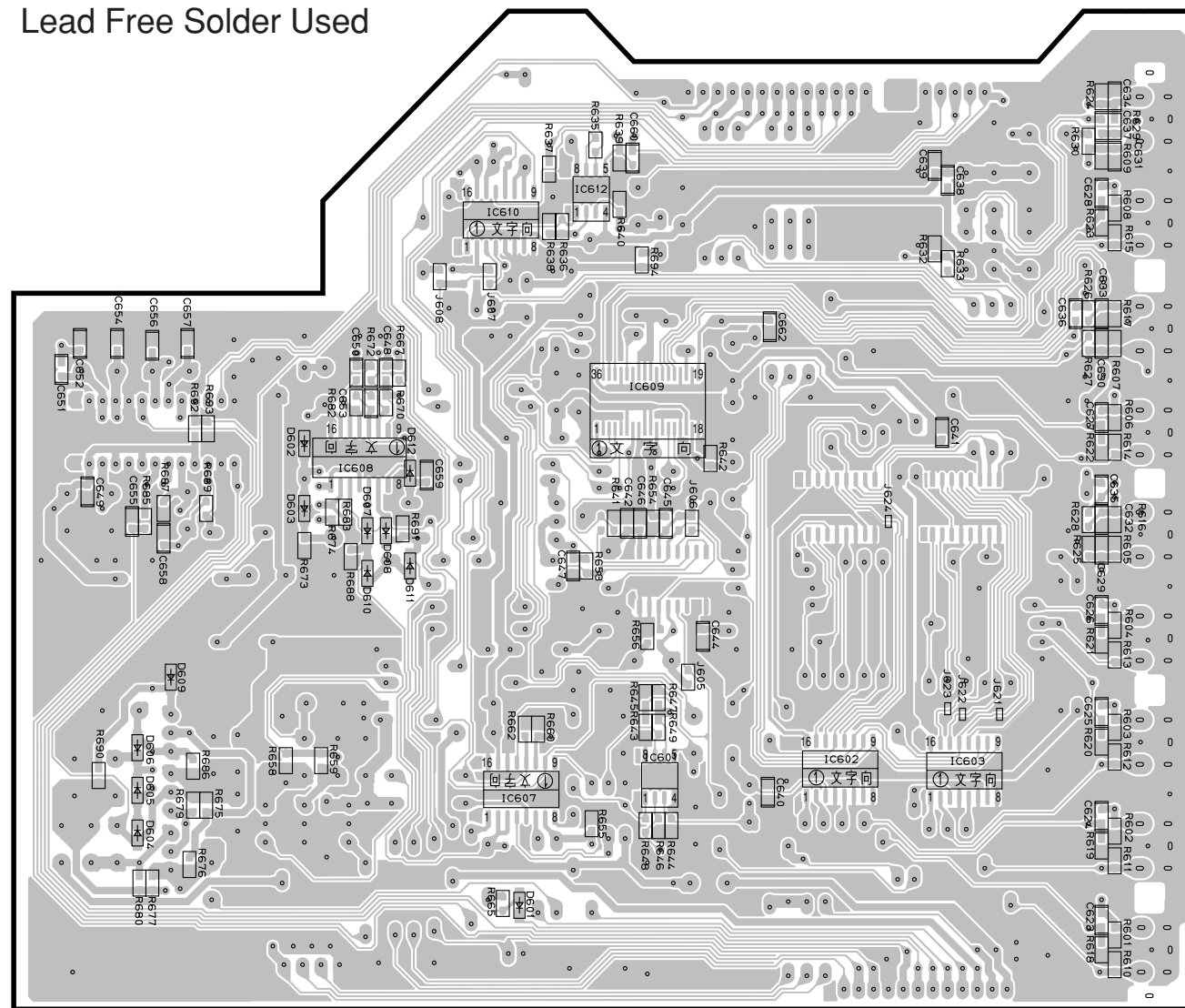
PRINTED CIRCUIT BOARD (Foil side)

VIDEO (1) P.C.B. (Side A)



VIDEO (1) P.C.B. (Side B)

Lead Free Solder Used



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D601	H5	D607	G3	IC601	I4	IC610	H2	Q605	B4
D602	G3	D608	H3	IC602	I4	IC611	B3	Q606	B4
D603	G3	D609	G4	IC603	J4	IC612	H2	Q607	B5
D604	G5	D610	G4	IC607	H4	Q601	D2	Q608	B4
D605	G4	D611	H4	IC608	G3	Q602	E2	Q609	B4
D606	G4	D612	H3	IC609	H3	Q604	B4		

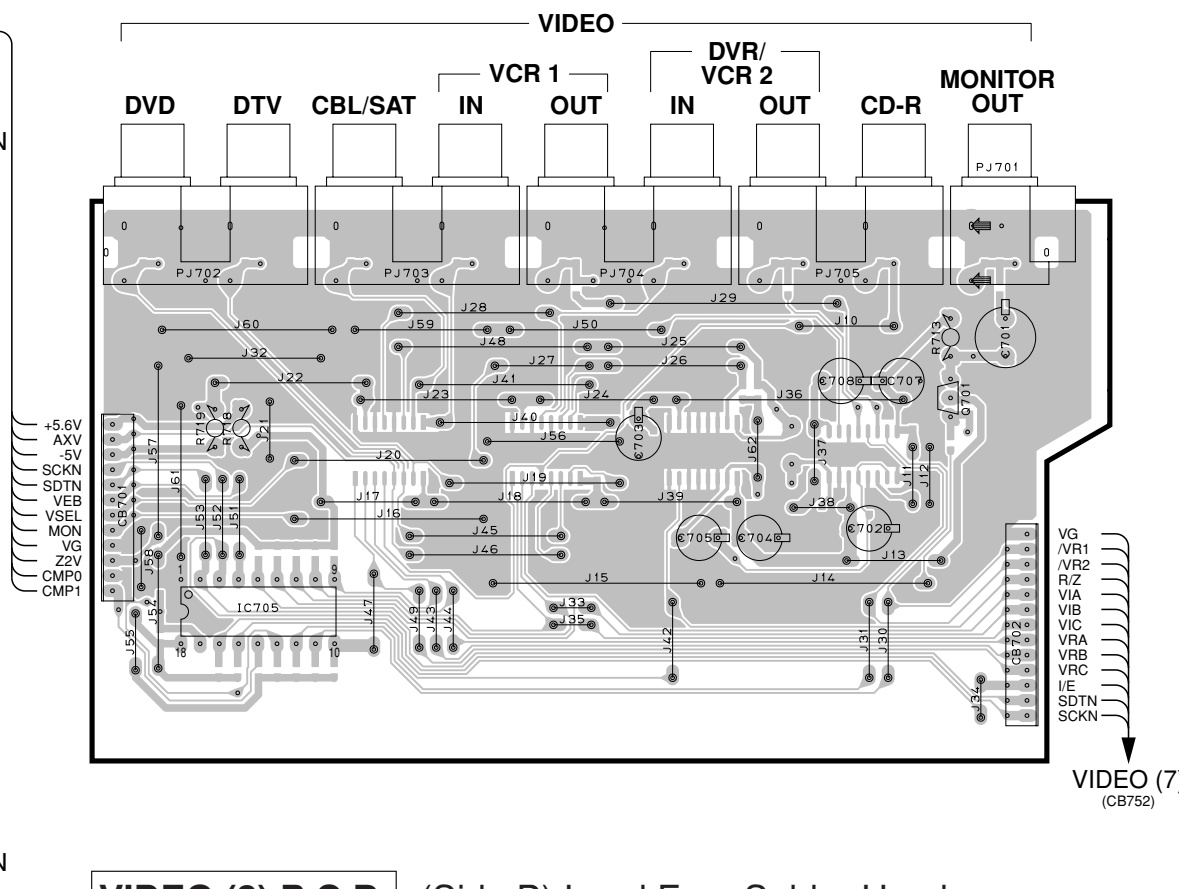
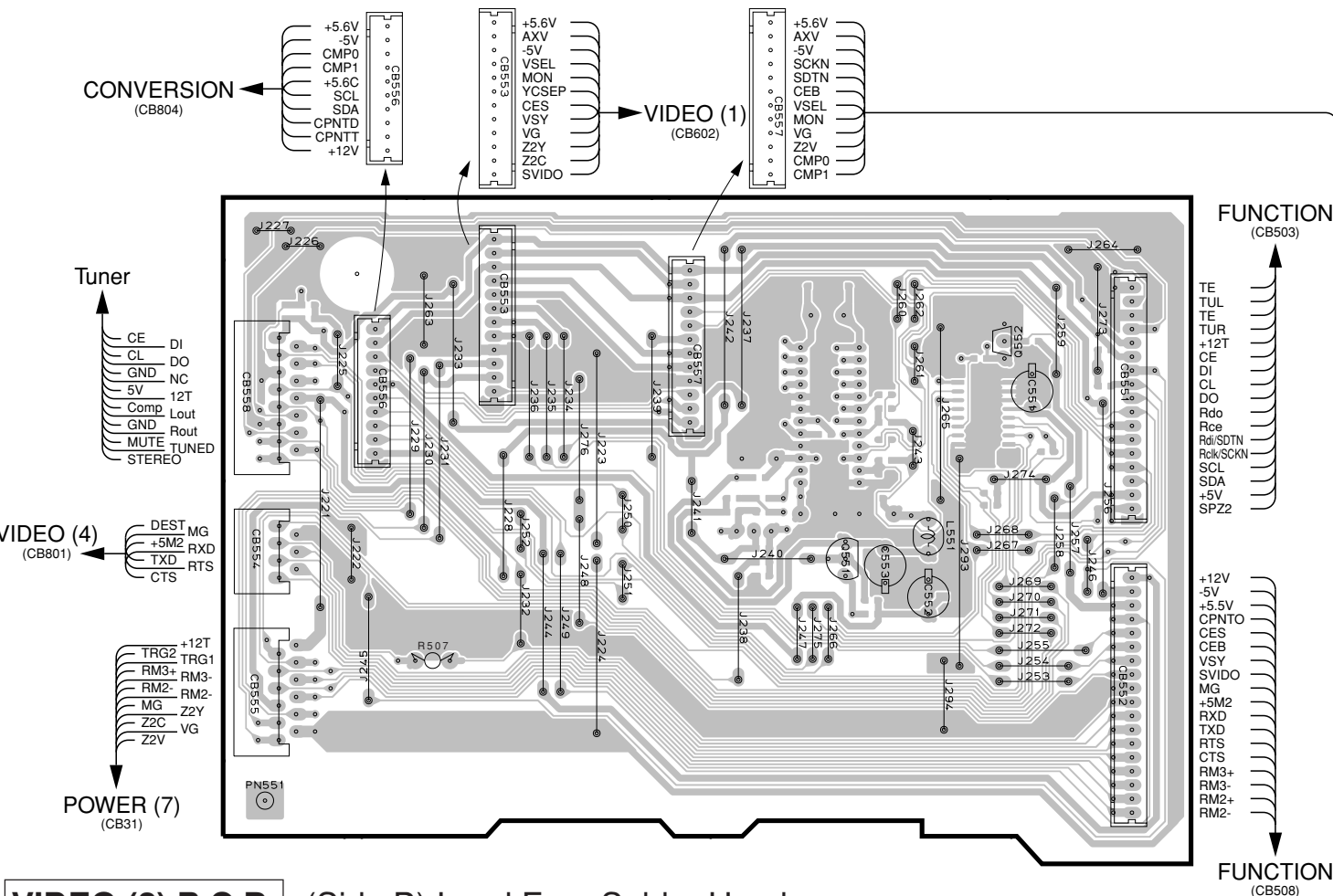


PRINTED CIRCUIT BOARD (Foil side)

• Semiconductor Location

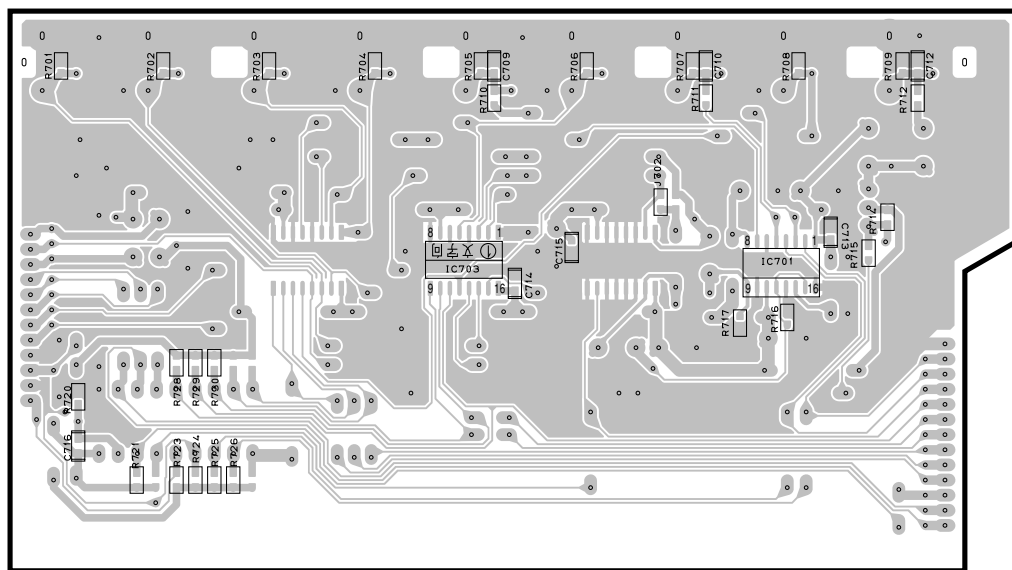
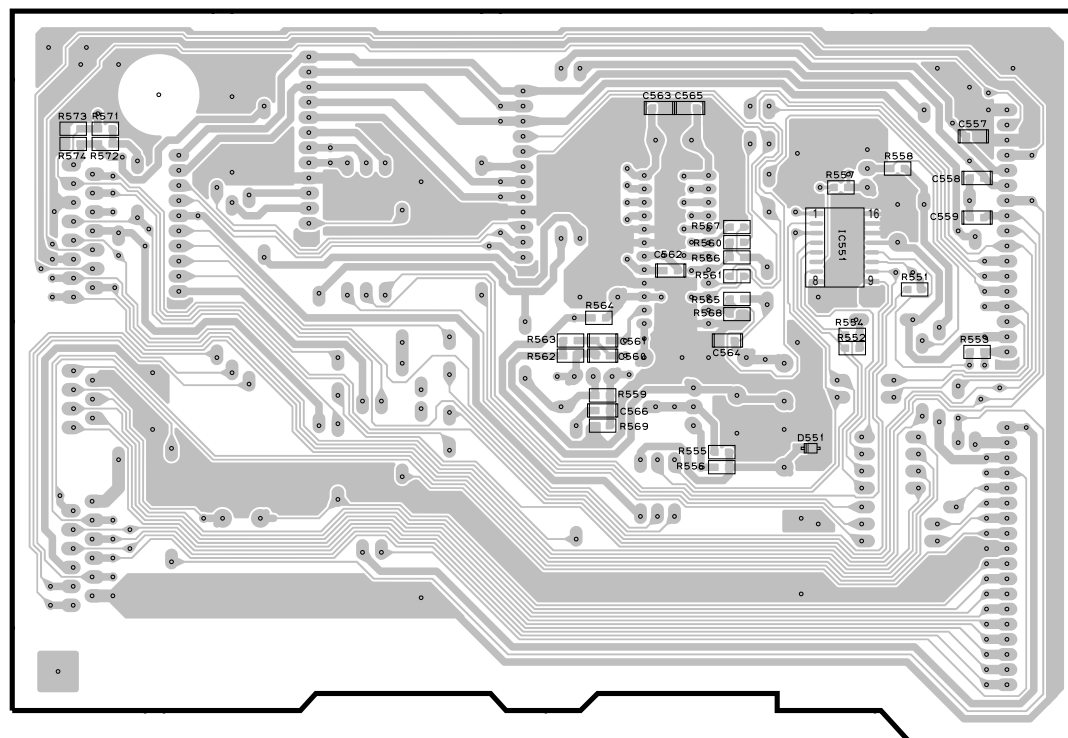
VIDEO (2) P.C.B. (Side A)

VIDEO (3) P.C.B. (Side A)



VIDEO (2) P.C.B. (Side B) Lead Free Solder Used

VIDEO (3) P.C.B. (Side B) Lead Free Solder Used



Ref. No.	Location
D551	D6
IC551	D6
IC701	I6
IC703	H6
IC705	G4
Q551	D3
Q552	E3
Q553	D3
Q701	I3

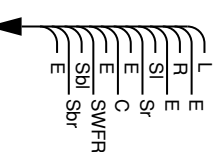
Circuit No.	U	C	A
IC552	X	X	X

X: NOT USED  
O: USED / APPLICABLE

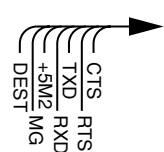
PRINTED CIRCUIT BOARD (Foil side)

VIDEO (4) P.C.B. (Side A)

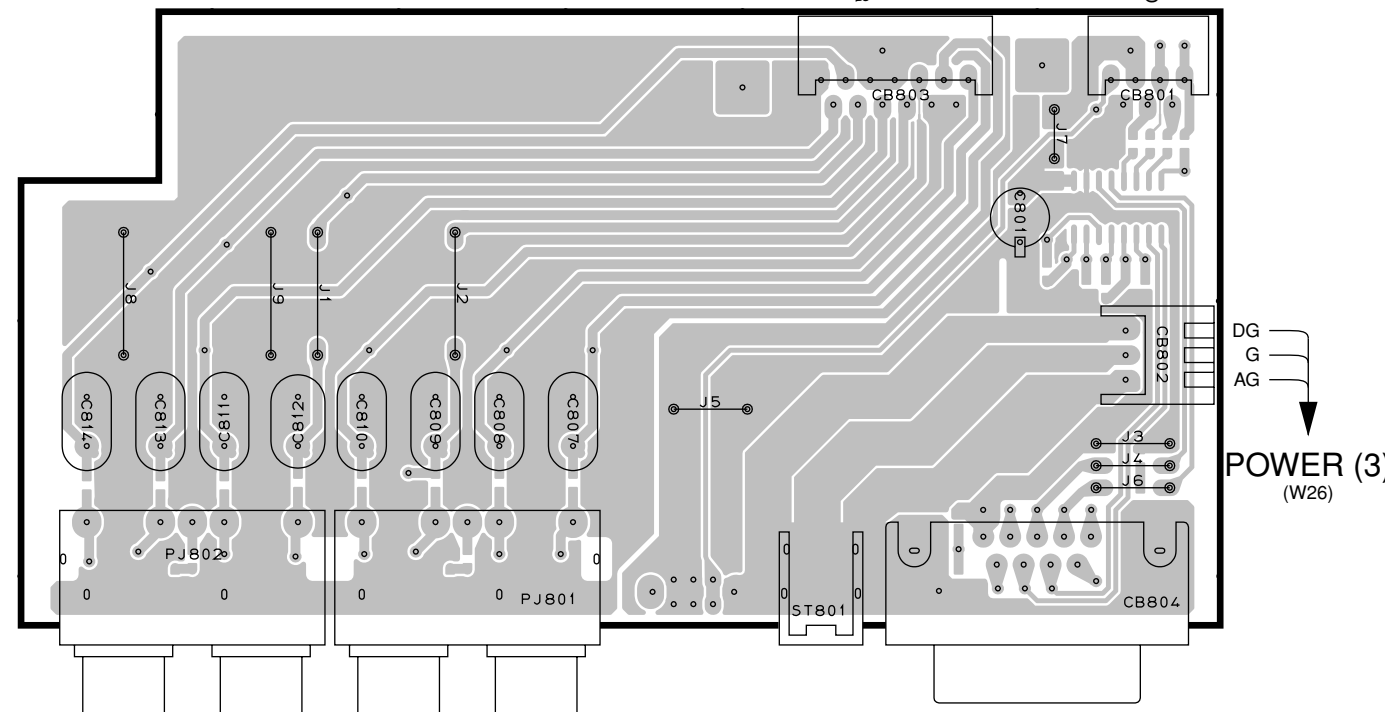
FUNCTION (CB513)



VIDEO (2) (CB554)



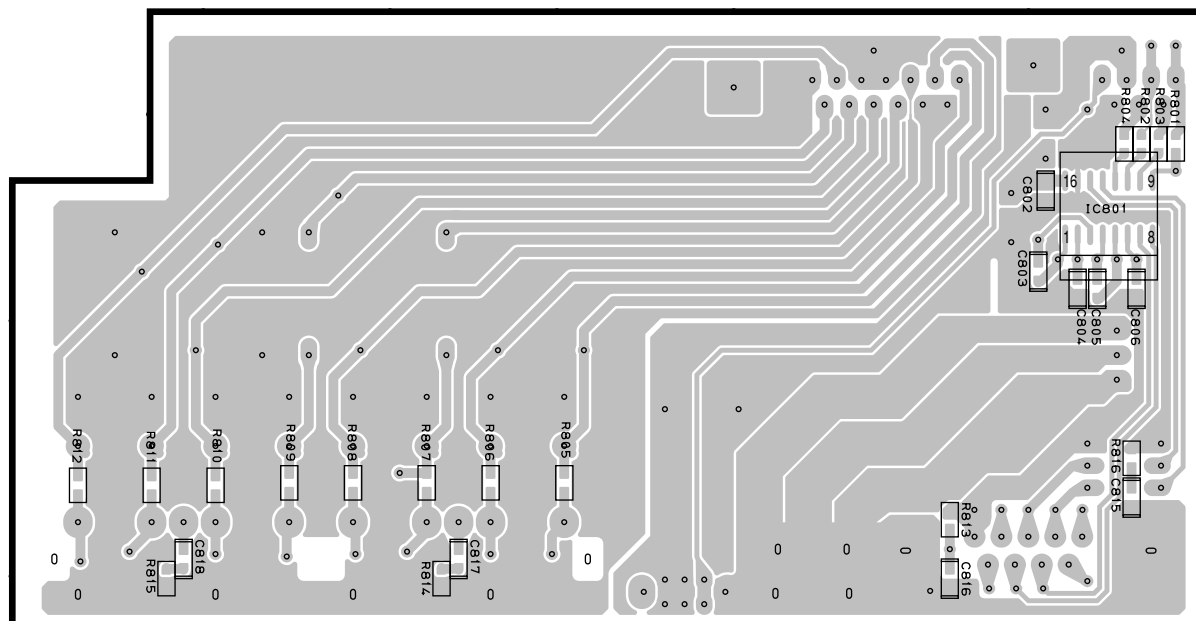
POWER (3) (W26)  
DG  
G  
AG



SURROUND SUB WOOFER SURROUND FRONT  
BACK/ /CENTER PRESENCE

PRE OUT

VIDEO (4) P.C.B. (Side B) Lead Free Solder Used

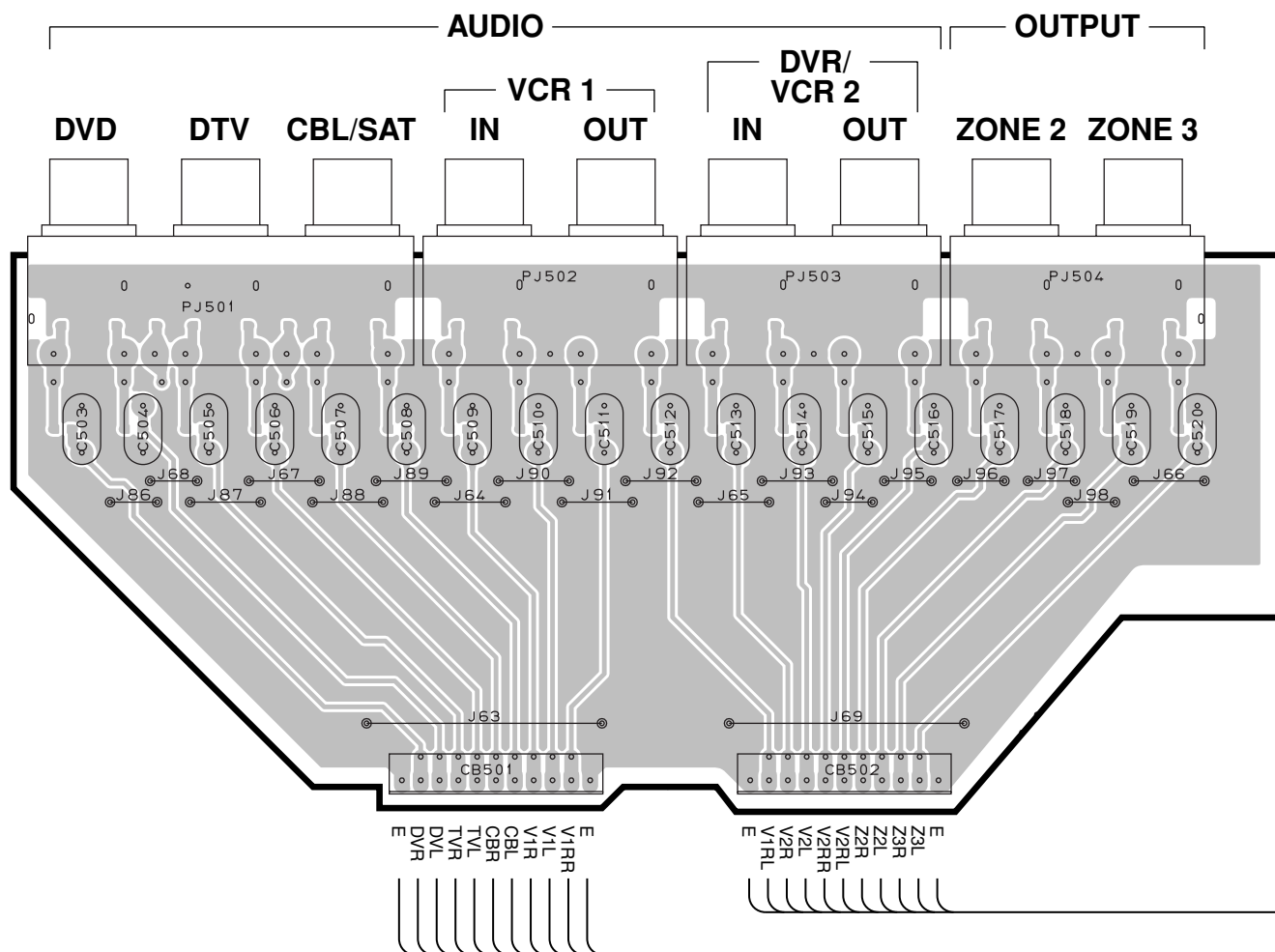


• Semiconductor Location

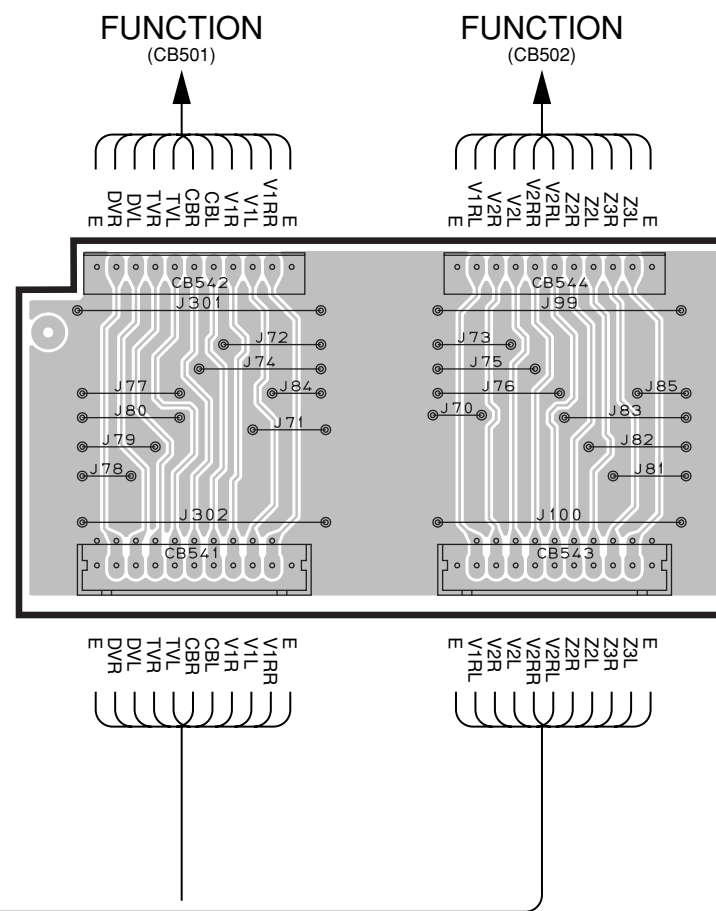
Ref. No.	Location
IC801	I2

1 ■ PRINTED CIRCUIT BOARD (Foil side)

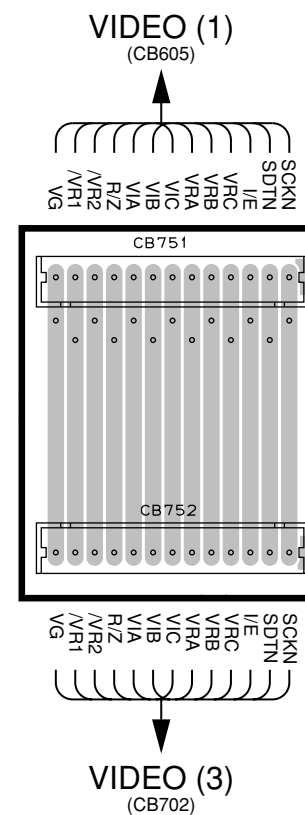
VIDEO (5) P.C.B. (Side A)



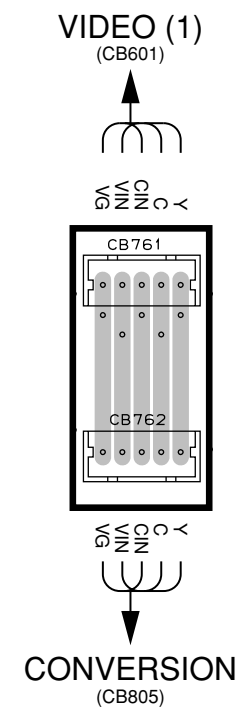
VIDEO (6) P.C.B. (Side A)



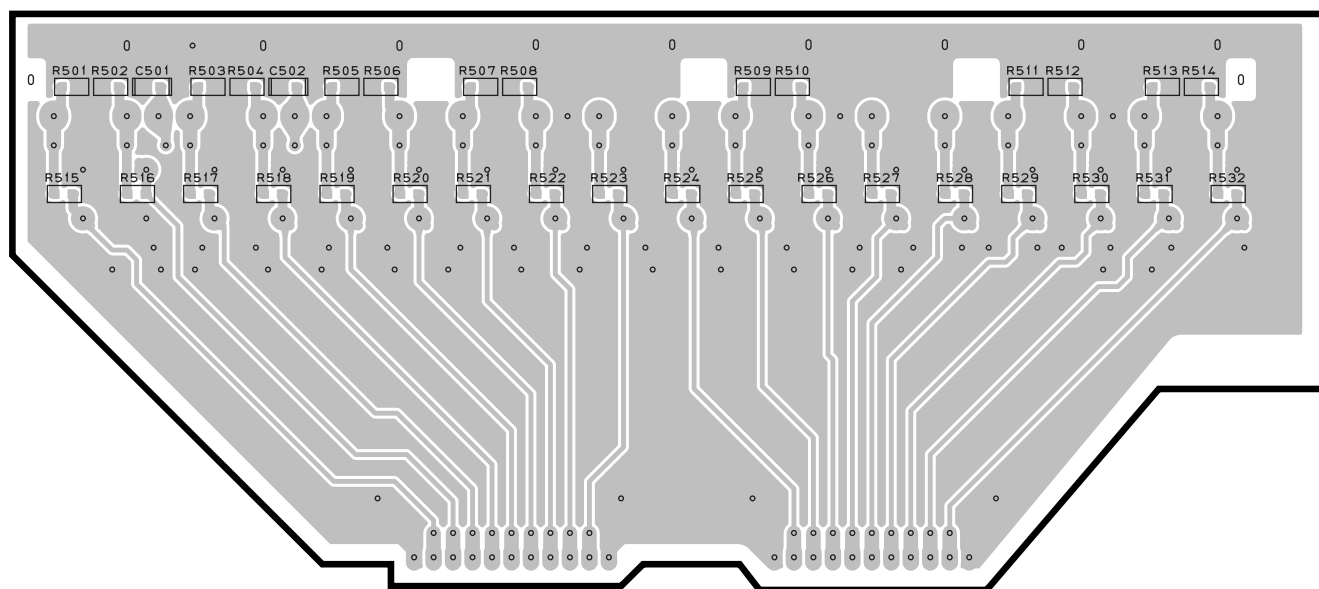
VIDEO (7) P.C.B. (Side A)



VIDEO (8) P.C.B. (Side A)



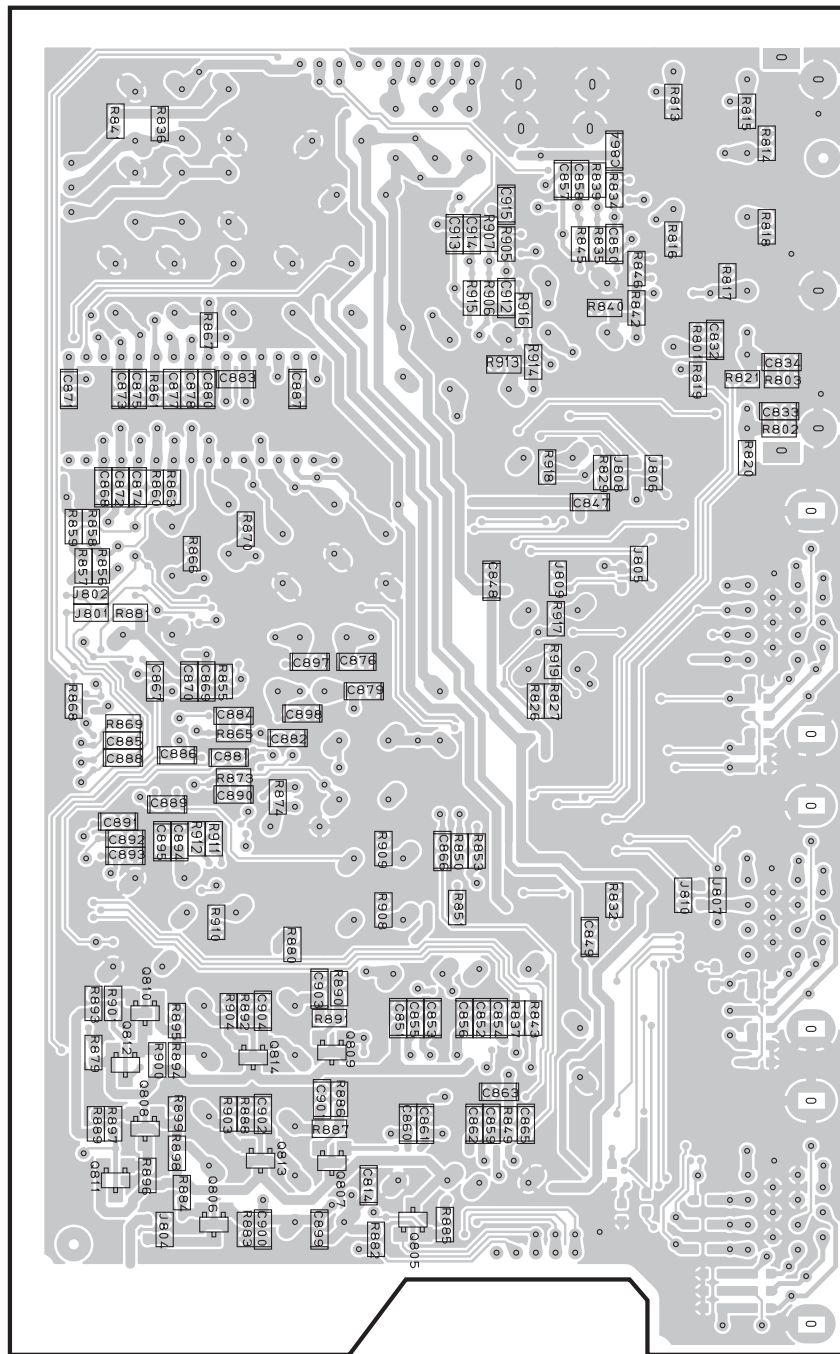
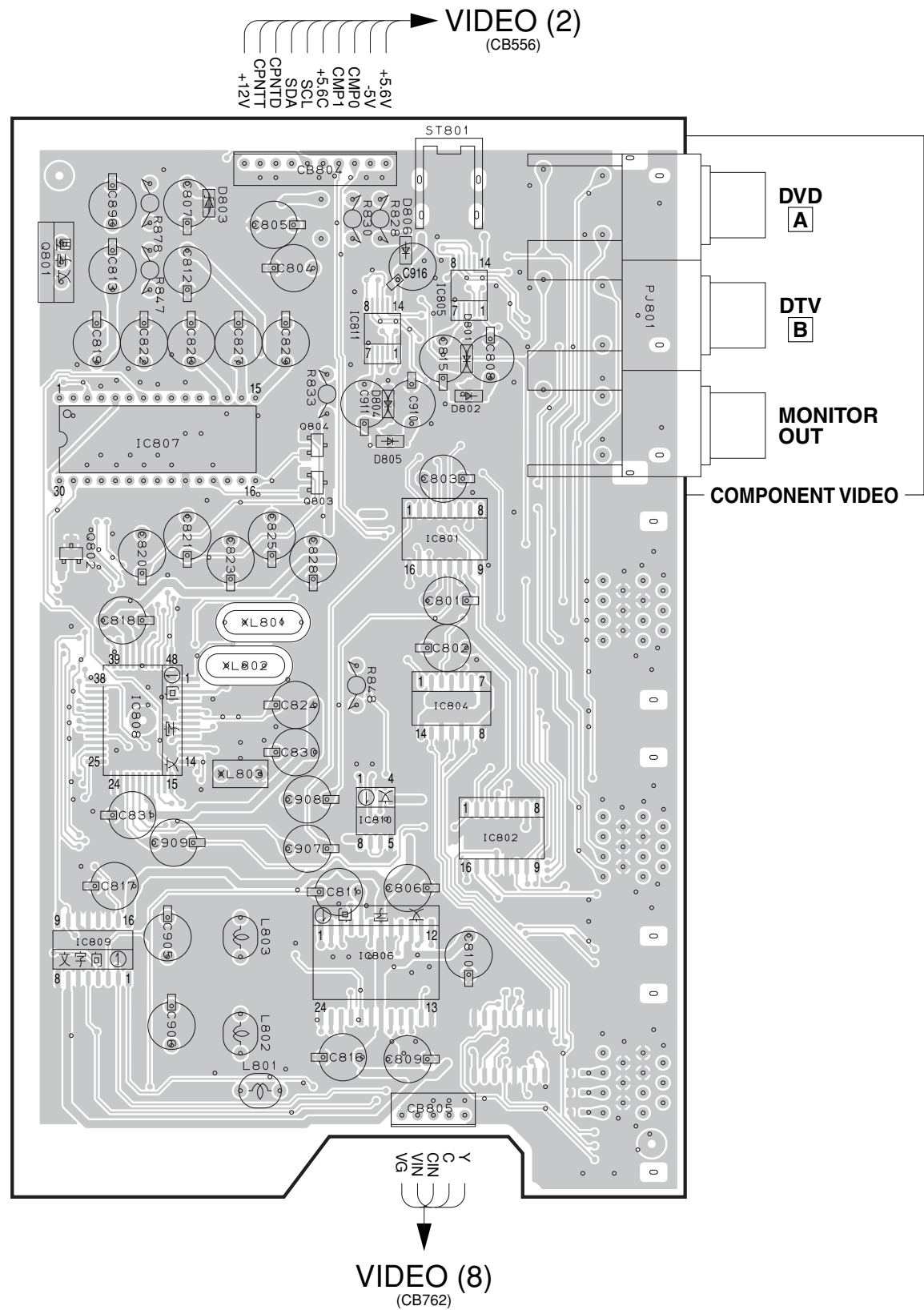
5 VIDEO (5) P.C.B. (Side B) Lead Free Solder Used



PRINTED CIRCUIT BOARD (Foil side)

CONVERSION P.C.B. (Side A) Lead Solder Used

CONVERSION P.C.B. (Side B) Lead Free Solder Used



• Semiconductor Location

Ref. No.	Location
D801	C3
D802	C3
D803	B2
D804	C3
D805	C3
D806	C3
IC801	C4
IC802	C5
IC804	C4
IC805	C3
IC806	C5
IC807	B3
IC808	B5
IC809	A5
IC810	C5
IC811	C3
Q801	A3
Q802	A4
Q803	B4
Q804	B3
Q805	F6
Q806	F6
Q807	F6
Q808	E6
Q809	F5
Q810	E5
Q811	E6
Q812	E6
Q813	F6
Q814	F5

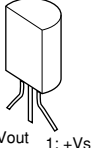
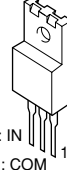
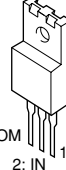

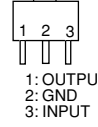
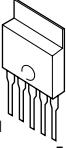

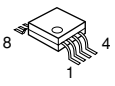
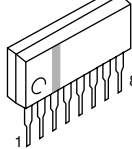
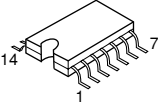
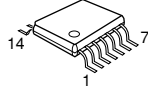
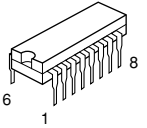
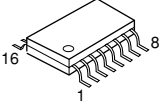
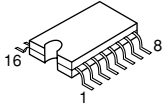
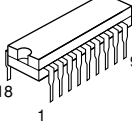
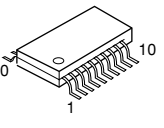
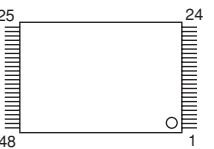
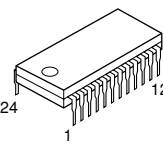
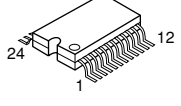
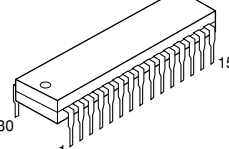
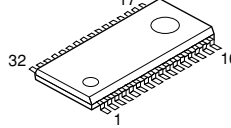
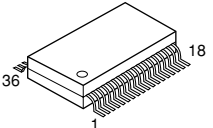
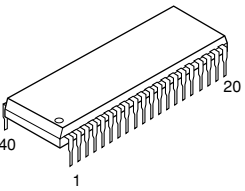
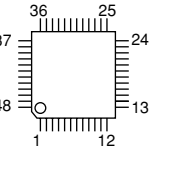
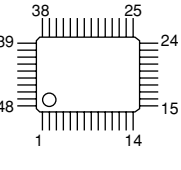
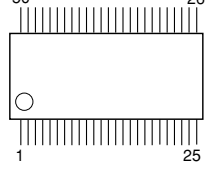
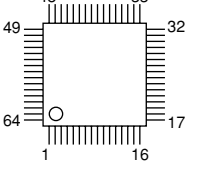
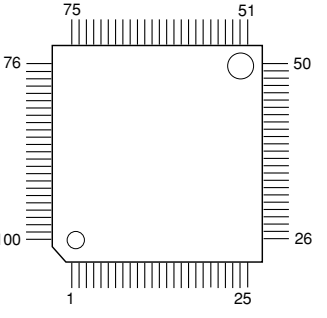
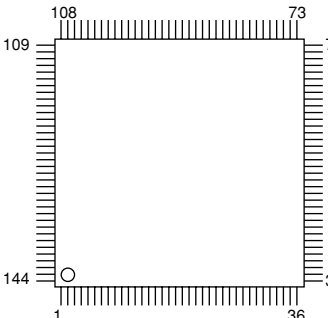
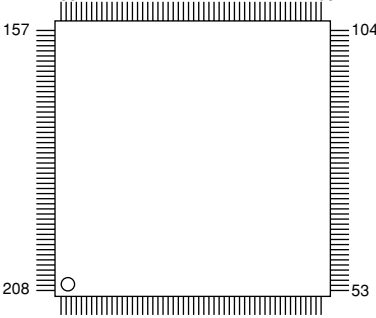
Circuit No.	U, C	A
C813, 819-823, 825, 827, 828, 868, 872, 874-877, 880, 887, 897	X	O
IC807	X	O
J801, 802	O	X
Q802-804	X	O
R847, 856-861, 863, 866, 867, 870	X	O
XL801	X	O

X: NOT USED  
O: USED / APPLICABLE

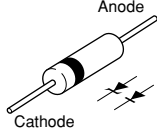
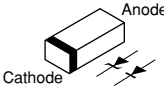
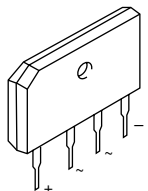
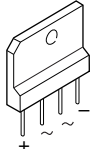


# PIN CONNECTION DIAGRAM

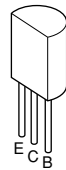
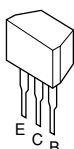
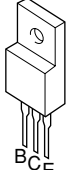
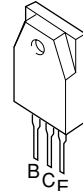

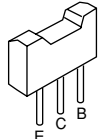
## • ICs

<p>LM61CIZ</p>  <p>3: GND 2: Vout 1: +Vs</p>	<p>AN78N05 NJM7805FA NJM7812FA</p>  <p>3: IN 2: COM 1: OUT</p>	<p>NJM79M05FA NJM79M12FA</p>  <p>3: COM 2: IN 1: OUT</p>	<p>μPC29M33T-E1</p>  <p>3: IN 2: COM 1: OUT</p>	<p>NJM78L05UA</p>  <p>1: OUTPUT 2: GND 3: INPUT</p>	<p>PQ012FZ01ZP PQ025EZ5MZP</p>  <p>1 5</p>
<p>SN74AHC1G08DCKR SN74AHCT1G32DCKR</p>  <p>5 4 3 1</p>	<p>NJM2068MD NJM2904M TK15420M μPC4570G2</p>  <p>8 4 1</p>	<p>NJM4556AL</p>  <p>1 8</p>	<p>TC74HCU04AFEL</p>  <p>14 1 7</p>	<p>NJM2581M SN74AHC00PWR SN74LVU04APWR SN74AHC08PWR SN74AHCT126PW</p>  <p>14 1 7</p>	<p>TC74HC4053AF</p>  <p>16 1 8</p>
<p>TC74VHC153FT 74VHC157MTCX ADM202JRN-REEL7 AK4382AVT AK5380-VT LA7108M M62320FP</p>  <p>16 1 8</p>	<p>MM74HC4051SJX MM74HC4053SJX TC74HC4052AF</p>  <p>16 1 8</p>	<p>BU2092</p>  <p>18 1 9</p>	<p>SN74LV245APWR YAC520-EE2</p>  <p>20 1 10</p>	<p>MBM29F800BA-70PFTN</p>  <p>25 24 48 1</p>	<p>LC74781-9798</p>  <p>24 1 12</p>
<p>TC90A49F</p>  <p>24 1 12</p>	<p>LC78211 LC78212 LC78213</p>  <p>30 1 15</p>	<p>BD3841FS</p>  <p>32 17 16 1</p>	<p>LA7109</p>  <p>36 1 18</p>		
<p>MSM514260E-60JS</p>  <p>40 1 20</p>	<p>AK4358VQ LC89057W-VF4-E YAC523-EVR2</p>  <p>36 25 24 37 48 1 12 13</p>	<p>TA1270BF</p>  <p>38 25 24 39 48 1 14 15</p>	<p>W981616BH-7</p>  <p>50 26 1 25</p>	<p>M66003-0101FP</p>  <p>48 33 49 32 64 1 17 16</p>	
<p>YSS930</p>  <p>75 51 76 50 100 1 25 26</p>	<p>M30805SGP</p>  <p>108 73 109 72 144 1 36 37</p>	<p>D601A002PYP180</p>  <p>156 105 157 104 208 1 52 53</p>			

• Diodes

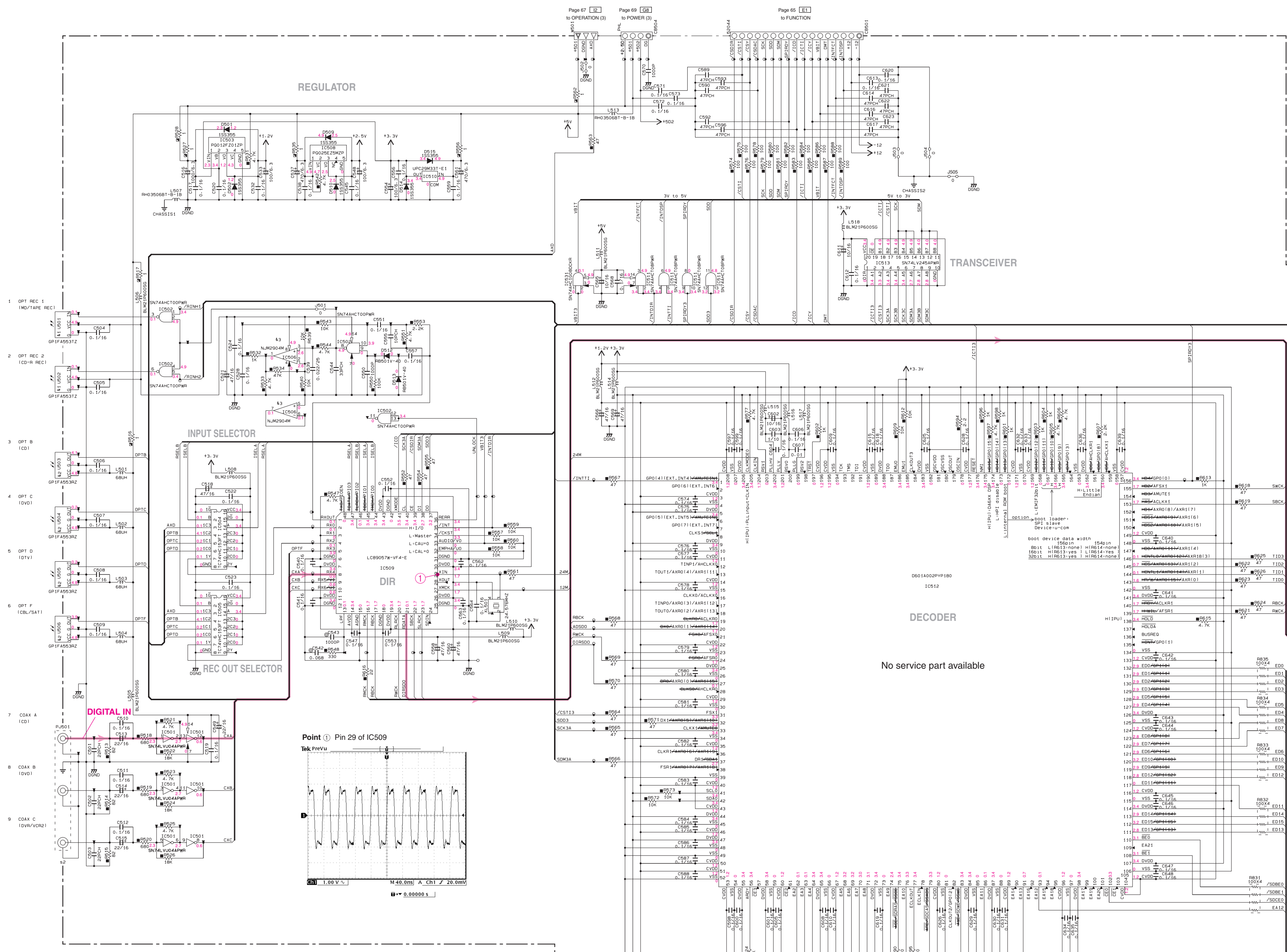
<p>1N4002S 1SS133 1SS244 1T2</p>	<p>MTZJ3.0B MTZJ4.7C MTZJ5.1A MTZJ7.5C MTZJ12C MTZJ15A MTZJ16C MTZJ24C MTZJ30A MTZJ33B</p>		<p>1SS355 1SS380 MA8051-M MA8056-M MA8068-L MA8100-L RB501V-40 UDZ 3.6BTE-17 UDZS5.6BTE-17 UDZ5.1B</p>	
<p>D2SBA20</p> 	<p>D15XB20</p> 			

• Transistors

<p>2SA893A 2SA970 2SA1015 2SA949 2SC535 2SC1815 2SC1890A 2SC2229 2SC2240 2SD438</p> 	<p>2SC1740S 2SD1915F DTC144ES DTC144ESA</p> 	<p>2SA1837 2SB941 2SB1274 2SC3852 2SC4793 2SD1913</p> 	<p>2SA1492 2SC3856</p> 
<p>2SA1037K 2SC2412K 2SC3326 DTA144EKA</p> 	<p>2SA1708 2SC4488 2SC4614</p> 		

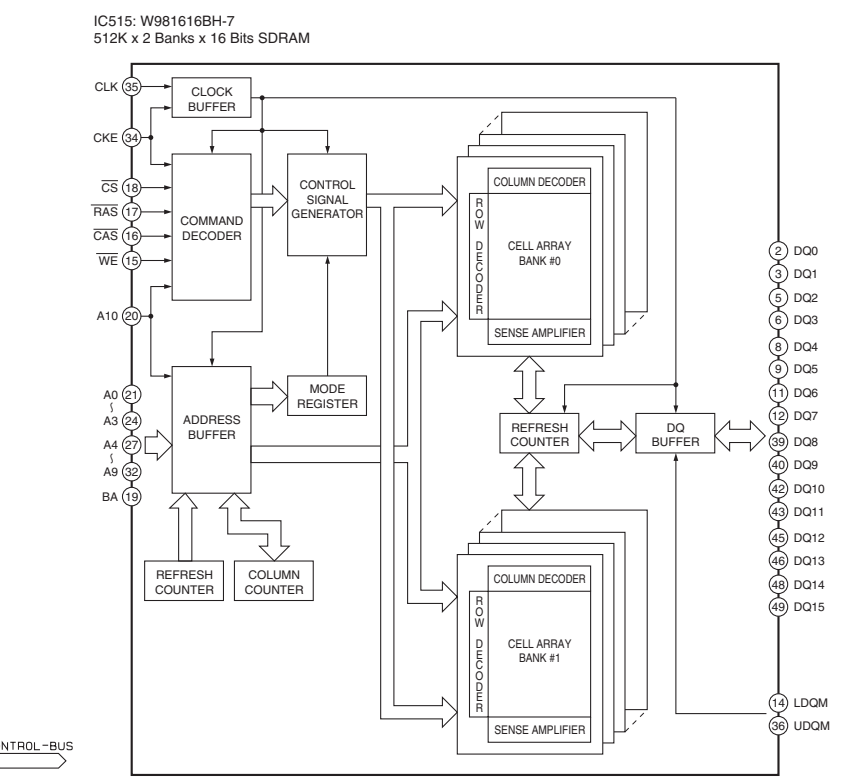
SCHEMATIC DIAGRAM (DSP 1/2)

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Interchangeable Parts at Manufacture Stage

Mark	Reference Parts Number	Parts Name
41	U501-502	GP1F45531Z 10K179
42	U503-506	GP1F4553RZ 10K179
43	IC508	NLM2904M NLM2904G
45	IC517	MM514260E-60J5 CL7440100-40J4 LS41C16297-30K LS41C16297-30K1 25C33261A/B1 25C33261B1
46	U513-524	25C33261A/B1 25C33261B1



CAPACITOR

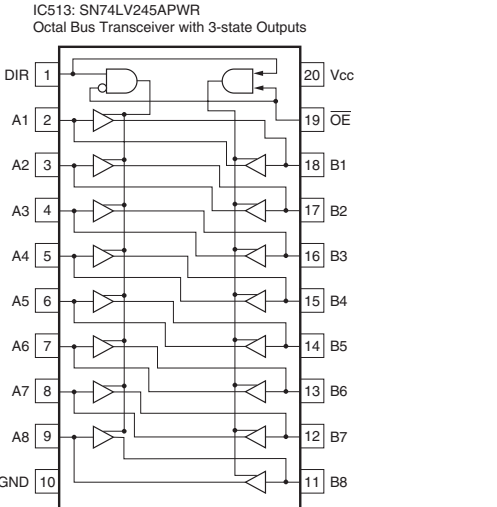
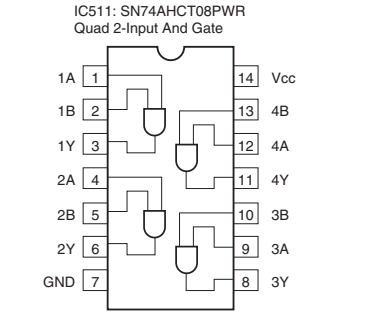
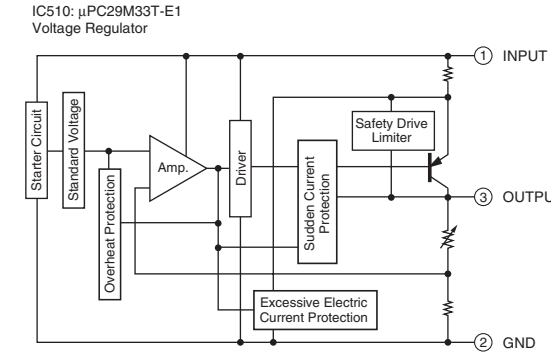
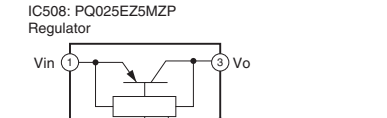
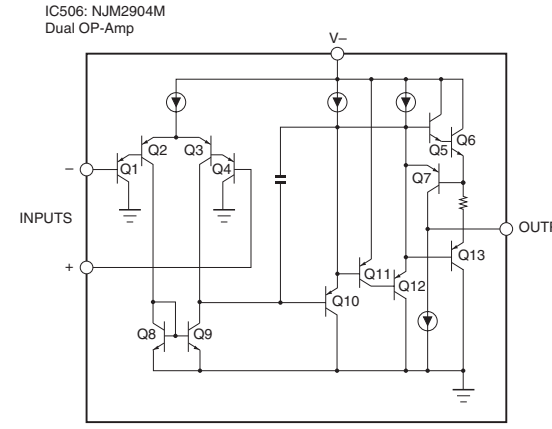
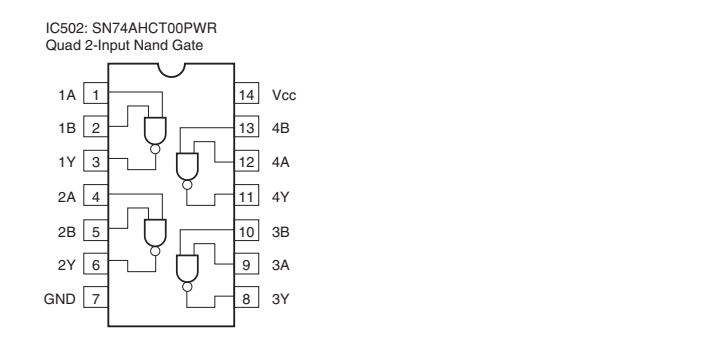
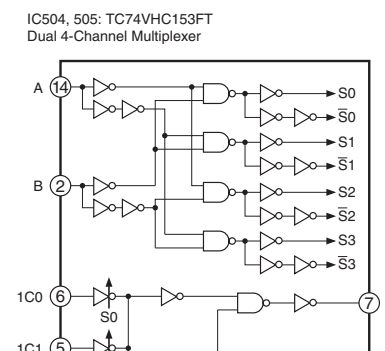
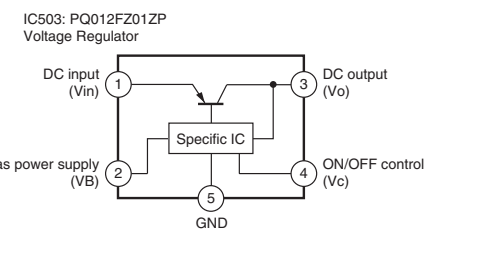
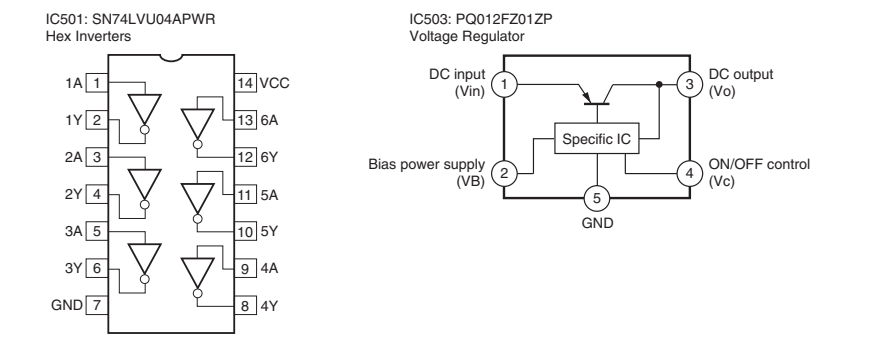
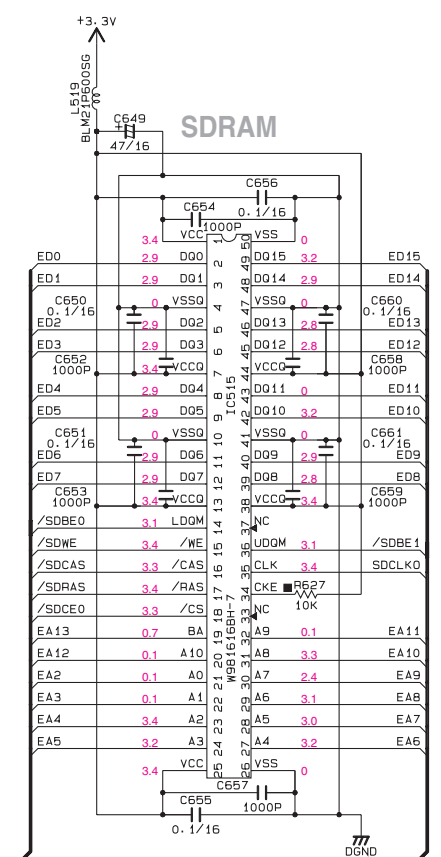
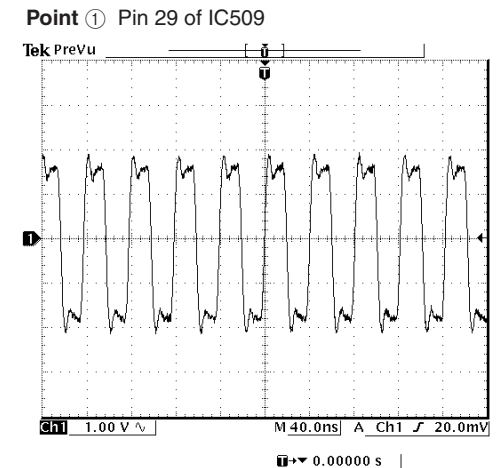
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
∅	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊕	POLYESTER FILM CAPACITOR
⊖	POLYSTYRENE FILM CAPACITOR
⊘	MICA CAPACITOR
⊙	POLYPROPYLENE FILM CAPACITOR
⊕	SEMICONDUCTIVE CERAMIC CAPACITOR
⊖	POLYPHYLENE SULFIDE FILM CAPACITOR

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P&F)
□	CARBON FILM RESISTOR (P&10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
▴	METAL PLATE RESISTOR
▾	FILM PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊕	SEMI VARIABLE RESISTOR
⊖	CHIP RESISTOR

NOTICE (mode1)  
(U)..... U.S.A  
(C)..... CANADA  
(A)..... AUSTRALIA

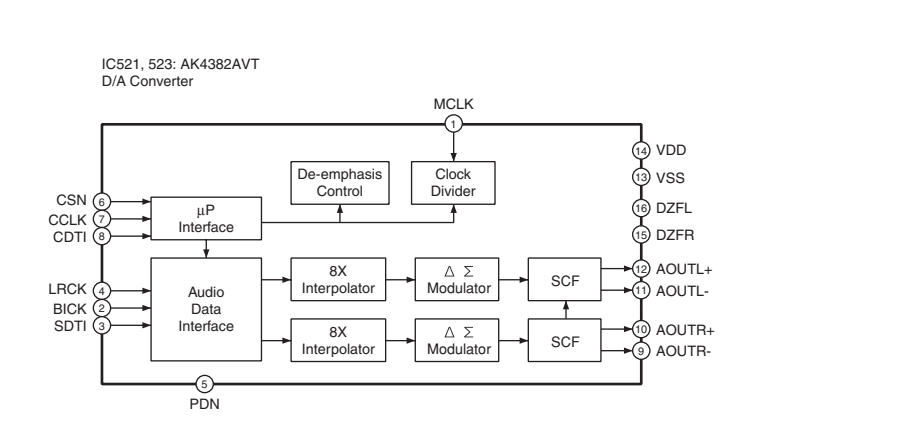
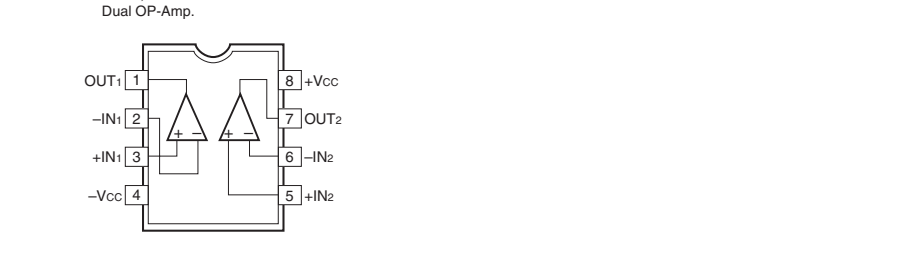
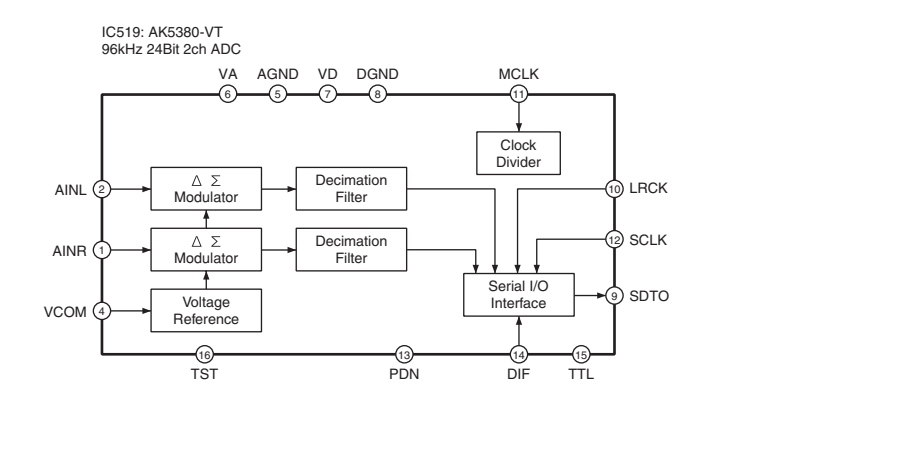
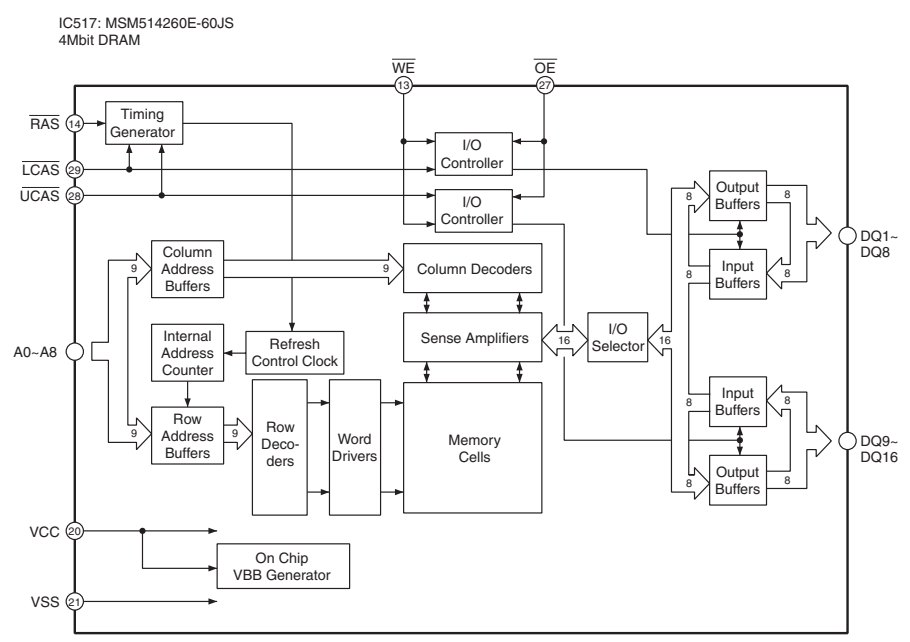
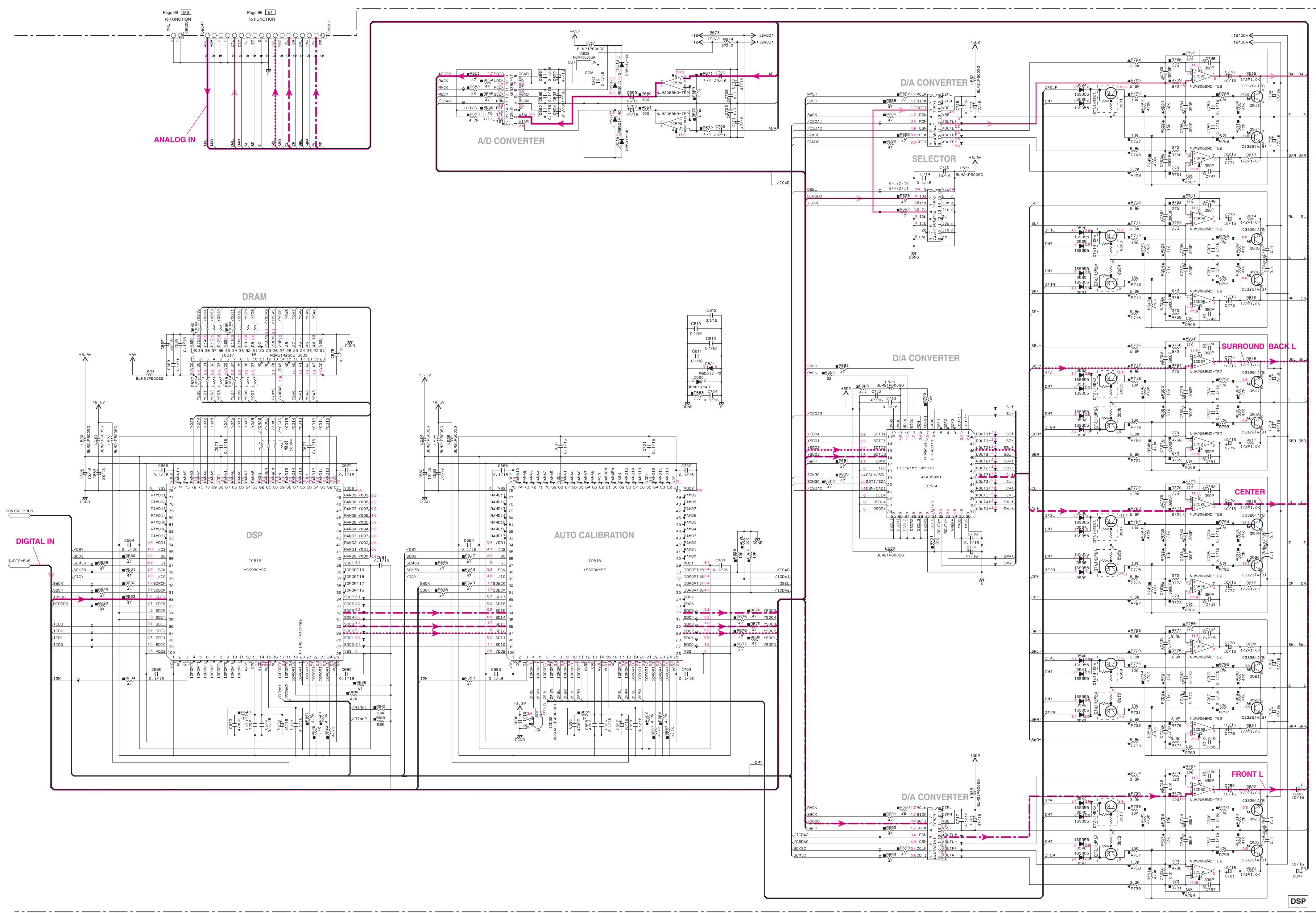
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DSP

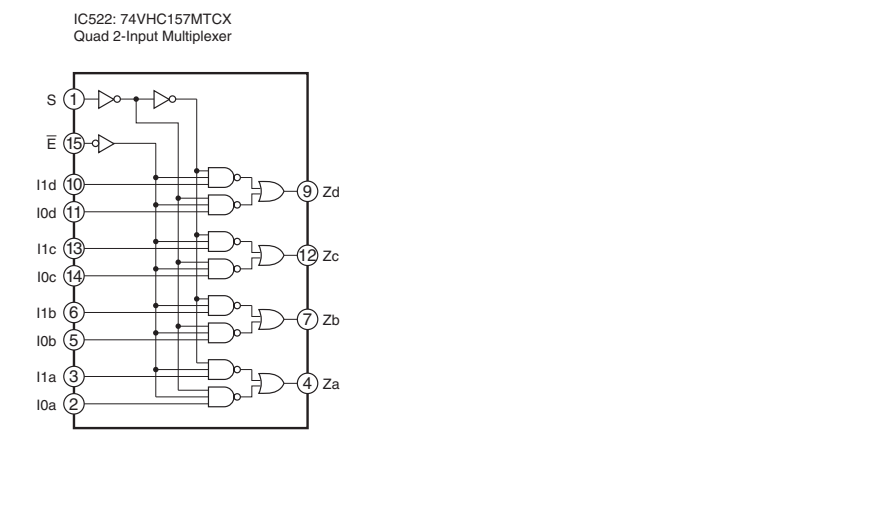
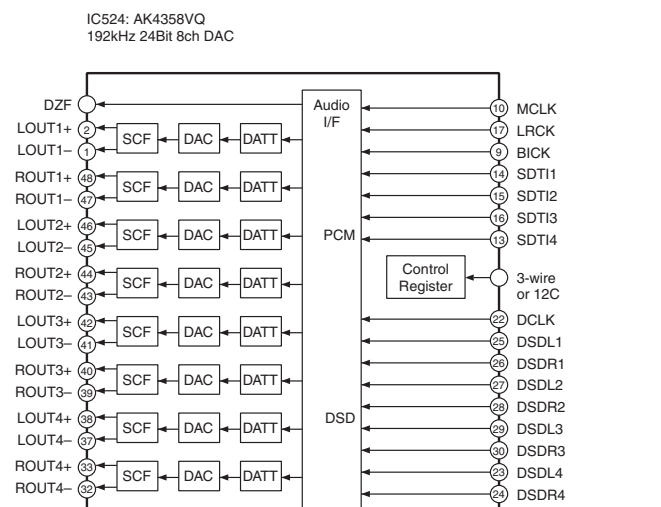
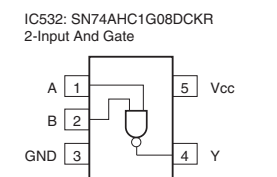
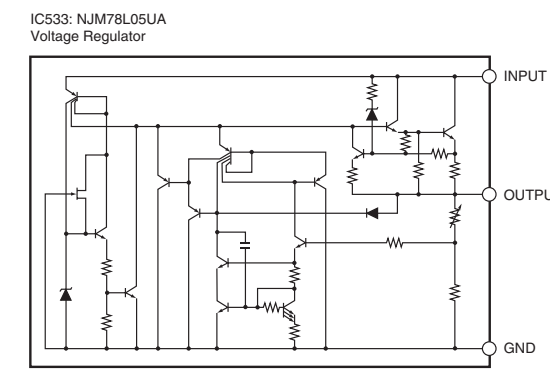
\* All voltages are measured with a 10MΩ/V DC electronic volt meter.  
\* Components having special characteristics are marked with a dot and must be replaced with parts having specifications equal to those originally installed.  
\* Schematic diagram is subject to change without notice.





S	Circuit No.	U.-C.-A	Wno	Remarks
1	RE38	4.7k	RES647	
2	PJ501	MSD-2531-2M1	MS4914D	2400

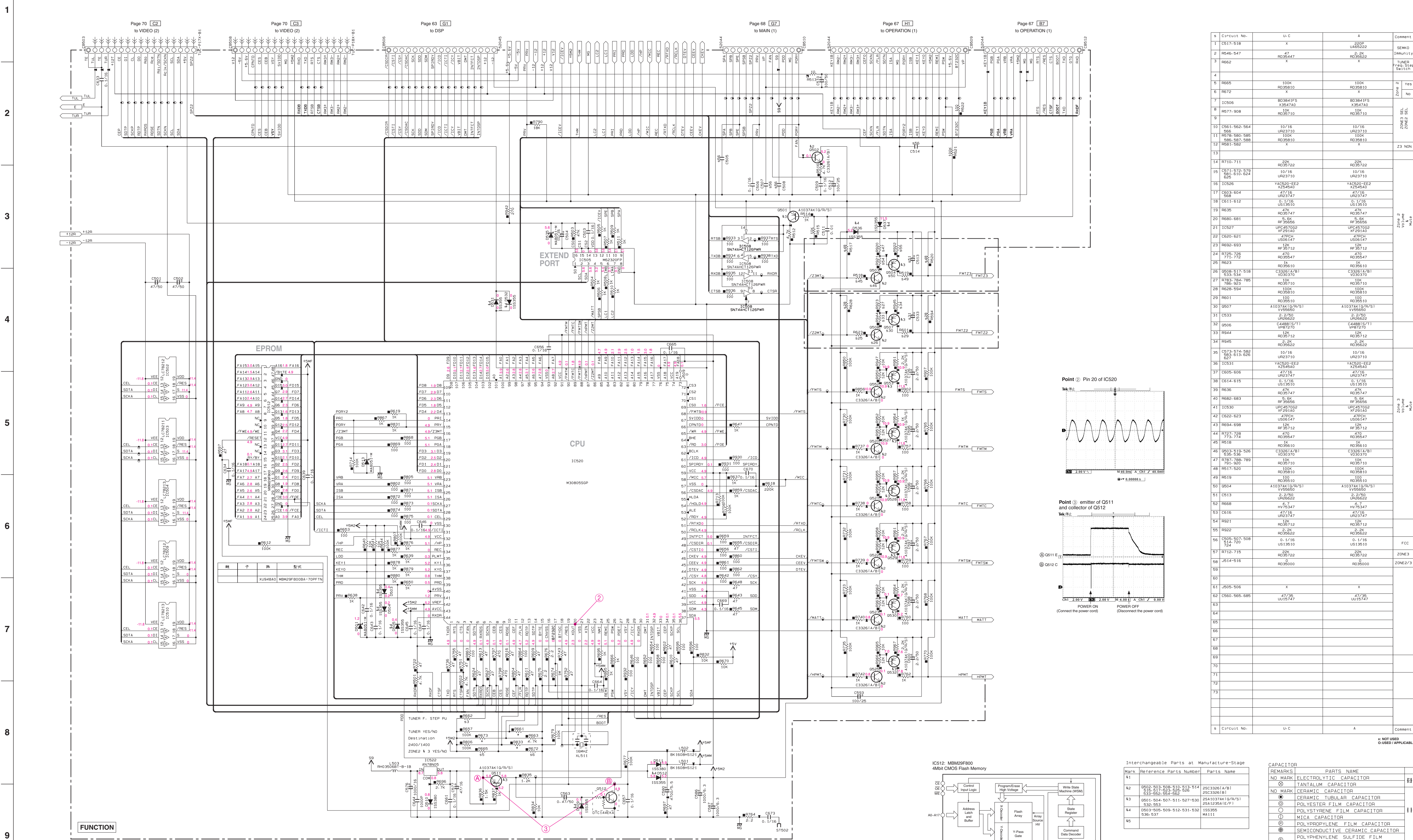
\* NOT USED  
 O USED / APPLICABLE



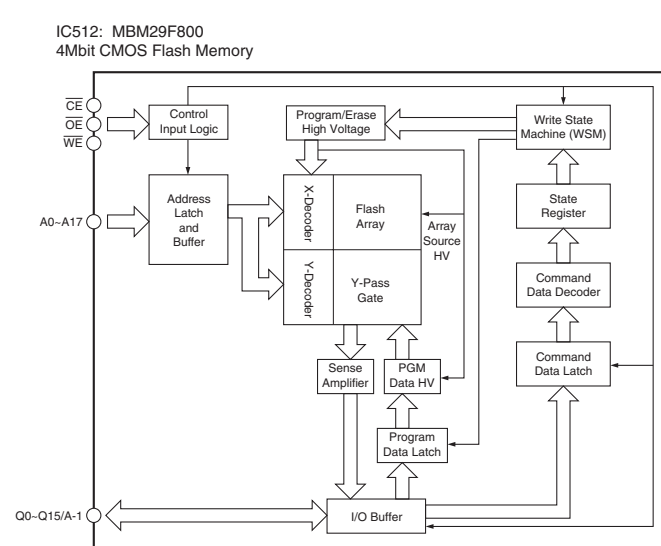
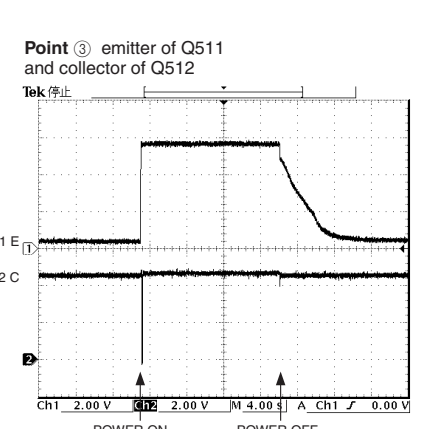
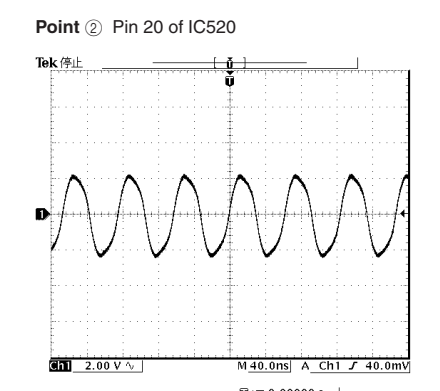
\* All voltages are measured with a 10MQ/V DC electronic volt meter.  
 \* Components having special characteristics are marked !, and must be replaced with parts having specifications equal to those originally installed.  
 \* Schematic diagram is subject to change without notice.



SCHEMATIC DIAGRAM (FUNCTION 1/2)



Circuit No.	U-C	A	Comment
1	CS17:518	2000	SEM0
2	RS46:547	47	10MΩ/1.1V
3	R662	X	TUNER
4	R665	100K	100K
5	R672	100K	100K
6	IC506	RD3841F5	RD3841F5
7	RS77:908	X	RD3841F5
8	CS61:562,564	10/16	10/16
9	RS76:585,586	UR23710	UR23710
10	RS81:582	X	UR23710
11	RS81:582	X	UR23710
12	RS81:582	X	UR23710
13	RY10:711	20K	20K
14	CS71:672,678	10/16	10/16
15	RS81:678,684	UR23710	UR23710
16	IC526	YAC500-EE2	YAC500-EE2
17	CS63:604	X2545A0	X2545A0
18	CS61:612	5.1716	5.1716
19	R635	47K	47K
20	R680:681	5.6K	5.6K
21	IC527	UR2457002	UR2457002
22	CS62:621	470K	470K
23	R692:693	12K	12K
24	R729:726	470	470
25	R643	1K	1K
26	CS68:517,518	10K	10K
27	R787:786,789	10K	10K
28	R628:694	10K	10K
29	R601	100	100
30	CS07	A1037AK1G/R/S1	A1037AK1G/R/S1
31	CS33	5.2/50	5.2/50
32	CS06	C44815/71	C44815/71
33	R944	12K	12K
34	R945	5.6K	5.6K
35	CS73:574,582	10/16	10/16
36	RS73:613,626	UR23710	UR23710
37	IC531	YAC500-EE2	YAC500-EE2
38	CS65:606	4716	4716
39	CS14:615	5.1716	5.1716
40	R636	47K	47K
41	IC530	UR2457002	UR2457002
42	CS62:623	470K	470K
43	R694:698	470	470
44	R727:728	470	470
45	R618	1K	1K
46	CS33:519,526	10K	10K
47	R787:786,789	10K	10K
48	RS17:520	100	100
49	R619	100	100
50	CS04	A1037AK1G/R/S1	A1037AK1G/R/S1
51	CS13	2.2/50	2.2/50
52	R668	47K	47K
53	CS16	HV7347	HV7347
54	R621	1K	1K
55	R622	1K	1K
56	CS65:507,508	5.1716	5.1716
57	RS17:715	20K	20K
58	RS14:516	RD35000	RD35000
59	J505:506	X	X
60	CS60:565,685	4770K	4770K
61	CS60:565,685	UA15727	UA15727
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Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
41		
42	0500, 503, 506, 510, 513, 514, 516, 517, 523, 525, 526, 533, 565, 566, 569	28C3286(A/B)
43	0501, 504, 507, 511, 527, 530, 532, 553	28A1037AK1G/R/S1
44	0503, 505, 508, 512, 531, 532, 536, 537	28A1235A1E/P1
45		15S305

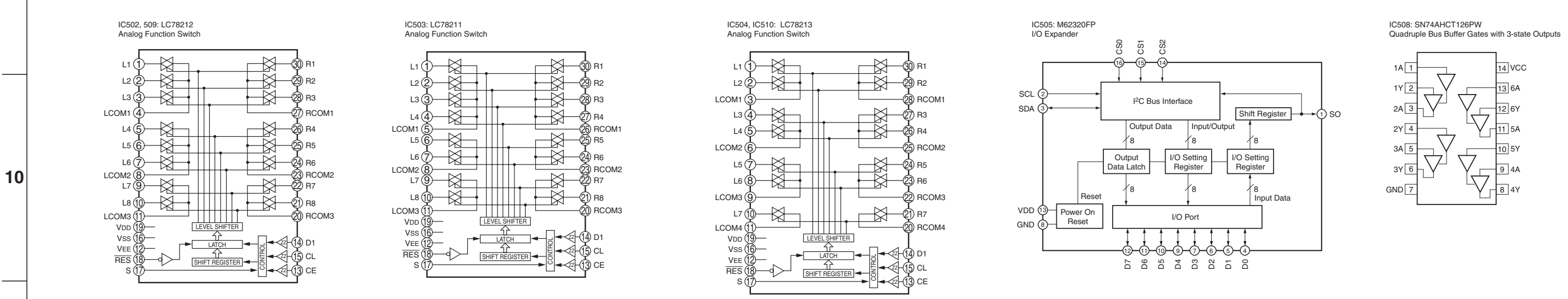
REMARKS PARTS NAME

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊙	POLYESTER FILM CAPACITOR
⊙	POLYESTER FILM CAPACITOR
⊙	MICA CAPACITOR
⊙	POLYPROPYLENE FILM CAPACITOR
⊙	SEMICONDUCTIVE CERAMIC CAPACITOR
⊙	POLYPHENYLENE SULFIDE FILM CAPACITOR

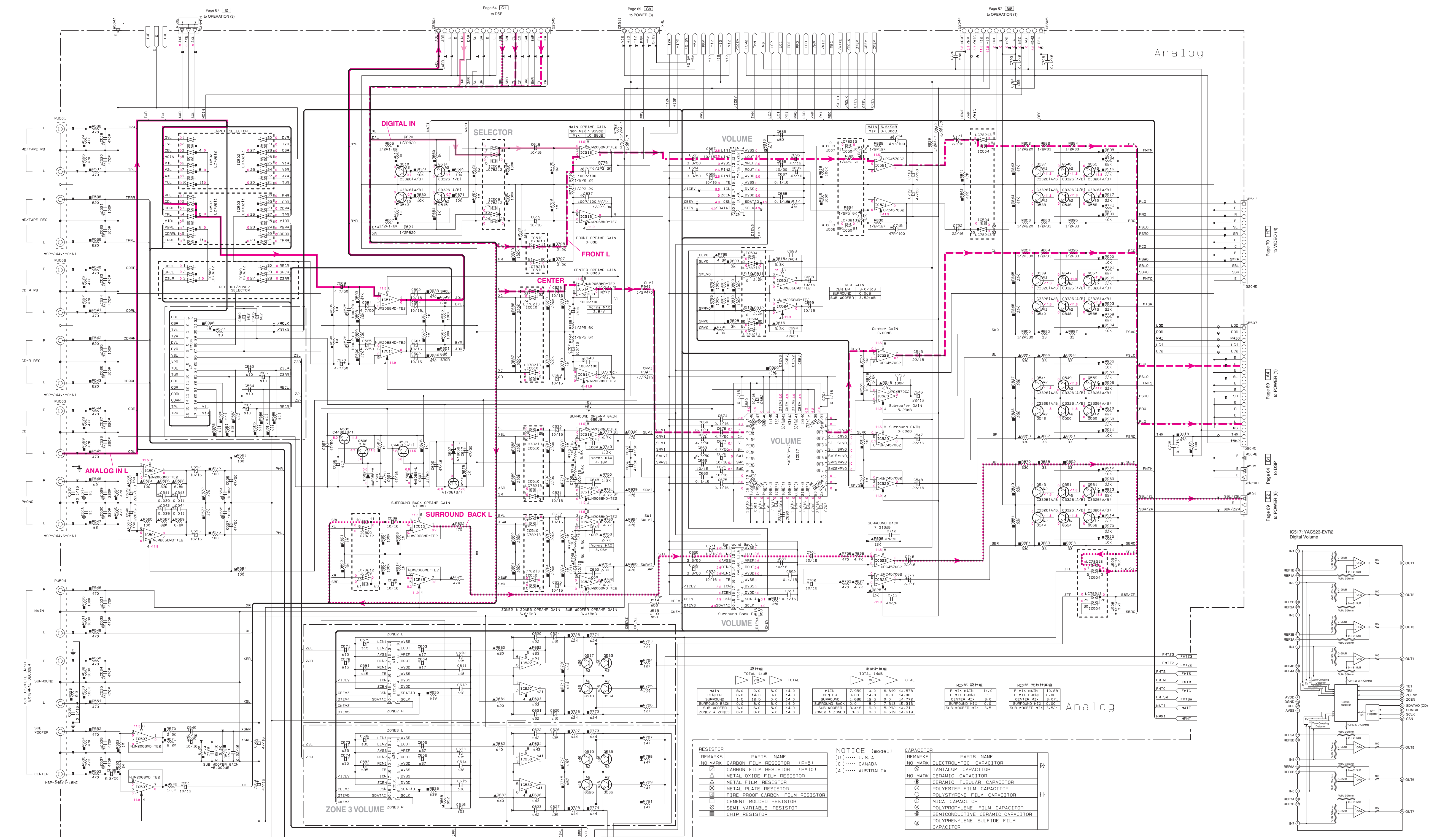
NOTICE (mode1)

(U)..... U.S.A.  
(C)..... CANADA  
(A)..... AUSTRALIA

\* All voltages are measured with a 10MΩ/V DC electronic volt meter.  
\* Components having special characteristics are marked 1 and must be replaced with parts having specifications equal to those originally installed.  
\* Schematic diagram is subject to change without notice.



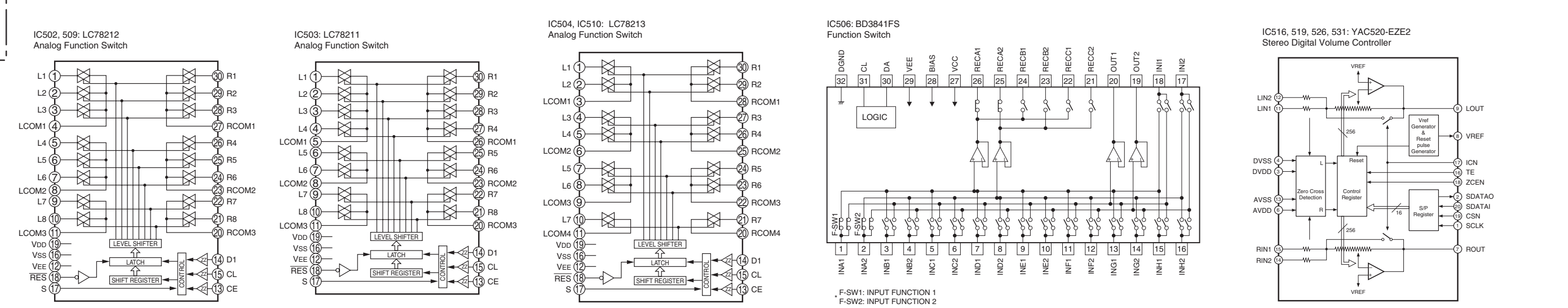




REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
▲	METAL OXIDE FILM RESISTOR
□	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
○	CEMENT MOLDED RESISTOR
◇	SEMI-VARIABLE RESISTOR
◎	CHIP RESISTOR

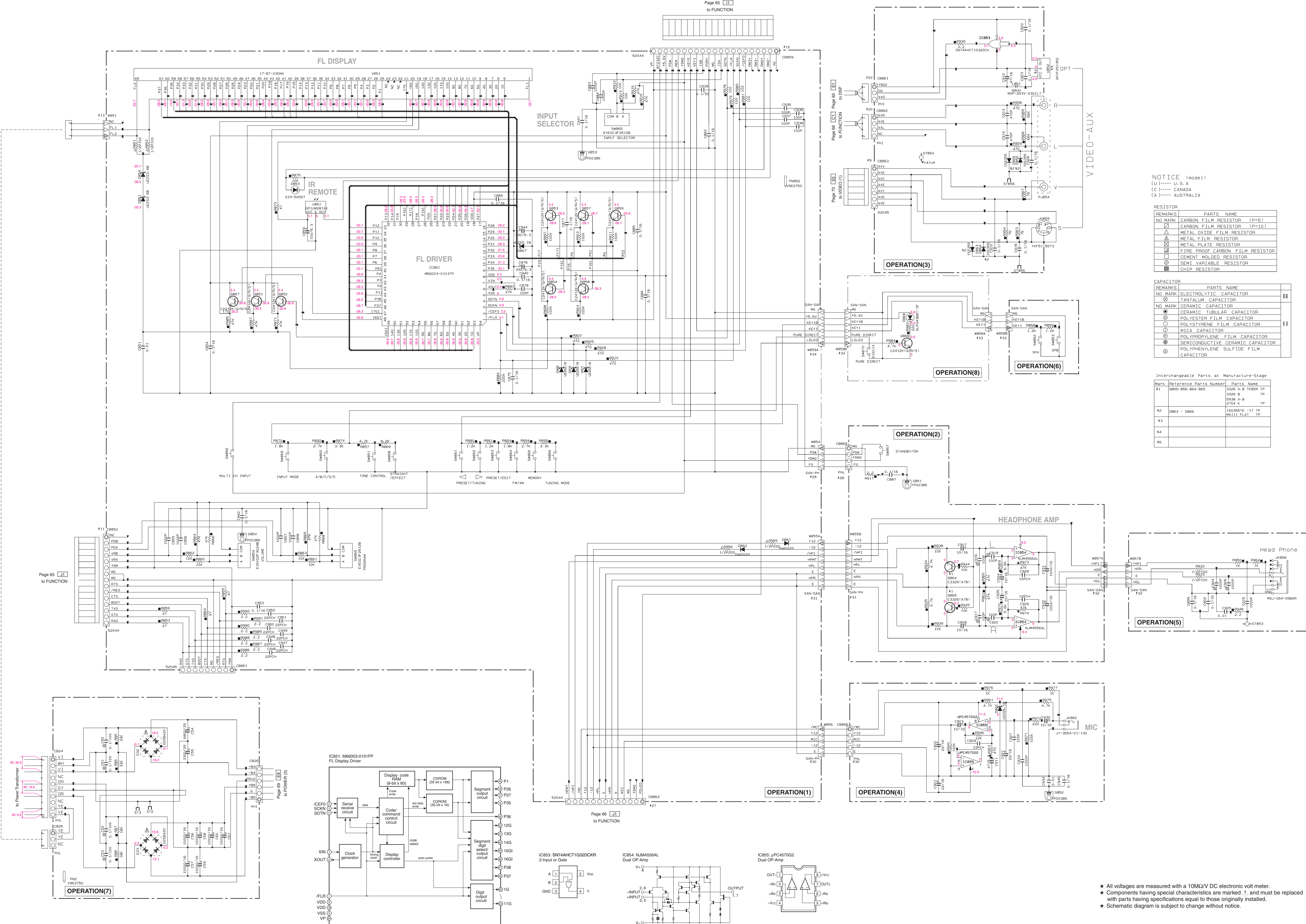
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
△	TANTALUM CAPACITOR
○	CERAMIC TUBULAR CAPACITOR
●	POLYESTER FILM CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	SEMICONDUCTIVE CERAMIC CAPACITOR
○	POLYPHENYLENE SULFIDE FILM CAPACITOR



\* All voltages are measured with a 10MΩ/V DC electronic volt meter.  
 \* Components having special characteristics are marked †, and must be replaced with parts having specifications equal to those originally installed.  
 \* Schematic diagram is subject to change without notice.



SCHEMATIC DIAGRAM (OPERATION)



NOTICE (model)  
 (U)..... U.S.A.  
 (C)..... CANADA  
 (A)..... AUSTRALIA

RESISTOR

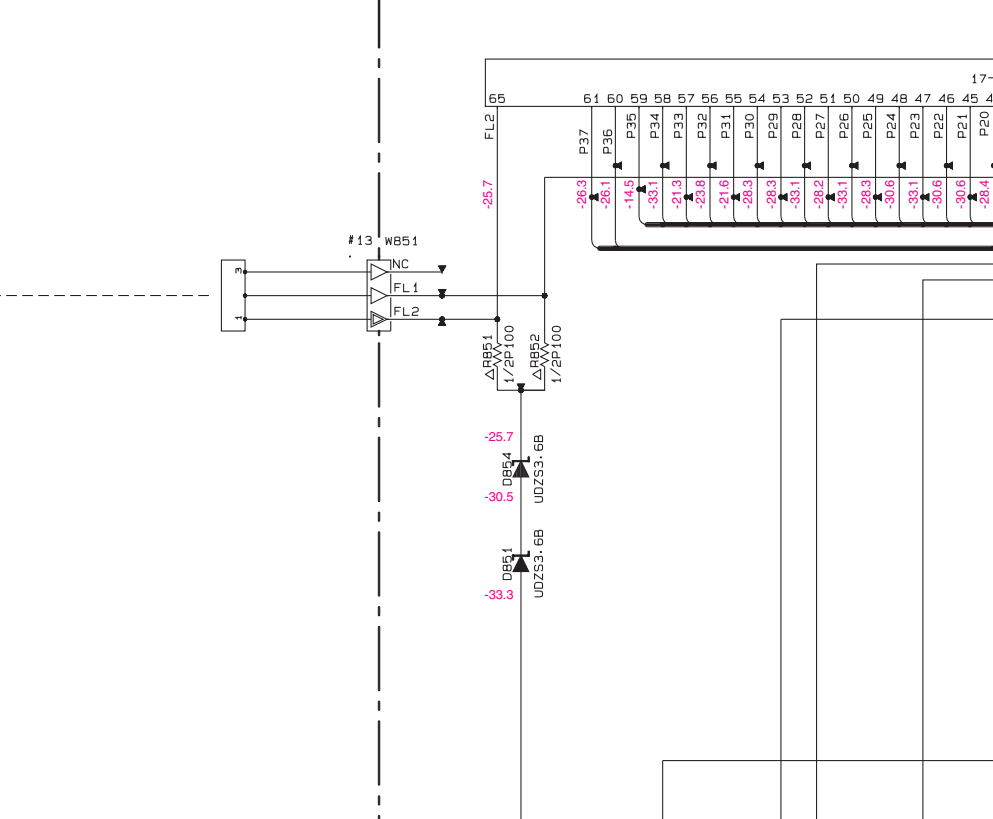
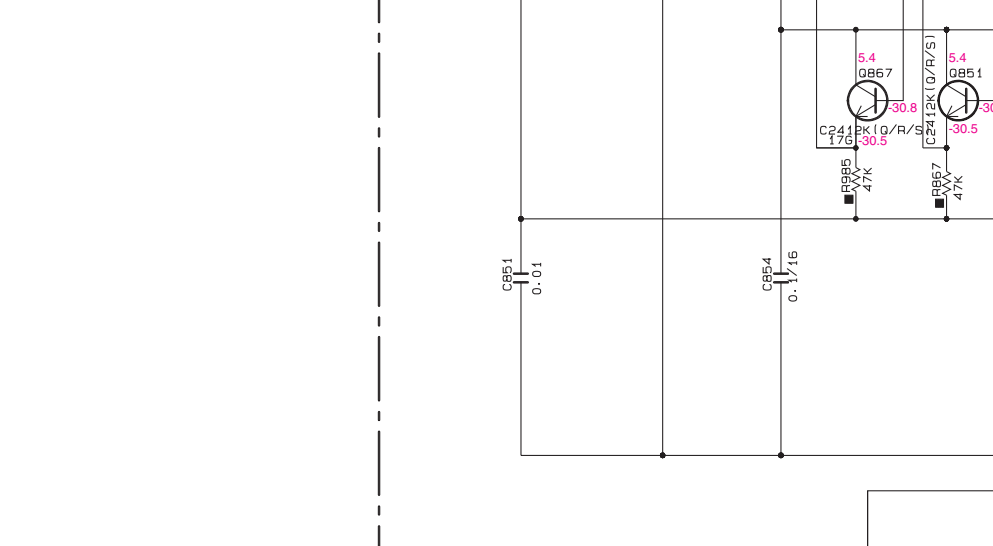
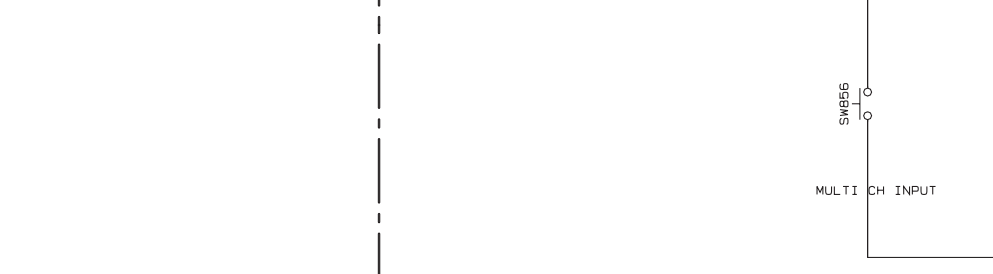
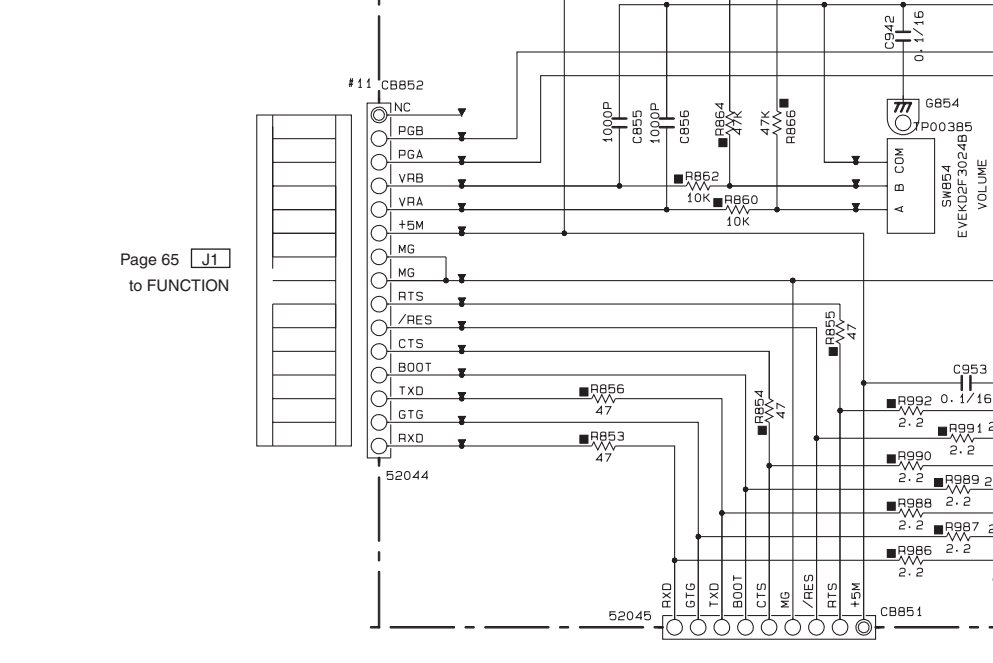
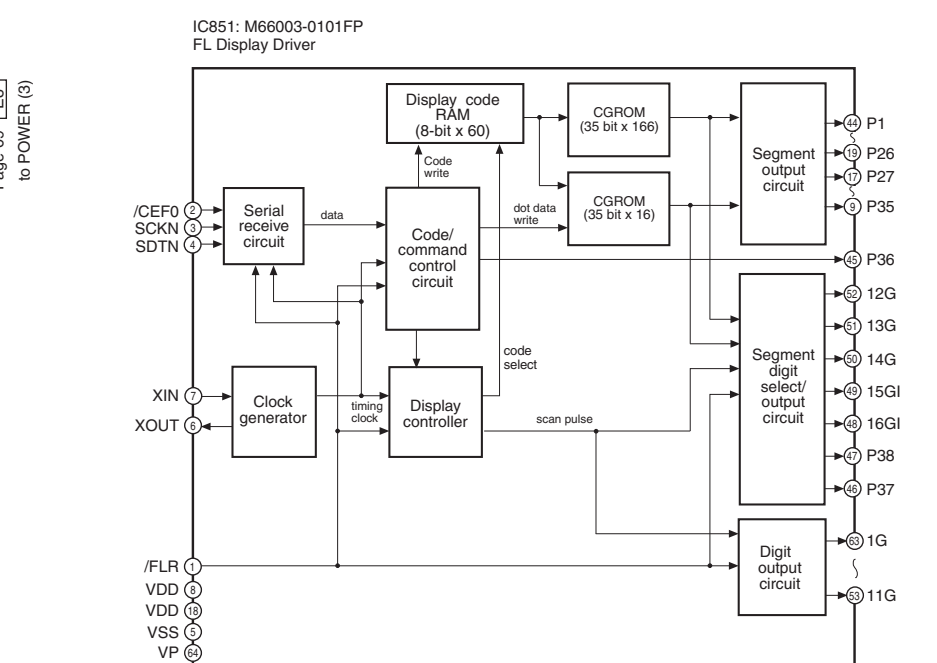
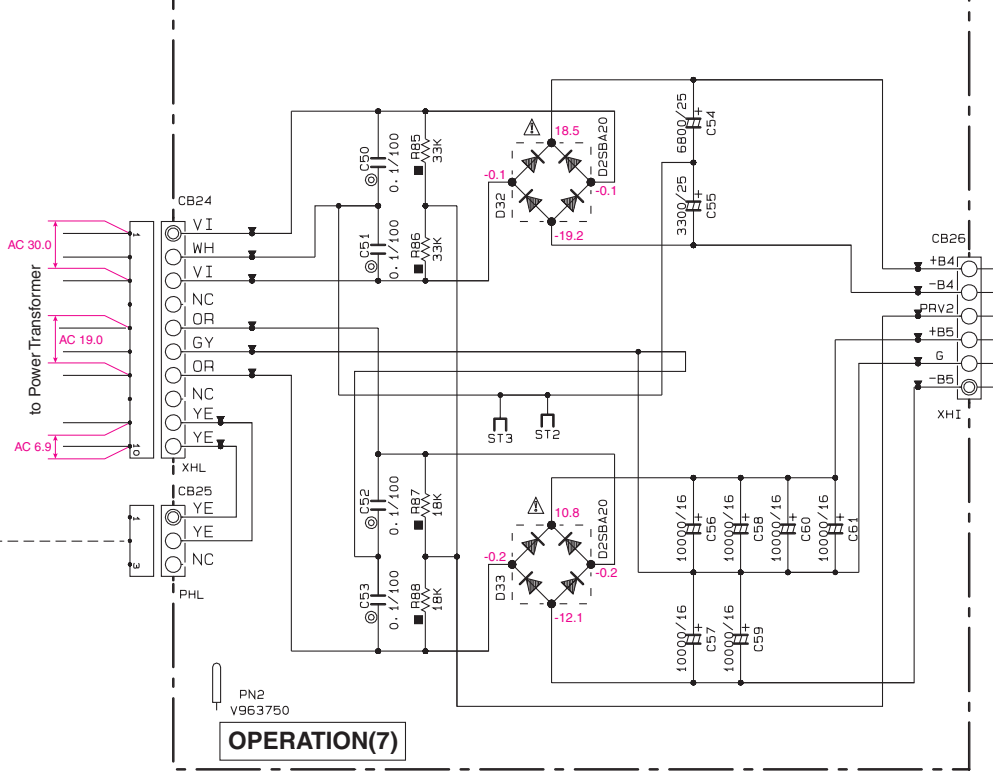
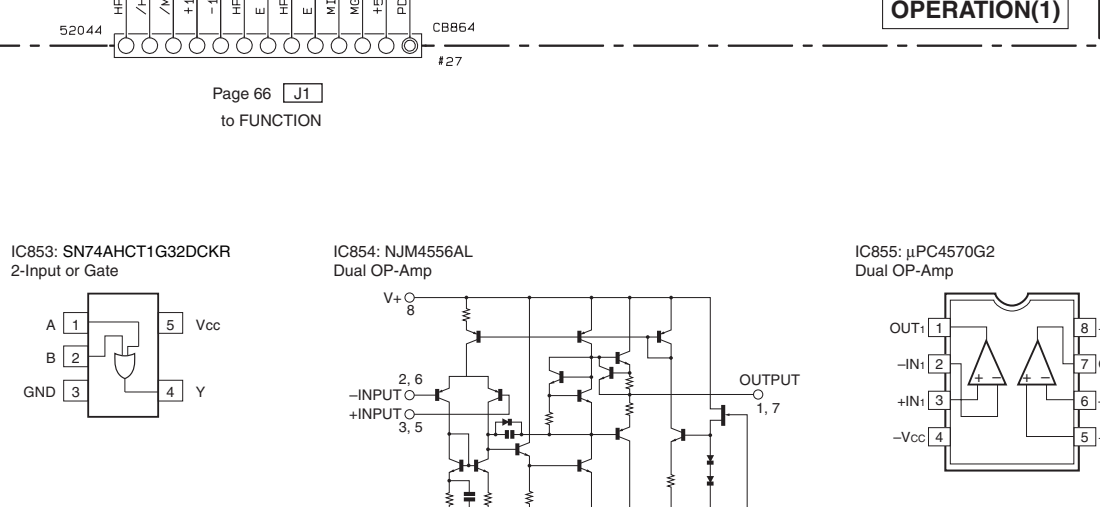
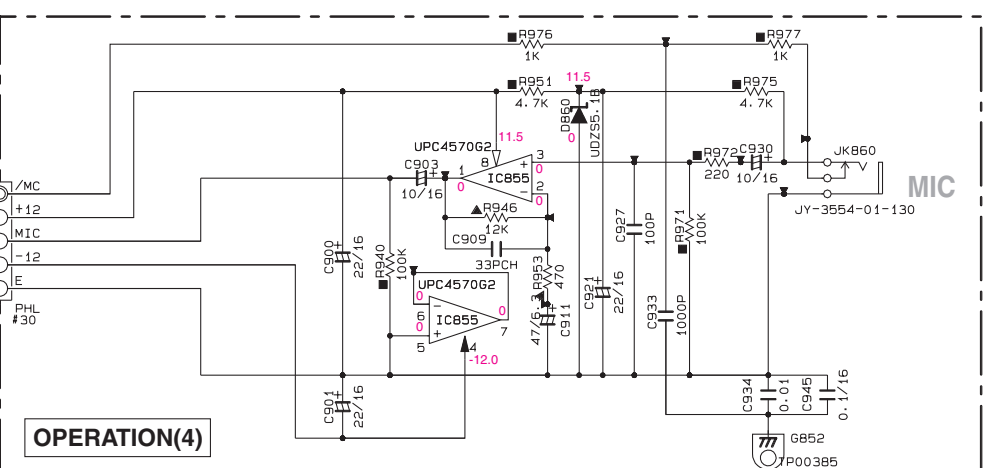
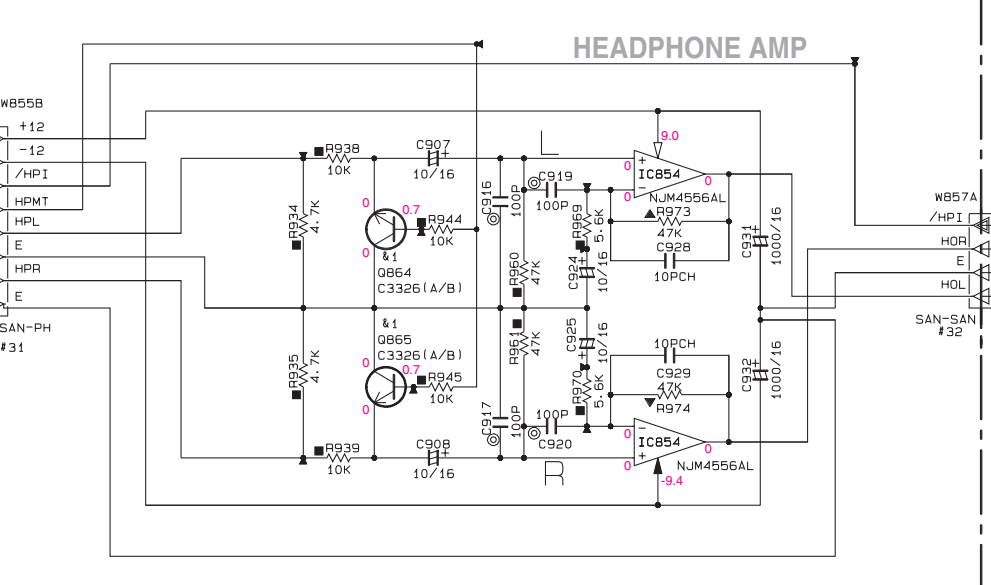
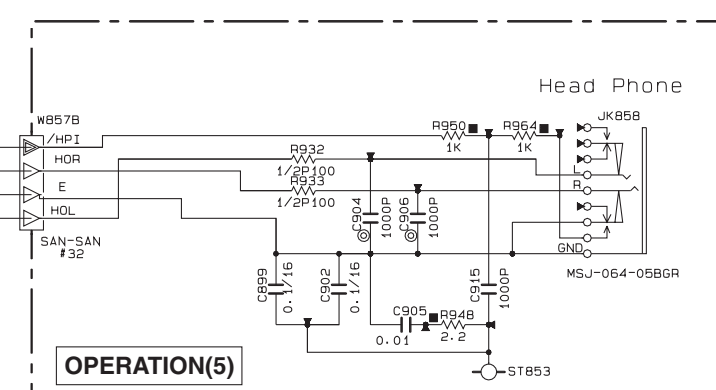
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P+5)
□	CARBON FILM RESISTOR (P+10)
△	METAL OXIDE FILM RESISTOR
▢	METAL PLATE RESISTOR
▣	FIRE PROOF CARBON FILM RESISTOR
▤	CEMENT MOLDED RESISTOR
▥	SEMI VARIABLE RESISTOR
▧	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
⊗	POLYPROPYLENE FILM CAPACITOR
⊙	SEMICONDUCTIVE CERAMIC CAPACITOR
⊖	POLYPHENYLENE SULFIDE FILM CAPACITOR

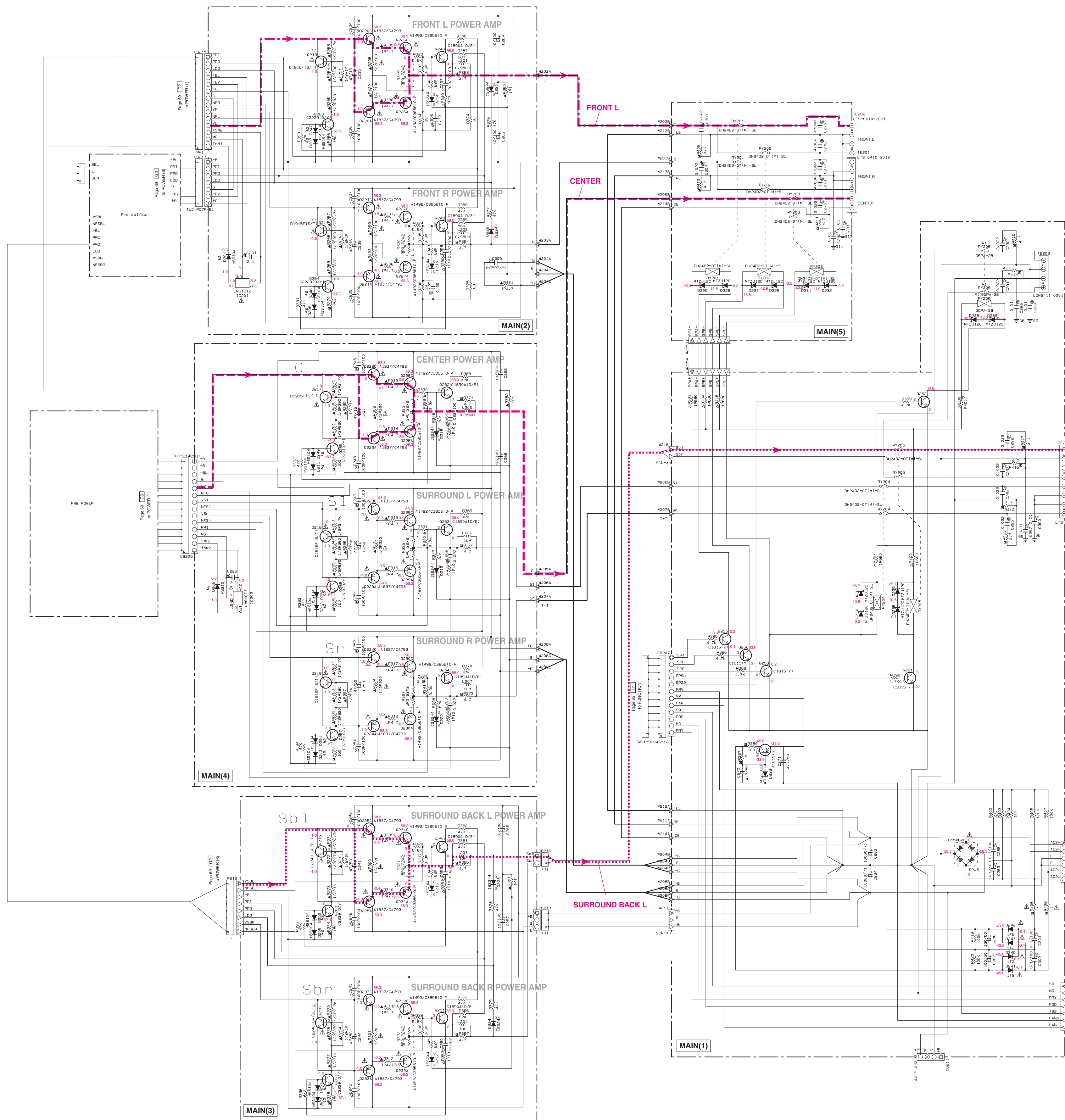
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
k1	D655-856-864-865	3328 A-B TESSR TP
		3328 B TP
		5938 A-B TP
		5704 K TP
k2	D653 - D656	155390TE -17 TP
		M4111 FLAT TP
k3		
k4		
k5		



\* All voltages are measured with a 10MΩ/V DC electronic volt meter.  
 \* Components having special characteristics are marked 1, and must be replaced with parts having specifications equal to those originally installed.  
 \* Schematic diagram is subject to change without notice.

HTR-5890  
**SCHEMATIC DIAGRAM (MAIN)**



Interchangeable Parts at Manufacture Stage

Mark	Reference Parts Number	Parts Name
41	49006	099A-08 062402-05IM
42	0001-206-213-247-253	HS104 155133 155176
43		

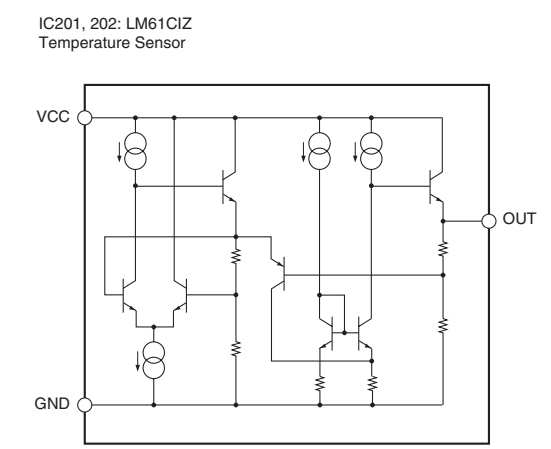
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
▲	METAL OXIDE FILM RESISTOR
△	METAL FILM RESISTOR
□	METAL PLATE RESISTOR
▢	FINE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
○	SEMI-VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊕	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

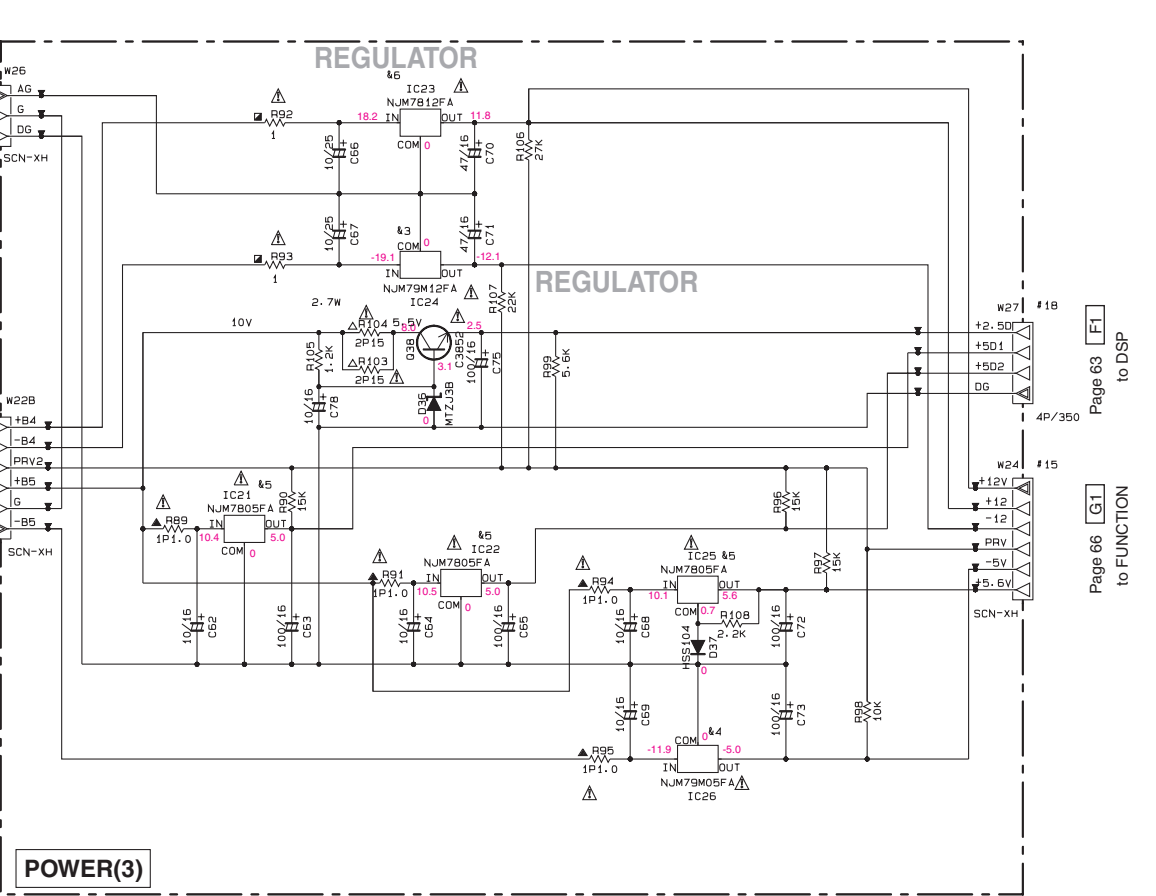
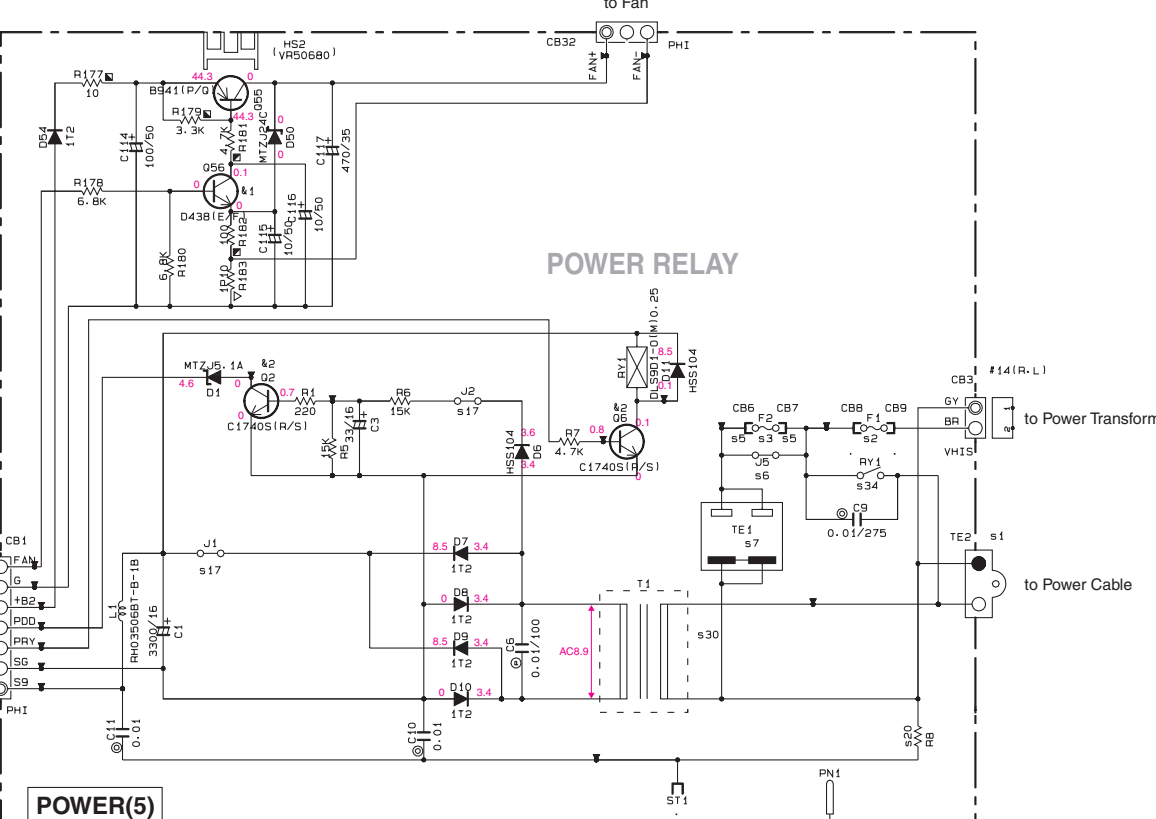
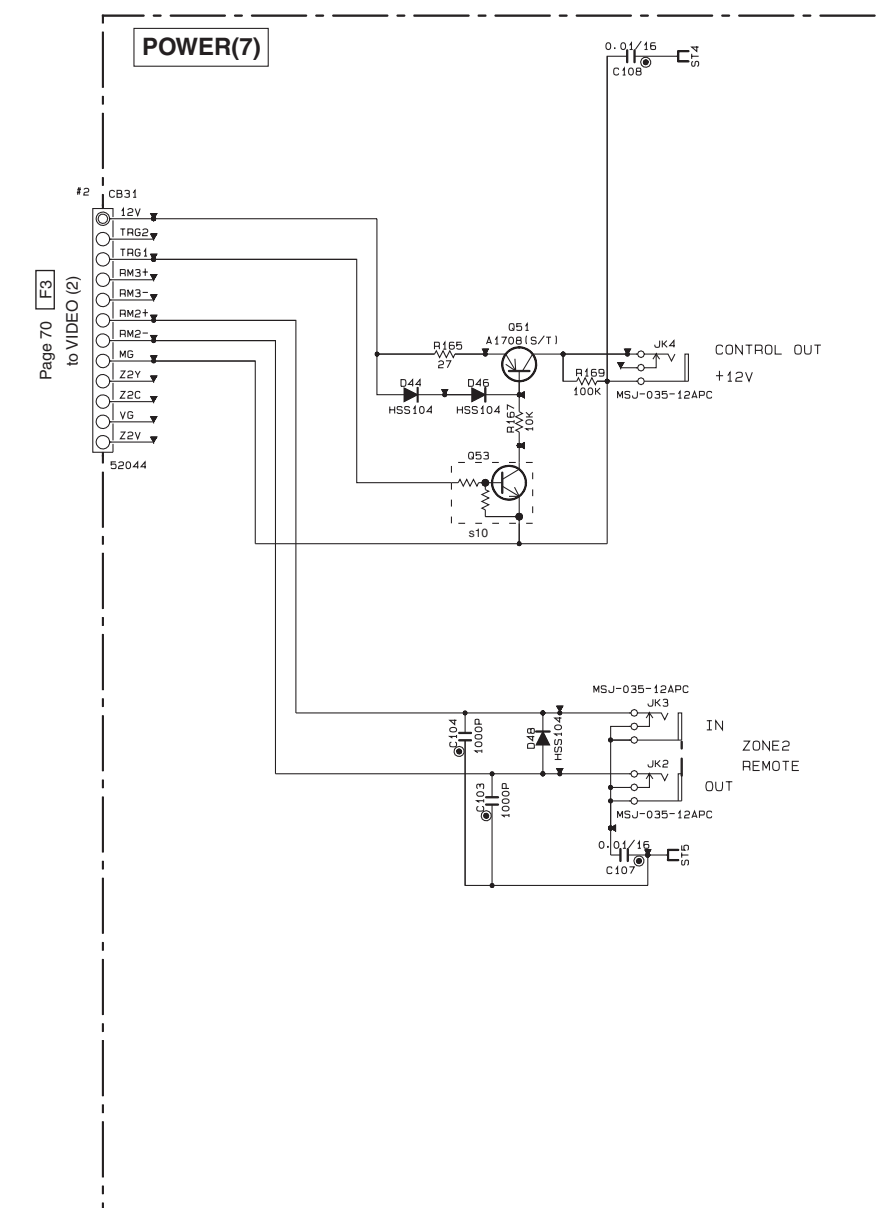
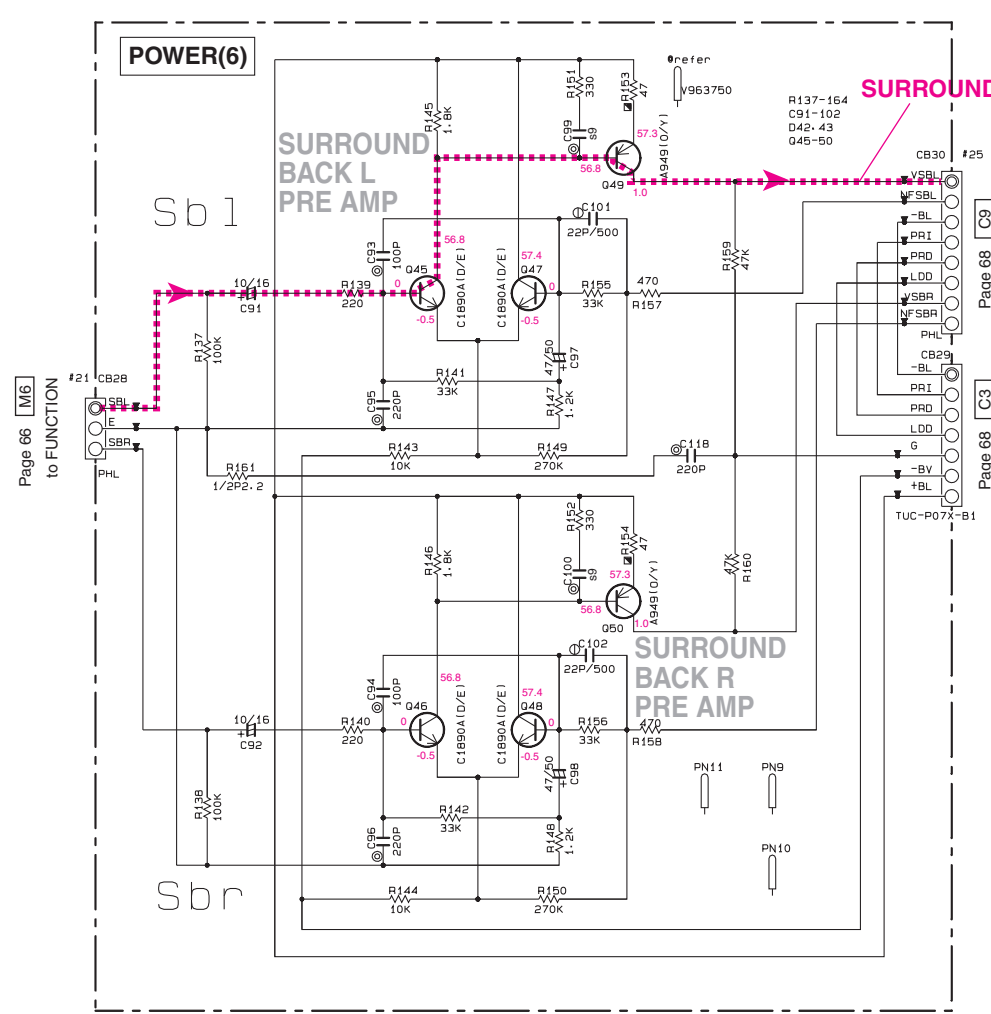
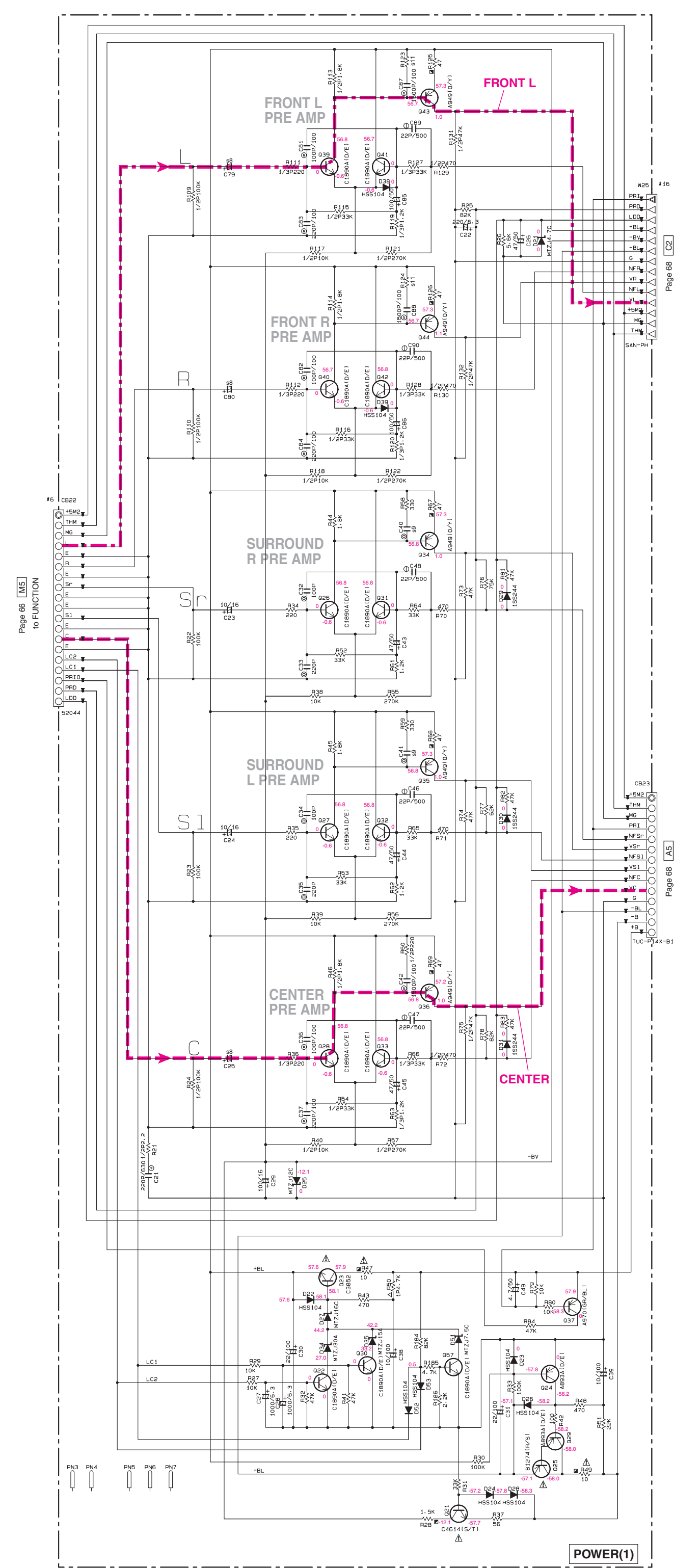
NOTICE (mode1)  
 (U)..... U.S.A  
 (C)..... CANADA  
 (A)..... AUSTRALIA



★ All voltages are measured with a 10MΩ/V DC electronic volt meter.  
 ★ Components having special characteristics are marked with a star and must be replaced with parts having specifications equal to those originally installed.  
 ★ Schematic diagram is subject to change without notice.



SCHEMATIC DIAGRAM (POWER)



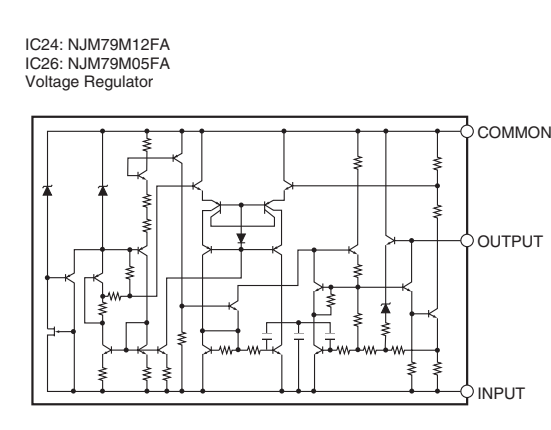
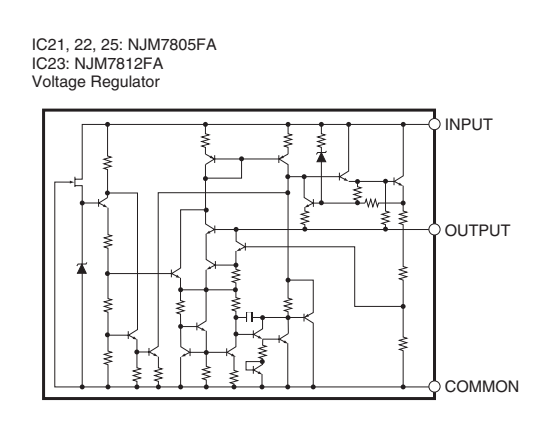
NOTICE (model)  
 U ..... U.S.A.  
 C ..... CANADA  
 A ..... AUSTRALIA

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
□	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊞	FIRE PROOF CARBON FILM RESISTOR
⊞	CEMENT MOUNTED RESISTOR
⊞	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊙	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊙	POLYESTER FILM CAPACITOR
⊙	POLYSTYRENE FILM CAPACITOR
⊙	MICA CAPACITOR
⊙	POLYPROPYLENE FILM CAPACITOR
⊙	SEMICONDUCTIVE CERAMIC CAPACITOR

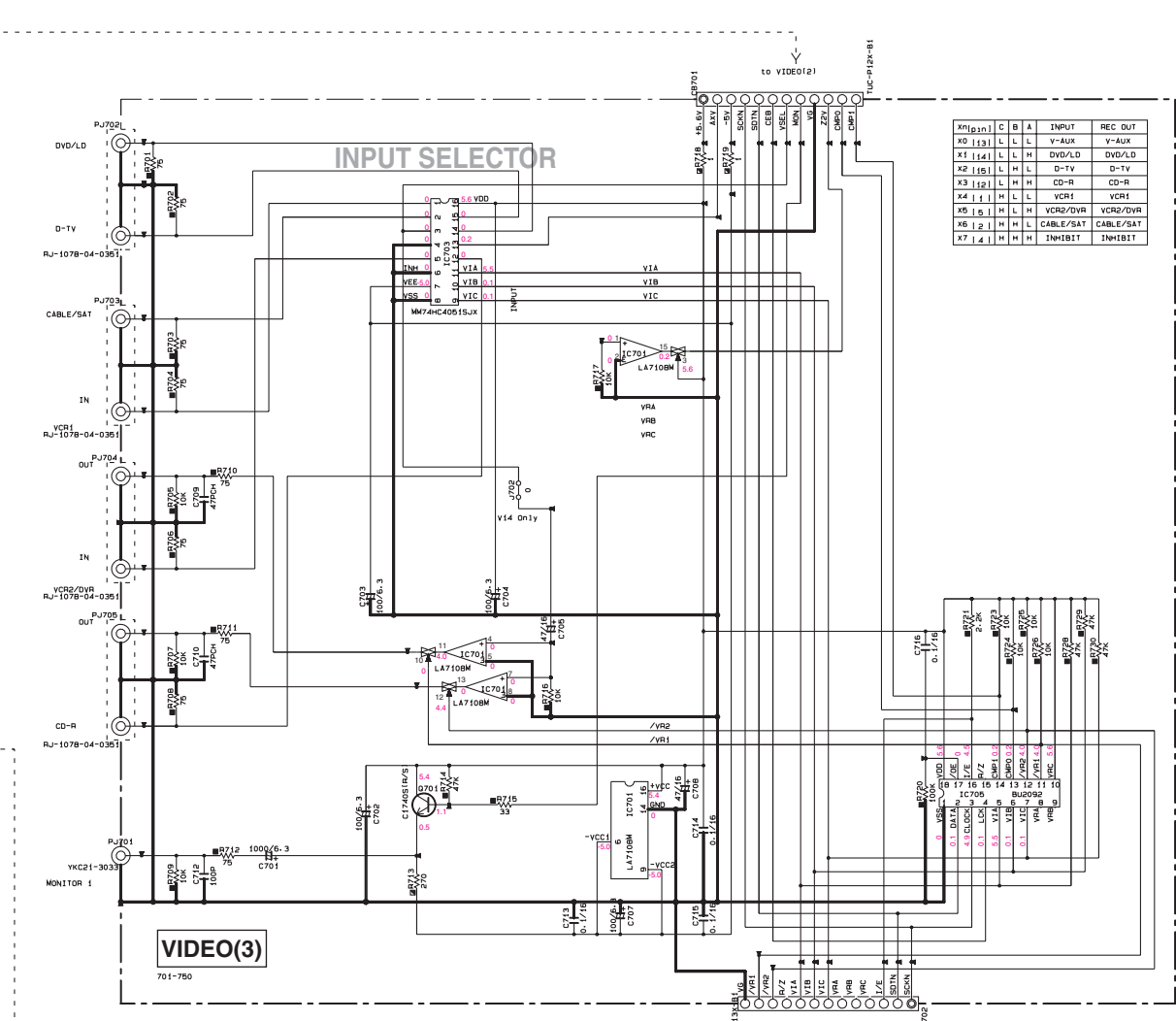
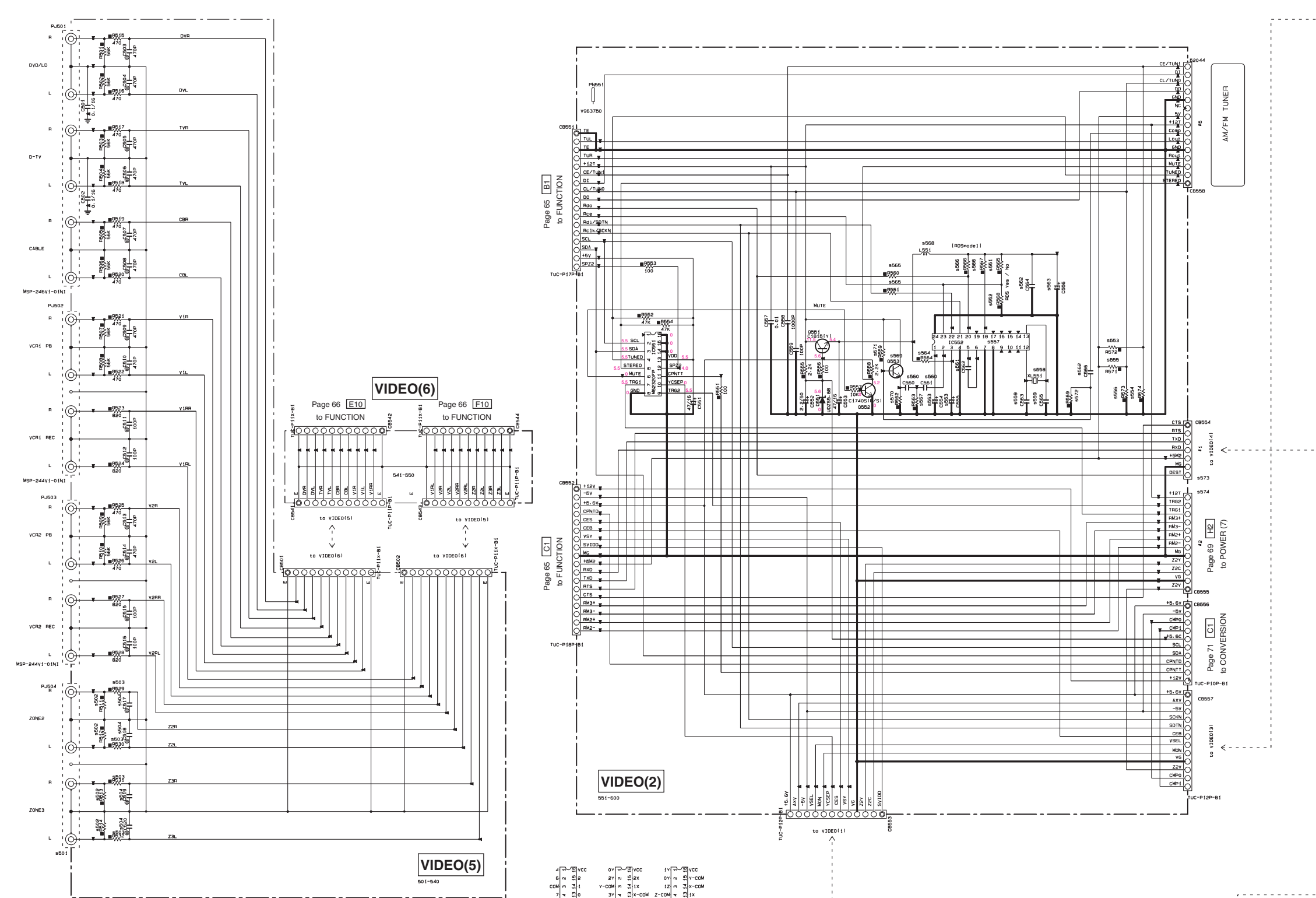
	PWB X4545	PWB X4546
	HTR-5890M	
	U-C	W58400
R1	WCR3000	X
R2	10K15V	TS GAL250V
R3	10K15V	1800004
R4	10K15V	X
R5	10K15V	X
R6	VR0060	X
R7	X	X
R8	50-70K1-214	50-7737-210
R9	VR4110	VT91500
R10	10K15V	1800004
R11	10K15V	1800004
R12	10K15V	1800004
R13	10K15V	1800004
R14	10K15V	1800004
R15	10K15V	1800004
R16	10K15V	1800004
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R97	10K15V	1800004
R98	10K15V	1800004
R99	10K15V	1800004
R100	10K15V	1800004

Mark	Reference Parts Number	Parts Name
R1	056	438 E.F. 205110/0/01
R2	00-0	20C1100010/01 20C60010/01 20C311010/0/0/01
R3	IC24	NJM79M12FA NM79M12P
R4	IC26	NJM79M05FA NM79M05P
R5	IC21-20-20	NJM79M05FA NM79M05P
R6	IC23	NJM79M12FA NM79M12P



★ All voltages are measured with a 10MΩ/V DC electronic volt meter.  
 ★ Components having special characteristics are marked .! and must be replaced with parts having specifications equal to those originally installed.  
 ★ Schematic diagram is subject to change without notice.

HTR-5890  
**SCHEMATIC DIAGRAM (VIDEO)**



RESISTOR	REMARKS	PARTS NAME	VALUE
R1		CARBON FILM RESISTOR (1/4W)	10K
R2		CARBON FILM RESISTOR (1/4W)	10K
R3		METAL OXIDE FILM RESISTOR	10K
R4		METAL FILM RESISTOR	10K
R5		1% TOLERANCE CARBON FILM RESISTOR	10K
R6		CERAMIC SURFACE FILM RESISTOR	10K
R7		POLYESTER FILM CAPACITOR	10K
R8		POLYESTER FILM CAPACITOR	10K
R9		POLYESTER FILM CAPACITOR	10K
R10		POLYESTER FILM CAPACITOR	10K
R11		POLYESTER FILM CAPACITOR	10K
R12		POLYESTER FILM CAPACITOR	10K
R13		POLYESTER FILM CAPACITOR	10K
R14		POLYESTER FILM CAPACITOR	10K
R15		POLYESTER FILM CAPACITOR	10K
R16		POLYESTER FILM CAPACITOR	10K
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R98		POLYESTER FILM CAPACITOR	10K
R99		POLYESTER FILM CAPACITOR	10K
R100		POLYESTER FILM CAPACITOR	10K

CAPACITOR	REMARKS	PARTS NAME	VALUE
C1		MIL ELECTROLYTIC CAPACITOR	100µF
C2		PANALUM CAPACITOR	100µF
C3		MIL ELECTROLYTIC CAPACITOR	100µF
C4		CERAMIC SURFACE CAPACITOR	100µF
C5		POLYESTER FILM CAPACITOR	100µF
C6		POLYESTER FILM CAPACITOR	100µF
C7		POLYESTER FILM CAPACITOR	100µF
C8		POLYESTER FILM CAPACITOR	100µF
C9		POLYESTER FILM CAPACITOR	100µF
C10		POLYESTER FILM CAPACITOR	100µF
C11		POLYESTER FILM CAPACITOR	100µF
C12		POLYESTER FILM CAPACITOR	100µF
C13		POLYESTER FILM CAPACITOR	100µF
C14		POLYESTER FILM CAPACITOR	100µF
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C21		POLYESTER FILM CAPACITOR	100µF
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C23		POLYESTER FILM CAPACITOR	100µF
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C75		POLYESTER FILM CAPACITOR	100µF
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C77		POLYESTER FILM CAPACITOR	100µF
C78		POLYESTER FILM CAPACITOR	100µF
C79		POLYESTER FILM CAPACITOR	100µF
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C83		POLYESTER FILM CAPACITOR	100µF
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C97		POLYESTER FILM CAPACITOR	100µF
C98		POLYESTER FILM CAPACITOR	100µF
C99		POLYESTER FILM CAPACITOR	100µF
C100		POLYESTER FILM CAPACITOR	100µF

NOTICE (Impedance)

① U.S.A.  
 ② CANADA  
 ③ AUSTRALIA

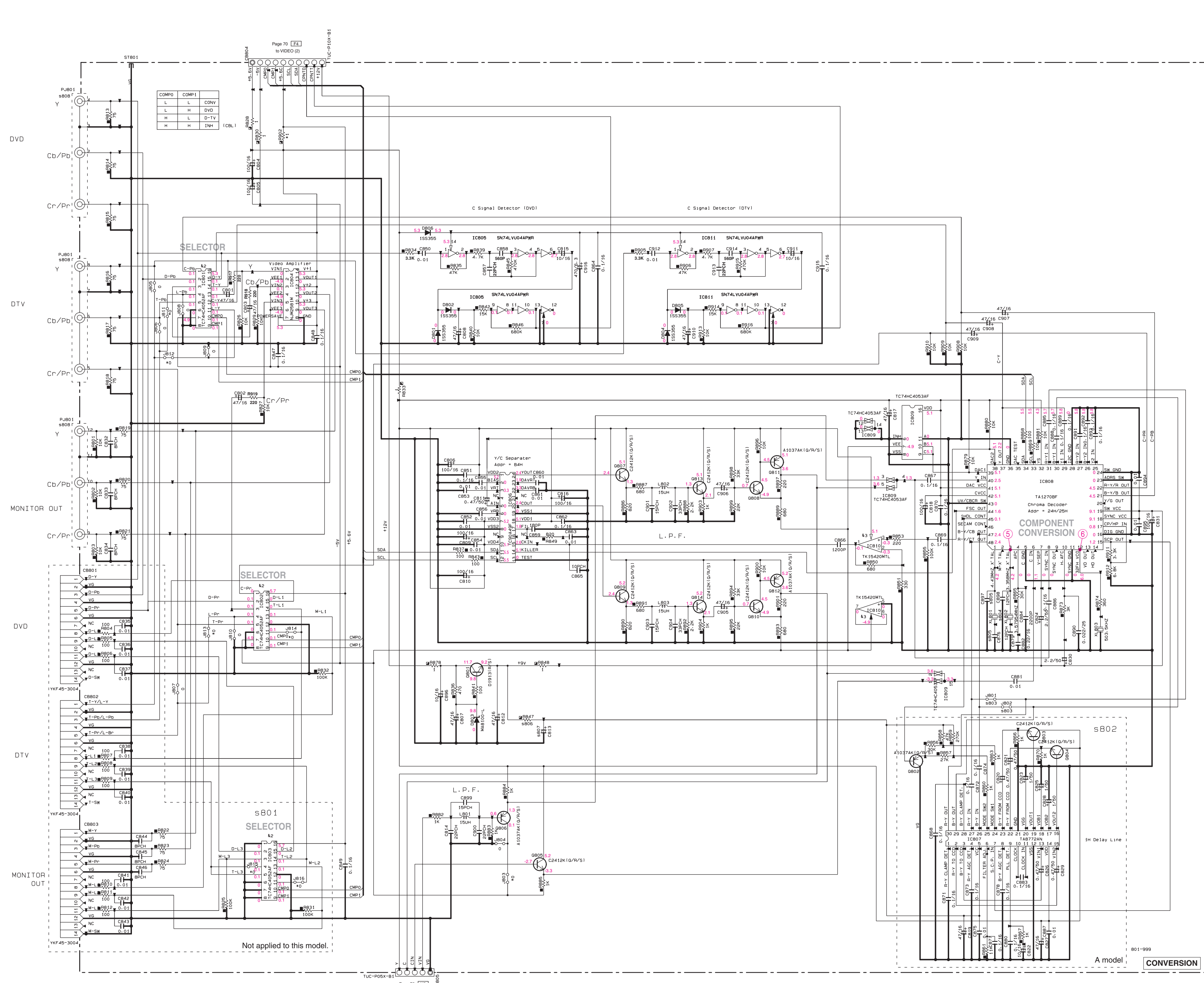
Part No.	Manufacturer
A1	10001-010
A2	10001-010

IC	Part No.	Manufacturer
IC1	10001-010	10001-010
IC2	10001-010	10001-010
IC3	10001-010	10001-010
IC4	10001-010	10001-010
IC5	10001-010	10001-010
IC6	10001-010	10001-010
IC7	10001-010	10001-010
IC8	10001-010	10001-010
IC9	10001-010	10001-010
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IC55	10001-010	10001-010
IC56	10001-010	10001-010
IC57	10001-010	10001-010
IC58	10001-010	10001-01



**SCHEMATIC DIAGRAM (CONVERSION)**

- ★ All voltages are measured with a 10MΩ/V DC electronic volt meter.
- ★ Components having special characteristics are marked 'A', and must be replaced with parts having specifications equal to those originally installed.
- ★ Schematic diagram is subject to change without notice.



**RESISTOR**

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
□	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
▣	FIRE PROOF CARBON FILM RESISTOR
⊞	CEMENT MOLDED RESISTOR
⊞	SEMI-VARIABLE RESISTOR
■	CHIP RESISTOR

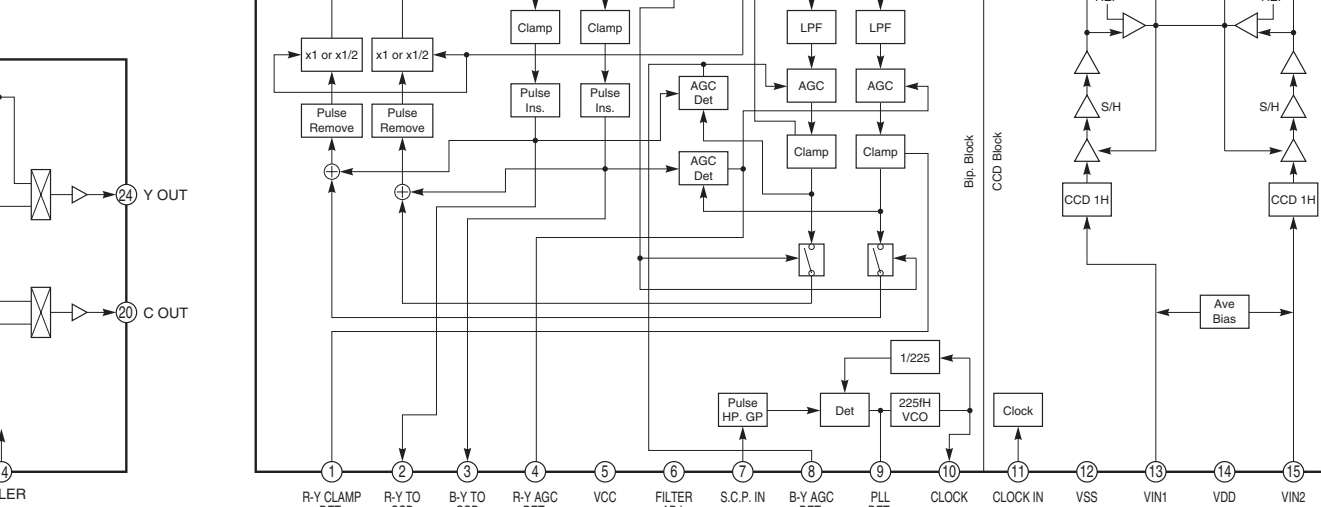
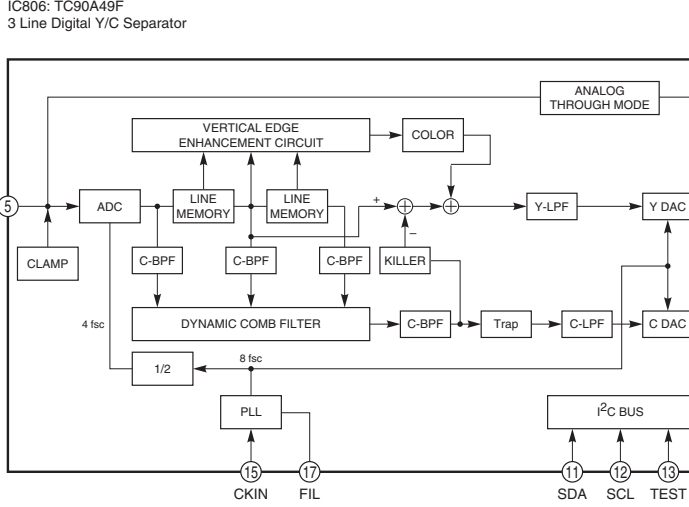
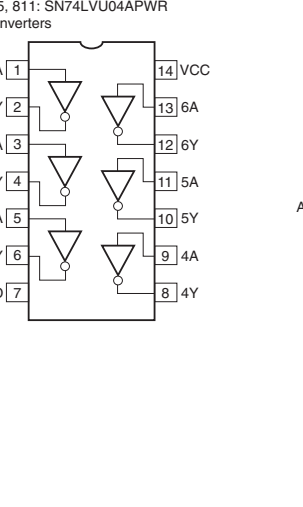
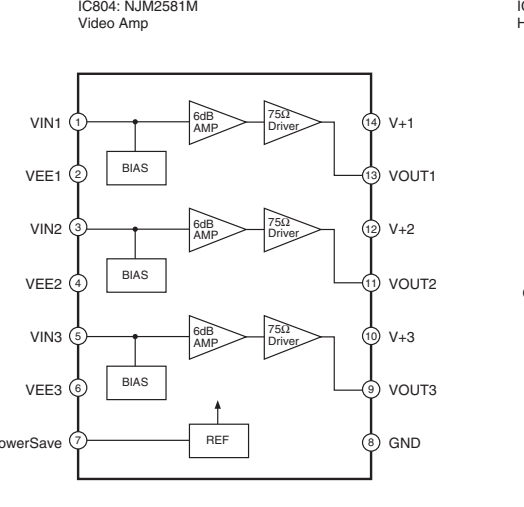
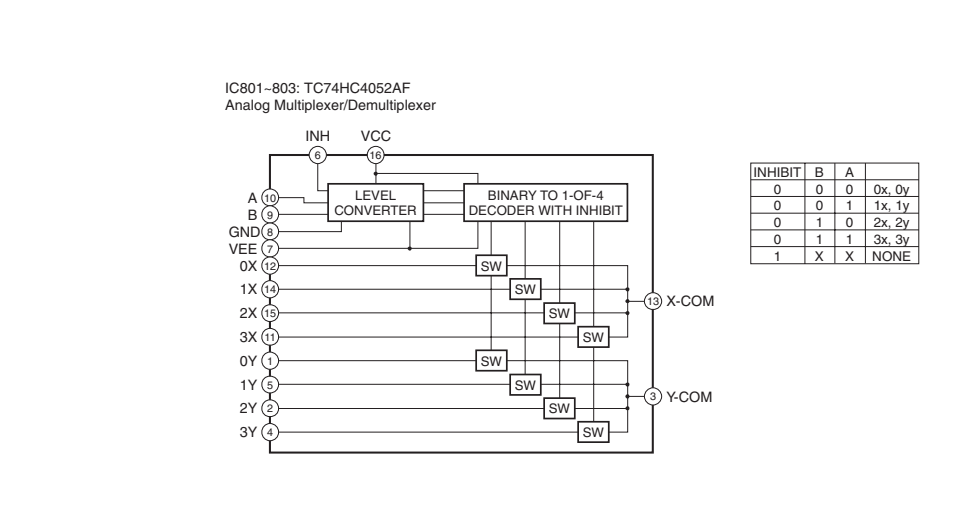
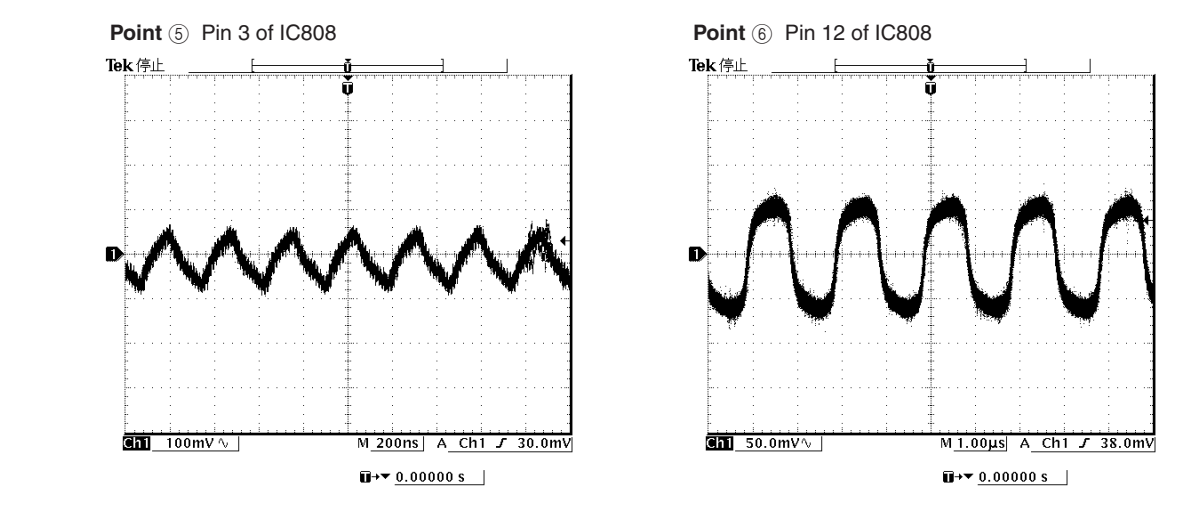
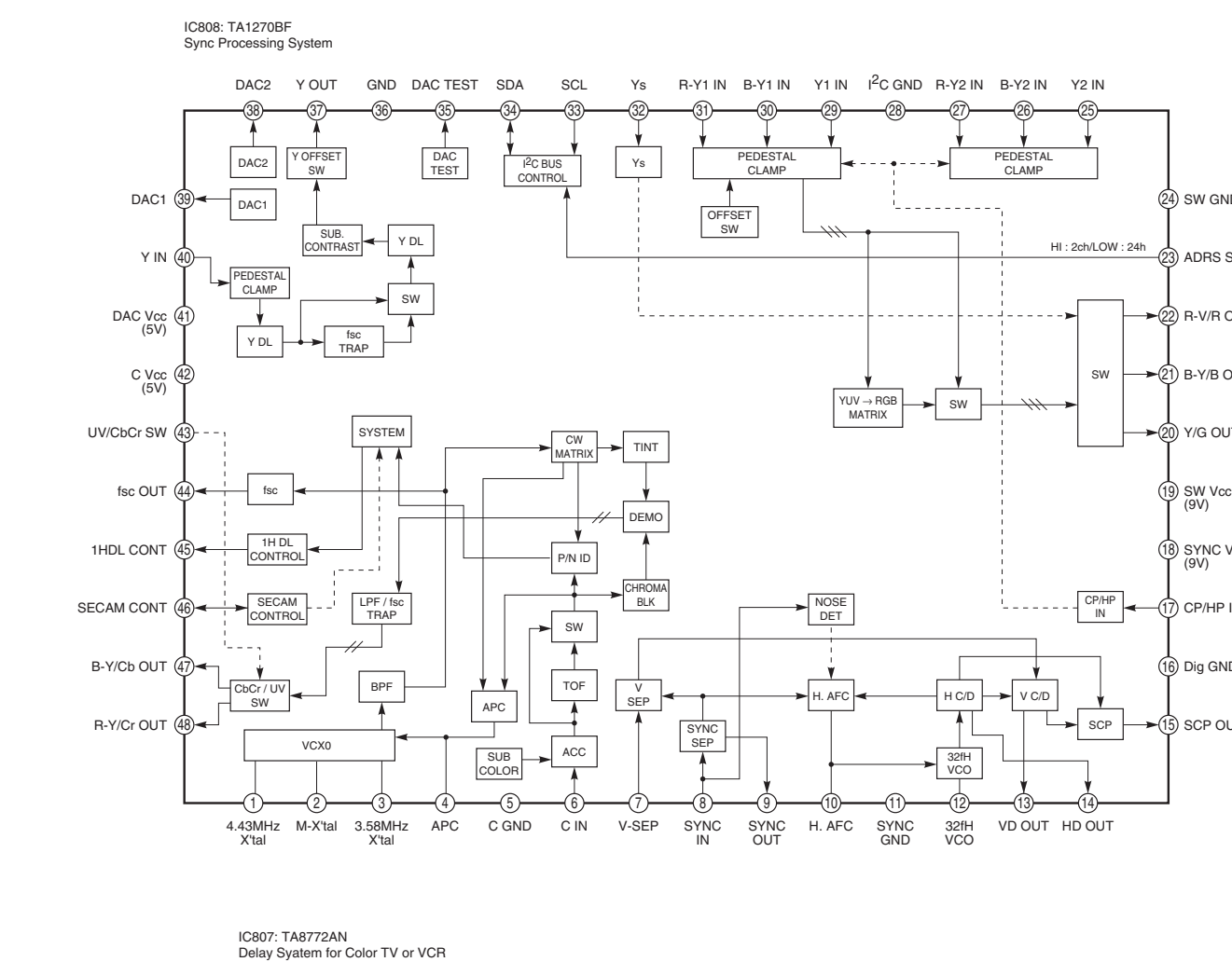
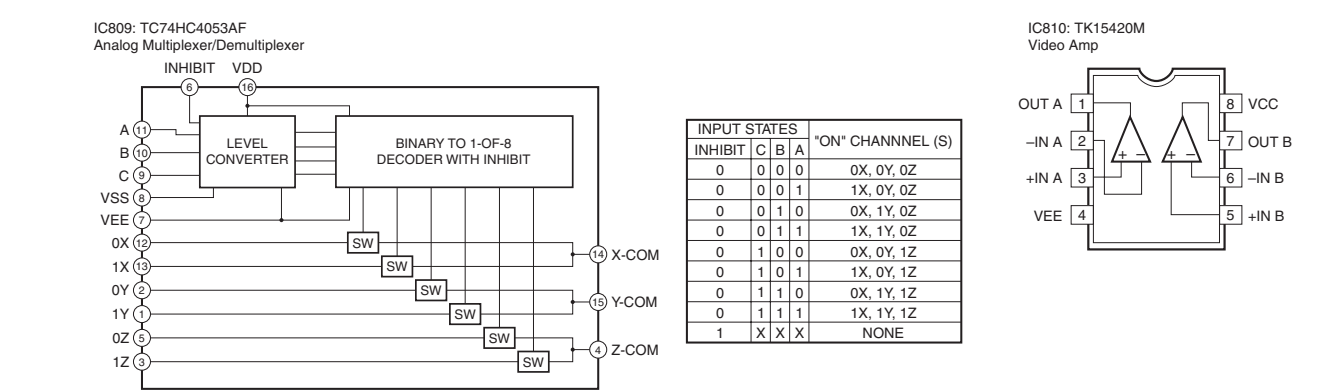
**NOTICE (mode1)**  
 (U)..... U.S.A  
 (C)..... CANADA  
 (A)..... AUSTRALIA

**CAPACITOR**

REMARKS	PARTS NAME
⊞	ELECTROLYTIC CAPACITOR
⊞	TANTALUM CAPACITOR
○	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊙	POLYESTER FILM CAPACITOR
⊙	POLYSTYRENE FILM CAPACITOR
⊙	MICA CAPACITOR
⊙	POLYPROPYLENE FILM CAPACITOR
⊙	SEMICONDUCTIVE CERAMIC CAPACITOR

**Interchangeable Parts at Manufacture-Stage**

Mark	Reference Parts Number	Parts Name
k1	IC801-803	TC74HC4052AF MKT4HC4052S.JX
k3	IC810	TK15420ML A80564R



# PARTS LIST

## ■ ELECTRICAL PARTS

### ■ WARNING

- Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.

### ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C.A.EL.CHP	: CHIP ALUMI.ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED,INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR,RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN,TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR.	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR,BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR,CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR,DIN	SCR.TR	: SCREW,TRANSISTOR
CN.FLAT	: CONNECTOR,FLAT CABLE	SUPRT.PCB	: SUPPORT,P.C.B.
CN.POST	: CONNECTOR,BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL,AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL,FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL,FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL,FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'Y
FLTR.LC.RF	: LC FILTER,EMI	TUNER.AM	: TUNER PACK,AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK,FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-ENDTUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER,TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

**Note)** Those parts marked with “#” are not included in the P.C.B. ass'y.



## P.C.B. DSP

Schm Ref.	PART NO.	Description	Markets
	WD646700	P. C. B.	DSP
CB501	VF982300	CN. BS. PIN	17P
CB503	VQ044800	CN. BS. PIN	18P
CB504	VB858300	CN. BS. PIN	4P
CB505	LB919020	CN. BS. PIN	2P
C513	UR237220	C. EL	22uF 16V
C514	UR237220	C. EL	22uF 16V
C515	UR237220	C. EL	22uF 16V
C516	UU119100	C. EL	1000uF 6.3V
C518	UR237470	C. EL	47uF 16V
C521	UR237470	C. EL	47uF 16V
C533	UR218100	C. EL	100uF 6.3V
C537	UR018470	C. EL	470uF 6.3V
C542	UA654680	C. MYLAR	0.068uF 50V
C543	UA653100	C. MYLAR	1000pF 50V
C548	UR218100	C. EL	100uF 6.3V
C549	UR237220	C. EL	22uF 16V
C554	UR218100	C. EL	100uF 6.3V
C558	UR237470	C. EL	47uF 16V
C560	UR237470	C. EL	47uF 16V
C561	UR018470	C. EL	470uF 6.3V
C565	UR237100	C. EL	10uF 16V
C566	UR237470	C. EL	47uF 16V
C569	UR237470	C. EL	47uF 16V
C602	UR237100	C. EL	10uF 16V
C611	UR237100	C. EL	10uF 16V
C649	UR237470	C. EL	47uF 16V
C662	UR237100	C. EL	10uF 16V
C663	UR237220	C. EL	22uF 16V
C667	UR237220	C. EL	22uF 16V
C675	UR237100	C. EL	10uF 16V
C682	UR237100	C. EL	10uF 16V
C683	UR237220	C. EL	22uF 16V
C692	UU137470	C. EL	47uF 16V
C693	UU137470	C. EL	47uF 16V
C694	UU166220	C. EL	2.2uF 50V
C697	UR237100	C. EL	10uF 16V
C699	UR037100	C. EL	10uF 16V
C700	UR037100	C. EL	10uF 16V
C705	UU137470	C. EL	47uF 16V
C706	UU137470	C. EL	47uF 16V
C708	UA655100	C. MYLAR	0.1uF 50V
C709	UA655100	C. MYLAR	0.1uF 50V
C710	UR037470	C. EL	47uF 16V
C711	UR037470	C. EL	47uF 16V
C712	UU137470	C. EL	47uF 16V
C715	UU137470	C. EL	47uF 16V
C719	UU137470	C. EL	47uF 16V
C720	UU137470	C. EL	47uF 16V
C721	UU137470	C. EL	47uF 16V
C722	UA653390	C. MYLAR	3900pF 50V
C723	UA653390	C. MYLAR	3900pF 50V
C724	UA653390	C. MYLAR	3900pF 50V
C725	UA653390	C. MYLAR	3900pF 50V
C726	UA653390	C. MYLAR	3900pF 50V
C727	UA653390	C. MYLAR	3900pF 50V

\* New Parts

## P.C.B. DSP

Schm Ref.	PART NO.	Description	Markets
C728	UA653390	C. MYLAR	3900pF 50V
C729	UA653390	C. MYLAR	3900pF 50V
C730	UA654330	C. MYLAR	0.033uF 50V
C731	UA654330	C. MYLAR	0.033uF 50V
C732	UA654100	C. MYLAR	0.01uF 50V
C733	UA654100	C. MYLAR	0.01uF 50V
C734	UA652390	C. MYLAR	390pF 50V
C735	UA652390	C. MYLAR	390pF 50V
C736	UA652390	C. MYLAR	390pF 50V
C737	UA652390	C. MYLAR	390pF 50V
C738	UA652390	C. MYLAR	390pF 50V
C739	UA652390	C. MYLAR	390pF 50V
C740	UA652390	C. MYLAR	390pF 50V
C741	UA652390	C. MYLAR	390pF 50V
C742	UA654150	C. MYLAR	0.015uF 50V
C743	UA654150	C. MYLAR	0.015uF 50V
C744	UA652390	C. MYLAR	390pF 50V
C745	UA652390	C. MYLAR	390pF 50V
C746	UA652390	C. MYLAR	390pF 50V
C747	UA652390	C. MYLAR	390pF 50V
C748	UA652390	C. MYLAR	390pF 50V
C749	UA652390	C. MYLAR	390pF 50V
C750	UA652390	C. MYLAR	390pF 50V
C751	UA652390	C. MYLAR	390pF 50V
C752	UA652390	C. MYLAR	390pF 50V
C753	UA652390	C. MYLAR	390pF 50V
C754	UA654150	C. MYLAR	0.015uF 50V
C755	UA654150	C. MYLAR	0.015uF 50V
C756	UA652390	C. MYLAR	390pF 50V
C757	UA652390	C. MYLAR	390pF 50V
C770	UR037100	C. EL	10uF 16V
C771	UR037100	C. EL	10uF 16V
C772	UR037100	C. EL	10uF 16V
C773	UR037100	C. EL	10uF 16V
C774	UR037100	C. EL	10uF 16V
C775	UR037100	C. EL	10uF 16V
C776	UR037100	C. EL	10uF 16V
C777	UR037100	C. EL	10uF 16V
C778	UR037100	C. EL	10uF 16V
C779	UR037100	C. EL	10uF 16V
C780	UR037100	C. EL	10uF 16V
C781	UR037100	C. EL	10uF 16V
C784	UA655100	C. MYLAR	0.1uF 50V
C785	UA655100	C. MYLAR	0.1uF 50V
C788	UA655100	C. MYLAR	0.1uF 50V
C789	UA655100	C. MYLAR	0.1uF 50V
C792	UA655100	C. MYLAR	0.1uF 50V
C793	UA655100	C. MYLAR	0.1uF 50V
C794	UR037470	C. EL	47uF 16V
C795	UR037470	C. EL	47uF 16V
C798	UR037470	C. EL	47uF 16V
C799	UR037470	C. EL	47uF 16V
C802	UR037470	C. EL	47uF 16V
C803	UR037470	C. EL	47uF 16V
C806	UR237100	C. EL	10uF 16V
C807	UR237100	C. EL	10uF 16V

\* New Parts

## P.C.B. DSP

Schm Ref.	PART NO.	Description	Markets
D501	VT332900	DIODE	1SS355
D502	VT332900	DIODE	1SS355
D509	VT332900	DIODE	1SS355
D510	VT332900	DIODE	1SS355
D512	VV220700	DIODE. SHOT	RB501V-40
D513	VV220700	DIODE. SHOT	RB501V-40
D514	VT332900	DIODE	1SS355
D515	VT332900	DIODE	1SS355
D516	VV220700	DIODE. SHOT	RB501V-40
D517	VV220700	DIODE. SHOT	RB501V-40
D518	VV220700	DIODE. SHOT	RB501V-40
D519	VV220700	DIODE. SHOT	RB501V-40
D520	VV220700	DIODE. SHOT	RB501V-40
D521	VV220700	DIODE. SHOT	RB501V-40
D524	VT332900	DIODE	1SS355
D525	VT332900	DIODE	1SS355
D528	VT332900	DIODE	1SS355
D529	VT332900	DIODE	1SS355
D530	VT332900	DIODE	1SS355
D531	VT332900	DIODE	1SS355
D532	VT332900	DIODE	1SS355
D533	VT332900	DIODE	1SS355
D534	VT332900	DIODE	1SS355
D535	VT332900	DIODE	1SS355
D536	VT332900	DIODE	1SS355
D537	VT332900	DIODE	1SS355
D538	VT332900	DIODE	1SS355
D539	VT332900	DIODE	1SS355
D540	VT332900	DIODE	1SS355
D541	VT332900	DIODE	1SS355
D542	VT332900	DIODE	1SS355
D543	VT332900	DIODE	1SS355
D544	VT332900	DIODE	1SS355
D545	VT332900	DIODE	1SS355
D546	VT332900	DIODE	1SS355
D547	VT332900	DIODE	1SS355
IC501	X3936A00	IC	SN74LVU04APWR
IC502	X3018A00	IC	SN74AHCT00PWR NAND
IC503	X4314A00	IC	PQ012FZ01ZP 1.2V1A
IC504	XV894A00	IC	TC74VHC153FT MULTI
IC505	XV894A00	IC	TC74VHC153FT MULTI
IC506	XV190A00	IC	NJM2904M OP AMP
IC508	XZ003A00	IC	PQ025EZ5MZP 2.5V
IC509	X3566A00	IC	LC89057W-VF4-E
IC510	XU965A00	IC	uPC29M33T-E1 3.3V
IC511	X3824A00	IC	SN74AHCT08PWR
IC513	X3693A00	IC	SN74LV245APWR TRAN
IC515	X2590A00	IC	W981616BH-7 SDRAM
IC516	X3567A00	IC	YSS930-SZ
IC517	XV077B00	IC	MSM514260E-60JS
IC518	X3567A00	IC	YSS930-SZ
IC519	X2096A00	IC	AK5380-VT
IC520	X3505A00	IC	NJM2068MD-TE2
IC521	X0661A00	IC	AK4382AVT
IC522	X0293A00	IC	74VHC157MTCX
IC523	X0661A00	IC	AK4382AVT

\* New Parts

## P.C.B. DSP

Schm Ref.	PART NO.	Description	Markets
IC524	X4289A00	IC	AK4358VQ
IC525	X3505A00	IC	NJM2068MD-TE2
IC526	X3505A00	IC	NJM2068MD-TE2
IC527	X3505A00	IC	NJM2068MD-TE2
IC528	X3505A00	IC	NJM2068MD-TE2
IC529	X3505A00	IC	NJM2068MD-TE2
IC530	X3505A00	IC	NJM2068MD-TE2
IC531	X3833A00	IC	SN74AHC1G08DCKR
IC532	X3833A00	IC	SN74AHC1G08DCKR
IC533	XJ598A00	IC	NJM78L05UA 5V
PJ501	WB491400	JACK. PIN	3P MSD-253V-29 NI
Q501	VV655300	TR. DGT	DTA144EKA
Q503	VV655300	TR. DGT	DTA144EKA
Q504	VV655300	TR. DGT	DTA144EKA
Q505	VV655300	TR. DGT	DTA144EKA
Q506	VV655300	TR. DGT	DTA144EKA
Q507	VV655300	TR. DGT	DTA144EKA
Q508	VV655300	TR. DGT	DTA144EKA
Q509	VV655300	TR. DGT	DTA144EKA
Q510	VV655300	TR. DGT	DTA144EKA
Q511	VV655300	TR. DGT	DTA144EKA
Q512	VV655300	TR. DGT	DTA144EKA
Q513	VD303700	TR	2SC3326 A, B
Q514	VD303700	TR	2SC3326 A, B
Q515	VD303700	TR	2SC3326 A, B
Q516	VD303700	TR	2SC3326 A, B
Q517	VD303700	TR	2SC3326 A, B
Q518	VD303700	TR	2SC3326 A, B
Q519	VD303700	TR	2SC3326 A, B
Q520	VD303700	TR	2SC3326 A, B
Q521	VD303700	TR	2SC3326 A, B
Q522	VD303700	TR	2SC3326 A, B
Q523	VD303700	TR	2SC3326 A, B
Q524	VD303700	TR	2SC3326 A, B
R516	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R517	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R527	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R528	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R535	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R556	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R562	HV753100	R. CAR. FP	1 $\Omega$ 1/4W
R673	HF353220	R. CAR	2.2 $\Omega$ 1/2W
R674	HF353220	R. CAR	2.2 $\Omega$ 1/2W
R686	HV753470	R. CAR. FP	4.7 $\Omega$ 1/4W
R812	HF356100	R. CAR	1K $\Omega$ 1/2W
R813	HF356100	R. CAR	1K $\Omega$ 1/2W
R814	HF356100	R. CAR	1K $\Omega$ 1/2W
R815	HF356100	R. CAR	1K $\Omega$ 1/2W
R816	HF356100	R. CAR	1K $\Omega$ 1/2W
R817	HF356100	R. CAR	1K $\Omega$ 1/2W
R818	HF356100	R. CAR	1K $\Omega$ 1/2W
R819	HF356100	R. CAR	1K $\Omega$ 1/2W
R820	HF356100	R. CAR	1K $\Omega$ 1/2W
R821	HF356100	R. CAR	1K $\Omega$ 1/2W
R822	HF356100	R. CAR	1K $\Omega$ 1/2W
R823	HF356100	R. CAR	1K $\Omega$ 1/2W

\* New Parts

**P.C.B. DSP & P.C.B. FUNCTION**

Schm Ref.	PART NO.	Description	Markets
U501	WB001600	CN. PHOT. SN 1P GP1FA553TZ	
U502	WB001600	CN. PHOT. SN 1P GP1FA553TZ	
U503	WB001400	CN. PHOT. SN 1P GP1FA553RZ	
U504	WB001400	CN. PHOT. SN 1P GP1FA553RZ	
U505	WB001400	CN. PHOT. SN 1P GP1FA553RZ	
U506	WB001400	CN. PHOT. SN 1P GP1FA553RZ	
XL501	V6931900	RESONATOR 24.576MHz DS0751SV	
	WD646900	P. C. B. FUNCTION	UC
	WD647200	P. C. B. FUNCTION	A
CB501	V7826100	CN 11P TE TUC SERIES	
CB502	V7826100	CN 11P TE TUC SERIES	
CB503	V7828400	SOCKET 17P SE TUC SERIES	
CB504	VP573800	CN. BS. PIN 18P	
CB505	VQ044600	CN. BS. PIN 13P	
CB506	VM973500	CN. BS. PIN 17P	
CB507	VQ047400	CN. BS. PIN 19P	
CB508	V7828500	SOCKET 18P TE TUC SERIES	
CB509	VQ045100	CN. BS. PIN 21P	
CB510	VN066500	CN. BS. PIN 12P	
CB511	LB919060	CN. BS. PIN 6P	
CB512	VM929900	CN. BS. PIN 15P	
CB513	VM923600	CN. BS. PIN 13P	
C501	UR267470	C. EL 47uF 50V	
C502	UR267470	C. EL 47uF 50V	
C504	UR237100	C. EL 10uF 16V	
C510	UR068100	C. EL 100uF 50V	
C512	UR248100	C. EL 100uF 25V	
C513	UR266220	C. EL 2. 2uF 50V	
C517	UA652220	C. MYLAR 220pF 50V	A
C518	UA652220	C. MYLAR 220pF 50V	A
C519	UA652470	C. MYLAR 470pF 50V	
C520	UA652470	C. MYLAR 470pF 50V	
C521	UA652100	C. MYLAR 100pF 50V	
C522	UA652100	C. MYLAR 100pF 50V	
C523	UA652470	C. MYLAR 470pF 50V	
C524	UA652470	C. MYLAR 470pF 50V	
C525	UA652100	C. MYLAR 100pF 50V	
C526	UA652100	C. MYLAR 100pF 50V	
C527	VQ462600	C. MYLAR 220pF 50V	
C528	VQ462600	C. MYLAR 220pF 50V	
C529	UA652220	C. MYLAR 220pF 50V	
C530	UA652220	C. MYLAR 220pF 50V	
C531	UA652470	C. MYLAR 470pF 50V	
C532	UA652470	C. MYLAR 470pF 50V	
C533	UR266220	C. EL 2. 2uF 50V	
C534	UA652470	C. MYLAR 470pF 50V	
C535	UA652470	C. MYLAR 470pF 50V	
C536	UA652470	C. MYLAR 470pF 50V	
C537	UA652470	C. MYLAR 470pF 50V	
C538	UR266220	C. EL 2. 2uF 50V	
C539	UR218220	C. EL 220uF 6. 3V	
C540	UR218220	C. EL 220uF 6. 3V	
C541	UA654390	C. MYLAR 0. 039uF 50V	

\* New Parts

**P.C.B. FUNCTION**

Schm Ref.	PART NO.	Description	Markets
C542	UA654390	C. MYLAR 0. 039uF 50V	
C543	UA654110	C. MYLAR 0. 011uF 50V	
C544	UA654110	C. MYLAR 0. 011uF 50V	
C545	UU137220	C. EL 22uF 16V	
C546	UU137220	C. EL 22uF 16V	
C547	UU137220	C. EL 22uF 16V	
C548	UU137220	C. EL 22uF 16V	
C549	UR237100	C. EL 10uF 16V	
C550	UR237100	C. EL 10uF 16V	
C551	UR237100	C. EL 10uF 16V	
C552	UR237100	C. EL 10uF 16V	
C553	UR237100	C. EL 10uF 16V	
C554	UA653100	C. MYLAR 1000pF 50V	
C555	UA653100	C. MYLAR 1000pF 50V	
C556	UR267470	C. EL 47uF 50V	
C557	UR267470	C. EL 47uF 50V	
C558	UR237470	C. EL 47uF 16V	
C559	UR237470	C. EL 47uF 16V	
C560	UU157470	C. EL 47uF 35V	
C561	UR237100	C. EL 10uF 16V	
C562	UR237100	C. EL 10uF 16V	
C563	UR265470	C. EL 0. 47uF 50V	
C564	UR237100	C. EL 10uF 16V	
C565	UU157470	C. EL 47uF 35V	
C566	UR237100	C. EL 10uF 16V	
C567	UR267470	C. EL 47uF 50V	
C568	UR237470	C. EL 47uF 16V	
C569	UR266470	C. EL 4. 7uF 50V	
C570	UR266470	C. EL 4. 7uF 50V	
C571	UR237100	C. EL 10uF 16V	
C572	UR237100	C. EL 10uF 16V	
C573	UR237100	C. EL 10uF 16V	
C574	UR237100	C. EL 10uF 16V	
C575	UT952100	C. PP 100pF 100V	
C576	UR239100	C. EL 1000uF 16V	
C577	UR237470	C. EL 47uF 16V	
C578	UT952100	C. PP 100pF 100V	
C579	UR237100	C. EL 10uF 16V	
C580	VT180400	C. EL 4700uF 5. 5V	
C581	UR237100	C. EL 10uF 16V	
C582	UR237100	C. EL 10uF 16V	
C583	UR237100	C. EL 10uF 16V	
C584	UR266470	C. EL 4. 7uF 50V	
C585	UR266470	C. EL 4. 7uF 50V	
C586	UR219100	C. EL 1000uF 6. 3V	
C587	UR219100	C. EL 1000uF 6. 3V	
C588	UR267470	C. EL 47uF 50V	
C589	UR237100	C. EL 10uF 16V	
C590	UR237100	C. EL 10uF 16V	
C591	UR237470	C. EL 47uF 16V	
C592	UR237100	C. EL 10uF 16V	
C593	UR248100	C. EL 100uF 25V	
C594	UR237100	C. EL 10uF 16V	
C595	UR266220	C. EL 2. 2uF 50V	
C596	UR266220	C. EL 2. 2uF 50V	
C597	UR266220	C. EL 2. 2uF 50V	

\* New Parts

## P.C.B. FUNCTION

Schm Ref.	PART NO.	Description	Markets
C598	UR266220	C. EL 2. 2uF 50V	
C600	UR266220	C. EL 2. 2uF 50V	
C601	UR237100	C. EL 10uF 16V	
C602	UR237100	C. EL 10uF 16V	
C603	UR237470	C. EL 47uF 16V	
C604	UR237470	C. EL 47uF 16V	
C605	UR237470	C. EL 47uF 16V	
C606	UR237470	C. EL 47uF 16V	
C607	UR267470	C. EL 47uF 50V	
C609	UR237470	C. EL 47uF 16V	
C610	UR237100	C. EL 10uF 16V	
C613	UR237100	C. EL 10uF 16V	
C616	UR237470	C. EL 47uF 16V	
C617	UR267470	C. EL 47uF 50V	
C618	UR237100	C. EL 10uF 16V	
C619	UR237100	C. EL 10uF 16V	
C624	UR237100	C. EL 10uF 16V	
C625	UR237100	C. EL 10uF 16V	
C626	UR237100	C. EL 10uF 16V	
C627	UR237100	C. EL 10uF 16V	
C628	UR237100	C. EL 10uF 16V	
C629	UR237100	C. EL 10uF 16V	
C630	UR237100	C. EL 10uF 16V	
C631	UR237100	C. EL 10uF 16V	
C632	UR237100	C. EL 10uF 16V	
C635	UR237100	C. EL 10uF 16V	
C636	UT952100	C. PP 100pF 100V	
C637	UT952100	C. PP 100pF 100V	
C638	UT952100	C. PP 100pF 100V	
C640	UT952100	C. PP 100pF 100V	
C651	UR267470	C. EL 47uF 50V	
C652	UR267470	C. EL 47uF 50V	
C653	UR266330	C. EL 3. 3uF 50V	
C654	UR266330	C. EL 3. 3uF 50V	
C655	UR266330	C. EL 3. 3uF 50V	
C658	UR266330	C. EL 3. 3uF 50V	
C662	UR266470	C. EL 4. 7uF 50V	
C663	UR266470	C. EL 4. 7uF 50V	
C666	UR237100	C. EL 10uF 16V	
C667	UR237100	C. EL 10uF 16V	
C668	UR237100	C. EL 10uF 16V	
C671	UR237100	C. EL 10uF 16V	
C672	UR237100	C. EL 10uF 16V	
C676	UR266470	C. EL 4. 7uF 50V	
C677	UR266470	C. EL 4. 7uF 50V	
C678	UR237100	C. EL 10uF 16V	
C679	UR237100	C. EL 10uF 16V	
C681	UR237330	C. EL 33uF 16V	
C682	UR237100	C. EL 10uF 16V	
C683	UR237330	C. EL 33uF 16V	
C684	UR237330	C. EL 33uF 16V	
C685	UU157470	C. EL 47uF 35V	
C686	UR267100	C. EL 10uF 50V	
C689	UR237100	C. EL 10uF 16V	
C690	UR237330	C. EL 33uF 16V	
C695	UR237470	C. EL 47uF 16V	

\* New Parts

## P.C.B. FUNCTION

Schm Ref.	PART NO.	Description	Markets
C696	UR237470	C. EL 47uF 16V	
C697	UR237330	C. EL 33uF 16V	
C698	UR237100	C. EL 10uF 16V	
C699	UR237100	C. EL 10uF 16V	
C700	UR237330	C. EL 33uF 16V	
C701	UR237100	C. EL 10uF 16V	
C702	UR237100	C. EL 10uF 16V	
C703	UR237330	C. EL 33uF 16V	
C706	UR238100	C. EL 100uF 16V	
C707	UR238100	C. EL 100uF 16V	
C708	UR238100	C. EL 100uF 16V	
C709	UR238100	C. EL 100uF 16V	
C710	UR238100	C. EL 100uF 16V	
C711	UR238100	C. EL 100uF 16V	
C714	V9607800	C. PP 47pF 100V	
C715	V9607800	C. PP 47pF 100V	
C716	UR237220	C. EL 22uF 16V	
C717	UR237220	C. EL 22uF 16V	
C718	UR267470	C. EL 47uF 50V	
C719	UR267470	C. EL 47uF 50V	
C721	UU137220	C. EL 22uF 16V	
C722	UU137220	C. EL 22uF 16V	
C726	UR266220	C. EL 2. 2uF 50V	
D501	VU992600	D1ODE. ZENR MA8051-M 5. 1V	
D502	VU993000	D1ODE. ZENR MA8056-M 5. 6V	
D503	VT332900	D1ODE 1SS355	
D504	VT332900	D1ODE 1SS355	
D505	VT332900	D1ODE 1SS355	
D506	VU993700	D1ODE. ZENR MA8068-L 6. 6V	
D507	VU993700	D1ODE. ZENR MA8068-L 6. 6V	
D509	VT332900	D1ODE 1SS355	
D510	VV833200	D1ODE 1SS380	
D511	VV833200	D1ODE 1SS380	
D512	VT332900	D1ODE 1SS355	
D513	VU992600	D1ODE. ZENR MA8051-M 5. 1V	
D531	VT332900	D1ODE 1SS355	
D532	VT332900	D1ODE 1SS355	
D535	VU992600	D1ODE. ZENR MA8051-M 5. 1V	
D536	VT332900	D1ODE 1SS355	
D537	VT332900	D1ODE 1SS355	
IC501	X3505A00	IC NJM2068MD-TE2	
IC502	XP895A00	IC LC78212	
IC503	XP894A00	IC LC78211	
IC504	XP896A00	IC LC78213	
IC505	X2896A00	IC. CPU M62320FP I/O PORT	
IC506	X3547A00	IC BD3841FS	
IC507	X3505A00	IC NJM2068MD-TE2	
IC508	X4536A00	IC SN74AHCT126PW	
IC509	XP895A00	IC LC78212	
IC510	XP896A00	IC LC78213	
IC511	X3505A00	IC NJM2068MD-TE2	
IC512	X4678A00	IC. ERROR MBM29F800BA-70PFTN	(unwritten)
IC513	X3505A00	IC NJM2068MD-TE2	
IC514	X3505A00	IC NJM2068MD-TE2	
IC515	X3505A00	IC NJM2068MD-TE2	
IC516	XZ545A00	IC YAC520-EE2	

\* New Parts

## P.C.B. FUNCTION

Schm Ref.	PART NO.	Description	Markets
IC517	X4325A00	IC	YAC523-EVR2
IC518	X3505A00	IC	NJM2068MD-TE2
IC519	XZ545A00	IC	YAC520-EE2
IC520	X2965A00	IC. CPU	M30805SGP
IC521	XF291A00	IC	uPC4570G2
IC522	XA507A00	IC	AN78N05
IC523	XF291A00	IC	uPC4570G2
IC524	X3505A00	IC	NJM2068MD-TE2
IC525	X3505A00	IC	NJM2068MD-TE2
IC526	XZ545A00	IC	YAC520-EE2
IC527	XF291A00	IC	uPC4570G2
IC528	XF291A00	IC	uPC4570G2
IC529	XF291A00	IC	uPC4570G2
IC530	XF291A00	IC	uPC4570G2
IC531	XZ545A00	IC	YAC520-EE2
PJ501	V7046700	JACK. PIN	4P MSP-244V1-01NI
PJ502	V7046700	JACK. PIN	4P MSP-244V1-01NI
PJ503	V8041300	JACK. PIN	4P MSP-244V6-01NI
PJ504	V9394300	JACK. PIN	6P MSP-246V1-18NI
PN501	V9637500	PIN	L=70 #18
PN502	V9637500	PIN	L=70 #18
PN503	V9637500	PIN	L=70 #18
PN504	V9637500	PIN	L=70 #18
PN505	V9637500	PIN	L=70 #18
PN506	V9637500	PIN	L=70 #18
PN507	V9637500	PIN	L=70 #18
Q501	VV556500	TR	2SA1037K Q, R, S
Q502	VD303700	TR	2SC3326 A, B
Q503	VD303700	TR	2SC3326 A, B
Q504	VV556500	TR	2SA1037K Q, R, S
Q505	VP872700	TR	2SC4488 S, T
Q506	VP872700	TR	2SC4488 S, T
Q507	VV556500	TR	2SA1037K Q, R, S
Q508	VD303700	TR	2SC3326 A, B
Q509	VP872700	TR	2SC4488 S, T
Q510	VD303700	TR	2SC3326 A, B
Q511	VV556500	TR	2SA1037K Q, R, S
Q512	VV655700	TR. DGT	DTC144EKA
Q513	VD303700	TR	2SC3326 A, B
Q514	VD303700	TR	2SC3326 A, B
Q515	VD303700	TR	2SC3326 A, B
Q516	VP872600	TR	2SA1708 S, T
Q517	VD303700	TR	2SC3326 A, B
Q518	VD303700	TR	2SC3326 A, B
Q519	VD303700	TR	2SC3326 A, B
Q520	VD303700	TR	2SC3326 A, B
Q521	VD303700	TR	2SC3326 A, B
Q522	VD303700	TR	2SC3326 A, B
Q523	VD303700	TR	2SC3326 A, B
Q525	VD303700	TR	2SC3326 A, B
Q526	VD303700	TR	2SC3326 A, B
Q527	VV556500	TR	2SA1037K Q, R, S
Q528	VV556500	TR	2SA1037K Q, R, S
Q529	VV556500	TR	2SA1037K Q, R, S
Q530	VV556500	TR	2SA1037K Q, R, S
Q532	VV556500	TR	2SA1037K Q, R, S

\* New Parts

## P.C.B. FUNCTION

Schm Ref.	PART NO.	Description	Markets
Q533	VD303700	TR	2SC3326 A, B
Q534	VD303700	TR	2SC3326 A, B
Q535	VD303700	TR	2SC3326 A, B
Q536	VD303700	TR	2SC3326 A, B
Q537	VD303700	TR	2SC3326 A, B
Q538	VD303700	TR	2SC3326 A, B
Q539	VD303700	TR	2SC3326 A, B
Q540	VD303700	TR	2SC3326 A, B
Q541	VD303700	TR	2SC3326 A, B
Q542	VD303700	TR	2SC3326 A, B
Q543	VD303700	TR	2SC3326 A, B
Q544	VD303700	TR	2SC3326 A, B
Q545	VD303700	TR	2SC3326 A, B
Q546	VD303700	TR	2SC3326 A, B
Q547	VD303700	TR	2SC3326 A, B
Q548	VD303700	TR	2SC3326 A, B
Q549	VD303700	TR	2SC3326 A, B
Q550	VD303700	TR	2SC3326 A, B
Q551	VD303700	TR	2SC3326 A, B
Q552	VD303700	TR	2SC3326 A, B
Q553	VV556500	TR	2SA1037K Q, R, S
Q554	VD303700	TR	2SC3326 A, B
Q555	VD303700	TR	2SC3326 A, B
Q556	VD303700	TR	2SC3326 A, B
Q557	VD303700	TR	2SC3326 A, B
Q558	VD303700	TR	2SC3326 A, B
Q559	VD303700	TR	2SC3326 A, B
Q560	VD303700	TR	2SC3326 A, B
Q561	VD303700	TR	2SC3326 A, B
Q562	VD303700	TR	2SC3326 A, B
R513	HV754100	R. CAR. FP	10 Ω 1/4W
R583	HV755100	R. CAR. FP	100 Ω 1/4W
R584	HV755100	R. CAR. FP	100 Ω 1/4W
R606	HF356180	R. CAR	1.8K Ω 1/2W
R607	HF356180	R. CAR	1.8K Ω 1/2W
R620	HF355820	R. CAR	820 Ω 1/2W
R621	HF355820	R. CAR	820 Ω 1/2W
R668	HV753470	R. CAR. FP	4.7 Ω 1/4W
R716	HF356220	R. CAR	2.2K Ω 1/2W
R717	HF356220	R. CAR	2.2K Ω 1/2W
R729	HF356560	R. CAR	5.6K Ω 1/2W
R744	HF356560	R. CAR	5.6K Ω 1/2W
R775	HF356330	R. CAR	3.3K Ω 1/2W
R776	HF356330	R. CAR	3.3K Ω 1/2W
R777	HF356470	R. CAR	4.7K Ω 1/2W
R778	HF356470	R. CAR	4.7K Ω 1/2W
R792	HF353470	R. CAR	4.7 Ω 1/2W
R793	HF353470	R. CAR	4.7 Ω 1/2W
R813	HV753470	R. CAR. FP	4.7 Ω 1/4W
R824	HF356560	R. CAR	5.6K Ω 1/2W
R825	HF356560	R. CAR	5.6K Ω 1/2W
R829	HF357120	R. CAR	12K Ω 1/2W
R830	HF357120	R. CAR	12K Ω 1/2W
R839	HF353470	R. CAR	4.7 Ω 1/2W
R840	HF353470	R. CAR	4.7 Ω 1/2W
R852	HF355220	R. CAR	220 Ω 1/2W

\* New Parts



## P.C.B. FUNCTION &amp; P.C.B. OPERATION

Schm Ref.	PART NO.	Description	Markets
R853	HF355220	R. CAR 220 Ω 1/2W	
R854	HF355330	R. CAR 330 Ω 1/2W	
R855	HF355330	R. CAR 330 Ω 1/2W	
R882	HF354330	R. CAR 33 Ω 1/2W	
R883	HF354330	R. CAR 33 Ω 1/2W	
R884	HF354330	R. CAR 33 Ω 1/2W	
R894	HF354330	R. CAR 33 Ω 1/2W	
R895	HF354330	R. CAR 33 Ω 1/2W	
R896	HF354330	R. CAR 33 Ω 1/2W	
R941	HF355470	R. CAR 470 Ω 1/2W	
R943	HF355470	R. CAR 470 Ω 1/2W	
ST502	V4040500	SCR. TERM M3	
XL511	WA674700	RSNR. CE 16MHz CSTLS16MOX51	
	<b>WE634400</b>	<b>P. C. B. OPERATION</b>	
CB24	LB919100	CN. BS. PIN 10P SE XH	
CB25	VB858200	CN. BS. PIN 3P	
CB26	LB918060	CN. BS. PIN 6P	
CB851	VQ047200	CN. BS. PIN 9P	
CB852	VM929900	CN. BS. PIN 15P	
CB859	VQ045100	CN. BS. PIN 21P	
CB861	VB389900	CN. BS. PIN 3P	
CB862	VB390000	CN. BS. PIN 4P	
CB863	VQ047100	CN. BS. PIN 7P	
CB864	VQ044600	CN. BS. PIN 13P	
CB866	VB858400	CN. BS. PIN 5P	
CB869	VB858300	CN. BS. PIN 4P	
C50	VR324900	C. MYLAR 0.1uF 100V	
C51	VR324900	C. MYLAR 0.1uF 100V	
C52	VR324900	C. MYLAR 0.1uF 100V	
C53	VR324900	C. MYLAR 0.1uF 100V	
C54	UR049680	C. EL 6800uF 25V	
C55	UR149330	C. EL 3300uF 25V	
C56	UR03A100	C. EL 10000uF 16V	
C57	UR03A100	C. EL 10000uF 16V	
C58	UR03A100	C. EL 10000uF 16V	
C59	UR03A100	C. EL 10000uF 16V	
C60	UR03A100	C. EL 10000uF 16V	
C61	UR03A100	C. EL 10000uF 16V	
C859	UR218100	C. EL 100uF 6.3V	
C876	UR218330	C. EL 330uF 6.3V	
C900	UM397220	C. EL 22uF 25V	
C901	UM397220	C. EL 22uF 25V	
C903	UM397100	C. EL 10uF 16V	
C904	UA653100	C. MYLAR 1000pF 50V	
C906	UA653100	C. MYLAR 1000pF 50V	
C907	UM397100	C. EL 10uF 16V	
C908	UM397100	C. EL 10uF 16V	
C911	UM387470	C. EL 47uF 16V	
C912	UR237470	C. EL 47uF 16V	
C916	UA652100	C. MYLAR 100pF 50V	
C917	UA652100	C. MYLAR 100pF 50V	
C919	UA652100	C. MYLAR 100pF 50V	
C920	UA652100	C. MYLAR 100pF 50V	

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\* New Parts

## P.C.B. OPERATION

Schm Ref.	PART NO.	Description	Markets
C921	UM397220	C. EL 22uF 25V	
C924	UR237100	C. EL 10uF 16V	
C925	UR237100	C. EL 10uF 16V	
C930	UM397100	C. EL 10uF 16V	
C931	WB553000	C. EL 1000uF 16V	
C932	WB553000	C. EL 1000uF 16V	
C944	UR218330	C. EL 330uF 6.3V	
D32	V4269600	D1ODE. BRG D2SBA20 1.5A 200V	
D33	V4269600	D1ODE. BRG D2SBA20 1.5A 200V	
D851	VU171500	D1ODE. ZENR UDZ 3.6BTE-17 3.6V	
D853	V2598200	LED SIR-505ST	
D854	VU171500	D1ODE. ZENR UDZ 3.6BTE-17 3.6V	
D860	VU171900	D1ODE. ZENR UDZ5.1B 5.1V	
D861	VV307700	D1ODE 1N4002S	
D862	VV307700	D1ODE 1N4002S	
D863	VT332900	D1ODE 1SS355	
D864	VT332900	D1ODE 1SS355	
D865	VT332900	D1ODE 1SS355	
D866	VT332900	D1ODE 1SS355	
D867	VU171900	D1ODE. ZENR UDZ5.1B 5.1V	
D868	WB071400	LED BE SLR343BBT	
D869	VU171900	D1ODE. ZENR UDZ5.1B 5.1V	
D870	VU171900	D1ODE. ZENR UDZ5.1B 5.1V	
D871	VU171900	D1ODE. ZENR UDZ5.1B 5.1V	
IC851	X2874A00	IC M66003-0101FP FLD	
IC853	X2080A00	IC SN74AHCT1G32DCKR	
IC854	XP844A00	IC NJM4556AL	
IC855	XF291A00	IC uPC4570G2	
JK858	V9408200	JACK. PHONE MSJ-064-05B GR	
JK859	V2589500	CN 1P	
JK860	WC814400	JACK. MNI JY-3554-01-130	
PJ854	V7190100	JACK. PIN 3P	
PN2	V9637500	PIN L=70 #18	
PN852	V9637500	PIN L=70 #18	
Q851	VV556400	TR 2SC2412K Q, R, S	
Q852	VV556400	TR 2SC2412K Q, R, S	
Q853	VV556400	TR 2SC2412K Q, R, S	
Q854	VV556400	TR 2SC2412K Q, R, S	
Q857	VV556400	TR 2SC2412K Q, R, S	
Q858	VV556400	TR 2SC2412K Q, R, S	
Q859	VV556400	TR 2SC2412K Q, R, S	
Q864	VD303700	TR 2SC3326 A, B	
Q865	VD303700	TR 2SC3326 A, B	
Q866	VV556400	TR 2SC2412K Q, R, S	
Q867	VV556400	TR 2SC2412K Q, R, S	
R851	HL005100	R. MTL. OXD 100 Ω 1/2W	
R852	HL005100	R. MTL. OXD 100 Ω 1/2W	
R932	HF355100	R. CAR 100 Ω 1/2W	
R933	HF355100	R. CAR 100 Ω 1/2W	
R955	HL005220	R. MTL. OXD 220 Ω 1/2W	
R956	HL005220	R. MTL. OXD 220 Ω 1/2W	
ST2	V4040500	SCR. TERM M3	
ST3	V4040500	SCR. TERM M3	
ST853	WA246200	SCR. TERM 3.5	
ST854	WA246200	SCR. TERM 3.5	
ST855	V4040500	SCR. TERM M3	

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\* New Parts

**P.C.B. OPERATION & P.C.B. MAIN**

Schm Ref.	PART NO.	Description	Markets
ST856	V4040500	SCR. TERM M3	
SW851	V4757100	SW. TACT EVQ11A	
SW852	V4757100	SW. TACT EVQ11A	
SW853	V4757100	SW. TACT EVQ11A	
SW854	V9281300	SW. RT. ENC EVEKD2F3024B	
SW855	V9281200	SW. RT. ENC EVEGC1F2512B	
SW856	V4757100	SW. TACT EVQ11A	
SW857	V4757100	SW. TACT EVQ11A	
SW858	V4757100	SW. TACT EVQ11A	
SW859	V4757100	SW. TACT EVQ11A	
SW860	V4757100	SW. TACT EVQ11A	
SW861	V4757100	SW. TACT EVQ11A	
SW862	V4757100	SW. TACT EVQ11A	
SW863	V4757100	SW. TACT EVQ11A	
SW864	V4757100	SW. TACT EVQ11A	
SW865	V4757100	SW. TACT EVQ11A	
SW866	V4757100	SW. TACT EVQ11A	
SW869	V9281200	SW. RT. ENC EVEGC1F2512B	
SW870	V4757100	SW. TACT EVQ11A	
U851	V9240900	L. DTCT GP1UM281XK	
U852	WB547900	L. DTCT 1P GP1FA513RZ	
V851	WD507500	FL. DSPLY 17-BT-23GNK	
	V6007000	SHEET	
	V6007100	SPACER. FL 4. 6/10/32	
	<b>WB722500</b>	<b>P. C. B.</b>	<b>MAIN</b>
CB205	V7826400	CN 14P TE TUC SERIES	
CB207	VU271200	CN 12P TE	
CB211	WB127100	CN. BS. PIN 3P TE XH	
CB212	LB932060	CN. BS. PIN 6P	
CB215	VE352600	CN. BS. PIN 14P	
CB216	LB918020	CN. BS. PIN 2P	
CB217	V7825700	CN 7P TE TUC SERIES	
CB218	LB918030	CN. BS. PIN 3P	
C201	VJ599100	C. CE. TUBLR 0. 1uF 50V	
C226	VJ599100	C. CE. TUBLR 0. 1uF 50V	
C234	UT652100	C. PP 100pF 100V	
C235	UR037470	C. EL 47uF 16V	
C236	UT652100	C. PP 100pF 100V	
C237	UT652100	C. PP 100pF 100V	
C238	UR037470	C. EL 47uF 16V	
C239	UT652100	C. PP 100pF 100V	
C240	UT652100	C. PP 100pF 100V	
C241	UR267470	C. EL 47uF 50V	
C242	UT652100	C. PP 100pF 100V	
C243	UT652100	C. PP 100pF 100V	
C244	UR267470	C. EL 47uF 50V	
C245	UT652100	C. PP 100pF 100V	
C246	UT652100	C. PP 100pF 100V	
C247	UR037470	C. EL 47uF 16V	
C248	UT652100	C. PP 100pF 100V	
C249	UT652100	C. PP 100pF 100V	
C250	UR267470	C. EL 47uF 50V	
C251	UT652100	C. PP 100pF 100V	

\* New Parts

**P.C.B. MAIN**

Schm Ref.	PART NO.	Description	Markets
C252	UT652100	C. PP 100pF 100V	
C253	UR267470	C. EL 47uF 50V	
C254	UT652100	C. PP 100pF 100V	
C255	VE326700	C. MYLAR. ML 0. 39uF 50V	
C256	VE326700	C. MYLAR. ML 0. 39uF 50V	
C257	VP918300	C. PP 0. 022uF 100V	
C258	VP918300	C. PP 0. 022uF 100V	
C259	UA654220	C. MYLAR 0. 022uF 50V	
C260	UA654220	C. MYLAR 0. 022uF 50V	
C261	VP918300	C. PP 0. 022uF 100V	
C262	UA654220	C. MYLAR 0. 022uF 50V	
C263	UA654220	C. MYLAR 0. 022uF 50V	
C264	UR397100	C. EL 10uF 100V	
C265	UR397100	C. EL 10uF 100V	
C266	UR297100	C. EL 10uF 100V	
C267	UR297100	C. EL 10uF 100V	
C268	UR397100	C. EL 10uF 100V	
C269	UR397100	C. EL 10uF 100V	
C270	UR266470	C. EL 4. 7uF 50V	
C271	UR266470	C. EL 4. 7uF 50V	
C275	UA653470	C. MYLAR 4700pF 50V	
C276	UA653470	C. MYLAR 4700pF 50V	
C277	UA653470	C. MYLAR 4700pF 50V	
C278	UA653470	C. MYLAR 4700pF 50V	
C279	UA654220	C. MYLAR 0. 022uF 50V	
C280	UA654100	C. MYLAR 0. 01uF 50V	
C281	UA654100	C. MYLAR 0. 01uF 50V	
C283	WA744300	C. EL 10000uF 71V	
C284	WA744300	C. EL 10000uF 71V	
C286	VG291500	C. EL 330uF 50V	
C287	VG291300	C. EL 100uF 50V	
C288	VR324900	C. MYLAR 0. 1uF 100V	
C289	VR324900	C. MYLAR 0. 1uF 100V	
C290	UA654220	C. MYLAR 0. 022uF 50V	
C291	UA654220	C. MYLAR 0. 022uF 50V	
C292	UA654220	C. MYLAR 0. 022uF 50V	
C293	UA654220	C. MYLAR 0. 022uF 50V	
C294	UA654220	C. MYLAR 0. 022uF 50V	
C295	UA654220	C. MYLAR 0. 022uF 50V	
C296	UA654100	C. MYLAR 0. 01uF 50V	
C297	UA654100	C. MYLAR 0. 01uF 50V	
C299	UA654100	C. MYLAR 0. 01uF 50V	
C300	UA654100	C. MYLAR 0. 01uF 50V	
C301	VR324900	C. MYLAR 0. 1uF 100V	
C302	VR324900	C. MYLAR 0. 1uF 100V	
C303	UA654220	C. MYLAR 0. 022uF 50V	
C304	UA654220	C. MYLAR 0. 022uF 50V	
C305	V8584600	C. PP 220pF 630V	
D201	VD631600	DIODE 1SS133, 176	
D206	VD631600	DIODE 1SS133, 176	
D207	VD631600	DIODE 1SS133, 176	
D208	VD631600	DIODE 1SS133, 176	
D209	VD631600	DIODE 1SS133, 176	
D210	VD631600	DIODE 1SS133, 176	
D211	VD631600	DIODE 1SS133, 176	
D212	VD631600	DIODE 1SS133, 176	

\* New Parts



## P.C.B. MAIN

Schm Ref.	PART NO.	Description	Markets
D213	VD631600	DIODE	1SS133, 176
D214	WA180300	DIODE	1SS244
D215	WA180300	DIODE	1SS244
D216	WA180300	DIODE	1SS244
D217	WA180300	DIODE	1SS244
D218	WA180300	DIODE	1SS244
D219	WA180300	DIODE	1SS244
D220	WA180300	DIODE	1SS244
D221	WA180300	DIODE	1SS244
D222	WA180300	DIODE	1SS244
D223	WA180300	DIODE	1SS244
D224	WA180300	DIODE	1SS244
D225	VG440300	DIODE. ZENR	MTZJ12C 12V
D226	VG440300	DIODE. ZENR	MTZJ12C 12V
D227	VG440300	DIODE. ZENR	MTZJ12C 12V
D228	VG443700	DIODE. ZENR	MTZJ33B 33V
D229	VG440300	DIODE. ZENR	MTZJ12C 12V
D231	VG440300	DIODE. ZENR	MTZJ12C 12V
D232	VG440300	DIODE. ZENR	MTZJ12C 12V
D233	VG440300	DIODE. ZENR	MTZJ12C 12V
D234	VG440300	DIODE. ZENR	MTZJ12C 12V
D235	VG440300	DIODE. ZENR	MTZJ12C 12V
D236	VG440300	DIODE. ZENR	MTZJ12C 12V
D238	VG440300	DIODE. ZENR	MTZJ12C 12V
D239	VG440300	DIODE. ZENR	MTZJ12C 12V
△ D240	VS997800	DIODE	1T2
△ D241	VS997800	DIODE	1T2
△ D242	VS997800	DIODE	1T2
△ D243	VS997800	DIODE	1T2
△ D246	VZ755200	DIODE. BRG	D15XB20 15A 200V
D247	VD631600	DIODE	1SS133, 176
D248	VD631600	DIODE	1SS133, 176
D249	VD631600	DIODE	1SS133, 176
D250	VD631600	DIODE	1SS133, 176
D251	VD631600	DIODE	1SS133, 176
D252	VD631600	DIODE	1SS133, 176
D253	VD631600	DIODE	1SS133, 176
G201	V5995800	PLATE. GND	
△ IC201	X0515A00	IC	LM61CIZ THERMAL
△ IC202	X0515A00	IC	LM61CIZ THERMAL
PN201	V9637500	PIN	L=70 #18
PN202	V9637500	PIN	L=70 #18
PN203	V9637500	PIN	L=70 #18
PN204	V9637500	PIN	L=70 #18
PN205	V9637500	PIN	L=70 #18
PN206	V9637500	PIN	L=70 #18
△ Q213	VK432900	TR	2SD1915F S, T
△ Q214	VK432900	TR	2SD1915F S, T
△ Q215	iC224030	TR	2SC2240 GR, BL
△ Q216	iC224030	TR	2SC2240 GR, BL
△ Q217	VK432900	TR	2SD1915F S, T
△ Q218	VK432900	TR	2SD1915F S, T
△ Q219	VK432900	TR	2SD1915F S, T
△ Q220A	iX632610	TR	2SA1837 0, Y
△ Q220C	iX632620	TR	2SC4793 0, Y
△ Q221A	iX632610	TR	2SA1837 0, Y

\* New Parts

## P.C.B. MAIN

Schm Ref.	PART NO.	Description	Markets
△ Q221C	iX632620	TR	2SC4793 0, Y
△ Q222A	iX632610	TR	2SA1837 0, Y
△ Q222C	iX632620	TR	2SC4793 0, Y
△ Q223A	iX632610	TR	2SA1837 0, Y
△ Q223C	iX632620	TR	2SC4793 0, Y
△ Q224A	iX632610	TR	2SA1837 0, Y
△ Q224C	iX632620	TR	2SC4793 0, Y
△ Q225A	iX632610	TR	2SA1837 0, Y
△ Q225C	iX632620	TR	2SC4793 0, Y
△ Q226A	iX606460	TR	2SA1492 0, P, Y
△ Q226C	iX606470	TR	2SC3856 0, P, Y
△ Q227A	iX606460	TR	2SA1492 0, P, Y
△ Q227C	iX606470	TR	2SC3856 0, P, Y
△ Q228A	iX606460	TR	2SA1492 0, P, Y
△ Q228C	iX606470	TR	2SC3856 0, P, Y
△ Q229A	iX606460	TR	2SA1492 0, P, Y
△ Q229C	iX606470	TR	2SC3856 0, P, Y
△ Q230A	iX606460	TR	2SA1492 0, P, Y
△ Q230C	iX606470	TR	2SC3856 0, P, Y
△ Q231A	iX606460	TR	2SA1492 0, P, Y
△ Q231C	iX606470	TR	2SC3856 0, P, Y
△ Q232A	iX606460	TR	2SA1492 0, P, Y
△ Q232C	iX606470	TR	2SC3856 0, P, Y
△ Q233A	iX632610	TR	2SA1837 0, Y
△ Q233C	iX632620	TR	2SC4793 0, Y
Q248	VP883100	TR	2SC1890A D, E
Q249	VP883100	TR	2SC1890A D, E
Q250	VP883100	TR	2SC1890A D, E
Q251	VP883100	TR	2SC1890A D, E
Q252	VP883100	TR	2SC1890A D, E
Q253	VP883100	TR	2SC1890A D, E
Q254	VP883100	TR	2SC1890A D, E
Q255	iC181510	TR	2SC1815 Y
Q256	iC181510	TR	2SC1815 Y
Q257	iA101510	TR	2SA1015 Y
Q258	iC181510	TR	2SC1815 Y
Q261	iC181510	TR	2SC1815 Y
Q262	iC181510	TR	2SC1815 Y
Q263	VR325600	TR	2SC2229 0, Y
Q264	VR325600	TR	2SC2229 0, Y
Q265	VR325600	TR	2SC2229 0, Y
Q266	VR325600	TR	2SC2229 0, Y
Q267	VR325600	TR	2SC2229 0, Y
Q268	VR325600	TR	2SC2229 0, Y
Q269	VR325600	TR	2SC2229 0, Y
R263	V3946100	R. MTL. OXD	2.7K Ω 1/2W
R264	V3945100	R. MTL. OXD	390 Ω 1/2W
R265	V3945500	R. MTL. OXD	820 Ω 1/2W
R266	HV755150	R. CAR. FP	150 Ω 1/4W
R267	V3946100	R. MTL. OXD	2.7K Ω 1/2W
R268	V3945100	R. MTL. OXD	390 Ω 1/2W
R269	V3945500	R. MTL. OXD	820 Ω 1/2W
R270	HV755150	R. CAR. FP	150 Ω 1/4W
R271	V3946100	R. MTL. OXD	2.7K Ω 1/2W
R272	V3944900	R. MTL. OXD	270 Ω 1/2W
R273	V3945600	R. MTL. OXD	1K Ω 1/2W

\* New Parts

**P.C.B. MAIN**

**P.C.B. MAIN & P.C.B. POWER**

Schm Ref.	PART NO.	Description	Markets
R274	HV755150	R. CAR. FP 150 Ω 1/4W	
R275	V3946100	R. MTL. OXD 2. 7K Ω 1/2W	
R276	V3944900	R. MTL. OXD 270 Ω 1/2W	
R277	V3945600	R. MTL. OXD 1K Ω 1/2W	
R278	HV755150	R. CAR. FP 150 Ω 1/4W	
R279	V3946100	R. MTL. OXD 2. 7K Ω 1/2W	
R280	V3945100	R. MTL. OXD 390 Ω 1/2W	
R281	V3945500	R. MTL. OXD 820 Ω 1/2W	
R282	HV755150	R. CAR. FP 150 Ω 1/4W	
R283	V3946100	R. MTL. OXD 2. 7K Ω 1/2W	
R284	V3945100	R. MTL. OXD 390 Ω 1/2W	
R285	V3945500	R. MTL. OXD 820 Ω 1/2W	
R286	HV755150	R. CAR. FP 150 Ω 1/4W	
R287	V3946100	R. MTL. OXD 2. 7K Ω 1/2W	
R288	V3945100	R. MTL. OXD 390 Ω 1/2W	
R289	V3945500	R. MTL. OXD 820 Ω 1/2W	
R290	HV755150	R. CAR. FP 150 Ω 1/4W	
R291	V3945600	R. MTL. OXD 1K Ω 1/2W	
R292	V3945600	R. MTL. OXD 1K Ω 1/2W	
R293	V3945600	R. MTL. OXD 1K Ω 1/2W	
R294	V3945600	R. MTL. OXD 1K Ω 1/2W	
R295	V3945600	R. MTL. OXD 1K Ω 1/2W	
R296	V3945600	R. MTL. OXD 1K Ω 1/2W	
R297	V3945600	R. MTL. OXD 1K Ω 1/2W	
⚠ R298	V3944400	R. MTL. OXD 100 Ω 1/2W	
⚠ R299	V3944400	R. MTL. OXD 100 Ω 1/2W	
⚠ R300	V3944800	R. MTL. OXD 220 Ω 1/2W	
⚠ R301	V3944800	R. MTL. OXD 220 Ω 1/2W	
⚠ R302	V3944800	R. MTL. OXD 220 Ω 1/2W	
⚠ R303	V3944800	R. MTL. OXD 220 Ω 1/2W	
⚠ R304	V3944800	R. MTL. OXD 220 Ω 1/2W	
R305	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R306	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R307	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R308	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R309	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R310	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R311	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R312	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R313	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R314	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R315	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R316	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R317	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R318	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R319	V3873200	R. WW 0. 22 Ω 3W	
R320	V3873200	R. WW 0. 22 Ω 3W	
R321	WB279900	R. WW RGC55C 0. 22+0. 22	
R322	WB279900	R. WW RGC55C 0. 22+0. 22	
R325	V3873200	R. WW 0. 22 Ω 3W	
R326	WB279900	R. WW RGC55C 0. 22+0. 22	
R327	WB279900	R. WW RGC55C 0. 22+0. 22	
R349	VP939800	R. MTL. OXD 10 Ω 1W	
R350	VP939800	R. MTL. OXD 10 Ω 1W	
R351	VP939800	R. MTL. OXD 10 Ω 1W	
R352	VP939800	R. MTL. OXD 10 Ω 1W	

\* New Parts

Schm Ref.	PART NO.	Description	Markets
R353	VP939800	R. MTL. OXD 10 Ω 1W	
R354	VP939800	R. MTL. OXD 10 Ω 1W	
R355	VP939800	R. MTL. OXD 10 Ω 1W	
R363	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R364	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R365	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R367	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R371	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R372	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R373	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R380	VP939500	R. MTL. FLM 1 Ω 1W	
R381	VP939500	R. MTL. FLM 1 Ω 1W	
R382	VP939500	R. MTL. FLM 1 Ω 1W	
R383	VP941000	R. MTL. OXD 680 Ω 1W	
R384	VP941000	R. MTL. OXD 680 Ω 1W	
R387	HV756100	R. CAR. FP 1K Ω 1/4W	
R389	HV755100	R. CAR. FP 100 Ω 1/4W	
R397	VP941000	R. MTL. OXD 680 Ω 1W	
R400	VP941000	R. MTL. OXD 680 Ω 1W	
R401	VP941000	R. MTL. OXD 680 Ω 1W	
R406	HV753100	R. CAR. FP 1 Ω 1/4W	
R408	HV753100	R. CAR. FP 1 Ω 1/4W	
R409	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R410	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R411	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R412	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R413	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R414	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R415	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R416	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R417	HV753470	R. CAR. FP 4. 7 Ω 1/4W	
R418	VP941000	R. MTL. OXD 680 Ω 1W	
R421	VP939700	R. MTL. FLM 4. 7 Ω 1W	
R422	V3944400	R. MTL. OXD 100 Ω 1/2W	
R423	V3944400	R. MTL. OXD 100 Ω 1/2W	
RY201	V6322600	RELAY DC DH24D2-OT (M) -SL	
RY202	V6322600	RELAY DC DH24D2-OT (M) -SL	
RY203	V6322600	RELAY DC DH24D2-OT (M) -SL	
RY204	V6322600	RELAY DC DH24D2-OT (M) -SL	
RY205	V6322600	RELAY DC DH24D2-OT (M) -SL	
RY206	WA544800	RELAY DC G5PA-28	
TE201	V9458800	TERM. SP LTS0410-3012	
TE202	WB424700	TERM. SP LTS0610-2011G	
TE203	V8259500	TERM. SP LQR2411-0001G	
TE204	V9459000	TERM. SP LTS0810-1016	
	EP600140	SCR. BND. HD 3x10 MFZN2BL	
	WC913200	P. C. B. POWER	UC
	WE634900	P. C. B. POWER	A
CB1	VB390300	CN. BS. PIN 7P	
CB3	VG879900	CN. BS. PIN 2P	
CB6	WC050700	CL IP. FUSE EYF52BCY	UC
CB7	WC050700	CL IP. FUSE EYF52BCY	UC
CB8	WC050700	CL IP. FUSE EYF52BCY	

\* New Parts

## P.C.B. POWER

Schm Ref.	PART NO.	Description	Markets
CB9	WC050700	CL IP. FUSE	EYF52BCY
CB22	VQ044900	CN. BS. PIN	19P
CB23	V7828100	SOCKET	14P TE TUC SERIES
CB28	VB858200	CN. BS. PIN	3P
CB29	V7827400	SOCKET	7P TE TUC SERIES
CB30	VB858700	CN. BS. PIN	8P
CB31	VN066500	CN. BS. PIN	12P
CB32	VB389900	CN. BS. PIN	3P
C1	VG288200	C. EL	3300uF 16V
C3	UR237330	C. EL	33uF 16V
C6	VL884600	C. PP	0.01uF 100V
C9	V6185300	C. CE. SAFTY	0.01uF 275V
C10	UA654100	C. MYLAR	0.01uF 50V
C11	UA654100	C. MYLAR	0.01uF 50V
C21	V8584600	C. PP	220pF 630V
C22	UR218220	C. EL	220uF 6.3V
C23	UR237100	C. EL	10uF 16V
C24	UR237100	C. EL	10uF 16V
C25	UU137100	C. EL	10uF 16V
C25	UU267100	C. EL	10uF 50V
C26	UR267470	C. EL	47uF 50V
C27	UR219100	C. EL	1000uF 6.3V
C28	UR219100	C. EL	1000uF 6.3V
C29	UU238100	C. EL	100uF 16V
C30	V9411200	C. EL	22uF 100V
C31	V9411200	C. EL	22uF 100V
C32	UA652100	C. MYLAR	100pF 50V
C33	UA652220	C. MYLAR	220pF 50V
C34	UA652100	C. MYLAR	100pF 50V
C35	UA652220	C. MYLAR	220pF 50V
C36	UT952100	C. PP	100pF 100V
C37	UT952220	C. PP	220pF 100V
C38	UR397100	C. EL	10uF 100V
C39	UR397100	C. EL	10uF 100V
C40	UA653220	C. MYLAR	2200pF 50V
C40	UA653150	C. MYLAR	1500pF 50V
C41	UA653220	C. MYLAR	2200pF 50V
C41	UA653150	C. MYLAR	1500pF 50V
C42	VP917900	C. PP	1500pF 100V
C43	UR267470	C. EL	47uF 50V
C44	UR267470	C. EL	47uF 50V
C45	VG291200	C. EL	47uF 50V
C46	FU451220	C. MICA	22pF 500V
C47	FU451220	C. MICA	22pF 500V
C48	FU451220	C. MICA	22pF 500V
C49	UR266470	C. EL	4.7uF 50V
C62	UR237100	C. EL	10uF 16V
C63	UR038100	C. EL	100uF 16V
C64	UR237100	C. EL	10uF 16V
C65	UU238100	C. EL	100uF 16V
C66	UR247100	C. EL	10uF 25V
C67	UR247100	C. EL	10uF 25V
C68	UR237100	C. EL	10uF 16V
C69	UR237100	C. EL	10uF 16V
C70	UR337470	C. EL	47uF 16V
C71	UR337470	C. EL	47uF 16V

\* New Parts

## P.C.B. POWER

Schm Ref.	PART NO.	Description	Markets
C72	UU238100	C. EL	100uF 16V
C73	UU238100	C. EL	100uF 16V
C75	UR038100	C. EL	100uF 16V
C78	UR237100	C. EL	10uF 16V
C79	UU137100	C. EL	10uF 16V
C79	UU267100	C. EL	10uF 50V
C80	UU137100	C. EL	10uF 16V
C80	UU267100	C. EL	10uF 50V
C81	UT952100	C. PP	100pF 100V
C82	UT952100	C. PP	100pF 100V
C83	UT952220	C. PP	220pF 100V
C84	UT952220	C. PP	220pF 100V
C85	VG291300	C. EL	100uF 50V
C86	VG291300	C. EL	100uF 50V
C87	VP917900	C. PP	1500pF 100V
C88	VP917900	C. PP	1500pF 100V
C89	FU451220	C. MICA	22pF 500V
C90	FU451220	C. MICA	22pF 500V
C91	UR237100	C. EL	10uF 16V
C92	UR237100	C. EL	10uF 16V
C93	UA652100	C. MYLAR	100pF 50V
C94	UA652100	C. MYLAR	100pF 50V
C95	UA652220	C. MYLAR	220pF 50V
C96	UA652220	C. MYLAR	220pF 50V
C97	UR267470	C. EL	47uF 50V
C98	UR267470	C. EL	47uF 50V
C99	UA653220	C. MYLAR	2200pF 50V
C99	UA653150	C. MYLAR	1500pF 50V
C100	UA653220	C. MYLAR	2200pF 50V
C100	UA653150	C. MYLAR	1500pF 50V
C101	FU451220	C. MICA	22pF 500V
C102	FU451220	C. MICA	22pF 500V
C103	VF467000	C. CE. TUBLR	1000pF 50V
C104	VF467000	C. CE. TUBLR	1000pF 50V
C107	VF467300	C. CE. TUBLR	0.01uF 16V
C108	VF467300	C. CE. TUBLR	0.01uF 16V
C114	UR268100	C. EL	100uF 50V
C115	UR267100	C. EL	10uF 50V
C116	UR267100	C. EL	10uF 50V
C117	UR258470	C. EL	470uF 35V
C118	UA652220	C. MYLAR	220pF 50V
D1	VG437300	D1ODE. ZENR	MTZJ5.1A 5.1V
D6	VD631600	D1ODE	1SS133, 176
D7	VS997800	D1ODE	1T2
D8	VS997800	D1ODE	1T2
D9	VS997800	D1ODE	1T2
D10	VS997800	D1ODE	1T2
D11	VD631600	D1ODE	1SS133, 176
D21	VG437200	D1ODE. ZENR	MTZJ4.7C 4.7V
D22	VD631600	D1ODE	1SS133, 176
D23	VD631600	D1ODE	1SS133, 176
D24	VD631600	D1ODE	1SS133, 176
D25	VG440300	D1ODE. ZENR	MTZJ12C 12V
D26	VD631600	D1ODE	1SS133, 176
D27	VG441200	D1ODE. ZENR	MTZJ16C 16V
D28	VD631600	D1ODE	1SS133, 176

\* New Parts

**P.C.B. POWER**

**P.C.B. POWER**

HTR-5890

Schm Ref.	PART NO.	Description	Markets
D29	WA180300	DIODE	1SS244
D30	WA180300	DIODE	1SS244
D31	WA180300	DIODE	1SS244
D34	VG443200	DIODE. ZENR	MTZJ30A 30V
D35	VG440700	DIODE. ZENR	MTZJ15A 15V
D36	VG435900	DIODE. ZENR	MTZJ3.0B 3.0V
D37	VD631600	DIODE	1SS133, 176
D38	VD631600	DIODE	1SS133, 176
D39	VD631600	DIODE	1SS133, 176
D44	VD631600	DIODE	1SS133, 176
D46	VD631600	DIODE	1SS133, 176
D48	VD631600	DIODE	1SS133, 176
D50	VG442600	DIODE. ZENR	MTZJ24C 24V
D51	VG438700	DIODE. ZENR	MTZJ7.5C 7.5V
D52	VD631600	DIODE	1SS133, 176
D53	VD631600	DIODE	1SS133, 176
D54	VS997800	DIODE	1T2
F1	VS823400	FUSE	10A 125V
F1	KB003240	FUSE	T5A 250V
F2	VS823400	FUSE	10A 125V
⚠ IC21	XJ607A00	IC	NJM7805FA 5V
⚠ IC22	XJ607A00	IC	NJM7805FA 5V
⚠ IC23	XJ608A00	IC	NJM7812FA
⚠ IC24	XD343A00	IC	NJM79M12FA
⚠ IC25	XJ607A00	IC	NJM7805FA 5V
⚠ IC26	XE436A00	IC	NJM79M05FA
JK2	V9435700	JACK. MNI	MSJ-035-12APC
JK3	V9435700	JACK. MNI	MSJ-035-12APC
JK4	V9435700	JACK. MNI	MSJ-035-12APC
PN1	V9637500	PIN	L=70 #18
PN3	V9637500	PIN	L=70 #18
PN4	V9637500	PIN	L=70 #18
PN5	V9637500	PIN	L=70 #18
PN6	V9637500	PIN	L=70 #18
PN7	V9637500	PIN	L=70 #18
PN9	V9637500	PIN	L=70 #18
PN10	V9637500	PIN	L=70 #18
PN11	V9637500	PIN	L=70 #18
Q2	iC174020	TR	2SC1740S QRS
Q6	iC174020	TR	2SC1740S QRS
⚠ Q21	V4096100	TR	2SC4614 S, T
Q22	VP883100	TR	2SC1890A D, E
⚠ Q23	VC938500	TR	2SC3852
Q24	VP883000	TR	2SA893A D, E
⚠ Q25	VC614000	TR	2SB1274 Q, R, S
Q26	VP883100	TR	2SC1890A D, E
Q27	VP883100	TR	2SC1890A D, E
Q28	VP883100	TR	2SC1890A D, E
Q29	VP883000	TR	2SA893A D, E
Q30	VP883100	TR	2SC1890A D, E
Q31	VP883100	TR	2SC1890A D, E
Q32	VP883100	TR	2SC1890A D, E
Q33	VP883100	TR	2SC1890A D, E
Q34	V3966800	TR	2SA949 O, Y
Q35	V3966800	TR	2SA949 O, Y
Q36	V3966800	TR	2SA949 O, Y

\* New Parts

Schm Ref.	PART NO.	Description	Markets
Q37	iA097030	TR	2SA970 GR, BL
⚠ Q38	VC938500	TR	2SC3852
Q39	VP883100	TR	2SC1890A D, E
Q40	VP883100	TR	2SC1890A D, E
Q41	VP883100	TR	2SC1890A D, E
Q42	VP883100	TR	2SC1890A D, E
Q43	V3966800	TR	2SA949 O, Y
Q44	V3966800	TR	2SA949 O, Y
Q45	VP883100	TR	2SC1890A D, E
Q46	VP883100	TR	2SC1890A D, E
Q47	VP883100	TR	2SC1890A D, E
Q48	VP883100	TR	2SC1890A D, E
Q49	V3966800	TR	2SA949 O, Y
Q50	V3966800	TR	2SA949 O, Y
Q51	VP872600	TR	2SA1708 S, T
Q53	VG722000	TR. DGT	DTC144ES
Q53	VV912300	TR. DGT	DTC144ESA-TP
Q55	VC141900	TR	2SB941 P, Q
Q56	iD043820	TR	2SD438 E, F
Q57	VP883100	TR	2SC1890A D, E
R8	V6730000	R. CAR.	2.2MΩ 1/2W
R21	HF353220	R. CAR	2.2Ω 1/2W
R24	HF358100	R. CAR	100KΩ 1/2W
R28	HV756150	R. CAR. FP	1.5KΩ 1/4W
R36	VK859400	R. CAR	220Ω 1/3W
R40	HF357100	R. CAR	10KΩ 1/2W
R46	HF356180	R. CAR	1.8KΩ 1/2W
⚠ R47	HV754100	R. CAR. FP	10Ω 1/4W
⚠ R49	HV754100	R. CAR. FP	10Ω 1/4W
R50	V8072000	R. MTL. OXD	4.7KΩ 1W
R54	HF357330	R. CAR	33KΩ 1/2W
R57	HF358270	R. CAR	270KΩ 1/2W
R60	HF355330	R. CAR	330Ω 1/2W
R63	VL877400	R. CAR	1.2KΩ 1/3W
R66	VL878900	R. CAR	33KΩ 1/3W
R67	HV754470	R. CAR. FP	47Ω 1/4W
R68	HV754470	R. CAR. FP	47Ω 1/4W
R69	HV754470	R. CAR. FP	47Ω 1/4W
R72	HF355470	R. CAR	470Ω 1/2W
R75	HF357470	R. CAR	47KΩ 1/2W
⚠ R89	V8070000	R. MTL. FLM	1Ω 1W
⚠ R91	V8070000	R. MTL. FLM	1Ω 1W
⚠ R92	HV753100	R. CAR. FP	1Ω 1/4W
⚠ R93	HV753100	R. CAR. FP	1Ω 1/4W
⚠ R94	V8070000	R. MTL. FLM	1Ω 1W
⚠ R95	V8070000	R. MTL. FLM	1Ω 1W
⚠ R103	VC756700	R. MTL. OXD	15Ω 2W
⚠ R104	VC756700	R. MTL. OXD	15Ω 2W
R109	HF358100	R. CAR	100KΩ 1/2W
R110	HF358100	R. CAR	100KΩ 1/2W
R111	VK859400	R. CAR	220Ω 1/3W
R112	VK859400	R. CAR	220Ω 1/3W
R113	HF356180	R. CAR	1.8KΩ 1/2W
R114	HF356180	R. CAR	1.8KΩ 1/2W
R115	HF357330	R. CAR	33KΩ 1/2W
R116	HF357330	R. CAR	33KΩ 1/2W

\* New Parts

## P.C.B. POWER &amp; P.C.B. VIDEO

Schm Ref.	PART NO.	Description	Markets
R117	HF357100	R. CAR 10K Ω 1/2W	
R118	HF357100	R. CAR 10K Ω 1/2W	
R119	VL877400	R. CAR 1.2K Ω 1/3W	
R120	VL877400	R. CAR 1.2K Ω 1/3W	
R121	HF358270	R. CAR 270K Ω 1/2W	
R122	HF358270	R. CAR 270K Ω 1/2W	
R123	HF355390	R. CAR 390 Ω 1/2W	UC
R123	HF355330	R. CAR 330 Ω 1/2W	A
R124	HF355390	R. CAR 390 Ω 1/2W	UC
R124	HF355330	R. CAR 330 Ω 1/2W	A
R125	HV754470	R. CAR. FP 47 Ω 1/4W	
R126	HV754470	R. CAR. FP 47 Ω 1/4W	
R127	VL878900	R. CAR 33K Ω 1/3W	
R128	VL878900	R. CAR 33K Ω 1/3W	
R129	HF355470	R. CAR 470 Ω 1/2W	
R130	HF355470	R. CAR 470 Ω 1/2W	
R131	HF357470	R. CAR 47K Ω 1/2W	
R132	HF357470	R. CAR 47K Ω 1/2W	
R153	HV754470	R. CAR. FP 47 Ω 1/4W	
R154	HV754470	R. CAR. FP 47 Ω 1/4W	
R161	HF353220	R. CAR 2.2 Ω 1/2W	
R177	HV754100	R. CAR. FP 10 Ω 1/4W	
R179	HV756330	R. CAR. FP 3.3K Ω 1/4W	
R181	HV756470	R. CAR. FP 4.7K Ω 1/4W	
R182	HV755100	R. CAR. FP 100 Ω 1/4W	
R183	VP939800	R. MTL. OXD 10 Ω 1W	
RY1	V9366900	RELAY DLS9D1-0(M)0.25W	
ST1	V4040500	SCR. TERM M3	
ST4	V4040500	SCR. TERM M3	
ST5	V4040500	SCR. TERM M3	
T1	X2936A00	TRANS	UC
T1	X2938A00	TRANS	A
TE1	VU543100	OUTLET. AC 2P	UC
TE1	VT915000	OUTLET. AC 1P	A
TE2	WB782600	AC INLET R-30190(26)	
	EP600140	SCR. BND. HD 3x10 MFZN2BL	
	WD647500	P. C. B. VIDEO	UC
	WD647600	P. C. B. VIDEO	A
CB501	V7827800	SOCKET 11P SE TUC SERIES	
CB502	V7827800	SOCKET 11P SE TUC SERIES	
CB541	V7826100	CN 11P TE TUC SERIES	
CB542	V7827800	SOCKET 11P SE TUC SERIES	
CB543	V7826100	CN 11P TE TUC SERIES	
CB544	V7827800	SOCKET 11P SE TUC SERIES	
CB551	V7826700	CN 17P TE TUC SERIES	
CB552	V7826800	CN 18P TE TUC SERIES	
CB553	V7826200	CN 12P TE TUC SERIES	
CB554	VQ044300	CN. BS. PIN 7P	
CB555	VN066500	CN. BS. PIN 12P	
CB556	V7826000	CN 10P TE TUC SERIES	
CB557	V7826200	CN 12P TE TUC SERIES	
CB558	VM929900	CN. BS. PIN 15P	
CB601	V7827200	SOCKET 5P TE TUC SERIES	

\* New Parts

## P.C.B. VIDEO

Schm Ref.	PART NO.	Description	Markets
CB602	V7827900	SOCKET 12P TE TUC SERIES	
CB603	VQ044300	CN. BS. PIN 7P	
CB605	V7828000	SOCKET 13P SE TUC SERIES	
CB701	V7827900	SOCKET 12P TE TUC SERIES	
CB702	V7828000	SOCKET 13P SE TUC SERIES	
CB751	V7826300	CN 13P TE TUC SERIES	
CB752	V7826300	CN 13P TE TUC SERIES	
CB761	V7825500	CN 5P TE TUC SERIES	
CB762	V7825500	CN 5P TE TUC SERIES	
CB801	VQ044300	CN. BS. PIN 7P	
CB801	VQ044300	CN. BS. PIN 7P	
CB802	LB919030	CN. BS. PIN 3P	
CB803	VQ044600	CN. BS. PIN 13P	
CB804	V6509500	SOCKET 9P SE 3170	
C503	UA652470	C. MYLAR 470pF 50V	
C504	UA652470	C. MYLAR 470pF 50V	
C505	UA652470	C. MYLAR 470pF 50V	
C506	UA652470	C. MYLAR 470pF 50V	
C507	UA652470	C. MYLAR 470pF 50V	
C508	UA652470	C. MYLAR 470pF 50V	
C509	UA652470	C. MYLAR 470pF 50V	
C510	UA652470	C. MYLAR 470pF 50V	
C511	UA652100	C. MYLAR 100pF 50V	
C512	UA652100	C. MYLAR 100pF 50V	
C513	UA652470	C. MYLAR 470pF 50V	
C514	UA652470	C. MYLAR 470pF 50V	
C515	UA652100	C. MYLAR 100pF 50V	
C516	UA652100	C. MYLAR 100pF 50V	
C517	UA652470	C. MYLAR 470pF 50V	
C518	UA652470	C. MYLAR 470pF 50V	
C519	UA652470	C. MYLAR 470pF 50V	
C520	UA652470	C. MYLAR 470pF 50V	
C551	UR237470	C. EL 47uF 16V	
C552	UR266220	C. EL 2.2uF 50V	
C553	UR237470	C. EL 47uF 16V	
C601	UR219100	C. EL 1000uF 6.3V	
C602	UR218100	C. EL 100uF 6.3V	
C603	UR218100	C. EL 100uF 6.3V	
C605	UR266470	C. EL 4.7uF 50V	
C606	UR266470	C. EL 4.7uF 50V	
C607	UR237470	C. EL 47uF 16V	
C608	UR218100	C. EL 100uF 6.3V	
C609	UR218100	C. EL 100uF 6.3V	
C610	UR237470	C. EL 47uF 16V	
C611	UR218100	C. EL 100uF 6.3V	
C612	UR218100	C. EL 100uF 6.3V	
C613	UR218100	C. EL 100uF 6.3V	
C614	UR237470	C. EL 47uF 16V	
C615	UR237100	C. EL 10uF 16V	
C616	UR218100	C. EL 100uF 6.3V	
C617	UR266100	C. EL 1uF 50V	
C618	UR266100	C. EL 1uF 50V	
C619	UR237100	C. EL 10uF 16V	
C620	UR266470	C. EL 4.7uF 50V	
C621	UR218100	C. EL 100uF 6.3V	
C622	UR218330	C. EL 330uF 6.3V	

\* New Parts



## P.C.B. VIDEO

Schm Ref.	PART NO.	Description	Markets
C661	UR266470	C. EL 4. 7uF 50V	
C701	UR219100	C. EL 1000uF 6. 3V	
C702	UR218100	C. EL 100uF 6. 3V	
C703	UR218100	C. EL 100uF 6. 3V	
C704	UR218100	C. EL 100uF 6. 3V	
C705	UR237470	C. EL 47uF 16V	
C707	UR218100	C. EL 100uF 6. 3V	
C708	UR237470	C. EL 47uF 16V	
C801	UR237470	C. EL 47uF 16V	
C807	UA652470	C. MYLAR 470pF 50V	
C808	UA652470	C. MYLAR 470pF 50V	
C809	UA652470	C. MYLAR 470pF 50V	
C810	UA652470	C. MYLAR 470pF 50V	
C811	UA652470	C. MYLAR 470pF 50V	
C812	VE326800	C. MYLAR. ML 0. 47uF 50V	
C813	UA652470	C. MYLAR 470pF 50V	
C814	UA652470	C. MYLAR 470pF 50V	
D551	VU172000	DIODE. ZENR UDZ55. 6BTE-17 5. 6V	
D601	VT332900	DIODE 1SS355	
D602	VT332900	DIODE 1SS355	
D603	VT332900	DIODE 1SS355	
D604	VT332900	DIODE 1SS355	
D605	VT332900	DIODE 1SS355	
D606	VT332900	DIODE 1SS355	
D607	VT332900	DIODE 1SS355	
D608	VT332900	DIODE 1SS355	
D609	VT332900	DIODE 1SS355	
D611	VT332900	DIODE 1SS355	
D612	VT332900	DIODE 1SS355	
IC551	X2896A00	IC. CPU M62320FP I/O PORT	
IC601	XW939A00	IC TK15420M VIDEO AMP	
IC602	XY550A00	IC MM74HC4051SJX	
IC603	XY550A00	IC MM74HC4051SJX	
IC607	XY877A00	IC MM74HC4053SJX	
IC608	XD598A00	IC TC74HCU04AFEL INV	
IC609	XY443A00	IC LA7109 6CH	
IC610	XY877A00	IC MM74HC4053SJX	
IC611	XZ060A00	IC LC74781-9798	
IC612	XW939A00	IC TK15420M VIDEO AMP	
IC701	XW911A00	IC LA7108M VIDEO AMP	
IC703	XY550A00	IC MM74HC4051SJX	
IC705	XW416A00	IC BU2092 SER/PAR	
IC801	XW863A00	IC ADM202JRN-REEL7	
JK601	VS867300	CN. DIN 4P YKF51-5501	
JK602	V9273500	CN. DIN 2P YKF51-5605	
JK603	V9273500	CN. DIN 2P YKF51-5605	
JK604	V9273500	CN. DIN 2P YKF51-5605	
JK605	V9273500	CN. DIN 2P YKF51-5605	
PJ501	V7046800	JACK. PIN 6P MSP-246V1-01NI	
PJ502	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ503	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ504	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ701	VN134600	JACK. PIN 1P	
PJ702	VV325000	JACK. PIN 2P	
PJ703	VV325000	JACK. PIN 2P	
PJ704	VV325000	JACK. PIN 2P	

\* New Parts

## P.C.B. VIDEO

Schm Ref.	PART NO.	Description	Markets
PJ705	VV325000	JACK. PIN 2P	
PJ801	V7046700	JACK. PIN 4P MSP-244V1-01NI	
PJ802	V5479100	JACK. PIN 4P RJ-1073-39-0351	
PN551	V9637500	PIN L=70 #18	
PN601	V9637500	PIN L=70 #18	
Q551	iC181510	TR 2SC1815 Y	
Q552	iC174020	TR 2SC1740S QRS	
Q601	iC174020	TR 2SC1740S QRS	
Q602	iC174020	TR 2SC1740S QRS	
Q604	iC174020	TR 2SC1740S QRS	
Q605	iC174020	TR 2SC1740S QRS	
Q606	iC174020	TR 2SC1740S QRS	
Q607	iC053540	TR 2SC535 A, B, C	
Q608	iA101510	TR 2SA1015 Y	
Q609	iC224030	TR 2SC2240 GR, BL	
Q701	iC174020	TR 2SC1740S QRS	
R570	HV754470	R. CAR. FP 47Ω 1/4W	
R631	HV755270	R. CAR. FP 270Ω 1/4W	
R634	HV755470	R. CAR. FP 470Ω 1/4W	
R650	HV755220	R. CAR. FP 220Ω 1/4W	
R651	HV755470	R. CAR. FP 470Ω 1/4W	
R657	HV755220	R. CAR. FP 220Ω 1/4W	
R661	HV755470	R. CAR. FP 470Ω 1/4W	
R664	HV753100	R. CAR. FP 1Ω 1/4W	
R666	HV753100	R. CAR. FP 1Ω 1/4W	
R668	HV753220	R. CAR. FP 2. 2Ω 1/4W	
R669	HV753220	R. CAR. FP 2. 2Ω 1/4W	
R671	HV753220	R. CAR. FP 2. 2Ω 1/4W	
R678	HV755470	R. CAR. FP 470Ω 1/4W	
R681	HV755470	R. CAR. FP 470Ω 1/4W	
R684	HV755470	R. CAR. FP 470Ω 1/4W	
R695	HV753100	R. CAR. FP 1Ω 1/4W	
R713	HV755270	R. CAR. FP 270Ω 1/4W	
R718	HV753100	R. CAR. FP 1Ω 1/4W	
R719	HV753100	R. CAR. FP 1Ω 1/4W	
ST801	V4040500	SCR. TERM M3	
XL601	V9018400	RSNR. CRY 14. 3181MHz	UC
XL601	V9018500	RSNR. CRY 17. 7344MHz	A

\* New Parts



**P.C.B. CONVERSION**

Schm Ref.	PART NO.	Description	Markets
	WB729100	P. C. B. CONVERSION	UC
	WB729200	P. C. B. CONVERSION	A
CB804	V7827700	SOCKET 10P SE TUC SERIES	
CB805	V7827200	SOCKET 5P TE TUC SERIES	
C801	UR237470	C. EL 47uF 16V	
C802	UR237470	C. EL 47uF 16V	
C803	UR237470	C. EL 47uF 16V	
C804	UR238100	C. EL 100uF 16V	
C805	UR238100	C. EL 100uF 16V	
C806	UR238100	C. EL 100uF 16V	
C807	UR237470	C. EL 47uF 16V	
C808	UR237470	C. EL 47uF 16V	
C809	UR238100	C. EL 100uF 16V	
C810	UR238100	C. EL 100uF 16V	
C811	UR265470	C. EL 0.47uF 50V	
C812	UR237470	C. EL 47uF 16V	
C813	UR237470	C. EL 47uF 16V	A
C815	UR237100	C. EL 10uF 16V	
C816	UR238100	C. EL 100uF 16V	
C817	UR237470	C. EL 47uF 16V	
C818	UR238100	C. EL 100uF 16V	
C819	UR237470	C. EL 47uF 16V	A
C820	UR265470	C. EL 0.47uF 50V	A
C821	UR265470	C. EL 0.47uF 50V	A
C822	UR237100	C. EL 10uF 16V	A
C823	UR266100	C. EL 1uF 50V	A
C824	UR266220	C. EL 2.2uF 50V	
C825	UR266100	C. EL 1uF 50V	A
C826	UR265470	C. EL 0.47uF 50V	A
C827	UR237470	C. EL 47uF 16V	A
C828	UR266100	C. EL 1uF 50V	A
C829	UR265470	C. EL 0.47uF 50V	A
C830	UR266220	C. EL 2.2uF 50V	
C831	UR238100	C. EL 100uF 16V	
C896	UR237100	C. EL 10uF 16V	
C905	UR237470	C. EL 47uF 16V	
C906	UR237470	C. EL 47uF 16V	
C907	UR237470	C. EL 47uF 16V	
C908	UR237470	C. EL 47uF 16V	
C909	UR237470	C. EL 47uF 16V	
C910	UR237470	C. EL 47uF 16V	
C911	UR237100	C. EL 10uF 16V	
C916	UR218470	C. EL 470uF 6.3V	
D801	VT332900	D10DE 1SS355	
D802	VT332900	D10DE 1SS355	
D803	VU995300	D10DE. ZENR MA8100-L 9.7V	
D804	VT332900	D10DE 1SS355	
D805	VT332900	D10DE 1SS355	
D806	VT332900	D10DE 1SS355	
IC801	XS790A00	IC TC74HC4052AF MPX	
IC802	XS790A00	IC TC74HC4052AF MPX	
IC804	X2904A00	IC NJM2581M VIDEO AMP	
IC805	X3936A00	IC SN74LVU04APWR	
IC806	X4349A00	IC TC90A49F	
IC808	X4347A00	IC TA1270BF	
IC809	XY879A00	IC TC74HC4053AF(EL)	

\* New Parts

**P.C.B. CONVERSION**

Schm Ref.	PART NO.	Description	Markets
IC810	XW939A00	IC TK15420M VIDEO AMP	
IC811	X3936A00	IC SN74LVU04APWR	
PJ801	V8143900	JACK PIN 9P SHIELD YKC21	
Q801	VC407900	TR 2SD1913 R, S	
Q802	VV556500	TR 2SA1037K Q, R, S	A
Q803	VV556400	TR 2SC2412K Q, R, S	A
Q804	VV556400	TR 2SC2412K Q, R, S	A
Q805	VV556400	TR 2SC2412K Q, R, S	
Q806	VV556500	TR 2SA1037K Q, R, S	
Q807	VV556400	TR 2SC2412K Q, R, S	
Q808	VV556400	TR 2SC2412K Q, R, S	
Q809	VV556400	TR 2SC2412K Q, R, S	
Q810	VV556400	TR 2SC2412K Q, R, S	
Q811	VV556500	TR 2SA1037K Q, R, S	
Q812	VV556500	TR 2SA1037K Q, R, S	
Q813	VV556400	TR 2SC2412K Q, R, S	
Q814	VV556400	TR 2SC2412K Q, R, S	
R828	HV753100	R. CAR. FP 1Ω 1/4W	
R830	HV753100	R. CAR. FP 1Ω 1/4W	
R833	HV753100	R. CAR. FP 1Ω 1/4W	
R847	HV753100	R. CAR. FP 1Ω 1/4W	A
R848	HV753100	R. CAR. FP 1Ω 1/4W	
R878	HV753100	R. CAR. FP 1Ω 1/4W	
ST801	V4040500	SCR. TERM M3	
XL801	WB750000	RSNR. CRY5 4.433619MHz	A
XL802	WB749900	RSNR. CRY5 3.579545MHz	
XL803	V5345200	RSNR. CE CSBLA503KECF30-B0	

\* New Parts

**CHIP PARTS**

Schm Ref.	PART NO.	Description	Markets
	US044220	C. CE. M. CHP 0.022uF 25V	
	US060700	C. CE. CHP 7pF 50V	
	US060800	C. CE. CHP 8pF 50V	
	US061100	C. CE. M. CHP 10pF 50V	
	US061120	C. CE. CHP 12pF 50V	
	US061150	C. CE. CHP 15pF 50V	
	US061220	C. CE. M. CHP 22pF 50V	
	US061240	C. CE. CHP 24pF 50V	
	US061270	C. CE. M. CHP 27pF 50V	
	US061330	C. CE. M. CHP 33pF 50V	
	US061470	C. CE. M. CHP 47pF 50V	
	US062100	C. CE. M. CHP 100pF 50V	
	US062120	C. CE. CHP 120pF 50V	
	US062180	C. CE. CHP 180pF 50V	
	US062220	C. CE. CHP 220pF 50V	
	US062330	C. CE. M. CHP 330pF 50V	
	US062470	C. CE. M. CHP 470pF 50V	
	US062560	C. CE. CHP 560pF 50V	
	US063100	C. CE. M. CHP 1000pF 50V	
	US063120	C. CE. M. CHP 1200pF 50V	
	US063220	C. CE. M. CHP 2200pF 50V	
	US063470	C. CE. CHP 4700pF 50V	
	US064100	C. CE. M. CHP 0.01uF 50V	
	US065100	C. CE. M. CHP 0.1uF 50V	
	US126100	C. CE. CHP 1uF 10V	
	US135100	C. CE. CHP 0.1uF 16V	
	US135220	C. CE. CHP 0.22uF 16V	
	RD350000	R. CHP 0Ω 1/16W	
	RD353220	R. CHP 2.2Ω 1/16W	
	RD354220	R. CHP 22Ω 1/16W	
	RD354330	R. CHP 33Ω 1/16W	
	RD354470	R. CHP 47Ω 1/16W	
	RD354750	R. CHP 75Ω 1/16W	
	RD354820	R. CHP 82Ω 1/16W	
	RD355100	R. CHP 100Ω 1/16W	
	RD355120	R. CHP 120Ω 1/16W	
	RD355220	R. CHP 220Ω 1/16W	
	RD355270	R. CHP 270Ω 1/16W	
	RD355330	R. CHP 330Ω 1/16W	
	RD355360	R. CHP 360Ω 1/16W	
	RD355390	R. CHP 390Ω 1/16W	
	RD355430	R. CHP 430Ω 1/16W	
	RD355470	R. CHP 470Ω 1/16W	
	RD355680	R. CHP 680Ω 1/16W	
	RD355820	R. CHP 820Ω 1/16W	
	RD356100	R. CHP 1KΩ 1/16W	
	RD356120	R. CHP 1.2KΩ 1/16W	
	RD356150	R. CHP 1.5KΩ 1/16W	
	RD356180	R. CHP 1.8KΩ 1/16W	
	RD356220	R. CHP 2.2KΩ 1/16W	
	RD356270	R. CHP 2.7KΩ 1/16W	
	RD356300	R. CHP 3KΩ 1/16W	
	RD356330	R. CHP 3.3KΩ 1/16W	
	RD356390	R. CHP 3.9KΩ 1/16W	
	RD356470	R. CHP 4.7KΩ 1/16W	
	RD356560	R. CHP 5.6KΩ 1/16W	

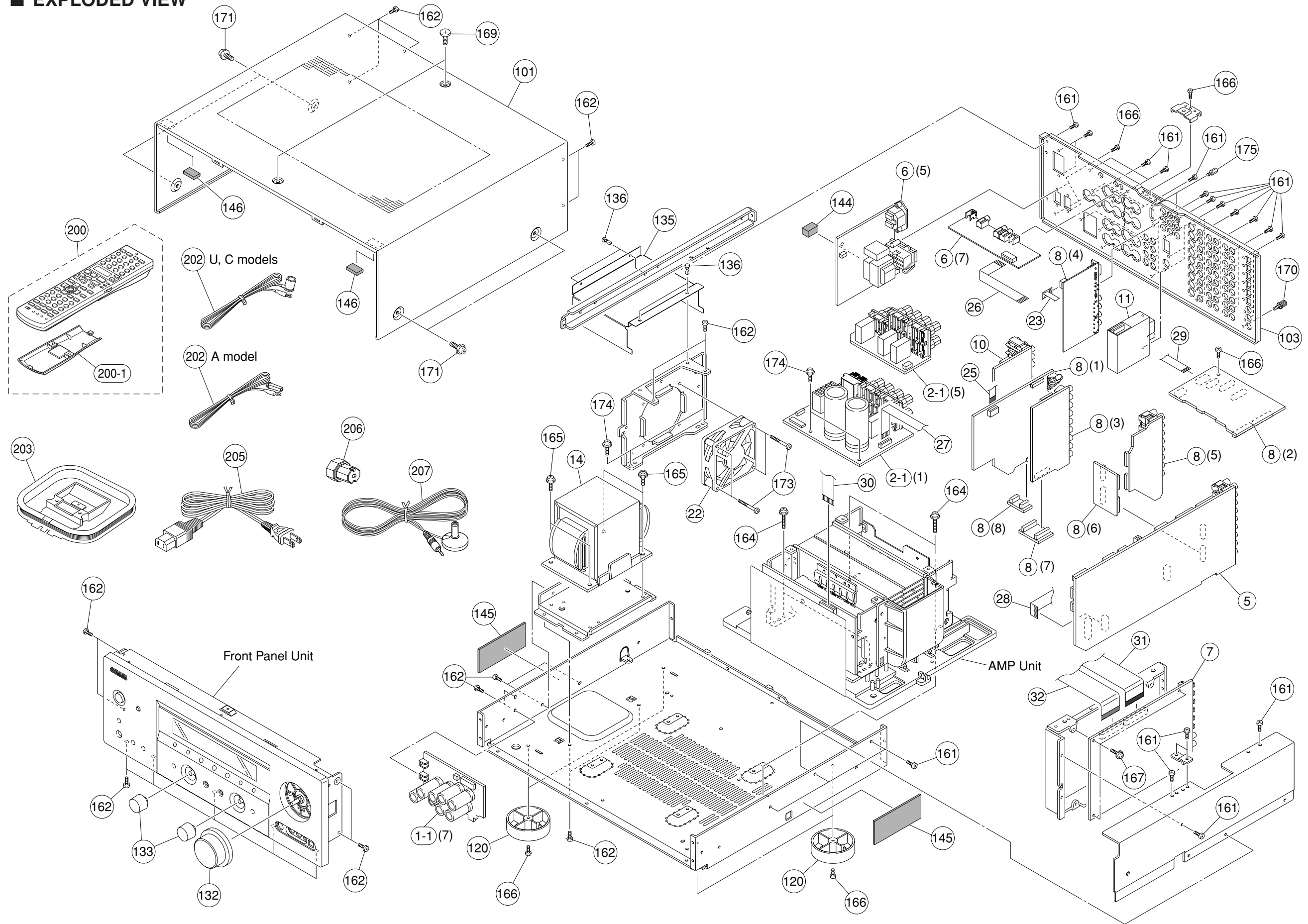
\* New Parts

**CHIP PARTS**

Schm Ref.	PART NO.	Description	Markets
	RD356680	R. CHP 6.8KΩ 1/16W	
	RD356820	R. CHP 8.2KΩ 1/16W	
	RD357100	R. CHP 10KΩ 1/16W	
	RD357120	R. CHP 12KΩ 1/16W	
	RD357150	R. CHP 15KΩ 1/16W	
	RD357180	R. CHP 18KΩ 1/16W	
	RD357200	R. CHP 20KΩ 1/16W	
	RD357220	R. CHP 22KΩ 1/16W	
	RD357270	R. CHP 27KΩ 1/16W	
	RD357300	R. CHP 30KΩ 1/16W	
	RD357330	R. CHP 33KΩ 1/16W	
	RD357470	R. CHP 47KΩ 1/16W	
	RD357560	R. CHP 56KΩ 1/16W	
	RD358100	R. CHP 100KΩ 1/16W	
	RD358150	R. CHP 150KΩ 1/16W	
	RD358220	R. CHP 220KΩ 1/16W	
	RD358470	R. CHP 470KΩ 1/16W	
	RD358680	R. CHP 680KΩ 1/16W	
	RD359100	R. CHP 1MΩ 1/16W	
	RD359220	R. CHP 2.2MΩ 1/16W	
	RF354330	R. CHP 33Ω 1/16W	
	RF355100	R. CHP 100Ω 1/16W	
	RF355150	R. CHP 150Ω 1/16W	
	RF355330	R. CHP 330Ω 1/16W	
	RF355470	R. CHP 470Ω 1/16W	
	RF356100	R. CHP 1.0KΩ 1/16W	
	RF356120	R. CHP 1.2KΩ 1/16W	
	RF356220	R. CHP 2.2KΩ 1/16W	
	RF356270	R. CHP 2.7KΩ 1/16W	
	RF356330	R. CHP 3.3KΩ 1/16W	
	RF356430	R. CHP 4.3KΩ 1/16W	
	RF356470	R. CHP 4.7KΩ 1/16W	
	RF356560	R. CHP 5.6KΩ 1/16W	
	RF356680	R. CHP 6.8KΩ 1/16W	
	RF357100	R. CHP 10KΩ 1/16W	
	RF357110	R. CHP 11KΩ 1/16W	
	RF357120	R. CHP 12KΩ 1/16W	
	RF357470	R. CHP 47KΩ 1/16W	
	RF357820	R. CHP 82KΩ 1/16W	

\* New Parts

EXPLODED VIEW



MECHANICAL PARTS

Schm Ref.	PART NO.	Description	Remarks	Markets
* 1-1	WE634400	P. C. B. ASS' Y	OPERATION	
2-1	WB722500	P. C. B. ASS' Y	MAIN	
5	WD646900	P. C. B. ASS' Y	FUNCTION	UC
5	WD647200	P. C. B. ASS' Y	FUNCTION	A
6	WC913200	P. C. B. ASS' Y	POWER	UC
* 6	WE634900	P. C. B. ASS' Y	POWER	A
7	WD646700	P. C. B. ASS' Y	DSP	
8	WD647500	P. C. B. ASS' Y	VIDEO	UC
8	WD647600	P. C. B. ASS' Y	VIDEO	A
10	WB729100	P. C. B. ASS' Y	CONVERSION	UC
10	WB729200	P. C. B. ASS' Y	CONVERSION	A
11	WD048300	AM/FM TUNER	FAE385-A01F	UC
11	WD048400	AM/FM TUNER	FAE485-E01F	A
⚠ 14	X4594A00	POWER TRANSFORMER		UC
⚠ 14	X4598A00	POWER TRANSFORMER		A
22	V8563700	DC FAN MOTOR	3110KL-05W-B40-T21	
23	MF107070	FLEXIBLE FLAT CABLE	7P 70mm P=1.25	
25	MF107500	FLEXIBLE FLAT CABLE	7P 500mm P=1.25	
26	MF112140	FLEXIBLE FLAT CABLE	12P 140mm P=1.25	
27	MF112450	FLEXIBLE FLAT CABLE	12P 450mm P=1.25	
28	MF113450	FLEXIBLE FLAT CABLE	13P 450mm P=1.25	
29	MF115070	FLEXIBLE FLAT CABLE	15P 70mm P=1.25	
30	MB019250	S FLEXIBLE FLAT CABLE	19P 250mm P=1.25	
31	MF117100	FLEXIBLE FLAT CABLE	17P 100mm P=1.25	
32	MF118250	FLEXIBLE FLAT CABLE	18P 250mm P=1.25	
101	V9151100	TOP COVER		BL
101	V9151300	TOP COVER		SI
* 103	WE521100	REAR PANEL		UC
* 103	WE521200	REAR PANEL		A
120	VV544300	LEG	D60xH21	BL
120	VS025000	LEG	D60xH21	SI
* 132	WE183300	KNOB/D48	VOLUME	BL
* 132	WE183600	KNOB/D48	VOLUME	SI
133	WC560500	KNOB D23	PROGRAM/INPUT	BL
133	WC560800	KNOB D23	PROGRAM/INPUT	SI
135	WB313000	TRANS COVER		
136	VQ368600	PUSH RIVET	P3555-B	
144	WC062000	SPACER	10x25 t13	
145	V3198100	DAMPER	GUARD	
146	V8080600	CUSHION 10X20		
* 161	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3	
* 162	WE774400	BIND HEAD B-TIGHT SCREW	3x8 MFZN2B3	
* 164	WE774600	SCREW IC	3x18 MFZN2W3	
* 165	WE774700	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3	
* 166	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
167	VT669300	PW HEAD B-TIGHT SCREW	3x8-8 MFC2	
169	VK522100	SPECIAL S-TIGHT SCREW	4x8-10 MFC2BL	BL
169	VZ893000	SPECIAL S-TIGHT SCREW	4x8-10 MFN133	SI
170	AA627310	GROUND TERMINAL		
171	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFN13BL	BL
171	VD069600	PW HEAD S-TIGHT SCREW	4x8-10 MFN133	SI
* 173	WE774500	BIND HEAD B-TIGHT SCREW	3x30 MFZN2B3	

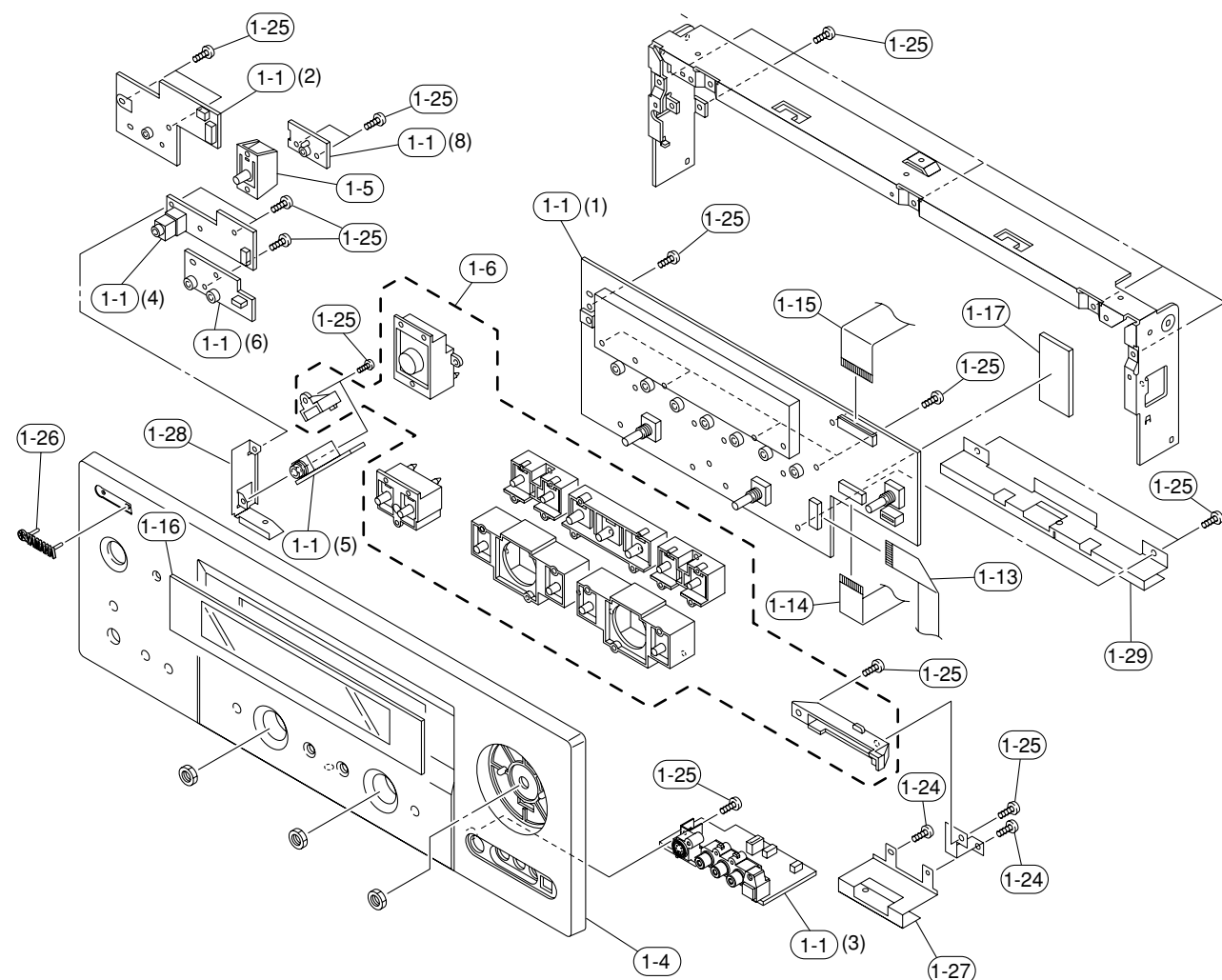
\* New Parts

Schm Ref.	PART NO.	Description	Remarks	Markets
174	VB770200	PW HEAD P-TIGHT SCREW	3x10-8 MFC2	
175	V6509600	JACK SCREW	SS6-A47511848	
		ACCESSORIES		
200	WD108300	REMOTE CONTROL	RAV350	
200-1	AAX59640	BATTERY COVER		3139 238 08051
202	V6267000	INDOOR FM ANTENNA	1.4m 1pc	UC
202	VQ147100	INDOOR FM ANTENNA	1.4m 1pc	A
203	VR248500	AM LOOP ANTENNA	1.0m 1pc	
⚠ 205	V7704800	POWER CABLE	2m 1pc	UC
⚠ 205	WB750900	POWER CABLE	2m 1pc	A
206	WC080100	SPEAKER TERMINAL WRENCH	LTS0090-0002GM	
207	WB929200	OPTIMIZER MICROPHONE BATTERY, MANGANESE DRY	EMX-251 UM-4NE, 4pcs	
		SERVICE TOOLS		
1-13	MF113500	FLEXIBLE FLAT CABLE	13P 500mm P=1.25	
1-13	MF115500	FLEXIBLE FLAT CABLE	15P 500mm P=1.25	
1-13	MF119500	FLEXIBLE FLAT CABLE	19P 500mm P=1.25	

\* New Parts



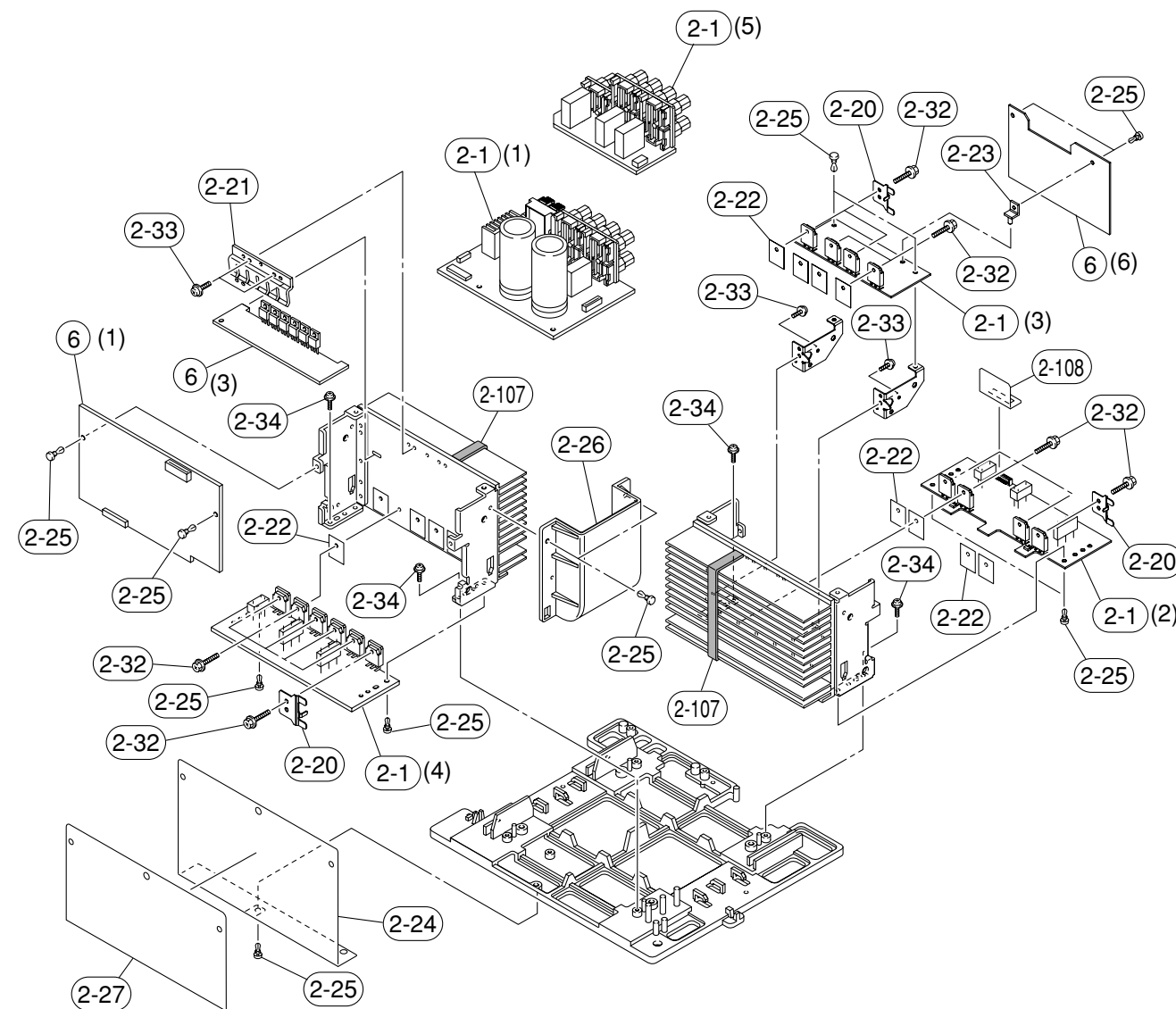
FRONT PANEL UNIT



Schm Ref.	PART NO.	Description	Remarks	Markets
* 1-1	WE634400	P. C. B. ASS'Y	OPERATION	
* 1-4	WE179500	FRONT PANEL ASS'Y	BL	
* 1-4	WE179900	FRONT PANEL ASS'Y	SI	
* 1-5	WF121100	BUTTON/LENS		
1-6	WC491700	BUTTONCASE 5760	BL	
1-6	WC868400	BUTTONCASE 5760	SI	
1-13	MB013140	S FLEXIBLE FLAT CABLE	13P 140mm P=1.25	
1-14	MB015140	S FLEXIBLE FLAT CABLE	15P 140mm P=1.25	
1-15	MF121120	FLEXIBLE FLAT CABLE	21P 120mm P=1.25	
1-16	WC495500	SHEET, WINDOW		
1-17	V6742300	DAMPER	3/30/60	
* 1-24	WE774000	BIND HEAD SCREW	3x6 MFZN2W3	
* 1-25	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	
1-26	V6034200	EMBLEM		BL
1-26	V6034100	EMBLEM		SI
1-27	WD131900	EARTH PLATE, AUX		
1-28	WD132000	EARTH PLATE, HP		
1-29	WD165100	EARTH PLATE, FL		

\* New Parts

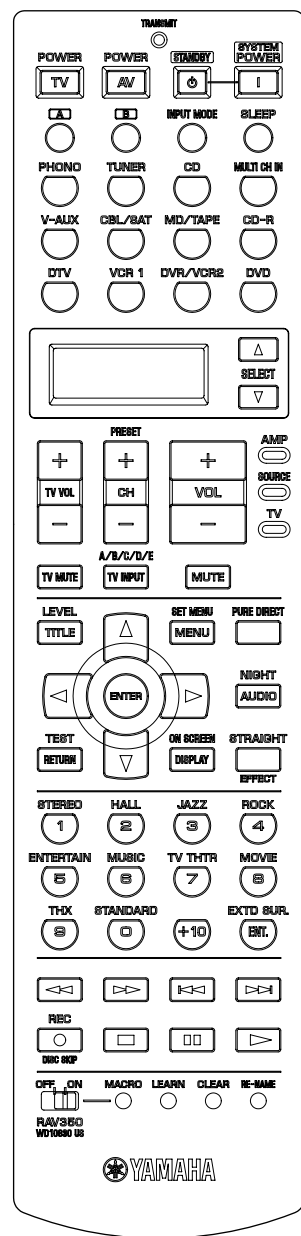
AMP UNIT



Schm Ref.	PART NO.	Description	Remarks	Markets
2-1	WB722500	P. C. B. ASS'Y	MAIN	
2-20	WB297600	SUPPORT/TR		
2-21	WB458700	SUPPORT/TR 7P		
2-22	VV849300	RADIATION SHEET	19x24	
2-23	CB091290	SUPPORT, P. C. B.	No. 1645	
2-24	WA207000	SHEET/SHIELD B		
2-25	V0368600	PUSH RIVET	P3555-B	
2-26	V9120600	DUCT		
* 2-27	WE881400	SHEET/BARRIER FP		
2-32	VK173200	SCREW, TRANSISTOR	3x15 SP MFC2	
2-33	VT669300	PW HEAD B-TIGHT SCREW	3x8-8 MFC2	
2-34	VB770200	PW HEAD P-TIGHT SCREW	3x10-8 MFC2	
2-107	VP922500	DAMPER	2x10x170	
2-108	WC558300	SPACER, PCB		
* 6	WC913200	P. C. B. ASS'Y	POWER	UC
* 6	WE634900	P. C. B. ASS'Y	POWER	A

\* New Parts

# REMOTE CONTROL RAV350



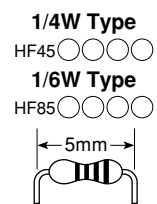
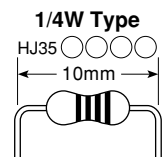
\*1; These code are transmitted when "ZONE" is set-up as AMP library.  
 \*2; "MAIN" is shown on LCD for 2 second, then return to previous status.  
 \*3; These code are transmitted when "ZONE2" is chosen with Select key.  
 \*4; These code are transmitted when "ZONE3" is chosen with Select key.  
 \*5; These code are transmitted when "SYSTEM" is chosen with Select key.  
 In case the key except K6 or K7 pressed, return to previous status and transmit the code it is has.

\*1; AMPライブラリをZONEに設定することで送信される。  
 \*2; LCD上に2秒間"MAIN"が表示され、その後元の状態に戻る。  
 \*3; SelectキーによってZONE2を選択することで送信される。  
 \*4; SelectキーによってZONE3を選択することで送信される。  
 \*5; SelectキーによってSYSTEMを選択することで送信される。  
 K3またはK4以外のキーを押した場合、前の状態に戻り、持っているコードが送信される。

NO	LABEL	AMP Library AMP1	AMP Library:AMP1Z*1				TUNER	
			MAIN	ZONE2*3	ZONE3*4	SYSTM*5	TUNER	Yamaha1
3	STANDBY	7A-1E	7E-7F*2	7E-BB	7A-EE	7A-1E		
4	SYSTEM POWER	7A-1D	7E-7E*2	7E-BA	7A-ED	7A-1D		
7	INPUT MODE	7A-C3		7A-C3				
8	SLEEP	7A-57		7A-57				
9	PHONO	7A-14	7A-14	7A-D0	7A-F1			
10	TUNER	7A-16	7A-16	7A-D2	7A-F3			
11	CD	7A-15	7A-15	7A-D1	7A-F2			
12	MULTI CH INPUT	7A-87		7A-87				
13	V-AUX	7A-55	7A-55	7A-D8	7A-F0			
14	CBL/SAT	7A-C0	7A-C0	7A-CC	7A-F7			
15	MD/TAPE	7A-18	7A-18	7A-D3	7A-F4			
16	CD-R	7A-19	7A-19	7A-D4	7A-F5			
17	DTV	7A-54	7A-54	7A-D9	7A-F6			
18	VCR1	7A-0F	7A-0F	7A-D6	7A-F9			
19	DVR/VCR2	7A-13	7A-13	7A-D7	7A-FA			
20	DVD	7A-C1	7A-C1	7A-CD	7A-FC			
24							PRESET+	7A-10
25	VOL UP	7A-1A	7A-1A	7A-DA	7A-FD			
27							PRESET-	7A-11
28	VOL DOWN	7A-1B	7A-1B	7A-DB	7A-FE			
30							A/B/C/D/E	7A-12
31	MUTE	7A-1C	7A-1C	7A-DC	7A-FF			
32	LEVEL	7A-86		7A-86				
33	UP	7A-98		7A-98				
34	SET MENU	7A-9C		7A-9C				
35	PURE DIRECT	7A-DD		7A-DD				
36	LEFT	7A-53		7A-53				
37	ENTER	7A-DE		7A-DE				
38	RIGHT	7A-52		7A-52				
39	NIGHT	7A-95		7A-95				
40	TEST	7A-85		7A-85				
41	DOWN	7A-99		7A-99				
42	ON SCREEN	7A-C2		7A-C2				
43	STRAIGHT	7A-56		7A-56				
44	STEREO	7A-88		7A-88		P1		7A-E5
45	HALL	7A-89		7A-89		P2		7A-E6
46	JAZZ	7A-8A		7A-8A		P3		7A-E7
47	ROCK	7A-8B		7A-8B		P4		7A-E8
48	ENTERTAIN	7A-8C		7A-8C		P5		7A-E9
49	MUSIC	7A-8D		7A-8D		P6		7A-EA
50	TV THTR	7A-8E		7A-8E		P7		7A-EB
51	MOVIE	7A-8F		7A-8F		P8		7A-EC
52	THX	7A-90		7A-90				
53	STANDARD	7A-91		7A-91				
54	-	-		-				
55	EXTD SUR.	7A-97		7A-97				
56								
57								
58								
59								

# Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			



# HTR-5890

