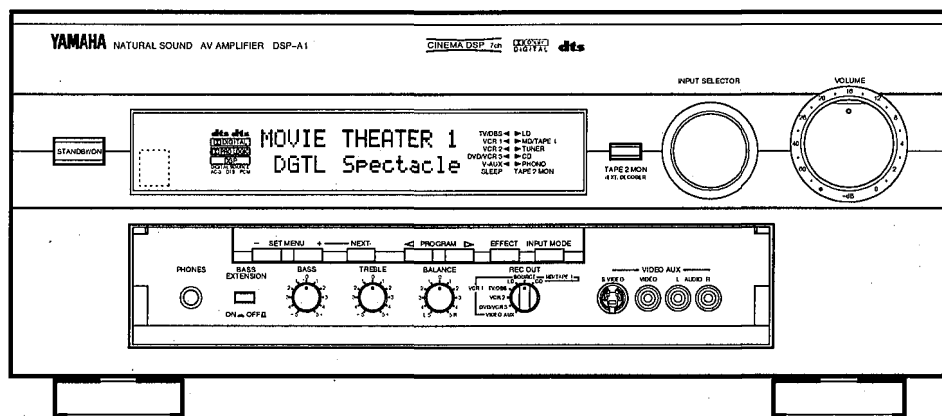
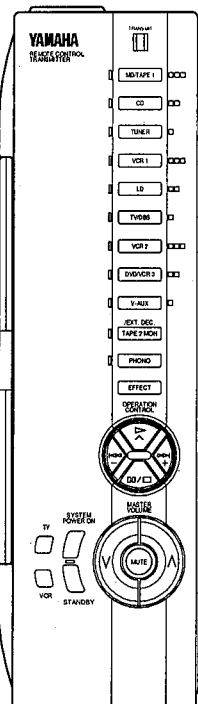


DSP/AV AMPLIFIER

DSP-A1

SERVICE MANUAL



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.

CONTENTS

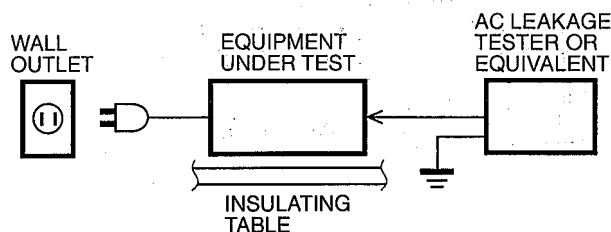
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DSP-A1

■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
2. 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 ohm shunted by 0.15 μ F.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.



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.

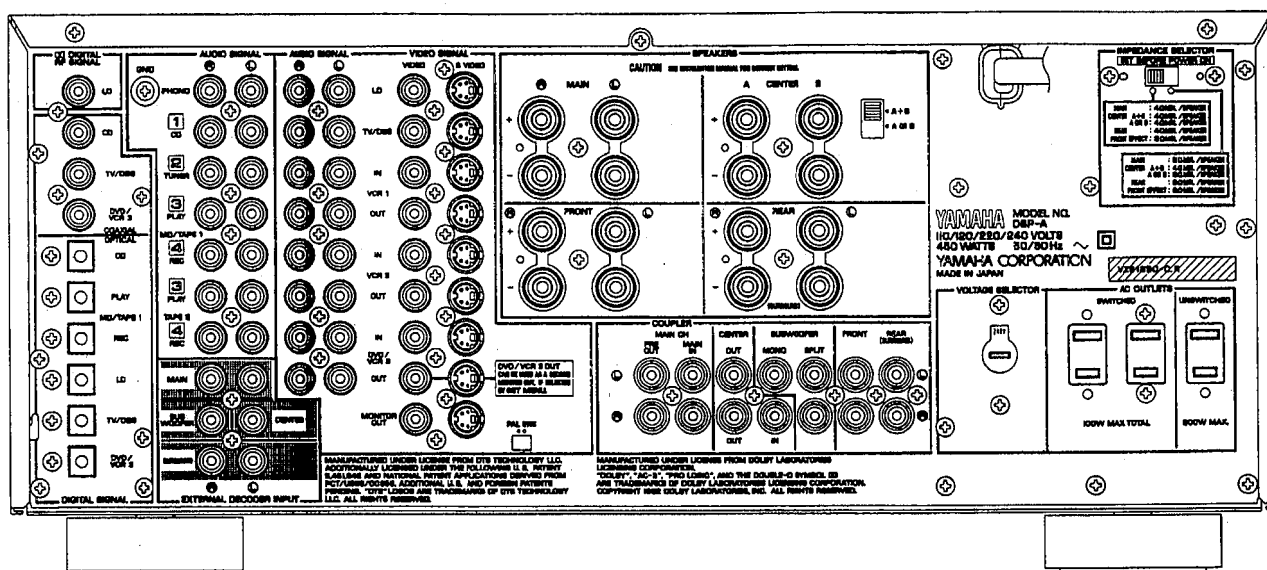
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

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

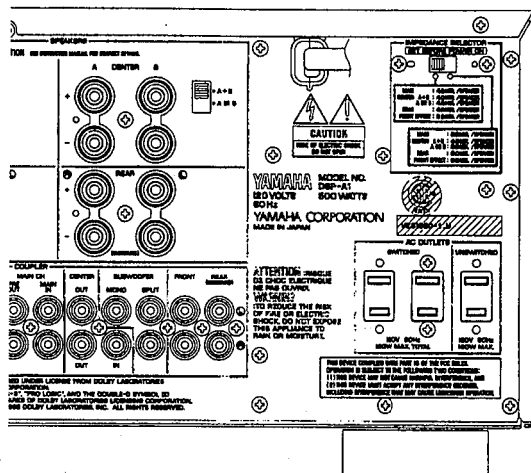
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ REAR PANELS

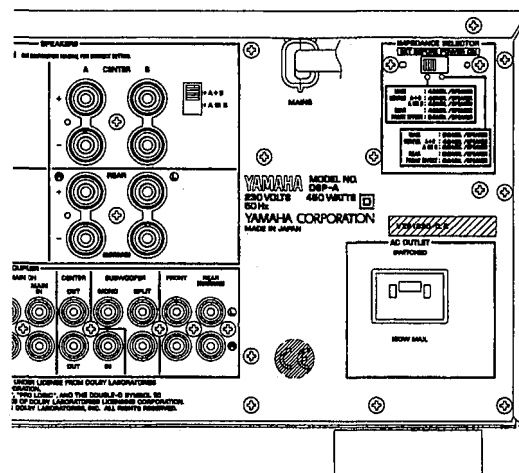
▼ R, T models



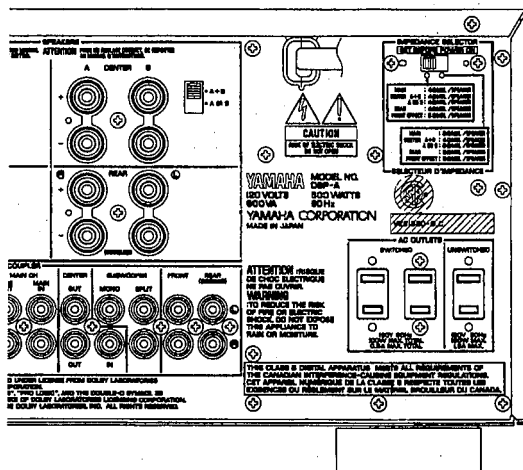
▼ U model



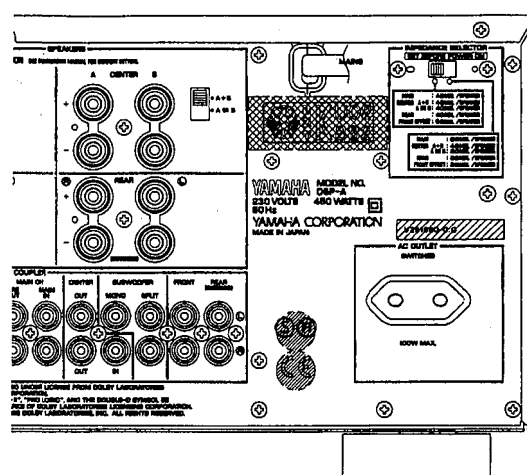
▼ B model



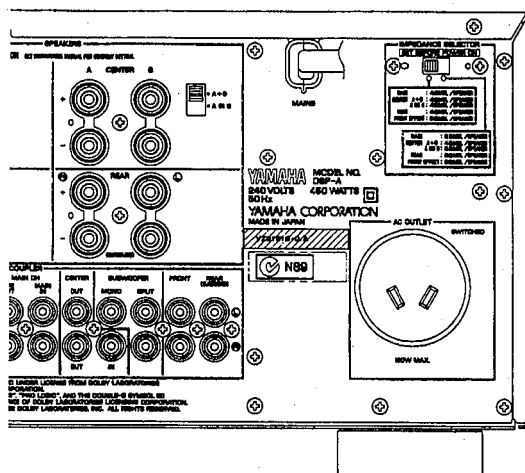
▼ C model



▼ G model



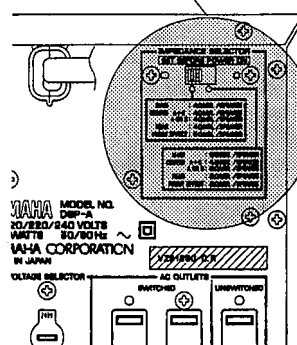
▼ A model



WARNING

Do not change the IMPEDANCE SELECTOR switch setting while the power to this unit is on, otherwise this unit may be damaged.

IMPEDANCE SELECTOR



SPECIFICATIONS

Minimum RMS Output Power Per Channel

Main (20Hz—20kHz, 0.015% THD, 8Ω)	110W + 110W
Center (20Hz—20kHz, 0.015% THD, 8Ω)	110W
Rear (20Hz—20kHz, 0.015% THD, 8Ω)	110W + 110W
Front (1kHz, 0.05% THD, 8Ω)	35W + 35W

Maximum Power Per Channel (R, T models only)

Main (1kHz, 10% THD, 8Ω)	150W + 150W
Center (1kHz, 10% THD, 8Ω)	150W
Rear (1kHz, 10% THD, 8Ω)	150W + 150W
Front (1kHz, 10% THD, 8Ω)	45W + 45W

Dynamic Power Per Channel (U, C, R, T models only)

(by IHF Dynamic Headroom Measuring Method)	
Main (8Ω/6Ω/4Ω/2Ω)	150W/180W/240W/340W

DIN Standard Output Power Per Channel (B, G models only)

Main (1kHz, 0.7% THD, 4Ω)	180W
---------------------------	------

Dynamic Headroom (U, C, R, T models only)

Main (8Ω)	1.3dB
-----------	-------

IEC Power (B, G models only)

Main (1kHz, 0.015% THD, 8Ω)	120W
-----------------------------	------

Damping Factor

Main, Center (20Hz—20kHz, 8Ω)	200
-------------------------------	-----

Input Sensitivity/Impedance

Phono MM	2.5mV/47kΩ
CD etc	150mV/47kΩ
MAIN IN	1.0V/47kΩ

Maximum Input Signal (1kHz, 0.05% THD)

Phono MM	130mV
CD etc	2.3V

Output Level/Impedance

REC OUT	150mV/1kΩ
PRE OUT (MAIN, CENTER, REAR, FRONT)	1V/1.2kΩ
SW OUT (SPLIT L/R)	2.0V/1.2kΩ
SW OUT (MONO)	4.0V/1.2kΩ

Maximum Voltage Output (20Hz—20kHz, 1% THD)

PRE OUT (MAIN L/R)	3V
--------------------	----

Headphone Jack Rated Output/Impedance

Input CD etc, 50mV RL=8Ω	0.2V
Impedance	100Ω

Frequency Response (20Hz—20kHz)

CD etc	0±0.5dB
--------	---------

RIAA Equalization Deviation (20Hz—20kHz)

Phono MM	0±0.5dB
----------	---------

Total Harmonic Distortion (20Hz—20kHz)

Phono MM to REC OUT, 3V	0.01%
CD etc to PRE OUT (MAIN L/R), 1V	0.005%
MAIN IN to SP out (MAIN L/R, CENTER)	
55W/8Ω	0.005%

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

Phono MM (Input Shorted), 5mV	More than 86dB
CD etc (Input Shorted), 150mV	More than 96dB

Residual Noise (IHF-A Network)

MAIN L/R SP out	150μV
-----------------	-------

Channel Separation (Vol -30dB)

Phono MM Input shorted	
1kHz/10kHz	More than 70dB/60dB
CD etc Input 5.1kΩ Terminated	
1kHz/10kHz	More than 70dB/60dB

Tone Control Characteristics

Bass	
Boost/Cut	±10dB (50Hz)
Turnover frequency	350Hz
Treble	
Boost/Cut	±10dB (20kHz)
Turnover frequency	3.5kHz

Center Graphic Equalizer

Frequency	100/300/1k/3k/10k
Boost/Cut	±6dB
Q	0.7

Cinema Equalizer

High Shelving Filter	
Frequency	1k to 12.7kHz
Boost/Cut	-9 to +6dB
Parametric Equalizer	
Frequency	1k to 12.7kHz
Boost/Cut	-9 to +6dB
Q	1.85

Low Pass Filter Characteristics (Sub Woofer)

High cut Filter	fc=90Hz, 24dB/oct
-----------------	-------------------

BASS EXTENSION (Main L/R)

+6dB (70Hz)

AUDIO MUTING

-20dB

Video

Video Signal Type	
(U, C models)	NTSC
(A, B, G models)	PAL
(R, T models)	NTSC/PAL
Video Signal Level	1Vp-p/75Ω
S-Video Signal Level	
Y	1Vp-p/75Ω
C	0.286Vp-p/75Ω
Maximum Input Level	1.5Vp-p
Video S/N	50dB
Monitor Out Frequency response	5Hz—10MHz, -3dB

Power Supply

U, C models	AC 120V, 60Hz
A model	AC 240V, 50Hz
B, G models	AC 230V, 50Hz
R, T models	AC 110/120/220/240V 60/50Hz

Power Consumption

U model	500W
C model	500W, 650VA
A, B, G, R, T models	500W

AC Outlets

2 Switched Outlets	
(U model)	120W max. total
(C, R, T models)	100W max. total
1 Switched Outlets	
(A, B, G models)	100W max. total
1 Unswitched Outlets	
(U, C models)	180W max. total
(R, T models)	200W max. total

Dimensions (W x H x D)

Black Panel model	435 x 191 x 473mm
	(17-1/8" x 7-9/16" x 18-5/8")
Titanium & Gold Panel models	473 x 191.5 x 473mm
	(18-5/8" x 7-9/16" x 18-5/8")

Weight

Black Panel model	23.0kg (50 lbs. 11 oz)
Titanium & Gold Panel models	25.0kg (55 lbs. 1 oz)

* Specifications subject to change without notice.

U U. S. A model

G European model

C Canadian model

R General model

B British model

T China model

A Australian model

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● PARAMETER TABLE

PARAMETER	EFFECT TRIM	P. INT. DLY	P. ROOM SIZE	P. LIVENESS	S. DLY			S. INT. DLY			S. ROOM SIZE			S. LIVENESS			REV. TIME	REV. LVL	REV. DLY
					PRO LOGIC	EXCEPT PRO LOGIC	AC-3	DTS	AC-3	DTS	2CH	AC-3	DTS	2CH	AC-3	DTS			
INPUT SIGNAL																			
MIN	-3dB	1ms	0.1	0	15ms	15ms	0ms	0ms	0ms	1ms	0.1	0.1	0.1	0	0	0	1.0s	0%	0ms
MAX	+3dB	99ms	2.0	10	30ms	49ms	15ms	15ms	15ms	49ms	2.0	2.0	2.0	10	10	10	5.0s	100%	250ms
STEP	1dB	1ms	0.1	1	1ms	1ms	1ms	1ms	1ms	1ms	0.1	0.1	0.1	1	1	1	0.1s	1%	1ms
DSP PROGRAM																			
PROGRAM TYPE																			
CONCERT HALL 1																			
Hall A in Europe	0dB	30ms	1.0	5			10ms	10ms											
Hall B in Europe	0dB	30ms	1.0	5			5ms	5ms											
Hall C in Europe	0dB	30ms	1.0	5			5ms	5ms											
CONCERT HALL 2																			
Hall D in U.S.A.	0dB	35ms	1.0	5			5ms	5ms											
Hall E in Europe	0dB	30ms	1.0	5			5ms	5ms											
Live Concert	0dB	45ms	1.0	5			5ms	5ms											
CHURCH																			
Tokyo	0dB	40ms					15ms	15ms									2.5s	56%	122ms
Freiburg	0dB	95ms					15ms	15ms									4.0s	55%	130ms
Roymount	0dB	69ms					15ms	15ms									4.0s	52%	120ms
JAZZ CLUB																			
Village Gate	0dB	21ms	1.0	3			5ms	5ms											
Village Vanguard	0dB	26ms	1.0	5			5ms	5ms											
The Bottom Line	0dB	30ms	1.0	5			5ms	5ms											
ROCK CONCERT																			
The Roxy Theatre	0dB	15ms	1.0	5			7ms	7ms									1.6s	7%	100ms
Warehouse Loft	0dB	15ms	1.0	5			8ms	8ms									2.0s	6%	160ms
Arena	0dB	15ms	1.0	7			8ms	8ms									2.0s	8%	120ms
ENTERTAINMENT																			
Disco	0dB	26ms	1.0	5			12ms	12ms									2.7s	5%	120ms
Party	0dB	15ms	1.0	5			12ms	12ms									2.5s	4%	140ms
Game/Amusement	0dB	45ms	1.0	5			12ms	12ms									2.5s	10%	130ms
CONCERT VIDEO1																			
Pop/Rock	0dB	21ms	1.0				5ms	5ms									2.2s	1%	120ms
DJ	0dB	23ms	1.0				5ms	5ms											
CONCERT VIDEO2																			
Classical/Opera	0dB	28ms	1.0				5ms	5ms											
Pavilion	0dB	23ms	1.0				5ms	5ms											
TV THEATER																			
Mono Movie	0dB	49ms	1.0				8ms	8ms									2.5s	4%	142ms
Variety/Sports	0dB	10ms	1.0				8ms	8ms									2.5s	2%	160ms
MOVIE THEATER1																			
70mm/DGTL/DTS Spectacle	0dB	13ms	1.0				15ms	15ms									1.6s	4%	100ms
70mm/DGTL/DTS Sci-Fi	0dB	16ms	1.0				15ms	15ms											
MOVIE THEATER2																			
70mm/DGTL/DTS Adventure	0dB	15ms	1.0				15ms	15ms											
70mm/DGTL/DTS General	0dB	15ms	1.0				15ms	15ms											
DOLBY/DTS SUR.																			
Normal							5ms	5ms											
Enhanced							5ms	5ms											

● SUPERIMPOSING

Input LD, etc.		Output		Superimposing	
Terminal	Signal	Monitor connection			
S	O	O	O (On screen)		
V	O	—	X		
S	O	X	X		
V	O	—	O (On screen)		
S	O	O	O (On screen)		
V	X	—	X		
S	O	X	X		
V	X	—	O (Blue back)		
S	X	—	X		
V	X	—	X		
S	X	—	X (On screen)		
V	X	—	O (Blue back)		
S	X	—	O (Blue back)		
V	X	—	O (Blue back)		

S : S video signal

V : Composite video signal

O : YES

X : NO

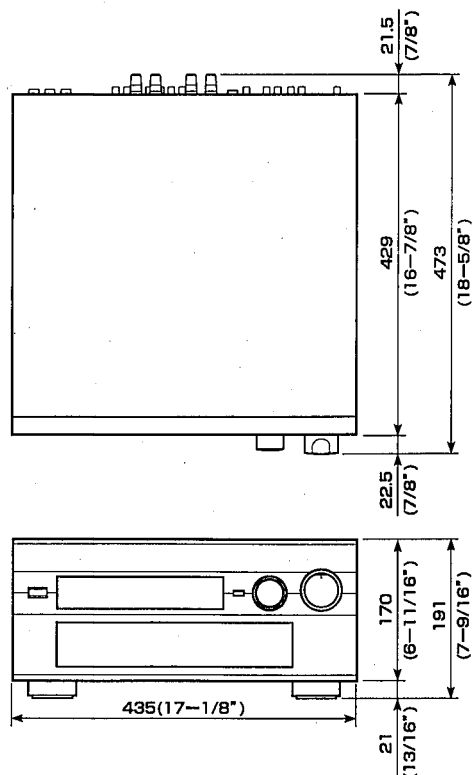
— : NO CARE

* When MONTR is selected by using VCR3/DVD VIDEO OUT of SET MENU 10, "Superimposing" is indicated for the VCR3/DVD VIDEO OUT as well.

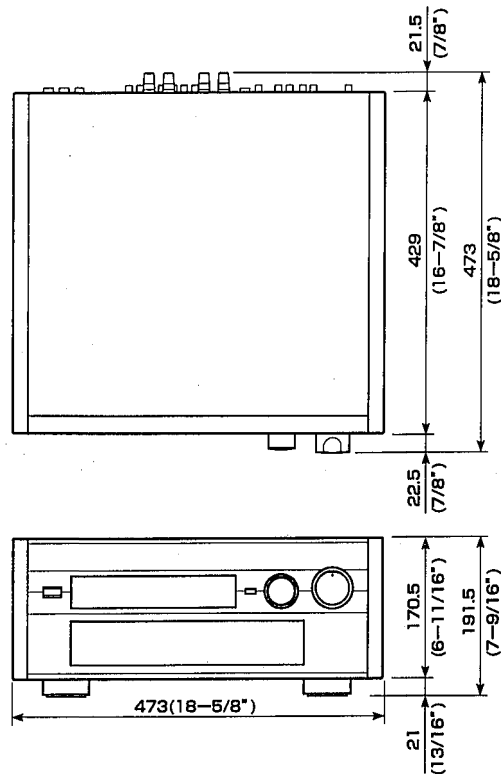
● SET MENU TABLE

No.	SET MENU	PRESET VALUE	SETTING RANGES
1.	SPEAKER SET		
1A	CENTER SPEAKER	LARGE	LARGE/SMALL/NONE
1B	REAR SPEAKER	LARGE	LARGE/SMALL
1C	MAIN SPEAKER	LARGE	LARGE/SMALL
1D	LFE/BASS OUT	SUBWOOFER	SUBWOOFER/MAIN/BOTH
1E	FRONT MIX	OFF-7ch	OFF-7ch/ON-5ch
1F	MAIN LEVEL	NORMAL	NORMAL/-10dB
2.	LOW FREQ. TEST	TONE : OFF OUTPUT : MAIN L FREQUENCY : 88Hz	ON/OFF L/C/R/RS/LS/SW/FRONT 35 — 250Hz
3.	DOLBY DIGITAL SET		
3A	LFE LEVEL	0dB	-20dB — 0dB
3B	DYNAMIC RANGE	MAX	MAX/STD/MIN
	STD :	HIGH LEVEL CUT SCALE LOW LEVEL BOOST SCALE	1.0 0.0 — 1.0 1.0 0.0 — 1.0
4.	DOLBY DIGITAL SET		
4A	LFE LEVEL	0dB	-10dB — +10dB
5.	CENTER DELAY	0ms	0ms — 5ms
6.	CENTER GRAPHIC EQ.	EACH ch : 0dB	100Hz — 10kHz, -6dB — +6dB
7.	CINEMA EQ.	ALL "OFF"	L, C, R EQ/FRONT EQ/REAR EQ ON/OFF
7A	L, C, R EQ.	HIGH 12.7kHz, -3dB PEQ 12.7kHz, -4dB	HIGH, PEQ : 1kHz — 12.7kHz
7B	FRONT EQ.	HIGH 12.7kHz, 0dB PEQ 8kHz, -3dB	GAIN : -9dB — +6dB
7C	REAR EQ.	HIGH 12.7kHz, 0dB PEQ 8kHz, -3dB	
8.	PARAMETER INITIALIZE	OFF	PROGRAM 1 — 12
9.	MEMORY GUARD	OFF	ON/OFF
10.	VCR3 VIDEO OUT	REC OUT	REC OUT/MONITOR
11.	INPUT MODE	AUTO TV/DBS DVD/VCR3	AUTO/LAST
12.	DIMMER	0	-4 — 0

● Black model

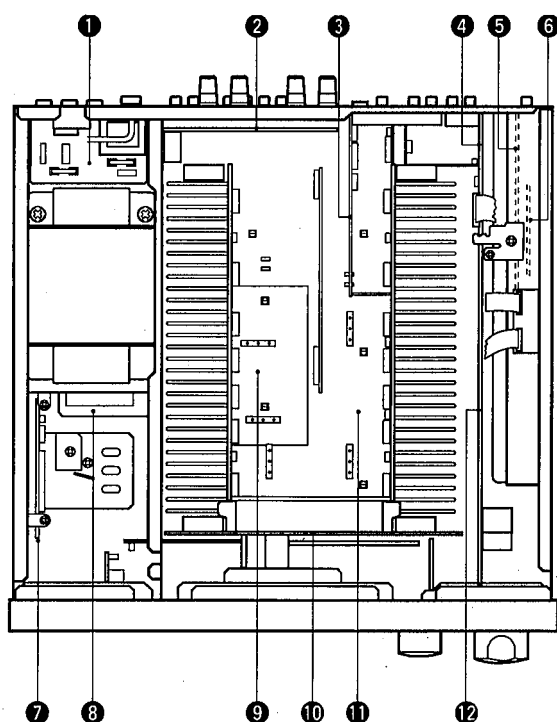


● Titanium model & Gold model



Units : mm (inch)

INTERNAL VIEW



- ① P.C.B. VIDEO (6)
- ② P.C.B. MAIN (2)
- ③ P.C.B. VIDEO (1)
- ④ P.C.B. DSP (5)
- ⑤ P.C.B. DSP (1)
- ⑥ P.C.B. DSP (2)
- ⑦ P.C.B. MAIN (3)
- ⑧ FAN
- ⑨ P.C.B. VIDEO (5)
- ⑩ P.C.B. VIDEO (3)
- ⑪ P.C.B. MAIN (1)
- ⑫ P.C.B. FUNCTION

DISASSEMBLY PROCEDURES (Remove parts in the order as numbered.)

1. Removal of Top Cover

- a. Remove 8 screws (①), 2 screws (②) and 2 screws (③) and then remove the Top Cover in Fig. 1.

2. Removal of Bottom Cover

- a. Remove 12 screws (④) and then remove the Bottom Cover in Fig. 1.

3. Removal of Front Panel

- a. Remove 2 knobs in Fig. 1.
- b. Remove 4 screws (⑤) and then remove the Front Panel in Fig. 1.

Black model

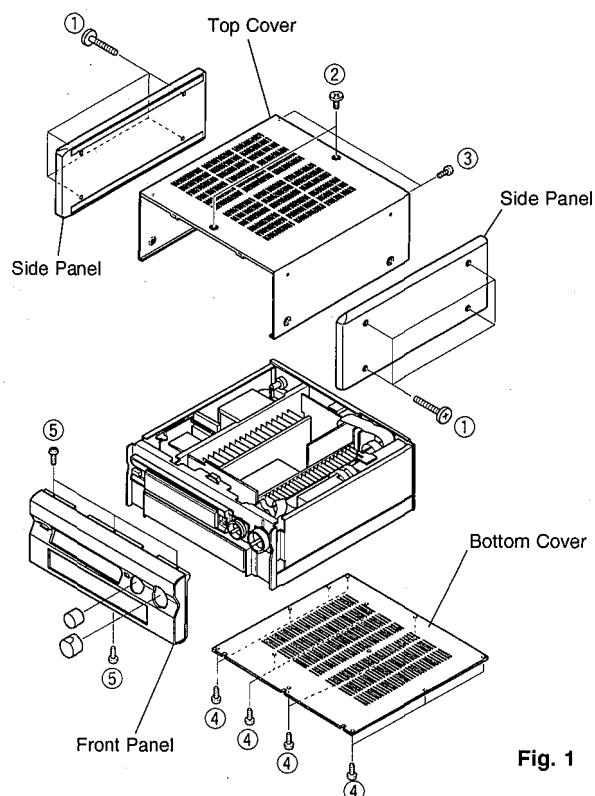
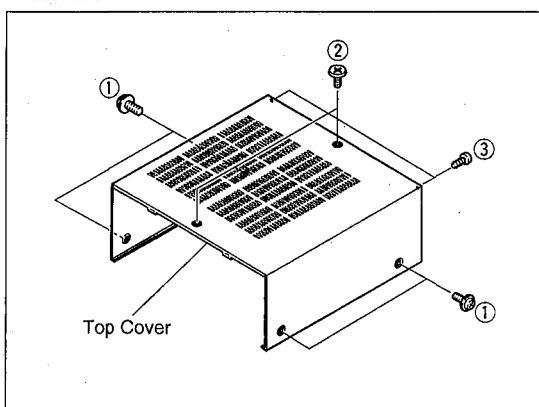


Fig. 1

Titanium model (R, G only) & Gold model (R, T only)

DSP-A1

4. Removal of DSP P.C.B. (1) & (2)

- a. Remove 14 screws (⑥) and remove the right upper frame in Fig. 2.

Note :

1. When the rear panel has been removed, the ground wire of the input/output pin jack becomes loose. Connect it to the chassis by using a lead wire.

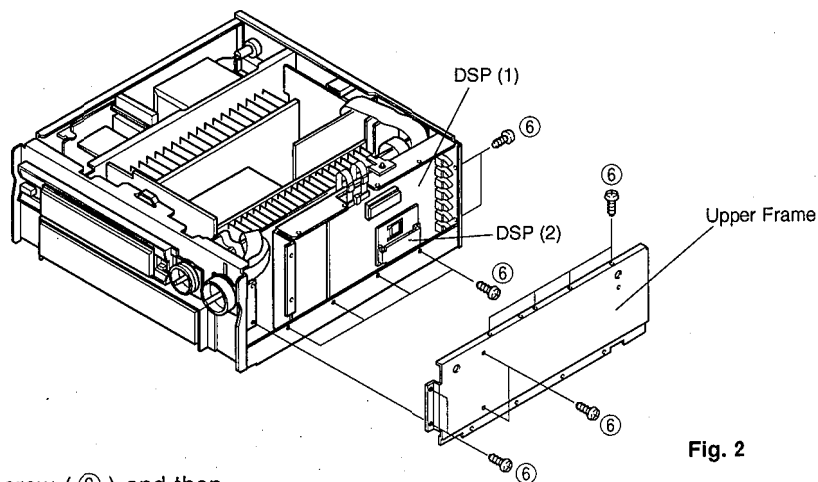


Fig. 2

5. Removal of Main P.C.B. (3)

- a. Remove 5 screws (⑦) and 1 screw (⑧) and then remove the left side frame in Fig. 3.

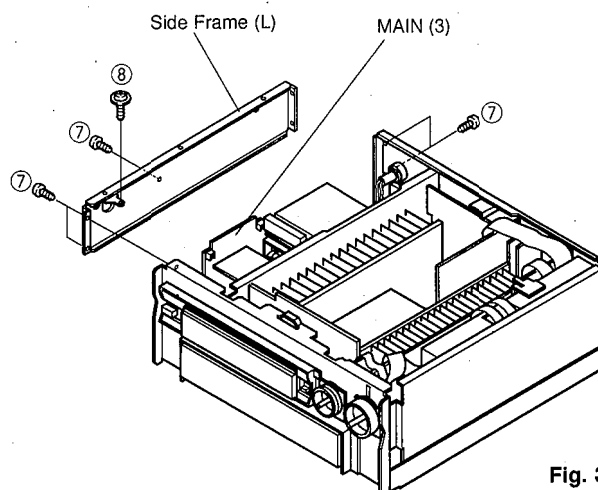


Fig. 3

6. Removal of VIDEO P.C.B. (3)

- a. Remove 7 screws (⑨) and 2 screws (⑩) and then remove the sub chassis in Fig. 4.

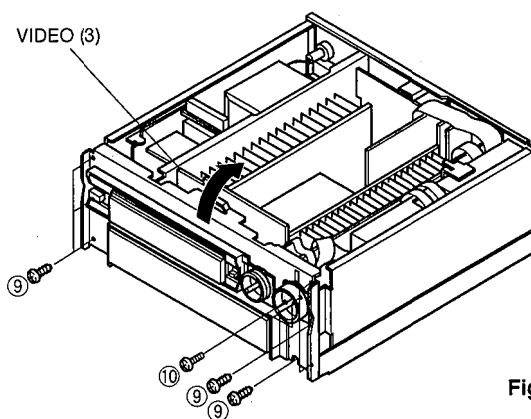


Fig. 4

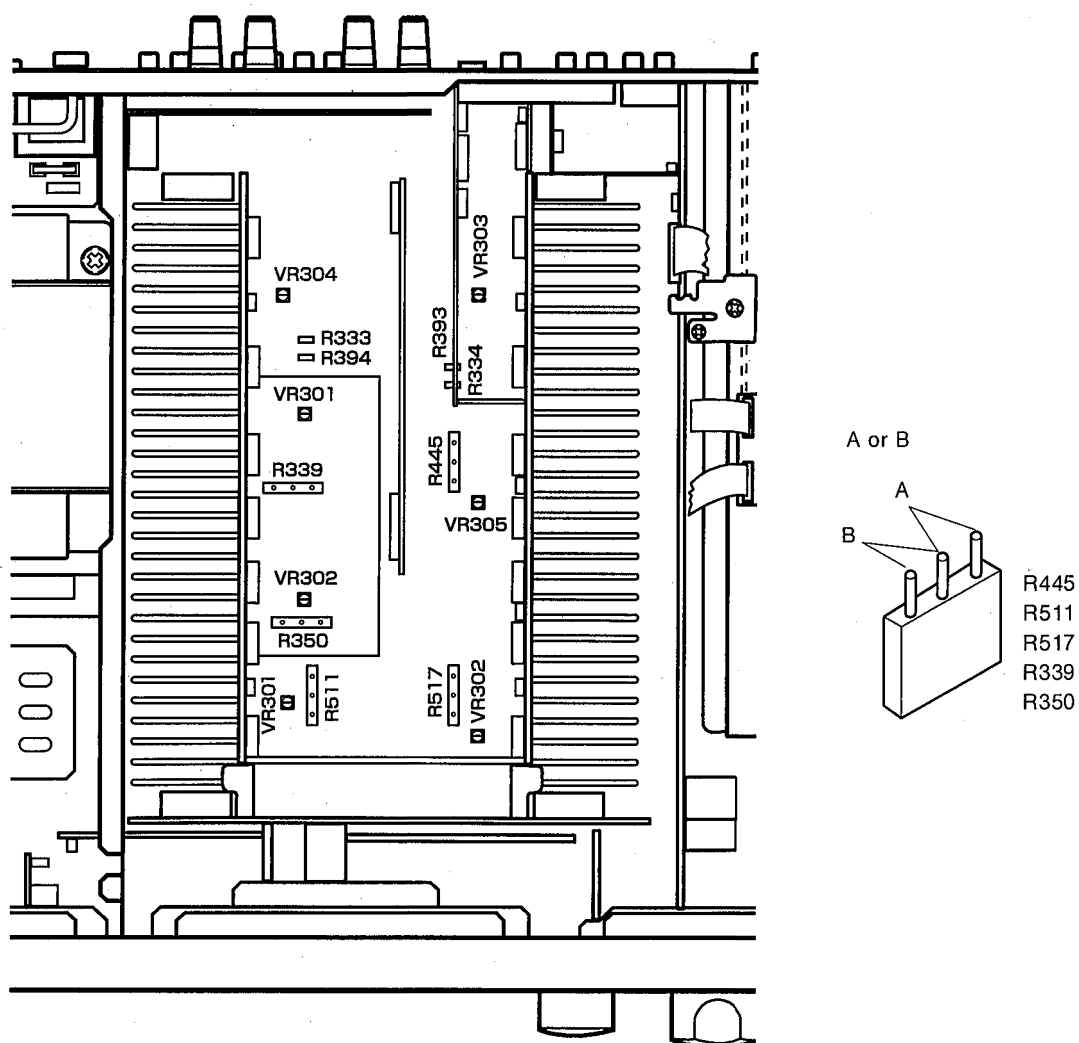
■ ADJUSTMENTS

● IDLING CURRENT ADJUSTMENT

Before this adjustment, wait for 10 minutes with no signal applied after the power is turned ON.

Item	Test Point	Adjustment point	Rating (DC)
MAIN L	Between terminals of R333, or R394, at both ends	VR304 (MAIN P.C.B.)	2.5mV~6mV
MAIN R	Between terminals of R334, or R393, at both ends	VR303 (MAIN P.C.B.)	
CENTER	Between terminals of R445, at the center and one end	VR305 (MAIN P.C.B.)	2.5mV~6mV
REAR L	Between terminals of R511, at the center and one end	VR301 (MAIN P.C.B.)	2.5mV~6mV
REAR R	Between terminals of R517, at the center and one end	VR302 (MAIN P.C.B.)	
FRONT L	Between terminals of R339, at the center and one end	VR301 (VIDEO P.C.B.)	2.5mV~6mV
FRONT R	Between terminals of R350, at the center and one end	VR302 (VIDEO P.C.B.)	

● Test Point



SELF DIAGNOSIS FUNCTION

This product has a built-in self diagnosis function (DIAG) to facilitate inspection, measurement and determination of a faulty item.

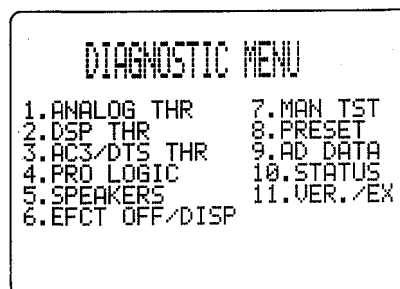
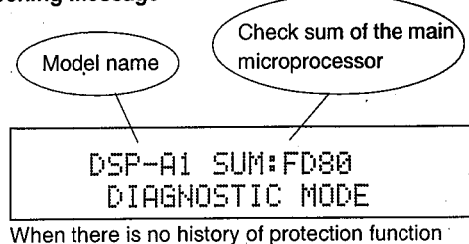
Starting DIAG

Press the "POWER" (STANDBY/ON) key of the main unit while pressing the "SET MENU +" key and the "NEXT" key located in the sealing panel of the main unit, and DIAG will start to function.

Display at the start of DIAG

The diagnostic menu appears on the monitor display. (It remains on display until it's canceled.) On the FL display of the main unit, an opening message (or the history of the protection) appears for 2 seconds before the diagnostic menu No.1 MAIN BYPASS.

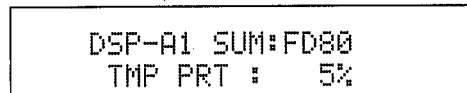
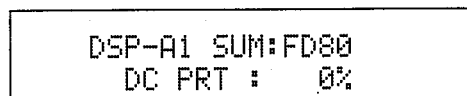
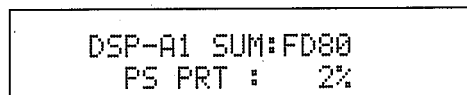
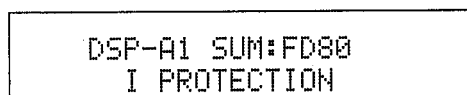
Opening message



If the protection function works after DIAG has been started and the power turns OFF

When the protection function (*1) works, the history of the protection appears on display and the power turns OFF. Repair the faulty parts according to the displayed history.

*1) When an excess current or any other faulty condition is found with the power source, DC, etc., the power is forced to turn OFF as a protection function.



I PROTECTION display

(The power turns OFF instantly, display is provided only to show the history.)

Cause: There is an abnormal current flow to the power amplifier.

Supplementary information: As the current of the power transistor is checked in each channel, it is possible to determine the abnormal channel by checking the transistor where a current is detected.

PS PRT display

(The power turns OFF after 2 seconds. Display may not be provided, if there is an abnormality with the power supply for the display.)

Cause: There is an abnormality in the power supply section (voltage).

Supplementary information: As the power from following sources is detected, it is possible to determine where an abnormality exists.

Transformer secondary winding
VI X 2(CB104), YE x 2(CB202)
Stabilizing power source
±15, ±5V, +5D1, +5D2, VP

DC PRT display (The power turns OFF after about 3 seconds)

Cause: The DC output of the power amplifier is detected in each channel.

TMP PRT display

Cause: The temperature of the heat sink (J, U, C: D101 of the main P.C.B. (3)) in the diode bridge or of the heat sink (R, T, A, B, G) in the power amplifier is detected. When the temperature rises and an abnormality is detected, the power supply will turn OFF.

Besides the above possible causes, the cause may exist in the connector which has come off or around CPU. PS PRT and DC PRT displays include the abnormal A/D value in %. For this value, refer to the DIAG menu No.9 AD DATA CHK (on page 19).

Protection history

When the protection function works, its history will be stored in memory with a backup. Even when no abnormality is noted while the unit is being serviced, an abnormality which has occurred previously can be defined as long as the backup data has been stored. (For example, with I PROTECTION on display, it is also possible that an abnormality exists in the user's speaker or setting.) The protection history is cleared when DIAG is canceled by selecting "RESERVED" (to initialize the memory) from the setting items of the DIAG menu No.8 PRESET or when the backup data is erased.

● Operation procedure of DIAG menu and SUB-MENU

There are No.1 to 11 MENU items and some SUB-MENU items as well.

DIAG menu selection

Main Unit: PROGRAM +/- (forward/reverse) key

Remote Controller: Cursor key Δ/∇ (forward/reverse) or PROGRAM key (direct selection)

SUB-MENU selection

Main Unit: SET MENU +/- (forward/reverse) key

Remote Controller: Cursor key +/- (forward/reverse) or PROGRAM key (Press the same No.)

It is possible to switch the input, select the external decoder, tape monitor or REC OUT, adjust the front, center and rear levels, control the master volume, muting and turn the power ON and OFF while DIAG is executed. However, the EFFECT/INPUT MODE key is not useable.

No. DIAG menu	SUB-MENU	No. DIAG menu	SUB-MENU
1. ANALOG THR.	MAIN BYPASS DSP 0dB DSP FULL BIT	7. MANUAL TEST	ALL MAIN L CENTER MAIN R REAR R REAR L FRONT L FRONT R LFE
2. DSP RAM THR.	AC3→CDSP→SRAM AC3PLav→CDSP CDSP DIRECT E. VOL FULL	8. PRESET	INHIBIT (Memory initialization inhibited) RESERVED (Memory initialized)
3. AC-3 THR.	STATUS (Binary)	9. AD DATA CHK	Initial screen REC KEY THM PRD PRV
4. PRO LOGIC	CENTER LARGE EFFECT OFF	10. STATUS	STATUS (1): Information communicated between microprocessors STATUS (2): Channel status information STATUS (3): BS information 1 STATUS (4): BS information 2 STATUS (5): BS information 3 STATUS (6): BS information 4 STATUS (7): BS information 5 STATUS (8): Decoder information
5. SPEAKERS SET	CENTER LARGE C:SMALL & B:SWFR C:SMALL & B:MAIN C:NONE & AMT:OFF C:NONE & AMT:ON REAR:L & FRNT:7 REAR:S & FRNT:5 MAIN:LARGE 0dB MAIN:SMALL 0dB MAIN:LARGE -10 LFE/BASS:SWFR LFE/BASS:MAIN	11. VER./EXIT	MAIN & SUB CPU VERSION EXIT (DIAG end)
6. DISPLAY CHK	Initial screen (EFFECT OFF) DISPLAY CHECK		

● Canceling DIAG

There are two ways to cancel DIAG.

- 1) Turn OFF the power by pressing the "POWER" key of the main unit or the "STANDBY" key of the remote controller.
- 2) Cancel the DIAG function by using the DIAG menu No.11, "VER./EXIT". Then DIAG will end and the normal state will be restored.

CAUTION: When canceling this function, check the DIAG menu No.8 PRESET (for memory initialization inhibit/reserve). (To keep the user memory, be sure to select "INHIBIT" from the No.8 PRESET menu to inhibit initialization before canceling the diagnosis function.)

● Trouble causes that can be checked by DIAG

Trouble symptom	Possible cause and check method by using DIAG
Digital sound is not produced	Failure in signal path : Check for faulty IC with the signal path changed by using Menu No.2.
	Failure of AC-3 decoder (YSS249) : Check the decode information by using Menu No.3 and No.10 .
	Failure of DTS decoder (DSPI56009) : Check the decode information by using Menu No.3 and No.10.
	Malfunction of sub-CPU : Check the version of CPU by using Menu No.11 and communication operation by using Menu No.10.
	Malfunction of digital input, DIR (YM3436) : Check the digital information by using Menu No.10. Refer to page 20 for the details.
	Malfunction of CDSP (YSS214) : As it is undetectable by using DIAG, check the signals before and after CDSP.
	Failure of DAC (AK4324) : As it is undetectable by using DIAG, check the signals before and after DAC. The test tone of this product is output from the noise generator which is built in the CDSP (YSS214) through DAC (AK4324). If the test tone is not output through the connector #7 of the DSP circuit board, an abnormality exists in either CDSP or DAC.
	Failure of connector #7 : Check soldering, the flat connecting cable, pattern, etc.
AC-3 sound is not produced	Check each item (particularly malfunction of YSS249) for the above symptom "Digital sound is not produced."
	Failure of RF input or DEM (PM4007) : An abnormality exists if "1" is detected at bit 7 of the second byte in Menu No.10 STATUS (1).
	The source is not usable for AC-3 : The source is usable for AC-3 if "1" is detected at bit 5 of the second byte in Menu No. 10 STATUS (1) and also at bit 0 of the second byte in STATUS (8). The AC-3 decode source without the digital data bit (CD-ROM, DAT, etc.) is reproducible only in Menu No.3.
PRO LOGIC sound is not produced	Malfunction of AC3PLav(YSS249) : Check the signal in both paths using/not using AC3PLav in Menu No.2.
EFFECT sound is not produced	Malfunction of SRAM : Check the signal in both paths using/not using SRAM in Menu No.2.
	Failure of electronic volume : As it is undetectable by using DIAG, check the signals before and after the volume, the control signal from CPU, etc.
Power turns OFF after being turned ON (The protection function works.)	Check for the faulty part according to the history of protection function (4 types) when starting DIAG. Failure of detection circuit, connectors (#1, #3, #4, etc.): Check for the constant, soldering condition, flat connecting cable coming off, pattern, etc.

If an failure in the digital system is anticipated, check whether there is an analog output at the connector #7 of the DSP circuit board in addition to the above check items. If there is a correct output, a failure exists after DSP. Check whether a signal exists or not in the analog section before the volume (connector #7 of the function circuit board) and after it (connector #1 of the function circuit board), pre-out, etc. Also, such malfunction does not necessarily mean a malfunction of the IC itself. Check for poor soldering condition, peripheral pattern, control signal from CPU, connector, power supply, etc. at the same time.

Details of DIAG menu

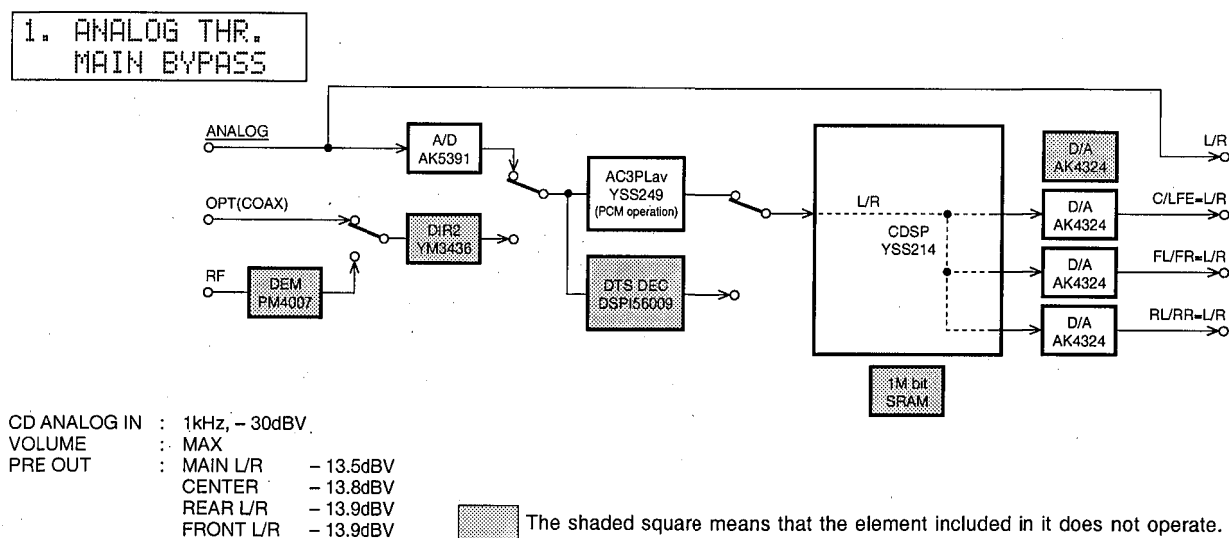
In each menu, "SPEAKERS" is always set to "LARGE" and the electronic volume to "0dB" unless otherwise specified. Also, CENTER GEQ and CINEMA EQ are set to "flat", D-RANGE to "MAX", LFE LEVEL to 0dB (-10dB at AC-3) and CENTER DELAY to 0ms.

1. ANALOG THR. (Analog through)

The input is fixed to use the analog (A/D) system and has 3 sub-menu items.

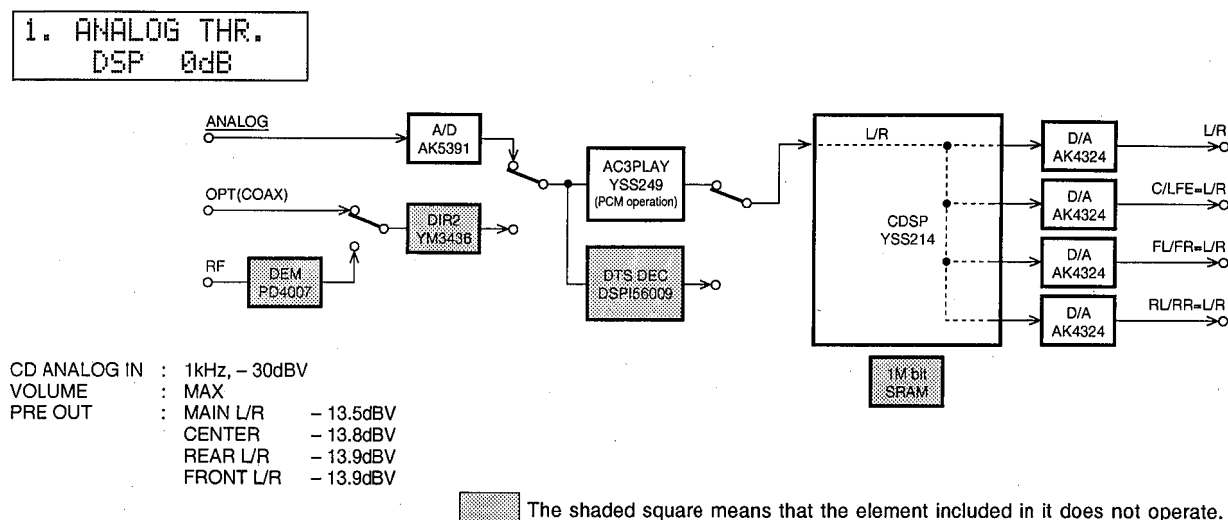
MAIN BYPASS

The main L/R signal is output through the analog bypass without passing the DSP section. The main L/R signal passing through the DSP is output through C/LFE, FL/FR and RL/RR.



DSP 0dB

The main L/R, C/LFE, FL/FR, RL/RR signals pass through the DSP section.



DSP FULL BIT

The same applies as "DSP 0dB" except that the digital data is output in full bit at D/A.



Full bit: The digital data is normally output with a head margin of 6dB for each of C, FL/FR and RL/RR channels. In this menu, the head margin is not used and the digital data is output in full bit so as to obtain the A/D and D/A characteristics fully. Note that this means the analog gain after D/A is +6dB for L/R channels. Also, the LFE channel which is normally controlled by LFE MIX LEVEL of the set menu is also output in full bit.

DSP-A1

2. DSP RAM THR.

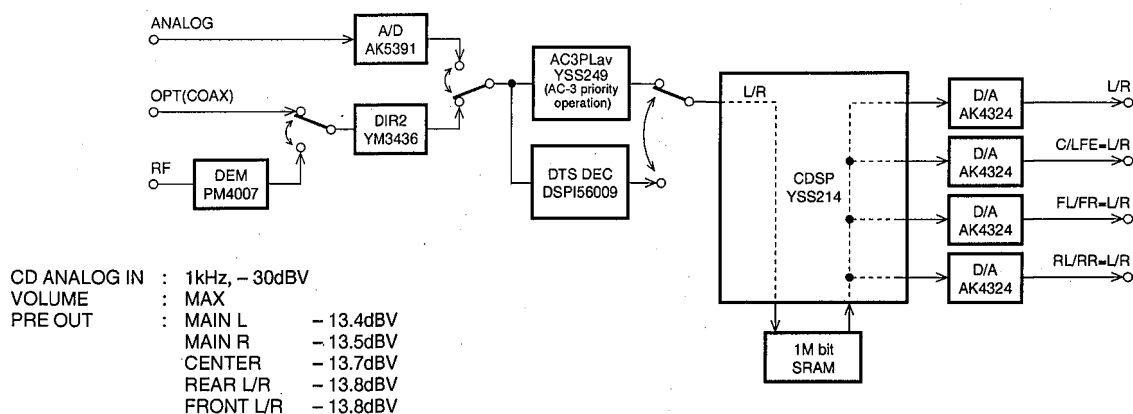
There are 4 sub-menu items.

Using this menu, it is possible to diagnose a trouble in YSS249(IC5), DSP156009(IC301), YSS214(IC2) and SRAM(IC3, 4, 37) by switching the sub-menu and checking each output signal. The input data is automatically identified and switched in the priority order of AC3 -> DTS -> PCM AUDIO -> Analog (A/D) according to the signal detection.

AC3 -> CDSP -> SRAM

The main L/R signal is input through AC3PLav to CDSP and after passing SRAM, it is output through all channels. The C/LFE and LS/RS signals are not output even at AC3/DTS.

2. DSP RAM THR.
AC3->CDSP->SRAM

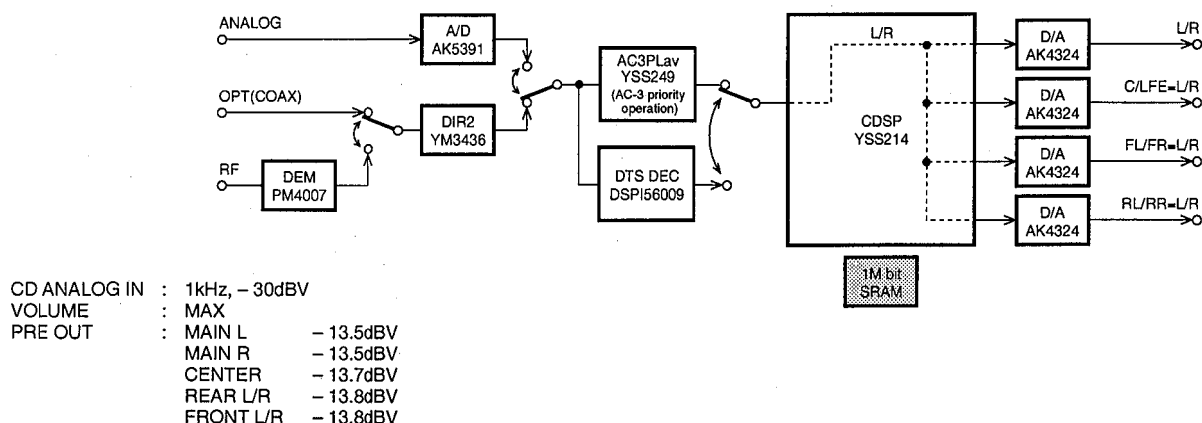


All elements are working.

AC3PLav -> CDSP

The main L/R signal is input through AC3PLav to CDSP and then output through all channels. SRAM is bypassed. The C/LFE and LS/RS signals are not output even at AC3/DTS.

2. DSP RAM THR.
AC3PLav->CDSP



The shaded square means that the element included in it does not operate.

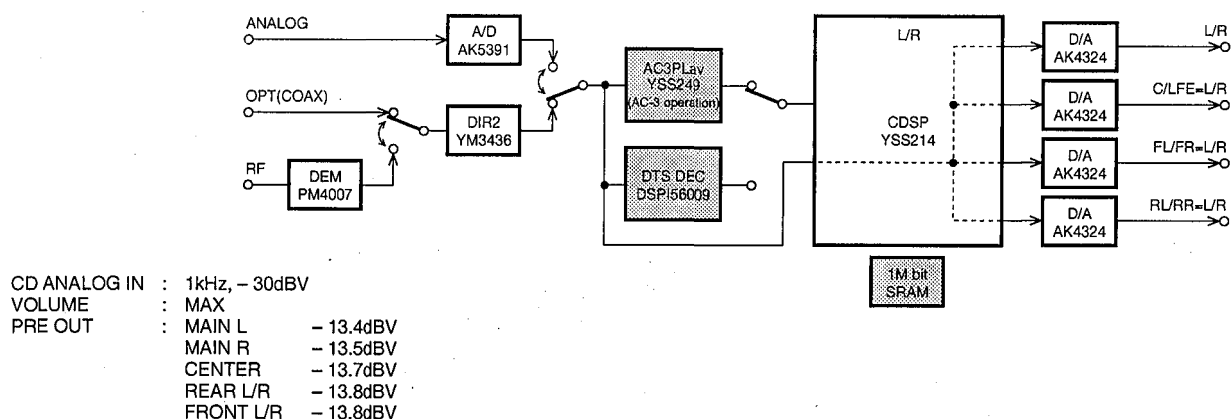
CDSP DIRECT

The main L/R signal is input directly to CDSP by DIR2 and then output through all channels. AC3PLav, DTS DEC and SRAM are bypassed.

2. DSP RAM THR.
CDSP DIRECT

CAUTION:

As AC3PLav and DTS DEC are bypassed, no decoding is executed at all. For this reason, when the AC-3 signal or the DTS signal is inputted, it will be output as a signal before decoding (noise-like sound).

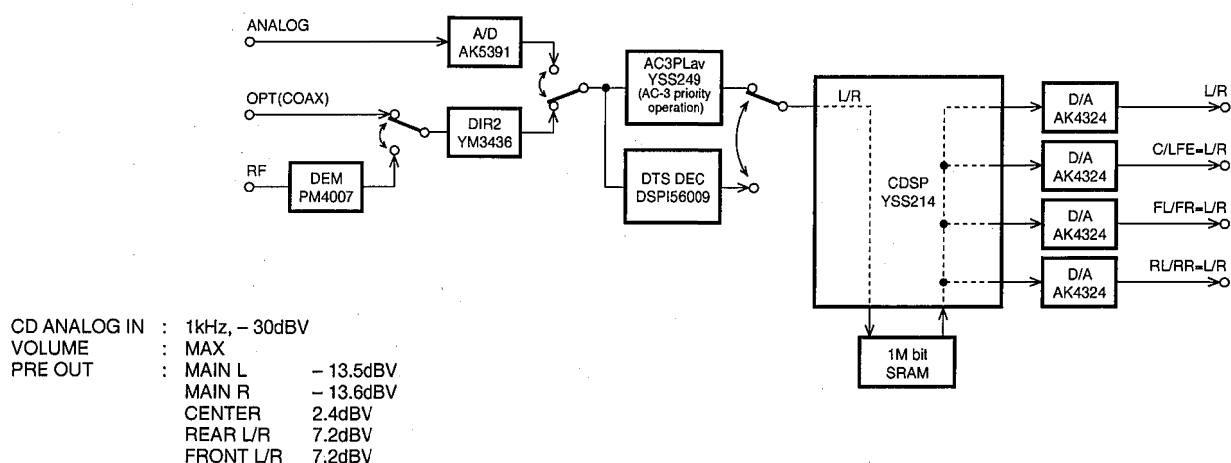


The shaded square means that the element included in it does not operate.

E. VOL FULL

Set the electronic volume to +10dB for CENTER, to +15dB for REAR, +15dB for FRONT and 0dB for SWFR. The signal path is the same as AC3 -> CDSP -> SRAM. However, as the signal is output in the digital full bit, the volume finally becomes +16dB for CENTER, +21dB for REAR, +21dB for FRONT and +10dB for SWFR.

2. DSP RAM THR.
E. VOL FULL



All elements are working.

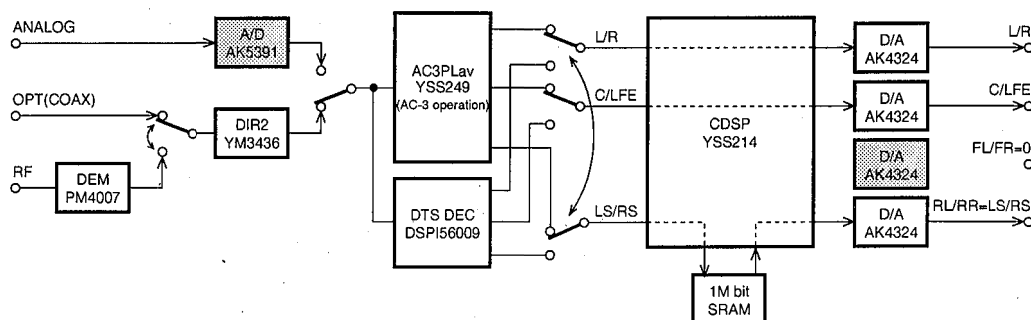
3. AC3/DTS THR.

Only the signal of the digital system is input. The AC3 or DTS signal is decoded and reproduced according to the input source.

STATUS:

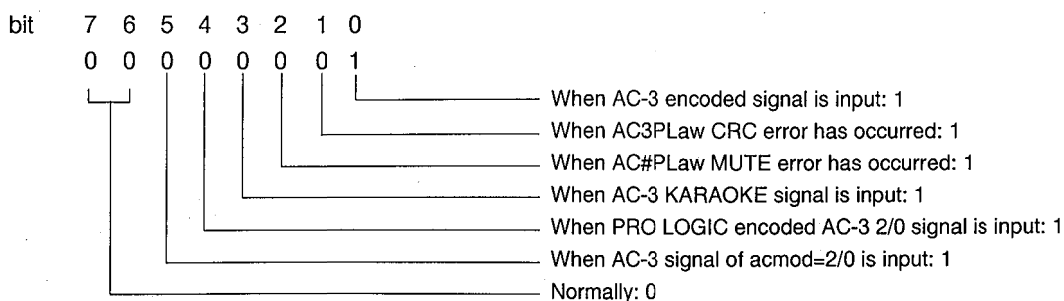
The AC-3 signal in each channel is decoded and output through AC3PLav -> CDSP. The status information of the AC-3 signal is indicated in binary notation on the lower level of the FL display.

```
3. AC3/DTS THR.
STATUS:00000001
```



The shaded square means that the element included in it does not operate.

Status information of AC3 signal



As signal identification is executed in normal AC-3 reproduction, the source (DAT, CD-ROM, etc.) without digital data bit of IEC958 cannot be reproduced even when it is AC-3 encoded. On the other hand, as this menu does not execute such digital data bit identification, these sources can be AC-3 reproduced. (To measure characteristics during AC-3 reproduction, use the AC-3 decoded sine wave.) However, note that with the sources that have not been AC-3 or DTS encoded, a decode error occurs and muting is applied. In addition, by displaying the status information indicating the operation of the AC-3 signal on the lower level of the FL display in binary notation, malfunction of the decoder can be detected.

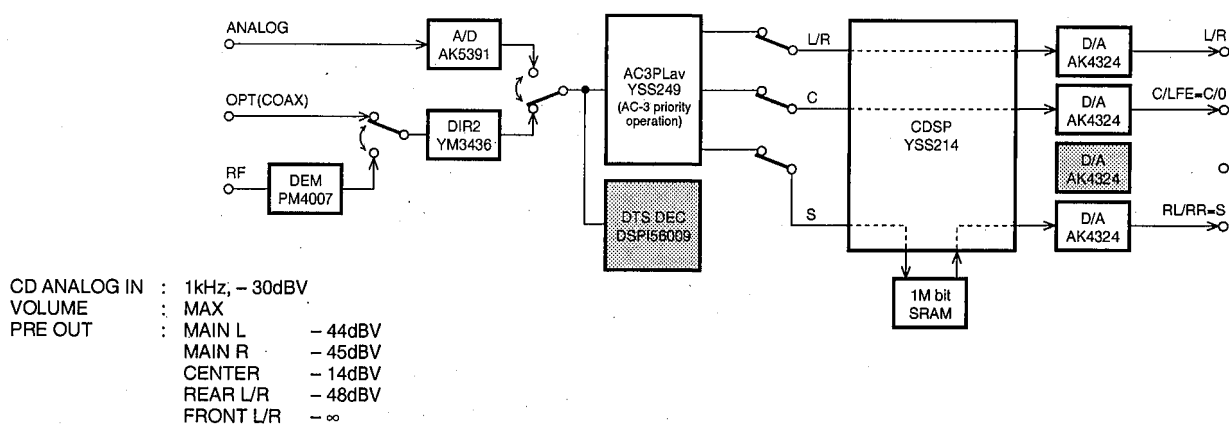
4. PRO LOGIC

The input data is automatically identified in the priority order of AC-3 -> PCM -> Analog. DTS is inhibited. The sub-menu items include selection of Pro-logic (The auto input balance is OFF) and EFFECT OFF.

CENTER LARGE

When the center mode uses the analog, PCM audio or AC-3 2/0 mode, L, R, C, S signals are pro-logic decoded and output. When the AC-3 mode other than 2/0 is used, the pro logic function does not work and the signals are AC-3 reproduced.

4. PRO LOGIC CENTER LARGE



The shaded square means that the element included in it does not operate.

EFFECT OFF

The L/R signal is output through MAIN BYPASS when in the analog mode and through CDSP when in the digital mode.

4. PRO LOGIC EFFECT OFF

CD ANALOG IN : 1kHz, -30dBV
 VOLUME : MAX
 PRE OUT : MAIN L -13.4dBV
 MAIN R -13.4dBV
 CENTER -∞
 REAR L/R -∞
 FRONT L/R -∞

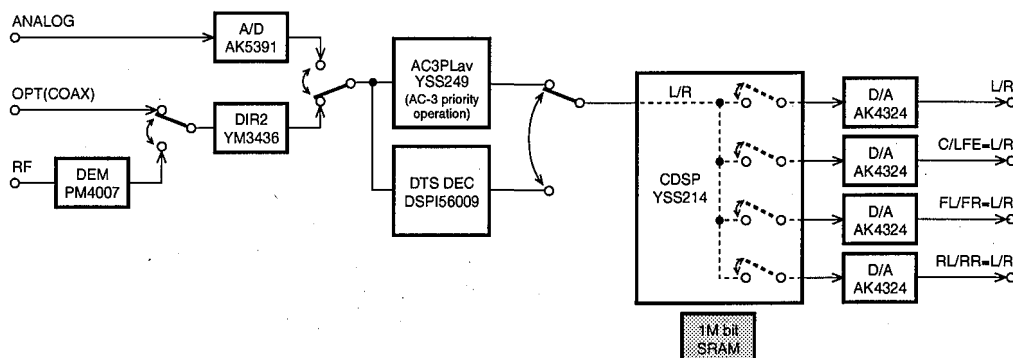
5. SPEAKERS SET

The input signal is automatically identified in the priority order of AC-3 -> DTS -> PCM -> Analog. The input L/R signal is output through the specified channels according to the sub-menu.

5. SPEAKERS SET CENTER:LARGE

There are 12 sub-menu items.

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



Sub menu	CENTER	REAR	MAIN SP	MAIN LVL	LFE/BASS	FRONT MIX	A. MUTE	DSP OUT* (Internal)
CENTER LARGE	LARGE	LARGE	LARGE	0dB	SWFR	7ch	OFF	CENTER
C:SMLL & B:SWFR	SMALL	LARGE	LARGE	0dB	SWFR	7ch	OFF	CENTER
C:SMLL & B:MAIN	SMALL	LARGE	LARGE	0dB	MAIN	7ch	OFF	CENTER
C:NONE & AMT:OFF	NONE	LARGE	LARGE	0dB	SWFR	7ch	OFF	CENTER
C:NONE & AMT:ON	NONE	LARGE	LARGE	0dB	SWFR	7ch	ON	CENTER
REAR:L & FRNT:7	LARGE	LARGE	LARGE	0dB	SWFR	7ch	OFF	REAR, FRONT
REAR:S & FRNT:5	LARGE	SMALL	LARGE	0dB	SWFR	5ch	OFF	REAR, FRONT
MAIN:LARGE 0dB	LARGE	LARGE	LARGE	0dB	SWFR	7ch	OFF	MAIN L/R
MAIN:SMALL 0dB	LARGE	LARGE	SMALL	0dB	SWFR	7ch	OFF	MAIN L/R
MAIN:LARGE -10	LARGE	LARGE	LARGE	-10dB	SWFR	7ch	OFF	MAIN L/R
LFE/BASS:SWFR	LARGE	LARGE	LARGE	0dB	SWFR	7ch	OFF	LFE
LFE/BASS:MAIN	LARGE	LARGE	LARGE	0dB	MAIN	7ch	OFF	MAIN L/R

LARGE : Signals are output in all bandwidths.

SMALL : Only signals lower than 90Hz are mixed in the channel specified by LFE/BASS.

NONE : The center contents are distributed to the MAIN L/R channels after -3dB.

C : CENTER

B : BASS

SWFR : SUBWOOFER

AMT : AUDIO MUTE

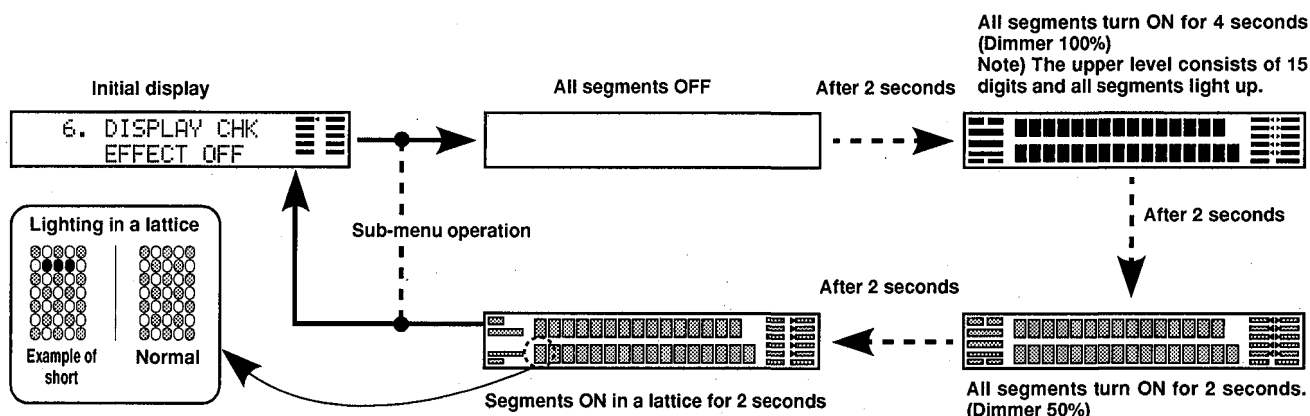
FRNT : FRONT

Signal output/muting is executed in the DSP section and switching of each filter ON/OFF or to gain is executed in the function section.

6. DISPLAY CHK

This is a program to check lighting of the FL display section. It is started and stopped by operating the sub-menu. When the program is started, the FL display operates as shown below.

The input signal is automatically identified in the priority order of AC-3 -> PCM -> Analog. The signals are processed in the same way as EFFECT OFF of No.4. The L/R signal is output through DSP BYPASS when in the analog mode and through CDSP when in the digital mode. As for internal/external synchronization selection of the image signals, forced external synchronization is selected by the microprocessor control.



Segment conditions of the FL driver (IC901, IC902) 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 a lattice). (In the above example, the center segment in the second row from the top is shorted.)

7. MANUAL TEST

The test noise is output by the noise generator with a built-in DSP through the channels specified by the sub-menu.

7. MANUAL TEST
ALL

ALL

Noise is output through all channels.

MAIN L

Noise is output through the MAIN L channel.

CENTER

Noise is output through the CENTER channel.

MAIN R

Noise is output through the MAIN R channel.

REAR R

Noise is output through the REAR R channel.

REAR L

Noise is output through the REAR L channel.

FRONT L

Noise is output through the FRONT L channel.

FRONT R

Noise is output through the FRONT R channel.

LFE

Noise is output through the LFE (sub-woofer) channel.

8. PRESET

This menu reserves and inhibits initialization of the back-up RAM (parameter, set menu contents, etc. for the sound field program). The input signals are automatically identified in the priority order of AC-3 -> PCM -> Analog. The signals are processed in the same way as EFFECT OFF of No.4.

INHIBIT (Initialization inhibited)

RAM initialization is not executed. Select INHIBIT to protect the values set by the user.

```
8.  PRESET
   INHIBIT
```

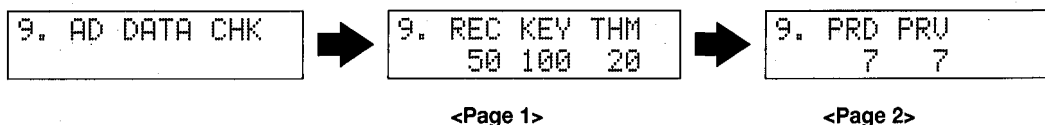
RESERVED

Initialization of the back-up RAM is reserved and it is executed when the power is turned ON after canceling DIAG. RESERVED should be selected when shipping out of the factory or resetting RAM.

```
8.  PRESET
   RESERVED
```

9. AD DATA CHK

The A/D conversion value (5ch) of the main CPU (IC1 of the function circuit board) detecting the REC OUT selector, the main unit key, protection, etc. is divided into 2 pages and displayed in % by using the sub-menu. (5V as 100%). While pages 1 and 2 are on display, it is possible to use functions of DIAG menu selection, power OFF and DIAG cancellation only. The signal process remains in the state before execution of this menu.



Page 1

REC: Value at REC OUT position (10% step)

KEY: Detection of main unit panel key operation (10% step)

THM: Detection of heat sink temperature (Normal value 6 ~ 40)

Page 2

PRD: DC detect protection value (Normal value 1 ~ 13)

PRV: Power supply voltage protection value (Normal value 3 ~ 20)

Standard value of REC OUT position

REC OUT	Standard value
TAPE1-CD	60
SOURCE	50
LD	40
TV/DBS	30
VCR2	20
VCR3/DVD	10
VIDE AUX	0

Standard value of KEY (main unit panel key)

Main unit panel key	Standard value
TAPE2 MONITOR	0
INPUT MODE	60
EFFECT	70
PROGRAM +	80
PROGRAM -	90
NEXT	30
SET MENU +	---
SET MENU -	50
KEY OFF state	100

Note: The SET MENU + key is normal if the DIAG menu switches from No.9 to No.10.

This menu checks the A/D input port of the main CPU and the resistance value for voltage division.

- REC and KEY A/Ds fail to operate properly if they are $\pm 4\%$ off from the standard value. In this case, check the constant of the partial pressure resistor, poor soldering, etc.
- When THM becomes less than 5%, the protection function works to turn off the power. When it exceeds 40%, it is possible that there is an abnormality in the temperature detection system.
- When the PRD/PRV value becomes abnormal, the protection function works to turn off the power.

10. STATUS (1) ~ (8)

There are 8 SUB-MENU items.

According to the sub-menu operation, the following status information is indicated in hexadecimal notation. The signal process remains in the state before execution of this menu.

STATUS (1): Indicates the information communicated between microprocessors.

```
10. STATUS(1)
I/F 00 00
```

1st byte 2nd byte

1st byte (Port information & request)

bit7: Normally "0"
 bit6: Normally "0"
 bit5: MUTE REQ (Mute request for the main signal)
 bit4: ALL REQ (All data transmission request for the main signal)
 bit3: STM (Data transmitted from sub CPU to main CPU)
 bit2: MTS (Data transmitted from main CPU to sub CPU)
 bit1: SRQ (Transmission request from sub CPU to main CPU)
 bit0: MRQ (Transmission request from main CPU to sub CPU)

2nd byte (Digital data)

bit7: DEM MUTO ("0" when AC-3 RF signal is input)
 bit 6: OPTICAL ("1" when selected signal is input to the optical terminal)
 bit5: DIGITAL DATA ("0" when PCM AUDIO signal is input)
 bit4: DIGITAL FORMAT ("1" when in the undefined channel status)
 bit3: AC3PLav MUTE ("1" when a YSS249 error has occurred)
 bit2: CDSP/IRQ ("0" when a YSS214 error has occurred)
 bit1: DTS UNDECODE ("1" when DTS DECODE NG has occurred)
 bit0: DIR2 UNLOCK & ERR ("1" when the lock has come off or an error has occurred)

Indicate 0 0
 bit 7 6 5 4 3 2 1 0

Indicate	bit			
	3	2	1	0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

STATUS (2): Indicates the channel status data of IEC958 in order starting from the 1st byte.

```
10. STATUS(2)
DIR 00 00 00 00
```

STATUS (3) ~ (7): Indicates the bit stream information included in the AC-3 signal in order starting from the 1st byte.

```
10. STATUS(3)
BSI 00 00 00 00
```

STATUS (8): Indicates AC-3 and DTS DECODER information.

```
10. STATUS(8)
DEC 00 00 00
```

1st byte 3rd byte
 2nd byte

2nd byte (AC3 STATUS)

bit7: Normally "0"
 bit6: Normally "0"
 bit5: 2/0 MODE ("1" when AC-3 2/0 signal is input)
 bit4: SURENC("1" when AC-3 2/0 + PRO LOGIC signal is input)
 bit3: KARAOKE ("1" when AC-3 KARAOKE signal is input)
 bit2: MUTE ("1" when YSS249 error has occurred)
 bit1: CRC ("1" when AC-3 decode error has occurred, undefined at PCM)
 bit0: AC3DATA ("1" at AC3 DECODE OK)

1st byte (AC-3 DATA STREAM)

Information to indicate in what number of the multi-bit stream the AC-3 signal is included

3rd byte (DTS STATUS)

bit7: "1" when FL red DTS lights up.
 bit6: Normally "0"
 bit5: Normally "0"
 bit4: Normally "0"
 bit3: Normally "0"
 bit2: Normally "0"
 bit1: DTS DECODE ("1" when DTS is decoded)
 bit0: DTS BOARD ("1" when DTS circuit board exists)

Trouble symptom	Possible cause and check method
Digital sound is not produced (DIGITAL SOURCE indicator remains OFF.)	Malfunction of digital input, DIR(YM3436): Check the 2nd byte bit0 of STATUS (1) for a digital lock or an error . (If bit0 is "1", possibility is failure of DIR and another possibility is malfunction of the digital input selector.) Check the channel status data in STATUS (2).

11. VER./EXT

Indicated in the lower level is the CPU (main/sub) version. The self-diagnosis function is completed by using the sub-menu and the normal operation is restored. When replacing CPU, make sure to check the CPU version. Depending on compatibility of the communication format, CPU may not be suitable. Use of a CPU whose communication format is not compatible will result in failure in communication between CPUs. The signals are processed in the same way as EFFECT OFF of No.4.

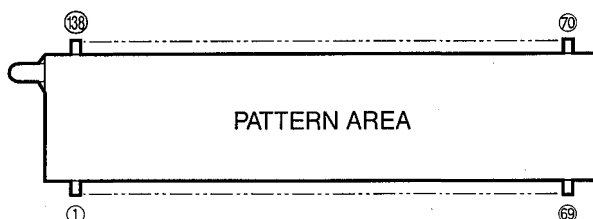
M: Indicates the version of main CPU (IC1 of the function circuit board).

S: Indicates the version of sub CPU (IC1 of the DSP circuit board). The alphabet at the end of the version indication represents compatibility of the communication format between the main/sub-CPU's. The communication format of CPU is interchangeable with the one whose alphabet at this end is the same. If the end alphabets differ, CPUs will not operate properly.

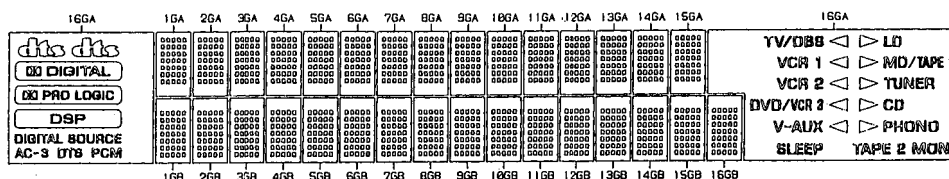
11. VER./EXIT
M:1010A S:0.0A

■ DISPLAY DATA (VZ524400)

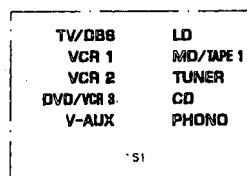
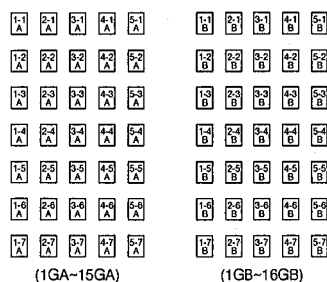
● V901 : 32-BT-04G



GRID ASSIGNMENT



SEGMENT DESIGNATION



PIN CONNECTION

Pin No.	Connection	Pin No.	Connection	Pin No.	Connection	Pin No.	Connection	Pin No.	Connection	Pin No.	Connection	Pin No.	Connection
1	F1	21	P35B	41	10GB	61	P4B	81	P20A	101	P1A	121	7GA
2	F1	22	P25B	42	11GB	62	P3B	82	P19A	102	P26A	122	6GA
3	F1	23	P24B	43	12GB	63	P2B	83	NP	103	P27A	123	5GA
4	NP	24	P23B	44	13GB	64	P1B	84	P18A	104	P28A	124	IC
5	NP	25	P22B	45	14GB	65	NP	85	P17A	105	P29A	125	NP
6	P26B	26	P21B	46	15GB	66	NP	86	P16A	106	P30A	126	Fd
7	P27B	27	P20B	47	16GB	67	F2	87	P15A	107	P31A	127	Fd
8	P28B	28	P19B	48	P15B	68	F2	88	P14A	108	P32A	128	NP
9	P29B	29	P18B	49	P14B	69	F2	89	P13A	109	P33A	129	IC
10	IC	30	P17B	50	P13B	70	F2	90	P12A	110	P34A	130	4GA
11	NP	31	P16B	51	P12B	71	F2	91	P11A	111	P35A	131	3GA
12	Fd	32	1GB	52	P11B	72	F2	92	P10A	112	16GA	132	2GA
13	Fd	33	2GB	53	P10B	73	NP	93	P9A	113	15GA	133	1GA
14	NP	34	3GB	54	P9B	74	NP	94	P8A	114	14GA	134	NP
15	IC	35	4GB	55	P8B	75	P25A	95	P7A	115	13GA	135	NP
16	P30B	36	5GB	56	NP	76	P24A	96	P6A	116	12GA	136	F1
17	P31B	37	6GB	57	P7B	77	P23A	97	P5A	117	11GA	137	F1
18	P32B	38	7GB	58	P6B	78	P22A	98	P4A	118	10GA	138	F1
19	P33B	39	8GB	59	NP	79	P21A	99	P3A	119	9GA		
20	P34B	40	9GB	60	P5B	80	NP	100	P2A	120	8GA		

Note : F1, F2 : Filament NP : No Pin NC : No Connection IC : Internal Connection

P1A~P35A, P1B~P35B : Datum Line 1GA~16GA, 1GB~16GB : Grid

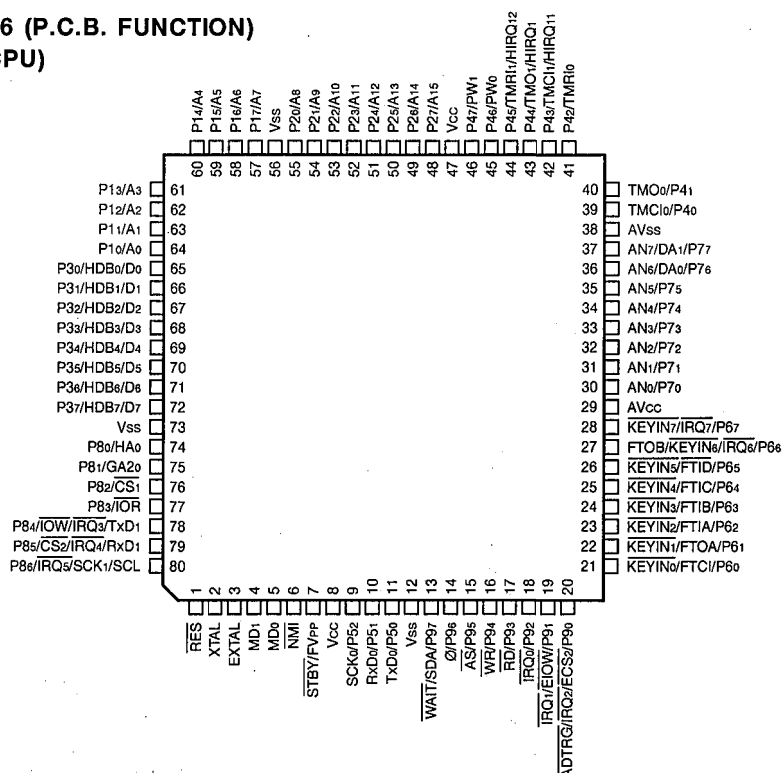
ANODE CONNECTION

	1GA~15GA	16GA		1GA~15GA	16GA		1GA~15GA	16GA		1GA~15GA	16GA
P1A	1-1A	—	P11A	1-3A	—	P21A	1-5A	◁ (TV/DBS)	P31A	1-7A	□ PRO LOGIC
P2A	2-1A	—	P12A	2-3A	—	P22A	2-5A	◁ (VCR 1)	P32A	2-7A	DSP
P3A	3-1A	—	P13A	3-3A	—	P23A	3-5A	◁ (VCR 2)	P33A	3-7A	DIGITAL SOURCE
P4A	4-1A	—	P14A	4-3A	dots (left)	P24A	4-5A	◁ (DVD/VCR3)	P34A	4-7A	AC-3
P5A	5-1A	—	P15A	5-3A	dots (right)	P25A	5-5A	◁ (V-AUX)	P35A	5-7A	PCM
P6A	1-2A	—	P16A	1-4A	▷ (PHONO)	P26A	1-6A	S1			
P7A	2-2A	—	P17A	2-4A	▷ (CD)	P27A	2-6A	TAPE 2 MON			
P8A	3-2A	—	P18A	3-4A	▷ (TUNER)	P28A	3-6A	SLEEP			
P9A	4-2A	—	P19A	4-4A	▷ (MD/TAPE1)	P29A	4-6A	DTS			
P10A	5-2A	—	P20A	5-4A	▷ (LD)	P30A	5-6A	□ DIGITAL			

	1GB~16GB		1GB~16GB		1GB~16GB		1GB~16GB
P1B	1-1B	P11B	1-3B	P21B	1-5B	P31B	1-7B
P2B	2-1B	P12B	2-3B	P22B	2-5B	P32B	2-7B
P3B	3-1B	P13B	3-3B	P23B	3-5B	P33B	3-7B
P4B	4-1B	P14B	4-3B	P24B	4-5B	P34B	4-7B
P5B	5-1B	P15B	5-3B	P25B	5-5B	P35B	5-7B
P6B	1-2B	P16B	1-4B	P26B	1-6B		
P7B	2-2B	P17B	2-4B	P27B	2-6B		
P8B	3-2B	P18B	3-4B	P28B	3-6B		
P9B	4-2B	P19B	4-4B	P29B	4-6B		
P10B	5-2B	P20B	5-4B	P30B	5-6B		

■ IC DATA

IC1 : HD64F3337YF16 (P.C.B. FUNCTION)

8 bit μ -COM (Main CPU)

No.	Terminal	Port	Port Name	Function	Power On	Power Off	Backup
1	RES	RES	Reset	Reset	---	---	---
2	XTAL	XTAL	Oscillator	Oscillator : 8MHz	---	---	---
3	EXTAL	EXTAL	Oscillator	Oscillator : 8MHz	---	---	---
4	MD1	MD1	CPU mode	Normal : 5V	---	---	---
5	MD0	MD0	CPU mode	Normal : 5V	---	---	---
6	NMI	NMI	NMI Interrupt	Not used (5V)	---	---	---
7	STBY/FVpp	STBY	Standby	Not used (5V)	---	---	---
8	Vcc	Vcc	+5BU	Power supply	---	---	---
9	P52/SCK0	SCK0	CLK	COM: CLOCK	O	OL	OL
10	P51/RxD0	RxD0	STM	COM: RXD	I	I	OL
11	P50/TxD0	TxD0	MTS	COM: TXD	O	OL	OL
12	Vss	Vss	Ground	0V	---	---	---
13	P97/SDA	P97	MRQ	COM: O-STROBE	O	OL	OL
14	P96/Ø	P96		Not used (0V)	I	I	HiZ
15	P95	P95	SBR	Sub CPU reset	O	OL	OL
16	P94	P94	FLR	FL driver reset	O	OL	OL
17	P93	P93	PSW	Power SW detect	I	I	OL
18	P92/IRQ0	IRQ0	PDT	Power detect	I	I	OL
19	P91/IRQ1	IRQ1	REM	Remocon in	I	I	OL
20	P90/IRQ2/ADTRG	IRQ2	SRQ	Strobe from Sub CPU	I	I	OL
21	P60/FTCI/KEYIN0	P60	IPA	I-SEL. encoder in A	I	I	OL
22	P61/FTOA/KEYIN1	P61	IPB	I-SEL. encoder in B	I	I	OL
23	P62/FTIA/KEYIN2	P62		Not used (0V)			OL
24	P63/FTIB/KEYIN3	P63	VUP(volume)	Stop : HI, Up : LO, Down : HI	O	OL	OL
25	P64/FTIC/KEYIN4	P64	VDN(volume)	Stop : HI, Up : HI, Down : LO	O	OL	OL
26	P65/FTID/KEYIN5	P65	VIND	Volume LED	O	OL	OL
27	P66/FTOB/KEYIN6/IRQ6	IRQ6		Not used (0V)			OL
28	P67/IRQ7/KEYIN7	IRQ7		Not used (0V)			OL
29	Avcc	Avcc	+5M	Power supply for AD	---	---	---

IC1 : HD64F3337YF16 (P.C.B. FUNCTION)
8 bit μ -COM (Main CPU)

No.	Terminal	Port	Port Name	Function	Power On	Power Off	Backup
30	P70/AN0	AN0	PRV	Power supply error detect	I	I	HiZ
31	P71/AN1	AN1	PRD	Power amplifier output DC detect	I	I	HiZ
32	P72/AN2	AN2	KEY	Key scan	I	I	HiZ
33	P73/AN3	AN3	REC	Rec out selector position detect	I	I	HiZ
34	P74/AN4	AN4	THM	Radiator temperature detect	I	I	HiZ
35	P75/AN5	AN5		Not used (0V)			HiZ
36	P76/AN6/DA0	AN6		Not used (0V)			HiZ
37	P77/AN7/DA1	DA1	FAN	DAC output for Fan drive	O	OL	HiZ
38	Avss	Avss	Ground	Ground for AD	---	---	---
39	P40/TMCIO	P40	HMT	Head phones mute	O	OL	OL
40	P41/TMO0	P41	HPI	Head phones detect	I	I	OL
41	P42/TMRI0	P42		Not used (0V)			OL
42	P43/TMC11	P43		Not used (0V)			OL
43	P44/TMO1	P44		Not used (0V)			OL
44	P45/TMRI1	P45		Not used (0V)			OL
45	P46/PW0	P46		Not used (0V)			OL
46	P47/PW1	P47		Not used (0V)			OL
47	Vcc	Vcc	+5BU	Power supply	---	---	---
48	P27	P27		Not used (0V)			OL
49	P26	P26		Not used (0V)			OL
50	P25	P25		Not used (0V)			OL
51	P24	P24		Not used (0V)			OL
52	P23	P23		Not used (0V)			OL
53	P22	P22		Not used (0V)			OL
54	P21	P21		Not used (0V)			OL
55	P20	P20		Not used (0V)			OL
56	Vss	Vss	Ground	0V	---	---	---
57	P17	P17		Not used (0V)			OL
58	P16	P16		Not used (0V)			OL
59	P15	P15		Not used (0V)			OL
60	P14	P14		Not used (0V)			OL
61	P13	P13		Not used (0V)			OL
62	P12	P12	EX/AT	SPI : FIXED/AUTO (H/L)	I	I	OL
63	P11	P11	INP/N	SPI : PAL/NTSC (H/L)	I	I	OL
64	P10	P10	RP/N	R model PAL/NTSC SW detect	I	I	OL
65	P30	P30	PRI	Power amplifier excess current detect	I	I	OL
66	P31	P31	FMT	Full mute	O	OL	OL
67	P32	P32	MLV	Main level : 0dB/-10dB(H/L)	O	OL	OL
68	P33	P33	SRV	Speaker relay	O	OL	OL
69	P34	P34	PRV	Power relay	O	OL	OL
70	P35	P35	CET	CE: TC9273N/TC9162AN	O	OL	OL
71	P36	P36	CEL1	CE: LC7824/LC75710NE/LC7535	O	OL	OL
72	P37	P37	CEL2	CE: LC75710NE/LC78213....	O	OL	OL
73	Vss	Vss	Ground	0V	---	---	---
74	P80	P80	SCK	External clock	O	OL	OL
75	P81	P81	SDT	External data	O	OL	OL
76	P82	P82	CES	CE: M35013	O	OL	OL
77	P83	P83	E/I	Video Sync : External/Internal(H/L)	O	OL	OL
78	P84/IRQ3/TxD1	TxD1	Programboot	Data transfer	O	OL	OL
79	P85/IRQ4/RxD1	RxD1	Programboot	Data receive	I	I	OL
80	P86/SCK1/IRQ5/SCL	IRQ5	VSY	V-sync detect	I	I	OL

DSP-A1

IC1 : HD6473257P10 (P.C.B. DSP)
8 bit μ -COM (Sub CPU)

P60/FTCI	1	64	P37/D7
P61/FTOA	2	63	P36/D6
P62/FTOB	3	62	P35/D5
P63/FTI	4	61	P34/D4
P64/IRQ0	5	60	P33/D3
P65/IRQ1	6	59	P32/D2
P66/IRQ2	7	58	P31/D1
RES	8	57	P30/D0
XTAL	9	56	P10/A0
EXTAL	10	55	P11/A1
MD1	11	54	P12/A2
MD0	12	53	P13/A3
NMI	13	52	P14/A4
VCC	14	51	P15/A5
STBY	15	50	P16/A6
VSS	16	49	P17/A7
P40/TMCI0	17	48	VSS
P41/TMO0	18	47	P20/A8
P42/TMRI0	19	46	P21/A9
P43/TMCI1	20	45	P22/A10
P44/TMO1	21	44	P23/A11
P45/TMRI1	22	43	P24/A12
P46/ $\emptyset$	23	42	P25/A13
P47/E	24	41	P26/A14
P50/TXD0	25	40	P27/A15
P51/RXD0	26	39	VCC
P52/SCK0	27	38	P77/WAIT
P53/TXD1	28	37	P76/RD
P54/RXD1	29	36	P75/WR
P55/TXD1	30	35	P74/AS
P70/IS	31	34	P73/IOS
P71/OS	32	33	P72/BUSY

No.	Port	Name	I/O	Function
1	P60	KM1	O	DIR forcible mode (L : ANALOG)
2	P61	CLD	O	DIR CE
3	P62	CCK	O	DIR CLK
4	P63	CD0	I	DIR data
5	P64/IRQ0	/DIRER	IRQ	DIR ERR detect interrupt
6	P65/IRQ1	DTS	IRQ	DTS decoder
7	P66/IRQ2	/IRQ	IRQ	CDSP interrupt request
8	/RES	/RES		RESET
9	XTAL	XTAL		20MHz
10	EXTAL	EXTAL		20MHz
11	MD1	MD1		+ 5V
12	MD0	MD0		+ 5V
13	/NMI	/NMI		+ 5V
14	VCC	VCC		+ 5V
15	/SYBY	/STBY		+ 5V
16	VSS	VSS		GND
17	P40	/ICA	O	DIR/AC3PLav IC
18	P41	/AD	O	A/D
19	P42	ADSEL	O	SOURCE/MIC Normal : "H" (SOURCE)
20	P43	NC		Not used

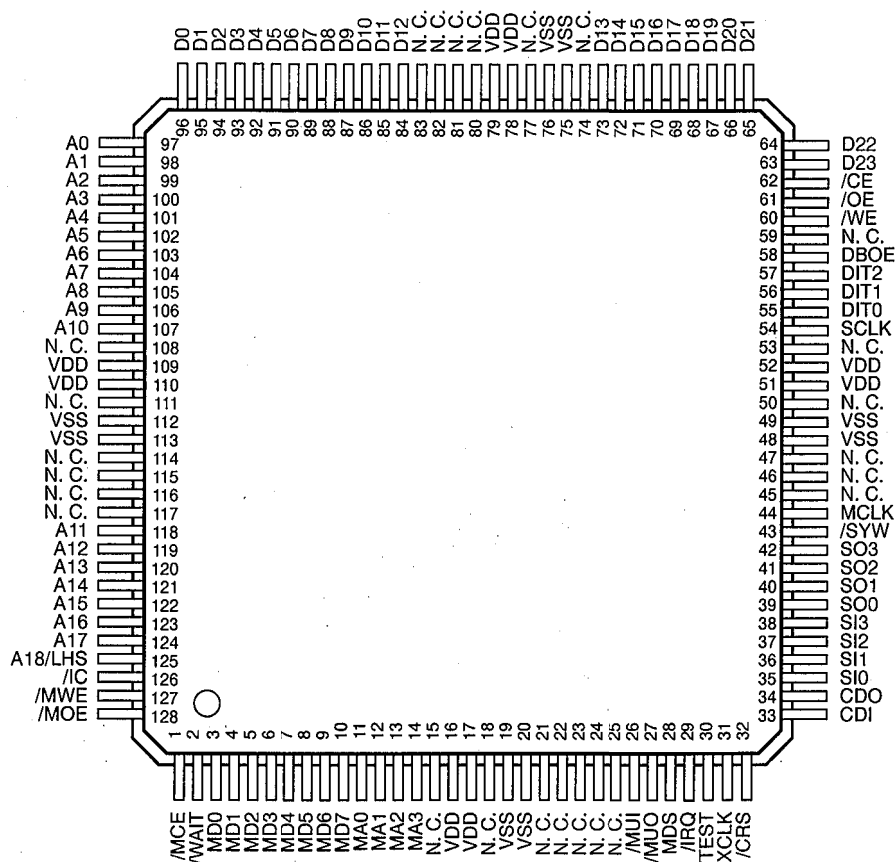
IC1 : HD6473257P10 (P.C.B. DSP)

8 bit μ -COM (Sub CPU)

No.	Port	Name	I/O	Function
21	P44	AC3MT	I	AC3PL MUTE
22	P45	/RSEL	O	RECIEVE SEL (L : DTS)
23	P46	/HREQ	I	DTS HOST REQUEST
24	P47/E	/CE	O	AC3PLav/DTS I/F
25	P50/TXD0	TXDO	O	AC3PLav/DTS I/F
26	P51/RXD0	RXDO	I	AC3PLav/DTS I/F
27	P52/SCK0	SCKO	O	AC3PLav/DTS I/F
28	P53/TXD1	TXD1	O	CPU I/F (STM)
29	P54/RXD1	RXD1	I	CPU I/F (MTS)
30	P55/SCK1	SCK1	I	CPU I/F (CLK)
31	P70	/IS	I	CPU I/F (MRQ)
32	P71	/OS	O	CPU I/F (SRQ)
33	P72	DMT	O	DAC MUTE (H : MUTE)
34	P73/IOS	NC		Not used
35	P74/AS	MUTO	I	DEM MUTO
36	P75/WR	DVOPT	I	DVD/VCR3 OPTICAL
37	P76/RD	TVOPT	I	TV/DBS OPTICAL
38	P77/WAIT	CDOPT	I	CD OPTICAL
39	VCC	VCC		+ 5V
40	P27/A15	/DTSB	I	DTS BOARD (Low active)
41	P26/A14	MODC	O	DTS MODE
42	P25/A13	MODB	O	DTS MODE
43	P24/A12	MODA	O	DTS MODE
44	P23/A11	PINIT	O	DTS PLL INITIALIZE
45	P22/A10	/DTSRST	O	DTS RESET
46	P21/A9	/ICB	I	CDSP IC
47	P20/A8	/MUI	O	CDSP INPUT MUTE
48	VSS	VSS		GND
49	P17/A7	/WAIT	I	CDSP Wait
50	P16/A6	/MOE	O	CDSP OE (Output enable)
51	P15/A5	/MWE	O	CDSP WE (Write enable)
52	P14/A4	/MCE	O	CDSP CE (Chip enable)
53	P13/A3	MA3	O	CDSP address
54	P12/A2	MA2	O	
55	P11/A1	MA1	O	
56	P10/A0	MA0	O	
57	P30/D0	MD0	I/O	CDSP data bus
58	P31/D1	MD1	I/O	
59	P32/D2	MD2	I/O	
60	P33/D3	MD3	I/O	
61	P34/D4	MD4	I/O	
62	P35/D5	MD5	I/O	
63	P36/D6	MD6	I/O	
64	P37/D7	MD7	I/O	

DSP-A1

IC2 : YSS214 (P.C.B. DSP)
CDSP



No.	Name	I/O	Function
1	/MCE	Is+	Chip enable input from CPU
2	/WAIT	OD	Wait signal output to CPU
3	MD0	Is/O	CPU I/F parallel data
4	MD1	Is/O	CPU I/F parallel data
5	MD2	Is/O	CPU I/F parallel data
6	MD3	Is/O	CPU I/F parallel data
7	MD4	Is/O	CPU I/F parallel data
8	MD5	Is/O	CPU I/F parallel data
9	MD6	Is/O	CPU I/F parallel data
10	MD7	Is/O	CPU I/F parallel data
11	MA0	Is	CPU I/F address input
12	MA1	Is	CPU I/F address input
13	MA2	Is	CPU I/F address input
14	MA3	Is	CPU I/F address input
15	N.C.	-	Unconnected
16	VDD	-	+5V power supply
17	VDD	-	+5V power supply
18	N.C.	-	Unconnected
19	VSS	-	Ground
20	VSS	-	Ground
21	N.C.	-	Unconnected
22	N.C.	-	Unconnected
23	N.C.	-	Unconnected
24	N.C.	-	Unconnected

IC2 : YSS214 (P.C.B. DSP)
CDSP

No.	Name	I/O	Function
25	N.C.	—	Unconnected
26	/MUI	Is+	Serial data input gate
27	/MUO	O	Serial data output mute
28	MDS	Is+	Micro-processor communication mode select
29	/IRQ	OD	Interrupt request
30	/TEST	Is+	LSI test (normally unconnected)
31	XCLK	Is/O	Serial control data shift clock
32	/CRS	Is+/O	Reset signal for serial control data synchronization
33	CDI	Is+	Serial control data input
34	CDO	O	Serial control data output
35	SI0	Is+	Serial data input
36	SI1	Is+	Serial data input
37	SI2	Is+	Serial data input
38	SI3	Is+	Serial data input
39	SO0	O	Serial data output
40	SO1	O	Serial data output
41	SO2	O	Serial data output
42	SO3	O	Serial data output
43	/SYW	Is	Signal input for system synchronization
44	MCLK	Is	Master clock input (256fs)
45	N.C.	—	Unconnected
46	N.C.	—	Unconnected
47	N.C.	—	Unconnected
48	VSS	—	Ground
49	VSS	—	Ground
50	N.C.	—	Unconnected
51	VDD	—	+5V power supply
52	VDD	—	+5V power supply
53	N.C.	—	Unconnected
54	SCLK	O	Clock output (64fs)
55	DIT0	O	Digital audio interface data output
56	DIT1	O	Digital audio interface data output
57	DIT2	O	Digital audio interface data output
58	DBOE	Is+	memory data bus output enable
59	N.C.	—	Unconnected
60	/WE	O	External RAM write enable
61	/OE	O	External RAM output enable
62	/CE	O	External RAM chip enable
63	D23	Is+/O	External RAM data
64	D22	Is+/O	External RAM data
65	D21	Is+/O	External RAM data
66	D20	Is+/O	External RAM data
67	D19	Is+/O	External RAM data
68	D18	Is+/O	External RAM data
69	D17	Is+/O	External RAM data
70	D16	Is+/O	External RAM data
71	D15	Is+/O	External RAM data
72	D14	Is+/O	External RAM data
73	D13	Is+/O	External RAM data
74	N.C.	—	Unconnected
75	VSS	—	Ground
76	VSS	—	Ground

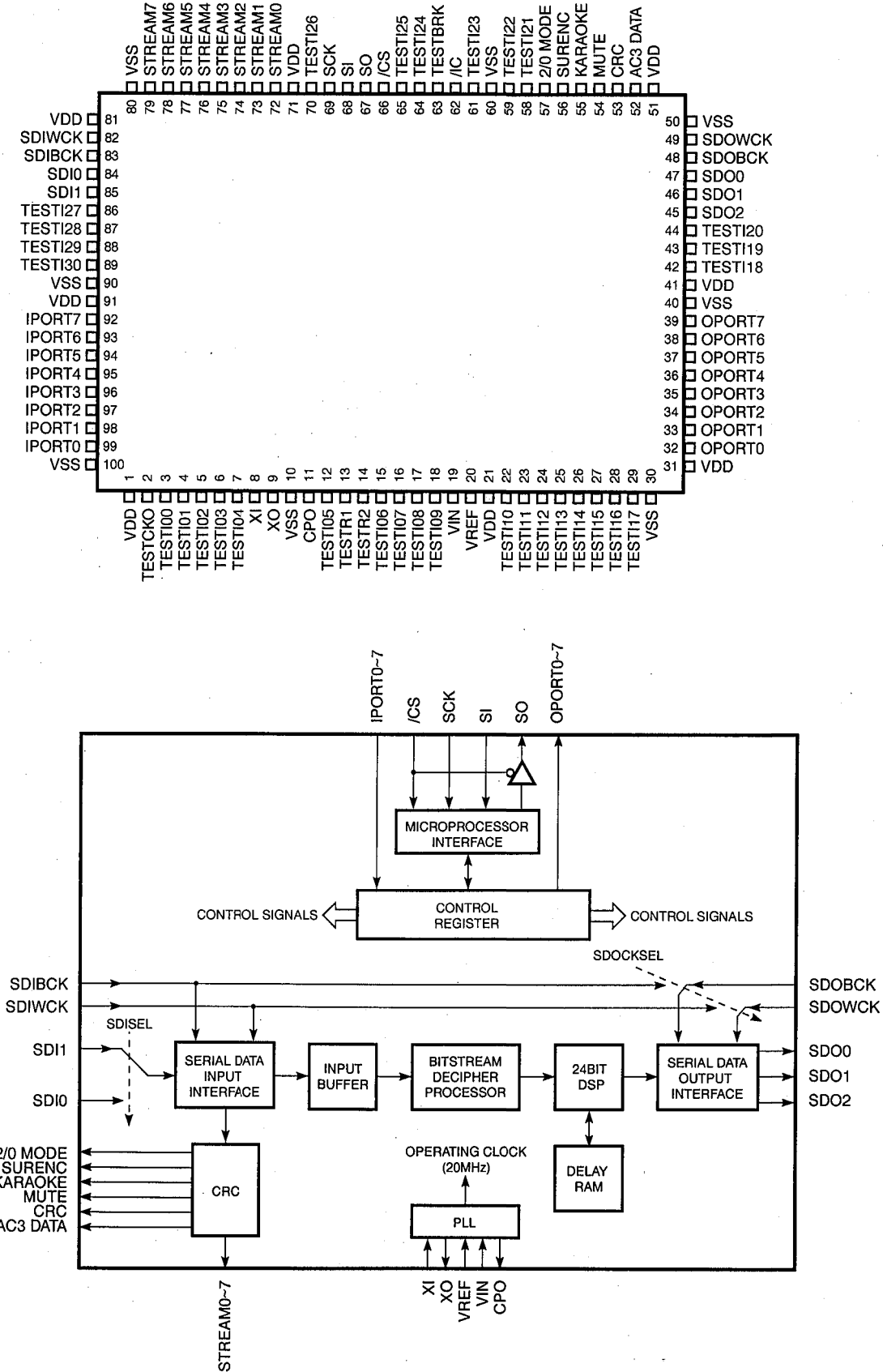
IC2 : YSS214 (P.C.B. DSP)

CDSP

No.	NAME	I/O	FUNCTION
77	N.C.	—	Unconnected
78	VDD	—	+5V power supply
79	VDD	—	+5V power supply
80	N.C.	—	Unconnected
81	N.C.	—	Unconnected
82	N.C.	—	Unconnected
83	N.C.	—	Unconnected
84	D12	Is+/O	External RAM data
85	D11	Is+/O	External RAM data
86	D10	Is+/O	External RAM data
87	D9	Is+/O	External RAM data
88	D8	Is+/O	External RAM data
89	D7	Is+/O	External RAM data
90	D6	Is+/O	External RAM data
91	D5	Is+/O	External RAM data
92	D4	Is+/O	External RAM data
93	D3	Is+/O	External RAM data
94	D2	Is+/O	External RAM data
95	D1	Is+/O	External RAM data
96	D0	Is+/O	External RAM data
97	A0	O	External RAM address
98	A1	O	External RAM address
99	A2	O	External RAM address
100	A3	O	External RAM address
101	A4	O	External RAM address
102	A5	O	External RAM address
103	A6	O	External RAM address
104	A7	O	External RAM address
105	A8	O	External RAM address
106	A9	O	External RAM address
107	A10	O	External RAM address
108	N.C.	—	Unconnected
109	VDD	—	+5V power supply
110	VDD	—	+5V power supply
111	N.C.	—	Unconnected
112	VSS	—	Ground
113	VSS	—	Ground
114	N.C.	—	Unconnected
115	N.C.	—	Unconnected
116	N.C.	—	Unconnected
117	N.C.	—	Unconnected
118	A11	O	External RAM address
119	A12	O	External RAM address
120	A13	O	External RAM address
121	A14	O	External RAM address
122	A15	O	External RAM address
123	A16	O	External RAM address
124	A17	O	External RAM address
125	A18/LHS	O	External RAM address/L/H word clock
126	/IC	Is	Initial clear
127	/MWE	Is+	Write enable input from CPU
128	/MOE	Is+	Output enable input from CPU

I: Input O: Output +: Built-in pull-up resistor s: Schmidt input
 OD: Open drain N.C.: Non-connect (unconnected)

IC5 : YSS249 (P.C.B. DSP)
AC3PLav



DSP-A1

IC5 : YSS249 (P.C.B. DSP)

AC3PLav

No.	Name	I/O	Function
1	VDD		+5V power supply
2	TESTCKO	O	Test terminal (normally unconnected)
3	TESTI00	Itp	Test terminal (normally unconnected)
4	TESTI01	Itp	Test terminal (normally unconnected)
5	TESTI02	Itp	Test terminal (normally unconnected)
6	TESTI03	Itp	Test terminal (normally unconnected)
7	TESTI04	Itp	Test terminal (normally unconnected)
8	XI	Ic	Crystal oscillator connecting terminal (5.0MHz ~ 40.0MHz)
9	XO	O	Crystal oscillator connecting terminal
10	VSS		Ground terminal
11	CPO	AO	PLL output terminal (connected to VIN through external analog filter circuit)
12	TESTI05	Itp	Test terminal (normally unconnected)
13	TESTR1	Itp	Test terminal (normally unconnected)
14	TESTR2	Itp	Test terminal (normally unconnected)
15	TESTI06	Itp	Test terminal (normally unconnected)
16	TESTI07	Itp	Test terminal (normally unconnected)
17	TESTI08	Itp	Test terminal (normally unconnected)
18	TESTI09	Itp	Test terminal (normally unconnected)
19	VIN	AI	PLL input terminal (connected to CPO through external analog filter circuit)
20	VREF	AI	PLL input terminal (connected to VDD through external analog filter circuit)
21	VDD		+5V power supply
22	TESTI10	Itp	Test terminal (normally unconnected)
23	TESTI11	Itp	Test terminal (normally unconnected)
24	TESTI12	Itp	Test terminal (normally unconnected)
25	TESTI13	Itp	Test terminal (normally unconnected)
26	TESTI14	Itp	Test terminal (normally unconnected)
27	TESTI15	Itp	Test terminal (normally unconnected)
28	TESTI16	Itp	Test terminal (normally unconnected)
29	TESTI17	Itp	Test terminal (normally unconnected)
30	VSS		Ground terminal
31	VDD		+5V power supply
32	OPORT0	O	General purpose output terminal
33	OPORT1	O	General purpose output terminal
34	OPORT2	O	General purpose output terminal
35	OPORT3	O	General purpose output terminal
36	OPORT4	O	General purpose output terminal
37	OPORT5	O	General purpose output terminal
38	OPORT6	O	General purpose output terminal
39	OPORT7	O	General purpose output terminal
40	VSS		Ground terminal
41	VDD		+5V power supply
42	TESTI18	Itp	Test terminal (normally unconnected)
43	TESTI19	Itp	Test terminal (normally unconnected)
44	TESTI20	Itp	Test terminal (normally unconnected)
45	SDO2	O	PCM output terminal (C/LFE output at AC-3, C/S output at Pro Logic)
46	SDO1	O	PCM output terminal (LS/RS output at AC-3, Lt/Rt output at Pro Logic)
47	SDO0	O	PCM output terminal (L/R output both at AC-3 and at Pro Logic)
48	SDOCLK	Itp	Bit clock input terminal for SDO output signal
49	SDOWCK	Itp	Word clock input terminal for SDO output signal
50	VSS		Ground terminal
51	VDD		+5V power supply
52	AC3DATA	O	AC-3 data detect terminal

IC5 : YSS249 (P.C.B. DSP)
AC3PLav

No.	Name	I/O	Function
53	CRC	O	CRC error detect terminal
54	MUTE	O	Auto mute detect terminal
55	KARAOKE	O	AC-3 KARAOKE data detect terminal
56	SURENC	O	AC-3 2/0 mode Dolby surround encode input detect terminal
57	2/0MODE	O	AC-3 2/0 mode input detect terminal
58	TESTI21	Itp	Test terminal (normally unconnected)
59	TESTI22	Itp	Test terminal (normally unconnected)
60	VSS		Ground terminal
61	TESTI23	Itp	Test terminal (normally unconnected)
62	/IC	Ics	Initial clear terminal;
63	TESTBRK	Itp	Test terminal (normally unconnected)
64	ITESTI24	Itp	Test terminal (normally unconnected)
65	ITESTI25	Itp	Test terminal (normally unconnected)
66	/CS	Ics	Microprocessor interface chip select input terminal
67	SO	O*	Microprocessor interface data output terminal
68	SI	Ics	Microprocessor interface data input terminal
69	SCK	Ics	Microprocessor interface clock input terminal
70	TESTI26	Itp	Test terminal (normally unconnected)
71	VDD		+5V power supply
72	STREAM0	O	STREAM0 detect terminal
73	STREAM1	O	STREAM1 detect terminal
74	STREAM2	O	STREAM2 detect terminal
75	STREAM3	O	STREAM3 detect terminal
76	STREAM4	O	STREAM4 detect terminal
77	STREAM5	O	STREAM5 detect terminal
78	STREAM6	O	STREAM6 detect terminal
79	STREAM7	O	STREAM7 detect terminal
80	VSS		Ground terminal
81	VDD		+5V power supply
82	SDIWCK	It	Word clock input terminal for SDI input signal
83	SDIBCK	It	Bit clock input terminal for SDI input signal
84	SDI0	It	AC-3 bit stream (or PCM) data input terminal
85	SDI1	It	AC-3 bit stream (or PCM) data input terminal
86	TESTI27	Itp	Test terminal (normally unconnected)
87	TESTI28	Itp	Test terminal (normally unconnected)
88	TESTI29	Itp	Test terminal (normally unconnected)
89	TESTI30	Itp	Test terminal (normally unconnected)
90	VSS		Ground terminal
91	VDD		+5V power supply
92	IPORT7	Itp	General purpose input terminal
93	IPORT6	Itp	General purpose input terminal
94	IPORT5	Itp	General purpose input terminal
95	IPORT4	Itp	General purpose input terminal
96	IPORT3	Itp	General purpose input terminal
97	IPORT2	Itp	General purpose input terminal
98	IPORT1	Itp	General purpose input terminal
99	IPORT0	Itp	General purpose input terminal
100	VSS		Ground terminal

Note) Listed below are symbols in the I/O column and their meanings.

Ic: CMOS level input terminal

Is: Schmidt trigger input terminal

O: Digital output terminal

Al: Analog input terminal

It: TTL level input terminal

Ip: Input terminal with pull-up resistor

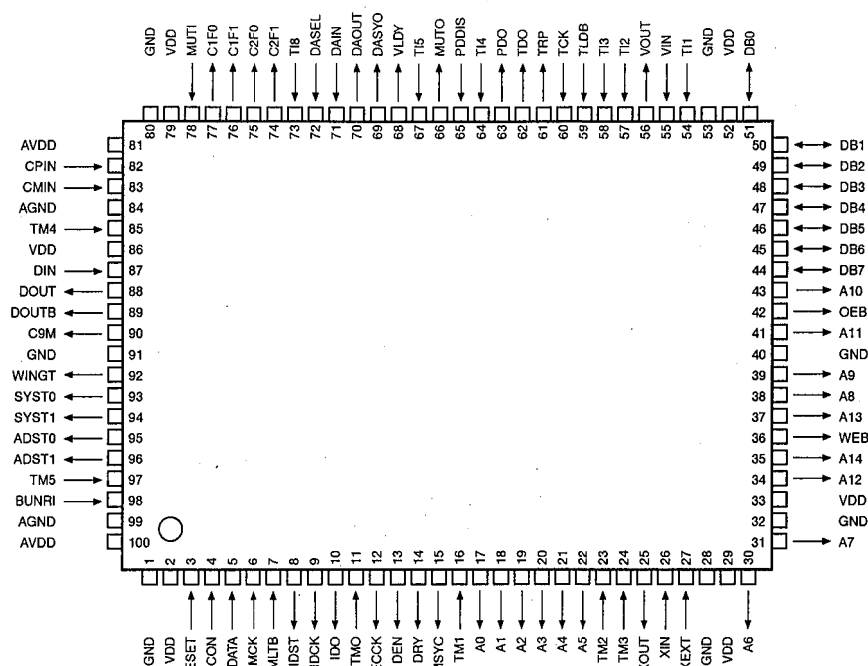
O*: Tri-state digital output terminal

AO: Analog output terminal

DSP-A1

IC6 : PM4007A

AC-3 RF Demodulator



No.	Name	I/O	Function
1	GND		Ground (0V)
2	VDD		+5V power supply
3	RESET	I	System resetting terminal (reset at "L")
4	OSCON	I	Oscillation control terminal. Oscillation ON at "H", set to "H" normally and to "L" when in standby state
5	DATA	I	IC test terminal, normally connected to ground (or unconnected)
6	MCK	I	IC test terminal, normally connected to ground (or unconnected)
7	MLTB	I	IC test terminal, normally connected to ground (or unconnected)
8	IDST	O	Output terminal for IC test
9	IDCK	O	Output terminal for IC test
10	IDO	O	Output terminal for IC test
11	TM0	I	IC test terminal, normally connected to ground (or unconnected)
12	ECCK	O	Output terminal for IC test
13	DEN	O	Output terminal for IC test
14	DRY	O	Output terminal for IC test
15	MSYC	O	Output terminal for IC test
16	TM1	I	IC test terminal, normally connected to ground (or unconnected)
17	A0	O	External RAM address output. Address 0 (LSB)
18	A1	O	External RAM address output. Address 1
19	A2	O	External RAM address output. Address 2
20	A3	O	External RAM address output. Address 3
21	A4	O	External RAM address output. Address 4
22	A5	O	External RAM address output. Address 5
23	TM2	I	IC test terminal, normally connected to ground (or unconnected)
24	TM3	I	IC test terminal, normally connected to ground (or unconnected)
25	XOUT	O	Output terminal for IC test
26	XIN	I	IC test terminal, normally connected to ground (or unconnected)
27	XEXT	I	IC test terminal, normally connected to ground (or unconnected)
28	GND		Ground terminal (0V)
29	VDD		+5V power supply

IC6 : PM4007A
AC-3 RF Demodulator

No.	Name	I/O	Function
30	A6	O	External RAM address output. Address 6
31	A7	O	External RAM address output. Address 7
32	GND		Ground terminal (0V)
33	VDD		+5V power supply
34	A12	O	External RAM address output. Address 12
35	A14	O	External RAM address output. Address 14 (MSB)
36	WEB	O	External RAM write enable signal, active at "L"
37	A13	O	External RAM address output. Address 13
38	A8	O	External RAM address output. Address 8
39	A9	O	External RAM address output. Address 9
40	GND		Ground terminal (0V)
41	A11	O	External RAM address output. Address 11
42	OEB	O	External RAM output enable signal, active at "L"
43	A10	O	External RAM address output. Address 10
44	DB7	I/O	External RAM data terminal. Data bus 7
45	DB6	I/O	External RAM data terminal. Data bus 6
46	DB5	I/O	External RAM data terminal. Data bus 5
47	DB4	I/O	External RAM data terminal. Data bus 4
48	DB3	I/O	External RAM data terminal. Data bus 3
49	DB2	I/O	External RAM data terminal. Data bus 2
50	DB1	I/O	External RAM data terminal. Data bus 1
51	DB0	I/O	External RAM data terminal. Data bus 0
52	VDD		+5V power supply
53	GND		Ground terminal (0V)
54	TI1	I	IC test terminal, normally connected to VDD
55	VIN	I	VCXO input
56	VOUT	O	VCXO output
57	TI2	I	IC test terminal, normally connected to GND (or unconnected)
58	TI3	I	IC test terminal, normally connected to GND (or unconnected)
59	TLDB	I	IC test terminal, normally connected to GND (or unconnected)
60	TCK	I	IC test terminal, normally connected to GND (or unconnected)
61	TRP	O	Output terminal for IC test
62	TDO	O	Output terminal for IC test
63	PDO	O	Output terminal for phase comparator (tri-state)
64	TI4	I	IC test terminal, normally connected to GND (or unconnected)
65	PDDIS	I	Input terminal to control PDO output. Output ON at "L"
66	MUTO	O	Muting output. Muting available at "H". Setting becomes "H" when "MUTI=H" or AC-3 is asynchronous.
67	TI5	I	IC test terminal, normally connected to GND (or unconnected)
68	VLDY	O	Output terminal for IC test
69	DASYO	O	Output terminal for IC test
70	DAOUT	O	Digital out output (serial data stream output)
71	DAIN	I	Digital external input, through to DAOUT when DASEL is "H".
72	DASEL	I	Digital out select
73	TI8	I	IC test terminal, normally connected to GND (or unconnected)
74	C2F1	O	Terminal used to indicate error condition after C2 correction, whether completely corrected or not.
75	C2F0	O	Terminal used to indicate error condition after C2 correction, number of errors at C2.
76	C1F1	O	Terminal used to indicate error condition after C1 correction, whether any error exists at C1 or not.
77	C1F0	O	Terminal used to indicate error condition after C1 correction, number of errors at C1.
78	MUTI	I	Muting input. Muting available at "H"
79	VDD		+5V power supply
80	GND		Ground terminal (0V)

DSP-A1

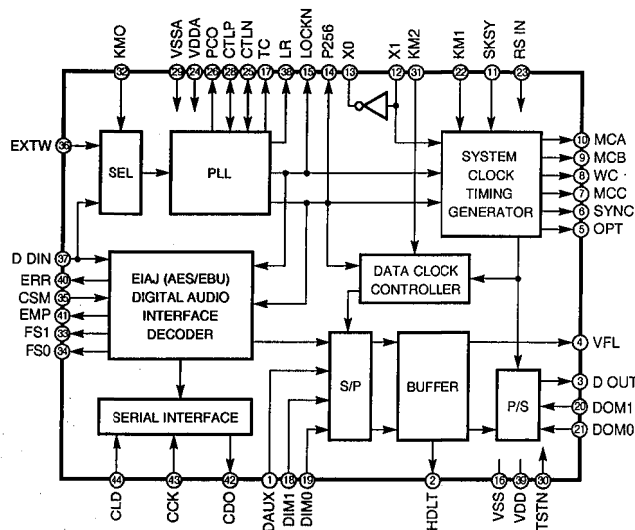
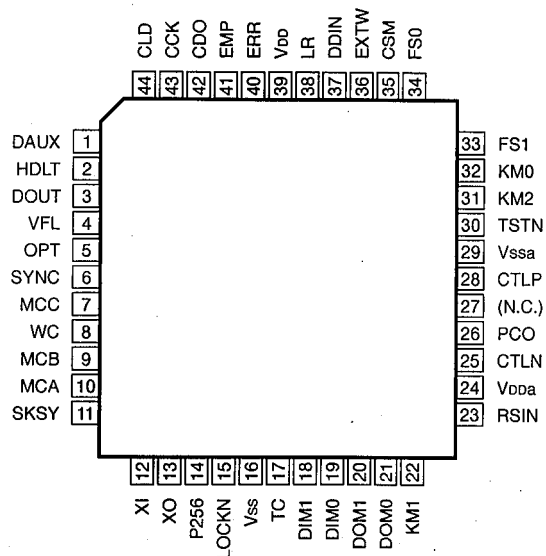
IC6 : PM4007A

AC-3 RF Demodulator

No.	Name	I/O	Function
81	AVDD		+5V power supply for analog comparator
82	CPIN	I	Analog comparator input, positive side (Non-reverse side: QPSK input)
83	CMIN	I	Analog comparator input, negative side (reverse side)
84	AGND		Ground terminal for analog comparator (0V)
85	TM4	I	IC test terminal, normally connected to GND (or unconnected)
86	VDD		+5V power supply
87	DIN	I	IC test terminal, normally connected to GND (or unconnected)
88	DOUT	O	Analog comparator result output
89	DOUTB	O	Analog comparator result reverse output
90	C9M	O	9.216MHz output, output divided into 2 at VIN (No.55 pin)
91	GND		Ground terminal (0V)
92	WINGT	O	Output for IC test
93	SYST0	O	Output for IC test
94	SYST1	O	Output for IC test
95	ADST0	O	Output for IC test
96	ADST1	O	Output for IC test
97	TM5	I	IC test terminal, normally connected to GND (or unconnected)
98	BUNRI	I	IC test terminal, normally connected to GND (or unconnected)
99	AGND		Ground terminal (0V) for 46.08MHz oscillator
100	AVDD		+5V power supply for 46.08MHz oscillator

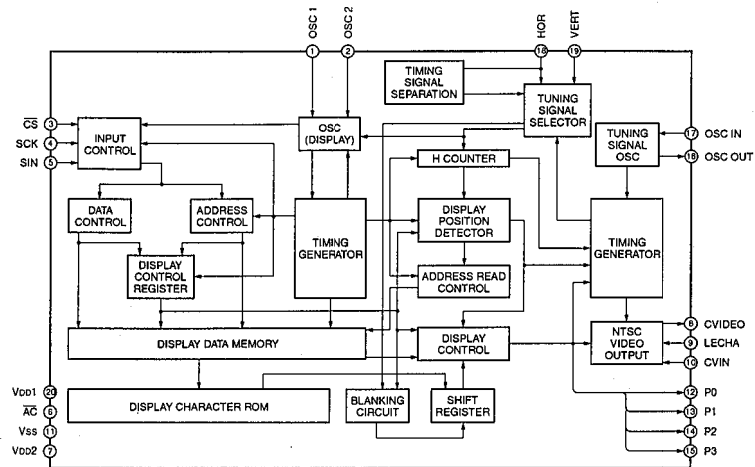
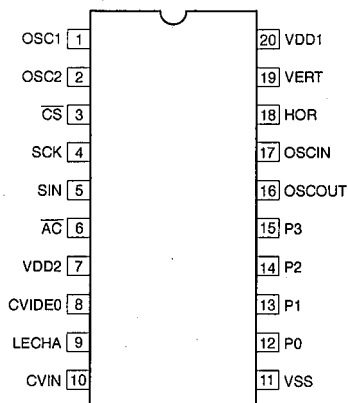
IC8 : YM3436DK (P.C.B. DSP)

DIR (Digital Format Interface Receiver)



Pin No.	Pin Name	I/O	Function	Pin No.	Pin Name	I/O	Function
1	DAUX	I	Auxiliary input for audio data	26	PCO	O	PLL phase comparison output
2	HDLT	O	Asynchronous buffer operation flag	27	(NC)		
3	DOUT	O	Audio data output	28	CTLP	I	VCO control input P
4	VFL	O	Parity flag output	29	Vssa		VCO section power (GND)
5	OPT	O	Fs x 1 Synchronous output signal for DAC	30	TSTN	I	Test terminal. Open for normal use
6	SYNC	O	Fs x 1 Synchronous output signal for DSP	31	KM2	I	Clock mode switching input 2
7	MCC	O	Fs x 64Bit clock output	32	KM0	I	Clock mode switching input 0
8	WC	O	Fs x 1Word clock output	33	FS1	O	Channel status sampling frequency display output 1
9	MCB	O	Fs x 128Bit clock output	34	FS0	O	Channel status sampling frequency display output 0
10	MCA	O	Fs x 256Bit clock output	35	CSM	I	Channel status output method selection
11	SKSY	I	Clock synchronization control input	36	EXTW	I	External synchronous auxiliary input word clock
12	XI	I	Crystal oscillator connection or external clock input	37	DDIN	I	EIAJ (AES/EBU) data input
13	XO	O	Crystal oscillator connection	38	LR	O	PLL word clock output
14	P256	O	VCO oscillating clock connection	39	Vdd		Logic section power (+5V)
15	LOCK	O	PLL lock flag	40	ERR	O	Data error flag output
16	Vss		Logic section power (GND)	41	EMP	O	Channel status emphasis control code output
17	TC	O	PLL time constant switching output	42	CD0	O	3-wire type microcomputer interface data output
18	DIM1	I	Data input mode selection	43	CCK	I	3-wire type microcomputer interface clock input
19	DIM0	I	Data input mode selection	44	CLD	I	3-wire type microcomputer interface load input
20	DOM1	I	Data output mode selection				
21	DOM0	I	Data output mode selection				
22	KM1	I	Clock mode switching input 1				
23	RSTN	I	System reset input				
24	Vdda		VCO section power (+5V)				
25	CTLN	I	VCO control input N				

IC12 : M35013-076SP (P.C.B. VIDEO) Super Impose



Pin No.	Symbol	Terminal name	Function
1 2	OSC1 OSC2	External terminal for oscillation circuit	External terminal of oscillation circuit for display. The standard oscillation frequency is about 7MHz. The display position in the horizontal direction and width of characters on the TV screen are determined according to this oscillation frequency.
3	$\overline{CS}$	Chip select input	Chip select terminal "L" is set when the serial data is transferred. Hysteresis input. A pull-up resistor is built in.
4	SCK	Serial clock input	When $\overline{CS}$ terminal is "L", the SIN serial data is taken in at the SCK rise. Hysteresis input. A pull-up resistor is built in.
5	SIN	Serial data input	The data and addresses for the display control register and display data memory are input in serial form. Hysteresis input. A pull-up resistor is built in.
6	$\overline{AC}$	Auto clear input	The IC internal circuit is reset when in "L" state. Hysteresis input. A pull-up resistor is built in.
7	VDD2	Power supply terminal	Analog type power supply terminal that should be connected to +5V.
8	CVIDEO	Composite video signal output	Output terminal for composite video signal 2Vp-p composite video signal is output. When making a superimposition, the character output and other features are superimposed on the composite video signals input through the CVIN terminal.
9	LECHA	Character level input	Input terminal to determine the output level for the characters in the composite video signals. The color of characters is white.
10	CVIN	Video input	Input terminal for external composite video signals. When making a superimposition, the character output and other features are superimposed on these composite video signals.
11	VSS	Ground terminal	Connection to GND is made by using this terminal.
12	P0	Port 0 output	Port terminal output or character background signals (BLNK1*) are output. The polarity can be selected when determining the font ROM.
13	P1	Port 1 output	Port terminal output or character background signals (CO1*) are output. The polarity can be selected when determining the font ROM.
14	P2	Port 2 output	Port terminal output or character background signals (BLNK2*) are output. The polarity can be selected when determining the font ROM.
15	P3	Port 3 output	Port terminal output or character background signals (CO2*) are output. The polarity can be selected when determining the font ROM.
16 17	OSCOUT OSCIN	Oscillation circuit for generation of synchronous signals	External terminal of the oscillation circuit for generation of synchronous signals. The oscillation frequency is 14.32MHz when the NTSC system is used and 17.73MHz when the PAL system is used.
18	HOR*	Horizontal synchronous signal input	Horizontal synchronous signals are input. Hysteresis input The polarity can be selected when determining the font ROM.
19	VERT*	Vertical synchronous signal input	Vertical synchronous signals are input. Hysteresis input The polarity can be selected when determining the font ROM.
20	VDD1	Power supply terminal	Digital type power supply terminal that should be connected to +5V.

1

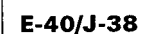


3

4

5

6



A

B

C

D

E

F

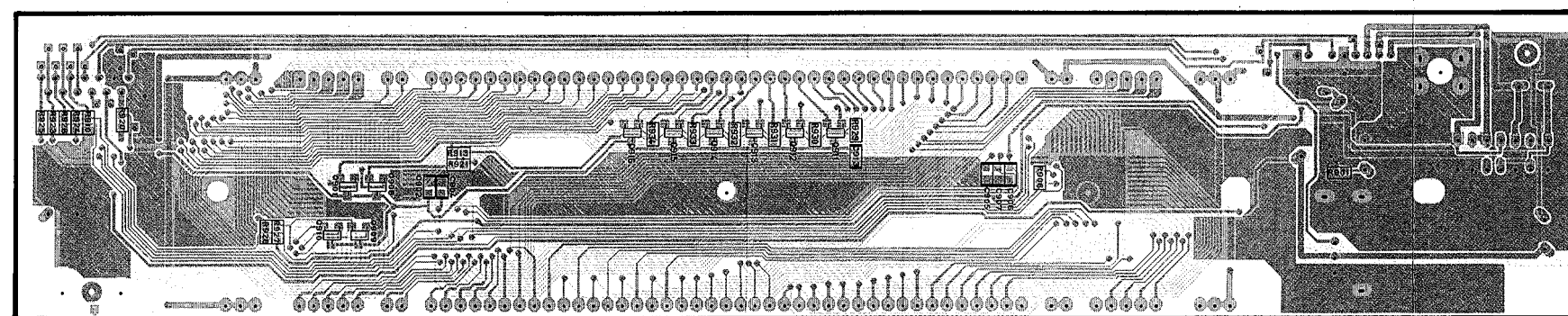
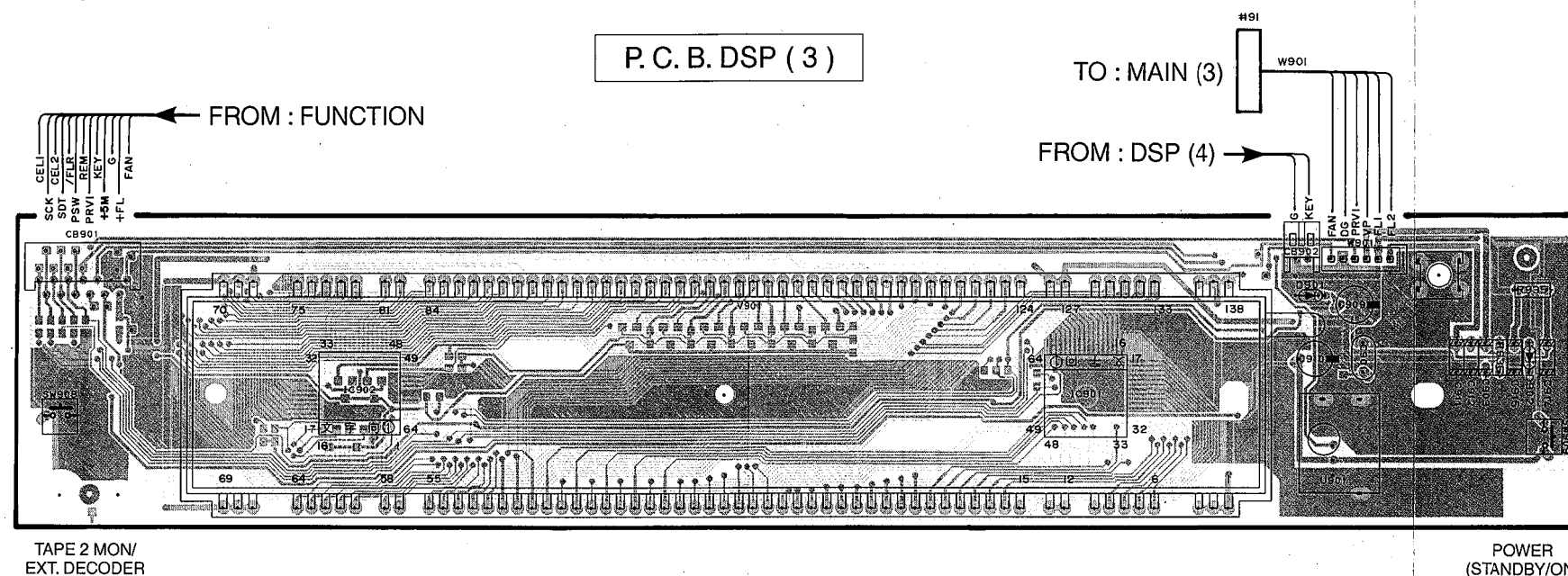
G

H

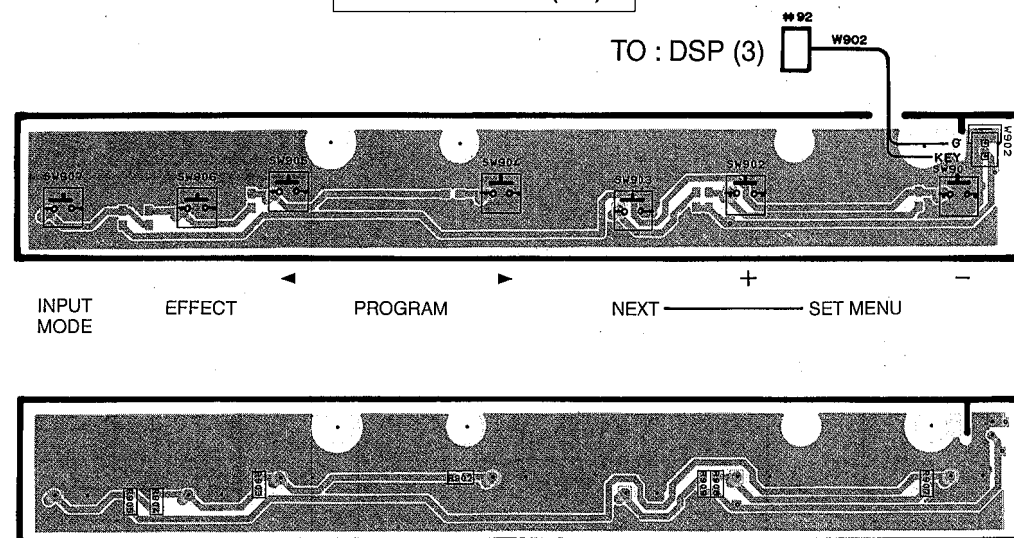
DSP-A1

PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

P. C. B. DSP (3)

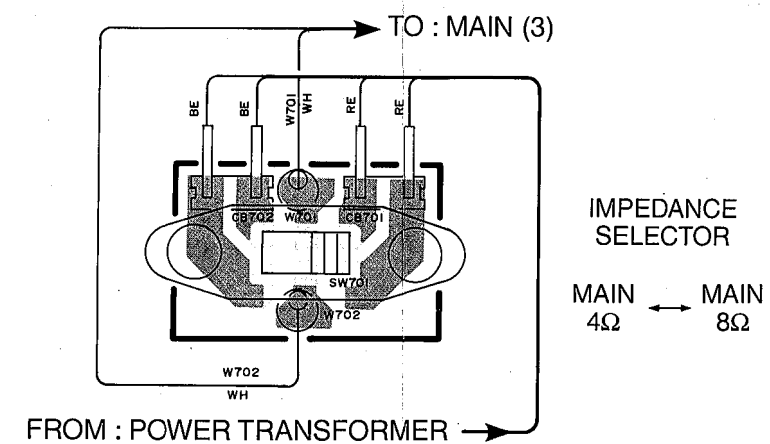


P. C. B. DSP (4)



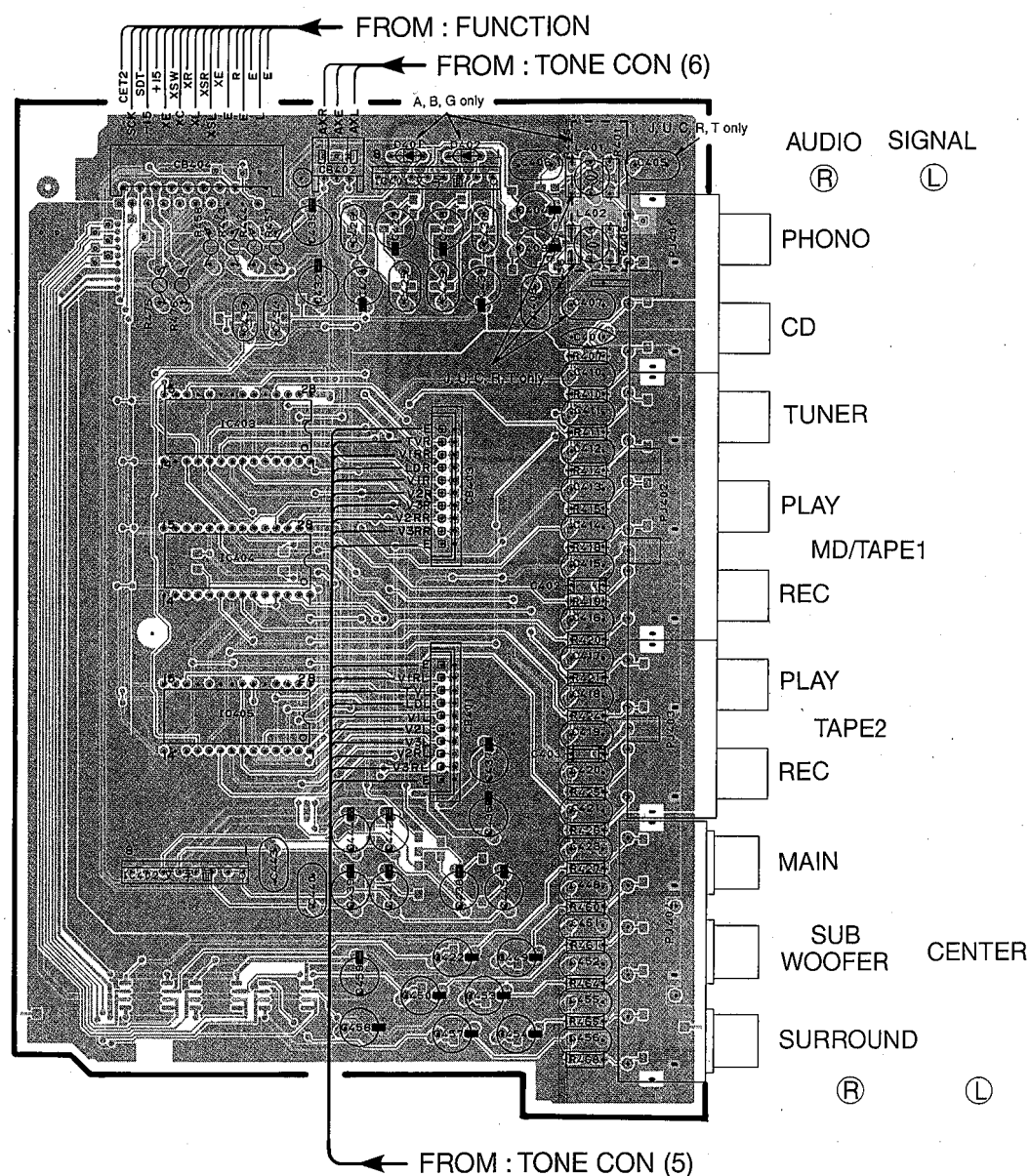
● C model only

P. C. B. DSP (6)

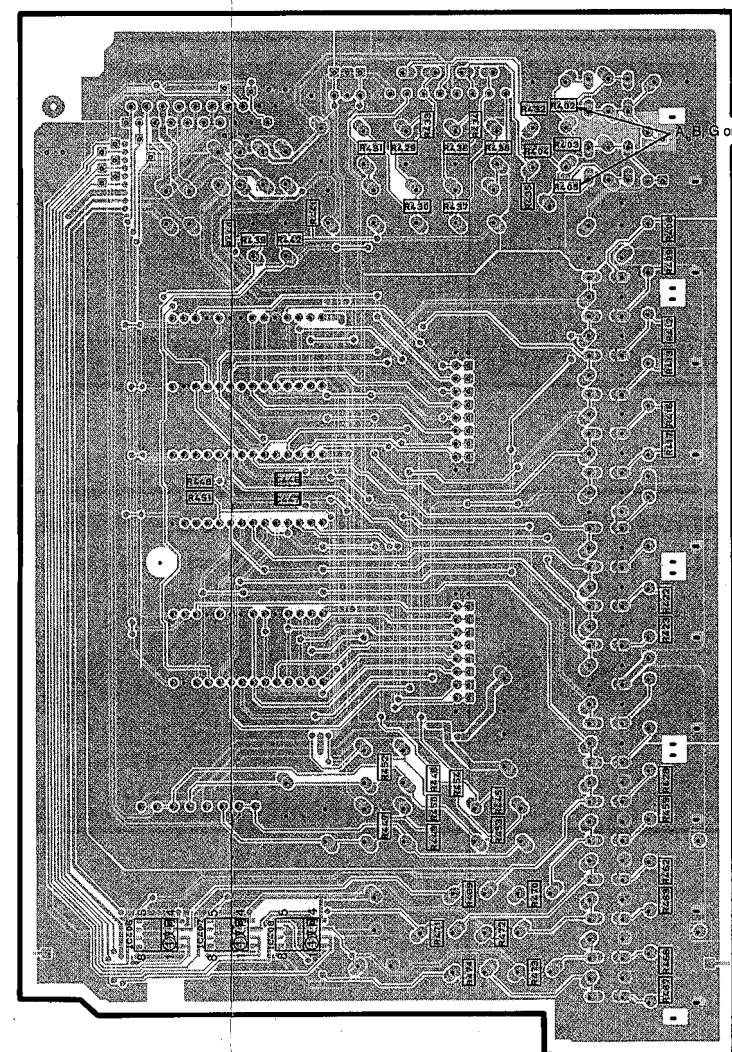


■PRINTED CIRCUIT BOARD (Foil side)／シート図(パターン側)

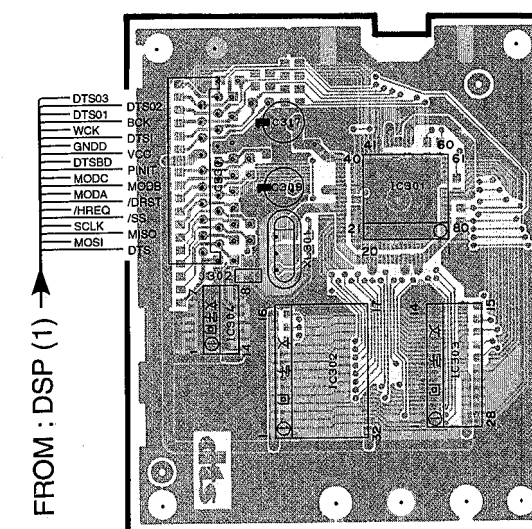
P. C. B. DSP (5)



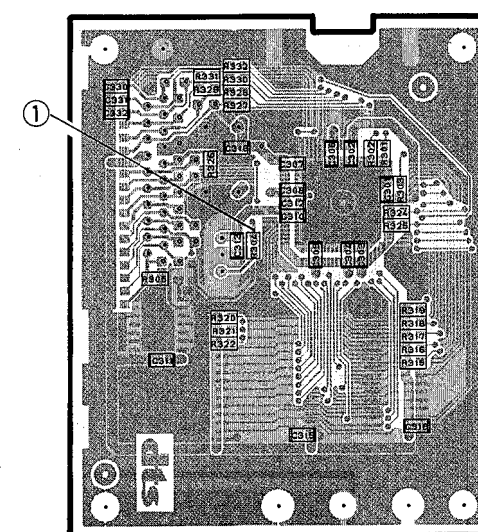
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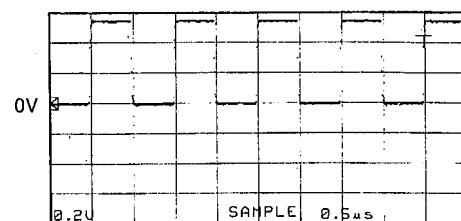
P. C. B. DSP (2)



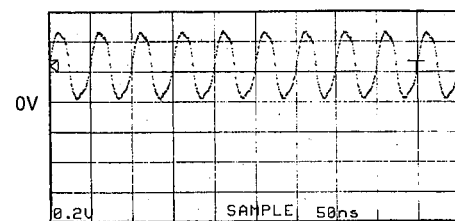
P. C. B. DSP (2)



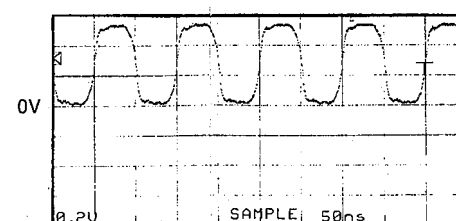
Point ① (Pin27 of IC301)
V : 0.2V/div H : 0.5 μ sec/div
DC range 1 : 1 probe



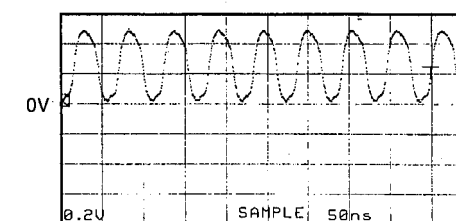
Point ② (Pin9 of IC1)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



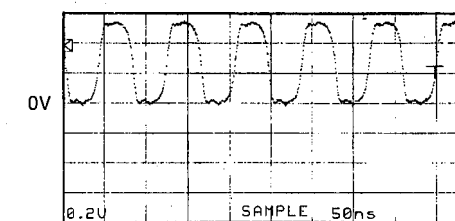
Point ③ (Pin9 of IC5)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ④ (Pin56 of IC6)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ⑤ (Pin13 of IC8)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



1

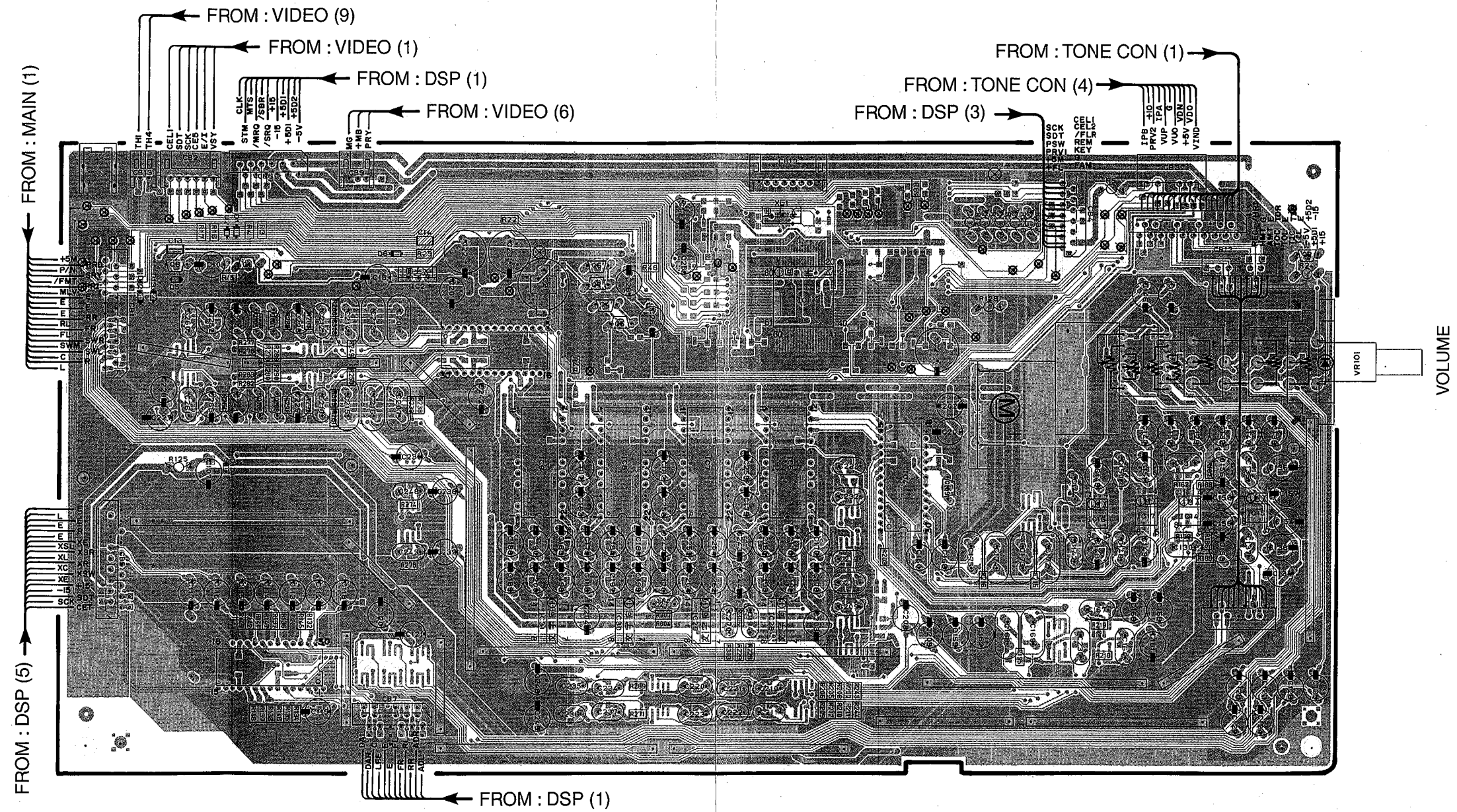
P. C. B. DSP (1)



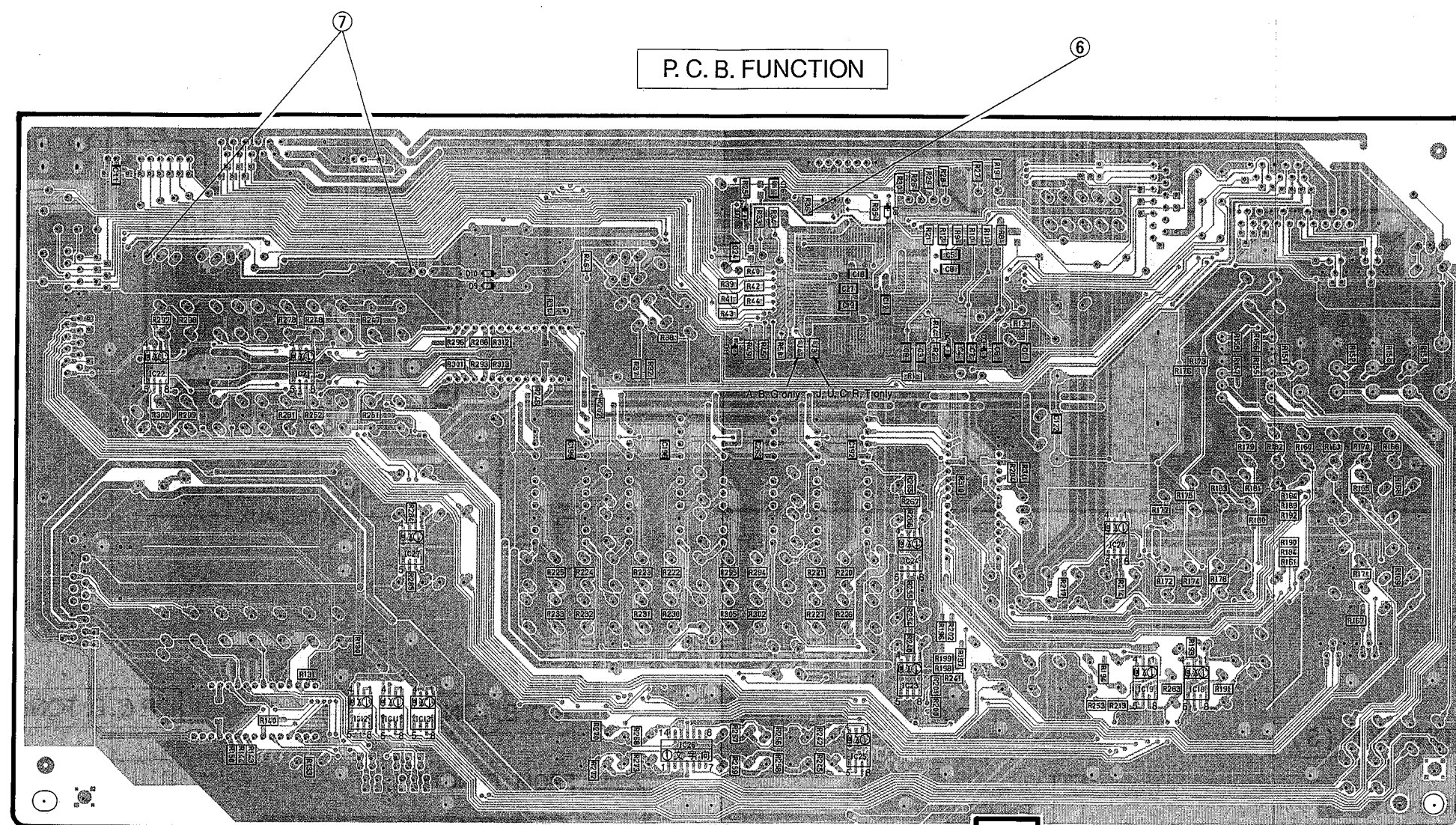
DSP-A1

PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

P. C. B. FUNCTION

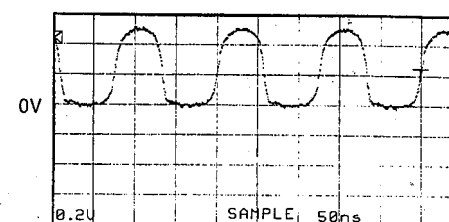


■PRINTED CIRCUIT BOARD (Foil side)/シート図(パターン側)



Point ⑥ (Pin2 of IC1)

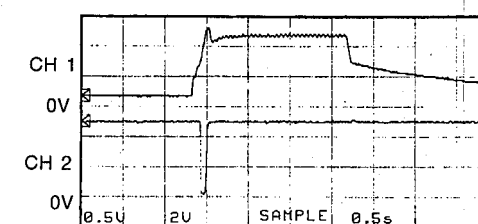
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ⑦

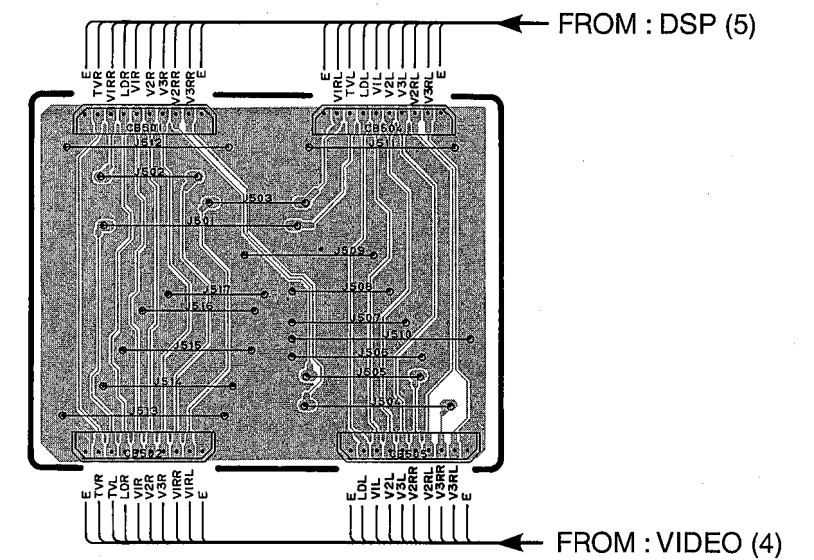
CH1 : IN of IC2 V : 0.5V/div (CH1)
CH2 : Collector of Q3 V : 2V/div (CH2)

H : 0.5 sec/div DC range 1 : 1 probe
(This waveform is not available by pushing the power switch ON and OFF.)



With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.

Disconnect the power cord from the AC outlet.



1 _____

2 _____

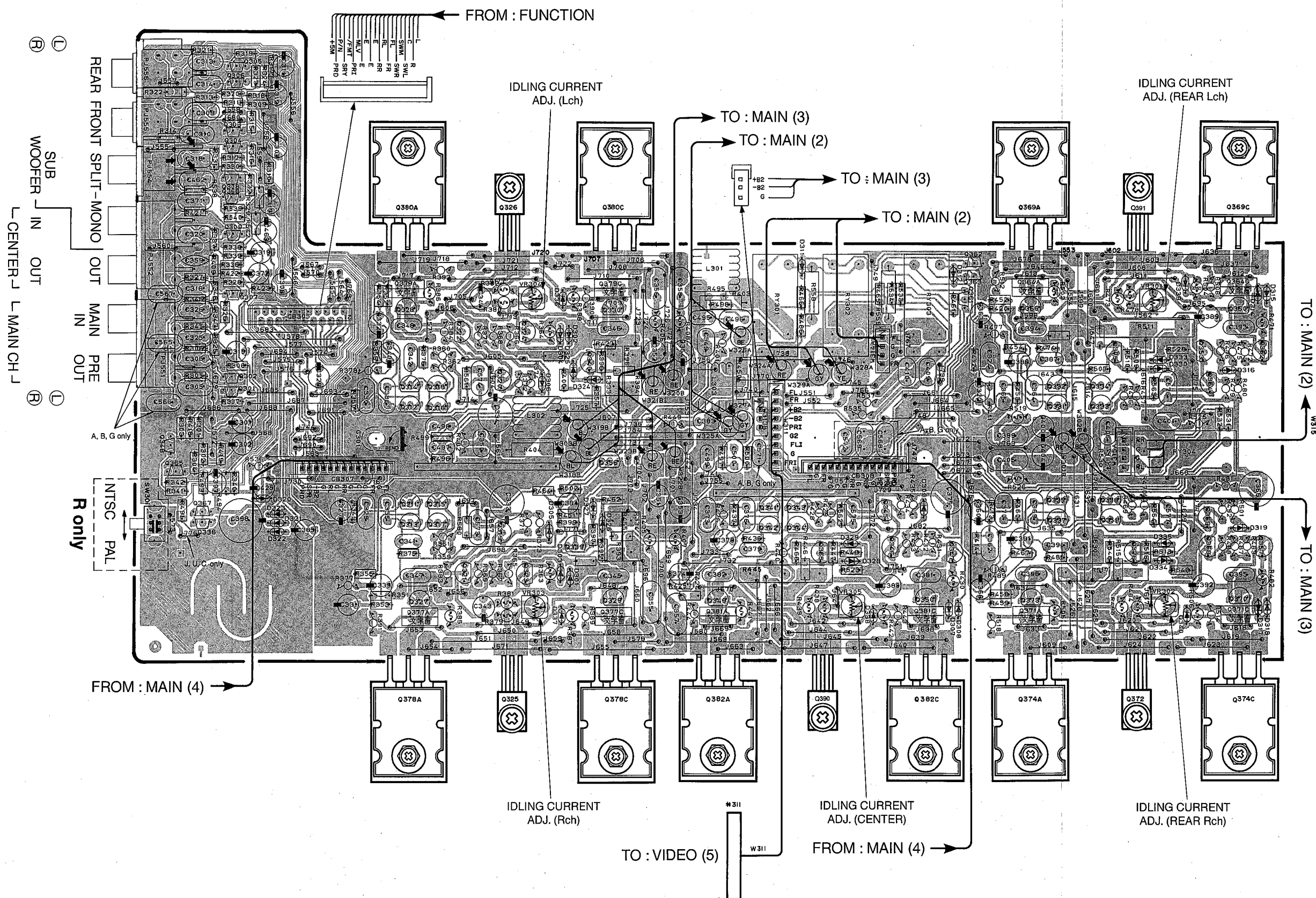
3 _____

4 _____

5 _____

6 _____

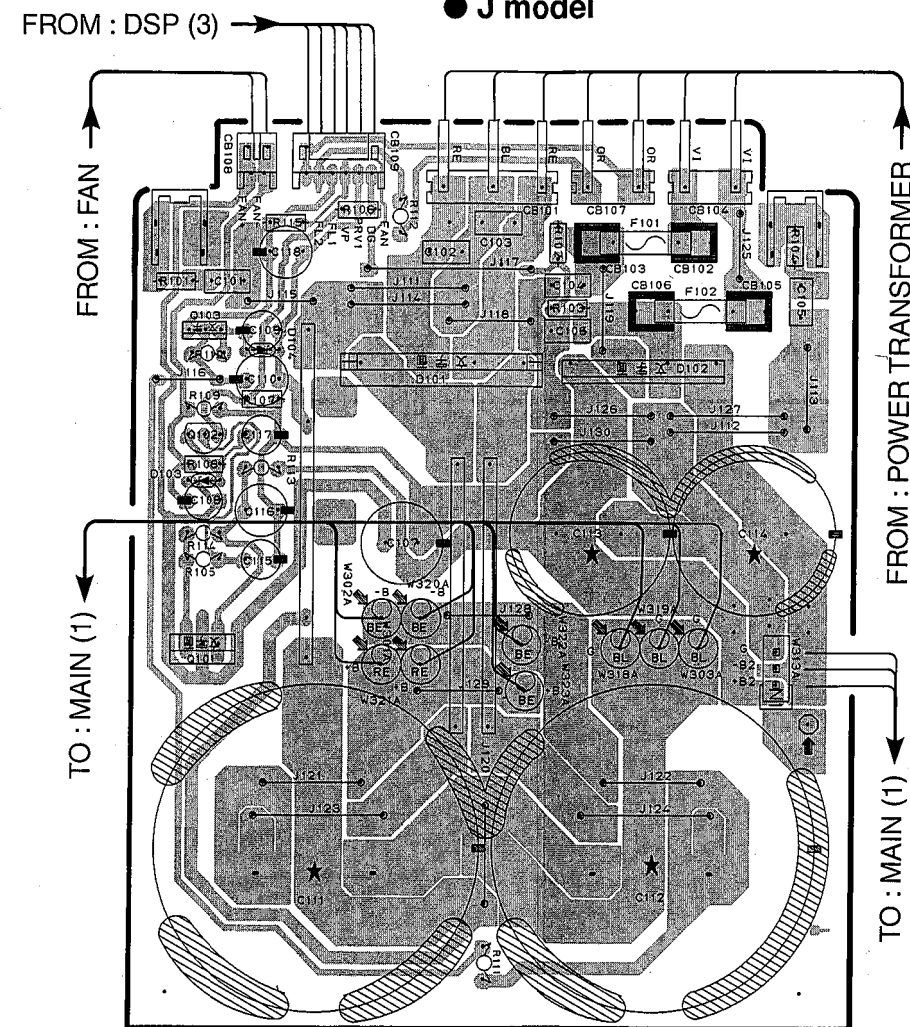
P. C. B. MAIN (1)



■PRINTED CIRCUIT BOARD (Foil side)／シート図(パターン側)

P. C. B. MAIN (3)

● J model



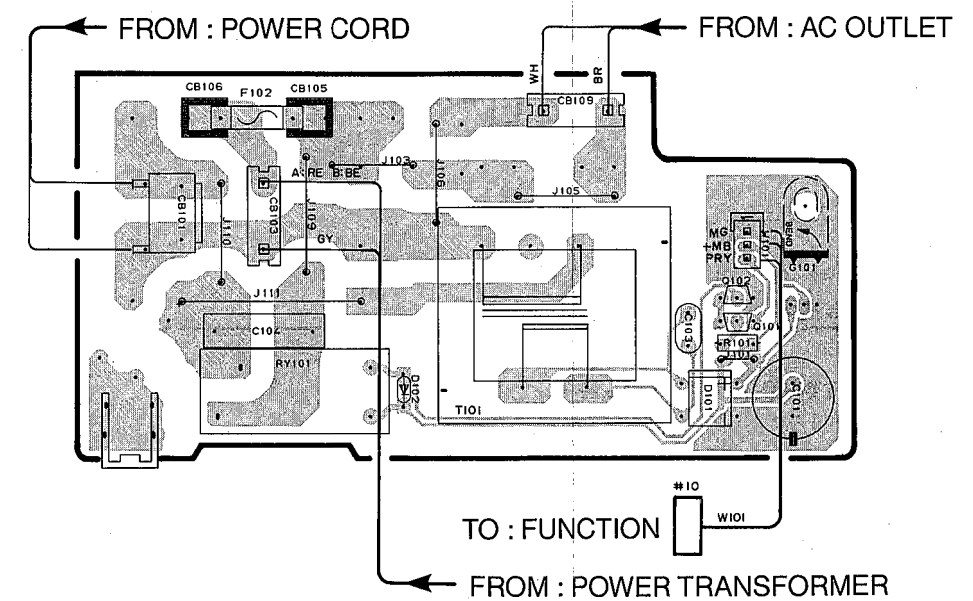
6

FROM : VIDEO (1)



6

P. C. B. VIDEO (6)

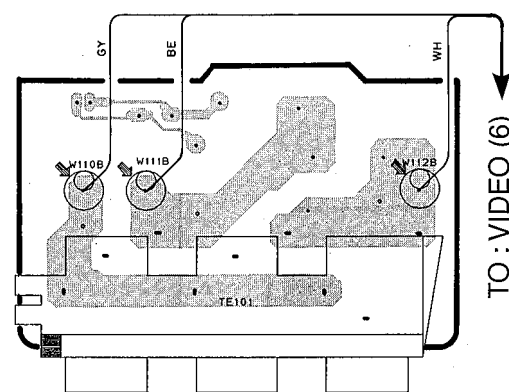


DSP-A1

PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

● J, U, C, R, T models only

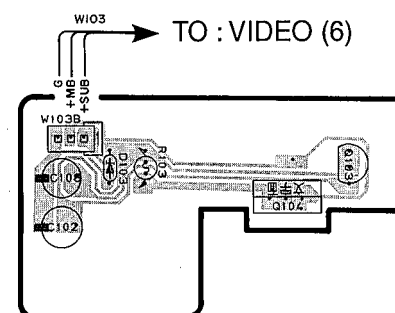
P. C. B. VIDEO (7)



AC OUTLETS

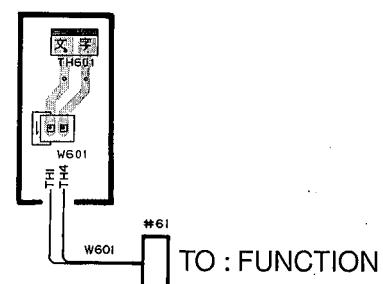
● R, T models only

P. C. B. VIDEO (8)



TO : VIDEO (6)

P. C. B. VIDEO (9)



TO : FUNCTION

PIN CONNECTION DIAGRAM / 半導体外形図

ICs

AN78N05 1: INPUT 2: COMMON 3: OUTPUT	NJM79M05FA NJM79M15FA 1: COMMON 2: INPUT 3: OUTPUT	NJM78M15FA 1: OUTPUT 2: COMMON 3: INPUT	PQ05RF1 1: VIN 2: VO 3: GND 4: VC	NJM2068L-D NJM4556AL	μPC4570HA	LB1641
MC14576CP MC14577CP	TC74HC04AP	LC7824 μPD4051BC μPD4053BC	M35013-076SP	LC7535	TC9162AN TC9273N-004	
LC78211 LC78213	HD6473257P10	AK5391-VS UM61256FS-15Q	LC75710NE	PM4007A YSS249		
NJM2068MD-T1 NJM2904M-T1 NJM2904G-T1 μPC4570G2	TC74HC00AF TC74HC02AF-TP1 TC74HC04AF-TP1 μPC4574G2	M5M51008BFP-55 MSM27C131ZB	HD64F3337YF16	YSS214		
TC4052BF TC74HC151AF TC74HC153AF TC74HC157AF	AK4324-VF	YM3436DK				

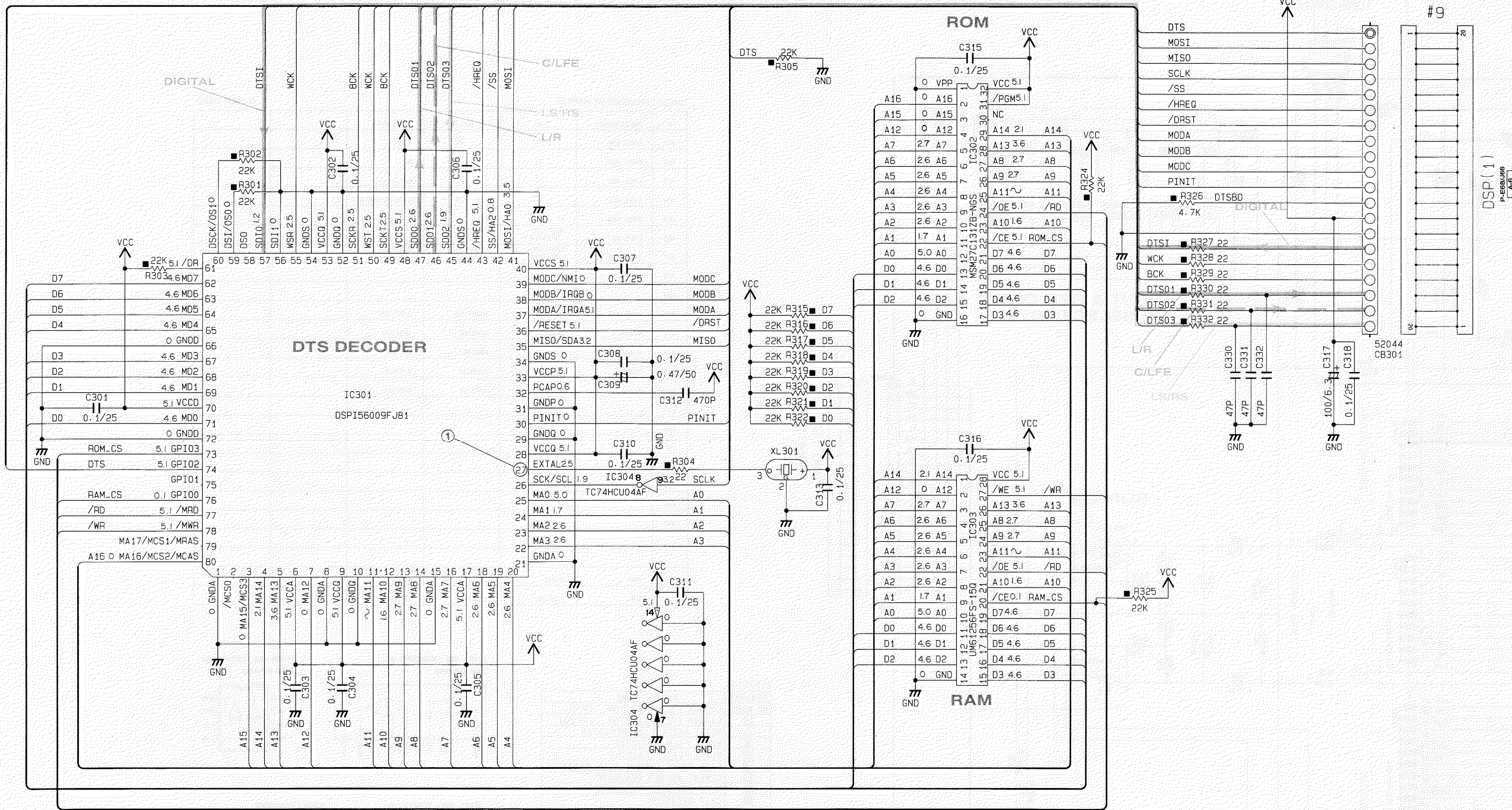
Transistors

2SA933S (Q, R) 2SC1740S (R, S) 2SC2603 (E, F) 2SD1915F (S, T) DTC114ES DTC143XS DTC144ES	2SA1037K (Q, R, S) 2SC2412K (Q, R, S) 2SC3326 (A, B) DTA143ES DTA144EK	2SA970 (GR, BL) 2SA1015 (Y) 2SC535 (A, B, C) 2SC1145 (O, Y) 2SC1815 (Y) 2SC2240 (GR, BL) 2SC2705 (O, Y) 2SC2878 (A, B)	2SK246 (Y)
2SA1708 (S, T) 2SC4488 (S, T)	2SC1846 (S)	2SA1837 2SB1375 2SC4793 2SD2396 (J, K)	2SA1694 (O, P, Y) 2SC4467 (O, P, Y)
			2SA1943 (O, R) 2SC5200 (O, R)

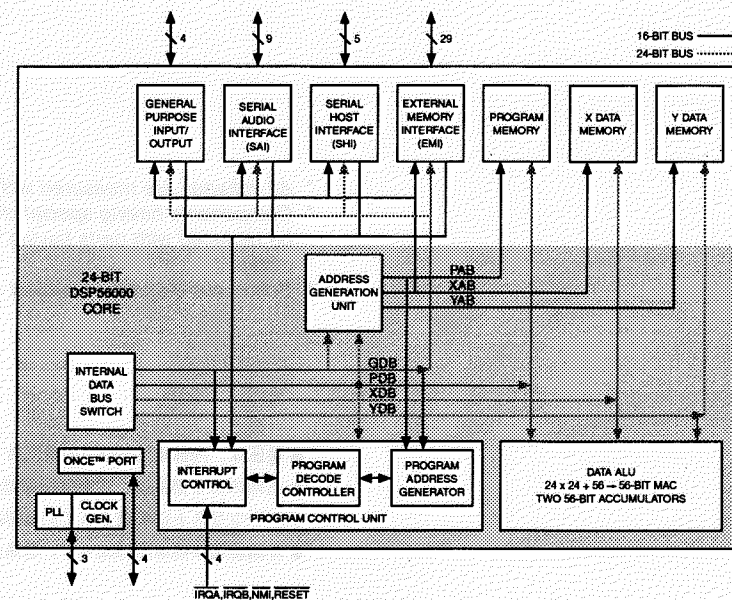
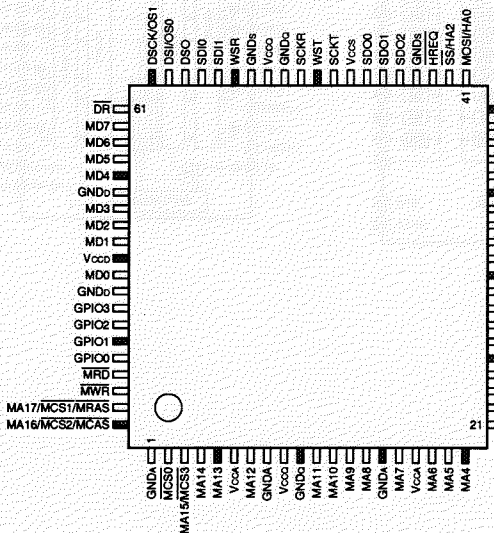
Diodes

1SR139-400 1SS133 1SS270A AK04 MA185	MTZJ2.0B MTZJ5.1B MTZJ6.8B MTZJ11.0B MTZJ12.0C MTZJ15.0B MTZJ27.0B MTZJ30.0D RB441Q-40	1SS355 UDZ4.7BTE-17 UDZ5.1BTE-17 UDZS6.8BTE-17	KV1851-TL	S1NB20	D3SBA20 D15XB20 RBA-406B

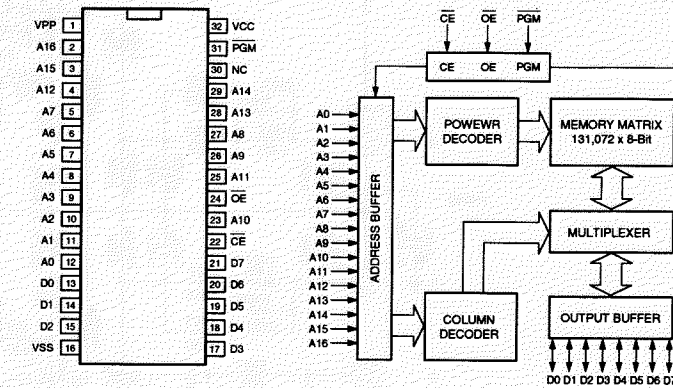
SCHEMATIC DIAGRAM (DSP-2)／総回路図



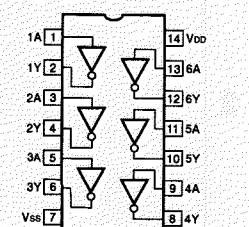
IC301 : DSP156009FJ81
DTS Decoder



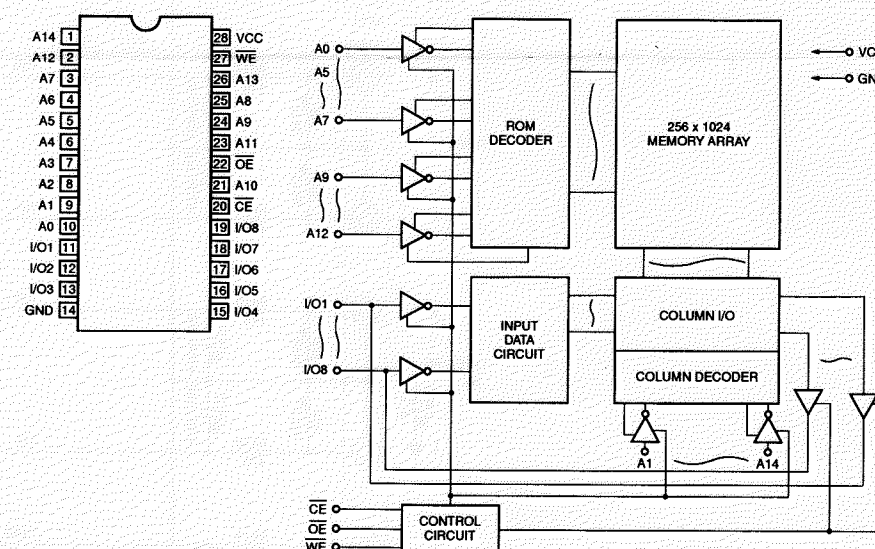
IC302 : MSM27C1312B
131,072-word x 8bit One Time PROM



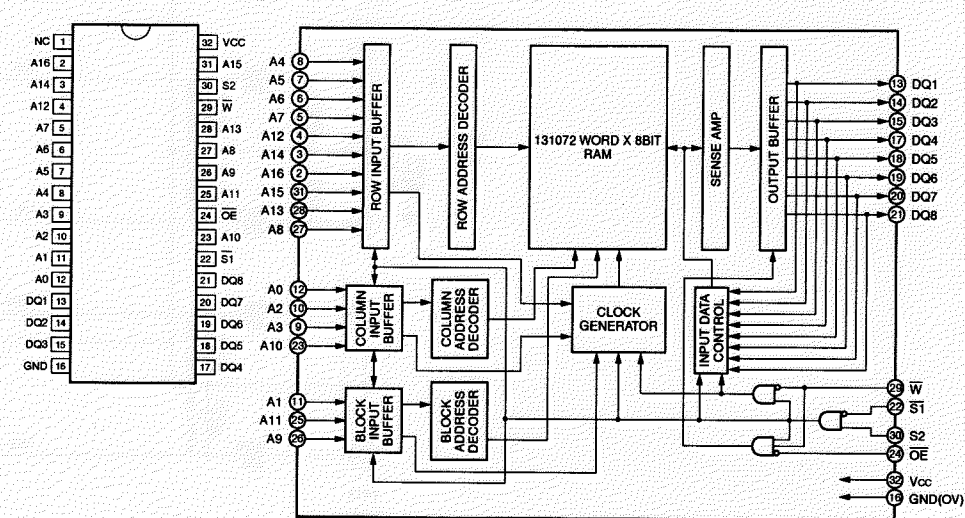
IC304 : TC74HCU04AF
Hex Inverters



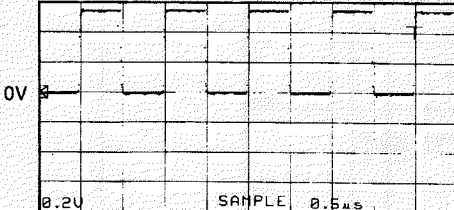
IC7, 303 : UM61256FS-15Q
32K X 8 High Speed Static RAM



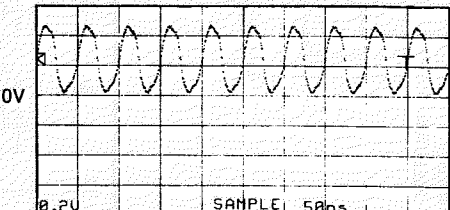
IC3, 4, 37 : M5M51008BFP-55
131,072-word x 8bit Static RAM



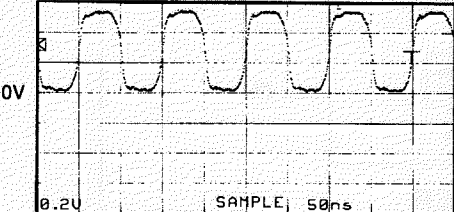
Point ① (Pin27 of IC301)
V : 0.2V/div H : 0.5 μsec/div
DC range 1 : 1 probe



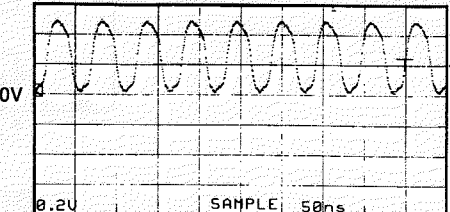
Point ② (Pin9 of IC1)
V : 0.2V/div H : 0.5 nsec/div
DC range 1 : 1 probe



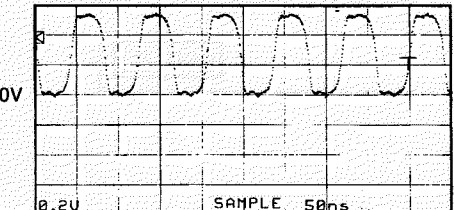
Point ③ (Pin9 of IC5)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ④ (Pin56 of IC6)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



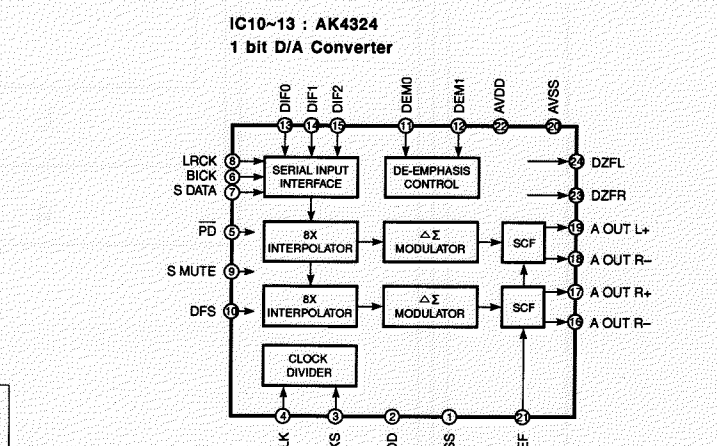
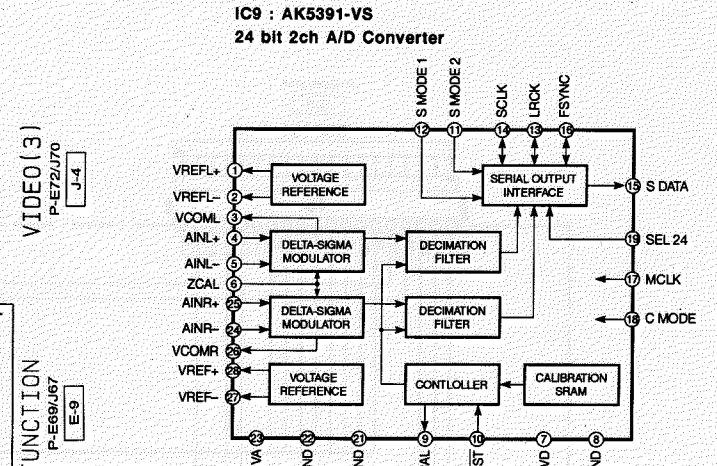
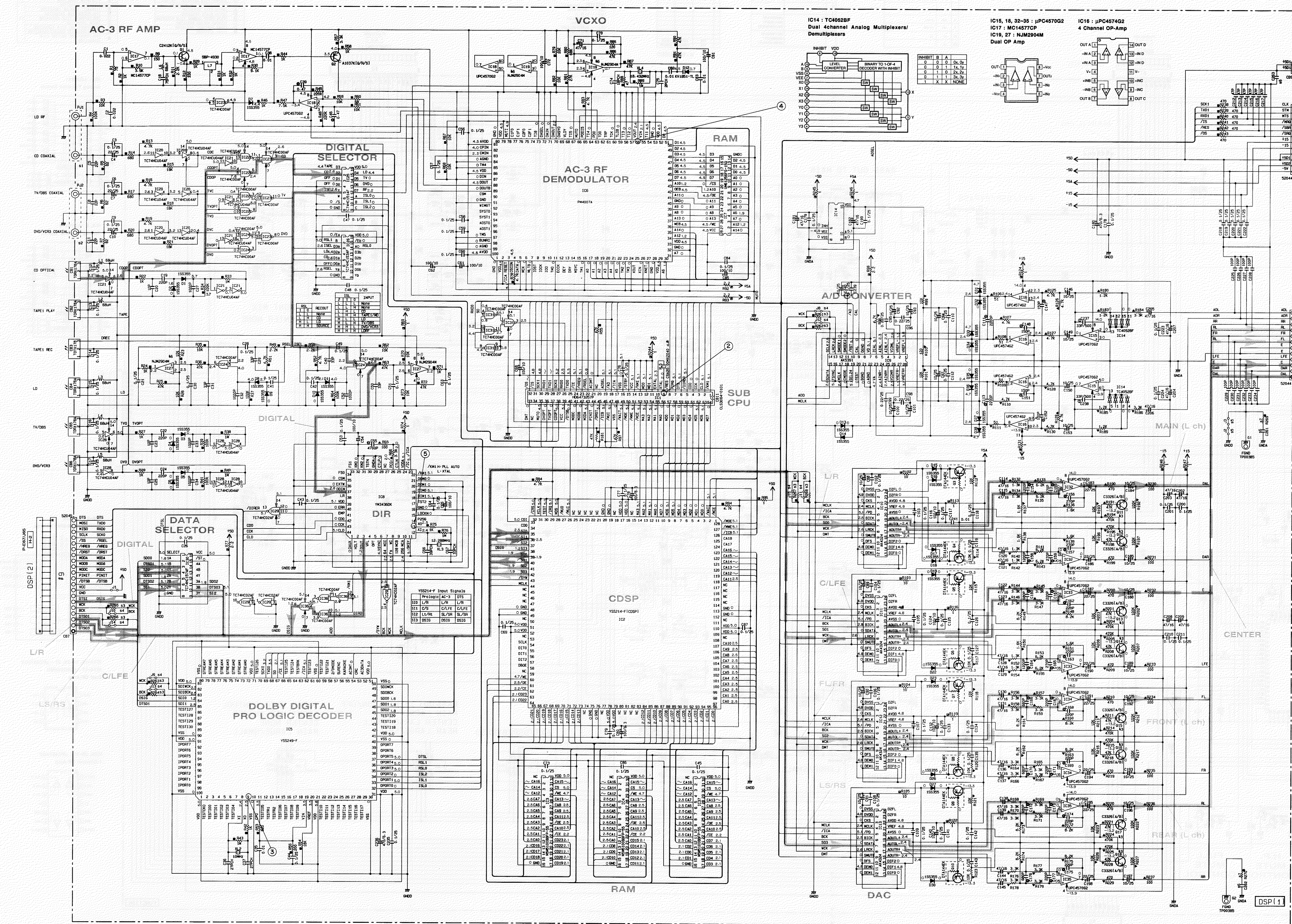
Point ⑤ (Pin13 of IC8)
V : 0.2V/div H : 50 nsec/div
DC range 1 : 1 probe



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

● 電圧は、内部抵抗10MΩの電圧計で測定したものです。
● △印のある部品は、安全性確保部品を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
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■SCHEMATIC DIAGRAM (DSP-1)／総回路図



RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P-5)
△	CARBON FILM RESISTOR (P-10)
△	METAL FILM RESISTOR
△	METAL FILM RESISTOR
△	METAL FILM RESISTOR
△	FIRE PROOF CARBON FILM RESISTOR
△	CEMENT MOLDED RESISTOR
△	SEMI VARIABLE RESISTOR
△	CHIP RESISTOR

CAPACITOR

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

NOTICE (model)

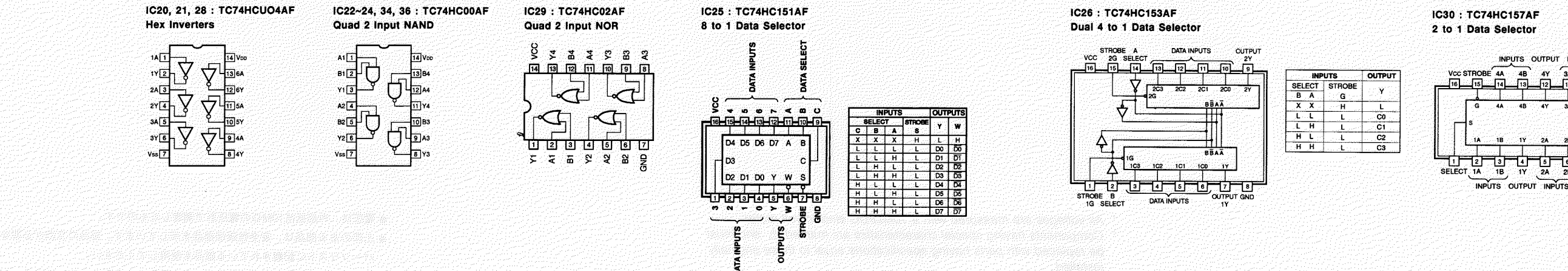
(J)..... JAPANESE
(U)..... U.S.A.
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

CIRCUIT CHANGES BY MARKET

	J	U.S.A.	C	A.B.S.
1	R11	V27630	V27630	V27630
2	P12	V27640	V27640	V27640
3	R261-268	100	100	X
4	JP-15	X	X	X
5	JP-2	X	X	X
6	C261-263	0.1/25	0.1/25	0.1/25
7	R269-270	2.2	2.2	2.2
PCB	V26160	V26170	V26170	V26180

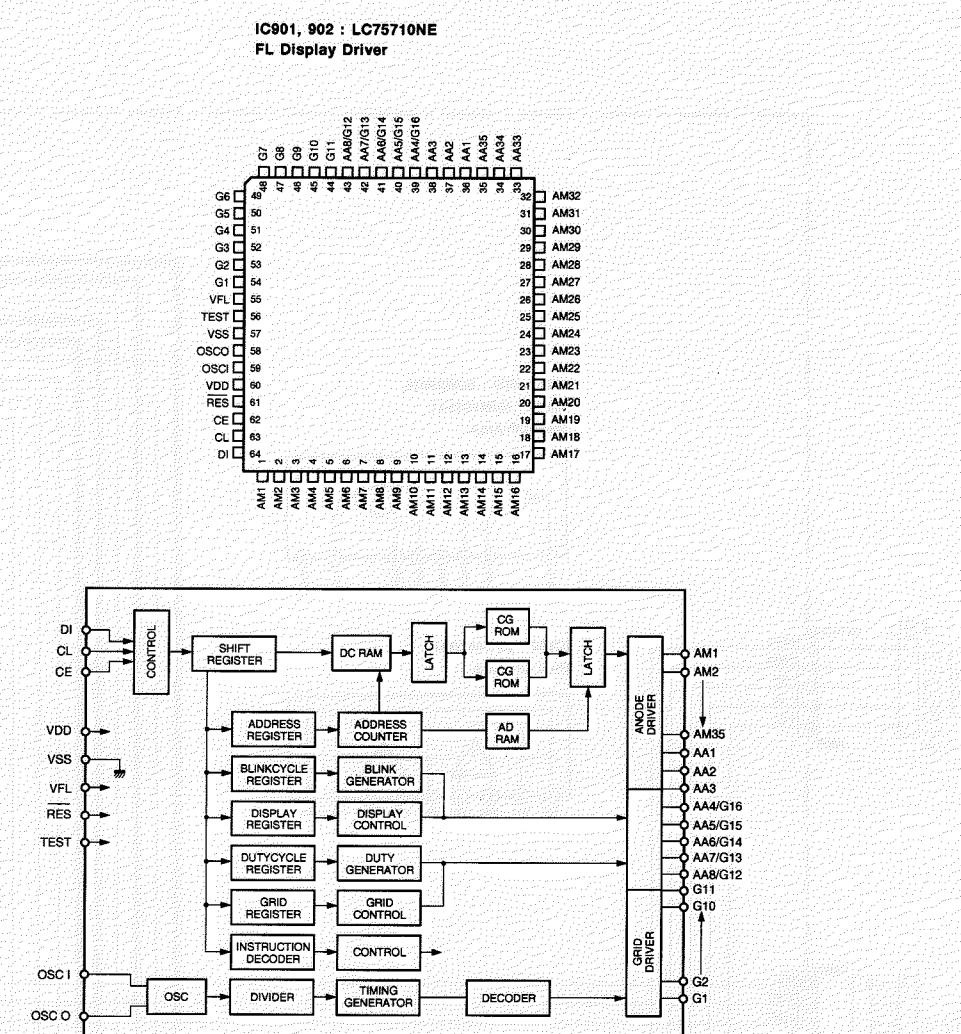
Interchangeable Parts at Manufacture Stage

Mark	Reference Parts Number	Parts Name
41		
42		
43	011-18	20C3261(A/B) 20C3261(B)
44		
45		
46	IC18-27	NR0904-11 NR0904-11
47		



● All voltages are measured with a 10MΩ/DC electric 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.

● 電圧は、内部抵抗10MΩの電圧計で測定したものです。
● △印のある部品は、安全特性確保部品を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
● 本回路図は標準回路図です。改良のため予告なく変更することがございます。



TRANS P-E72/J70 K-3

MAIN (S) P-E72/J71 K-3

TRANS P-E72/J70 K-3

9V01 9V02

SW701

SPK

A-6

DSP [61]

NOTICE (model1)
 (J)..... JAPANESE
 (U)..... U.S.A
 (C)..... CANADIAN
 (R)..... GENERAL
 (A)..... AUSTRALIAN
 (B)..... BRITISH
 (G)..... EUROPEAN
 (T)..... CHINA
 (L)..... SINGAPORE

CIRCUIT CHANGES BY MARKET.					X : NOT USED	
S	Parts Number	J	U- R- T	C	A- B- G	
701	SM701	X	X	V207550	X	
702	W701- 702	X	X	V206760	X	
703	CB701- 702	X	X	LA00239	X	
	PWG	XU338	XU338	XU338	XU338	
	PCB	V280160	V280170	V206760	V280160	

* All voltages are measured with a 10M Ω /DC electric volt meter.

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

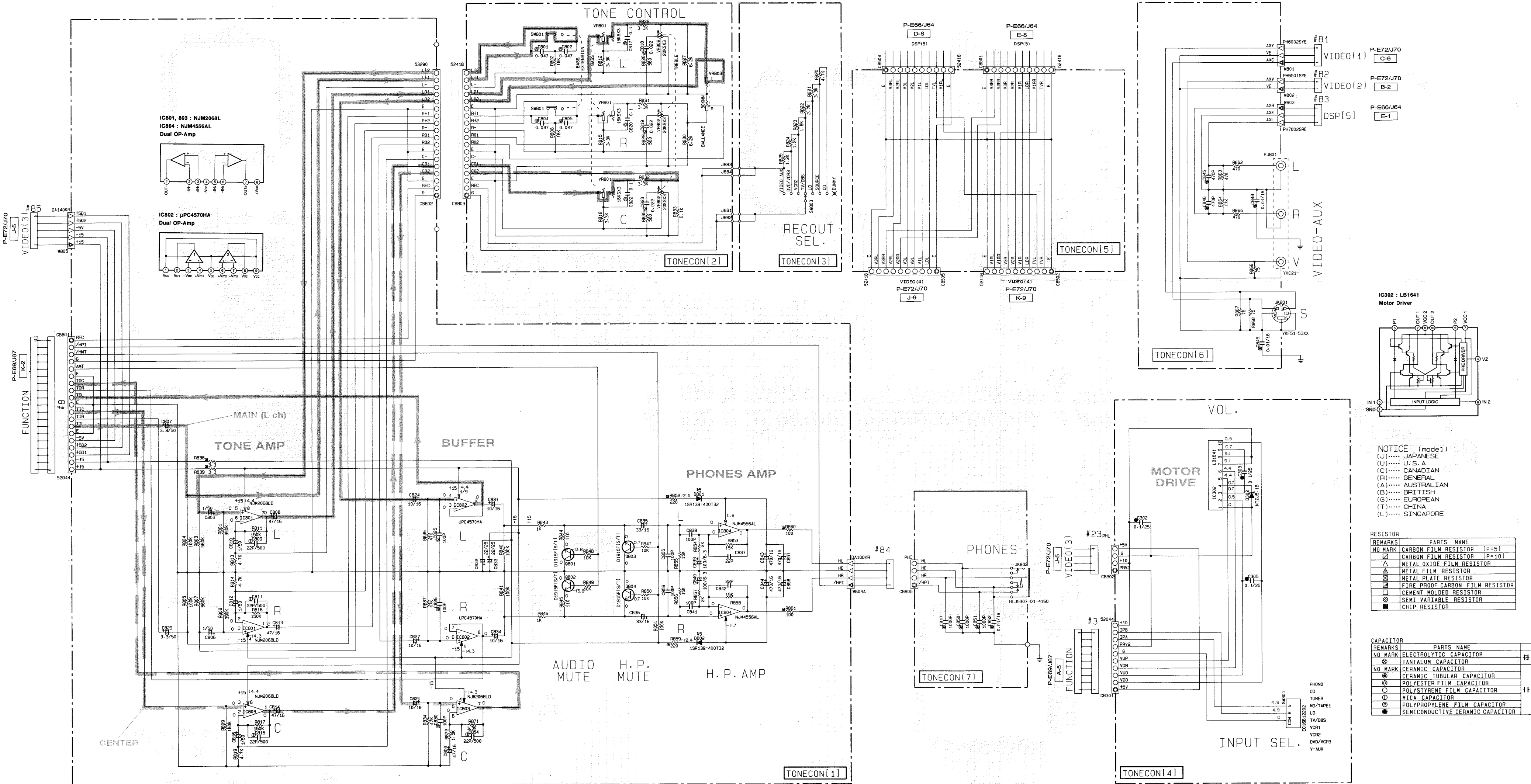
* Schematic diagram is subject to change without notice.

●電圧は、内部抵抗10M Ω の電圧計で測定したものです。

● Δ 印のある部品は、安全性確保部品を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。

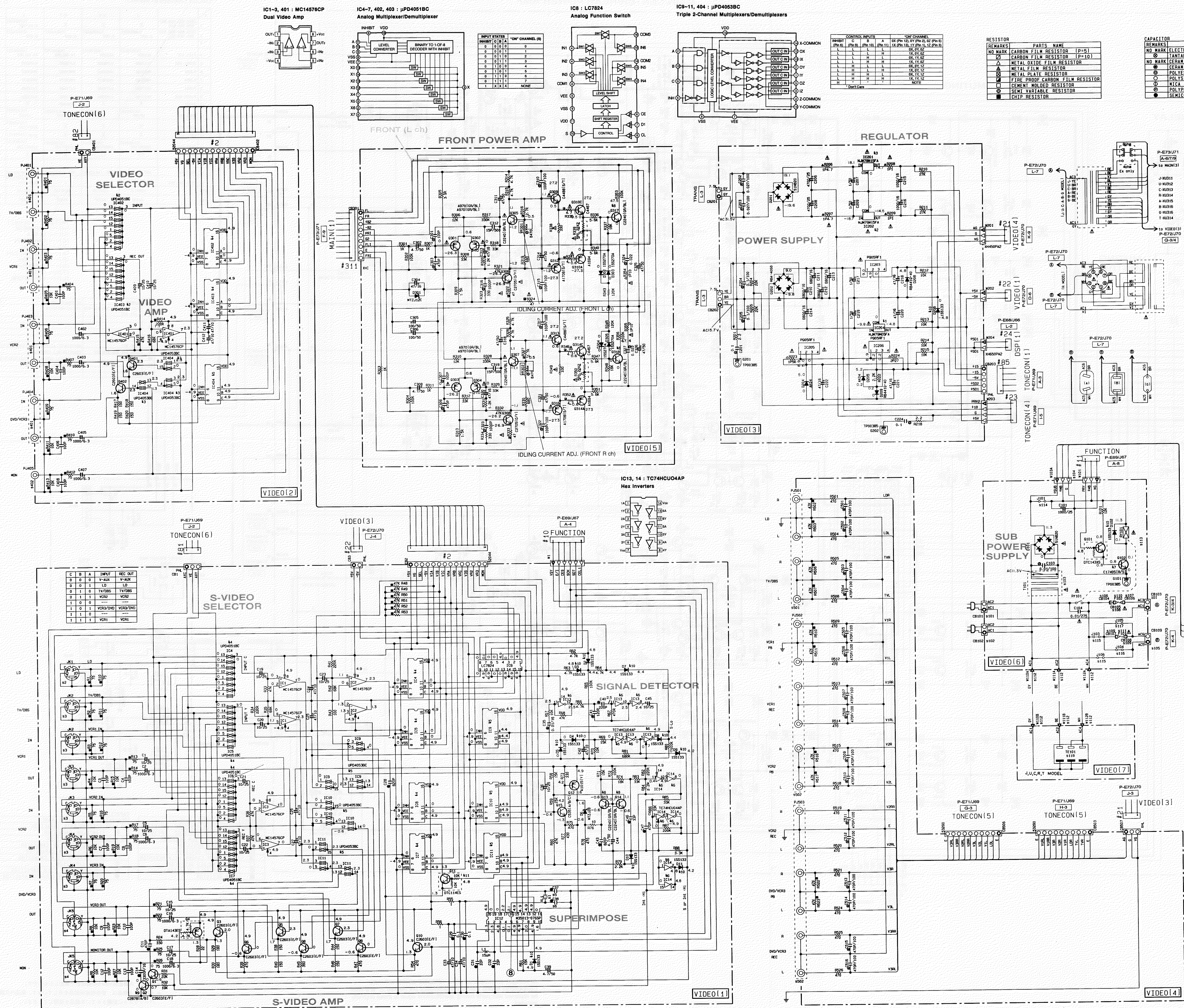
●本回路図は標準回路図です。改良のため予告なく変更することがございます。

SCHEMATIC DIAGRAM (TONE CON)／総回路図



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

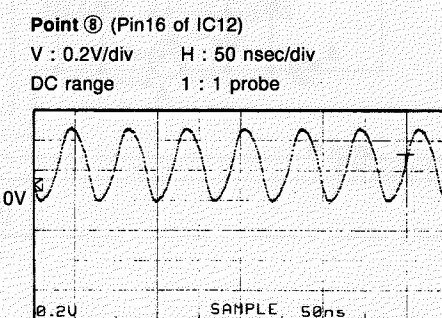
● 電圧は、内部抵抗10M Ω の電圧計で測定したものです。
● Δ 印のある部品は、安全性確保部品を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
● 本回路図は標準回路図です。改良のため予告なく変更することがございます。



RTS_NAME		NOTICE (model)
C CAPACITOR	日	(J)..... JAPANESE
ACAPACITOR		(U)..... U. S. A
ACAPACITOR		(C)..... CANADIAN
GENERAL CAPACITOR		(R)..... GENERAL
FILM CAPACITOR	日	(A)..... AUSTRALIAN
FILM CAPACITOR		(B)..... BRITISH
ATOR		(G)..... EUROPEAN
ENE FILM CAPACITOR		(T)..... CHINA
IVE CERAMIC CAPACITOR		(L)..... SINGAPORE

CIRCUIT CHANGES BY MARKET.										O : USED		
N	PNLS NUMBER	J	U	C	P, T	A	B	S				
1	XL1	V43842 V058050	V43842 V058050	V43842 V058050	V43842 V058050	V77818 VY14930	V77818 VY14930	V77818 VY14930				
2	JK1	VY96460	VY6420	VY6420	VY6420	VY6420	VY6420	VY6420				
3	J2P-4	VY11490	VY11360	VY11360	VY11360	VY11360	VY11360	VY11360				
4	C37	VY14450	VY73700	VY73700	VY73700	VY73700	VY73700	VY73700				
5	J33	20P	20P	20P	20P	2, 2P	2, 2P	2, 2P				
6	C38	15P	15P	15P	15P	3, 3P	3, 3P	3, 3P				
401	PAJ01-404	VW18340	VW15110	VW15110	VW15110	VW15110	VW15110	VW15110				
402	PAJ405	VW14420	VW13460	VW13460	VW13460	VW13460	VW13460	VW13460				
501	PAJ501	VU14460	VW72580	VW72580	VW72580	VW72580	VW72580	VW72580				
502	PAJ502-503	VU14480	VW72600	VW72600	VW72600	VW72600	VW72600	VW72600				
101	CB011	×	V587900	V587900	V587900	V587900	V587900	V587900				
102	CB012	LA00387	×	×	×	×	×	×				
103	T303	KC326	KC116	KC116	KC115	KC117	KC354	KC354				
104	W103	×	×	×	V586200	×	×	×				
105	CB109	×	×	×	LA00214	LA00214	LA00214	LA00214				
106	CB104	V595610	V595610	V595610	V595610	×	×	×				
107	CB106	V595610	V595610	V595610	V595610	VY02650	VY02650	VY02650				
108	CB105	V595610	V595610	V595610	V595610	VY02650	VY02650	VY02650				
109	CB107-108	VU23840 DA125V	VU23830 DA205V	VU23830 DA205V	VY02650	KB00718 TAL-20V	KB00718 TAL-20V	VY02650				
110	F102	×	×	×	KB00718 TAL-20V	×	×	×				
111	F101	×	×	×	V736180	×	×	×				
112	W107-112	V236360	V236360	V236360	V236360	×	×	×				
113	W121	VY95900	VY95900	VY95900	W133620	VY96900	VY96900	VY95500				
114	J101	○	○	○	×	○	○	○				
115	J103-106	×	×	×	×	×	×	×				
116	J104	×	×	×	×	292-64117	×	×				
117	J105	×	×	×	×	2502396(J-K)	×	×				
118												
119	T101	VU10790	VU10790	VU10790	VU10790	×	×	×				
120												
121	C102	×	×	×	47163	×	×	×				
122	C108	×	×	×	10718	×	×	×				
123	G103	×	×	×	W7118	×	×	×				
124	R103	×	×	×	×	×	×	×				
125	G104	×	×	×	×	×	×	×				
126	Q103	×	×	×	×	×	×	×				
127	W001	V207580	V207580	V207580	V050590	V050590	V050590	V050590				
128												
129	PNB	W1338	W1340	W1340	W1341	W1342	W1342	W1343				
130	J28	V280190	V280500	V280500	V280500	V280330	V280400	V280400				

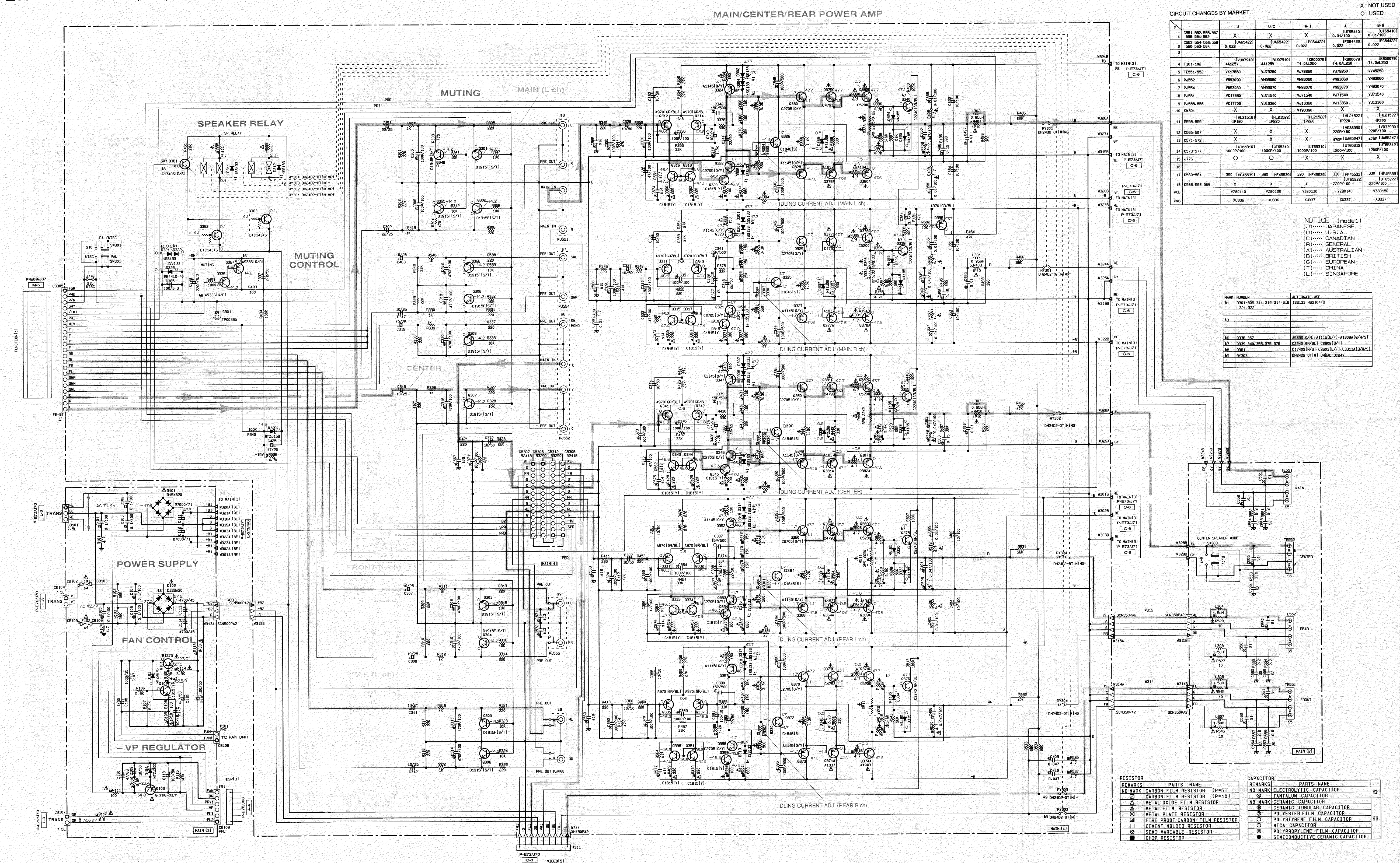
Interchangeable Parts at Manufacturer's Store		
Mark	Reference Parts Number	Part Name
81	TC004	NAL7809FA AN7809FA
82	TC002	NAL7815FA AN7815FA
83	TC001	NAL7815FA AN7815FA
84	IC4-7: 4002-4003	UPD4091HC TC4002BP
85	IC9-11: 4004	UPD4003BC TC4003BP
86	TC13-14	TC74000AP 2074AC00AN NC74AC00AN
87	91002	29C14055 (R/S) 29C2601 (L/P/S) 29C3311 (L/R/V/S)
88	D13-14: 317-318	29C2040 (R/L/V/L) 29C2040 (L/R/V/S)
89	92	29C2097 (R/L + R) 29C1915 (R/S + L)
90	D11-5: 7-11: 1002-1006	15S133 H50141
91	011	OTC14E5 UM5010



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

- 電圧は、内部抵抗10MΩの電圧計で測定したものです。
- Δ 印のある部品は、安全性能部品を示しています。部品の交換が必要な場合は必ずリストに記載されている部品を使用してください。
- 本図面は随時修正図となります。改訂の通知書/改訂通知書と必ずご確認ください。

■ SCHEMATIC DIAGRAM (MAIN) / 総回路図



- * All voltages are measured with a 10M Ω /DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

- 電圧は、内部抵抗10MΩの電圧計で測定したものです。
- 凸印のある部品は、安全性確保部品を示しています。部品の交換が必要な場合
パーツリストに記載されている部品を使用してください。
- 本回路図は標準回路図です。改良のため予告なく変更することがございます。

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

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

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the part Nos. of the carbon resistors refer to the last page.
- Chip resistors and chip metal film resistors are listed on page 91.

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-END TUNER 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. FUNCTION

Schm Ref.	PART NO.	Description		
* VZ800900	P.C.B.	FUNCTION(UCRT)		
* VZ801000	P.C.B.	FUNCTION(ABG)		
CB1	VQ047600	CN.BS. PIN	21P	
CB2	VB858500	CN.BS. PIN	6P	
CB3	VP113500	CN.BS. PIN	10P	
CB4	VM923600	CN.BS. PIN	13P	
CB5	VQ047400	CN.BS. PIN	19P	
CB6	VQ047300	CN.BS. PIN	12P	
CB7	VQ047300	CN.BS. PIN	12P	
CB8	VQ047400	CN.BS. PIN	19P	
CB9	VB858200	CN.BS. PIN	3P	
CB10	VB858700	CN.BS. PIN	8P	
CB11	VM859500	CN.BS. PIN	11P	
CB12	VM859500	CN.BS. PIN	11P	
CB13	VB858100	CN.BS. PIN	2P	
C1	UB245100	C.CE.M. CHP	0.1uF	25V
C2	Vi841400	C.EL	1000uF	6.3V
C3	UB245100	C.CE.M. CHP	0.1uF	25V
C4	UB245100	C.CE.M. CHP	0.1uF	25V
C5	UB013100	C.CE.M. CHP	1000pF	50V
C6	UB245100	C.CE.M. CHP	0.1uF	25V
C7	UB245100	C.CE.M. CHP	0.1uF	25V
C8	UB013100	C.CE.M. CHP	1000pF	50V
C9	UB245100	C.CE.M. CHP	0.1uF	25V
C10	Vi844800	C.EL	0.47uF	50V
C11	UB245100	C.CE.M. CHP	0.1uF	25V
C12	UB245100	C.CE.M. CHP	0.1uF	25V
C13	UB245100	C.CE.M. CHP	0.1uF	25V
C14	UB245100	C.CE.M. CHP	0.1uF	25V
C15	Vi845900	C.EL	10uF	63V
C16	UB245100	C.CE.M. CHP	0.1uF	25V
C17	Vi844900	C.EL	1uF	50V
C18	UB245100	C.CE.M. CHP	0.1uF	25V
C19	UB245100	C.CE.M. CHP	0.1uF	25V
C20	Vi845600	C.EL	47uF	50V
C21	VU545000	C.EL	47000uF	5.5V
C22	Vi841400	C.EL	1000uF	6.3V
C23	Vi841400	C.EL	1000uF	6.3V
C24	UB245100	C.CE.M. CHP	0.1uF	25V
C25	Vi844900	C.EL	1uF	50V
C26	Vi845000	C.EL	2.2uF	50V
C27	UB245100	C.CE.M. CHP	0.1uF	25V
C28	Vi845000	C.EL	2.2uF	50V
C107	Vi845600	C.EL	47uF	50V
C112	Vi845900	C.EL	10uF	63V
C113	Vi845900	C.EL	10uF	63V
C114	Vi845900	C.EL	10uF	63V
C115	Vi845900	C.EL	10uF	63V
C116	Vi845900	C.EL	10uF	63V
C117	Vi845900	C.EL	10uF	63V
C118	Vi845900	C.EL	10uF	63V
C119	Vi845900	C.EL	10uF	63V
C120	Vi845600	C.EL	47uF	50V

* New Parts

Schm Ref.	PART NO.	Description		
C121	Vi845600	C.EL	47uF	50V
C122	UB245100	C.CE.M. CHP	0.1uF	25V
C123	Vi845900	C.EL	10uF	63V
C124	Vi845900	C.EL	10uF	63V
C125	Vi845900	C.EL	10uF	63V
C126	Vi845900	C.EL	10uF	63V
C127	Vi845900	C.EL	10uF	63V
C128	Vi845900	C.EL	10uF	63V
C129	Vi845000	C.EL	2.2uF	50V
* C130	UP652100	C.POL	100pF	100V
* C131	UP652100	C.POL	100pF	100V
C132	Vi845000	C.EL	2.2uF	50V
C133	Vi845000	C.EL	2.2uF	50V
C134	Vi845900	C.EL	10uF	63V
* C135	UP652100	C.POL	100pF	100V
C136	Vi841800	C.EL	100uF	10V
* C137	UP652100	C.POL	100pF	100V
C138	Vi841800	C.EL	100uF	10V
C140	Vi845000	C.EL	2.2uF	50V
C141	Vi845000	C.EL	2.2uF	50V
C142	FU351220	C.MICA	22pF	500V
C143	Vi841800	C.EL	100uF	10V
C144	FU351220	C.MICA	22pF	500V
C145	Vi841800	C.EL	100uF	10V
C146	Vi845000	C.EL	2.2uF	50V
C147	Vi845000	C.EL	2.2uF	50V
C148	FU351220	C.MICA	22pF	500V
C149	Vi841800	C.EL	100uF	10V
C150	FU351220	C.MICA	22pF	500V
C151	Vi841800	C.EL	100uF	10V
C152	Vi845000	C.EL	2.2uF	50V
C153	Vi841800	C.EL	100uF	10V
C154	Vi845600	C.EL	47uF	50V
C155	Vi841800	C.EL	100uF	10V
C156	Vi841800	C.EL	100uF	10V
C157	Vi845600	C.EL	47uF	50V
C158	Vi841800	C.EL	100uF	10V
C159	Vi845900	C.EL	10uF	63V
C160	Vi845900	C.EL	10uF	63V
C161	Vi845600	C.EL	47uF	50V
C162	Vi845600	C.EL	47uF	50V
C163	Vi845900	C.EL	10uF	63V
* C164	UP652100	C.POL	100pF	100V
C165	Vi845600	C.EL	47uF	50V
C166	Vi845600	C.EL	47uF	50V
* C167	UP652100	C.POL	100pF	100V
* C168	UP654270	C.POL	0.027uF	100V
* C169	UP654270	C.POL	0.027uF	100V
C170	Vi845900	C.EL	10uF	63V
C171	Vi845900	C.EL	10uF	63V
* C172	UP654270	C.POL	0.027uF	100V
* C173	UP654270	C.POL	0.027uF	100V
* C174	UP654270	C.POL	0.027uF	100V

* New Parts

P.C.B. FUNCTION

Schm Ref.	PART NO.	Description
* C175	UP654270	C. POL 0.027uF 100V
C176	Vi844500	C. EL 0.1uF 50V
C177	Vi845900	C. EL 10uF 63V
C178	Vi845900	C. EL 10uF 63V
C179	Vi845900	C. EL 10uF 63V
C180	Vi844500	C. EL 0.1uF 50V
C181	Vi844500	C. EL 0.1uF 50V
C182	Vi845900	C. EL 10uF 63V
C183	Vi845900	C. EL 10uF 63V
C184	Vi844500	C. EL 0.1uF 50V
C185	Vi844500	C. EL 0.1uF 50V
C186	Vi845900	C. EL 10uF 63V
C187	Vi845900	C. EL 10uF 63V
C188	Vi845900	C. EL 10uF 63V
C189	Vi845900	C. EL 10uF 63V
C190	Vi844500	C. EL 0.1uF 50V
C191	Vi844500	C. EL 0.1uF 50V
C192	UB245100	C. CE. M. CHP 0.1uF 25V
C193	Vi844500	C. EL 0.1uF 50V
C194	UA652100	C. MYLAR 100pF 50V
C195	Vi844500	C. EL 0.1uF 50V
C196	UB245100	C. CE. M. CHP 0.1uF 25V
C197	Vi844500	C. EL 0.1uF 50V
C198	Vi844500	C. EL 0.1uF 50V
C199	UB245100	C. CE. M. CHP 0.1uF 25V
C200	Vi844500	C. EL 0.1uF 50V
C201	Vi845600	C. EL 47uF 50V
C202	Vi845600	C. EL 47uF 50V
C203	Vi845600	C. EL 47uF 50V
C204	Vi845600	C. EL 47uF 50V
C205	Vi845900	C. EL 10uF 63V
* C206	UP654100	C. POL 0.01uF 100V
* C207	UP654100	C. POL 0.01uF 100V
C208	Vi845900	C. EL 10uF 63V
C209	UA652100	C. MYLAR 100pF 50V
C210	UA652100	C. MYLAR 100pF 50V
C211	UA652100	C. MYLAR 100pF 50V
C212	FU451100	C. MICA 10pF 500V
* C213	UP654100	C. POL 0.01uF 100V
* C214	UP654100	C. POL 0.01uF 100V
* C215	UP654100	C. POL 0.01uF 100V
* C216	UP654100	C. POL 0.01uF 100V
C217	FU451100	C. MICA 10pF 500V
C218	UA654390	C. MYLAR 0.039uF 50V
C219	UA654330	C. MYLAR 0.033uF 50V
C220	UA654390	C. MYLAR 0.039uF 50V
C221	UA654330	C. MYLAR 0.033uF 50V
C222	UA654330	C. MYLAR 0.033uF 50V
C223	UA654390	C. MYLAR 0.039uF 50V
C226	Vi845600	C. EL 47uF 50V
C227	Vi845600	C. EL 47uF 50V
C228	Vi845600	C. EL 47uF 50V
C229	Vi845600	C. EL 47uF 50V

* New Parts

Schm Ref.	PART NO.	Description
* C230	UP652100	C. POL 100pF 100V
C231	Vi845600	C. EL 47uF 50V
C232	UA653560	C. MYLAR 5600pF 50V
C233	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C234	UA653560	C. MYLAR 5600pF 50V
C235	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C236	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C237	UA653560	C. MYLAR 5600pF 50V
C238	Vi845600	C. EL 47uF 50V
C239	Vi845600	C. EL 47uF 50V
C240	Vi845600	C. EL 47uF 50V
C241	Vi845600	C. EL 47uF 50V
C242	Vi844900	C. EL 1uF 50V
C243	Vi845900	C. EL 10uF 63V
C244	Vi845900	C. EL 10uF 63V
C245	Vi845600	C. EL 47uF 50V
C246	Vi845600	C. EL 47uF 50V
C247	Vi845900	C. EL 10uF 63V
C248	UA652100	C. MYLAR 100pF 50V
C249	UA652100	C. MYLAR 100pF 50V
C252	Vi845600	C. EL 47uF 50V
C253	Vi845600	C. EL 47uF 50V
C254	Vi844500	C. EL 0.1uF 50V
C255	Vi845900	C. EL 10uF 63V
C256	Vi845900	C. EL 10uF 63V
C257	Vi844500	C. EL 0.1uF 50V
C260	FU451100	C. MICA 10pF 500V
C261	FU451100	C. MICA 10pF 500V
C262	Vi844500	C. EL 0.1uF 50V
C263	UB245100	C. CE. M. CHP 0.1uF 25V
C264	Vi844500	C. EL 0.1uF 50V
C270	UA652100	C. MYLAR 100pF 50V
C271	UA652100	C. MYLAR 100pF 50V
D1	VT332900	DIODE 1SS355
* D2	VU172200	DIODE. ZENR UDZ 6.8BTE-17 6.8V
* D3	VU171800	DIODE. ZENR UDZ 4.7BTE-17 4.7V
D4	VT332900	DIODE 1SS355
D5	VT332900	DIODE 1SS355
D6	VT332900	DIODE 1SS355
D7	VT332900	DIODE 1SS355
D8	VT332900	DIODE 1SS355
D9	VT332900	DIODE 1SS355
D10	VT332900	DIODE 1SS355
* D11	VU171800	DIODE. ZENR UDZ 4.7BTE-17 4.7V
D12	VT332900	DIODE 1SS355
D13	VT332900	DIODE 1SS355
D101	VU171900	DIODE. ZENR UDZ 5.1BTE-17 5.1V
IC1	XU391B00	IC CPU
IC2	XA507A00	IC AN78N05
IC3	XP894A00	IC LC78211
IC4	XP896A00	IC LC78213
IC5	XP896A00	IC LC78213
IC6	XE536001	IC LC7535

* New Parts

P.C.B. FUNCTION & MAIN

Schm Ref.	PART NO.	Description
IC7	XE536001	IC LC7535
IC8	XE536001	IC LC7535
IC9	XE536001	IC LC7535
IC11	XF291A00	IC uPC4570G2
IC12	XF291A00	IC uPC4570G2
IC13	XF291A00	IC uPC4570G2
IC14	XJ553A00	IC NJM2068MD
IC15	XJ553A00	IC NJM2068MD
IC16	XJ553A00	IC NJM2068MD
IC17	XJ553A00	IC NJM2068MD
IC18	XF291A00	IC uPC4570G2
IC19	XF291A00	IC uPC4570G2
IC20	XF291A00	IC uPC4570G2
IC21	XF291A00	IC uPC4570G2
IC22	XF291A00	IC uPC4570G2
IC23	XF291A00	IC uPC4570G2
IC24	XF291A00	IC uPC4570G2
IC25	XF291A00	IC uPC4570G2
IC26	XE518A00	IC uPC4574G2
IC27	XF291A00	IC uPC4570G2
IC28	XE518A00	IC uPC4574G2
IC29	XE518A00	IC uPC4574G2
IC30	XE518A00	IC uPC4574G2
IC31	XE518A00	IC uPC4574G2
Q1	iA093320	TR 2SA933S Q, R
Q2	iC174020	TR 2SC1740S R, S
Q3	VG722000	TR. DGT DTC144ES
Q4	iA093320	TR 2SA933S Q, R
Q5	iA093320	TR 2SA933S Q, R
Q6	iA093320	TR 2SA933S Q, R
Q7	iA093320	TR 2SA933S Q, R
Q105	VK432900	TR 2SD1915F S, T
Q106	VK432900	TR 2SD1915F S, T
Q107	VK432900	TR 2SD1915F S, T
Q108	VK432900	TR 2SD1915F S, T
Q109	VK432900	TR 2SD1915F S, T
R5	HV455180	R. CAR. FP 180 Ω 1/4W
R24	HV455150	R. CAR. FP 150 Ω 1/4W
R125	HV456150	R. CAR. FP 1.5K Ω 1/4W
R128	HV453470	R. CAR. FP 4.7 Ω 1/4W
R129	HV453470	R. CAR. FP 4.7 Ω 1/4W
R234	HV453330	R. CAR. FP 3.3 Ω 1/4W
R235	HV453330	R. CAR. FP 3.3 Ω 1/4W
R236	HV453330	R. CAR. FP 3.3 Ω 1/4W
R237	HV453330	R. CAR. FP 3.3 Ω 1/4W
* VR101	VZ621400	VR. MTR RK16Y18MCL
XL1	VE222400	RSNR. CE 8MHz
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13

* New Parts

Schm Ref.	PART NO.	Description
* VZ801200	P. C. B.	MAIN(UC)
* VZ801300	P. C. B.	MAIN(RT)
* VZ801400	P. C. B.	MAIN(A)
* VZ801500	P. C. B.	MAIN(BG)
CB101	LA002400	TERM. WRAP 3P L-753B
CB102	VP206500	HOLDER. FUS EYF-52BC
CB103	VP206500	HOLDER. FUS EYF-52BC
CB104	LA002390	TERM. WRAP 2P
CB105	VP206500	HOLDER. FUS EYF-52BC
CB106	VP206500	HOLDER. FUS EYF-52BC
CB107	LA002390	TERM. WRAP 2P
CB108	VD005400	CN. BS. PIN 2P
CB109	VB858500	CN. BS. PIN 6P
* CB305	VN924200	CN. BS. PIN FE 21P TE
CB306	VQ961600	CN 13P
CB307	VQ963400	CN. BS. PIN 13P
CB308	VQ963400	CN. BS. PIN 13P
CB312	VQ961600	CN 13P
C101	Vi862200	C. POLY 0.1uF 100V
C102	Vi862200	C. POLY 0.1uF 100V
C103	Vi862200	C. POLY 0.1uF 100V
C104	Vi862200	C. POLY 0.1uF 100V
C105	Vi862200	C. POLY 0.1uF 100V
C106	Vi862200	C. POLY 0.1uF 100V
C107	VK181600	C. EL 1000uF 35V
C108	Vi844900	C. EL 1uF 50V
C109	Vi845900	C. EL 10uF 63V
C110	Vi846200	C. EL 47uF 63V
* C111	VZ726000	C. EL 27000uF 71V
* C112	VZ726000	C. EL 27000uF 71V
C113	VG875500	C. EL 4700uF 45V
C114	VG875500	C. EL 4700uF 45V
C115	Vi845200	C. EL 4.7uF 50V
C116	Vi845700	C. EL 100uF 50V
C117	Vi845900	C. EL 10uF 63V
C118	Vi845700	C. EL 100uF 50V
C301	Vi846000	C. EL 22uF 63V
C302	Vi846000	C. EL 22uF 63V
C305	UT452100	C. PP 100pF 100V
C306	UT452100	C. PP 100pF 100V
C307	Vi845900	C. EL 10uF 63V
C308	Vi845900	C. EL 10uF 63V
C309	UT452470	C. PP 470pF 100V
C310	UT452470	C. PP 470pF 100V
C311	Vi845900	C. EL 10uF 63V
C312	Vi845900	C. EL 10uF 63V
C313	UT452470	C. PP 470pF 100V
C314	UT452470	C. PP 470pF 100V
C315	Vi845900	C. EL 10uF 63V
C316	UT452470	C. PP 470pF 100V
C317	Vi845900	C. EL 10uF 63V
C318	UT452470	C. PP 470pF 100V
C319	Vi845900	C. EL 10uF 63V

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
C320	UT452470	C. PP 470pF 100V
C322	VH622100	C. EL 10uF 50V
C324	UT452100	C. PP 100pF 100V
C325	UT452100	C. PP 100pF 100V
C326	UT452100	C. PP 100pF 100V
C327	VH622100	C. EL 10uF 50V
C328	VH622100	C. EL 10uF 50V
C329	UT452100	C. PP 100pF 100V
C330	UT452100	C. PP 100pF 100V
C331	VH622100	C. EL 10uF 50V
C332	VH622100	C. EL 10uF 50V
C333	VH574800	C. EL 47uF 100V
C334	VH574800	C. EL 47uF 100V
C335	UT452100	C. PP 100pF 100V
C336	UT452100	C. PP 100pF 100V
C339	Vi841800	C. EL 100uF 10V
C340	Vi841800	C. EL 100uF 10V
C341	FU451150	C. MICA 15pF 500V
C342	FU451150	C. MICA 15pF 500V
C343	VH622200	C. EL 22uF 50V
C344	VH622200	C. EL 22uF 50V
C345	FU452100	C. MICA 100pF 500V
C346	FU452100	C. MICA 100pF 500V
C347	FU452100	C. MICA 100pF 500V
C348	FU452100	C. MICA 100pF 500V
C349	VR325300	C. MYLAR 0.047uF 100V
C350	VR325300	C. MYLAR 0.047uF 100V
C351	Vi846900	C. EL 10uF 100V
C352	Vi846900	C. EL 10uF 100V
C353	Vi846900	C. EL 10uF 100V
C354	Vi846900	C. EL 10uF 100V
C355	UT454100	C. PP 0.01uF 100V
C356	UT454100	C. PP 0.01uF 100V
C357	UT454100	C. PP 0.01uF 100V
C358	UT454100	C. PP 0.01uF 100V
C359	FG214100	C. CE 0.01uF 50V
C360	VH622100	C. EL 10uF 50V
C362	UT452100	C. PP 100pF 100V
C363	VH622100	C. EL 10uF 50V
C364	UT452100	C. PP 100pF 100V
C365	UT452100	C. PP 100pF 100V
C366	VH574800	C. EL 47uF 100V
C368	VH622100	C. EL 10uF 50V
C369	UT452100	C. PP 100pF 100V
C370	UT452100	C. PP 100pF 100V
C371	UT452100	C. PP 100pF 100V
C372	VH622100	C. EL 10uF 50V
C373	UT452100	C. PP 100pF 100V
C374	VH622100	C. EL 10uF 50V
C375	VH574800	C. EL 47uF 100V
C376	UT452100	C. PP 100pF 100V
C378	Vi841800	C. EL 100uF 10V
C379	FU451150	C. MICA 15pF 500V

* New Parts

Schm Ref.	PART NO.	Description
C380	VH622200	C. EL 22uF 50V
C381	FU452100	C. MICA 100pF 500V
C382	FU452100	C. MICA 100pF 500V
C383	VR325300	C. MYLAR 0.047uF 100V
C384	Vi845100	C. EL 3.3uF 50V
C385	Vi841800	C. EL 100uF 10V
C387	FU451150	C. MICA 15pF 500V
C388	Vi841800	C. EL 100uF 10V
C389	VH622200	C. EL 22uF 50V
C390	FU451150	C. MICA 15pF 500V
C391	Vi841800	C. EL 100uF 10V
C392	VH622200	C. EL 22uF 50V
C393	FU452100	C. MICA 100pF 500V
C394	FU452100	C. MICA 100pF 500V
C395	FU452100	C. MICA 100pF 500V
C396	FU452100	C. MICA 100pF 500V
C397	Vi845000	C. EL 2.2uF 50V
C398	VK179200	C. EL 2200uF 6.3V
C399	UT454100	C. PP 0.01uF 100V
C400	Vi846900	C. EL 10uF 100V
C401	VR325300	C. MYLAR 0.047uF 100V
C404	Vi846900	C. EL 10uF 100V
C405	UT454100	C. PP 0.01uF 100V
C406	VR325300	C. MYLAR 0.047uF 100V
C409	UA654470	C. MYLAR 0.047uF 50V
C410	UA654470	C. MYLAR 0.047uF 50V
C425	Vi845600	C. EL 47uF 50V
C462	UT452470	C. PP 470pF 100V
C463	Vi845900	C. EL 10uF 63V
C495	VE324800	C. MYLAR.ML 0.01uF 50V
C496	VE326200	C. MYLAR.ML 0.15uF 50V
C497	VE324800	C. MYLAR.ML 0.01uF 50V
C498	VE326200	C. MYLAR.ML 0.15uF 50V
C499	VE324800	C. MYLAR.ML 0.01uF 50V
C500	VE326200	C. MYLAR.ML 0.15uF 50V
C551	UT454100	C. PP 0.01uF 100V (ABG)
C552	UT454100	C. PP 0.01uF 100V (ABG)
C553	FG244220	C. CE 0.022uF 50V (RTABG)
C553	UA654220	C. MYLAR 0.022uF 50V (UC)
C554	FG244220	C. CE 0.022uF 50V (RTABG)
C554	UA654220	C. MYLAR 0.022uF 50V (UC)
C555	UT454100	C. PP 0.01uF 100V (ABG)
C556	FG244220	C. CE 0.022uF 50V (RTABG)
C556	UA654220	C. MYLAR 0.022uF 50V (UC)
C557	UT454100	C. PP 0.01uF 100V (ABG)
C558	UT454100	C. PP 0.01uF 100V (ABG)
C559	FG244220	C. CE 0.022uF 50V (RTABG)
C559	UA654220	C. MYLAR 0.022uF 50V (UC)
C560	FG244220	C. CE 0.022uF 50V (RTABG)
C560	UA654220	C. MYLAR 0.022uF 50V (UC)
C561	UT454100	C. PP 0.01uF 100V (ABG)
C562	UT454100	C. PP 0.01uF 100V (ABG)
C563	FG244220	C. CE 0.022uF 50V (RTABG)

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
C563	UA654220	C. MYLAR 0.022uF 50V(UC)
C564	FG244220	C. CE 0.022uF 50V(RTABG)
C564	UA654220	C. MYLAR 0.022uF 50V(UC)
C565	VD339900	C. PP 220pF 100V(ABG)
C566	UT452220	C. PP 220pF 100V(ABG)
C567	VD339900	C. PP 220pF 100V(ABG)
C568	UT452220	C. PP 220pF 100V(ABG)
C569	UT452220	C. PP 220pF 100V(ABG)
C571	UA652470	C. MYLAR 470pF 50V(ABG)
C572	UA652470	C. MYLAR 470pF 50V(ABG)
C573	UT453100	C. PP 1000pF 100V(UCRT)
C573	UT453120	C. PP 1200pF 100V(ABG)
C574	UT453100	C. PP 1000pF 100V(UCRT)
C574	UT453120	C. PP 1200pF 100V(ABG)
C575	UT453100	C. PP 1000pF 100V(UCRT)
C575	UT453120	C. PP 1200pF 100V(ABG)
C576	UT453100	C. PP 1000pF 100V(UCRT)
C576	UT453120	C. PP 1200pF 100V(ABG)
C577	UT453100	C. PP 1000pF 100V(UCRT)
C577	UT453120	C. PP 1200pF 100V(ABG)
C578	VF467300	C. CE. TUBLR 0.01uF 16V(ABG)
D101	V2261600	DIODE. BRG RBV1306(UC)
D101	VZ755200	DIODE. BRG D15XB20(RTABG)
D102	VN011300	DIODE. BRG D3SBA20 4A 200V
D103	VG442900	DIODE. ZENR MTZJ27B 27V
D104	VG443500	DIODE. ZENR MTZJ30D 30V
D301	iF004600	DIODE 1SS133
D302	iF004600	DIODE 1SS133
D303	iF004600	DIODE 1SS133
D304	iF004600	DIODE 1SS133
D305	iF004600	DIODE 1SS133
D306	iF004600	DIODE 1SS133
D307	iF004600	DIODE 1SS133
D308	iF004600	DIODE 1SS133
D309	iF004600	DIODE 1SS133
D311	iF004600	DIODE 1SS133
D312	iF004600	DIODE 1SS133
D314	iF004600	DIODE 1SS133
D315	iF004600	DIODE 1SS133
D316	iF004600	DIODE 1SS133
D317	iF004600	DIODE 1SS133
D318	iF004600	DIODE 1SS133
D319	iF004600	DIODE 1SS133
D320	VG440800	DIODE. ZENR MTZJ15B 15V
D321	iF004600	DIODE 1SS133
D322	iF004600	DIODE 1SS133
* D323	VU647200	DIODE. SHOT RB441Q-40 T-77
D324	VC398400	DIODE MA185
D325	VC398400	DIODE MA185
D326	VC398400	DIODE MA185
D327	VC398400	DIODE MA185
D328	VC398400	DIODE MA185
D329	VC398400	DIODE MA185

* New Parts

Schm Ref.	PART NO.	Description
D330	VC398400	DIODE MA185
D333	VC398400	DIODE MA185
D334	VC398400	DIODE MA185
D335	VC398400	DIODE MA185
D336	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
D337	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
D338	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
D339	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
D340	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
△ F101	VT943100	FUSE 4A 250V(RTABG)
△ F101	VU079100	FUSE 4A 125A(UC)
△ F102	VT943100	FUSE 4A 250V(RTABG)
△ F102	VU079100	FUSE 4A 125A(UC)
G301	VR463400	TERM. GND D3.5 TP00385
L301	VC664100	COIL 0.95uH
L302	VC664100	COIL 0.95uH
L303	VC664100	COIL 0.95uH
* L304	VU751000	COIL 1.5uH
* L305	VU751000	COIL 1.5uH
* L306	VU751000	COIL 1.5uH
* L307	VU751000	COIL 1.5uH
PJ551	VJ715400	JACK. PIN 4P
PJ552	VN930600	JACK. PIN 4P
PJ554	VN930700	JACK. PIN 2P
PJ555	VJ133600	JACK. PIN 2P
PJ556	VJ133600	JACK. PIN 2P
△ * Q101	VS548300	TR 2SBM
△ * Q102	iC1815C0	TR 2SC1815 Y
△ * Q103	VS548300	TR 2SBM
Q301	VK432900	TR 2SD1915F S,T
Q302	VK432900	TR 2SD1915F S,T
Q303	VK432900	TR 2SD1915F S,T
Q304	VK432900	TR 2SD1915F S,T
Q305	VK432900	TR 2SD1915F S,T
Q306	VK432900	TR 2SD1915F S,T
Q307	VK432900	TR 2SD1915F S,T
Q308	VK432900	TR 2SD1915F S,T
Q309	VK432900	TR 2SD1915F S,T
Q311	iA097000	TR 2SA970 GR,BL
Q312	iA097000	TR 2SA970 GR,BL
Q313	iA097000	TR 2SA970 GR,BL
Q314	iA097000	TR 2SA970 GR,BL
Q315	iC1815C0	TR 2SC1815 Y
Q316	iC1815C0	TR 2SC1815 Y
Q317	iC1815C0	TR 2SC1815 Y
Q318	iC1815C0	TR 2SC1815 Y
Q319	iC1815C0	TR 2SC1815 Y
Q320	iC1815C0	TR 2SC1815 Y
Q321	VE198800	TR 2SC2705 O,Y
Q322	VE198800	TR 2SC2705 O,Y
Q323	VE198700	TR 2SA1145 O,Y
Q324	VE198700	TR 2SA1145 O,Y
# Q325	VC398100	TR 2SC1846 S

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
# Q326	VC398100	TR 2SC1846 S
Q327	VE198700	TR 2SA1145 O, Y
Q328	VE198700	TR 2SA1145 O, Y
Q329	VE198800	TR 2SC2705 O, Y
Q330	VE198800	TR 2SC2705 O, Y
Q331	iA097000	TR 2SA970 GR, BL
Q332	iA097000	TR 2SA970 GR, BL
Q333	iC1815C0	TR 2SC1815 Y
Q334	iC1815C0	TR 2SC1815 Y
Q335	iA097000	TR 2SA970 GR, BL
Q336	iA093320	TR 2SA933S Q, R
Q337	iA097000	TR 2SA970 GR, BL
Q338	iC1815C0	TR 2SC1815 Y
Q339	iC224030	TR 2SC2240 GR, BL
Q340	iC224030	TR 2SC2240 GR, BL
Q341	iA097000	TR 2SA970 GR, BL
Q342	iA097000	TR 2SA970 GR, BL
Q343	iC1815C0	TR 2SC1815 Y
Q344	iC1815C0	TR 2SC1815 Y
Q345	iC1815C0	TR 2SC1815 Y
Q346	VE198800	TR 2SC2705 O, Y
Q347	VE198700	TR 2SA1145 O, Y
Q348	VK432900	TR 2SD1915F S, T
Q349	VE198700	TR 2SA1145 O, Y
Q350	VE198800	TR 2SC2705 O, Y
Q351	iC1815C0	TR 2SC1815 Y
Q352	VE198700	TR 2SA1145 O, Y
Q353	VE198800	TR 2SC2705 O, Y
Q354	iC1815C0	TR 2SC1815 Y
Q355	iC224030	TR 2SC2240 GR, BL
Q356	iA097000	TR 2SA970 GR, BL
Q357	VE198700	TR 2SA1145 O, Y
Q358	VE198800	TR 2SC2705 O, Y
Q359	iC1815C0	TR 2SC1815 Y
Q360	VE198800	TR 2SC2705 O, Y
Q361	iC174020	TR 2SC1740S R, S
Q362	VD488500	TR. DGT DTC143XS
Q363	VD488500	TR. DGT DTC143XS
△ Q364A	iX632610	TR 2SA1837 O, Y
△ Q364C	iX632620	TR 2SC4793 O, Y
Q365	VK432900	TR 2SD1915F S, T
Q366	VE198700	TR 2SA1145 O, Y
Q367	iA093320	TR 2SA933S Q, R
Q368	VK432900	TR 2SD1915F S, T
△ # Q369A	iX637430	TR 2SA1943 O, R
△ # Q369C	iX637440	TR 2SC5200 O, R
Q370	VE198800	TR 2SC2705 O, Y
△ # Q371A	iX632610	TR 2SA1837 O, Y
△ # Q371C	iX632620	TR 2SC4793 O, Y
# Q372	VC398100	TR 2SC1846 S
Q373	VE198700	TR 2SA1145 O, Y
△ # Q374A	iX637430	TR 2SA1943 O, R
△ # Q374C	iX637440	TR 2SC5200 O, R

* New Parts

Schm Ref.	PART NO.	Description
Q375	iC224030	TR 2SC2240 GR, BL
Q376	iC224030	TR 2SC2240 GR, BL
△ Q377A	iX632610	TR 2SA1837 O, Y
△ Q377C	iX632620	TR 2SC4793 O, Y
△ # Q378A	iX637430	TR 2SA1943 O, R
△ # Q378C	iX637440	TR 2SC5200 O, R
△ Q379A	iX632610	TR 2SA1837 O, Y
△ Q379C	iX632620	TR 2SC4793 O, Y
△ # Q380A	iX637430	TR 2SA1943 O, R
△ # Q380C	iX637440	TR 2SC5200 O, R
△ Q381A	iX632610	TR 2SA1837 O, Y
△ Q381C	iX632620	TR 2SC4793 O, Y
△ # Q382A	iX637430	TR 2SA1943 O, R
△ # Q382C	iX637440	TR 2SC5200 O, R
# Q390	VC398100	TR 2SC1846 S
# Q391	VC398100	TR 2SC1846 S
△ R105	HV456470	R. CAR. FP 4.7KΩ 1/4W
△ R109	HL314100	R. MIL. OXD 10Ω 1W
R110	HV456820	R. CAR. FP 8.2KΩ 1/4W
△ R111	HV455100	R. CAR. FP 100Ω 1/4W
△ R112	HV453220	R. CAR. FP 2.2Ω 1/4W
△ R113	HL314330	R. MIL. OXD 33Ω 1W
△ R114	HV456330	R. CAR. FP 3.3KΩ 1/4W
△ R333	HZ003050	R. WW 0.22Ω 5W
△ R334	HZ003050	R. WW 0.22Ω 5W
△ R359	HV455220	R. CAR. FP 220Ω 1/4W
△ R360	HV455220	R. CAR. FP 220Ω 1/4W
△ R361	HV455220	R. CAR. FP 220Ω 1/4W
△ R362	HV455220	R. CAR. FP 220Ω 1/4W
△ R363	VK188000	R. FUS 150Ω 1/4W
△ R364	VK188000	R. FUS 150Ω 1/4W
R365	HV457150	R. CAR. FP 15KΩ 1/4W
R366	HV457150	R. CAR. FP 15KΩ 1/4W
R367	HV457150	R. CAR. FP 15KΩ 1/4W
R368	HV457150	R. CAR. FP 15KΩ 1/4W
R369	HV457150	R. CAR. FP 15KΩ 1/4W
R370	HV457150	R. CAR. FP 15KΩ 1/4W
△ R371	HV455100	R. CAR. FP 100Ω 1/4W
△ R372	HV455100	R. CAR. FP 100Ω 1/4W
△ R373	HV455680	R. CAR. FP 680Ω 1/4W
△ R374	HV455680	R. CAR. FP 680Ω 1/4W
△ R379	VK189500	R. FUS 3.3KΩ 1/4W
△ R380	VK189500	R. FUS 3.3KΩ 1/4W
△ R381	VK188700	R. FUS 560Ω 1/4W
△ R382	VK188700	R. FUS 560Ω 1/4W
△ R383	HV454470	R. CAR. FP 47Ω 1/4W
△ R384	HV454470	R. CAR. FP 47Ω 1/4W
△ R385	VK189100	R. FUS 1.2KΩ 1/4W
△ R386	VK189100	R. FUS 1.2KΩ 1/4W
△ R387	VK188400	R. FUS 330Ω 1/4W
△ R388	VK188400	R. FUS 330Ω 1/4W
△ R389	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R390	HV453470	R. CAR. FP 4.7Ω 1/4W

* New Parts

P.C.B. MAIN & DSP

Schm Ref.	PART NO.	Description
△ R391	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R392	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R393	HZ003050	R. WW 0.22Ω 5W
△ R394	HZ003050	R. WW 0.22Ω 5W
△ R401	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R402	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R403	HL314100	R. MIL. OXD 10Ω 1W
△ R404	HL314100	R. MIL. OXD 10Ω 1W
△ R405	VE009700	R. FUS 4.7Ω 1/4W
△ R406	VE009700	R. FUS 4.7Ω 1/4W
△ R407	VE009700	R. FUS 4.7Ω 1/4W
△ R408	VE009700	R. FUS 4.7Ω 1/4W
△ R428	HV455220	R. CAR. FP 220Ω 1/4W
△ R429	HV455220	R. CAR. FP 220Ω 1/4W
△ R430	VK188000	R. FUS 150Ω 1/4W
△ R431	HV457150	R. CAR. FP 15KΩ 1/4W
△ R432	HV457150	R. CAR. FP 15KΩ 1/4W
△ R433	HV457150	R. CAR. FP 15KΩ 1/4W
△ R434	HV455100	R. CAR. FP 100Ω 1/4W
△ R435	HV455680	R. CAR. FP 680Ω 1/4W
△ R438	VK189500	R. FUS 3.3KΩ 1/4W
△ R439	VK188700	R. FUS 560Ω 1/4W
△ R440	HV454470	R. CAR. FP 47Ω 1/4W
△ R441	VK189100	R. FUS 1.2KΩ 1/4W
△ R442	VK188400	R. FUS 330Ω 1/4W
△ R443	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R444	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R445	VJ787600	R. MIL. PLAT 0.22Ω+0.22 5W
△ R449	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R450	HL314100	R. MIL. OXD 10Ω 1W
△ R456	HV455220	R. CAR. FP 220Ω 1/4W
△ R457	HV455220	R. CAR. FP 220Ω 1/4W
△ R469	HV455220	R. CAR. FP 220Ω 1/4W
△ R470	HV455220	R. CAR. FP 220Ω 1/4W
△ R471	VK188000	R. FUS 150Ω 1/4W
△ R472	HV457150	R. CAR. FP 15KΩ 1/4W
△ R473	VK189500	R. FUS 3.3KΩ 1/4W
△ R475	HV457150	R. CAR. FP 15KΩ 1/4W
△ R476	HV457150	R. CAR. FP 15KΩ 1/4W
△ R478	VK188700	R. FUS 560Ω 1/4W
△ R479	HV455100	R. CAR. FP 100Ω 1/4W
△ R480	HV455680	R. CAR. FP 680Ω 1/4W
△ R481	HV454470	R. CAR. FP 47Ω 1/4W
△ R482	VK188000	R. FUS 150Ω 1/4W
△ R483	HV457150	R. CAR. FP 15KΩ 1/4W
△ R484	VK189500	R. FUS 3.3KΩ 1/4W
△ R487	HV457150	R. CAR. FP 15KΩ 1/4W
△ R488	HV457150	R. CAR. FP 15KΩ 1/4W
△ R490	VK188700	R. FUS 560Ω 1/4W
△ R492	HV455100	R. CAR. FP 100Ω 1/4W
△ R501	HV455680	R. CAR. FP 680Ω 1/4W
△ R503	VK189100	R. FUS 1.2KΩ 1/4W
△ R504	VK188400	R. FUS 330Ω 1/4W

* New Parts

Schm Ref.	PART NO.	Description
△ R505	VK189100	R. FUS 1.2KΩ 1/4W
△ R506	VK188400	R. FUS 330Ω 1/4W
△ R508	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R511	VJ787600	R. MIL. PLAT 0.22Ω+0.22 5W
△ R512	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R514	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R517	VJ787600	R. MIL. PLAT 0.22Ω+0.22 5W
△ R518	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R519	VE009700	R. FUS 4.7Ω 1/4W
△ R520	HV454100	R. CAR. FP 10Ω 1/4W
△ R525	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R526	VE009700	R. FUS 4.7Ω 1/4W
△ R527	HV454100	R. CAR. FP 10Ω 1/4W
△ R530	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R535	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R536	HV456470	R. CAR. FP 4.7KΩ 1/4W
△ R537	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R545	HV454100	R. CAR. FP 10Ω 1/4W
△ R546	HV454100	R. CAR. FP 10Ω 1/4W
△ R558	HL315220	R. MIL. OXD 220Ω 1W
△ R559	HL315220	R. MIL. OXD 220Ω 1W
△ RY301	KC002020	RELAY DH24D2-OT/M
△ RY302	KC002020	RELAY DH24D2-OT/M
△ RY303	VK438300	RELAY DH24D2-OT/M2
△ RY304	KC002020	RELAY DH24D2-OT/M
△ SW301	VT903900	SW. SLIDE SSAA22 (RT)
△ SW303	VJ769200	SW. SLIDE ESD-2764
△ TE551	VJ792600	TERM. SP 8P (UCRTA)
△ TE551	VV452500	TERM. SP 8P (BG)
△ TE552	VJ792600	TERM. SP 8P (UCRTA)
△ TE552	VV452500	TERM. SP 8P (BG)
△ VR301	VJ692700	VR. TRIM B330Ω
△ VR302	VJ692700	VR. TRIM B330Ω
△ VR303	VJ692700	VR. TRIM B330Ω
△ VR304	VJ692700	VR. TRIM B330Ω
△ VR305	VJ692700	VR. TRIM B330Ω
* VZ681300		HEAT. SINK PWR
* BB071360		SCR. TERM 8.3x13
* VK697600		SCR. BND. HD 3x10 SP ZMC2-Y
* V2067500	P. C. B.	DSP (C)
* VZ801700	P. C. B.	DSP (URT)
* VZ801800	P. C. B.	DSP (ABG)
CB1	VT620100	L. DTCT 1P TORX178A
CB2	VT620100	L. DTCT 1P TORX178A
CB3	VT707200	L. EMIT TOTX178
CB4	VT620100	L. DTCT 1P TORX178A
CB5	VT620100	L. DTCT 1P TORX178A
CB6	VT620100	L. DTCT 1P TORX178A
CB7	VQ047500	CN. BS. PIN 20P
CB8	VN066500	CN. BS. PIN 12P

* New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
CB9	LB919020	CN. BS. PIN 2P
CB10	VN066500	CN. BS. PIN 12P
CB11	VG904000	SOCKET. IC CLC3064-0101
CB301	VQ045000	CN. BS. PIN 20P
CB401	VQ963100	CN. BS. PIN 10P
CB402	VB858200	CN. BS. PIN 3P
CB403	VQ963100	CN. BS. PIN 10P
CB404	VQ044900	CN. BS. PIN 19P
CB701	LA002000	TERM. WRAP 2P(C)
CB702	LA002000	TERM. WRAP 2P(C)
CB901	VQ044600	CN. BS. PIN 13P
CB902	VB858100	CN. BS. PIN 2P
C1	UB044220	C. CE. M. CHP 0.022uF 50V
C2	UB044220	C. CE. M. CHP 0.022uF 50V
C3	UB245100	C. CE. M. CHP 0.1uF 25V
C4	Vi846000	C. EL 22uF 63V
C5	UB051220	C. CE. M. CHP 22pF 50V
C6	UB245100	C. CE. M. CHP 0.1uF 25V
C7	Vi846000	C. EL 22uF 63V
C8	UB051220	C. CE. M. CHP 22pF 50V
C9	UB245100	C. CE. M. CHP 0.1uF 25V
C10	Vi846000	C. EL 22uF 63V
C11	UB051220	C. CE. M. CHP 22pF 50V
C12	UB245100	C. CE. M. CHP 0.1uF 25V
C13	UB245100	C. CE. M. CHP 0.1uF 25V
C14	UB245100	C. CE. M. CHP 0.1uF 25V
C15	UB245100	C. CE. M. CHP 0.1uF 25V
C16	UB245100	C. CE. M. CHP 0.1uF 25V
C17	UB245100	C. CE. M. CHP 0.1uF 25V
C18	VJ901600	C. CE. M. CHP 75pF 50V
C19	UB012220	C. CE. M. CHP 220pF 50V
C20	UB051100	C. CE. M. CHP 10pF 50V
C21	UB245100	C. CE. M. CHP 0.1uF 25V
C22	UB012220	C. CE. M. CHP 220pF 50V
C23	UB051100	C. CE. M. CHP 10pF 50V
C24	UB012220	C. CE. M. CHP 220pF 50V
C25	UB051100	C. CE. M. CHP 10pF 50V
C26	UB245100	C. CE. M. CHP 0.1uF 25V
C27	UB013100	C. CE. M. CHP 1000pF 50V
C28	UB245100	C. CE. M. CHP 0.1uF 25V
C29	UB051330	C. CE. M. CHP 33pF 50V
C30	UB245100	C. CE. M. CHP 0.1uF 25V
C31	UB051330	C. CE. M. CHP 33pF 50V
C32	UB013100	C. CE. M. CHP 1000pF 50V
C33	UB013100	C. CE. M. CHP 1000pF 50V
C34	UB013100	C. CE. M. CHP 1000pF 50V
C35	UB044100	C. CE. M. CHP 0.01uF 50V
C36	VJ900500	C. CE. M. CHP 27pF 50V
C37	VJ900500	C. CE. M. CHP 27pF 50V
C38	UB044100	C. CE. M. CHP 0.01uF 50V
C39	VR169200	C. MYLAR. ML ECQ-VIH474JL3
C40	UB051330	C. CE. M. CHP 33pF 50V
C41	UB245100	C. CE. M. CHP 0.1uF 25V

*New Parts

Schm Ref.	PART NO.	Description
C42	UB245100	C. CE. M. CHP 0.1uF 25V
C43	UB245100	C. CE. M. CHP 0.1uF 25V
C44	UB245100	C. CE. M. CHP 0.1uF 25V
C45	UB245100	C. CE. M. CHP 0.1uF 25V
C46	VR169200	C. MYLAR. ML ECQ-VIH474JL3
C47	UB245100	C. CE. M. CHP 0.1uF 25V
C48	UB245100	C. CE. M. CHP 0.1uF 25V
C49	UB245100	C. CE. M. CHP 0.1uF 25V
C50	UB051330	C. CE. M. CHP 33pF 50V
C51	UB245100	C. CE. M. CHP 0.1uF 25V
C52	UB013100	C. CE. M. CHP 1000pF 50V
C53	UB245100	C. CE. M. CHP 0.1uF 25V
C54	Vi841800	C. EL 100uF 10V
C55	UA653470	C. MYLAR 4700pF 50V
C56	UB245100	C. CE. M. CHP 0.1uF 25V
C57	UB245100	C. CE. M. CHP 0.1uF 25V
C58	UB245100	C. CE. M. CHP 0.1uF 25V
C59	UB245100	C. CE. M. CHP 0.1uF 25V
C60	UB245100	C. CE. M. CHP 0.1uF 25V
C61	Vi841800	C. EL 100uF 10V
C62	Vi841800	C. EL 100uF 10V
C63	UB245100	C. CE. M. CHP 0.1uF 25V
C64	UB245100	C. CE. M. CHP 0.1uF 25V
C65	Vi841800	C. EL 100uF 10V
C66	VJ900900	C. CE. M. CHP 39pF 50V
C67	VJ900700	C. CE. M. CHP 33pF 50V
C68	Vi841800	C. EL 100uF 10V
C69	UB245100	C. CE. M. CHP 0.1uF 25V
C70	UB245100	C. CE. M. CHP 0.1uF 25V
C71	UN837470	C. EL 47uF 16V
C72	Vi841800	C. EL 100uF 10V
C73	UB245100	C. CE. M. CHP 0.1uF 25V
C74	VJ900100	C. CE. M. CHP 18pF 50V
* C75	VJ898700	C. CE. M. CHP 2pF 50V
C76	UB245100	C. CE. M. CHP 0.1uF 25V
C77	UB245100	C. CE. M. CHP 0.1uF 25V
C78	VF760000	C. EL 100uF 10V
C79	UB245100	C. CE. M. CHP 0.1uF 25V
C80	VF760000	C. EL 100uF 10V
C81	Vi841800	C. EL 100uF 10V
C82	UB044100	C. CE. M. CHP 0.01uF 50V
C83	UB044100	C. CE. M. CHP 0.01uF 50V
C84	UB245100	C. CE. M. CHP 0.1uF 25V
C85	Vi841800	C. EL 100uF 10V
C86	UB245100	C. CE. M. CHP 0.1uF 25V
C87	UB245100	C. CE. M. CHP 0.1uF 25V
C88	Vi845900	C. EL 10uF 63V
C89	Vi845900	C. EL 10uF 63V
C90	Vi845900	C. EL 10uF 63V
C91	Vi845900	C. EL 10uF 63V
C92	Vi845900	C. EL 10uF 63V
C93	Vi845900	C. EL 10uF 63V
C94	Vi845900	C. EL 10uF 63V

*New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
C95	UB245220	C. CE. M. CHP 0.22uF 25V
C96	UB245220	C. CE. M. CHP 0.22uF 25V
C97	Vi845900	C. EL 10uF 63V
C98	UB245220	C. CE. M. CHP 0.22uF 25V
C99	UB245220	C. CE. M. CHP 0.22uF 25V
C100	Vi845900	C. EL 10uF 63V
C101	Vi845900	C. EL 10uF 63V
C102	UB245100	C. CE. M. CHP 0.1uF 25V
C103	UB245100	C. CE. M. CHP 0.1uF 25V
C104	UB245100	C. CE. M. CHP 0.1uF 25V
C105	UB245100	C. CE. M. CHP 0.1uF 25V
C106	UB245100	C. CE. M. CHP 0.1uF 25V
C107	UB245100	C. CE. M. CHP 0.1uF 25V
C108	UB245100	C. CE. M. CHP 0.1uF 25V
C109	UB245100	C. CE. M. CHP 0.1uF 25V
C110	UB245100	C. CE. M. CHP 0.1uF 25V
C111	UA653220	C. MYLAR 2200pF 50V
C112	UB245100	C. CE. M. CHP 0.1uF 25V
C113	UA653220	C. MYLAR 2200pF 50V
C114	Vi845600	C. EL 47uF 50V
C115	Vi845600	C. EL 47uF 50V
C116	Vi841800	C. EL 100uF 10V
C117	UB245100	C. CE. M. CHP 0.1uF 25V
C118	UB245100	C. CE. M. CHP 0.1uF 25V
C119	UB245100	C. CE. M. CHP 0.1uF 25V
C120	Vi845600	C. EL 47uF 50V
C121	Vi845600	C. EL 47uF 50V
C122	Vi845600	C. EL 47uF 50V
C123	Vi845600	C. EL 47uF 50V
C124	Vi841800	C. EL 100uF 10V
C125	UB245100	C. CE. M. CHP 0.1uF 25V
C126	UB245100	C. CE. M. CHP 0.1uF 25V
C127	UB245100	C. CE. M. CHP 0.1uF 25V
C128	Vi845600	C. EL 47uF 50V
C129	Vi845600	C. EL 47uF 50V
C130	Vi845600	C. EL 47uF 50V
C131	Vi845600	C. EL 47uF 50V
C132	Vi841800	C. EL 100uF 10V
C133	UB245100	C. CE. M. CHP 0.1uF 25V
C134	UB245100	C. CE. M. CHP 0.1uF 25V
C135	UB245100	C. CE. M. CHP 0.1uF 25V
C136	Vi845600	C. EL 47uF 50V
C137	Vi845600	C. EL 47uF 50V
C138	Vi845600	C. EL 47uF 50V
C139	Vi845600	C. EL 47uF 50V
C140	Vi841800	C. EL 100uF 10V
C141	UB245100	C. CE. M. CHP 0.1uF 25V
C142	UB245100	C. CE. M. CHP 0.1uF 25V
C143	UB245100	C. CE. M. CHP 0.1uF 25V
C144	Vi845600	C. EL 47uF 50V
C145	Vi845600	C. EL 47uF 50V
C146	Vi845900	C. EL 10uF 63V
C147	UA652150	C. MYLAR 150pF 50V

* New Parts

Schm Ref.	PART NO.	Description
C148	UA652150	C. MYLAR 150pF 50V
C149	Vi845900	C. EL 10uF 63V
C150	Vi845900	C. EL 10uF 63V
C151	UA652150	C. MYLAR 150pF 50V
C152	UA652150	C. MYLAR 150pF 50V
C153	Vi845900	C. EL 10uF 63V
C154	UA653120	C. MYLAR 1200pF 50V
C155	UA652270	C. MYLAR 270pF 50V
C156	UA652270	C. MYLAR 270pF 50V
C157	UA652270	C. MYLAR 270pF 50V
C158	UA653120	C. MYLAR 1200pF 50V
C159	UA652270	C. MYLAR 270pF 50V
C160	UA652680	C. MYLAR 680pF 50V
C161	UA652220	C. MYLAR 220pF 50V
C162	UA652220	C. MYLAR 220pF 50V
C163	UA652270	C. MYLAR 270pF 50V
C164	UA653120	C. MYLAR 1200pF 50V
C165	UA652270	C. MYLAR 270pF 50V
C166	UA652680	C. MYLAR 680pF 50V
C167	UA652220	C. MYLAR 220pF 50V
C168	UA652220	C. MYLAR 220pF 50V
C169	UA652220	C. MYLAR 220pF 50V
C170	UA652680	C. MYLAR 680pF 50V
C171	UA652220	C. MYLAR 220pF 50V
C172	UA652680	C. MYLAR 680pF 50V
C173	UA652220	C. MYLAR 220pF 50V
C174	UA652220	C. MYLAR 220pF 50V
C175	UA652220	C. MYLAR 220pF 50V
C176	UA652680	C. MYLAR 680pF 50V
C177	UA652220	C. MYLAR 220pF 50V
C178	UB245100	C. CE. M. CHP 0.1uF 25V
C179	UB245100	C. CE. M. CHP 0.1uF 25V
C180	Vi841300	C. EL 470uF 6.3V
C181	Vi845600	C. EL 47uF 50V
C182	Vi845600	C. EL 47uF 50V
C183	Vi846000	C. EL 22uF 63V
C184	Vi845900	C. EL 10uF 63V
C185	Vi845900	C. EL 10uF 63V
C186	Vi846000	C. EL 22uF 63V
C187	Vi846000	C. EL 22uF 63V
C188	Vi845900	C. EL 10uF 63V
C189	Vi845900	C. EL 10uF 63V
C190	Vi846000	C. EL 22uF 63V
C191	Vi846000	C. EL 22uF 63V
C192	Vi845900	C. EL 10uF 63V
C193	Vi845900	C. EL 10uF 63V
C194	Vi846000	C. EL 22uF 63V
C195	Vi846000	C. EL 22uF 63V
C196	Vi845900	C. EL 10uF 63V
C197	Vi845900	C. EL 10uF 63V
C198	Vi846000	C. EL 22uF 63V
C199	UB245100	C. CE. M. CHP 0.1uF 25V
C200	UB245100	C. CE. M. CHP 0.1uF 25V

* New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
C201	UB245100	C. CE. M. CHP 0.1uF 25V
C202	Vi845600	C. EL 47uF 50V
C203	Vi845600	C. EL 47uF 50V
C204	Vi845600	C. EL 47uF 50V
C205	Vi845600	C. EL 47uF 50V
C206	Vi845600	C. EL 47uF 50V
C207	Vi845600	C. EL 47uF 50V
C208	Vi845600	C. EL 47uF 50V
C209	Vi845600	C. EL 47uF 50V
C210	UB245100	C. CE. M. CHP 0.1uF 25V
C211	UB245100	C. CE. M. CHP 0.1uF 25V
C212	UB051470	C. CE. M. CHP 47pF 50V
C213	UB051470	C. CE. M. CHP 47pF 50V
C214	UB051470	C. CE. M. CHP 47pF 50V
C215	UB051470	C. CE. M. CHP 47pF 50V
C216	UB051470	C. CE. M. CHP 47pF 50V
C217	UB051470	C. CE. M. CHP 47pF 50V
C218	UB245100	C. CE. M. CHP 0.1uF 25V
C219	UB245100	C. CE. M. CHP 0.1uF 25V
C220	UB245100	C. CE. M. CHP 0.1uF 25V
C221	UB245100	C. CE. M. CHP 0.1uF 25V
C222	UB245100	C. CE. M. CHP 0.1uF 25V
C223	UB245100	C. CE. M. CHP 0.1uF 25V
C224	UB245100	C. CE. M. CHP 0.1uF 25V
C225	UB052100	C. CE. M. CHP 100pF 50V
C226	UB052100	C. CE. M. CHP 100pF 50V
C227	UB052100	C. CE. M. CHP 100pF 50V
C228	UB052100	C. CE. M. CHP 100pF 50V
C229	UB052100	C. CE. M. CHP 100pF 50V
C230	UB052100	C. CE. M. CHP 100pF 50V
C231	UB052100	C. CE. M. CHP 100pF 50V
C232	UB052100	C. CE. M. CHP 100pF 50V
C233	UB052100	C. CE. M. CHP 100pF 50V
C234	UB052100	C. CE. M. CHP 100pF 50V
C235	UB245100	C. CE. M. CHP 0.1uF 25V
C236	Vi841300	C. EL 470uF 6.3V
C237	FU451330	C. MICA 33pF 500V
C238	FU451330	C. MICA 33pF 500V
C239	UB245100	C. CE. M. CHP 0.1uF 25V
C240	Vi845900	C. EL 10uF 63V
C241	UB044100	C. CE. M. CHP 0.01uF 50V
C261	UB245100	C. CE. M. CHP 0.1uF 25V (URTC)
C262	UB245100	C. CE. M. CHP 0.1uF 25V (URTC)
C263	UB245100	C. CE. M. CHP 0.1uF 25V (URTC)
C301	UB245100	C. CE. M. CHP 0.1uF 25V
C302	UB245100	C. CE. M. CHP 0.1uF 25V
C303	UB245100	C. CE. M. CHP 0.1uF 25V
C304	UB245100	C. CE. M. CHP 0.1uF 25V
C305	UB245100	C. CE. M. CHP 0.1uF 25V
C306	UB245100	C. CE. M. CHP 0.1uF 25V
C307	UB245100	C. CE. M. CHP 0.1uF 25V
C308	UB245100	C. CE. M. CHP 0.1uF 25V
C309	VJ839000	C. EL 0.47uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C310	UB245100	C. CE. M. CHP 0.1uF 25V
C311	UB245100	C. CE. M. CHP 0.1uF 25V
C312	UB012470	C. CE. M. CHP 470pF 50V
C313	UB245100	C. CE. M. CHP 0.1uF 25V
C315	UB245100	C. CE. M. CHP 0.1uF 25V
C316	UB245100	C. CE. M. CHP 0.1uF 25V
C317	VF760000	C. EL 100uF 10V
C318	UB245100	C. CE. M. CHP 0.1uF 25V
C330	UB051470	C. CE. M. CHP 47pF 50V
C331	UB051470	C. CE. M. CHP 47pF 50V
C332	UB051470	C. CE. M. CHP 47pF 50V
C401	VD930900	C. CE. SMI 0.1uF 25V
C402	VH053100	C. CE. TUBLR 0.1uF 50V
C403	VH053100	C. CE. TUBLR 0.1uF 50V
C404	Vi844900	C. EL 1uF 50V
* C405	UP652100	C. POL 100pF 100V (URTC)
* C406	UP652220	C. POL 220pF 100V (URTC)
* C406	UP652390	C. POL 390pF 100V (ABG)
* C407	UP652100	C. POL 100pF 100V (URTC)
* C408	UP652220	C. POL 220pF 100V (URTC)
* C408	UP652390	C. POL 390pF 100V (ABG)
C409	Vi844900	C. EL 1uF 50V
* C410	UP652470	C. POL 470pF 100V
* C411	UP652470	C. POL 470pF 100V
* C412	UP652470	C. POL 470pF 100V
* C413	UP652470	C. POL 470pF 100V
* C414	UP652470	C. POL 470pF 100V
* C415	UP652470	C. POL 470pF 100V
* C416	UP652470	C. POL 470pF 100V
* C417	UP652470	C. POL 470pF 100V
* C418	UP652470	C. POL 470pF 100V
* C419	UP652470	C. POL 470pF 100V
* C420	UP652470	C. POL 470pF 100V
* C421	UP652470	C. POL 470pF 100V
C422	Vi845200	C. EL 4.7uF 50V
* C423	UP652220	C. POL 220pF 100V
C424	Vi845900	C. EL 10uF 63V
C425	UA654390	C. MYLAR 0.039uF 50V
C426	UA654110	C. MYLAR 0.011uF 50V
C427	Vi841100	C. EL 220uF 6.3V
C428	Vi841100	C. EL 220uF 6.3V
C429	UA654390	C. MYLAR 0.039uF 50V
C430	UA654110	C. MYLAR 0.011uF 50V
C431	Vi845900	C. EL 10uF 63V
C432	Vi842600	C. EL 100uF 16V
C433	UA653100	C. MYLAR 1000pF 50V
C434	UA653100	C. MYLAR 1000pF 50V
C435	Vi842600	C. EL 100uF 16V
C436	Vi845900	C. EL 10uF 63V
C437	Vi845900	C. EL 10uF 63V
C438	Vi845900	C. EL 10uF 63V
C439	Vi845200	C. EL 4.7uF 50V
* C440	UP652100	C. POL 100pF 100V (URTC)

* New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
* C440	UP652220	C. POL 220pF 100V (ABG)
C441	Vi845200	C. EL 4.7uF 50V
C442	Vi845200	C. EL 4.7uF 50V
* C443	UP652100	C. POL 100pF 100V (URTC)
* C443	UP652220	C. POL 220pF 100V (ABG)
C444	Vi845200	C. EL 4.7uF 50V
C445	Vi845900	C. EL 10uF 63V
C446	UB245220	C. CE. M. CHP 0.22uF 25V
C447	UB245220	C. CE. M. CHP 0.22uF 25V
* C448	UP652220	C. POL 220pF 100V
C449	Vi845200	C. EL 4.7uF 50V
C450	Vi845200	C. EL 4.7uF 50V
* C451	UP652220	C. POL 220pF 100V
* C452	UP652220	C. POL 220pF 100V
C453	Vi845200	C. EL 4.7uF 50V
C454	Vi845200	C. EL 4.7uF 50V
* C455	UP652220	C. POL 220pF 100V
* C456	UP652220	C. POL 220pF 100V
C457	Vi845200	C. EL 4.7uF 50V
C458	Vi845900	C. EL 10uF 63V
C459	Vi845900	C. EL 10uF 63V
C460	UB245100	C. CE. M. CHP 0.1uF 25V (ABG)
C901	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C902	UB245100	C. CE. M. CHP 0.1uF 25V
C903	VH053100	C. CE. TUBLR 0.1uF 50V
C904	UB245100	C. CE. M. CHP 0.1uF 25V
C905	VJ900700	C. CE. M. CHP 33pF 50V
C906	UB245100	C. CE. M. CHP 0.1uF 25V
C907	UB245100	C. CE. M. CHP 0.1uF 25V
C909	VJ836300	C. EL 330uF 6.3V
C910	VJ836900	C. EL 10uF 16V
C911	VH053100	C. CE. TUBLR 0.1uF 50V
C912	VH053100	C. CE. TUBLR 0.1uF 50V
C913	UB245100	C. CE. M. CHP 0.1uF 25V
C914	VH053100	C. CE. TUBLR 0.1uF 50V
C915	VH053100	C. CE. TUBLR 0.1uF 50V
D1	VT332900	DIODE 1SS355
D2	VT332900	DIODE 1SS355
D3	VT332900	DIODE 1SS355
D4	VT332900	DIODE 1SS355
D5	VT332900	DIODE 1SS355
D6	VT332900	DIODE 1SS355
D7	VT332900	DIODE 1SS355
D8	VT332900	DIODE 1SS355
D9	VT332900	DIODE 1SS355
D10	VT332900	DIODE 1SS355
D11	VT332900	DIODE 1SS355
D12	VT707700	C. TRIM KV1851-TL
D13	VT332900	DIODE 1SS355
D14	VT332900	DIODE 1SS355
D15	VT332900	DIODE 1SS355
D16	VT332900	DIODE 1SS355
D17	VT332900	DIODE 1SS355

* New Parts

Schm Ref.	PART NO.	Description
D18	VT332900	DIODE 1SS355
D19	VT332900	DIODE 1SS355
D22	VT332900	DIODE 1SS355
D23	VT332900	DIODE 1SS355
D26	VT332900	DIODE 1SS355
D27	VT332900	DIODE 1SS355
D30	VT332900	DIODE 1SS355
D31	VT332900	DIODE 1SS355
D32	VT332900	DIODE 1SS355
D33	VT332900	DIODE 1SS355
D34	VT332900	DIODE 1SS355
D35	VT332900	DIODE 1SS355
D36	VT332900	DIODE 1SS355
D37	VT332900	DIODE 1SS355
D38	VT332900	DIODE 1SS355
D401	iF004600	DIODE 1SS133 (ABG)
D402	iF004600	DIODE 1SS133 (ABG)
D901	VG437400	DIODE. ZENR MTZJ5.1B 5.1V
D902	VG438300	DIODE. ZENR MTZJ6.8B 6.8V
G1	VR463400	TERM. GND D3.5 TP00385
G2	VR463400	TERM. GND D3.5 TP00385
* IC1	XU032C00	IC CPU
IC2	XM099A00	IC YSS214-F CDSP
* IC3	XT954A00	IC M5M51008BFP-55 SRA
* IC4	XT954A00	IC M5M51008BFP-55 SRA
* IC5	XT959A00	IC YSS249-F
* IC6	XT958A00	IC PM4007A
IC7	XS282A00	IC UM61256FS-15Q SRAM
IC8	XG948E00	IC YM3436DK
* IC9	XT956A00	IC AK5391-VS-E2
* IC10	XT955A00	IC AK4324-VF-E2
* IC11	XT955A00	IC AK4324-VF-E2
* IC12	XT955A00	IC AK4324-VF-E2
* IC13	XT955A00	IC AK4324-VF-E2
IC14	XG903A00	IC TC4052BF MPX
IC15	XF291A00	IC uPC4570G2
IC16	XE518A00	IC uPC4574G2
IC17	Ki110D00	IC MC14577CP
IC18	XF291A00	IC uPC4570G2
IC19	XR038A00	IC NJM2904M OP AMP
IC20	XD660A00	IC TC74HCU04AF-TP1
IC21	XD660A00	IC TC74HCU04AF-TP1
IC22	XD655A00	IC TC74HC00AF NAND
IC23	XD655A00	IC TC74HC00AF NAND
IC24	XD655A00	IC TC74HC00AF NAND
IC25	XR041A00	IC TC74HC151AF
IC26	XR042A00	IC TC74HC153AF
IC27	XR038A00	IC NJM2904M OP AMP
IC28	XD660A00	IC TC74HCU04AF-TP1
IC29	XD600A00	IC TC74HC02AF-TP1 NOR
IC30	XH603A00	IC TC74HC157AF-TP1
IC31	XD655A00	IC TC74HC00AF NAND
IC32	XF291A00	IC uPC4570G2

* New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
IC33	XF291A00	IC uPC4570G2
IC34	XF291A00	IC uPC4570G2
IC35	XF291A00	IC uPC4570G2
IC36	XD655A00	IC TC74HC00AF NAND
* IC37	XT954A00	IC M5M51008BFP-55 SRA
* IC301	XT957A00	IC DSP156009FJ81
IC302	XU494B00	IC EPROM CPU
IC303	XS282A00	IC UM61256FS-15Q SRAM
IC304	XD660A00	IC TC74HCU04AF-TP1
IC401	XM356A00	IC NJM2068LD
IC402	XM356A00	IC NJM2068LD
IC403	XP580A00	IC TC9273N-004
IC404	XR027A00	IC TC9162AN
IC405	XP580A00	IC TC9273N-004
IC406	XF291A00	IC uPC4570G2
IC407	XF291A00	IC uPC4570G2
IC408	XF291A00	IC uPC4570G2
IC901	XR188A00	IC LC75710NE FLD
IC902	XR188A00	IC LC75710NE FLD
J1	VL448600	JUMPER. TST
L1	GE901970	COIL 68uH
L2	GE901970	COIL 68uH
L3	GE901970	COIL 68uH
L4	GE901970	COIL 68uH
L5	GE901970	COIL 68uH
L6	GE901970	COIL 68uH
L7	VT623200	FLTR. LC SBP-4930
L401	VB056900	COIL 220uH (ABG)
L402	VB056900	COIL 220uH (ABG)
* PJ1	VZ726200	JACK. PIN 2P
PJ2	VZ537500	JACK. PIN 2P
PJ401	VK421600	JACK. PIN 4P
PJ402	VM750600	JACK. PIN 6P
PJ403	VJ696300	JACK. PIN 4P
PJ404	VV577800	JACK. PIN 6P
Q1	iC241200	TR. CHP 2SC2412K Q, R, S
Q2	iA103700	TR. CHP 2SA1037 Q, R, S
Q3	VC124000	TR. DGT DTA144EK
Q4	VC124000	TR. DGT DTA144EK
Q5	VC124000	TR. DGT DTA144EK
Q6	VC124000	TR. DGT DTA144EK
Q7	VC124000	TR. DGT DTA144EK
Q8	VC124000	TR. DGT DTA144EK
Q9	VC124000	TR. DGT DTA144EK
Q10	VC124000	TR. DGT DTA144EK
Q11	VD303700	TR 2SC3326 A, B
Q12	VD303700	TR 2SC3326 A, B
Q13	VD303700	TR 2SC3326 A, B
Q14	VD303700	TR 2SC3326 A, B
Q15	VD303700	TR 2SC3326 A, B
Q16	VD303700	TR 2SC3326 A, B
Q17	VD303700	TR 2SC3326 A, B
Q18	VD303700	TR 2SC3326 A, B

* New Parts

Schm Ref.	PART NO.	Description
Q901	iC241200	TR. CHP 2SC2412K Q, R, S
Q908	iC241200	TR. CHP 2SC2412K Q, R, S
Q909	iC241200	TR. CHP 2SC2412K Q, R, S
Q910	iC241200	TR. CHP 2SC2412K Q, R, S
Q911	iC241200	TR. CHP 2SC2412K Q, R, S
Q912	iC241200	TR. CHP 2SC2412K Q, R, S
Q913	iC241200	TR. CHP 2SC2412K Q, R, S
Q914	iC241200	TR. CHP 2SC2412K Q, R, S
Q915	iC241200	TR. CHP 2SC2412K Q, R, S
Q916	iC241200	TR. CHP 2SC2412K Q, R, S
R69	HV453100	R. CAR. FP 1Ω 1/4W
R74	HV453100	R. CAR. FP 1Ω 1/4W
R77	HV453220	R. CAR. FP 2.2Ω 1/4W
R92	HV453220	R. CAR. FP 2.2Ω 1/4W
R93	HV453220	R. CAR. FP 2.2Ω 1/4W
R95	HV453100	R. CAR. FP 1Ω 1/4W
R98	HV453220	R. CAR. FP 2.2Ω 1/4W
R102	HV454100	R. CAR. FP 10Ω 1/4W
R103	HV454100	R. CAR. FP 10Ω 1/4W
R104	HV454100	R. CAR. FP 10Ω 1/4W
R105	HV454100	R. CAR. FP 10Ω 1/4W
R113	HV453100	R. CAR. FP 1Ω 1/4W
R116	HV453100	R. CAR. FP 1Ω 1/4W
R119	HV453100	R. CAR. FP 1Ω 1/4W
R122	HV453100	R. CAR. FP 1Ω 1/4W
R124	HV453100	R. CAR. FP 1Ω 1/4W
R131	HV453100	R. CAR. FP 1Ω 1/4W
R244	HV453100	R. CAR. FP 1Ω 1/4W
R245	HV453100	R. CAR. FP 1Ω 1/4W
R246	HV453100	R. CAR. FP 1Ω 1/4W
R247	HV453100	R. CAR. FP 1Ω 1/4W
R248	HV453100	R. CAR. FP 1Ω 1/4W
R443	HV455100	R. CAR. FP 100Ω 1/4W
R444	HV455100	R. CAR. FP 100Ω 1/4W
R457	HV455100	R. CAR. FP 100Ω 1/4W
R458	HV455100	R. CAR. FP 100Ω 1/4W
R475	HV455100	R. CAR. FP 100Ω 1/4W
R476	HV455100	R. CAR. FP 100Ω 1/4W
△ SW701	VZ075500	SW. SLIDE SL14-22AM5F(C)
SW901	VG392900	SW. TACT SKHVAA
SW902	VG392900	SW. TACT SKHVAA
SW903	VG392900	SW. TACT SKHVAA
SW904	VG392900	SW. TACT SKHVAA
SW905	VG392900	SW. TACT SKHVAA
SW906	VG392900	SW. TACT SKHVAA
SW907	VG392900	SW. TACT SKHVAA
SW908	VG392900	SW. TACT SKHVAA
SW909	VG392900	SW. TACT SKHVAA
U901	VR023400	L. DTCT SPS-424-1
* V901	VZ524400	FL. DSPLY 32-BT-04G
XL2	VM651900	RSNR. CRY5 10.0MHz
XL3	Vi552000	RSNR. CRY5 12.288MHz
XL4	VT928600	RSNR. CRY5 18.432MHz

* New Parts

P.C.B. DSP & VIDEO

Schm Ref.	PART NO.	Description
* XL5	Vi951800	RSNR. CE 20MHz
* XL301	VZ820400	RESONATOR 1MHz DOC-49S1
	VJ828000	PIN IMSA-6024-03E
	VP750600	SCR. TERM MEP1700
	VZ628400	SUPRT
	VZ628500	SHEET
	VZ802000	P. C. B. VIDEO (UC)
	VZ802200	P. C. B. VIDEO (RT)
	VZ802300	P. C. B. VIDEO (A)
	VZ802400	P. C. B. VIDEO (B)
	VZ884800	P. C. B. VIDEO (G)
CB1	VB858200	CN. BS. PIN 3P
CB2	VF982200	CN. BS. PIN 14P
CB3	VB858100	CN. BS. PIN 2P
CB101	VG879900	CN. BS. PIN 2P
CB103	LA002140	TERM. WRAP 2P
CB104	VS996100	CLIP. FUSE EYF64BC (UCRT)
CB105	VP206500	HOLDER. FUS EYF-52BC (ABG)
CB106	VP206500	HOLDER. FUS EYF-52BC (ABG)
CB106	VS996100	CLIP. FUSE EYF64BC (UCRT)
CB107	VP206500	HOLDER. FUS EYF-52BC (RTG)
CB108	VP206500	HOLDER. FUS EYF-52BC (RTG)
CB109	LA002140	TERM. WRAP 2P (RTABG)
CB201	LA002390	TERM. WRAP 2P
CB202	LA002400	TERM. WRAP 3P L-753B
CB203	VB858400	CN. BS. PIN 5P
CB301	VL845300	CN. BS. PIN 9P
CB401	VB858100	CN. BS. PIN 2P
CB402	VF982200	CN. BS. PIN 14P
CB503	VQ963100	CN. BS. PIN 10P
CB506	VQ963100	CN. BS. PIN 10P
CB507	LB919030	CN. BS. PIN 3P
C1	Vi845900	C. EL 10uF 63V
C2	Vi841400	C. EL 1000uF 6.3V
C3	UB052100	C. CE. M. CHP 100pF 50V
C4	UB052100	C. CE. M. CHP 100pF 50V
C5	Vi845900	C. EL 10uF 63V
C6	Vi841400	C. EL 1000uF 6.3V
C7	UB052100	C. CE. M. CHP 100pF 50V
C8	UB052100	C. CE. M. CHP 100pF 50V
C9	UB052100	C. CE. M. CHP 100pF 50V
C10	UB052100	C. CE. M. CHP 100pF 50V
C11	VF466900	C. CE. TUBLR 470pF 50V
C12	UB052100	C. CE. M. CHP 100pF 50V
C13	UB052100	C. CE. M. CHP 100pF 50V
C14	VG279600	C. CE. TUBLR 3300pF 16V
C15	Vi845900	C. EL 10uF 63V
C16	Vi841400	C. EL 1000uF 6.3V
C17	Vi845900	C. EL 10uF 63V
C18	Vi841400	C. EL 1000uF 6.3V

* New Parts

Schm Ref.	PART NO.	Description
C19	Vi845900	C. EL 10uF 63V
C20	Vi845900	C. EL 10uF 63V
C21	Vi845900	C. EL 10uF 63V
C22	Vi845900	C. EL 10uF 63V
C23	Vi845900	C. EL 10uF 63V
C24	Vi845600	C. EL 47uF 50V
C25	Vi845600	C. EL 47uF 50V
C26	Vi845600	C. EL 47uF 50V
C27	Vi845600	C. EL 47uF 50V
C28	VG279000	C. CE. TUBLR 820pF 50V
C29	VH053100	C. CE. TUBLR 0.1uF 50V
C30	VH053100	C. CE. TUBLR 0.1uF 50V
C31	VG277000	C. CE. TUBLR 33pF 50V
C32	VG277000	C. CE. TUBLR 33pF 50V
C33	Vi845600	C. EL 47uF 50V
C34	Vi845600	C. EL 47uF 50V
C35	VF467300	C. CE. TUBLR 0.01uF 16V
C36	Vi845900	C. EL 10uF 63V
C37	VG272400	C. CE. TUBLR 2.2pF 50V (ABG)
* C37	VG273900	C. CE. TUBLR 20pF 50V (UCRT)
C38	VG272600	C. CE. TUBLR 3.3pF 50V (ABG)
C38	VG273600	C. CE. TUBLR 15pF 50V (UCRT)
C38	VG273600	C. CE. TUBLR 15pF 50V
C39	Vi845200	C. EL 4.7uF 50V
C40	VG278400	C. CE. TUBLR 220pF 50V
C41	VG278100	C. CE. TUBLR 120pF 50V
C42	Vi845600	C. EL 47uF 50V
C43	VG279000	C. CE. TUBLR 820pF 50V
C44	Vi845200	C. EL 4.7uF 50V
C45	Vi845900	C. EL 10uF 63V
C46	VG277000	C. CE. TUBLR 33pF 50V
C47	VF466900	C. CE. TUBLR 470pF 50V
C101	VK181000	C. EL 1000uF 25V
* C102	UR877470	C. EL 47uF 63V (RT)
C103	VR324600	C. MYLAR 0.01uF 100V
C104	VV975400	C. CE 0.01uF 275V
C108	VJ836900	C. EL 10uF 16V (RT)
C201	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C202	UT454270	C. PP 0.027uF 100V
C203	UT454270	C. PP 0.027uF 100V
C204	Vi862200	C. POLY 0.1uF 100V
C205	Vi862200	C. POLY 0.1uF 100V
C206	VK181300	C. EL 4700uF 25V
C207	Vi844900	C. EL 1uF 50V
C208	VK181300	C. EL 4700uF 25V
C209	Vi844900	C. EL 1uF 50V
C210	VK180800	C. EL 6800uF 16V
C211	VK180800	C. EL 6800uF 16V
C212	VK180800	C. EL 6800uF 16V
C213	VK180800	C. EL 6800uF 16V
C214	VK180800	C. EL 6800uF 16V
C215	VK180400	C. EL 1000uF 16V
C216	VK180400	C. EL 1000uF 16V

* New Parts

P.C.B. VIDEO

Schm Ref.	PART NO.	Description
C217	Vi844900	C. EL 1uF 50V
C218	Vi845600	C. EL 47uF 50V
C219	Vi844900	C. EL 1uF 50V
C220	Vi845600	C. EL 47uF 50V
C221	Vi845600	C. EL 47uF 50V
C222	Vi845600	C. EL 47uF 50V
C224	VR168300	C. MYLAR. ML ECQ-VIH104JL3
C301	UA652100	C. MYLAR 100pF 50V
C302	Vi845200	C. EL 4.7uF 50V
C303	UA652470	C. MYLAR 470pF 50V
C304	Vi845600	C. EL 47uF 50V
C305	Vi845700	C. EL 100uF 50V
C306	Vi845700	C. EL 100uF 50V
C307	UA652100	C. MYLAR 100pF 50V
C308	Vi845200	C. EL 4.7uF 50V
C309	UA652470	C. MYLAR 470pF 50V
C310	VR325000	C. MYLAR 100pF 100V
C311	Vi845600	C. EL 47uF 50V
C312	VR516400	C. CE 15p 500V
C313	Vi845600	C. EL 47uF 50V
C314	Vi845600	C. EL 47uF 50V
C315	VR325000	C. MYLAR 100pF 100V
C316	UA653100	C. MYLAR 1000pF 50V
C317	VR325000	C. MYLAR 100pF 100V
C318	Vi845600	C. EL 47uF 50V
C319	VR516400	C. CE 15p 500V
C320	Vi845600	C. EL 47uF 50V
C321	Vi845600	C. EL 47uF 50V
C322	VR325000	C. MYLAR 100pF 100V
C323	UA653100	C. MYLAR 1000pF 50V
C324	UA654220	C. MYLAR 0.022uF 50V
C325	Vi845600	C. EL 47uF 50V
C326	Vi845600	C. EL 47uF 50V
C327	UA654220	C. MYLAR 0.022uF 50V
C401	UB052100	C. CE. M. CHP 100pF 50V
C402	Vi841400	C. EL 1000uF 6.3V
C403	Vi841400	C. EL 1000uF 6.3V
C404	UB052100	C. CE. M. CHP 100pF 50V
C405	Vi841400	C. EL 1000uF 6.3V
C406	UB052100	C. CE. M. CHP 100pF 50V
C407	Vi841400	C. EL 1000uF 6.3V
C408	UB052100	C. CE. M. CHP 100pF 50V
C409	Vi845900	C. EL 10uF 63V
C410	Vi845900	C. EL 10uF 63V
C411	Vi845600	C. EL 47uF 50V
C412	Vi845600	C. EL 47uF 50V
* C501	UP652470	C. POL 470pF 100V
* C502	UP652470	C. POL 470pF 100V
* C503	UP652470	C. POL 470pF 100V
* C504	UP652470	C. POL 470pF 100V
* C505	UP652470	C. POL 470pF 100V
* C506	UP652470	C. POL 470pF 100V
* C507	UP652470	C. POL 470pF 100V

* New Parts

Schm Ref.	PART NO.	Description
* C508	UP652470	C. POL 470pF 100V
* C509	UP652470	C. POL 470pF 100V
* C510	UP652470	C. POL 470pF 100V
* C511	UP652470	C. POL 470pF 100V
* C512	UP652470	C. POL 470pF 100V
* C513	UP652470	C. POL 470pF 100V
* C514	UP652470	C. POL 470pF 100V
* C515	UP652470	C. POL 470pF 100V
* C516	UP652470	C. POL 470pF 100V
D1	iF004600	DIODE 1SS133
D2	iF004600	DIODE 1SS133
D3	iF004600	DIODE 1SS133
D4	iF004600	DIODE 1SS133
D5	iF004600	DIODE 1SS133
D6	VG435100	DIODE. ZENR MTZJ2.0B 2.0V
D7	iF004600	DIODE 1SS133
D8	iF004600	DIODE 1SS133
D9	iF004600	DIODE 1SS133
D10	iF004600	DIODE 1SS133
D11	iF004600	DIODE 1SS133
△ D101	VR253700	DIODE. BRG SINB20 1.0A 200V
D102	iF004600	DIODE 1SS133
D103	VG439900	DIODE. ZENR MTZJ11B 11V(RT)
△ D201	VR253700	DIODE. BRG SINB20 1.0A 200V
△ D202	VM705800	DIODE. BRG RBA-406B 4.0A 60V
D204	VU391800	DIODE. SHOT AK04 WK
D205	VU391800	DIODE. SHOT AK04 WK
D206	iF004600	DIODE 1SS133
* D208	VU647200	DIODE. SHOT RB441Q-40 T-77
* D209	VU647200	DIODE. SHOT RB441Q-40 T-77
D301	VG440300	DIODE. ZENR MTZJ12C 12V
D302	VN008700	DIODE 1SS270A
D303	VN008700	DIODE 1SS270A
D304	VN008700	DIODE 1SS270A
D305	VN008700	DIODE 1SS270A
△ F101	KB000780	FUSE T5.0A 250V(RT)
△ F101	VT942900	FUSE TH2.5A 250V(G)
△ F102	KB000780	FUSE T5.0A 250V(ABG)
△ F102	VU238300	FUSE 12A 250V(UCRT)
G101	VR463400	TERM. GND D3.5 TP00385
G201	VR463400	TERM. GND D3.5 TP00385
G202	VR463400	TERM. GND D3.5 TP00385
IC1	Xi109D00	IC MC14576CP
IC2	Xi109D00	IC MC14576CP
IC3	Xi109D00	IC MC14576CP
IC4	iG105800	IC uPD4051BC
IC5	iG105800	IC uPD4051BC
IC6	iG105800	IC uPD4051BC
IC7	iG105800	IC uPD4051BC
IC8	XK313A00	IC LC7824
IC9	iG105900	IC uPD4053BC
IC10	iG105900	IC uPD4053BC
IC11	iG105900	IC uPD4053BC

* New Parts

P.C.B. VIDEO

Schm Ref.	PART NO.	Description
* IC12	XU035A00	IC M35013-076SP
IC13	iG142200	IC TC74HCU04AP
IC14	iG142200	IC TC74HCU04AP
△ IC201	XJ603A00	IC NJM78M15FA
△ IC202	XG505A00	IC NJM79M15FA
△ IC203	Xi124A00	IC PQ05RF1 5V1A
△ IC204	XE436A00	IC NJM79M05FA
△ IC205	Xi124A00	IC PQ05RF1 5V1A
△ IC206	Xi124A00	IC PQ05RF1 5V1A
IC401	Xi109D00	IC MC14576CP
IC402	iG105800	IC uPD4051BC
IC403	iG105800	IC uPD4051BC
IC404	iG105900	IC uPD4053BC
JK1	VU245200	CN. DIN 1P
JK2	VP113600	CN. DIN 2P
JK3	VP113600	CN. DIN 2P
JK4	VP113600	CN. DIN 2P
JK5	VT973000	CN. DIN 2P
L1	VM703900	COIL 15uH
PJ401	VR110100	JACK. PIN 2P
PJ402	VR110100	JACK. PIN 2P
PJ403	VR110100	JACK. PIN 2P
PJ404	VR110100	JACK. PIN 2P
PJ405	VN134600	JACK. PIN 1P
PJ501	VM725900	JACK. PIN 4P
PJ502	VM726000	JACK. PIN 6P
PJ503	VM726000	JACK. PIN 6P
Q1	iC260320	TR 2SC2603 E, F
Q2	iC287820	TR 2SC2878 A, B
Q3	iC260320	TR 2SC2603 E, F
Q4	VH964100	TR. DGT DTA143ES
Q5	iC260320	TR 2SC2603 E, F
Q6	iC260320	TR 2SC2603 E, F
Q7	iC260320	TR 2SC2603 E, F
Q8	iC260320	TR 2SC2603 E, F
Q9	iC260320	TR 2SC2603 E, F
Q10	iC260320	TR 2SC2603 E, F
Q11	VD678700	TR. DGT DTC114ES
Q12	iA101521	TR 2SA1015 Y
Q13	iC224030	TR 2SC2240 GR, BL
Q14	iC224030	TR 2SC2240 GR, BL
Q15	iC053540	TR 2SC535 A, B, C
Q101	VD488500	TR. DGT DTC143XS
Q102	iC174020	TR 2SC1740S R, S
Q103	iE102620	FET 2SK246 Y(RT)
△ Q104	VR510800	TR 2SD2396 J, K(RT)
△ Q301	iA097000	TR 2SA970 GR, BL
△ Q302	iA097000	TR 2SA970 GR, BL
△ Q303	iA097000	TR 2SA970 GR, BL
△ Q304	iA097000	TR 2SA970 GR, BL
△ Q305	iC224000	TR 2SC2240 GR, BL
△ Q306	VE198800	TR 2SC2705 O, Y
△ Q307	iC224000	TR 2SC2240 GR, BL

* New Parts

Schm Ref.	PART NO.	Description
△ Q308	VE198800	TR 2SC2705 O, Y
△ Q309	VP872700	TR 2SC4488 S, T
△ Q310A	iX615750	TR 2SA1694 O, P, Y
△ Q310C	iX615760	TR 2SC4467 O, P, Y
△ Q312	VP872600	TR 2SA1708 S, T
△ Q313	VP872700	TR 2SC4488 S, T
△ Q314A	iX615750	TR 2SA1694 O, P, Y
△ Q314C	iX615760	TR 2SC4467 O, P, Y
△ Q316	VP872600	TR 2SA1708 S, T
Q317	iC224030	TR 2SC2240 GR, BL
Q318	iC224030	TR 2SC2240 GR, BL
Q401	iC260320	TR 2SC2603 E, F
Q402	iC260320	TR 2SC2603 E, F
△ R103	VK187800	R. FUS 100Ω 1/4W(RT)
△ R206	VP939700	R. MTL. FLM 4.7Ω 1W
△ R207	VP939700	R. MTL. FLM 4.7Ω 1W
△ R208	VP939500	R. MTL. FLM 1Ω 1W
△ R209	VP939500	R. MTL. FLM 1Ω 1W
△ R223	HL314560	R. MTL. OXD 56Ω 1W
△ R224	HL324270	R. MTL. OXD 27Ω 2W
R316	HV456270	R. CAR. FP 2.7KΩ 1/4W
* R319	VK188800	R. FUS 680Ω 1/4W
△ R322	HV454470	R. CAR. FP 47Ω 1/4W
△ R324	HV454470	R. CAR. FP 47Ω 1/4W
R327	HV456270	R. CAR. FP 2.7KΩ 1/4W
* R330	VK188800	R. FUS 680Ω 1/4W
△ R333	HV454470	R. CAR. FP 47Ω 1/4W
△ R335	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R338	VK188400	R. FUS 330Ω 1/4W
△ R339	VJ787600	R. MTL. PLAT 0.22Ω+0.22 5W
△ R341	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R346	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R349	VK188400	R. FUS 330Ω 1/4W
△ R350	VJ787600	R. MTL. PLAT 0.22Ω+0.22 5W
△ R352	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R354	HL314100	R. MTL. OXD 10Ω 1W
△ R355	HL314100	R. MTL. OXD 10Ω 1W
△ RY101	VK539200	RELAY DC DH12D1-0/M(RT)
△ RY101	VV950000	RELAY VS-12MB-NR(UCABG)
△* T101	XC115B00	TRANS. PWR (RT)
△* T101	XC116B00	TRANS. PWR (UC)
△* T101	XC117B00	TRANS. PWR (A)
△ T101	XK354A00	TRANS (BG)
△* TE101	VU107000	CN. OUTLET 3P(UCRT)
TH601	VM842400	POSISTOR PTH9M04 BE (90°C)
VR301	VJ692800	VR. TRIM B470Ω
VR302	VJ692800	VR. TRIM B470Ω
XL1	VD980900	RSNR. CRYST 14.3181MHz(UCRT)
XL1	VV949900	RSNR. CRYST 17.734475MHz(ABG)
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13

* New Parts

P.C.B. TONE CONTROL

Schm Ref.	PART NO.	Description
* CB301	VZ802500	P.C.B. TONE CONTROL
CB302	VP113500	CN. BS. PIN 10P
CB501	VB858300	CN. BS. PIN 4P
CB502	VQ961300	CN. BS. PIN 10P
CB504	VQ961300	CN. BS. PIN 10P
CB505	VQ961300	CN. BS. PIN 10P
CB801	VQ044900	CN. BS. PIN 19P
CB802	VQ963900	CN. BS. PIN 18P
CB803	VQ962100	CN. BS. PIN 18P
CB805	VD004700	CN. BS. PIN 4P
C302	VD930900	C. CE. SMI 0.1uF 25V
C303	VD930900	C. CE. SMI 0.1uF 25V
C305	VD930900	C. CE. SMI 0.1uF 25V
C801	UA654470	C. MYLAR 0.047uF 50V
C802	UA654470	C. MYLAR 0.047uF 50V
C803	Vi844900	C. EL 1uF 50V
C804	UA654470	C. MYLAR 0.047uF 50V
C805	UA654470	C. MYLAR 0.047uF 50V
C806	Vi844900	C. EL 1uF 50V
C807	Vi845100	C. EL 3.3uF 50V
C808	Vi845600	C. EL 47uF 50V
C809	FU351220	C. MICA 22pF 500V
C810	Vi844900	C. EL 1uF 50V
C811	FU351220	C. MICA 22pF 500V
C812	Vi844900	C. EL 1uF 50V
C813	Vi845600	C. EL 47uF 50V
C814	Vi845600	C. EL 47uF 50V
C815	FU351220	C. MICA 22pF 500V
C816	Vi844900	C. EL 1uF 50V
C817	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C818	UA654220	C. MYLAR 0.022uF 50V
C819	UA654220	C. MYLAR 0.022uF 50V
C820	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C821	Vi845900	C. EL 10uF 63V
C822	VR168300	C. MYLAR. ML ECQ-V1H104JL3
C823	UA654220	C. MYLAR 0.022uF 50V
C824	Vi845900	C. EL 10uF 63V
C825	UA652100	C. MYLAR 100pF 50V
C826	UA652100	C. MYLAR 100pF 50V
C827	Vi845900	C. EL 10uF 63V
C829	Vi845100	C. EL 3.3uF 50V
C830	UA652100	C. MYLAR 100pF 50V
C831	Vi845900	C. EL 10uF 63V
C832	Vi846000	C. EL 22uF 63V
C833	Vi846000	C. EL 22uF 63V
C834	Vi845900	C. EL 10uF 63V
C835	Vi842400	C. EL 33uF 16V
C836	Vi842400	C. EL 33uF 16V
C837	FG251220	C. CE 22pF 50V
C838	FG212100	C. CE 100pF 50V
C839	Vi841800	C. EL 100uF 10V
C840	Vi841800	C. EL 100uF 10V

* New Parts

Schm Ref.	PART NO.	Description
C841	FG212100	C. CE 100pF 50V
C842	FG251220	C. CE 22pF 50V
C843	Vi842900	C. EL 470uF 16V
C844	Vi842900	C. EL 470uF 16V
C845	VF466900	C. CE. TUBLR 470pF 50V
C846	VF466900	C. CE. TUBLR 470pF 50V
C847	VF467000	C. CE. TUBLR 1000pF 50V
C848	VF467300	C. CE. TUBLR 0.01uF 16V
C849	VF467300	C. CE. TUBLR 0.01uF 16V
C850	VF467000	C. CE. TUBLR 1000pF 50V
C851	VF467000	C. CE. TUBLR 1000pF 50V
C852	VF467300	C. CE. TUBLR 0.01uF 16V
C853	Vi845600	C. EL 47uF 50V
C854	FU351220	C. MICA 22pF 500V
C855	FG212100	C. CE 100pF 50V
C856	FG212100	C. CE 100pF 50V
C857	Vi842900	C. EL 470uF 16V
C858	Vi842900	C. EL 470uF 16V
D302	VG437400	DIODE. ZENR MTZJ5.1B 5.1V
D801	VU264100	DIODE 1SR139-400
D802	VU264100	DIODE 1SR139-400
IC302	XF494A00	IC LB1641
IC801	XM356A00	IC NJM2068LD
IC802	XB247301	IC uPC4570HA
IC803	XM356A00	IC NJM2068LD
IC804	XP844A00	IC NJM4556AL
JK801	VT034300	CN. DIN 1P
JK802	VT749200	JACK. PHONE HLJ5307
PJ801	VU459400	JACK. PIN 3P
Q801	VK432900	TR 2SD1915F S,T
Q802	VK432900	TR 2SD1915F S,T
Q803	VK432900	TR 2SD1915F S,T
Q804	VK432900	TR 2SD1915F S,T
R838	HV453330	R. CAR. FP 3.3Ω 1/4W
R839	HV453330	R. CAR. FP 3.3Ω 1/4W
R852	HV455220	R. CAR. FP 220Ω 1/4W
R859	HV455220	R. CAR. FP 220Ω 1/4W
R860	HV455100	R. CAR. FP 100Ω 1/4W
R861	HV455100	R. CAR. FP 100Ω 1/4W
* SW301	VZ630900	SW. RT. ENC EC16B12202
SW801	VD357300	SW. PUSH SPUN12
SW803	VT904100	SW. RT SRRM17
VR801	VU145100	VR 16KΩ
VR802	VU145200	VR 20KΩ
VR803	VU145000	VR MN30KΩ
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13

* New Parts

CHIP RESISTOR & CHIP METAL FILM RESISTOR

Schm Ref.	PART NO.	Description
	RD250000	R. CAR. CHP 0Ω 1/10W
	RD253220	R. CAR. CHP 2.2Ω 1/10W
	RD253470	R. CAR. CHP 4.7Ω 1/10W
	RD254220	R. CAR. CHP 22Ω 1/10W
	RD254470	R. CAR. CHP 47Ω 1/10W
	RD254680	R. CAR. CHP 68Ω 1/10W
	RD254750	R. CAR. CHP 75Ω 1/10W
	RD254820	R. CAR. CHP 82Ω 1/10W
	RD255100	R. CAR. CHP 100Ω 1/10W
	RD255120	R. CAR. CHP 120Ω 1/10W
	RD255150	R. CAR. CHP 150Ω 1/10W
	RD255200	R. CAR. CHP 200Ω 1/10W
	RD255330	R. CAR. CHP 330Ω 1/10W
	RD255470	R. CAR. CHP 470Ω 1/10W
	RD255680	R. CAR. CHP 680Ω 1/10W
	RD255820	R. CAR. CHP 820Ω 1/10W
	RD256100	R. CAR. CHP 1KΩ 1/10W
	RD256220	R. CAR. CHP 2.2KΩ 1/10W
	RD256330	R. CAR. CHP 3.3KΩ 1/10W
	RD256390	R. CAR. CHP 3.9KΩ 1/10W
	RD256430	R. CAR. CHP 4.3KΩ 1/10W
	RD256470	R. CAR. CHP 4.7KΩ 1/10W
	RD256680	R. CAR. CHP 6.8KΩ 1/10W
	RD256750	R. CAR. CHP 7.5KΩ 1/10W
	RD256820	R. CAR. CHP 8.2KΩ 1/10W
	RD256910	R. CAR. CHP 9.1KΩ 1/10W
	RD257100	R. CAR. CHP 10KΩ 1/10W
	RD257180	R. CAR. CHP 18KΩ 1/10W
	RD257220	R. CAR. CHP 22KΩ 1/10W
	RD257270	R. CAR. CHP 27KΩ 1/10W
	RD257470	R. CAR. CHP 47KΩ 1/10W
	RD257680	R. CAR. CHP 68KΩ 1/10W
	RD257820	R. CAR. CHP 82KΩ 1/10W
	RD258100	R. CAR. CHP 100KΩ 1/10W
	RD258220	R. CAR. CHP 220KΩ 1/10W
	RD259100	R. CAR. CHP 1MΩ 1/10W
	Vi191700	R. MTL. CHP 47Ω 1/10W
	Vi191800	R. MTL. CHP 51Ω 1/10W
	Vi192400	R. MTL. CHP 91Ω 1/10W
	Vi192500	R. MTL. CHP 100Ω 1/10W
	Vi192700	R. MTL. CHP 120Ω 1/10W
	Vi192900	R. MTL. CHP 150Ω 1/10W
	Vi193300	R. MTL. CHP 220Ω 1/10W
	Vi193700	R. MTL. CHP 330Ω 1/10W
	Vi194100	R. MTL. CHP 470Ω 1/10W
	Vi194700	R. MTL. CHP 820Ω 1/10W
	Vi194900	R. MTL. CHP 1KΩ 1/10W
	Vi195000	R. MTL. CHP 1.1KΩ 1/10W
	Vi195100	R. MTL. CHP 1.2KΩ 1/10W
	Vi195200	R. MTL. CHP 1.3KΩ 1/10W

* New Parts

Schm Ref.	PART NO.	Description
	Vi195300	R. MTL. CHP 1.5KΩ 1/10W
	Vi195400	R. MTL. CHP 1.6KΩ 1/10W
	Vi195500	R. MTL. CHP 1.8KΩ 1/10W
	Vi195700	R. MTL. CHP 2.2KΩ 1/10W
	Vi195900	R. MTL. CHP 2.7KΩ 1/10W
	Vi196100	R. MTL. CHP 3.3KΩ 1/10W
	Vi196600	R. MTL. CHP 4.7KΩ 1/10W
	Vi196700	R. MTL. CHP 5.1KΩ 1/10W
	Vi196800	R. MTL. CHP 5.6KΩ 1/10W
	Vi196900	R. MTL. CHP 6.2KΩ 1/10W
	Vi197000	R. MTL. CHP 6.8KΩ 1/10W
	Vi197100	R. MTL. CHP 7.5KΩ 1/10W
	Vi197200	R. MTL. CHP 8.2KΩ 1/10W
	Vi197400	R. MTL. CHP 10KΩ 1/10W
	Vi197600	R. MTL. CHP 12KΩ 1/10W
	Vi197700	R. MTL. CHP 13KΩ 1/10W
	Vi198000	R. MTL. CHP 18KΩ 1/10W
	Vi198200	R. MTL. CHP 22KΩ 1/10W
	Vi198400	R. MTL. CHP 27KΩ 1/10W
	Vi198500	R. MTL. CHP 30KΩ 1/10W
	Vi198600	R. MTL. CHP 33KΩ 1/10W
	Vi198800	R. MTL. CHP 39KΩ 1/10W
	Vi199000	R. MTL. CHP 47KΩ 1/10W
	Vi199200	R. MTL. CHP 56KΩ 1/10W
	Vi199600	R. MTL. CHP 82KΩ 1/10W
	Vi199900	R. MTL. CHP 91KΩ 1/10W
	Vi200000	R. MTL. CHP 100KΩ 1/10W
	VK581200	R. MTL. CHP 120KΩ 1/10W
	VK581600	R. MTL. CHP 180KΩ 1/10W
	VK582000	R. MTL. CHP 270KΩ 1/10W
	VK582200	R. MTL. CHP 330KΩ 1/10W
	VK582600	R. MTL. CHP 470KΩ 1/10W
	VK583400	R. MTL. CHP 1MΩ 1/10W

* New Parts

A

B

C

D

E

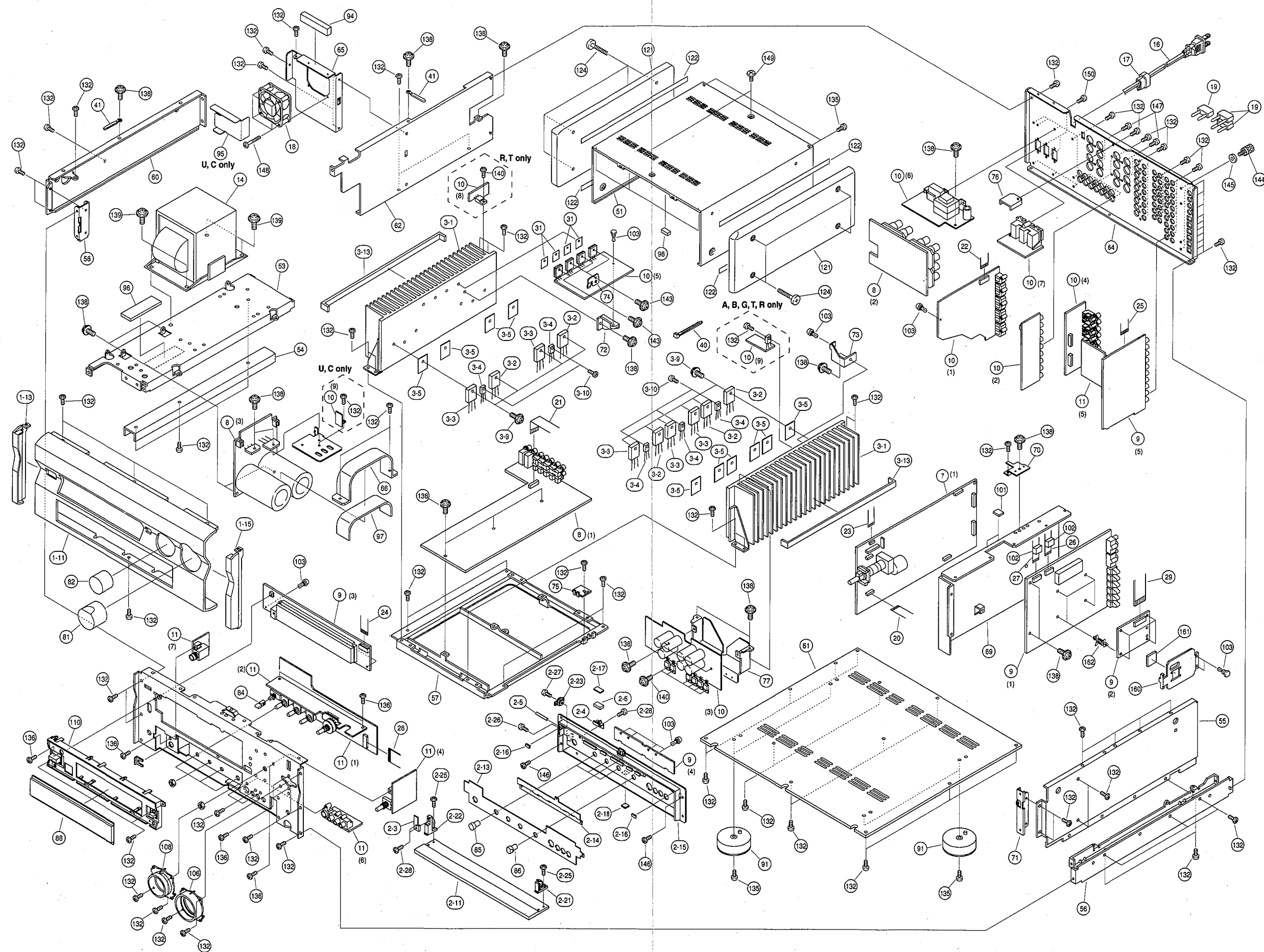
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G

H

DSP-A1

EXPLODED VIEW

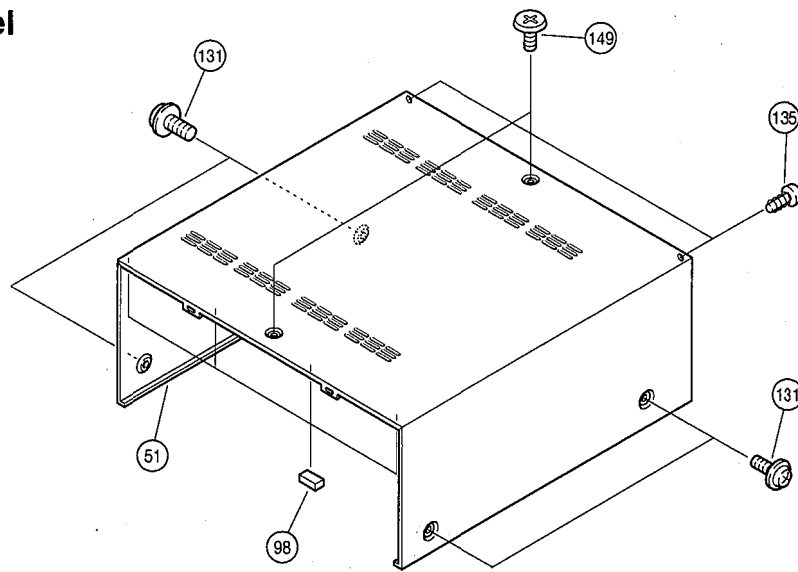


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EXPLODED VIEW

Black model

2

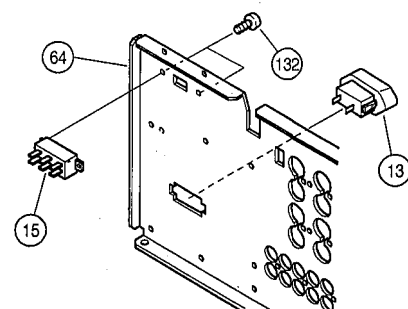
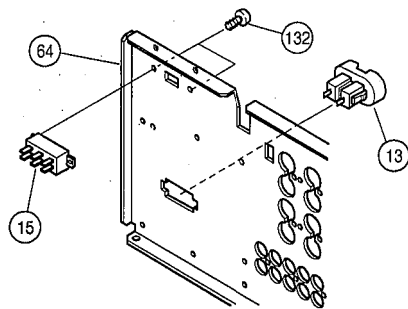


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A model

G model

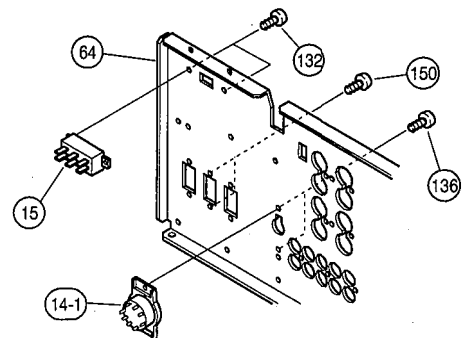
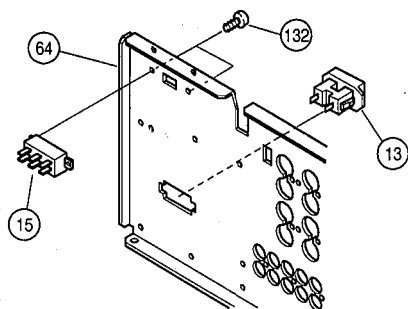
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B model

R, T models

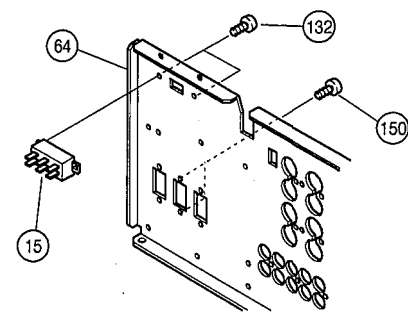
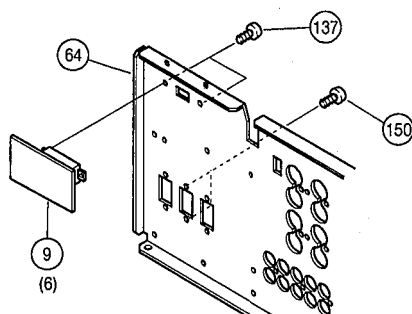
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C model

U model

6



7

■ MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-11	V0046100	FRONT PANEL	GD	
* 1-11	VZ622000	FRONT PANEL	BL	
* 1-11	VZ622100	FRONT PANEL	TI	
* 1-13	V0047200	PLATE, SIDE L	GD	
* 1-13	VZ629000	PLATE, SIDE L	BL	
* 1-13	VZ629100	PLATE, SIDE L	TI	
* 1-15	V0047300	PLATE, SIDE R	GD	
* 1-15	VZ629200	PLATE, SIDE R	BL	
* 1-15	VZ629300	PLATE, SIDE R	TI	
* 2- 3	VZ619800	SUPPORT	HINGE	
* 2- 4	VZ830500	SUPPORT	MG	
* 2- 5	VZ621800	SHAFT	AA	
* 2- 6	VZ621900	MAGNET		
* 2-11	V0046300	PANEL, LID	GD	
* 2-11	VZ622400	PANEL, LID	BL	
* 2-11	VZ622500	PANEL, LID	TI	
* 2-13	V0046800	PLATE, L	GD	
* 2-13	VZ627700	PLATE, L	BL	
* 2-13	VZ627800	PLATE, L	TI	
* 2-14	V0046900	PLATE, SP	GD	
* 2-14	VZ627900	PLATE, SP	BL	
* 2-14	VZ628000	PLATE, SP	TI	
* 2-15	V0047000	CASE, SUB PANEL	GD	
* 2-15	VZ628600	CASE, SUB PANEL	BL	
* 2-15	VZ628700	CASE, SUB PANEL	TI	
* 2-16	V2048500	CUSHION, LID	GD	
	VT062900	CUSHION	BL	
	VU182300	CUSHION, LID	TI	
* 2-17	VZ875000	SPACER	MG	
	VH625500	DAMPER		
* 2-21	V0050300	STOPPER	HINGE	GD
	VJ888100	STOPPER	HINGE	BL
* 2-21	VZ830400	STOPPER	HINGE	TI
* 2-22	V0047400	HINGE		GD
* 2-22	VZ629400	HINGE		BL
* 2-22	VZ629500	HINGE		TI
* 2-23	VZ830300	DAMPER, GEAR	15G	
	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
	EK930010	PW HEAD B-TITE SCREW	3x8-8 FCRM3-BL	
	VG893800	BIND HEAD P-TITE SCREW	2x6 ZMC2-BL	
	VE529700	PW HEAD B-TITE SCREW	3x6-8 FCRM3-BL	
* 3- 1	VZ628100	HEAT SINK ASS'Y		
△# 3- 2	ix637430	TRANSISTOR	2SA1943 O, R	Q369A, 374A, 378A
△# 3- 2	ix637430	TRANSISTOR	2SA1943 O, R	, 380A, 382A
△# 3- 3	ix637440	TRANSISTOR	2SC5200 O, R	Q369C, 374C, 378C
△# 3- 3	ix637440	TRANSISTOR	2SC5200 O, R	, 380C, 382C
# 3- 4	VC398100	TRANSISTOR	2SC1846 S	Q325, 326, 372
# 3- 4	VC398100	TRANSISTOR	2SC1846 S	, 390, 391
	VK196000	SHEET	22x29	
	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
	VK697600	BIND HEAD B-TITE SCREW	3x10 SP ZMC2-Y	
	VU195800	DAMPER, FIN		
* 7	VZ800900	P.C.B. ASS'Y	FUNCTION	(UCRT)

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 7	VZ801000	P.C.B. ASS'Y	FUNCTION	(ABG)
* 8	VZ801200	P.C.B. ASS'Y	MAIN	(UC)
* 8	VZ801300	P.C.B. ASS'Y	MAIN	(RT)
* 8	VZ801400	P.C.B. ASS'Y	MAIN	(A)
* 8	VZ801500	P.C.B. ASS'Y	MAIN	(BG)
9	V2067500	P.C.B. ASS'Y	DSP	(C)
* 9	VZ801700	P.C.B. ASS'Y	DSP	(URT)
* 9	VZ801800	P.C.B. ASS'Y	DSP	(ABG)
* 10	VZ802000	P.C.B. ASS'Y	VIDEO	(UC)
* 10	VZ802200	P.C.B. ASS'Y	VIDEO	(RT)
* 10	VZ802300	P.C.B. ASS'Y	VIDEO	(A)
* 10	VZ802400	P.C.B. ASS'Y	VIDEO	(B)
* 10	VZ884800	P.C.B. ASS'Y	VIDEO	(G)
* 11	VZ802500	P.C.B. ASS'Y	TONE CONTROL	
△ 13	VJ775000	AC OUTLET	2P	(B)
△ 13	VJ775100	AC OUTLET	2P	(G)
△ 13	VT915100	AC OUTLET	2P	(A)
△ * 14	XU313A00	POWER TRANSFORMER		(C)
△ * 14	XU312A00	POWER TRANSFORMER		(U)
△ * 14	XU314A00	POWER TRANSFORMER		(RT)
△ * 14	XU315A00	POWER TRANSFORMER		(A)
△ * 14	XU316A00	POWER TRANSFORMER		(BG)
△ 14-1	Vi449800	VOLTAGE SELECTOR	ESE-37284-F	(RT)
△ * 15	VZ855600	SLIDE SWITCH	SDKGA4	(URABGT)
△ 16	VP418300	POWER CORD ASS'Y		(A)
△ 16	VQ458400	POWER CORD ASS'Y		(R)
△ 16	VS759300	POWER CORD ASS'Y		(G)
△ 16	VU122900	POWER CORD ASS'Y		(UC)
△ 16	VU411300	POWER CORD ASS'Y		(B)
△ 16	VZ542500	POWER CORD ASS'Y		(T)
17	VN158600	CORD STOPPER	No.2104	
* 18	V2063800	DC FAN MOTOR	DC MMS-06D24DU-R0E	
19	LB101890	SHORT PLUG		
* 20	VZ869000	CONNECTOR, FLAT CABLE	11P 100mm	
* 21	VZ869700	CONNECTOR, FLAT CABLE	21P 400mm	
22	VN024000	CONNECTOR, FLAT CABLE	14P 60mm	
23	VQ157100	CONNECTOR, FLAT CABLE	10P 70mm	
* 24	VZ869400	CONNECTOR, FLAT CABLE	13P 250mm	
25	VT242300	CONNECTOR, FLAT CABLE	19P 200mm	
* 26	VZ869100	CONNECTOR, FLAT CABLE	12P 60mm	
* 27	VZ869200	CONNECTOR, FLAT CABLE	12P 200mm	
28	VU145800	CONNECTOR, FLAT CABLE	19P 250mm	
* 29	VZ869500	CONNECTOR, FLAT CABLE	20P 30mm	
31	VK195900	SHEET	19x24	
40	CB069250	BINDING TIE	BK-1	
41	CB502030	BINDING TIE	S-75B	
* 51	V0046000	TOP COVER		GD
* 51	VZ617400	TOP COVER		BL
* 51	VZ617500	TOP COVER		TI
* 53	VZ618000	FRAME	L	
54	VU120700	FRAME, L/SF		
* 55	VZ618100	FRAME	R/UP	
56	VK380300	FRAME		

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
57	VT999300	FRAME, CENTER A		
58	VJ895500	FRAME	A	
* 60	VZ618300	FRAME	SL	
61	VJ893400	BOTTOM COVER		
* 62	VZ618400	FRAME	CF	
* 63	VZ617900	SUB CHASSIS		
* 64	VZ618600	REAR PANEL		(U)
* 64	VZ618800	REAR PANEL		(C)
* 64	VZ618900	REAR PANEL		(RT)
* 64	VZ619100	REAR PANEL		(A)
* 64	VZ619200	REAR PANEL		(G)
* 64	VZ619300	REAR PANEL		(B)
* 65	VZ619400	SUPPORT	FAN	
* 66	VZ764400	SUPPORT	CMCN	
* 69	VZ618200	SHIELD CASE	/DSP	
* 70	VZ619600	SUPPORT	I/PCB	
71	VT999700	SUPPORT	R/FR	
72	VU120500	SUPPORT	E/PCB	
* 73	VZ772400	SUPPORT	S/PCB	
74	VU196100	SUPPORT, TR	AMP	
* 75	VZ619700	SUPPORT	I/UND	
76	VV306200	SUPPORT, TOP		
* 77	VZ628200	HEAT SINK		
* 81	V0046400	KNOB	GD	
* 81	VZ622600	KNOB	BL	
* 81	VZ622700	KNOB	TI	
* 82	V0046600	KNOB	GD	
* 82	VZ623200	KNOB	BL	
* 82	VZ623400	KNOB	TI	
* 84	V0016900	BUTTON, 3/8	GD	
84	VV123500	BUTTON, 3/8	BL	
84	VV123600	BUTTON, 3/8	TI	
85	VS757200	KNOB, P	BL	
85	VS757300	KNOB, P	D12	
* 85	VZ891300	KNOB, P	D12	
86	VT275100	KNOB	D12R	
86	VT275200	KNOB	D12R	
* 86	VZ891400	KNOB, R	D12	
* 88	VZ628300	WINDOW PANEL, LID		
* 91	V0042500	LEG	D60/H21	
91	VS025000	LEG	D60xH21	
* 94	VZ822300	CUSHION, FAN	GD	
* 95	VZ739500	PLATE, FAN COVER	TI, BL	
* 96	VZ764800	DAMPER		(UC)
97	VK492200	DAMPER	BLACK	
98	VE222600	CUSHION	A	
99	Vi707300	DAMPER		(G)
101	VH625500	DAMPER		
102	VL347200	DAMPER	11x15	
103	CB605620	PLASTIC RIVET	No. 1781	
* 106	VZ623800	ESCUTCHEON, VOL	BL	
* 106	VZ623900	ESCUTCHEON, VOL	TI	
* 106	VZ756400	ESCUTCHEON, VOL	GD	

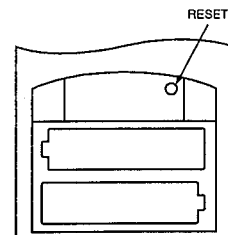
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 108	VZ625900	ESCUTCHEON, SEL	BL	
* 108	VZ626000	ESCUTCHEON, SEL	TI	
* 108	VZ756800	ESCUTCHEON, SEL	GD	
* 110	V0050200	BUTTON CASE	GD	
* 110	VZ695400	BUTTON CASE	BL	
* 110	VZ695500	BUTTON CASE	TI	
* 121	VZ829900	SIDE PANEL	DSP-A3092	GD, TI
122	VK492400	SPACER	GD, TI	
124	VC077200	FLAT FILLISTER HEAD SCREW	4x27 FCRM3-BR	GD, TI
131	EK365090	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
131	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
132	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
135	EP600190	BIND HEAD B-TITE SCREW	3x8 ZMC2-BL	
136	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
* 137	VB748400	BIND HEAD SCREW	3x8 MFNI33	(C)
138	EK930010	PW HEAD B-TITE SCREW	3x8-8 FCRM3-BL	
139	VK625000	CUP S-TITE SCREW	5x10-12 ZMC2-Y	
140	VK697600	BIND HEAD B-TITE SCREW	3x10 SP ZMC2-Y	
143	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
144	AA627310	GROUND TERMINAL		
145	EV265560	PLAIN WASHER	3.6x10x0.8 FNM3-3G	
146	EP600140	BIND HEAD B-TITE SCREW	3x10 MFZN2-BL	
147	VY731200	BONDING HEAD TAPPING SCREW	3x10 MFNI33	
148	VV220300	BIND HEAD B-TITE SCREW	3x30 MFZN2-BL	
149	EX601850	SPECIAL SCREW S-TITE	4x8-10 FCRM3-BL	BL
149	EX601860	SPECIAL SCREW S-TITE	4x8-10 FNM3-BL	TI
* 149	VZ893000	DECORATED SCREW S-TIGHT	4x8-10 MFNI-33	GD
150	EP600220	BIND HEAD B-TITE SCREW	3x10 ZMC2-Y	(UCRT)
* 160	VZ766800	HEAT SINK	DTS	
* 161	VZ830600	SHEET, DTS	100G-FA-A3217	
* 162	VZ830700	SPACER, PCB	MSPLS-6	
ACCESSORIES				
* 162	VZ338400	REMOTE CONTROL TRANSMITTER	RAV160	
	VY814500	LABEL, REMOTE CONTROL		
		BATTERY, ALKALINE MANGANESE	LR6, AA	

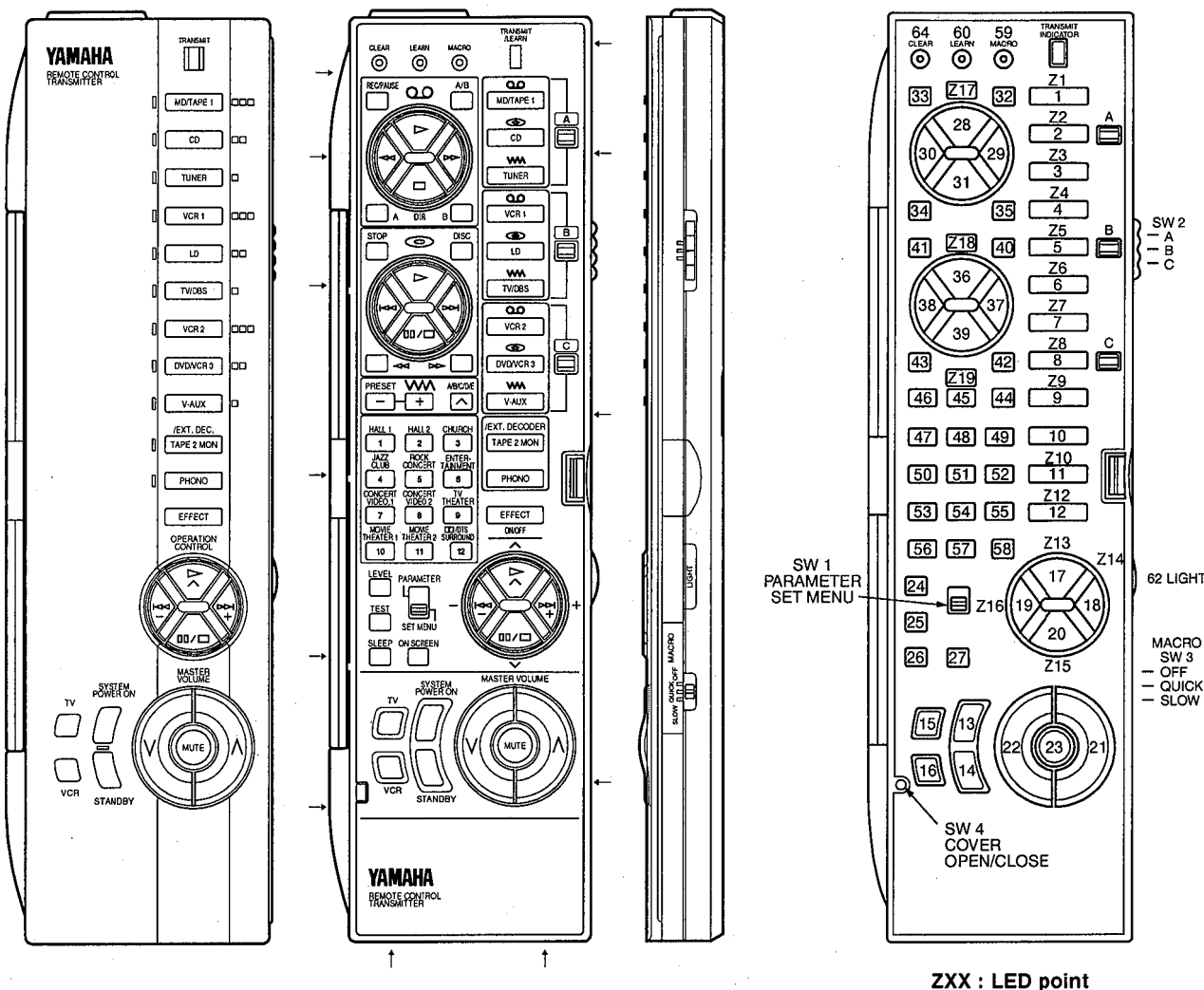
* New Parts

REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



Key arrangement



ZXX : LED point

List of the fixed code

Key No.	SW 1 SW 2	SET MENU			PARAMETER		
		A	B	C	A	B	C
1	TAPE	7D-82-8B	7D-82-8B	7D-82-8B	7D-82-8B	7D-82-8B	7D-82-8B
2	CD	7D-82-87	7D-82-87	7D-82-87	7D-82-87	7D-82-87	7D-82-87
3	TUNER	7D-82-89	7D-82-89	7D-82-89	7D-82-89	7D-82-89	7D-82-89
4	VCR 1	7D-82-81	7D-82-81	7D-82-81	7D-82-81	7D-82-81	7D-82-81
5	LD	7D-82-83	7D-82-83	7D-82-83	7D-82-83	7D-82-83	7D-82-83
6	TV/DBS	7D-82-84	7D-82-84	7D-82-84	7D-82-84	7D-82-84	7D-82-84
7	VCR 2	7D-82-82	7D-82-82	7D-82-82	7D-82-82	7D-82-82	7D-82-82
8	DVD/VCR 3	7D-82-85	7D-82-85	7D-82-85	7D-82-85	7D-82-85	7D-82-85
9	V-AUX	7D-82-8A	7D-82-8A	7D-82-8A	7D-82-8A	7D-82-8A	7D-82-8A
10	TAPE 2 MON/EXTDEC	7D-82-8C	7D-82-8C	7D-82-8C	7D-82-8C	7D-82-8C	7D-82-8C
11	PHONO	7D-82-88	7D-82-88	7D-82-88	7D-82-88	7D-82-88	7D-82-88
12	EFFECT	7D-82-C1	7D-82-C1	7D-82-C1	7D-82-C1	7D-82-C1	7D-82-C1
13	SYSTEM POWER	7D-82-90	7D-82-90	7D-82-90	7D-82-90	7D-82-90	7D-82-90
14	POWER OFF	7D-82-91	7D-82-91	7D-82-91	7D-82-91	7D-82-91	7D-82-91
15	TV POWER	—	—	—	—	—	—
16	VCR POWER	—	—	—	—	—	—
17	^ PLAY ^	7D-82-9D	7D-82-9D	7D-82-9D	7D-82-C5	7D-82-C5	7D-82-C5
18	+ >>> +	7D-82-9E	7D-82-9E	7D-82-9E	7D-82-C6	7D-82-C6	7D-82-C6
19	- <<< -	7D-82-9F	7D-82-9F	7D-82-9F	7D-82-C7	7D-82-C7	7D-82-C7
20	∨ PAUSE/STOP ∨	7D-82-9C	7D-82-9C	7D-82-9C	7D-82-C4	7D-82-C4	7D-82-C4
21	VOLUME +	7D-82-8D	7D-82-8D	7D-82-8D	7D-82-8D	7D-82-8D	7D-82-8D
22	VOLUME -	7D-82-8E	7D-82-8E	7D-82-8E	7D-82-8E	7D-82-8E	7D-82-8E
23	MUTE	7D-82-94	7D-82-94	7D-82-94	7D-82-94	7D-82-94	7D-82-94
24	LEVEL	7D-82-95	7D-82-95	7D-82-95	7D-82-95	7D-82-95	7D-82-95
25	TEST	7D-82-CA	7D-82-CA	7D-82-CA	7D-82-CA	7D-82-CA	7D-82-CA
26	SLEEP	7D-82-93	7D-82-93	7D-82-93	7D-82-93	7D-82-93	7D-82-93
27	ON SCREEN	7D-82-C2	7D-82-C2	7D-82-C2	7D-82-C2	7D-82-C2	7D-82-C2
28	PLAY	7A-85-00	—	—	7D-82-00	—	—
29	>>>	7A-85-02	—	—	7A-85-02	—	—
30	<<<	7A-85-01	—	—	7A-85-01	—	—

Key No.	SW 1 SW 2	SET MENU			PARAMETER		
		A	B	C	A	B	C
31	STOP	7A-85-03	—	—	7A-85-03	—	—
32	A/B	7A-85-06	—	—	7A-85-06	—	—
33	REC/PAUSE	7A-85-04	—	—	7A-85-04	—	—
34	DIR A	7A-85-07	—	—	7A-85-07	—	—
35	DIR B	7A-85-40	—	—	7A-85-40	—	—
36	PLAY	7A-85-08	7C-83-05	—	7A-85-08	7C-83-05	—
37	>>>	7A-85-0A	7C-83-03	—	7A-85-0A	7C-83-03	—
38	<<<	7A-85-0B	7C-83-02	—	7A-85-0B	7C-83-02	—
39	PAUSE/STOP	7A-85-09	7C-83-04	—	7A-85-09	7C-83-04	—
40	DISC	7A-85-4F	—	—	7A-85-4F	—	—
41	STOP	—	7C-83-5B	—	—	7C-83-5B	—
42	>>>	7A-85-0C	7C-83-07	—	7A-85-0C	7C-83-07	—
43	<<<	7A-85-0D	7C-83-06	—	7A-85-0D	7C-83-06	—
44	A/B/C/D/E	7A-85-12	—	—	7A-85-12	—	—
45	PRESET +	7A-85-10	—	—	7A-85-10	—	—
46	PRESET -	7A-85-11	—	—	7A-85-11	—	—
47	1	7D-82-D0	7D-82-D0	7D-82-D0	7D-82-D0	7D-82-D0	7D-82-D0
48	2	7D-82-D1	7D-82-D1	7D-82-D1	7D-82-D1	7D-82-D1	7D-82-D1
49	3	7D-82-D2	7D-82-D2	7D-82-D2	7D-82-D2	7D-82-D2	7D-82-D2
50	4	7D-82-D3	7D-82-D3	7D-82-D3	7D-82-D3	7D-82-D3	7D-82-D3
51	5	7D-82-D4	7D-82-D4	7D-82-D4	7D-82-D4	7D-82-D4	7D-82-D4
52	6	7D-82-D5	7D-82-D5	7D-82-D5	7D-82-D5	7D-82-D5	7D-82-D5
53	7	7D-82-D6	7D-82-D6	7D-82-D6	7D-82-D6	7D-82-D6	7D-82-D6
54	8	7D-82-D7	7D-82-D7	7D-82-D7	7D-82-D7	7D-82-D7	7D-82-D7
55	9	7D-82-D8	7D-82-D8	7D-82-D8	7D-82-D8	7D-82-D8	7D-82-D8
56	10	7D-82-D9	7D-82-D9	7D-82-D9	7D-82-D9	7D-82-D9	7D-82-D9
57	11	7D-82-DA	7D-82-DA	7D-82-DA	7D-82-DA	7D-82-DA	7D-82-DA
58	12	7D-82-DB	7D-82-DB	7D-82-DB	7D-82-DB	7D-82-DB	7D-82-DB

DSP-A1

Learning and macro key

Key No.	NAME	LEARN	MACRO	Key No.	NAME	LEARN	MACRO
1	TAPE	X	O	31	STOP	●	X
2	CD	X	O	32	A/B	●	X
3	TUNER	X	O	33	REC/PAUSE	●	X
4	VCR 1	X	O	34	DIR A	●	X
5	LD	X	O	35	DIR B	●	X
6	TV/DBS	X	O	36	PLAY	●	X
7	VCR 2	X	O	37	⏮	●	X
8	DVD/VCR 3	X	O	38	⏭	●	X
9	V-AUX	X	O	39	PAUSE/STOP	●	X
10	TAPE 2 MONEXTDEC	X	O	40	DISC	●	X
11	PHONO	X	O	41	STOP	●	X
12	EFFECT	X	X	42	⏮	●	X
13	SYSTEM POWER	X	O	43	⏭	●	X
14	POWER OFF	X	O	44	A/B/C/D/E	●	X
15	TV POWER	O	X	45	PRESET +	●	X
16	VCR POWER	O	X	46	PRESET -	●	X
17	⏮ PLAY ⏭	X	X	47	1	●	X
18	+ ⏮ +	X	X	48	2	●	X
19	- ⏭ -	X	X	49	3	●	X
20	⏮ PAUSE/STOP ⏭	X	X	50	4	●	X
21	VOLUME +	X	X	51	5	●	X
22	VOLUME -	X	X	52	6	●	X
23	MUTE	X	X	53	7	●	X
24	LEVEL	X	X	54	8	●	X
25	TEST	X	X	55	9	●	X
26	SLEEP	X	X	56	10	●	X
27	ON SCREEN	X	X	57	11	●	X
28	PLAY	●	X	58	12	●	X
29	⏮	●	X				
30	⏭	●	X				

LEARN

O : Learning key A (The key of learning 1 position (Don't care every SW).)

● : Learning key B (The key of learning 2 position of SW3-B and SW3-C. in case of SW3-A, non-learning key, without regard to the positions of other SW.)

X : Non-learning key (The key of non-learning without regard to positions of every SW.)

MACRO

O : The key of macro setting

X : The key of macro non-setting

The list of action when each key is pushed.

Key No.		Cover OPEN			Cover CLOSE		
		Don't care			Don't care		
		SW 1	SW 2	SW 3	OFF	QUICK	SLOW
1	TAPE	AS	AS	AS	AS	MS	MS
2	CD	AS	AS	AS	AS	MS	MS
3	TUNER	AS	AS	AS	AS	MS	MS
4	VCR 1	AS	AS	AS	AS	MS	MS
5	LD	AS	AS	AS	AS	MS	MS
6	TV/DBS	AS	AS	AS	AS	MS	MS
7	VCR 2	AS	AS	AS	AS	MS	MS
8	DVD/VCR 3	AS	AS	AS	AS	MS	MS
9	V-AUX	AS	AS	AS	AS	MS	MS
10	TAPE 2 MONEXTDEC	AS	AS	AS	AS	MS	MS
11	PHONO	AS	AS	AS	AS	MS	MS
12	EFFECT	AS	AS	AS	AS	AS	AS
13	SYSTEM POWER	A	A	A	A	M	M
14	POWER OFF	A	A	A	A	M	M
15	TV POWER	G	G	G	G	G	G
16	VCR POWER	G	G	G	G	G	G
17	⏮ PLAY ⏭	A	A	A	CS	CS	CS
18	+ ⏮ +	A	A	A	CS	CS	CS
19	- ⏭ -	A	A	A	CS	CS	CS
20	⏮ PAUSE/STOP ⏭	A	A	A	CS	CS	CS
21	VOLUME +	A	A	A	A	A	A
22	VOLUME -	A	A	A	A	A	A
23	MUTE	A	A	A	A	A	A
24	LEVEL	A	A	A	—	—	—
25	TEST	A	A	A	—	—	—
26	SLEEP	A	A	A	—	—	—
27	ON SCREEN	A	A	A	—	—	—
28	PLAY	AS	GS	GS	—	—	—
29	⏮	AS	GS	GS	—	—	—
30	⏭	AS	GS	GS	—	—	—

Key No.		Cover OPEN			Cover CLOSE		
		Don't care			Don't care		
		SW 1	SW 2	SW 3	OFF	QUICK	SLOW
31	STOP	AS	GS	GS	—	—	—
32	A/B	AS	GS	GS	—	—	—
33	REC/PAUSE	AS	GS	GS	—	—	—
34	DIR A	AS	GS	GS	—	—	—
35	DIR B	AS	GS	GS	—	—	—
36	PLAY	AS	BS	GS	—	—	—
37	⏮	AS	BS	GS	—	—	—
38	⏭	AS	BS	GS	—	—	—
39	PAUSE/STOP	AS	BS	GS	—	—	—
40	DISC	AS	GS	GS	—	—	—
41	STOP	AS	BS	GS	—	—	—
42	⏮	NS	BS	GS	—	—	—
43	⏭	AS	BS	GS	—	—	—
44	A/B/C/D/E	AS	GS	GS	—	—	—
45	PRESET +	AS	GS	GS	—	—	—
46	PRESET -	AS	GS	GS	—	—	—
47	1	A	B	B	—	—	—
48	2	A	B	B	—	—	—
49	3	A	B	B	—	—	—
50	4	A	B	B	—	—	—
51	5	A	B	B	—	—	—
52	6	A	B	B	—	—	—
53	7	A	B	B	—	—	—
54	8	A	B	B	—	—	—
55	9	A	B	B	—	—	—
56	10	A	B	B	—	—	—
57	11	A	B	B	—	—	—
58	12	A	B	B	—	—	—

A : Transmit the fixed code (non-learning key)

B : Transmit the fixed code or learn code

AS : Transmit the fixed code (non-learning key) + lighting

BS : Transmit the fixed code or learn code + lighting

CS : Transmit the code of control mode + lighting

G : Transmit the learn code (in case of the non-learning, transmits no code)

GS : Transmit the learn code (in case of the non-learning, transmits no code) + lighting

M : MACRO transmission

MS : MACRO transmission + lighting

NS : Lighting only

Lighting point

Key No.	COVER		OPEN		
	SW 1		Don't care.		
	SW 3		Don't care.		
	SW 2		A	B	C
1	TAPE		Z1, Z17	Z1	Z1
2	CD		Z2, Z18	Z2	Z2
3	TUNER		Z3, Z19	Z3	Z3
4	VCR 1		Z4	Z4, Z17	Z4
5	LD		Z5	Z5, Z18	Z5
6	TV/DBS		Z6	Z6, Z19	Z6
7	VCR 2		Z7	Z7	Z7, Z17
8	DVD/VCR 3		Z8	Z8	Z8, Z18
9	V-AUX		Z9	Z9	Z9, Z19
10	TAPE 2 MONEXTDEC		Z10	Z10	Z10
11	PHONO		Z11	Z11	Z11
12	EFFECT		Z12	Z12	Z12
28	PLAY		Z1, Z17	Z4, Z17	Z7, Z17
29	>>>		Z1, Z17	Z4, Z17	Z7, Z17
30	<<<		Z1, Z17	Z4, Z17	Z7, Z17
31	STOP		Z1, Z17	Z4, Z17	Z7, Z17
32	A/B		Z1, Z17	Z4, Z17	Z7, Z17
33	REC/PAUSE		Z1, Z17	Z4, Z17	Z7, Z17
34	DIR A		Z1, Z17	Z4, Z17	Z7, Z17
35	DIR B		Z1, Z17	Z4, Z17	Z7, Z17
36	PLAY		Z2, Z18	Z5, Z18	Z8, Z18
37	>>>		Z2, Z18	Z5, Z18	Z8, Z18
38	<<<		Z2, Z18	Z5, Z18	Z8, Z18
39	PAUSE/STOP		Z2, Z18	Z5, Z18	Z8, Z18
40	DISC		Z2, Z18	Z5, Z18	Z8, Z18
41	STOP		Z2, Z18	Z5, Z18	Z8, Z18
42	>>>		Z2, Z18	Z5, Z18	Z8, Z18
43	<<<		Z2, Z18	Z5, Z18	Z8, Z18
44	A/B/C/D/E		Z3, Z19	Z6, Z19	Z9, Z19
45	PRESET +		Z3, Z19	Z6, Z19	Z9, Z19
46	PRESET -		Z3, Z19	Z6, Z19	Z9, Z19

Key No.	COVER		CLOSE		
	SW 1		Don't care.		
	SW 3		Don't care.		
	SW 2		Don't care.		
1	TAPE		Z1 : ○, Z13 : ○, Z14 : ○, Z16 : ○, Z15 : ○		
2	CD		Z1 : ○, Z13 : ○, Z14 : ○, Z16 : ○, Z15 : ○		
3	TUNER		Z3 : ○, Z13 : ○, Z14 : ○, Z16 : ○		
4	VCR 1		Z4 : ○, Z13 : K28-B, Z14 : K29-B, Z16 : K30-B, Z15 : K31-B		
5	LD		Z5 : ○, Z13 : ○, Z14 : ○, Z16 : ○, Z15 : ○		
6	TV/DBS		Z6 : ○, Z13 : K44-B, Z14 : K45-B, Z16 : K46-B		
7	VCR 2		Z7 : ○, Z13 : K28-C, Z14 : K29-C, Z16 : K30-C, Z15 : K31-C		
8	DVD/VCR 3		Z8 : ○, Z13 : K36-C, Z14 : K37-C, Z16 : K38-C, Z15 : K39-C		
9	V-AUX		Z9 : ○, Z13 : K44-C, Z14 : K45-C, Z16 : K46-C		
10	TAPE 2 MONEXTDEC		Z10 : ○		
11	PHONO		Z11 : ○		
12	EFFECT		Z12 : ○		
17	△ PLAY △		Same as the case of pushing the mode key of current mode.		
18	+ >>> +		(In case of having set the mode TAPE, the lighting is same as the case of pushing TAPE key.)		
19	- <<< -				
20	∨ PAUSE/STOP ∨				

Detail : ○----- Lighting on.

K X X - Y----- Lighting on if the key, that is key No. X X and SW2-Y, has been learned.

Control transmission

The unit transmits the code of the mode set by pushing one of 4 keys (OPERATION CONTROL keys) shown below.

The codes of every mode are the code setting key No. shown below.

(The code is fixed code or learned signal in case of finishing learning. If the key has no code and no learning, the unit transmits no code.)

Key No.	NAME	TAPE	CD	TUNER	VCR 1	LD	TV/DBS	VCR 2	DVD/VCR 3	V-AUX
17	△ PLAY △	K28-A	K36-A	K44-A	K28-B	K36-B	K44-B	K28-C	K36-C	K44-C
18	+ >>> +	K29-A	K37-A	K45-A	K29-B	K37-B	K45-B	K29-C	K37-C	K45-C
19	- <<< -	K30-A	K38-A	K46-A	K30-B	K38-B	K46-B	K30-C	K38-C	K46-C
20	∨ PAUSE/STOP ∨	K31-A	K39-A	—	K31-B	K39-B	—	K31-C	K39-C	—

Detail : K X X - Y

Key No. The position of SW2

All key lighting

If the LIGHT key (Key No. 62) is pushed, the LED lights as shown below.

If the LIGHT key (Key No. 62) is pushed again during lighting of the LED, the LED turns off.

COVER	OPEN	CLOSE
Lighting LED	Z1 ~ Z19	Z1 ~ Z16

MACRO transmission

Transmission code of initial setting is shown below. (key No.)

Each transmission code is the fixed or learning code.

Key No.	COVER		CLOSE						
	SW 1		Don't care.						
	SW 2		Don't care.						
	SW 3		QUICK or SLOW						
	MACRO order		1	2	3	4	5	6	7
1	TAPE	K13	K1	K28-A	-	-	-	-	-
2	CD	K13	K2	K36-A	-	-	-	-	-
3	TUNER	K13	K3	-	-	-	-	-	-
4	VCR 1	K13	K4	K28-B	-	-	-	-	-
5	LD	K13	K5	K36-B	-	-	-	-	-
6	TV/DBS	K13	K6	-	-	-	-	-	-
7	VCR 2	K13	K7	K28-C	-	-	-	-	-
8	DVD/VCR 3	K13	K8	K36-C	-	-	-	-	-
9	V-AUX	K13	K9	-	-	-	-	-	-
10	TAPE 2 MONEXTDEC	K13	K10	-	-	-	-	-	-
11	PHONO	K13	K11	-	-	-	-	-	-
13	SYSTEM POWER	K13	K15	K16	-	-	-	-	-
14	POWER OFF	K14	-	-	-	-	-	-	-

Detail : K X X - Y

Key No. The position of SW2

A

B

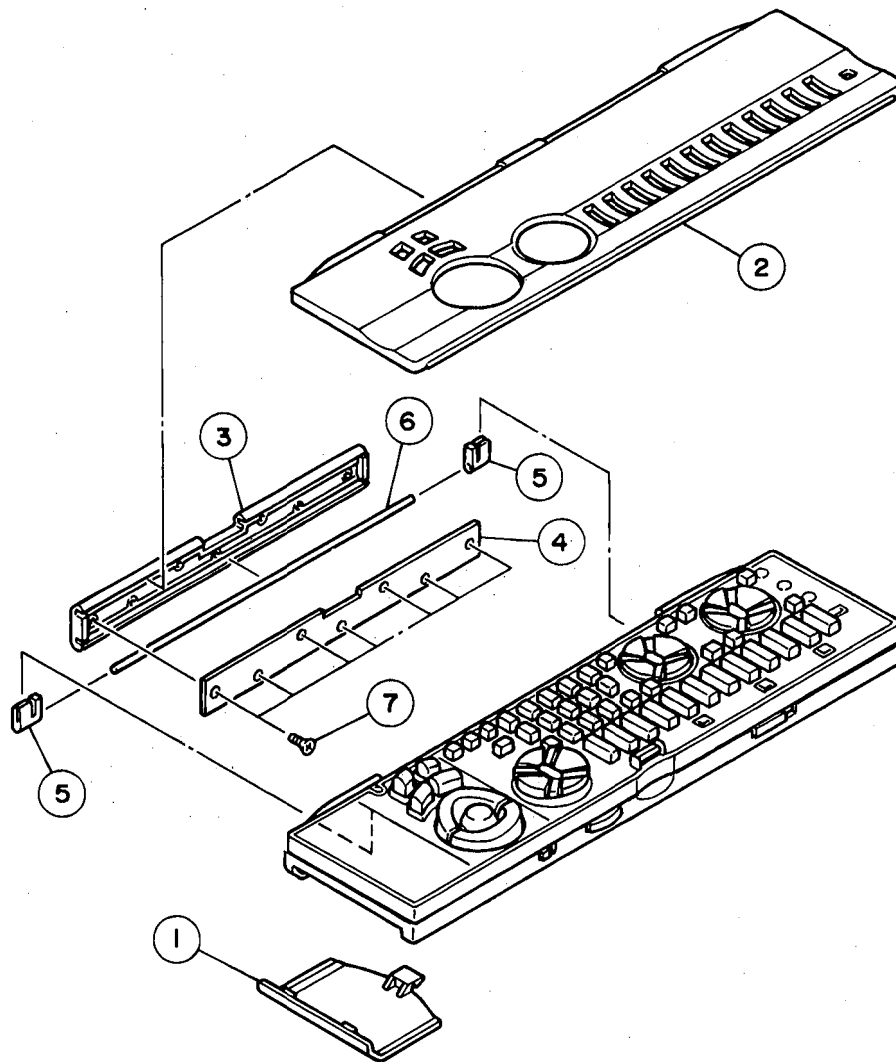
C

D

E

DSP-A1

EXPLODED VIEW



Ref. No.	PART NO.	Description	Remarks	Markets
* 1	VZ338400	REMOTE CONTROL TRANSMITTER	RRC4000-5452R	
* 2	CX680040	COVER, BATTERY		
3	CX680060	BRACKET	A	
4	CX680070	BRACKET	B	
5	CX680080	GUIDE PIN		
6	CX680090	PIN		
7	EX603910	SCREW	M1.7x13.5	

* New Parts

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 k Ω	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 k Ω	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 k Ω	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 k Ω	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 k Ω	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 k Ω	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 k Ω	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 k Ω	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 k Ω	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 k Ω	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 k Ω	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 k Ω	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 k Ω	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 k Ω	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 k Ω	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 k Ω	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 k Ω	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 k Ω	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 k Ω	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 k Ω	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 k Ω	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 k Ω	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 k Ω	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 k Ω	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 k Ω	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 k Ω	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 k Ω	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 k Ω	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 k Ω	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 k Ω	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 k Ω	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 k Ω	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 k Ω	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 k Ω	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 M Ω	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 M Ω	HJ35 9120	*
1.0 k Ω	HF45 6100	HF45 6100	1.5 M Ω	HJ35 9150	HF85 9150
1.2 k Ω	HF45 6120	HF45 6120	1.8 M Ω	HJ35 9180	HF85 9180
1.5 k Ω	HF45 6150	HF45 6150	2.2 M Ω	HJ35 9220	HF85 9220
1.8 k Ω	HF45 6180	HF45 6180	3.3 M Ω	HJ35 9330	HF85 9330
2.0 k Ω	HJ35 6200	HF85 6200	3.9 M Ω	HJ35 9390	*
2.2 k Ω	HF45 6220	HF45 6220	4.7 M Ω	HJ35 9470	HF85 9470
2.4 k Ω	HJ35 6240	HF85 6240			
2.7 k Ω	HF45 6270	HF45 6270			
3.0 k Ω	HF45 6300	HF45 6300			
3.3 k Ω	HF45 6330	HF45 6330			
3.6 k Ω	HJ35 6360	HF85 6360			
3.9 k Ω	HF45 6390	HF45 6390			
4.7 k Ω	HF45 6470	HF45 6470			
5.1 k Ω	HF45 6510	HF45 6510			
5.6 k Ω	HF45 6560	HF45 6560			
6.8 k Ω	HF45 6680	HF45 6680			
8.2 k Ω	HF45 6820	HF45 6820			
9.1 k Ω	HF45 6910	HF45 6910			

1/4W Type

HJ35 ○○○○

10mm

1/4W Type

HF45 ○○○○

1/6W Type

HF85 ○○○○

5mm

DSP-A1

YAMAHA
