

# POWERED MULTIMEDIA SPEAKERS

# YST-MS50/YST-MS55D

## SERVICE MANUAL

### IMPORTANT NOTICE

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

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

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

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

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

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

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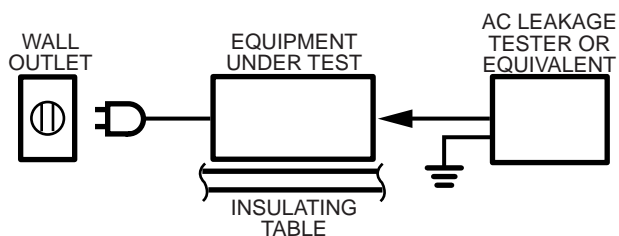
このサービスマニュアルは、エコマーク認定の再生紙を使用しています。  
This Service Manual uses recycled paper.



## ■ TO SERVICE PERSONNEL

1. Critical Components information.  
Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Model only).  
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 $\mu$ F.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



### "CAUTION"

"F1: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 1.25A, 250V FUSE."



### CAUTION

F1: REPLACE WITH SAME TYPE 1.25A, 250V FUSE.

### ATTENTION

F1: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 1.25A, 250V FUSE.

## WARNING: CHEMICAL CONTENT NOTICE!

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

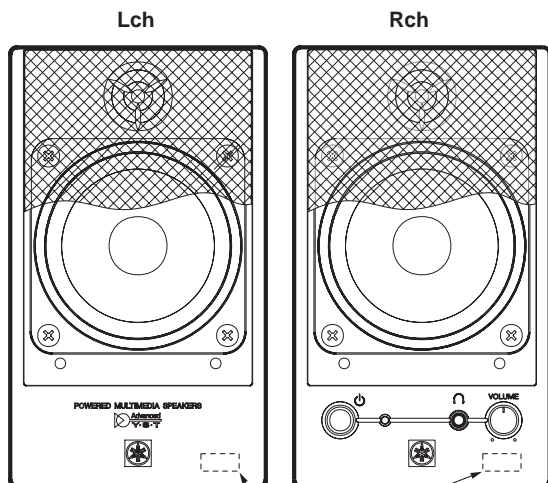
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

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

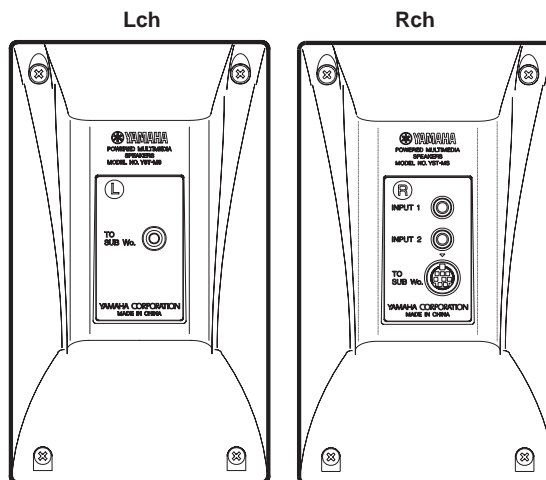
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## ■ FRONT AND REAR PANELS

### ● Satellite Speakers Front Panel

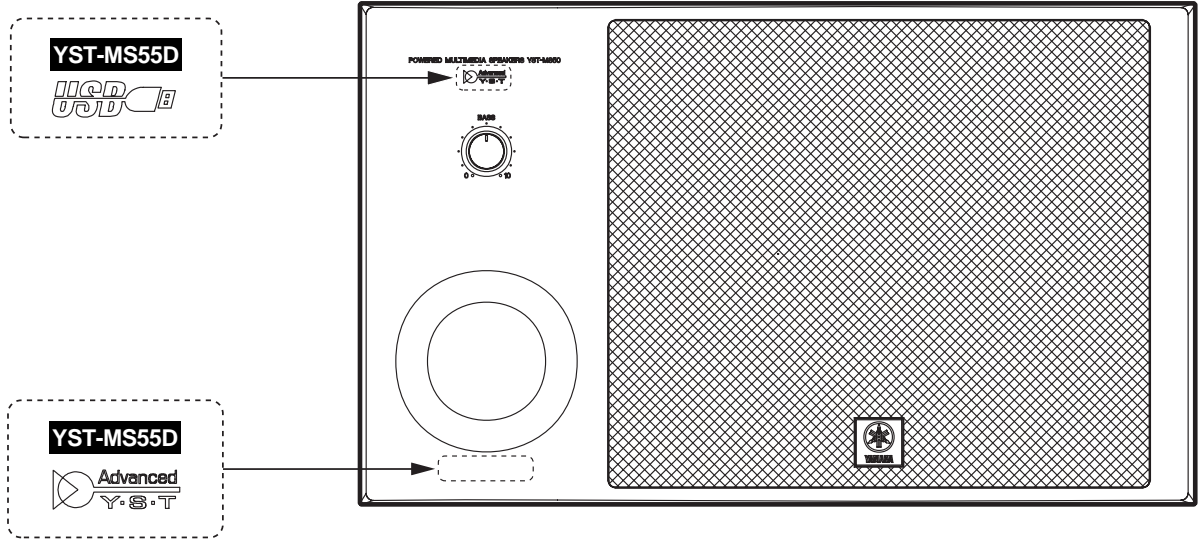


### ● Satellite Speakers Rear Panel

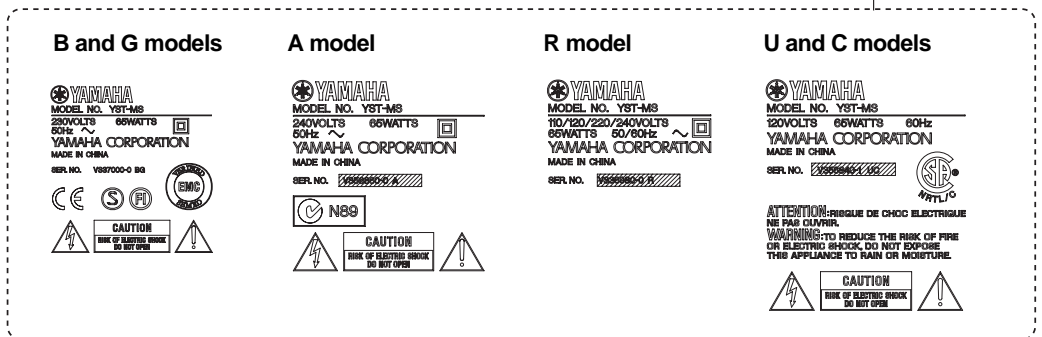
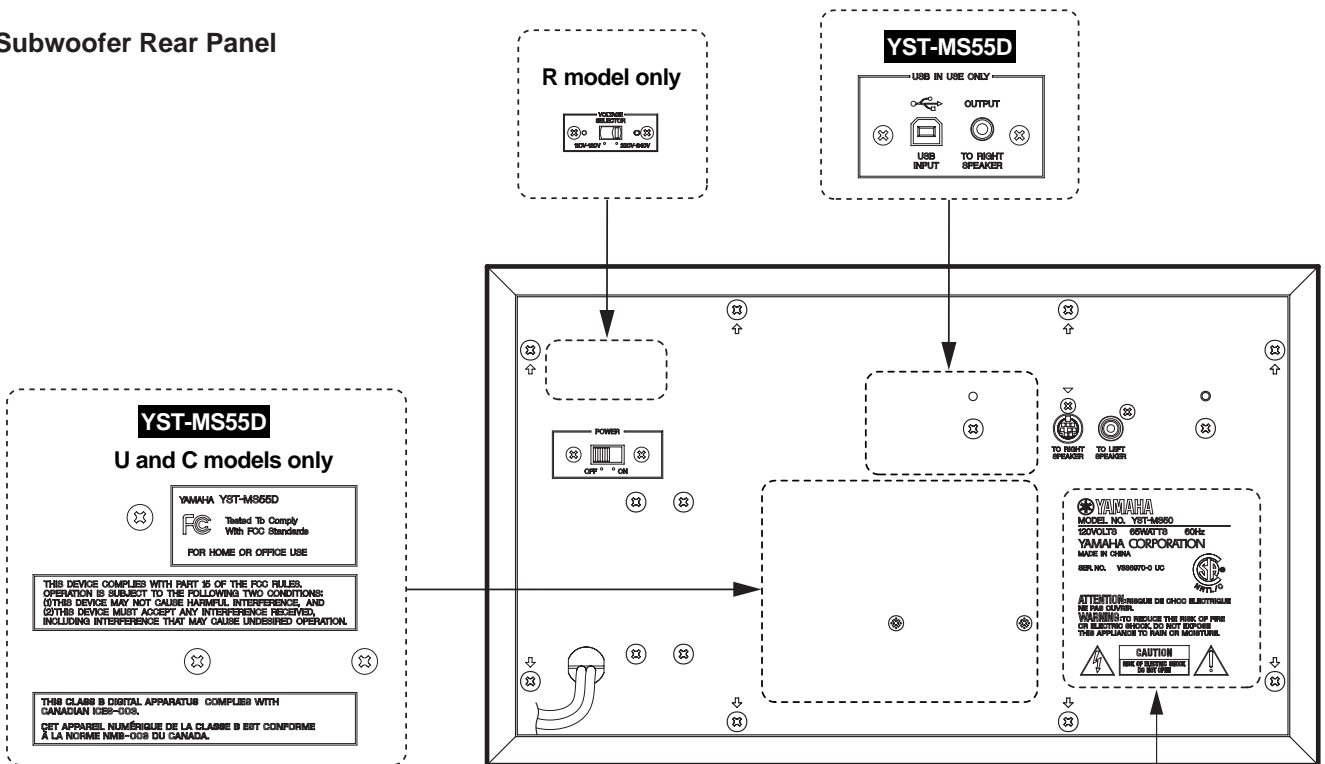


**YST-MS50 YST-MS55D**

● Subwoofer Front Panel



● Subwoofer Rear Panel



|                 |                  |
|-----------------|------------------|
| <b>YST-MS50</b> | <b>YST-MS55D</b> |
|-----------------|------------------|

|             |  |
|-------------|--|
| <b>Type</b> | Active Servo Technology (Advanced Y. S. T) |
|-------------|--|

**Output Power**

|           |                                      |
|-----------|--------------------------------------|
| Satellite | 20W+20W (1kHz, 4 ohms at T.H.D.=10%) |
| Subwoofer | 40W (100Hz, 5 ohms at T.H.D.=10%)    |

|                          |                             |
|--------------------------|-----------------------------|
| <b>Input Sencitivity</b> | 200mV (1kHz, 4 ohms at 20W) |
|--------------------------|-----------------------------|

|                        |          |
|------------------------|----------|
| <b>Input Impedance</b> | 25 kohms |
|------------------------|----------|

|                           |                 |
|---------------------------|-----------------|
| <b>Frequency Responce</b> | 32 Hz to 20 kHz |
|---------------------------|-----------------|

**Crossover Frequency**

|                   |          |
|-------------------|----------|
| Satellite Tweeter | 12 kHz   |
| Subwoofer         | fc=200Hz |

**Headphone Output Level**

|                                       |
|---------------------------------------|
| 0.38V/30 ohms (at 200 mV Rated Input) |
|---------------------------------------|

**Speaker Unit**

|           |  |
|-----------|--|
| Satellite |  |
| Tweeter   | : 19mm (3/4") balanced dome (JA0262),<br>Magnetic shielding Type |
| Midrange  | : 8cm(3") cone (JA0865),<br>Magnetic Shielding Type              |
| Subwoofer | : 16cm(6-1/2") cone (JA1673),<br>Magnetic Shielding Type         |

**Input Sction****YST-MS50**

|           |   |
|-----------|---|
| Satellite | 3.5mm stereo minijack for audio-signal x2 |
|-----------|---|

**YST-MS55D**

|           |   |
|-----------|---|
| Satellite | 3.5mm stereo mini jack for audio-signal x2<br>(USB in use x1) |
| Subwoofer | USB digital x1  |

**Output Sction****YST-MS50**

|           |  |
|-----------|--|
| Subwoofer | RCA pin jack connected to L ch speaker<br>8 pin jack connected to R ch speaker |
|-----------|--|

**YST-MS55D**

|           |  |
|-----------|--|
| Subwoofer | RCA pin jack connected to L ch speaker<br>8 pin jack connected to R ch speaker<br>3.5mm stereo mini jack for audio-signal x1<br>(USB in use) |
|-----------|--|

|                          |     |
|--------------------------|-----|
| <b>Power Consumption</b> | 65W |
|--------------------------|-----|

**Power Supply**

|             |                            |
|-------------|----------------------------|
| U, C models | AC120V/60Hz                |
| R models    | AC110/120/220/240V/50/60Hz |
| A models    | AC240V/50Hz                |
| B, G models | AC230V/50Hz                |

**Operating Section**

|           |  |
|-----------|--|
| Satellite | ⏻(Auto Power)Switch<br>Master Volume control |
| Subwoofer | Volume control                               |

**Dimensions (W x H x D)**

|           |   |
|-----------|---|
| Satellite | 97x159x178mm<br>(3-13/16"x6-1/4"x7-9/16")   |
| Subwoofer | 350x210x321mm<br>(13-25/32"x8-1/4"x12/5/8") |

**Weight**

|           |                       |
|-----------|-----------------------|
| Satellite | 0.7kg (1lbs. 9 oz.)x2 |
| Subwoofer | 8kg (17lbs. 10oz.)    |

**Finish****YST-MS50**

|           |                      |
|-----------|----------------------|
| YST-MS50W | Computer white color |
| YST-MS50B | Black color          |

**YST-MS55D**

|            |                      |
|------------|----------------------|
| YST-MS55DW | Computer white color |
| YST-MS55DB | Black color          |

**Accessories****YST-MS50**

|  |
|--|
| 3.5mm stereo mini plug cable with black color(1.8m) x1 |
| RCA pin plug cable (1.8m) x1                           |
| 8 pin plug cable (1.8m) x1                             |
| 8 pcs of nonskid pads x1set                            |

**YST-MS55D**

|  |
|--|
| 3.5mm stereo mini plug cable with black color(1.8m) x1 |
| RCA pin plug color (1.8m) x1                           |
| USB cable (2m) x1                                      |
| 8 pcs of nonskid pads x1set                            |
| CD-ROM x1  |

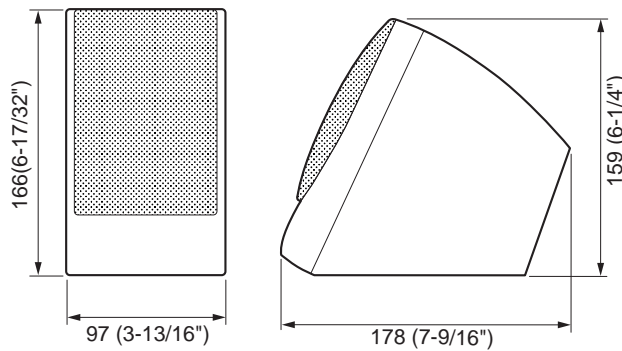
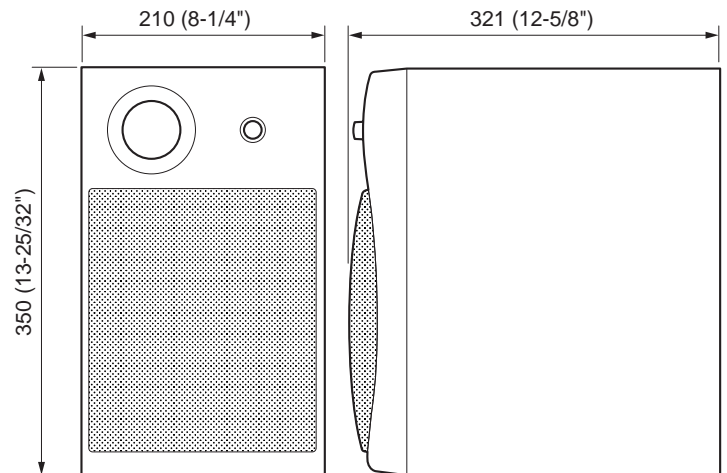
**USB Operating Requirements YST-MS55D**

|  |
|--|
| :Windows 98-installed PC equipped with USB port.         |
| :CD-ROM drive for device driver installation.            |
| :Intel Pentium processor at least 200 MHz or equivalent. |
| :At least 10 MB of available hard disk capacity.         |

\* Specifications subject to change without notice.

|                |                       |                |                         |
|----------------|-----------------------|----------------|-------------------------|
| <b>U</b> ..... | <b>U. S. A. model</b> | <b>A</b> ..... | <b>Australian model</b> |
| <b>C</b> ..... | <b>Canadian model</b> | <b>B</b> ..... | <b>British model</b>    |
| <b>R</b> ..... | <b>General model</b>  | <b>G</b> ..... | <b>European model</b>   |

|   |
|---|
| "Windows 98", are trademarks of Micro Soft Corporation. |
|---|

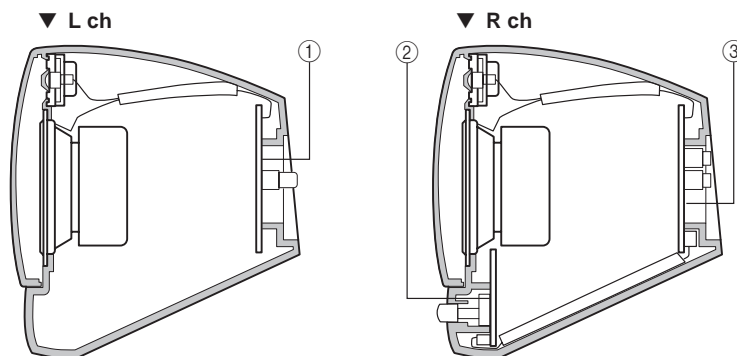
**YST-MS50 YST-MS55D**● **DIMENSIONS**▼ **Satellite Speaker**▼ **Subwoofer**

Units : mm (inch)

■ **INTERNAL VIEW**● **Satellite Speakers**

**Notes:** The Satellite Speakers are available by the speaker unit (Lch or Rch).

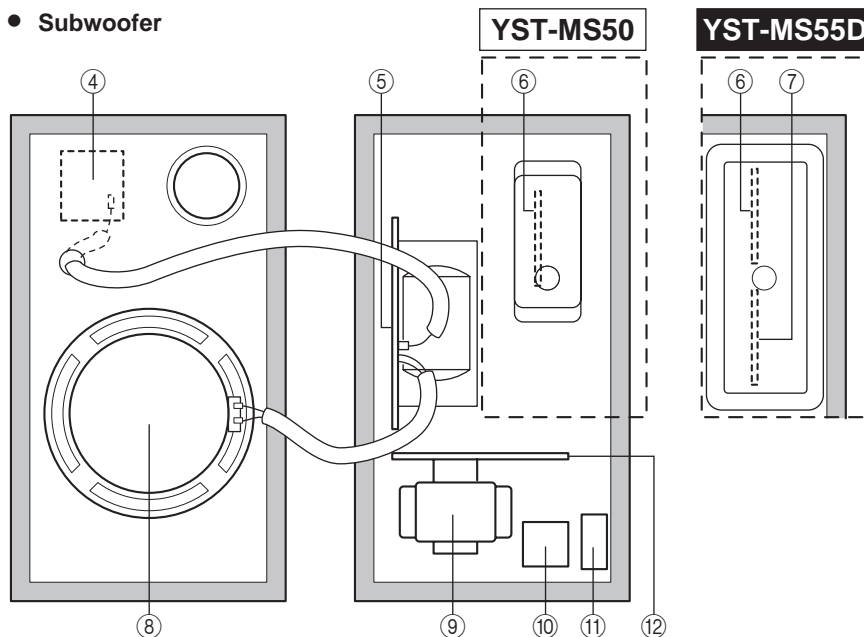
Individual parts of the Satellite Speakers are not available. (See page 31 and 33 of the PARTS LIST for YST-MS50, page 34 and 36 of the PARTS LIST for YST-MS55D.)

● **Satellite Speaker (L ch)**

- ① P. C. B. MAIN (8)

● **Satellite Speaker (R ch)**

- ② P. C. B. MAIN (4)
- ③ P. C. B. MAIN (5)

● **Subwoofer**● **Subwoofer**

- ④ P. C. B. MAIN (6)
- ⑤ P. C. B. MAIN (1)
- ⑥ P. C. B. MAIN (3)
- ⑦ P. C. B. MAIN (9)  
(YST-MS55D only)
- ⑧ SPEAKER UNIT  
(Subwoofer)
- ⑨ POWER TRANSFORMER
- ⑩ P. C. B. MAIN (7)
- ⑪ VOLTAGE SELECTOR (R only)
- ⑫ P. C. B. MAIN (2)

## DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

### Disassemble of the Subwoofer

#### 1. Removal of the Rear Panel Ass'y.

- Remove 8 screws ( ① ) in Fig. 1, and remove the rear panel ass'y.
- Disconnect one connector in Fig. 1.
- Disconnect the Speaker cord in Fig. 1.

#### 2. Removal of the Front Panel Ass'y

The front panel ass'y is fixed to the cabinet with dowels at 6 locations.

\* As a screwdriver (for slotted head screw) is used for removal, use special care not to cause damage to the Cabinet.

- Using the screwdriver insert in the gaps between the front panel ass'y and cabinet, push up the front panel ass'y.
- Remove the front panel ass'y while taking it out.  
(Front panel ass'y can not to remove completely.)

#### 3. Removal of the Speaker

- Set up the front panel ass'y in the direction of the arrow, in Fig. 2.
- Remove 4 screws ( ② ) in Fig. 2, and remove the speaker.

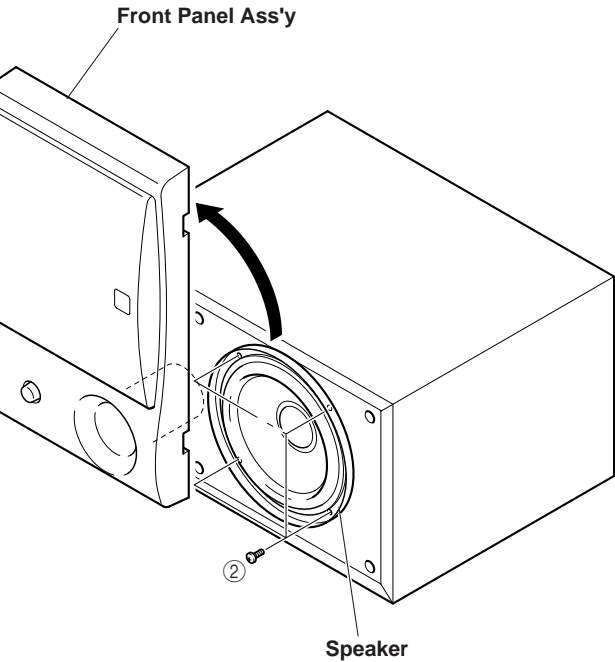
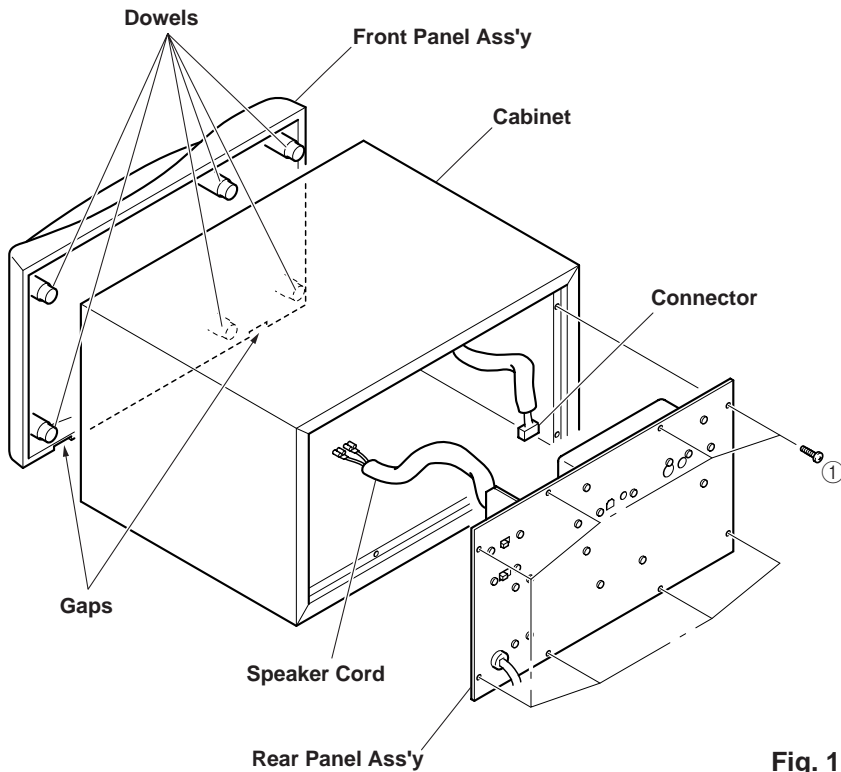


Fig. 2

Fig. 1

**YST-MS55D****■ USB PORT OPERATION CHECK**

The YST-MS55D have a USB port. This USB port operation is checked be necessary whether or not normal state.

**1. BEFORE CHECKING THE USB PORT OPERATION****(1) Measuring Instruments**

- Personal Computer (Windows 98)
- CD-ROM (Accessories)
- USB Cable (Accessories)

**(2) USB Operating requirements**

- Windows 98 installed Personal Computer equipped with USB port.
- CD-ROM drive for device driver installation.
- Intel Pentium processor at least 200MHz or equivqlent.
- At least 10MB of available hard disk capacity.

**(3) Installing the YST-MS55D speaker device drivers**

Please follow these steps to install the Yamaha YST-MS55D speaker device drivers in your Windows 98 system using the included CD-ROM, and verify that Windows 98 recognizes the installed device drivers and that CD audio, sound generated while using software, and system sounds from the personal computer will be output via the USB port.

Notes: Before starting, check the above-mentioned “(2) USB Operating requirements” section to see if your PC supports YST-MS55D. Also, make sure that no other CD-ROM is loaded in the CD-ROM drive and that you quit all application programs.

Have your Windows 98 CD-ROM ready when you install the Yamaha YST-MS55D speaker device drivers. You may need it in some cases.

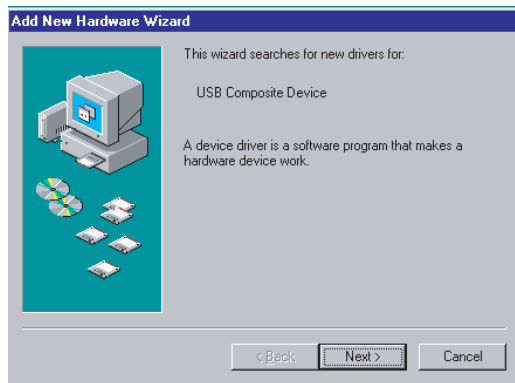
The installation procedure may differ from the following instructions depending on the system environment. Follow the instructions that appear in the dialog box.

- 1) Start up Windows 98 on your computer. Insert the included YST-MS55D device driver CD-ROM into the CD-ROM drive
- 2) Connect the YST-MS55D speakers using the specified cables and plug them in to the AC outlet. At this time, do not connect the subwoofer to the personal computer yet.
- 3) Make sure that the POWER switch on the rear panel of the subwoofer is turned on.
- 4) Connect the subwoofer to the USB port on the personal computer using the USB cable.

**YST-MS55D**

Message “Windows has found a new hardware and is locating the software for it.” appears, then:

The following “Add New Hardware Wizard” appears to install the USB Composite Device. (See Fig. 1)



1. Click [Next].

**Fig. 1**

The system displays the following panel: (See Fig. 2)



2. Click [Next] again to display the following panel.

**Fig. 2**

The system displays the following panel: (See Fig. 3)



3. Check “CD-ROM drive” and de-select other options, then click [Next] to proceed to the following panel:

**Fig. 3**



**YST-MS55D**

The system displays the following panel: (See Fig. 4)



**Fig. 4**

4. Make sure that “The updated driver (Recommended)” lists “YAMAHA YST-MS55D USB Composite Device,” then click [Next].

The system displays the following panel: (See Fig. 5)

**Note:** Depending on your system, a path other than “D:\USB.INF” may appear.



**Fig. 5**

5. Click [Next].

The system starts installing the YAMAHA YST-MS55D USB Composite Device. Please wait awhile.

The system displays the following panel: (See Fig. 6)



**Fig. 6**

6. Click “Finish” to complete the installation of the USB Composite Device.

**YST-MS55D**

The system displays a panel to begin installing a Human Interface Device. (See Fig. 7)



**Fig. 7**

7. Follow the screen instructions. Make sure that “The updated driver (Recommended)” panel lists “Human Interface Devices,” and click the [Next] button repeatedly as in steps 2–5 until the following panel appears:

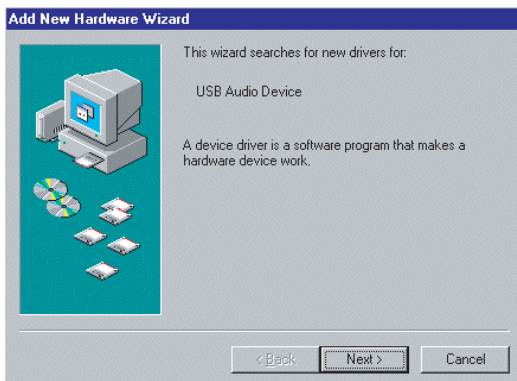
The system displays the following panel: (See Fig. 8)



**Fig. 8**

8. Click “Finish” to complete the installation of the Human Interface Device.

The system displays a panel to begin installing a USB Audio Device. (See Fig. 9)

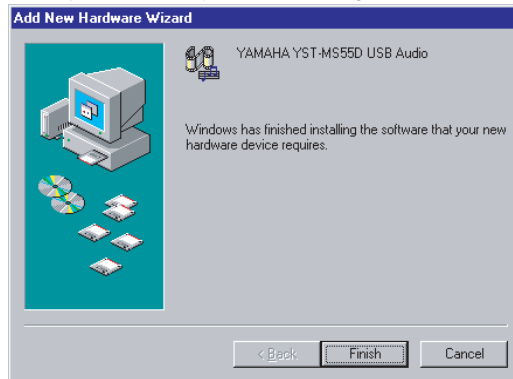


**Fig. 9**

9. Follow the same screen instructions as steps 2–5. Make sure that “The updated driver (Recommended)” panel lists “YAMAHA YST-MS55D USB Audio” in step 4, and click the [Next] button repeatedly until the following panel appears:

**YST-MS55D**

The system displays the following panel: (See Fig. 10)



**Fig. 10**

**10. Click "Finish" to complete the installation of the USB Audio Device.**

#### (4) Confirming the OS (Operating System)

Confirm that the installed the YST-MS55D speaker device driver.

There are 3 items in the YST-MS55D speaker device drivers.

Before confirming,

- 1) Make sure that the POWER switch on the rear panel of the subwoofer is turned on.
- 2) Connect the subwoofer to the USB port on the personal computer using the USB cable.

There are 4 items in the confirmation as shown below.

#### **CONFIRM 1**

#### **" YAMAHA YST-MS55D USB Audio "**

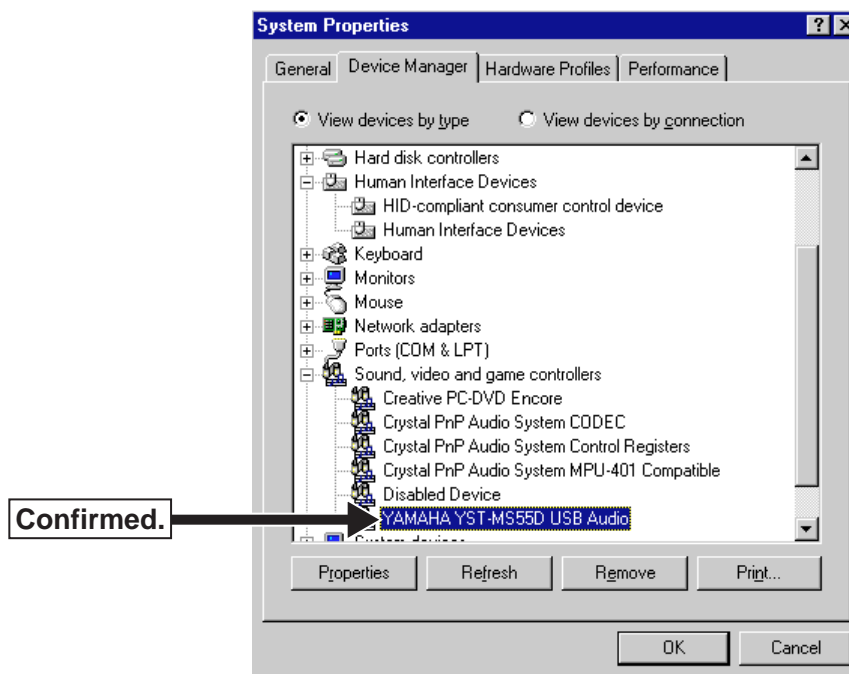
Open the window by the order of [My Computer], [Control Panel], [System], and click the [Device Manager] or [System Properties].



Click the [View devices by type ].



Confirm the "YAMAHA YST-MS55D USB Audio". (See Fig. 11)



**Fig. 11**



**To next confirmation.**

**YST-MS55D**

**CONFIRM 2 " Human Interface Devices "**

Confirm the "Human Interface Devices". (See Fig. 12)

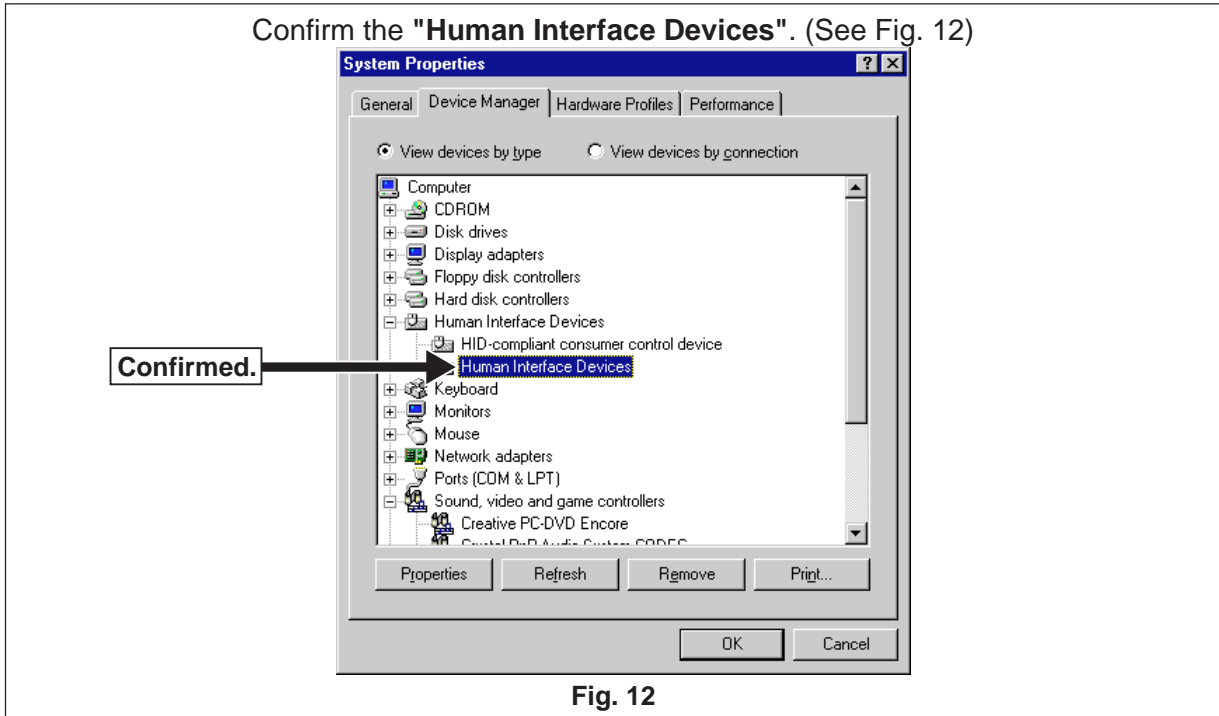


Fig. 12

To next confirmation.

**CONFIRM 3 " YAMAHA YST-MS55D USB Composite Device "**

Confirm the "YAMAHA YST-MS55D USB Composite Device". (See Fig. 13)

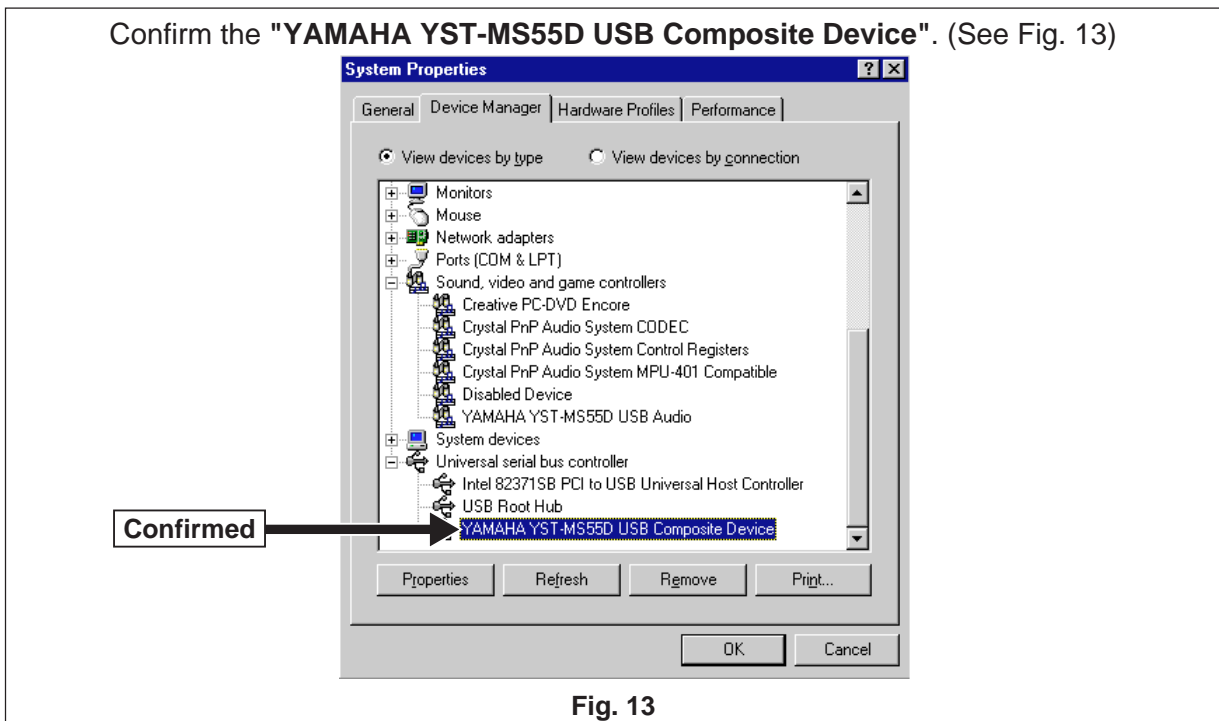


Fig. 13

To next confirmation.

**YST-MS55D****CONFIRM 4** " YAMAHA YST-MS55D USB Audio (1) "

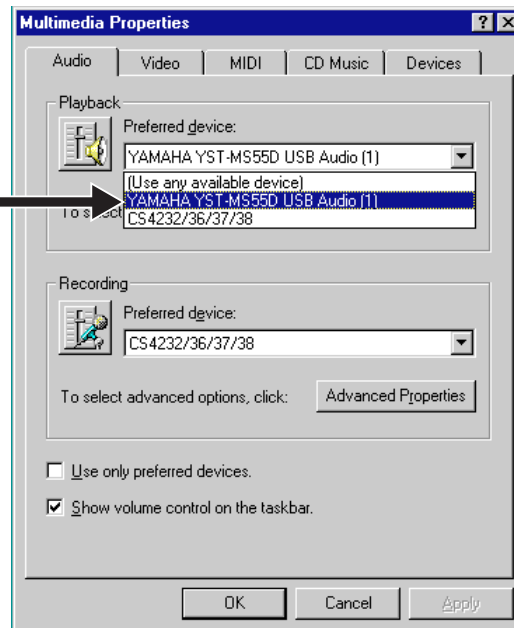
Click the [Audio] of [Multimedia Properties].



Confirm the [Playback ].



Confirm the "YAMAHA YST-MS55D USB Audio (1) ". (See Fig. 14)

**Confirmed.****Fig. 14****Completed the confirmation of OS.**

**CAUTION:** If not installed the YST-MS55D speaker device drivers, repeat install from the CD-ROM.  
(See page 6~10)

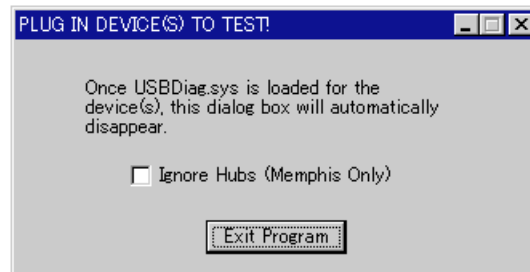
**YST-MS55D****2. STARTING THE USB PORT OPERATION CHECK**

The USB port operation check is using the USB Compliance check Test Tool Version 2.6. Install the this Test Tool.

Running the Test Tool.



[PLUG IN DEVICE (S) TO TEST!] display.



**Fig. 15**

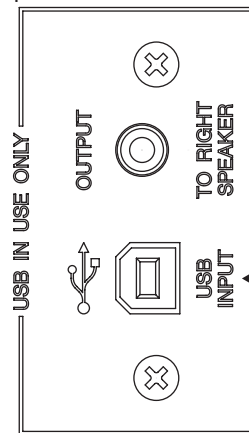


Connect the USB cable to the USB port of the personal computer.



Plug in the USB cable from Personal to [USB INPUT] on the rear panel of the Subwoofer. (See Fig. 16)

Rear panel of the Subwoofer



Plug in the  
USB Cable from the  
Personal Computer.

**Fig. 16**



**Start the USB port operation check.**

**YST-MS55D****3. DETAIL OF USB PORT OPERATION CHECK**

There are 5 items in the USB port operation check as shown below.

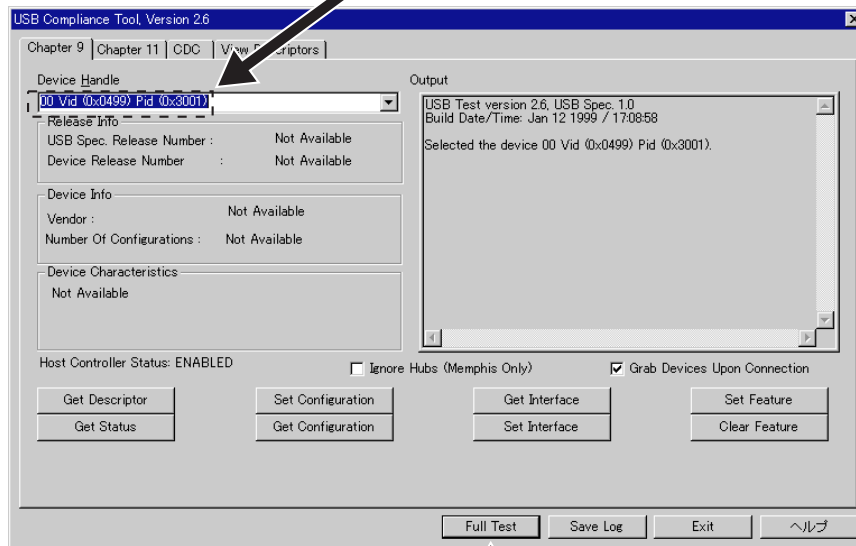
**CHECK 1 " 00Vid (0X0499) Pid (0X3001) "**

[USB Compliance Tool, Version 2.6] display.



Confirm the " 99 Vid (0X0499) Pid (0X3001)". (See Fig. 17)

**Confirmed.**



**Click.**

**Fig. 17**



Confirmation of USB EEPROM (IC201) operation is completed.



**Click the [Full Test] (See Fig. 17) for next check.**

## YST-MS55D

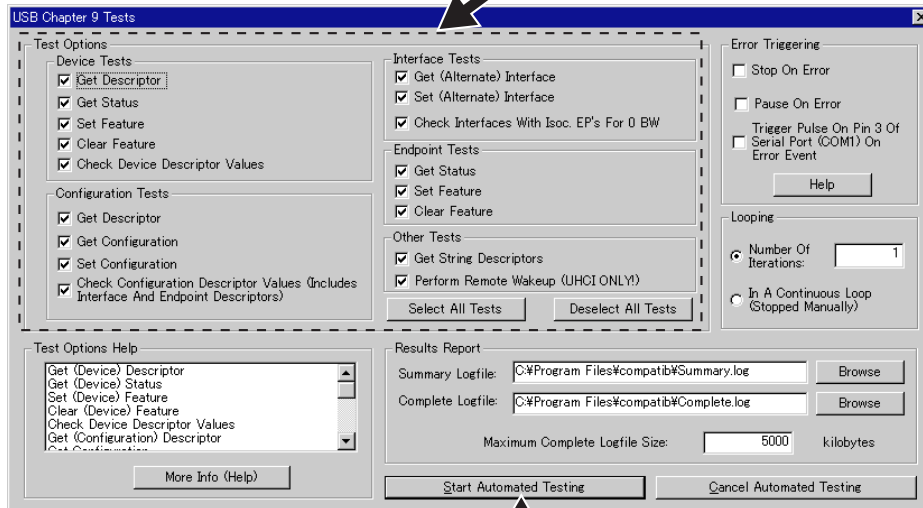
**CHECK 2** All is checked ("✓").

[USB Chapter 9 Test] display.



Confirm that all is checked ("✓"). (See Fig. 18)

All is checked ("✓").



Click.

Fig. 18



Click the [Start Automated Testing] (See Fig. 18) for next check.



**YST-MS55D****CHECK 3 " Error Count : 0 "**

[Full Test Results] display.



Confirm the " Error Count : 0 ". (See Fig. 19)

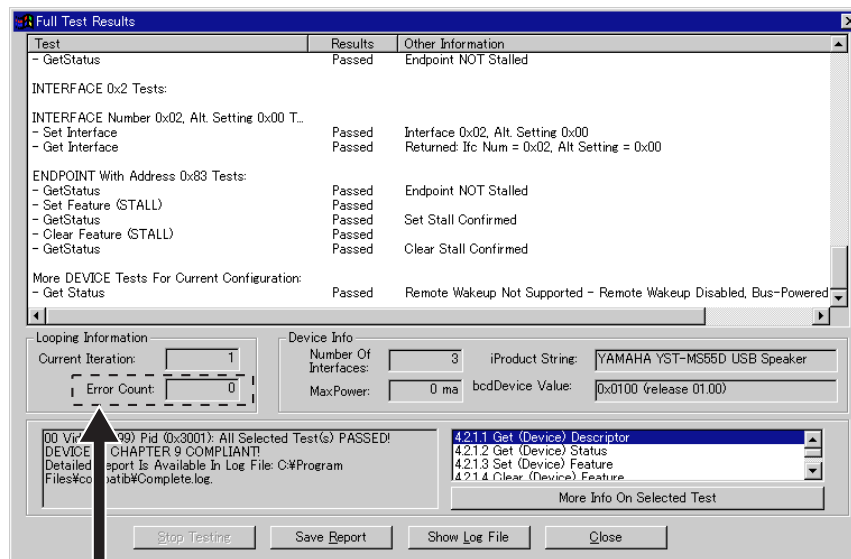
**Confirmed.**

Fig. 19



Operation of between USB IC and USB port is normal state.

**Enter automated to next check.**

# YST-MS55D

## CHECK 4 " OK "

[USB Compliance Tool] display.



Confirm the " OK ". (See Fig. 20)

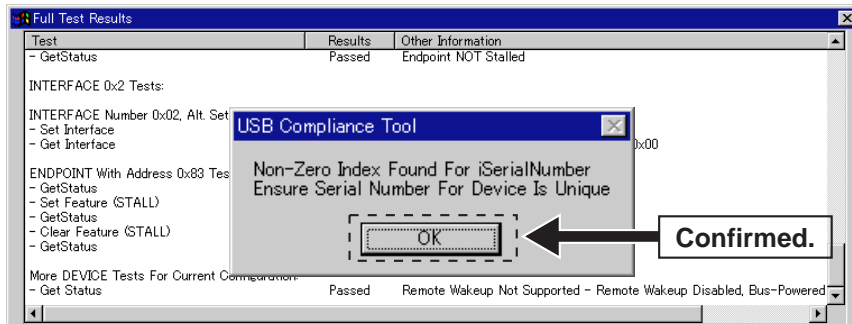


Fig. 20



Enter automated to next check.

## CHECK 5 " OK "

[DEVICE IS HID] display.



Confirm the " OK ". (See Fig. 21)

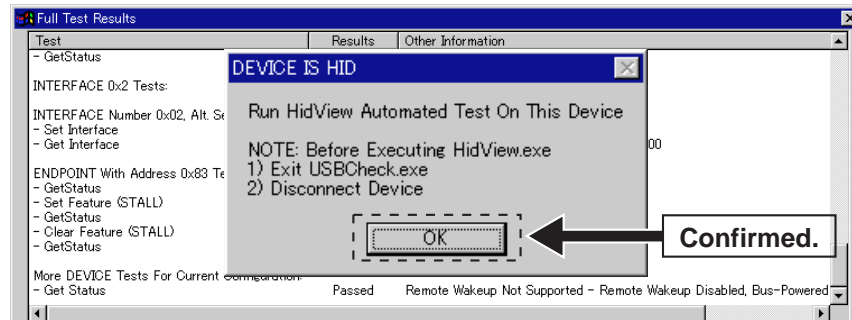


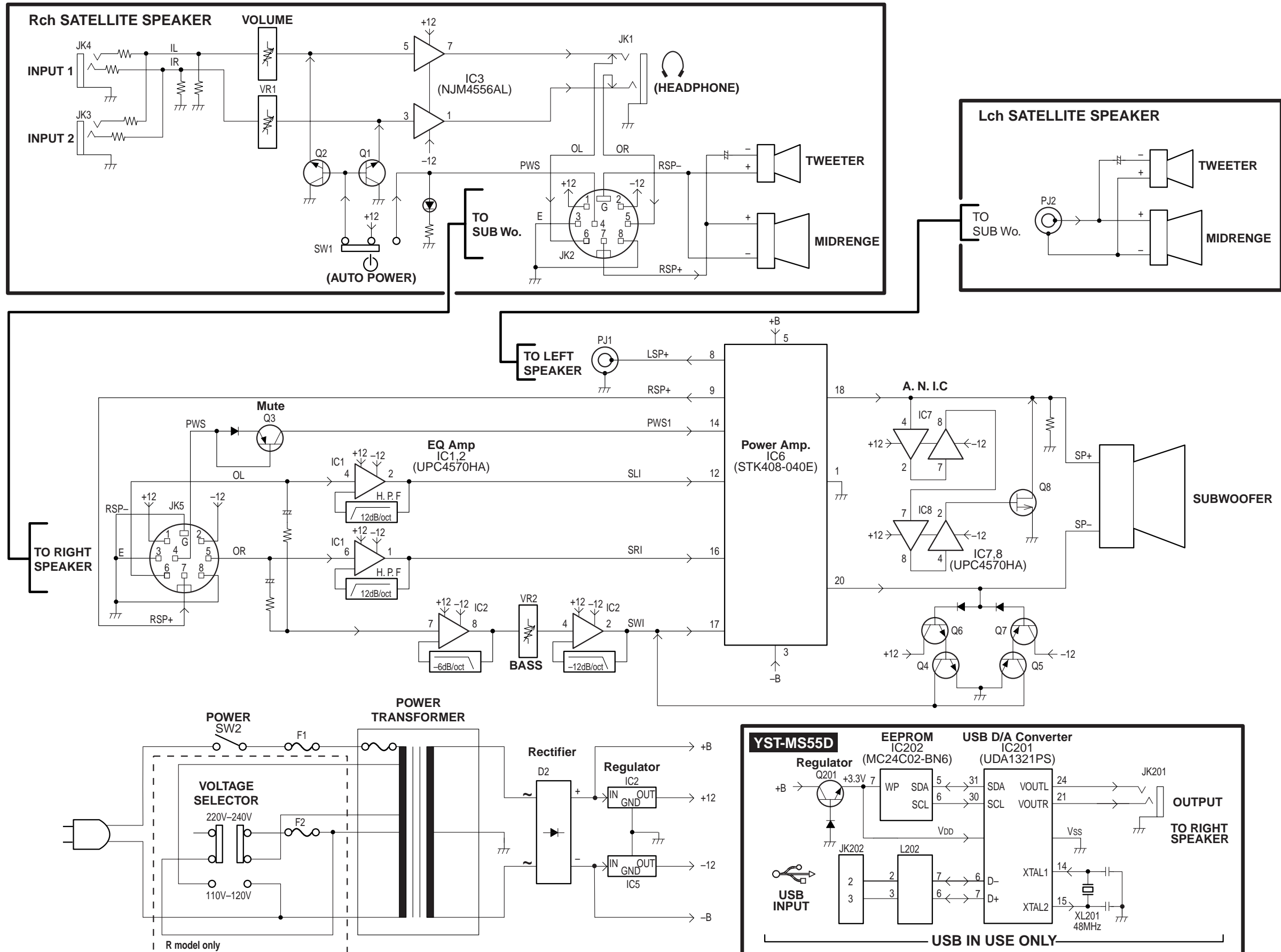
Fig. 21



Completed the USB port operation check.

YST-MS50 YST-MS55D

■ BLOCK DIAGRAM

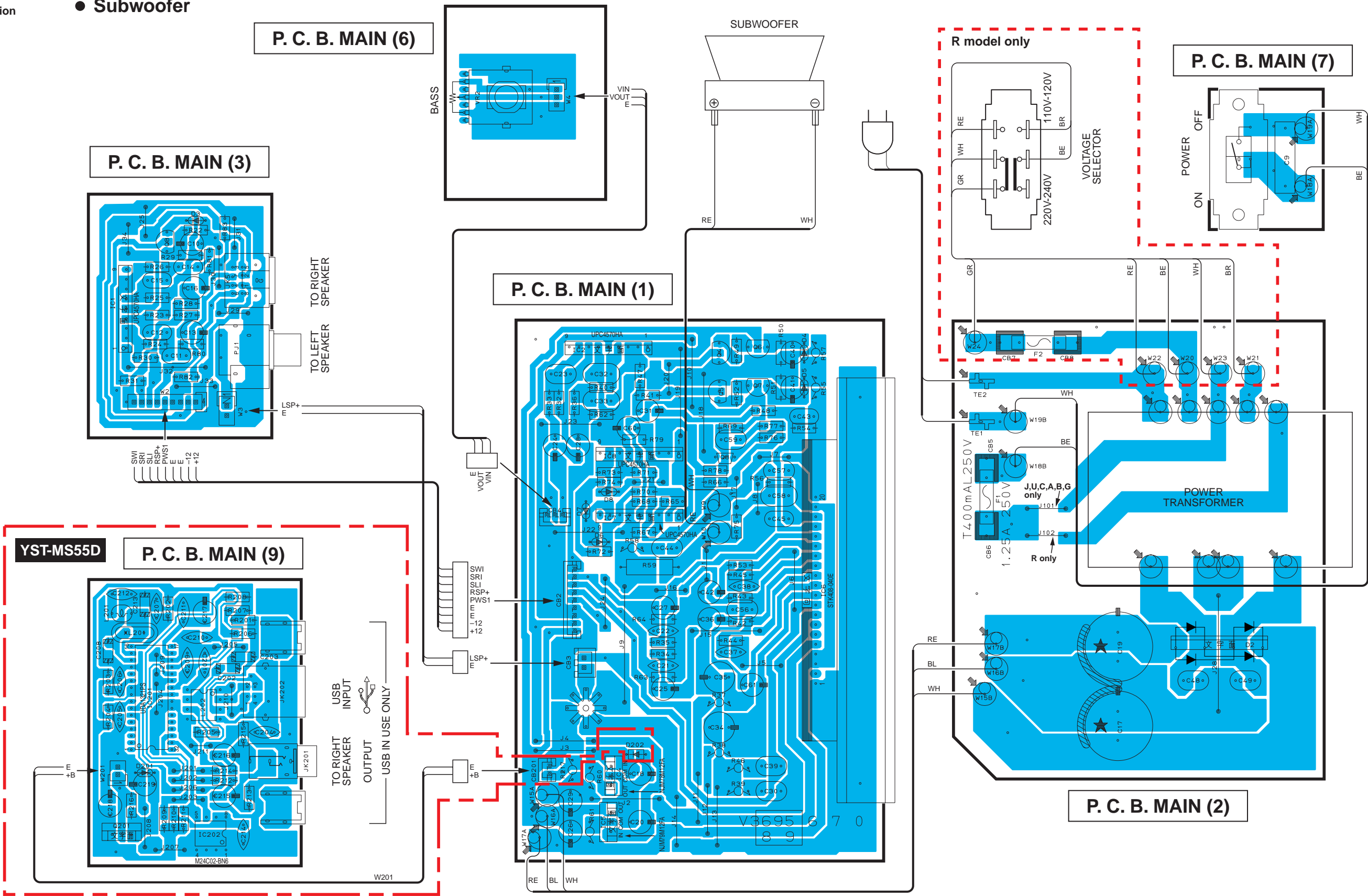


PRINTED CIRCUIT BOARD (Foil side)

● Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D2       | H4       |
| D3       | B2       |
| D4       | E3       |
| D5       | E3       |
| D6       | D4       |
| D7       | D4       |
| D8       | D4       |
| D201     | B5       |
| D202     | E5       |
| IC1      | B3       |
| IC2      | D3       |
| IC4      | D5       |
| IC5      | D5       |
| IC6      | E4       |
| IC7      | D4       |
| IC8      | D3       |
| IC201    | B5       |
| IC202    | B5       |
| Q3       | B2       |
| Q4       | E3       |
| Q5       | E3       |
| Q6       | E3       |
| Q7       | E3       |
| Q8       | E3       |
| Q201     | B5       |

● Subwoofer



**YST-MS50 YST-MS55D**

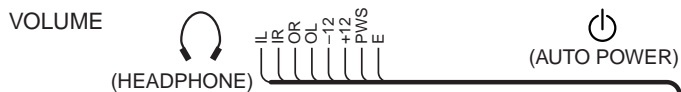
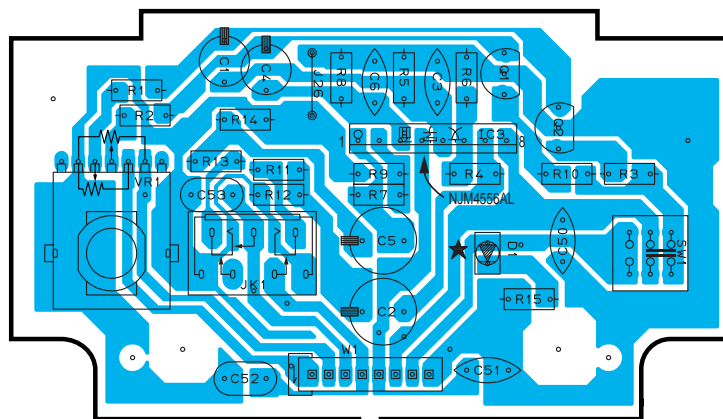
**PRINTED CIRCUIT BOARD (Foil side)**

● **Satellite Speakers**

**P. C. B. MAIN (4)**

● **Semiconductor Location**

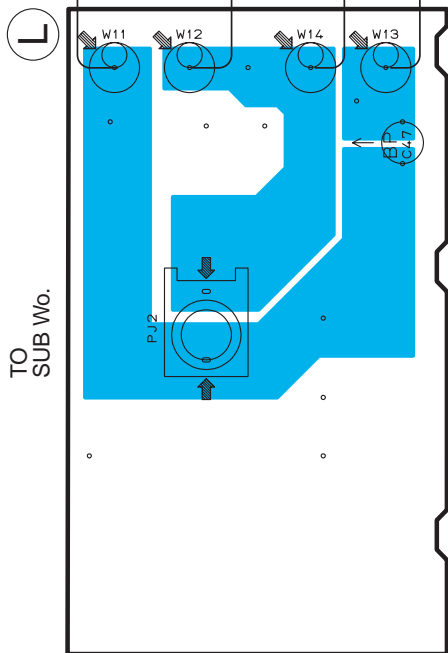
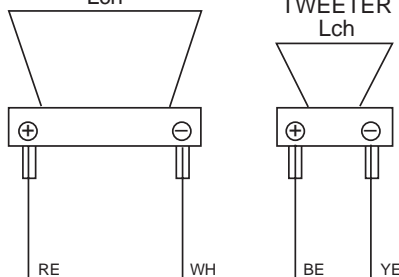
| Ref. No. | Location |
|----------|----------|
| IC3      | C1       |
| Q1       | C1       |
| Q2       | C1       |



**P. C. B. MAIN (8)**

SATELLITE  
MIDRANGE  
Lch

SATELLITE  
TWEETER  
Lch

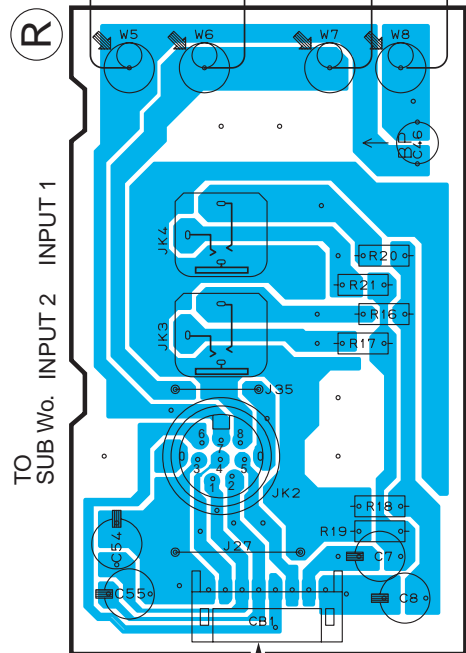
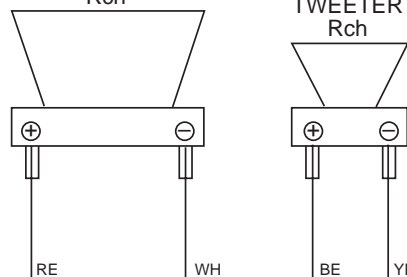


TO  
SUB Wo.

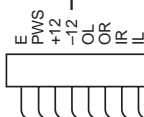
**P. C. B. MAIN (5)**

SATELLITE  
MIDRANGE  
Rch

SATELLITE  
TWEETER  
Rch



TO  
SUB Wo. INPUT 2



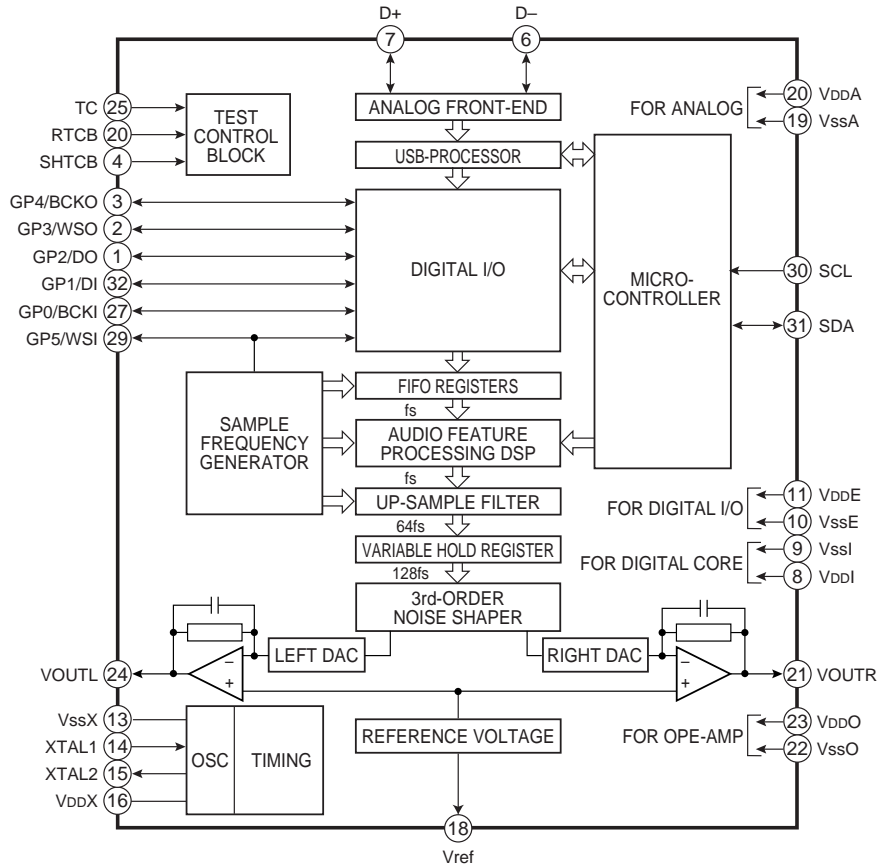
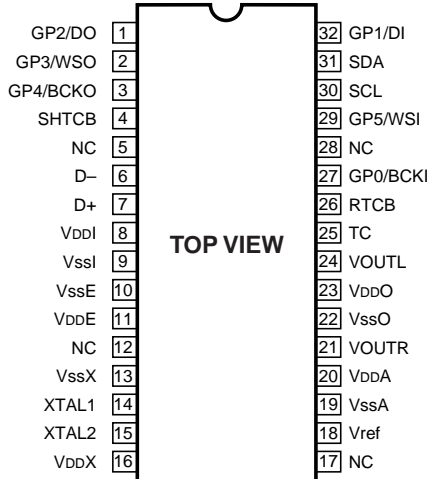
**YST-MS55D**

**IC DATA**

IC201: UDA1321PS

Universal Serial Bus (USB)

Digital-to-Analog Converter (DAC)



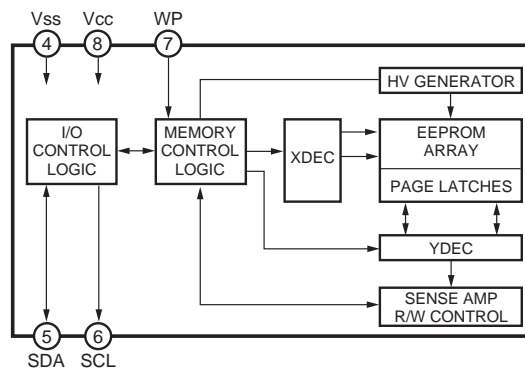
| No. | Name     | I/O          | Function                 | No. | Name     | I/O | Function                            |
|-----|----------|--------------|--------------------------|-----|----------|-----|-------------------------------------|
| 1   | GP2/DO   |              | *1                       | 32  | GP1/DI   |     | *1                                  |
| 2   | GP3/WSO  |              | *1                       | 31  | SDA      | I/O | Serial data (I <sup>2</sup> C-Bus)  |
| 3   | GP4/BCKO |              | *1                       | 30  | SCL      | I   | Serial clock (I <sup>2</sup> C-Bus) |
| 4   | SHTCB    |              | *2                       | 29  | GP5/WSI  |     | *1                                  |
| 5   | NC       |              | Unconnected              | 28  | NC       |     | Unconnected                         |
| 6   | D-       | I/O          | Negative                 | 27  | GP0/BCKI |     | *1                                  |
| 7   | D+       | I/O          | Positive                 |     |          |     |                                     |
| 8   | VDDI     |              | Power supply             | 26  | RTCB     |     | *2                                  |
| 9   | VssI     |              | Ground                   |     |          |     |                                     |
| 10  | VssE     |              | Ground                   | 25  | TC       |     | *2                                  |
| 11  | VDD E    |              | Power supply             |     |          |     |                                     |
| 12  | NC       |              | Unconnected              | 24  | VOU TL   | O   | Lch Output voltage                  |
| 13  | VssX     |              | Ground                   | 23  | VDDO     |     | Power supply                        |
| 14  | XTAL1    | Input        | (for Crystal oscillator) | 22  | VssO     |     | Ground                              |
| 15  | XTAL2    | Output       |                          | 21  | VOU TR   | O   | Rch output voltage                  |
| 16  | VDDX     | Power supply |                          | 20  | VDDA     |     | Power supply                        |
|     |          |              |                          | 19  | VssA     |     | Ground                              |
|     |          |              |                          | 18  | Vref     | O   | Reference Voltage                   |
|     |          |              |                          | 17  | NC       |     | Unconnected                         |

NOTE) \*1 : Normally unconnected. \*2 : Normally connected to ground.

IC202: M24C02-BN6

2k 2.5V CMOS Serial

Electrically Erasable PROM (EEPROM)



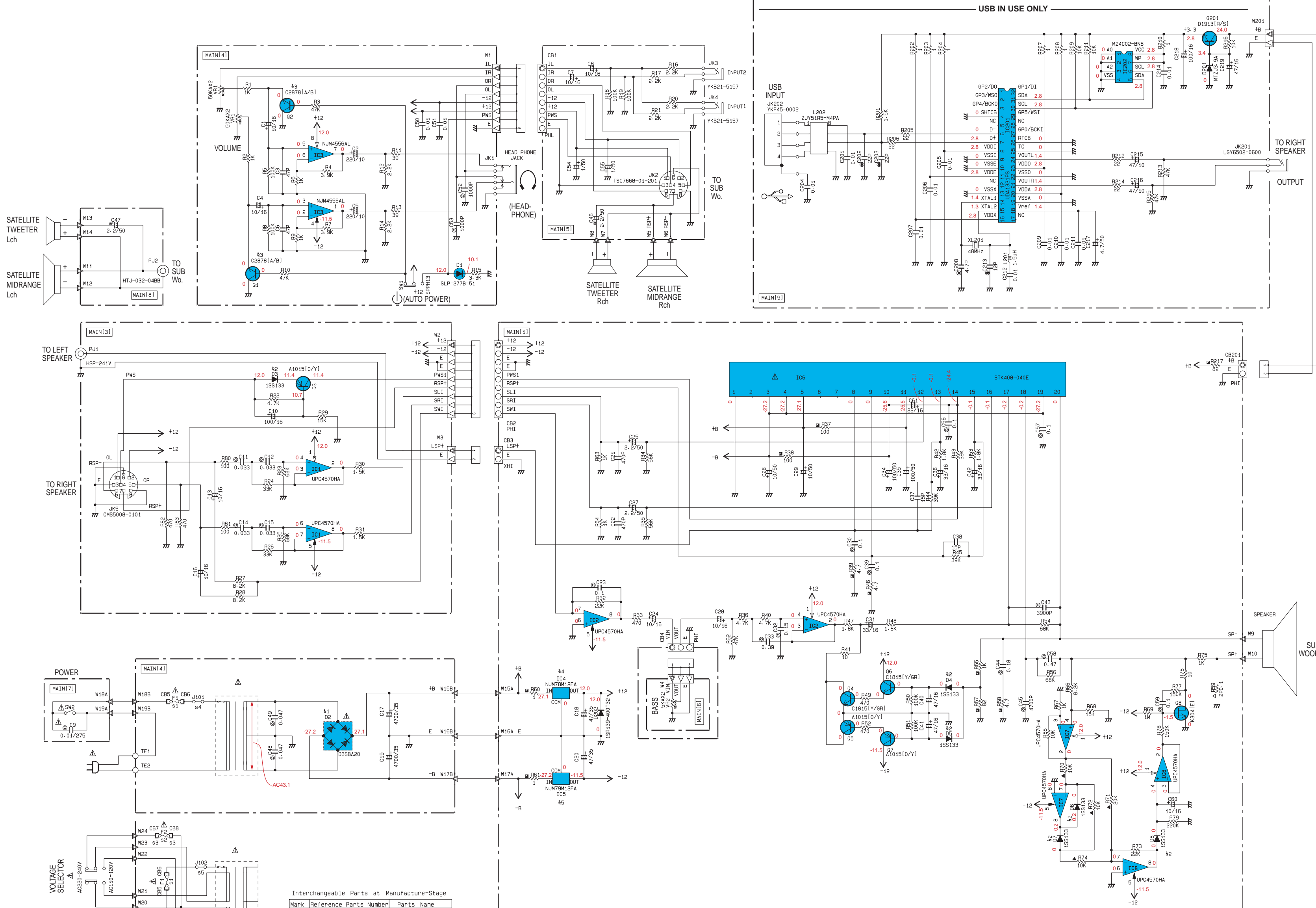
| No. | Name | I/O | Function | No. | Name | I/O | Function                            |
|-----|------|-----|----------|-----|------|-----|-------------------------------------|
| 1   | A0   |     | *1       | 8   | Vcc  |     | Power supply                        |
| 2   | A1   |     | *1       | 7   | WP   |     | *2                                  |
| 3   | A2   |     | *1       | 6   | SCL  | O   | Serial clock (I <sup>2</sup> C-Bus) |
| 4   | Vss  |     | Ground   | 5   | SDA  | I/O | Serial data (I <sup>2</sup> C-Bus)  |

NOTE) \*1 : Normally connected to ground. \*2 : Normally connected to power supply.

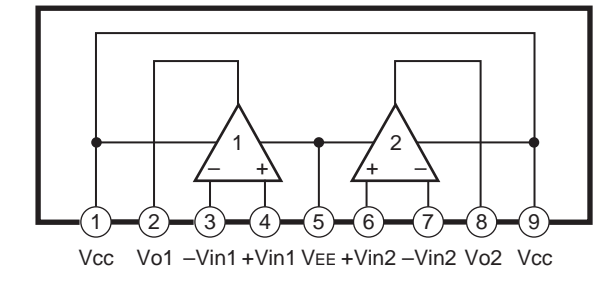


SCHEMATIC DIAGRAM (YST-MS55D)

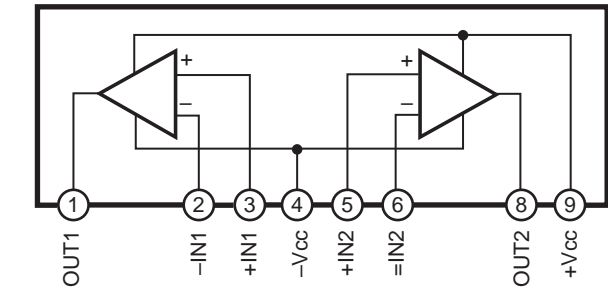
IC201, 202→See page 23, IC DATA



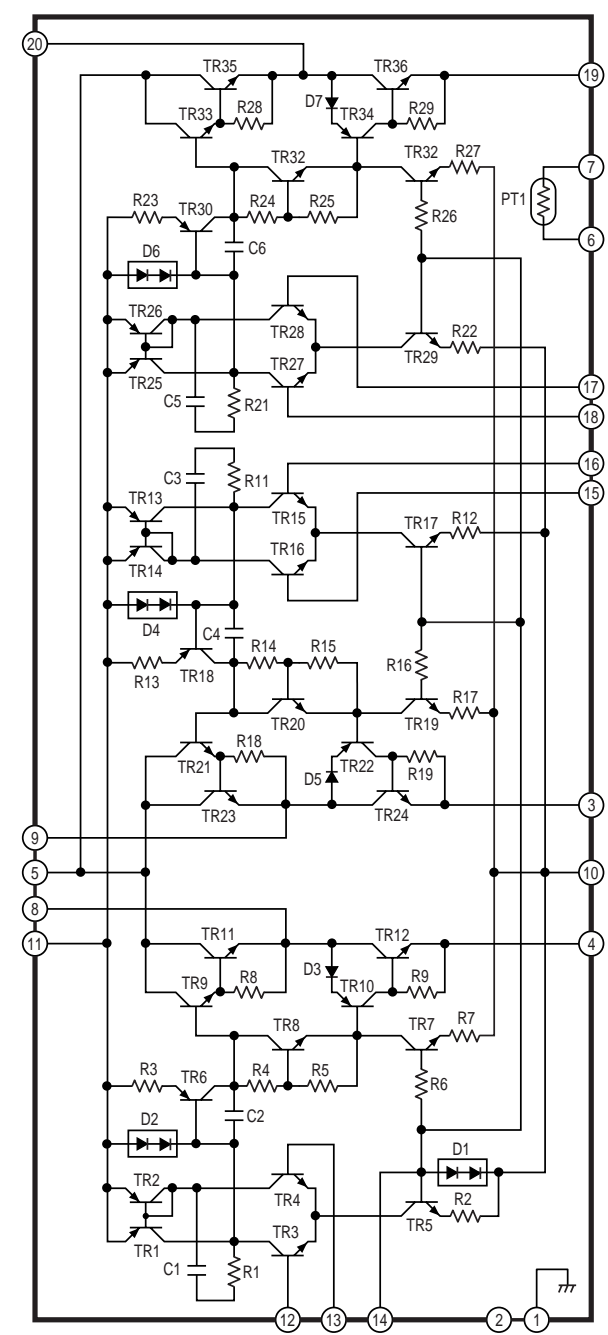
IC1,2,7,8 : UPC4570HA Dual OP-Amp



IC3 : NJM4556AL Dual Op-Amp



IC6 : STK408-040E 3-channel AF Power Amp



Interchangeable Parts at Manufacture-Stage

| Mark | Reference | Parts Number | Parts Name |
|------|-----------|--------------|------------|
| k1   | D2        | D3SB420      | RBV-402    |
| k2   | D3-8      | 1SS133       | HSS104TD   |
| k3   | G1-2      | C2878(A,B)   | C3792      |
| k4   | IC4       | NJM79M12FA   | AN79M12F   |
| k5   | IC5       | NJM79M12FA   | AN79M12F   |

|    | J-U-C | R         | A           | B-G         |
|----|-------|-----------|-------------|-------------|
| s1 | F1    | 1.25A250V | 1.25A250V   | T400MAL250V |
| s2 | F2    | X         | T400MAL250V | X           |
| s3 | C87-8 | X         | VP20650     | X           |
| s4 | J101  | 0         | X           | 0           |
| s5 | J102  | X         | 0           | X           |

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

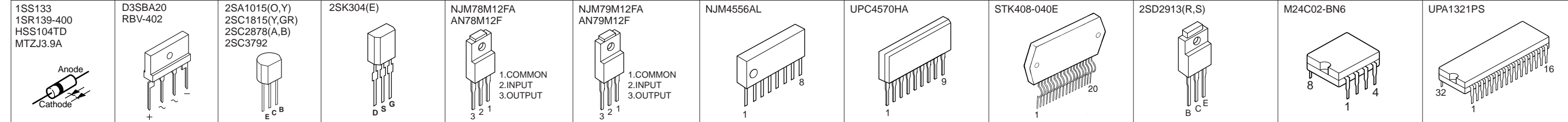
RESISTOR

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

CAPACITOR

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

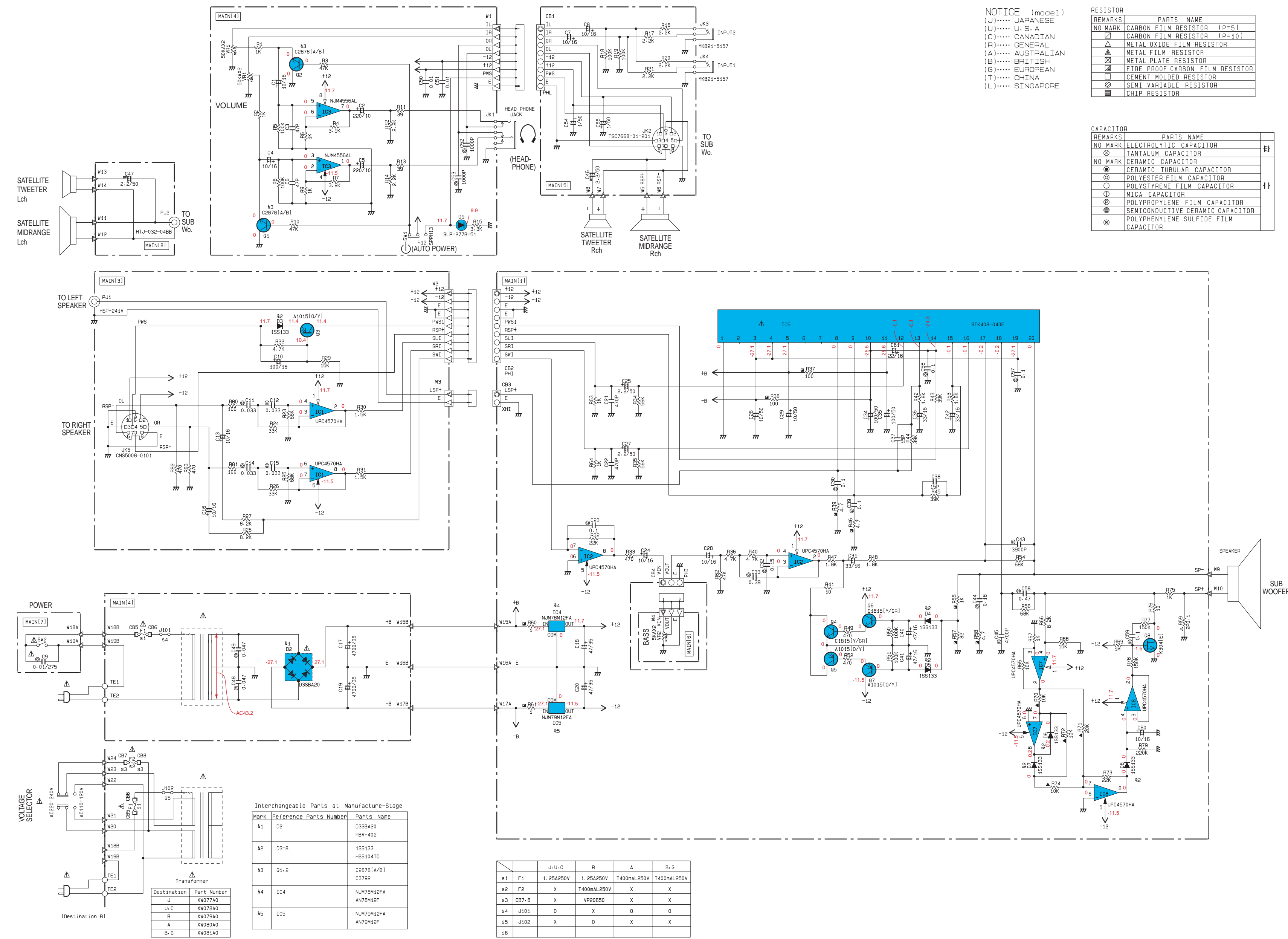
PIN CONNECTION DIAGRAM OF DIODES, TRANSISTORS AND IC's.



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

YST-MS50

SCHEMATIC DIAGRAM (YST-MS50)

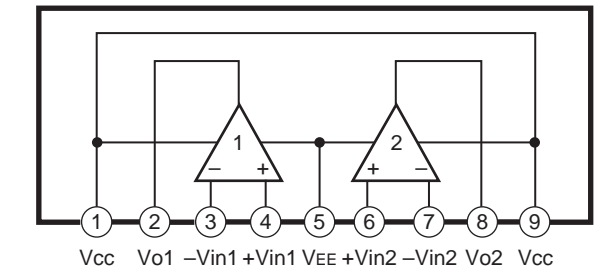


NOTICE (mode1)  
 (J)..... JAPANESE  
 (U)..... U.S.A  
 (C)..... CANADIAN  
 (R)..... GENERAL  
 (A)..... AUSTRALIAN  
 (B)..... BRITISH  
 (G)..... EUROPEAN  
 (T)..... CHINA  
 (L)..... SINGAPORE

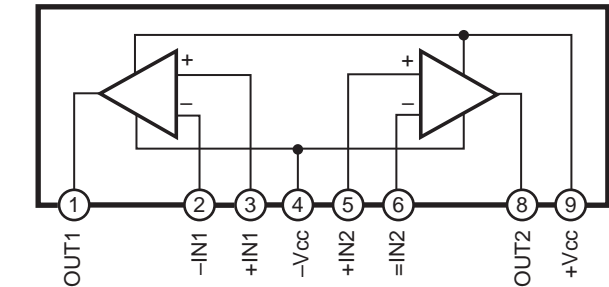
| REMARKS | PARTS NAME                      |
|---------|---------------------------------|
| NO MARK | CARBON FILM RESISTOR (P=5)      |
| □       | CARBON FILM RESISTOR (P=10)     |
| △       | METAL OXIDE FILM RESISTOR       |
| ▲       | METAL FILM RESISTOR             |
| ⊠       | METAL PLATE RESISTOR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

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

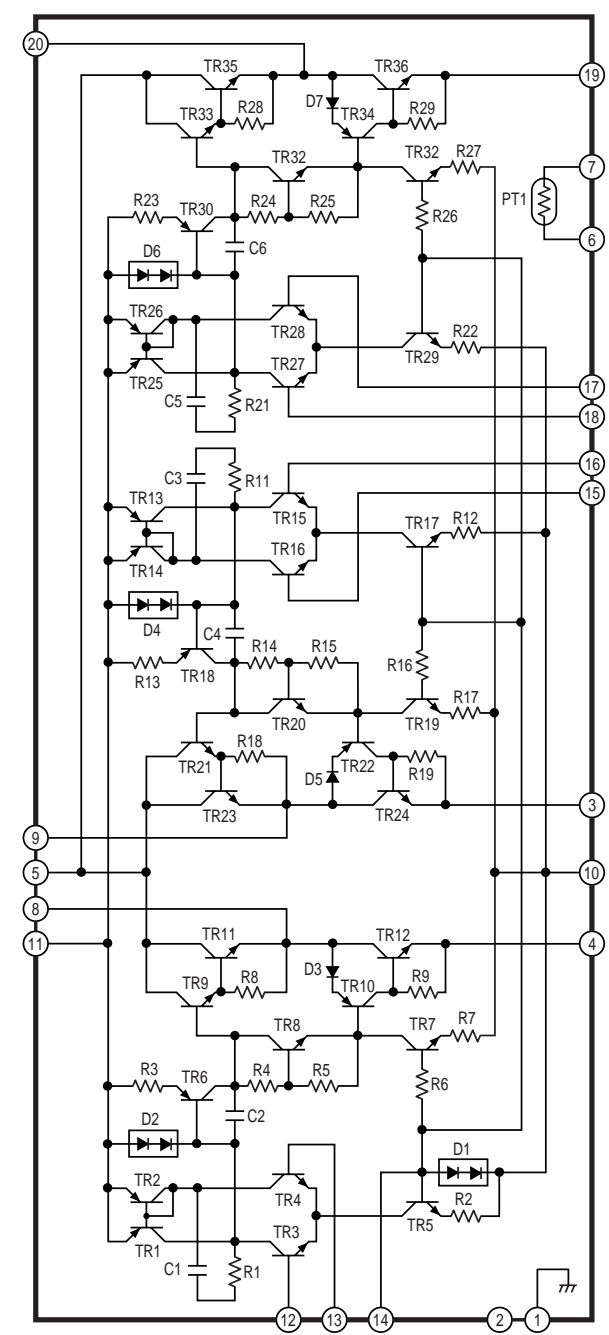
IC1,2,7,8 : UPC4570HA Dual Op-Amp



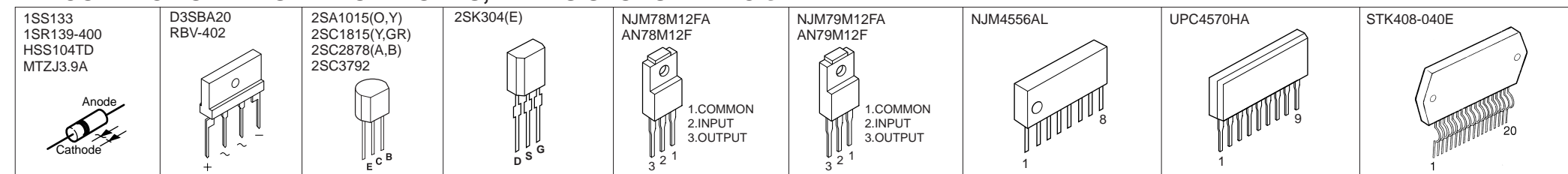
IC3 : NJM4556AL Dual Op-Amp



IC6 : STK408-040E 3-channel AF Power Amp



PIN CONNECTION DIAGRAM OF DIODES, TRANSISTORS AND IC'S.



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



# PARTS LIST

## ■ ELECTRICAL PARTS

### ■ WARNING

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

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts Nos. of the carbon resistores, refer to the last page.

### ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

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

**Note)** Those parts marked with "#" are not included in the P. C. B. Ass'y.

## YST-MS50

## P. C. B. MAIN

| Schm Ref   | PART NO. | Description |             |
|------------|----------|-------------|-------------|
| * V3406400 | P.C.B.   | MAIN(UC)    |             |
| * V3406500 | P.C.B.   | MAIN(R)     |             |
| * V3406600 | P.C.B.   | MAIN(A)     |             |
| * V3406700 | P.C.B.   | MAIN(BG)    |             |
| CB1        | VB858700 | CN.BS.PIN   | 8P          |
| CB2        | VD005200 | CN.BS.PIN   | 9P          |
| CB3        | LB918020 | CN.BS.PIN   | 2P          |
| CB4        | VD004600 | CN.BS.PIN   | 3P          |
| CB5        | VP206500 | HOLDER.FUS  | EYF-52BC    |
| CB6        | VP206500 | HOLDER.FUS  | EYF-52BC    |
| CB7        | VP206500 | HOLDER.FUS  | EYF-52BC(R) |
| CB8        | VP206500 | HOLDER.FUS  | EYF-52BC(R) |
| C1         | VJ836900 | C.EL        | 10uF 16V    |
| C2         | VV020100 | C.EL        | 220uF 10V   |
| C3         | FG211470 | C.CE        | 47pF 50V    |
| C4         | VJ836900 | C.EL        | 10uF 16V    |
| C5         | VV020100 | C.EL        | 220uF 10V   |
| C6         | FG211470 | C.CE        | 47pF 50V    |
| C7         | VJ836900 | C.EL        | 10uF 16V    |
| C8         | VJ836900 | C.EL        | 10uF 16V    |
| △ C9       | VS741700 | C.CE.SAFTY  | 0.01uF 275V |
| C10        | VF964800 | C.EL        | 100uF 16V   |
| C11        | UA654330 | C.MYLAR     | 0.033uF 50V |
| C12        | UA654330 | C.MYLAR     | 0.033uF 50V |
| C13        | VJ836900 | C.EL        | 10uF 16V    |
| C14        | UA654330 | C.MYLAR     | 0.033uF 50V |
| C15        | UA654330 | C.MYLAR     | 0.033uF 50V |
| C16        | VJ836900 | C.EL        | 10uF 16V    |
| C17        | UR759470 | C.EL        | 4700uF 35V  |
| C18        | UR857470 | C.EL        | 47uF 35V    |
| C19        | UR759470 | C.EL        | 4700uF 35V  |
| C20        | UR857470 | C.EL        | 47uF 35V    |
| C21        | FG212470 | C.CE        | 470pF 50V   |
| C22        | FG212470 | C.CE        | 470pF 50V   |
| C23        | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C24        | VJ836900 | C.EL        | 10uF 16V    |
| C25        | UR866220 | C.EL        | 2.2uF 50V   |
| C26        | UR867100 | C.EL        | 10uF 50V    |
| C27        | UR866220 | C.EL        | 2.2uF 50V   |
| C28        | VJ836900 | C.EL        | 10uF 16V    |
| C29        | UR867100 | C.EL        | 10uF 50V    |
| C30        | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C31        | UM397330 | C.EL        | 33uF 16V    |
| C32        | UA655150 | C.MYLAR     | 0.15uF 50V  |
| C33        | UA655390 | C.MYLAR     | 0.39uF 50V  |
| C34        | UJ668100 | C.EL        | 100uF 50V   |
| C35        | UJ668100 | C.EL        | 100uF 50V   |
| C36        | UM397330 | C.EL        | 33uF 16V    |
| C37        | FG211150 | C.CE        | 15pF 50V    |
| C38        | FG211150 | C.CE        | 15pF 50V    |
| C39        | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C40        | VJ837200 | C.EL        | 47uF 16V    |
| C41        | VJ837200 | C.EL        | 47uF 16V    |

\* New Parts

| Schm Ref | PART NO. | Description |                 |
|----------|----------|-------------|-----------------|
| C42      | UM397330 | C.EL        | 33uF 16V        |
| C43      | UA653390 | C.MYLAR     | 3900pF 50V      |
| C44      | UA655180 | C.MYLAR     | 0.18uF 50V      |
| C45      | UA653470 | C.MYLAR     | 4700pF 50V      |
| C46      | VD916400 | C.EL        | 2.2uF 50V       |
| C47      | VD916400 | C.EL        | 2.2uF 50V       |
| C48      | UA654470 | C.MYLAR     | 0.047uF 50V     |
| C49      | UA654470 | C.MYLAR     | 0.047uF 50V     |
| C50      | FG214100 | C.CE        | 0.01uF 50V      |
| C51      | FG214100 | C.CE        | 0.01uF 50V      |
| C52      | UA653100 | C.MYLAR     | 1000pF 50V      |
| C53      | UA653100 | C.MYLAR     | 1000pF 50V      |
| C54      | VJ839100 | C.EL        | 1uF 50V         |
| C55      | VJ839100 | C.EL        | 1uF 50V         |
| C56      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C57      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C58      | UA655470 | C.MYLAR     | 0.47uF 50V      |
| C59      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C60      | VJ836900 | C.EL        | 10uF 16V        |
| C61      | UM407220 | C.EL        | 22uF 25V        |
| D1       | VY660300 | LED(gr)     | SLP-277B-51     |
| △ D2     | VN011300 | DIODE.BRG   | D3SBA20 4A 200V |
| D3       | iF004600 | DIODE       | 1SS133          |
| D4       | iF004600 | DIODE       | 1SS133          |
| D5       | iF004600 | DIODE       | 1SS133          |
| D6       | iF004600 | DIODE       | 1SS133          |
| D7       | iF004600 | DIODE       | 1SS133          |
| D8       | iF004600 | DIODE       | 1SS133          |
| △ F1     | KB000660 | FUSE        | 400mA 250V(ABG) |
| △ F1     | VT272700 | FUSE        | 1.25A(UCR)      |
| △ F2     | KB000660 | FUSE        | 400mA 250V(R)   |
| IC1      | XB247301 | IC          | uPC4570HA       |
| IC2      | XB247301 | IC          | uPC4570HA       |
| IC3      | XP844A00 | IC          | NJM4556AL       |
| IC4      | XJ602A00 | IC          | NJM78M12FA      |
| IC5      | XD343A00 | IC          | NJM79M12FA      |
| IC6      | XV809A00 | IC          | STK408-040E 25W |
| IC7      | XB247301 | IC          | uPC4570HA       |
| IC8      | XB247301 | IC          | uPC4570HA       |
| * JK1    | V3666400 | JACK.MNI    | HTJ-035-27A     |
| * JK2    | V3317500 | JACK.DIN    | 8P              |
| * JK3    | V3317400 | JACK.MNI    | 1P              |
| * JK4    | V3317400 | JACK.MNI    | 1P              |
| JK5      | VV881000 | CN.DIN      | 8P CMS5008-0101 |
| * PJ1    | V3407500 | JACK.PIN    | 1P              |
| PJ2      | VU581900 | JACK.PIN    | HTJ-032-04BB    |
| Q1       | iC287820 | TR          | 2SC2878 A,B     |
| Q2       | iC287820 | TR          | 2SC2878 A,B     |
| Q3       | iA101590 | TR          | 2SA1015 O,Y     |
| Q4       | iC1815M0 | TR          | 2SC1815 Y,GR    |
| Q5       | iA101590 | TR          | 2SA1015 O,Y     |
| Q6       | iC1815M0 | TR          | 2SC1815 Y,GR    |
| Q7       | iA101590 | TR          | 2SA1015 O,Y     |

\* New Parts

## YST-MS50

| Schm Ref | PART NO. | Description |           |          |
|----------|----------|-------------|-----------|----------|
| * Q8     | V3028000 | FET         | 2SK304 E  |          |
| R37      | HV455100 | R.CAR.FP    | 100Ω      | 1/4W     |
| R38      | HV455100 | R.CAR.FP    | 100Ω      | 1/4W     |
| R39      | HV453470 | R.CAR.FP    | 4.7Ω      | 1/4W     |
| R46      | HV453470 | R.CAR.FP    | 4.7Ω      | 1/4W     |
| R55      | HV456100 | R.CAR.FP    | 1KΩ       | 1/4W     |
| R57      | HV454820 | R.CAR.FP    | 82Ω       | 1/4W     |
| R58      | HV453470 | R.CAR.FP    | 4.7Ω      | 1/4W     |
| R59      | VE869300 | R.MTL.OXD   | 0.1Ω      | 2W       |
| R60      | HV453100 | R.CAR.FP    | 1Ω        | 1/4W     |
| R61      | HV453100 | R.CAR.FP    | 1Ω        | 1/4W     |
| R70      | HU597100 | R.MTL.FLM   | 10KΩ      | 1/4W     |
| R71      | VH007900 | R.MTL.FLM   | 20KΩ      | 1/4W     |
| R72      | HU597100 | R.MTL.FLM   | 10KΩ      | 1/4W     |
| R74      | HU597100 | R.MTL.FLM   | 10KΩ      | 1/4W     |
| SW1      | VS066500 | SW.PUSH     | SPPH13-W  |          |
| TE1      | VT658100 | TERM.WRAP   | 352-TX119 |          |
| TE2      | VT658100 | TERM.WRAP   | 352-TX119 |          |
| VR1      | V2261700 | VR          | A50KΩ     |          |
| VR2      | VZ496100 | VR          | A5KΩ      |          |
| △        | V2572700 | VOLT.SELCT  | (R)       |          |
|          | BB070700 | GND.MTL     |           |          |
| *        | V3408500 | RADIATOR    |           |          |
| *        | V4097600 | HOLDER.LED  | LH-5-14   |          |
|          | Ei030086 | SCR.BND.HD  | 3x8       | ZMC2-Y   |
|          | Ei330166 | SCR.BND.HD  | 3x16      | FCRM3-BL |

\* New Parts

## P.C.B. MAIN

| Schm Ref | PART NO. | Description |             |
|----------|----------|-------------|-------------|
| *        | V3695600 | P.C.B.      | MAIN(UC)    |
| *        | V3695700 | P.C.B.      | MAIN(R)     |
| *        | V3695800 | P.C.B.      | MAIN(A)     |
| *        | V3695900 | P.C.B.      | MAIN(BG)    |
| CB1      | VB858700 | CN.BS.PIN   | 8P          |
| CB2      | VD005200 | CN.BS.PIN   | 9P          |
| CB3      | LB918020 | CN.BS.PIN   | 2P          |
| CB4      | VD004600 | CN.BS.PIN   | 3P          |
| CB5      | VP206500 | HOLDER.FUS  | EYF-52BC    |
| CB6      | VP206500 | HOLDER.FUS  | EYF-52BC    |
| CB7      | VP206500 | HOLDER.FUS  | EYF-52BC(R) |
| CB8      | VP206500 | HOLDER.FUS  | EYF-52BC(R) |
| CB201    | VD004500 | CN.BS.PIN   | 2P          |
| C1       | VJ836900 | C.EL        | 10uF 16V    |
| C2       | VV020100 | C.EL        | 220uF 10V   |
| C3       | FG211470 | C.CE        | 47pF 50V    |
| C4       | VJ836900 | C.EL        | 10uF 16V    |
| C5       | VV020100 | C.EL        | 220uF 10V   |
| C6       | FG211470 | C.CE        | 47pF 50V    |
| C7       | VJ836900 | C.EL        | 10uF 16V    |
| C8       | VJ836900 | C.EL        | 10uF 16V    |
| △ C9     | VS741700 | C.CE.SAFTY  | 0.01uF 275V |
| C10      | VF964800 | C.EL        | 100uF 16V   |
| C11      | UA654330 | C.MYLAR     | 0.033uF 50V |
| C12      | UA654330 | C.MYLAR     | 0.033uF 50V |
| C13      | VJ836900 | C.EL        | 10uF 16V    |
| C14      | UA654330 | C.MYLAR     | 0.033uF 50V |
| C15      | UA654330 | C.MYLAR     | 0.033uF 50V |
| C16      | VJ836900 | C.EL        | 10uF 16V    |
| * C17    | UR759470 | C.EL        | 4700uF 35V  |
| C18      | UR857470 | C.EL        | 47uF 35V    |
| * C19    | UR759470 | C.EL        | 4700uF 35V  |
| C20      | UR857470 | C.EL        | 47uF 35V    |
| C21      | FG212470 | C.CE        | 470pF 50V   |
| C22      | FG212470 | C.CE        | 470pF 50V   |
| C23      | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C24      | VJ836900 | C.EL        | 10uF 16V    |
| C25      | UR866220 | C.EL        | 2.2uF 50V   |
| C26      | UR867100 | C.EL        | 10uF 50V    |
| C27      | UR866220 | C.EL        | 2.2uF 50V   |
| C28      | VJ836900 | C.EL        | 10uF 16V    |
| C29      | UR867100 | C.EL        | 10uF 50V    |
| C30      | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C31      | UM397330 | C.EL        | 33uF 16V    |
| C32      | UA655150 | C.MYLAR     | 0.15uF 50V  |
| C33      | UA655390 | C.MYLAR     | 0.39uF 50V  |
| C34      | UJ668100 | C.EL        | 100uF 50V   |
| C35      | UJ668100 | C.EL        | 100uF 50V   |
| C36      | UM397330 | C.EL        | 33uF 16V    |
| C37      | FG211150 | C.CE        | 15pF 50V    |
| C38      | FG211150 | C.CE        | 15pF 50V    |
| C39      | UA655100 | C.MYLAR     | 0.1uF 50V   |
| C40      | VJ837200 | C.EL        | 47uF 16V    |

\* New Parts

| Schm Ref | PART NO. | Description |                 |
|----------|----------|-------------|-----------------|
| C41      | VJ837200 | C.EL        | 47uF 16V        |
| C42      | UM397330 | C.EL        | 33uF 16V        |
| C43      | UA653390 | C.MYLAR     | 3900pF 50V      |
| C44      | UA655180 | C.MYLAR     | 0.18uF 50V      |
| C45      | UA653470 | C.MYLAR     | 4700pF 50V      |
| C46      | VD916400 | C.EL        | 2.2uF 50V       |
| C47      | VD916400 | C.EL        | 2.2uF 50V       |
| C48      | UA654470 | C.MYLAR     | 0.047uF 50V     |
| C49      | UA654470 | C.MYLAR     | 0.047uF 50V     |
| C50      | FG214100 | C.CE        | 0.01uF 50V      |
| C51      | FG214100 | C.CE        | 0.01uF 50V      |
| C52      | UA653100 | C.MYLAR     | 1000pF 50V      |
| C53      | UA653100 | C.MYLAR     | 1000pF 50V      |
| C54      | VJ839100 | C.EL        | 1uF 50V         |
| C55      | VJ839100 | C.EL        | 1uF 50V         |
| C56      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C57      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C58      | UA655470 | C.MYLAR     | 0.47uF 50V      |
| C59      | UA655100 | C.MYLAR     | 0.1uF 50V       |
| C60      | VJ836900 | C.EL        | 10uF 16V        |
| C61      | UM407220 | C.EL        | 22uF 25V        |
| C201     | FG214100 | C.CE        | 0.01uF 50V      |
| C202     | VG276600 | C.CE.TUBLR  | 22pF 50V        |
| C203     | VG276600 | C.CE.TUBLR  | 22pF 50V        |
| C204     | FG214100 | C.CE        | 0.01uF 50V      |
| C205     | FG214100 | C.CE        | 0.01uF 50V      |
| C206     | FG214100 | C.CE        | 0.01uF 50V      |
| C207     | FG214100 | C.CE        | 0.01uF 50V      |
| C208     | VG274700 | C.CE.TUBLR  | 4.7pF 50V       |
| C209     | FG214100 | C.CE        | 0.01uF 50V      |
| C210     | FG214100 | C.CE        | 0.01uF 50V      |
| C211     | FG214100 | C.CE        | 0.01uF 50V      |
| C212     | FG214100 | C.CE        | 0.01uF 50V      |
| C213     | VG276000 | C.CE.TUBLR  | 12pF 50V        |
| C214     | FG214100 | C.CE        | 0.01uF 50V      |
| C215     | UR827470 | C.EL        | 47uF 10V        |
| C216     | UR827470 | C.EL        | 47uF 10V        |
| C217     | UM416470 | C.EL        | 4.7uF 50V       |
| C218     | VF964800 | C.EL        | 100uF 16V       |
| C219     | VJ837200 | C.EL        | 47uF 16V        |
| C220     | FG214100 | C.CE        | 0.01uF 50V      |
| C221     | FG214100 | C.CE        | 0.01uF 50V      |
| C222     | FG214100 | C.CE        | 0.01uF 50V      |
| C223     | FG214100 | C.CE        | 0.01uF 50V      |
| △ D1     | VY660300 | LED(gr)     | SLP-277B-51     |
| D2       | VN011300 | DIODE.BRG   | D3SBA20 4A 200V |
| D3       | iF004600 | DIODE       | 1SS133          |
| D4       | iF004600 | DIODE       | 1SS133          |
| D5       | iF004600 | DIODE       | 1SS133          |
| D6       | iF004600 | DIODE       | 1SS133          |
| D7       | iF004600 | DIODE       | 1SS133          |
| D8       | iF004600 | DIODE       | 1SS133          |
| D201     | VG436500 | DIODE.ZENR  | MTZJ3.9A 3.9V   |

\* New Parts

## YST-MS55D

| Schm Ref | PART NO.       | Description |                 |
|----------|----------------|-------------|-----------------|
|          | D202 VU264100  | DIODE       | 1SR139-400      |
| △        | F1 KB000660    | FUSE        | 400mA 250V(ABG) |
| △        | F1 VT272700    | FUSE        | 1.25A(UCR)      |
| △        | F2 KB000660    | FUSE        | 400mA 250V(R)   |
|          | IC1 XB247301   | IC          | uPC4570HA       |
|          | IC2 XB247301   | IC          | uPC4570HA       |
|          | IC3 XP844A00   | IC          | NJM4556AL       |
|          | IC4 XJ602A00   | IC          | NJM78M12FA      |
|          | IC5 XD343A00   | IC          | NJM79M12FA      |
| *        | IC6 XV809A00   | IC          | STK408-040E 25W |
|          | IC7 XB247301   | IC          | uPC4570HA       |
|          | IC8 XB247301   | IC          | uPC4570HA       |
| *        | IC201 XW001A00 | IC          | UDA1321PS       |
|          | IC202 XW243A00 | IC          | M24C02BN6EEPROM |
| *        | JK1 V3666400   | JACK.MNI    | HTJ-035-27A     |
| *        | JK2 V3317500   | JACK.DIN    | 8P              |
| *        | JK3 V3317400   | JACK.MNI    | 1P              |
| *        | JK4 V3317400   | JACK.MNI    | 1P              |
|          | JK5 VV881000   | CN.DIN      | 8P CMS5008-0101 |
|          | JK201 VT267500 | JACK.MNI    | LGY6502-0600    |
| *        | JK202 V3671200 | JACK.USB    | 4P              |
|          | L201 V3233700  | COIL        | 1.5uH           |
|          | L202 FLTR.EMC  |             | ZJY51R5-M4PA    |
| *        | PJ1 V3407500   | JACK.PIN    | 1P              |
| *        | PJ2 VU581900   | JACK.PIN    | HTJ-032-04BB    |
|          | Q1 iC287820    | TR          | 2SC2878 A,B     |
|          | Q2 iC287820    | TR          | 2SC2878 A,B     |
|          | Q3 iA101590    | TR          | 2SA1015 O,Y     |
|          | Q4 iC1815M0    | TR          | 2SC1815 Y,GR    |
|          | Q5 iA101590    | TR          | 2SA1015 O,Y     |
|          | Q6 iC1815M0    | TR          | 2SC1815 Y,GR    |
|          | Q7 iA101590    | TR          | 2SA1015 O,Y     |
|          | Q8 V3028000    | FET         | 2SK304 E        |
|          | Q201 VC407900  | TR          | 2SD1913 R,S     |
|          | R37 HV455100   | R.CAR.FP    | 100Ω 1/4W       |
|          | R38 HV455100   | R.CAR.FP    | 100Ω 1/4W       |
|          | R39 HV453470   | R.CAR.FP    | 4.7Ω 1/4W       |
|          | R46 HV453470   | R.CAR.FP    | 4.7Ω 1/4W       |
|          | R55 HV456100   | R.CAR.FP    | 1KΩ 1/4W        |
|          | R57 HV454820   | R.CAR.FP    | 82Ω 1/4W        |
|          | R58 HV453470   | R.CAR.FP    | 4.7Ω 1/4W       |
|          | R59 VE869300   | R.MTL.OXD   | 0.1Ω 2W         |
|          | R60 HV453100   | R.CAR.FP    | 1Ω 1/4W         |
|          | R61 HV453100   | R.CAR.FP    | 1Ω 1/4W         |
|          | R70 HU597100   | R.MTL.FLM   | 10KΩ 1/4W       |
|          | R71 VH007900   | R.MTL.FLM   | 20KΩ 1/4W       |
|          | R72 HU597100   | R.MTL.FLM   | 10KΩ 1/4W       |
|          | R74 HU597100   | R.MTL.FLM   | 10KΩ 1/4W       |
|          | R217 HV454820  | R.CAR.FP    | 82Ω 1/4W        |
|          | SW1 VS066500   | SW.PUSH     | SPPH13-W        |
|          | TE1 VT658100   | TERM.WRAP   | 352-TX119       |
|          | TE2 VT658100   | TERM.WRAP   | 352-TX119       |
| *        | VR1 V2261700   | VR          | A50KΩ           |

\* New Parts

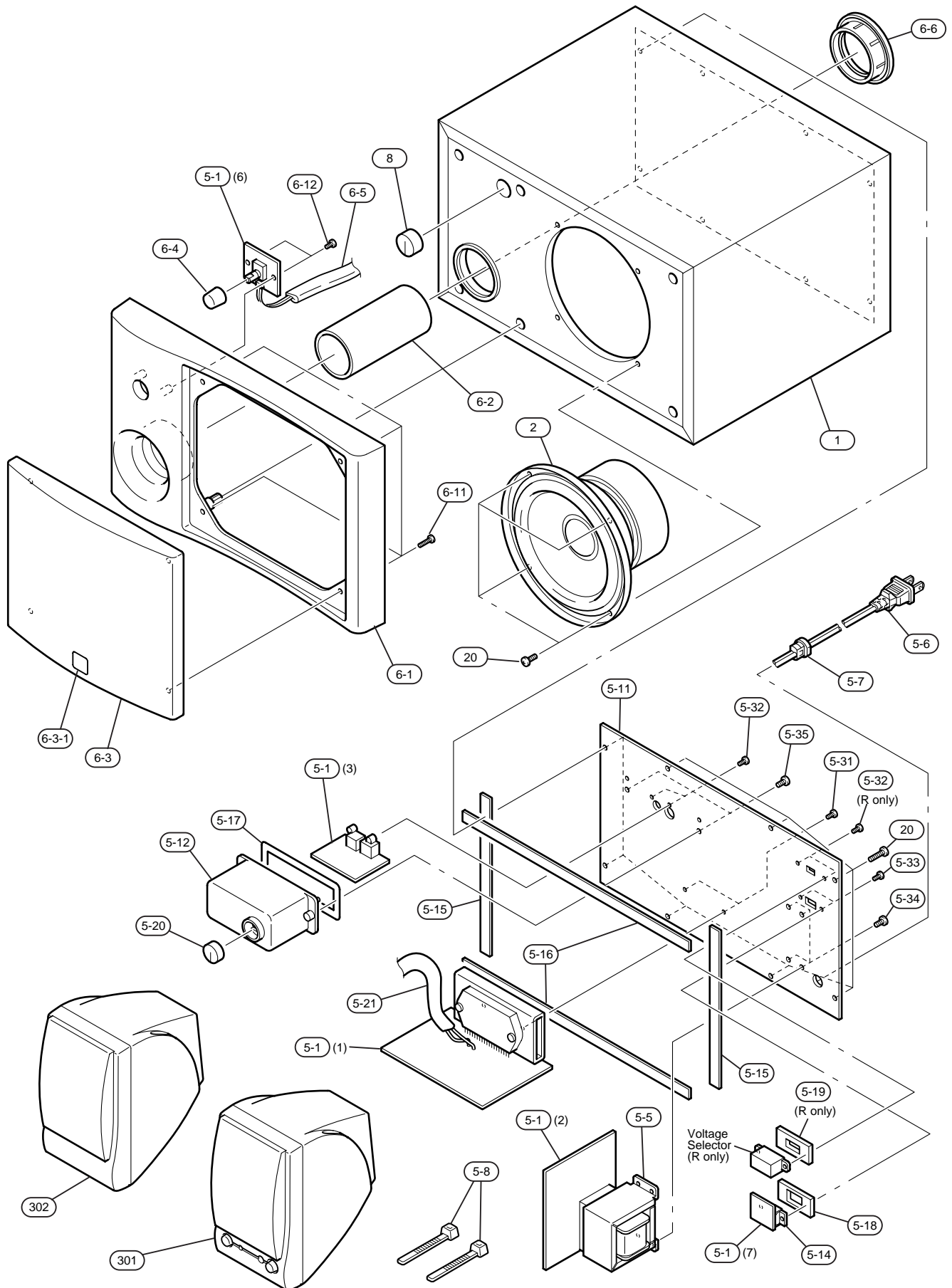
| Schm Ref | PART NO.       | Description |               |
|----------|----------------|-------------|---------------|
|          | VR2 VZ496100   | VR          | A5KΩ          |
| *        | XL201 V3671300 | RSNR.CRYS   | 48MHz         |
| △        | V2572700       | VOLT.SELCT  | (R)           |
|          | BB070700       | GND.MTL     |               |
|          | BB071360       | SCR.TERM    | 8.3x13        |
| *        | V3408500       | RADIATOR    |               |
|          | V4097600       | HOLDER.LED  | LH-5-14       |
|          | Ei030086       | SCR.BND.HD  | 3x8 ZMC2-Y    |
|          | Ei330166       | SCR.BND.HD  | 3x16 FCRM3-BL |

\* New Parts

YST-MS50/YST-MS55D

## YST-MS50

## EXPLODED VIEW (YST-MS50)





YST-MS50

MECHANICAL PARTS (YST-MS50)

| Ref. No.  | PART NO. | Description                  | Remarks        | Markets |
|-----------|----------|------------------------------|----------------|---------|
| * 1       | V3368300 | CABINET                      | WH             |         |
| * 1       | V3368400 | CABINET                      | BL             |         |
| * 2       | XV968A00 | SPEAKER                      | 16cm JA1673    |         |
| * 5- 1    | V3406400 | P.C.B. ASS'Y                 | MAIN           | (UC)    |
| * 5- 1    | V3406500 | P.C.B. ASS'Y                 | MAIN           | (R)     |
| * 5- 1    | V3406600 | P.C.B. ASS'Y                 | MAIN           | (A)     |
| * 5- 1    | V3406700 | P.C.B. ASS'Y                 | MAIN           | (BG)    |
| △* 5- 5   | XW078A00 | POWER TRANSFORMER            |                | (UC)    |
| △* 5- 5   | XW079A00 | POWER TRANSFORMER            |                | (R)     |
| △* 5- 5   | XW080A00 | POWER TRANSFORMER            |                | (A)     |
| △* 5- 5   | XW081A00 | POWER TRANSFORMER            |                | (BG)    |
| △* 5- 6   | MG002320 | POWER CORD                   | 2.5A 250V 2.0m | (G)     |
| △ 5- 6    | V2582500 | POWER CORD                   | 10A 2.0m       | (UC)    |
| △ 5- 6    | VQ790000 | POWER CORD                   | 5A 2.0m        | (B)     |
| △ 5- 6    | VT666200 | POWER CORD ASS'Y             |                | (A)     |
| △ 5- 6    | VZ555600 | POWER CORD                   | 10A 250V 2.0m  | (R)     |
| 5- 7      | CB072750 | CORD STOPPER                 | SR-4N-4        |         |
| 5- 8      | CB069250 | BINDING TIE                  | BK-1           |         |
| * 5-11    | V3369700 | REAR PANEL                   |                | (UC)    |
| * 5-11    | V3369800 | REAR PANEL                   |                | (R)     |
| * 5-11    | V3369900 | REAR PANEL                   |                | (A)     |
| * 5-11    | V3370000 | REAR PANEL                   |                | (BG)    |
| 5-12      | VZ654900 | COVER                        |                |         |
| △ 5-14    | V2574000 | SLIDE SWITCH                 | ESD39304T      | (UC)    |
| △ 5-14    | V2574100 | SLIDE SWITCH                 | ESD39318S      | (RABG)  |
| 5-15      | V2583100 | PACKING                      | A              |         |
| 5-16      | V2583200 | PACKING                      | B              |         |
| 5-17      | VZ653300 | PACKING                      | E              |         |
| 5-18      | V2583400 | PACKING D                    | D              |         |
| 5-19      | VZ653400 | PACKING                      | F              | (R)     |
| 5-20      | VZ655300 | BUSH                         |                |         |
| 5-21      | V2586100 | INSULATOR                    |                |         |
| 5-31      | EN335030 | BIND HEAD BONDING TAP. SCREW | 3x10 FCRM3-BL  |         |
| 5-32      | EX601360 | BIND HEAD P-TITE SCREW       | 3x10 FCRM3-BL  |         |
| 5-33      | ED330086 | BIND HEAD SCREW              | 3x8 FCRM3-BL   |         |
| 5-34      | EK396010 | BIND HEAD S-TITE SCREW       | 4x8 FCRM3-BL   |         |
| * 6- 1    | V3370900 | FRONT PANEL                  |                | WH      |
| * 6- 1    | V3371000 | FRONT PANEL                  |                | BL      |
| * 6- 2    | V3374600 | PORT                         |                |         |
| * 6- 3    | V3371100 | FRONT GRILLE ASS'Y           |                | WH      |
| * 6- 3    | V3371200 | FRONT GRILLE ASS'Y           |                | BL      |
| * 6- 3- 1 | V3371600 | EMBLEM                       |                |         |
| * 6- 4    | V3374700 | KNOB, VOLUME                 |                | WH      |
| * 6- 4    | V3374800 | KNOB, VOLUME                 |                | BL      |
| * 6- 5    | V2586100 | INSULATOR                    |                |         |
| * 6- 6    | V2490000 | PORT RING                    |                |         |
| 6-11      | EK093030 | BIND HEAD P-TITE SCREW       | 3x10 ZMC2-Y    |         |
| 6-12      | EP600280 | BIND HEAD P-TITE SCREW       | 3x8 ZMC2-Y     |         |
| 8         | VZ655300 | BUSH                         |                |         |
| 20        | Ei340206 | BIND HEAD TAPPING SCREW      | 4x20 ZMC2-BL   |         |

\* New Parts

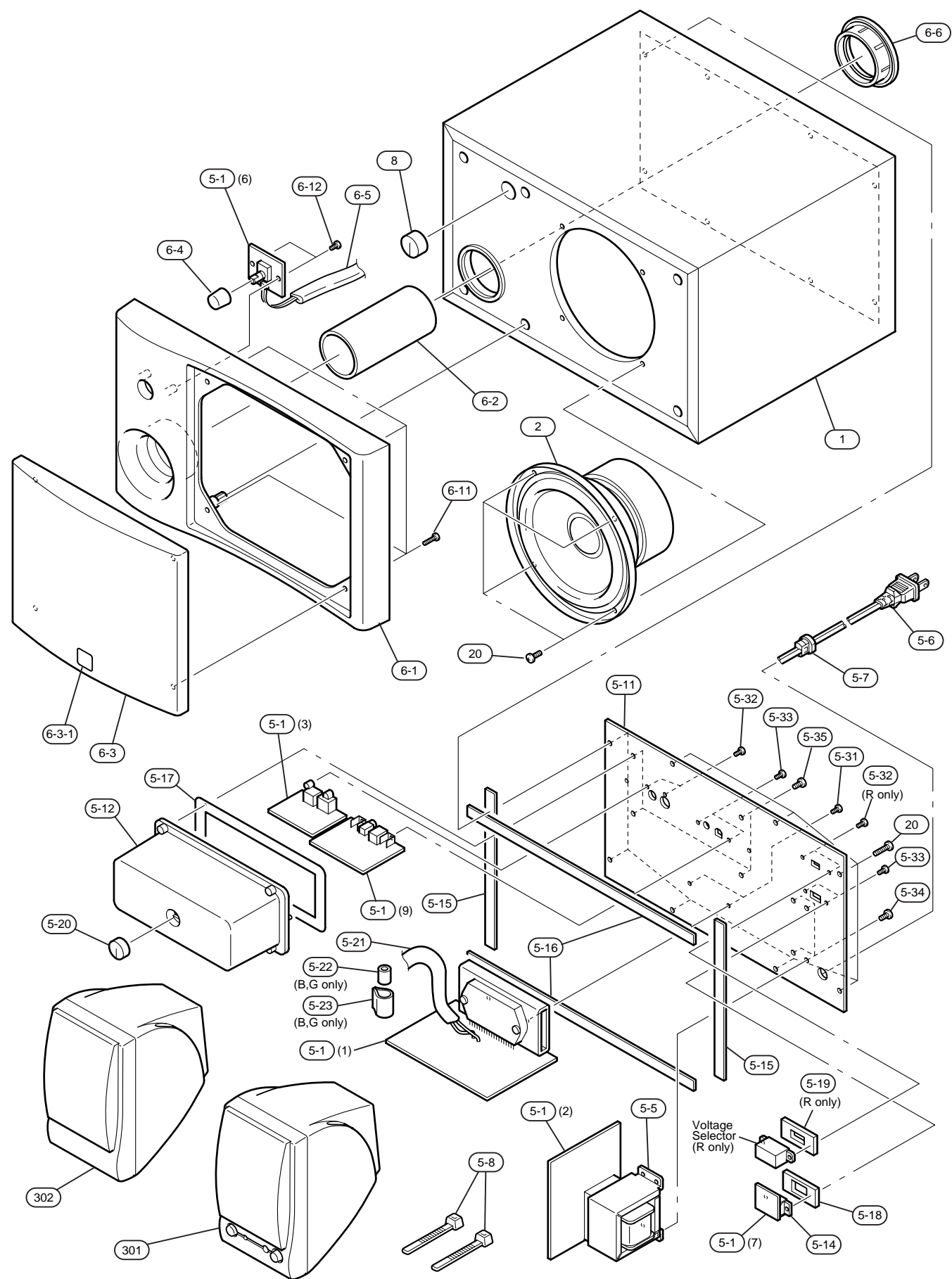
YST-MS50

| Ref. No. | PART NO. | Description            | Remarks  | Markets |
|----------|----------|------------------------|----------|---------|
|          |          | ACCESSORIES            |          |         |
|          | VS494400 | CABLE, MINI PLUG       |          |         |
|          | VT309500 | RCA PIN CABLE          | 1.8m     |         |
|          | VZ663800 | DIN PLUG CABLE         | 8P 1.86m |         |
|          | VS104300 | LEG                    |          |         |
| * 301    | V3371700 | SATELLITE SPEAKER UNIT | R        | WH      |
| * 301    | V3372100 | SATELLITE SPEAKER UNIT | R        | BL      |
| * 302    | V3372500 | SATELLITE SPEAKER UNIT | L        | WH      |
| * 302    | V3372900 | SATELLITE SPEAKER UNIT | L        | BL      |

\* New Parts

## YST-MS55D

## EXPLODED VIEW (YST-MS55D)



## MECHANICAL PARTS (YST-MS55D)

## YST-MS55D

| Ref. No. | PART NO. | Description                  | Remarks         | Markets |
|----------|----------|------------------------------|-----------------|---------|
| * 1      | V3368300 | CABINET                      | WH              |         |
| * 1      | V3368400 | CABINET                      | BL              |         |
| * 2      | XV968A00 | SPEAKER JA1673               | 16cm            |         |
| * 5-1    | V3695600 | P.C.B. ASS'Y                 | MAIN            | (UC)    |
| * 5-1    | V3695700 | P.C.B. ASS'Y                 | MAIN            | (R)     |
| * 5-1    | V3695800 | P.C.B. ASS'Y                 | MAIN            | (A)     |
| * 5-1    | V3695900 | P.C.B. ASS'Y                 | MAIN            | (BG)    |
| △* 5-5   | XW078A00 | POWER TRANSFORMER            |                 | (UC)    |
| △* 5-5   | XW079A00 | POWER TRANSFORMER            |                 | (R)     |
| △* 5-5   | XW080A00 | POWER TRANSFORMER            |                 | (A)     |
| △* 5-5   | XW081A00 | POWER TRANSFORMER            |                 | (BG)    |
| △ 5-6    | MG002320 | POWER CORD                   | 2.5A 250V 2.0m  | (G)     |
| △ 5-6    | V2582500 | POWER CORD                   | 10A 2.0m        | (UC)    |
| △ 5-6    | VQ790000 | POWER CORD                   | 5A 2.0m         | (B)     |
| △ 5-6    | VT666200 | POWER CORD ASS'Y             |                 | (A)     |
| △ 5-6    | VZ555600 | POWER CORD                   | 10A 250V 2.0m   | (R)     |
| 5-7      | CB072750 | CORD STOPPER                 | SR-4N-4         |         |
| 5-8      | CB069250 | BINDING TIE                  | BK-1            |         |
| * 5-11   | V3568400 | REAR PANEL                   |                 | (UC)    |
| * 5-11   | V3568500 | REAR PANEL                   |                 | (R)     |
| * 5-11   | V3568600 | REAR PANEL                   |                 | (A)     |
| * 5-11   | V3568700 | REAR PANEL                   |                 | (BG)    |
| 5-12     | V2489900 | COVER                        |                 |         |
| △ 5-14   | V2574000 | SLIDE SWITCH                 | ESD39304T       | (UC)    |
| △ 5-14   | V2574100 | SLIDE SWITCH                 | ESD39318S       | (RABG)  |
| 5-15     | V2583100 | PACKING                      | A               |         |
| 5-16     | V2583200 | PACKING                      | B               |         |
| 5-17     | V2583300 | PACKING                      | C               |         |
| 5-18     | V2583400 | PACKING D                    | D               |         |
| 5-19     | VZ653400 | PACKING                      | F               |         |
| 5-20     | VZ655300 | BUSH                         |                 | (R)     |
| 5-21     | V2586100 | INSULATOR                    |                 |         |
| * 5-22   | V4510600 | FERRITE CORE                 | HF70RH12X15X7.3 | (BG)    |
| 5-23     | VZ406100 | INSULATOR                    | C               | (BG)    |
| 5-31     | EN335030 | BIND HEAD BONDING TAP. SCREW | 3x10 FCRM3-BL   |         |
| 5-32     | EX601360 | BIND HEAD P-TITE SCREW       | 3x10 FCRM3-BL   |         |
| 5-33     | ED330086 | BIND HEAD SCREW              | 3x8 FCRM3-BL    |         |
| 5-34     | EK396010 | BIND HEAD S-TITE SCREW       | 4x8 FCRM3-BL    |         |
| 5-35     | VB744600 | BIND HEAD P-TITE SCREW       | 4x12 FCRM3-BL   |         |
| * 6-1    | V3538200 | FRONT PANEL                  | WH              |         |
| * 6-1    | V3538300 | FRONT PANEL                  | BL              |         |
| * 6-2    | V3374600 | PORT                         |                 |         |
| * 6-3    | V3371100 | FRONT GRILLE ASS'Y           | WH              |         |
| * 6-3    | V3371200 | FRONT GRILLE ASS'Y           | BL              |         |
| 6-3-1    | V3371600 | EMBLEM                       |                 |         |
| * 6-4    | V3374700 | KNOB, VOLUME                 | WH              |         |
| * 6-4    | V3374800 | KNOB, VOLUME                 | BL              |         |
| 6-5      | V2586100 | INSULATOR                    |                 |         |
| * 6-6    | V2490000 | PORT RING                    |                 |         |
| 6-11     | EK093030 | BIND HEAD P-TITE SCREW       | 3x10 ZMC2-Y     |         |
| 6-12     | EP600280 | BIND HEAD P-TITE SCREW       | 3x8 ZMC2-Y      |         |
| 8        | VZ655300 | BUSH                         |                 |         |
| 20       | Ei340206 | BIND HEAD TAPPING SCREW      | 4x20 MC2-BL     |         |

\* New Parts



## YST-MS55D

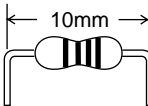
| Ref. No. | PART NO. | Description              | Remarks  | Markets |
|----------|----------|--------------------------|----------|---------|
| *        | V4368200 | ACCESSORIES<br>USB CABLE | 1P 2.0m  |         |
|          | VS494400 | CABLE, MINI PLUG         |          |         |
|          | VT309500 | RCA PIN CABLE            | 1.8m     |         |
|          | VZ663800 | DIN PLUG CABLE           | 8P 1.86m |         |
|          | VS104300 | LEG                      |          |         |
| *        | V4400400 | CD-ROM                   |          |         |
| * 301    | V3565300 | SATELLITE SPEAKER UNIT   | R        | WH      |
| * 301    | V3565700 | SATELLITE SPEAKER UNIT   | R        | BL      |
| * 302    | V3566100 | SATELLITE SPEAKER UNIT   | L        | WH      |
| * 302    | V3566500 | SATELLITE SPEAKER UNIT   | L        | BL      |

\* New Parts

# Parts List for Carbon Resistors

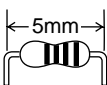
| Value  | 1/4W Type Part No. | 1/6W Type Part No. | Value  | 1/4W Type Part No. | 1/6W Type Part No. |
|--------|--------------------|--------------------|--------|--------------------|--------------------|
| 1.0 Ω  | HJ35 3100          | HF85 3100          | 10 kΩ  | HF45 7100          | HF45 7100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

**1/4W Type**  
HJ35 ○○○○



← 10mm →

**1/6W Type**  
HF85 ○○○○



← 5mm →

\*: Not available

1992