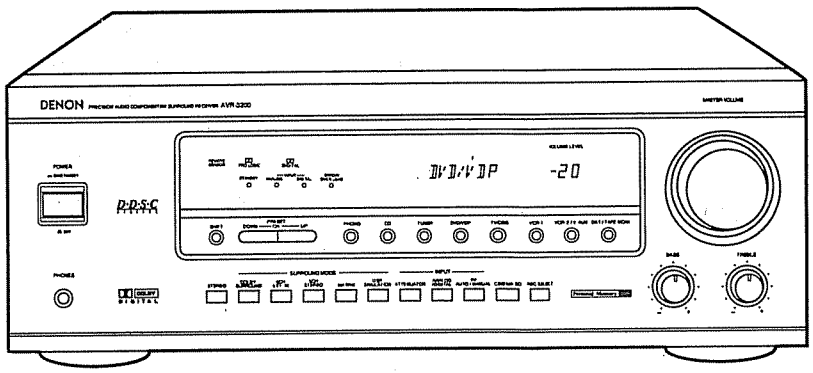
DENON

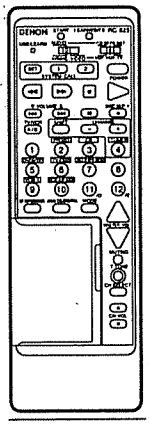
Hi-Fi AV Surround Receiver

SERVICE MANUAL

MODEL AVR-3200

AV SURROUND RECEIVER





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● Some illustration using in this service manual are slightly different from the actual set.

NIPPON COLUMBIA CO., LTD.

• **SAFETY PRECAUTIONS**

CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION
POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

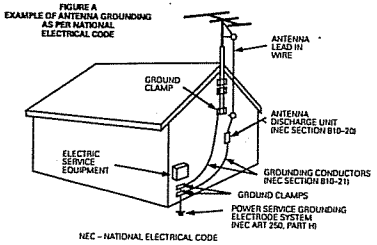
SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

FIGURE A
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



NEC – NATIONAL ELECTRICAL CODE

12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
    - A. The power-supply cord or the plug has been damaged; or
    - B. Objects have fallen, or liquid has been spilled into the appliance; or
    - C. The appliance has been exposed to rain; or
    - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    - E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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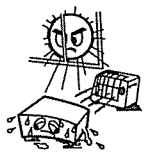
• ACCESSORIES

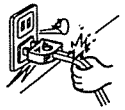
Check that the following parts are included in addition to the main unit:

① Operating instructions 1
② Warranty (for North American model only) 1
③ Service station list 1
④ Remote control unit (RC-825) 1
⑤ R6P/AA batteries 2
⑥ AM loop antenna 1
⑦ FM indoor antenna 1
⑧ FM antenna adaptor 1

1 NOTE ON USE

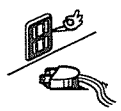


• Avoid high temperatures
Allow for sufficient heat dispersion when installed on a rack.

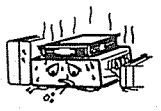


• Handle the power cord carefully.
Hold the plug when unplugging the cord.

• Keep the set free from moisture, water, and dust.

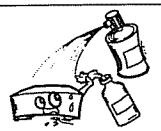


• Unplug the power cord when not using the set for long periods of time.



*(For sets with ventilation holes)
• Do not obstruct the ventilation holes.

• Do not let foreign objects in the set.



• Do not let insecticides, benzene, and thinner come in contact with the set.

• Never disassemble or modify the set in any way.

2 BEFORE USING

Pay attention to the following before using this unit:

• **Moving the set**
To prevent short circuits or damaged wires in the connection cords, always unplug the power cord and disconnect the connection cords between all other audio components when moving the set.

• **Before turning the power switch on**
Check once again that all connections are proper and that there are not problems with the connection cords. Always set the power switch to the standby position before connecting and disconnecting connection cords.

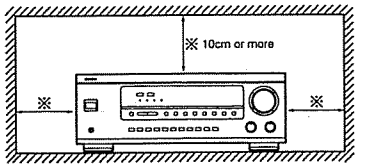
• **Store this instructions in a safe place.**
After reading, store this instructions along with the warranty in a safe place. Also fill in the items on the back page for your convenience.

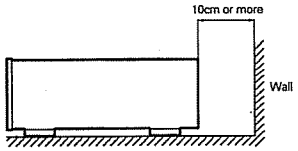
• **Note that the illustrations in this instructions may differ from the actual set for explanation purposes.**

3 CAUTIONS ON INSTALLATION

Noise or disturbance of the picture may be generated if this unit or any other electronic equipment using microprocessors is used near a tuner or TV.
If this happens, take the following steps:
• Install this unit as far as possible from the tuner or TV.
• Set the antenna wires from the tuner or TV away from this unit's power cord and input/output connection cords.
• Noise or disturbance tends to occur particularly when using indoor antennas or 300 Ω/ohms feeder wires. **We recommend using outdoor antennas and 75 Ω/ohms coaxial cables.**

For heat dispersal, leave at least 10 cm of space between the top, back and sides of this unit and the wall or other components.





4 CAUTIONS ON HANDLING

• **Switching the input function when input jacks are not connected**
A clicking noise may be produced if the input function is switched when nothing is connected to the input jacks. If this happens, either turn down the MASTER VOLUME control or connect components to the input jacks.

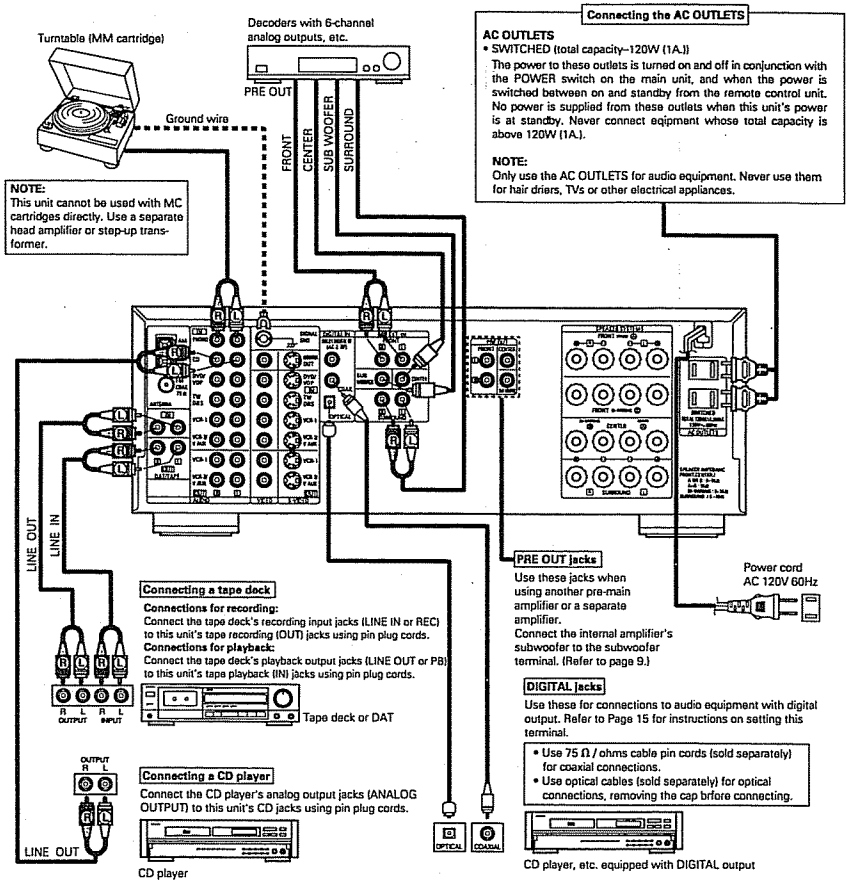
• **Muting of PRE OUT jacks**
The PRE OUT jacks include a muting circuit. Because of this, the output signals are greatly reduced for several seconds after the power switch is turned on or input function, surround mode or any other set-up is changed. If the volume is turned up during this time, the output will be very high after the muting circuit stops functioning. Always wait until the muting circuit turns off before adjusting the volume.

• **Whenever the power switch is in the OFF state, the apparatus is still connected on some AC line voltages.**
Please be sure to unplug the cord when you leave home for, say, a vacation.

5 CONNECTIONS

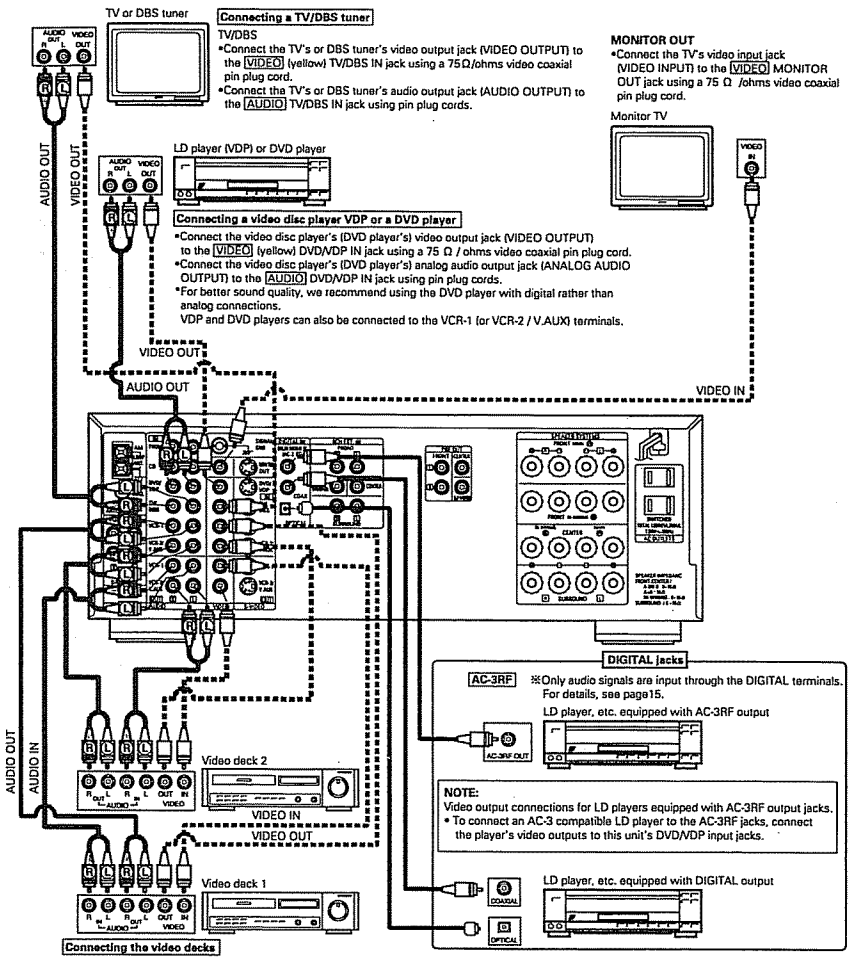
- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- **Use the AC OUTLETS for audio equipment only. Do not use them for hair driers, etc.**
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in generating hum or other noise.
- Noise or humming may be generated if a connected audio equipment is used independently without turning the power of this unit on. If this happens, turn on the power of the this unit.

Connecting the audio components



Connecting the video equipments

To connect the video signal, connect using a 75 Ω/ohms video signal cable cord. Using an improper cable can result in a drop in sound quality.



• There are two sets of video deck (VCR) jacks, so two video decks can be connected for simultaneous recording or video copying.

Video input / output connections:

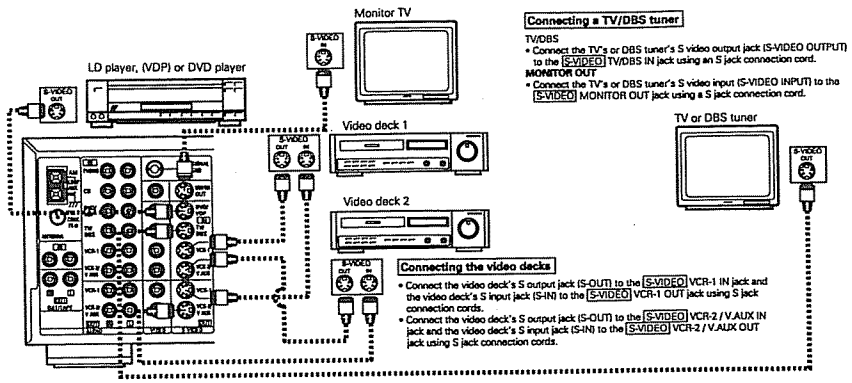
• Connect the video deck's video output jack (VIDEO OUT) to the VIDEO (yellow) VCR-1 IN jack, and the video deck's video input jack (VIDEO IN) to the VIDEO (yellow) VCR-1 OUT jack using 75 Ω /ohms video coaxial pin plug cords.

Connecting the audio output jacks

• Connect the video deck's audio output jacks (AUDIO OUT) to the AUDIO VCR-1 IN jacks, and the video deck's audio input jacks (AUDIO IN) to the AUDIO VCR-1 OUT jacks using pin plug cords.

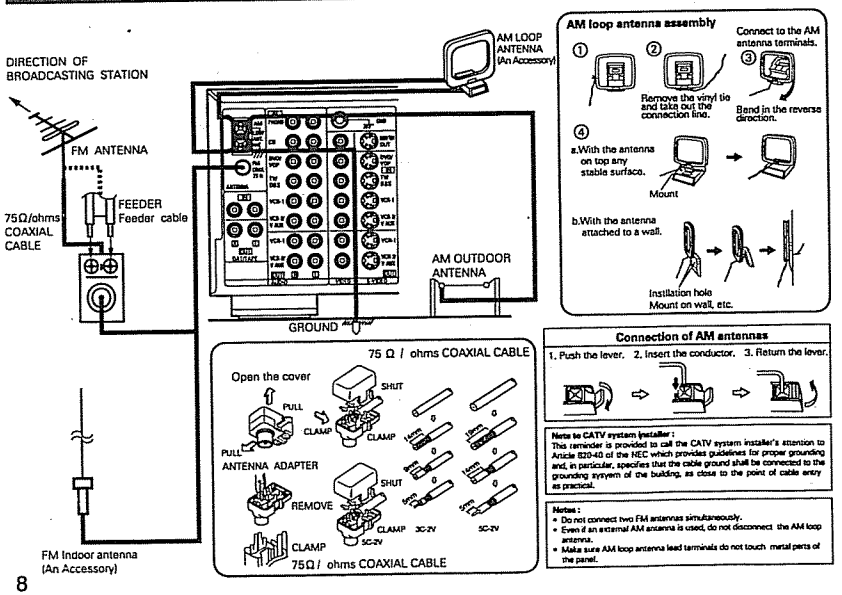
※Connect the second video deck to the VCR-2 jacks in the same way.

Connecting the S-video terminals



- **A note on the S input jacks**
  The input selectors for the S inputs and pin jack inputs work in conjunction with each other.
- **Precaution when using S-jacks**
  This unit's S-jacks (input and output) and video pin jacks (input and output) have independent circuit structures, so that video signals input from the S-jacks are only output from the S-jack outputs and video signals input from the pin jacks are only output from the pin jack outputs. When connecting this unit with equipment that is equipped with S-jacks, keep the above point in mind and make connections according to the equipment's instruction manuals.

Connecting the antenna terminals

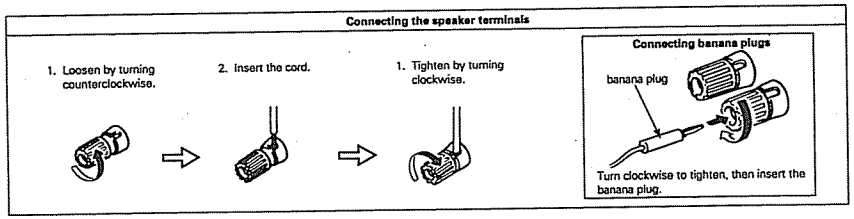


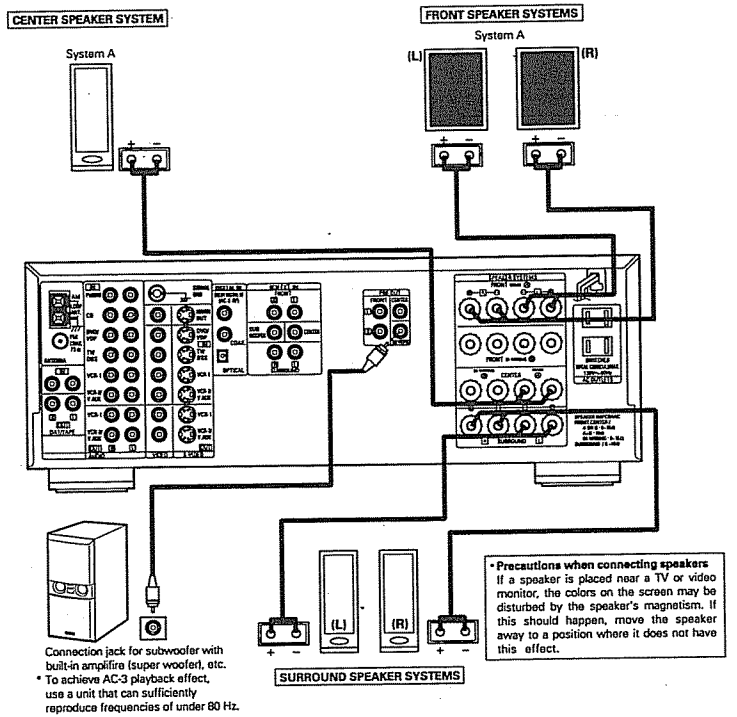
Speaker system connections

- Connect the speaker terminals with the speakers making sure that like polarities are matched (⊕ with ⊕ , ⊖ with ⊖). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel. Use banana plugs the speaker cords touch or if their core wire is thick and it is difficult to connect the cord to the speaker terminal.

Speaker Impedance

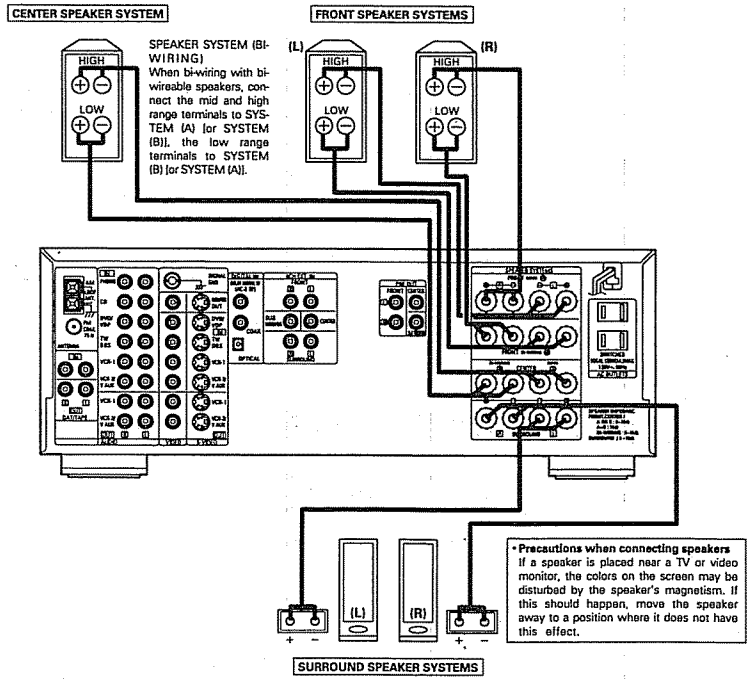
- When speaker systems A and B are use separately, speakers with an impedance of from 8 to 16 Ω/ohms can be connected for use as front and center speakers.
- Be careful when using two pairs of front or center speakers (A + B) at the same time, since use of speakers with an impedance of less than 16 Ω/ohms will lead to damage.
- Speakers with an impedance of 8 to 16 Ω/ohms can be connected for use as surround speakers.
- The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.





- About bi-wiring
  If your speakers have bi-wiring terminals, you can achieve higher quality sound by adding cords and using bi-wiring, as shown on the diagram below.
- By connecting speaker systems to both the speaker A and B terminals, you can play the same music source simultaneously in different rooms. (Use speakers with impedances of 16 Ω/ohms.)

Bi-wiring procedure



Protector circuit

This set has a built-in high speed protector circuit which protects the internal circuitry from strong currents that may be generated if the speakers are used with their cords insecurely connected to the speaker terminals or if the cords are short-circuited.
If this protector circuit is activated, the speaker output is automatically cut off, the display turns off and the STANDBY LED flashes rapidly. If this should happen, be sure to turn off the set's power, then check the speaker cord connections once again before turning the power back on. The sound will be muted for several seconds, after which the set will operate normally.

6 SYSTEM SETUP

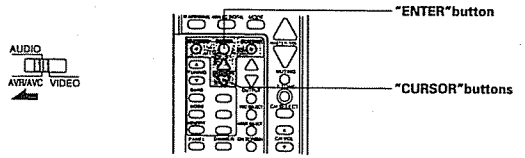
After connections with other components have been made, make the various settings on the monitor connected to the MONITOR OUT terminal using this unit's on screen display function. These settings must be made in order to complete the AV system in your listening room.
Make the seven settings described below.

Caution:
Do not play any apparatus connected to this set while in setting item ① or ② below, or some malfunction may occur.

① **Speaker Configuration**
② **Delay Time**
③ **Channel Level**
④ **Digital Input**
(only when an AV component is connected to the digital input jacks)
⑤ **DOLBY DIGITAL**
⑥ **Auto Tuner Preset**
⑦ **On Screen Display**

NOTES:
- The output from the S MONITOR OUT terminal has priority for the on screen display. For example, the S-video signals have priority if signals are input from a component on which both the S-video and regular video input terminals are connected and the output monitor is connected to both the S-video and regular video output terminals. If you want to always output the on screen display signals to the video output, do not connect a cable to the S MONITOR OUT terminal.
- This model's on screen display function is designed for high resolution monitor displays. Small characters may be difficult to read on small displays or low resolution TVs.

Use the following buttons on the remote control unit to make the settings:
* Set to the AVR/AVC side.



Before setting up the system

1

Press the POWER switch on the main unit or the POWER button on the remote control unit to turn on the power.

2

Press the ENTER button.
- The "Tuner Preset Stations" menu is only displayed when the input function is set to "TUNER".
- The "Surround Parameters" are not displayed when the parameters that should be set in the selected surround mode are not there. Examples include "5 CH STEREO", "6 CH EXT. IN", and "STEREO" (with PCM analog input) modes.

```
Menu
▫System Setup
▾
 Surround Parameters
 Tuner Preset Stations
 Menu Off
```

3

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "System Setup".

```
Menu
▫System Setup
▾
```

4

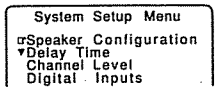
Press the ENTER button to switch the screen.

```
System Setup Menu
▫Speaker Configuration
▾Delay Time
 Channel Level
 Digital Inputs
 DOLBY DIGITAL
 Auto Tuner Presets
 On Screen Display
 Setup Menu Off
```

Setting the speaker configuration

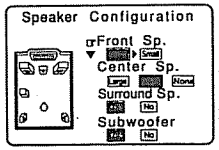
1 

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Speaker Configuration".



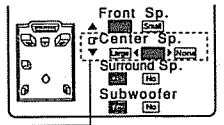
2 

Press the ENTER button to switch the screen.



3 

Use the CURSOR △ and ▽ buttons to set the ☞ mark to the speaker to be set.



Example:Center speaker selected and parameter set to "Small".

4 

Use the CURSOR ◀ and ▶ buttons to highlight the parameter to be set.

■ **Parameters**

Large ..... Select this when using speakers that can fully reproduce low sounds of below 80 Hz.
Small ..... Select this when using speakers that cannot reproduce low sounds of below 80 Hz with sufficient volume. When this setting is selected, low frequencies of below 80 Hz are assigned to the subwoofer.
None ..... Select this when no speakers are installed.
Yes/No ..... Select "Yes" when surround speakers and a subwoofer are installed, "No" when they are not installed.

NOTE: ⁎ Select "Large" or "Small" not according to the physical size of the speaker, but according to the bass reproduction capacity at 80 Hz. If you cannot determine the best setting, try comparing the sound when set to "Small" and when set to "Large", at a level that will not damage the speakers.

⁎ When "None" has been selected for the center speaker, "No" cannot be selected for the surround speakers. Also note that when "No" has been selected for the surround speakers, "None" cannot be selected for the center speaker.

5 

Press the ENTER button to enter the setting.
The "System Setup Menu" screen reappears.

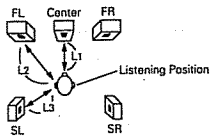
Caution:
In case the subwoofer is not used, be sure to set "Subwoofer = No", or the bass sound of front channel is divided to subwoofer channel and not reproduced in some mode.

Setting the delay time

Input the distances from the listening position to the speakers and set the surround delay time.

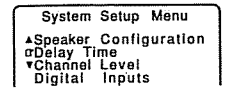
Preparations:
Measure the distances from the listening position to the speakers (L1 to L3 on the diagram at the right).

L_1: Distance from center speaker to listening position
L_2: Distance from front speakers to listening position
L_3: Distance from rear speakers to listening position



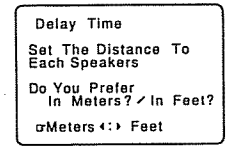
1 

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Delay Time".



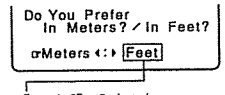
2 

Press the ENTER button to switch the screen.



3 

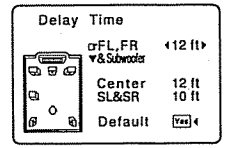
Use the CURSOR ◀ and ▶ buttons to select the unit of distance. Highlight the desired unit, "Meters" or "Feet".



Example:"Feet"selected.

4

- Selecting "Meters" or "Feet" in Step 3 will automatically change the screen to the one on the right.



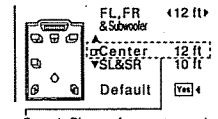
5 

Use the CURSOR △ and ▽ buttons to set the ☞ mark to speaker to be set.

6 

Use the CURSOR ◀ and ▶ buttons to set the distance from the speaker to the listening position.

- The number changes in units of 1 foot (or 0.1 meters) each time one of the buttons is pressed. Select the value closest to the measured distance.



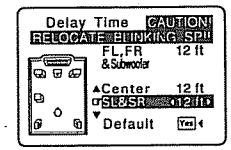
Example:Distance from center speaker to listening position set to 12ft.

⁎ The settings are reset to the factory settings when the ☞ mark is set to "Default" and "Yes". (Refer to page 18.)

⁎ If you set an invalid distance, a CAUTION notice, such as screen appear as shown right. In this case, please relocate the blinking speaker(s) so that its distance is no larger than the value shown in highlighted line. Then press the ENTER button again.

⁎ Set in such a way that the distance to the center speaker is the same as or up to 5 feet (1.5 meters) shorter than the distance to the front left and front right speakers and the subwoofer.

⁎ Set in such a way that the distance to the surround left and right speakers is the same as or up to 15 feet (4.5 meters) shorter than the distance to the front left and front right speakers and the subwoofer.



7 

Press the ENTER button to enter the setting.
The "System Setup Menu" screen reappears.
This procedure automatically sets the optimum surround delay time for the listening room.

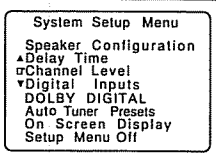
NOTE:
If the unit of distance is changed after the delay time is set, the setting is cleared and reset to the factory setting. (Refer to page 18.)

Setting the channel level

Use the following procedure to adjust the balance of the playing level between the different channels.
This sets the balance of the playing levels between the different channels to the same balance for all the surround modes.
Make the adjustment from the listening position while listening to the test tone output from each speaker.

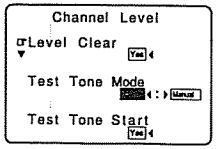
1 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Channel Level".



2 ENTER

Press the ENTER button to switch the screen.

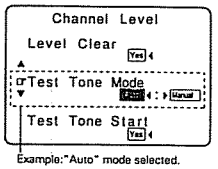


3 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Test Tone Mode".

4 CURSOR CURSOR

Use the CURSOR ◀ and ▶ buttons to select the mode.
Highlight "Auto" or "Manual" to select that mode.



Example:"Auto" mode selected.

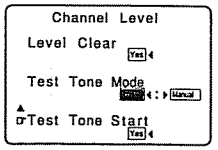
Auto: Adjust the level while listening to the test tones output automatically from the different speakers.
Manual: Select the speaker from which to output the test tone to adjust the level.

5 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Test Tone Start".

6 CURSOR

Press the CURSOR ◀ button and is set to "Yes".



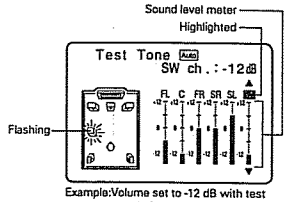
7 **A. If the "Auto" mode is selected:**

Test tones are automatically emitted from the different speakers.
The test tones are emitted from the different speakers in the following order, at 4-second intervals the first time and second time around, 2-second intervals the third time around and on:

FL → C → FR → SR → SL → SW

CURSOR

Use the CURSOR △ and ▽ buttons to adjust so that the volume of the test tones output from the different speakers sounds the same.
The volume can be adjusted in units of 1 dB from −12 to +12 dB.



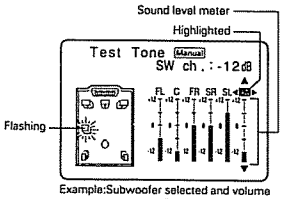
Example:Volume set to -12 dB with test tone being output from subwoofer.

B. If the "Manual" mode is selected:

CURSOR CURSOR

Use the CURSOR ◀ and ▶ buttons to highlight and select the speaker from which you want to output test tones, then use the CURSOR △ and ▽ buttons to adjust so that the volume of the test tones output from the different speakers sounds the same.

CURSOR



Example:Subwoofer selected and volume set to -12 dB.

The level of each channel should be adjusted to 75 dB (C-weighted, slow meter mode) on a sound level meter at the listening position.
If a sound level meter is not available adjust the channels by ear so the sound levels are the same. Because adjusting the subwoofer level test tone by ear is difficult, use a well known music selection and adjust for natural balance.
NOTE: When adjusting the level of an active subwoofer system, you may also need to adjust the subwoofer's own volume control.

8 ENTER

Press the ENTER button to enter the setting.
The "Channel Level" screen reappears.
To cancel the settings, select "Level Clear" and "Yes" on the "Channel Level" screen, then make the settings again.

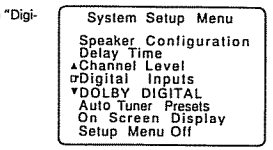
NOTE:
When the level clear operation is performed, all channel levels for all modes are set to 0 dB.

Digital input setup

Input the types of components connected to the digital input terminals.

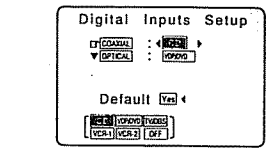
1 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Digital Inputs".



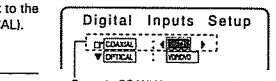
2 ENTER

Press the ENTER button to switch the screen.



3 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to the connector whose input you want to set (COAXIAL or OPTICAL).



Example:COAXIAL connector selected and input device set to CD.

4 CURSOR CURSOR

Use the CURSOR ◀ and ▶ buttons to highlight and select the type of device connected to the various terminals.
- Select "OFF" if nothing is connected.

✻ The settings are reset to the factory settings when the ☞ mark is set to "Default" and "Yes". (Refer to page 18.)
NOTE: PHONO, TUNER and DAT/TAPE cannot be selected.

5 ENTER

Press the ENTER button to enter the setting.
The "System Setup Menu" screen reappears.

DOLBY DIGITAL

Use the following procedure to set the level of the LFE (Low Frequency Effect) included in the source when playing program sources recorded in Dolby Digital.

- If the subwoofer clips due to the LFE signal during Dolby Digital playback, adjust the level as needed.

1

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "DOLBY DIGITAL".

System Setup Menu
Speaker Configuration
Delay Time
Channel Level
▲Digital Inputs
☞DOLBY DIGITAL
▼Auto Tuner Presets
On Screen Display
Setup Menu Off

2

Press the ENTER button to switch the screen.

DOLBY DIGITAL
☞LFE Trim
▼ ◀ 0 dB ▶
Default Yes ◀

3

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "LFE Trim".

4

Use the CURSOR ◀ and ▶ buttons to set the LFE level.
The level can be adjusted in units of 1 dB from −10 to 0 dB. Set to the desired level according to the speaker systems being used and the source to be played.

DOLBY DIGITAL
☞LFE Trim
▼ ◀ -10 dB ▶
Default Yes ◀

Example:LFE level set to -10 dB

* The settings are reset to the factory settings when the ☞ mark is set to "Default" and "Yes". (Refer to page 18.)

5

Press the ENTER button to enter the setting.
The "System Setup Menu" screen reappears.

Auto tuner presets

Use this to automatically search for FM broadcasts and store up to 40 stations at preset channels A1 to 8, B1 to 8, C1 to 8, D1 to 8 and E1 to 8.

NOTE:
If an FM station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then preset it using the manual "Preset memory" operation. (Refer to page 36.)

1

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Auto Tuner Presets".

System Setup Menu
Speaker Configuration
Delay Time
Channel Level
Digital Inputs
▲DOLBY DIGITAL
☞Auto Tuner Presets
▼On Screen Display
Setup Menu Off

2

Press the ENTER button to switch the screen.

Auto Preset Memory
Auto Tuning &
Preset Station Memory
Storing Preset Memory
☞Start Yes ◀

3

Press the CURSOR ◀ button.

Auto Tuning &
Preset Station Memory
Storing Preset Memory
☞Start Yes ◀

4

The set automatically starts searching for FM stations.
- "Search" flashes on the screen.
- "Completed" a appears once searching is completed.

Search

Flashing: When searching is competed, the display switches to "Completed".

5

When searching is completed, the screen automatically returns to the "System Setup Menu".

* For instructions on checking the frequencies of the preset stations, refer to page 27.

On Screen Display

This set is equipped with an on-screen display function that displays information on the various operations on the monitor TV connected to the VIDEO MONITOR OUT connector on the rear panel. These messages are superimposed on the picture when a video source is being played and displayed on a blue background when no video source is being played.
Use the following procedure to turn this function on and off.

1

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "On Screen Display".

System Setup Menu
Speaker Configuration
Delay Time
Channel Level
Digital Inputs
DOLBY DIGITAL
▲Auto Tuner Presets
☞On Screen Display
▼Setup Menu Off

2

Press the ENTER button to switch the screen.

On Screen Display
On ◀ : ▶ Off

3 CURSOR CURSOR

Use the CURSOR ◀ and ▶ buttons to select "ON" or "OFF". Highlight the desired setting.

On Screen Display

ON : OFF

Example:On-screen display function set to "ON".

4 ENTER

Press the ENTER button to enter the setting.

This completes the system setup operations. Once the system is set up, there is no need to make the settings again unless other components or speakers are connected or the speaker layout is changed.

Operation after completing system setup

1 CURSOR

Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Setup Menu Off".

System Setup Menu
Speaker Configuration
Delay Time
Channel Level
Digital Inputs
DOLBY DIGITAL
Auto Tuner Presets
▲On Screen Display
☞Setup Menu Off

2 ENTER

Press the enter button twice to turn off the on screen display.

SYSTEM SETUP DEFAULT VALUE

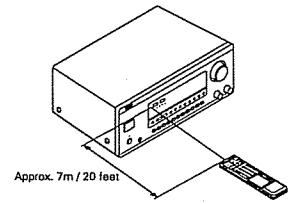
① SPEAKER CONFIGURATION	Front Sp.		Center Sp.	Surround Sp.		Subwoofer
	Small		Small	Yes		Yes
② DELAY TIME	FL, FR & Subwoofer		Center	SL & SR		
	12 ft. (3.6 m)		12 ft. (3.6 m)	10 ft. (3.0 m)		
③ CHANNEL LEVEL	FL	FR	C	SL	SR	SW
	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB
④ DIGITAL INPUTS	COAXIAL: CD		OPTICAL: DVD/VDP			
⑤ DOLBY DIGITAL	LFE Trim 0 dB					
⑥ AUTO TUNER PRESETS						
A1 – A8	87.5/89.1/98.1/107.9/90.1/90.1/90.1/90.1 MHz					
B1 – B8	520/600/1000/1400/1500/1710 kHz/90.1/90.1 MHz					
C1 – C8	90.1 MHz					
D1 – D8	90.1 MHz					
E1 – E8	90.1 MHz					
⑦ ON SCREEN DISPLY	ON					

Playback with the above setting is possible upon shipment from the factory and after initializing (refer to page 37).

7 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

Range of operation of the remote control unit

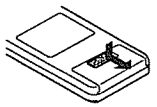


Point the remote control unit at the remote control sensor as shown on the diagram at the left.

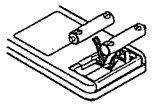
NOTES:
- The remote control unit can be used from a straight distance of approximately 7 meters/20 feet, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

Inserting the batteries

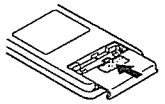
① Press as shown by the arrow and slide off.



② Insert the SUM3 batteries properly, as shown on the diagram.

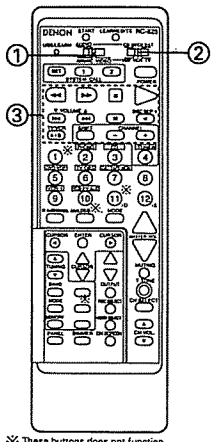


③ Close the lid.



NOTES:
- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.
- The codes that have been learned may be lost if removed batteries are not replaced within about 5 minutes.

System code buttons



※ These buttons does not function. (Some buttons can be used by using the pre-set memory or the learning function.)

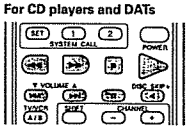
DENON remote-controllable audio components can be controlled using this unit's remote control unit. Note that some components, however, cannot be operated with this remote control unit.

1 Set to slide switch to "AUDIO" ("AVR/AVC").

2 Set the slide switch to the position for the component to be operated (CD, DECK or DAT).

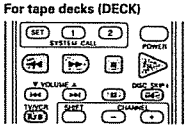
3 Use the buttons shown below to operate the audio component. For details, refer to the respective component's manual.

a. For CD players and DATs



◀◀, ▶▶ : Manual search (reverse and forward)
■ : Stop
▶ : Play
|◀◀, ▶▶| : Auto search
II : Pause
DISC : Disc selection
SKIP+ : (CD changer only)

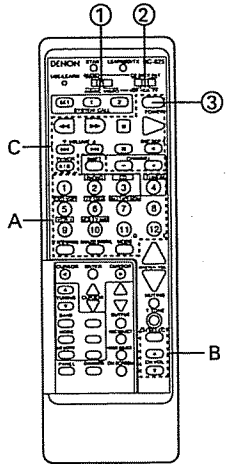
b. For tape decks (DECK)



◀◀ : Reverse
▶▶ : Forward
■ : Stop
▶ : Forward play
II : Pause
A/B : A/B deck selection
◀ : Reverse play

Preset memory

DENON and other makes of components can be operated by setting the preset memory for your make of video component. **Operation is not possible for some models, however. In this case use the learning function (see page 22) to store the remote control signals.**
For instructions on clearing the presettings stored in the preset memory, see page 23.

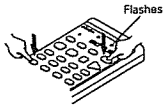


1 Set the slide switch to "VIDEO".

2 Set the slide switch to the component to be registered (VDP, VCR or TV).

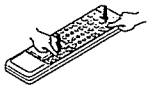
(Keep the POWER button pressed in when performing steps 3 and 4.)

3 Holding in the POWER button, press the button for the corresponding manufacturer in block A.
(Refer to Table 1.)



The LEARNED/TX LED flashes.

4 Next, while holding in the POWER button, press the button for the code in block B. (Refer to Table 7-2.) The operation is completed when the LEARNED/TX LED lights.



5 To continue registering other components, repeat steps 2 to 4.

This remote control unit can be used to operate components of other manufacturers without using the learning function by registering the manufacturer of the component as shown on Table 1.

Table 1: Combinations of Personal System Codes for Different Manufacturers

"VDP"

A \ B	CH SELECT	CH VOL ▲	CH VOL ▼
①	DENON A	DENON B	DENON C
② (PHONO)	DENON (DVD)	—	—
③ (CD)	MITSUBISHI	—	—
④ (TUNER)	PANASONIC	—	—
⑤ (DVD/VDP)	—	—	—
⑥ (TV/DBS)	SONY A	SONY B	SONY C
⑦ (DAT/TAPE MON)	PIONEER	—	—
⑧	—	—	—
⑨ (VCR-1)	—	—	—
⑩ (VCR-2/V.AUX)	—	—	—
⑪ /0	—	—	—
⑫ /E	PHILIPS	—	—
RF AUTOMAKER	RCA	—	—
ANALOG/DIGITAL	—	—	—
MODE	MAGNAVOX	—	—

"VCR"

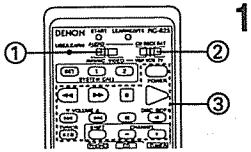
A \ B	CH SELECT	CH VOL ▲	CH VOL ▼
①	—	—	—
② (PHONO)	HITACHI A	HITACHI B	—
③ (CD)	MITSUBISHI A	MITSUBISHI B	MITSUBISHI C
④ (TUNER)	PANASONIC A	PANASONIC B	PANASONIC C
⑤ (DVD/VDP)	JVC (VICTOR)A	JVC (VICTOR) B	JVC (VICTOR) C
⑥ (TV/DBS)	SONY A	SONY B	SONY C
⑦ (DAT/TAPE MON)	PIONEER	—	—
⑧	TOSHIBA A	TOSHIBA B	—
⑨ (VCR-1)	SANYO A	SANYO B	—
⑩ (VCR-2/V.AUX)	SHARP A	SHARP B	—
⑪ /0	NEC A	NEC B	NEC C
⑫ /E	PHILIPS A	PHILIPS B	PHILIPS C
RF AUTOMAKER	RCA A	RCA B	—
ANALOG/DIGITAL	GENERAL ELECTRIC A	GENERAL ELECTRIC B	—
MODE	MAGNAVOX A	MAGNAVOX B	MAGNAVOX C

"TV"

A \ B	CH SELECT	CH VOL ▲	CH VOL ▼
①	—	—	—
② (PHONO)	DENON/HITACHI	—	—
③ (CD)	MITSUBISHI A	MITSUBISHI B	—
④ (TUNER)	PANASONIC A	PANASONIC B	—
⑤ (DVD/VDP)	JVC (VICTOR)	—	—
⑥ (TV/DBS)	SONY	—	—
⑦ (DAT/TAPE MON)	PIONEER	—	—
⑧	TOSHIBA	—	—
⑨ (VCR-1)	SANYO A	—	—
⑩ (VCR-2/V.AUX)	SHARP	—	—
⑪ /0	NEC A	—	—
⑫ /E	PHILIPS A	—	—
RF AUTOMAKER	RCA A	—	—
ANALOG/DIGITAL	GENERAL ELECTRIC A	GENERAL ELECTRIC B	—
MODE	MAGNAVOX A	—	—

NOTES:
- The signals for the pressed buttons are emitted while setting the preset memory. To avoid accidental operation, cover the remote control unit's transmitting window while setting the preset memory.
- Some models and years of manufacture of components of the manufacturers listed on Table 1 cannot be used.

Operation after components are registered

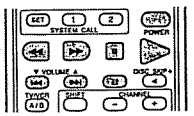


1 Set the slide switch to "VIDEO".

2 Set the slide switch to the component to be registered (VDP, VCR or TV).

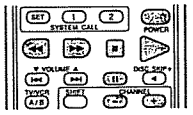
3 Use the buttons shown below to operate the video component. (Some models cannot be used.)
For details, refer to the respective component's manual.

a. VDP



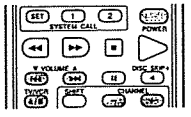
POWER : Power on/off
◀◀, ▶▶ : Manual search (reverse and forward)
■ : Stop
▶ : Play
I◀◀, ▶▶I : Auto search
II : Pause

b. VCR



POWER : Power on/off
◀◀, ▶▶ : Manual search (reverse and forward)
■ : Stop
▶ : Play
II : Pause
CHANNEL +, − : Channel selection

c. TV

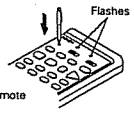


POWER : Power on/off
VOLUME ▲, ▼ : Volume up/down
TV/VCR : TV/video selection
CHANNEL +, − : Channel selection

Remote control unit learning function

If your AV components are not DENON products or if operation is not possible with the preset memory settings, the components' remote control signals can be "learned" to enable remote control operation.
The buttons that can be "learned" are the CD, DAT and DECK system buttons (see page 19) and the VDP, VCR and TV system buttons (see page 21). (For the TV only, the A block buttons can also be "learned".)

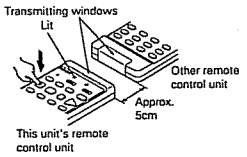
1 Press the USE/LEARN selector button with the tip of a pen etc., to set the learn mode. Both the START and LEARNED/TX indicators flash.



2 Set the program switch to the side to be "learned".
Set to the AUDIO side for the CD, tape deck or DAT position, to the VIDEO side for the VDP, VCR or TV position.

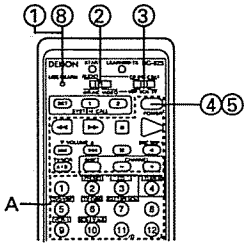
3 Set the program switch to the position to be "learned".

4 Set the remote control units so they are facing each other, then press the button to be "learned" on this unit's remote control unit.

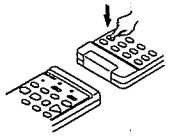


The indicator stops flashing and the START LED lights.
The learnable buttons are the buttons which can be operated with the DENON system codes for the CD player, DAT and tape deck, the buttons which can be operated with the preset memory for the VCR, VDP and TV. For the TV only, however, the buttons in the section indicated "A" on the diagram above can also be "learned". Use these to "learn" TV channels.

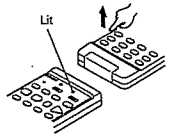
NOTE: Use button ⑪/0 as the 0 number button, button ⑫/E as the enter button.



5 Check that the START LED is lit, then press the button to be "learned" on the other remote control unit.



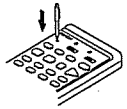
6 Once the START LED turns off and the LEARNED/TX LED lights, release the button on the other remote control unit.



The two LEDs start flashing again.

7 To "learn" other buttons, repeat steps 2 to 6.

8 Once the learning operation is completed, press the USE/LEARN selector button again.
The two LEDs stop flashing and the learning mode is cancelled.



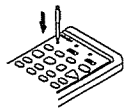
Check that the stored codes work properly.

NOTES:

- Up to 26 codes can be "learned", but this number may be lower if the codes are long.
- If a non-learnable button is pressed or two or more buttons are pressed at once, the two LEDs will once again light when the button(s) is released.
- If the codes could not be stored, the LEARNED/TX LED does not light after the START LED turns off. For limited number of models, codes cannot be stored in RC-825.
- If the two LEDs start flashing rapidly after the START LED lights, this means that the memory is already full, and the code you have just attempted to store was not stored.
  To "learn" that code, first perform the resetting operation.

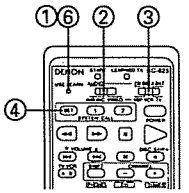
Clearing "learned" remote control signals and the preset memory settings

1 Press the USE/LEARN selector button with the tip of a pen, etc., to set the learn mode.



2 To clear "learned" remote control signals, set the slide switch to the position at which the signals were "learned". To clear the preset memory settings, set the slide switch to "VIDEO".

3 Set the slide switch to the position at which the signals were "learned" or at which the preset memory settings were set.



4 Press the SYSTEM CALL SET button, and hold it in for at least four seconds.

5 When both the START and LEARNED / TX LEDs light simultaneously, all the stored codes are cleared.

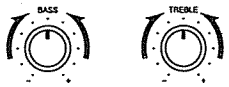
6 Press the USE/LEARN selector button.

8 OPERATIONS

Preparations for playback

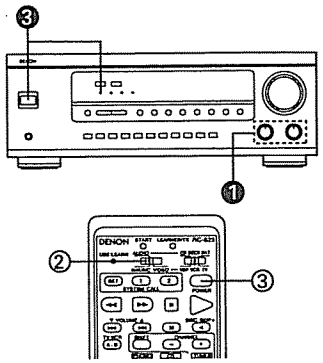
Preparations:
Check that all connections are proper.

1 Set to the center position.



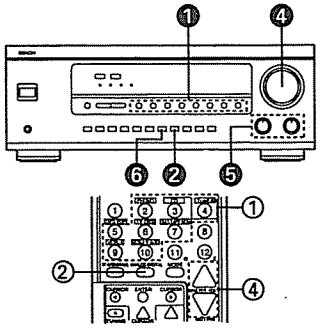
2 Set the remote control unit's slide switch to the AUDIO position.
(only when operating with the remote control unit)

3 Turn on the power.
Press the POWER switch (button).

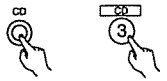


- ⏻ ON/STANDBY
  The power turns on and "STANDBY" indicator is lit.
  Several seconds are required from the time the power switch is set to the " ⏻ ON/STANDBY" position until sound is output. This is due to the built-in muting circuit that prevents noise when the power switch is turned on and off.
  Set the POWER switch to this position to turn the power on and off from the included remote control unit (RC-825).
- ⏻ OFF
  The power turns off and "STANDBY" indicator is off.
  In this position, the power cannot be turned on and off from the remote control unit.

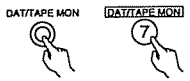
Playing the analog program source



1 Press the button for the program source to be played.
EX 1: CD

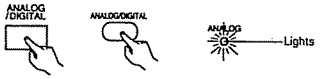


EX 2: DAT/TAPE



- Press the button once to switch the source to DAT/TAPE input, again to cancel DAT/TAPE input.

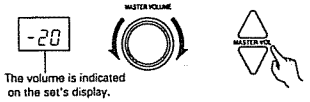
2 Select the ANALOG input mode.



Check that the "ANALOG" indicator is lit.

3 Start playback on the selected component.
For operating instructions, refer to the various components' manuals.

4 Adjust the MASTER VOLUME control.

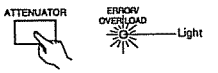


- The volume can be adjusted in units of 1 dB from −60 to 0 to +18 dB.

5 Adjust the BASS and TREBLE.

Turn the control clockwise to increase the bass or treble, counterclockwise to decrease it.

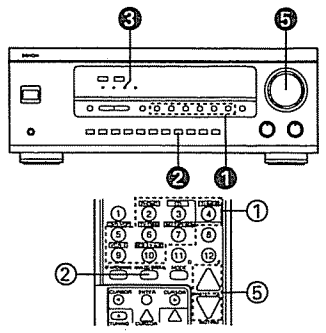
6 If the indicator lights when the "OVER LOAD" LED is lit, press the ATTENUATOR button.



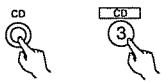
- The input level is lowered by −6 dB.

Notes:
- For digital input sources, there is no need to adjust the ATTENUATOR.
  (This button will not operate.)
- If the indicator does not turn off when this button is pressed, adjust the output level on the player.
- This button cannot be used when playing in the 6-channel EXT.IN mode.

Playing the digital program source



1 Press the button for the program source to be played that is connected to the digital input jacks.
EX: CD



2 Select the DIGITAL input mode.

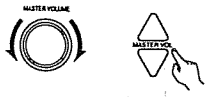
3 Check that the "DIGITAL" indicator is lit.

DIGITAL ☼ light on
ERROR/ OVERLOAD ○ light off

When digital signals are input properly, the " ERROR / OVERLOAD " indicator is not lit.
* If the "ERROR/OVERLOAD" indicator is lit, check that the system setup's input setting (refer to page 15) and the connections are proper, that the component's power is turned on, etc.

4 Start playback on the selected component.
For operating instructions, refer to the various components' manuals.

5 Adjust the MASTER VOLUME control.

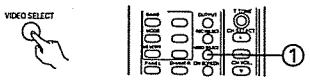


NOTE:
- NEVER try to play CD-ROM discs.
- If a CD-ROM is played, the "DIGITAL"indicator is lit green but no sound is heard.

Simulcast playback

Use this switch to monitor a video source other than the audio source.

1 Press the VIDEO SELECT button repeatedly until the desired source appears on the display.



The video source switches as follows each time the button is pressed:

DVD/VDP → TV/DBS → VCR-1 → VCR-2/V-AUX → SOURCE (= VIDEO SELECT : OFF)

* Cancelling simulcast playback.
- Select "SOURCE" using the video select button.
- Switch the program source to the component connected to the video.

Using the muting function

Use this to turn off the audio output temporarily.

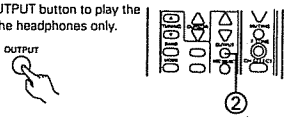
1 Press the MUTING button.
* Cancelling MUTING mode.
Press the MUTING button again.

* **Caution:** Switching off the power of the unit and the remote control unit will cancel the settings.

Listen with headphones

1 Connect the headphones to the PHONES jack of the front panel.

2 Press the OUTPUT button to play the sound over the headphones only.



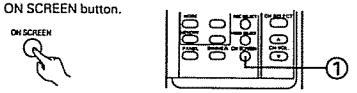
- The output to the speaker and pre-out jacks is turned off and no sound is produced from the speakers.

* **Caution:** Switching off the power of the unit and the remote control unit will cancel the settings.

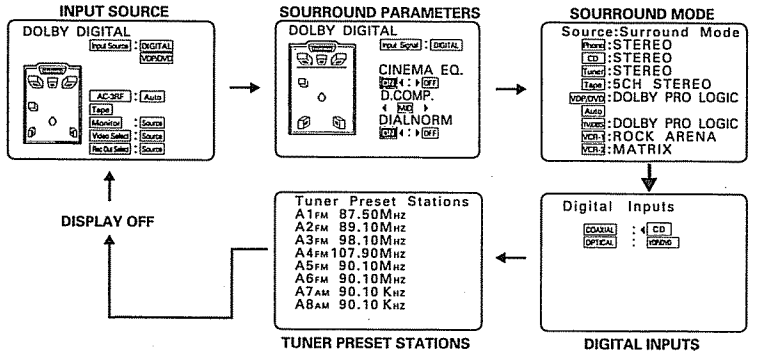
On screen display

The input and output sources and the surround setting, etc., are displayed on the monitor TV, so the various functions can be checked visually at a glance.

1 Press the ON SCREEN button.



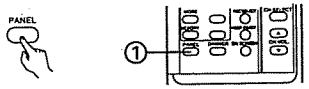
The display switches as follows each time the button is pressed (the following screens are examples):



Front panel display

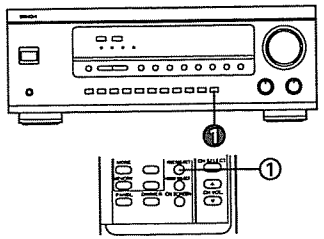
When an operation is performed on the main unit or on the remote control unit, that operation appears on the display, making it possible to check the operation visually.
The set's operating status can also be checked on the display using the procedure described below.

1 Press the PANEL button.

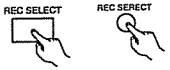


The input and output sources and the surround setting, etc., appear in order on the display each time the button is pressed.

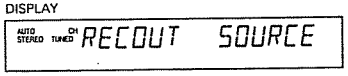
Recording the currently playing program source



1 Press the REC SELECT button and set the recording output to "SOURCE".



DISPLAY



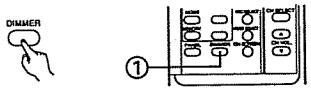
2 Set the cassette deck, video deck or other recording device to the recording mode.
For instructions, refer to the device's operating manual.

To record the sound from a tape deck, set the REC OUT mode to DAT/TAPE.

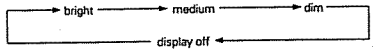
Using the dimmer function

Use this function to adjust the brightness of the main unit's display.

1 Press the DIMMER button.



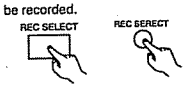
The brightness changes in the following order each time the button is pressed:



Recording using the REC OUT selector

Use the following procedure to record a source other than the one currently playing.

1 Press the REC SELECT button and set the recording output to the source to be recorded.



DISPLAY

Example: Source to be recorded set to PHONO

2 Set the video deck or other recording device to the recording mode.
For instructions, refer to the device's operating manual.

■ Tape monitor function

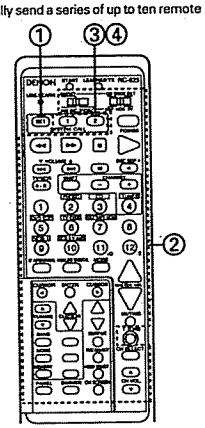
When a three-head tape deck is used, the sound actually being recorded can be monitored during recording by pressing the DAT/TAPE MONITOR button.
Press the button again to cancel monitoring.

NOTES:

- Only the currently playing source can be recorded on the tape deck.
- Digital input signals cannot be recorded. To record, connect to the analog input terminals.
- It is not possible to record between the video jack and the S-video jack.
- If the input function is set to PHONO, CD or TUNER when "TV/DBS" is selected with the REC OUT selector, the picture signals selected with the "TV/DBS" setting are output from the MONITOR OUT terminal.

System call (remote control unit)

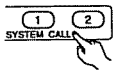
This function allows you to preset frequently used operation patterns in the remote control unit then automatically send a series of up to ten remote control codes with a single button.



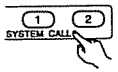
1 **Presetting**
Press the SET button.

2 Press the buttons for the codes to be sent, changing the position of the slide switch as necessary. (Up to ten buttons can be set.)
Buttons which have been "learned" and buttons which have been preset can also be selected.

3 Press the SYSTEM CALL button ("1" or "2") at which you want to store the codes.
The setting is now stored.



4 **Recalling**
Press the SYSTEM CALL button ("1" or "2") at which the desired codes have been stored.
The series of codes is now sent.



9 USING THE SURROUND FUNCTION

Dolby Surround

This unit is equipped with digital signal processing sections for decoding and reproducing movie soundtracks the same way as in movie theaters.

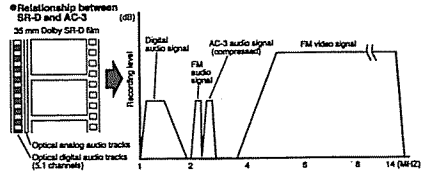
1. DOLBY PRO LOGIC

When using conventional video tapes, laser discs, TV programs or CDs with the DOLBY SURROUND mark, Dolby Pro Logic provides extremely natural sound movement and positioning, immersing you in the on screen action. Pro Logic uses a directional emphasis circuit to decode four output channels (front left and right, center and surround) from the two audio channels provided on the software.
This set is equipped with four Dolby Pro Logic play modes: Normal, Phantom, Wide and 3-channel. The set automatically selects the optimum mode according to the system setup's speaker configuration settings.

2. DOLBY DIGITAL

When you connect the DVD player or an LD player with an AC-3RF output to the AC-3RF input terminal and play DVD, laser discs with DOLBY DIGITAL (or DOLBY SURROUND AC-3 DIGITAL) mark, you can experience improved sound spatiality, positioning, and impact compared with Pro Logic. This is because Dolby Digital delivers up to 5 totally discrete, full frequency audio channels (front left and right, center, and surround left and right), plus a bass-only effects channel. Since the signal is digital from the input of the program source until to the output of this unit, a higher quality and clarity of surround sound results.
Dolby Digital AC-3 (Audio Coding 3) is a system developed by Dolby Laboratories that transmits 5.1 channels of digital signals. The surround system developed for movie theaters using this system is called "Dolby SR-D (Surround Digital)". Whereas the conventional Dolby Pro Logic Surround is an analog matrix system, Dolby SR-D is a digital discrete system in which the different channels are completely independent. This makes it possible to achieve a realistic sound field with a "three-dimensional" feel, giving the sound a sense of distance, movement and relative position, and creating a surprisingly real and powerful sense of presence when playing movie software in AV rooms.
There are "5.1 ch" playback channels: three front channels (front left, center and front right), two surround channels (surround left and surround right), plus "0.1 channel" called LFE (Low Frequency Effect) for low bass effect sounds of 120 Hz or less. The signals are recorded on the software in fully discrete fashion, eliminating crosstalk between channels and making it possible to control the sound field in the listening/viewing space with greater precision.
In addition, the frequency range of the five channels extends up to 20 kHz, (the same as CDs,) resulting in clear sound with greater richness of expression.

●Relationship between SR-D and AC-3

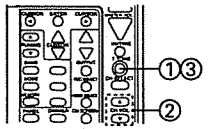


● **Dolby Digital and Pro Logic**

Home surround methods	Dolby Digital	Dolby Pro Logic
No. recording channels (material)	5.1 ch	2 ch
No. playback channels	5.1 ch	4 ch
Playback channels	L, R, C, SL, SR and SW	L, R, C, S (SW recommended)
Audio processing	Digital discrete processing, AC-3 encoding/decoding	Analog matrix processing, Dolby Surround
Upper reproduction limit of surround channel	20 kHz	7 kHz

Before playing with the surround function

Before playing with the surround function, be sure to use the test tones to adjust the playback level from the different speakers. This adjustment can be performed with the system setup (see page 14, 15) or from the remote control unit, as described below.
Adjusting with the remote control unit using the test tones is only possible in the "Auto" mode and only effective in the DOLBY PRO LOGIC and DOLBY DIGITAL modes. The adjusted levels are automatically stored in the memory.

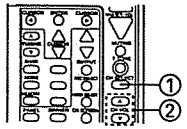


1 Press the test tone button. T.TONE

2 Test tones are output from the different speakers. Use the channel volume adjust buttons to adjust so that the volume of the test tones is the same for all the speakers. CH VOL

3 After completing the adjustment, press the test tone button again. T.TONE

After adjusting using the test tones, adjust the channel levels either according to the playback sources or to suit your tastes, as described below.

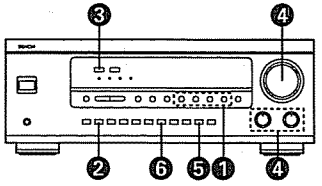


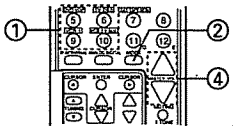
1 Press the channel select button to select the speaker to be adjusted. CH SELECT

2 Adjust the level of the selected speaker. CH VOL

Using the Dolby Pro Logic mode

Play a pre-recorded source with the DOLBY SURROUND mark.





1 Press the button for the program source to be played. **EX: VCR-1** VCR-1 VCR-1 9

2 Set the DOLBY SURROUND mode.
DOLBY SURROUND MODE PRO LOGIC Lit

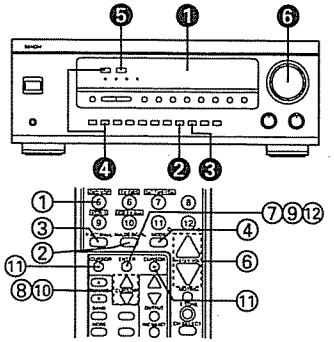
3 Start playback on the selected component.
For operating instructions, refer to the various components' manuals.

4 Adjust the MASTER VOLUME and TONE controls.
MASTER VOLUME MASTER VOL BASS TREBLE

5 Press the CINEMA EQ button when playing back movie video software and the speech portion is felt to be harsh upon the ears. The output frequency response of the center and front speakers becomes closer to that in a theater and the sound becomes more pleasant to the ears. CINEMA EQ

Using the Dolby Digital mode

Play a pre-recorded source (LD or DVD) with the DOLBY SURROUND AC-3 DIGITAL mark.



1 DVD/VDP DVD/VDP (3) Press the DVD/VDP button.

2 ANALOG /DIGITAL ANALOG/DIGITAL Select the DIGITAL input mode.

3 RF AUTO/MANUAL RF AUTO/MANUAL Select the audio input mode. The mode switches as shown on the right each time the button is pressed.
DVD AUTO → DVD AC-3RF → DVD/VDP → DVD AUTO

DVD AUTO ..... Some video discs with Dolby Digital AC-3 audio have only digital or analog audio. When using such discs, this mode automatically switches the audio input according to the type of audio Dolby Digital (AC-3), digital or analog) being played.
DVD AC-3RF ..... Only the Dolby Digital (AC-3) audio is played.
DVD/VDP ..... The audio is input according to the analog/digital input setting on the main unit or remote control unit.

NOTES:
- In the "DVD AUTO" mode, when the mode changes from pause, chapter search, etc., to playback during playback of the Dolby Digital audio on an LD, the PCM or analog sound may be output momentarily before the mode is switched to the Dolby Digital audio mode. If this happens, the sound will not be interrupted if you switch to the "DVD AC-3RF" (AC-3RF fixed input) mode.
- The audio input mode setting is reset to "DVD AUTO" when the power is turned off using the power switch on the remote control unit or on the main unit.

4 DOLBY SURROUND MODE PRO LOGIC Lit Set the DOLBY SURROUND mode.

5 Start playback on the selected component.
For operating instructions, refer to the various components' manuals.
When Dolby Digital (AC-3) encoded signals are played, the PRO LOGIC indicator turns off and the Dolby Digital indicator lights.
- The PRO LOGIC indicator lights when a 2-channel Dolby Digital (AC-3) signal is input.

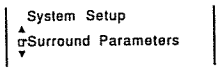
DIGITAL Lit

6 MASTER VOLUME MASTER VOL Adjust the MASTER VOLUME control.

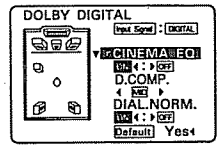
7 ENTER Set the surround parameter on the monitor according to the source and adjust the tone.
First press the ENTER button.

Menu
▫System Setup
▾ Surround Parameters
Menu Off

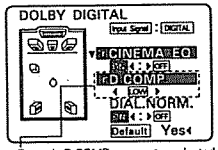
8 Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Surround Parameters".



9 Press the ENTER button to switch the screen.



10 Use the CURSOR △ and ▽ buttons to set the ☞ mark to the parameter to be set.



11 Use the CURSOR ◀ and ▶ buttons to set the parameter. Display or highlight the characters for the desired setting.

Example:D.COMP. parameter selected and set to LOW.

■ Surround parameters

CINEMA EQ. ..... Use "CINEMA EQUALIZER" if dialogue audio truck sound scratchy when playing movie software. (The higher frequency component is lowered.) (Only effective in the Dolby Pro Logic, Dolby Digital modes.)
This parameter can also be turned on and off with the CINEMA button on the main unit.

D. COMP. ..... "DYNAMIC RANGE COMPRESSION" compresses the dynamic range. This is only effective for Dolby Digital program sources. — There are four parameters: "OFF" ↔ "LOW" ↔ "MID" ↔ "HIGH" (Only effective in the Dolby Digital modes.)

DIAL. NORM. ..... "DIALOG NORMALIZATON" automatically adjusts the playback level during source playback to the optimum value. This parameter is only valid for settings that use the center surround speaker with Dolby Digital program sources and in the "Speaker Configuration" screen of the "Systems Setup" menu. (Only effective in the Dolby Digital modes.)

NOTE: "DIAL. NORM." automatically restores the power to "ON" when the power of the unit has been switched "OFF".
* The settings are reset to the factory settings when the ☞ mark is set to "Default" "Yes" is highlighted. (Refer to page 34.)

12 Press the ENTER button to enter the setting.

* If for a certain source you feel that the bass is too strong, adjust the LFE level in the system setup's DOLBY DIGITAL setting. (Refer to page 16.)

NOTE:
- With the this model, **Dolby Digital encoded signals can only be played in the Dolby Pro Logic, Dolby Digital and STEREO modes.** Other surround mode buttons will not function during the Dolby Digital signal playback.
- When playing back in the Dolby Pro Logic mode, depending on the settings of each output channel, it may not be possible to make a setting of the master volume that exceeds −3 dB.

DSP surround simulation

This unit is equipped with a high precision D.S.P. (Digital Signal Processor) for processing signals digitally to simulate sound fields. Select the surround mode according to the playback source and adjust the parameters according to the conditions in the listening room to achieve realistic venue ambience.

■ Types of surround modes and their characteristics

1	STEREO	Sound is produced from the two front channels. (Nothing is output from the Surround and center channels.)
2	6CH EXT. IN	Connect the output of the external Dolby Digital decoder to this unit's 6 CH EXT IN.
3	5CH STEREO	The signals of the left and right channels are distributed to the different speakers to achieve a stereo sound from all directions at the listening position.
4	MATRIX	Use this to enjoy stereo music sources with rich reverberations.
5	MONO MOVIE	In this mode, a sense of expansion is added to monaural audio sources. This mode is best suited for playing old movies or movie tapes recorded in monaural.
6	ROCK ARENA	The powerful reverberations of this mode produce a sound field which recreates the excitement of live concerts. This mode is effective for rock, popular music, etc.
7	JAZZ CLUB	This mode creates the sound field of a live house with a low ceiling and hard wall reverberations. The result is that the artist seems to be performing right before your eyes.
8	VIDEO GAME	Use this to enjoy video game sources.

* Depending on the program source being played, the effect may not be very noticeable.
In this case, try other surround modes, without worrying about their names, to create a sound field suited to your tastes.

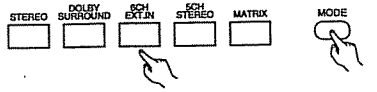
Personal Memory Plus function .... for EASY USE

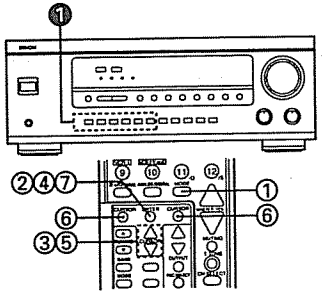
This unit automatically stores the surround mode adding selected effects for all input sources. The corresponding surround mode is recalled automatically each time an input source is selected.

Using the DSP surround simulation

Preparations: Select the input device and start playback.

1 Select the surround mode according to the input source.



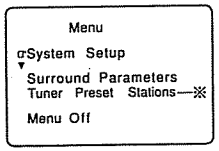


The surround mode switches in the following order each time the DSP SIMULATION button is pressed:

→ MONO MOVIE → ROCK ARENA → JAZZ CLUB → VIDEO GAME ←

2 Set the surround parameter on the monitor according to the source and adjust the tone.
First press the ENTER button.

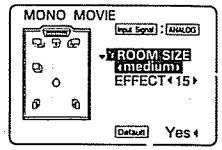
※ Displayed only when the input source is "TUNER".



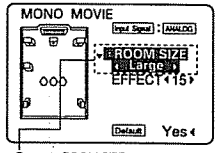
3 Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Surround Parameters".


```
System Setup
▲
☞Surround Parameters
▼Tuner Preset Stations
Menu Off
```

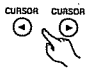
4 Press the ENTER button to switch the screen.
(The diagram at the right shows an example of the display for when the surround mode is set to MONO MOVIE.)



5 Use the CURSOR △ and ▽ buttons to set the ☞ mark to the parameter to be set.
- The parameters that can be set differ according to the surround mode. For details, see the table below.



6 Use the CURSOR ◀ and ▶ buttons to set the parameter. Display or highlight the characters for the desired setting.



Example:ROOM SIZE parameter selected and set to Large.

■ Surround parameters

ROOM SIZE ..... "Room size" refers to the size of the sound field. — There are five parameters: "Small" ↔ "med.S." ↔ "medium" ↔ "med.L." ↔ "large"

EFFECT LEVEL ..... "Effect level" refers to the strength of the effect sounds. If the sound becomes distorted, lower the level. Parameter "1" – "15"

DELAY TIME ..... This can be set to between 0 and 140 msec for the MATRIX mode.

✻ The settings are reset to the factory settings when the ☞ mark is set to "Default" and "Yes" is highlighted. (See the table below.)

7 Press the ENTER button to enter the setting.

NOTES:

✻ For analog sound only, if the ERROR/OVERLOAD indicator lights during playback, press the ATTENUATOR button on the main unit to lower the input level by –6 dB so that the indicator does not light. Note that when playing back the 6 CH EXT. IN mode, the setting of the INPUT ATTENUATOR is invalid and that it is operable.

- When the mode is switched to Dolby Digital encoded signals while playing PCM digital signals or analog signals in the surround modes except STEREO, the mode is **forcibly switched to the Dolby Surround mode. 6 CH EXT. IN, 5 CH STEREO, MATRIX, MONO MOVIE, ROCK ARENA, JAZZ CLUB or VIDEO GAME.**
- To listen to the signal of equipment that is connected to the "5.1 CH EXT. IN" input jack, make sure the video input of the equipment is selecting the connected function and select "5.1 CH EXT. IN" with the "5.1 CH EXT. IN" mode button or with the remote control mode button.

■ Surround modes and parameters

The following table shows the presence or absence of signals in the various modes, and whether or not they can be controlled. Initial settings are indicated in parentheses.

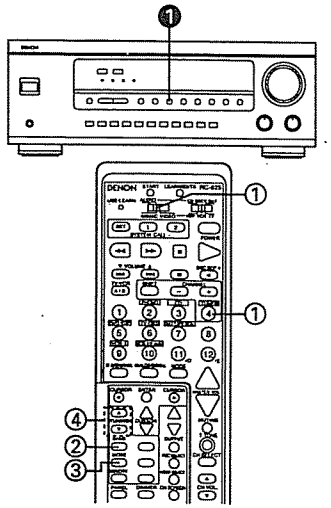
MODE	OUTPUT CHANNEL (0 dB)				PARAMETER SOURCE						When playing Dolby Digital (AC-3) data
	FRONT L / R	CENTER	SURROUND	SUBWOOFER	CINEMA EQ.	ROOM SIZE	EFFECT LEVEL	DELAY TIME	D. COMP.	DIALNORM	
STEREO	O	×	×	O	×	×	-×	×	O(Dolby Digital (AC-3) SOURCE ONLY (OFF))	×	O
DOLBY PRO LOGIC	O	O	O	O	O(OFF)	×	×	×	O(Dolby Digital (AC-3) SOURCE ONLY (OFF))	O(Dolby Digital (AC-3) SOURCE ONLY (ON))	O
DOLBY DIGITAL	O	O	O	O	O(OFF)	×	×	×	O(OFF)	O(ON)	O
6CH EXT. IN	O	O	O	O	×	×	×	×	×	×	×
5CH STEREO	O	O	O	O	×	×	×	×	×	×	×
MATRIX	O	O	O	O	×	×	×	O(20 msec)	×	×	×
MONO MOVIE	O	O	O	O	×	O(Medium)	O(10)	×	×	×	×
ROCK ARENA	O	O	O	O	×	O(Medium)	O(10)	×	×	×	×
JAZZ CLUB	O	O	O	O	×	O(Medium)	O(10)	×	×	×	×
VIDEO GAME	O	O	O	O	×	O(Medium)	O(10)	×	×	×	×

O : Signal present or controllable.
△ : Select one according to the speaker configuration setting.
◎ : Can be turned on and off according to the speaker configuration setting.
× : No signal or not controllable.

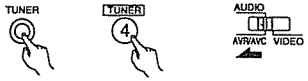
- The "INPUT ATTENUATOR" can only operate with analog inputs. The initial setting value is "0 dB". Note that this button is stored with each input source.

10 LISTENING TO THE RADIO

Auto tuning

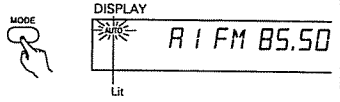


1 Set the input function to "TUNER".



2 Watching the display, press the BAND button to select the desired band (AM or FM).

3 Press the MODE button to set the auto tuning mode.



4 Press the TUNING UP or DOWN button.

- Automatic searching begins, then stops when a station is tuned in.

NOTE:

- When in the auto tuning mode on the FM band, the "STEREO" indicator lights on the display when a stereo broadcast is tuned in. At open frequencies, the noise is muted and the "TUNED" and "STEREO" indicators turn off.

Manual tuning

1 Set the input function to "TUNER".

2 Watching the display, press the BAND button to select the desired band (AM or FM).

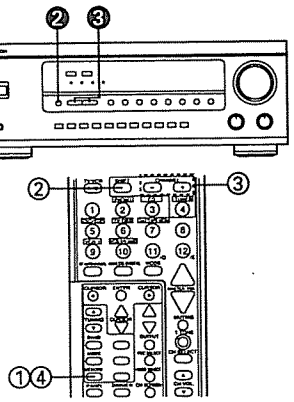
3 Press the MODE button to set the manual tuning mode. Check that the display's "AUTO" indicator turns off.

4 Press the TUNING UP or DOWN button to tune in the desired station.
The frequency changes continuously when the button is held in.

NOTE:

- When the manual tuning mode is set, FM stereo broadcasts are received in monaural and the "STEREO" indicator turns off.

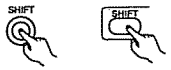
Preset memory



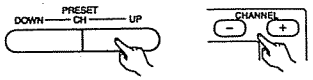
Preparations: Use the "Auto tuning" or "Manual tuning" operation to tune in the station to be preset in the memory.

1 Press the MEMORY button.

2 Press the SHIFT button and select the desired memory block (A to E).



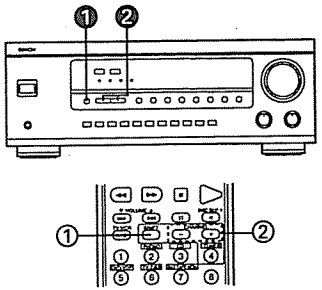
3 Press the PRESET UP or DOWN button to select the desired preset channel (1 to 8).



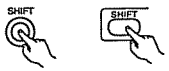
4 Press the MEMORY button again to store the station in the preset memory.

* To preset other channels, repeat steps 1 to 4.
A total of 40 broadcast stations can be preset—8 stations (channels 1 to 8) in each of blocks A to E.

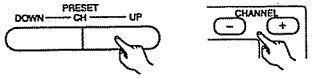
Recalling preset stations



1 Watching the display, press the SHIFT button to select the preset memory block.

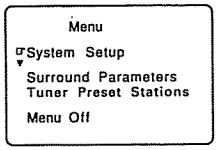


2 Watching the display, press the PRESET UP or DOWN button to select the desired preset channel.

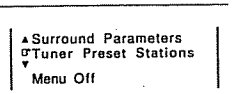


Recalling preset stations with the on screen display

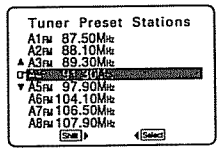
1 Press the ENTER button and call out the "Menu" screen from the on screen display.



2 Use the CURSOR △ and ▽ buttons to set the ☞ mark to "Tuner Preset Stations".

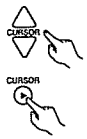


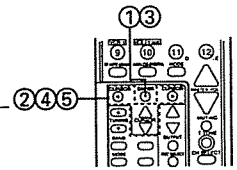
3 Press the ENTER button.
- The frequencies of the preset stations are displayed.



4 Use the CURSOR △ and ▽ buttons to highlight the station to be tuned in.

If the desired station is not displayed, press the CURSOR ▶ button and display the next page.





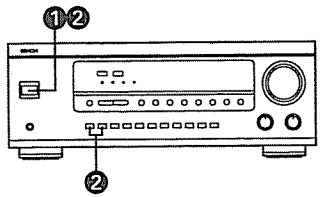
5 Press the CURSOR ◀ button. The selected station is tuned in.

11 LAST FUNCTION MEMORY

- This unit is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off.
- The unit is also equipped with a back-up memory. This function provides approximately one week of memory storage when the main unit's power switch is off and with the power cord disconnected.

12 INITIALIZATION OF THE MICROPROCESSOR

When the indication of the display is not normal or when the operation of the unit does not shows the reasonable result, the initialization of the microprocessor is required by the following procedure.



1 Switch off the unit using the main unit's power switch.

2 Hold the following STEREO button and DOLBY SURROUND button, and turn the main unit's power switch on.

3 Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons and the microprocessor will be initialized.

13 TROUBLESHOOTING

If a problem should arise, first check the following:

1. **Are the connections correct?**
2. **Have you operated the receiver according to the Operating Instructions?**
3. **Are the speakers, turntable, and other components operating properly?**

If this unit is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	DISPLAY not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug. • Turn the power on with the remote control unit after turning the POWER switch on.	6 24
	DISPLAY lit but sound not produced.	• Speaker cords not securely connected. • Improper position of the audio function button. • Volume control set to minimum. • MUTING is on. • Digital signals not input Digital input selected.	• Connect securely. • Set to a suitable position. • Turn volume up to suitable level. • Switch off MUTING. • Input digital signals or select input jacks to which digital signals are being input.	9, 10 25, 26 25, 26 27 26
	DISPLAY is not displayed and the "STANDBY" LED flashes at a high rate.	• Speaker terminals are short-circuited. • Block the ventilation holes of the set. • The unit is operating at continuous high power conditions and/or inadequate ventilation.	• Switch power off, connect speakers properly, then switch power back on. • Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. • Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on.	9, 10 5 5
	Sound produced only from one channel.	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords.	• Connect securely. • Connect securely.	9, 10 6–8
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords.	• Check left and right connections.	6–10
	The on screen display is not displayed.	• "On screen display" is set to off on the system setup menu screen.	• Set "on screen display" on the system setup menu screen to on.	17
When playing records	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection. • TV or radio transmission antenna nearby.	• Connect securely. • Connect securely. • Contact your store of purchase.	6 6 —
	Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible. • Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).	— —
	Sound is distorted.	• Stylus pressure too weak. • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.	— — —
	Volume is weak.	• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.	6
Remote control unit	This unit does not operate properly when remote control unit is used.	• Batteries dead. • Remote control unit too far from this unit. • Obstacle between this unit and remote control unit. • Different button is being pressed. • ⊕ and ⊖ ends of battery inserted in reverse.	• Replace with new batteries. • Move closer. • Remove obstacle. • Press the proper button. • Insert batteries properly.	19 19 19 — 19
	ERROR/OVERLOAD LED lights. • During analog input playback. • During digital input playback.	— —	• See page 25. • See page 26.	— —

14 SPECIFICATIONS

- **Audio section**

(Power amplifier)

Rated output:
Front: 85 W + 85 W (8 Ω / ohms, 20 Hz – 20 kHz with 0.05% T.H.D.)
Center: 85 W (8 Ω / ohms, 20 Hz – 20 kHz with 0.05% T.H.D.)
Surround: 85 W + 85 W (8 Ω / ohms, 20 Hz – 20 kHz with 0.05% T.H.D.)

Dynamic power:
105 W × 2 ch (8 Ω / ohms)
170 W × 2 ch (4 Ω / ohms)
215 W × 2 ch (2 Ω / ohms)

Output terminals:
Front / Center: A or B or Bi-wiring 8 to 16 Ω / ohms
A + B 16 Ω / ohms
Surround: 8 to 16 Ω / ohms

(Analog)

Input sensitivity / input impedance: 200 mV/47 kΩ / kohms
Frequency response: 10 Hz – 150 kHz: +1, –3 dB
S / N: 96 dB
Distortion: 0.05% (20 Hz – 20 kHz)
Rated output 1.2 V
Maximum headphones output: 27 mW (8 Ω/ohms)
Phono equalizer (PHONO input —REC OUT)
Input sensitivity: 2.5 mV
RIAA deviation: ±1 dB (20 Hz to 20 kHz)
S / N: 74 dB (A weighting, with 5 mV input)
Rated output / Maximum output 150 mV / 8 V
Distortion factor: 0.03% (1 kHz, 3V)

(Digital)

D / A output:
Rated output – 2 V (at 0 dB playback)
Total harmonic distortion – 0.01% (1 kHz, at 0 dB)
S/N ratio – 102 dB
Dynamic range – 93 dB

Digital input:
Format – Digital audio interface

- **Video section**

(Standard video jacks)

Input / output level and impedance: 1 Vp-p, 75 Ω / ohms
Frequency response: 5 Hz – 10 MHz +1, –3 dB

(S-video jacks)

Input / output level and impedance:
Y (brightness) signal – 1 Vp-p, 75 Ω/ohms
C (color) signal – 0.286 Vp-p, 75 Ω/ohms

Frequency response:
Y (brightness) signal – 5 Hz – 10 MHz +1, –3 dB
C (color) signal – 10 Hz – 10 MHz +1, –3 dB

- **Tuner section**

		[FM] (note: μV at 75 Ω/ohms, 0 dBf = 1 × 10^{-15} W)	[AM]
Receiving Range:		87.5 MHz – 107.9 MHz	520 kHz – 1710 kHz
Usable Sensitivity:		1.0 μV (11.2 dBf)	18 μV
50 dB Quieting Sensitivity:	MONO	1.6 μV (15.3 dBf)	
	STEREO	23 μV (38.5 dBf)	
S / N: (IHF-A):	MONO	80 dB	50 dB
	STEREO	75 dB	
Total Harmonic Distortion (at 1 kHz):	MONO	0.15%	
	STEREO	0.3%	

- **General**

Power supply: AC 120 V, 60 Hz
Power consumption: 5.6 A
Maximum external dimensions: 434 (W) × 161 (H) × 416 (D) mm (17-3/32" × 6-11/32" × 16-3/8")
Weight: 14.8 kg (32 lbs 10 oz)

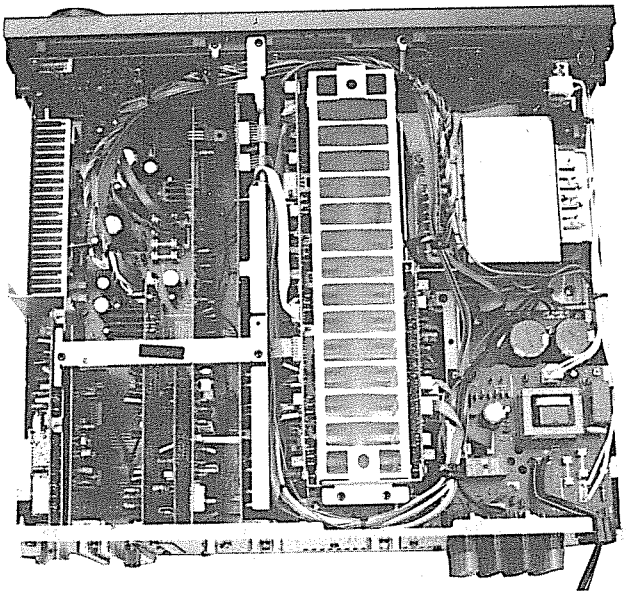
- **Remote control unit (RC-825)**

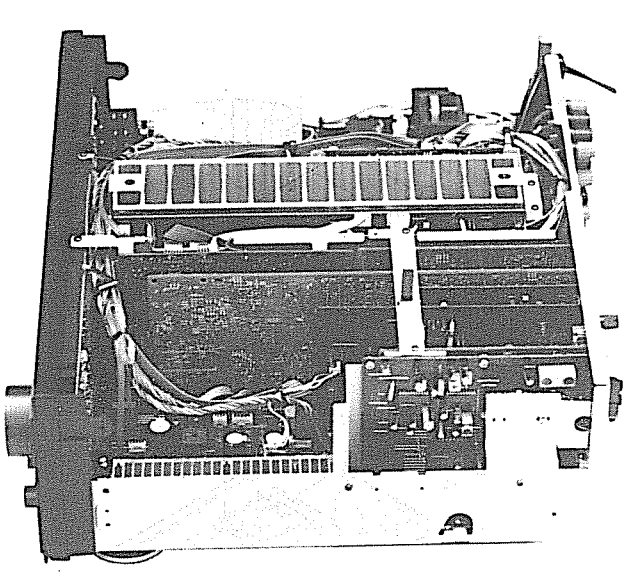
Batteries: R6P/AA Type (two batteries)
External dimensions: 70 (W) × 215 (H) × 19 (D) mm (2-3/4" × 8-15/32" × 3/4")
Weight: 180 g (Approx. 6 oz) (including batteries)

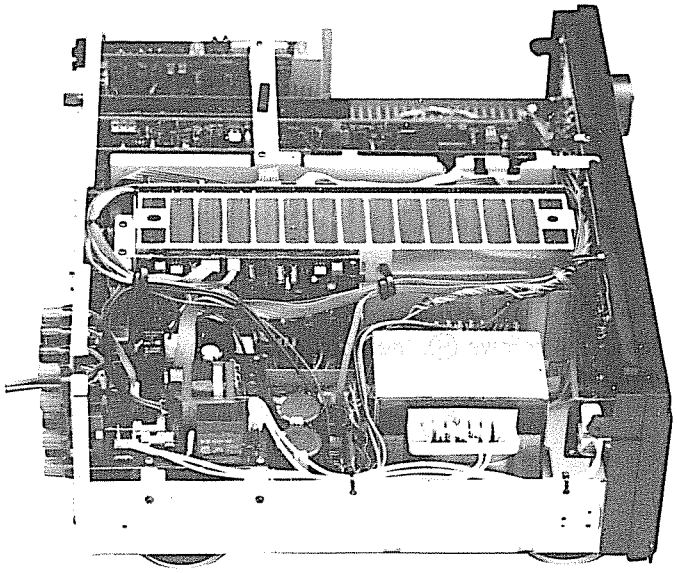
* For purposes of improvement, specifications and design are subject to change without notice.

WIRE ARRANGEMENT

In case of wires require unclasping or loosening to move the location to perform adjustment or part replacement, be sure to rearrange them neatly to restore properly in the same location as they were originally placed, or causing to produce a noise may occasionally occur.





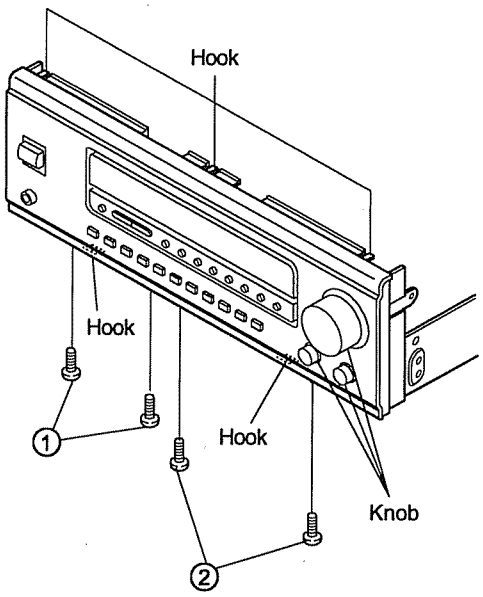


DISASSEMBLY

(To reassemble reverse disassembly)

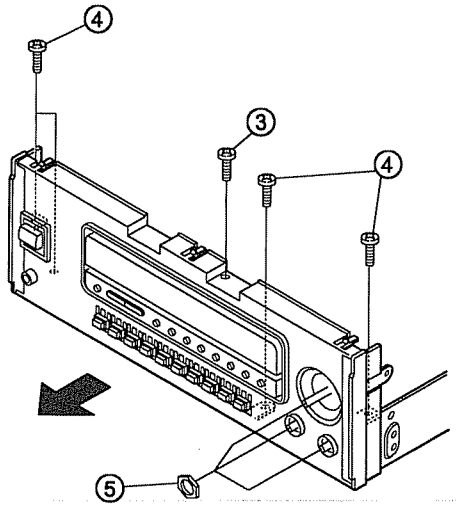
1. Front Aluminium Panel

1) Pull out 3 Knobs.
2) Remove 2 screws ① and 2 screws ②.
3) Unfasten 3 upper hooks and 2 below hooks.



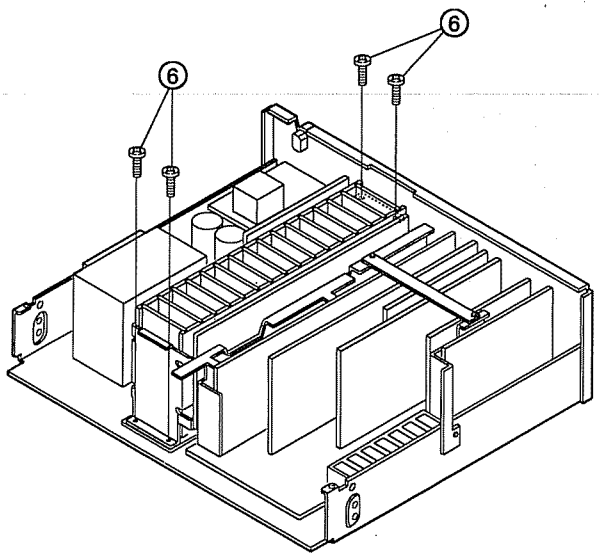
2. Front Mold Panel

1) Remove a screw ③ and 4 screws ④.
2) Remove 3 nuts ⑤.
3) Detach the Front Mold Panel in the arrow direction as it connects with connectors.

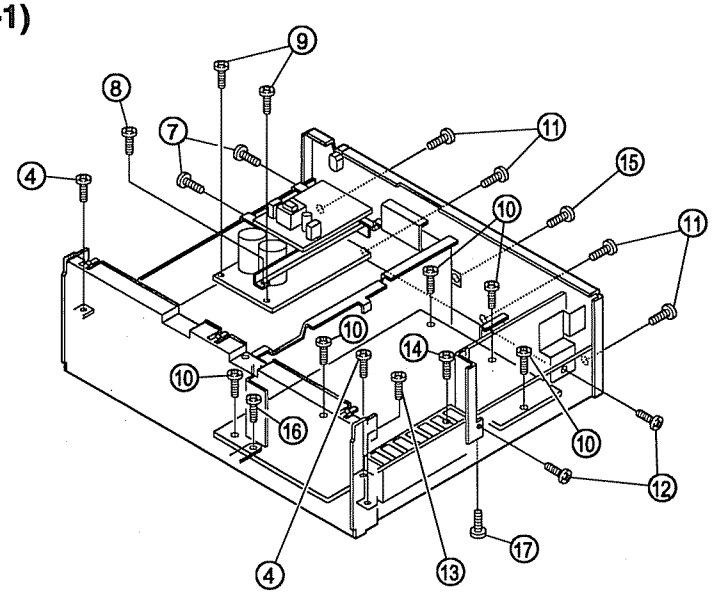


3. Power Amp. Unit

Remove 4 screws ⑥, then pull out the Power Amp. Unit upwards.



4. When Maintenance for Main Unit (1U-2994-1)



● In case the Power Supply is ON

1) Remove 2 screws ④ fixing the Front Mold Panel when detached the Front Aluminium Panel and the Power Amp. Unit.
2) Remove 3 screws ⑦ and ⑧ fixing the bracket.
3) Remove 2 screws ⑨ fixing the Power Supply Unit.
4) Remove 5 screws ⑩ fixing the Main Unit (1U-2994-1).
5) Remove 4 screws ⑪ fixing the Rear Panel.
6) Remove 2 screws ⑫ fixing the Tuner Unit.
7) Remove a screw ⑰.

Then separate the chassis only for maintenance.

● In case the Power Supply is OFF

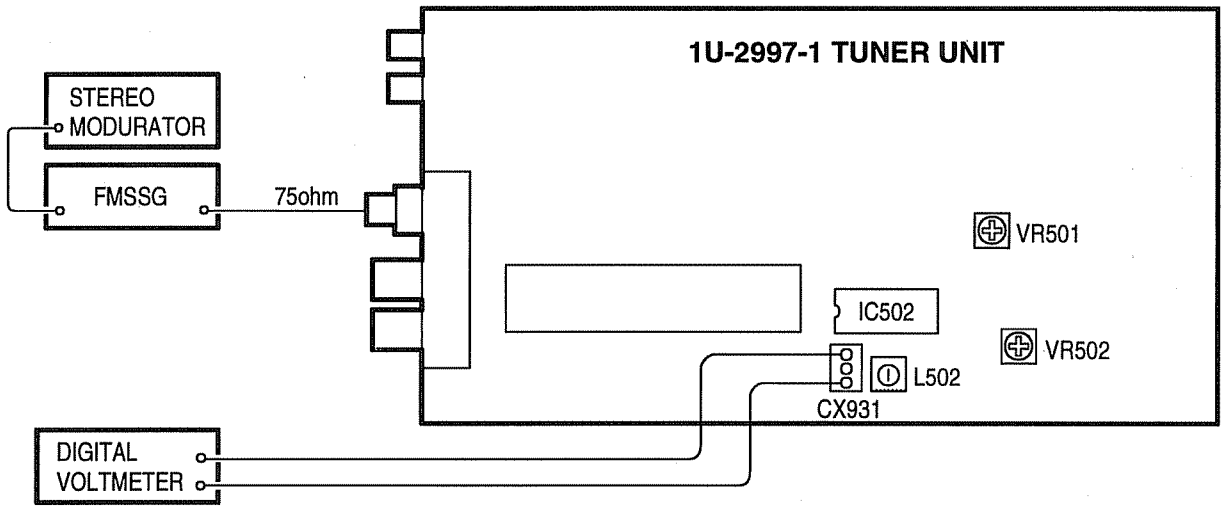
1) Remove 7 screws ⑩ and ⑯, ⑰ fixing the Main Unit (1U-2994-1).
2) Remove 3 screws ⑪ and ⑮ fixing the Rear Panel.
3) Remove a screw fixing the Preout Unit (1U-2997-5) of the Rear Panel side, and two below screws.
4) Remove 4 screws fixing the SP terminal of the Rear Panel side and 2 screws fixing the AC Outlets.

ADJUSTMENT

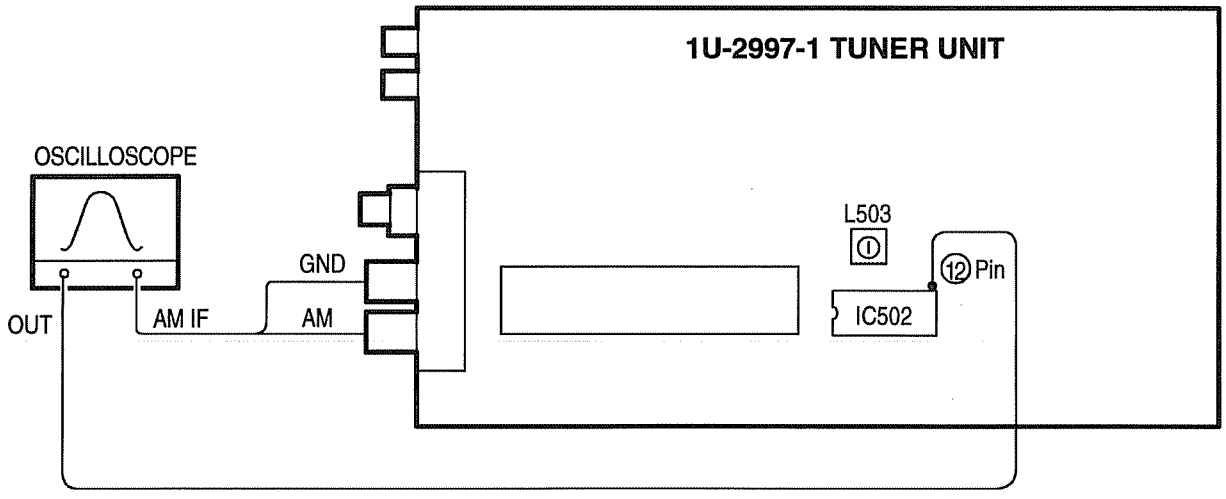
Tuner Section

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

● **FM**



● **AM**



FM/MPX ALIGNMENT

Step	Alignment Item	Tuning Frequency Setting	Input					Output		Adjust		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	Tuning Center	98.1 MHz	FM SSG	98.1 MHz	60 dBμ	None	Antenna Terminal	Digital Voltmeter	CX931	L502	± 50mV	Function : FM Mode : Auto
2	Separation	98.1 MHz	FM SSG	98.1 MHz	60 dBμ	Stereo (L) 1KHz 100%	Antenna Terminal	AC Voltmeter	AUDIO OUT Terminal (R)	VR502	Maximum Separation	—
3	Signal Level	98.1 MHz	FM SSG	98.1 MHz	20 dBμ	Off	Antenna Terminal	—	—	VR501	Light "TUNED" FLD Character	—

AM ALIGNMENT

Step	Alignment Item	Frequency	Input	Output		Adjustment		Remarks
				Type	Connect to	Points	Adjust to	
1	IF	—	IF SWEEP (Input level is not over to work A.G.C.)	Oscilloscope	IC502 12Pin	L503	Maximum height and best symmetry curve	

Audio Section

Idling Current (1U-2995-2, 1U-2995-3)

Required measurement equipment : DC Voltmeter

Arrengement

(1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room tempereture 15 °C ~ 30 °C (59 °F ~ 86 °F).

(2) Presetting

- POWER (Power sourse switch) → OFF
- VOLUME (Volume control) → "---" : fully counterclockwise (◯ min.)
- BASS, TREBLE (Tone control) → FLAT: (Controls to center)
- SPEAKER-A (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

Adjustment

(1) Remove top cover and set VR701, VR702, VR801 on 1U-2995-2 (Front Amp Unit) and VR901, VR902 on 1U-2995-3 (Surround Amp Unit) at counterclockwise (◯) fully.

(2) Connect DC Voltmeter to test points (FRONT-Lch: TP701, FRONT-Rch: TP702, CENTER ch: TP801, SURROUND-Lch: TP901, SURROUND-Rch: TP902).

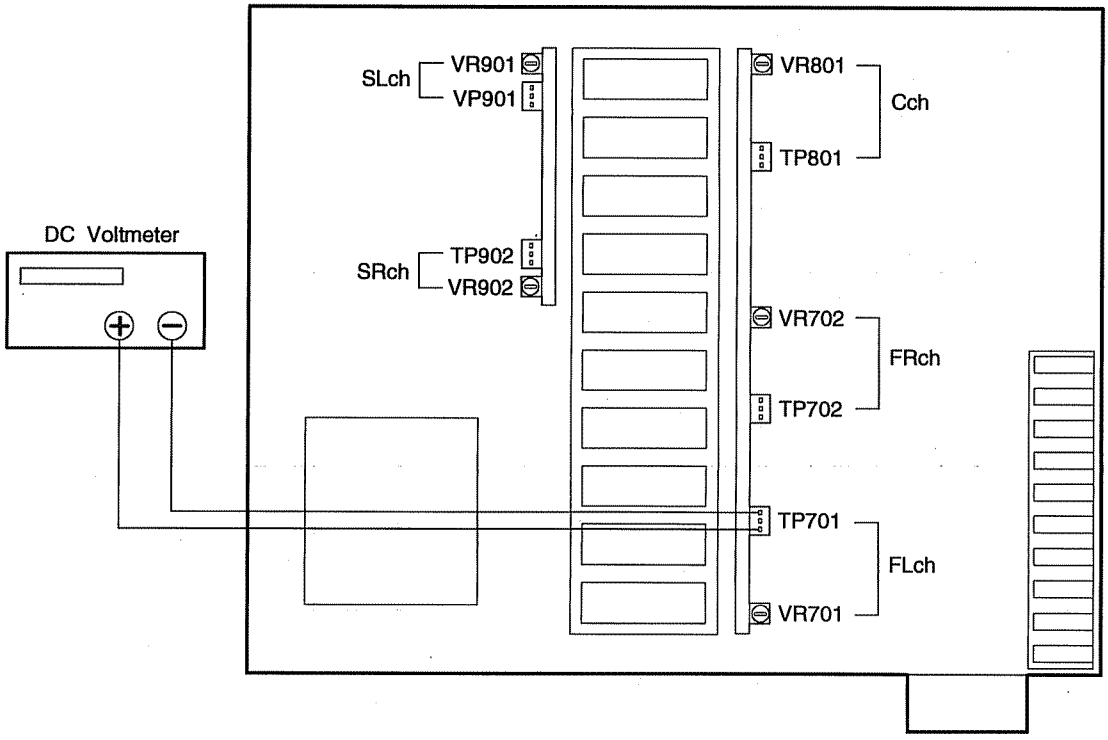
(3) Connect power cord to AC Line, and turn power switch "ON".

(4) Presetting. MODE : 5ch STEREO
FUNCTION : CD

(5) Allow 2 minutes, and turn VR701 clockwise (◯) and adjust the TEST POINTS voltage to 1.5 mV ±0.5 mV DC.

(6) After 10 minutes from preset, turn VR701 to set the voltage to 3 mV ±0.5 mV DC.

(7) Adjust the Variable Resistors of other channels in the same way.

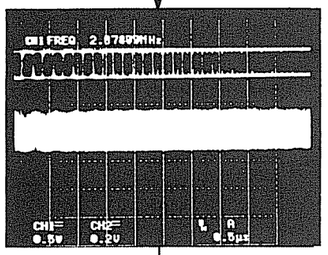


Confirming for Digital Block (1U-2998-1)

When the unit is in normal operation, the digital signals provide as shown in figure and confirm the test points with corresponding waveforms.

When the RF signal is fed.

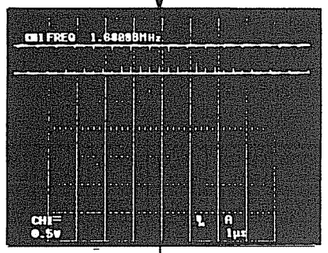
fig.1



A: IC308 82 pin
B: IC304 1 pin

Vertical: IC308 82 pin 5V/div
IC304 1 pin 2V/div
Horizontal: 0.5 mS/div

fig.2-1



IC308 70 pin
IC457 61 pin

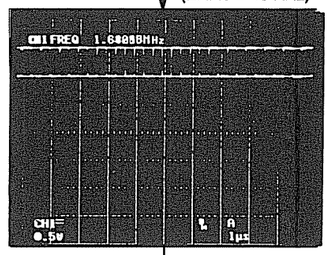
DIG-DATA (Bi-Phase DATA)

Vertical: 5V/div
Horizontal: 1.0 mS/div

When the digital signal is fed.

(EX. fs = 48 KHz)

fig.2-2

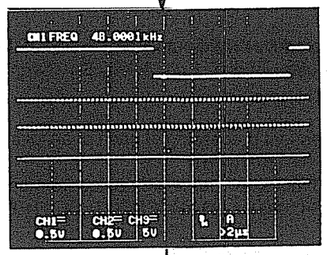


IC303 15 pin (OPT)
IC303 2 pin (COAX)
IC457 61 pin

Vertical: 5V/div
Horizontal: 1.0 mS/div

When the analog signal is fed.

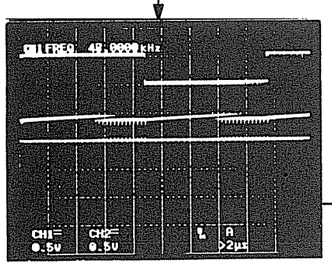
fig.2-3



A: IC515 14 pin
B: IC515 15 pin
C: IC515 16 pin

Vertical: 5V/div
Horizontal: 0.5 mS/div

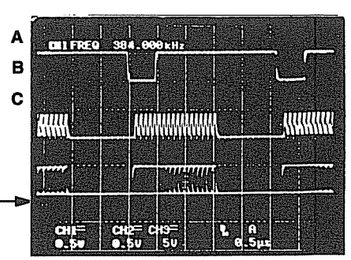
fig.3



A: IC501 ~ 503 20 pin
B: IC501 ~ 503 22 pin

Vertical: 5V/div
Horizontal: 2 mS/div

fig.4



A: IC504 ~ 506 13 pin
B: IC504 ~ 506 11 pin
C: IC504 ~ 506 14 pin

Vertical: 5V/div
Horizontal: 0.5 mS/div

Confirm the normal communication waveforms (Fig.5) at 89Pin, 87Pin and 3Pin of IC457 which is fed from the microcomputer with serial data communication control.

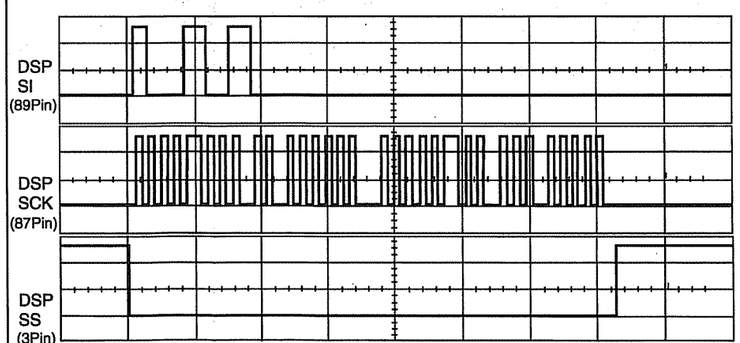


fig.5 (The DSPSI signal is a reference data)

FUNCTION OF NEW CIRCUIT

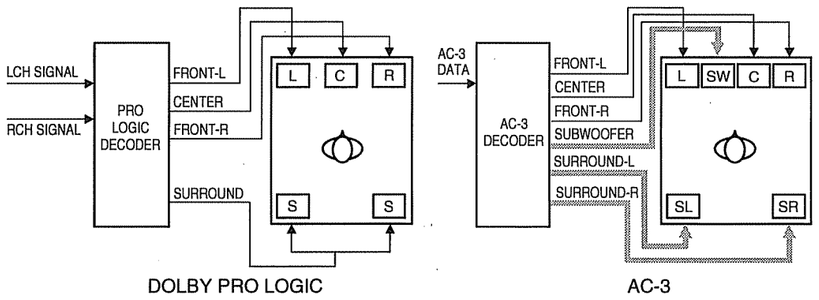
Circuit Description

DOLBY AC-3

DOLBY AC-3 is a format of new surround signal reproduces maximum 5 channels, i. e. FRONT-LEFT, -RIGHT, CENTER and SURROUND-LEFT, -RIGHT ;plus exclusive subwoofer signal (0.1 ch), totally 5.1 channels from the exclusive digital signal. Following is the featuring points of AC-3.

(1) Makes surround channel into stereo.
(2) Provides optimum separation due to independent processing of each channel signal.
(AC-3: More than 80 dB, PRO LOGIC: Approx. 25~40 dB)
(3) Resultant surpassed orientation feeling and movement feeling obtained from uniform frequency characteristic.
(AC-3: 20Hz~20kHz all channels, PRO LOGIC: 20 Hz~20 kHz FRONT, CENTER channels 20 Hz~7 kHz SURROUND channels)
(4) With the high-efficient signal coding technique, one digital cable permits transmission maintaining the above features.

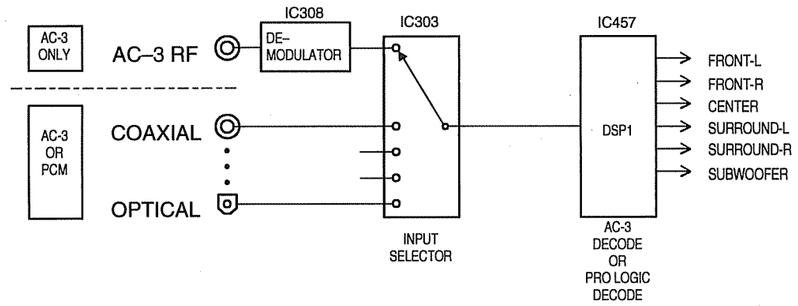
Comparative Diagram of PRO LOGIC and AC-3



Two kinds of input signals: one corresponds "AC-3RF" signal emitting from LD player; the other is universal optical or coaxial digital format "IEC958" over lapped with "AC-3 exclusive" digital signal. AC-3RF signal is connected via the terminals "AC-3RF OUT" equipped with AC-3 corresponding LD player and "AC-3RF" input of AVR3200 with a general coaxial digital cable. An applied signal to AVR3200 goes through demodulator IC(IC308), delivered to DSP (IC457) through input selector (IC303), and executed decode processing of AC-3.
The other one is connected in the same way as universal optical or coaxial digital signal. AVR3200 corresponds with automatic shifting of AC-3 and other signal (PCM) according to input signal.
The signal of each input terminal is delivered to selector (IC303) and applied the same process as to AC-3RF afterward.
AC-3 data and PCM data are transmitted with a common line.

DSP (IC457) performs AC-3 decoding process, DOLBY PRO LOGIC process and PCM digital process and PCM digital process by shifting. Decoded signal to each channel after passed through DSP1 (IC457) is D/A converted and delivered to volume control.

Block Diagram of AC-3, PCM Input Section (1U-2998)



CONTROL ADVISABILITY OF EACH MODE

	FRONT L LEV.	FRONT R LEV	CENTER LEVEL	SURROUND L LEV	SURROUND R LEV	S. WOOFER LEVEL	INPUT ATTENUATOR	ROOM SIZE	EFFECT LEVEL	DELAY TIME	CINEMA EQ	D. COMP	DIAL, NORM.	TEST TONE
STEREO	O	O	X	X	X	O※3	O※4	X	X	X	X	O※5	O※5	O※6
6CH EXT, IN	O	O	O	O	O	O	—	—	—	—	—	—	—	
5CH STEREO	O	O	O※1	O※2	O※2	O※3	O※4	X	X	X	X	X	X	
DOLBY AC-3 or DOLBY PROLOGIC	O	O	O※1	O※2	O※2	O※3	O※4	X	X	X	O	O※5	O※5	
MONO MOVIE	O	O	O※1	O※2	O※2	O※3	O※4	O	O	X	X	O※5	O※5	
ROCK ARENA	O	O	O※1	O※2	O※2	O※3	O※4	O	O	X	X	O※5	O※5	
JAZZ CLUB	O	O	O※1	O※2	O※2	O※3	O※4	O	O	X	X	O※5	O※5	
VIDEO GAME	O	O	O※1	O※2	O※2	O※3	O※4	O	O	X	X	O※5	O※5	
MATRIX	O	O	O※1	O※2	O※2	O※3	O※4	X	X	O	X	O※5	O※5	

O : Feasible to control X : Infeasible to control

O※1 : According to the contents of set up menu, when no center speaker is provided, with no controlling and sets - ∞ data to center electronic volume.
O※2 : According to the contents of set up menu, when no rear speaker is provided, with no controlling and sets - ∞ data to rear electronic volume.
O※3 : According to the contents of set up menu, when no woofer is provided, with no controlling and sets - ∞ data to woofer electronic volume.
O※4 : Feasible to control only at analog input. Note that, this function corresponds to each input channel.
O※5 : Feasible to control only at AC-3 input.
O※6 : Feasible to control TEST TONE in all modes of set up menu.

Additional note : Each mode's FRONT/CENTER/SURROUND/S. WOOFER DELAY should be set according to the setting contents of delay time for set up menu.

DIGITAL/ANALOG, SURROUND MODE IN EACH INPUT FUNCTION AND INITIAL SETTING OF DIGITAL FUNCTION

INPUT FUNCTION	DIGITAL/ANALOG	SURROUND MODE	DIGITAL FUNCTION
PHONO	FORCED ANALOG	STEREO	INFEASIBLE TO SET
CD	ANALOG	STEREO	COAXIAL
TUNER	FORCED ANALOG	STEREO	INFEASIBLE TO SET
DVD/VDP	ANALOG	DOLBY PRO LOGIC	OPTICAL-1
TV/DBS	ANALOG	STEREO	OFF
VCR-1	ANALOG	DOLBY PRO LOGIC	OFF
VCR-2/V.AUX	ANALOG	STEREO	OFF
DAT/TAPE	FORCED ANALOG	STEREO	OFF

INITIAL SETTING OF EACH MODE

	FRONT L LEV.	FRONT R LEV	CENTER LEVEL	SURROUND L LEV	SURROUND R LEV	S. WOOFER LEVEL	INPUT ATTENUATOR	ROOM SIZE	EFFECT LEVEL	DELAY TIME	CINEMA EQ	DIALOG ※1	DYNAMIC ※1
STEREO	0 dB	0 dB	—	—	—	0 dB	0 dB	—	—	—	—	ON	OFF
6CH EXT. IN	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	—	—	—	—	—	—	—
5CH STEREO	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	—	—	—	—	—	—	—
DOLBY AC-3 or DOLBY PROLOGIC	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	—	—	—	OFF	ON	OFF
MONO MOVIE	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	MED	10	—	—	—	—
ROCK ARENA	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	MED	10	—	—	—	—
JAZZ CLUB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	MED	10	—	—	—	—
VIDEO GAME	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	MED	10	—	—	—	—
MATRIX	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	—	—	30m sec	—	—	—

※1 : Conditions in case for setting AC-3 data to ZR38600.

Others:
- Set REC SELECT to SOURCE.
- Set TAPE MONITOR to OFF.
- Set VIDEO SELECT to OFF.
- Set MASTER VOL to -∞.
- Each input should be set to analog input.
- Set TEST TONE to OFF.
- In case DEFAULT is selected for SURR. PARAMETERS setting menu, sets the appropriate parameter of ROOM SIVE, EFFECT LEVEL, DELAY, CINEMA, D. COMP to the initial value of above table.

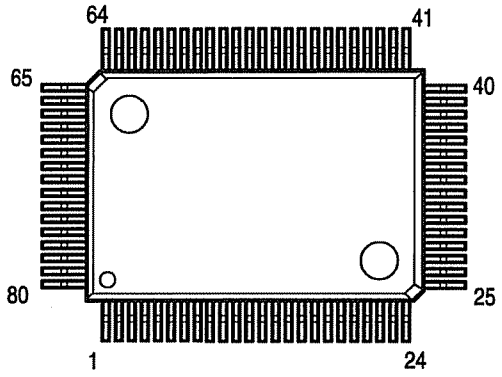
SEMICONDUCTORS

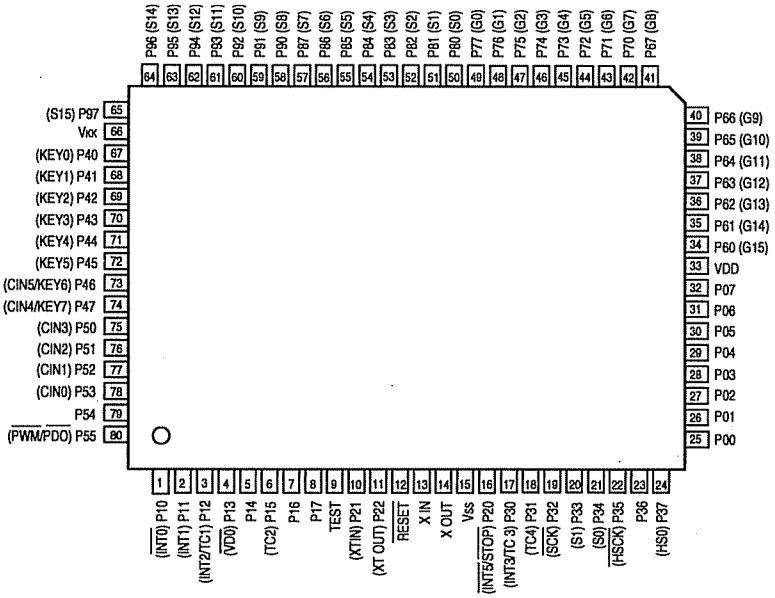
● IC's

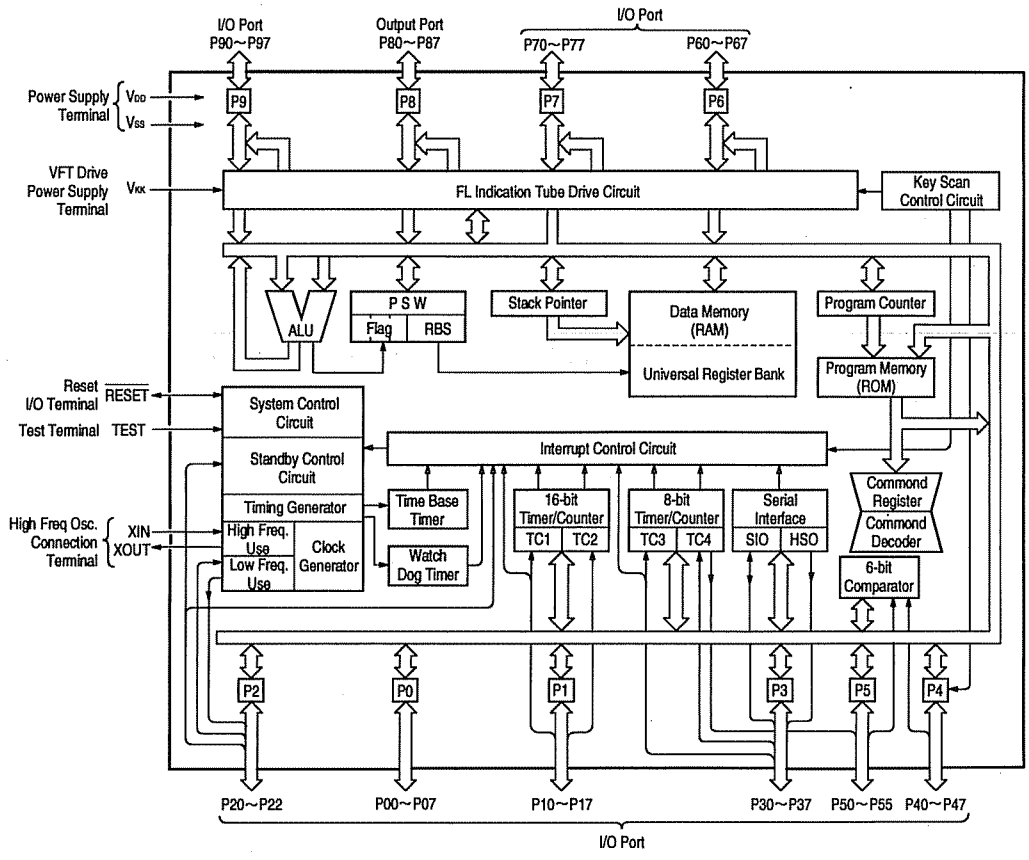
Note: Indications before IC numbers denote P.W.B. name.

MA : Main P.W.B. Unit
PA : Power Amp Unit
VI : Video & Display Unit
TU : Tuner Unit
AU : Audio & DSP Unit
EV : E. Vol Unit

TMP87CS71F-**** (MA: IC113)







TMP87CS71F-**** (IC113) Terminal Function

Pin No.	Port Name	Symbol	I/O	Type	Op	Det	Res	Init	Function
1	P10/INT 0	PROTECTION IN	I	—	Eu	E&L	Z	—	Protection detecting input. (H: Detection)
2	P11/INT 1	DSP CLK IN	I	—	Eu	Ed	Z	—	DSP control terminal.
3	P12/INT 2	RDS START	I	—	Eu	Ed	Z	H	RDS data input (LC7074). *E2 model only.
4	P13/DVO	STEREO/MONO	O	C	—	—	Z	L	STEREO/MONO control signal. (L: STEREO receiving)
5	P14	PLL-ST	O	C	—	—	Z	L	LM7001 control output.
6	P15/TC2	PLL-CLK	O	C	—	S	Z	L	LM7001 control output.
7	P16	PLL-DATA	O	C	—	S	Z	L	LM7001 control output.
8	P17	TUNED SIGNAL	I	—	Eu	Lv	Z	—	Tuning detection. (L: Tuning)
9	TEST	TEST	I	—	GND	S	—	—	Connect to ground.
10	P21/XTIN	STEREO SIGNAL	I	—	Eu	Lv	Z	—	STEREO control signal. (L: STEREO receiving)
11	P22/XTO	SCL	O	N	Eu	—	Z	H	MAIN-SUB microcomputer communication control terminal.
12	RESET	RESET	I	—	Eu	Lv	L	—	Reset input.
13	XIN	XIN	I	—	—	—	—	—	Oscillator circuit terminal. (4MHz)
14	XOUT	XOUT	O	—	—	—	—	—	Oscillator circuit terminal. (4MHz)
15	VSS	VSS	I	—	GND	—	—	—	Ground.
16	P20/INT 5	POWER OFF	I	—	Eu	Lv	Z	—	Power OFF detection terminal. (L: Power OFF)
17	P30/INT 3	REMOCON	I	—	Ed	E&L	Z	—	Remote signal input.
18	P31/TC4	SDA	O	N	Eu	S	Z	H	MAIN-SUB microcomputer communication control terminal.
19	P32/SCK	RDS CLK	I	—	—	S	Z	—	RDS clock input (LC7074). *E2 model only.
20	P33/SI	RDS DATA	I	—	—	S	Z	—	RDS data input (LC7074). *E2 model only.
21	P34/SO	RDS RES	O	N	Eu	—	Z	H	RDS reset output (LC7074). *E2 model only.
22	P35/HSCK	OSD CLK	O	N	Eu	S	Z	H	OSD control output. (M35015)
23	P36	OSD CS	O	N	Eu	—	Z	H	OSD control output. (M35015)
24	P37/HSO	OSD DATA	O	N	Eu	S	Z	L	OSD control output. (M35015)
25	P00	OSD RES	O	C	—	—	Z	H	OSD contro! output. (M35015)
26	P01	FL RES	O	C	—	—	Z	L	Fluorescent display control output. (MSC1937)
27	P02	FL DATA	O	C	—	S	Z	H	Fluorescent display control output. (MSC1937)
28	P03	FL CLK	O	C	—	S	Z	H	Fluorescent display control output. (MSC1937)
29	P04	FUNC CK	O	C	—	S	Z	L	Function control output. (TC9274N, NJU7313AL)
30	P05	FUNC DATA	O	C	—	S	Z	L	Function control output. (TC9274N, NJU7313AL)
31	P06	FUNC ST1	O	C	—	—	Z	L	Function control output. (TC9273) REC OUT, INH.
32	P07	FUNC ST2	O	C	—	—	Z	L	Function control output. (NJU7313AL) 5.1CH decoder.
33	VDD	VDD	I	—	—	—	—	—	Connect to +5V power supply.
34	P60	VOL MUTE	O	P	Id	—	L	L	Control signal at minus infinite of master volume. (L: infinite)
35	P61	AC-3 RF DET.	I	—	Id	—	L	L	AC-3 RF signal judgment input. (L: AC-3 data input)
36	P62	E. VOL CE2	O	P	Id	—	L	L	Master volume control output. (LC7536) (Center/Sub woofer, Rear L/R)
37	P63	E. VOL CE1	O	P	Id	—	L	L	Master volume control output. (LC7536) (Front L/R)
38	P64	E. VOL DATA	O	P	Id	—	L	H	Electronic volume control output. (LC7536)
39	P65	E. VOL CK	O	P	Id	—	L	H	Electronic volume control output. (LC7536)
40	P66	DISCHARGE	O	P	Id	—	L	H	Pod noise prevention control terminal. (H: Power ON)
41	P67	A/D RES	O	P	Id	—	L	L	A/D control terminal. (L: Reset and analog input)
42	P70	SEL	O	P	Id	—	L	H	DIR control terminal. (CS8412)
43	P71	SELCK	O	P	Id	—	L	H	DIR control terminal. (CS8412) (H: Digital, L: Analog)
44	P72	ANALOG LED	O	P	Id	—	L	L	Analog indication LED drive output. (H: Lighting)
45	P73	DOLBY DIGITAL LED	O	P	Id	—	L	L	Dolby Digital indication LED drive output. (H: Lighting)
46	P74	PRO LOGIC LED	O	P	Id	—	L	L	Pro Logic indication LED drive output. (H: Lighting)
47	P75	DIGITAL LED	O	P	Id	—	L	L	Digital indication LED drive output. (H: Lighting)
48	P76	ERR/OVER LED	O	P	Id	—	L	L	Err/Over indication LED drive output. (H: Lighting)
49	P77	STANDBY LED	I	—	Id	—	L	H	Standby indication LED drive output. (H: Lighting)
50	P80	TUNER MUTE	O	P	Id	—	H	H	Tuner mute output. (H: Mute)
51	P81	CINEMA EQ	O	P	Id	—	L	H	Cinema Eq control output. (H: ON)
52	P82	EXP CLK	O	P	Id	—	L	L	I/O Expander control output. (TC4094)
53	P83	EXP DATA	O	P	Id	—	L	L	I/O Expander control output. (TC4094)
54	P84	EXP ST	O	P	Id	—	L	L	I/O Expander control output. (TC4094)
55	P85	EXP OE	O	P	Id	—	L	L	I/O Expander control output. (TC4094)
56	P86	POWER	O	P	Id	—	L	H	Power supply relay control output. (H: ON)
57	P87	AC-3 MUTE	O	P	Id	—	L	H	Digital mute control terminal (L: AC-3).
58	P90	OVL	I	—	—	—	L	—	Over load detecting input. (H: Over load)
59	P91	AC-3 DET.	I	—	—	—	L	—	AC-3 decode data input terminal. (L: AC-3 decode)
60	P92	NC	I	P	Id	—	L	L	No connection.
61	P93	NC	I	P	Id	—	L	L	No connection.
62	P94	NC	I	P	Id	—	L	L	No connection.
63	P95	CSI	I	—	—	—	L	—	DIR control input terminal. (CS8412) (H: PCM)
64	P96	ERR	I	—	—	—	L	—	DIR control input terminal. (CS8412) (H: ERR)
65	P97	NC	I	P	Id	—	L	L	No connection.
66	VKK	VKK	I	—	—	—	—	—	Connect to ground.
67	P40/KEY0	S-MONITOR DET.	I	—	Eu	Lv	Z	—	Judgment whether S monitor is connected or not. (L: Connecting)
68	P41/KEY1	S-SIGNAL DET.	I	—	Eu	Lv	Z	—	S signal input control. (H: S signal input)
69	P42/KEY2	OSD SYNC DET.	I	—	Eu	Lv	Z	—	OSD sync switching signal. (H: External sync)
70	P43/KEY3	MVOL SELB	I	—	Eu	Lv	Z	H	Master volume setting signal. (Rotary encode)
71	P44/KEY4	MVOL SELA	I	—	Eu	Lv	Z	H	Master volume setting signal. (Rotary encode)
72	P45/KEY5	NC	O	—	—	Lv	Z	L	
73	P46/CIN5	MODE	I	—	Eu	Lv	Z	—	Connect to GND.
74	P47/CIN4	KEY5	I	—	Eu	Lv	Z	H	Key input 5.
75	P50/CIN3	KEY4	I	—	Eu	Lv	Z	H	Key input 4.
76	P51/CIN2	KEY3	I	—	Eu	Lv	Z	H	Key input 3.
77	P52/CIN1	KEY2	I	—	Eu	Lv	Z	H	Key input 2.
78	P53/CIN0	KEY1	I	—	Eu	Lv	Z	H	Key input 1.
79	P54	SUB SYNC 1	I	—	Eu	Lv	Z	H	SUB microcomputer sync input.
80	P55/PMW	SO/ZORAN	I	—	Eu	Lv	Z	H	DSP data input terminal. (ZR38600)

NOTE:

Pin No. : Terminal number of microcomputer.
Port Name : The name entered in the data sheet of microcomputer.
Symbol : Symbolized interface function.
I/O : Input or out of part.
- "I" = Input port
- "O" = Output port

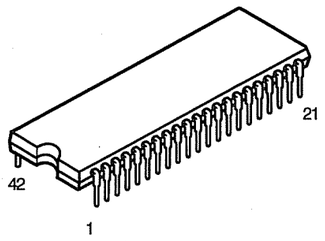
Type : Composition of port in case of output port.
- "C" = CMOS output
- "N" = NMOS open drain output
- "P" = PMOS open drain output

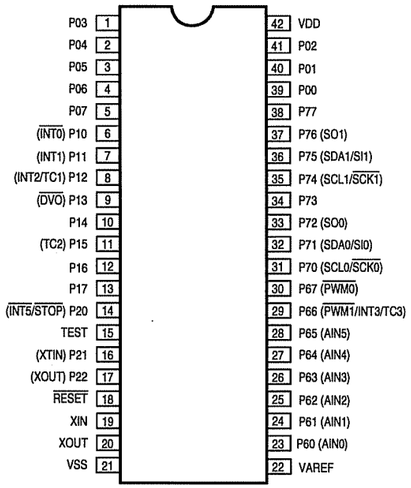
Op : Pull up/Pull down selection information.
- "Iu" = Inner microcomputer pull up
- "Id" = Inner microcomputer pull down
- "Eu"= External microcomputer pull up
- "Ed"= External microcomputer pull down

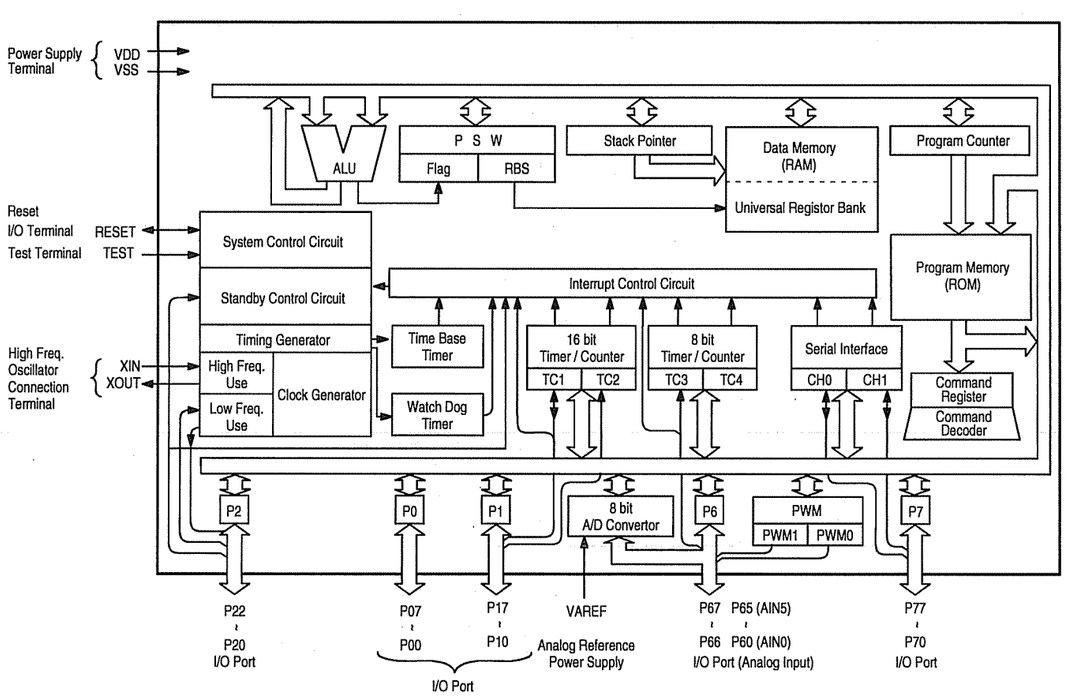
Det : Indicates judging state of input port. Level detection is "LV"; Edge detection is "Ed"; Detection by both shifting is "E&L"; Serial data detection is "S" (Serial data output is also "S").
Res : State at reset.
- "H" = Outputs High Level at reset
- "L" = Outputs Low Level at reset
- "Z" = Becomes High impedance mode at reset

Ini : Initial output state.
Function : Function and logical level explanation of signals to be interface.

TMP87CM43N-*** (DS: IC307)



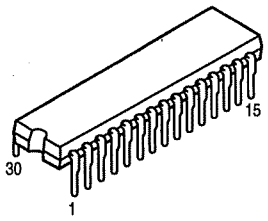


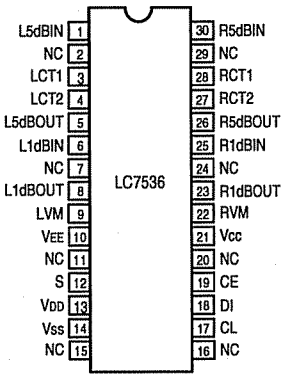


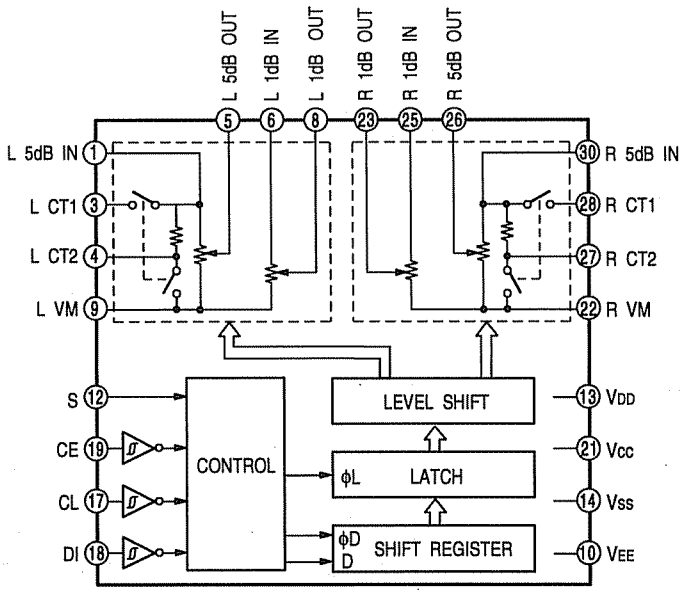
TMP87CM43N-*** Terminal Function

Pin No.	Port Name	Symbol	I/O	Type	Op	Det	Res	Ini	Function
1	P03	DSP POWER	O	C	—	—	L	L	DSP power supply control output (H: ON).
2	P04	DSP RES(ZORAN)	O	C	—	—	Z	H	DSP control terminal (ZR38600) (L: reset).
3	P05	DSP DATA	O	C	—	S	Z	H	DSP control terminal (ZR38600).
4	P06	ZORAN SS	O	C	—	—	Z	L	DSP control terminal (ZR38600).
5	P07	DSP CLK	O	C	—	S	Z	H	DSP control terminal (ZR38600).
6	P10/INT 0	DIN A	O	C	—	—	Z	L	Digital input control terminal (TC74HC151).
7	P11/INT 1	DIN B	O	C	—	—	Z	L	Digital input control terminal (TC74HC151).
8	P12/INT 2	DFS 2	O	C	—	—	Z	L	Digital filter emphasis control terminal.
9	P13/DV0	DFS 1	O	C	—	—	Z	H	Digital filter emphasis control terminal.
10	P14	FGAIN	O	C	—	—	Z	H	Gain selection control terminal.
11	P15/TC2	F0	O	—	—	—	Z	L	
12	P16	F1	O	—	—	—	Z	L	
13	P17	F2	O	—	—	—	Z	L	
14	P20/INT 5	SEL	O	—	—	—	Z	L	
15	TEST	TEST	I	—	GND	—	—	L	Connect with GND.
16	P21/XTIN		I	—	—	—	Z	L	Open, or connect with GND.
17	P22/XT0		I	—	—	—	Z	L	Open, or connect with GND.
18	RESET	RESET	I	—	Eu	Lv	L	—	Reset input.
19	XIN	XIN	I	—	—	—	—	—	Oscillator circuit (4 MHz).
20	XOUT	XOUT	O	—	—	—	—	—	Oscillator circuit (4 MHz).
21	VSS	VSS	I	—	GND	—	—	—	Connect with GND.
22	VAREF	VAREF	I	—	GND	—	—	—	Connect with GND.
23	P60		I	—	—	—	Z	L	Open, or connect with GND.
24	P61		I	—	—	—	Z	L	Open, or connect with GND.
25	P62		I	—	—	—	Z	L	Open, or connect with GND.
26	P63		I	—	—	—	Z	L	Open, or connect with GND.
27	P64		I	—	—	—	Z	L	Open, or connect with GND.
28	P65		I	—	—	—	Z	L	Open, or connect with GND.
29	P66		I	—	—	—	Z	L	Open, or connect with GND.
30	P67		I	—	—	—	Z	L	Open, or connect with GND.
31	P70/SCL	SCL	I	—	Eu	S	Z	—	MAIN-SUB microcomputer communication control terminal.
32	P71/SDA	SDA	I	—	Eu	S	Z	—	MAIN-SUB microcomputer communication control terminal.
33	P72	SUB SYNC1	O	N	Eu	—	Z	H	SUB microcomputer sync output.
34	P73		I	—	Eu	Lv	Z	—	Detect for stoping power supply (L: stoping power supply).
35	P74		I	—	—	—	Z	L	Open, or connect with GND.
36	P75		I	—	—	—	Z	L	Open, or connect with GND.
37	P76		I	—	—	—	Z	L	Open, or connect with GND.
38	P77		I	—	—	—	Z	L	Open, or connect with GND.
39	P00	DEMOD RES	O	C	—	—	Z	H	Demodulator reset control terminal (L: reset).
40	P01	DEMOD POWER	O	C	—	—	Z	L	Demodulator POWER ON/OFF control terminal (H: ON).
41	P02	DEMOD ON	O	C	—	—	Z	L	Demodulator oscillating control terminal (H: oscillating).
42	VDD	VDD	I	—	—	—	Z	—	Connect with +5V.

LC7536
(EV: IC101, 107, 108)



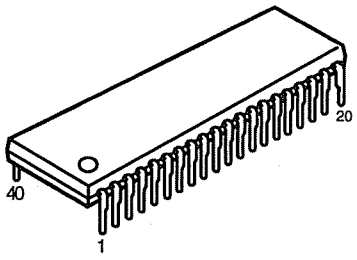


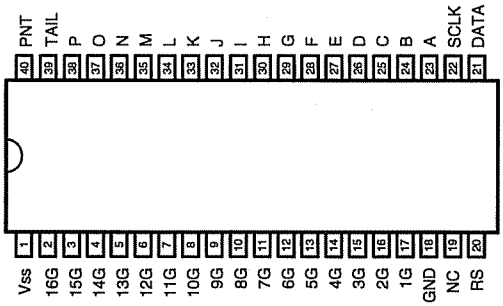


LC7536 Terminal Function

Pin No.	Symbol	I/O	Function
1	L 5dB IN	I	Input terminal for 5dB step attenuator, it should be driven with low impedance path.
2	NC	–	No connection.
3	L CT1		For loudness control, connect a capacitor between CT1 and 5dB IN with high frequency compensation, and also connect a capacitor between CT2 and Vm with low frequency compensation.
4	L CT2		
5	L 5dBOUT	O	Output terminal for 5dB step attenuator with approx. 1Mohm load impedance.
6	L 1dBIN	I	Input terminal for 1dB step attenuator, it should be driven with low impedance.
7	NC	–	No connection.
8	L 1dBOUT	O	Output terminal for 1dB step attenuator with approx. 47kohm ~ 1Mohm load impedance.
9	L VM		Common terminal for volume control.
10	VEE	I	Connect to power supply.
11	NC	–	No connection.
12	S		Selection terminal for address code during data format.
13	VDD	I	Connect to power supply (Pay attention to the rising time so that Vcc does rise up faster than VDD when the power turns).
14	Vss	I	Connect to power supply.
15	NC	–	No connection.
16	NC	–	No connection.
17	CL	I	Input terminal for controlling LC7536 serial data with 0 ~ 5V amplitude.
18	DI		
19	CE		
20	NC	–	No connection.
21	Vcc	I	Connect power supply (Pay attention to the rising time so that Vcc does not rise up faster than VDD when the power turns).
22	R VM		Common terminal for volume control.
23	R 1dBOUT	O	Output terminal for 1dB step attenuator with approx. 47kohm ~ 1Mohm load impedance.
24	NC	–	No connection.
25	R 1dBIN	I	Input terminal for 1dB step attenuator, it should be driven with low impedance.
26	R 5dBOUT	O	Output terminal for 5dB step attenuator with approx. 1Mohm load impedance.
27	R CT2		For loudness control, connect a capacitor between CT1 and 5dBIN with high frequency compensation, and also connect a capacitor between CT2 and Vm with low frequency compensation.
28	R CT1		
29	NC	–	No connection.
30	R SdBIN	I	Input terminal for 5dB step attenuator, it should be driven with low impedance path.

MSC1937-03RS
(VI: IC102)

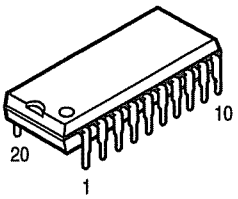


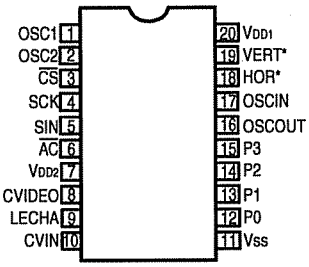


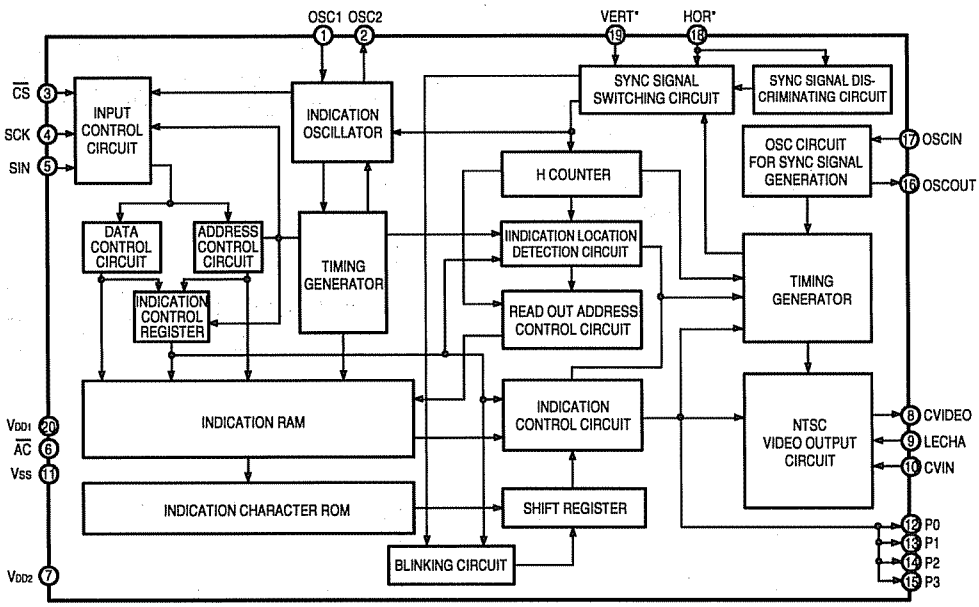
MSC1937-03RS Terminal Function

Pin No.	Symbol	I/O	Function
1	Vss	–	Power supply (+5V).
2	16G	O	Digit 16 output.
3	15G	O	Digit 15 output.
4	14G	O	Digit 14 output.
5	13G	O	Digit 13 output.
6	12G	O	Digit 12 output.
7	11G	O	Digit 11 output.
8	10G	O	Digit 10 output.
9	9G	O	Digit 9 output.
10	8G	O	Digit 8 output.
11	7G	O	Digit 7 output.
12	6G	O	Digit 6 output.
13	5G	O	Digit 5 output.
14	4G	O	Digit 4 output.
15	3G	O	Digit 3 output.
16	2G	O	Digit 2 output.
17	1G	O	Digit 1 output.
18	GND	–	Ground.
19	NC	–	No connection.
20	RS	I	POWER-ON-RESET. (H: RESET)
21	DATA	I	Data input.
22	SCLK	I	Shift clock input.
23	A	O	Seg,ent A output.
24	B	O	Segment B output.
25	C	O	Segment C output.
26	D	O	Segment D output.
27	E	O	Segment E output.
28	F	O	Segment F output.
29	G	O	Segment G output.
30	H	O	Segment H output.
31	I	O	Segment I output.
32	J	O	Segment J output.
33	K	O	Segment K output.
34	L	O	Segment L output.
35	M	O	Segment M output.
36	N	O	Segment N output.
37	O	O	Segment O output.
38	P	O	Segment P output.
39	TAIL	–	No connection.
40	PNT	O	Point output.

M35015-204SP
(VI: IC303)



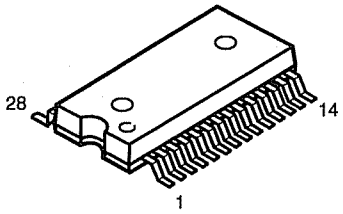


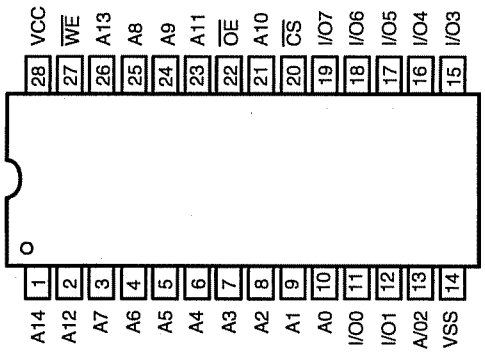


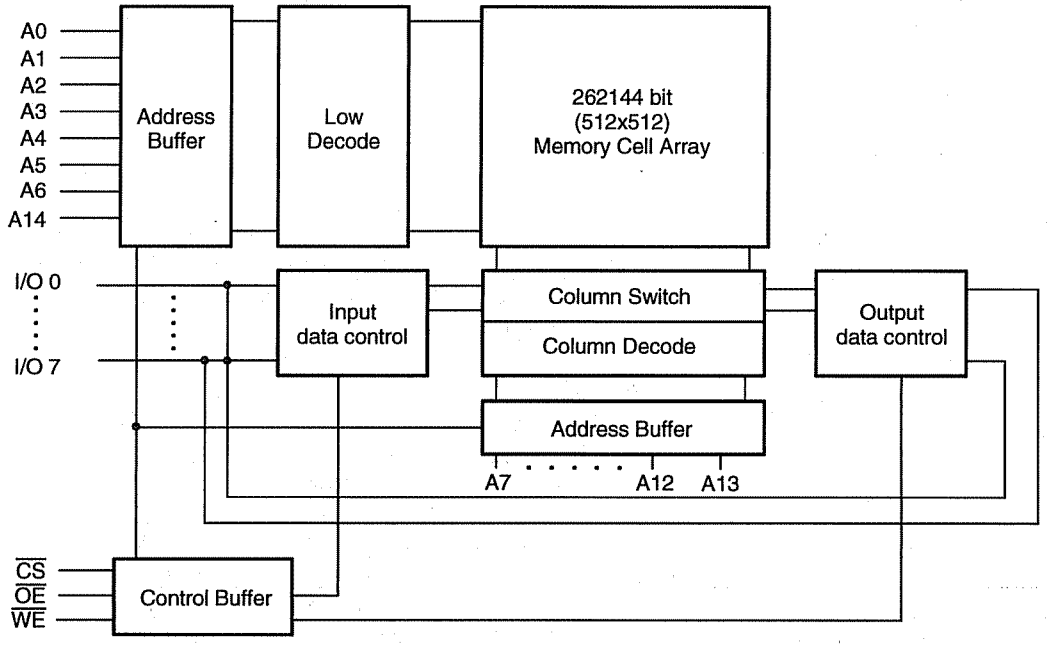
M35015-204SP Terminal Function

Pin No.	Symbol	Name	I/O	Function
1	OSC1	Osc. circuit ext. terminal.	I	External terminal for indication oscillator circuit. Standard OSC. freq. is approx. 7MHz.
2	OSC2		O	With this OSC. freq., decides horizontal indicatin and character width.
3	$\overline{CS}$	Chip select input	I	Chip select terminal and turns to "L" when transfer serial data. Hysteresis input. Pull up resistor is built-in.
4	SCK	Serial clock input	I	Takes in serial data of SIN at SCK rise when CS terminal is in "L". Hysteresis input. Pull up rersist is built-in.
5	SIN	Serial data input	I	Serial input of register for indication control and data, and address for indication data memory. Hysteresis input. Pull up rersistor is built-in.
6	$\overline{AC}$	Auto-clear input	I	Resets internal circuit of IC at "L" mode. Hysteresi input. Pull up resistor is built-in.
7	V_{DD2}	Power supply	—	Power supply terminal of analog system. Connect to +5V.
8	CVIDEO	Combined video output	O	Output terminal of combined video signal. Outputs 2Vp-p combined signal. Character output, etc. Overlap CVIN signal and outputs at superimpose.
9	LECHA	Character level input	I	Input terminal deciding character output level in combined video signal. color of character is white.
10	CVIN	Combined video input	I	Input terminal of external combined video signal. Character output etc. overlap this external combined video signal.
11	Vss	Ground	—	Ground terminal. Connect to GND.
12	P0	Output port p0	O	General output or character background signal BL NK1* output is switchable. Polarity can be selected at ROM mask.
13	P1	Output port P1	O	General output or character background signal CO1* output is switchable. Polarity can be selected at ROM mask.
14	P2	Output port P2	O	General output or character background signal BLNK2* output is switchable. Polarity can be selected at ROM mask.
15	P3	Output port P3	O	General output or character background signal CO2* output is switchable. Polarity can be selected at ROM mask.
16	OSCOUT	Ext. terminal for sync sig. OSC. Circuit	O	Terminal for external use of sync signal OSC. circuit. Use the freq.: 14.32MHz at NTSC system, 17.73MHz at PAL. system, 14.30MHz at MPAL system.
17	OSCIN		I	
18	HOR*	Horizontal sync signal	I	Inputs horizontal sync signal. Hysteresis input.
19	VERT*	Vertical sync signal	—	Input vertical sync signal. Hysteresis input. Polarity can be selected at ROM mask.
20	V_{DD1}	Power supply	I	Power supply terminal of digital system. Connect to +5V.

BR62256F-70LL
(AU: IC306)



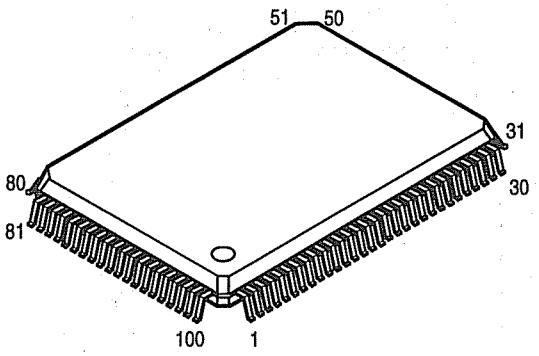


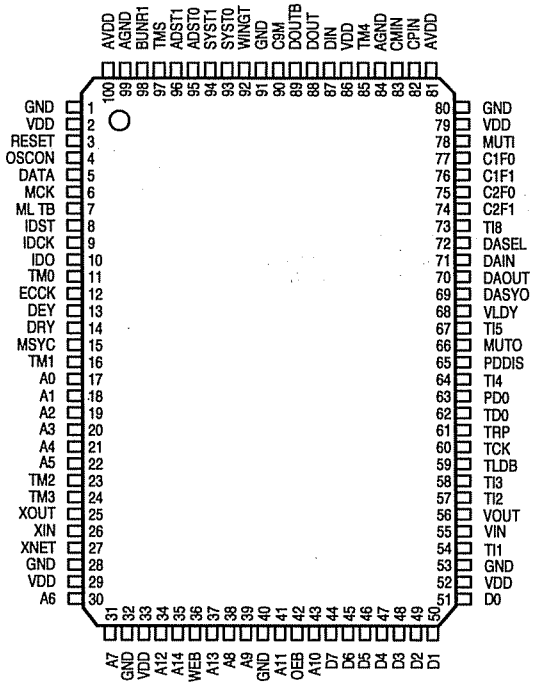


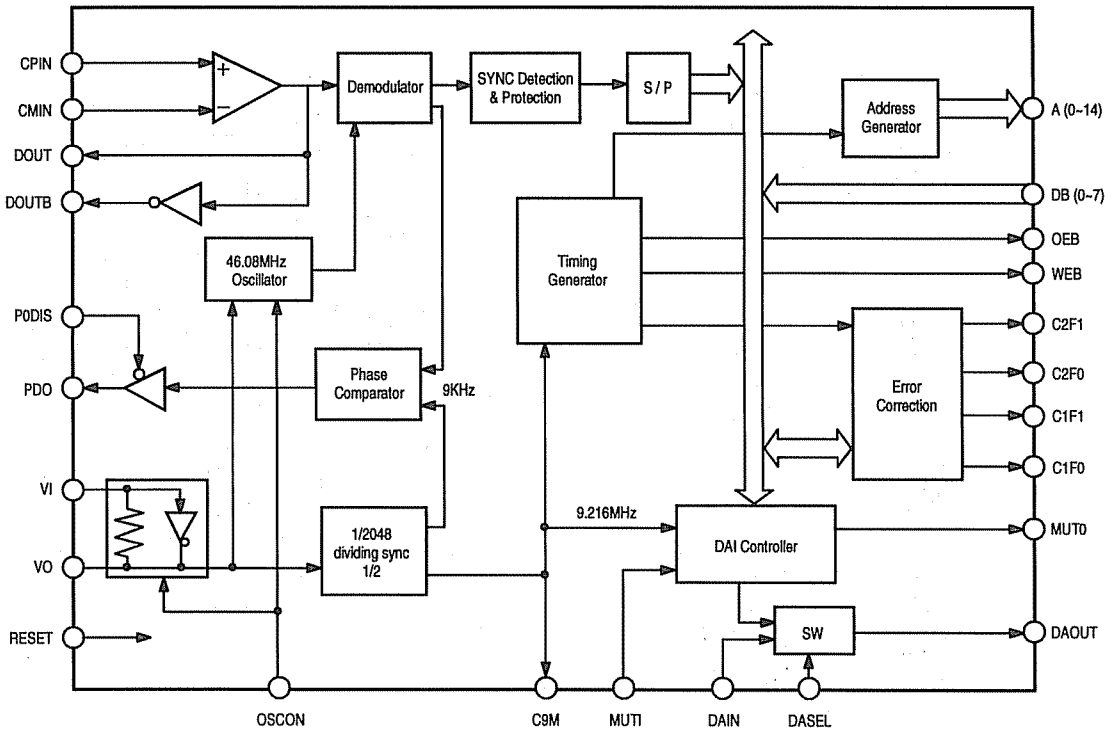
BR62256F-70LL Terminal Function

Pin No.	Symbol	I/O	Function
1~10	A0~A7, A12, A14	I	32K byte memory address input.
11~13	I/O0~I/O2	I/O	8 bit data input/output.
14	Vss	—	GND
15~19	I/O3~I/O7	I/O	8 bit data input/output.
20	$\overline{CS}$	I	Chip select control input.
21	A10	I	32K byte memory address input.
22	$\overline{OE}$	I	Output enable control input.
23~26	A8, A9, A11, A13	I	32K byte memory address input.
27	$\overline{WE}$	I	Write enable control input.
28	Vcc	—	+5V power supply.

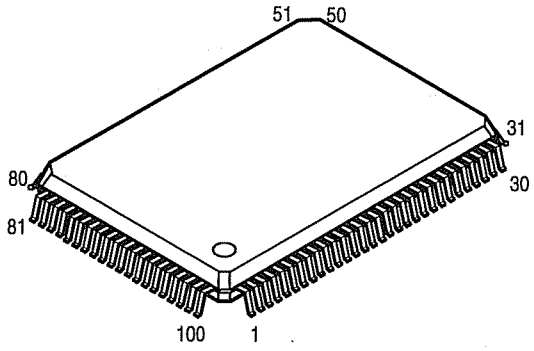
PM4007A
(AU: IC308)

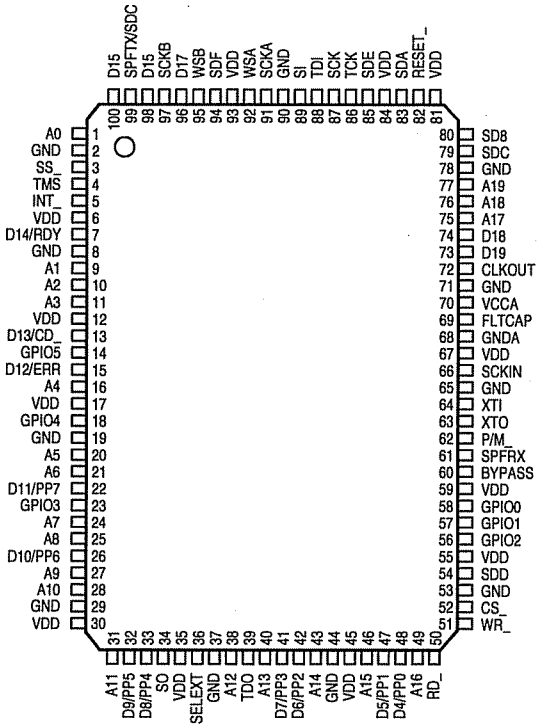




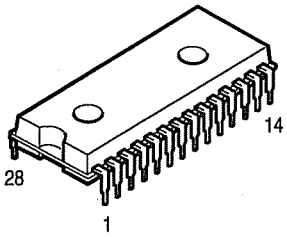


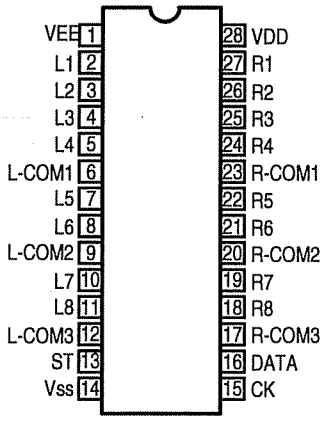
ZR38600 (AU: IC457)

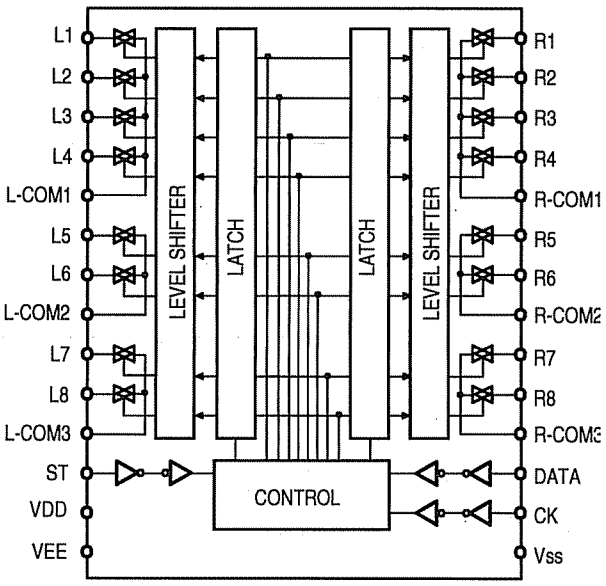




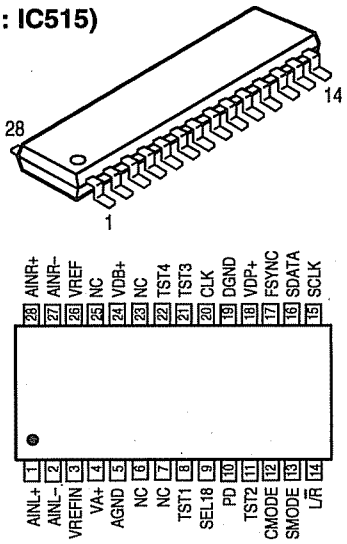
NJU7313AL (AU: IC704)

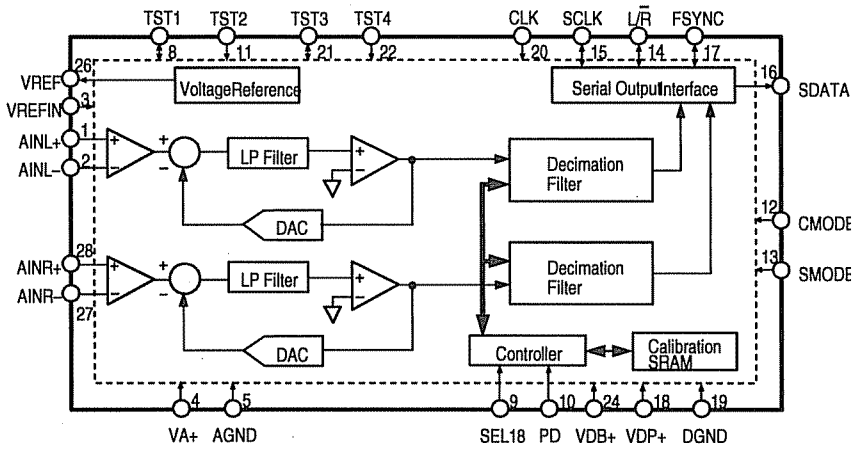






AK5340VS
(AU: IC515)



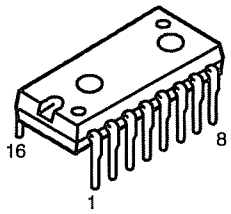


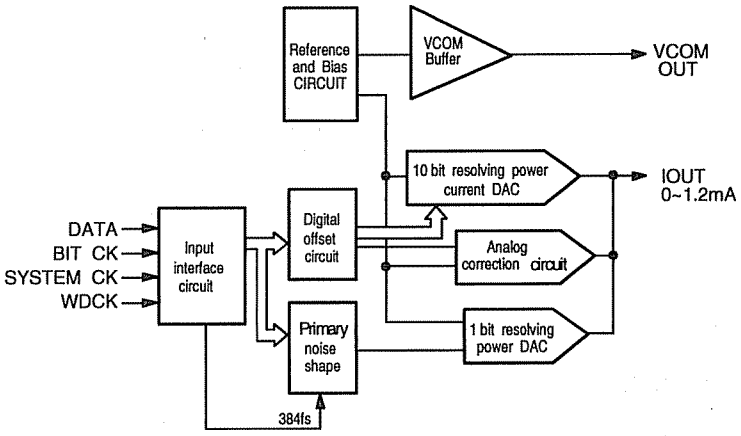
AK5340VS Terminal Function

Pin No.	Symbol	I/O	Function
1	AINL+	I	L ch analog non inverting input.
2	AINL–	I	L ch analog inverting input.
3	VREFIN	I	Reference voltage input.
4	VA+	—	Analog +5V power supply.
5	AGND	—	Analog ground.
6	NC		No connection.
7	NC		No connection.
8	TST1		Test terminal, open or connect to DGND.
9	SEL18	I	Output data length selecting terminal (built in pull down resistance) (L: 16 bit, H: 18 bit).
10	PD	I	Power down signal (H: Power down).
11	TST2		Test terminal, open or connect to DGND.
12	CMODE	I	Master clock selecting terminal. L: CLK = 256fs (12.288MHz @fs = 48kHz) H: CLK = 384fs (18.432MHz @fs = 48kHz)
13	SMODE	I	Interface clock selecting terminal (L: Slave mode, H: Master mode).
14	L/R	I/O	Input channel selecting terminal. Slave mode: fs clock input. Master mode: fs clock output.
15	SCLK	I/O	Serial data clock terminal. Slave mode: 32fs ~ 64fs clock input. Master mode: 64fs clock output.
16	SDATA	O	Serial data output terminal, data sequence output from MSB with 2's complement.
17	FSYNC	I/O	Frame sync clock terminal. Slave mode: Enable SDATA output at H. Master mode: 2fs clock output.
18	VDP+	—	Digital +5V power supply.
19	DGND	—	Digital ground.
20	CLK	I	Master clock input terminal. CMODE = "H" = 384fs CMODE = "L" = 256fs
21	TST3		Test terminal, open or connect to DGND.
22	TST4		Test terminal, open or connect to DGND.
23	NC		No connection.
24	VDB+	—	Digital +5V power supply.
25	NC		No connection.
26	VREF	O	Reference voltage output.
27	AINR–	I	R ch analog inverting input.
28	AINR+	I	R ch analog non inverting input.

Note: All other terminals except the above are no connection (NC). NC terminals are not bonded internally.

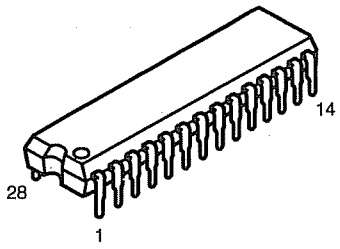
PCM69AP
(AU: IC504~506)

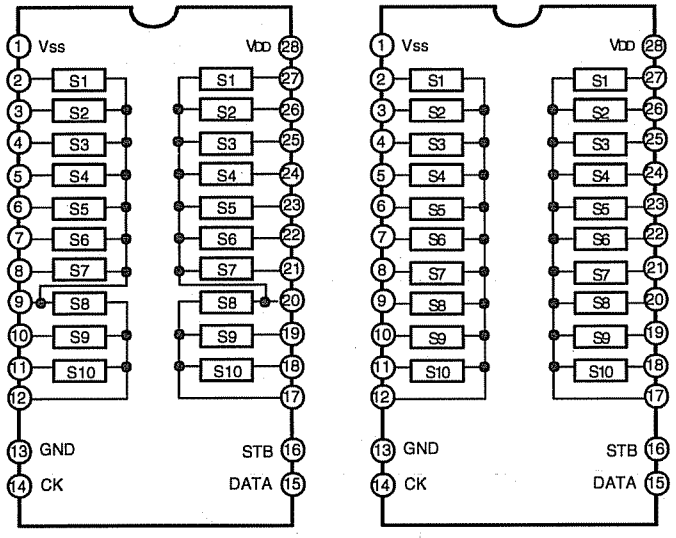




Pin No.	Function
1	+Vcc (Analog power supply)
2	Vcom. Lch
3	Lout. Lch
4	Servo. DC
5	REF. DC
6	Lout. Rch
7	Vcom. Rch
8	A-GND (Analog common)
9	D-GND (Digital common)
10	DATA Rch
11	BCK
12	SYS CLK
13	WDCK
14	DATA Lch
15	TP1
16	+VDD (Digital power supply)

TC9273N-007 (AU: IC602)
TC9273N-004 (AU: IC603)

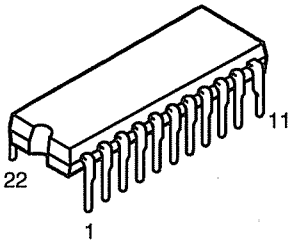


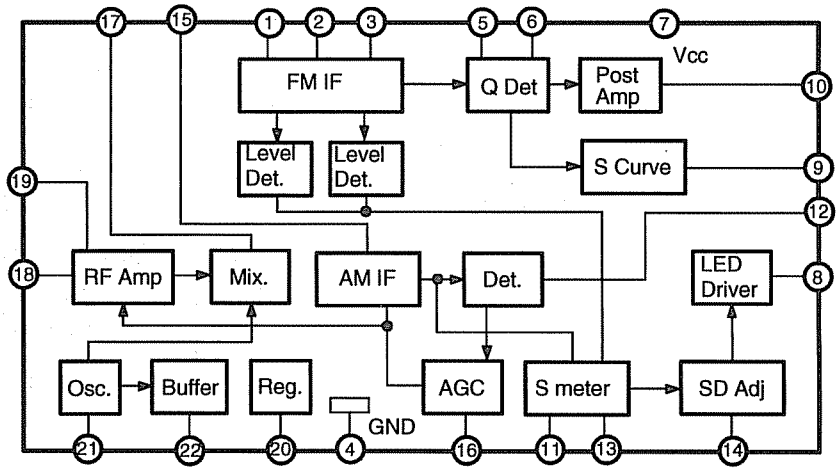


TC9273N Terminal Function

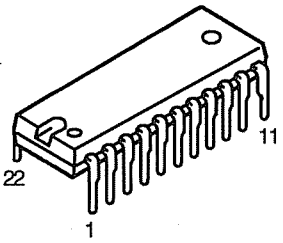
Pin No.	Symbol	Name	Function	Note
1	Vss	–Power Terminal	Dual Power Use: VDD = 8.0~17 V; GND = 0V; Vss = –8.0~17V. Signal Power Use: VDD = 8.0~18V; Vss = GND = 0V	—
13	GND	Digital Ground		
28	VDD	+Power Terminal		
2~12, 17~27	S1~11	I/O Terminal	Input terminal of analog switch.	—
14	CK	Clock Input	Clock input for data transfer.	Low level Border Input Terminal
15	DATA	Data Input	Serial input for switch setting.	
16	STB	Strobe Input	Strobe input for data writing..	

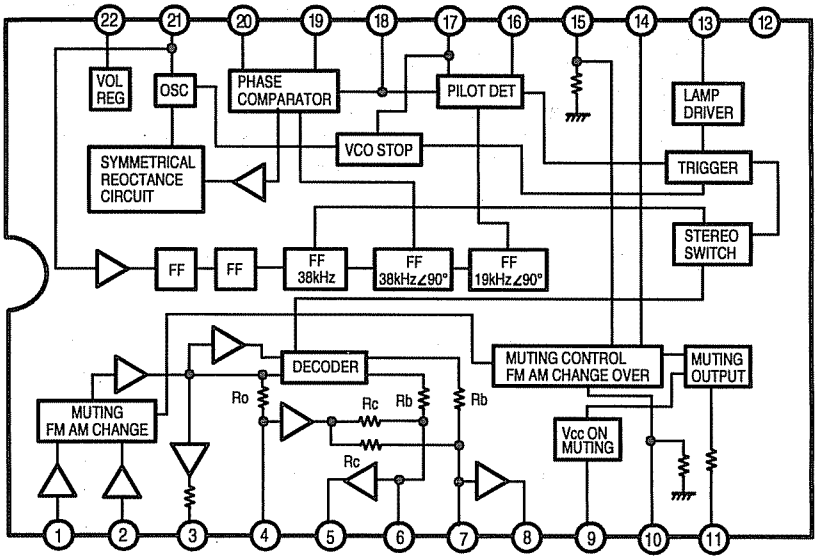
LA1265 (S)
(TU: IC502)



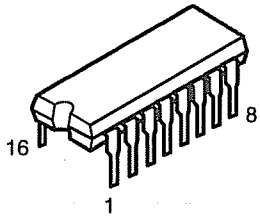


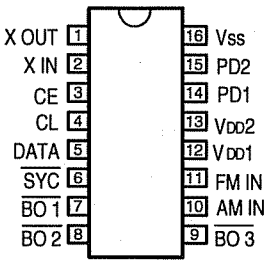
LA3401
(TU: IC503)

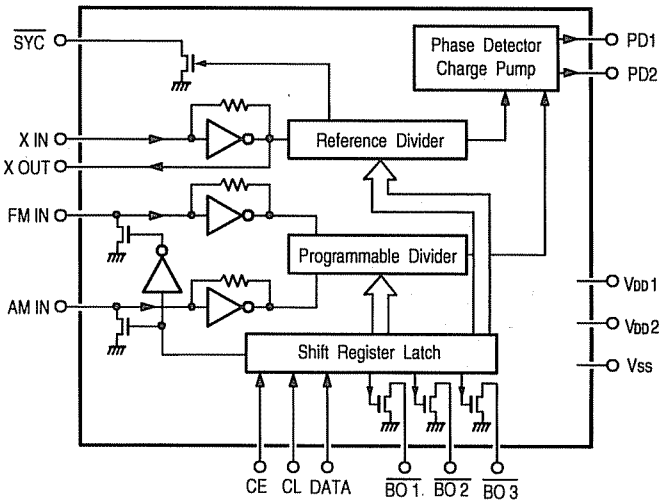




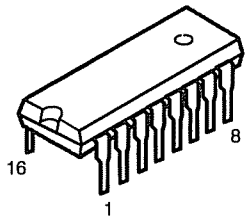
LM7001 (TU: IC505)

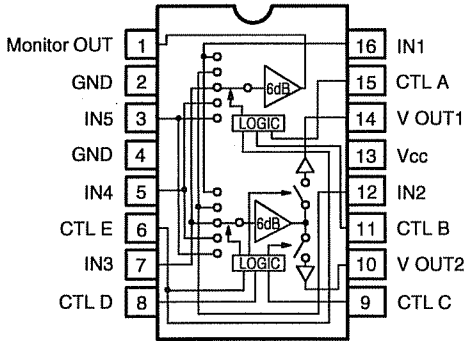






BA7625 (VI: IC302, 401)
BA7626 (VI: IC301)





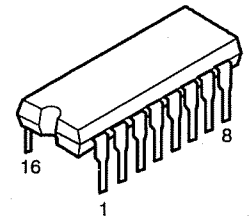
A	B	E	MONITOR OUT
L	L	*	IN 1
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

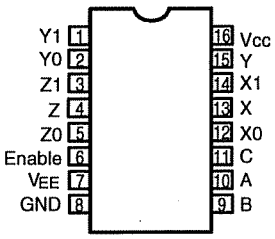
C	D	E	V OUT 1
L	L	*	—
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

C	D	E	V OUT 2
L	L	*	IN 1
H	L	*	—
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

Note 1: * mark means that feasible for either H or L.
Note 2: Each input terminal is provided with sink chip clamp (BA7625).
Each input terminal takes 20kohm at the end (BA7626).

MC74HC4053N
(VI: IC304)

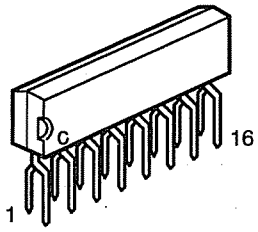


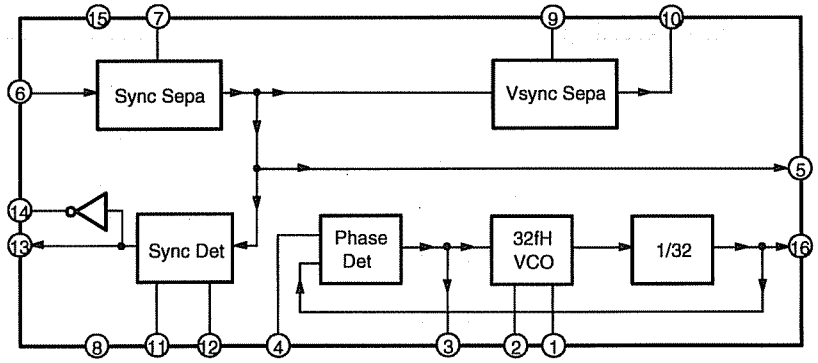


Control Inputs				
	Select			
Enable	C	B	A	ON Switches
L	L	L	L	Z0 Y0 X0
L	L	L	H	Z0 Y0 X1
L	L	H	L	Z0 Y1 X0
L	L	H	H	Z0 Y1 X1
L	H	L	L	Z1 Y0 X0
L	H	L	H	Z1 Y0 X1
L	H	H	L	Z1 Y1 X0
L	H	H	H	Z1 Y1 X1
H	X	X	X	None

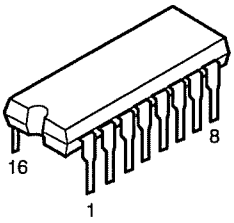
X = Don't Care

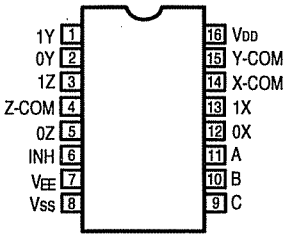
NJM2229S (VI: IC305)

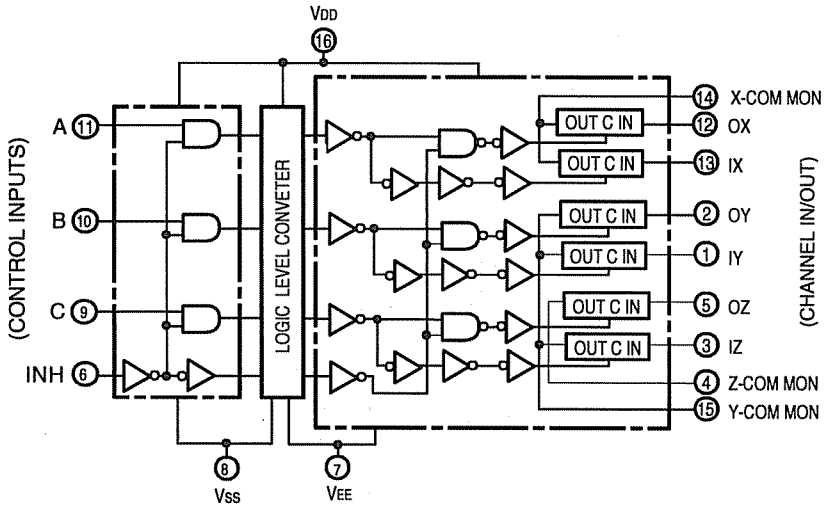




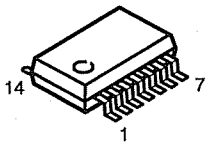
TC4053BP (VI: IC402)



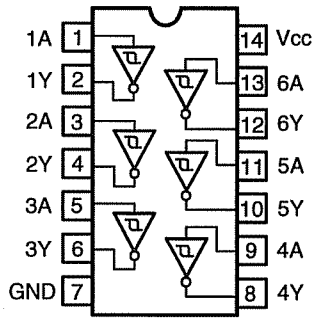




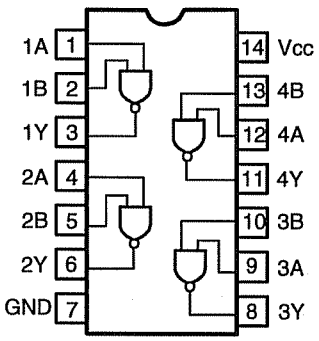
SN74HC14NS (AU: IC456)
SN74HCU04NS (AU: IC302)
TC74HC00AF (AU: IC454)



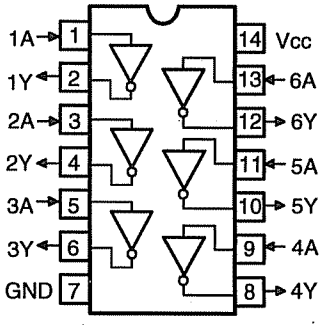
SN74HC14NS



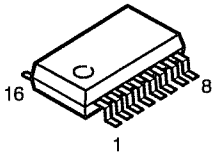
TC74HC00AF



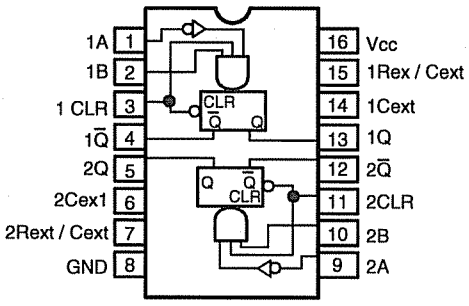
SN74HCU04NS



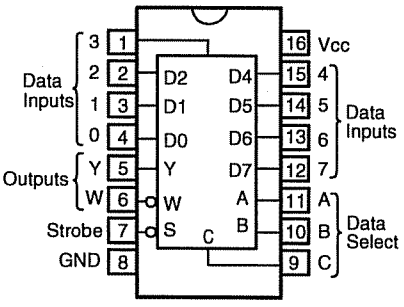
TC74HC123AF (AU: IC455)
SN74HC151NS (AU: IC303)



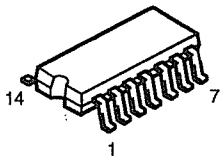
TC74HC123AF

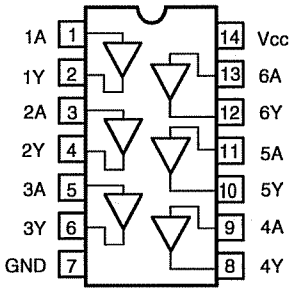


SN74HC151NS

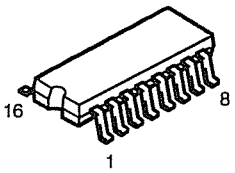


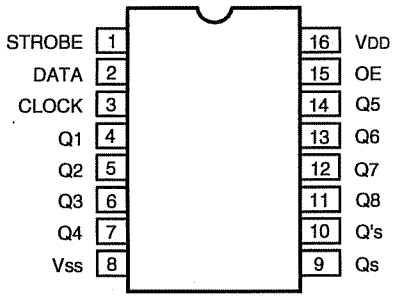
TC74HCT7007AF
(AU: IC458)



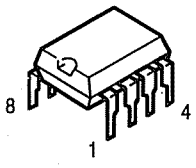


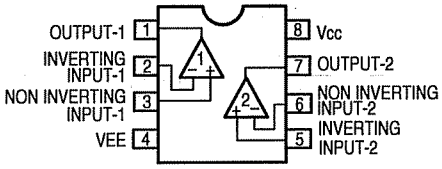
TC4094BF
(MA: IC121, 122)



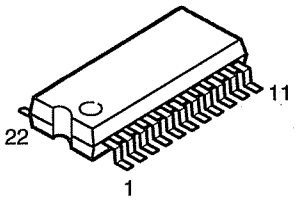


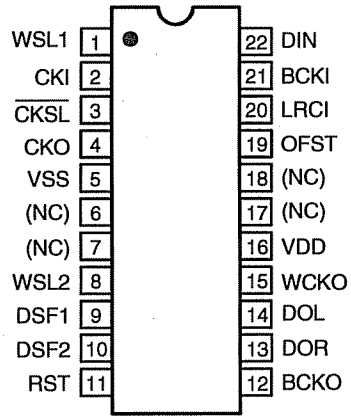
MC14577CP
(AU: IC304)
NJM2068DDC
(PA: IC701, 703, 901)
(VI: IC201)



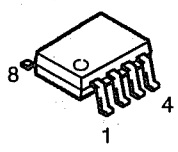


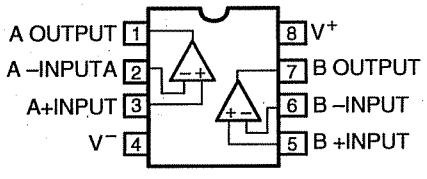
SM5841HS (AU: IC501~503)



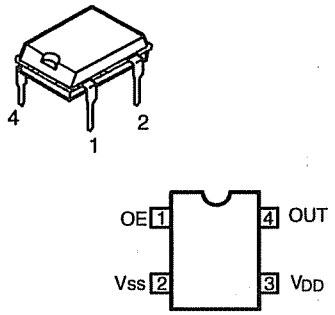


NJM2115M (AU: IC513, 514)
BA15218F (TU: IC504)
(AU: IC604~606, 701~703, 803~806)
(EV: IC103, 105, 106, 109, 110)
NJM2068MD(AU: IC507~512,601)
(EV: IC104)

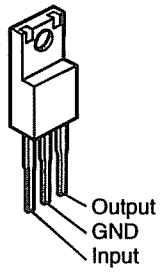




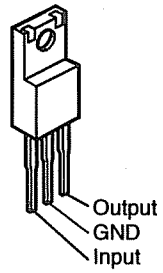
SG-531PH (12.288MHz)
(DS: IC515)



NJM7805FA (S) (MA: IC116, 117)
NJM7806FA (S) (PA: IC704)
(VI: IC403, 404)
NJM7812FA (S) (TU: IC506)
NJM7815FA (MA: IC114)
BA033T (AU: IC460)

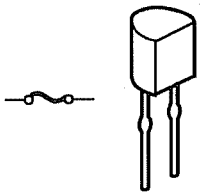


NJM7905FA (MA: IC118)
NJM7915FA (MA: IC115)



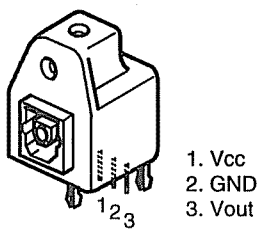
● IC PROTECTOR

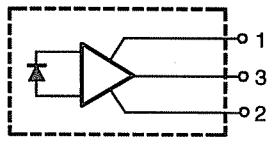
ICP-N15 (TU: IC507) (PA: IC705)



● OPTICAL

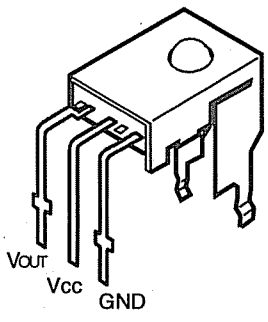
INPUT
GP1F32R
(AU: IC301)

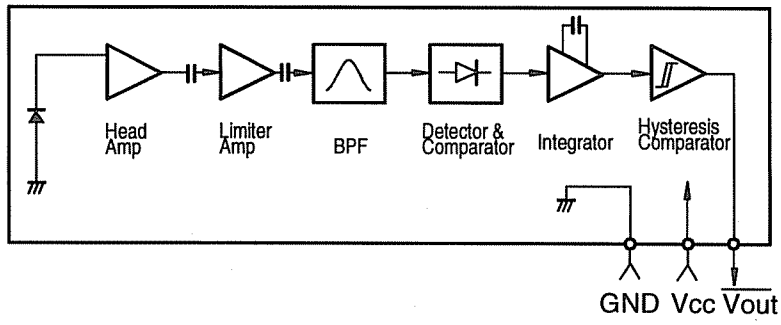




● OTHER

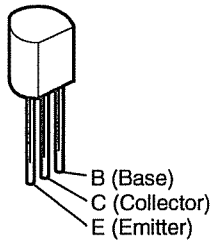
GP1U271X (Remote Control Sensor)
(VI: IC101)



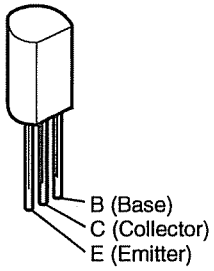


TRANSISTORS

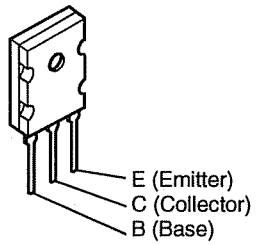
2PA1015GR
2PC1815BL
2SA970 (BL)
2SA988 (E/F)
2SC2878 (A/B)



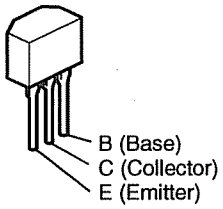
2SA1145 (O)/(Y)
2SB1041 (R)
2SC2705 (O)/(Y)
2SD1292 (R)



2SA1491
2SC3855

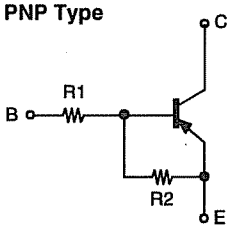


DTA114ES
DTC143ES
DTC144ES
RN2202



DTA114ES
RN2202

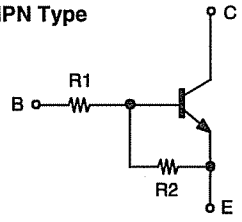
PNP Type



	R1	R2
DTA114ES	10kohm	10kohm
RN2202	10kohm	10kohm

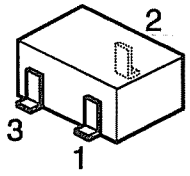
DTC143ES
DTC144ES

NPN Type



	R1	R2
DTC143ES	4.7kohm	4.7kohm
DTC144ES	47kohm	47kohm

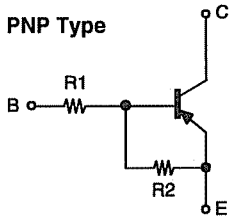
DTA114EK
DTA124EK
DTA143EK
DTA144EK
DTC114EK
DTC144EK
DTC323TK
RN2402



1: GND/Emitter
2: Out/Collector
3: In/Base

DTA114EK
DTA124U
DTA143EK
DTA144EK

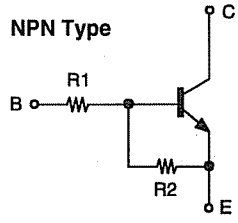
PNP Type



	R1	R2
DTA114EK	10kohm	10kohm
DTA124EK	22kohm	22kohm
DTA143EK	4.7kohm	4.7kohm
DTA144EK	47kohm	47kohm
RN2402	10kohm	10kohm

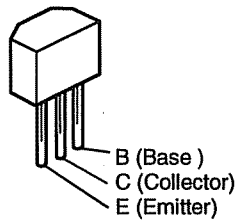
DTC114EK
DTC144EK
DTC323TK

NPN Type

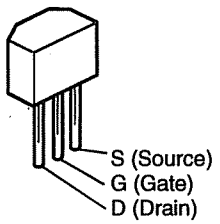


	R1	R2
DTC114EK	10kohm	10kohm
DTC144EK	47kohm	47kohm
DTC323TK	2.2kohm	-

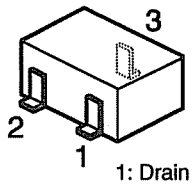
2SA933S (S)
2SC1740S (E)
2SC2058S (Q)



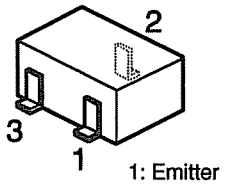
2SK184 (GR)/(BL)
2SK381 (B)/(C)



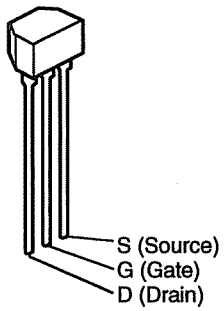
2SK209 (GR)



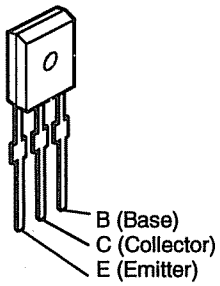
2SB709A
2SD601A



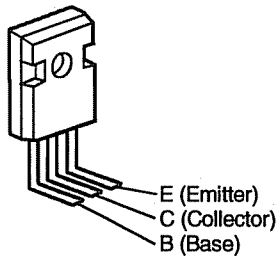
2SK365 (BL/GR)



2SB1328 (P/Q)
2SD2004 (P/Q)

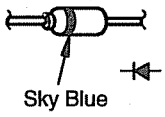


2SA1633F31

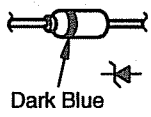


DIODES (included LED)

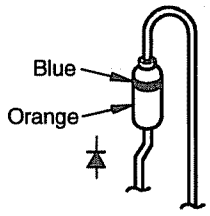
1SS270A
1S2076A



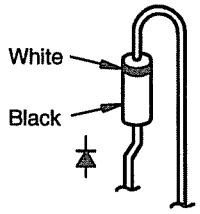
MTZJ3.3A **MTZJ36A**
MTZJ5.6A **HZS5A-1**
MTZJ7.5A **HZS7C-1**
MTZJ9.1A **HZS12A-1**



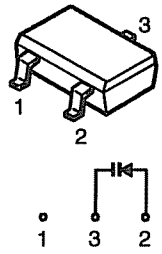
1SR35-200A



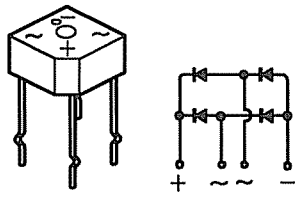
DSM1D2 (Type 3)



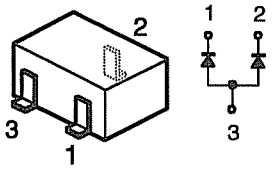
KV1851-TL
(AU: CD303)



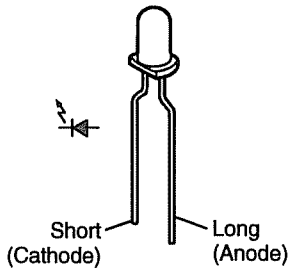
S4VB20
(MA: D117)



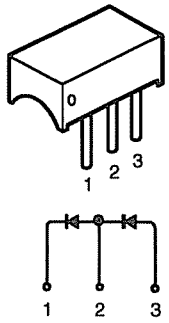
MA151A



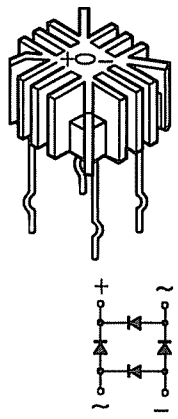
SEL1210S (Red)
(VI: LD101, 106)
SEL1410E (Green)
(VI: LD102, 105)



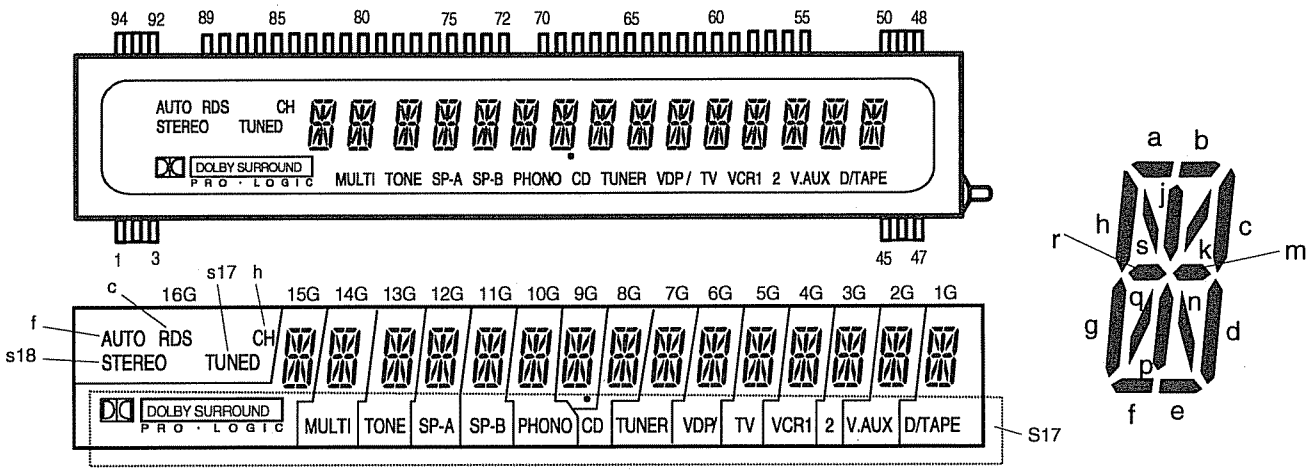
LD-603MG (Green)
(VI: LD103)
LD-603VR (Red)
(VI: LD104)



S10VB20F9
(TU: D601)



● FL DISPLAY FIP16FM7R (Part No.: 3934156001)(FL751)



(UPPER)

TERMINAL No.	94	93	92	91	90	89	88	87	86	85	84	83	82	81						
ELECTRODE	F1	F1	F1	NP	NP	P a	P b	P c	P j	P k	P s	P h	P r	P m						
TERMINAL No.	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
ELECTRODE	P d	P n	P q	P p	P g	P f	P e	P s17	P s18	NP	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G
TERMINAL No.								60	59	58	57	56	55	54	53	52	51	50	49	48
ELECTRODE								6G	5G	4G	3G	2G	1G	NP	NP	NP	NP	F2	F2	F2

(LOWER)

TERMINAL No.								35	36	37	38	39	40	41	42	43	44	45	46	47
ELECTRODE								NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	F2	F2	F2
TERMINAL No.	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
ELECTRODE	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
ELECTRODE	F1	F1	F1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP						

Notes: F: Filament G: Grid A: Anode NP: No Pin

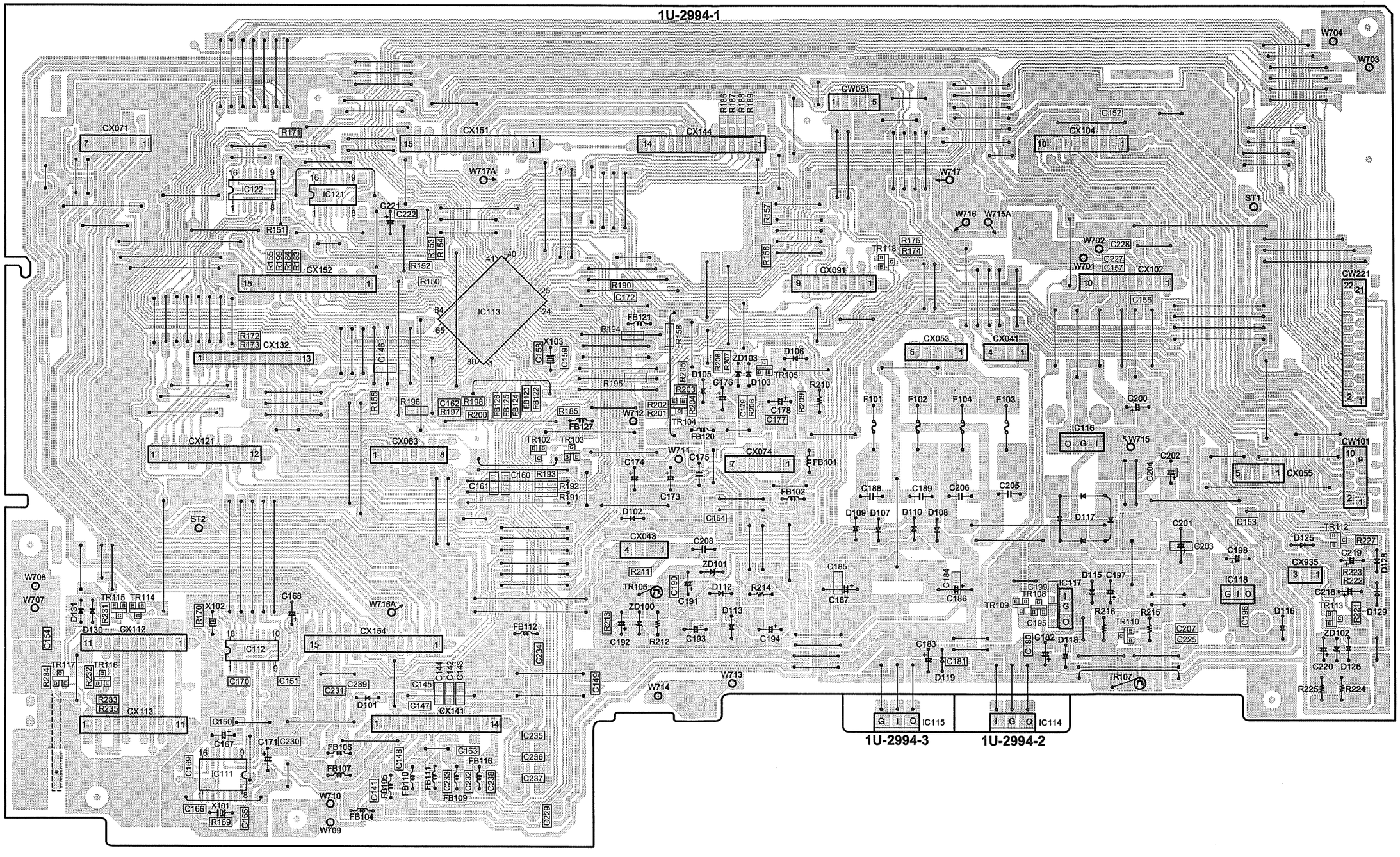
PRINTED WIRING BOARD

1 2 3 4 5 6 7 8

A B C D E

1U-2994

1U-2994-1



1U-2995

1U-2995-1

1U-2995-2

1U-2995-3

1U-2995-4

1U-2995-5

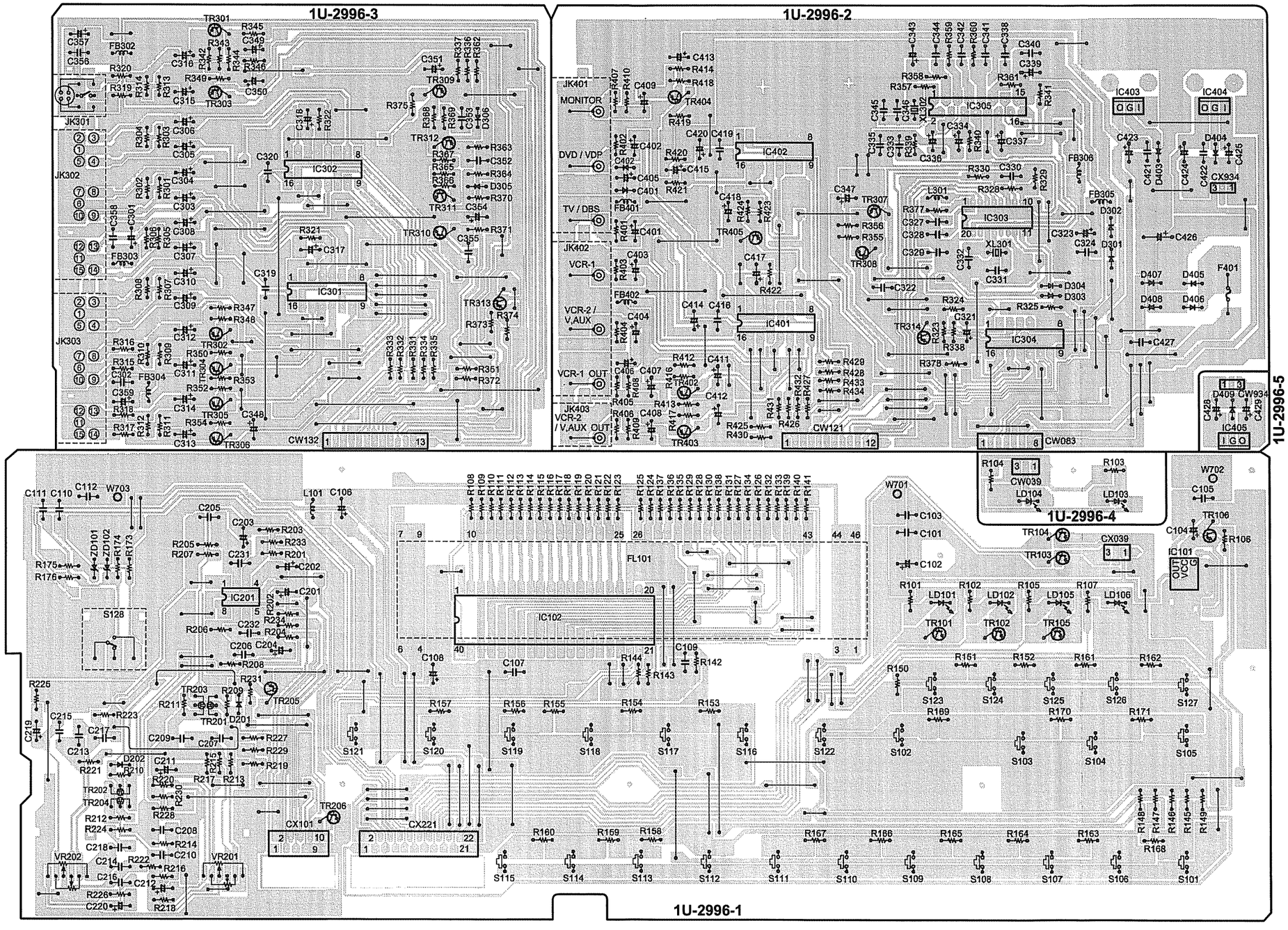
1U-2995-6

1U-2995-7

1U-2995-8

1U-2995-9

1U-2996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1U-2996-2
1U-2996-5
1U-2996-4
1U-2996-1
JK301
JK302
JK303
JK401
JK402
JK403
MONITOR
DVD / VDP
TV / DBS
VCR-1
VCR-2 / V.AUX
VCR-1 OUT
VCR-2 / V.AUX OUT
IC301
IC302
IC303
IC304
IC305
IC401
IC402
IC403
IC404
IC405
IC101
IC102
IC201
FL101
CW132
CW121
CW083
CW039
CW934
CX101
CX221
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CX039
S101
S102
S103
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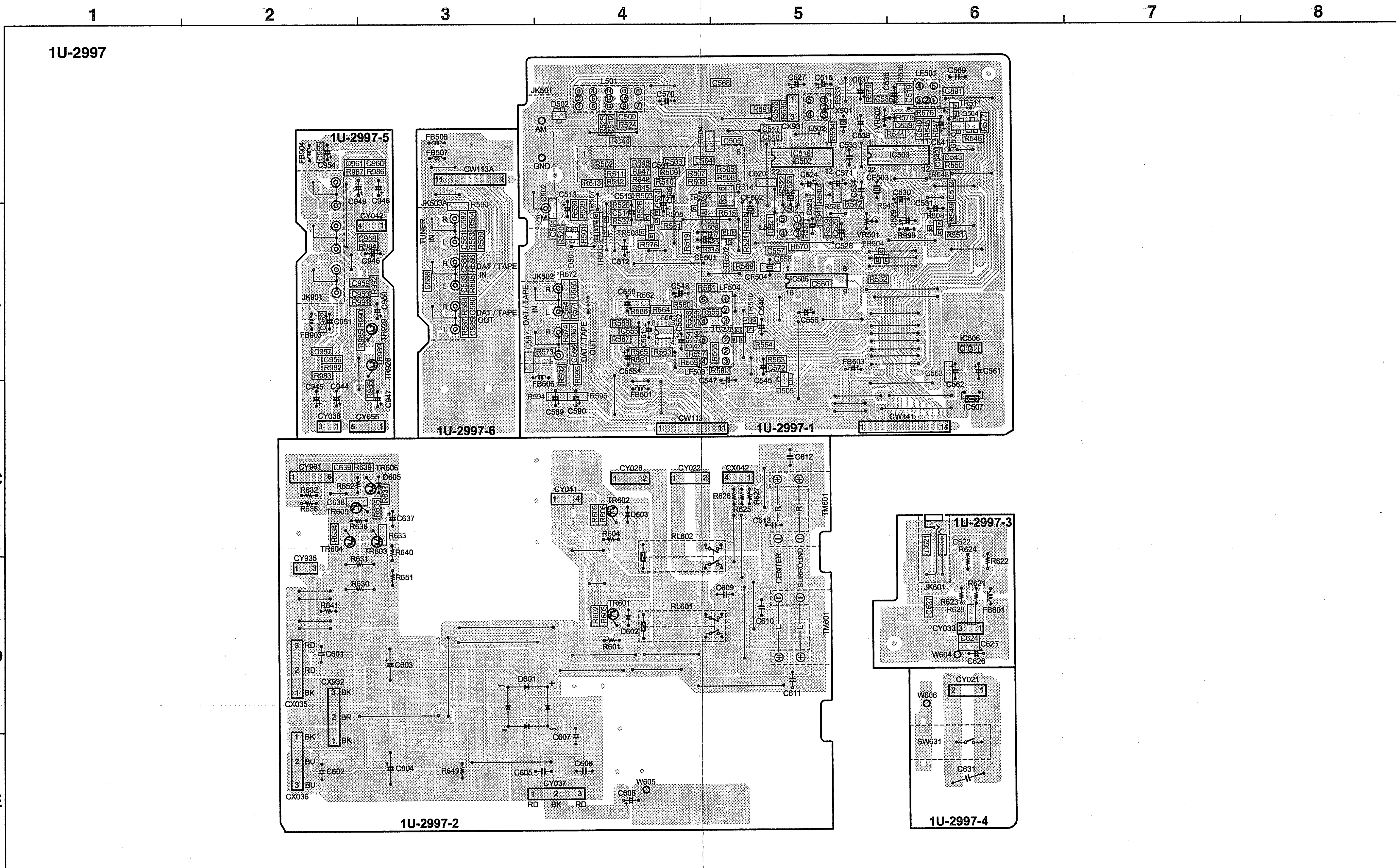
W702
W703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1U-2997-4
1U-2997-5
1U-2997-6

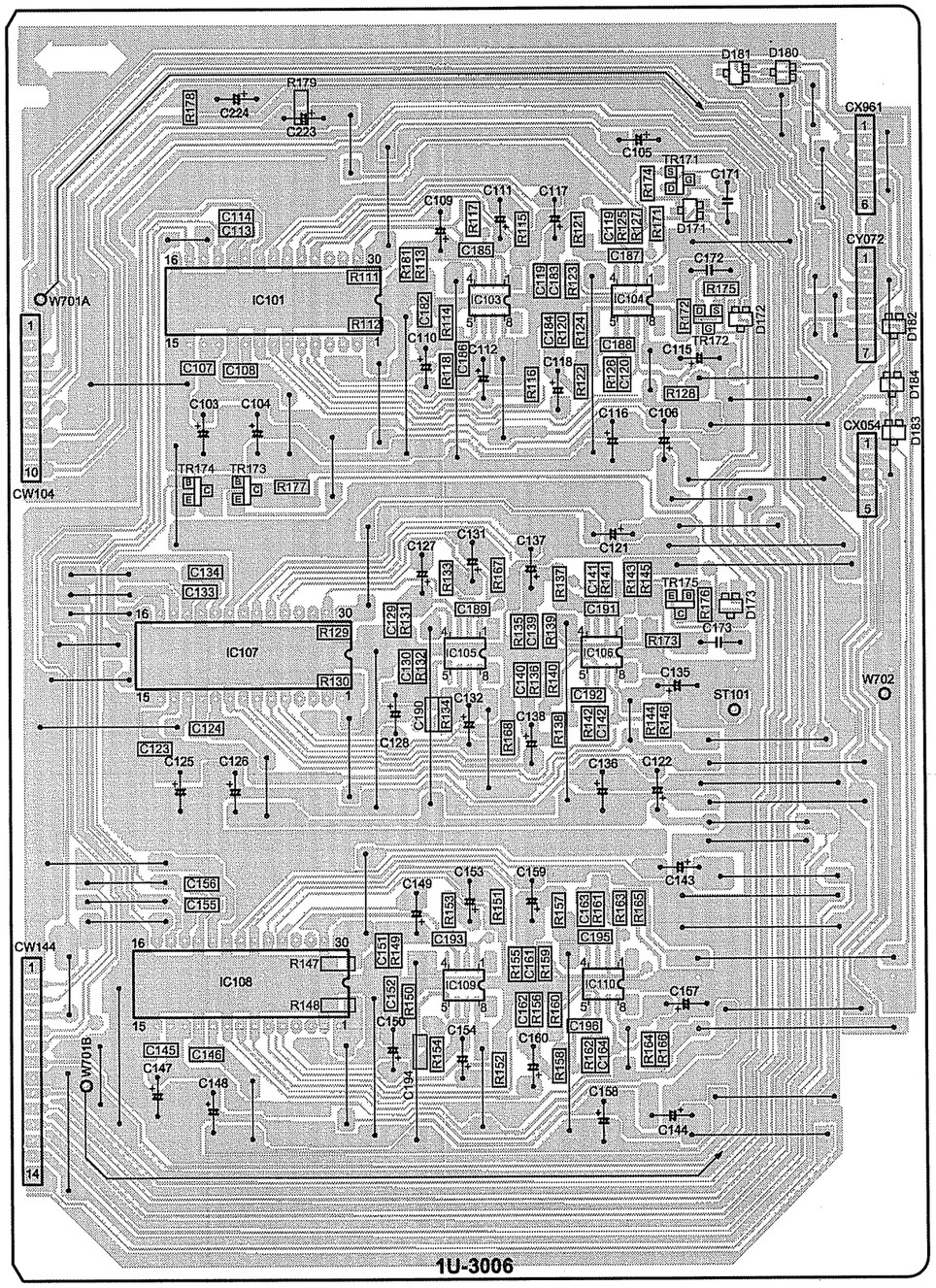
1U-2998

1U-2998-3

1U-2998-2

1U-2998-1

1U-3006



NOTE FOR PARTS LIST

- Part indicated with the mark "⊙" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▬ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.: RN (Type) 14K (Shape and performance) 2E (Power) 182 (Resistance) G (Allowable error) FR (Others)

RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metal oxide film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

∗ Resistance

1 8 2 ⇒ 1800 ohm = 1.8 kohm
Indicates number of zeros after effective number.
2-digit effective number.
• Units: ohm

1 R 2 ⇒ 1.2 ohm
1-digit effective number.
2-digit effective number, decimal point indicated by R.
• Units: ohm

● Capacitors

Ex.: CE (Type) 04W (Shape and performance) 1H (Dielectric strength) 2R2 (Capacity) M (Allowable error) BP (Others)

CE : Aluminum foil electrolytic	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolytic	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolytic	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For change and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80% −20%	U : UL part
CP : Oil	2A : 100V	P : +100% −0%	C : CSA part
CM : Mica	2B : 125V	C : ±0.25pF	W : UL-CSA type
CF : Metallized	2C : 160V	D : ±0.5pF	F : Lead wire forming
CH : Metallized	2D : 200V	= : Others	
	2E : 250V		
	2H : 500V		
	2J : 630V		

∗ Capacity (electrolyte only)

2 2 2 ⇒ 2200μF
Indicates number of zeros after effective number.
2-digit effective number.
• Units: μF.

2 R 2 ⇒ 2.2μF
1-digit effective number.
2-digit effective number, decimal point indicated by R.
• Units: μF.

∗ Capacity (except electrolyte)

2 2 2 ⇒ 2200pF=0.0022μF
(More than 2) — Indicates number of zeros after effective number.
2-digit effective number.
• Units: pF.

2 2 1 ⇒ 220pF
(0 or 1) — Indicates number of zeros after effective number.
2-digit effective number.
• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dieelectric strength value.

PARTS LIST OF P.W.B. UNIT ASS'Y

1U-2994 MAIN UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC113	262 2373 100	IC TMP87CS71F-****	master-ucom
IC114	263 0812 006	IC NJM7815FA(S)	
IC115	263 0561 001	IC NJM7915FA	
IC116,117	263 0809 006	IC NJM7805FA(S)	
IC118	263 0554 005	IC NJM7905FA	
IC121,122	262 2375 904	IC TC4094BF	
TR102	269 0083 901	Transistor DTA114EK	
TR103	269 0054 901	Transistor DTC144EK	
TR104	274 0163 904	Transistor 2SD601A	
TR105	269 0054 901	Transistor DTC144EK	
TR106	271 0131 924	Transistor 2SA988(E/F)	
TR108	269 0047 905	Transistor DTA143EK	
TR109	269 0054 901	Transistor DTC144EK	
TR112,113	269 0083 901	Transistor DTA114EK	
TR114	269 0054 901	Transistor DTC144EK	
TR115	269 0055 900	Transistor DTA144EK	
TR116,117	275 0094 908	FET 2SK209-GR	
TR118	269 0055 900	Transistor DTA144EK	
D117	276 0305 001	Diode S4VB20	
D102	276 0553 905	Diode 1SR35-200A	
D103	276 0432 903	Diode 1SS270A	
D105	276 0432 903	Diode 1SS270A	
D106	276 0553 905	Diode 1SR35-200A	
D107~110	276 0548 910	Diode DSM1D2	
D112,113	276 0553 905	Diode 1SR35-200A	
D115,116	276 0432 903	Diode 1SS270A	
D118,119	276 0432 903	Diode 1SS270A	
D125,126	276 0553 905	Diode 1SR35-200A	
D128~131	276 0432 903	Diode 1SS270A	
ZD100	276 0645 978	Zener diode MTZJ36A	36V
ZD101	276 0644 937	Zener diode MTZJ9.1A	9.1V
ZD102	276 0643 996	Zener diode MTZJ5.6A	5.6V
ZD103	276 0634 905	Zener diode MTZJ3.3A	3.3V
RESISTORS GROUP			
R150~156	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R158	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R171~175	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R183~189	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R190	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R191~193	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R194,195	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R196	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R198~201	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R202	247 0013 900	Carbon chip 220kohm 1/10W	RM73B--224J
R203	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R204	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R205	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R206	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R207~209	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R210	241 2387 940	Carbon film 4.7ohm 1/4W(NB)	RD14B2E4R7JNBS
R211	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R212	241 2387 940	Carbon film 4.7ohm 1/4W(NB)	RD14B2E4R7JNBS
R213	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R214	241 2375 907	Carbon film 10ohm 1/4W(NB)	RD14B2E100JNBS
R216	241 2376 919	Carbon film 30ohm 1/4W(NB)	RD14B2E300JNBS
R221	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R222,223	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R224,225	244 2055 996	Metal oxide 1.2kohm 1W	RS14B3A122JNBS(S)
R227	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R231	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R232	247 0013 900	Carbon chip 220kohm 1/10W	RM73B--224J
R233	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R234	247 0013 900	Carbon chip 220kohm 1/10W	RM73B--224J
R235	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
CAPACITORS GROUP			
C141,142	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C144	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C149	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C153	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C155,156	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C158,159	257 0004 903	Ceramic chip 56pF/50V	CC73SL1H560J
C160	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C164	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C172	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C173	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C174	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C175	256 1034 982	Metalized 0.12μF/50V	CF93A1H124J
C176	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C177	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C178	259 0007 702	Back up cap. 8200μF/5.5V	SB CAP=822=C
C179~181	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C182,183	254 4258 947	Electrolytic 47μF/35V	CE04W1V470M
C184,185	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C186,187	254 4259 700	Electrolytic 2200μF/35V	CE04W1V222MC
C188,189	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C190	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C191,192	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C193	254 4261 743	Electrolytic 330μF/50V	CE04W1H331M
C194	254 4262 771	Electrolytic 330μF/63V	CE04W1J331MC
C195,196	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C197,198	254 4258 947	Electrolytic 47μF/35V	CE04W1V470M
C199	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C200	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C201	254 4403 705	Electrolytic 6800μF/25V	CE04W1E682MC
C202	254 4256 787	Electrolytic 1000μF/25V	CE04W1E102MC
C203,204	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C205,206	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C208	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J

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Ref. No.	Part No.	Part Name	Remarks
C218,219	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7M
C220	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C221	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C222	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C234,235	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C239	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
OTHER PARTS GROUP			**Q'ty**
CW101	205 1056 001	10P connector socket TKC-V	1
CW221	205 1056 014	22P connector socket TKC-V	1
CX041	205 0343 045	4P connector base(KR-PH)	1
CX043	205 0233 045	4P EH connector base	1
CX053	205 0233 058	5P EH connector base	1
CX055	205 0343 058	5P connector base(KR-PH)	1
CX071	205 0943 021	7P connector base (TUC-P)	1
CX074	205 0343 074	7P connector base(KR-PH)	1
CX083	205 0884 096	8P connector base (TUC-P)	1
CX091	205 0884 038	9P connector base (TUC-P)	1
CX102	205 0884 054	10P connector base (TUC-P)	1
CX104	205 0884 054	10P connector base (TUC-P)	1
CX112,113	205 0884 067	11P connector base (TUC-P)	2
CX121	205 0884 070	12P connector base (TUC-P)	1
CX132	205 0943 005	13P connector base (TUC-P)	1
CX141	205 0884 012	14P connector base (TUC-P)	1
CX144	205 0884 012	14P connector base (TUC-P)	1
CX151,152	205 0884 041	15P connector base (TUC-P)	2
CX154	205 0884 041	15P connector base (TUC-P)	1
CX935	205 0343 032	3P connector base(KR-PH)	1
F101,102	202 0040 909	Fuse clip	4
F103,104	202 0040 909	Fuse clip	4
F101~104	206 1039 076	Fuse 2.5A	4
FB101~103	235 0049 900	Beads inductor	3
FB104~107	235 0049 900	Beads inductor	4
FB109~111	235 0049 900	Beads inductor	3
FB112~115	235 0049 900	Beads inductor	4
FB116	235 0049 900	Beads inductor	1
FB120,121	235 0049 900	Beads inductor	2
FB122~125	235 0106 908	Chip emifil (21A05)	4
FB126	235 0106 908	Chip emifil (21A05)	1
FB127	235 0049 900	Beads inductor	1
X103	399 0191 903	Ceramic resonator	CST4.00MGW-TF01 1
ST001,002	205 0452 017	Style Pin	2
	417 0476 010	Radiator	IC116, IC118 2
	471 3304 015	Screw 3X8 CBS-Z	2

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC701	263 0609 002	IC NJM2068DDC	
IC703	263 0609 002	IC NJM2068DDC	
IC704	263 0793 002	IC NJM7806FA(S)	
IC705	268 0073 905	IC ICP-N15	IC protector
IC901	263 0609 002	IC NJM2068DDC	
TR651	273 0429 904	Transistor 2SC3311A	
TR653,654	273 0429 904	Transistor 2SC3311A	
TR701,702	273 0253 918	Transistor 2SC2878(A/B)	
TR703,704	273 0235 923	Transistor 2SC1841(E/F)	
TR705~708	271 0131 924	Transistor 2SA988(E/F)	
TR709,710	273 0235 923	Transistor 2SC1841(E/F)	
TR717,718	274 0151 916	Transistor 2SD2004(P/Q)	
TR719,720	272 0107 919	Transistor 2SB1328(P/Q)	
TR721,722	273 0235 923	Transistor 2SC1841(E/F)	
TR728	271 0131 924	Transistor 2SA988(E/F)	
TR731,732	273 0323 000	Transistor 2SC3421 O/Y	
TR781	269 0040 902	Transistor DTC144ES (47K-47K)	
TR782	273 0429 904	Transistor 2SC3311A	
TR784	273 0429 904	Transistor 2SC3311A	
TR785	271 0192 905	Transistor 2SA933S(S)	
TR786,787	273 0429 904	Transistor 2SC3311A	
TR788	271 0192 905	Transistor 2SA933S(S)	
TR789,790	273 0429 904	Transistor 2SC3311A	
TR801	273 0253 918	Transistor 2SC2878(A/B)	
TR803	273 0235 923	Transistor 2SC1841(E/F)	
TR805	271 0131 924	Transistor 2SA988(E/F)	
TR807	271 0131 924	Transistor 2SA988(E/F)	
TR809	273 0235 923	Transistor 2SC1841(E/F)	
TR817	274 0151 916	Transistor 2SD2004(P/Q)	
TR819	272 0107 919	Transistor 2SB1328(P/Q)	
TR821	273 0235 923	Transistor 2SC1841(E/F)	
TR831	273 0323 000	Transistor 2SC3421 O/Y	
TR901,902	273 0253 918	Transistor 2SC2878(A/B)	
TR903,904	273 0235 923	Transistor 2SC1841(E/F)	
TR905~908	271 0131 924	Transistor 2SA988(E/F)	
TR909,910	273 0235 923	Transistor 2SC1841(E/F)	
TR917,918	274 0151 916	Transistor 2SD2004(P/Q)	
TR919,920	272 0107 919	Transistor 2SB1328(P/Q)	
TR921,922	273 0235 923	Transistor 2SC1841(E/F)	
TR931,932	273 0323 000	Transistor 2SC3421 O/Y	
D651	276 0432 903	Diode 1SS270A	
D653	276 0432 903	Diode 1SS270A	
D654~659	276 0553 905	Diode 1SR35-200A	

Ref. No.	Part No.	Part Name	Remarks
D703,704	276 0049 914	Diode 1S2076A	
D707~712	276 0432 903	Diode 1SS270A	
D781	276 0432 903	Diode 1SS270A	
D803	276 0049 914	Diode 1S2076A	
D807	276 0432 903	Diode 1SS270A	
D809	276 0432 903	Diode 1SS270A	
D811	276 0432 903	Diode 1SS270A	
D903,904	276 0049 914	Diode 1S2076A	
D907~912	276 0432 903	Diode 1SS270A	
ZD660	276 0644 911	Zener diode MTZJ7.5A	7.5V
RESISTORS GROUP			
R651	241 2375 978	Carbon film 20ohm 1/4W(NB)	RD14B2E200JNBS
R654	242 0073 000	Composition 2.2Mohm 1/2W	RC05GF2H225K
R659	244 2050 933	Metal oxide 180ohm 1W	RS14B3A181JNBS(S)
R725,726	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R727,728	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS
R739,740	241 2378 920	Carbon film 220ohm 1/4W(NB)	RD14B2E221JNBS
R741~744	241 2387 908	Carbon film 1ohm 1/4W(NB)	RD14B2E010JNBS
R745~752	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R757~760	241 2380 950	Carbon film 2kohm 1/4W(NB)	RD14B2E202JNBS
R761,762	244 2051 987	Metal oxide 4.7ohm 1W	RS14B3A4R7JNBS(S)
R769,770	244 2043 937	Metal oxide 10ohm 1W	RS14B3A100JNBS(S)
R777,778	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R779,780	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS
R792	244 2052 986	Metal oxide 750ohm 1W	RS14B3A751JNBS(S)
R795,796	244 2052 960	Metal oxide 220ohm 1W	RS14B3A221JNBS(S)
R821,922	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R825	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R827	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R829	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS
R839	241 2378 920	Carbon film 220ohm 1/4W(NB)	RD14B2E221JNBS
R841	241 2387 908	Carbon film 1ohm 1/4W(NB)	RD14B2E010JNBS
R841,942	241 2387 908	Carbon film 1ohm 1/4W(NB)	RD14B2E010JNBS
R843	241 2387 908	Carbon film 1ohm 1/4W(NB)	RD14B2E010JNBS
R845	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R847	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R849	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R851	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R857	241 2380 950	Carbon film 2kohm 1/4W(NB)	RD14B2E202JNBS
R859	241 2380 950	Carbon film 2kohm 1/4W(NB)	RD14B2E202JNBS
R861	244 2051 987	Metal oxide 4.7ohm 1W	RS14B3A4R7JNBS(S)
R869	244 2043 937	Metal oxide 10ohm 1W	RS14B3A100JNBS(S)
R875	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS
R923,924	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS

Ref. No.	Part No.	Part Name	Remarks
R939,940	241 2378 920	Carbon film 220ohm 1/4W(NB)	RD14B2E221JNBS
R943~950	244 2043 982	Metal oxide 0.22ohm 1W	RS14B3AR22JNBS(S)
R951,952	244 2051 987	Metal oxide 4.7ohm 1W	RS14B3A4R7JNBS(S)
R953,954	241 2380 950	Carbon film 2kohm 1/4W(NB)	RD14B2E202JNBS
R959,960	241 2380 950	Carbon film 2kohm 1/4W(NB)	RD14B2E202JNBS
R967,968	244 2043 937	Metal oxide 10ohm 1W	RS14B3A100JNBS(S)
R971,972	241 2387 908	Carbon film 1ohm 1/4W(NB)	RD14B2E010JNBS
R973,974	241 2379 932	Carbon film 620ohm 1/4W(NB)	RD14B2E621JNBS
R975,976	241 2377 989	Carbon film 150ohm 1/4W(NB)	RD14B2E151JNBS
VR701,702	211 6129 909	Semi fixed resistor 4.7kohm	K06QB472
VR801	211 6129 909	Semi fixed resistor 4.7kohm	K06QB472
VR901	211 6129 909	Semi fixed resistor 4.7kohm	K06QB472
VR902	211 6129 909	Semi fixed resistor 4.7kohm	K06QB472
CAPACITORS GROUP			
C652~654	255 1265 936	Mylar film 0.01μF/50V	CQ93M1H103J(B)
C656	255 1265 936	Mylar film 0.01μF/50V	CQ93M1H103J(B)
C657	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C658	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C660	253 8014 702	Ceramic 0.01μF/400V(AC)	CK45F2GAC103MC
C661	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
C662	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C663	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C664	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C665	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C667	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C668,669	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C701,702	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C703,704	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M
C705,706	253 4444 907	Ceramic 220pF/50V	CC45SL1H221J
C707,708	253 4537 908	Ceramic 27pF/50V	CC45SL1H270J
C709,710	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C711,712	254 4261 918	Electrolytic 47μF/50V	CE04W1H470M
C713,714	253 4537 966	Ceramic 47pF/50V	CC45SL1H470J
C721,722	255 1265 936	Mylar film 0.01μF/50V	CQ93M1H103J(B)
C723,724	254 4263 987	Electrolytic 10μF/100V	CE04W2A100M
C725,726	253 1128 909	Ceramic 220pF/500V	CK45B2H221K
C731,732	255 1265 978	Mylar film 0.022μF/50V	CQ93M1H223J(B)
C733,734	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C735~738	254 4263 987	Electrolytic 10μF/100V	CE04W2A100M
C738,740	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C742	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C781	253 9039 906	BC ceramic cap. 0.1μF/25V	CK45=1E104Z
C782	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C783	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C784	253 9039 906	BC ceramic cap. 0.1μF/25V	CK45=1E104Z
C785	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331M
C786	253 9039 906	BC ceramic cap. 0.1μF/25V	CK45=1E104Z

Ref. No.	Part No.	Part Name	Remarks
C787	254 4250 945	Electrolytic 330µF/6.3V	CE04W0J331M
C789~792	256 1034 979	Metalized 0.1µF/50V	CF93A1H104J
C793,794	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C801	254 4260 980	Electrolytic 10µF/50V	CE04W1H100M
C803	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M
C805	253 4444 907	Ceramic 220pF/50V	CC45SL1H221J
C807	253 4537 908	Ceramic 27pF/50V	CC45SL1H270J
C809	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C811	254 4261 918	Electrolytic 47µF/50V	CE04W1H470M
C813	253 4537 966	Ceramic 47pF/50V	CC45SL1H470J
C821	255 1265 936	Mylar film 0.01µF/50V	CQ93M1H103J(B)
C823	254 4263 987	Electrolytic10µF/100V	CE04W2A100M
C825	253 1128 909	Ceramic 220pF/500V	CK45B2H221K
C831	255 1265 978	Mylar film 0.022µF/50V	CQ93M1H223J(B)
C833	253 1181 904	Ceramic 0.01µF/50V	CK45F1H103Z
C835	254 4263 987	Electrolytic 10µF/100V	CE04W2A100M
C837	254 4263 987	Electrolytic 10µF/100V	CE04W2A100M
C839	256 1034 979	Metalized 0.1µF/50V	CF93A1H104J
C841,842	256 1034 979	Metalized 0.1µF/50V	CF93A1H104J
C843,844	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C901,902	254 4260 980	Electrolytic 10µF/50V	CE04W1H100M
C903,904	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M
C905,906	253 4444 907	Ceramic 220pF/50V	CC45SL1H221J
C907,908	253 4537 908	Ceramic 27pF/50V	CC45SL1H270J
C909,910	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C911,912	254 4261 918	Electrolytic 47µF/50V	CE04W1H470M
C913,914	253 4537 966	Ceramic 47pF/50V	CC45SL1H470J
C917,918	255 1265 936	Mylar film 0.01µF/50V	CQ93M1H103J(B)
C921,922	254 4263 987	Electrolytic 10µF/100V	CE04W2A100M
C923,924	253 1128 909	Ceramic 220pF/500V	CK45B2H221K
C929,930	255 1265 978	Mylar film 0.022µF/50V	CQ93M1H223J(B)
C931,932	253 1181 904	Ceramic 0.01µF/50V	CK45F1H103Z
C933~936	254 4263 987	Electrolytic 10µF/100V	CE04W2A100M
C937,938	256 1034 979	Metalized 0.1µF/50V	CF93A1H104J
C939~943	253 4537 966	Ceramic 47pF/50V	CC45SL1H470J
C956,957	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C958~961	256 1034 979	Metalized 0.1µF/50V	CF93A1H104J
C962	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z

OTHER PARTS GROUP				Q'ty
⚠AC651	203 3976 002	AC outlet (2P)		1
CX021,022	205 0581 001	2P VH connector base		2
CX023,024	205 0606 025	2P wrapping terminal		2
CX027	205 0581 001	2P VH connector base		1
CX028	205 0581 056	2P VH connector base		1
CX031	205 0343 032	3P connector base(KR-PH)		1
CX033	205 0343 032	3P connector base(KR-PH)		1
CX038	205 0343 032	3P connector base(KR-PH)		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
CX051	205 0355 059	5P KR connector base(L)		1
CX060~069	205 1037 062	6P KR pin header (TXX)		10
CX072	205 0355 075	7P KR connector base(L)		1
CX701	205 0087 026	2P wrapping terminal		
CX702	205 0087 039	3 P wrapping terminal		1
CY027	205 0581 001	2P VH connector base		1
CY031	205 0343 032	3P connector base(KR-PH)		
CY054	205 0343 058	5P connector base(KR-PH)		1
F001,008	202 0040 909	Fuse clip		4
F001,008	206 1046 014	Fuse 8A		2
L701,702	235 0068 004	Inductor 1µH		2
L801	235 0068 004	Inductor 1µH		1
L901	235 0068 004	Inductor 1µH		1
L902	235 0068 004	Inductor 1µH		1
RL651	214 0188 000	Relay VS-12MBNR-SM2(TV-8)		1
RL701	214 0190 001	Relay (MR82-12USR)		1
RL902	214 0129 001	Relay (DH2TU)		1
SC783	279 0016 904	Thyristor SF0R1A42		1
SP651	205 0632 002	8P SP terminal (V-1)		1
⚠T651	233 5818 004	Power trans. (Mini)-EU		1
TH781	279 0034 054	Posistor PTH9M04BC222TS2F333		1
TP701,702	205 0154 030	3P NH connector base		2
TP801	205 0154 030	3P NH connector base		1
TP901,902	205 0154 030	3P NH connector base		2
	412 4165 102	Bus bar		4
	412 4263 004	Bus bar (30X1)		2
	415 0309 026	P.V.C. tube (L=20)	for TH781	2
	417 0476 010	Radiator	for IC704	1
	471 3304 015	Screw 3X8 CBS-Z		1

1U-2996 VIDEO & DISPLAY UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	499 0290 007	Remocon sensor GP1U271X	
IC102	262 2035 008	IC MSC1937-03RS	
IC201	263 0609 002	IC NJM2068DDC	
IC301	263 0857 003	IC BA7626	
IC302	263 0856 004	IC BA7625	
IC303	262 2311 007	IC M35015-***SP	
IC304	262 2067 005	IC MC74HC4053N	
IC305	263 0682 003	IC NJM2229S	
IC401	263 0856 004	IC BA7625	
IC402	262 0522 005	IC TC4053BP	
IC403	263 0793 002	IC NJM7806FA(S)	
IC405	263 0793 002	IC NJM7806FA(S)	
TR101~105	269 0020 906	Transistor DTC114ES(10K-10K)	
TR106	269 0046 906	Transistor DTA114ES(10K-10K)	
TR201~204	275 0061 902	FET 2SK184(GR)/(BL)	
TR205	269 0046 906	Transistor DTA114ES(10K-10K)	
TR206	269 0020 906	Transistor DTC114ES(10K-10K)	
TR301~307	271 0290 904	Transistor 2PA1015GR	
TR309	271 0290 904	Transistor 2PA1015GR	
TR310	269 0020 906	Transistor DTC114ES(10K-10K)	
TR311	273 0446 903	Transistor 2PC1815BL	
TR312	271 0290 904	Transistor 2PA1015GR	
TR314	271 0290 904	Transistor 2PA1015GR	
TR402~405	271 0290 904	Transistor 2PA1015GR	
D201,202	276 0432 903	Diode 1SS270A	
D301~306	276 0432 903	Diode 1SS270A	
D401~403	276 0432 903	Diode 1SS270A	
D405~408	276 0548 910	Diode DSM1D2	
D409	276 0432 903	Diode 1SS270A	
ZD101,102	276 0637 902	Zener diode MTZJ6.2A	6.2V
LD101	393 9434 906	LED SEL1210S	Red
LD102	393 9452 904	LED SEL1410E	green
LD103	393 9567 006	LED LD-603MG	PRO-LOGK
LD104	393 9566 007	LED LD-603VR	DIGITAL
LD105	393 9452 904	LED SEL1410E	green
LD106	393 9434 906	LED SEL1210S	Red
FL101	393 4156 001	FLD FIP16FM7R	

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP			
VR201	211 0883 018	Variable resistor 30kohm	V14P25FC303K
VR202	211 0883 005	Variable resistor 10kohm	V14P25FC103K
CAPACITORS GROUP			
C101	253 9039 906	BC ceramic cap. 0.1μF/25V	CK45=1E104Z
C102	254 4252 969	Electrolytic 470μF/10V	CE04W1A471M
C104	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C105	253 9039 906	BC ceramic cap. 0.1μF/25V	CK45=1E104Z
C106	254 4261 921	Electrolytic 100μF/50V	CE04W1H101M
C107	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C108	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331M
C109	253 1179 903	Ceramic 100pF/50V	CK45B1H101K
C110,111	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C201,202	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C203,204	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C205,206	253 4537 924	Ceramic 33pF/50V	CC45SL1H330J
C207,208	255 1264 940	Mylar film 2200pF/50V	CQ93M1H222J(B)
C209,210	256 1035 907	Metallized 0.18μF/50V	CF93A1H184J
C211,212	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C215,216	255 1265 949	Mylar film 0.012μF/50V	CQ93M1H123J(B)
C217,218	256 1034 940	Metallized 0.056μF/50V	CF93A1H563J
C219,220	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C231,232	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C233,234	254 3052 937	Electrolytic 100μF/50V	CE04W1A101MBP
C301	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C302	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C303~310	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7M
C311	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C312	254 4250 958	Electrolytic 470μF/6.3V	CE04W0J471M
C313	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C314	254 4250 958	Electrolytic 470μF/6.3V	CE04W0J471M
C315	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C316	254 4250 958	Electrolytic 470μF/6.3V	CE04W0J471M
C317,318	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C319,320	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223Z
C321	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C323	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C324	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C327~329	253 4537 924	Ceramic 33pF/50V	CC45SL1H330J
C330	253 9030 963	BC ceramic cap. 0.01μF/25V	CK45=1E103K
C331	253 4536 909	Ceramic 10pF/50V	CC45SL1H100D
C332	253 4536 925	Ceramic 12pF/50V	CC45SL1H120J
C333	255 1265 978	Mylar film 0.022μF/50V	CQ93M1H223J(B)
C334	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7M
C335	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C336	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C337	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C338	255 1264 908	Mylar film 1000pF/50V	CQ93M1H102J(B)
C339	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M

Ref. No.	Part No.	Part Name	Remarks
C340	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C341	255 1264 911	Mylar film 1200pF/50V	CQ93M1H122J(B)
C342	253 1179 929	Ceramic 150pF/50V	CK45B1H151K
C343	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C344	256 1034 953	Metalized 0.068μF/50V	CF93A1H683J
C345	253 1179 987	Ceramic 470pF/50V	CK45B1H471K
C346	253 9030 934	BC ceramic cap. 1000pF/25V	CK45=1E332K
C347,348	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C349,350	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C351	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C352,353	256 1034 937	Metallized 0.047μF/50V	CF93A1H473J
C354	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C355	256 1034 937	Metallized 0.047μF/50V	CF93A1H473J
C356	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C357	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C358	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C359	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C401~404	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7M
C405,406	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C407~409	254 4250 958	Electrolytic 470μF/6.3V	CE04W0J471M
C411~413	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C414,415	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C416	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223Z
C417	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C418	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C419	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C420	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C421,422	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C423	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C425	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C426	254 4472 707	Electrolytic 4700μF/16V	CE04W1C472MC
C427	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C428,429	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M

OTHER PARTS GROUP				Q'ty
CW083	205 0885 095	8P connector socket (TUC-P)		1
CW121	205 0885 079	12P connector socket (TUC-P)		1
CW132	205 0942 006	13P connector socket(TUC-P)		1
CX039	205 0355 033	3P KR connector base (L)		1
CX101	205 1055 002	10P connector base (TKC-V)		1
CX221	205 1055 015	22P connector base (TKC-V)		1
CX934	205 0343 032	3P connector base(KR-PH)		1
F401	202 0040 909	Fuse clip		2
F401	206 1039 076	Fuse 2.5A		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
FB302~306	235 0049 900	Beads inductor		6
JK301	205 0902 004	1P S-terminal (SW)		1
JK302,303	204 8415 011	3P S-terminal		2
JK401,402	204 8516 017	3P pin jack		2
JK403	204 8512 008	1P pin jack		1
L101	235 0060 989	Inductor 120μH		1
L301	235 0060 963	Inductor 15μH		1
S101~122	212 5604 910	Tact switch		22
S128	212 0373 000	Rotary encorder EC16B		1
XL301	399 0153 006	Crystal 14.32MHZ-12PF		1
XL302	399 0105 009	Ceramic resonator CSB503F2		1
	417 0476 010	Radiator	for IC403	1
	471 3304 015	Screw 3X8 CBS-Z		1

1U-2997 TUNER UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC501	216 0102 008	Front end	
IC502	263 0891 001	IC LA1265(S)	
IC503	263 0439 007	IC LA3401	
IC504	263 0615 902	IC BA15218F	
IC505	262 2348 009	IC LM7001JU	
IC506	263 0801 004	IC NJM7812FA(S)	
IC507	268 0073 905	IC ICP-N15	IC protector
TR502	273 0411 909	Transistor 2SC2996-Y	
TR503,504	269 0083 901	Transistor DTA114EK	
TR505	269 0114 906	Transistor RN2402	
TR506	273 0403 904	Transistor 2SC2712-Y/GR	
TR507	275 0075 901	FET 2SK209-Y/GR	
TR508	269 0054 901	Transistor DTC144EK	
TR509,510	269 0066 902	Transistor DTC323TK	
TR511	269 0086 908	Transistor DTA114TK	
TR601,602	273 0429 904	Transistor 2SC3311A	
TR928,929	273 0253 918	Transistor 2SC2878(A/B)	
D501~505	276 0438 910	Diode MA151A	
D601	276 0371 006	Diode S10VB20F9	
D602,603	276 0432 903	Diode 1SS270A	
RESISTORS GROUP			
R501	247 0002 966	Carbon chip 10ohm 1/10W	RM73B--100J
R503	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R504~514	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R515	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R516	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R518	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R519	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R520	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R521	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R522	247 0006 920	Carbon chip 330ohm 1/10W	RM73B--331J
R523	247 0007 961	Carbon chip 1.2kohm 1/10W	RM73B--122J
R524,525	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R526	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R527	247 0009 969	Carbon chip 8.2kohm 1/10W	RM73B--822J
R528	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R529	247 0006 946	Carbon chip 390ohm 1/10W	RM73B--391J
R530	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R531	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R532	247 0005 921	Carbon chip 120ohm 1/10W	RM73B--121J
R533	247 0010 929	Carbon chip 15kohm 1/10W	RM73B--153J
R534	247 0005 921	Carbon chip 120ohm 1/10W	RM73B--121J
R535	247 0010 945	Carbon chip 18kohm 1/10W	RM73B--183J
R536	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R537	247 0011 986	Carbon chip 68kohm 1/10W	RM73B--683J

Ref. No.	Part No.	Part Name	Remarks
R538	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R539	247 0009 927	Carbon chip 5.6kohm 1/10W	RM73B--562J
R540,541	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R542,543	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R544,545	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R546	247 0011 973	Carbon chip 62kohm 1/10W	RM73B--623J
R547	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R548	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R549	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R550	247 0009 927	Carbon chip 5.6kohm 1/10W	RM73B--562J
R551	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R553~556	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R557,558	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R559,560	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R561,562	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R563,564	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R565,566	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R567,568	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R569	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R571,572	247 0011 973	Carbon chip 62kohm 1/10W	RM73B--623J
R573,574	247 0015 966	Carbon chip 2.7Mohm 1/10W	RM73B--275J
R575,576	247 0012 943	Carbon chip 120kohm 1/10W	RM73B--124J
R577	247 0010 961	Carbon chip 22kohm 1/10W	RM73B--223J
R578~581	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R592,593	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R594,595	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R601	244 2050 933	Metal oxide 180ohm 1W	RS14B3A181JNBS(S)
R602	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R603	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R604	244 2050 933	Metal oxide 180ohm 1W	RS14B3A181JNBS(S)
R605	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R606	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R621	244 2052 960	Metal oxide 220ohm 1W	RS14B3A221JNBS(S)
R623	244 2052 960	Metal oxide 220ohm 1W	RS14B3A221JNBS(S)
R641	244 2055 996	Metal oxide 1.2kohm 1W	RS14B3A122JNBS(S)
R644	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R647,648	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R982~984	247 0007 903	Carbon chip 680ohm 1/10W	RM73B--681J
R985	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R988	247 0010 961	Carbon chip 22kohm 1/10W	RM73B--223J
R989	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R990,991	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R992	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
VR501	211 6093 941	Semi fixed resistor 10kohm	V06PB103
VR502	211 6093 970	Semi fixed resistor 100kohm	V06PB104

Ref. No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
C501,502	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C503~505	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C507,508	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C509	257 0002 947	Ceramic chip 12pF/50V	CC73SL1H120J
C510	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C511	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1M
C512	254 4254 954	Electrolytic 220μF/16V	CE04W1C221M
C513	254 3056 917	Electrolytic 1μF/50V	CE04D1H010MBP
C514	257 0010 942	Ceramic chip 0.022μF/50V	CK73B1H223K
C515	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C516,517	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C520	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C521~523	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C524	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C525	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C526	257 0010 942	Ceramic chip 0.022μF/50V	CK73B1H223K
C527	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C528	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C529	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C530	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22M
C531	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C532	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C533	256 1034 937	Metallized 0.047μF/50V	CF93A1H473J
C534	256 1034 940	Metallized 0.056μF/50V	CF93A1H563J
C535	254 3053 910	Electrolytic 22μF/16V	CE04D1C220MBP
C536	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C538	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C539,540	257 0006 972	Ceramic chip 750pF/50V	CC73SL1H751J
C541	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M
C544	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C545~548	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C551,552	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C553,554	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C555,556	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C557,558	257 0002 976	Ceramic chip 16pF/50V	CC73SL1H160J
C559	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C560	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C561,562	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C563	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C568	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C569	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z
C570	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C571	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C574	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C587	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C589,590	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C591	254 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C601,602	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K
C603,604	254 6211 005	Electrolytic 12000μF/63V	CE68W1J123M(DL)
C605~607	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K
C608	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C609~613	255 1265 936	Mylar film 0.01μF/50V	CQ93M1H103J(B)
C621,622	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C624,625	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C631	253 8014 702	Ceramic 0.01μF/400V(AC)	CK45F2GAC103MC
C944~947	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C950	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C951	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C952	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C953	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J

OTHER PARTS GROUP			Q'ty
CF501	261 0135 907	Ceramic filter MA8	1
CF502	261 0136 906	Ceramic filter MS2G	1
CF503	261 0079 005	Resonator CSB456F11	1
CF504	399 0075 003	Crystal 7.2 MHz	1
CW113	205 0885 066	11P connector socket (TUC-P)	1
CW141	205 0885 011	14P connector socket (TUC-P)	1
CX035,036	205 0087 039	3 P wrapping terminal	2
CX042	205 0343 045	4P connector base(KR-PH)	1
CX931	205 0190 036	3P NH connector base	1
CX932	205 0087 039	3 P wrapping terminal	1
CY021,022	205 0581 001	2P VH connector base	2
CY028	205 0581 056	2P VH connector base	1
CY033	205 0343 032	3P connector base(KR-PH)	1
CY037	205 0087 039	3 P wrapping terminal	1
CY038	205 0343 032	3P connector base(KR-PH)	1
CY041,042	205 0343 045	4P connector base(KR-PH)	2
CY055	205 0343 058	5P connector base(KR-PH)	1
CY935	205 0343 032	3P connector base(KR-PH)	1
FB501	235 0049 900	Beads inductor	1
FB503	235 0049 900	Beads inductor	1
FB505	235 0049 900	Beads inductor	1
FB903	235 0049 900	Beads inductor	1
JK501	205 0847 004	3P antenna terminal (PAL/F)	1
JK502	204 8545 004	4P pin jack (GND)	1
JK601	204 8264 013	Headphone jack (NI)	1
JK901	204 8540 009	4 P pin jack	1
L501	231 2096 001	MW ant.-osc. coil	1
L502	231 2085 009	FM det. trans.	1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
L503	231 1138 009	AM IFT		1
RL601	214 0154 005	Relay (VB24SMBU)		1
RL602	214 0129 001	Relay (DH2TU)		1
⚠SW631	212 1031 008	Power switch (TV-5)		1
TM601	205 0632 002	8P SP terminal (V-1)		1
X501	261 0031 001	Ceramic filter BFU450C4		1
X502	261 0116 007	Ceramic filter SFU450B3		1
	414 0819 005	Earth plate		1
	417 0476 010	Radiator	for IC506	1
	471 3304 015	Screw 3X8 CBS-Z		1

1U-2998 AUDIO & DSP UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC301	269 0097 007	IC GP1F32R	
IC302	262 2384 908	IC SN74HCU04NS	
IC303	262 2386 906	IC SN74HC151NS	
IC304	263 1018 003	IC MC14577CP	
IC305	263 0687 901	IC BA4560FT	
IC306	262 2371 908	IC BR62256F-70LL	
IC307	262 2374 002	IC TMP87CM43N-****	SUB-UCOM
IC308	262 2372 004	IC PM4007A	
IC454	262 1718 902	IC TC74HC00AF	
IC455	262 1348 903	IC TC74HC123AF	
IC456	262 2385 907	IC SN74HC14NS	
IC457	262 2370 006	IC ZR38600	
IC458	262 2376 903	IC TC74HCT7007AF	
IC460	263 1048 002	IC BA033T	
IC501~503	262 2210 904	IC SM5841HS	
IC504~506	262 2145 008	IC PCM69AP	
IC507~512	263 0896 909	IC NJM2068MD	
IC513,514	263 1047 906	IC NJM2115M	
IC515	262 2158 901	IC AK5340-VS-E1	
IC516	399 0300 008	IC SG-531PH(12.288MHz)	
IC517	263 0673 902	IC BA10393F	
IC601	263 0896 909	IC NJM2068MD	
IC602	262 2034 009	IC TC9273N-007	
IC603	262 2033 000	IC TC9273N-004	
IC604~606	263 0615 902	IC BA15218F	
IC701~703	263 0615 902	IC BA15218F	
IC704	262 1853 100	IC NJU7313AL	
IC803~806	263 0615 902	IC BA15218F	
TR301,302	274 0163 904	Transistor 2SD601A	
TR303,304	272 0125 904	Transistor 2SB709A	
TR309,310	274 0163 904	Transistor 2SD601A	
TR431	269 0083 901	Transistor DTA114EK	
TR501~512	273 0414 906	Transistor 2SC3326(A/B)	
TR513	269 0082 902	Transistor DTC114EK	
TR601	275 0075 901	FET 2SK209-Y/GR	
TR603	269 0055 900	Transistor DTA144EK	
TR604	269 0054 901	Transistor DTC144EK	
TR805	275 0094 908	FET 2SK209-GR	
TR808	269 0055 900	Transistor DTA144EK	
TR809	269 0054 901	Transistor DTC144EK	

Ref. No.	Part No.	Part Name	Remarks
D301~303	276 0438 910	Diode MA151A	
D461~464	276 0438 910	Diode MA151A	
D501	276 0438 910	Diode MA151A	
D503	276 0438 910	Diode MA151A	
D601,602	276 0438 910	Diode MA151A	
D801	276 0438 910	Diode MA151A	
CD303	276 0663 905	Diode KV1851-TL	
RESISTORS GROUP			
R300	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R302	247 0004 977	Carbon chip 75ohm 1/10W	RM73B--750J
R303	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R305	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R306	247 0006 988	Carbon chip 560ohm 1/10W	RM73B--561J
R307	247 0004 993	Carbon chip 91ohm 1/10W	RM73B--910J
R308~310	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R311	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R312	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R313	247 0008 928	Carbon chip 2.2kohm 1/10W	RM73B--222J
R314~317	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R318	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R319,320	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R321	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R322	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R323	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R324	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R332	247 0008 902	Carbon chip 1.8kohm 1/10W	RM73B--182J
R333,334	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R335,336	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R337	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R339	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R340	247 0009 969	Carbon chip 8.2kohm 1/10W	RM73B--822J
R341	247 0010 987	Carbon chip 27kohm 1/10W	RM73B--273J
R342	247 0011 986	Carbon chip 68kohm 1/10W	RM73B--683J
R343,344	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R345	247 0005 921	Carbon chip 120ohm 1/10W	RM73B--121J
R346~349	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R350	247 0004 922	Carbon chip 47ohm 1/10W	RM73B--470J
R351	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R352~370	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R371~385	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R386	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R387~398	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R399	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R400~403	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R404	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K

Ref. No.	Part No.	Part Name	Remarks
R405	247 0010 903	Carbon chip 12kohm 1/10W	RM73B--123J
R406	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R408,409	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R410,411	247 0008 915	Carbon chip 2kohm 1/10W	RM73B--202J
R412~416	247 0004 922	Carbon chip 47ohm 1/10W	RM73B--470J
R417~422	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R425	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R428~431	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R432	247 0010 958	Carbon chip 20kohm 1/10W	RM73B--203J
R433	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R434	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R435	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R437,438	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R439,440	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R441,442	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R443,444	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R445,446	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R447,448	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R449,450	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R462,463	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R467~469	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R471	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R477~480	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R481,482	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R483~486	247 0009 998	Carbon chip 11kohm 1/10W	RM73B--113J
R487~490	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R491~494	247 0006 920	Carbon chip 330ohm 1/10W	RM73B--331J
R496	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R497	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R498~500	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R501~503	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R504~518	247 0006 920	Carbon chip 330ohm 1/10W	RM73B--331J
R520	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R521,522	247 0007 961	Carbon chip 1.2kohm 1/10W	RM73B--122J
R523,524	247 0006 988	Carbon chip 560ohm 1/10W	RM73B--561J
R525~528	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R529,530	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R531,532	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R533,534	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R535,536	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R537,538	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R539,540	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R541,542	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R543,544	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R545,546	247 0007 961	Carbon chip 1.2kohm 1/10W	RM73B--122J
R547,548	247 0006 988	Carbon chip 560ohm 1/10W	RM73B--561J
R549	247 0009 914	Carbon chip 5.1kohm 1/10W	RM73B--512J
R550	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R551	247 0009 914	Carbon chip 5.1kohm 1/10W	RM73B--512J
R552	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R553,554	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J

Ref. No.	Part No.	Part Name	Remarks
R555,556	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R557	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R558	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R560	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R561	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R562	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R563,564	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R565,566	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R567,568	247 0007 961	Carbon chip 1.2kohm 1/10W	RM73B--122J
R569,570	247 0006 988	Carbon chip 560ohm 1/10W	RM73B--561J
R571~574	247 0009 914	Carbon chip 5.1kohm 1/10W	RM73B--512J
R575,576	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R577,578	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R579,580	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R583,584	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R585,586	247 0005 989	Carbon chip 220ohm 1/10W	RM73B--221J
R587,588	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R592	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R593~596	247 0008 960	Carbon chip 3.3kohm 1/10W	RM73B--332J
R601,602	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R603,604	247 0006 946	Carbon chip 390ohm 1/10W	RM73B--391J
R605,606	247 0011 986	Carbon chip 68kohm 1/10W	RM73B--683J
R607,608	247 0012 969	Carbon chip 150kohm 1/10W	RM73B--154J
R609,610	247 0004 922	Carbon chip 47ohm 1/10W	RM73B--470J
R611,612	247 0005 992	Carbon chip 240ohm 1/10W	RM73B--241J
R613,614	247 0012 956	Carbon chip 130kohm 1/10W	RM73B--134J
R615,616	247 0009 998	Carbon chip 11kohm 1/10W	RM73B--113J
R617,618	247 0003 949	Carbon chip 22ohm 1/10W	RM73B--220J
R619,620	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R621,622	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R623~632	247 0015 966	Carbon chip 2.7Mohm 1/10W	RM73B--275J
R633~642	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R643,644	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R645,646	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R647,648	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R649,650	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R651~654	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R655~658	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R659,660	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R663,664	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R665,666	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R667~672	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R673,674	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R677,678	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R679,680	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R681	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R683~686	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R687~690	247 0015 966	Carbon chip 2.7Mohm 1/10W	RM73B--275J
R691,692	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R693~695	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K

Ref. No.	Part No.	Part Name	Remarks
R701,702	247 0011 973	Carbon chip 62kohm 1/10W	RM73B--623J
R703,704	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R705,706	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R709,710	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R711,712	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R713,714	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R717,718	247 0011 973	Carbon chip 62kohm 1/10W	RM73B--623J
R719,720	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R721,722	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R725,726	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R727	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R728	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R729	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R730	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R733,734	247 0011 973	Carbon chip 62kohm 1/10W	RM73B--623J
R735,736	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R737,738	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R741,742	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R743,744	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R745,746	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R747~752	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R791,792	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R801,802	247 0010 961	Carbon chip 22kohm 1/10W	RM73B--223J
R803,804	247 0010 932	Carbon chip 16kohm 1/10W	RM73B--163J
R805~808	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R809,810	247 0007 932	Carbon chip 910ohm 1/10W	RM73B--911J
R811,812	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R813,814	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R815,816	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R819,820	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R829,830	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R831,832	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R833,834	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R835,836	247 0008 928	Carbon chip 2.2kohm 1/10W	RM73B--222J
R837	247 0009 927	Carbon chip 5.6kohm 1/10W	RM73B--562J
R839,840	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R842	247 0009 969	Carbon chip 8.2kohm 1/10W	RM73B--822J
R846	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R850	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R869	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R901~906	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J

CAPACITORS GROUP

C301	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C302	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C303	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C304	254 4256 923	Electrolytic 33μF/25V	CE04W1E330M
C305	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C306	257 0003 904	Ceramic chip 22pF/50V	CC73SL1H220J

Ref. No.	Part No.	Part Name	Remarks
C307	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C308	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C309,310	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C311	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C312	257 0011 941	Ceramic chip 0.022μF/25V	CK73B1E223K
C313~315	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C316	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C317	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C318	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C319	257 0004 932	Ceramic chip 75pF/50V	CC73SL1H750J
C320	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C321	257 0011 996	Ceramic chip 0.1μF/25V	CK73B1E104K
C322	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C323	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C325	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C326	254 3061 902	Electrolytic 1μF/50V	CE04D1H010MTBP (SRE)
C327	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C328	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C329	254 3061 902	Electrolytic 1μF/50V	CE04D1H010MTBP (SRE)
C330	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C331	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C332~334	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C335	254 3053 936	Electrolytic 47μF/16V	CE04D1C470MBP
C336	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C337	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C338	257 0002 989	Ceramic chip 18pF/50V	CC73SL1H180J
C339	257 0001 922	Ceramic chip 1 pF/50V	CC73SL1H010C
C340,341	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C342	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C343	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C344	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C345	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C346	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C347	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C348	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C349	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C350	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C351	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C352	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C353	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C358	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C360	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C361	257 0011 996	Ceramic chip 0.1μF/25V	CK73B1E104Z
C362,363	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C377,378	257 0004 903	Ceramic chip 56pF/50V	CC73SL1H560J
C382	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C383	257 0005 944	Ceramic chip 220pF/50V	CK73B1H221J
C384,385	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C387	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C388	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z

Ref. No.	Part No.	Part Name	Remarks
C407	254 4196 944	Electrolytic 1μF/50V	CE04W1H010M (SRA)
C425	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C431,432	254 4196 944	Electrolytic 1μF/50V	CE04W1H010M (SRA)
C434	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C435	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C436	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C437,438	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C441	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C443	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C444	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C445,446	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C448	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C461,462	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C463,464	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C465~467	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C468	257 0011 983	Ceramic chip 0.047μF/25V	CK73B1E473K
C469	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C470,471	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C472	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C473	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C474	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C475	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C476	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C478	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C479	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C480	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C481,482	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C483,484	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C485,486	254 4196 944	Electrolytic 1μF/50V	CE04W1H010M(SRA)
C487,488	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C489,490	255 1264 924	Mylar film 1500pF/50V	CQ93M1H152J(B)
C492	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C494	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C495	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C496	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C497,498	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C499	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C500	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C501	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C502	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C503	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C504	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C505	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C506	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C507	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C508	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C509	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)
C510	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C511	254 4193 905	Electrolytic 10μF/16V	CE04W1C100M(SRA)

Ref. No.	Part No.	Part Name	Remarks
C512~515	257 0012 966	Ceramic chip 0.01µF/50V	CK73F1H103Z
C516,517	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C518	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C519,520	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C521	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C522,523	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C524	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C525,526	257 0012 966	Ceramic chip 0.01µF/50V	CK73F1H103Z
C527,528	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C529~532	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C533,534	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C535,536	255 4201 968	Polypropylene film 470pF/50V	CQ93P1H471J
C537,538	255 4201 984	Polypropylene film 560pF/50V	CQ93P1H561J
C539,540	257 0014 935	Ceramic chip 0.1µF/25V	CK73F1E104Z
C541,542	255 1265 907	Mylar film 6800pF/50V	CQ93M1H682J(B)
C543,544	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C545,546	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C547~550	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C551,552	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C553	255 4202 925	Polypropylene film 820pF/50V	CQ93P1H821J
C555	255 4201 926	Polypropylene film 330pF/50V	CQ93P1H331J
C556	256 1034 979	Metallized 0.1µF/50V	CF93A1H104J
C557,558	257 0014 935	Ceramic chip 0.1µF/25V	CK73F1E104Z
C559,560	255 1265 907	Mylar film 6800pF/50V	CQ93M1H682J(B)
C561,562	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C563,564	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M
C565~568	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C569,570	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C571,572	255 4202 925	Polypropylene film 820pF/50V	CQ93P1H821J
C573,574	255 4201 926	Polypropylene film 330pF/50V	CQ93P1H331J
C575,576	257 0014 935	Ceramic chip 0.1µF/25V	CK73F1E104Z
C577,578	255 1265 907	Mylar film 6800pF/50V	CQ93M1H682J(B)
C579,580	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C581,582	257 0012 966	Ceramic chip 0.01µF/50V	CK73F1H103Z
C583~588	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C589	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C591	257 0014 935	Ceramic chip 0.1µF/25V	CK73F1E104Z
C595	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C598	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C601,602	257 0005 944	Ceramic chip 220pF/50V	CC73SL1H221J
C603,604	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C605,606	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C607,608	254 4250 932	Electrolytic 220µF/6.3V	CE04W0J221M
C609,610	255 4199 999	Mylar film 0.024µF/50V	CQ92M1H243J(MRZ)
C611,612	255 1265 907	Mylar film 6800pF/50V	CQ93M1H682J(B)
C613,614	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
C615,616	257 0012 982	Ceramic chip 0.022µF/50V	CK73F1H223Z
C627,628	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C629,930	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C633,634	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
C635~640	257 0012 982	Ceramic chip 0.022µF/50V	CK73F1H223Z

Ref. No.	Part No.	Part Name	Remarks
C641	254 4260 980	Electrolytic 10µF/50V	CE04W1H100M
C642	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C643	254 4260 980	Electrolytic 10µF/50V	CE04W1H100M
C644	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C645,646	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M
C647,648	257 0005 944	Ceramic chip 220pF/50V	CC73SL1H221J
C651,652	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C655,656	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C657,658	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C661~664	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C665~667	257 0012 966	Ceramic chip 0.01µF/50V	CK73F1H103Z
C671,672	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C703,704	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C705,706	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C709,710	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C711,712	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C717,718	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C719,720	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C723	254 4254 941	Electrolytic 100µF/16V	CE04W1C101M
C724	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C725,726	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C731,732	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C733,734	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C737,738	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C739,740	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C743,744	257 0012 982	Ceramic chip 0.022µF/50V	CK73F1H223Z
C745,746	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C747	253 1116 908	Ceramic chip 2200pF/50V	CK45B1H222K
C801,802	256 1034 966	Metalized 0.082µF/50V	CF93A1H823J
C803,804	256 1034 982	Metalized 0.12µF/50V	CF93A1H124J
C805,806	254 4193 905	Electrolytic 10µF/16V	CE04W1C100M(SRA)
C811,812	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C813,814	257 0014 935	Ceramic chip 0.1µF/25V	CK73F1E104Z
C820	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C823,824	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C835,836	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
C837	257 0012 966	Ceramic chip 0.01µF/50V	CK73F1H103Z
C843	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M

OTHER PARTS GROUP				Q'ty
CW071	205 0942 022	7P connector socket(TUC-P)		1
CW091	205 0885 037	9P connector socket (TUC-P)		1
CW102	205 0885 053	10P connector socket (TUC-P)		1
CW103	205 0986 059	10P connector plug (TKC-A)		1
CW112	205 0885 066	11P connector socket (TUC-P)		1
CW151,152	205 0885 040	15P connector socket (TUC-P)		2
CW154	205 0885 040	15P connector socket (TUC-P)		1
CX103	205 0985 018	10P connector socket(TKC-A)		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
FB301	235 0106 908	Chip emifil (21A05)		1
FB307~310	235 0049 900	Beads inductor		4
FB321~323	235 0049 900	Beads inductor		3
FB350~358	235 0106 908	Chip emifil (21A05)		9
FB501	235 0049 900	Beads inductor		1
FB503~506	235 0049 900	Beads inductor		4
FB508,509	235 0049 900	Beads inductor		2
FB510~520	235 0106 908	Chip emifil (21A05)		11
FB521~524	235 0049 900	Beads inductor		4
FB526~528	235 0049 900	Beads inductor		3
FB530,531	235 0049 900	Beads inductor		2
FB601	235 0106 908	Chip emifil (21A05)		1
FB603	235 0106 908	Chip emifil (21A05)		1
FB701	235 0106 908	Chip emifil (21A05)		1
JK301	204 8561 004	2P pin jack (NI)		1
JK601,602	204 8543 006	6 P pin jack		2
JK603	204 8540 009	4 P pin jack		1
JK701	204 8543 006	6 P pin jack		1
L301	235 0060 918	Inductor 4.7µH		1
L303	235 0060 905	Inductor 2.2µH		1
L304	235 0070 953	Inductor 68µH		1
L401	235 0060 950	Inductor 10µH		1
L402	235 0049 900	Beads Inductor		1
LF301	261 0152 003	2.88M band pass filter	2.88M BPF(5VLT)	1
X301	399 0402 003	Crystal 18.432 MHz		1
X302	399 0191 903	Ceramic resonator	CST4.00MGW-TF01	1

1U-3006 E. VOL UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	262 2214 007	IC LC7536	
IC103	263 0615 902	IC BA15218F	
IC104	263 0896 909	IC NJM2068MD	
IC105,106	263 0615 902	IC BA15218F	
IC107,108	262 2214 007	IC LC7536	
IC109,110	263 0615 902	IC BA15218F	
TR171,172	275 0075 901	FET 2SK209-Y/GR	
TR173	269 0055 900	Transistor DTA144EK	
TR174	269 0054 901	Transistor DTC144EK	
TR175	275 0075 901	FET 2SK209-Y/GR	
D171~173	276 0438 910	Diode MA151A	
RESISTORS GROUP			
R111,112	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R113,114	247 0013 984	Carbon chip 470kohm 1/10W	RM73B--474J
R115,116	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R117,118	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R119,120	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R121,122	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R123~126	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R127,128	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R129,130	247 0010 961	Carbon chip 22kohm 1/10W	RM73B--223J
R131,132	247 0013 900	Carbon chip 220kohm 1/10W	RM73B--224J
R133,134	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R135,136	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R137,138	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R139,140	247 0007 916	Carbon chip 750ohm 1/10W	RM73B--751J
R141	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R142	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R143	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R144	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R145,146	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R147,148	247 0010 961	Carbon chip 22kohm 1/10W	RM73B--223J
R149,150	247 0013 900	Carbon chip 220kohm 1/10W	RM73B--224J
R151,152	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R153,154	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R155,156	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R157,158	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R159,160	247 0007 916	Carbon chip 750ohm 1/10W	RM73B--751J
R161,162	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R163,164	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R165,166	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R167,168	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R171,172	247 0006 920	Carbon chip 330ohm 1/10W	RM73B--331J
R173	247 0009 943	Carbon chip 6.8kohm 1/10W	RM73B--682J
R174~177	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J

Ref. No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
C103,104	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C105,106	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C107,108	257 0012 982	Ceramic chip 0.022μF/50V	CK73F1H223Z
C109~112	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C114	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C115,116	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C117,118	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C119,120	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C121,122	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C123,124	257 0012 982	Ceramic chip 0.022μF/50V	CK73F1H223Z
C125,126	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C127,128	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C131,132	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C134	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C135,136	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C137,138	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C141,142	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C143,144	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C145,146	257 0012 982	Ceramic chip 0.022μF/50V	CK73F1H223Z
C147,148	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C149,150	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C153,154	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C156	257 0012 966	Ceramic chip 0.01μF/50V	CK73F1H103Z
C157,158	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C159,160	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C163,164	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C171,172	256 1034 953	Metalized 0.068μF/50V	CF93A1H683J
C173	255 1265 923	Mylar film 8200pF/50V	CQ93M1H822J(B)

OTHER PARTS GROUP			Q'ty
CW104	205 0885 053	10P connector socket (TUC-P)	1
CW144	205 0885 011	14P connector socket (TUC-P)	1
CX054	205 0343 058	5P connector base(KR-PH)	1
CY072	205 0343 074	7P connector base(KR-PH)	1
ST101	205 0452 017	Style pin	1
W702	205 1005 007	1P terminal	1

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	1U-2994	Main P.W.B. unit ass'y		1
2	1U-2995	Power amp. P.W.B. unit ass'y		1
2-1	1U-2995-1	Power supply-1 P.W.B. unit		
2-2	1U-2995-2	Front amp. P.W.B. unit		
2-3	1U-2995-3	Surround amp. P.W.B. unit		
2-4	1U-2995-4	Reg.-1 P.W.B. unit		
2-5	1U-2995-5	Reg.-2 P.W.B. unit		
2-6	1U-2995-6	Reg.-3 P.W.B. unit		
2-7	1U-2995-7	Reg.-4 P.W.B. unit		
2-8	1U-2995-8	Reg.-5 P.W.B. unit		
3	1U-2996	Video & display P.W.B. unit ass'y		1
3-1	1U-2996-1	Display P.W.B. unit		
3-2	1U-2996-2	C-video P.W.B. unit		
3-3	1U-2996-3	S-video P.W.B. unit		
3-4	1U-2996-4	LED P.W.B. unit		
3-5	1U-2996-5	Reg. P.W.B. unit		
4	1U-2997	Tuner P.W.B. unit ass'y		1
4-1	1U-2997-1	Tuner P.W.B. unit		
4-2	1U-2997-2	Power supplay-2 P.W.B. unit		
4-3	1U-2997-3	H/P P.W.B. unit		
4-4	1U-2997-4	Power switch P.W.B. unit		
4-5	1U-2997-5	Pre out P.W.B. unit		
5	1U-2998	Audio & DSP P.W.B. unit ass'y		1
5-1	1U-2998-1	DSP P.W.B. unit		
5-2	1U-2998-2	Audio in P.W.B. unit		
5-3	1U-2998-3	6ch. external in P.W.B. unit		
6	1U-3006	E.vol. P.W.B. unit ass'y		1
7	411 1358 304	Main chassis		1
8	412 4204 209	Trans. bracket		1
9	412 4210 002	Bracket		5
10	104 0194 205	Foot ass'y		4
11	412 4205 004	PWB bracket (A)		1
12	513 2706 002	Caution label	R	1
13	513 2706 015	Caution label	L	1
14	417 0546 209	Radiator		1
15	415 0234 007	Insulating sheet		11
16	271 0276 009	Transistor 2SA1633F31(E/F)		1
17	412 4207 002	Radiator bracket (A)		1
18	412 4208 001	Radiator bracket (B)		1
19	412 4259 005	Tuner bracket		1
20	412 2814 044	Card spacer (L=6)		1
21	477 0288 006	Push rivet		2
22	105 1225 202	Back panel		1
23	412 4203 006	Radiator support (R)		1
24	412 2814 028	Card spacer (L=10)		4
25	417 0544 308	Power radiator		1
26	273 0389 031	Transistor 2SC3855 LB (O/P/Y)(Z)		5
27	271 0240 035	Transistor 2SA1491 LB (O/P/Y)(Z)		5
28	412 4247 004	PWB bracket (C)		1
29	412 4212 107	Radiator bracket (R)		1
30	412 4211 108	Radiator bracket (F)		1
31	412 4248 003	PWB bracket (D)		2
32	412 4201 105	PWB bracket		1
⚠ 33	233 6220 002	Power trans. (EU/EC)		1
34	412 4209 301	PWB support		1
⚠ 35	206 2060 002	AC cord (POLARIZED)		1
⚠ 36	445 0056 008	Cord bush		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
37	477 0018 001	Washer (P-87)		1
38	205 0071 016	Terminal ass'y		1
39	146 1669 306	Inner panel ass'y		1
40	412 4249 002	PWB bracket (E)		1
41	113 1804 006	Tuning knob		1
42	113 1805 005	Function knob		2
43	412 4163 007	Switch bracket		1
44	445 0048 003	Cord holder (L76)		4
45	411 1365 106	Shield plate		1
46	445 8004 007	Wire clamper		10
47	461 0386 068	Rubber sheet		2
48	461 9001 001	Rubber sheet	30X8X5	1
49	112 0744 038	VR. knob ass'y		1
50	112 0685 100	Knob (MARU)		2
51	113 9213 000	P· knob (P) ass'y		1
52	102 0583 001	Top cover		1
53	461 0386 071	Rubber sheet		1
54	414 0819 005	Earth plate		1
SCREWS				
101	471 3303 016	Screw 3X6 CBS-Z		2
102	473 7002 018	Screw 3X8 CBTS(S)-Z		45
103	473 7005 002	Screw 3X10 CBTS(S)-Z		8
104	473 7004 016	Screw 4X6 CBTS(S)-Z		10
105	473 7015 018	Screw 3X8 CBTS(S)-B		18
106	473 7500 015	Screw 3X8 CBTS(P)-Z		12
107	473 7505 007	Screw 2.6X8 CBTS(P)-Z		2
108	473 7508 017	Screw 3X10 CBTS(P)-B		5
109	473 8007 009	Cup screw 3X12		11
110	473 8063 014	Screw 4X8 CBTS (B)-B		6
111	477 0064 107	Fixing screw		23
112	477 0262 006	Special screw		1
PACKING & ACCESORIES (Not included EXPLODED VIEW)				
151	505 8092 007	Laminate envelope		1
152	503 1236 000	Cushion		1
153	505 8006 019	Envelope		1
154	511 3081 005	Instruction manual		1
155	231 0922 009	Loop antenna		1
156	395 0023 008	FM ant. ass'y		1
157	399 0355 008	Remocon RC-825		1
158		Battery		2
159	515 0671 504	S.S. list (EX)		1
160	529 0079 008	FM ant. adapter		1
161	501 1954 001	Carton case		1
162	513 1389 006	Control card base		1
163	513 1349 004	Thermal carbon film		1
164	515 0690 103	DEL warranty home		1
165	517 0107 087	UPC label		1

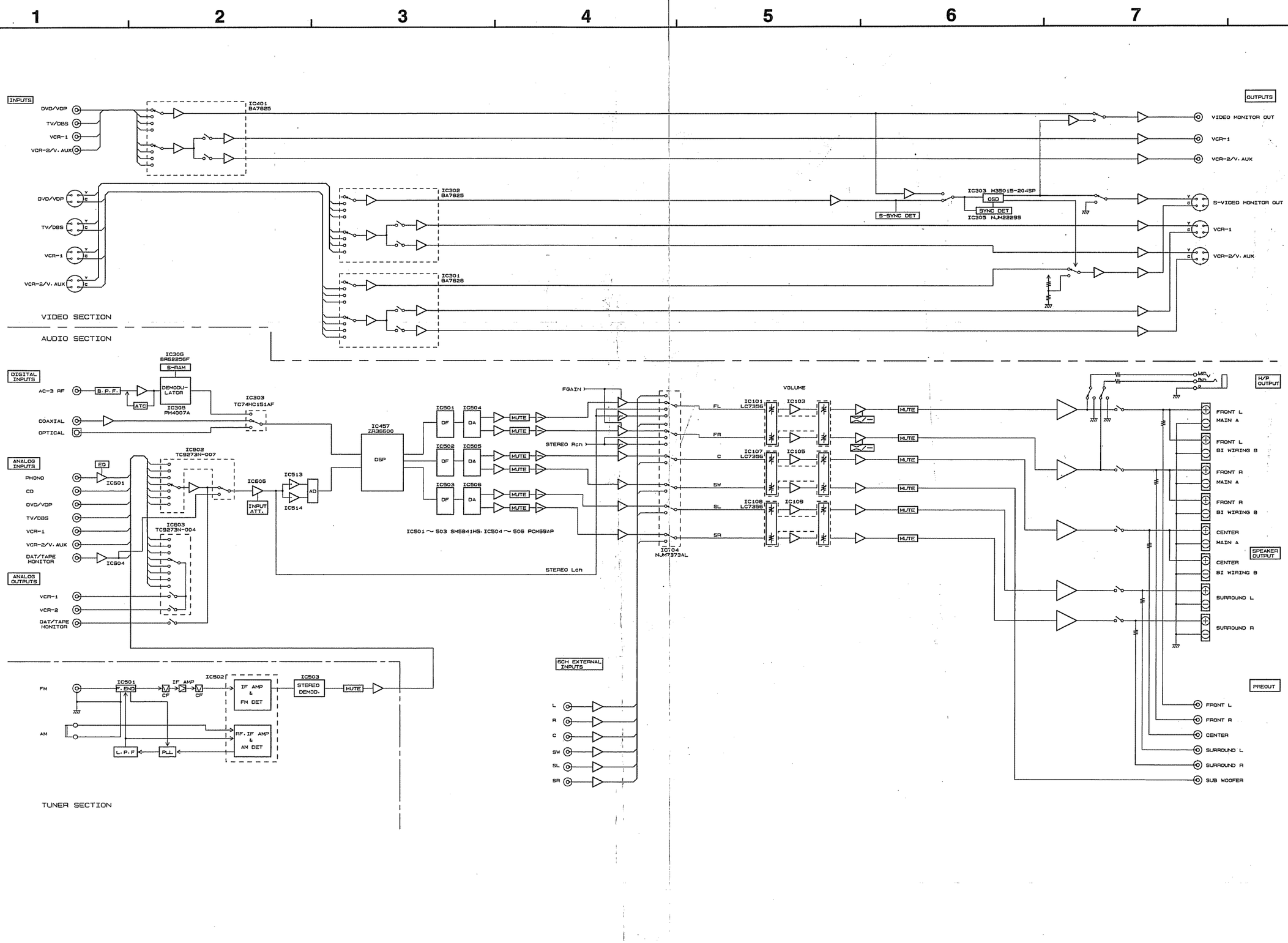
EXPLODED VIEW OF CHASSIS AND CABINET

1 2 3 4 5 6 7 8

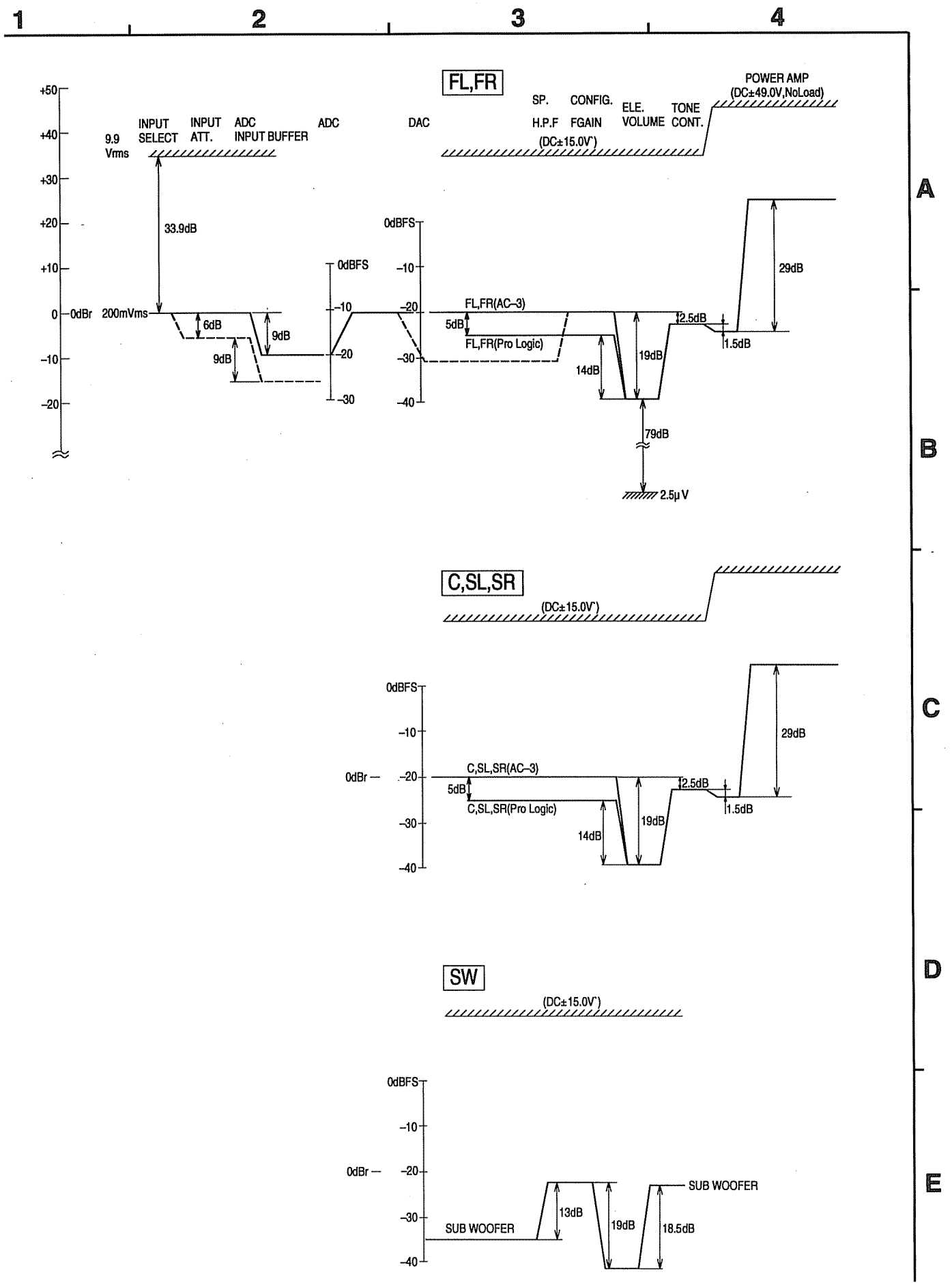
A B C D E

WARNING:
Parts marked with this symbol ⚠ ▯▯▯ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

BLOCK DIAGRAM



BLOCK LEVEL DIAGRAM



MEMO:

WIRING DIAGRAM

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H

1U-2997-5
PRE OUT UNIT
CY042 4P KR
CY035 3P KR
CY055 5P KR

1U-2998-3
6CH. EXTERNAL IN UNIT
CX103 CW103 TKC-A
CW151 CX151 KUC-P
CW071 CX071 TUC-P

1U-2996-3
S-VIDEO UNIT
CW132 CX132 TUC-P

1U-2996-2
COMP-VIDEO UNIT
CW083 CX083 TUC-P
CX121 TUC-P

1U-2998-2
AUDIO IN UNIT
CW112 CX112 TUC-P
CX154 CW154 TUC-P
CX141 CW141 TUC-P
CX113 CW113 TUC-P

AC CORD
E2 only
AC AUTLET
2P VA
CX024 CX025 2P VH CY027 2P VH
CX021 PSW PSW 2P VH
CX023 AC AC W.T.
CX038 3P KR
CY074 7P KR
1U-2995-1
POWER SUPPLY-1

CX022 SL SR 2P VH
1U-2995-3
SURROUND AMP UNIT
W4 4Ω
W5 GND(A1-3)
W6 8Ω W.T.
CY054 5P KR
CX031 3P KR

CY028
CX042 4P KR
CY035 3P KR
CY022 2P VH
CY041 4P KR
1U-2997-2
POWER SUPPLY-2

CX027 FL FR 2P VH
MUTE-Z DC PROTECT ASO
CW031 3P KR
CX028 CENTER CENTER 2P VH
1U-2995-2
FRONT AMP UNIT
CX072 7P KR
CX051 5P PH

CX035 CX036 CX932 W.T.
CY037 W.T. POWER POWER POWER
POWER TRANS
1PX3
CX702 4Ω 8Ω GND(A1-2) W.T.
H/P L H/P R GND(A1-2)
CX033 3P KR

CN042 KR-KR
CN038 KR-KR
CN055 KR-KR
CN022 VH-VH
CN027 VH-VH
CN028 VH-VH
CN021 VH-VH 1PX2
CN935 KR-KR
CN074 KR-KR
CN041 KR-KR
CN031 KR-KR
CN054 KR-KR
CN072 KR-KR
CN033 KR-KR
PH-SAN
CN053 EH
CN043 EH

1U-2998-1
DSP UNIT
CW091 CX091
CW102 CX102
CX055 SW MUTE SW GND(A1) GND(A1) GND(A1)
CX935 GND(A1) GND(A1) +8
CX074 GND(D1) +6V(D1) P.DOWN POWER RL-A GND(A2) +24V
CX041 +24V GND(D2) RL-C RL-S
CW051 +24V GND(A2) RL-H MUTE PROTECT
CX053 AC(ANALOG) AC(DIGITAL) GND(A1) AC(DIGITAL) AC(ANALOG)
CX043 AC(FL) AC(FL) AC(VIDEO) AC(VIDEO)

1U-3006
E.VOL UNIT
CX144 CW144 TUP-C
CX104 CW104 TUP-C
CX054 5P PH
W702
CY072 7P KR

1U-2997-1
TUNER UNIT

1U-2994
MAIN UNIT

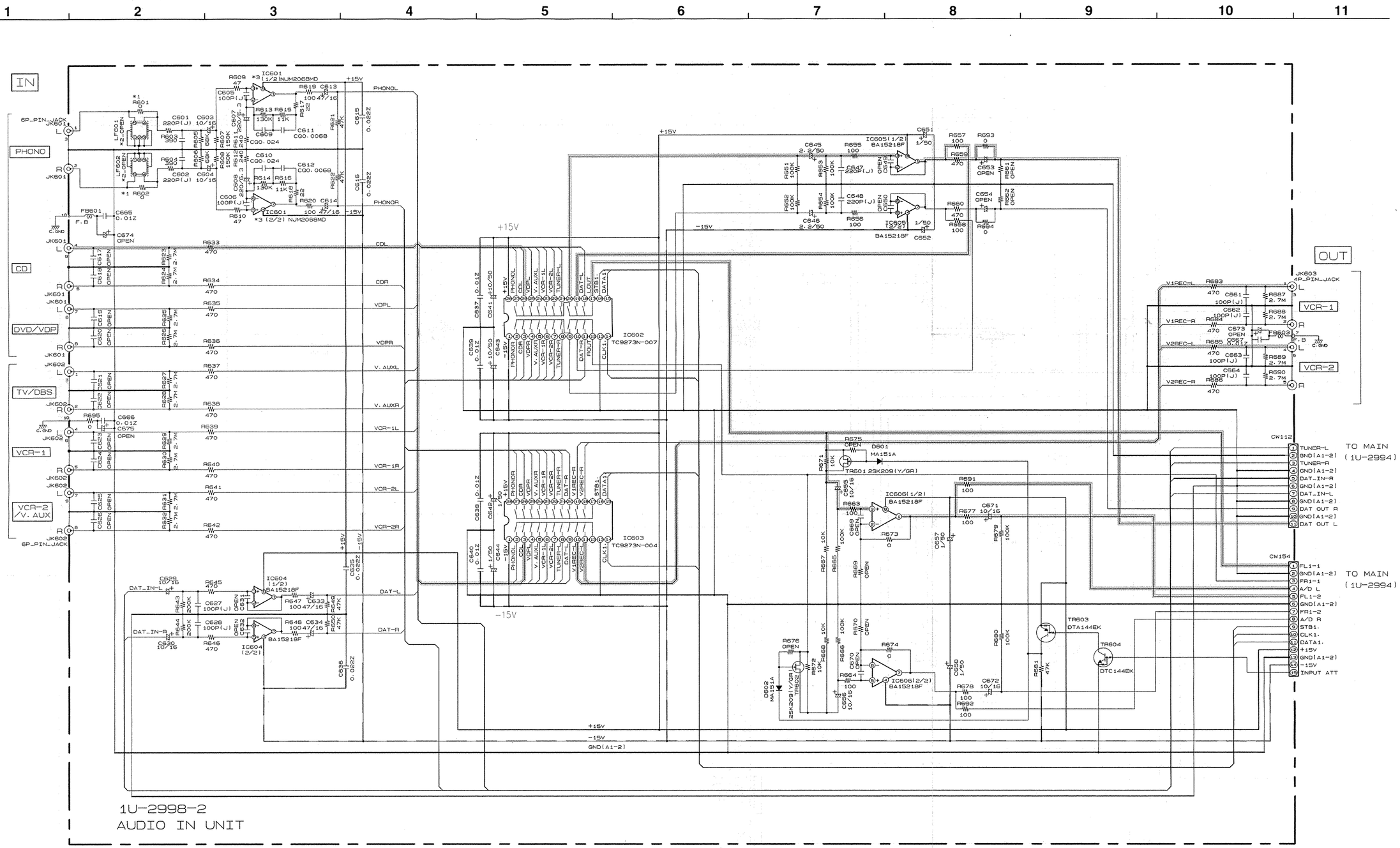
1U-2997-4
POWER-SW UNIT
CY021 2P VH

1U-2997-3
H/P UNIT
CY033 3P KR

1U-2996-4
LED UNIT
CW039 CX039 3P DA 3P KR

1U-2996-1
DISPLAY UNIT
CW101 CX101 TKC-V
CW221 CX221 TKC-V

SCHEMATIC DIAGRAM (1/11)



NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

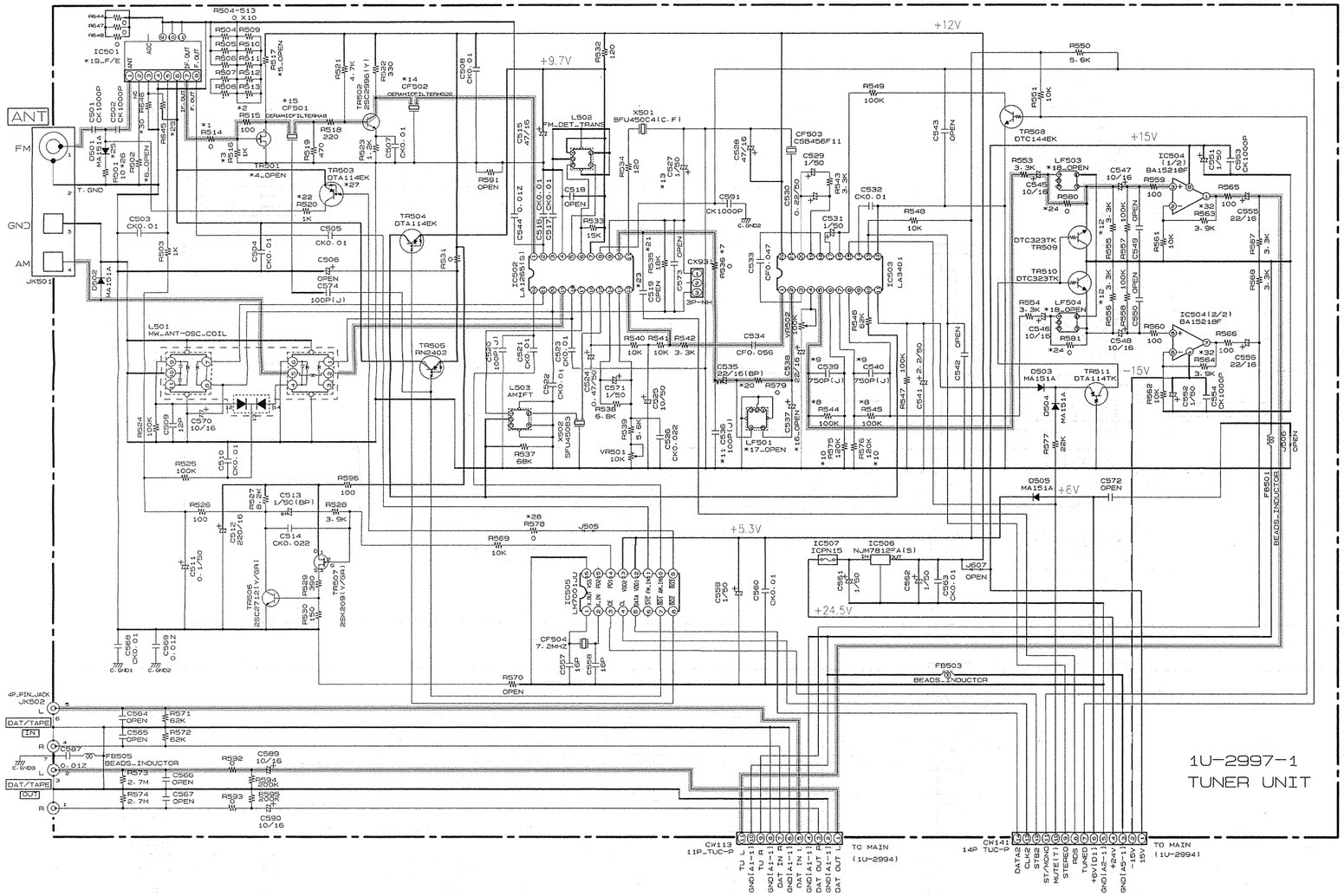
	*1 R601, 602	*2 LF601, 602	*3 IC601
* USA CANADA	0	---	NJM2068MD
ASIA	1.3K	L.P.F	NJM2068MD
EUROPE	1.3K	L.P.F	NJM2068MD
JAPAN	0	---	NJM2068MD

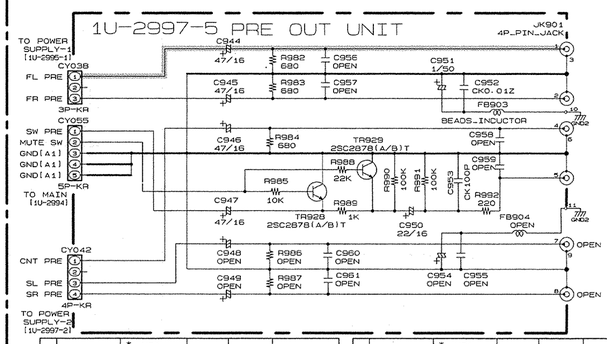
+B LINE
-B LINE
SIGNAL LINE

SCHEMATIC DIAGRAM (2/11)

1 2 3 4 5 6 7 8 9 10 11

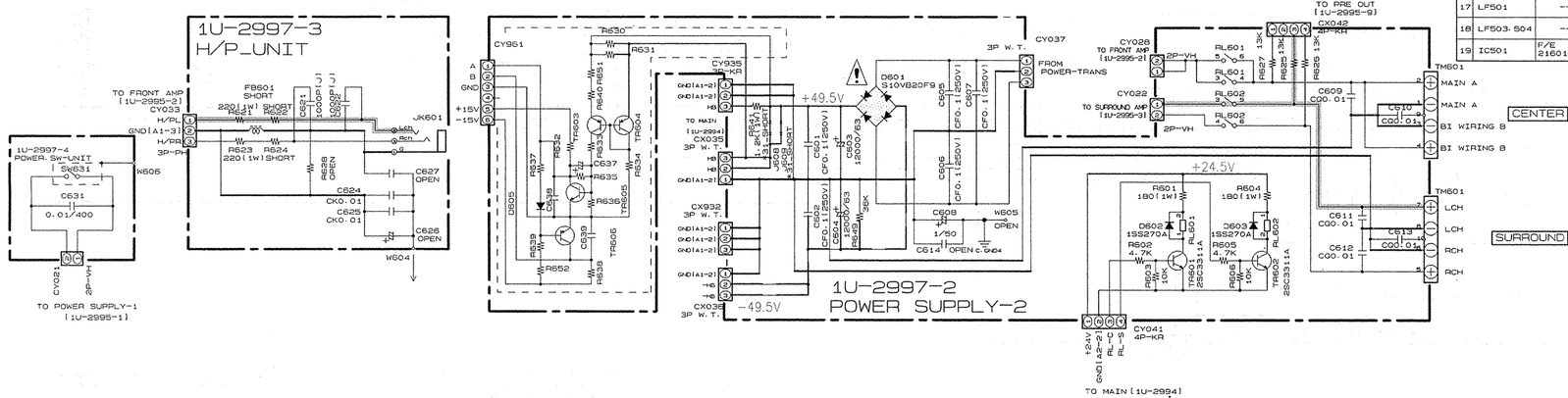
A B C D E F G H





*	NO	* USA CANADA	ASIA	EUROPE	JAPAN
1	R514	0		0	0
2	R515	100	---		100
3	R516	1K	330		330
4	TR501	---	2SK161(GR)TP4		---
5	R517	---	330		---
6	R502	---	0		---
7	R536	0	1.2K		0
8	R544.545	100K	100K		100K
9	C539.540	750p	510p		510p
10	R575.576	120K	120K		120K
11	C536	100p	---		---
12	R555.556	3.3K	---		3.3K
13	C527	1/50	0.33/50		0.33/50
14	CF502	SFE 10.7MS2G	SFT 10.7MS2		SFE 10.7MS2G
15	CF501	SFE 10.7MA8	SFT 10.7MS2		SFE 10.7MA8
16	C537	---	22/16		---
17	LF501	---	ANTI BIRDIE FILTER		---
18	LF503.504	---	LPF		LPF 2320085004
19	IC501	F/E 2160102008	F/E 2169013004		F/E 2169012005

*	NO	* USA CANADA	ASIA	EUROPE	JAPAN
20	R579	0	---		0
21	R535	18K	39K		18K
22	R520	1K	1K		---
23	C519	----	CK100p		---
24	R580.581	0	---		---
25	D501	MA151A	MA151A		---
26	R501	10	10		---
27	TR503	DTA114EK	DTA114EK		---
28	R578	0	0		---
29	R645	---	10K		---
30	R646	---	5.6K		---
31	J608.609	SHORT	SHORT		OPEN
32	R563.564	3.9K	3.9K / 13K		3.9K



+B LINE

-B LINE

SIGNAL LINE

NOTES

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM (3/11)

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H

1U-2996-3
S-VIDEO UNIT

1U-2996-1 REG. UNIT

TO COMP-VIDEO
(1U-2996-2)

TO MAIN (1U-2994)

TO MAIN (1U-2994)

1U-2996-2
COMP-VIDEO UNIT

TO REG. UNIT
(1U-2996-1)

	*1 F401
* USA CANADA	2.5A/125V 2061039076
ASIA	2.5A/250V 2061015032
EUROPE	2.5A/250V 2061015032
JAPAN	2.5A/125V 2061035067

+B LINE

SIGNAL LINE

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ 0000 have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM (4/11)

	×1 R747・748 R749・750 R751・752	×2 R705・706 R721・722 R737・738
* USA CANADA	0	470
ASIA	470	100
EUROPE	470	100
JAPAN	0	470

1U-2998-3
6CH. EXTERNAL_IN_UNIT

+B LINE
-B LINE
SIGNAL LINE

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
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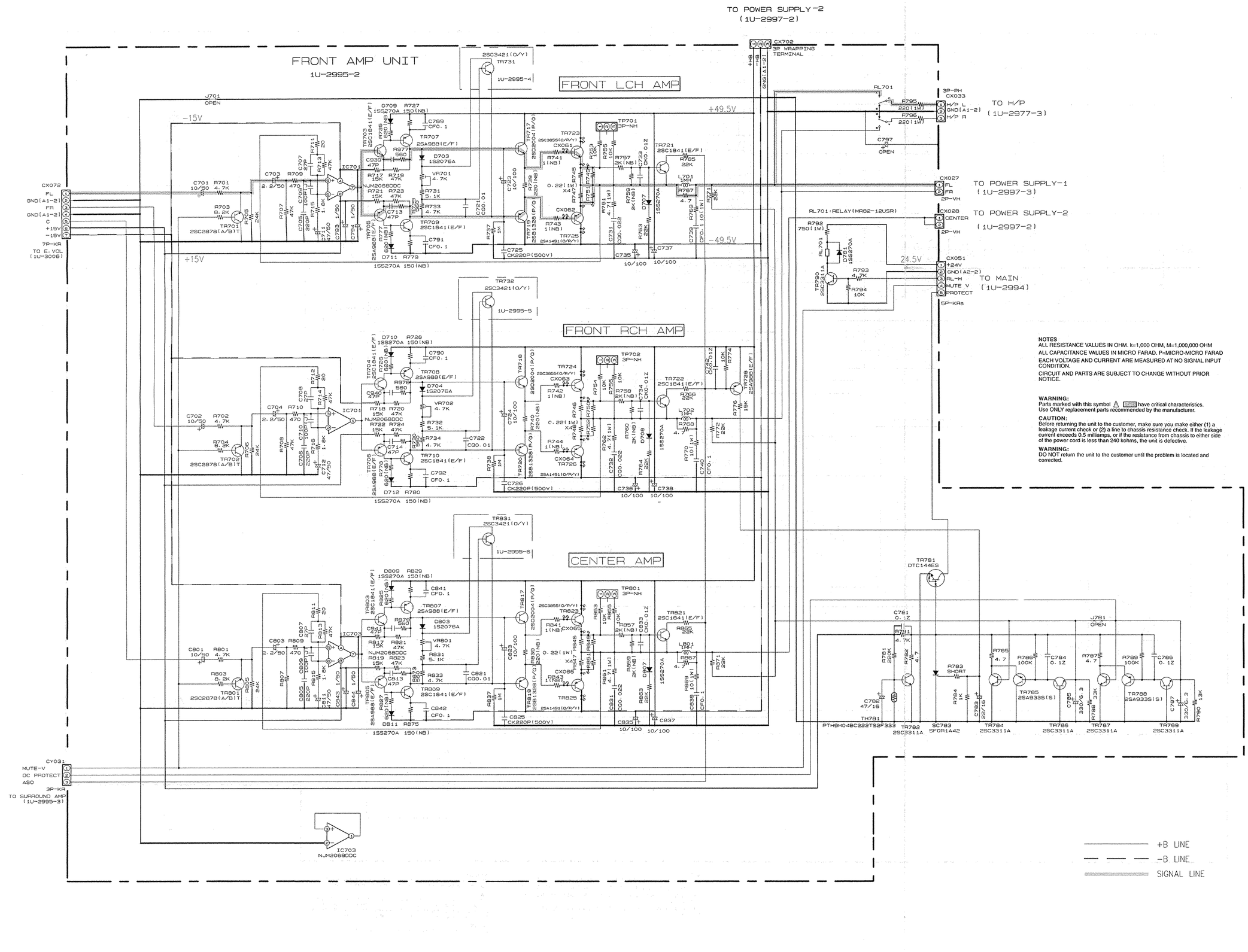
CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM (5/11)



NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

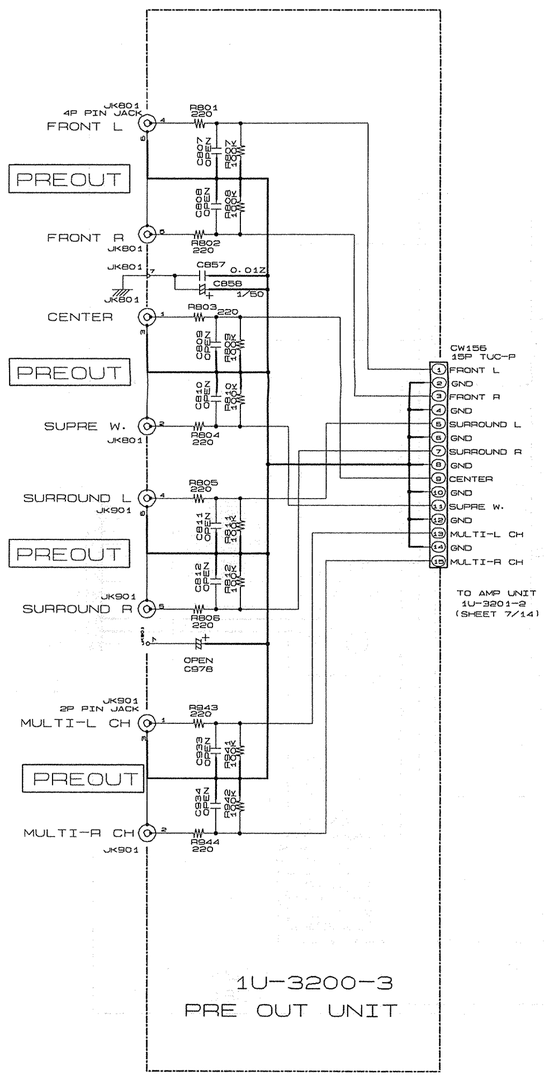
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

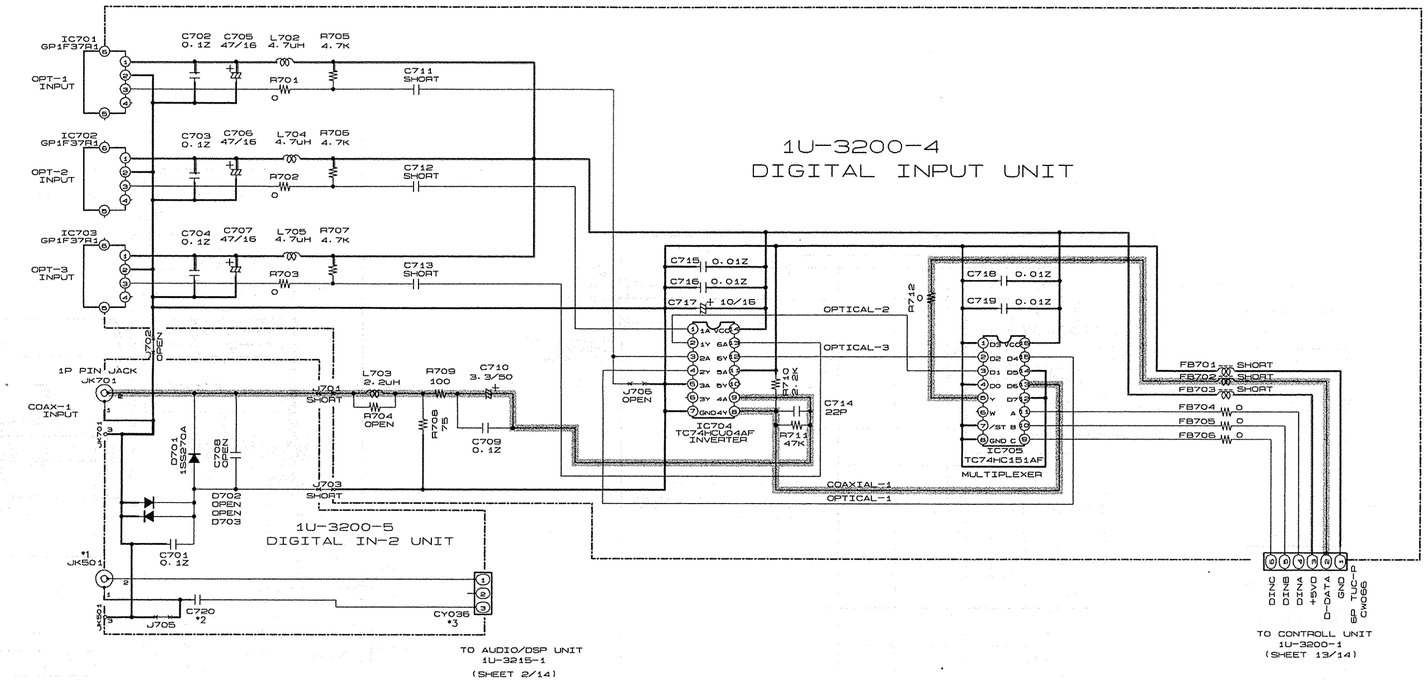
WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

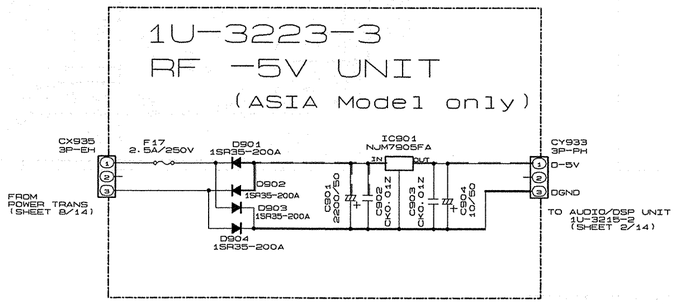
CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

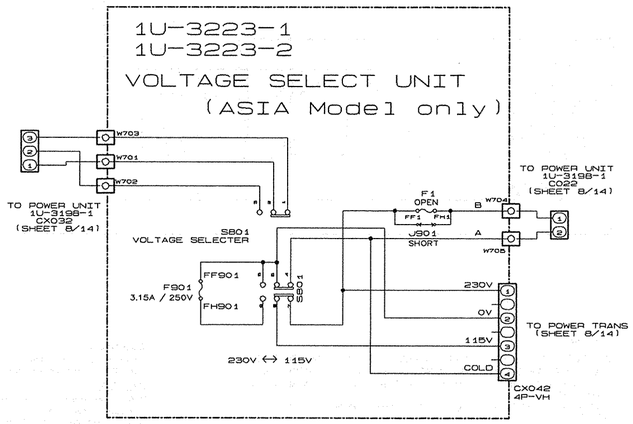
WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS (9/14)









	*1 JK501	*2 C720	*3 CY036
USA CANADA	OPEN	OPEN	OPEN
EUROPE	OPEN	OPEN	OPEN
ASIA	1P PIN JACK	CK0.1	3P KR

NOTICE
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

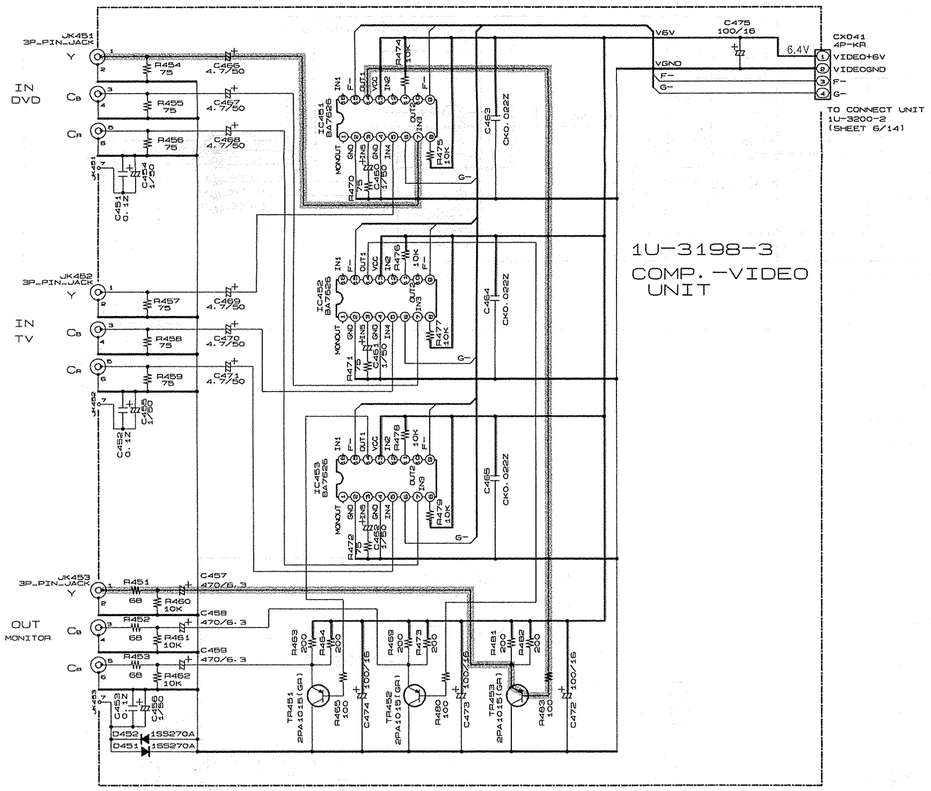
CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is detective.

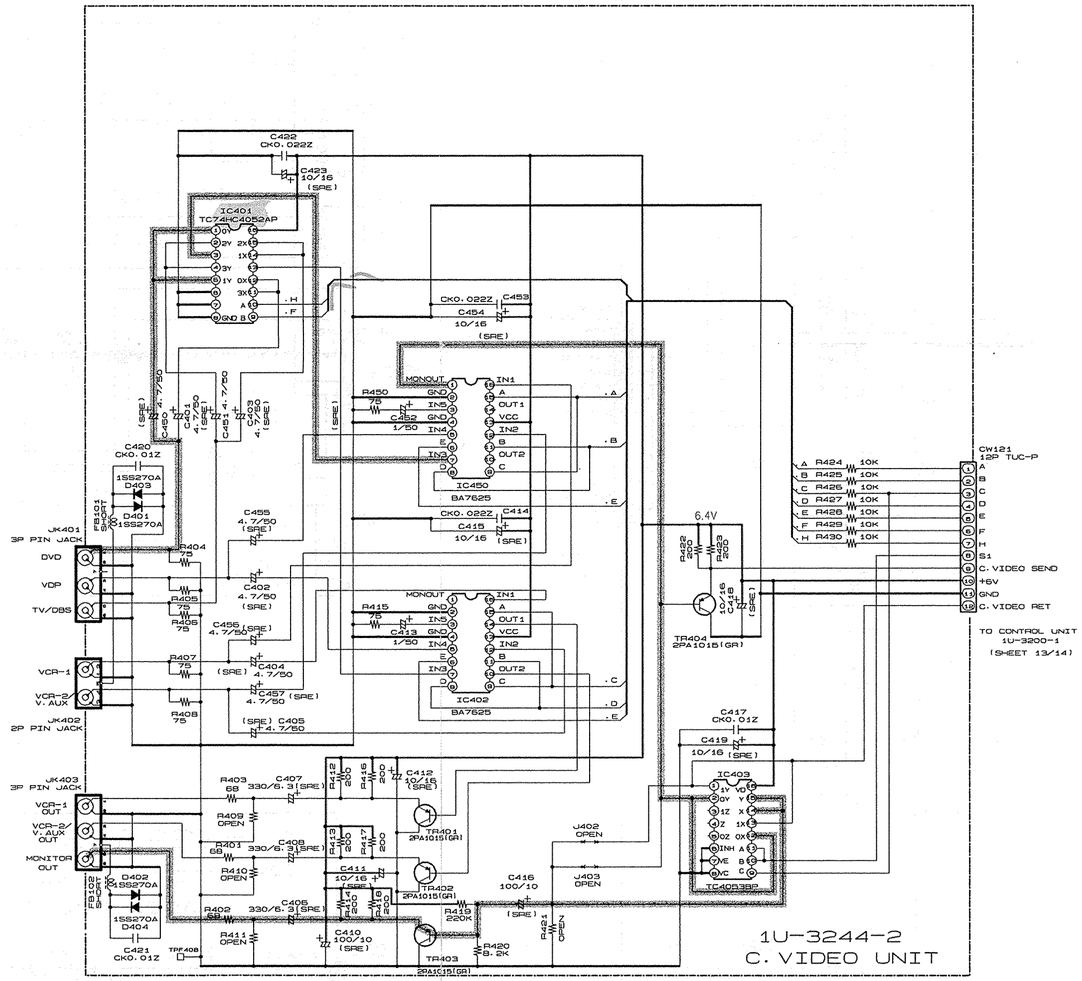
WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

+B LINE
-B LINE
SIGNAL LINE

SCHEMATIC DIAGRAMS (9/14)
1U-3200-3 PRE OUT UNIT / 1U-3200-4 DIGITAL INPUT UNIT
1U-3200-5 DIGITAL IN-2 UNIT
1U-3223-1 / 1U-3223-2 VOLTAGE SELECT UNIT
1U-3223-3 RF -5V UNIT

SCHEMATIC DIAGRAMS (10/14)





+B LINE

SIGNAL LINE

NOTICE

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WARNING:

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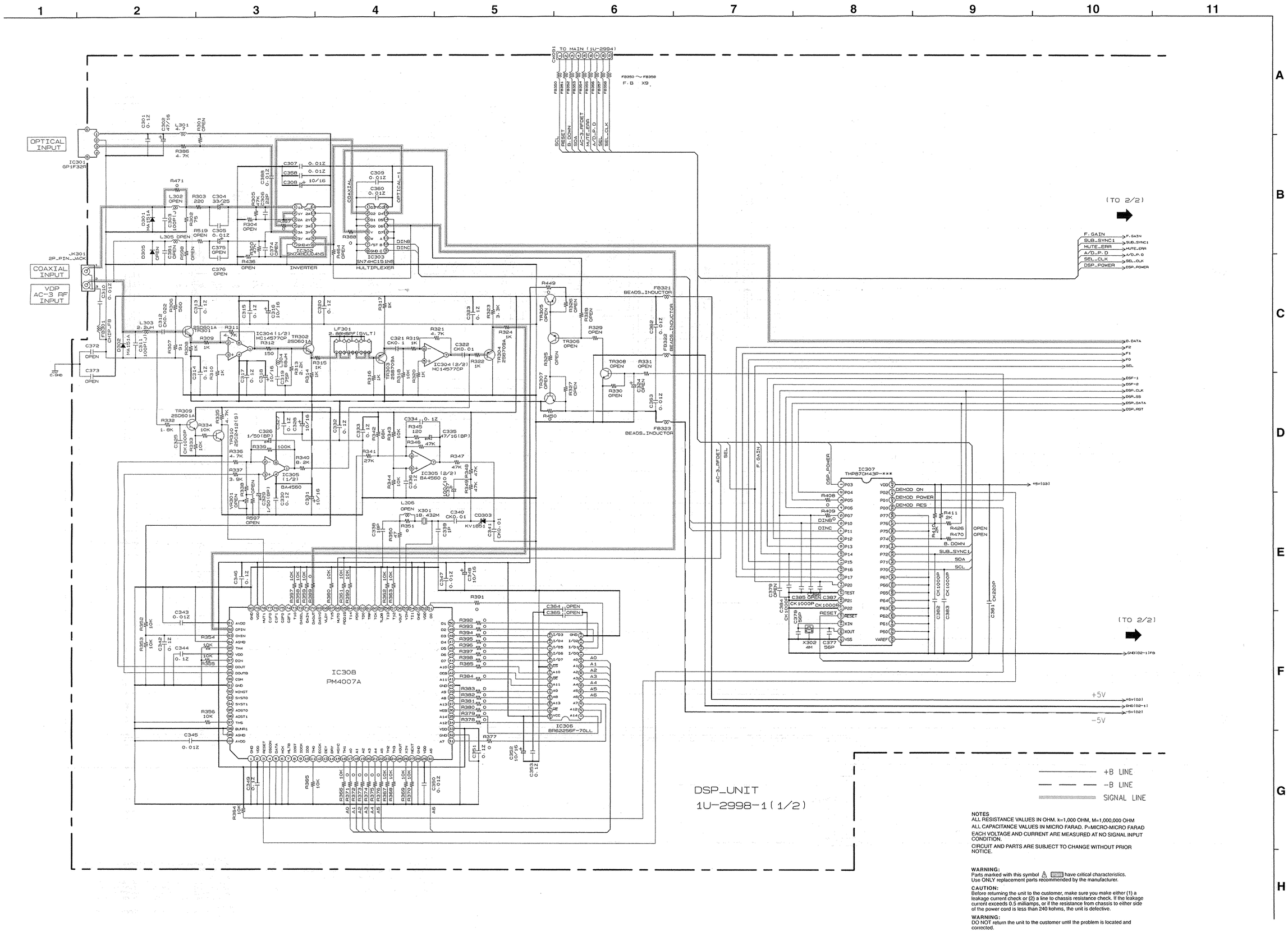
SCHEMATIC DIAGRAMS (10/14)

1U-3198-3 COMP.-VIDEO UNIT
1U-3244-2 C.VIDEO UNIT

SCHEMATIC DIAGRAM (8/11)



NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
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CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

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CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
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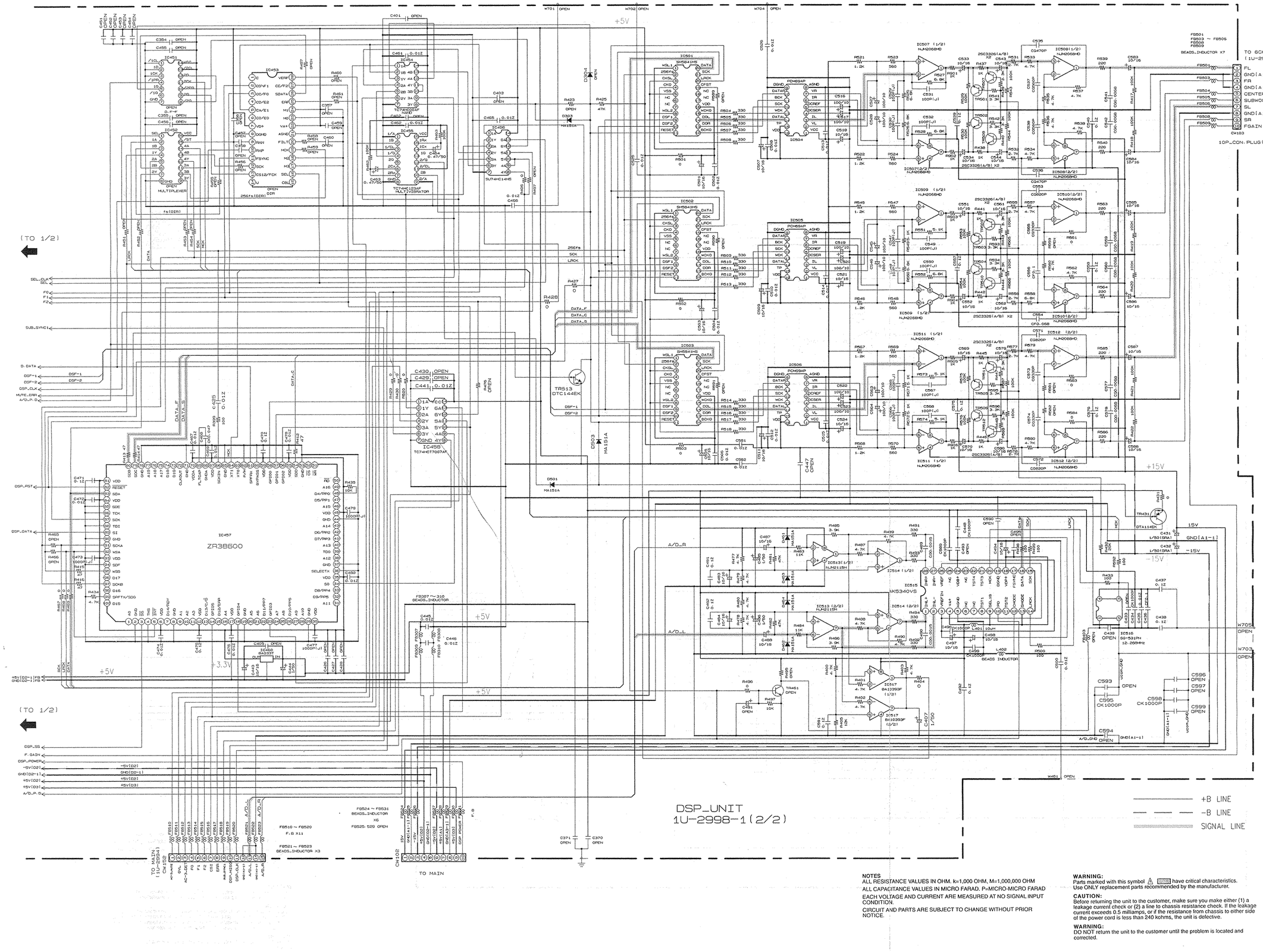
SCHEMATIC DIAGRAM (9/11)



NOTES

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

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WARNING:
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SCHEMATIC DIAGRAM (10/11)

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H

1U-2996-1
DISPLAY_UNIT

1U-2996-4
LED UNIT

FL101 FIP16FM7R

IC102 MSC1937-03

IC101 GP1U271X

IC201 NJM2068DDC

S101-122 TACT SW

AVR MODEL

	K1	K2	K3	K4	K5
L1	STEREO	DOLBY SURROUND	ANALOG/ DIGITAL	TUNER	CD
L2	PHONO	6ch DECORDER	VDP MODE	VDP/DVD	MEMORY
L3	PRESET UP	5CH STEREO	CINEMA	TV/DBS	BAND
L4	PRESET DOWN	MATRIX	REC SELECT	VCR-1	TUNING MODE
L5	PRESET SHIFT	DSP SIMULATION	——	VCR-2/ V. AUX	TUNING UP
L6	——	INPUT ATT.	——	TAPE MONITOR	TUNING DOWN

AVC MODEL

	K5
L4	CH VR SELECT
L5	CH VR UP
L6	CH VR DOWN

+B LINE
-B LINE
SIGNAL LINE

NOTES
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WARNING:
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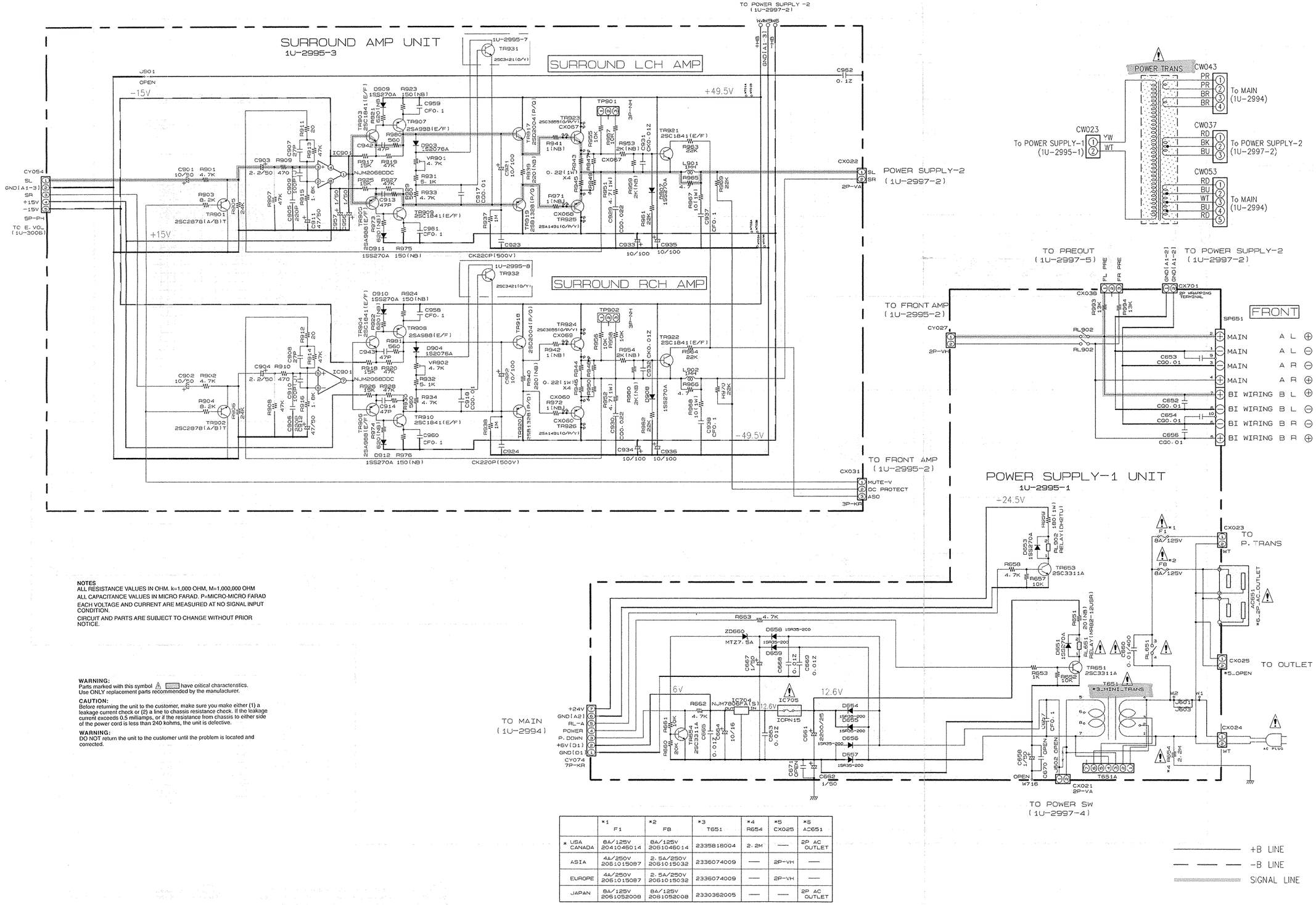
SCHEMATIC DIAGRAM (11/11)



NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
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WARNING:
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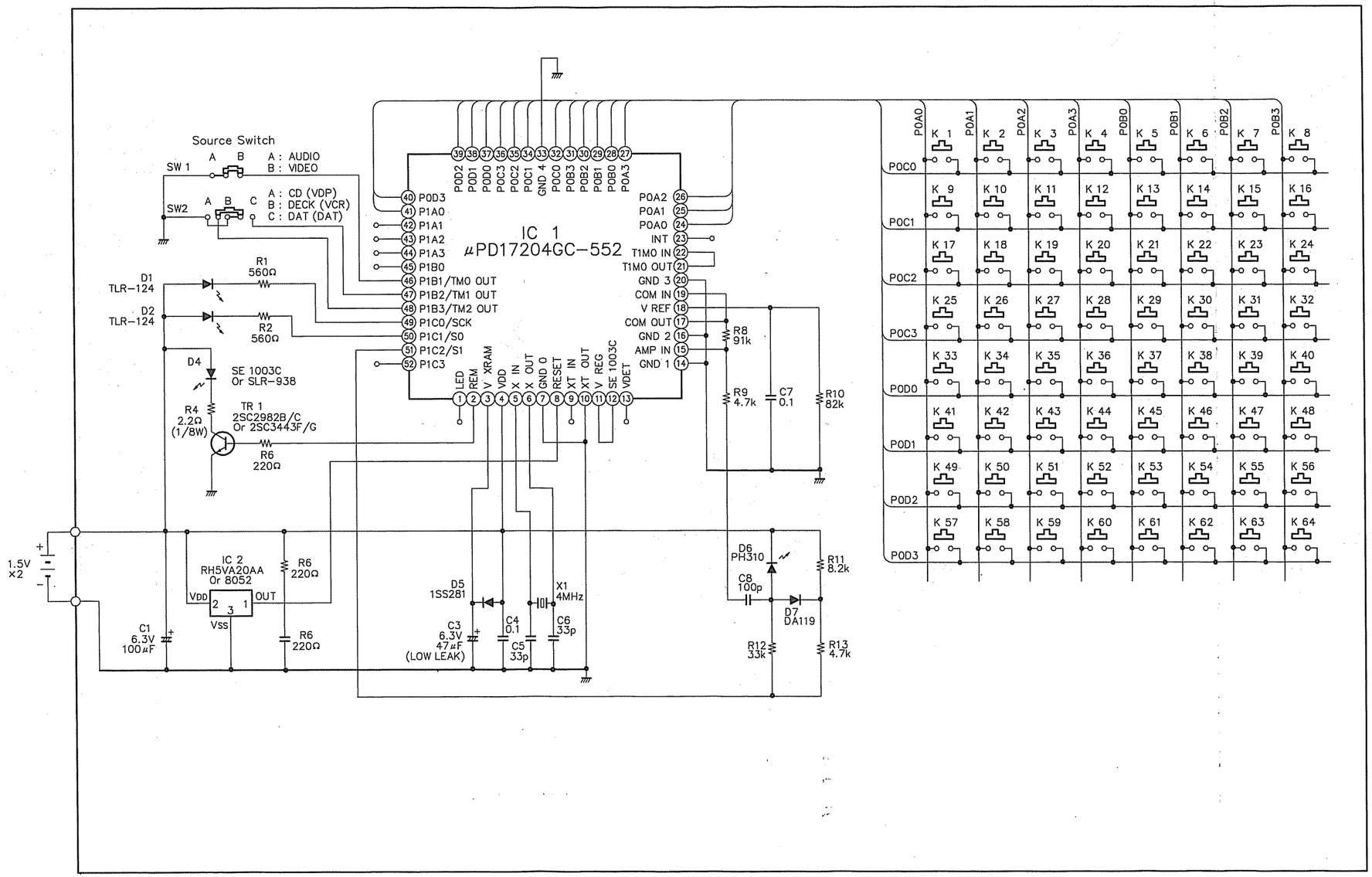
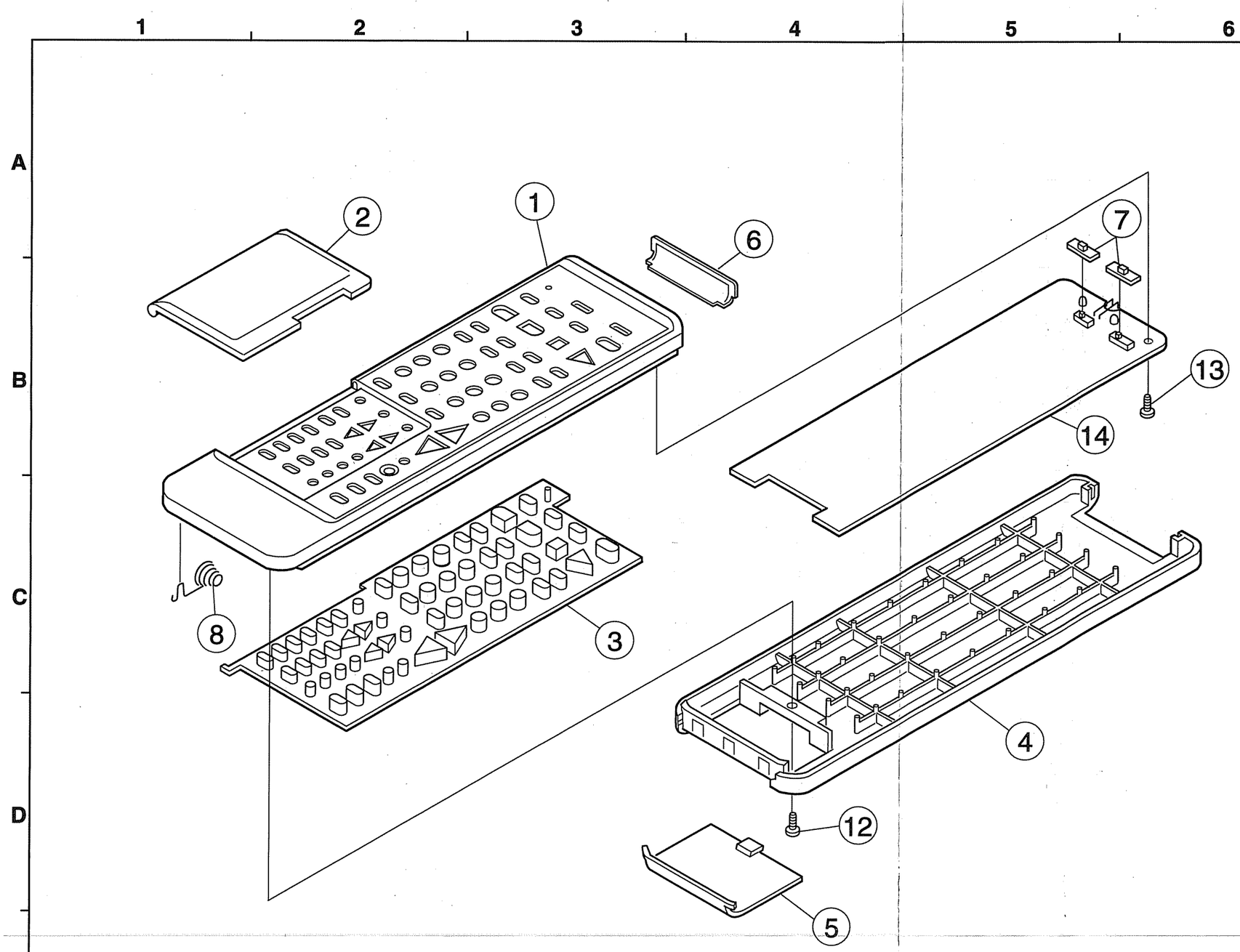
	*1 F1	*2 FB	*3 T651	*4 R654	*5 CX025	*5 AC651
* USA CANADA	8A/125V 2041045014	8A/125V 2051045014	2335818004	2.2M	——	2P AC OUTLET
ASIA	4A/250V 2051015087	2.5A/250V 2051015032	2336074009	——	2P-VH	——
EUROPE	4A/250V 2051015087	2.5A/250V 2051015032	2336074009	——	2P-VH	——
JAPAN	8A/125V 2051052008	8A/125V 2051052008	2330362005	——	——	2P AC OUTLET

REMOTE CONTROL UNIT (RC-825)





PARTS LIST OF REMOTE CONTROL UNIT (RC-825)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
⊙ 1	9H3 1000 164	Top Case (RC825) Ass'y		1s
⊙ 2	9H3 100 0 168	Cover		1
⊙ 3	9H3 1000 169	Switch Rubber		1
⊙ 4	9H3 1000 166	Bottom Case		1
⊙ 5	9H3 1000 167	Battery Cover		1
⊙ 6	9H3 1000 148	Filter		1
7	9H3 1000 150	Slide Knob		2
8	9H3 1000 152	Coil Spring		1
9	—	—		
10	—	—		
11	—	—		
12	9H3 1000 154	Tapping Screw 2x6		1
13	9H3 1000 107	Tapping Screw 2x5		1
14	9H3 1000 161	Main P.W.B. Ass'y		1s
IC1	9H3 1000 162	IC μPD17204GC-552	μ-Com	1
IC2	9H3 1000 158	IC RH5VA10AA	vol. Detector	1
Q1	9H3 1000 070	Transistor 2SC2982	Chip	1
D1,2	9H3 1000 028	LED TLR124	Visible-Red	2
D4	9H3 1000 131	LED SE1003-C	Inflared	1
D5	9H3 1000 087	Diode 1SS2B1		1
D6	9H3 1000 029	Diode PH310	Photo-PIN	1
D7	9H3 1000 071	Diode DA119	Chip	1
X1	9H3 1000 088	Ceramic Resonator	KBR4, 0M503	1
SW1	9H3 1000 089	Slide Switch		1
SW2	9H3 1000 074	Slide Switch		1
C1	254 4213 034	Electrolytic 100μF/6.3V	CE04W0J101M	1
C3	254 4213 021	Electrolytic 47μF/6.3V	CE04W0J470M	1