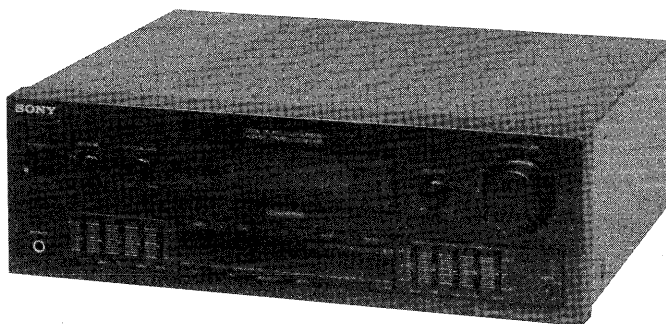


# TA-AV411

## SERVICE MANUAL

US Model



### SPECIFICATIONS

#### AUDIO POWER SPECIFICATIONS

##### POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm loads, both channels driven, from 40 - 20,000 Hz; rated 135 watts per channel minimum RMS power, with less than 0.9% total harmonic distortion from 250 milliwatts to rated output.

#### Amplifier section

Power bandwidth (IHF)

30 Hz - 30 kHz (8 ohms)

Dynamic headroom 1.7 dB (\*78 IHF)

Harmonic distortion Less than 0.9% at rated output (Surround OFF)

Frequency response PHONO: RIAA equalization curve  
CD, VIDEO, TUNER, TAPE:  
30 Hz - 30 kHz  $\pm 3$ dB

Surround output 15 W + 15 W (8 ohms)

Damping factor 27 (8 ohms, 1 kHz)

Input

| Input jack             | Jack type | Sensitivity | Impedance | S/N (weighting network, input level) |
|------------------------|-----------|-------------|-----------|--------------------------------------|
| PHONO                  | Phono     | 3.0 mV      | 50 kohms  | 71 dB<br>75 dB*<br>(A, 3.0 mV)       |
| CD, VIDEO, TUNER, TAPE | Phono     | 250 mV      | 50 kohms  | 92 dB<br>83 dB*<br>(A, 250 mV)       |

\*78 IHF

#### Output

|                |                   |                                            |
|----------------|-------------------|--------------------------------------------|
| TAPE (REC OUT) | Phono jacks       | Voltage 150 mV<br>Impedance 1 kohm         |
| SPEAKERS       | -                 | Accepts speakers of 8 - 16 ohms            |
| HEADPHONES     | Stereo phone jack | Accepts low and high impedance headphones. |

#### GRAPHIC EQUALIZER controls

Boost/Cut range:

$\pm 8$  dB (100 Hz, 330 Hz, 1 kHz, 3.3 kHz)

$\pm 6$  dB (10 kHz)

#### General

##### Power requirements

120 V AC, 60 Hz

##### Power consumption

250 W

AC outlets 3 switched, 120 V/1 A max.

Dimensions Approx. 430 x 145 x 360 mm (w/h/d)  
(17 x 5 $\frac{5}{8}$  x 14 $\frac{1}{8}$  inches)

Weight Approx. 9.9 kg (21 lb 14 oz)

##### Accessories supplied

Remote Commander RM-U212 (1)  
Sony batteries SUM 3(NS) (2)

Design and specifications subject to change without notice.



INTEGRATED STEREO AMPLIFIER  
**SONY**

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:  
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- 1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
- 2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

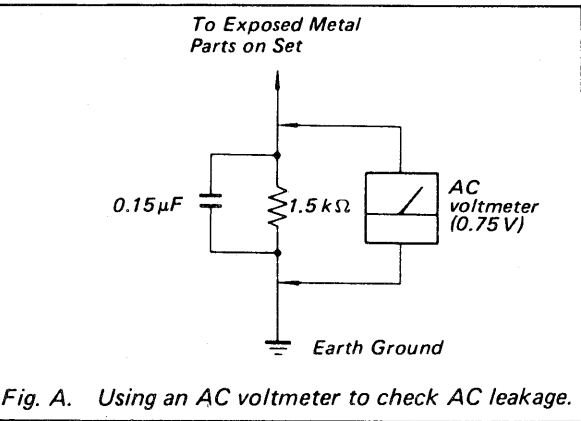


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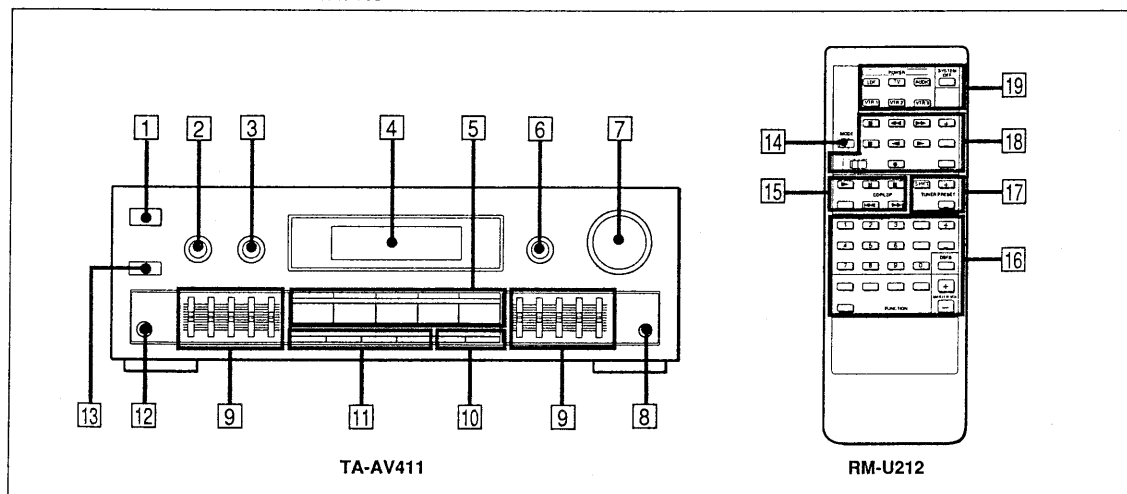
**SAFETY-RELATED COMPONENT WARNING!!**  
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1

### GENERAL

This section is extracted from instruction manual.

#### 1-1. Location and Function of Controls



##### Amplifier

##### 1 SYSTEM POWER switch

When the SYSTEM POWER switch is turned ON, the settings on the display panel are automatically reset to the original setting.

##### 2 SPEAKERS selector

##### 3 INPUT BALANCE control

##### 4 Display window

##### 5 Function selectors

##### 6 BALANCE control

##### 7 MASTER VOLUME control

##### 8 DBFB switch

##### 9 Graphic equalizer controls

##### 10 REAR LEVEL buttons

##### 11 SURROUND MODE selectors

##### 12 HEADPHONES jack

##### 13 Remote control sensor

##### Remote Commander

##### 14 MODE selector

Selects the function mode on the remote commander.

1: To select the function indicated in light gray such as DECK, DAT, CD player and surround mode of amplifier.

2: To select the functions indicated in blue such as VTR, LDP (Laser disc player) and TV.

##### 15 CDP/LDP control section

The combined CD/LD player can be controlled with LDP position.

▶: Play

⏸: Pause

■: Stop

D (disc) SKIP: Disc skip (for a CD player equipped with a multi-disc changer)

◀◀/▶▶: Manual search (only for LD player)

◀◀/▶▶: Locates a desired selection.

##### 16 Amplifier/TV section

TV/VIDEO button: Selects the input signal of the TV. (for TV)

Program number (1 to 0) and ENTER buttons: Select the channel. (for TV)

SURROUND mode selectors (for the amplifier)

ON/OFF: Turns on/off the surround mode.

MODE: Selects the surround mode.

FUNCTION selectors: Select an input source of the amplifier. (for the amplifier)

REAR VOL /TV VOL +/- buttons: Control the volume of rear speakers (surround level) or TV.

DBFB button: Turns on/off the DBFB (Dynamic Bass Feed Back). (for the amplifier)

MASTER VOL +/- buttons: Control the amplifier volume. (for the amplifier)

##### 17 Tuner/TV section

SHIFT and TUNER PRESET/ TV CH (channel) +/- buttons:

Select a preset channel of the tuner or a channel of the TV.

##### 18 Tape deck/VCR control section

DECK/VTR selector

DECK A,B, and DAT: Selects A,B, or DAT deck.

VTR 1, 2, and 3: Selects VCR type.

(1: Betamax VCRs, 2: 8 mm VCRs, 3: VHS VCRs)

⏸: Pause

■: Stop

◀◀/▶▶: Fast winding

◀/▶: Play

● (REC): Recording

ANT (antenna) TV/VTR button: Selects the output signal from the antenna terminal on the VCR, either a TV signal or VCR programs.

VTR CH (channel) +/- buttons: Select channel on the VCR.

##### 19 Power control section

SYSTEM OFF button: Turns off the power of the whole system: LDP, VTR, TV, and AUDIO.

LDP/VTR1/VTR2/VTR3/TV/AUDIO POWER buttons: Control the power of each unit. (The VTR button can be operative only

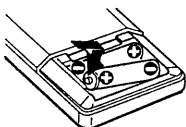
#### Installing Batteries

1



2

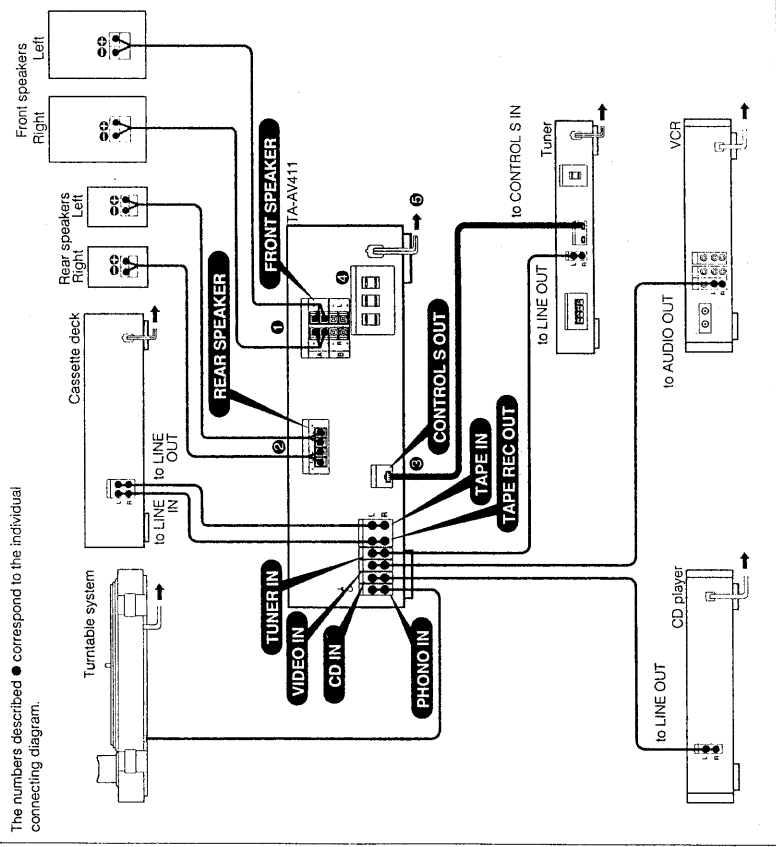
Two size-AA (R6) batteries



Connections

- Connect the AC power cord last. Make sure power is off.
- Cord plugs and jacks are color coded. Red plugs and jacks are for right channel (R) and white ones for the left channel (L).
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- The + and - cords of the speaker systems should be correctly connected to the + and - terminals of the amplifier respectively.

The numbers described ● correspond to the individual connecting diagram.



**1 Front speakers**  
You can connect two pairs of speaker systems: system A and system B. They can be selected individually or simultaneously with the selector on the front panel.

**2 Rear speakers**  
Connect a pair of rear speaker systems for enjoying surround sound.

**3 AC outlets (switched)**  
Use these to power audio components whose power consumption is less than the wattage indicated on the AC outlets. These outlets are controlled by the POWER switch.

**CAUTION**  
Do not connect any electrical home appliances such as an electric iron, fan, TV or other high wattage equipment to these AC outlets.

**4 Flat remote control cord (not supplied)**  
Connect to the CONTROL S IN jack of other Sony equipment with the flat remote control cord for whole audio system remote control.

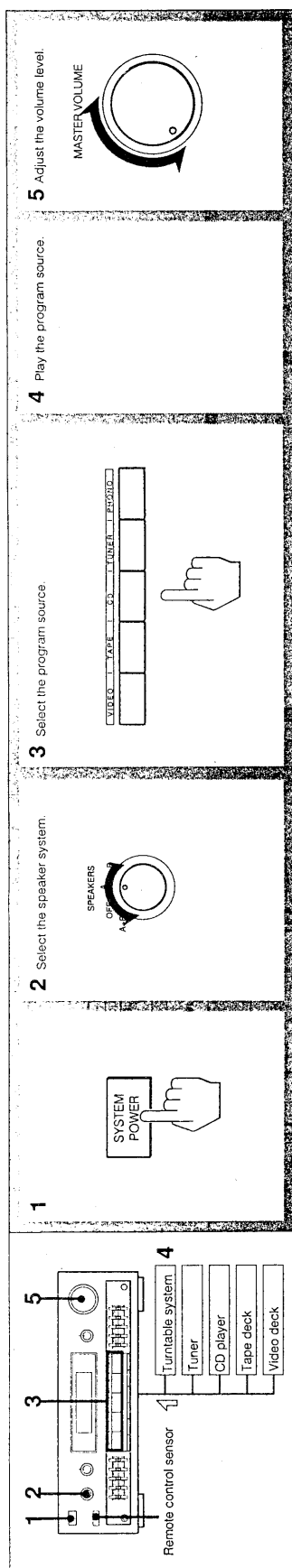
**5 Power cord**  
Connect to a wall outlet.

**Note on speaker impedance and power capacity**  
This amplifier is designed to work best with speakers of nominal impedance from 8 to 16 ohms. Be sure to use a speaker system with adequate power handling capabilities.

**To connect a video tape recorder**  
Use the following cables.

|                                           |
|-------------------------------------------|
| For stereo video tape recorder            |
| RK-C74    phono plug x 2 – phono plug x 2 |
| For monaural video tape recorder          |
| RK-G105    mini plug x 1 – phono plug x 2 |
| RK-C72    phono plug x 1 – phono plug x 2 |

## Listening to a Program Source



### Selecting the speaker system

To drive speaker system A: Set SPEAKERS to 'A'.

To drive speaker system B: Set SPEAKERS to 'B'.

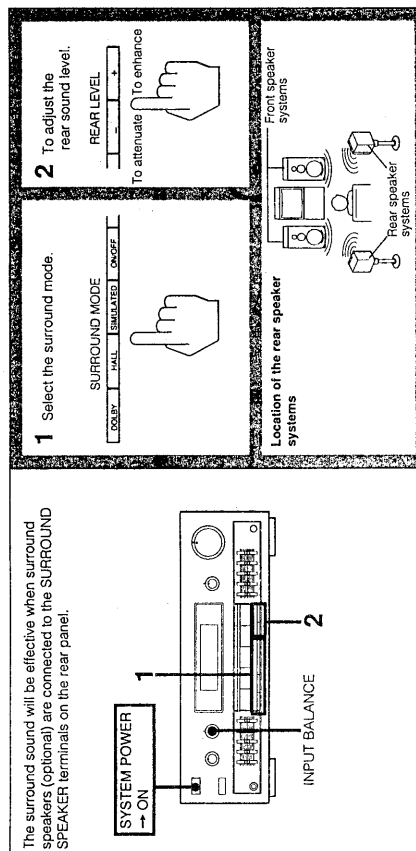
To drive both speakers: Set SPEAKERS to 'A + B'.

For headphone listening only: Set SPEAKERS to 'OFF'.

### Notes

- When SPEAKERS is set to 'A + B', two pairs of speaker systems must be connected. Otherwise, no sound can be heard.
- The sound of rear (surround) speakers are not heard from the headphone.

## Enjoying Surround Sound



### Note

No sound will be heard from the surround speakers, unless one of the Surround modes is selected.

**Adjusting the INPUT BALANCE control**  
In the DOLBY SURROUND mode adjust this control so that the (audio) volume of the surround speaker is minimized during the scene of conversation (where the sound is monaural).

### Selecting surround modes

**DOLBY** (Dolby Surround)

Expands sound just like listening to it in a movie theater.

**HALL** (Hall Surround)

Provides reverberation effect that is produced in a concert hall.

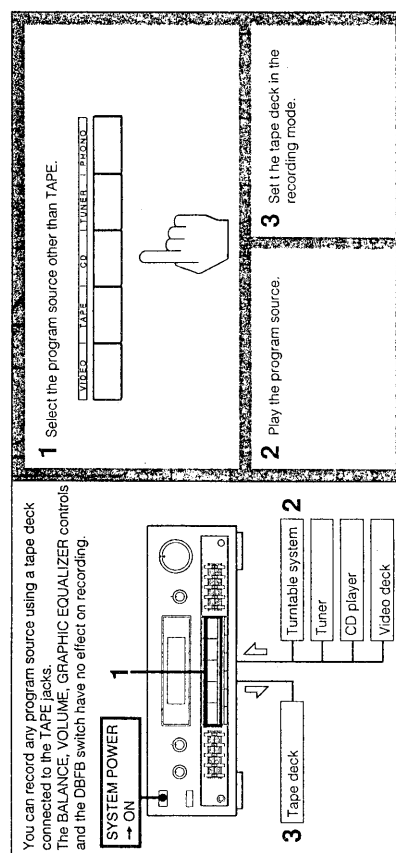
**SIMULATED** (Simulated Surround)

Gives a simulate stereo effect to monaural sound.

**OFF** (To disable surround effect)

The normal sound without surround effect will resume.

## Recording



You can record any program source using a tape deck connected to the TAPE jacks.

The BALANCE, VOLUME, GRAPHIC EQUALIZER controls and the DBFB switch have no effect on recording.

## SECTION 2

### DIAGRAMS

#### 2-1. Description on IC101 ( $\mu$ PD75206-717-3BE)

| Pin | Port            | I/O | ACT | RESET | Outside |               |
|-----|-----------------|-----|-----|-------|---------|---------------|
| 1   | RESET           | I   |     |       |         | DIGIT9        |
| 2   | t0              | O   | H   | High  | L       | DIGIT8        |
| 3   | t1              | O   | H   | High  | L       | DIGIT7        |
| 4   | t2              | O   | H   | High  | L       | DIGIT6        |
| 5   | t3              | O   | H   | High  | L       | DIGIT5        |
| 6   | t4              | O   | H   | High  | L       | DIGIT4        |
| 7   | t5              | O   | H   | High  | L       | DIGIT3        |
| 8   | t6              | O   | H   | High  | L       | DIGIT2        |
| 9   | t7              | O   | H   | High  | L       | DIGIT1        |
| 10  | t8              | O   | H   | High  | L       | NC            |
| 11  | t9              | O   | H   | High  | L       | DBFB          |
| 12  | t10             | O   | H   | High  | L       | FRONT MUTE    |
| 13  | t11             | O   | H   | High  | L       | REAR MUTE     |
| 14  | t12             | O   | H   | High  | L       | DRLC CONTROL  |
| 15  | t13             | O   | H   | High  | L       | DRLC SW A     |
| 16  | t14             | O   | H   | High  | L       | DRLC SW B     |
| 17  | t15             | O   | H   | High  | L       | - 30V         |
| 18  | Vload           |     | -   | High  |         | - 4V          |
| 19  | Vpre            |     | -   | High  |         | NC            |
| 20  | s9              | O   | H   | High  | L       | SEG9          |
| 21  | s8              | O   | H   | High  | L       | SEG8          |
| 22  | s7              | O   | H   | High  | L       | SEG7          |
| 23  | s6              | O   | H   | High  | L       | SEG6          |
| 24  | s5              | O   | H   | High  | L       | SEG5/KEY OUT5 |
| 25  | s4              | O   | H   | High  | L       | + 5V          |
| 26  | V <sub>DD</sub> |     |     | High  |         | SEG4/KEY OUT4 |
| 27  | s3              | O   | H   | High  | L       | SEG3/KEY OUT3 |
| 28  | s2              | O   | H   | High  | L       | SEG2/KEY OUT2 |
| 29  | s1              | O   | H   | High  | L       | SEG1/KEY OUT1 |
| 30  | s0              | O   | H   | High  | L       | KEY IN 1      |
| 31  | p00             | I   | H   | In    | L       | KEY IN 2      |
| 32  | p01             | I   | H   | In    | L       |               |

High : High - impedance status

In : Input status

| Pin | Port | I/O | ACT | RESET | Outsided |                    |
|-----|------|-----|-----|-------|----------|--------------------|
| 33  | p02  | I   | H   | In    | L        | KEY IN 3           |
| 34  | p03  | I   | H   | In    | L        | KEY IN 4           |
| 35  | p10  | I   | H   | In    |          | RM - 1             |
| 36  | p11  | I   | H   | In    |          | RM - 2             |
| 37  | p12  | I   | L   | In    |          | DRLC SW            |
| 38  | p13  | I   | L   | In    |          | POWER SW           |
| 39  | p20  | O   | H   | In    | L        | ST LC7535/LC7822   |
| 40  | p21  | O   | L   | In    | L        | ST LV1001M         |
| 41  | p22  | O   | H   | In    | L        | SV MSM59371        |
| 42  | p23  | O   | H   | In    | L        | VOL +              |
| 43  | p30  | O   | H   | In    | L        | VOL -              |
| 44  | p31  | O   | H   | In    | L        | VIDEO A            |
| 45  | p32  | O   | H   | In    | L        | VIDEO B            |
| 46  | p33  | O   | L   | In    | L        | TC PAUSE/PRO LOGIC |
| 47  | p60  | O   | H   | In    | L        | STOP               |
| 48  | p61  | O   | H   | In    | L        | CLOCK              |
| 49  | p62  | O   | H   | In    | L        | DATA               |
| 50  | p63  | O   | H   | In    | L        | FRONT SP relay     |
| 51  | p40  | O   | L   | In    | L        | RECOU SW V1        |
| 52  | p41  | O   | L   | In    | L        | RECOU SW V2        |
| 53  | p42  | O   | L   | In    | L        | RECOU SW TAPE      |
| 54  | p43  | O   | H   | In    | L        | POWER RELAY        |
| 55  | ppo  | O   | H   | In    | L        | REAR SP relay      |
| 56  | x1   |     |     |       |          |                    |
| 57  | x2   |     |     |       |          |                    |
| 58  | Vss  |     |     |       |          |                    |
| 59  | xt1  |     |     |       |          |                    |
| 60  | zt2  |     |     |       |          |                    |
| 61  | p50  | O   | H   | In    |          | DRLC READY         |
| 62  | p51  | O   | H   | In    |          | MIX SW             |
| 63  | p52  | O   | H   | In    |          | DOLBY SW           |
| 64  | p53  | O   | H   | In    |          | SIM SW             |

High : High-impedance status

In : Input status

**2-2. Key operation**

Key input has priority over serial input.

**(1) Setting**

| KEY OUT<br>KEY IN | S0    | S1    | S2    | S3   | S4        |
|-------------------|-------|-------|-------|------|-----------|
| P00               | PHONO | TUNER | CD    | TAPE | VIDEO01   |
| P02               | DBFB  | DELAY | DOLBY | HALL | SIMULATED |

Note 1. SURROUND ON/OFF.

**(2) FUNCTION Key (PHONO,TUNER, CD, TAPE, VIDEO1-4) operation**

These keys execute operations below when pressed.

FUNCTION IC .....Serial data

REC OUT SW .....Static data

VIDEO SW .....Static data

FRONT MUTE .....One shot

REAR MUTE .....One shot

**(3) REAR MUTE PORT**

The port is turned to "H" by switching to SURR ON, MODE or FUNCTION.

(Key input, Serial input)

Also the port is "H" three seconds after POWER ON is selected.

REAR MUTE PORT has priority over other ports to output when POWER OFF is selected and operates when SUB VOLUME is turned to ∞.

However there is no output for the port switching the main FUNCTION when DRLC ON is selected.

**(4) DRLC CONTROL PORT (used for SP relay too)**

The port is turned to "H" only when DRLC ON is selected. (Key input, Serial input)

**(5) POWER RELAY PORT**

The port is turned to "H" when either POWER ON or DRLC ON is selected. (Key input, Serial input RM-1, RM-2) Both MAIN and SUB are turned OFF when ALL OFF serial input is selected.

**(6) DOLBY PORT**

The port is turned to "L" HALL or SIM is selected. (Key input, Serial input)

**(7) SIM PORT**

The port is turned to "L" when SIM is selected. (Key input, Serial input)

The relation between Switch ON and FUNCTION

| SW         | TA-AX311/AV411 |
|------------|----------------|
| 1. PHONO   | 10000001       |
| 2. TUNER   | 01000001       |
| 3. CD      | 00100001       |
| 4. TAPE    | 00010000       |
| 5. VIDEO 3 | none           |
| 6. VIDEO 2 | none           |
| 7. VIDEO 1 | 00000011       |
| 8. VIDEO 4 | none           |

Serial data to SURR IC (LV1001M)

The delay time is controlled with 8-bit data (short mode).

The delay time is decided by the count time.

(Address data) - FFFF (short mode)

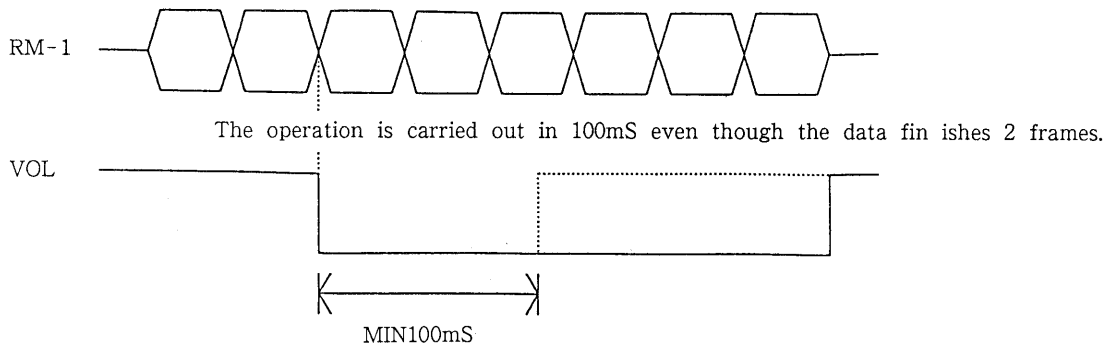
15mS .....8AB0h

20mS .....63C0h

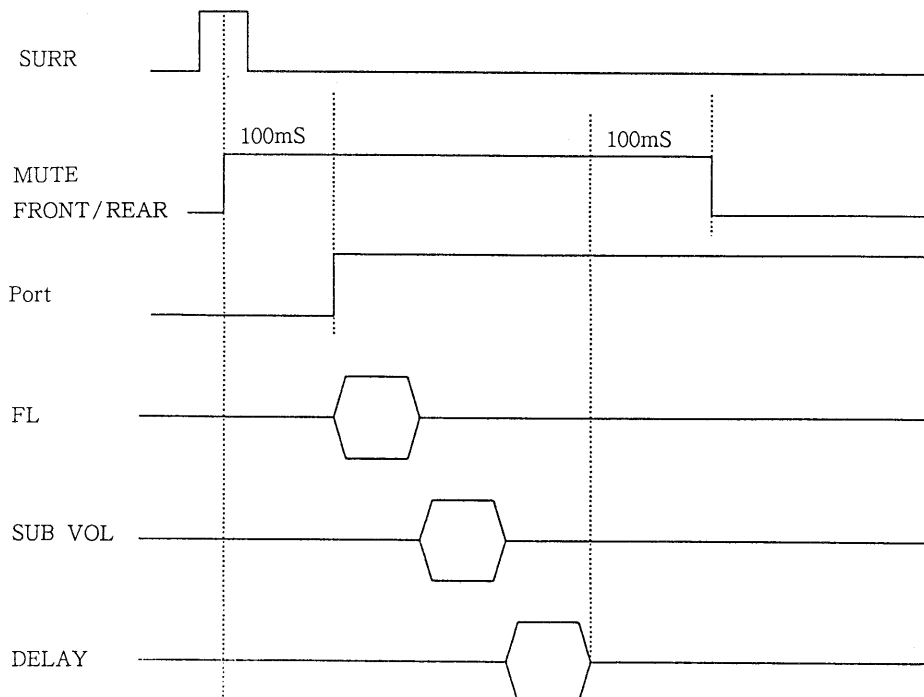
30mS .....15A0h

Timing chart

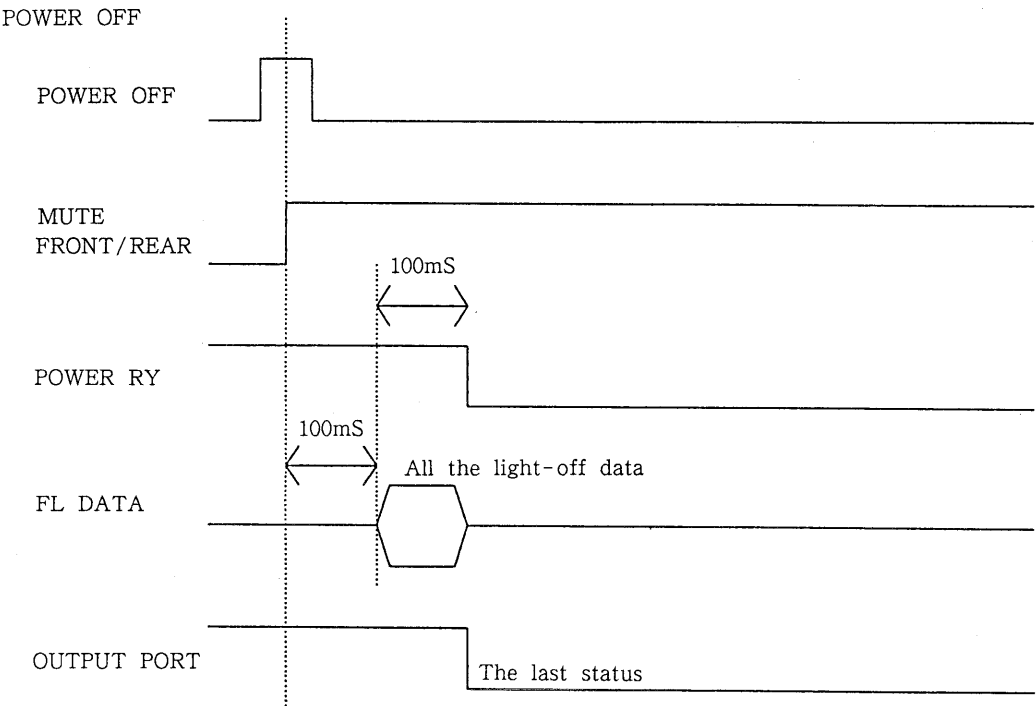
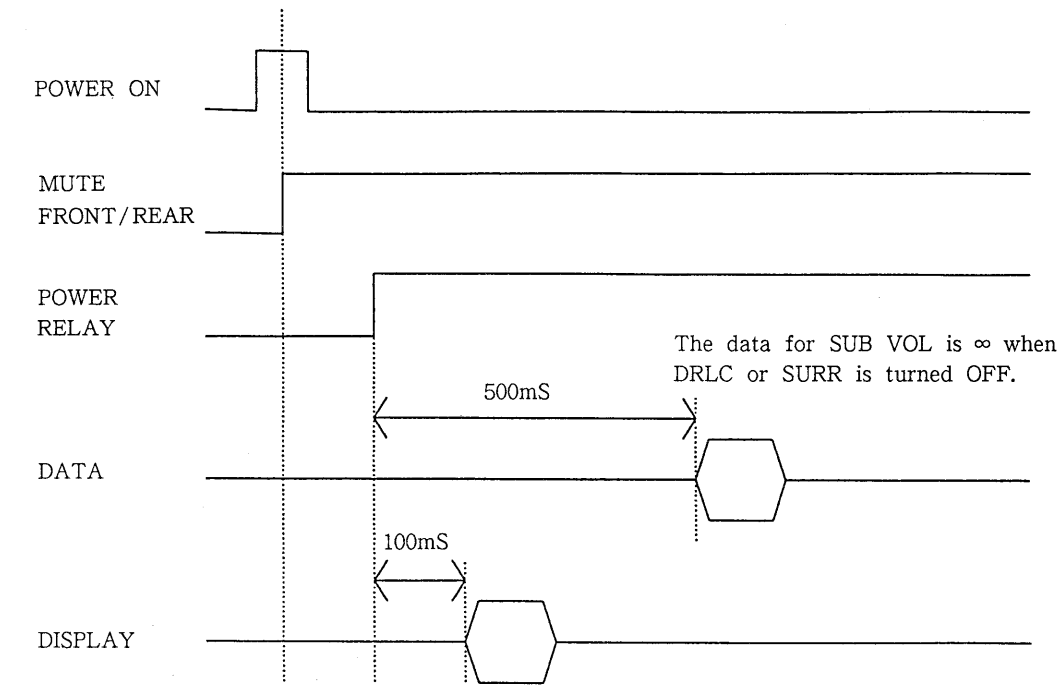
VOL + / -



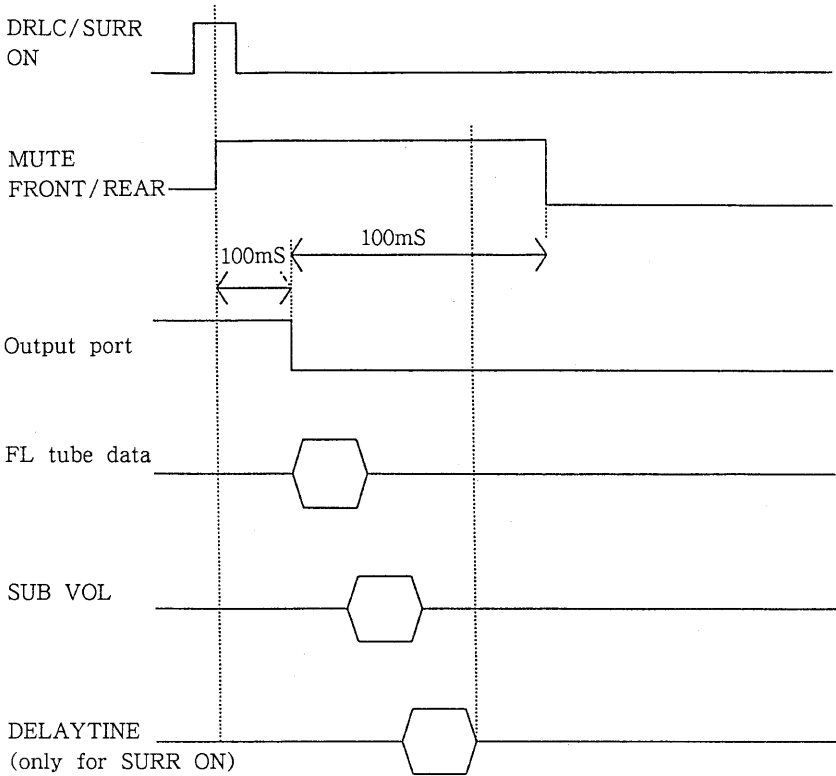
MUTE must be switched 100mS forward or backward during SURR MODE switching (including SURR/OFF switch).



POWER ON (The same operation when starting the buck up system.)

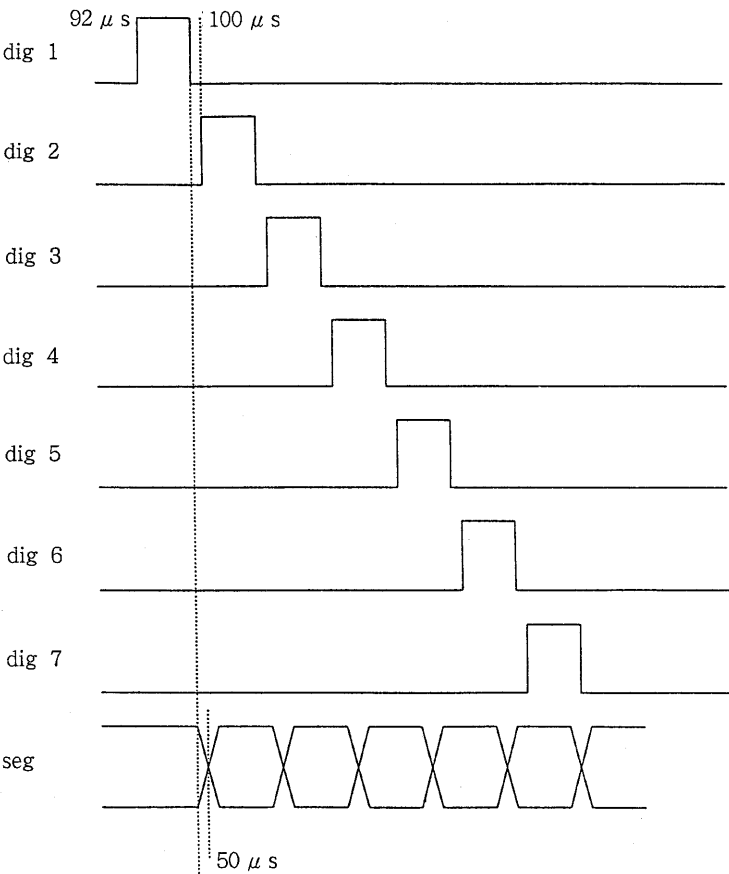


DRLC↔SURRE mutual switching

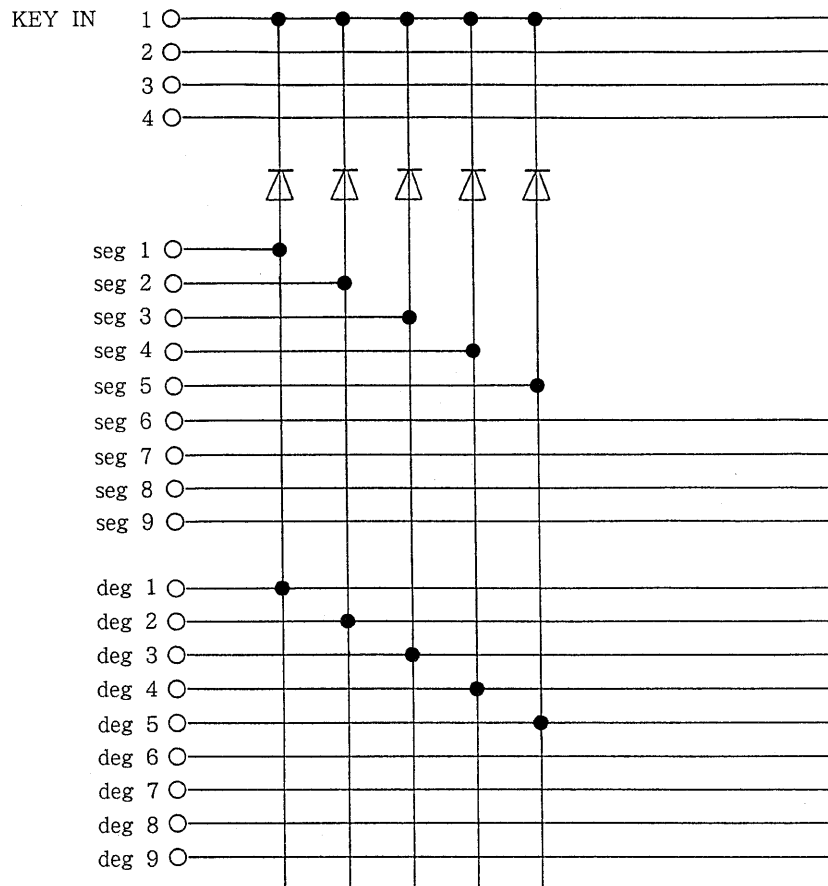


Display operation

1. FL tube start timing



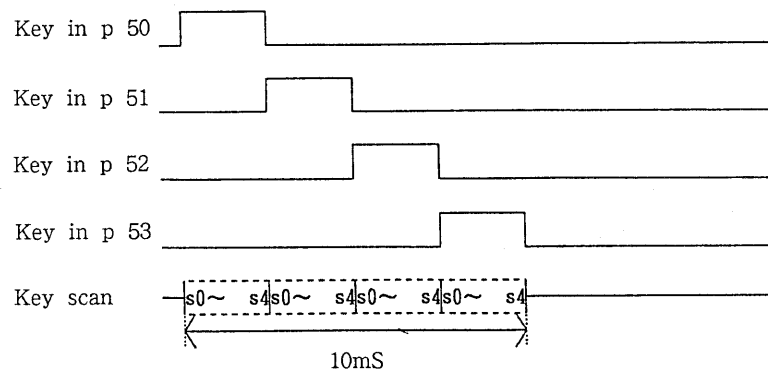
## 2-3. MATRIX for FL tube and KEY IN



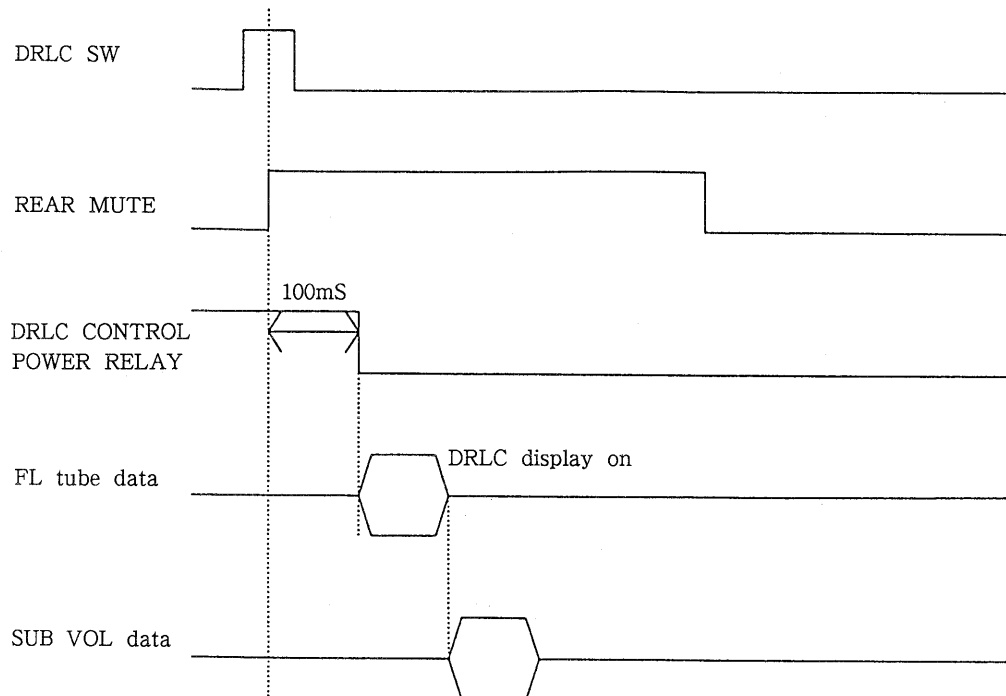
### Key scan operation

- ① Key input has priority over serial input.
- ② If a key is input 10mS after the same key was input, this is recognized as a key input and registers five times.
- ③ Double-pressing is not accepted, one pressing first and being replaced by a second has priority.
- ④ No keys can be input during POWER OFF.
- ⑤ No keys can be input for 1 Second after POWER ON.

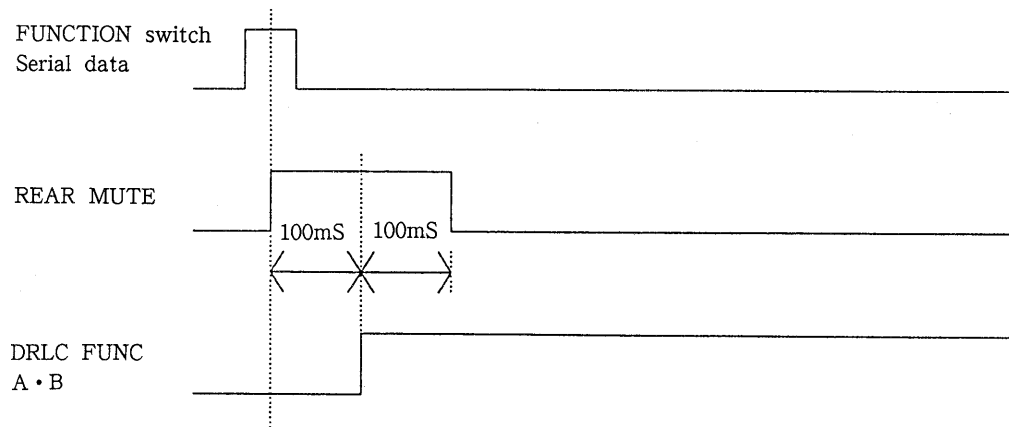
### Key scan operation



Timing chart  
DRLC



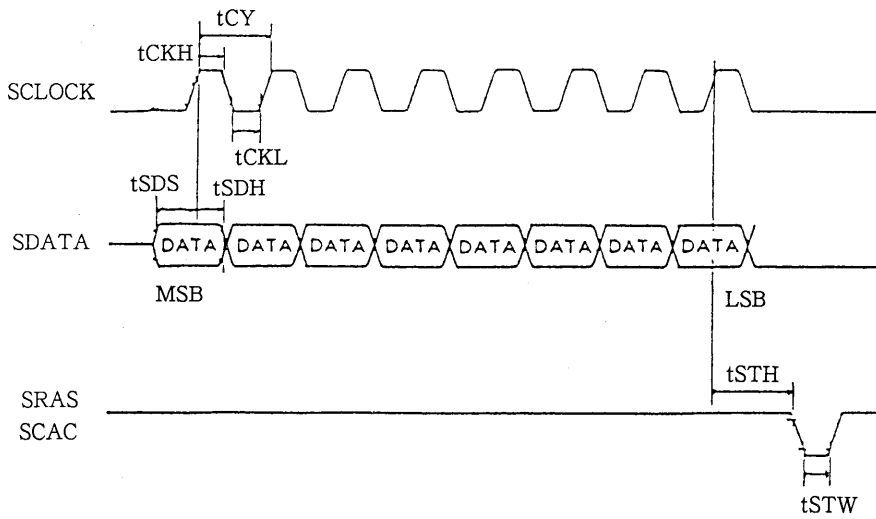
DRLC FUNCTION



## 2-4.Description on IC303 (LV1001M)

| Pin No.  | Explanations                                                                  |
|----------|-------------------------------------------------------------------------------|
| 1        | De-couple capacitor for threshold voltage                                     |
| 2, 64    | Capacitor for smoothing of rectifier output                                   |
| 3        | Capacitor for sliding band filter and Delayed output                          |
| 4, 62    | Capacitor for sliding band filter                                             |
| 5, 61    | Capacitor for pre-emphasis                                                    |
| 6, 60    | Input filter for rectifier                                                    |
| 7, 57    | Input filter for rectifier                                                    |
| 8        | Reference voltage                                                             |
| 9        | Reference voltage                                                             |
| 10       | Mute control                                                                  |
| 11       | Vcc                                                                           |
| 12       | Output for V <sub>DD</sub>                                                    |
| 13       | Clock input for serial input, data input for parallel input mode              |
| 14       | Data input for serial input, data input for parallel input mode               |
| 15       | Column address selection for serial input, data input for parallel input mode |
| 16       | Row address selection for serial input, data input for parallel input mode    |
| 18 to 32 | Connection to memory device                                                   |
| 24       | Vss                                                                           |
| 33       | X'tal resonator for oscillator                                                |
| 34       | X'tal resonator for oscillator                                                |
| 35       | Long or Short mode selection                                                  |
| 36       | Serial or Parallal mode selection                                             |
| 37       | For test mode                                                                 |
| 38       | Smoothing for NR rectifier                                                    |
| 39       | Smoothing for NR rectifier                                                    |
| 40       | Capacitor for weighting on side chain path                                    |
| 41       | Input for variable resistor                                                   |
| 42       | NR output                                                                     |
| 43       | 7kHz low pass filter output                                                   |
| 44       | Input for NR                                                                  |
| 45       | Capacitor for de-couple on NR                                                 |
| 46       | Delay output or NR output                                                     |
| 47       | Input for mute circuit                                                        |
| 48       | Output for mute circuit                                                       |
| 49       | Output for 7kHz low pass filter                                               |
| 50       | Input for 7kHz low pass filter                                                |
| 51       | GND                                                                           |
| 52       | Input for right channel                                                       |
| 53       | Input for left channel                                                        |
| 54       | Capacitor for de-couple on Fixed matrix output                                |
| 55       | Noise shaping and delay input                                                 |
| 56       | Noise shaping output                                                          |
| 57       | Delay input signal mode select switch (L + R/L - R)                           |
| 58       | Filter for supply voltage on comparator                                       |
| 63       | Capacitor for sliding band filter and local decoder output                    |

# Input Address Port Timing SHORT MODE

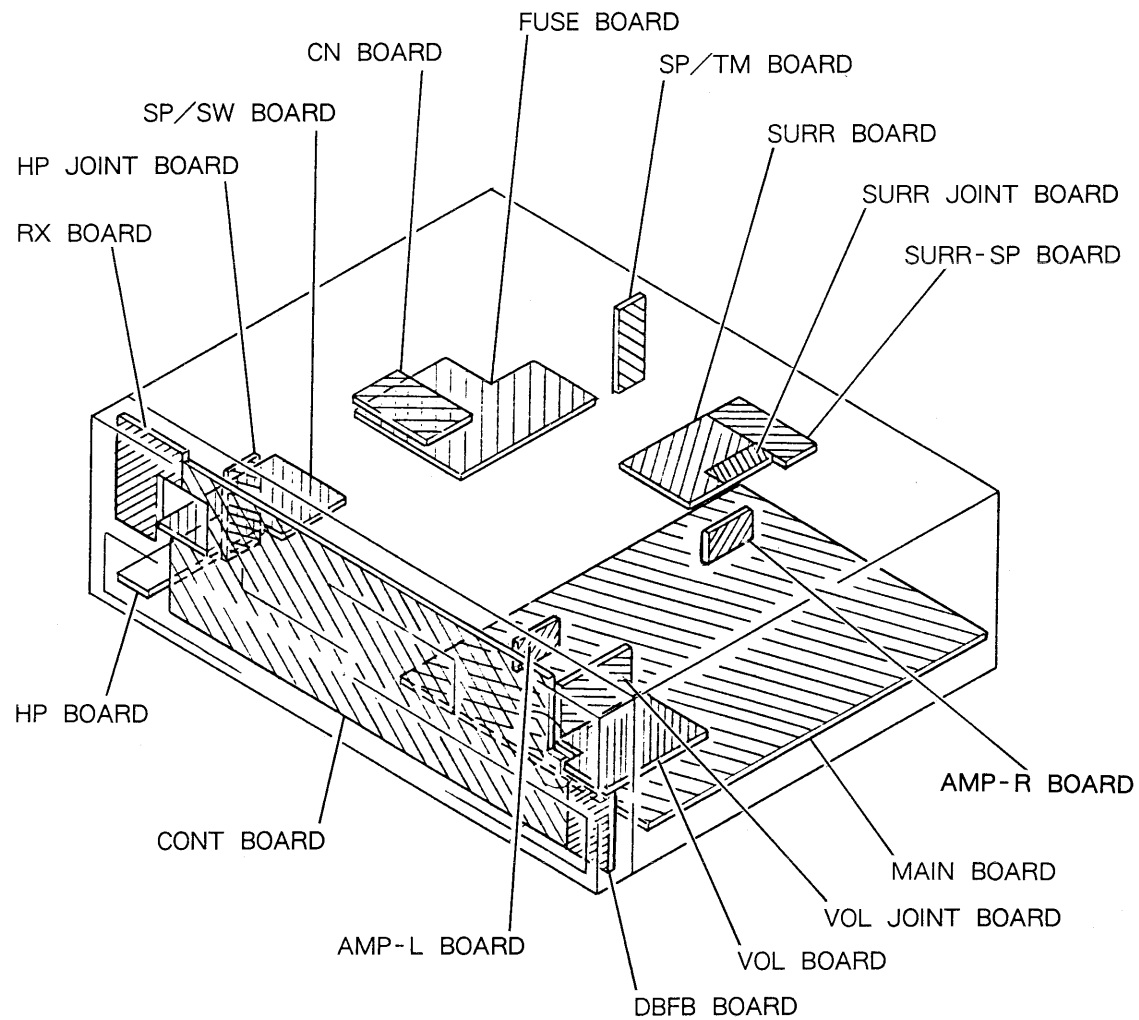


In case of short mode, delay time setting is set in above timing. The date loaded to SDATA is written on the leading edge timing. In order to select that the data latch for row address strobe or column address strobe is loaded, SRAS or SCAS port is controlled.

When changing delay time setting, meaningless data on a memory are read. this causes the pop noise. when SRAS or SCAS is controlled, mute circuit (pin 55 is input, pin 56 is output) is activated. Mute time is the same as the delay time which is set at that time. (Serial data input mode only, On parallel data input mode, mute circuit is activated by using the mute control port pin 18.)

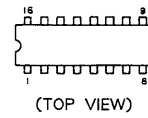
On long mode, input data number is 9, the way of setting delay time is same.

## 2-5. CIRCUIT BOARDS LOCATION

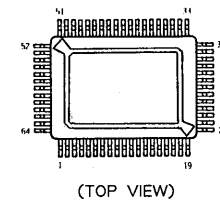


## 2-6. SEMICONDUCTOR LEAD LAYOUTS

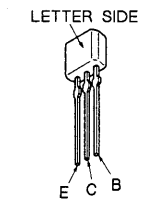
CXA1100P  
CXA1198AP  
M5226P  
TC4051BPHB



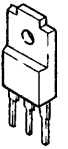
$\mu$  PD75206GF-717-3BE



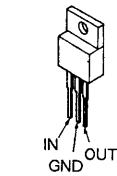
2SA1175-HFE  
2SC2785-HFE



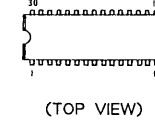
2SA1684-LK  
2SC4431-LK  
2SD2012



M5F7805L  
M5F7812L



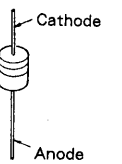
LC7822



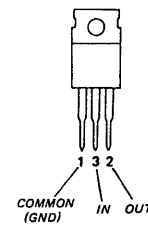
DTA124ES  
DTA144ES  
DTC114ES  
DTC124ES  
DTC144ES  
2SC2603-FE



HZS6C3L  
HZS6C2L  
HZS30-1L



M5F7912L



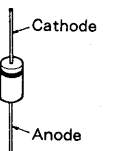
IR2E31A



2SK246-Y



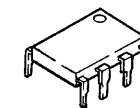
10E2N  
1S1585



LA3160  
M5128AL  
 $\mu$  PC1237HA



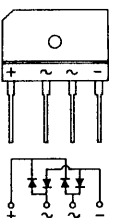
LB1639



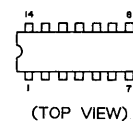
2SA733-QP  
2SC945-QP  
2SC1815-Y



RBA-402  
RBV-602-01



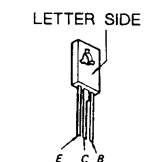
LC4966  
MC14066BCP  
TC4001BP  
 $\mu$  PD4011BC



SI-18752N



2SC2682-QPE



SEL2210S-CD

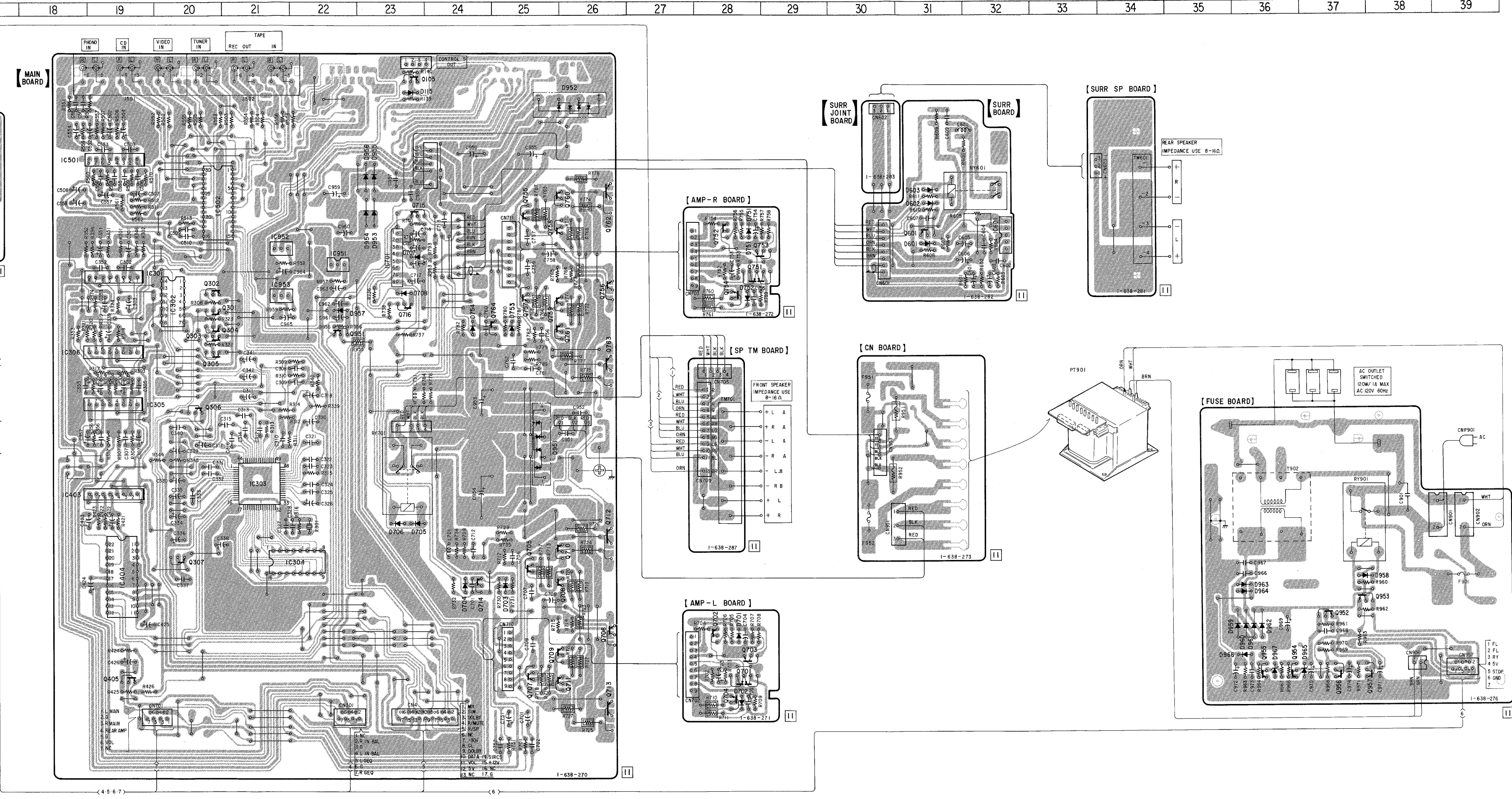
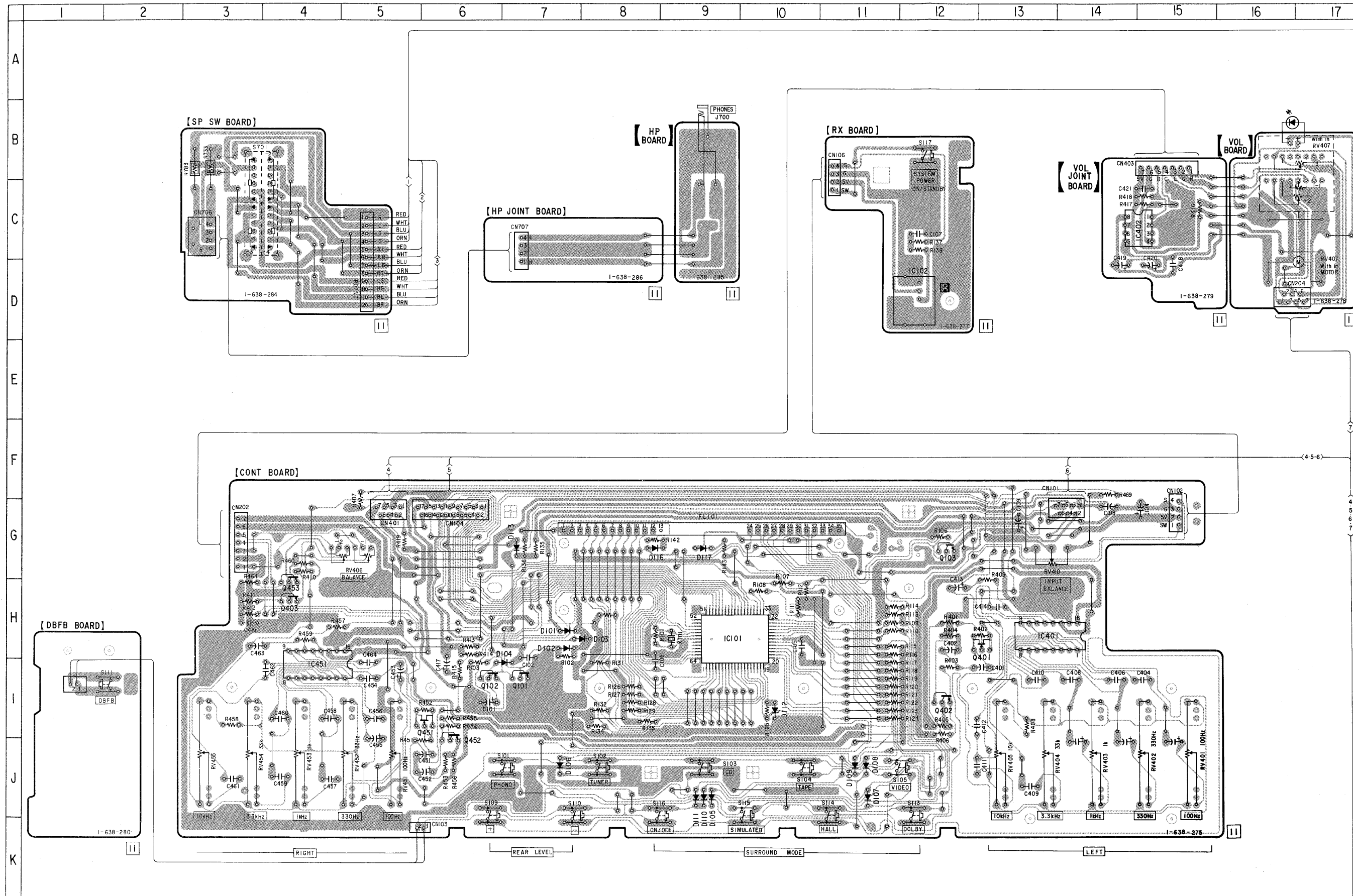


2-7. PRINTED WIRING BOARDS

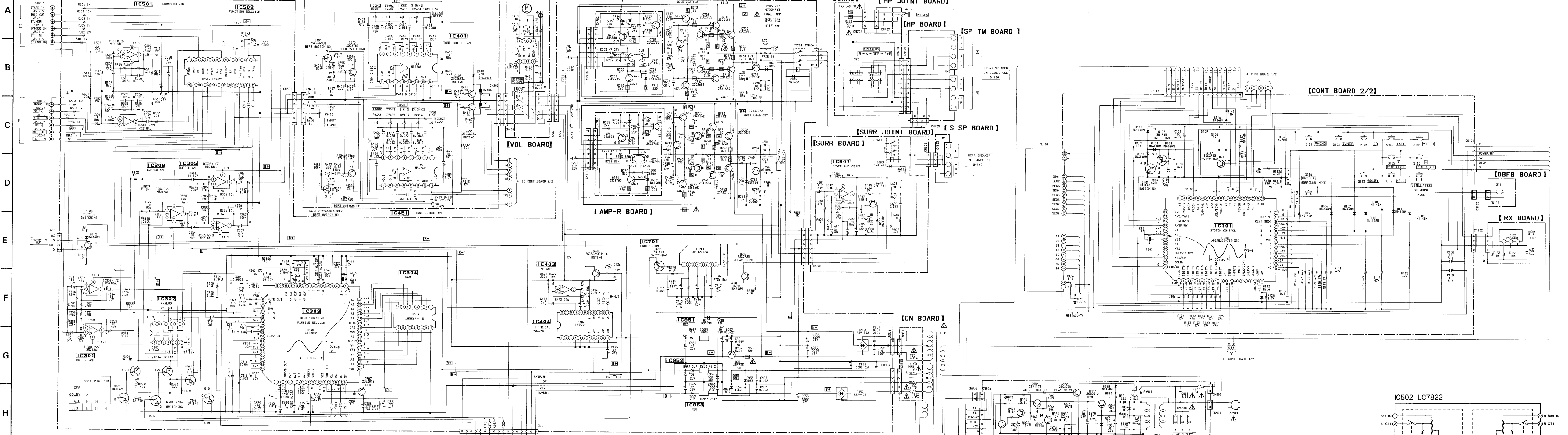
Semiconductor Location

| Ref. No. | Location | Ref. No. | Location |
|----------|----------|----------|----------|
| D101     | H-7      | Q405     | J-19     |
| D102     | H-7      | Q451     | I-6      |
| D103     | H-8      | Q452     | I-6      |
| D104     | H-7      | Q453     | I-6      |
| D105     | J-9      | Q601     | D-31     |
| D106     | J-7      | Q701     | J-28     |
| D107     | J-11     | Q702     | J-28     |
| D108     | J-11     | Q703     | J-28     |
| D109     | J-11     | Q704     | K-28     |
| D110     | J-9      | Q705     | I-25     |
| D111     | I-9      | Q706     | J-26     |
| D112     | I-10     | Q707     | J-25     |
| D113     | G-7      | Q708     | I-26     |
| D115     | B-23     | Q709     | J-26     |
| D116     | G-8      | Q710     | H-26     |
| D117     | G-9      | Q711     | J-26     |
| D601     | D-31     | Q712     | H-26     |
| D602     | C-31     | Q713     | K-26     |
| D603     | C-31     | Q714     | I-24     |
| D701     | J-28     | Q715     | C-23     |
| D702     | K-28     | Q716     | E-23     |
| D703     | I-25     | Q751     | D-28     |
| D704     | I-24     | Q752     | D-28     |
| D705     | H-23     | Q753     | D-29     |
| D706     | H-23     | Q754     | F-28     |
| D707     | H-23     | Q755     | D-25     |
| D708     | E-23     | Q756     | D-25     |
| D751     | D-28     | Q757     | E-25     |
| D752     | E-28     | Q758     | D-26     |
| D753     | E-25     | Q759     | E-26     |
| D754     | E-24     | Q760     | C-26     |
| D951     | G-25     | Q761     | E-26     |
| D952     | B-26     | Q762     | C-26     |
| D953     | C-23     | Q763     | F-25     |
| D954     | C-23     | Q764     | E-25     |
| D955     | C-23     | Q951     | E-22     |
| D956     | C-23     | Q952     | I-37     |
| D957     | I-37     | Q954     | J-36     |
| D958     | I-37     | Q955     | J-36     |
| D959     | J-36     | Q956     | J-36     |
| D960     | J-36     | Q957     | J-37     |
| D961     | J-36     |          |          |
| D962     | J-36     |          |          |
| D963     | I-36     | IC101    | H-9      |
| D964     | I-36     | IC102    | D-12     |
| D965     | J-37     | IC301    | D-19     |
| D966     | J-36     | IC302    | E-20     |
| D967     | J-36     | IC303    | G-21     |
|          |          | IC304    | I-22     |
| Q101     | I-7      | IC305    | F-19     |
| Q102     | I-6      | IC306    | E-19     |
| Q103     | G-12     | IC401    | H-13     |
| Q105     | A-23     | IC402    | C-15     |
| Q301     | E-20     | IC403    | H-19     |
| Q302     | E-20     | IC404    | I-19     |
| Q303     | E-20     | IC451    | I-4      |
| Q304     | E-20     | IC501    | C-19     |
| Q305     | E-20     | IC502    | C-20     |
| Q306     | F-20     | IC601    | C-32     |
| Q307     | H-20     | IC701    | D-23     |
| Q401     | H-13     | IC951    | D-22     |
| Q402     | I-12     | IC952    | D-21     |
| Q403     | H-3      | IC953    | F-21     |

Note on Mounting Diagram:  
● : parts extracted from the component side.



|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|



### Note on Schematic Diagram:

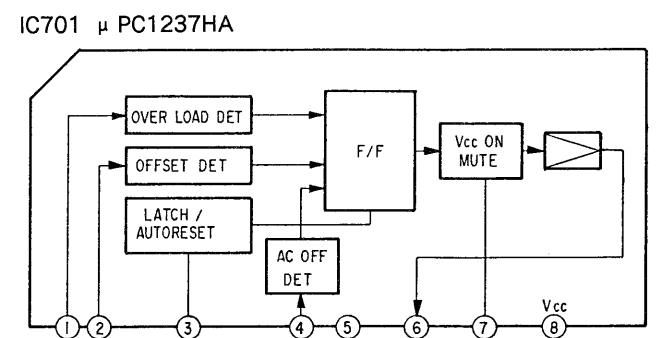
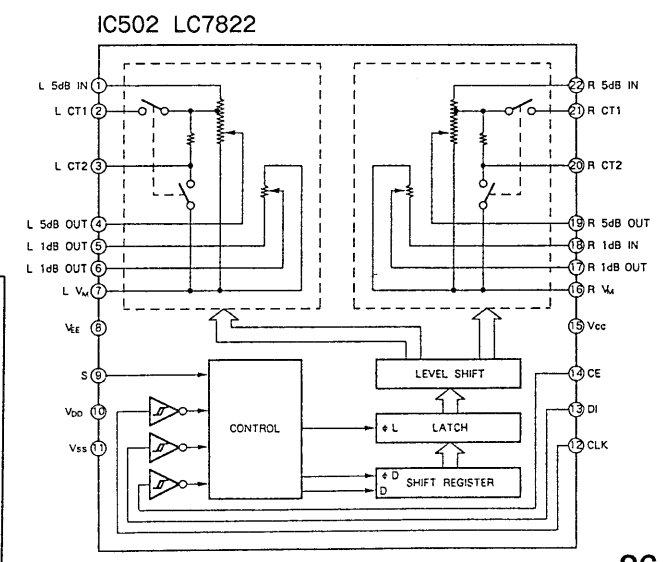
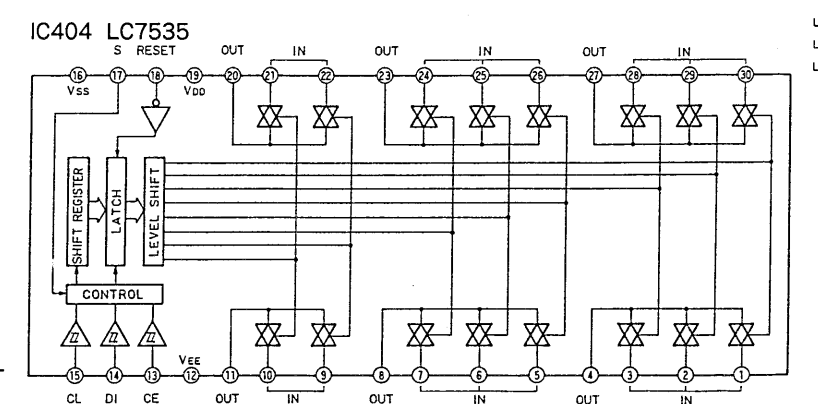
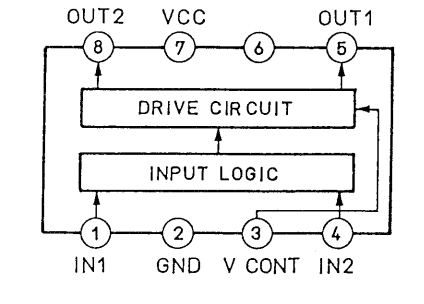
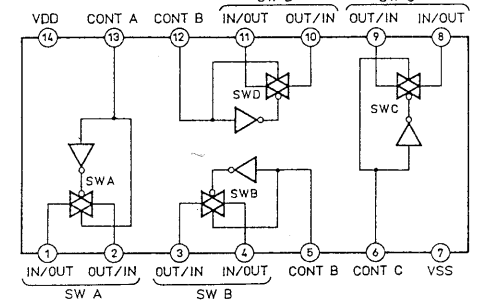
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
-  : nonflammable resistor.
-  : fusible resistor.

**Note:** The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

-  : + B — Line
-  : B — Line
- no mark: No-signal, PHONO MODE
- Voltages are taken with a VOM (input impedance 10M  $\Omega$ )
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.

⇒ : PHONO

2-9. IC BLOCK DIAGRAMS



## SECTION 3

### EXPLODED VIEWS

**NOTE :**

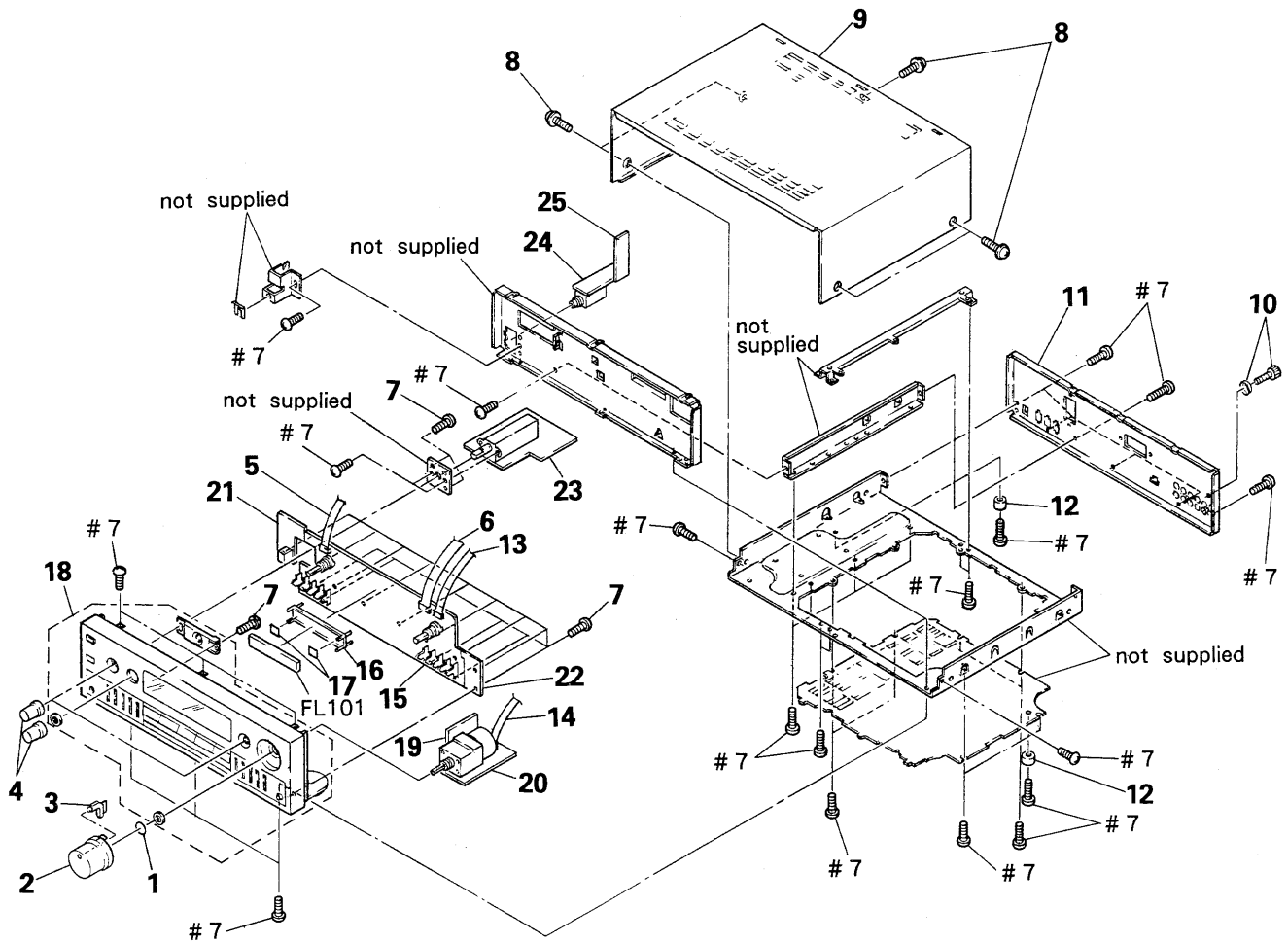
- - XX, - X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts  
Example :  
KNOB, BALANCE (WHITE)...(RED)  

$\uparrow$  $\uparrow$

Parts color      Cabinet's color
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

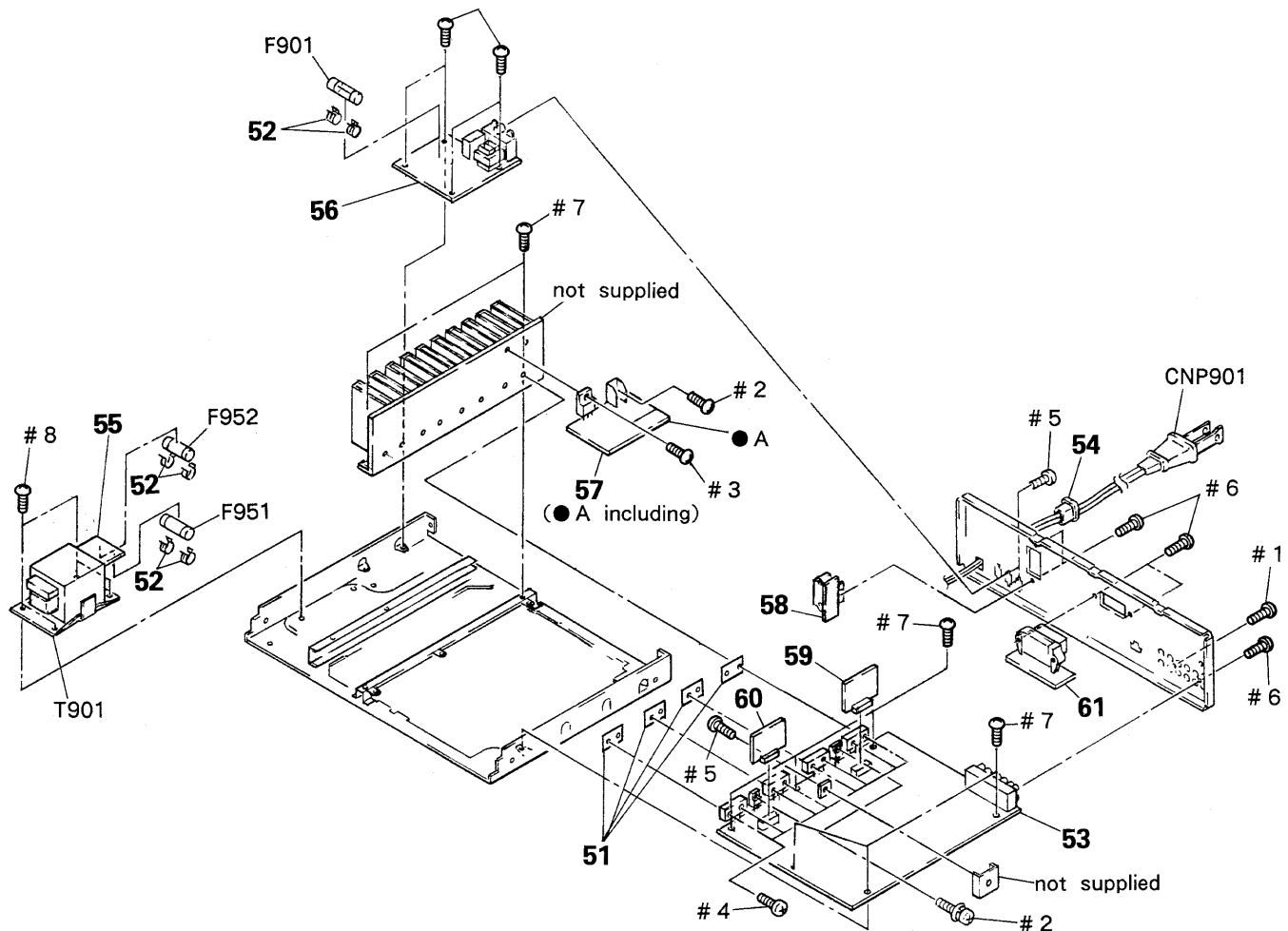
### 3-1. OVERALL SECTION 1



| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>         | <u>Remark</u> |
|-----------------|-----------------|----------------------------|---------------|
| 1               | 3-350-426-01    | SPRING, RING               |               |
| 2               | 4-943-091-01    | KNOB (VOL)                 |               |
| 3               | 4-943-092-01    | PLATE (VOL), LIGHT GUIDE   |               |
| 4               | 4-943-420-01    | KNOB (DIA. 19)             |               |
| 5               | 1-590-486-11    | WIRE, FLAT TYPE (7 CORE)   |               |
| 6               | 1-590-487-11    | WIRE, FLAT TYPE (17 CORE)  |               |
| 7               | 4-928-635-01    | SCREW, +BV (2.6X8) TAPPING |               |
| 8               | 3-704-366-01    | SCREW (CASE) (M3X8)        |               |
| 9               | 4-931-031-11    | CASE                       |               |
| 10              | 3-706-165-00    | SCREW                      |               |
| 11              | * 4-943-458-01  | PANEL, BACK                |               |
| 12              | X-4941-229-1    | FOOT ASSY (F2112S-M)       |               |

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>       | <u>Remark</u> |
|-----------------|-----------------|--------------------------|---------------|
| 13              | 1-590-538-11    | WIRE, FLAT TYPE (7 CORE) |               |
| 14              | 1-590-485-11    | WIRE, FLAT TYPE (7 CORE) |               |
| 15              | * A-4341-682-A  | CONT BOARD, COMPLETE     |               |
| 16              | * 4-943-107-01  | HOLDER (FL TUBE)         |               |
| 17              | * 4-921-941-01  | CUSHION (FL)             |               |
| 18              | A-4323-854-A    | PANEL ASSY, FRONT        |               |
| 19              | * 1-638-279-11  | VOL JOINT BOARD          |               |
| 20              | * 1-638-278-11  | VOL BOARD                |               |
| 21              | * 1-638-277-11  | RX BOARD                 |               |
| 22              | * 1-638-280-11  | DBFB BOARD               |               |
| 23              | * 1-638-284-11  | SP SW BOARD              |               |
| 24              | * 1-638-285-11  | HP BOARD                 |               |
| 25              | * 1-638-286-11  | HP JOINT BOARD           |               |

### 3-2. OVERALL SECTION 2



**Note:** The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

| Ref. No. | Part No.       | Description              | Remark | Ref. No. | Part No.       | Description           | Remark |
|----------|----------------|--------------------------|--------|----------|----------------|-----------------------|--------|
| 51       | 4-885-901-31   | SHEET, RADIATION         |        | 60       | * 1-638-271-11 | AMP-L BOARD           |        |
| 52       | 1-533-217-31   | HOLDER, FUSE             |        | 61       | * 1-638-281-11 | SURR SP BOARD         |        |
| 53       | * A-4341-678-A | MAIN BOARD, COMPLETE     |        | CNP901   | ▲ 1-551-478-00 | CORD, POWER           |        |
| 54       | * 3-703-244-00 | BUSHING (2104), CORD     |        | F901     | ▲ 1-532-749-11 | FUSE, GLASS TUBE (6A) |        |
| 55       | * 1-638-273-11 | CN BOARD                 |        | F951     | ▲ 1-576-107-11 | FUSE (3.15 A)         |        |
| 56       | * 1-638-276-11 | FUSE BOARD               |        | F952     | ▲ 1-576-107-11 | FUSE (3.15 A)         |        |
| 57       | * 1-638-282-11 | SURR BOARD (A including) |        | T901     | ▲ 1-450-370-11 | TRANSFORMER, POWER    |        |
| 58       | * 1-638-287-11 | SP, TM, BOARD            |        |          |                |                       |        |
| 59       | * 1-638-272-11 | AMP-R BOARD              |        |          |                |                       |        |

## SECTION 4

### ELECTRICAL PARTS LIST

AMP - L

AMP - R

CN

**NOTE :**

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...,  $\mu$ PA...,  
uPB...,  $\mu$ PB..., uPC...,  $\mu$ PC...,  
uPD...,  $\mu$ PD...
- CAPACITORS:  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

| Ref. No.                                             | Part No.              | Description            | Remarks       | Ref. No.                         | Part No.              | Description            | Remarks |
|------------------------------------------------------|-----------------------|------------------------|---------------|----------------------------------|-----------------------|------------------------|---------|
| * 1-638-271-11 AMP-L BOARD<br>*****<br>< CAPACITOR > |                       |                        |               | < CONNECTOR >                    |                       |                        |         |
| C703                                                 | 1-124-477-11          | ELECT                  | 47uF 20% 25V  | CN703                            | 1-560-943-00          | PIN, CONNECTOR 9P      |         |
| C704                                                 | 1-124-477-11          | ELECT                  | 47uF 20% 25V  | < DIODE >                        |                       |                        |         |
| C705                                                 | 1-162-292-31          | CERAMIC                | 680PF 10% 50V | D751                             | 8-719-933-40          | DIODE HZS6C2L          |         |
| < CONNECTOR >                                        |                       |                        |               | D752                             | 8-719-987-63          | DIODE 1N4148M          |         |
| CN702                                                | 1-560-943-00          | PIN, CONNECTOR 9P      |               | < TRANSISTOR >                   |                       |                        |         |
| < DIODE >                                            |                       |                        |               | Q751                             | 8-729-620-18          | TRANSISTOR 2SA979-FG   |         |
| D701                                                 | 8-719-933-40          | DIODE HZS6C2L          |               | Q752                             | 8-729-108-14          | TRANSISTOR 2SA988-F    |         |
| D702                                                 | 8-719-987-63          | DIODE 1N4148M          |               | Q753                             | 8-729-119-78          | TRANSISTOR 2SC2785-HFE |         |
| < TRANSISTOR >                                       |                       |                        |               | Q754                             | 8-729-119-78          | TRANSISTOR 2SC2785-HFE |         |
| Q701                                                 | 8-729-620-18          | TRANSISTOR 2SA979-FG   |               | < RESISTOR >                     |                       |                        |         |
| Q702                                                 | 8-729-108-14          | TRANSISTOR 2SA988-F    |               | R752                             | 1-249-435-11          | CARBON 33K 5% 1/4W     |         |
| Q703                                                 | 8-729-119-78          | TRANSISTOR 2SC2785-HFE |               | R753                             | 1-249-408-11          | CARBON 180 5% 1/4W     |         |
| Q704                                                 | 8-729-119-78          | TRANSISTOR 2SC2785-HFE |               | R754                             | 1-249-421-11          | CARBON 2.2K 5% 1/4W    |         |
| < RESISTOR >                                         |                       |                        |               | R755                             | 1-249-434-11          | CARBON 27K 5% 1/4W     |         |
| R702                                                 | 1-249-435-11          | CARBON 33K 5% 1/4W     |               | R756                             | 1-249-426-11          | CARBON 5.6K 5% 1/4W    |         |
| R703                                                 | 1-249-408-11          | CARBON 180 5% 1/4W     |               | R757                             | 1-249-429-11          | CARBON 10K 5% 1/4W     |         |
| R704                                                 | 1-249-421-11          | CARBON 2.2K 5% 1/4W    |               | R758                             | 1-249-435-11          | CARBON 33K 5% 1/4W     |         |
| R705                                                 | 1-249-434-11          | CARBON 27K 5% 1/4W     |               | R759                             | 1-249-411-11          | CARBON 330 5% 1/4W     |         |
| R706                                                 | 1-249-426-11          | CARBON 5.6K 5% 1/4W    |               | R760                             | $\Delta$ 1-247-704-11 | CARBON 220 5% 1/4W     |         |
| R707                                                 | 1-249-429-11          | CARBON 10K 5% 1/4W     |               | R761                             | $\Delta$ 1-247-704-11 | CARBON 220 5% 1/4W     |         |
| R708                                                 | 1-249-435-11          | CARBON 33K 5% 1/4W     |               | *****                            |                       |                        |         |
| R709                                                 | 1-249-411-11          | CARBON 330 5% 1/4W     |               | * 1-638-273-11 CN BOARD<br>***** |                       |                        |         |
| R710                                                 | $\Delta$ 1-247-704-11 | CARBON 220 5% 1/4W     |               | < FUSE >                         |                       |                        |         |
| R711                                                 | $\Delta$ 1-247-704-11 | CARBON 220 5% 1/4W     |               | F951                             | $\Delta$ 1-576-107-11 | FUSE (3.15A)           |         |
| *****                                                |                       |                        |               | F952                             | $\Delta$ 1-576-107-11 | FUSE (3.15A)           |         |
| * 1-638-272-11 AMP-R BOARD<br>*****<br>< CAPACITOR > |                       |                        |               | < RESISTOR >                     |                       |                        |         |
| C753                                                 | 1-124-477-11          | ELECT                  | 47uF 20% 25V  | R951                             | $\Delta$ 1-217-469-00 | FUSIBLE 1 5% 1W F      |         |
| C754                                                 | 1-124-477-11          | ELECT                  | 47uF 20% 25V  | R952                             | $\Delta$ 1-217-469-00 | FUSIBLE 1 5% 1W F      |         |
| C755                                                 | 1-162-292-31          | CERAMIC                | 680PF 10% 50V | *****                            |                       |                        |         |

# CONT

| Ref. No. | Part No.       | Description                   | Remarks |
|----------|----------------|-------------------------------|---------|
|          | * A-4341-682-A | CONT BOARD, COMPLETE<br>***** |         |
|          | * 1-638-275-11 | CONT BOARD                    |         |
|          | 1-533-217-31   | HOLDER, FUSE                  |         |
|          | 1-569-132-11   | PIN, CONNECTOR 7P             |         |
|          | 4-352-844-01   | PIN, LEAD, COATING            |         |
|          | * 4-921-941-01 | CUSHION (FL)                  |         |
|          | * 4-943-107-01 | HOLDER (FL TUBE)              |         |
|          |                | < CAPACITOR >                 |         |
| C101     | 1-124-902-00   | ELECT 0.47uF 20% 50V          |         |
| C102     | 1-130-495-00   | MYLAR 0.1uF 5% 50V            |         |
| C103     | 1-162-596-00   | CERAMIC 0.022uF               |         |
| C104     | 1-124-443-00   | ELECT 100uF 20% 10V           |         |
| C105     | 1-130-495-00   | MYLAR 0.1uF 5% 50V            |         |
| C106     | 1-130-495-00   | MYLAR 0.1uF 5% 50V            |         |
| C108     | 1-136-907-00   | ELECT 10uF 5% 50V             |         |
| C109     | 1-136-907-00   | ELECT 10uF 5% 50V             |         |
| C401     | 1-124-903-11   | ELECT 1uF 20% 50V             |         |
| C402     | 1-124-902-00   | ELECT 0.47uF 20% 50V          |         |
| C403     | 1-124-254-00   | ELECT 0.68uF 20% 50V          |         |
| C404     | 1-130-490-11   | MYLAR 0.039uF 5% 50V          |         |
| C405     | 1-124-464-11   | ELECT 0.22uF 20% 50V          |         |
| C406     | 1-130-484-00   | MYLAR 0.012uF 5% 50V          |         |
| C407     | 1-130-493-00   | MYLAR 0.068uF 5% 50V          |         |
| C408     | 1-130-478-00   | MYLAR 0.0039uF 5% 50V         |         |
| C409     | 1-130-487-00   | MYLAR 0.022uF 5% 50V          |         |
| C410     | 1-164-086-11   | CERAMIC 0.0012uF 10% 50V      |         |
| C411     | 1-130-481-00   | MYLAR 0.0068uF 5% 50V         |         |
| C412     | 1-162-289-31   | CERAMIC 390PF 10% 50V         |         |
| C413     | 1-124-907-11   | ELECT 10uF 20% 50V            |         |
| C414     | 1-161-374-11   | CERAMIC 0.0015uF 20% 50V      |         |
| C415     | 1-136-169-00   | FILM 0.22uF 5% 50V            |         |
| C417     | 1-124-907-11   | ELECT 10uF 20% 50V            |         |
| C451     | 1-124-903-11   | ELECT 1uF 20% 50V             |         |
| C452     | 1-124-902-00   | ELECT 0.47uF 20% 50V          |         |
| C453     | 1-124-254-00   | ELECT 0.68uF 20% 50V          |         |
| C454     | 1-130-490-11   | MYLAR 0.039uF 5% 50V          |         |
| C455     | 1-124-464-11   | ELECT 0.22uF 20% 50V          |         |
| C456     | 1-130-484-00   | MYLAR 0.012uF 5% 50V          |         |
| C457     | 1-130-493-00   | MYLAR 0.068uF 5% 50V          |         |
| C458     | 1-130-478-00   | MYLAR 0.0039uF 5% 50V         |         |
| C459     | 1-130-487-00   | MYLAR 0.022uF 5% 50V          |         |
| C460     | 1-164-086-11   | CERAMIC 0.0012uF 10% 50V      |         |
| C461     | 1-130-481-00   | MYLAR 0.0068uF 5% 50V         |         |
| C462     | 1-162-289-31   | CERAMIC 390PF 10% 50V         |         |
| C463     | 1-124-907-11   | ELECT 10uF 20% 50V            |         |
| C464     | 1-161-374-11   | CERAMIC 0.0015uF 20% 50V      |         |
|          |                | < CONNECTOR >                 |         |
| CN101    | * 1-568-850-11 | SOCKET, CONNECTOR 7P          |         |
| CN102    | * 1-565-480-11 | CONNECTOR, BOARD TO BOARD 4P  |         |
| CN104    | 1-568-860-11   | SOCKET, CONNECTOR 17P         |         |
| CN202    | * 1-561-651-00 | SOCKET, CONNECTOR 7P          |         |
| CN401    | * 1-568-850-11 | SOCKET, CONNECTOR 7P          |         |
| CN402    | * 1-561-651-00 | SOCKET, CONNECTOR 7P          |         |

| Ref. No. | Part No.       | Description                 | Remarks |
|----------|----------------|-----------------------------|---------|
|          |                | < DIODE >                   |         |
| D101     | 8-719-987-63   | DIODE 1N4148M               |         |
| D102     | 8-719-987-63   | DIODE 1N4148M               |         |
| D103     | 8-719-987-63   | DIODE 1N4148M               |         |
| D104     | 8-719-987-63   | DIODE 1N4148M               |         |
| D105     | 8-719-987-63   | DIODE 1N4148M               |         |
| D106     | 8-719-987-63   | DIODE 1N4148M               |         |
| D107     | 8-719-987-63   | DIODE 1N4148M               |         |
| D108     | 8-719-987-63   | DIODE 1N4148M               |         |
| D109     | 8-719-987-63   | DIODE 1N4148M               |         |
| D110     | 8-719-987-63   | DIODE 1N4148M               |         |
| D111     | 8-719-987-63   | DIODE 1N4148M               |         |
| D112     | 8-719-985-53   | DIODE HZS4ALL               |         |
| D113     | 8-719-985-53   | DIODE HZS4ALL               |         |
| D116     | 8-719-987-63   | DIODE 1N4148M               |         |
| D117     | 8-719-987-63   | DIODE 1N4148M               |         |
|          |                | < FILTER >                  |         |
| FL101    | 1-519-663-11   | INDICATOR TUBE, FLUORESCENT |         |
|          |                | < IC >                      |         |
| IC101    | 8-759-154-40   | IC uPD75206-717-3BE         |         |
| IC401    | 8-759-602-04   | IC M5226P                   |         |
| IC451    | 8-759-602-04   | IC M5226P                   |         |
|          |                | < COIL >                    |         |
| L731     | * 1-420-872-00 | COIL, AIR CORE              |         |
|          |                | < TRANSISTOR >              |         |
| Q101     | 8-729-900-36   | TRANSISTOR DTC124ES         |         |
| Q102     | 8-729-900-63   | TRANSISTOR DTA124ES         |         |
| Q103     | 8-729-119-78   | TRANSISTOR 2SC2785-HFE      |         |
| Q401     | 8-729-224-61   | TRANSISTOR 2SK246-Y         |         |
| Q402     | 8-729-119-78   | TRANSISTOR 2SC2785-HFE      |         |
| Q403     | 8-729-141-30   | TRANSISTOR 2SC3623A-LK      |         |
| Q451     | 8-729-224-61   | TRANSISTOR 2SK246-Y         |         |
| Q452     | 8-729-119-78   | TRANSISTOR 2SC2785-HFE      |         |
| Q453     | 8-729-141-30   | TRANSISTOR 2SC3623A-LK      |         |
|          |                | < RESISTOR >                |         |
| R101     | 1-247-903-00   | CARBON 1M 5% 1/4W           |         |
| R102     | 1-249-429-11   | CARBON 10K 5% 1/4W          |         |
| R103     | 1-247-895-00   | CARBON 470K 5% 1/4W         |         |
| R106     | 1-249-417-11   | CARBON 1K 5% 1/4W           |         |
| R107     | 1-249-411-11   | CARBON 330 5% 1/4W          |         |
| R108     | 1-249-411-11   | CARBON 330 5% 1/4W          |         |
| R109     | 1-249-411-11   | CARBON 330 5% 1/4W          |         |
| R110     | 1-249-411-11   | CARBON 330 5% 1/4W          |         |
| R111     | 1-249-425-11   | CARBON 4.7K 5% 1/4W         |         |
| R112     | 1-249-425-11   | CARBON 4.7K 5% 1/4W         |         |
| R113     | 1-249-425-11   | CARBON 4.7K 5% 1/4W         |         |
| R114     | 1-249-425-11   | CARBON 4.7K 5% 1/4W         |         |
| R115     | 1-249-437-11   | CARBON 47K 5% 1/4W          |         |
| R116     | 1-249-437-11   | CARBON 47K 5% 1/4W          |         |
| R117     | 1-249-437-11   | CARBON 47K 5% 1/4W          |         |

CONT

DBFB

FUSE

| Ref. No. | Part No.     | Description                   | Remarks | Ref. No.       | Part No.       | Description                            | Remarks |
|----------|--------------|-------------------------------|---------|----------------|----------------|----------------------------------------|---------|
| R118     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV406          | 1-241-022-11   | RES. VAR. CARBON 150K/150K (BALANCE)   |         |
| R119     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV410          | 1-238-777-11   | RES. VAR. CARBON 250K (IN PUT BALANCE) |         |
| R120     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV451          | 1-241-434-11   | RES. VAR. SLIDE 250K (100Hz)           |         |
| R121     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV452          | 1-241-434-11   | RES. VAR. SLIDE 250K (330Hz)           |         |
| R122     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV453          | 1-241-434-11   | RES. VAR. SLIDE 250K (1KHz)            |         |
| R123     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV454          | 1-241-434-11   | RES. VAR. SLIDE 250K (3.3KHz)          |         |
| R124     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | RV455          | 1-241-434-11   | RES. VAR. SLIDE 250K (10KHz)           |         |
| R125     | 1-249-425-11 | CARBON 4.7K 5% 1/4W           |         |                |                | ( SWITCH )                             |         |
| R126     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S101           | 1-554-303-21   | SWITCH, TACTILE (PHONO)                |         |
| R127     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S102           | 1-554-303-21   | SWITCH, TACTILE (TUNER)                |         |
| R128     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S103           | 1-554-303-21   | SWITCH, TACTILE (CD)                   |         |
| R129     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S104           | 1-554-303-21   | SWITCH, TACTILE (TAPE)                 |         |
| R130     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S105           | 1-554-303-21   | SWITCH, TACTILE (VIDEO)                |         |
| R131     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S109           | 1-554-303-21   | SWITCH, TACTILE (+)                    |         |
| R132     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S110           | 1-554-303-21   | SWITCH, TACTILE (-)                    |         |
| R133     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S113           | 1-554-303-21   | SWITCH, TACTILE (DOLBY)                |         |
| R134     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | S114           | 1-554-303-21   | SWITCH, TACTILE (HALL)                 |         |
| R135     | 1-249-405-11 | CARBON 100 5% 1/4W            |         | S115           | 1-554-303-21   | SWITCH, TACTILE (SIMULATED)            |         |
| R136     | 1-249-405-11 | CARBON 100 5% 1/4W            |         | S116           | 1-554-303-21   | SWITCH, TACTILE (ON/OFF)               |         |
| R142     | 1-249-429-11 | CARBON 10K 5% 1/4W            |         |                |                | ( CRYSTAL )                            |         |
| R143     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | X101           | 1-567-775-11   | VIBRATOR, CERAMIC                      |         |
| R401     | 1-249-441-11 | CARBON 100K 5% 1/4W           |         |                |                | *****                                  |         |
| R402     | 1-247-903-00 | CARBON 1M 5% 1/4W             |         | * 1-638-280-11 | DBFB BOARD     | *****                                  |         |
| R403     | 1-249-411-11 | CARBON 330 5% 1/4W            |         |                |                | ( CONNECTOR )                          |         |
| R404     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | CN107          | * 1-568-951-11 | PIN, CONNECTOR 2P                      |         |
| R405     | 1-249-412-11 | CARBON 390 5% 1/4W            |         |                |                | ( SWITCH )                             |         |
| R406     | 1-249-426-11 | CARBON 5.6K 5% 1/4W           |         | S111           | 1-554-303-21   | SWITCH, TACTILE (DBFB)                 |         |
| R407     | 1-249-417-11 | CARBON 1K 5% 1/4W             |         |                |                | *****                                  |         |
| R408     | 1-249-419-11 | CARBON 1.5K 5% 1/4W           |         | * 1-638-276-11 | FUSE BOARD     | *****                                  |         |
| R409     | 1-249-425-11 | CARBON 4.7K 5% 1/4W           |         |                |                | ( CAPACITOR )                          |         |
| R410     | 1-249-419-11 | CARBON 1.5K 5% 1/4W           |         | C901           | 1-161-744-00   | CERAMIC 0.01uF 400V                    |         |
| R411     | 1-249-425-11 | CARBON 4.7K 5% 1/4W           |         | C966           | 1-130-487-00   | MYLAR 0.022uF 5% 50V                   |         |
| R412     | 1-249-429-11 | CARBON 10K 5% 1/4W            |         | C967           | 1-130-487-00   | MYLAR 0.022uF 5% 50V                   |         |
| R413     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | C968           | 1-162-282-31   | CERAMIC 100PF 10% 50V                  |         |
| R414     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | C969           | 1-124-557-11   | ELECT 1000uF 20% 25V                   |         |
| R415     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         | C970           | 1-124-477-11   | ELECT 47uF 20% 25V                     |         |
| R419     | 1-249-417-11 | CARBON 1K 5% 1/4W             |         | C971           | 1-124-907-11   | ELECT 10uF 20% 50V                     |         |
| R451     | 1-249-441-11 | CARBON 100K 5% 1/4W           |         | C972           | 1-124-903-11   | ELECT 1uF 20% 50V                      |         |
| R452     | 1-247-903-00 | CARBON 1M 5% 1/4W             |         | C973           | 1-130-487-00   | MYLAR 0.022uF 5% 50V                   |         |
| R453     | 1-249-411-11 | CARBON 330 5% 1/4W            |         | C974           | 1-124-464-11   | ELECT 0.22uF 20% 50V                   |         |
| R454     | 1-249-437-11 | CARBON 47K 5% 1/4W            |         |                |                | ( CONNECTOR )                          |         |
| R455     | 1-249-412-11 | CARBON 390 5% 1/4W            |         | CN901          | 1-535-139-00   | BASE POST 22MM (10MM PITCH) 2P         |         |
| R456     | 1-249-426-11 | CARBON 5.6K 5% 1/4W           |         | CN902          | 1-535-139-00   | BASE POST 22MM (10MM PITCH) 2P         |         |
| R457     | 1-249-417-11 | CARBON 1K 5% 1/4W             |         | CN956          | * 1-564-777-11 | PLUG, CONNECTOR (2.5MM) 2P             |         |
| R458     | 1-249-419-11 | CARBON 1.5K 5% 1/4W           |         | CN957          | * 1-568-826-11 | SOCKET, CONNECTOR 7P                   |         |
| R459     | 1-249-425-11 | CARBON 4.7K 5% 1/4W           |         | CNJ901         | △1-540-062-11  | OUTLET, AC                             |         |
| R460     | 1-249-419-11 | CARBON 1.5K 5% 1/4W           |         |                |                |                                        |         |
| R461     | 1-249-425-11 | CARBON 4.7K 5% 1/4W           |         |                |                |                                        |         |
| R469     | 1-249-417-11 | CARBON 1K 5% 1/4W             |         |                |                |                                        |         |
|          |              | ( VARIABLE RESISTOR )         |         |                |                |                                        |         |
| RV401    | 1-241-434-11 | RES. VAR. SLIDE 250K (100Hz)  |         |                |                |                                        |         |
| RV402    | 1-241-434-11 | RES. VAR. SLIDE 250K (330Hz)  |         |                |                |                                        |         |
| RV403    | 1-241-434-11 | RES. VAR. SLIDE 250K (1KHz)   |         |                |                |                                        |         |
| RV404    | 1-241-434-11 | RES. VAR. SLIDE 250K (3.3KHz) |         |                |                |                                        |         |
| RV405    | 1-241-434-11 | RES. VAR. SLIDE 250K (10KHz)  |         |                |                |                                        |         |

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

|      |    |          |      |
|------|----|----------|------|
| FUSE | HP | HP JOINT | MAIN |
|------|----|----------|------|

| Ref. No.        | Part No.      | Description                | Remarks |
|-----------------|---------------|----------------------------|---------|
| < DIODE >       |               |                            |         |
| D958            | 8-719-987-63  | DIODE 1N4148M              |         |
| D959            | 8-719-200-77  | DIODE 10E2N                |         |
| D960            | 8-719-200-77  | DIODE 10E2N                |         |
| D961            | 8-719-200-77  | DIODE 10E2N                |         |
| D962            | 8-719-200-77  | DIODE 10E2N                |         |
| D963            | 8-719-987-63  | DIODE 1N4148M              |         |
| D964            | 8-719-987-63  | DIODE 1N4148M              |         |
| D965            | 8-719-933-41  | DIODE HZS6C3L              |         |
| D966            | 8-719-933-41  | DIODE HZS6C3L              |         |
| D967            | 8-719-985-53  | DIODE HZS4ALL              |         |
| < FUSE >        |               |                            |         |
| F901            | △1-532-749-11 | FUSE (6A)                  |         |
| < TRANSISTOR >  |               |                            |         |
| Q952            | 8-729-209-15  | TRANSISTOR 2SD2012         |         |
| Q953            | 8-729-119-78  | TRANSISTOR 2SC2785-HFE     |         |
| Q954            | 8-729-119-76  | TRANSISTOR 2SA1175-HFE     |         |
| Q955            | 8-729-119-78  | TRANSISTOR 2SC2785-HFE     |         |
| Q956            | 8-729-119-76  | TRANSISTOR 2SA1175-HFE     |         |
| Q957            | 8-729-119-78  | TRANSISTOR 2SC2785-HFE     |         |
| < RESISTOR >    |               |                            |         |
| R960            | 1-249-396-11  | CARBON 18 5% 1/6W          |         |
| R961            | 1-249-417-11  | CARBON 1K 5% 1/4W          |         |
| R962            | 1-249-437-11  | CARBON 47K 5% 1/4W         |         |
| R963            | 1-249-433-11  | CARBON 22K 5% 1/4W         |         |
| R964            | 1-249-429-11  | CARBON 10K 5% 1/4W         |         |
| R965            | 1-249-425-11  | CARBON 4.7K 5% 1/4W        |         |
| R966            | 1-249-429-11  | CARBON 10K 5% 1/4W         |         |
| R967            | 1-249-417-11  | CARBON 1K 5% 1/4W          |         |
| R968            | 1-249-429-11  | CARBON 10K 5% 1/4W         |         |
| R969            | 1-249-426-11  | CARBON 5.6K 5% 1/4W        |         |
| R970            | 1-249-417-11  | CARBON 1K 5% 1/4W          |         |
| R971            | 1-249-426-11  | CARBON 5.6K 5% 1/4W        |         |
| < RELAY >       |               |                            |         |
| RY901           | △1-515-701-11 | RELAY (POWER)              |         |
| < TRANSFORMER > |               |                            |         |
| T902            | △1-449-993-21 | TRANSFORMER, POWER         |         |
| *****           |               |                            |         |
| * 1-638-285-11  | HP BOARD      | *****                      |         |
| < JACK >        |               |                            |         |
| J700            | 1-568-515-21  | JACK (LARGE TYPE) (PHONES) |         |
| *****           |               |                            |         |

| Ref. No.       | Part No.             | Description              | Remarks |
|----------------|----------------------|--------------------------|---------|
| * 1-638-286-11 | HP JOINT BOARD       | *****                    |         |
| < CONNECTOR >  |                      |                          |         |
| CN707          | * 1-506-509-11       | PIN, CONNECTOR 4P        |         |
| *****          |                      |                          |         |
| A-4341-682-A   | MAIN BOARD, COMPLETE | *****                    |         |
| * 1-638-270-11 | MAIN BOARD           |                          |         |
| 1-533-217-31   | HOLDER, FUSE         |                          |         |
| * 4-942-204-01 | PLATE, GROUND        |                          |         |
| 7-682-548-04   | SCREW +BVT 3X8 (S)   |                          |         |
| < CAPACITOR >  |                      |                          |         |
| C301           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C302           | 1-162-215-31         | CERAMIC 47PF 5% 50V      |         |
| C303           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C304           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C305           | 1-162-215-31         | CERAMIC 47PF 5% 50V      |         |
| C306           | 1-162-282-31         | CERAMIC 100PF 10% 50V    |         |
| C307           | 1-124-927-11         | ELECT 4.7uF 20% 100V     |         |
| C308           | 1-130-481-00         | MYLAR 0.0068uF 5% 50V    |         |
| C309           | 1-130-480-00         | MYLAR 0.0056uF 30% 50V   |         |
| C310           | 1-162-290-31         | CERAMIC 470PF 10% 50V    |         |
| C311           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C312           | 1-162-292-31         | CERAMIC 680PF 10% 50V    |         |
| C313           | 1-130-497-00         | MYLAR 0.15uF 5% 50V      |         |
| C314           | 1-162-284-31         | CERAMIC 150PF 10% 50V    |         |
| C315           | 1-130-487-00         | MYLAR 0.022uF 5% 50V     |         |
| C316           | 1-162-294-31         | CERAMIC 0.001uF 10% 50V  |         |
| C317           | 1-124-903-11         | ELECT 1uF 20% 50V        |         |
| C318           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C319           | 1-124-657-00         | ELECT 10uF 20% 50V       |         |
| C320           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C321           | 1-124-657-00         | ELECT 10uF 20% 50V       |         |
| C322           | 1-130-489-00         | MYLAR 0.033uF 5% 50V     |         |
| C323           | 1-161-377-00         | CERAMIC 0.0047uF 30% 16V |         |
| C324           | 1-130-478-00         | MYLAR 0.0039uF 5% 50V    |         |
| C325           | 1-130-493-00         | MYLAR 0.068uF 5% 50V     |         |
| C326           | 1-124-464-11         | ELECT 0.22uF 20% 50V     |         |
| C327           | 1-164-056-11         | CERAMIC 27PF 5% 50V      |         |
| C328           | 1-164-056-11         | CERAMIC 27PF 5% 50V      |         |
| C329           | 1-124-472-11         | ELECT 470uF 20% 10V      |         |
| C330           | 1-124-903-11         | ELECT 1uF 20% 50V        |         |
| C331           | 1-162-294-31         | CERAMIC 0.001uF 10% 50V  |         |
| C332           | 1-130-487-00         | MYLAR 0.022uF 5% 50V     |         |
| C333           | 1-162-284-31         | CERAMIC 150PF 10% 50V    |         |
| C334           | 1-126-176-11         | ELECT 220uF 20% 10V      |         |
| C335           | 1-126-176-11         | ELECT 220uF 20% 10V      |         |
| C336           | 1-126-118-11         | ELECT 220uF 20% 16V      |         |
| C337           | 1-130-495-00         | MYLAR 0.1uF 5% 50V       |         |
| C338           | 1-126-176-11         | ELECT 220uF 20% 10V      |         |
| C339           | 1-124-907-11         | ELECT 10uF 20% 50V       |         |
| C340           | 1-124-608-11         | ELECT 0.22uF 20% 50V     |         |

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

| Ref. No. | Part No.     | Description | Remarks          | Ref. No. | Part No.       | Description                                                | Remarks        |
|----------|--------------|-------------|------------------|----------|----------------|------------------------------------------------------------|----------------|
| C341     | 1-124-905-00 | ELECT       | 3.3uF 50V        | C957     | 1-130-487-00   | MYLAR                                                      | 0.022uF 5% 50V |
| C342     | 1-124-905-00 | ELECT       | 3.3uF 50V        | C958     | 1-130-487-00   | MYLAR                                                      | 0.022uF 5% 50V |
| C351     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | C959     | 1-124-563-11   | ELECT                                                      | 2200uF 20% 25V |
| C352     | 1-162-215-31 | CERAMIC     | 47PF 5% 50V      | C960     | 1-124-557-11   | ELECT                                                      | 1000uF 20% 25V |
| C353     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | C961     | 1-124-907-11   | ELECT                                                      | 10uF 20% 50V   |
| C354     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | C962     | 1-124-907-11   | ELECT                                                      | 10uF 20% 50V   |
| C355     | 1-162-215-31 | CERAMIC     | 47PF 5% 50V      | C963     | 1-124-477-11   | ELECT                                                      | 47uF 20% 25V   |
| C356     | 1-162-282-31 | CERAMIC     | 100PF 10% 50V    | C964     | 1-124-477-11   | ELECT                                                      | 47uF 20% 25V   |
| C357     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   | C965     | 1-124-477-11   | ELECT                                                      | 47uF 20% 25V   |
| C422     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   |          |                | < CONNECTOR >                                              |                |
| C423     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   | CN104    | * 1-568-836-11 | SOCKET, CONNECTOR 17P                                      |                |
| C424     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   | CN2      | 1-564-980-11   | PIN, CONNECTOR 4P                                          |                |
| C425     | 1-124-477-11 | ELECT       | 47uF 20% 25V     | CN301    | * 1-568-826-11 | SOCKET, CONNECTOR 7P                                       |                |
| C426     | 1-124-903-00 | ELECT       | 1uF 50V          | CN701    | * 1-568-826-11 | SOCKET, CONNECTOR 7P                                       |                |
| C501     | 1-162-283-31 | CERAMIC     | 120PF 10% 50V    | CN710    | * 1-563-192-11 | CONNECTOR (SOCKET) 9P                                      |                |
| C502     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | CN711    | * 1-563-192-11 | CONNECTOR (SOCKET) 9P                                      |                |
| C503     | 1-162-282-31 | CERAMIC     | 100PF 10% 50V    |          |                | < DIODE >                                                  |                |
| C504     | 1-124-925-11 | ELECT       | 2.2uF 20% 100V   | D115     | 8-719-987-63   | DIODE 1N4148M                                              |                |
| C505     | 1-130-480-00 | MYLAR       | 0.0056uF 5% 50V  | D703     | 8-719-815-85   | DIODE 1S1585                                               |                |
| C506     | 1-161-374-11 | CERAMIC     | 0.0015uF 20% 50V | D704     | 8-719-815-85   | DIODE 1S1585                                               |                |
| C507     | 1-124-902-00 | ELECT       | 0.47uF 20% 50V   | D705     | 8-719-987-63   | DIODE 1N4148M                                              |                |
| C508     | 1-126-233-11 | ELECT       | 22uF 20% 50V     | D706     | 8-719-987-63   | DIODE 1N4148M                                              |                |
| C509     | 1-162-294-31 | CERAMIC     | 0.001uF 10% 50V  | D707     | 8-719-815-85   | DIODE 1S1585                                               |                |
| C510     | 1-162-294-31 | CERAMIC     | 0.001uF 10% 50V  | D708     | 8-719-987-63   | DIODE 1N4148M                                              |                |
| C548     | 1-124-468-00 | ELECT       | 150uF 6.3V       | D753     | 8-719-815-85   | DIODE 1S1585                                               |                |
| C551     | 1-162-283-31 | CERAMIC     | 120PF 10% 50V    | D754     | 8-719-815-85   | DIODE 1S1585                                               |                |
| C552     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | D951     | 8-719-302-38   | DIODE RBV-602-01                                           |                |
| C553     | 1-162-282-31 | CERAMIC     | 100PF 10% 50V    | D952     | 8-719-312-09   | DIODE RBA-402                                              |                |
| C554     | 1-124-925-11 | ELECT       | 2.2uF 20% 100V   | D953     | 8-719-200-77   | DIODE 10E2N                                                |                |
| C555     | 1-130-480-00 | MYLAR       | 0.0056uF 5% 50V  | D954     | 8-719-200-77   | DIODE 10E2N                                                |                |
| C556     | 1-161-374-11 | CERAMIC     | 0.0015uF 20% 50V | D955     | 8-719-200-77   | DIODE 10E2N                                                |                |
| C557     | 1-124-902-00 | ELECT       | 0.47uF 20% 50V   | D956     | 8-719-200-77   | DIODE 10E2N                                                |                |
| C558     | 1-126-233-11 | ELECT       | 22uF 20% 50V     | D957     | 8-719-934-21   | DIODE HZS30-1L                                             |                |
| C701     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   |          |                | < IC >                                                     |                |
| C702     | 1-162-286-31 | CERAMIC     | 220PF 10% 50V    | IC301    | 8-759-634-50   | IC M5218AL                                                 |                |
| C706     | 1-162-209-31 | CERAMIC     | 27PF 5% 50V      | IC302    | 8-759-801-01   | IC LC4966                                                  |                |
| C707     | 1-161-959-00 | CERAMIC     | 22PF 10% 500V    | IC303    | 8-759-823-63   | IC LV1001M                                                 |                |
| C708     | 1-124-477-11 | ELECT       | 47uF 20% 25V     | IC304    | 8-759-821-13   | IC LM3364K-15                                              |                |
| C709     | 1-161-959-00 | CERAMIC     | 22PF 10% 500V    | IC305    | 8-759-634-50   | IC M5218AL                                                 |                |
| C710     | 1-130-495-00 | MYLAR       | 0.1uF 5% 50V     | IC306    | 8-759-634-50   | IC M5218AL                                                 |                |
| C712     | 1-130-493-00 | MYLAR       | 0.068uF 5% 50V   | IC403    | 8-759-634-50   | IC M5218AL                                                 |                |
| C713     | 1-130-487-00 | MYLAR       | 0.022uF 5% 50V   | IC404    | 8-759-820-11   | IC LC7535                                                  |                |
| C714     | 1-124-477-11 | ELECT       | 47uF 20% 25V     | IC501    | 8-759-634-50   | IC M5218AL                                                 |                |
| C715     | 1-124-443-00 | ELECT       | 100uF 20% 10V    | IC502    | 8-759-805-14   | IC LC7822                                                  |                |
| C716     | 1-124-907-11 | ELECT       | 10uF 20% 50V     | IC701    | 8-759-111-68   | IC uPC1237HA                                               |                |
| C717     | 1-124-477-11 | ELECT       | 47uF 20% 25V     | IC951    | 8-759-231-53   | IC M5F7805L                                                |                |
| C751     | 1-124-927-11 | ELECT       | 4.7uF 20% 100V   | IC952    | 8-759-604-33   | IC M5F7812L                                                |                |
| C752     | 1-162-286-31 | CERAMIC     | 220PF 10% 50V    | IC953    | 8-759-604-51   | IC M5F7912L                                                |                |
| C756     | 1-162-209-31 | CERAMIC     | 27PF 5% 50V      |          |                | < JACK >                                                   |                |
| C757     | 1-161-959-00 | CERAMIC     | 22PF 10% 500V    | J501     | 1-580-826-11   | JACK, PIN (Lch: PHONO, CD, VIDEO, TAPE, TUNER IN, REC OUT) |                |
| C758     | 1-124-477-11 | ELECT       | 47uF 20% 25V     | J502     | 1-580-825-11   | JACK, PIN (Rch: PHONO, CD, VIDEO, TAPE, TUNER IN, REC OUT) |                |
| C759     | 1-161-959-00 | CERAMIC     | 22PF 10% 500V    |          |                |                                                            |                |
| C760     | 1-130-495-00 | MYLAR       | 0.1uF 5% 50V     |          |                |                                                            |                |
| C762     | 1-130-493-00 | MYLAR       | 0.068uF 5% 50V   |          |                |                                                            |                |
| C951     | 1-106-367-00 | MYLAR       | 0.01uF 5% 200V   |          |                |                                                            |                |
| C952     | 1-106-367-00 | MYLAR       | 0.01uF 5% 200V   |          |                |                                                            |                |
| C953     | 1-126-358-11 | ELECT       | 10000uF 20% 71V  |          |                |                                                            |                |
| C954     | 1-126-358-11 | ELECT       | 10000uF 20% 71V  |          |                |                                                            |                |
| C955     | 1-124-026-00 | ELECT       | 3300uF 20% 35V   |          |                |                                                            |                |
| C956     | 1-124-026-00 | ELECT       | 3300uF 20% 35V   |          |                |                                                            |                |

## MAIN

| Ref. No.       | Part No.       | Description               | Remarks | Ref. No. | Part No.      | Description          | Remarks |
|----------------|----------------|---------------------------|---------|----------|---------------|----------------------|---------|
| < COIL >       |                |                           |         |          |               |                      |         |
| L701           | * 1-420-872-00 | COIL, AIR CORE            |         | R314     | 1-249-423-11  | CARBON 3. 3K 5% 1/4W |         |
| L751           | * 1-420-872-00 | COIL, AIR CORE            |         | R315     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| < TRANSISTOR > |                |                           |         | R316     | 1-247-903-00  | CARBON 1M 5% 1/4W    |         |
| Q105           | 8-729-119-78   | TRANSISTOR 2SC2785-HFE    |         | R317     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q301           | 8-729-900-36   | TRANSISTOR DTC124ES       |         | R318     | 1-247-887-00  | CARBON 220K 5% 1/4W  |         |
| Q302           | 8-729-900-63   | TRANSISTOR DTA124ES       |         | R319     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q303           | 8-729-900-36   | TRANSISTOR DTC124ES       |         | R320     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q304           | 8-729-900-63   | TRANSISTOR DTA124ES       |         | R321     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q305           | 8-729-900-36   | TRANSISTOR DTC124ES       |         | R322     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| Q306           | 8-729-900-36   | TRANSISTOR DTC124ES       |         | R323     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| Q307           | 8-729-209-15   | TRANSISTOR 2SD2012        |         | R324     | 1-249-421-11  | CARBON 2. 2K 5% 1/4W |         |
| Q404           | 8-729-141-30   | TRANSISTOR 2SC3623A-LK    |         | R340     | 1-247-823-00  | CARBON 470 5% 1/4W   |         |
| Q405           | 8-729-141-30   | TRANSISTOR 2SC3623A-LK    |         | R344     | 1-249-425-11  | CARBON 4. 7K 5% 1/4W |         |
| Q705           | 8-729-141-06   | TRANSISTOR 2SA1142-QPE    |         | R345     | 1-247-857-00  | CARBON 12K 5% 1/4W   |         |
| Q706           | 8-729-209-15   | TRANSISTOR 2SD2012        |         | R351     | 1-247-887-00  | CARBON 220K 5% 1/4W  |         |
| Q707           | 8-729-141-05   | TRANSISTOR 2SC2682-QPE    |         | R352     | 1-247-887-00  | CARBON 220K 5% 1/4W  |         |
| Q708           | 8-729-119-78   | TRANSISTOR 2SC2785-HFE    |         | R353     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q709           | 8-729-119-76   | TRANSISTOR 2SA1175-HFE    |         | R354     | 1-247-895-00  | CARBON 470K 5% 1/4W  |         |
| Q710           | 8-729-141-46   | TRANSISTOR 2SC4431-LK     |         | R355     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q711           | 8-729-141-37   | TRANSISTOR 2SA1684-LK     |         | R356     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q712           | 8-729-320-96   | TRANSISTOR 2SC2921-OPY    |         | R357     | 1-249-441-11  | CARBON 100K 5% 1/4W  |         |
| Q713           | 8-729-320-75   | TRANSISTOR 2SA1215-0Y     |         | R374     | 1-249-421-11  | CARBON 2. 2K 5% 1/4W |         |
| Q714           | 8-729-140-84   | TRANSISTOR 2SC1841-PAFAEA |         | R420     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q715           | 8-729-900-63   | TRANSISTOR DTA124ES       |         | R421     | 1-247-887-00  | CARBON 220K 5% 1/4W  |         |
| Q716           | 8-729-119-78   | TRANSISTOR 2SC2785-HFE    |         | R422     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q755           | 8-729-141-06   | TRANSISTOR 2SA1142-QPE    |         | R423     | 1-247-863-11  | CARBON 22K 5% 1/4W   |         |
| Q756           | 8-729-209-15   | TRANSISTOR 2SD2012        |         | R424     | 1-249-421-11  | CARBON 2. 2K 5% 1/4W |         |
| Q757           | 8-729-141-05   | TRANSISTOR 2SC2682-QPE    |         | R425     | 1-249-425-11  | CARBON 4. 7K 5% 1/4W |         |
| Q758           | 8-729-119-78   | TRANSISTOR 2SC2785-HFE    |         | R426     | 1-249-441-11  | CARBON 100K 5% 1/4W  |         |
| Q759           | 8-729-119-76   | TRANSISTOR 2SA1175-HFE    |         | R501     | 1-249-411-11  | CARBON 330 5% 1/4W   |         |
| Q760           | 8-729-141-46   | TRANSISTOR 2SC4431-LK     |         | R502     | 1-247-865-11  | CARBON 27K 5% 1/4W   |         |
| Q761           | 8-729-141-37   | TRANSISTOR 2SA1684-LK     |         | R503     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| Q762           | 8-729-320-96   | TRANSISTOR 2SC2921-OPY    |         | R504     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| Q763           | 8-729-320-73   | TRANSISTOR 2SA1215-0Y     |         | R505     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| Q764           | 8-729-140-84   | TRANSISTOR 2SC1841-PAFAEA |         | R506     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| Q951           | 8-729-141-03   | TRANSISTOR 2SA733-QP      |         | R507     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| < RESISTOR >   |                |                           |         | R508     | 1-249-416-11  | CARBON 820 5% 1/4W   |         |
| R139           | 1-249-417-11   | CARBON 1K 5% 1/4W         |         | R509     | 1-247-897-11  | CARBON 560K 5% 1/4W  |         |
| R140           | 1-249-393-11   | CARBON 10 5% 1/4W         |         | R510     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| R301           | 1-247-887-00   | CARBON 220K 5% 1/4W       |         | R511     | 1-249-441-11  | CARBON 100K 5% 1/4W  |         |
| R302           | 1-247-887-00   | CARBON 220K 5% 1/4W       |         | R512     | 1-249-409-11  | CARBON 220 5% 1/4W   |         |
| R303           | 1-249-429-11   | CARBON 10K 5% 1/4W        |         | R513     | 1-249-425-11  | CARBON 4. 7K 5% 1/4W |         |
| R304           | 1-247-895-00   | CARBON 470K 5% 1/4W       |         | R551     | 1-249-411-11  | CARBON 330 5% 1/4W   |         |
| R305           | 1-249-429-11   | CARBON 10K 5% 1/4W        |         | R552     | 1-247-865-11  | CARBON 27K 5% 1/4W   |         |
| R306           | 1-249-429-11   | CARBON 10K 5% 1/4W        |         | R553     | 1-249-429-11  | CARBON 10K 5% 1/4W   |         |
| R307           | 1-249-441-11   | CARBON 100K 5% 1/4W       |         | R554     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| R308           | 1-249-437-11   | CARBON 47K 5% 1/4W        |         | R555     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| R309           | 1-249-428-11   | CARBON 8. 2K 5% 1/4W      |         | R556     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
| R310           | 1-249-428-11   | CARBON 8. 2K 5% 1/4W      |         | R557     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
| R311           | 1-249-431-11   | CARBON 15K 5% 1/4W        |         | R558     | 1-249-416-11  | CARBON 820 5% 1/4W   |         |
| R312           | 1-249-428-11   | CARBON 8. 2K 5% 1/4W      |         | R559     | 1-247-897-11  | CARBON 560K 5% 1/4W  |         |
| R313           | 1-249-436-11   | CARBON 39K 5% 1/4W        |         | R560     | 1-249-437-11  | CARBON 47K 5% 1/4W   |         |
|                |                |                           |         | R561     | 1-249-441-11  | CARBON 100K 5% 1/4W  |         |
|                |                |                           |         | R562     | 1-249-409-11  | CARBON 220 5% 1/4W   |         |
|                |                |                           |         | R701     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
|                |                |                           |         | R712     | 1-249-435-11  | CARBON 33K 5% 1/4W   |         |
|                |                |                           |         | R713     | △1-247-692-11 | CARBON 22 5% 1/4W    |         |
|                |                |                           |         | R714     | 1-249-417-11  | CARBON 1K 5% 1/4W    |         |
|                |                |                           |         | R715     | 1-249-412-11  | CARBON 390 5% 1/4W   |         |
|                |                |                           |         | R716     | △1-247-692-11 | CARBON 22 5% 1/4W    |         |

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

|      |    |       |       |
|------|----|-------|-------|
| MAIN | RX | SP SW | SP TM |
|------|----|-------|-------|

| Ref. No. | Part No.       | Description          | Remarks |
|----------|----------------|----------------------|---------|
| R717     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R718     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R719     | △1-247-719-11  | CARBON 3.3K 5% 1/4W  |         |
| R720     | △1-247-713-11  | CARBON 1K 5% 1/4W    |         |
| R721     | △1-247-713-11  | CARBON 1K 5% 1/4W    |         |
| R722     | △1-247-717-11  | CARBON 2.2K 5% 1/4W  |         |
| R723     | △1-247-745-11  | CARBON 330 5% 1/2W   |         |
| R724     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R725     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R726     | △1-214-789-00  | RES, METAL PLATE 0.1 |         |
| R727     | △1-214-789-00  | RES, METAL PLATE 0.1 |         |
| R728     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R729     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R730     | 1-249-419-11   | CARBON 1.5K 5% 1/4W  |         |
| R731     | 1-249-431-11   | CARBON 15K 5% 1/4W   |         |
| R732     | 1-249-437-11   | CARBON 47K 5% 1/4W   |         |
| R734     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R735     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R736     | 1-249-438-11   | CARBON 56K 5% 1/4W   |         |
| R737     | 1-249-433-11   | CARBON 22K 5% 1/4W   |         |
| R738     | 1-249-425-11   | CARBON 4.7K 5% 1/4W  |         |
| R739     | 1-249-429-11   | CARBON 10K 5% 1/4W   |         |
| R751     | 1-249-417-11   | CARBON 1K 5% 1/4W    |         |
| R762     | 1-249-435-11   | CARBON 33K 5% 1/4W   |         |
| R763     | △1-247-692-11  | CARBON 22 5% 1/4W    |         |
| R764     | 1-249-417-11   | CARBON 1K 5% 1/4W    |         |
| R765     | 1-249-412-11   | CARBON 390 5% 1/4W   |         |
| R766     | △1-247-692-11  | CARBON 22 5% 1/4W    |         |
| R767     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R768     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R769     | △1-247-719-11  | CARBON 3.3K 5% 1/4W  |         |
| R770     | △1-247-713-11  | CARBON 1K 5% 1/4W    |         |
| R771     | △1-247-713-11  | CARBON 1K 5% 1/4W    |         |
| R772     | △1-247-717-11  | CARBON 2.2K 5% 1/4W  |         |
| R773     | △1-247-745-11  | CARBON 330 5% 1/2W   |         |
| R774     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R775     | △1-247-688-11  | CARBON 10 5% 1/4W    |         |
| R776     | △1-214-789-00  | RES, METAL PLATE 0.1 |         |
| R777     | △1-214-789-00  | RES, METAL PLATE 0.1 |         |
| R778     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R779     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R780     | 1-249-419-11   | CARBON 1.5K 5% 1/4W  |         |
| R781     | 1-249-431-11   | CARBON 15K 5% 1/4W   |         |
| R782     | 1-249-438-11   | CARBON 56K 5% 1/4W   |         |
| R784     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R789     | 1-249-393-11   | CARBON 10 5% 1/4W    |         |
| R953     | 1-247-813-11   | CARBON 180 5% 1/4W   |         |
| R955     | △1-247-704-11  | CARBON 220 5% 1/4W   |         |
| R956     | 1-249-426-11   | CARBON 5.6K 5% 1/4W  |         |
| R957     | 1-249-385-11   | CARBON 2.2 5% 1/6W   |         |
| R958     | 1-249-385-11   | CARBON 2.2 5% 1/6W   |         |
| R959     | 1-249-385-11   | CARBON 2.2 5% 1/6W   |         |
|          |                | < RELAY >            |         |
| RY701    | 1-515-741-11   | RELAY                |         |
|          |                | < CONNECTOR >        |         |
| TP701    | * 1-560-531-00 | PIN, CONNECTOR 5P    |         |

| Ref. No. | Part No.       | Description                    | Remarks |
|----------|----------------|--------------------------------|---------|
|          |                | < CRYSTAL >                    |         |
| X301     | 1-577-157-11   | VIBRATOR, CERAMIC (8MHz)       |         |
|          |                | *****                          |         |
|          | * 1-638-277-11 | RX BOARD                       |         |
|          |                | *****                          |         |
|          |                | < CAPACITOR >                  |         |
| C107     | 1-162-294-31   | CERAMIC 0.001uF 10% 50V        |         |
|          |                | < CONNECTOR >                  |         |
| CN106    | * 1-565-295-11 | PLUG, CONNECTOR 4P             |         |
|          |                | < IC >                         |         |
| IC102    | 8-749-920-83   | IC GP1U52XB                    |         |
|          |                | < RESISTOR >                   |         |
| R137     | 1-249-429-11   | CARBON 10K 5% 1/4W             |         |
| R138     | 1-249-429-11   | CARBON 10K 5% 1/4W             |         |
|          |                | < SWITCH >                     |         |
| S117     | 1-554-303-21   | SWITCH, TACTILE (SYSTEM POWER) |         |
|          |                | *****                          |         |
|          | * 1-638-284-11 | SP SW BOARD                    |         |
|          |                | *****                          |         |
|          |                | < CONNECTOR >                  |         |
| CN706    | * 1-565-480-11 | CONNECTOR, BOARD TO BOARD 4P   |         |
| CN708    | 1-506-786-11   | PLUG, CONNECTOR (2.5mm) 12P    |         |
|          |                | < RESISTOR >                   |         |
| R733     | △1-216-431-11  | METAL OXIDE 560 5% 1W F        |         |
| R783     | △1-216-431-11  | METAL OXIDE 560 5% 1W F        |         |
|          |                | < SWITCH >                     |         |
| S701     | 1-572-685-11   | SWITCH, ROTARY SLIDE (SPEAKER) |         |
|          |                | *****                          |         |
|          | * 1-638-287-11 | SP TM BOARD                    |         |
|          |                | *****                          |         |
|          |                | < CONNECTOR >                  |         |
| CN705    | * 1-564-778-11 | PLUG, CONNECTOR (2.5mm) 4P     |         |
|          |                | < TERMINAL >                   |         |
| TM701    | 1-537-341-11   | TERMINAL BOARD (8P SP)         |         |
|          |                | *****                          |         |

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

|      |         |     |           |
|------|---------|-----|-----------|
| SURR | SURR SP | VOL | VOL JOINT |
|------|---------|-----|-----------|

| Ref. No. | Part No.       | Description                   | Remarks |
|----------|----------------|-------------------------------|---------|
|          | * 1-638-282-11 | SURR BOARD<br>*****           |         |
|          |                | < CAPACITOR >                 |         |
| C601     | 1-124-927-11   | ELECT 4.7uF 20% 100V          |         |
| C602     | 1-162-282-31   | CERAMIC 100PF 10% 50V         |         |
| C603     | 1-124-477-11   | ELECT 47uF 20% 25V            |         |
| C604     | 1-130-483-00   | MYLAR 0.01uF 5% 50V           |         |
| C605     | 1-124-907-11   | ELECT 10uF 20% 50V            |         |
| C606     | 1-124-907-11   | ELECT 10uF 20% 50V            |         |
| C607     | 1-136-171-00   | MYLAR 0.33uF 5% 50V           |         |
| C609     | 1-130-489-00   | MYLAR 0.033uF 5% 50V          |         |
|          |                | < CONNECTOR >                 |         |
| CN601    | * 1-506-710-11 | PLUG, CONNECTOR (2.5MM) 8P    |         |
| CN602    | * 1-565-835-11 | SOCKET, CONNECTOR 3P          |         |
|          |                | < DIODE >                     |         |
| D601     | 8-719-987-63   | DIODE 1N4148M                 |         |
| D602     | 8-719-987-63   | DIODE 1N4148M                 |         |
| D603     | 8-719-987-63   | DIODE 1N4148M                 |         |
|          |                | < IC >                        |         |
| IC601    | 8-759-502-32   | IC SI-18752N                  |         |
|          |                | < TRANSISTOR >                |         |
| Q601     | 8-729-140-84   | TRANSISTOR 2SC1841-PAFAEA     |         |
|          |                | < RESISTOR >                  |         |
| R601     | 1-249-417-11   | CARBON 1K 5% 1/4W             |         |
| R602     | 1-249-437-11   | CARBON 47K 5% 1/4W            |         |
| R603     | 1-247-817-11   | CARBON 270 5% 1/4W            |         |
| R604     | 1-249-437-11   | CARBON 47K 5% 1/4W            |         |
| R605     | △1-217-151-00  | RES, METAL PLATE 0.22         |         |
| R606     | 1-247-688-11   | CARBON 10 5% 1/4W             |         |
| R607     | 1-247-815-11   | CARBON 220K 5% 1/4W           |         |
| R608     | 1-247-853-11   | CARBON 8.2K 5% 1/4W           |         |
| R609     | 1-247-688-11   | CARBON 10 5% 1/4W             |         |
| R610     | 1-249-437-11   | CARBON 47K 5% 1/4W            |         |
| R611     | 1-247-817-11   | CARBON 270 5% 1/4W            |         |
|          |                | < RELAY >                     |         |
| RY601    | 1-515-790-11   | RELAY (REAR SP)               |         |
| *****    |                |                               |         |
|          | * 1-638-281-11 | SURR SP BOARD<br>*****        |         |
|          |                | < CONNECTOR >                 |         |
| CN603    | * 1-560-666-00 | PIN, CONNECTOR 3P             |         |
|          |                | < TERMINAL >                  |         |
| TM601    | * 1-537-265-11 | TERMINAL BOARD (REAR SPEAKER) |         |
| *****    |                |                               |         |

| Ref. No. | Part No.       | Description                             | Remarks |
|----------|----------------|-----------------------------------------|---------|
|          | * 1-638-278-11 | VOL BOARD<br>*****                      |         |
|          |                | < CONNECTOR >                           |         |
| CN204    | * 1-568-826-11 | SOCKET, CONNECTOR 7P                    |         |
|          |                | < VARIABLE RESISTOR >                   |         |
| RV407    | 1-241-413-11   | RES, VAR, CARBON 100KX3 (MASTER VOLUME) |         |
| *****    |                |                                         |         |
|          | * 1-638-279-11 | VOL JOINT BOARD<br>*****                |         |
|          |                | < CAPACITOR >                           |         |
| C418     | 1-162-306-11   | CERAMIC 0.01uF 20% 16V                  |         |
| C419     | 1-124-925-11   | ELECT 2.2uF 20% 100V                    |         |
| C420     | 1-124-925-11   | ELECT 2.2uF 20% 100V                    |         |
| C421     | 1-162-306-11   | CERAMIC 0.01uF 20% 16V                  |         |
|          |                | < CONNECTOR >                           |         |
| CN403    | 1-569-132-11   | 7P                                      |         |
|          |                | < IC >                                  |         |
| IC402    | 8-759-820-62   | IC LB1639                               |         |
|          |                | < RESISTOR >                            |         |
| R416     | 1-247-813-11   | CARBON 180 5% 1/4W                      |         |
| R417     | 1-249-425-11   | CARBON 4.7K 5% 1/4W                     |         |
| R418     | 1-249-425-11   | CARBON 4.7K 5% 1/4W                     |         |
| *****    |                |                                         |         |
|          |                | MISCELLANEOUS<br>*****                  |         |
| 5        | 1-590-486-11   | WIRE, FLAT TYPE (7 CORE)                |         |
| 6        | 1-590-487-11   | WIRE, FLAT TYPE (17 CORE)               |         |
| 13       | 1-590-538-11   | WIRE, FLAT TYPE (7 CORE)                |         |
| 14       | 1-590-485-11   | WIRE, FLAT TYPE (7 CORE)                |         |
| CNP901   | △1-551-478-00  | CORD, POWER                             |         |
| T901     | △1-450-370-11  | TRANSFORMER, POWER                      |         |
| *****    |                |                                         |         |
|          |                | ACCESSORY & PACKING MATERIAL<br>*****   |         |
|          | 1-465-711-11   | REMOTE COMMANDER (RM-U212)              |         |
|          | 3-707-584-01   | COVER, BATTERY                          |         |
|          | 3-753-099-21   | MANUAL, INSTRUCTION (ENGLISH)           |         |
|          | * 4-943-619-01 | INDIVIDUAL CARTON                       |         |
|          | * 4-943-620-01 | CUSHION                                 |         |
| *****    |                |                                         |         |

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remarks</u> |
|-----------------|-----------------|--------------------|----------------|
|-----------------|-----------------|--------------------|----------------|

**HARDWARE LIST**

\*\*\*\*\*

|     |              |                          |  |
|-----|--------------|--------------------------|--|
| # 1 | 7-621-849-00 | SCREW, TAPPING           |  |
| # 2 | 7-682-548-09 | SCREW +B 3X8             |  |
| # 3 | 7-682-949-01 | SCREW +PSW 3X10          |  |
| # 5 | 7-682-950-01 | SCREW +PSW 3X12          |  |
| # 6 | 7-685-646-79 | SCREW +BTP 3X8 TYPE2 N-S |  |
| # 7 | 7-682-548-04 | SCREW +BVTT 3X8 (S)      |  |
| # 8 | 7-682-561-04 | SCREW +BVTT 4X8 (S)      |  |



# TA-AV411

## SONY<sup>®</sup> SERVICE MANUAL

US Model

### CORRECTION-1

Correct your service manual as shown below.

Correct the part No. as shown below

| Page | INCORRECT       | CORRECT         |                      |
|------|-----------------|-----------------|----------------------|
|      | <u>Part No.</u> | <u>Part No.</u> | <u>Description</u>   |
| 32   | A-4341-682-A    | * A-4341-678-A  | MAIN BOARD, COMPLETE |

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.