JVC

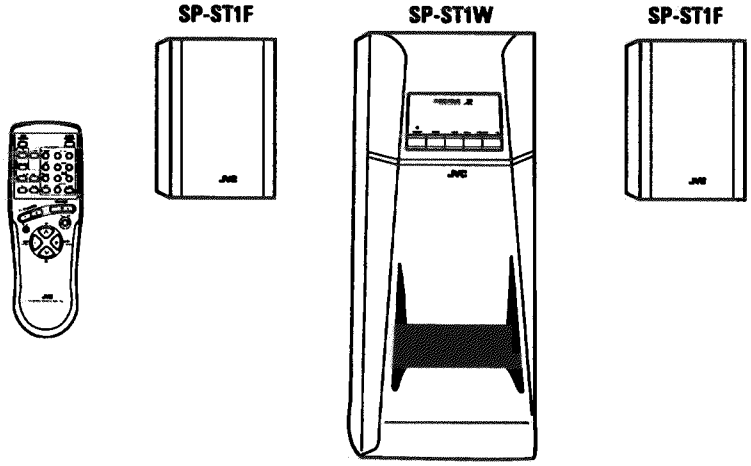
SERVICE MANUAL

HOME THEATER SOUND SYSTEM

SX-ST1

Area Suffix

BS....the U.K.



DOLBY SURROUND PRO•LOGIC

3D-PHONIC

Contents

No.20594U
Jun. 1997

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by (⚠) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and may create shock , fire , or other hazards .
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage .

English

Thank you for purchasing the JVC Home Cinema Sound System.
We hope it will be a valued addition to your home, giving you years of enjoyment.
Be sure to read this instruction manual carefully before operating your new sound system.
Here you will find all the information you need to set up and use the system.
For questions that are not be answered in the manual, please contact your dealer.

Features

- Dolby Pro Logic 3D-PHONIC, which JVC recently developed, allows you to enjoy surround sounds equivalent to Dolby Pro Logic by using only two front speakers and one subwoofer. The subwoofer greatly enhances the bass.
- Since an amplifier is built into the subwoofer, the cable connection is simple and little room is required for placement.
- Dolby Pro Logic 3D-PHONIC and three DAP (Digital Acoustic Processor) modes are built in – SYMPHONY, JAZZ CLUB, and NEWS.
- An optional center speaker and surround speakers can be connected. So you can also enjoy Dolby Pro Logic surround.
- The brightness of the display is adjustable to four levels by using the DIMMER function.
- The remote control supplied with this System can control JVC TVs and VCRs.

How This Manual Is Organized

In this manual we have incorporated some special features:
- Name of buttons and controls are written in all capital letters like this: POWER.
- When we are talking about the Function, rather than the BUTTON or DISPLAY, only the first letter is capitalized.

The manual has a table of contents to help you easily look up what you want to know.
We've enjoyed making this manual for you, and hope you will use it to enjoy the sound and many features built into your SX-ST1.

IMPORTANT CAUTIONS

1. **Installation of the Unit**
   - Select a place which is level, dry and neither too hot nor too cold. (Between 5°C and 35°C or 41°F and 95°F.)
   - Do not use the Unit in a place subject to vibrations.
2. **Power cord**
   - Do not handle the power cord with wet hands!
   - Some power (8 watts) is always consumed as long as the power cord is connected to the wall outlet.
   - When unplugging the Unit from the wall outlet, always pull the plug, not the power cord.
3. **Malfunctions, etc.**
   - There are no user serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
   - Do not insert any metallic object into the Unit.

Table of Contents

English

Instruction Book

SX-ST1

Getting Started

Accessories

Check that you have all of the following items, which are supplied with the SX-ST1.

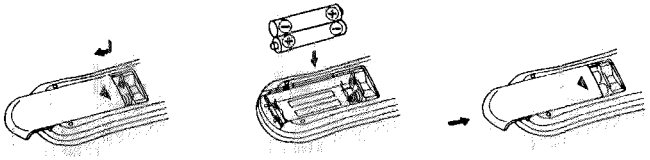
Remote Control (1)
Batteries (2)
Audio signal cord (1)
Speaker cord (2)
Spacers (8)
Screws (4) (for optional stand (SKZ-LS3))

If any of these items is missing, contact your dealer immediately.

How To Put Batteries In the Remote Control

Match the polarity (+ and –) on the batteries with the + and – markings in the battery compartment.

R6P (SUM-3)/AA (15F)



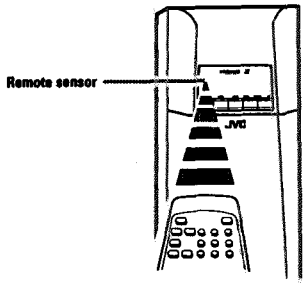
CAUTION: Handle batteries properly.
To avoid battery leakage or explosion:

- Remove batteries when the Remote Control will not be used for a long time.
- When you need to replace the batteries, replace both batteries at the same time with new ones.
- Don't use an old battery with a new one.
- Don't use different types of batteries together.

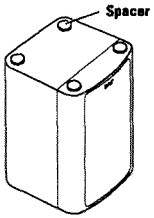
Using the Remote Control

The Remote Control makes it easy to use many of the functions of the SP-ST1W from a distance of up to 7m (23 feet) away.
When using the remote control , aim it at the remote sensor on the subwoofer cabinet.

- When operating JVC TVs or VCRs, aim the remote control at the remote sensor of the target component. (See page 17 "Operating Other Components.")



Attaching the Spacers to the Front Speakers



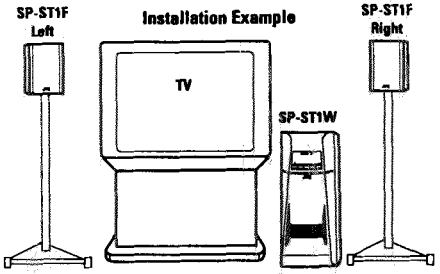
Attach the supplied spacers to the bottom of the front speakers to prevent the speaker from moving or falling down. The adhesive spacers are easy to attach.

- When using the optional speaker stands (SKZ-LS3), you do not have to attach the spacer to the front speakers.

Installing the System

- To prevent deformation and discoloration of the cabinets, do not place the System near heating sources, or in a humid place. Do not expose the System to direct sunlight.
- The System has been processed with magnetic shielding so as not to distort the color on the TV screen. If color distortion occurs on the TV screen, observe the following points.
  1 When using this System with a TV, install the System after turning off the TV by pressing the main power switch, and leaving the TV off for at least 30 minutes.
  2 If some speakers not processed with magnetic shielding are used with this System, they may cause the color distortion on the TV screen.
  3 With some TVs, color distortion may not be eliminated. In this case, place the System away from the TV.

Installation Example

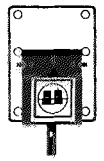


- The illustration above includes the optional speaker stands (SKZ-LS3).

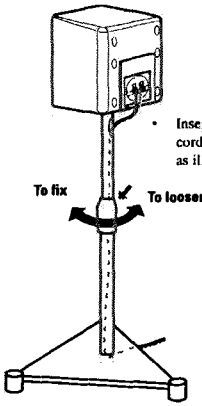
CAUTION: When installing or moving the System, do not hold the parts indicated by ✋ in the illustration to the left. Since these parts are slippery, you may be injured by dropping the cabinet.

How to Use the Optional Speaker Stands (SKZ-LS3):

When using the optional speaker stands SKZ-LS3, attach them as described below.



Fix each speaker to the stand using the two screws supplied with the System while holding the speaker tightly by hand.
Make sure that the speakers do not move after fixing them to the stands.



- Insert the speaker cords into the stands as illustrated.
- To adjust the hight of the speaker, rotate the portion pointed by the arrow in the above illustration to the "To loosen" direction, determine the hight, then rotate it to the "To fix" direction.
  When you fix it, rotate it so tightly that the speaker will not come down.

English

Connections

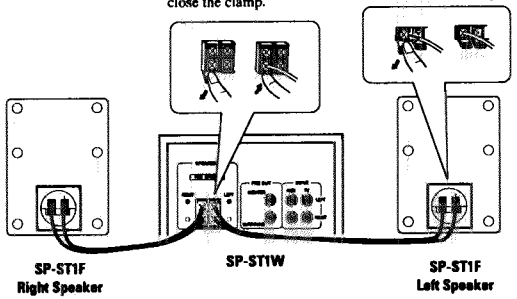
CAUTION: Make all connections before plugging the Unit into an AC power outlet.

Connecting the Speakers

- Twist and remove the insulation at the end of each speaker cord as illustrated. To insert the core wires easily into the speaker terminal, twist them into a single wire.
- Match the polarities (+) and (–) when connecting the speaker cords.
  The speaker cords and speaker terminals are color coded. Connect the speaker terminals using the speaker cord of the same color.
- Plug the speaker cords firmly.

On the SP-ST1W:
Open the clamp, insert the speaker cord, then close the clamp.

On the SP-ST1F:
Open and hold the clamp, insert the speaker cord, then release the clamp.



CAUTION: Do not connect any speakers other than the SP-ST1F speakers to the speaker terminals on the SP-ST1W speakers.

Connecting a TV

Connect the INPUT TV jacks on the SP-ST1W and audio output jacks on the TV using the supplied audio cord.

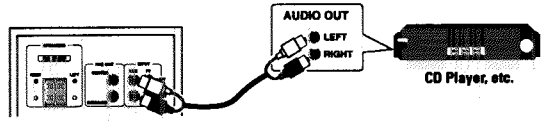
Note: When reproducing TV sounds through this System, turn off the TV's volume; otherwise, the surround effect of this System will be reduced.

CAUTION: Make all connections before plugging the Unit into an AC power outlet.

English

Connecting Another Component

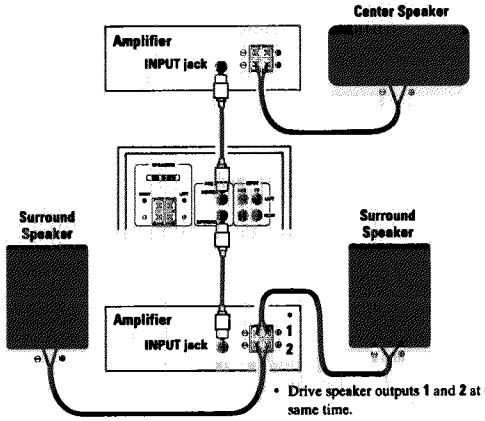
Connect the INPUT AUX jacks on the SP-ST1W and the audio output (LINE OUT) jacks on the other component using an audio cord.



For Dolby Pro Logic Reproduction

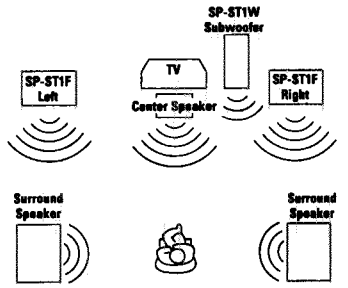
For Dolby Pro Logic reproduction, you need a center speaker, two surround speakers, and two amplifiers (for connecting the center and surround speakers).

Connection:



- Drive speaker outputs **1** and **2** at the same time.

Speaker Arrangement:



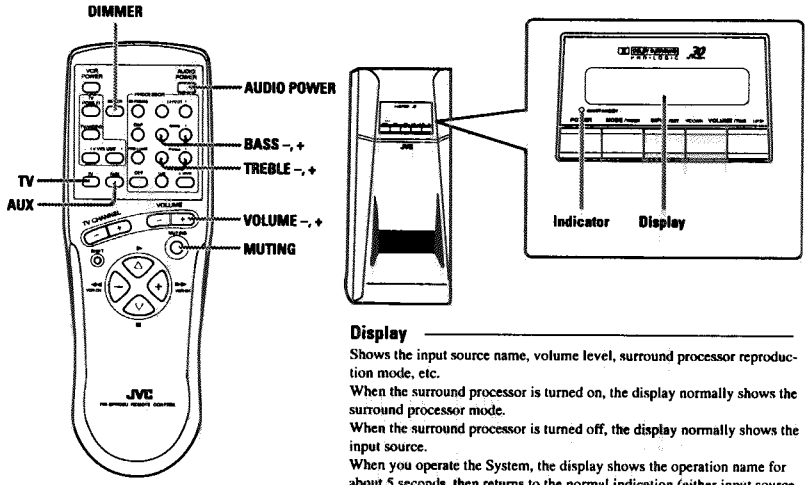
Now you can plug the AC power cord into the wall outlet, and your SX-ST1 is at your command!

SX-ST1

1-5

Common Operations

Operations from the Remote Control



Display

Shows the input source name, volume level, surround processor reproduction mode, etc.
When the surround processor is turned on, the display normally shows the surround processor mode.
When the surround processor is turned off, the display normally shows the input source.
When you operate the System, the display shows the operation name for about 5 seconds, then returns to the normal indication (either input source name indication or surround processor reproduction indication).
When the System is in standby mode, the display shows the clock time. If the clock is not yet set, "0:00" will flash on the display. (To set the clock, see "Setting the Clock" on page 14.)

Turning Power

When the power cord is plugged into an AC outlet, the indicator lights red, indicating the System is standing by.

AUDIO POWER

To turn on the power

Press the AUDIO POWER button.
The indicator turns yellow-green, and the display lights up.
The System turns in the mode it was in when the power was turned off.

To turn off the power

Press the AUDIO POWER button again.
The indicator turns red, and the display shows the clock time.
❑ Some power (8 watts) is always consumed even though power is turned off (called Standby Mode).

Selecting the Source

TV or AUX

Press the TV button or the AUX button.
The selected source is shown on the display.

TV or AUX

Adjusting the Volume

VOLUME

Press the VOLUME –/+ button.
The current volume level is shown on the display when you press the button once.

VOLUME 00

To increase the volume, press the VOLUME + button, and to decrease it, press the VOLUME – button.
- Keeping the button pressed changes the volume continuously.
- The adjustable range is 0 to 30.

CAUTION: Always turn down the volume before turning off the System.

MUTING

Muting

Press the MUTING button.
"MUTE ON" appears on the display and the volume level is set to 0.

MUTE ON

- To restore the volume, press the MUTING button again or the VOLUME –/+ button. "MUTE OFF" appears for a while and the normal indication appears on the display.

MUTE OFF

Adjusting the Tone

BASS

To adjust the bass

Press the BASS –/+ button.
The current bass level is shown on the display when you press the button once.

BASS 0

To increase the bass reinforcement, press the BASS + button, and to decrease the bass reinforcement, press the BASS – button.
- Keeping the button pressed changes the bass level continuously.
- The adjustable range is –5 to +5.

TREBLE

To adjust the treble

Press the TREBLE –/+ button.
The current treble level is shown on the display when you press the button once.

TREBLE 0

To increase the treble reinforcement, press the TREBLE + button, and to decrease the treble reinforcement, press the TREBLE – button.
- Keeping the button pressed changes the treble level continuously.
- The adjustable range is –5 to +5.

Adjusting the Brightness of the Display (DIMMER Function)

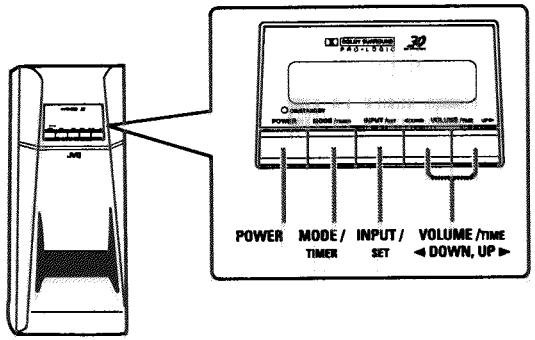
DIMMER

Press the DIMMER button.
Each time you press the button, the brightness changes as follows:

→ Brightest → Brighter → Dimmer → OFF →

- When you operate the main unit, the display is automatically set to Brightest.

Operations on the Main Unit



Turning Power

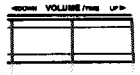
To turn on the power, press the POWER button.

To turn off the power, press the POWER button again.

Selecting the Source

Press the INPUT /SET button.
Each time you press the button, the source alternates between "TV" and "AUX."

Adjusting the Volume

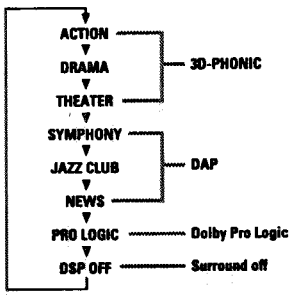


Press the VOLUME/TIME ◄ DOWN/UP ► button.
To increase the volume, press the VOLUME /TIME UP ► button, and to decrease it, press the VOLUME / TIME ◄ DOWN button.

CAUTION: Always turn down the volume before turning off the main unit.

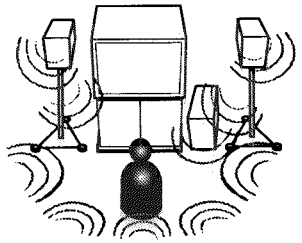
Selecting the Surround Processor Mode

Press the MODE /TIMER button.
Each time you press the button, the Surround Processor Mode changes as follows:



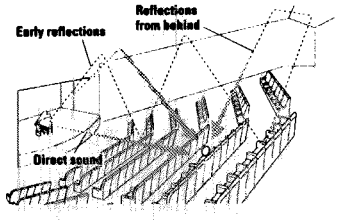
Surround Processor

Three types of DSP (Digital Signal Processor) are built into the main unit.



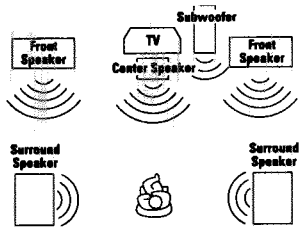
3D-PHONIC

Dolby Surround is widely used to reproduce sounds having a forceful surround effect as well as a feeling of movement like those experienced in movie theaters. In a movie theater, many speakers are arranged behind and next to the screen to reproduce sounds having the surround effect and feeling of movement. Dolby Pro Logic 3D-PHONIC allows families to easily duplicate this type of sound effect.
3D-PHONIC is the result of research on image localization technology carried out at JVC for many years and makes the best use of the latest digital signal processing technology in the reproduction of the surround sound by optimizing the transfer characteristics and directional recognition characteristics of the sound and then combining them to be able to be reproduced by the front speakers. When software bearing DOLBY SURROUND * mark, and encoded with Dolby Surround information is reproduced, a sound will have the force of a movie theater, a feeling of movement and clear dialogue using only the two front speaker and subwoofer.



DAP

The sound heard in a concert hall or club consists of direct and indirect sound — early reflections and reverberations. Direct sounds reach the listener directly without any reflection. On the other hand, early reflections and reverberations are delayed by the distances of the ceiling and walls. These direct sounds, early reflections and reverberations are the most important elements of the acoustic surround effects.
The DAP built into this System can create these important elements through the digital signal processing method, and gives you a real "being there" feeling.



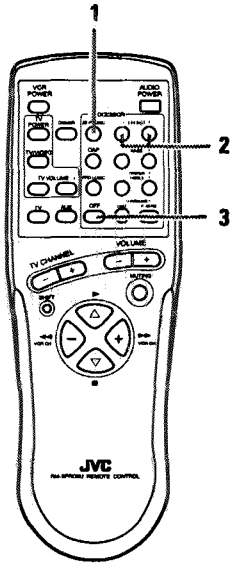
Dolby Pro Logic

Dolby Pro Logic is a function devised for home use to allow families to enjoy movies and music software bearing DOLBY SURROUND * mark which includes the same encoded surround information as found in Dolby Stereo films. Since Dolby Pro Logic reproduces dialogue from a center speaker independently, emphasizes the movement of sound, and gives you a real "being there" feeling.

* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under Canadian patent number 1,037,877. "Dolby", the double-D symbol and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

Playing the Source Using the 3D-PHONIC Modes

You can use this mode to watch a video software (bearing the DOLBY SURROUND mark) encoded with Dolby surround information. You can also use this mode to watch a TV program encoded with the Dolby surround information.



1. Press the 3D-PHONIC button repeatedly to select the 3D-PHONIC mode you want.
Each time you press the button, the 3D-PHONIC mode changes as follows:

→ ACTION → DRAMA → THEATER →

ACTION: Best for action and war movies — where the action is fast and explosive.
DRAMA: Best for dramas and romantic movies — where the action is slow and soft.
THEATER: Reproduces the sound field of a large theater.

2. Press the EFFECT –/+ button to adjust the effect level.
The current level is shown on the display when you press the button once.

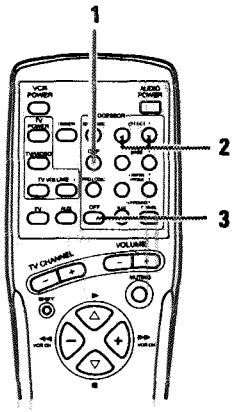
To increase the effect level, press the EFFECT + button, and to decrease it, press the EFFECT – button.
- Keeping the button pressed changes the effect level continuously.
- The adjustable range is –5 to +5 (11 levels).
- The effect level can be stored for each mode.
- "EFFECT 0" is the normal effect level.

3. To cancel the 3D-PHONIC modes, press the OFF button.
"DSP OFF" appears and the input source name is shown on the display.

- "DSP (Digital Signal Processor)" indicates the surround processor modes incorporated in this System as a whole.
- You can select the mode by pressing the MODE button on the main unit. (See page 9 "Operations on the Main Unit.")

Playing the Source Using the DAP Modes

When you listen to music or watch a music program on the TV, you can create a more realistic sound field by using the DAP modes. Among the DAP modes, there is one suitable for watching or listening to news.



1. Press the DAP button repeatedly to select the DAP mode you want.
Each time you press the button, the DAP mode changes as follows:

→ SYMPHONY → JAZZ CLUB → NEWS →

SYMPHONY: Reproduces the sound field of a large concert hall. Best for orchestral music.
JAZZ CLUB: Reproduces the sound field of a live music club
NEWS: Best for watching or listening to news.

2. Press the EFFECT –/+ button to adjust the effect level.
The current level is shown on the display when you press the button once.

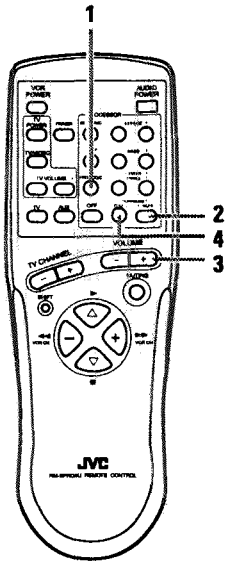
To increase the effect level, press the EFFECT + button, and to decrease it, press the EFFECT – button.
- Keeping the button pressed changes the effect level continuously.
- The adjustable range is –5 to +5 (11 levels).
- The effect level can be stored for each mode.
- "EFFECT 0" is the normal effect level.

3. To cancel the DAP modes, press the OFF button.
"DSP OFF" appears and the input source name is shown on the display.

- "DSP (Digital Signal Processor)" indicates the surround processor modes incorporated in this System as a whole.
- You can select the mode by pressing the MODE button on the main unit. (See page 9 "Operations on the Main Unit.")

Preparation for Dolby Pro Logic Reproduction

Before applying Dolby Pro Logic to any source, you need to adjust the center speaker mode and the output level of each speaker.
- Make sure that the center speaker, surround speakers, and amplifiers are connected and arranged correctly. (See page 6 "For Dolby Pro Logic Reproduction.")



1. Press the PRO LOGIC button.
"PRO LOGIC" appears on the display.

- Turn on the amplifiers connected to the center speaker and surround speakers, and set the volume to 0 on the amplifiers.

2. Press the C. MODE button to select the center speaker mode you want.
The current mode is shown on the display when you press the button once.
Each time you press the button, the center mode changes as follows:

→ NORMAL → WIDE → PHANTOM → OFF →

NORMAL: Select this mode when the center speaker cannot reproduce the bass better than the front speakers. The bass portions of the center channel signals are output through the front speakers.
WIDE: Select this mode when the center speaker can reproduce the bass better than the front speakers. All signals of the center channel are output through the center speaker.
PHANTOM: Select this mode when you do not use a center speaker. The center speaker channel signals are output through the front speakers.
OFF: Select this mode to turn off the center speaker channel.

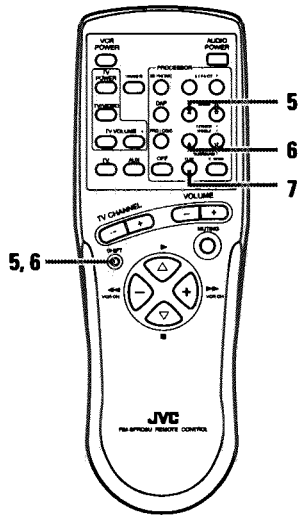
- Keeping the button pressed changes the center modes continuously.

3. Press the VOLUME –/+ button.
Play the source, and adjust the volume.

4. Press the TEST button.
Test tones come out from each speaker in turn so you can adjust the speaker's output. The display indicates the speaker currently outputing the test tones.

When the center mode is set to NORMAL or WIDE:
Test tones are output in the following order:
→ **TEST L** (left front speaker) → **TEST CTR** (center speaker) → **TEST R** (right front speaker) → **TEST SUR** (surround speakers) →

When the center mode is set to PHANTOM or OFF:
Test tones are output in the following order:
→ **TEST L** (left front speaker) → **TEST R** (right front speaker) → **TEST SUR** (surround speakers) →



5. Adjust the center speaker output level.
When the center mode is set to NORMAL or WIDE, you can adjust the center speaker output level.

1. Adjust the volume of the amplifier connected to the center speaker to the same level as this System.
2. Press the CENTER –/+ button while pressing the SHIFT button on the remote control to adjust the center speaker output level.
   Make this adjustment only from your listening position.
   - The current output level is shown on the display when you press the button once.

To increase the output level, press the CENTER + button, and to decrease it, press the CENTER – button while pressing the SHIFT button.
- The adjustable range is –10 to +10.
- Keeping the button pressed changes the effect level continuously.
- When the center mode is set to PHANTOM or OFF, you cannot adjust the center speaker output level.

6. Adjust the surround speaker output level.

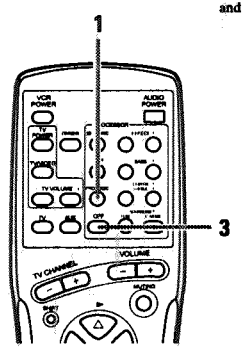
1. Adjust the volume of the amplifier connected to the surround speakers to the same level as this System.
2. Press the SURROUND –/+ button while pressing the SHIFT button on the remote control to adjust the surround speaker output level.
   Make this adjustment only from your listening position.
   - The current output level is shown on the display when you press the button once.

To increase the output level, press the SURROUND + button, and to decrease it, press the SURROUND – button while pressing the SHIFT button.
- The adjustable range is –10 to +10.
- The output levels of the left and right surround speakers are identical. You cannot adjust them separately.
- Keeping the button pressed changes the effect level continuously.

7. Press the TEST button.
After you finish the speaker output level adjustment, press the TEST button. The test tones stop and "PRO LOGIC" appears on the display.

Playing a Source Using Dolby Pro Logic

You can play a video software (bearing the DOLBY SURROUND mark) encoded with the Dolby surround information using an additional center speaker and surround speakers with this System.
- Before you start, complete the required preparations for Dolby Pro Logic reproduction (see page 12 and 13).



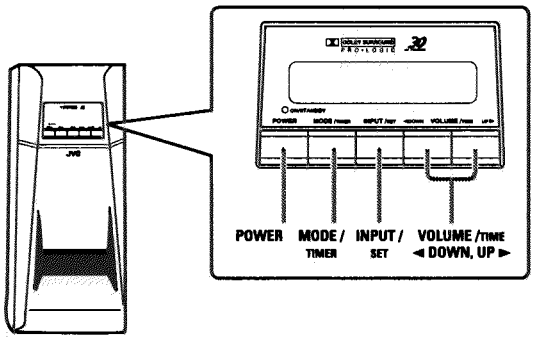
1. Press the PRO LOGIC button.
"PRO LOGIC" appears on the display.

2. Play the source bearing the DOLBY SURROUND mark.

3. To cancel the Dolby Pro Logic modes, press the OFF button.
"DSP OFF" appears and the input source name is shown on the display.

- You can select the mode by pressing the MODE button on the main unit. (See page 9 "Operations on the Main Unit.")
- When using Dolby Pro Logic, you cannot adjust the effect level by pressing the EFFECT –/+ button.

Using the Timers



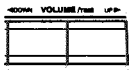
You can use two timers — On/Off Timer and Sleep Timer.
Before using the timers, set the clock first. You can set the clock and the timers only using the button on the main unit.

Setting the Clock

1. Turn on the System.
Press the POWER button (or the AUDIO POWER button on the remote control) if the System is in standby mode.

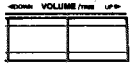
2. Press the MODE /TIMER button for more than 2 seconds.
The display shows the time indication with its "hour" part flashing.

Note: Complete the steps below while the time indication is shown on the display. If the time indication disappears from the display, repeat the procedure from step 2 again.



3. Set the "hour" by pressing the VOLUME /TIME ◄ DOWN or UP ► button.
Pressing the UP ► button increases the "hour", and pressing the ◄ DOWN button decreases it. Holding down the button allows you to continuously adjust the "hour" setting until the button is released.

4. Press the INPUT /SET button.
Check that the "hour" setting is correct.



5. Set the "minute" by pressing the VOLUME /TIME ◄ DOWN or UP ► button.
Pressing the UP ► button increases the "minute", and pressing the ◄ DOWN button decreases it. Holding down the button allows you to continuously adjust the "minute" setting until the button is released.

6. Press the INPUT /SET button.
The clock setting is completed. The display shows the set time for a while then returns to the normal indication.

CAUTION: If there is a power failure, the clock stops at that time ("0:00" flashes on the display). The System memorizes this stop time for several hours and may show this stop time on the display instead of "0:00" when you start resetting the clock. Reset the clock correctly using the above procedures again.

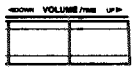
Setting the On/Off Timer

1. Turn on the System.
Press the POWER button (or the AUDIO POWER button on the remote control) if the System is in standby mode.

2. Press the MODE /TIMER button for more than 2 seconds.
The display shows the time indication with its "hour" part flashing.

Note: Complete the steps below while the time indication is shown on the display. If the time indication disappears from the display, repeat the procedure from step 2 again.

3. Press the MODE /TIMER button once again.
The display shows the on-time setting indication.



4. Set the on-time.
First press the VOLUME /TIME ◄ DOWN or UP ► button, then the INPUT /SET button to set the "hour".
Then, repeat the same procedure to set he "minute".
The display shows the off-time setting indication after setting the "minute".

5. Set the off-time.
First press the VOLUME /TIME ◄ DOWN or UP ► button, then the INPUT /SET button to set the "hour".
Then, repeat the same procedure to set the "minute".
The display shows the set off-time for a while then returns to the normal indication.

6. Press the POWER button.
The System enters standby mode. The display shows the clock time and "=T=" (this means that the timer is set).

Note: Make sure to press the POWER button after the display returns to the normal indication.
If you press the button while the off-time is shown on the display, the timer will not be set. You need to reset both the on-time and off-time again.

- When the On-time comes, the System automatically turns on. Then it enters standby mode when the off-time comes.
- Once the timer has been activated, the setting is erased.
- If you turn on the System or put it into standby mode after setting the timer, the setting is erased.

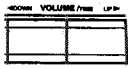
Setting the Sleep Timer

This timer automatically puts the System into standby mode after a time you set.

1. Press the MODE /TIMER button for more than 2 seconds.
The display shows the time indication with its "hour" part flashing.

2. Press the MODE /TIMER button three times.
The display shows the Sleep Timer setting indication.

Note: The Sleep Timer setting indication is shown on the display for about 5 seconds. If this indication disappears from the display, repeat the procedure from the beginning.



3. Set the time.
Press the VOLUME /TIME ◄ DOWN or UP ► button.
Each time you press the button, the shown time (flashing) changes as follows:

UP ► →
←10 ←20 ←30 ←60 ←90 ←120 ←0 ←
← ◄ DOWN

4. Press the INPUT /SET button.
The shown time on the display stops flashing, then the display returns to the normal indication.

- The System automatically enters standby mode after the time you set. "SLEEP OFF" appears and starts flashing on the display about 10 seconds before the System enters standby mode.

To change the Sleep Timer setting, repeat the above procedure from the beginning.

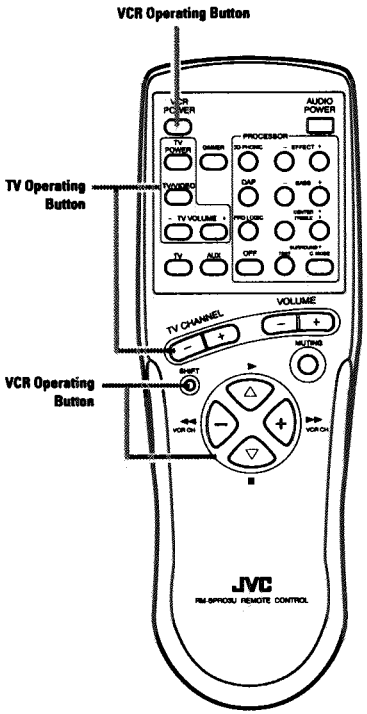
To cancel the Sleep Timer, repeat the above procedure and select "0" in step 3.

- While the Sleep Timer is being activated, you can check the remaining time until the System enters standby mode by repeating steps 1 and 2.

English

Operating Other Components

The remote control supplied with this System can control JVC TVs and VCRs.



Operating a JVC TV

When operating a TV, aim the remote control at the remote sensor on the TV.

TV POWER ..... Turns on or off (standby) the TV.

TV/VIDEO ..... Switches the TV's input mode (between TV and VCR).

– TV VOLUME + ... Adjust the TV's volume
To increase the volume, press the TV VOLUME + button.
To decrease it, press the TV VOLUME – button.

TV CHANNEL ..... Changes the TV's channels

Operating a JVC VCR

When operating a VCR, aim the remote control at the remote sensor on the VCR.
Set the remote code of the VCR to A.

VCR POWER ..... Turns on or off (standby) the VCR.

..... Plays back a video tape.

..... Stops playback.

..... Rewinds a video tape.

..... Fast-forwards a video tape.

SHIFT + ... Changes the channels on the VCR.
SHIFT +
• When changing channels, press the SHIFT button at the same time.

Troubleshooting

- If you are having a problem with your SX-ST1, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

Symptom	Possible Cause	Action
No sound comes out.	Wrong connections.	Check the connections. If wrong, redo the connections (see pages 5 and 6 "Connections").
	Connecting cords are not plugged in.	Connect the connecting cords correctly.
	An incorrect source is selected.	Select the correct source.
	MUTING function is on.	Set the MUTING function off. (See page 8.)
The remote control does not function.	Batteries are weak.	Replace the batteries.
	There is an obstruction in front of the remote sensor on the main unit.	Remove the obstruction.

Specifications

SP-ST1W

Amplifier Section

Output Power
- Main: 25 watts per channel, min RMS, into 6 ohms at 1 kHz, with no more than 0.9% Total Harmonic Distortion.
- Subwoofer: 25 watts, min RMS, into 6 ohms at 70 Hz, with no more than 0.9% Total Harmonic Distortion.

Input Sensitivity/Impedance (1 kHz)
- AUX/TV: 1.1V/47 kohms
- Tone Control: Bass (75 Hz) : +5dB, –7dB; Treble (10 kHz) : ±6dB
- Surround Processor: 3D-PHONIC (3 modes); DAP (3 modes); Dolby Pro Logic

Speaker Section
- Type: Kelton type (Magnetically-shielded type)
- Speaker: 13.5 cm (5-3/8 inch) cone
- Dimensions: 175 x 450 x 480 mm (W/H/D) (6-15/16 x 17-3/4 x 18-15/16 inches)
- Mass: 11.2 kg (24.7 lbs)

Power Specifications
- Power Requirements: AC 230 V ∿, 50 Hz
- Power Consumption: 65 watts; 8 watts (in standby mode)

SP-ST1F
- Type: Full range bass-reflex type (Magnetically-shielded-type)
- Speaker: 10 cm (4 inch) cone
- Dimensions: 137 x 205 x 141 mm (W/H/D) (5-7/16 x 8-1/8 x 5-5/8 inches)
- Mass: 1.4 kg (3.1 lbs)

SX-ST1
- Frequency Range: 34 Hz - 18 kHz
- Sound Pressure Level: 89dB/W•m

Accessories
Remote Control (1)
Batteries R6P (SUM-3)/AA (15F) (2)
Audio signal cord (1)
Speaker cord (2)
Spacers (8)
Screws (for optional stand (SKZ-LS3)) (4)

Design and specifications are subject to change without notice.

English

SX-ST1

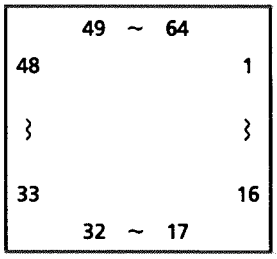
1-11

-MEMO-

Description of Major LSIs

■ MN171601AJAAF1 (IC201) : System Controller

1. Terminal Layout



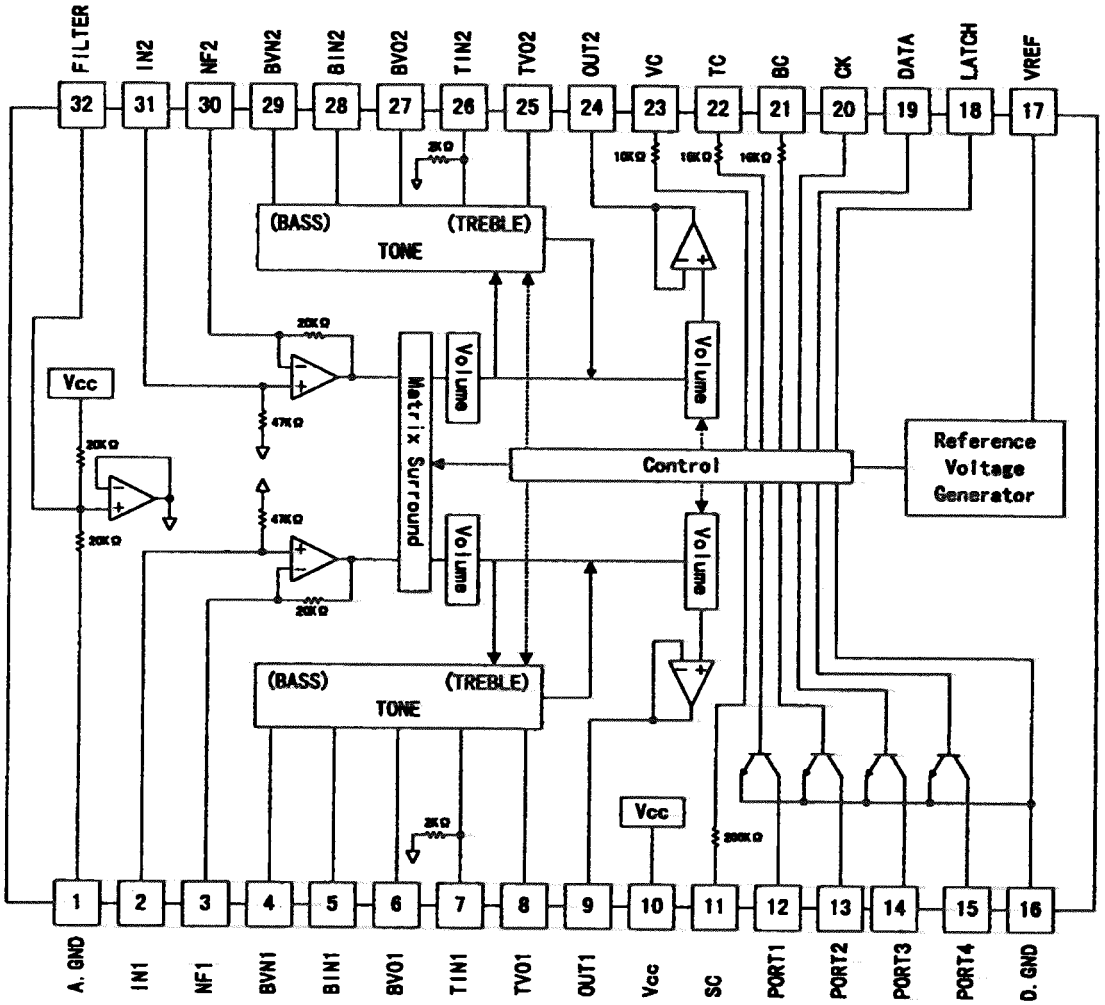
2. Description

Pin No.	Symbol	I/O	Function	Pin NO.	Symbol	I/O	Function
1	DATA	O	Data signal to IC061,081	36	FLON	--	Not used
2	RMIN	I	Remocon signal input	37~39		--	Not used
3	$\overline{INH}$	I	Inhibit signal input	40	AU/TV	O	AUX/TV input control
4		--	Not used	41~43		--	Connect to GND
5~7		--	Connect to GND	44	UP	I	UP switch input
8	$\overline{EMPTY}$	I	CMEM update buffer and HR resistor empty flug input	45	DOWN	I	DOWN switch input
9		--	Not used	46	MODE	I	MODE switch input
10	$\overline{RESET}$	O	Reset signal to IC081	47	INPUT	I	INPUT switch input
11	$\overline{CS}$	O	Chip select signal to IC081	48	POW	I	POWER switch input
12		--	Not used	49	$\overline{RESET1}$	O	Reset signal to IC801
13	HRS	O	Data frame synchronization signal to IC081	50	$\overline{CS1}$	O	Chip select signal to IC801
14	STB	O	Load strobe signal to IC061	51	RST	I	System reset signal input
15		--	Not used	52		--	Connect to GND
16	D.MT	O	DSP mute signal to IC081,041	53		--	Not used
17	VCK	O	Clock signal for IC202,IC102	54	GND	--	GND
18	VDATA	O	Data signal for IC202,IC102	55,56		--	oscillation terminal (6MHZ)
19	LATCH2	O	Latch signal to IC102	57	VDD	--	power supply
20	LATCH1	O	Latch signal to IC202	58		--	Connect to GND
21~30		--	Connect to GND	59	SCK1	O	Clock signal for IC801
31	PTH	--	Connect to GND	60	T.TEST	I	Test terminal
32	PRT	I	Protector detection	61	DATA1	O	Data signal for IC801
33	SPK	O	Speaker relay control signal	62	FOUT	O	Clock frequency output
34		--	Not used	63	SCK	O	Clock signal for IC081,061
35	$\overline{P.ON}$	O	Power on/off control	64	$\overline{MUTE}$	O	Mute control signal output

SX-ST1

■ BH3854AS (IC102,202) : Audio Sound Control

1. Block Diagram

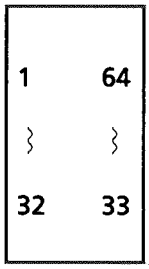


2. Description

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	A GND	–	Analog GND	19	DATA	I	Data signal for IC201
2	IN1	I	1ch volume input	20	CLK	I	clock signal for IC201
3	NF1	I	Gain adjustment of input stage amp	21	BC	–	To mount time constant to prevent shock at switching
4	BVN1	–	1ch low pass filter connect pin	22	TC	–	To mount time constant to prevent shock at switching
5	BIN1	–	1ch low pass filter connect pin	23	VC	–	To mount time constant to prevent shock at switching
6	BVO1	–	1ch low pass filter connect pin	24	OUT2	O	2ch volume output
7	TIN1	–	1ch high pass filter connect pin	25	TVO2	–	2ch high pass filter connect pin
8	TVO1	–	1ch high pass filter connect pin	26	TIN2	–	2ch high pass filter connect pin
9	OUT1	O	1ch volume output	27	BVO2	–	2ch low pass filter connect pin
10	VCC	–	Power supply	28	BIN2	–	2ch low pass filter connect pin
11~15		–	Not used	29	BVN2	–	2ch low pass filter connect pin
16	D GND	–	Digital GND	30	NF2	I	Gain adjustment of input stage amp
17	VREF	–	3.8V reference voltage output	31	IN2	I	2ch volume input
18	LATCH	I	Latch signal for IC201	32	FILTER	I	Filter pin

■ M66004SP (IC801) : FL Driver IC

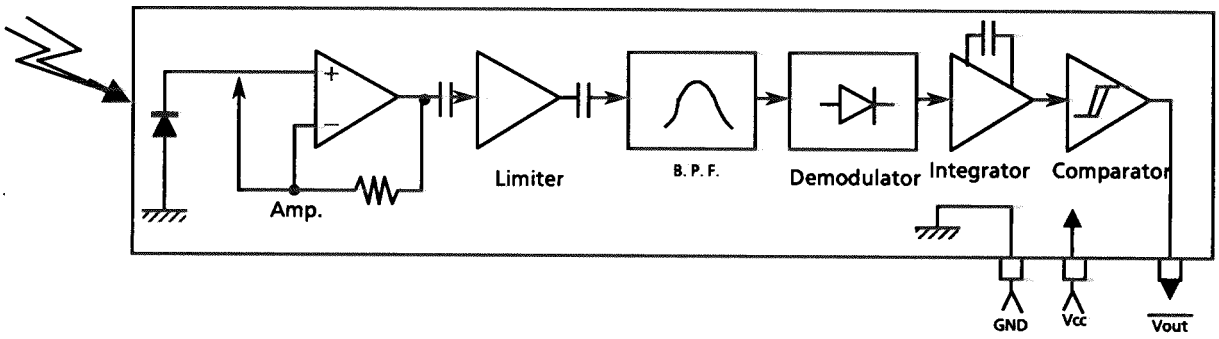
1. Terminal Layout



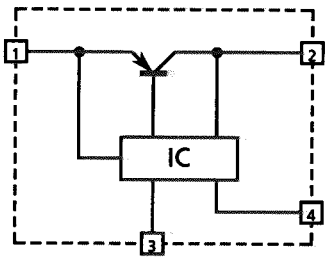
2. Description

Pin No	Symbol	I/O	Function
3~11	1G~9G	--	FL grid drive signal
13	$\overline{\text{RESET}}$	I	Reset input for internal logic at turning the power on.
14	$\overline{\text{CS}}$	I	Chip select
15	SCK	I	System clock for shift register
16	S.DATA	I	Indication data input
19,60	Vcc	--	Power supply
20,21	XOUT,XIN	I/O	Oscillation circuit is composed by connecting the resistor and capacitor.
22	GND	--	GND
32	VP	--	−32V
24~59	S0~S34	O	FL anode drive signal

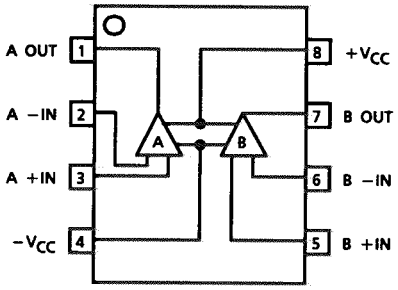
■ GP1U501X (IC802) : Receiver for remote controller



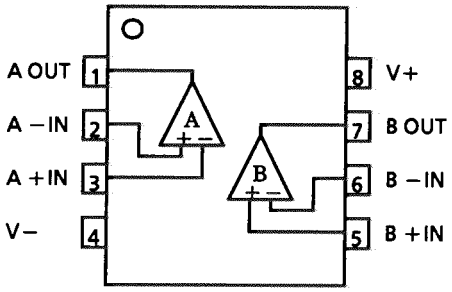
■ PQ05RF1 (IC103) : Regulator



■ VC4580D(IC101,301,302,401,402) : Dual OP Amp.



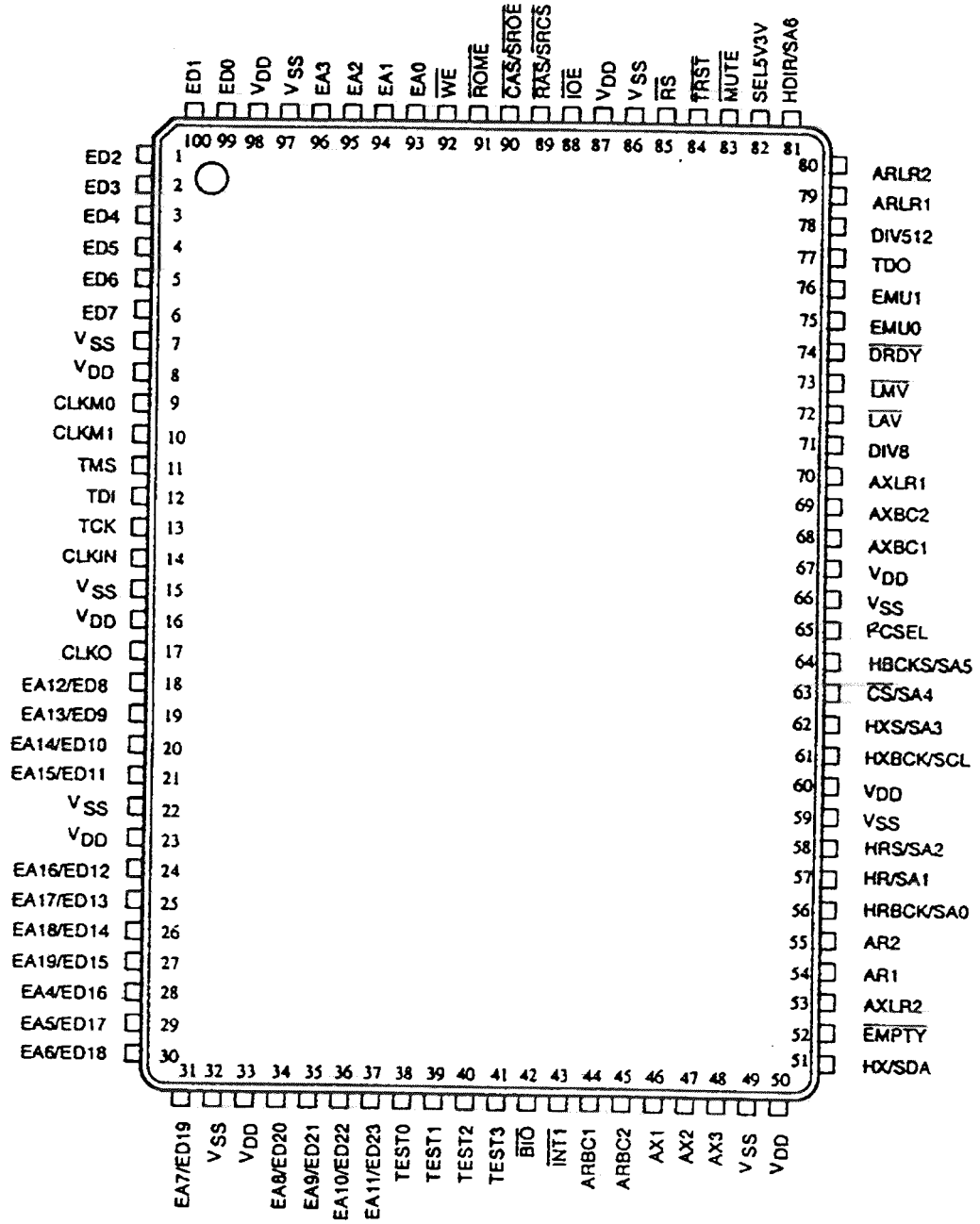
■ NJM2100M (IC051) : Dual OP Amp.
BA15218F (IC071)



SX-ST1

■ TMS57052 (IC081) : DSP LSI

1. Terminal Layout



2. Description

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	ED2	I/O	External memory and I/O data bus	26	EA18/ED14	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus
2	ED3	I/O	External memory and I/O data bus	27	EA19/ED15	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus
3	ED4	I/O	External memory and I/O data bus	28	EA4/ED16	I/O	External memory address bus / External I/O data bus
4	ED5	I/O	External memory and I/O data bus	29	EA5/ED17	I/O	External memory address bus / External I/O data bus
5	ED6	I/O	External memory and I/O data bus	30	EA6/ED18	I/O	External memory address bus / External I/O data bus
6	ED7	I/O	External memory and I/O data bus	31	EA7/ED19	I/O	External memory address bus / External I/O data bus
7	VSS	--	GND	32	VSS	--	GND
8	VDD	--	Power supply	33	VDD	--	Power supply
9	CLKM0	I	Clock mode	37	EA11/ED23	I/O	External memory address bus / External I/O data bus
10	CLKM1	I	Clock mode	38	TEST0	I	Test mode control
11	TMS	I	Test access port mode select	39	TEST1	I	Test mode control
12	TDI	I	Test access port data input	34	EA8/ED20	I/O	External memory address bus / External I/O data bus
13	TCK	I	Test access port clock	35	EA9/ED21	I/O	External memory address bus / External I/O data bus
14	CLKIN	I	Master clock input	36	EA10/ED22	I/O	External memory address bus / External I/O data bus
15	VSS	--	GND	40	TEST2	I	Test mode control
16	VDD	--	Power supply	41	TEST3	I	Test mode control
17	CLKO	O	Machine clock	42	$\overline{BIO}$	I	Divergence control input
18	EA12/ED8	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	43	$\overline{INT1}$	I	Interrupt 1
19	EA13/ED9	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	44	ARBC1	I	Audio data receive unit 1 bit clock
20	EA14/ED10	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	45	ARBC2	I	Audio data receive unit 2 bit clock
21	EA15/ED11	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	46	AX1	O	Audio data transmission unit 1 data output
22	VSS	--	GND	47	AX2	O	Audio data transmission unit 2 data output
23	VDD	--	Power supply	48	AX3	O	Audio data transmission unit 3 data output
24	EA16/ED12	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	49	VSS	--	GND
25	EA17/ED13	I/O	External SRAM and ROM address bus / External DRAM and I/O data bus	50	VDD	--	Power supply

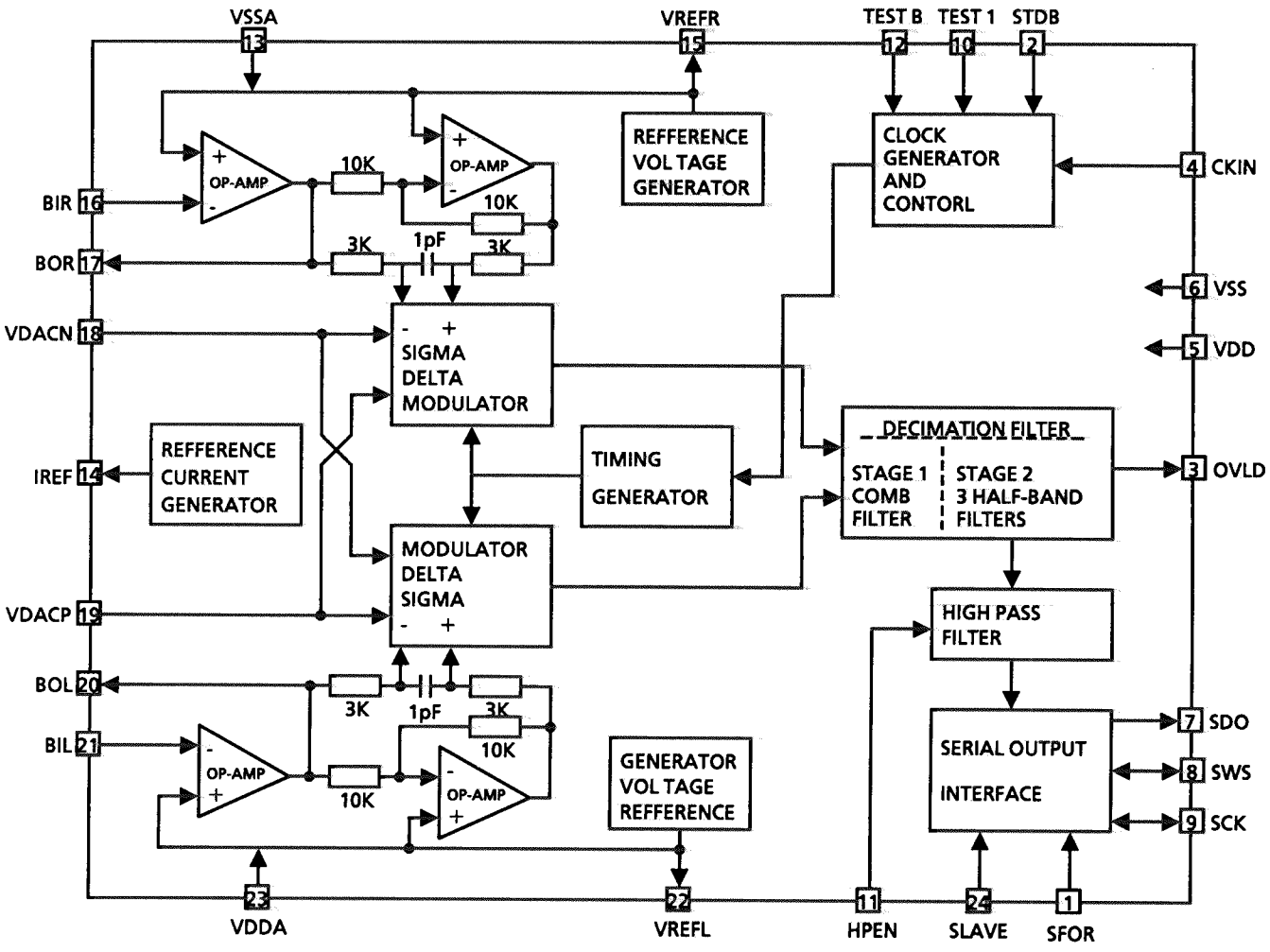
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
51	HX/SDA	I/O	Host interface data output / I²C bass data	76	EMU1	I/O	Emulator interrupt 1
52	$\overline{\text{EMPTY}}$	O	CCMEM update buffer and HR resistor empty fiug output	77	TDO	O	Test access port data output
53	AXLR2	I	Audio data transmission unit 2 L/R channel frame synchronization signal	78	DIV512	O	1/512 machine clock output
54	AR1	I	Audio data receive unit 1 data input	79	ARLR1	I	Audio data receive unit 1 L/R channel frame synchronization signal
55	AR2	I	Audio data receive unit 2 data input	80	ARLR2	I	Audio data receive unit 2 L/R channel frame synchronization signal
56	HRBCK/SA0	I	Host interface receive clock / I²C bass address 0	81	HDIR/SA6	I	Host interface data format select / I²C bass address 6
57	HR/SA1	I	Host interface data input / I²C bass address 1	82	SEL5V3V	I	Input level control
58	HRS/SA2	I	Host interface receive data frame synchronization signal / I²C bass address 2	83	$\overline{\text{MUTE}}$	I	Mute control
59	VSS	--	GND	84	$\overline{\text{TRST}}$	I	Test access port reset
60	VDD	--	Power supply	85	$\overline{\text{RS}}$	I	Hord wear reset
61	HXBCK/SCL	I	Host interface transmission clock / I²C bass clock	86	VSS	--	GND
62	HXS/SA3	I	Host interface transmissiondata frame synchronization signal / I²C bass address 3	87	VDD	--	Power supply
63	$\overline{\text{CS}}$/SA4	I	Host interface chip select / I²C bass address 4	88	$\overline{\text{IOE}}$	O	External I/O enable
64	HBCKS/SA5	I	HRBCK/HXBCK ACTIVE EDGE SELECT / I²C bass address 5	89	$\overline{\text{RAS}}$/$\overline{\text{SRCS}}$	O	External DRAM row address strobe /External SRAM chip select
65	I²CSEL	I	Host interface MODE	90	$\overline{\text{CAS}}$/$\overline{\text{SROE}}$	O	External DRAM column address strobe /External SRAM output enable
66	VSS	--	GND	91	$\overline{\text{ROME}}$	O	External ROM enable
67	VDD	--	Power supply	92	$\overline{\text{WE}}$	O	External memory and I/O write enable
68	AXBC1	I	Audio data transmission unit 1 bit clock	93	EA0	O	External memory and I/O address bus
69	AXBC2	I	Audio data transmission unit 2 bit clock	94	EA1	O	External memory and I/O address bus
70	AXLR1	I	Audio data transmission unit 1 L/R channel frame synchronization signal	95	EA2	O	External memory and I/O address bus
71	DIV8	O	1/8 machine clock output	96	EA3	O	External memory and I/O address bus
72	$\overline{\text{LAV}}$	O	Latch ALU overflow flug output	97	VSS	--	GND
73	$\overline{\text{LMV}}$	O	Latch MAC overflow flug output	98	VDD	--	Power supply
74	$\overline{\text{DRDY}}$	O	Host interface transmissiondata data ready flug output	99	ED0	I/O	External memory and I/O data bus
75	EMU0	I/O	Emulator interrupt 0	100	ED1	I/O	External memory and I/O data bus

■ SAA7367T (IC021) : A/D Converter

1. Terminal Layout

SFOR	1	24	SLAVE
STDB	2	23	VDDA
OVLD	3	22	VREFL
CKIN	4	21	BIL
VDD	5	20	BOL
VSS	6	19	VDACP
SDO	7	18	VDACN
SWS	8	17	BOR
SCK	9	16	BIR
TEST 1	10	15	VREFR
HPEN	11	14	IREF
TEST B	12	13	VSSA

2. Block Diagram

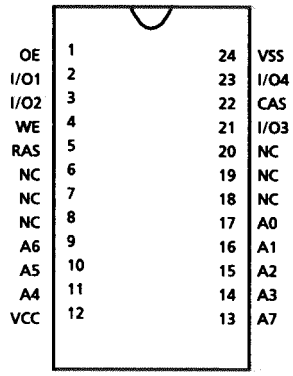


3. Description

Pin No.	Symbol	I/O	Functions
1	SFOR	I	Input for selectiing serial interface output format. HIGH=Format 1 LOW=Format 2
2	STDB	I	Input for selectiing STANDBY mode HIGH=Normal operation LOW=STANDBY (Low power consumption)
3	OVLD	O	Overload indication output. This pin indicates whether the internal digital signal is within 1dB of maximum. In STANDBY mode this output is in high impedance
4	CKIN	I	System clock input from IC093
5	VDD	--	Supply for the digital section (5V)
6	VSS	--	Ground supply for the digital section
7	SDO	O	Serial interface data output to IC081. In STANDBY mode this output is in high impedance
8	SWS	I/O	Serial interface word select signal. This pin is the word select input to the serial interface.
9	SCK	I/O	Serial interface clock. This pin is the input for the external bit clock.
10	TEST1	I	Test input 1. This pin should be left open circuit
11	HPEN	I	High pass filter enable input. (HPEN HIGH=enabled). If unconnected this pin defaults HIGH
12	TESETB	I	Test input 2. This pin should be left open circuit
13	VSSA	--	Ground supply for the analogue section
14	IREF	--	Current reference mode
15	VREFR	--	VDDA/2 reference generator for the right channel analog section
16	BIR	I	Buffer op-amp inverting input for right channel
17	BOR	O	Buffer op-amp output for right channel
18	VDACN	I	Nagative 1 bit DAC reference voltage input, normally connected to 0V
19	VDACP	I	Positive 1 bit DAC reference voltage input, normally connected to 5V
20	BOL	O	Buffer op-amp output for left channel
21	BIL	I	Buffer op-amp inverting input for left channel
22	VREFL	--	VDDA/2 reference generator for the left channel analog section
23	VDDA	--	Supply for the analog section (5V)
24	SLAVE	I	Input for selectiing serial interface operating mode MASTER/SLAVE HIGH=SLAVE, LOW=MASTER If unconnected the pin will default LOW

■ LC32464M-80(IC091) : 256K bit Dynamic RAM

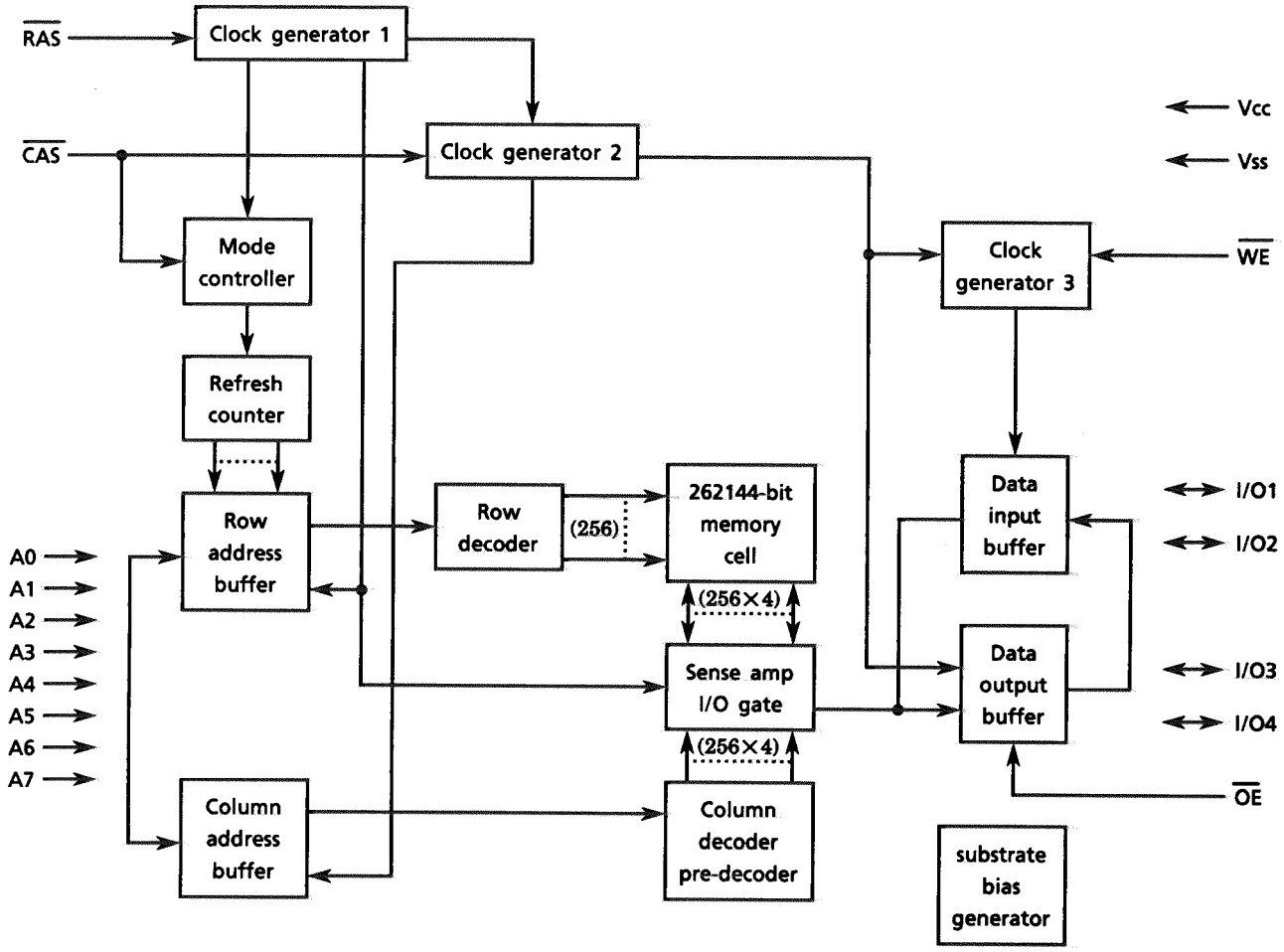
1. Terminal Layout



2. Description

Pin No.	Symbol	I/O	Function
1	OE	I	Output enable
2,3	I/O1,2	I/O	Data input/output
4	WE	I	Write enable
5	RAS	I	Row address strobe
6~8	NC	--	Non connnection
9~11	A6~A4	I	Address input
12	V_{CC}	--	Power supply
13~17	A7,A3~A0	I	Address input
18~20	NC	--	Non connnection
21	I/O3	I/O	Data input/output
22	CAS	I	Column address strobe
23	I/O4	I/O	Data input/output
24	V_{SS}	--	GND

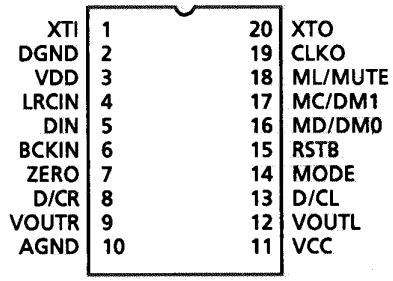
3. Block Diagram



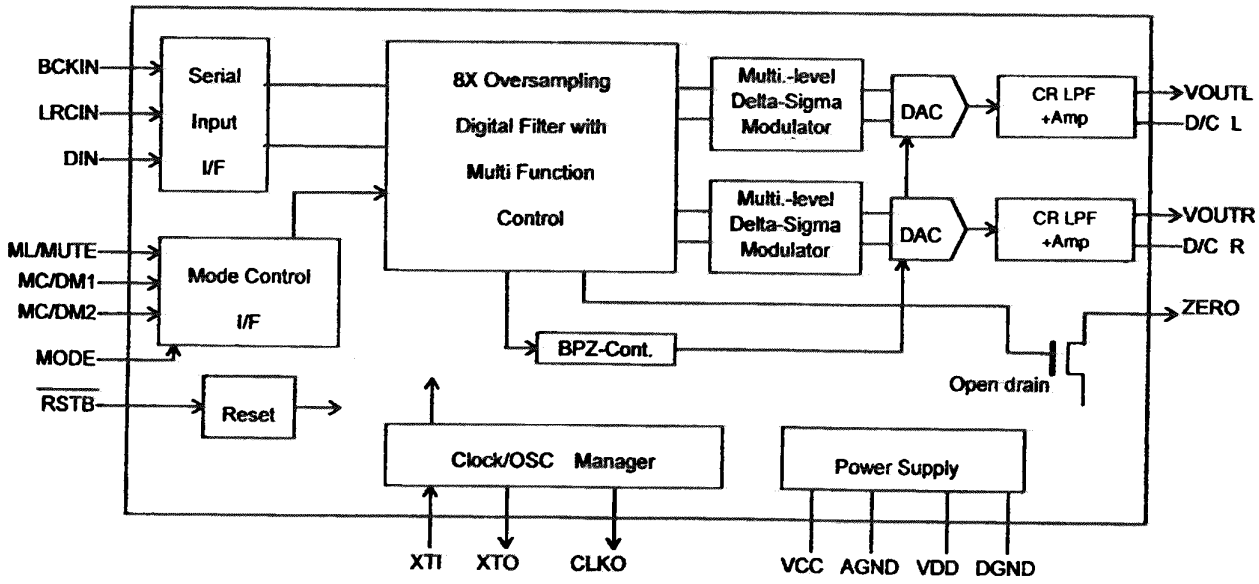
SX-ST1

■ PCM1717E (IC041,061) : D/A Converter

1. Terminal Layout



2. Block Diagram



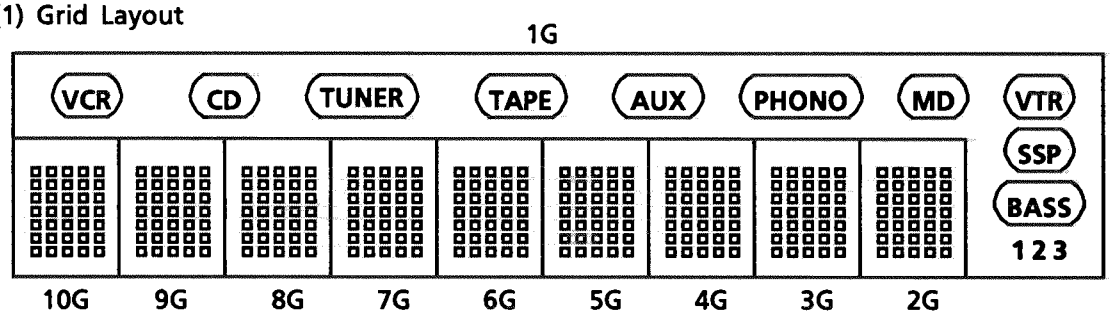
3. Description

Pin No	Symbol	I/O	Function	Pin No	Symbol	I/O	Function
1	XTI	I	Crystal oscillator input	11	VCC	--	Analog power supply
2	DGND	--	Digital ground	12	VOUTL	O	Lch analog voltage output
3	VDD	--	Digital power supply	13	D/CL	--	Lch analog output amp common terminal
4	LRCIN	I	Reference sumpling input	14	MODE	I	interface mode select termonal
5	DIN	I	PCM audio data input	15	RSTB	--	Not used
6	BCKIN	I	Bit clock for PCM audio data input	16	MD/DM0	I	Various control data / De-emphasis control
7	ZERO	--	Not used	17	MC/DM1	I	Bit clock for various control data / De-emphasis
8	D/CR	--	Rch analog output amp common terminal	18	ML/MUTE	I	Load strobe for various control data / Mute control
9	VOUTR	O	Rch analog voltage output	19	CLKO	O	inverting input of XT1
10	AGND	--	Analog ground	20	XTO	O	Crystal oscillator output

Internal Connections of FL Display Tube

■ ELU0001-187(DI801)

(1) Grid Layout



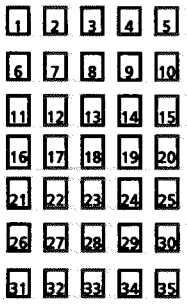
(2) Pin Connection

(UPPER)

TERMINAL NO.	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46
ELECTRODE	F1	F1	NP	P S1	P S2	P S3	P S4	P S5	P S6	P S7	P S8	P S9	P S10	P S11	P S12
TERMINAL NO.	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
ELECTRODE	P S13	P S14	P S15	P S16	P S17	P S18	P S19	P S20	P S21	P S22	P S23	P S24	NP	F2	F2

(LOWER)

TERMINAL NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ELECTRODE	NP	P S35	P S34	P S33	P S32	P S31	P S30	P S29	P S28	P S27	P S26	P S25	NP	F2	F2
TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ELECTRODE	F1	F1	NP	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP



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

(3) Anode Designation

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	1	1	1	1	1	1	1	1	1	VCR
S2	2	2	2	2	2	2	2	2	2	CD
S3	3	3	3	3	3	3	3	3	3	TUNER
S4	4	4	4	4	4	4	4	4	4	TAPE
S5	5	5	5	5	5	5	5	5	5	AUX
S6	6	6	6	6	6	6	6	6	6	PHONO
S7	7	7	7	7	7	7	7	7	7	MD
S8	8	8	8	8	8	8	8	8	8	VTR
S9	9	9	9	9	9	9	9	9	9	SSP
S10	10	10	10	10	10	10	10	10	10	BASS
S11	11	11	11	11	11	11	11	11	11	1
S12	12	12	12	12	12	12	12	12	12	2
S13	13	13	13	13	13	13	13	13	13	3
S14	14	14	14	14	14	14	14	14	14	
S15	15	15	15	15	15	15	15	15	15	
S16	16	16	16	16	16	16	16	16	16	
S17	17	17	17	17	17	17	17	17	17	
S18	18	18	18	18	18	18	18	18	18	

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S19	19	19	19	19	19	19	19	19	19	
S20	20	20	20	20	20	20	20	20	20	
S21	21	21	21	21	21	21	21	21	21	
S22	22	22	22	22	22	22	22	22	22	
S23	23	23	23	23	23	23	23	23	23	
S24	24	24	24	24	24	24	24	24	24	
S25	25	25	25	25	25	25	25	25	25	
S26	26	26	26	26	26	26	26	26	26	
S27	27	27	27	27	27	27	27	27	27	
S28	28	28	28	28	28	28	28	28	28	
S29	29	29	29	29	29	29	29	29	29	
S30	30	30	30	30	30	30	30	30	30	
S31	31	31	31	31	31	31	31	31	31	
S32	32	32	32	32	32	32	32	32	32	
S33	33	33	33	33	33	33	33	33	33	
S34	34	34	34	34	34	34	34	34	34	
S35	35	35	35	35	35	35	35	35	35	

Disassembly Procedures

[Amp Section]

It is always needed to discharge condensers (C701,C702) before disconnect the connections.

(1) Amp section removal

1. Remove 10 screws fastening the rear panel of amp. section.
2. Disconnect CN802 and CN804 which connect the speaker and amp. assemblies.
3. Remove the amp. section.

(2) Amp cover removal

1. Remove 2 screws Ⓐ and 3 screws Ⓑ fastening the amp. cover.
2. Remove the amp. cover.

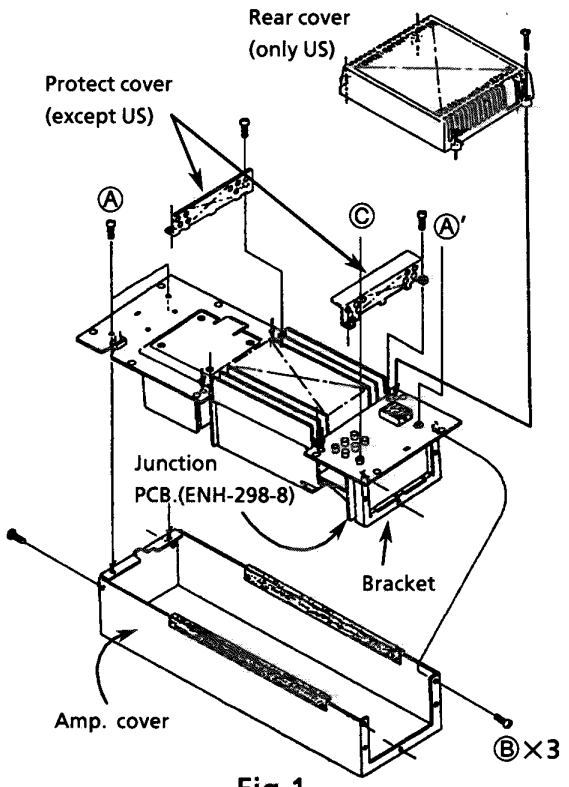


Fig.1

(3) Input PCB (ENH-298-1) and DSP PCB (ENP-055) removal

1. Remove the amp cover.
2. Remove 2 screws Ⓐ' and Ⓒ fastening the bracket. (See fig.1)
3. Remove the noise filter and tie band.(See fig.3)
4. Disconnect CN202 and CN303 to disassemble both the bracket and Junction PCB.(ENH-298-8) together.(See Fig.1.)
5. Remove 3 screws Ⓐ which fasten rear side of input PCB. (See fig.2)
6. Disconnect the connectors. (CN101,CN403,CN602)
7. Disassemble both DSP PCB.(ENP-055) and Input PCB. together.

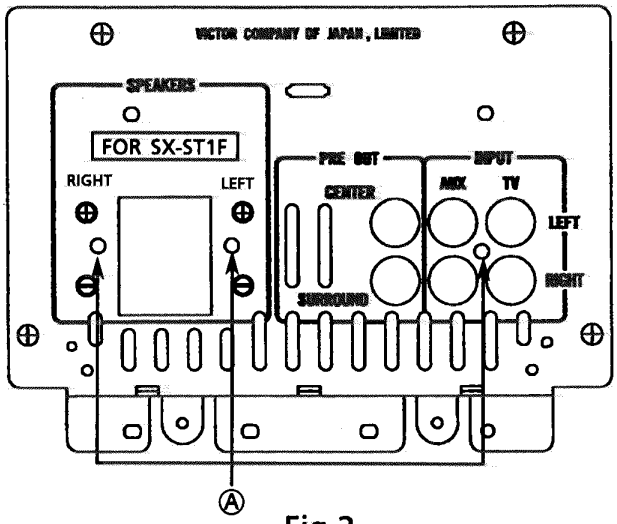


Fig.2

WIRING

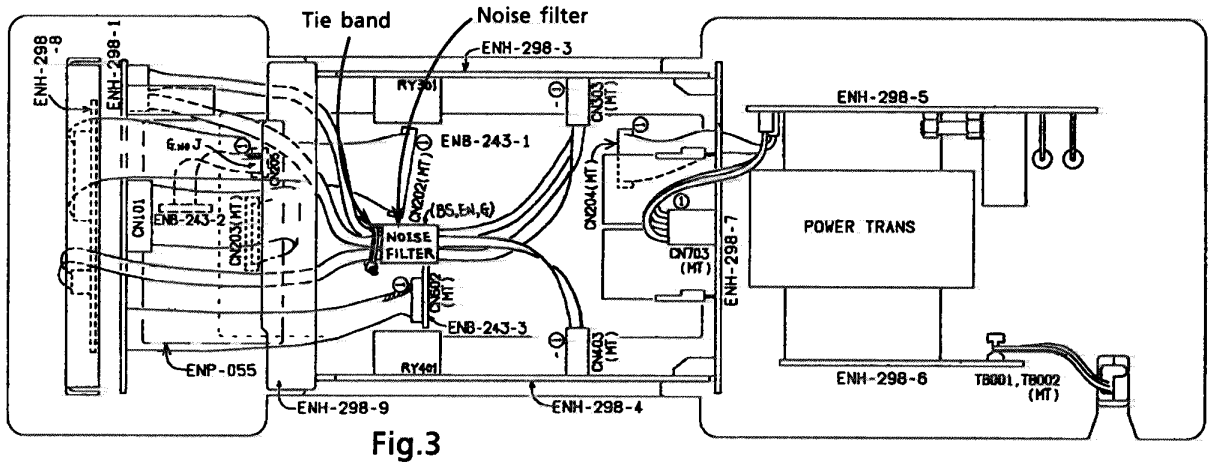


Fig.3

Ⓐ,Ⓐ' .... E73273-003 Ⓑ .... SBSG3008CC Ⓒ ... E66052-006

(5) µ-com PCB (ENB-243-1) removal

1. Disassemble DSP PCB.(ENP-055) together with Input PCB.(ENH-298-1).
2. Disconnect CN901 and CN902 to disassemble Sub PCB.(ENH-298-9).
3. Remove 4 screws Ⓑ fastening the µ-com PCB.
4. Disconnect CN701 to slide the µ-com PCB. slightly toward direction①.
5. Disconnect CN204 to slide the PCB. furthermore to the direction.

(6) Power amp PCB (ENH-298-3,4) removal

1. Remove the µ-com PCB and protector PCB.
2. Remove 4 screws Ⓓ fastening the power amp PCB to remove it.

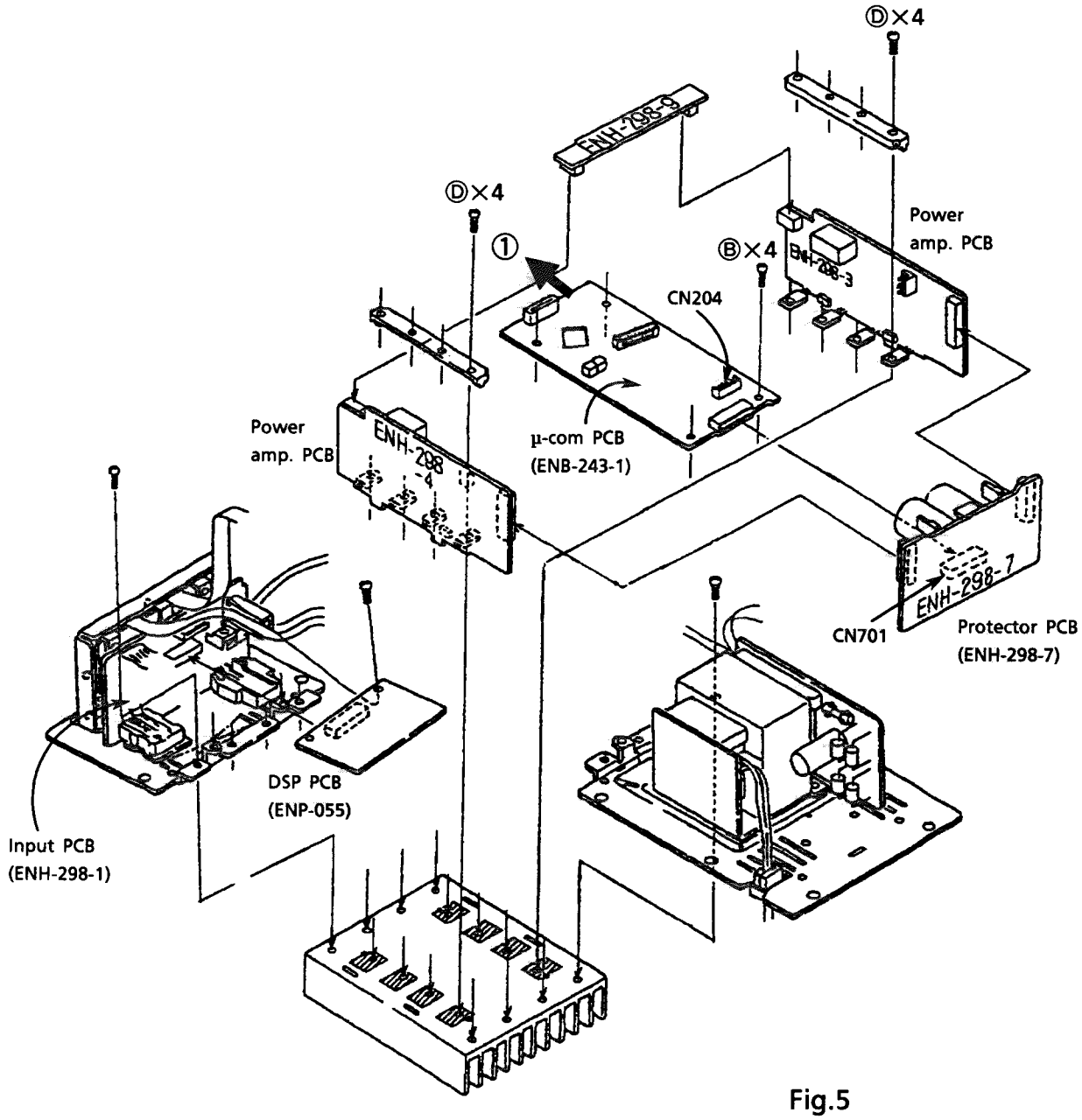


Fig.5

Ⓐ .. E73273-003 Ⓑ .... SBSG3008CC Ⓓ ... SBSG3010CC

(4) Protector PCB (ENH-298-7) removal

1. Disassemble DSP PCB.(ENP-055) together with Input PCB.(ENH-298-1).
2. Disconnect CN703.
3. Disconnect CN302* and CN402* halfway.
4. Disconnect CN701* to disassemble the Protector PCB.

(NOTES)

*Unreleasing the lock of CN302, CN402 and CN701 may cause damage of the connectors and PCB. Lift the hooks with a flat screw driver, etc. to release the lock and then disconnect them.

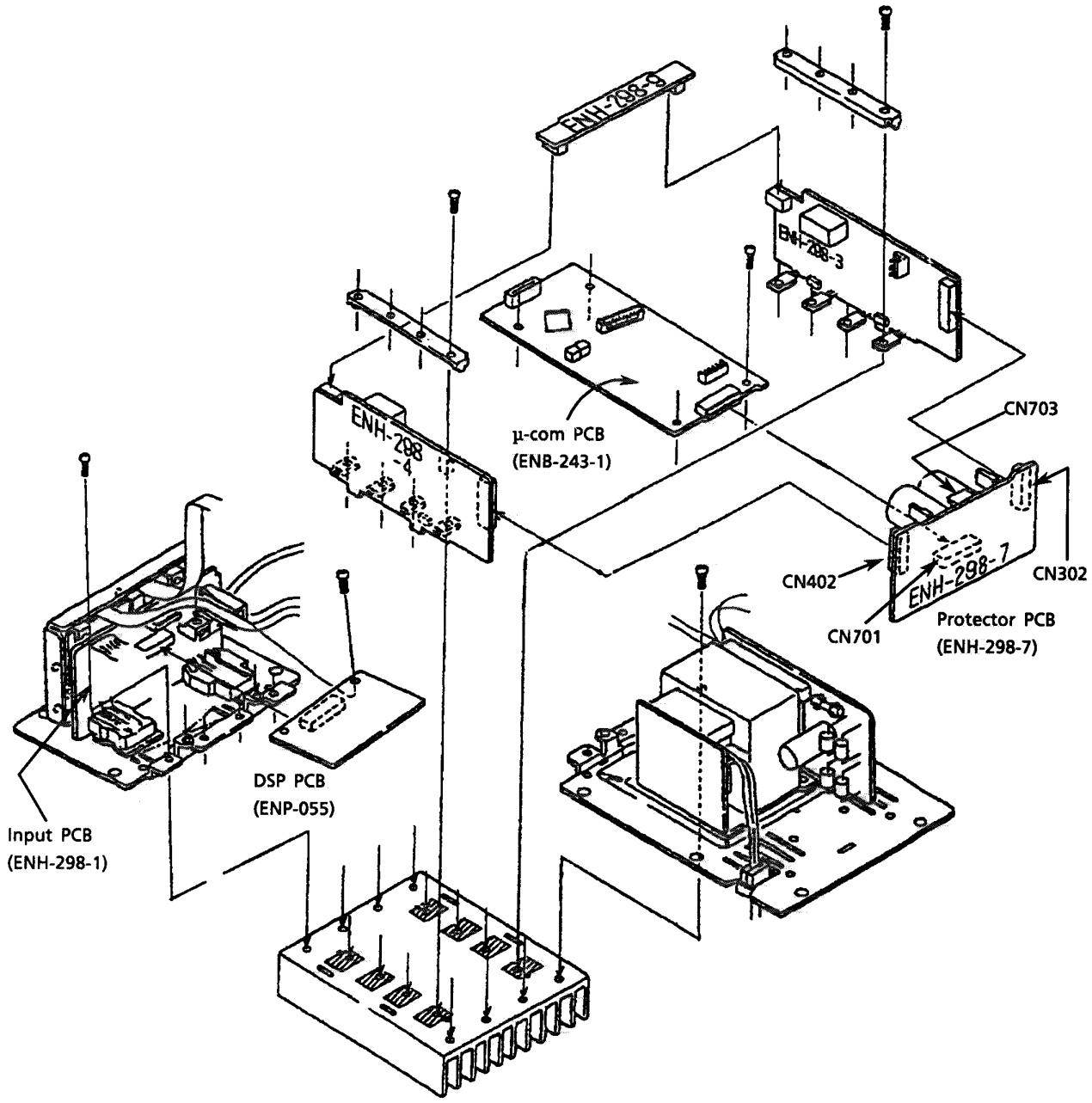


Fig.4

(7) Power trans ass`y removal

1. Remove the amp cover.
2. Remove the protector PCB.
3. Disconnect the connector (CN204).
4. Remove the tie band.
5. Remove 4 screws Ⓔ fastening the power trans ass'y to remove it.

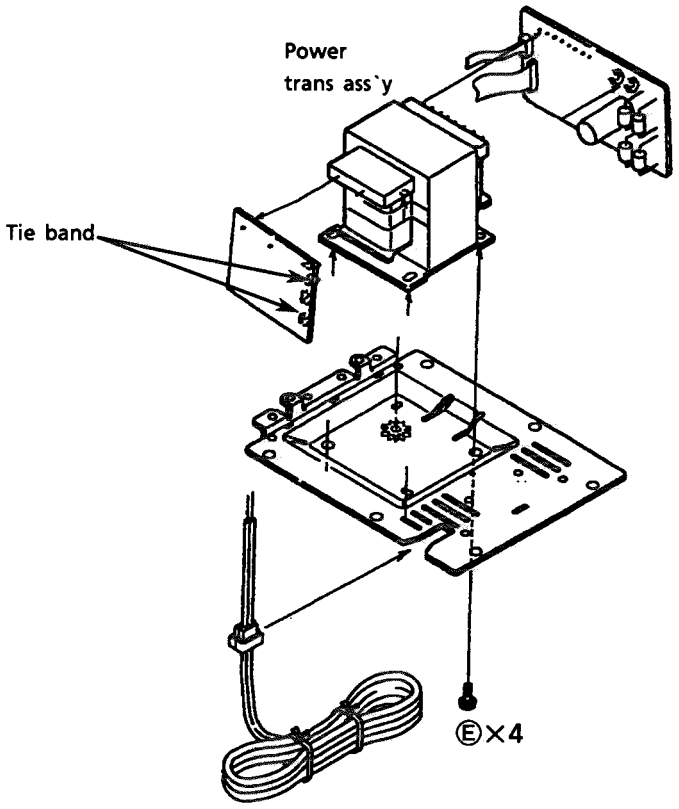


Fig.6

Ⓔ .. E65389-004

[Speaker Section]

(SP-ST1W)

※The amplifier section (rear panel). For details, refer to Removing Amplifier Section, page 2-12.

(1) Removing Saran Board Assembly

Remove 2 screws from the front underside of the ornament. Then remove the assembly by inserting a minus screw driver in between the cabinet and the ornament and slightly lifting the screw driver.
(Fig. 1)

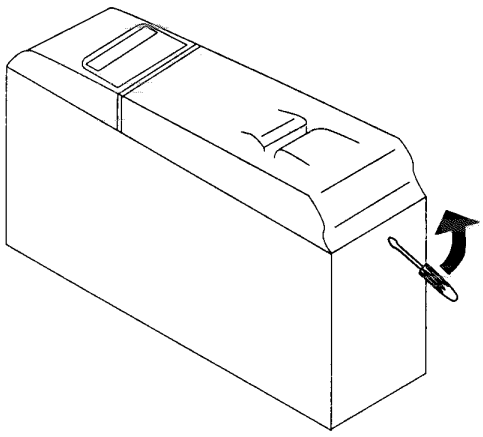


Fig-1

(Note) Use felt, cloth, and other soft materials during work to protect the ornament and cabinet from dents and scratches when you remove the ornament assembly.

(2) Removing Speaker Unit

The speaker unit is fixed on the partition inside the cabinet. Removal the ornament first, unscrew and remove from the front side the set screw or the speaker unit, and remove the speaker unit. After that,remove the connector
(Fig. 2)

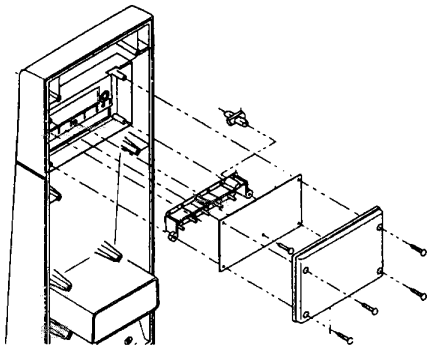


Fig-2

(Note) Use felt, cloth, and other soft materials during work to protect the ornament and the cabinet from dents and scratches when you remove the speaker unit.

(3) Removing FL PCB

The FL PCB is fixed on the back of the ornament with 4 screws. When you must repair the FL PCB, remove the ornament first and then remove the FL PCB. (Fig. 3)

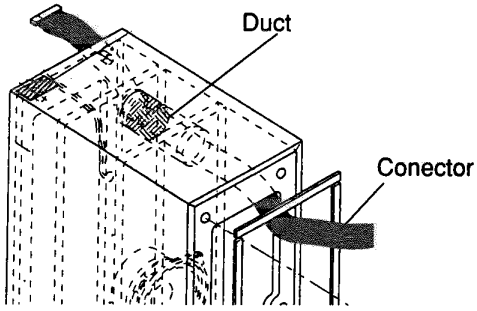


Fig-3

Pass the connector through the duct from the front of the cabinet, and put it behind the cabinet after the removing job is completed. (Fig. 4)

(SP-ST1F)

(1) Removing Ornament Assembly

To remove the ornament assembly, remove 6 screws from the back of the cabinet. (Fig. 4)

(Note) Use felt, cloth and other soft materials during work to protect the ornament and cabinet from dents and scratches when you remove the ornament assembly.

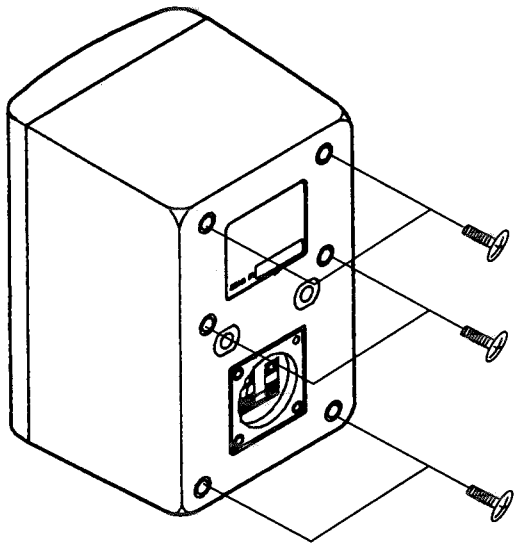


Fig-4

(2) Removing Speaker Unit

The speaker unit is fixed on the back of the ornament assembly with 4 screws.

To exchange the speaker unit with a new one, remove the ornament assembly.

(Note) Use felt, cloth and other soft materials during work to protect the cabinet from dents and scratches when you remove the speaker unit.

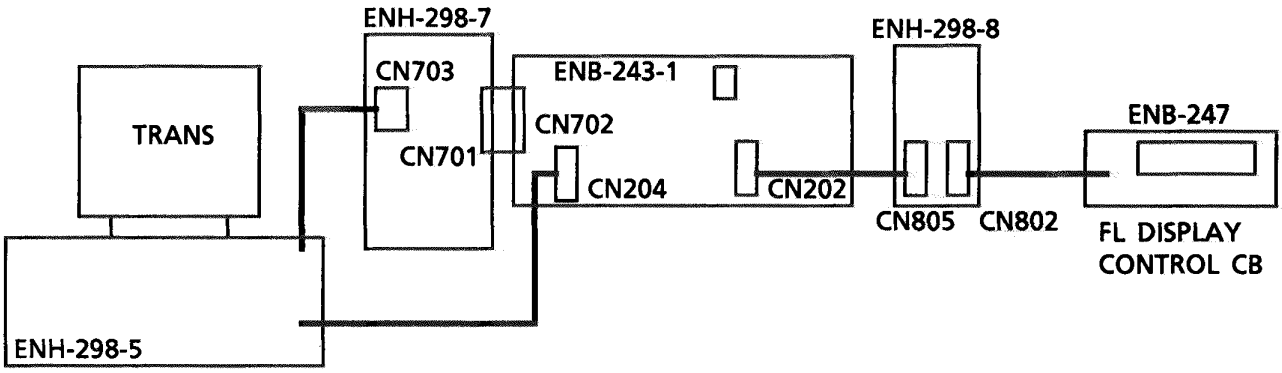
(3) Removing Speaker Terminal

Remove the speaker terminal after removing 4 screws from the back of the cabinet.

PCB. CHECK IN SERVICING

1. Check the μ-com PCB (ENB-243-1)

The following connections can make the μ-com PCB.(ENB-243-1) check the basic functions without connecting circuit boards completely.

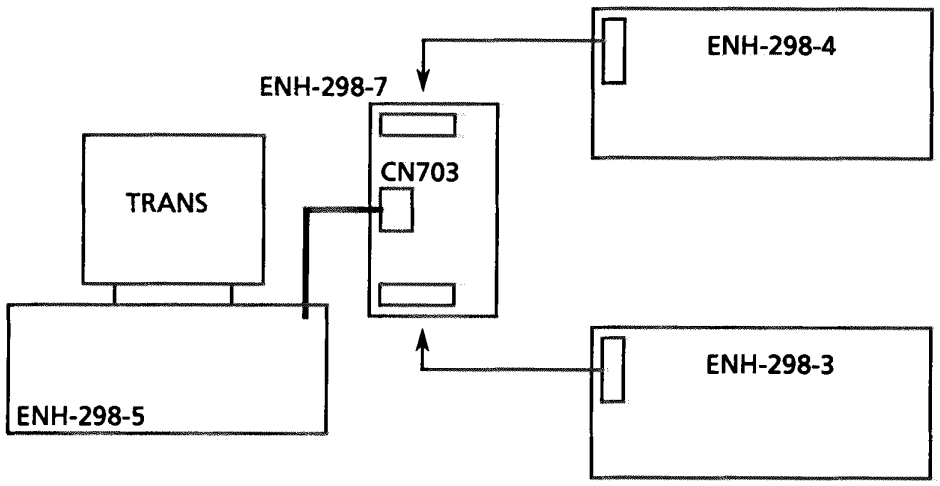


(1) Only this connection enables to check microprocessor's correct operation.

(2) Almost functions such as FL indication, tact switch and remote controller, etc. can be checked except power amplifier and DSP.

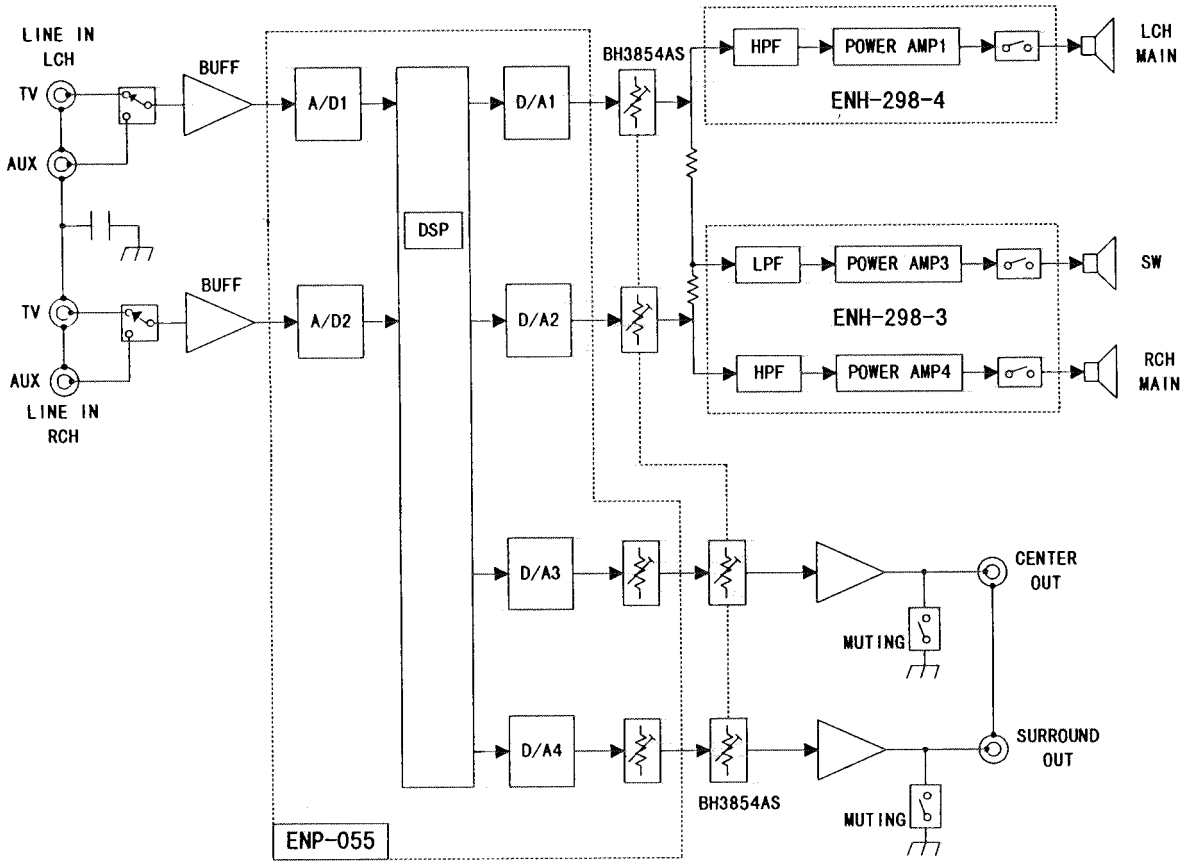
2. Check the power amp PCB (ENB-298-3,ENB-298-4)

The amplifier's basic operation can be checked by the following connections not depending on the microprocessor.

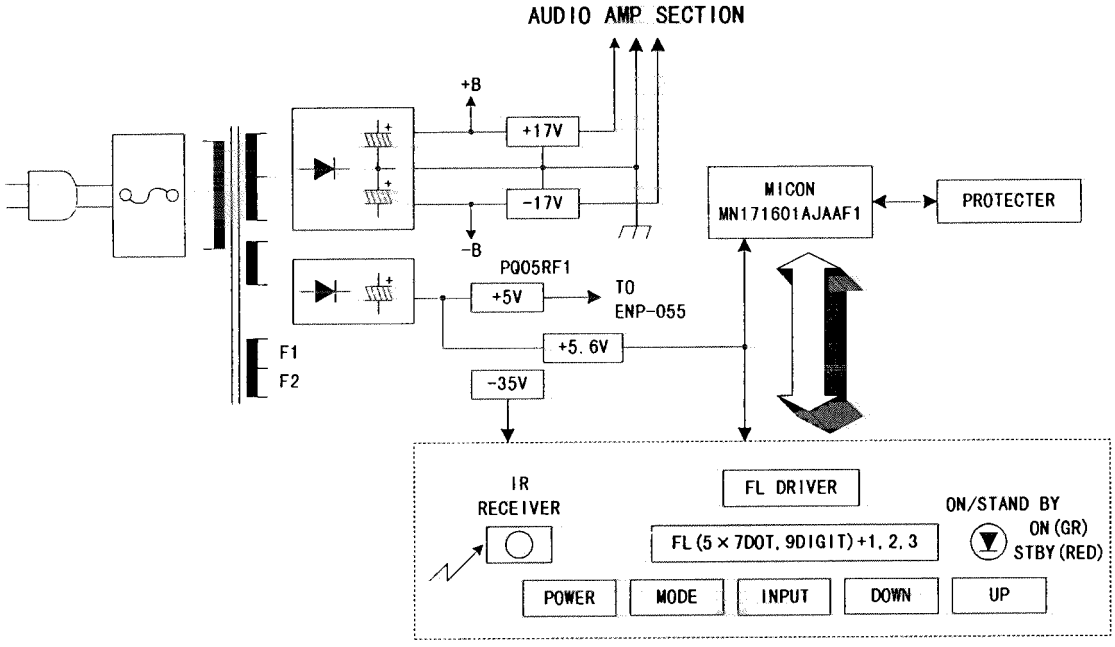


BLOCK DIAGRAM

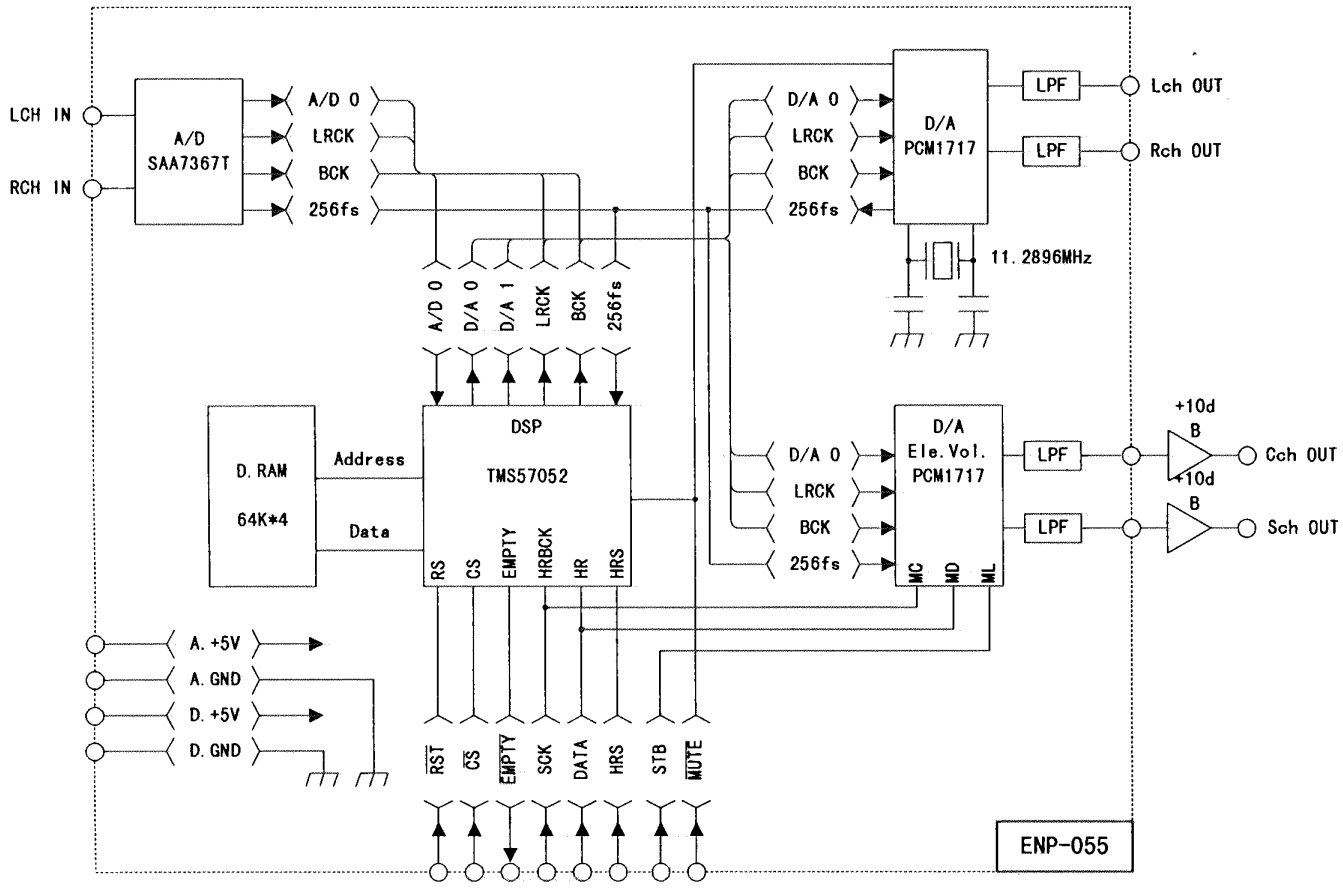
SOUND SIGNAL SECTION



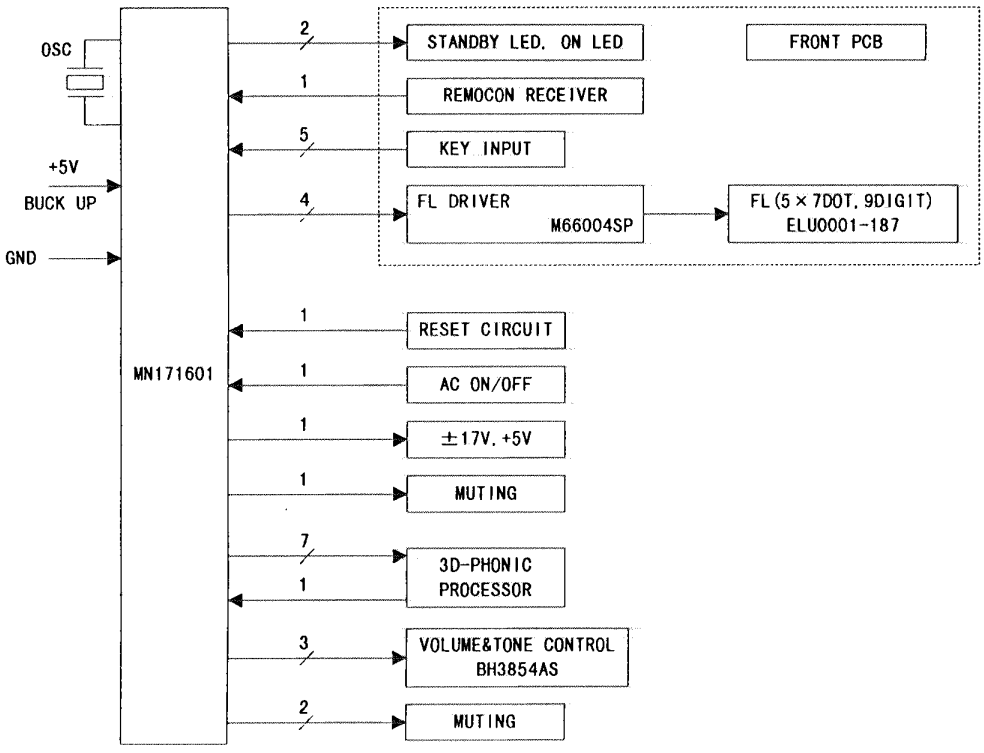
SYSTEM CONTROL SECTION



3D-PHONIC SECTION



MICON CONTROL SECTION



Schematic Diagram

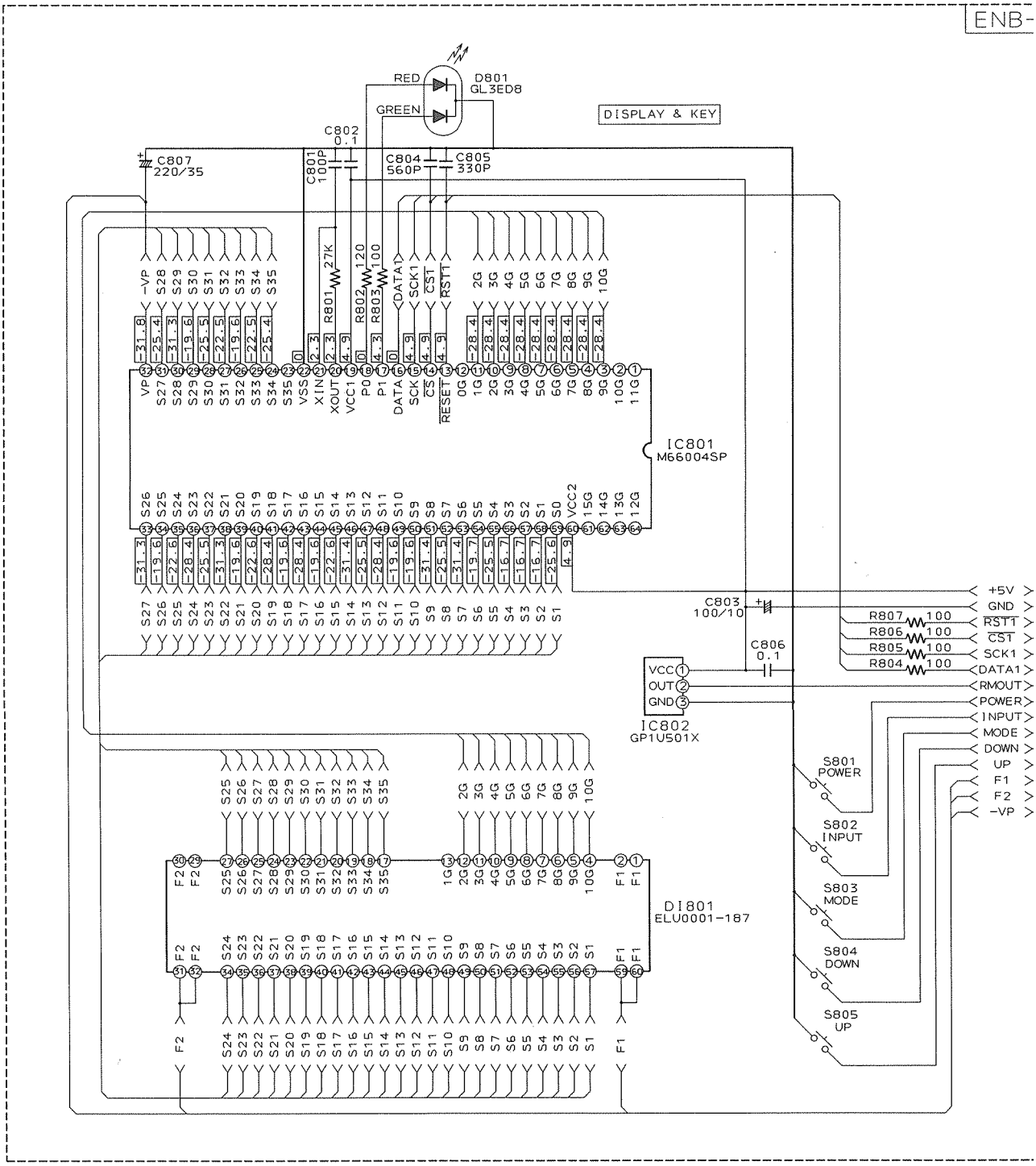
(1) Power Supply Section

— Note —

1. ➡ indicates Main signal path.
2. When replacing the parts in the darkened are (▒) and those marked with ⚠, be sure to use the designated parts to ensure safety.
3. This is the standard circuit diagram.
   The design and contents are subject to change withoutnotice.

VERSION CODE

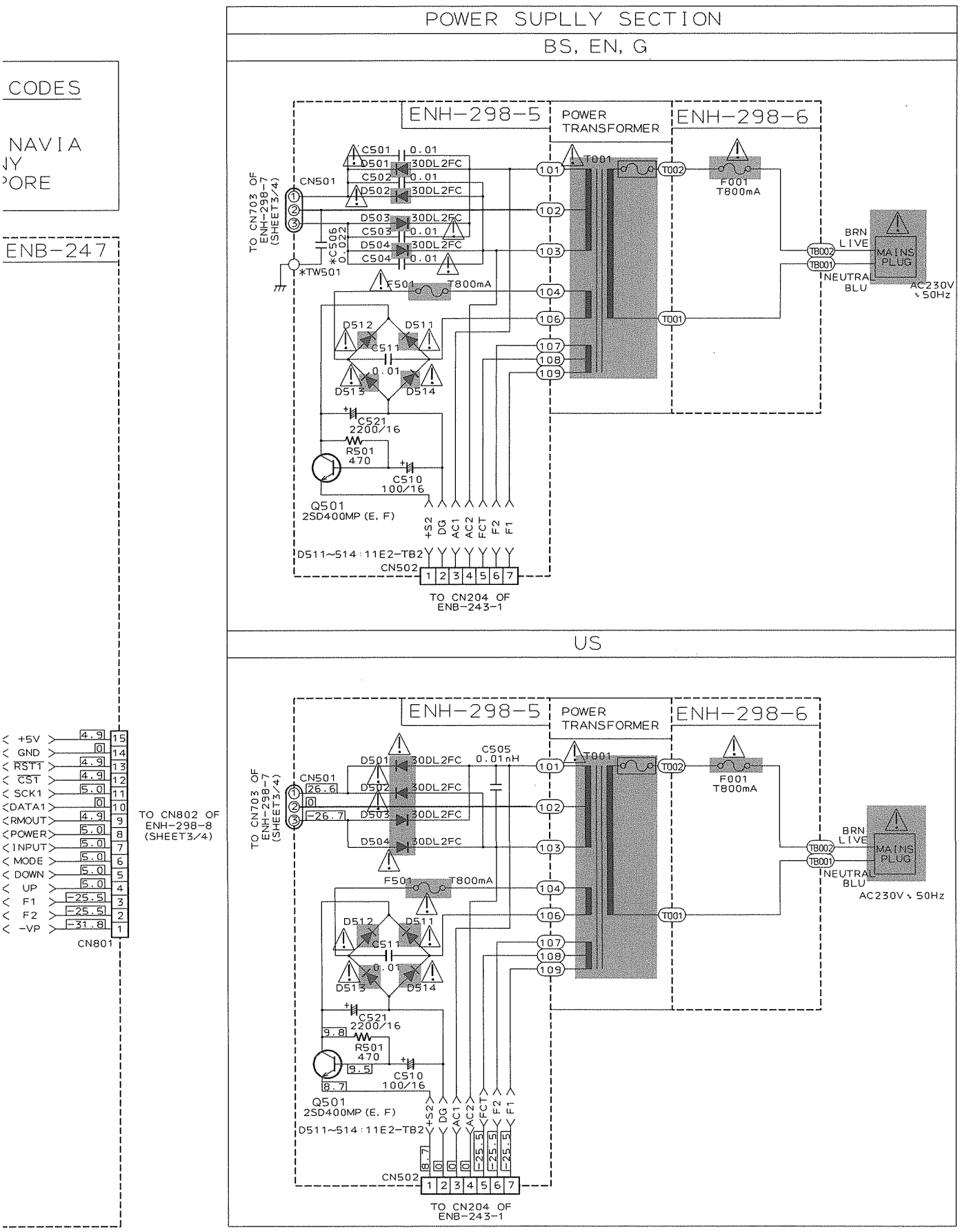
BS : U.K.
EN : SCANDINAV
G : GERMANY
US : SINGAPORE



CODES

NAVIA
NY
PORE

ENB-247

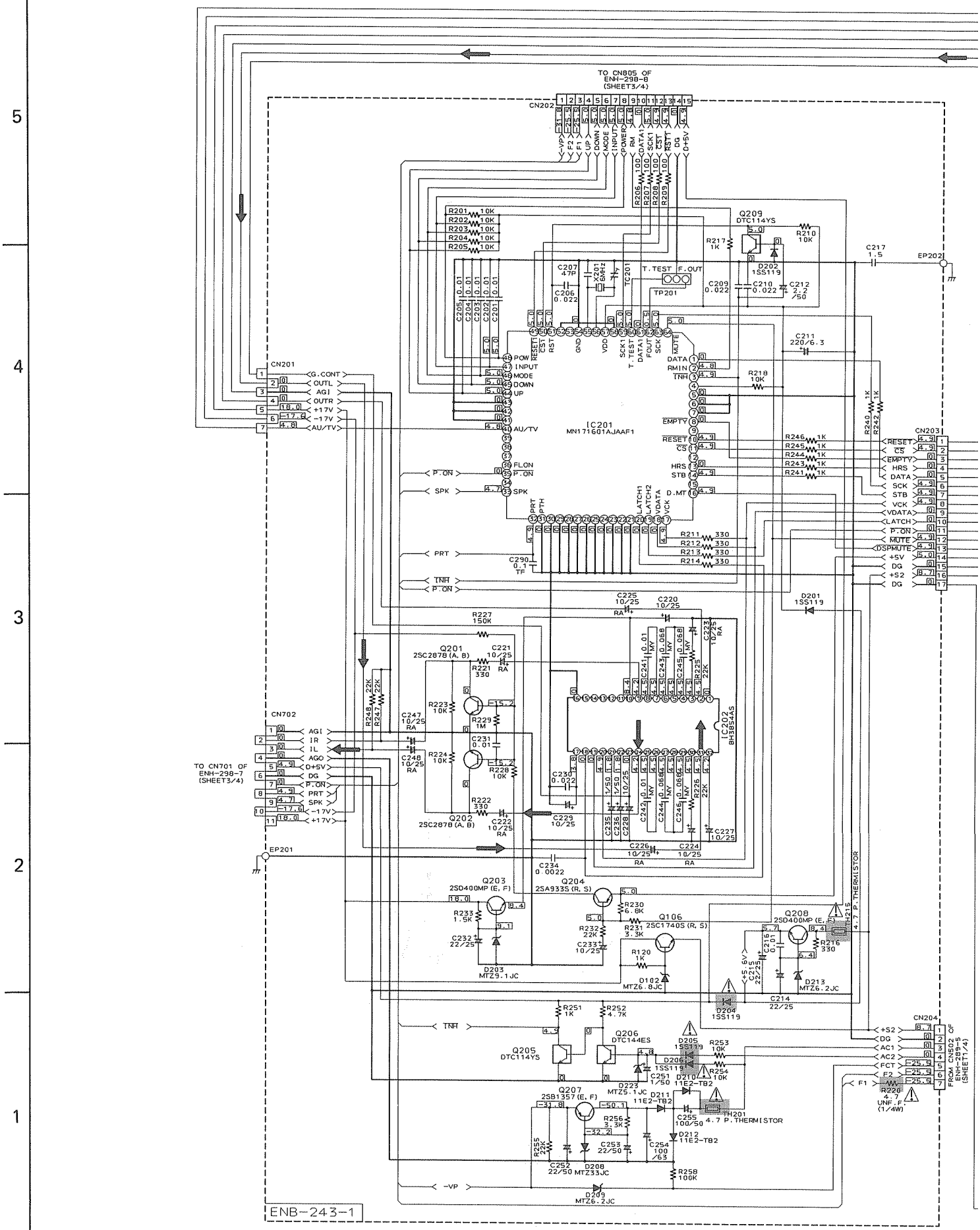


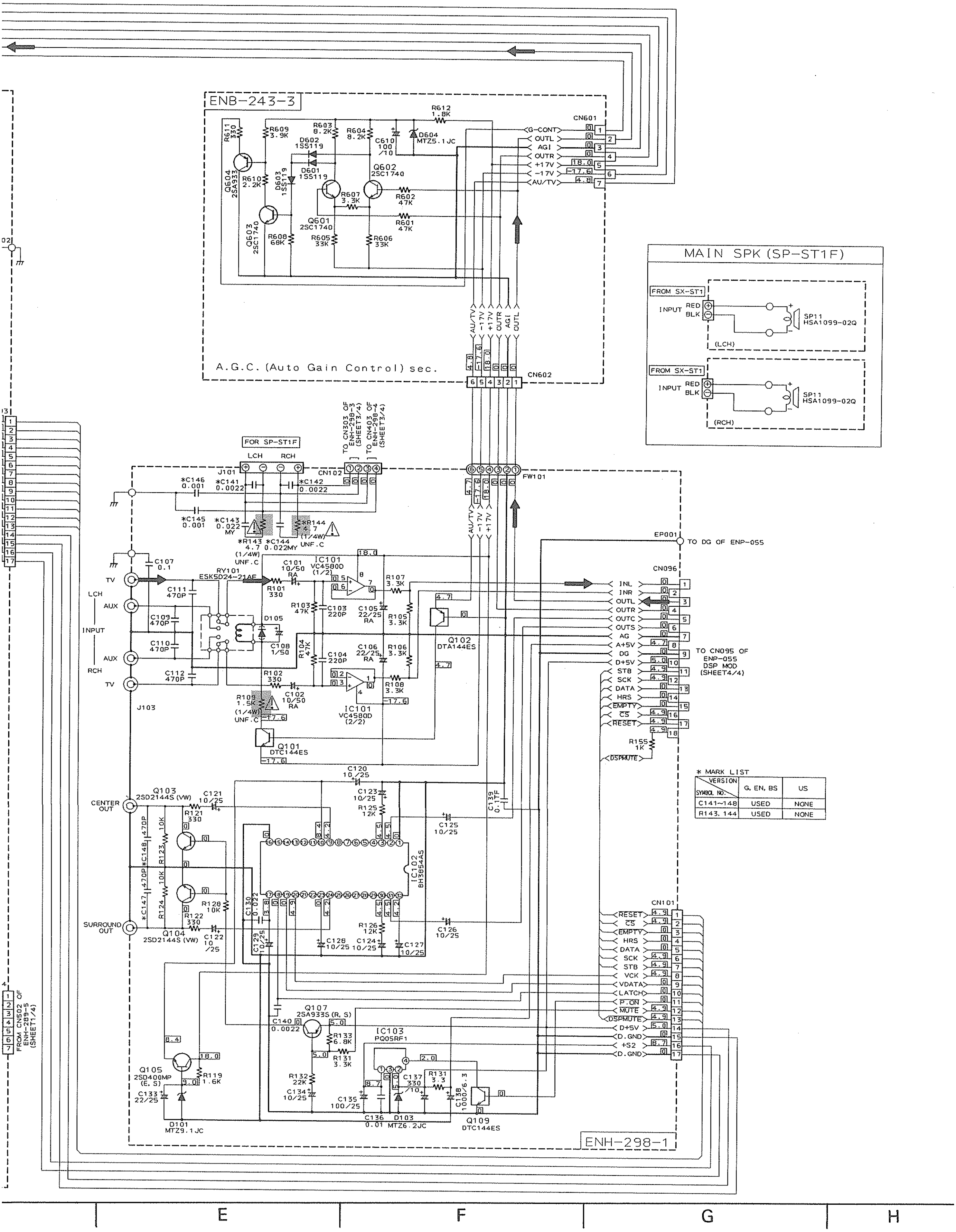
< +5V > 4.9 15
< GND > 0 14
< RST1 > 4.9 13
< CST > 4.9 12
< SCK1 > 5.0 11
<DATA1 > 0 10
<RMOUT > 4.9 9
<POWER > 5.0 8
< INPUT > 5.0 7
< MODE > 5.0 6
< DOWN > 5.0 5
< UP > 5.0 4
< F1 > -25.5 3
< F2 > -25.5 2
< -VP > -31.8 1

CN801

TO CN802 OF ENH-298-8 (SHEET3/4)

(2) System Control Section



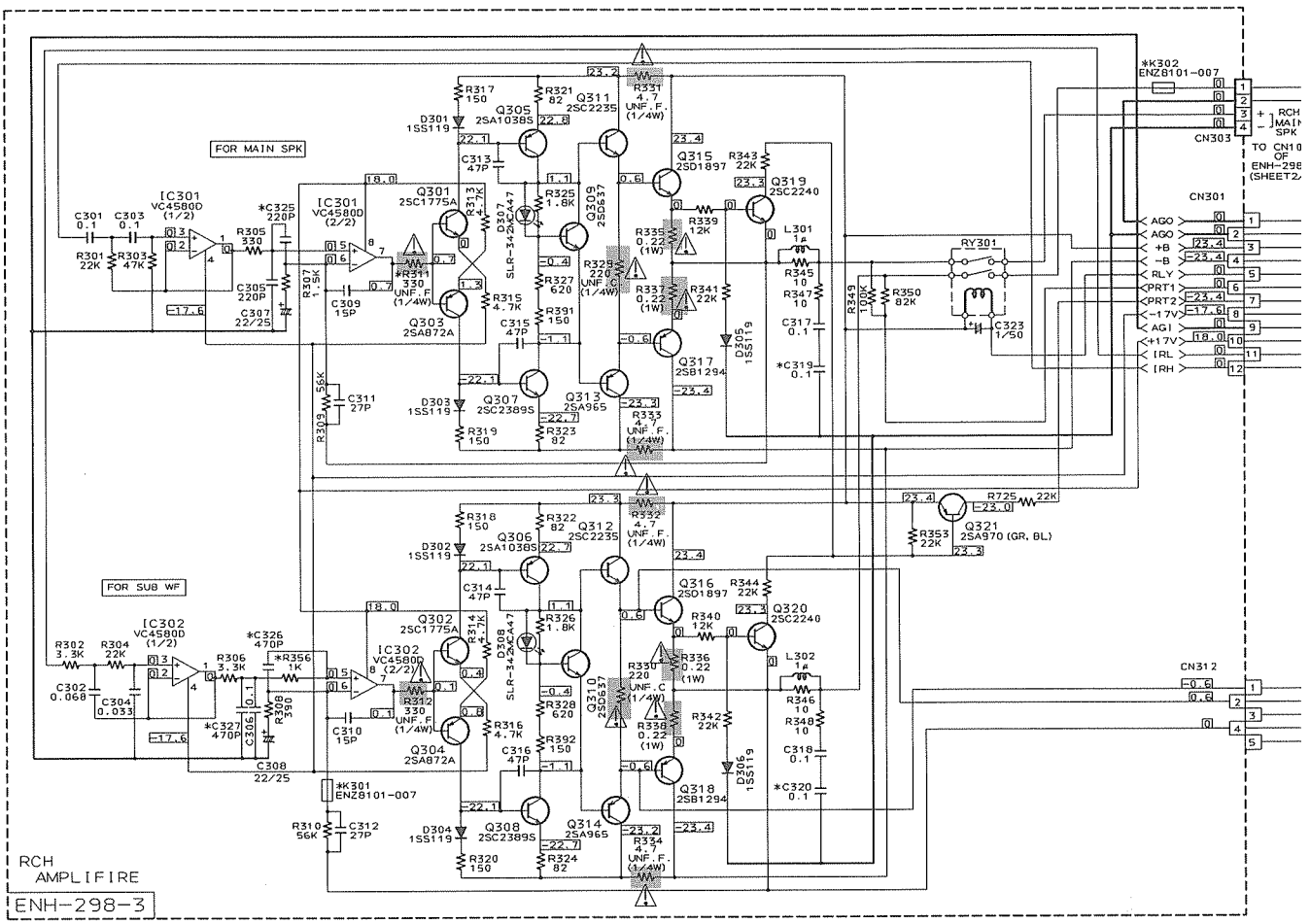


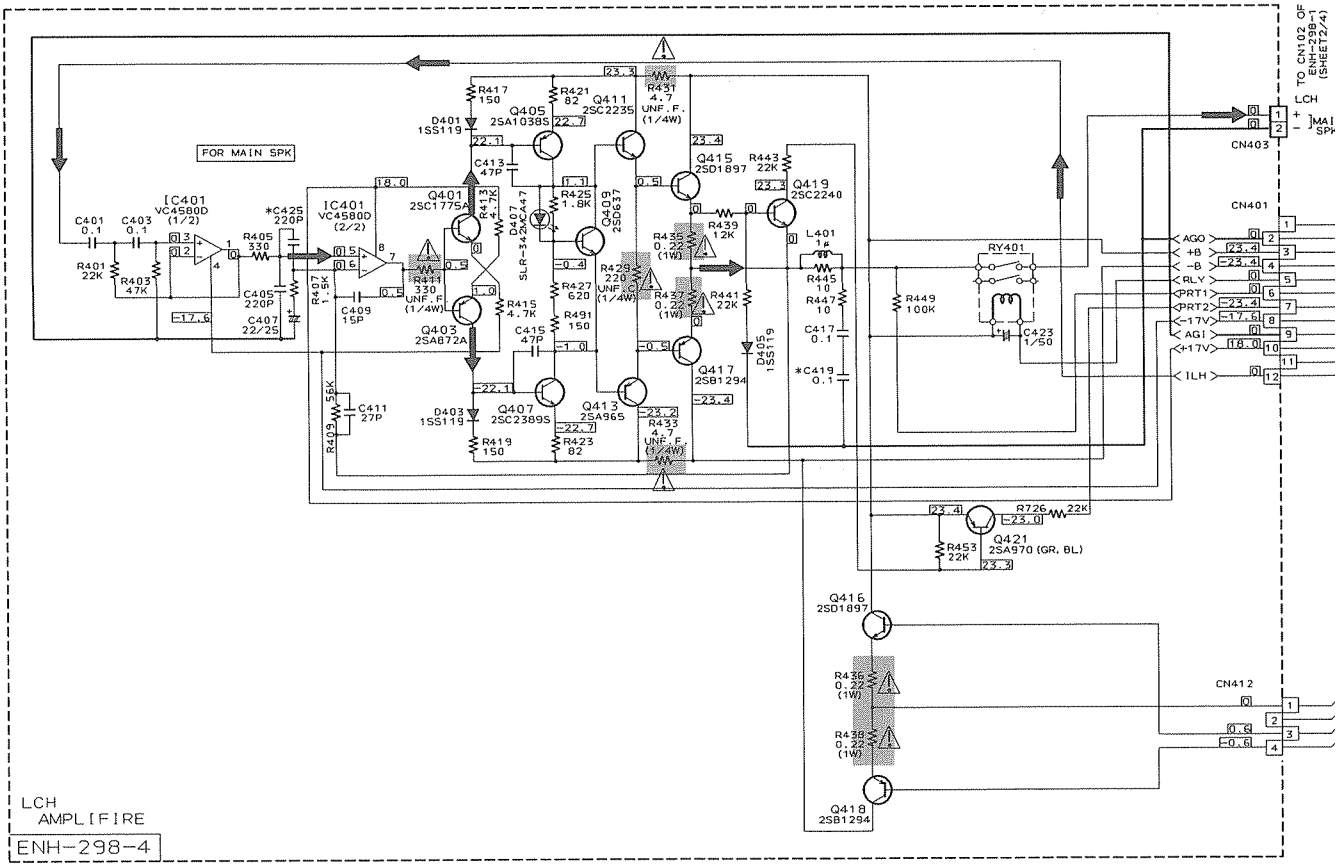
* MARK LIST

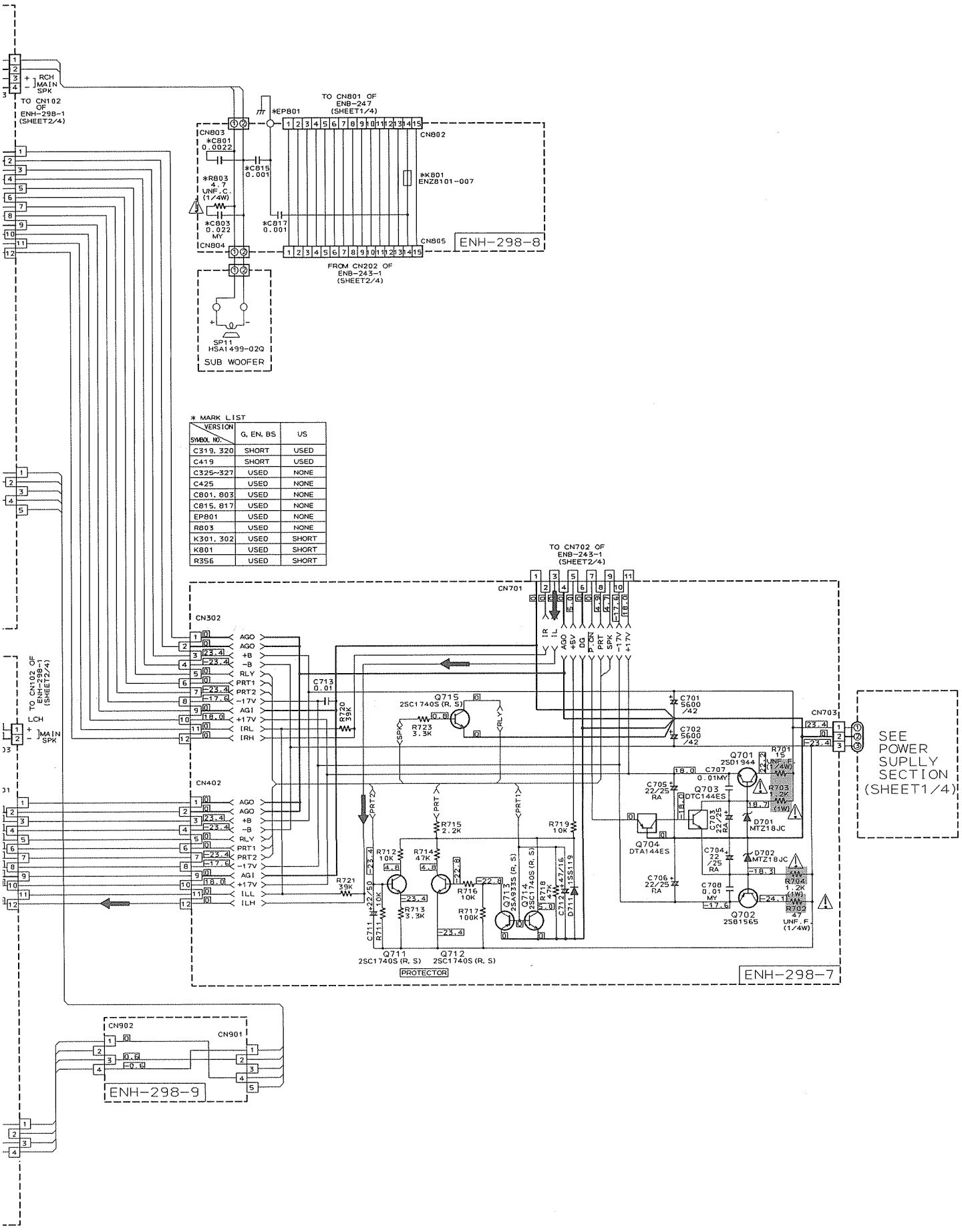
VERSION / SYMBOL NO.	G, EN, BS	US
C141~148	USED	NONE
R143, 144	USED	NONE

E	F	G	H

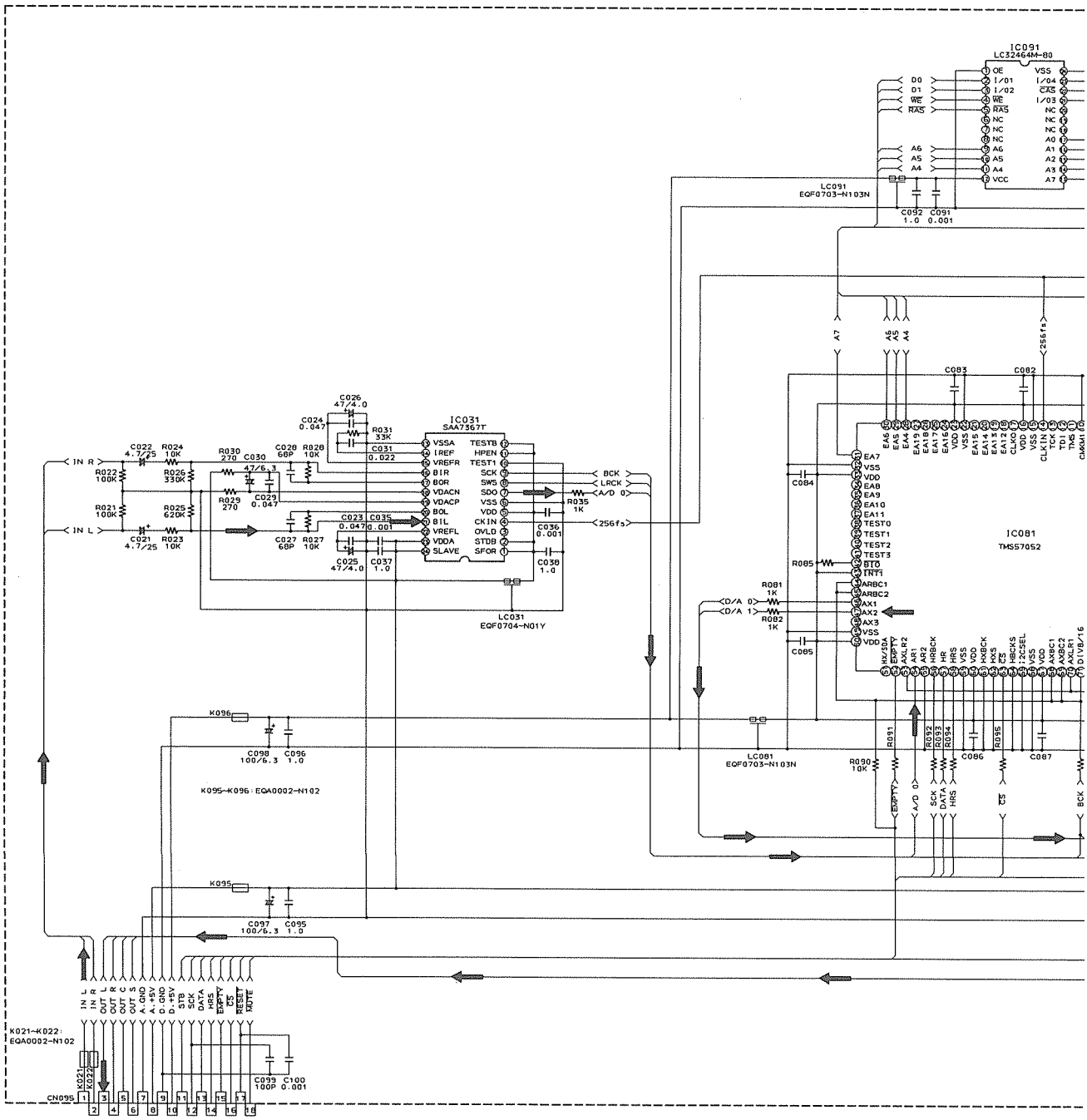
(3) FL & Amp.Section

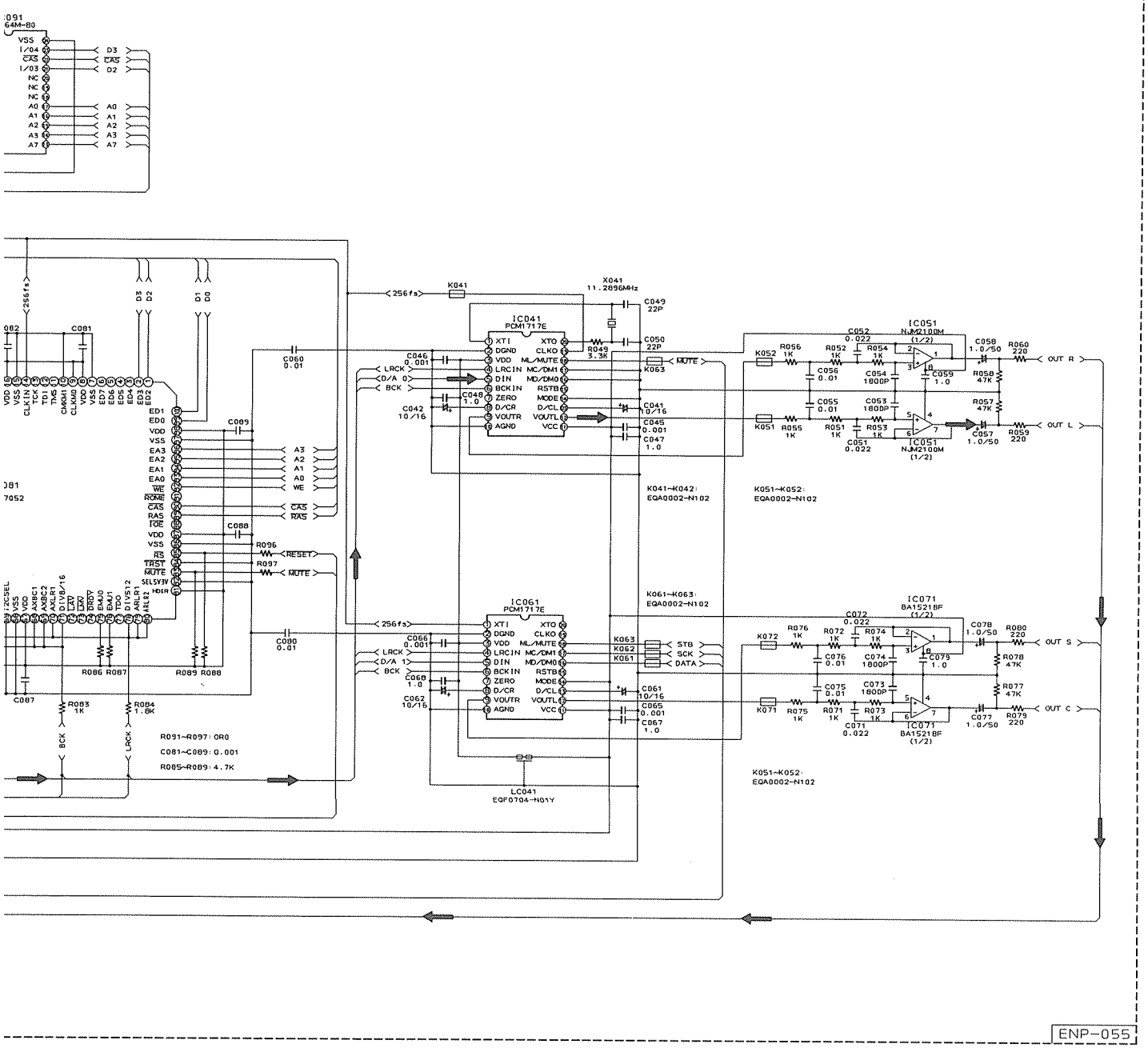





RCH MAIN SPK
TO CN102 OF ENH-298-1 (SHEET2/4)
TO CN801 OF ENB-247 (SHEET1/4)
*EP801
CN803
*C801 0.0022
*C815 0.001
*R803 4.7 UNF.C. (1/4W)
*C803 0.022 MY
*C817 0.001
CN802
*K801 ENZ8101-007
CN804
CN805
ENH-298-8
FROM CN202 OF ENB-243-1 (SHEET2/4)
SP11 HSA1499-02Q
SUB WOOFER
* MARK LIST
VERSION / SYMBOL NO.
G, EN, BS
US
C319, 320 SHORT USED
C419 SHORT USED
C325~327 USED NONE
C425 USED NONE
C801, 803 USED NONE
C815, 817 USED NONE
EP801 USED NONE
R803 USED NONE
K301, 302 USED SHORT
K801 USED SHORT
R356 USED SHORT
TO CN702 OF ENB-243-1 (SHEET2/4)
CN701
CN302
CN402
AGO
+B
-B
RLY
PRT1
PRT2
-17V
AGI
+17V
IRL
IRH
ILL
ILH
C713 0.01
R720 39K
R721 39K
Q715 2SC1740S (R, S)
R723 3.3K
C701 5600 /42
C702 5600 /42
CN703
SEE POWER SUPLLY SECTION (SHEET1/4)
Q701 2SD1944
R701 15 UNF.F (1/4W)
C707 0.01MY
Q703 DTC144ES
R703 1.2K (1W)
D701 MTZ18JC
C705 22/25 RA
Q704 DTA144ES
C703 22/25 RA
C704 22/25 RA
D702 MTZ18JC
R704 1.2K (1W)
C706 22/25 RA
C708 0.01 MY
Q702 2SB1565
R702 47 UNF.F (1/4W)
R715 2.2K
R719 10K
R712 10K
R714 47K
R716 10K
R717 100K
R713 3.3K
Q713 2SA933S (R, S)
Q714 2SC1740S (R, S)
R718 47K
C712 47/16
D711 1SS119
C711 10K
R711 10K
Q711 2SC1740S (R, S)
Q712 2SC1740S (R, S)
PROTECTOR
ENH-298-7
LCH MAIN SPK
TO CN102 OF ENH-298-1 (SHEET2/4)
CN902
CN901
ENH-298-9

(4) 3D-Phonic Section

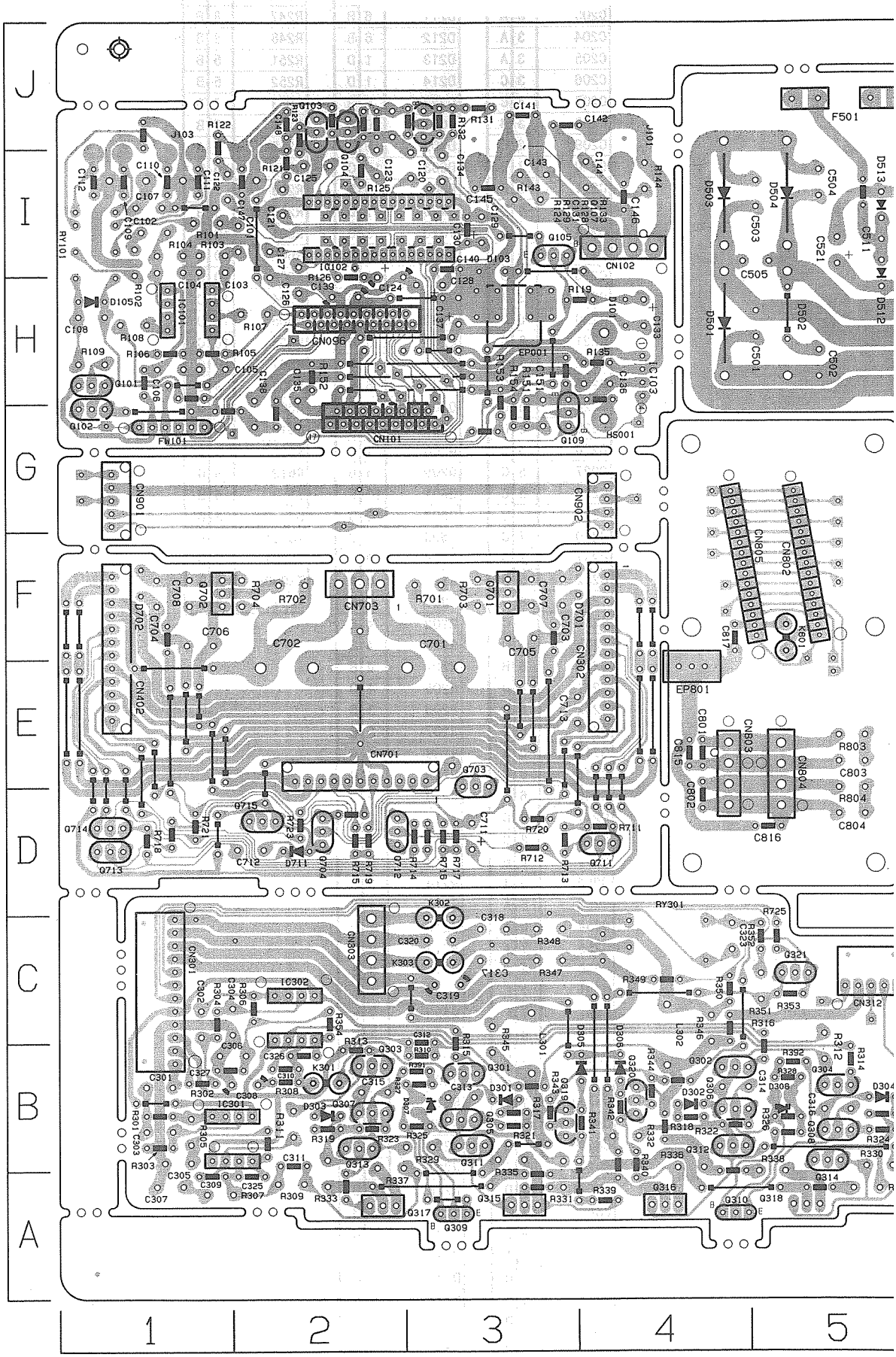



IC041
PCM1717E
IC061
PCM1717E
X041
11.2896MHz
256fs
LRCK
D/A 0
D/A 1
BCK
MUTE
STB
SCK
DATA
RESET
OUT A
OUT L
OUT S
OUT C
IC051
NJM2100M
(1/2)
IC071
BA15218F
(1/2)
LC041
EQF0704-N01Y
K041~K042:
EQA0002-N102
K051~K052:
EQA0002-N102
K061~K063:
EQA0002-N102
K051~K052:
EQA0002-N102
R091~R097: 0R0
C081~C089: 0.001
R085~R089: 4.7K

ENP-055

Printed Circuit Boards

■ Main P.C. Board (ENH-298)



C506
TB001
TB002
F001
CN501
CN502
D513
D514
C510
C511
Q501
R501
D511
D512
CN201
CN203
IC201
IC202
IC203
X201
TC201
CN702
CN204
EP201
EP202
CN312
CN412
CN403
CN401
RY401
K402
K403
K401
IC402
TC401
TH201
Q201
Q202
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R501
R720
R803
R804
C803
C804
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Location List (ENH-298)

Symbol	X	Y
C101	2	I
C102	1	I
C103	1	I
C104	1	I
C105	1	H
C106	1	H
C107	1	I
C108	1	H
C109	1	I
C110	1	I
C111	1	I
C112	1	I
C120	3	I
C121	2	I
C122	1	I
C123	2	I
C124	2	H
C125	2	I
C126	2	I
C127	2	I
C128	3	H
C129	3	I
C130	3	I
C131	2	J
C133	4	H
C134	3	I
C135	2	H
C136	4	H
C137	3	H
C138	2	H
C139	2	H
C140	3	I
C141	3	J
C142	4	J
C143	3	I
C144	4	I
C145	3	I
C146	4	I
C147	2	I
C148	2	J
C151	3	G
C201	7	E
C202	7	D
C203	7	D
C204	7	D
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C207	7	E
C208	7	E
C209	6	E
C210	7	E
C211	7	D
C212	8	E
C214	6	G
C215	8	E
C216	6	G
C217	7	D
C220	9	G
C221	10	F
C222	9	F
C223	9	G
C224	8	E
C225	8	F
C226	8	F
C227	8	F
C228	9	E
C229	9	E
C230	9	F
C231	10	E
C232	9	G
C233	10	F
C241	9	G
C242	9	F
C243	9	G
C244	9	F
C245	9	G

Symbol	X	Y
C246	9	F
C251	9	E
C252	8	D
C253	8	D
C254	9	D
C255	9	D
C301	1	B
C302	1	C
C303	1	B
C304	1	C
C305	1	B
C306	2	B
C307	1	A
C308	2	B
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C318	3	C
C319	3	C
C320	3	C
C323	4	C
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C326	2	B
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C401	10	B
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C420	8	C
C423	7	C
C425	10	A
C426	9	B
C427	9	B
C501	5	H
C502	5	H
C503	5	I
C504	5	I
C505	4	I
C506	8	J
C510	6	I
C511	5	I
C521	5	I
C701	3	E
C702	2	E
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C705	3	F
C706	1	F
C707	3	F
C708	1	F
C711	3	D
C712	2	D
C713	3	E
C801	4	E
C802	4	E

Symbol	X	Y
C803	5	E
C804	5	D
C815	4	E
C816	5	D
C817	4	F
CN096	2	H
CN101	3	G
CN102	4	I
CN201	7	F
CN202	7	D
CN203	6	E
CN204	10	D
CN301	1	C
CN302	4	F
CN303	2	C
CN312	5	C
CN401	10	B
CN402	1	E
CN403	9	C
CN412	6	C
CN501	8	I
CN502	8	H
CN701	3	E
CN702	10	E
CN703	2	F
CN802	5	G
CN803	4	E
CN804	5	D
CN805	5	F
CN901	1	G
CN902	4	G
D101	4	H
D103	3	I
D105	1	H
D201	8	E
D202	8	E
D203	9	G
D204	8	E
D205	9	E
D206	9	E
D208	8	D
D209	8	D
D210	9	D
D211	9	D
D212	9	D
D213	6	G
D223	9	E
D301	3	B
D302	4	B
D303	2	B
D304	5	B
D305	4	B
D306	4	B
D307	3	B
D308	5	B
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D403	9	B
D404	6	B
D405	7	B
D406	7	B
D407	8	B
D408	6	B
D501	4	I
D502	5	I
D503	4	J
D504	5	J
D511	5	I
D512	5	I
D513	5	I
D514	5	I
D701	4	F
D702	1	F
D711	2	D
F001	10	H
F501	5	J

Symbol	X	Y
FW101	1	G
IC101	1	H
IC102	2	I
IC103	4	H
IC201	7	F
IC202	8	F
IC203	8	F
IC301	1	B
IC302	2	C
IC401	9	B
IC402	9	C
J101	4	J
J103	2	I
K301	2	B
K302	3	C
K303	3	C
K401	9	B
K402	8	C
K403	8	C
K801	5	F
L301	3	B
L302	4	B
L401	8	B
L402	7	B
Q101	1	H
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Q408	6	B
Q409	8	A
Q410	7	A
Q411	8	B
Q412	7	B
Q413	9	B
Q414	6	B
Q415	8	A
Q416	7	A

Symbol	X	Y
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Q418	6	A
Q419	8	B
Q420	7	B
Q421	6	C
Q501	6	I
Q701	3	F
Q702	1	F
Q703	3	E
Q704	2	D
Q711	4	D
Q712	2	D
Q713	1	D
Q714	1	D
Q715	2	D
R101	1	I
R102	1	I
R103	1	I
R104	1	I
R105	1	H
R106	1	H
R107	2	H
R108	1	H
R109	1	H
R119	4	H
R121	2	I
R122	1	J
R123	2	I
R124	2	J
R125	2	I
R126	2	H
R128	3	J
R129	2	J
R131	3	J
R132	3	J
R133	3	J
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R229	10	E
R230	9	F
R231	9	G
R232	9	F
R233	9	G
R251	8	E
R252	8	E
R253	9	E
R254	9	D

Symbol	X	Y
R255	8	D
R256	8	D
R258	9	D
R290	7	D
R301	1	B
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R303	1	B
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R412	6	B
R413	9	B
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R415	8	C
R416	6	C

Symbol	X	Y
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R419	9	B
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R452	6	C
R453	6	C
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R491	8	B
R492	6	B
R501	6	H
R701	3	F
R702	2	F
R703	3	F
R704	2	F
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R712	3	D
R713	3	D
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R716	3	D
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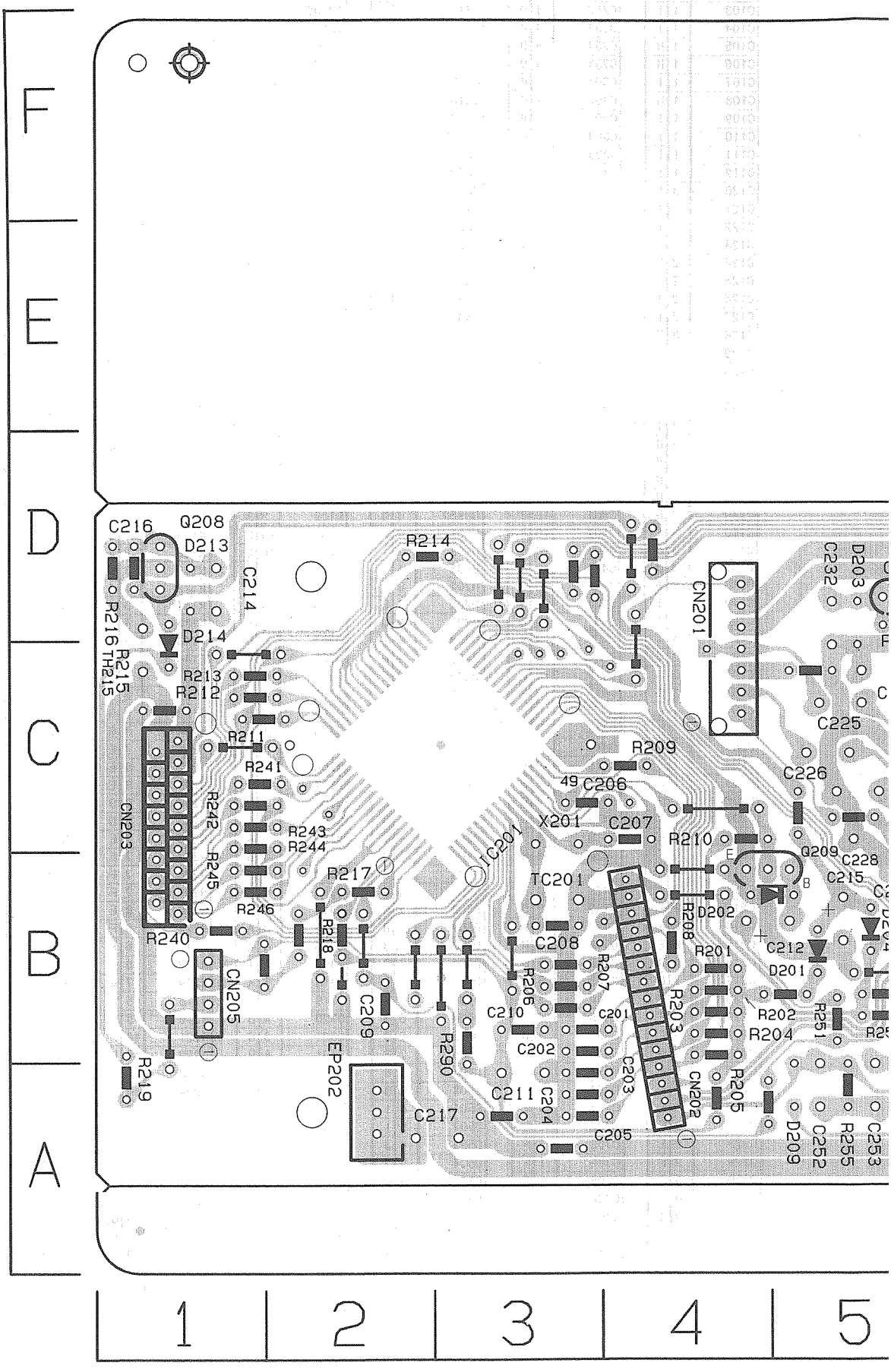
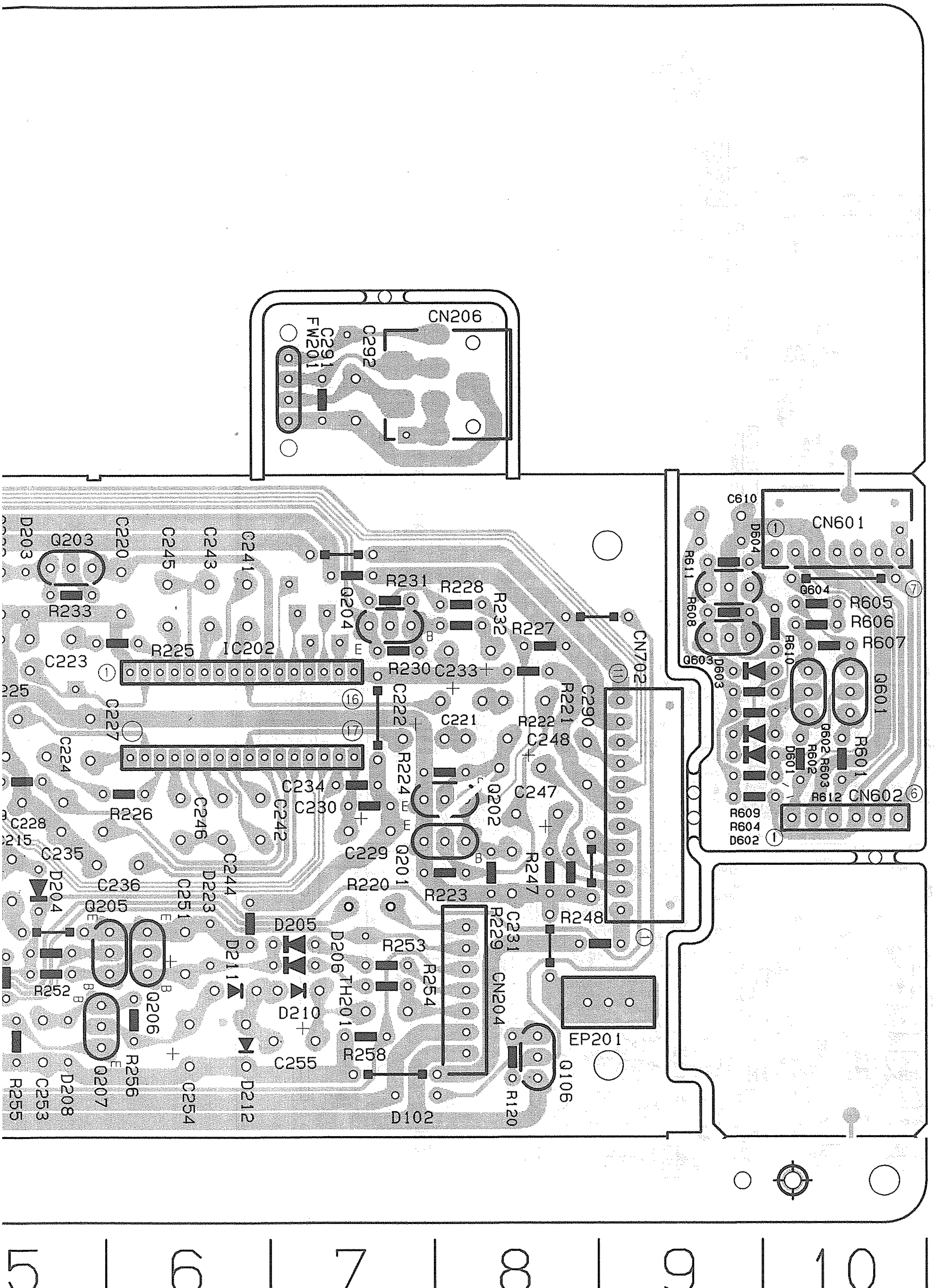
R719	2	D
R720	3	D
R721	1	D
R723	2	D
R725	5	C
R726	6	C
R803	5	E
R804	5	D
RY101	1	H
RY301	4	C
RY401	7	C
T001	8	I
T002	9	I
TB001	10	I
TB002	10	I
TC201	7	E
TH201	9	D
TW501	8	J
TW701	2	F
TW701A	3	E
X201	7	E

■ System Control P.C. Board (ENB-243)

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Q204
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R227
CN702
C610
CN601
D604
R611
R608
Q604
R605
R606
R607
R610
Q603
D603
Q601
C223
R225
IC202
R230
C233
C222
R221
C290
C227
C221
R222
C248
C224
R224
Q202
C234
C230
C247
R226
C246
C242
C228
C215
C235
C229
Q201
R247
D204
C236
C244
D223
C251
R220
R223
R229
C231
R248
Q205
D205
D211
D206
R253
R254
CN204
R252
Q206
D210
TH201
EP201
R256
Q207
C255
R258
Q106
R255
C253
D208
C254
D212
D102
R120
Q602
R602
R603
D601
R601
R612
CN602
R609
R604
D602
5
6
7
8
9
10

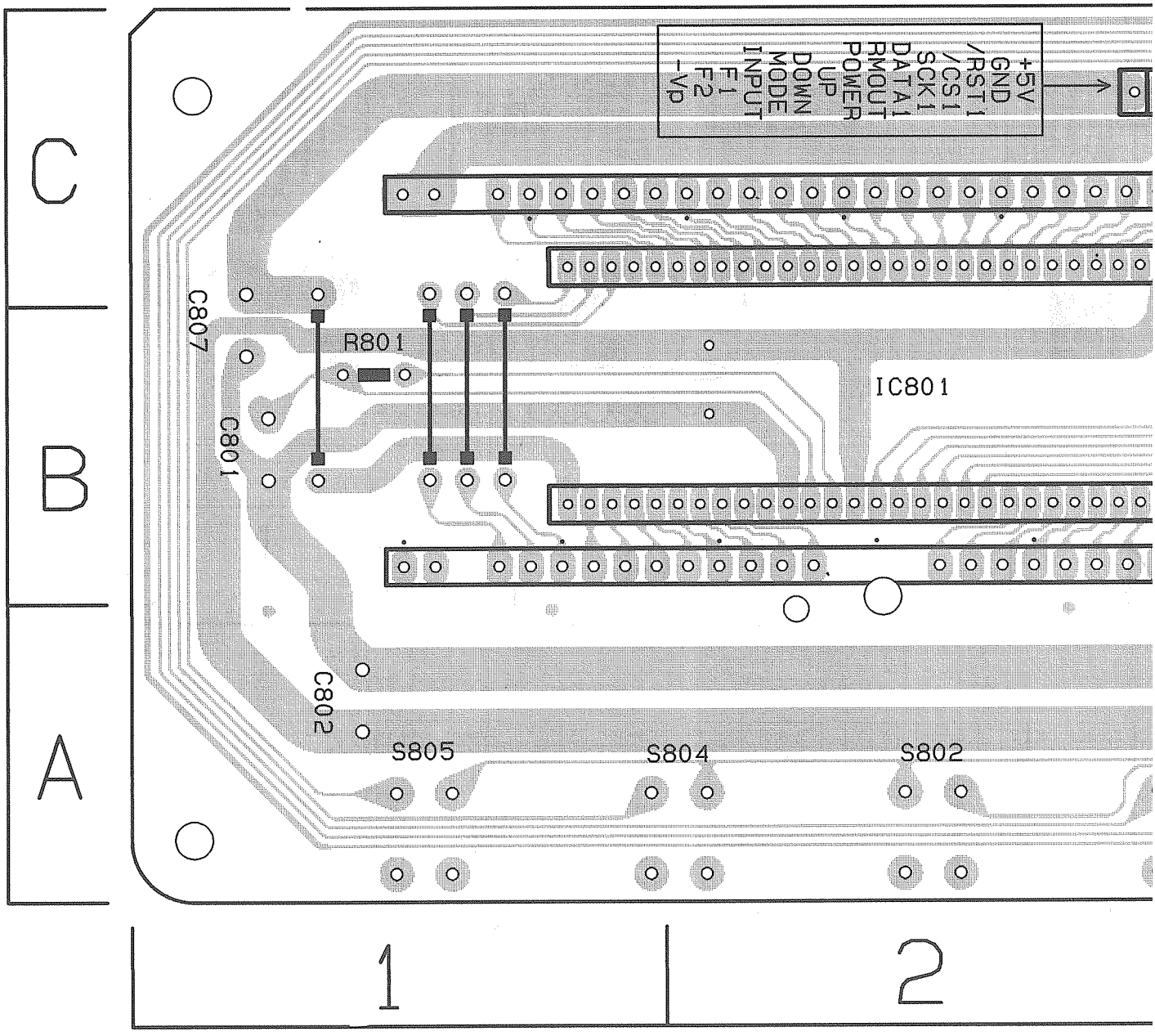
Location List (ENB-243)

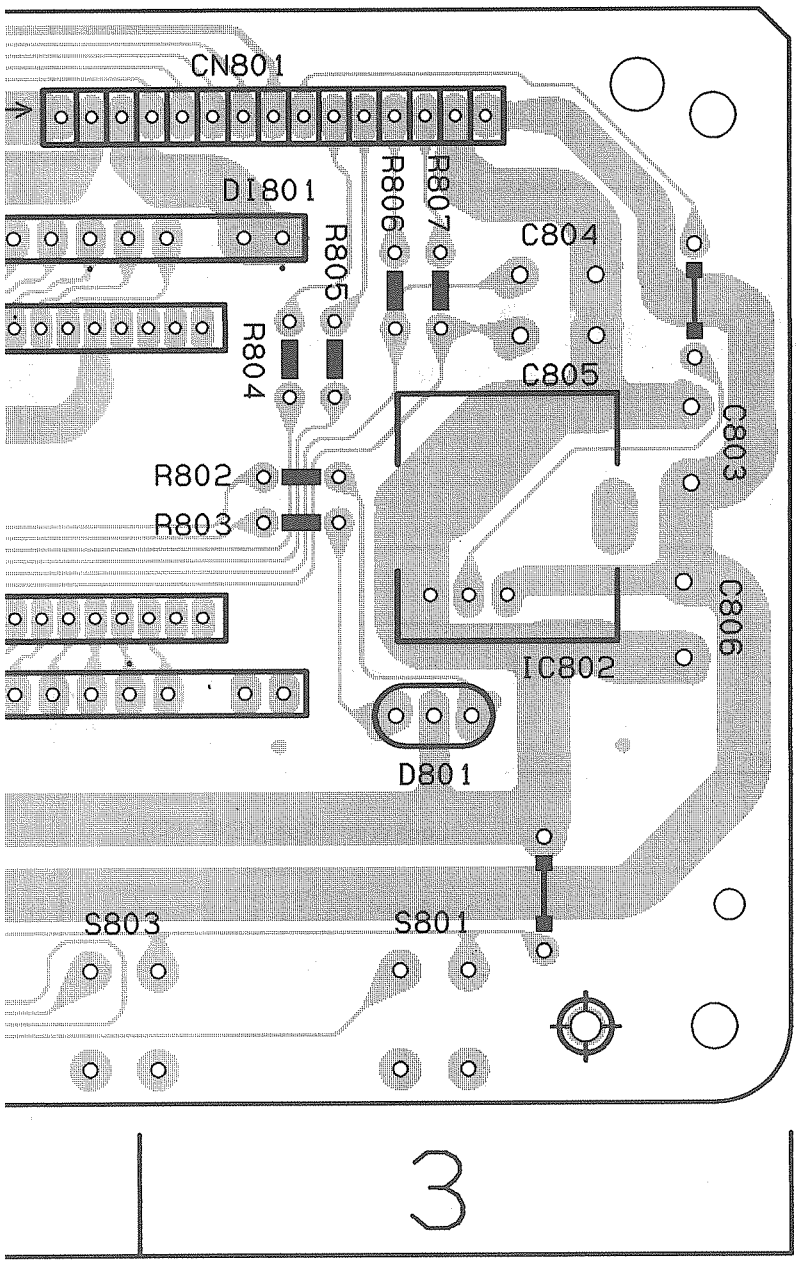
Symbol	X	Y
C201	3	B
C202	3	B
C203	3	A
C204	3	A
C205	3	A
C206	3	C
C207	4	C
C208	3	B
C209	2	B
C210	3	B
C211	3	A
C212	4	B
C214	1	D
C215	5	B
C216	1	D
C217	3	A
C220	6	D
C221	8	C
C222	7	C
C223	5	C
C224	5	C
C225	5	C
C226	5	C
C227	5	C
C228	5	C
C229	7	B
C230	7	C
C231	8	B
C232	5	D
C233	8	C
C234	7	C
C235	5	B
C236	6	B
C241	6	D
C242	6	C
C243	6	D
C244	6	C
C245	6	D
C246	6	C
C247	8	C
C248	8	C
C251	6	B
C252	5	A
C253	5	A
C254	6	A
C255	7	A
C290	8	C
C291	7	E
C292	7	E
C610	9	D
CN201	4	D
CN202	4	A
CN203	1	C
CN204	8	A
CN205	1	B
CN206	8	E
CN601	10	D
CN602	10	C
CN702	9	B
D102	7	A
D201	5	B
D202	4	B
D203	5	D
D204	5	B
D205	7	B
D206	7	B
D208	5	B

Symbol	X	Y
D209	5	B
D210	7	B
D211	6	B
D212	6	B
D213	1	D
D214	1	D
D223	6	B
D601	10	C
D602	10	C
D603	10	C
D604	9	D
FW201	7	D
IC201	3	C
IC202	6	C
Q106	8	A
Q201	8	B
Q202	8	C
Q203	5	D
Q204	7	C
Q205	6	B
Q206	6	B
Q207	5	A
Q208	1	D
Q209	5	B
Q601	10	C
Q602	10	C
Q603	9	C
Q604	9	D
R120	8	A
R201	4	B
R202	4	B
R203	4	B
R204	4	B
R205	4	B
R206	3	B
R207	3	B
R208	4	B
R209	4	C
R210	4	C
R211	2	C
R212	2	C
R213	2	C
R214	3	D
R215	1	C
R216	1	D
R217	2	B
R218	2	B
R219	1	A
R220	7	B
R221	8	C
R222	8	C
R223	8	B
R224	8	C
R225	6	C
R226	5	C
R227	8	C
R228	8	D
R229	8	B
R230	7	C
R231	7	D
R232	8	C
R233	5	D
R240	1	B
R241	2	C
R242	2	C
R243	2	C
R244	2	C

Symbol	X	Y
R245	2	B
R246	2	B
R247	8	B
R248	8	B
R251	5	B
R252	5	B
R253	7	B
R254	7	B
R255	5	A
R256	6	B
R258	7	A
R290	3	B
R601	10	C
R602	10	C
R603	10	C
R604	10	C
R605	10	D
R606	10	C
R607	10	C
R608	9	D
R609	10	C
R610	10	C
R611	9	D
R612	9	C
S1	4	B
S2	3	B
TC201	3	B
TH201	7	B
TX000E	8	B
X201	3	C

■ FL P.C. Board (ENB-247)

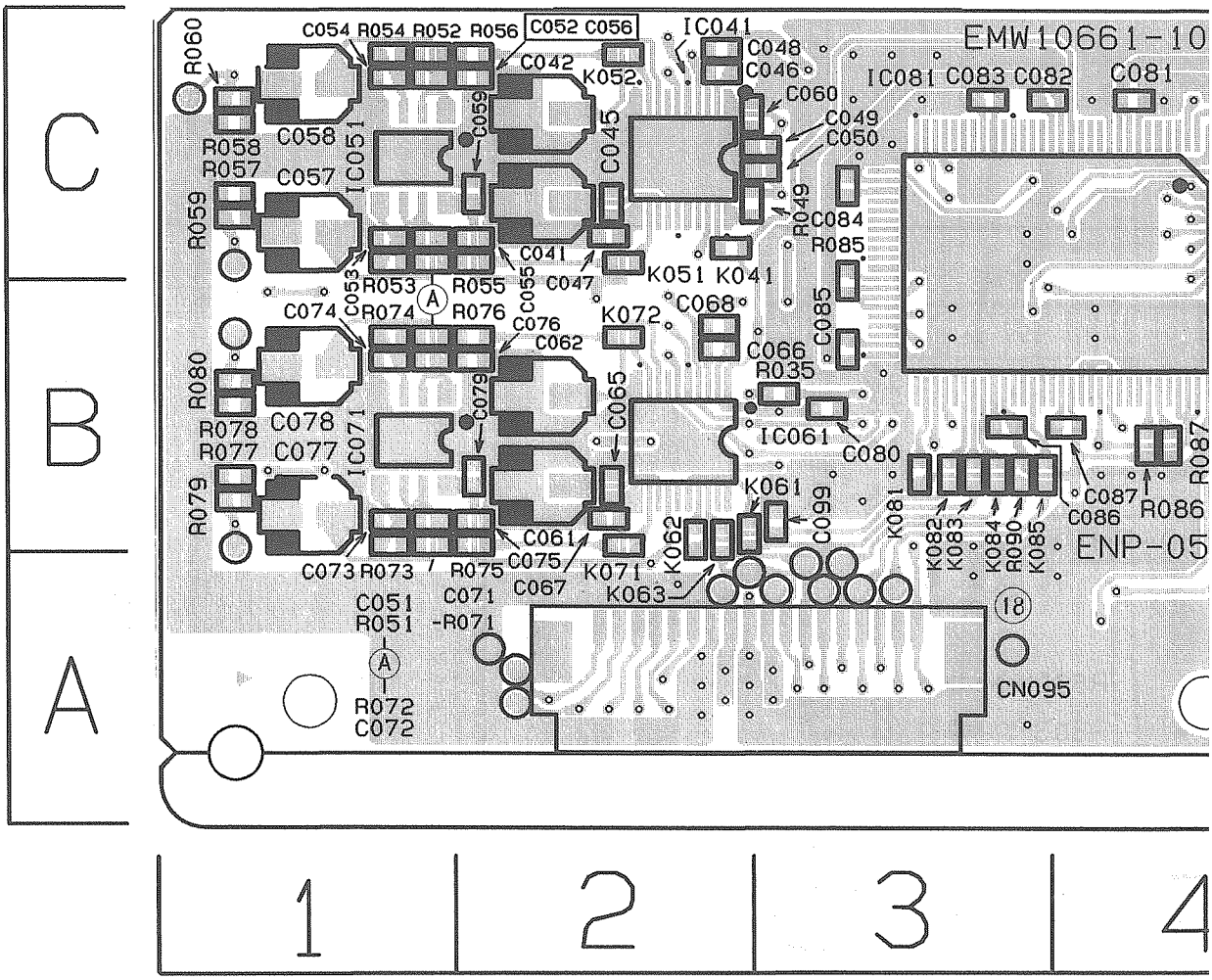




Location List (ENB-247)

Symbol	X	Y
C801	1	B
C802	1	A
C803	3	B
C804	3	C
C805	3	C
C806	3	B
C807	1	B
CN801	2	C
D801	3	B
DI801	3	B
IC801	3	B
IC802	3	B
R801	1	B
R802	3	B
R803	3	B
R804	3	B
R805	3	B
R806	3	C
R807	3	C
S801	3	A
S802	2	A
S803	2	A
S804	2	A
S805	1	A

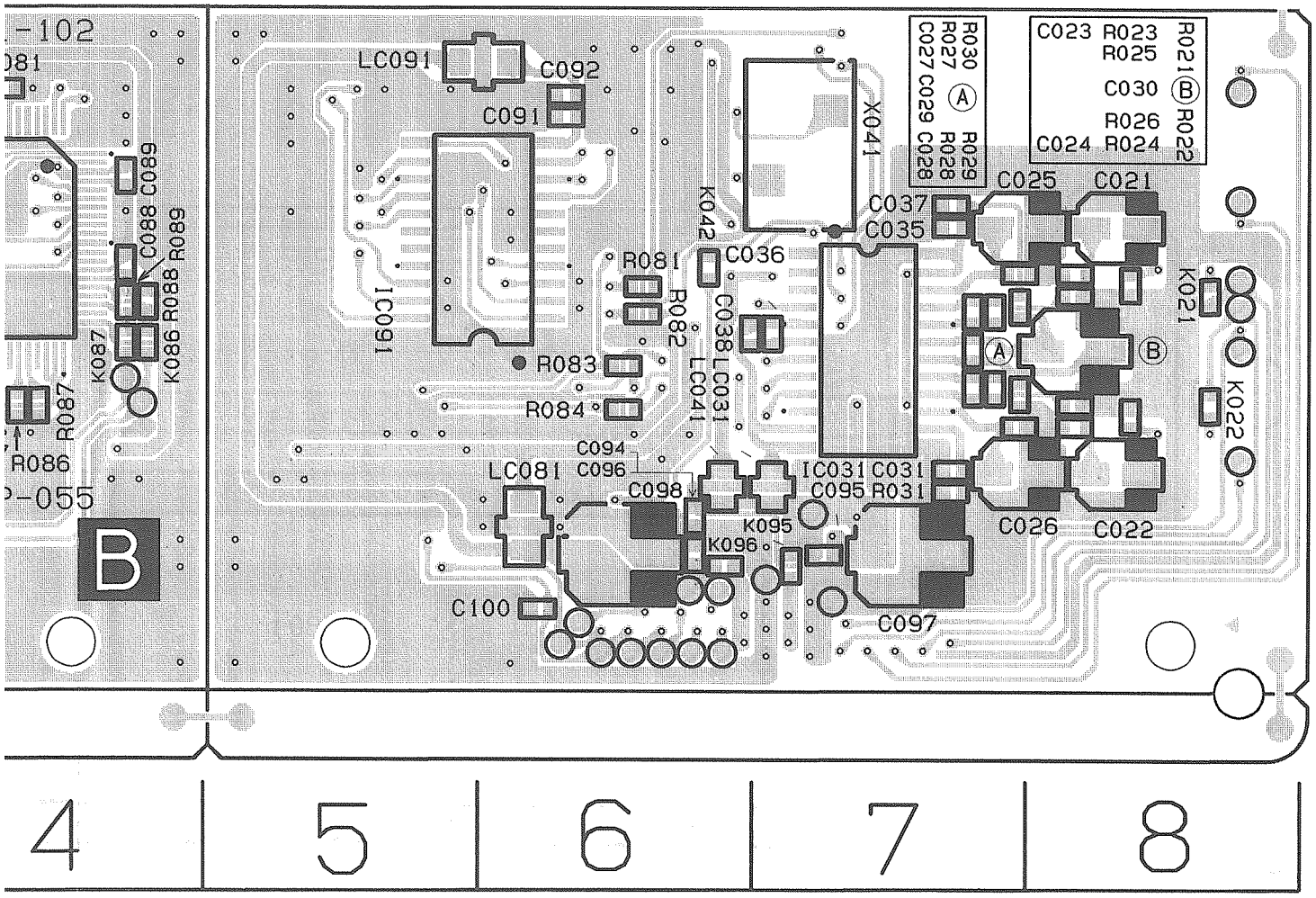
■ 3D-Phonic P.C. Board (ENP-055)



Location List (ENP-055)

Symbol	X	Y
C021	8	C
C022	8	B
C023	7	B
C024	7	B
C025	7	C
C026	7	B
C027	7	B
C028	7	B
C029	7	B
C030	8	B
C031	7	B
C035	7	C
C036	7	B
C037	7	C
C038	6	B
C041	2	C
C042	2	C
C045	2	C
C046	2	C
C047	2	C
C048	2	C

Symbol	X	Y
C049	3	C
C050	3	C
C051	1	C
C052	1	C
C053	1	C
C054	1	C
C055	2	C
C056	2	C
C057	1	C
C058	1	C
C059	2	C
C060	2	C
C061	2	B
C062	2	B
C065	2	B
C066	2	B
C067	2	B
C068	2	B
C071	1	B
C072	1	B
C073	1	B



Y
C
C
C
C
C
C
C
C
C
C
C
C
C
B
B
B
B
B
B
B
B
B

Symbol	X	Y
C074	1	B
C075	2	B
C076	2	B
C077	1	B
C078	1	B
C079	2	B
C080	3	B
C081	4	C
C082	3	C
C083	3	C
C084	3	C
C085	3	B
C086	3	B
C087	4	B
C088	4	B
C089	4	C
C091	6	C
C092	6	C
C094	6	A
C095	7	A
C096	6	A

Symbol	X	Y
C097	7	A
C098	6	A
C099	3	B
C100	6	A
CN095	2	A
IC031	7	B
IC041	2	C
IC051	1	C
IC061	2	B
IC071	1	B
IC081	4	C
IC091	5	C
K021	8	B
K022	8	B
K042	6	B
K051	2	C
K052	2	C
K061	2	B
K062	2	B
K063	2	B
K071	2	B

Symbol	X	Y
K072	2	B
K081	3	B
K082	3	B
K083	3	B
K084	3	B
K085	3	B
K086	4	B
K087	4	B
K095	7	A
K096	6	A
LC031	7	B
LC041	6	B
LC081	6	A
LC091	5	C
R021	8	B
R022	8	B
R023	8	B
R024	8	B
R025	8	B
R026	8	B
R027	7	B

Symbol	X	Y
R028	7	B
R029	7	B
R030	7	B
R031	7	B
R035	3	B
R049	2	C
R051	1	C
R052	1	C
R053	1	C
R054	1	C
R055	2	C
R056	2	C
R057	1	C
R058	1	C
R059	1	C
R060	1	C
R071	1	B
R072	1	B
R073	1	B
R074	1	B
R075	2	B

Symbol	X	Y
R076	2	B
R077	1	B
R078	1	B
R079	1	B
R080	1	B
R081	6	B
R082	6	B
R083	6	B
R084	6	B
R085	3	C
R086	4	B
R087	4	B
R088	4	B
R089	4	B
R090	3	B
X041	7	C

PARTS LIST

* All printed circuit boards and its assemblies are not available as service parts.

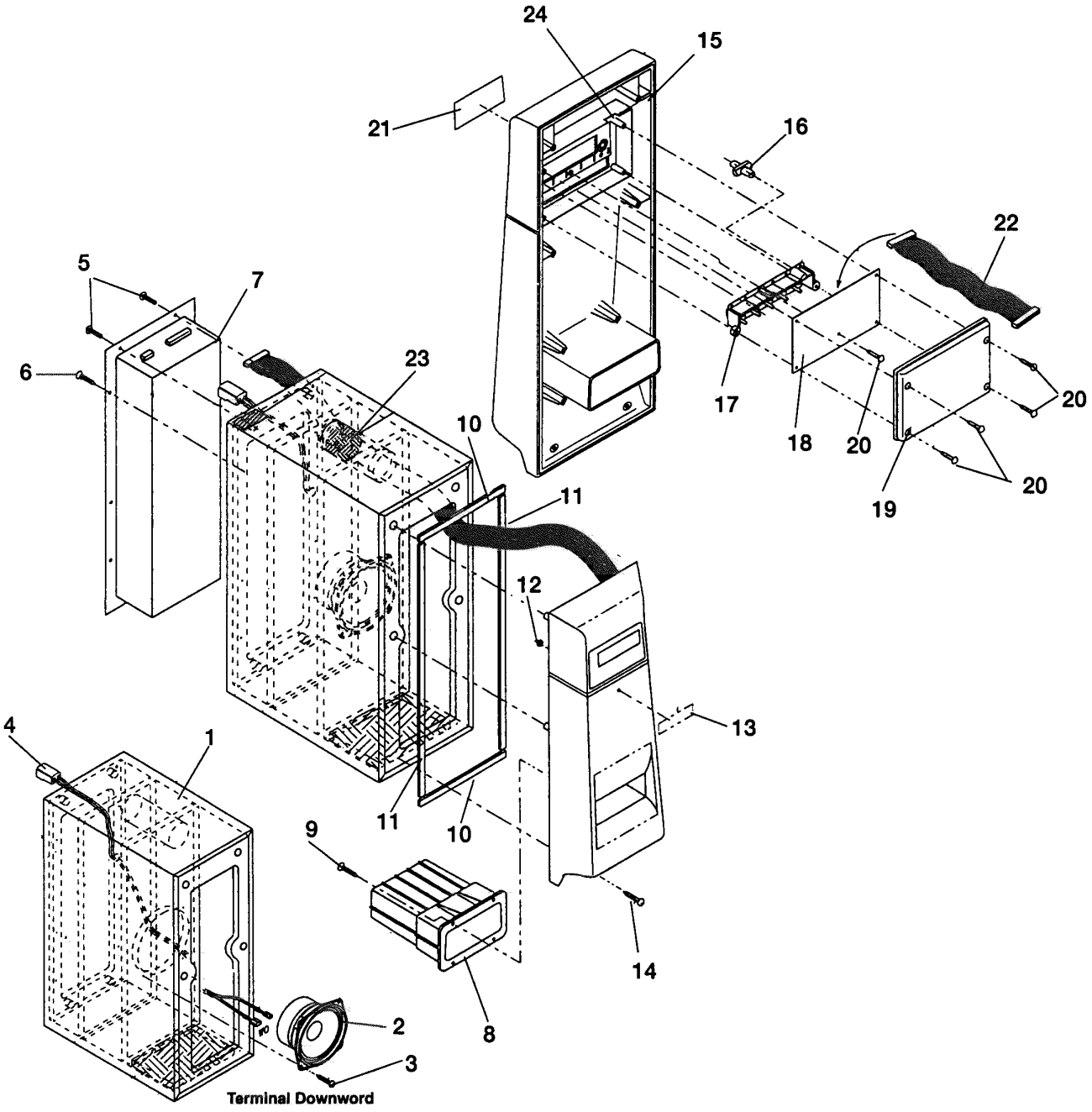
The Marks for Designated Areas
BS --- the U.K.
EN --- Scandinavia
G --- Germany
US --- Singapore
No mark indicates all areas.

- Contents -

Genenal Exploded View and Parts List

Block No. M 1 M M

■SP-ST1W



■Parts List

Block No. M 1 M M

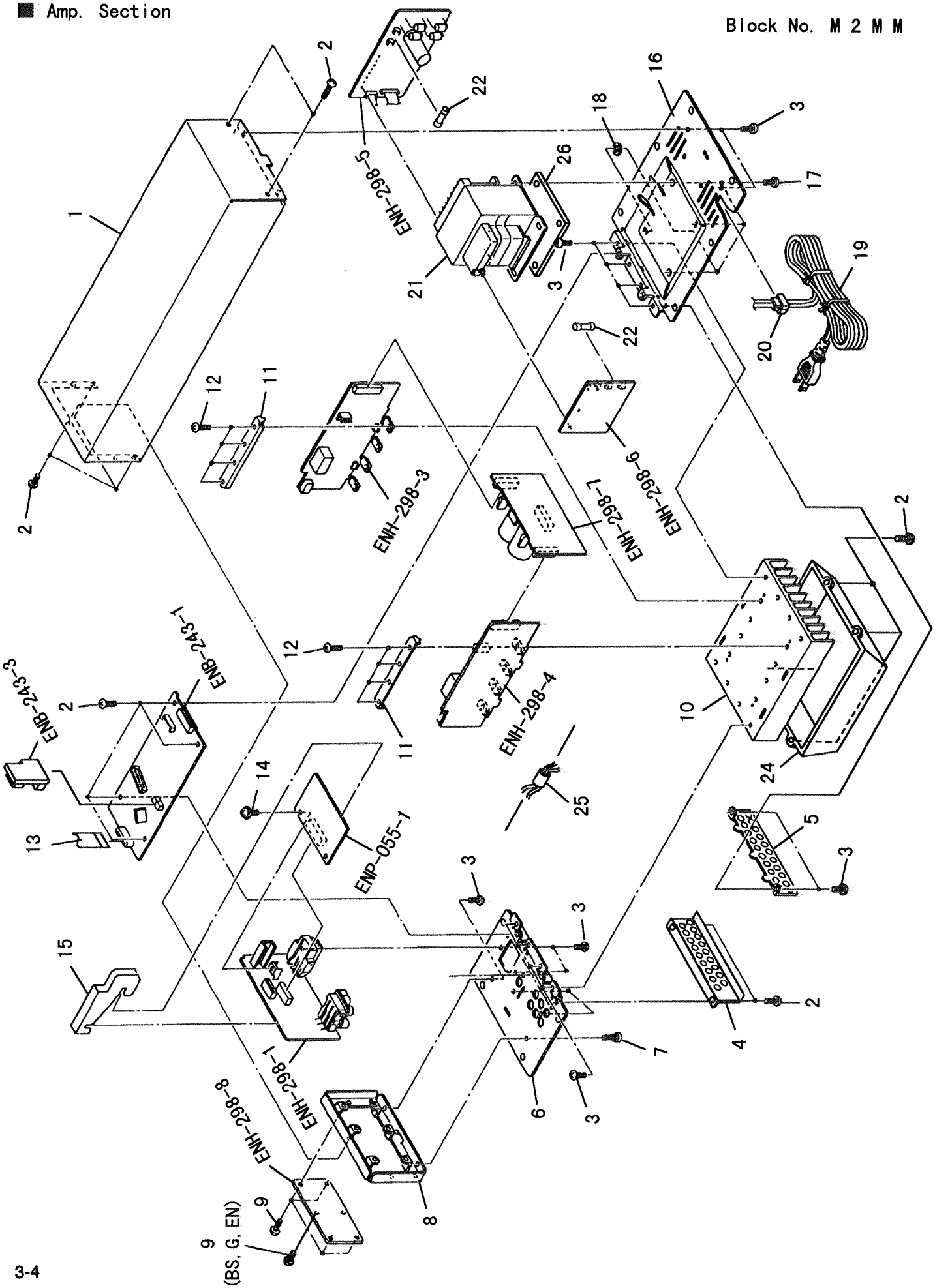
⚠	Item	Parts Number	Parts name	Qty	Description	Areas
	1	EZC-SP-ST1W	Cabinet Assembly	1		
	2	HSA1499-02Q	Speaker	1		
	3	SDSA4020M	Screw	4		
	4	E409437-001	Wire	1		
	5	SDSP4016M	Screw	4		
	6	SDSA4020M	Screw	6		
	7	————	Amplifier Assembly	1	refer to Page 2-4	
	8	E209008-001	Duct	1		
	9	SBSF4012Z	Screw	4		
	10	E409447-004	Spacer	2		
	11	E409447-003	Spacer	2		
	12	NSS3000M	Screw	4		
	13	E75939-001	Mark	1		
	14	SDSA4020M	Screw	2		
	15	E103218-001	Ornament	1		
	16	E409504-001	Indicator	1		
	17	E310054-001	Button	1		
	18	————	FL Board Assembly	1		
	19	E209052-001	Cover	1		
	20	SBSF2610Z	Screw	5		
	21	E310083-001	Window Screen	1		
	22	E409445-001	Wire	1		
	23	16-2273	Spacer	1		
	24	E409439-001	Spacer	2		

※Acoustic Absorber not available service parts.

SX-ST1

■ Amp. Section

Block No. M 2 M M



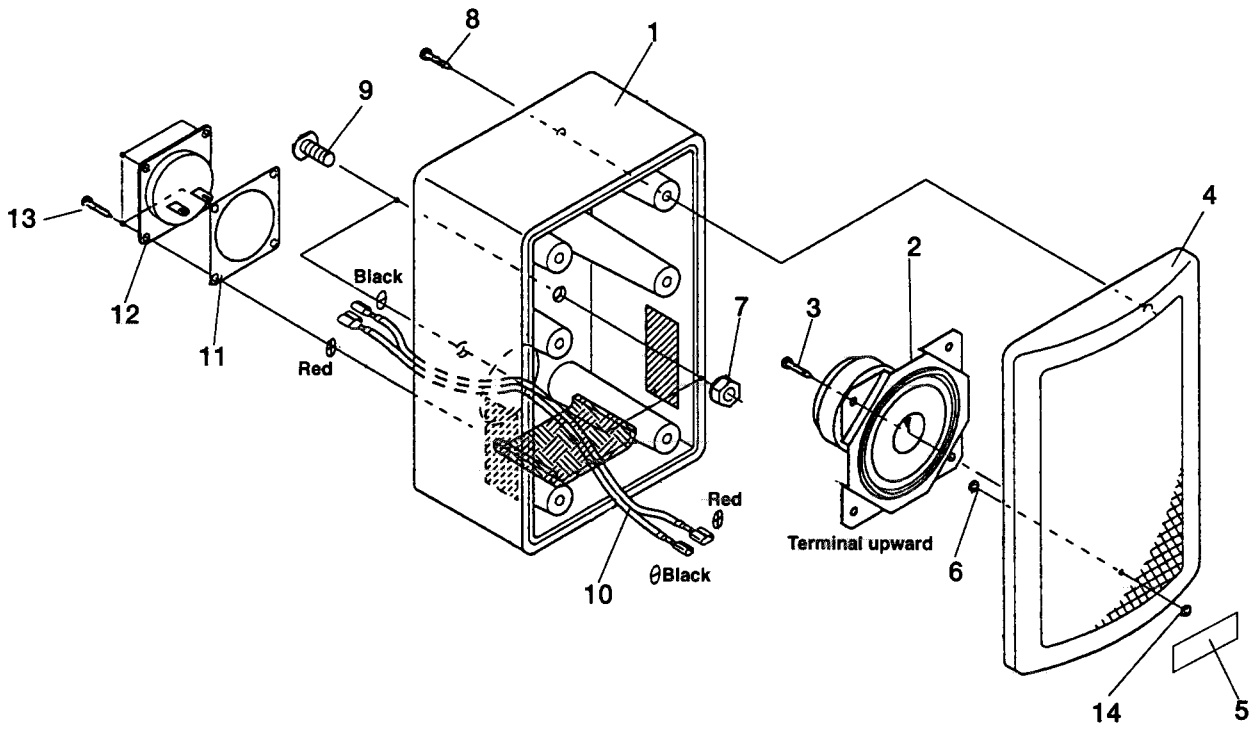
■ Parts List

Block No. M 2 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	E209049-001	PROTECTOR COVER	1		
	2	SBSG3008CC	TAPPING SCREW	9		
	3	E73273-003	SPECIAL SCREW	16		
	4	E310185-001	PROTECTOR COVER	1		BS EN G
	5	E310085-001ST	PANEL BRACKET	1		BS EN G
	6	E209047-004ST	REAR PANEL	1		BS EN G
		E209047-007ST	REAR PANEL	1		US
	7	E66052-006	SPECIAL SCREW	1		
	8	E310086-001	PANEL BRACKET	1		
	9	SBSG3006CC	SCREW	4		US
		SBSG3006CC	SCREW	5		BS EN G
	10	E310084-001ST	HEAT SINK	1		
	11	E409435-001	LEAF SPRING	2		
	12	SBSG3010CC	TAPPING SCREW	8		
	13	VWF1217-10TTB	FLAT WIRE	1		
	14	E408499-002	ASSY SCREW	1		
	15	E310176-001	PROTECTOR COVER	1		
	16	E209048-006ST	REAR PANEL	1		BS EN G
		E209048-010ST	REAR PANEL(D)	1		US
	17	E65389-006	SPECIAL SCREW	4		
	18	WAS4000CC	WASHER	1		
⚠	19	QMP3900-200	POWER CORD	1		EN G US
⚠		QMP5530-0085BS	POWER CORD	1		BS
⚠	20	QHS3771-108	CORD STOPPER	1		
⚠	21	ETP1100-71EA	POWER TRANSFORMER	1		
⚠	22	QMF51E2-R80J1	FUSE	2	F001, F501 (T0.8A/250V)	
	24	LE20281-001A	REAR COVER	1		US
	25	ENZ8104-004	NOISE FILTER	1		BS EN G
	26	LE40305-001A	SPACER	1		
	-	E61029-005	NUMBER LABEL	1		

■ SP-ST1F

Block No. M 3 M M



■Parts List

Block No. M 3 M M

⚠	Item	Parts Number	Parts name	Q'ty	Description
	1	EZC-SP-ST1F	Cabinet Assembly	1	
	2	HSA1099-02Q	Speaker	1	
	3	SBSF4010Z	Screw	4	
	4	E309521-002	Ornament	1	
	5	E75939-001	Mark	1	
	6	NSS3000M	Nut	1	
	7	HEW2015-003	Nut	2	
	8	SPSA4018Z	Screw	6	
	9	E74599-001	Screw	2	
	10	E408835-001	Wire	1	
	11	E407276-001	Spacer	1	
	12	E03823-103	Speaker	1	
	13	SBSF3010M	Screw	1	
	14	E407299-001	Washer	1	

■ Electrical Parts List (ENH-298)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	VC4580D	I.C(MONO-ANALOG)	
	IC102	BH3854AS	I.C(M)	
	IC103	PQ05RF1	I.C(HYBRID)	
	IC201	MN17P1601FD	I.C.	
	IC202	BH3854AS	I.C(M)	
	IC203	MN1281(P,Q)	I.C(DIGI-MOS)	
	IC301	VC4580D	I.C(MONO-ANALOG)	
	IC302	VC4580D	I.C(MONO-ANALOG)	
	IC401	VC4580D	I.C(MONO-ANALOG)	
		DIODES		
	D101	MTZ9.1JC	ZENER DIODE	
	D103	MTZ6.2JC	ZENER DIODE	
	D201	1SS119	SI.DIODE	
	D202	1SS119	SI.DIODE	
	D203	MTZ9.1JC	ZENER DIODE	
	D204	1SS119	SI.DIODE	
	D205	1SS119	SI.DIODE	
	D206	1SS119	SI.DIODE	
	D208	MTZ33JC	ZENER DIODE	
	D209	MTZ6.2JC	ZENER DIODE	
⚠	D210	11E2	SI.DIODE	
⚠	D211	11E2	SI.DIODE	
⚠	D212	11E2	SI.DIODE	
	D213	MTZ6.2JC	ZENER DIODE	
	D223	MTZ5.1JC	ZENER DIODE	
	D301	1SS119	SI.DIODE	
	D302	1SS119	SI.DIODE	
	D303	1SS119	SI.DIODE	
	D304	1SS119	SI.DIODE	
	D305	1SS119	SI.DIODE	
	D306	1SS119	SI.DIODE	
	D307	SLR-342MCA47	L.E.D.	
	D308	SLR-342MCA47	L.E.D.	
	D401	1SS119	SI.DIODE	
	D403	1SS119	SI.DIODE	
	D405	1SS119	SI.DIODE	
	D407	SLR-342MCA47	L.E.D.	
⚠	D501	30DL2FC	SI.DIODE	
⚠	D502	30DL2FC	SI.DIODE	
⚠	D503	30DL2FC	SI.DIODE	
⚠	D504	30DL2FC	SI.DIODE	
⚠	D511	11E2	SI.DIODE	
⚠	D512	11E2	SI.DIODE	
⚠	D513	11E2	SI.DIODE	
⚠	D514	11E2	SI.DIODE	
	D701	MTZ18JC	ZENER DIODE	
	D702	MTZ18JC	ZENER DIODE	
	D711	1SS119	SI.DIODE	
		TRANSISTORS		
	Q101	DTC144ES	DIGITAL TRANSISTOR	
	Q102	DTA144ES	DIGITAL TRANSISTOR	
	Q103	2SD2144S(VW)	SI.TRANSISTOR	
	Q104	2SD2144S(VW)	SI.TRANSISTOR	
	Q105	2SD400MP(E,F)	SI.TRANSISTOR	
	Q107	2SA933AS(RS)-T	SI.TRANSISTOR	
	Q109	DTC144ES	DIGITAL TRANSISTOR	
	Q201	2SC2878(B)	SI.TRANSISTOR	
	Q202	2SC2878(B)	SI.TRANSISTOR	
	Q203	2SD400MP(E,F)	SI.TRANSISTOR	
	Q204	2SA933S(RS)	SI.TRANSISTOR	
	Q205	DTC114YS	DIGITAL TRANSISTOR	
	Q206	DTC144ES	DIGITAL TRANSISTOR	
	Q207	2SB1357(E,F)	SI.TRANSISTOR	
	Q208	2SD400MP(E,F)	SI.TRANSISTOR	
	Q301	2SC1775AV(F1)	SI.TRANSISTOR	
	Q302	2SC1775AV(F1)	SI.TRANSISTOR	
	Q303	2SA872AV(E,F)	SI.TRANSISTOR	
	Q304	2SA872AV(E,F)	SI.TRANSISTOR	
	Q305	2SA1038(R,S)	SI.TRANSISTOR	

⚠	Item	Parts Number	Description	Area
	Q306	2SA1038(R,S)	SI.TRANSISTOR	
	Q307	2SC2389(S,E)	SI.TRANSISTOR	
	Q308	2SC2389(S,E)	SI.TRANSISTOR	
	Q309	2SD637(Q,R)	SI.TRANSISTOR	
	Q310	2SD637(Q,R)	SI.TRANSISTOR	
	Q311	2SC2235(O,Y)	SI.TRANSISTOR	
	Q312	2SC2235(O,Y)	SI.TRANSISTOR	
	Q313	2SA965(Y)	SI.TRANSISTOR	
	Q314	2SA965(Y)	SI.TRANSISTOR	
	Q315	2SD1897(D,F)	SI.TRANSISTOR	
	Q316	2SD1897(D,F)	SI.TRANSISTOR	
	Q317	2SB1294(D,F)	SI.TRANSISTOR	
	Q318	2SB1294(D,F)	SI.TRANSISTOR	
	Q319	2SC2240(GR,BL)	SI.TRANSISTOR	
	Q320	2SC2240(GR,BL)	SI.TRANSISTOR	
	Q321	2SA970(GR)	SI.TRANSISTOR	
	Q401	2SC1775AV(F1)	SI.TRANSISTOR	
	Q403	2SA872AV(E,F)	SI.TRANSISTOR	
	Q405	2SA1038(R,S)	SI.TRANSISTOR	
	Q407	2SC2389(S,E)	SI.TRANSISTOR	
	Q409	2SD637(Q,R)	SI.TRANSISTOR	
	Q411	2SC2235(O,Y)	SI.TRANSISTOR	
	Q413	2SA965(Y)	SI.TRANSISTOR	
	Q415	2SD1897(D,F)	SI.TRANSISTOR	
	Q416	2SD1897(D,F)	SI.TRANSISTOR	
	Q417	2SB1294(D,F)	SI.TRANSISTOR	
	Q418	2SB1294(D,F)	SI.TRANSISTOR	
	Q419	2SC2240(GR,BL)	SI.TRANSISTOR	
	Q421	2SA970(GR)	SI.TRANSISTOR	
	Q501	2SD400MP(E,F)	SI.TRANSISTOR	
	Q701	2SD1944(J,K)	SI.TRANSISTOR	
	Q702	2SB1565(E,F)	SI.TRANSISTOR	
	Q703	DTC144ES	DIGITAL TRANSISTOR	
	Q704	DTA144ES	DIGITAL TRANSISTOR	
	Q711	2SC1740S(R,S)	SI.TRANSISTOR	
	Q712	2SC1740S(R,S)	SI.TRANSISTOR	
	Q713	2SA933AS(RS)-T	SI.TRANSISTOR	
	Q714	2SC1740S(R,S)	SI.TRANSISTOR	
	Q715	2SC1740S(R,S)	SI.TRANSISTOR	
		CAPACITORS		
	C101	EETB1EM-106E	10MF 25V E.CAP.	
	C102	EETB1EM-106E	10MF 25V E.CAP.	
	C103	QCY21HK-221	220PF 50V CER.CAP.	
	C104	QCY21HK-221	220PF 50V CER.CAP.	
	C105	EETC1EM-226ZE	22MF 25V E.CAP.	
	C106	EETC1EM-226ZE	22MF 25V E.CAP.	
	C107	QFVC1HJ-104ZN	0.1MF 50V METAL.MYLAR	
	C108	QETB1HM-105	1MF 50V AL E.CAP.	
	C109	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C110	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C111	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C112	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C120	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C121	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C122	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C123	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C124	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C125	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C126	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C127	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C128	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C129	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C130	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C133	QETB1HM-226E	22MF 50V E.CAP.	
	C134	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C135	QETB1EM-107	100MF 25V AL E.CAP.	
	C136	QCF31HP-103Z	0.01MF 50V CER.CAP.	
	C137	QETC1AM-337ZN	330MF 10V E.CAP.	
	C138	QETB0JM-108N	1000MF 6.3V E.CAP.	
	C139	QFVC1HJ-104ZN	0.1MF 50V METAL.MYLAR	

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⚠	Item	Parts Number	Description	Area
	C140	QCXB1CM-222Y	2200PF 16V CER. CAP.	
	C141	QCXB1CM-222Y	2200PF 16V CER. CAP.	BS EN G
	C142	QCXB1CM-222Y	2200PF 16V CER. CAP.	BS EN G
	C143	QFN31HJ-223ZN	0.022MF 50V MYLAR CAP.	BS EN G
	C144	QFN31HJ-223ZN	0.022MF 50V MYLAR CAP.	BS EN G
	C145	QCGB1HK-102	1000PF 50V CER. CAP.	BS EN G
	C146	QCGB1HK-102	1000PF 50V CER. CAP.	BS EN G
	C147	QCBB1HK-471Y	470PF 50V CER. CAP.	BS EN G
	C148	QCBB1HK-471Y	470PF 50V CER. CAP.	BS EN G
	C201	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C202	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C203	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C204	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C205	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C206	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C207	QCSB1HJ-470Y	47PF 50V CER. CAP.	
	C208	QCSB1HJ-330Y	33PF 50V CER. CAP.	
	C209	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C210	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C211	QETC1CM-227Z	220MF 16V AL E. CAP.	
	C212	QETB1CM-107	100MF 16V AL E. CAP.	
	C214	QETB1EM-226N	22MF 25V E. CAP.	
	C215	QETB1EM-226N	22MF 25V E. CAP.	
	C216	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C220	QETC1EM-106ZM	10MF 25V AL E. CAP.	
	C221	EETB1EM-106E	10MF 25V E. CAP.	
	C222	EETB1EM-106E	10MF 25V E. CAP.	
	C223	EETB1EM-106E	10MF 25V E. CAP.	
	C224	EETB1EM-106E	10MF 25V E. CAP.	
	C225	EETB1EM-106E	10MF 25V E. CAP.	
	C226	EETB1EM-106E	10MF 25V E. CAP.	
	C227	QETC1EM-106ZM	10MF 25V AL E. CAP.	
	C228	QETC1EM-106ZM	10MF 25V AL E. CAP.	
	C229	QETC1EM-106ZM	10MF 25V AL E. CAP.	
	C230	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C231	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C232	QETB1HM-226E	22MF 50V E. CAP.	
	C233	QETC1EM-106ZM	10MF 25V AL E. CAP.	
	C241	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C242	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C243	QFN81HJ-683	0.068MF 50V METAL. MYLAR	
	C244	QFN81HJ-683	0.068MF 50V METAL. MYLAR	
	C245	QFN81HJ-683	0.068MF 50V METAL. MYLAR	
	C246	QFN81HJ-683	0.068MF 50V METAL. MYLAR	
	C251	QETB1HM-105	1MF 50V AL E. CAP.	
	C252	QETB1HM-226E	22MF 50V E. CAP.	
	C253	QETB1HM-226E	22MF 50V E. CAP.	
	C254	QETB1JM-107	100MF 63V AL E. CAP.	
	C255	QETB1HM-107	100MF 50V E. CAP.	
	C301	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C302	QFN81HJ-683	0.068MF 50V METAL. MYLAR	
	C303	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C304	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C305	QCS31HJ-221Z	220PF 50V CER. CAP.	
	C306	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C307	EETC1EM-226ZE	22MF 25V E. CAP.	
	C308	EETC1EM-226ZE	22MF 25V E. CAP.	
	C309	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C310	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C311	QCSB1HJ-270Y	27PF 50V CER. CAP.	
	C312	QCSB1HJ-270Y	27PF 50V CER. CAP.	
	C313	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C314	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C315	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C316	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C317	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C318	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C319	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	US
	C320	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	US
	C323	QETB1HM-105	1MF 50V AL E. CAP.	

⚠	Item	Parts Number	Description	Area
	C325	QCBB1HK-221Y	220PF 50V CER. CAP.	BS EN G
	C326	QCBB1HK-471Y	470PF 50V CER. CAP.	BS EN G
	C327	QCBB1HK-471Y	470PF 50V CER. CAP.	BS EN G
	C401	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C403	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C405	QCY21HK-221	220PF 50V CER. CAP.	
	C407	EETC1EM-226ZE	22MF 25V E. CAP.	
	C409	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C411	QCSB1HJ-270Y	27PF 50V CER. CAP.	
	C413	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C415	QCS31HJ-470Z	47PF 50V CER. CAP.	
	C417	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C419	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	US
	C423	QETB1HM-105	1MF 50V AL E. CAP.	
	C425	QCBB1HK-221Y	220PF 50V CER. CAP.	BS EN G
	C501	QCF31HP-103Z	0.01MF 50V CER. CAP.	BS EN G
	C502	QCF31HP-103Z	0.01MF 50V CER. CAP.	BS EN G
	C503	QCF31HP-103Z	0.01MF 50V CER. CAP.	BS EN G
	C504	QCF31HP-103Z	0.01MF 50V CER. CAP.	BS EN G
	C505	EFZ0101-103S	0.01MF POLYPROPY. FILM	US
	C506	QCF21HP-223A	0.022MF 50V CER. CAP.	BS EN G
	C510	QETB1CM-107	100MF 16V AL E. CAP.	
	C510	QETB1CM-228M	2200MF 16V E. CAP.	
	C511	QCF31HP-103Z	0.01MF 50V CER. CAP.	
	C521	QETB1CM-228M	2200MF 16V E. CAP.	
	C701	EEW4208-568E	5600MF E. CAP.	
	C702	EEW4208-568E	5600MF E. CAP.	
	C703	EETC1EM-226ZE	22MF 25V E. CAP.	
	C704	EETC1EM-226ZE	22MF 25V E. CAP.	
	C705	EETC1EM-226ZE	22MF 25V E. CAP.	
	C706	EETC1EM-226ZE	22MF 25V E. CAP.	
	C707	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C708	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C711	QEK51HM-225G	2.2MF 50V AL E. CAP.	
	C712	QEK51EM-476	47MF 25V AL E. CAP.	
	C713	QCF31HP-103Z	0.01MF 50V CER. CAP.	
	C801	QCXB1CM-222Y	2200PF 16V CER. CAP.	BS EN G
	C803	QFN31HJ-223ZN	0.022MF 50V MYLAR CAP.	BS EN G
	C815	QCGB1HK-102	1000PF 50V CER. CAP.	BS EN G
	C817	QCGB1HK-102	1000PF 50V CER. CAP.	BS EN G
		RESISTORS		
	R101	ERD004J-331Z	330 CARBON RES.	
	R102	ERD004J-331Z	330 CARBON RES.	
	R103	ERD004J-473Z	47K CARBON RES.	
	R104	ERD004J-473Z	47K CARBON RES.	
	R105	QRD167J-332	3.3K 1/6W CARBON RES.	
	R106	QRD167J-332	3.3K 1/6W CARBON RES.	
	R107	ERD004J-332Z	3.3K CARBON RES.	
	R108	ERD004J-332Z	3.3K CARBON RES.	
	R109	QRD14CJ-152SX	1.5K 1/4W UNF. CARBON R	
	R119	QRD161J-162	1.6K 1/6W CARBON RES.	
	R121	QRD161J-331	330 1/6W CARBON RES.	
	R122	QRD161J-331	330 1/6W CARBON RES.	
	R123	QRD161J-103	10K 1/6W CARBON RES.	
	R124	QRD161J-103	10K 1/6W CARBON RES.	
	R125	QRD161J-123	12K 1/6W CARBON RES.	
	R126	QRD161J-123	12K 1/6W CARBON RES.	
	R128	QRD161J-103	10K 1/6W CARBON RES.	
	R131	QRD167J-332	3.3K 1/6W CARBON RES.	
	R132	QRD167J-223	22K 1/6W CARBON RES.	
	R133	QRD167J-682	6.8K 1/6W CARBON RES.	
	R135	QRD161J-3R3	3.3 1/6W CARBON RES.	
	R143	QRD14CJ-4R7SX	4.7 1/4W UNF. CARBON R	BS EN G
	R144	QRD14CJ-4R7SX	4.7 1/4W UNF. CARBON R	BS EN G
	R155	QRD161J-102	1K 1/6W CARBON RES.	
	R201	QRD161J-103	10K 1/6W CARBON RES.	
	R202	QRD161J-103	10K 1/6W CARBON RES.	
	R203	QRD161J-103	10K 1/6W CARBON RES.	
	R204	QRD161J-103	10K 1/6W CARBON RES.	
	R205	QRD161J-103	10K 1/6W CARBON RES.	

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⚠	Item	Parts Number	Description	Area
	R206	QRD161J-101	100 1/6W CARBON RES.	
	R207	QRD161J-101	100 1/6W CARBON RES.	
	R208	QRD161J-101	100 1/6W CARBON RES.	
	R209	QRD161J-101	100 1/6W CARBON RES.	
	R210	QRD161J-821	820 1/6W CARBON RES.	
	R211	QRD161J-331	330 1/6W CARBON RES.	
	R212	QRD161J-331	330 1/6W CARBON RES.	
	R213	QRD161J-331	330 1/6W CARBON RES.	
	R214	QRD161J-331	330 1/6W CARBON RES.	
⚠	R215	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R216	QRD161J-122	1.2K 1/6W CARBON RES.	
	R221	ERD004J-331Z	330 CARBON RES.	
	R222	ERD004J-331Z	330 CARBON RES.	
	R223	ERD004J-104	100K CARBON RES.	
	R224	ERD004J-104	100K CARBON RES.	
	R225	QRD167J-562	5.6K 1/6W CARBON RES.	
	R226	QRD167J-562	5.6K 1/6W CARBON RES.	
	R227	QRD167J-154	150K 1/6W CARBON RES.	
	R228	QRD161J-103	10K 1/6W CARBON RES.	
	R229	QRD161J-105	1M 1/6W CARBON RES.	
	R230	QRD167J-682	6.8K 1/6W CARBON RES.	
	R231	QRD167J-332	3.3K 1/6W CARBON RES.	
	R232	QRD167J-223	22K 1/6W CARBON RES.	
	R233	QRD167J-152	1.5K 1/6W CARBON RES.	
	R251	QRD161J-102	1K 1/6W CARBON RES.	
	R252	QRD161J-472	4.7K 1/6W CARBON RES.	
	R253	QRD161J-103	10K 1/6W CARBON RES.	
	R254	QRD161J-103	10K 1/6W CARBON RES.	
	R255	QRD167J-223	22K 1/6W CARBON RES.	
	R256	QRD167J-562	5.6K 1/6W CARBON RES.	
	R258	QRD161J-104	100K 1/6W CARBON RES.	
	R290	QRD161J-103	10K 1/6W CARBON RES.	
	R301	QRD167J-223	22K 1/6W CARBON RES.	
	R302	QRD167J-332	3.3K 1/6W CARBON RES.	
	R303	QRD161J-473	47K 1/6W CARBON RES.	
	R304	QRD167J-223	22K 1/6W CARBON RES.	
	R305	ERD004J-331Z	330 CARBON RES.	
	R306	QRD167J-332	3.3K 1/6W CARBON RES.	
	R307	QRD167J-152	1.5K 1/6W CARBON RES.	
	R308	QRD161J-391	390 1/6W CARBON RES.	
	R309	ERD004J-563Z	56K CARBON RES.	
	R310	QRD161J-563	56K 1/6W CARBON RES.	
⚠	R311	QRZ0077-331	330 1/4W FUSIBLE RES.	
⚠	R312	QRZ0077-331	330 1/4W FUSIBLE RES.	
	R313	QRD161J-472	4.7K 1/6W CARBON RES.	
	R314	QRD161J-472	4.7K 1/6W CARBON RES.	
	R315	QRD161J-472	4.7K 1/6W CARBON RES.	
	R316	QRD161J-472	4.7K 1/6W CARBON RES.	
	R317	QRD167J-151	150 1/6W CARBON RES.	
	R318	QRD167J-151	150 1/6W CARBON RES.	
	R319	QRD167J-151	150 1/6W CARBON RES.	
	R320	QRD167J-151	150 1/6W CARBON RES.	
	R321	QRD161J-820	82 1/6W CARBON RES.	
	R322	QRD161J-820	82 1/6W CARBON RES.	
	R323	QRD161J-820	82 1/6W CARBON RES.	
	R324	QRD161J-820	82 1/6W CARBON RES.	
	R325	QRD161J-182	1.8K 1/6W CARBON RES.	
	R326	QRD161J-182	1.8K 1/6W CARBON RES.	
	R327	QRD161J-621	620 1/6W CARBON RES.	
	R328	QRD161J-621	620 1/6W CARBON RES.	
⚠	R329	QRD14CJ-221S	220 1/4W UNF. CARBON R	
⚠	R330	QRD14CJ-221S	220 1/4W UNF. CARBON R	
⚠	R331	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R332	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R333	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R334	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R335	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R336	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R337	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R338	QRX014J-R22	0.22 1W METAL FILM R	

⚠	Item	Parts Number	Description	Area
	R339	QRD161J-123	12K 1/6W CARBON RES.	
	R340	QRD161J-123	12K 1/6W CARBON RES.	
	R341	QRD167J-153	15K 1/6W CARBON RES.	
	R342	QRD167J-153	15K 1/6W CARBON RES.	
	R343	QRD167J-223	22K 1/6W CARBON RES.	
	R344	QRD167J-223	22K 1/6W CARBON RES.	
⚠	R345	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
⚠	R346	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
⚠	R347	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
⚠	R348	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R349	QRD161J-104	100K 1/6W CARBON RES.	
	R350	QRD161J-823	82K 1/6W CARBON RES.	
	R351	QRG01DJ-271X	270 1W O.M.FILM	
	R352	QRD161J-330	33 1/6W CARBON RES.	
	R353	QRD167J-223	22K 1/6W CARBON RES.	
	R354	QRD161J-102	1K 1/6W CARBON RES.	BS EN G
	R391	QRD167J-151	150 1/6W CARBON RES.	
	R392	QRD167J-151	150 1/6W CARBON RES.	
	R401	QRD167J-223	22K 1/6W CARBON RES.	
	R403	QRD161J-473	47K 1/6W CARBON RES.	
	R405	ERD004J-331Z	330 CARBON RES.	
	R407	QRD167J-152	1.5K 1/6W CARBON RES.	
	R409	ERD004J-563Z	56K CARBON RES.	
⚠	R411	QRZ0077-331	330 1/4W FUSIBLE RES.	
	R413	QRD161J-472	4.7K 1/6W CARBON RES.	
	R415	QRD161J-472	4.7K 1/6W CARBON RES.	
	R417	QRD167J-151	150 1/6W CARBON RES.	
	R419	QRD167J-151	150 1/6W CARBON RES.	
	R421	QRD161J-820	82 1/6W CARBON RES.	
	R423	QRD161J-820	82 1/6W CARBON RES.	
	R425	QRD161J-182	1.8K 1/6W CARBON RES.	
	R427	QRD161J-621	620 1/6W CARBON RES.	
⚠	R429	QRD14CJ-221S	220 1/4W UNF. CARBON R	
⚠	R431	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R433	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
⚠	R435	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R436	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R437	QRX014J-R22	0.22 1W METAL FILM R	
⚠	R438	QRX014J-R22	0.22 1W METAL FILM R	
	R439	QRD161J-123	12K 1/6W CARBON RES.	
	R441	QRD167J-153	15K 1/6W CARBON RES.	
	R443	QRD167J-223	22K 1/6W CARBON RES.	
⚠	R445	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
⚠	R447	QRD14CJ-100SX	10 1/4W UNF. CARBON R	
	R449	QRD161J-104	100K 1/6W CARBON RES.	
	R450	QRD161J-823	82K 1/6W CARBON RES.	
	R451	QRG01DJ-271X	270 1W O.M.FILM	
	R452	QRD161J-330	33 1/6W CARBON RES.	
	R453	QRD167J-223	22K 1/6W CARBON RES.	
	R491	QRD167J-151	150 1/6W CARBON RES.	
	R501	QRD161J-471	470 1/6W CARBON RES.	
⚠	R701	QRZ0077-150	15 1/4W FUSIBLE	
⚠	R702	QRZ0077-470	47 1/4W FUSIBLE RES.	
	R703	QRG01DJ-122X	1.2K 1W OXIDE METAL	
	R704	QRG01DJ-122X	1.2K 1W OXIDE METAL	
	R711	QRD161J-103	10K 1/6W CARBON RES.	
	R712	QRD161J-103	10K 1/6W CARBON RES.	
	R713	QRD167J-332	3.3K 1/6W CARBON RES.	
	R714	QRD161J-473	47K 1/6W CARBON RES.	
	R715	QRD161J-222	2.2K 1/6W CARBON RES.	
	R716	QRD161J-103	10K 1/6W CARBON RES.	
	R717	QRD161J-104	100K 1/6W CARBON RES.	
	R718	QRD161J-473	47K 1/6W CARBON RES.	
	R719	QRD161J-103	10K 1/6W CARBON RES.	
	R720	QRD161J-393	39K 1/6W CARBON RES.	
	R721	QRD161J-393	39K 1/6W CARBON RES.	
	R723	QRD167J-332	3.3K 1/6W CARBON RES.	
	R725	QRD167J-223	22K 1/6W CARBON RES.	
	R726	QRD167J-223	22K 1/6W CARBON RES.	
	R803	QRD14CJ-4R7SX	4.7 1/4W UNF. CARBON R	BS EN G

SX-ST1

■ Electrical Parts List (ENH-298)

⚠	Item	Parts Number	Description	Area
		OTHERS		
		EMW10667-007	CIR BOARD	
		SBST3008CC	TAPPING SCREW	
	B931	QXY123-22.5	BUS WIRE 1.M	
	B932	QXY123-22.5	BUS WIRE 1.M	
	B992	QXY123-30.0	BUS WIRE 1.M	
	J101	QNB0001-001	SPEAKER TERMINAL	
	J103	QNN0003-001	PIN JACK	
	K301	ENZ8101-007	INDUCTOR	BS EN G
	K302	ENZ8101-007	INDUCTOR	BS EN G
	K801	ENZ8101-007	INDUCTOR	BS EN G
	L301	EQL0001-1R0	INDUCTOR	
	L302	EQL0001-1R0	INDUCTOR	
	L401	EQL0001-1R0	INDUCTOR	
	X201	ECX0006-000KNJ	CRYSTAL	
	CN096	EMV7158-018	CONNECT TERMINAL	
	CN101	VMC0163-017	CONNECT TERMINAL	
	CN102	EWS284-008	SOCKET WIRE ASSY	
	CN202	EMV5109-015A	PLUG ASSY	
	CN203	VMC0163-017	CONNECT TERMINAL	
	CN204	EMV5111-007	CONNECT TERMINAL	
	CN301	EMV5942-012R	CONNECT TERMINAL	
	CN302	EMV7942-012	CONNECT TERMINAL	
	CN303	EMV5138-004	PIN CONNECTOR	
	CN312	EMV5163-005R	CONNECTOR	
	CN401	EMV5942-012R	CONNECT TERMINAL	
	CN402	EMV7942-012	CONNECT TERMINAL	
	CN403	EMV5138-002	PIN PLUG	
	CN412	EMV5163-004R	CONNECT TERMINAL	
	CN501	EWS283-001	SOCKET WIRE ASSY	
	CN502	EWS247-017	SOCKET WIRE ASSY	
	CN701	EMV7942-011	CONNECT TERMINAL	
	CN702	EMV5163-011R	CONNECT TERMINAL	
	CN703	EMV5138-003	PIN CONNECTOR	
	CN802	EMV5109-015A	PLUG ASSY	
	CN804	EMV5138-002	PIN PLUG	
	CN805	EWS26F-A916	SOCKET WIRE ASSY	
	CN901	EMV7163-005	CONNECTOR	
	CN902	EMV7163-004	CONNECT TERMINAL	
	EP101	E70225-001	EARTH PLATE	
	EP201	EMZ4002-001Z	EARTH PLATE	
	EP801	EMZ4002-002Z	EARTH PLATE	BS EN G
	FT001	EMG7331-003Z	FUSE CLIP	
	FT002	EMG7331-003Z	FUSE CLIP	
	FT501	EMG7331-003Z	FUSE CLIP	
	FT502	EMG7331-003Z	FUSE CLIP	
	FW101	EWR36B-13LST	FLAT WIRE	
	HS001	E70306-006	HEAT SINK	
	JT201	EMV7145-003Z	SOCKET ASSY	
	JT202	EMV7145-003Z	SOCKET ASSY	
	RY101	ESK5D24-21AF	RELAY	
	RY301	ESK7D24-2120	RELAY	
	RY401	ESK7D24-2120	RELAY	
	SP201	VYH7237-002	I.C.COVER	
	TB001	EMZ4001-002Z	TAB	
	TB002	EMZ4001-002Z	TAB	
⚠	TH201	PTH61G25AR4R7M	POSITIVE THERMISTOR	
	TW501	EWT015-026	TERMINAL WIRE	BS EN G
	TW701	QWE350-07RR	VINYL WIRE	

■ Electrical Parts List (ENB-243)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC201	MN171601AJAAF1	I.C(MICRO-COMPUTER)	
	IC202	BH3854AS	I.C(M)	
	IC203	MN1281(P,Q)	I.C(DIGI-MOS)	
	IC801	M66004SP	I.C(M)	
	IC802	GP1U571X	INFRARED DETECT	
		DIODES		
	D102	MTZ6.8JC	ZENER DIODE	
	D201	1SS119	SI.DIODE	
	D202	1SS119	SI.DIODE	
	D203	MTZ9.1JC	ZENER DIODE	
	D204	1SS119	SI.DIODE	
	D205	1SS119	SI.DIODE	
	D206	1SS119	SI.DIODE	
	D208	MTZ33JC	ZENER DIODE	
	D209	MTZ6.2JC	ZENER DIODE	
⚠	D210	11E2	SI.DIODE	
⚠	D211	11E2	SI.DIODE	
⚠	D212	11E2	SI.DIODE	
	D213	MTZ6.2JC	ZENER DIODE	
	D223	MTZ5.1JC	ZENER DIODE	
	D601	1SS119	SI.DIODE	
	D602	1SS119	SI.DIODE	
	D603	1SS119	SI.DIODE	
	D604	MTZ5.1JC	ZENER DIODE	
	D801	SPR-325MVW	L.E.D.	
		TRANSISTORS		
	Q106	2SC1740S(R,S)	SI.TRANSISTOR	
	Q201	2SC2878(B)	SI.TRANSISTOR	
	Q202	2SC2878(B)	SI.TRANSISTOR	
	Q203	2SD400MP(E,F)	SI.TRANSISTOR	
	Q204	2SA933AS(RS)-T,SI	SI.TRANSISTOR	
	Q205	DTC114YS	DIGITAL TRANSISTOR	
	Q206	DTC144ES	DIGITAL TRANSISTOR	
	Q207	2SB1357(E,F)	SI.TRANSISTOR	
	Q208	2SD400MP(E,F)	SI.TRANSISTOR	
	Q209	DTC114YS	DIGITAL TRANSISTOR	
	Q601	2SC1740S(R,S)	SI.TRANSISTOR	
	Q602	2SC1740S(R,S)	SI.TRANSISTOR	
	Q603	2SC1740S(R,S)	SI.TRANSISTOR	
	Q604	2SA933S(RS)	SI.TRANSISTOR	
		CAPACITORS		
	C201	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C202	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C203	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C204	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C205	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C206	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C207	QCSB1HJ-470Y	47PF 50V CER.CAP.	
	C208	QCSB1HJ-330Y	33PF 50V CER.CAP.	
	C209	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C210	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C211	QETC1CM-227Z	220MF 16V AL E.CAP.	
	C212	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C214	QETB1EM-226N	22MF 25V E.CAP.	
	C215	QETB1EM-226N	22MF 25V E.CAP.	
	C216	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C217	QCZ0202-155	1.5MF 25V CER.RES.	
	C220	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C221	EETB1EM-106E	10MF 25V E.CAP.	
	C222	EETB1EM-106E	10MF 25V E.CAP.	
	C223	EETB1EM-106E	10MF 25V E.CAP.	
	C224	EETB1EM-106E	10MF 25V E.CAP.	
	C225	EETB1EM-106E	10MF 25V E.CAP.	
	C226	EETB1EM-106E	10MF 25V E.CAP.	
	C227	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C228	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C229	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C230	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C231	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	

⚠	Item	Parts Number	Description	Area
	C232	QEK51CM-226	22MF 16V AL E.CAP.	
	C233	QETC1EM-106ZM	10MF 25V AL E.CAP.	
	C234	QCXB1CM-222Y	2200PF 16V CER.CAP.	
	C235	QETB1HM-105	1MF 50V AL E.CAP.	
	C236	QETB1HM-105	1MF 50V AL E.CAP.	
	C241	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C242	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C243	QFN81HJ-683	0.068MF 50V METAL.MYLAR	
	C244	QFN81HJ-683	0.068MF 50V METAL.MYLAR	
	C245	QFN81HJ-683	0.068MF 50V METAL.MYLAR	
	C246	QFN81HJ-683	0.068MF 50V METAL.MYLAR	
	C247	EETB1EM-106E	10MF 25V E.CAP.	
	C248	EETB1EM-106E	10MF 25V E.CAP.	
	C251	QETB1HM-105	1MF 50V AL E.CAP.	
	C252	QETB1HM-226E	22MF 50V E.CAP.	
	C253	QETB1HM-226E	22MF 50V E.CAP.	
	C254	QETB1JM-107	100MF 63V AL E.CAP.	
	C255	QETB1HM-107	100MF 50V E.CAP.	
	C290	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C610	QETC1AM-107ZN	100MF 10V E.CAP.	
	C801	QCY21HK-101	100PF 50V CER.CAP.	
	C802	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C803	QETC1AM-107ZN	100MF 10V E.CAP.	
	C804	QCY41HK-561	560PF 50V CER.CAP.	
	C805	QCY21HK-331	330PF 50V CER.CAP.	
	C806	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C807	QETB1VM-227	220MF 35V AL E.CAP.	
	TC201	ENZ1003-015	0.1MF TRIMMER CAPA	
		RESISTORS		
	R120	QRD161J-102	1K 1/6W CARBON RES.	
	R201	QRD161J-103	10K 1/6W CARBON RES.	
	R202	QRD161J-103	10K 1/6W CARBON RES.	
	R203	QRD161J-103	10K 1/6W CARBON RES.	
	R204	QRD161J-103	10K 1/6W CARBON RES.	
	R205	QRD161J-103	10K 1/6W CARBON RES.	
	R206	QRD161J-101	100 1/6W CARBON RES.	
	R207	QRD161J-101	100 1/6W CARBON RES.	
	R208	QRD161J-101	100 1/6W CARBON RES.	
	R209	QRD161J-101	100 1/6W CARBON RES.	
	R210	QRD161J-103	10K 1/6W CARBON RES.	
	R211	QRD161J-331	330 1/6W CARBON RES.	
	R212	QRD161J-331	330 1/6W CARBON RES.	
	R213	QRD161J-331	330 1/6W CARBON RES.	
	R214	QRD161J-331	330 1/6W CARBON RES.	
⚠	R215	QRD14CJ-100SX	10 1/4W UNF.CARBON R	
	R216	QRD161J-331	330 1/6W CARBON RES.	
	R217	QRD161J-102	1K 1/6W CARBON RES.	
	R218	QRD161J-103	10K 1/6W CARBON RES.	
⚠	R220	QRZ0077-4R7	4.7 1/4W FUSE RESISTO	
	R221	ERD004J-331Z	330 CARBON RES.	
	R222	ERD004J-331Z	330 CARBON RES.	
	R223	QRD161J-103	10K 1/6W CARBON RES.	
	R224	QRD161J-103	10K 1/6W CARBON RES.	
	R225	QRD167J-223	22K 1/6W CARBON RES.	
	R226	QRD167J-223	22K 1/6W CARBON RES.	
	R227	QRD167J-154	150K 1/6W CARBON RES.	
	R228	QRD161J-103	10K 1/6W CARBON RES.	
	R229	QRD161J-105	1M 1/6W CARBON RES.	
	R230	QRD167J-682	6.8K 1/6W CARBON RES.	
	R231	QRD167J-332	3.3K 1/6W CARBON RES.	
	R232	QRD167J-223	22K 1/6W CARBON RES.	
	R233	QRD167J-152	1.5K 1/6W CARBON RES.	
	R240	QRD161J-102	1K 1/6W CARBON RES.	
	R241	QRD161J-102	1K 1/6W CARBON RES.	
	R242	QRD161J-102	1K 1/6W CARBON RES.	
	R243	QRD161J-102	1K 1/6W CARBON RES.	
	R244	QRD161J-102	1K 1/6W CARBON RES.	
	R245	QRD161J-102	1K 1/6W CARBON RES.	
	R246	QRD161J-102	1K 1/6W CARBON RES.	
	R247	QRD167J-223	22K 1/6W CARBON RES.	

■ Electrical Parts List (ENB-243)

⚠	Item	Parts Number	Description	Area
	R248	QRD167J-223	22K 1/6W CARBON RES.	
	R251	QRD161J-102	1K 1/6W CARBON RES.	
	R252	QRD161J-472	4.7K 1/6W CARBON RES.	
	R253	QRD161J-103	10K 1/6W CARBON RES.	
	R254	QRD161J-103	10K 1/6W CARBON RES.	
	R255	QRD167J-223	22K 1/6W CARBON RES.	
	R256	QRD167J-562	5.6K 1/6W CARBON RES.	
	R258	QRD161J-104	100K 1/6W CARBON RES.	
	R290	QRD161J-103	10K 1/6W CARBON RES.	
	R601	QRD161J-473	47K 1/6W CARBON RES.	
	R602	QRD161J-473	47K 1/6W CARBON RES.	
	R603	QRD167J-822	8.2K 1/6W CARBON RES.	
	R604	QRD167J-822	8.2K 1/6W CARBON RES.	
	R605	QRD161J-333	33K 1/6W CARBON RES.	
	R606	QRD161J-333	33K 1/6W CARBON RES.	
	R607	QRD167J-332	3.3K 1/6W CARBON RES.	
	R608	QRD161J-683	68K 1/6W CARBON RES.	
	R609	QRD161J-392	3.9K 1/6W CARBON RES.	
	R610	QRD161J-222	2.2K 1/6W CARBON RES.	
	R611	QRD161J-331	330 1/6W CARBON RES.	
	R612	QRD161J-182	1.8K 1/6W CARBON RES.	
	R801	QRD161J-273	27K 1/6W CARBON RES.	
	R802	QRD161J-391	390 1/6W CARBON RES.	
	R803	QRD161J-271	270 1/6W CARBON RES.	
	R804	QRD161J-101	100 1/6W CARBON RES.	
	R805	QRD161J-101	100 1/6W CARBON RES.	
	R806	QRD161J-101	100 1/6W CARBON RES.	
	R807	QRD161J-101	100 1/6W CARBON RES.	
		OTHERS		
		EMW10666-005	CIR. BOARD	
	S801	ESP0001-023M	TACT SWITCH	
	S802	ESP0001-023M	TACT SWITCH	
	S803	ESP0001-023M	TACT SWITCH	
	S804	ESP0001-023M	TACT SWITCH	
	S805	ESP0001-023M	TACT SWITCH	
	X201	ECX0006-000KNJ	CRYSTAL	
	CN201	EMV7163-007	CONNECT TERMINAL	
	CN202	EMV5109-015A	PLUG ASSY	
	CN203	VMC0163-017	CONNECT TERMINAL	
	CN204	EMV5111-007	CONNECT TERMINAL	
	CN601	EMV5163-007R	CONNECT TERMINAL	
	CN702	EMV5942-011R	CONNECT TERMINAL	
	CN801	EMV5109-015B	CONNECT TERMINAL	
	DI801	ELU0001-187	FLUORESCENT DISPLAY TUBE	
	EP202	EMZ4002-001Z	EARTH PLATE	
	JT201	EMV7145-003Z	SOCKET ASSY	
	JT202	EMV7145-003Z	SOCKET ASSY	
	JT601	EMV7145-003Z	SOCKET ASSY	
	JT602	EMV7145-003Z	SOCKET ASSY	
	SP201	VYH7237-002	I.C. COVER	
	TH201	QAD0095-4R7Z	POSITIVE THERMISTOR	
	TH215	QAD0095-4R7Z	POSITIVE THERMISTOR	

■ Electrical Parts List (ENB-247)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC801	M66004SP	I.C(M)	
	IC802	GP1U571X	INFRARED DETECT	
		DIODES		
	D801	GL3ED8	L.E.D.	
		CAPACITORS		
	C801	QCY21HK-101	100PF 50V CER. CAP.	
	C802	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C803	QETC1AM-107ZN	100MF 10V E. CAP.	
	C804	QCY41HK-561	560PF 50V CER. CAP.	
	C805	QCY21HK-331	330PF 50V CER. CAP.	
	C806	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C807	QETB1VM-227	220MF 35V AL E. CAP.	
		RESISTORS		
	R801	QRD161J-273	27K 1/6W CARBON RES.	
	R802	QRD161J-391	390 1/6W CARBON RES.	
	R803	QRD161J-271	270 1/6W CARBON RES.	
	R804	QRD161J-101	100 1/6W CARBON RES.	
	R805	QRD161J-101	100 1/6W CARBON RES.	
	R806	QRD161J-101	100 1/6W CARBON RES.	
	R807	QRD161J-101	100 1/6W CARBON RES.	
		OTHERS		
		EMW10683-002	PRINTED BOARD	
	S801	ESP0001-007	TACT SWITCH	
	S802	ESP0001-007	TACT SWITCH	
	S803	ESP0001-007	TACT SWITCH	
	S804	ESP0001-007	TACT SWITCH	
	S805	ESP0001-007	TACT SWITCH	
	CN801	EMV5109-015B	CONNECT TERMINAL	
	DI801	ELU0001-187	FLUORESCENT DISPLAY TUBE	

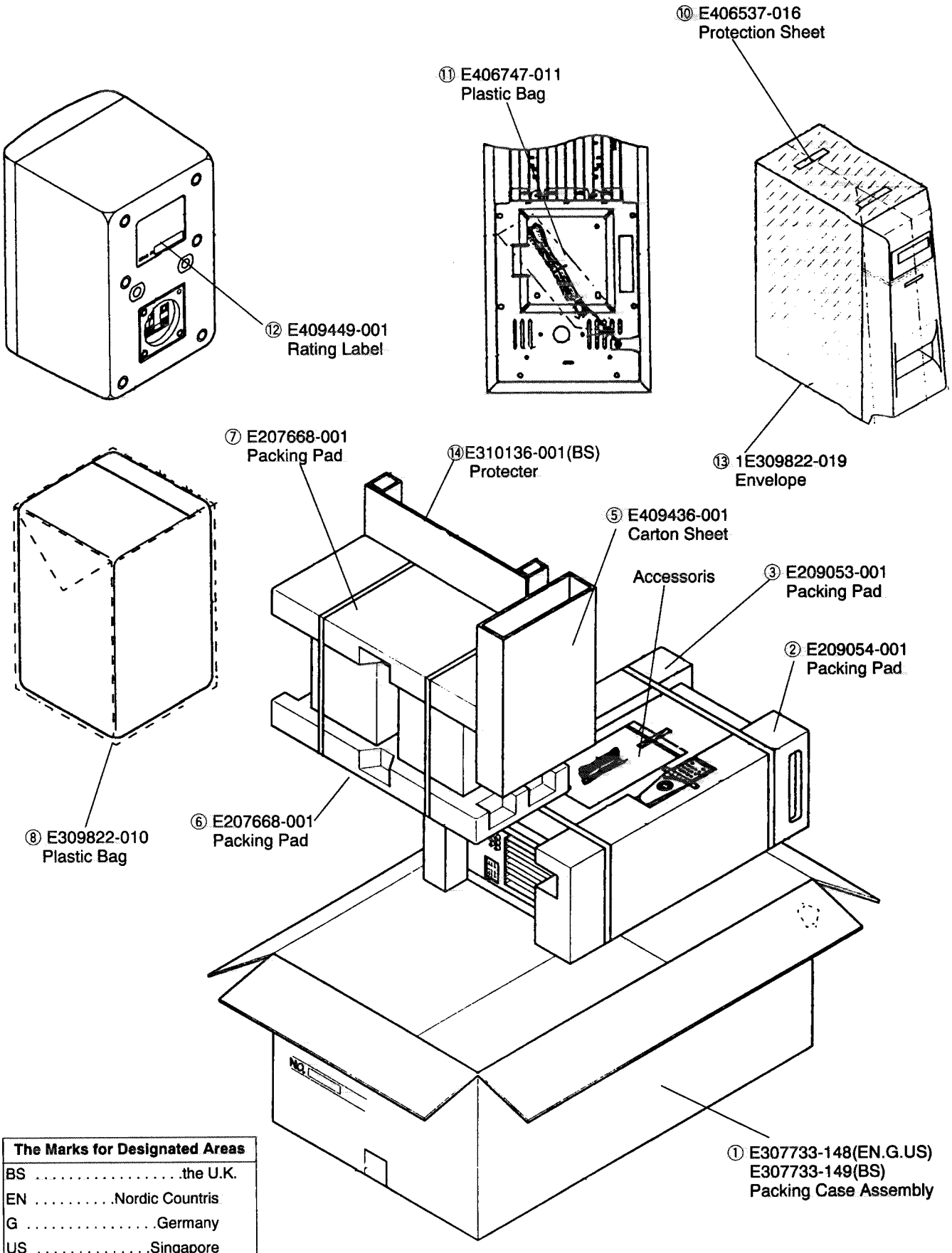
■ Electrical Parts List (ENP-055)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC031	SAA7367TX	I.C(DIGI-MOS)	
	IC041	PCM1717AE-X	I.C(MONO-ANALOG)	
	IC051	NJM2100MW	I.C(MONO-ANALOG)	
	IC061	PCM1717AE-X	I.C(MONO-ANALOG)	
	IC071	BA15218F	I.C(MONO-ANALOG)	
	IC081	TMS57052BFT	I.C(M)	
	IC091	LC32464M-80X	I.C(D-RAM)	
		CAPACITORS		
	C021	NEA71EM-475NZ	4.7MF 25V E.CAP.	
	C022	NEA71EM-475NZ	4.7MF 25V E.CAP.	
	C023	NCB31CK-473AY	0.047MF 16V CER.CAP.	
	C024	NCB31CK-473AY	0.047MF 16V CER.CAP.	
	C025	NEA70GM-476NZ	47MF E.CAP.	
	C026	NEA70GM-476NZ	47MF E.CAP.	
	C027	NCS31HJ-680AY	68PF 50V CER.CAP.	
	C028	NCS31HJ-680AY	68PF 50V CER.CAP.	
	C029	NCB31CK-473AY	0.047MF 16V CER.CAP.	
	C030	NEA70JM-476NZ	47MF 6.3V E.CAP.	
	C031	NCB31CK-223A	0.022MF 16V CER.CAP.	
	C035	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C036	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C037	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C038	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C041	NEA71CM-106NZ	10MF 16V E.CAP.	
	C042	NEA71CM-106NZ	10MF 16V E.CAP.	
	C045	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C046	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C047	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C048	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C049	NCS31HJ-220AY	22PF 50V CER.CAP.	
	C050	NCS31HJ-220AY	22PF 50V CER.CAP.	
	C051	NCB31CK-223A	0.022MF 16V CER.CAP.	
	C052	NCB31CK-223A	0.022MF 16V CER.CAP.	
	C053	NCB21HK-182AY	1800PF 50V CER.CAP.	
	C054	NCB21HK-182AY	1800PF 50V CER.CAP.	
	C055	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C056	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C057	NEA71HM-105NZ	1MF 50V E.CAP.	
	C058	NEA71HM-105NZ	1MF 50V E.CAP.	
	C059	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C060	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C061	NEA71CM-106NZ	10MF 16V E.CAP.	
	C062	NEA71CM-106NZ	10MF 16V E.CAP.	
	C065	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C066	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C067	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C068	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C071	NCB31CK-223A	0.022MF 16V CER.CAP.	
	C072	NCB31CK-223A	0.022MF 16V CER.CAP.	
	C073	NCB21HK-182AY	1800PF 50V CER.CAP.	
	C074	NCB21HK-182AY	1800PF 50V CER.CAP.	
	C075	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C076	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C077	NEA71HM-105NZ	1MF 50V E.CAP.	
	C078	NEA71HM-105NZ	1MF 50V E.CAP.	
	C079	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C080	NCB31CK-103AYM	0.01MF 16V CER.CAP.	
	C081	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C082	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C083	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C084	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C085	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C086	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C087	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C088	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C089	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C091	NCB31HK-102AY	1000PF 50V CER.CAP.	
	C092	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C095	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C096	NCF31AZ-105AYUU	1MF 10V CER.CAP.	
	C097	NEA70JM-107NP	100MF 6.3V E.CAP.	
	C098	NEA70JM-107NP	100MF 6.3V E.CAP.	
	C099	NCS31HJ-101AY	100PF 50V CER.CAP.	
	C100	NCB31HK-102AY	1000PF 50V CER.CAP.	
		RESISTORS		
	R021	NRSA63J-104NY	METAL GLAZE	
	R022	NRSA63J-104NY	METAL GLAZE	
	R023	NRSA63J-103N	METAL GLAZE	

⚠	Item	Parts Number	Description	Area
	R024	NRSA63J-103N	METAL GLAZE	
	R025	NRSA63J-624NY	METAL GLAZE	
	R026	NRSA63J-334NY	METAL GLAZE	
	R027	NRSA63F-103NY	METAL GLAZE	
	R028	NRSA63F-103NY	METAL GLAZE	
	R029	NRSA63J-271NY	METAL GLAZE	
	R030	NRSA63J-271NY	METAL GLAZE	
	R031	NRSA63J-333NY	METAL GLAZE	
	R035	NRSA63J-102NY	METAL GLAZE	
	R049	NRSA63J-332NY	METAL GLAZE	
	R051	NRSA63J-102NY	METAL GLAZE	
	R052	NRSA63J-102NY	METAL GLAZE	
	R053	NRSA63J-102NY	METAL GLAZE	
	R054	NRSA63J-102NY	METAL GLAZE	
	R055	NRSA63J-102NY	METAL GLAZE	
	R056	NRSA63J-102NY	METAL GLAZE	
	R057	NRSA63J-473NY	METAL GLAZE	
	R058	NRSA63J-473NY	METAL GLAZE	
	R059	NRSA63J-221NY	METAL GLAZE	
	R060	NRSA63J-221NY	METAL GLAZE	
	R071	NRSA63J-102NY	METAL GLAZE	
	R072	NRSA63J-102NY	METAL GLAZE	
	R073	NRSA63J-102NY	METAL GLAZE	
	R074	NRSA63J-102NY	METAL GLAZE	
	R075	NRSA63J-102NY	METAL GLAZE	
	R076	NRSA63J-102NY	METAL GLAZE	
	R077	NRSA63J-473NY	METAL GLAZE	
	R078	NRSA63J-473NY	METAL GLAZE	
	R079	NRSA63J-221NY	METAL GLAZE	
	R080	NRSA63J-221NY	METAL GLAZE	
	R081	NRSA63J-102NY	METAL GLAZE	
	R082	NRSA63J-102NY	METAL GLAZE	
	R083	NRSA63J-102NY	METAL GLAZE	
	R084	NRSA63J-182NY	METAL GLAZE	
	R085	NRSA63J-472NY	METAL GLAZE	
	R086	NRSA63J-472NY	METAL GLAZE	
	R087	NRSA63J-472NY	METAL GLAZE	
	R088	NRSA63J-472NY	METAL GLAZE	
	R089	NRSA63J-472NY	METAL GLAZE	
	R090	NRSA63J-103N	METAL GLAZE	
	R091	NRSA63J-0R0AY	METAL GLAZE	
	R092	NRSA63J-0R0AY	METAL GLAZE	
	R093	NRSA63J-0R0AY	METAL GLAZE	
	R094	NRSA63J-0R0AY	METAL GLAZE	
	R095	NRSA63J-0R0AY	METAL GLAZE	
	R096	NRSA63J-0R0AY	METAL GLAZE	
	R097	NRSA63J-0R0AY	METAL GLAZE	
		OTHERS		
		EMW10661-002	CIR.BOARD	
	K021	EQA0002-N102Y	FERRITE BEADS	
	K022	EQA0002-N102Y	FERRITE BEADS	
	K041	EQA0002-N102Y	FERRITE BEADS	
	K042	EQA0002-N102Y	FERRITE BEADS	
	K051	EQA0002-N102Y	FERRITE BEADS	
	K052	EQA0002-N102Y	FERRITE BEADS	
	K061	EQA0002-N102Y	FERRITE BEADS	
	K062	EQA0002-N102Y	FERRITE BEADS	
	K063	EQA0002-N102Y	FERRITE BEADS	
	K071	EQA0002-N102Y	FERRITE BEADS	
	K072	EQA0002-N102Y	FERRITE BEADS	
	K081	EQA0002-N102Y	FERRITE BEADS	
	K082	EQA0002-N102Y	FERRITE BEADS	
	K083	EQA0002-N102Y	FERRITE BEADS	
	K084	EQA0002-N102Y	FERRITE BEADS	
	K085	EQA0002-N102Y	FERRITE BEADS	
	K086	EQA0002-N102Y	FERRITE BEADS	
	K087	EQA0002-N102Y	FERRITE BEADS	
	K095	EQA0002-N102Y	FERRITE BEADS	
	K096	EQA0002-N102Y	FERRITE BEADS	
	X041	NAX0001-001X	CRYSTAL	
	CN095	EMV5158-018E	CONNECT TERMINAL	
	LC031	EQF0704-N01YU	INDUCTOR	
	LC041	EQF0704-N01YU	INDUCTOR	
	LC081	EQF0703-N103NZ	INDUCTOR	
	LC091	EQF0703-N103NZ	INDUCTOR	

Packing Materials and Parts Numbers

Block No. M 4 M M



The Marks for Designated Areas
BS .....the U.K.
EN .....Nordic Countris
G .....Germany
US .....Singapore
No mark indicates all areas

Accessories

Block No. M 5 M M

⚠	Item	Parts Number	Parts name	Q'ty	Description	Areas
	—	E30580-2532A	Instruction Book	1		BS.EN.G
	—	E30580-2533A	Instruction Book	1		US
	—	E409441-001ST	Speaker Cord	1		
	—	EWP302-015	Signal Cord	1		
	—	RM-SPRO3U	Remote Control Unit	1		
	—	R6PRPA-2ST	Battery	2		
	—	EN2202-001	Simens Plug	1		
	—	E309802-001	Poly Bag	1		
	—	E409544-001ST	Screw Assembly	1		
	—	BT-20134	Warranty Card	1		G
	—	BT-54003-1	Warranty Card	1		BS
	—	BT-20066A	SVC Center List	1		BS
	—	E43486-340A	BS Safety Inst	1		BS

JVC

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