


# ONKYO® SERVICE MANUAL

## A/V Surround Integrated Amplifier MODEL A-SV810PRO

|     |               |
|-----|---------------|
| U D | 120V AC, 60Hz |
|-----|---------------|

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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**ONKYO**  
**AUDIO COMPONENTS**

## SPECIFICATIONS

### AMPLIFIER SECTION

|                                       |   |
|---------------------------------------|---|
| Power Output:                         | BY-PASS (two channel stereo) mode<br>75 watts per channel min. RMS. at 8 ohms, both channels driven, from 20 Hz to 20,000 Hz, with no more than 0.06 % total harmonic distortion.<br>DOLBY PRO-LOGIC mode<br>85 watts per channel min. RMS. at 8 ohms, front L or R or C channel driven, 1,000 Hz with no more than 0.5 % total harmonic distortion.<br>35 watts per channel min. RMS. at 8 ohms, rear L and R channels driven, 1,000 Hz with no more than 1 % total harmonic distortion. |
| Total Harmonic Distortion:            | 0.06 % at rated power (BY-PASS mode)  |
| IM Distortion:                        | 0.06 % at rated power (BY-PASS mode)  |
| Damping Factor:                       | 90 at 8 ohms (FRONT)  |
| Sensitivity and Impedance:            | PHONO: 5 mV/50 kohms<br>CD, TUNER, TAPE/DAT (PLAY), VDP, DBS, VIDEO 1-4 (PLAY):<br>300 mV/50 kohms<br>TAPE/DAT, VIDEO 1-3 (REC):<br>300 mV/2.2 kohms<br>PREOUT/SUB WOOFER:<br>1 V/600 ohms  |
| Phono overload:                       | 110 mV RMS. at 1 kHz, 0.05 % THD.   |
| Frequency Response:                   | 2 to 100,000 Hz, +/-3 dB (BY-PASS mode)   |
| Phono RIAA Deviation:                 | 20 to 20,000 Hz, +/-0.8 dB  |
| Tone Control:                         | BASS: +/-12 dB at 20 Hz<br>MID: +/-12 dB at 850 Hz<br>TREBLE: +/-12 dB at 20 kHz  |
| Signal to Noise Ratio (BY-PASS mode): | PHONO : 80 dB (IHF A, 5 mV input)<br>CD, VDP: 105 dB (IHF A)  |

### VIDEO SECTION

|                            |  |
|----------------------------|--|
| Sensitivity and Impedance: | VDP, DBS, VIDEO 1-4 (PLAY) VIDEO input:<br>1 Vp-p, 75 ohms<br>VIDEO 1-3 (REC), MONITOR OUT VIDEO output:<br>1 Vp-p, 75 ohms<br>VDP, DBS, VIDEO 1, 2, 4 (PLAY) S-VIDEO input:<br>Y signal 1 Vp-p, 75 ohms<br>C signal 0.28 Vp-p, 75 ohms<br>VIDEO 1-2 (REC), MONITOR OUT S-VIDEO output:<br>Y signal 1 Vp-p, 75 ohms<br>C signal 0.28 Vp-p, 75 ohms |
|----------------------------|--|

### GENERAL

|                         |   |
|-------------------------|---|
| Power Supply:           | USA and Canadian model:<br>AC 120 V, 60 Hz            |
| Dimensions (W x H x D): | 455 x 170 x 421 mm<br>17-15/16" x 6-11/16" x 16-9/16" |
| Weight:                 | 17.5 kg., 38.6 lbs.                                   |

### REMOTE CONTROL TRANSMITTER RC-189M

|                         |   |
|-------------------------|---|
| Transmitter:            | Infrared                                      |
| Signal Range:           | Approx. 5 meters (16 ft. 4")                  |
| Power Supply:           | Two "AAA" batteries (1.5 V x 2)               |
| Dimensions (W x H x D): | 67 x 30 x 200 mm<br>2-5/8" x 1-3/16" x 7-7/8" |
| Weight:                 | 150 grams, 5.3 oz.<br>(including batteries)   |

Specifications and features are subject to change without notice.

## PRECAUTIONS

### 1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

| CIRCUIT NO. | PART NO. | DESCRIPTION           |
|-------------|----------|-----------------------|
| F901        | 252052   | 7A ST-6, Primary fuse |
| F921, F922  | 252051   | 6A ST-6, Primary fuse |

### 2. Insulation resistance measurement (Only U.S.A. model)

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specifications; More than 10 MΩ at 500V.

# ADJUSTMENT PROCEDURES

## 1. Idle Current Adjustment

### 1) Preparation

There should be no load and no signal, the volume knob should be at the minimum position, and the speaker and power switches should be off.

#### Note:

The power should be turned off some time previous to adjustment so that the interior of the unit has time to cool.

- 2) Switch power on.
- 3) Adjust semi-fixed resistors R671 - R673 so that the voltage at the test points for the left, center and right channels (P671 - P673) is 4 mV.
- 4) Five minutes later, readjust to 8 mV.

## 2. Auto Input Balance Adjustment

### 1) Preparation

- Short test pin P076 on circuit board NAAF-4057.
  - Connect an oscilloscope (dual-indication) or an AC level meter to the L and R terminals of test pin P075 on circuit board NAAF-4058.
  - Short test pin TP 1 on circuit board NAAF-4075.
  - Short test pin TP 3 on circuit board NAAF-4075.
  - Connect a DC voltmeter (one capable of measuring positive and negative) to test pin TP 2 on circuit board NAAF-4075.
  - Connect an AC level meter to test pin TP 1 and the ground TP on circuit board NAAF-4075.
  - Input a 1 kHz sine wave to one of the sets of input terminals (R and L) other than PHONO and switch the input selector to that position.
  - Set the SURROUND MODE selector to DOLBY PRO LOGIC and the CENTER MODE selector to WIDE BAND.
- 2) Adjust the oscillator level so that the signal level as measured between test pin TP 1 and the ground TP on circuit board NAAF-4075 is 200 mV.
  - 3) Adjust semi-fixed resistor VR 2 on circuit board NAAF-4075 so that the L and R output signal levels at test pin P075 on circuit board NAAF-4058 are as low as possible.
  - 4) Adjust semi-fixed resistor VR 1 on circuit board NAAF-4075 so that the DC voltage at test pin TP 2 is  $0 \pm 5$  mV.
  - 5) Open test pin TP 3 on circuit board NAAF-4075 and confirm that the DC voltage at test pin TP 2 is  $0 \pm 5$  mV.
  - 6) Disconnect measuring equipment and remove test pins.

## 3. Checking the Operation of the Protection Circuit

### Checking current detection

#### 1) Preparation

- Set the SURROUND MODE selector to DOLBY PRO LOGIC and the CENTER MODE selector to WIDE BAND. Set the volume knob to the minimum position and all tone controls to their flat positions.
- Make connections to the input terminals of test point P615 on circuit board NAAF-4048 as shown in the diagram below.

## 2) Left, right and center channel confirmation

Adjust the volume knob so that the output voltage is 35 V peak for the above three channels when there is no load on the amplifier.

- Connect a 2-ohm load and confirm that protection circuitry is not triggered.
- Connect a 1-ohm load and confirm that the protection circuitry is triggered.

## 3) Rear channel confirmation

• Adjust the volume knob so that the output voltage is 25 V peak for the above channels when there is no load on the amplifier.

- Connect a 3-ohm load and confirm that the protection circuitry is not triggered.
- Connect a 1-ohm load and confirm that the protection circuitry is triggered.

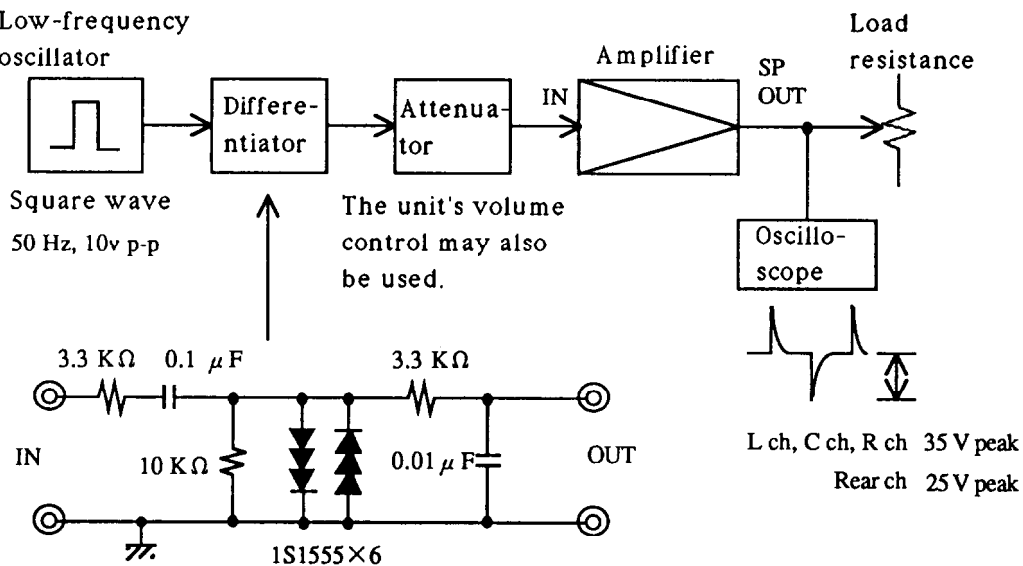
**Note:**

If the condition which triggered the protection circuitry continues, the relay will turn on and off repeatedly. After the third minutes, it remains off.

## Checking DC voltage detection

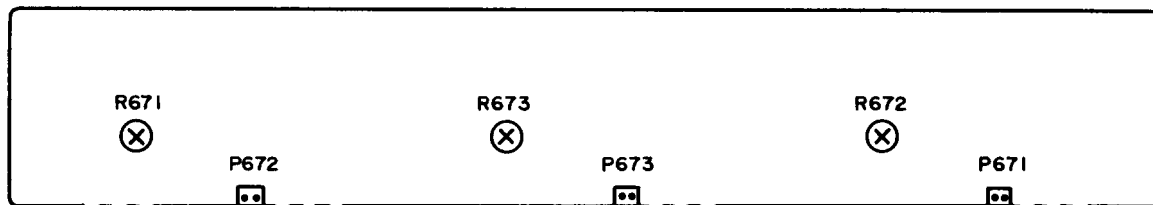
- 1) When there is no load on the amplifier, confirm that the protection circuitry is triggered when a DC voltage of +4 V is applied to test point P615.
- 2) Confirm that the protection circuitry is also triggered when a voltage of -4 V is applied.

## Low-frequency oscillator

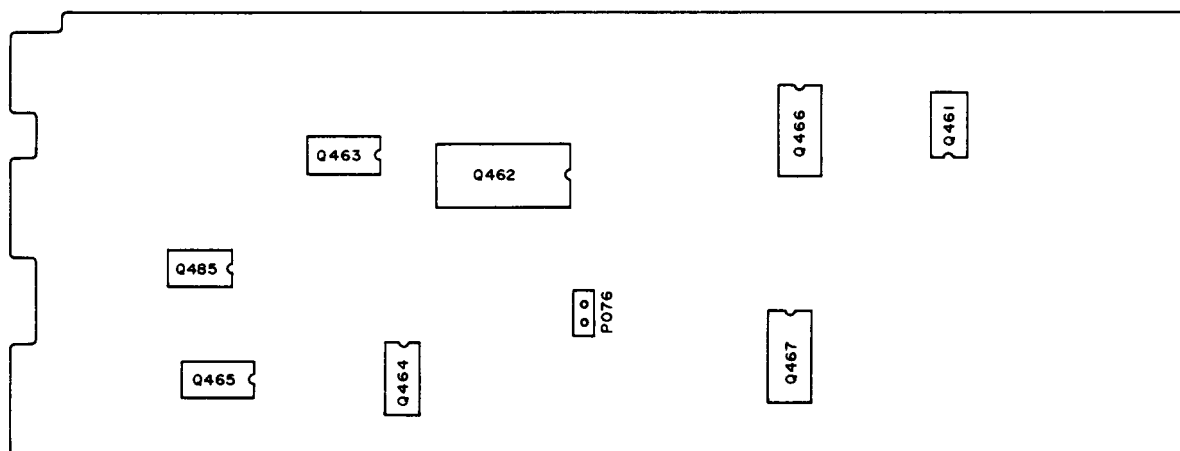


**Test points**

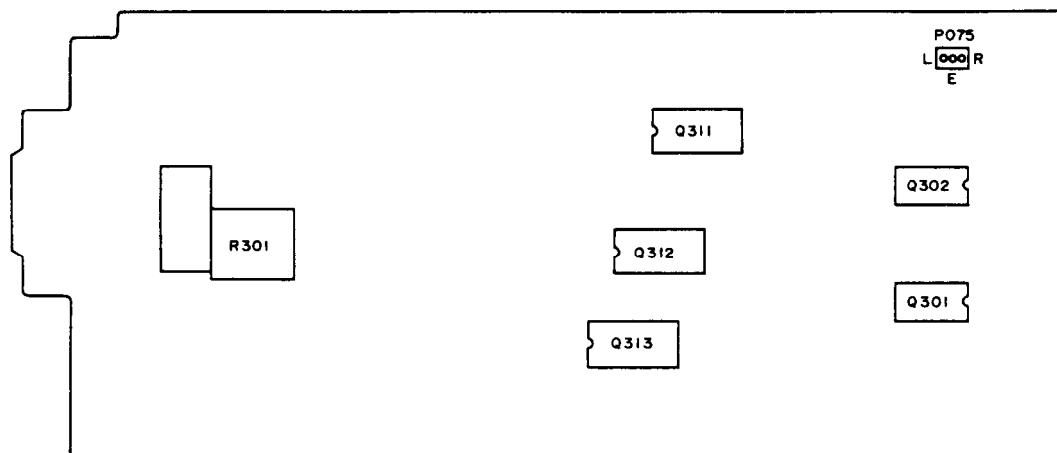
**NAAF-4049 (Bottom side)**



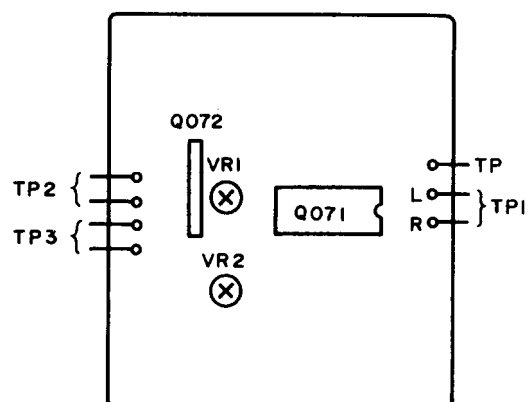
**NAAF-4057 (Component side)**



**NAAF-4058 (Component side)**

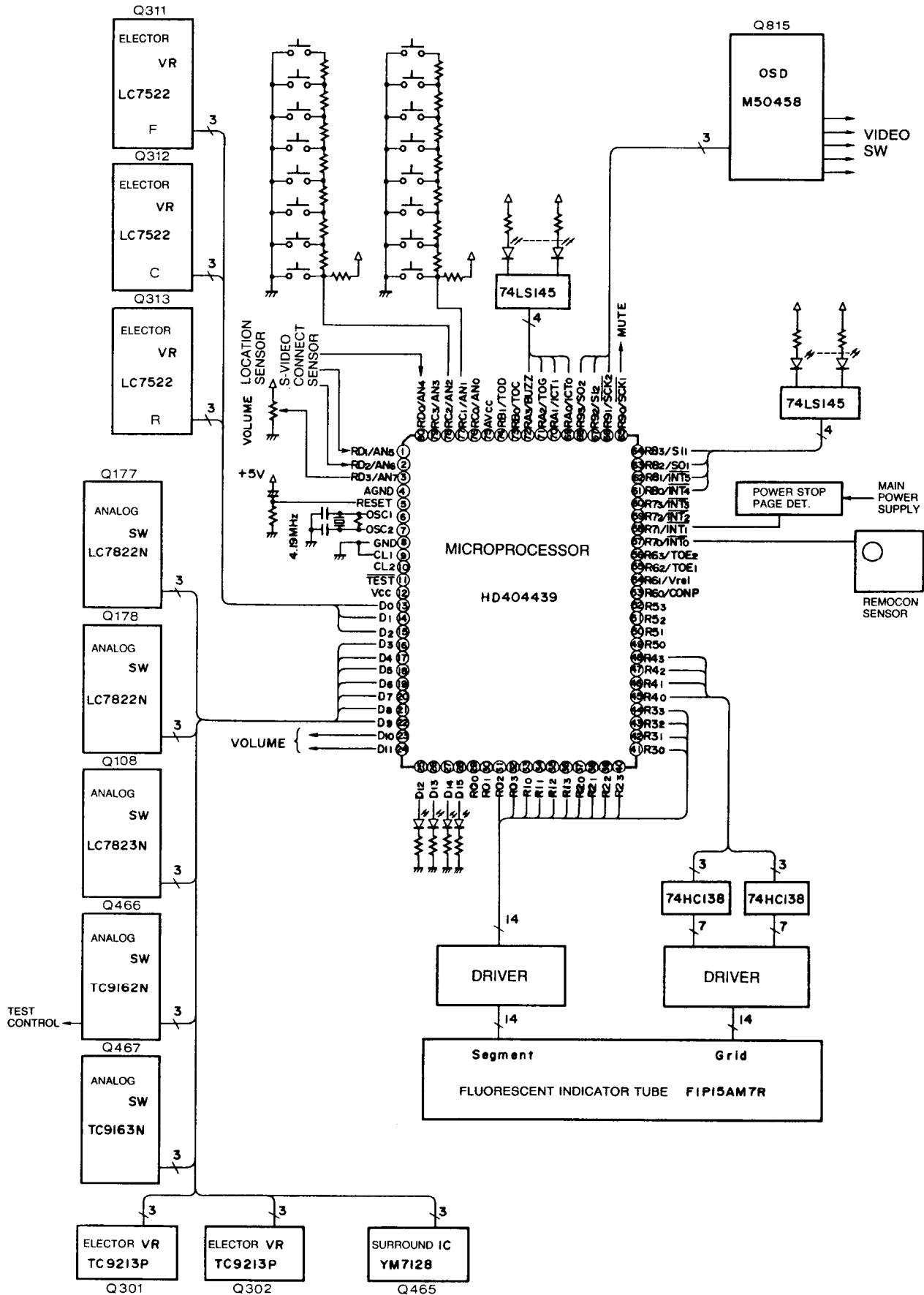


**NAAF-4075 (Component side)**



# IC BLOCK DIAGRAM

## HD404439A18FS (Microprocessor) [HD4074719FS]



**HD404439FS**

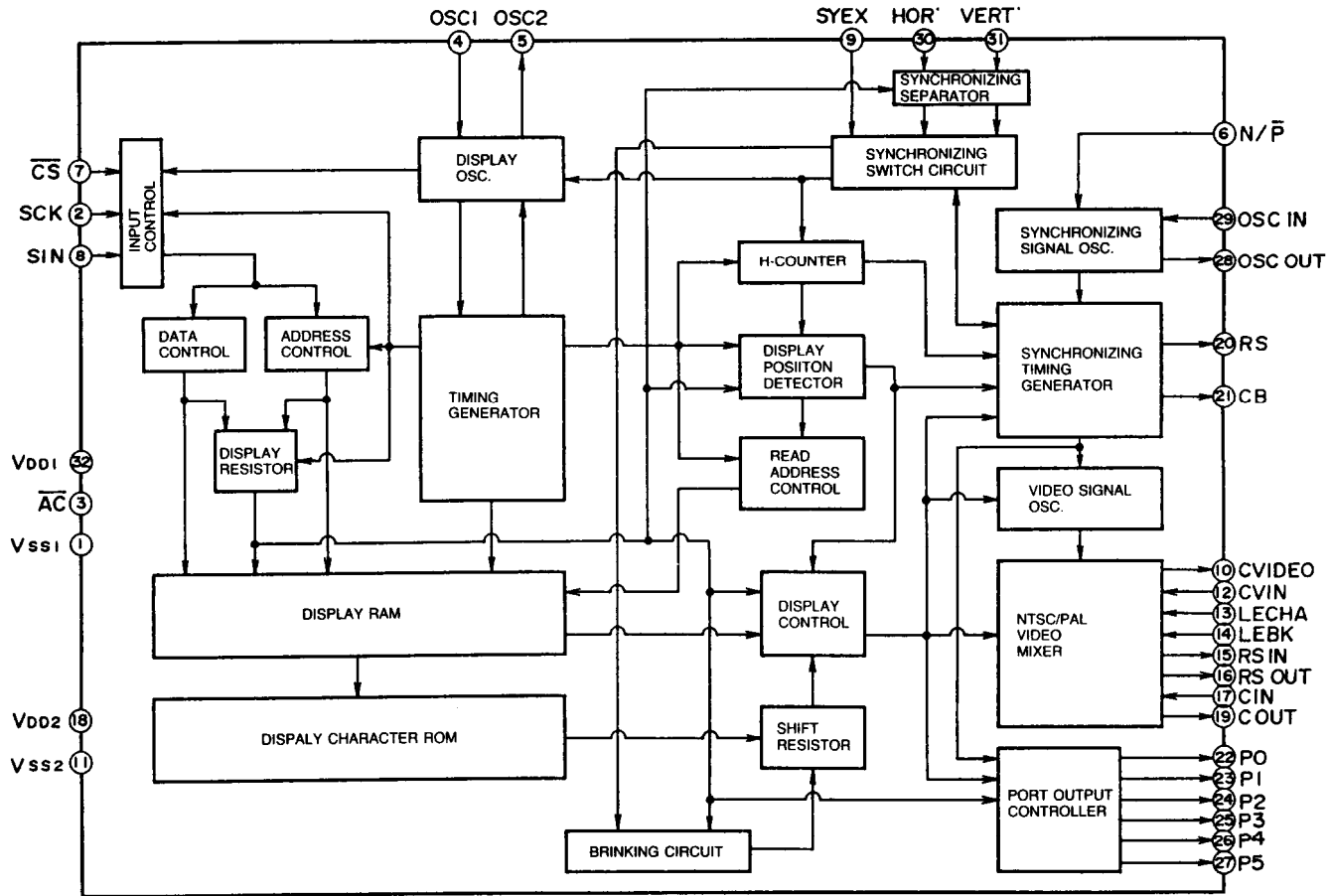
| Pin No.                    | Code            | Function        | Description  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
|----------------------------|-----------------|-----------------|--|----------------------------|---------|---------|------|---|---|-------|---|---|-------|---|---|-------|---|---|
| 1                          | RD1/AN5         | S2              | <p>VIDEO-1/VIDEO-2 S-video terminal connect detect input terminal. The status of two switches is determined through A/D conversion, allowing the detection of whether or not an S-video terminal is connected.</p> <table border="1"> <thead> <tr> <th>A/D conversion value (HEX)</th> <th>VIDEO-2</th> <th>VIDEO-1</th> </tr> </thead> <tbody> <tr> <td>0~6F</td> <td>○</td> <td>○</td> </tr> <tr> <td>70~8D</td> <td>○</td> <td>×</td> </tr> <tr> <td>8E~CF</td> <td>×</td> <td>○</td> </tr> <tr> <td>D0~FF</td> <td>×</td> <td>×</td> </tr> </tbody> </table> <p>○: Connected to S-video terminal<br/>                     ×: Not connected to S-video terminal (Composite)<br/>                     Video-3 is never connected to an S-video terminal.<br/>                     Processing also assumes that TAPE/DAT, TUNER, PHONO and CD are never connected to an S-video terminal.</p> | A/D conversion value (HEX) | VIDEO-2 | VIDEO-1 | 0~6F | ○ | ○ | 70~8D | ○ | × | 8E~CF | × | ○ | D0~FF | × | × |
| A/D conversion value (HEX) | VIDEO-2         | VIDEO-1         |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 0~6F                       | ○               | ○               |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 70~8D                      | ○               | ×               |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 8E~CF                      | ×               | ○               |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| D0~FF                      | ×               | ×               |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 2                          | RD2/AN6         | S3              | <p>VIDEO-4 S-video terminal connect detect input terminal. "L" when VIDEO-4 is connected to an S-video terminal.</p>   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 3                          | RD3/KAN7        | VOL IN          | <p>VOLUME position detect input terminal. The voltage, which is varied by turning the VOLUME knob, is A/D converted. When the value changes, the new value is shown for 4 seconds on the fluorescent display.</p>  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 4                          | AGND            | AGND            | Power supply GND terminal for A/D converter.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 5                          | RESET           | RESET           | Reset input terminal. "H" when active.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 6                          | OSC1            | OSC1            | Ceramic oscillating element (4.19MHz) connecting terminals.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 7                          | OSC2            | OSC2            |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 8                          | GND             | GND             | GND terminal.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 9                          | CL1             | CL1             | Clock crystal oscillating element connecting terminals. Not used. CL1 is connected to GND and CL2 is open.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 10                         | CL20            | CL2             |  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 11                         | TEST            | TEST            | Test terminal. Connected to V <sub>CC</sub> .  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 12                         | V <sub>CC</sub> | V <sub>CC</sub> | Power supply (+5V) connecting terminal.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 13                         | DO              | CLK             | Output terminal for connection to CLK terminal of electronic variable resistor LC7522.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 14                         | D1              | D01             | Output terminal for connection to DI terminal of electronic variable resistor LC7522-F.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 15                         | D2              | D02             | Output terminal for connection to DI terminal of electronic variable resistor LC7522-C and LC7522-R  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 16                         | D3              | CL              | Output terminal for connection to the CL terminals of function switches LC7822N and LC7823N, the CK terminals of TC9162N and TC9173N, the CK terminal of electronic variable resistor TC9213P, and SCI terminal of surround IC YM7128.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 17                         | D4              | DATA            | Output terminal for connection to the DI terminal of function switches LC7822N and LC7823N, the DATA terminals of TC9162N and TC9163N, the DATA terminal of electronic variable resistor TC9213P, and the DIN terminal of surround IC YM7128.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 18                         | D5              | CE              | Output terminal for connection to the CE terminal of function switches LC7822N and LC7823N.  |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |
| 19                         | D6              | ST              | Output terminal for connection to the ST terminals of function switches TC9162N and TC9163N.   |                            |         |         |      |   |   |       |   |   |       |   |   |       |   |   |

| Pin No. | Code | Function         | Description   |
|---------|------|------------------|---|
| 20      | D7   | A0               | Output terminal for connection to the AO terminal of surround IC YM7128.  |
| 21      | D8   | STBC             | Output terminal for connection to the STB terminal of electronic variable resistor TC9213P-C.   |
| 22      | D9   | STBR             | Output terminal for connection to the STB terminal of electronic variable resistor TC9213P-R.   |
| 23      | D10  | VOL DOWN         | Remote control VOL UP/DOWN control signal output terminals. The VOL UP output is "H" when the VOL UP code is input from remote control. The VOL DOWN is "H" when the VOL DOWN code is input.  |
| 24      | D11  | VOL UP           |   |
| 25      | D12  | DBS              | REC SELECTOR display (LED) output terminals. The output corresponding to the current REC SELECTOR position is "H" (lit).  |
| 26      | D13  | VDP              |   |
| 27      | D14  | SOURCE           |   |
| 28      | D15  | STBY/<br>RECEIVE | STAND-BY and RECEIVE display (LED) output terminal. "H" (lit continuously) during power off (standby) status. When power is on, "H" (lit) when codes from the remote control are input for decoding.  |
| 29      | R00  | POWER            | Power supply (POWER) control output terminal. "H" when power is on.   |
| 30      | R01  | FILON            | Fluorescent display filament power supply output terminal. "H" when power is on (except during the rec standby status).   |
| 31      | R02  | Sa               | Segment output terminals. "H" when active.  |
| 32      | R03  | Sb               |   |
| 33      | R10  | Sc               |   |
| 34      | R11  | Sd               |   |
| 35      | R12  | Se               |   |
| 36      | R13  | Sf               |   |
| 37      | R20  | Sg               |   |
| 38      | R21  | Sh               |   |
| 39      | R22  | Sj               | Segment output terminals. "H" when active.  |
| 40      | R23  | Sk               |   |
| 41      | R30  | Sm               |   |
| 42      | R31  | Sn               |   |
| 43      | R32  | Sp               |   |
| 44      | R33  | Sr               |   |
| 45      | R40  | DIGA             | Digit output terminals. Connected to expansion ICs 74HC138 (2), which expand 4-bit data into 16-bit format. (DIGA output is LSB.) Fluorescent grids 14H-1G are "H" (active) corresponding to the values of 1H-EH in the 4-bit output data. A 0H value of output to blank the display. |
| 46      | R41  | DIGB             |   |
| 47      | R42  | DIGC             |   |
| 48      | R43  | DIGD             |   |
| 49      | R50  | EXP/JPN          | Initial setting input terminal for switching the point of destination.<br>H: Export<br>J: Japan   |
| 50      | R51  | PROTECT          | Speaker protection detect input terminal. When "H", the speaker and headphone relays are off.   |
| 51      | R52  | SPON             | Speaker on detect input terminal. When "L", all speaker relays are off (FRONT R/L, CEN R/L, and REAR R/L output are "L"). "H" during normal operation.  |
| 52      | R53  | —                | Not used. Connected to GND.   |



| Pin No.       | Code     | Function | Description  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
|---------------|----------|----------|--|---------------|------|------|------|------|-------|---|---|---|---|-----------|---|---|---|---|-----------|---|---|---|---|--------|---|---|---|---|--------|---|---|---|---|--------|---|---|---|---|--------------|---|---|---|---|-----------|---|---|---|---|-------|---|---|---|---|--------|---|---|---|---|
| 53            | R60/COMP | HPRL     | Headphone relay control output terminal.<br>“H” when on.   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 54            | R61/Vref | FRONTRL  | Front speaker relay control output terminal.<br>“H” when on.   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 55            | R62/TOE1 | CENRL    | Center speaker relay control output terminal.<br>“H” when on.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 56            | R63/TOE2 | REARRL   | Rear speaker relay control output terminal.<br>“H” when on.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 57            | R70/INT0 | REM IN   | Remote control signal input terminal.<br>“L” when active.<br>Connected output of Remocon sensor.   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 58            | R71/INT1 | POFF     | Power interruption detect input terminal.<br>“L” when power interrupted.<br>“L” signals of 100μs or less are ignored.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 59            | R72/INT2 | RECCOMP  | Video signal composite recording output control output terminal.<br>“H” is output when the REC SELECTOR is set to a non S-video source.<br>Always “H” if the source setting is VIDEO-3 or OFF (TAPE/DAT, TUNER, PHONO, CD).  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 60            | R73/INT3 | INPCOMP  | Video signal composite monitor output control output terminal.<br>“H” is output when the REC SELECTOR is set to a S-video source and SYNTAX input is “H”.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 61            | R80/INT4 | SURA     | Surround mode display (LED) output terminal.<br>Connected to expansion IC 74LS145, which expands 4-bit data into 10-bit format. (SURA output is LSB.)<br>The 4-bit output corresponding to the current surround mode position (see table below) causes the display for that position setting to light.   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 62            | R81/INT5 | SURB     |  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 63            | R82/S01  | SURC     |  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 64            | R83/S11  | SURD     |  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
|               |          |          | <table border="1"> <thead> <tr> <th>SURROUND MODE</th> <th>SURD</th> <th>SURC</th> <th>SURB</th> <th>SURA</th> </tr> </thead> <tbody> <tr> <td>DOLBY</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>THEATER-1</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>THEATER-2</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>HALL-1</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>HALL-2</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>HALL-3</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>LIVE CONCERT</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>JAZZ CLUB</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>DISCO</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>BYPASS</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table> | SURROUND MODE | SURD | SURC | SURB | SURA | DOLBY | 0 | 0 | 0 | 0 | THEATER-1 | 0 | 0 | 0 | 1 | THEATER-2 | 0 | 0 | 1 | 0 | HALL-1 | 0 | 0 | 1 | 1 | HALL-2 | 0 | 1 | 0 | 0 | HALL-3 | 0 | 1 | 0 | 1 | LIVE CONCERT | 0 | 1 | 1 | 0 | JAZZ CLUB | 0 | 1 | 1 | 1 | DISCO | 1 | 0 | 0 | 0 | BYPASS | 1 | 0 | 0 | 1 |
| SURROUND MODE | SURD     | SURC     | SURB   | SURA          |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| DOLBY         | 0        | 0        | 0  | 0             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| THEATER-1     | 0        | 0        | 0  | 1             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| THEATER-2     | 0        | 0        | 1  | 0             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| HALL-1        | 0        | 0        | 1  | 1             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| HALL-2        | 0        | 1        | 0  | 0             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| HALL-3        | 0        | 1        | 0  | 1             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| LIVE CONCERT  | 0        | 1        | 1  | 0             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| JAZZ CLUB     | 0        | 1        | 1  | 1             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| DISCO         | 1        | 0        | 0  | 0             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| BYPASS        | 1        | 0        | 0  | 1             |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 65            | R90/SCK1 | MUTE     | Muting control output terminal. “H” when active.<br>Output a muting signal to prevent click noise from being output when the input selector setting is changed, etc.<br>Also, “H” is output continuously when MUTING ON is received from the remote control. (A single output is used for both the mute function which masks clicks and the remote control’s muting function.)   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 66            | R91/SCK2 | SCK      | Output terminal connected to the SCK terminal of OSD IC M50458.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 67            | R92/SI2  | CS       | Output terminal connected to the CS terminal of OSD IC M50458.   |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |
| 68            | R93/SO2  | SO       | Output terminal connected to the SIN terminal of OSD IC M50458.  |               |      |      |      |      |       |   |   |   |   |           |   |   |   |   |           |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |              |   |   |   |   |           |   |   |   |   |       |   |   |   |   |        |   |   |   |   |

| Pin No.                    | Code        | Function  | Description  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|----------------------------|-------------|---|--|----------------------------|-------------|---|-------|------------|-------|--------|---|---|-------|-----|---|-------|---|---|--------|---|---|---|---|--------|---|---|---|---|--------|---|---|---|---|--------|---|---|---|---|----------|---|---|---|---|-------|---|---|---|---|-------|---|---|---|---|----|---|---|---|---|
| 69                         | RA0/ICT0    | INPA  | Input selector display (LED) output terminals, Connected to expansion IC 74LS145, which expands 4-bit data into 10-bit format. (INPA output is LSB.)<br>The 4-bit output corresponding to the current input selector position (see table below) causes the display for that position setting to light.   |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 70                         | RA1/ICT1    | INPB  |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 71                         | RA2/TOG     | INPC  |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 72                         | RA3/BUZZ    | INPD  |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|                            |             |   | <table border="1"> <thead> <tr> <th>INPUT SELECTOR</th> <th>INPD</th> <th>INPC</th> <th>PINB</th> <th>INPA</th> </tr> </thead> <tbody> <tr> <td>VDP</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>DBS</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>VIDEO1</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>VIDEO2</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>VIDEO3</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>VIDEO4</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>TAPE/DAT</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>TUNER</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>PHONO</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>CD</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table> | INPUT SELECTOR             | INPD        | INPC  | PINB  | INPA       | VDP   | 0      | 0 | 0 | 0     | DBS | 0 | 0     | 0 | 1 | VIDEO1 | 0 | 0 | 1 | 0 | VIDEO2 | 0 | 0 | 1 | 1 | VIDEO3 | 0 | 1 | 0 | 0 | VIDEO4 | 0 | 1 | 0 | 1 | TAPE/DAT | 0 | 1 | 1 | 0 | TUNER | 0 | 1 | 1 | 1 | PHONO | 1 | 0 | 0 | 0 | CD | 1 | 0 | 0 | 1 |
| INPUT SELECTOR             | INPD        | INPC  | PINB   | INPA                       |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| VDP                        | 0           | 0   | 0  | 0                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| DBS                        | 0           | 0   | 0  | 1                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| VIDEO1                     | 0           | 0   | 1  | 0                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| VIDEO2                     | 0           | 0   | 1  | 1                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| VIDEO3                     | 0           | 1   | 0  | 0                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| VIDEO4                     | 0           | 1   | 0  | 1                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| TAPE/DAT                   | 0           | 1   | 1  | 0                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| TUNER                      | 0           | 1   | 1  | 1                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| PHONO                      | 1           | 0   | 0  | 0                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| CD                         | 1           | 0   | 0  | 1                          |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|                            |             |   | FH is output to blank all input selector displays  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 73                         | RBO/TOC     | PLAYER  | Remote control turntable control output terminal.<br>"H" when active.<br>If the input selector is set to PHONO, a 200ms "H" pulse is output when the K64 code (PLAY/REJECT) is input.  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 74                         | RB1/TOD     | SYS OUT/<br>SYS EN                              | System code output terminal. "L" when active.<br>At power-on, the initial setting input SYS EN determines whether the system code is output.   |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|                            |             |   | <table border="1"> <thead> <tr> <th>SYS EN</th> <th>SYSTEM CODE</th> <th rowspan="3">IF SYS EN=0, this port remains in input status.</th> </tr> </thead> <tbody> <tr> <td>L (0)</td> <td>Not output</td> </tr> <tr> <td>H (1)</td> <td>Output</td> </tr> </tbody> </table>   | SYS EN                     | SYSTEM CODE | IF SYS EN=0, this port remains in input status. | L (0) | Not output | H (1) | Output |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| SYS EN                     | SYSTEM CODE | IF SYS EN=0, this port remains in input status. |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| L (0)                      | Not output  |   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| H (1)                      | Output      |   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 75                         | AVCC        | AVCC  | Power supply connector terminal for A/D converter  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 76                         | RCO/ANO     | SYS IN  | System code input terminal.<br>"H" when active.  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 77                         | RC1/AN1     | K1  | Key (momentary) input terminal.<br>The key resistive potential is divided for and into the A/D converter.  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 78                         | RC2/AN2     | K2  |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 79                         | RC3/AN3     | SYNCEX  | OSD IC sync signal external/internal switching input terminal.<br>"H" for external sync (superimpose), "L" for internal sync (blue back).  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 80                         | RDO/AN4     | S1  | VDP, DBS S-video terminal detect input terminal.<br>The status of two switches is determined through A/D conversion, allowing the detection of whether or not an S-video terminal is connected.  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|                            |             |   | <table border="1"> <thead> <tr> <th>A/D conversion value (HEX)</th> <th>DBS</th> <th>VDP</th> </tr> </thead> <tbody> <tr> <td>0~6F</td> <td>○</td> <td>○</td> </tr> <tr> <td>70~8D</td> <td>○</td> <td>×</td> </tr> <tr> <td>8E~CF</td> <td>×</td> <td>○</td> </tr> <tr> <td>D0~FF</td> <td>×</td> <td>×</td> </tr> </tbody> </table>  | A/D conversion value (HEX) | DBS         | VDP   | 0~6F  | ○          | ○     | 70~8D  | ○ | × | 8E~CF | ×   | ○ | D0~FF | × | × |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| A/D conversion value (HEX) | DBS         | VDP   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 0~6F                       | ○           | ○   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 70~8D                      | ○           | ×   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| 8E~CF                      | ×           | ○   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
| D0~FF                      | ×           | ×   |  |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |
|                            |             |   | ○: Connected to S-video terminal<br>×: Not connected to S-video terminal (composite)   |                            |             |   |       |            |       |        |   |   |       |     |   |       |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |        |   |   |   |   |          |   |   |   |   |       |   |   |   |   |       |   |   |   |   |    |   |   |   |   |



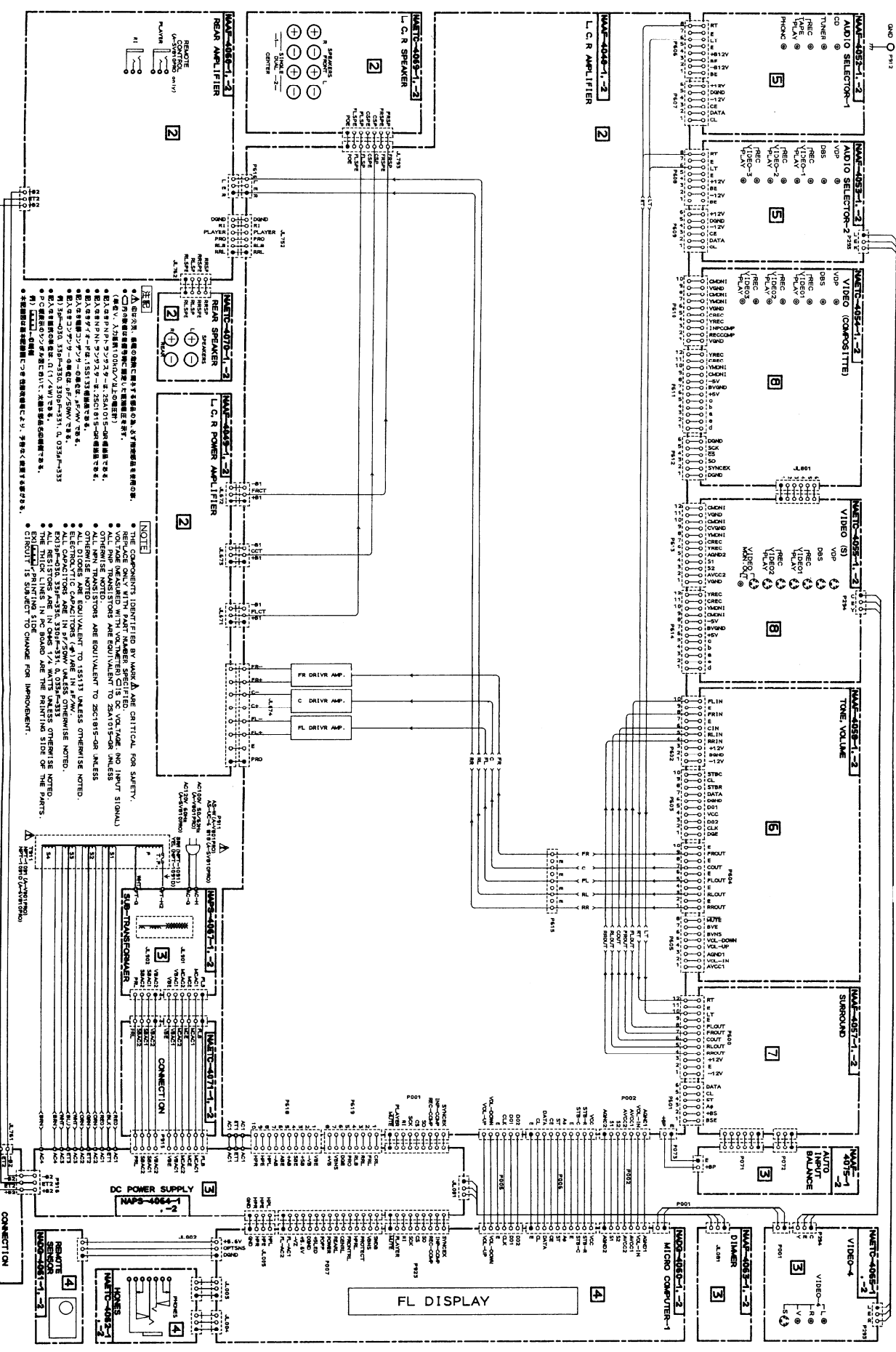
| Pin No. | Code              | Terminal Name                          | Function Description   |
|---------|-------------------|--|--|
| 1       | V <sub>SS1</sub>  | Ground terminal                        | The ground terminal for the digital circuitry; connected to GND.   |
| 2       | SCK               | Serial clock input                     | When the CS terminal is "L", SIN serial data is read in at the rising edge of SCK.<br>Hysteresis input.  |
| 3       | $\overline{AC}$   | Aut-clear input                        | When "L", the internal IC circuitry is reset Hysteresis input.   |
| 4       | OSC1              | Oscillator                             | These are the external terminals for the oscillator circuit. The reference oscillating frequency is 7MHz. This oscillating frequency is used to determine the horizontal display position and character width on the TV screen. LC and CR oscillation are supported. |
| 5       | OSC2              | External                               |  |
| 6       | N/ $\overline{P}$ | NTSC/ $\overline{PAL}$ Switching input | This is switching terminal for NTSC and PAL sync signal generation.<br>When "H" an NTSC sync signal is generated, when "L", a PAL sync signal.   |
| 7       | $\overline{CS}$   | Chip select input                      | This is the chip select terminal. It is "L" during serial data transfer.   |
| 8       | SIN               | Serial data input                      | Serial data and address signals for display control registers and display data memory are input.   |

| Pin No. | Code             | Terminal Name               | Function Description   |
|---------|------------------|-----------------------------|--|
| 9       | SYEX             | Sync signal switching input | Switching terminal for external and internal sync signals. "H" for the external sync mode and "L" for the internal sync mode.<br>SYEX consists of the EX resistor at address 295 in the display control register and logical sum of the internal sync precedence. If SYEX is "L", internal sync is selected regardless of the contents of the EX resistor. |
| 10      | CVIDEO           | Composite video output      | This is the composite video signal output terminal. The 2Vp-p composite video signal is output. When superimposing is used, character output, etc. is overlaid onto the external composite video signal from CVIN.<br>During independent Y-C output, the Y (luminosity) signal is output.  |
| 11      | V <sub>SS2</sub> | Ground terminal             | The ground terminal for the analog circuitry connected to GND.   |
| 12      | CVIN             | Composite video input       | This is the composite video signal input terminal. The 2Vp-p composite video signal is clamped externally and input.<br>When superimposing is used, character output, etc. is overlaid onto the composite video signal.<br>During independent Y-C output, the Y (luminosity) signal is input.  |
| 13      | LECHA            | Character level input       | The signal input to this terminal is used to determine the white level of superimposed characters in the composite video signal.   |
| 14      | LEBK             | Blanking level input        | The signal input to this terminal is used to determine the black level of superimposed characters and the blanking level in the composite video signal.  |
| 15      | RSIN             |                             | This is the video signal input terminal for when internal sync is used. The signal output from RSOUT is input here.  |
| 16      | RSOUT            |                             | This is the video signal output terminal for when internal sync is used. It is connected to the RSIN terminal.   |
| 17      | CIN              |                             | This is the input terminal for signal the C (chroma) signal during independent Y-C output.   |
| 18      | V <sub>DD2</sub> | Power supply terminal       | This is the power supply terminal for the analog circuitry; it is connected to a -5V power supply.   |
| 19      | COUT             |                             | This is the output terminal for the C (chroma) signal during independent Y-C output.   |
| 20      | RS               | Carrier color signal output | This is the carrier color signal output for the video signal. A signal with a phase angle based on the color burst signal CB is output. Amplitude: 5V.   |
| 21      | CB               | Color burst signal output   | A 3.58MHz (NTSC) or 4.43MHz (PAL) color burst signal is output. Amplitude: 5V.   |
| 22      | P0               | Port 0 output               | Can be switched between port terminal output and YM (luminance) signal output.<br>The polarity of the YM signal can be selected when the character ROM is specified.   |

| Pin No.  | Code             | Terminal Name                                 | Function Description   |
|----------|------------------|---|--|
| 23       | P1               | Port 1 output                                 | Can be switched between port terminal output and BLINK (video blanking) signal output.<br>The polarity for the BLINK signal can be selected when the character ROM is specified. |
| 24       | P2               | Port 2 output                                 | Can be switched between port terminal output and B (blue) signal output.<br>The polarity of the B signal can be selected when the character ROM is specified.                    |
| 25       | P3               | Port 3 output                                 | Can be switched between port terminal output and G (green) signal output.<br>The polarity of the G signal can be selected when the character ROM is specified.                   |
| 26       | P4               | Port 4 output                                 | Can be switched between port terminal output and R (red) signal output.<br>The polarity of the R signal can be selected when the character ROM is specified.                     |
| 27       | P5               | Port 5 output                                 | Can be switched between port terminal output and CSYN (composite sync) signal output.  |
| 28<br>29 | OSCIN<br>OSCOU   | Oscillator circuit for sync signal generation | This is the external terminal for sync signal generation. It must be made to oscillate at 14.32MHz (NSCT) or 17.73MHz (PAL).   |
| 30       | HOR              | Horizontal sync signal input                  | This is the horizontal sync signal input terminal.<br>Hysteresis input.<br>The polarity can be selected when the character ROM is specified.                                     |
| 31       | VERT             | Vertical sync signal input                    | This is the vertical sync signal input terminal.<br>Hysteresis input.<br>The polarity can be selected when the character ROM is specified.                                       |
| 32       | V <sub>DD1</sub> | Power supply terminal                         | This is the power supply terminal for the digital circuitry; it is connected to a +5V power supply.  |

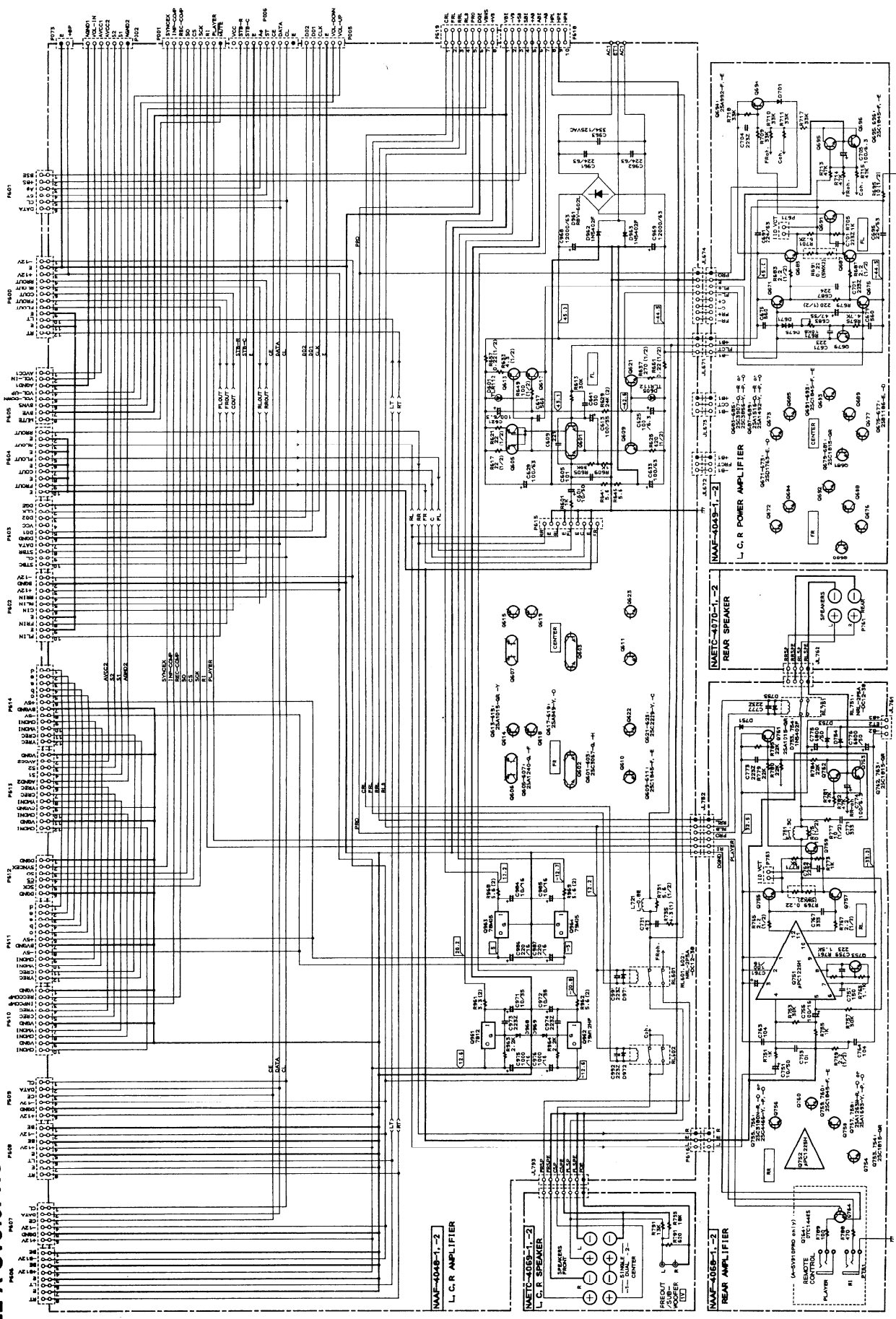
# SCHEMATIC DIAGRAM PART-1 MODEL A-SV810PRO

A B C D E F G



A B C D E F G

# SCHEMATIC DIAGRAM PART-2 MODEL A-SV810PRO



ONKYO CORPORATION

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1

2

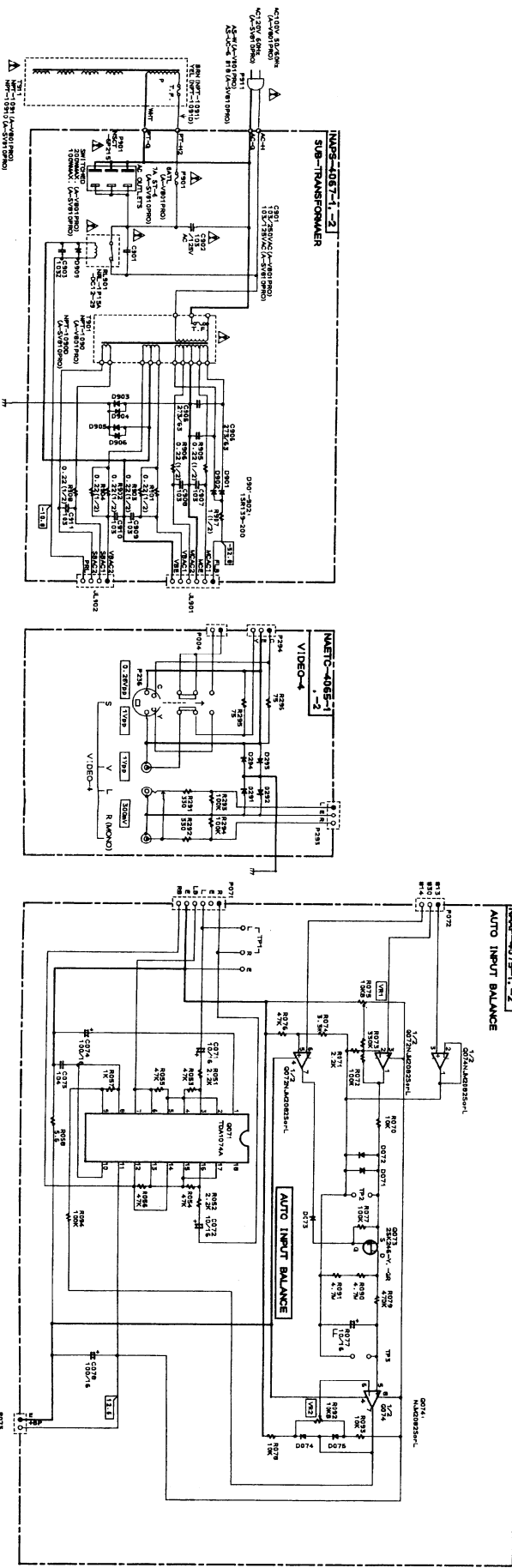
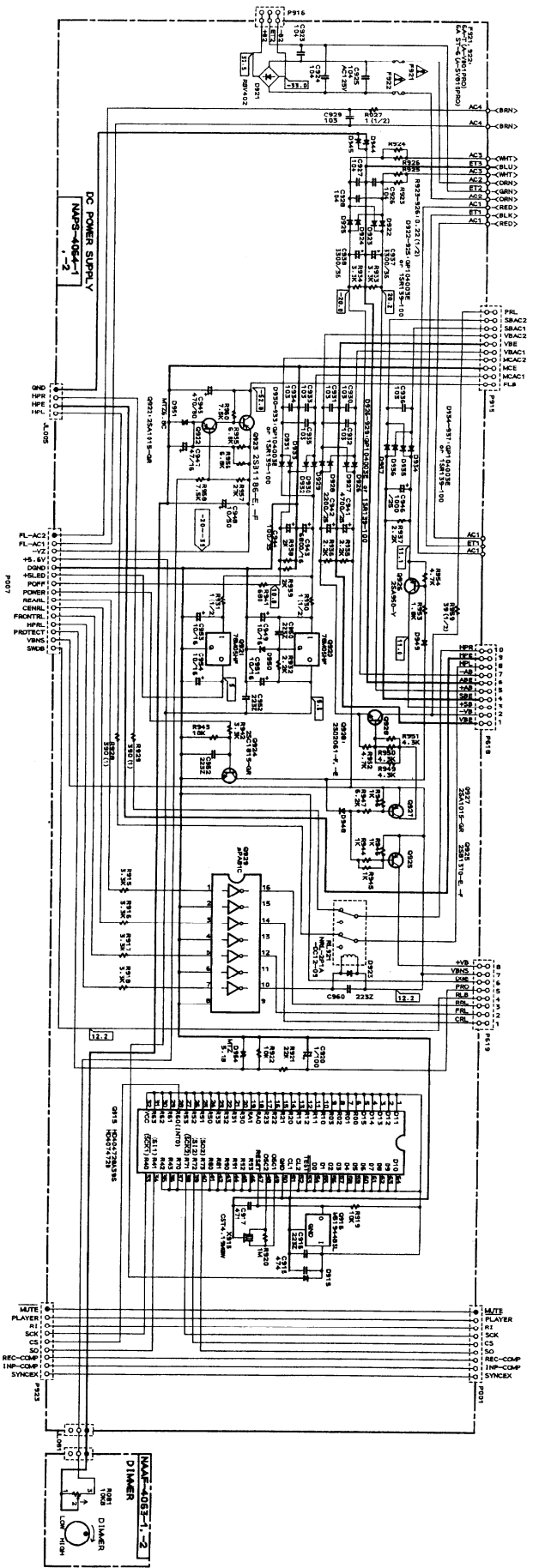
3

4

5

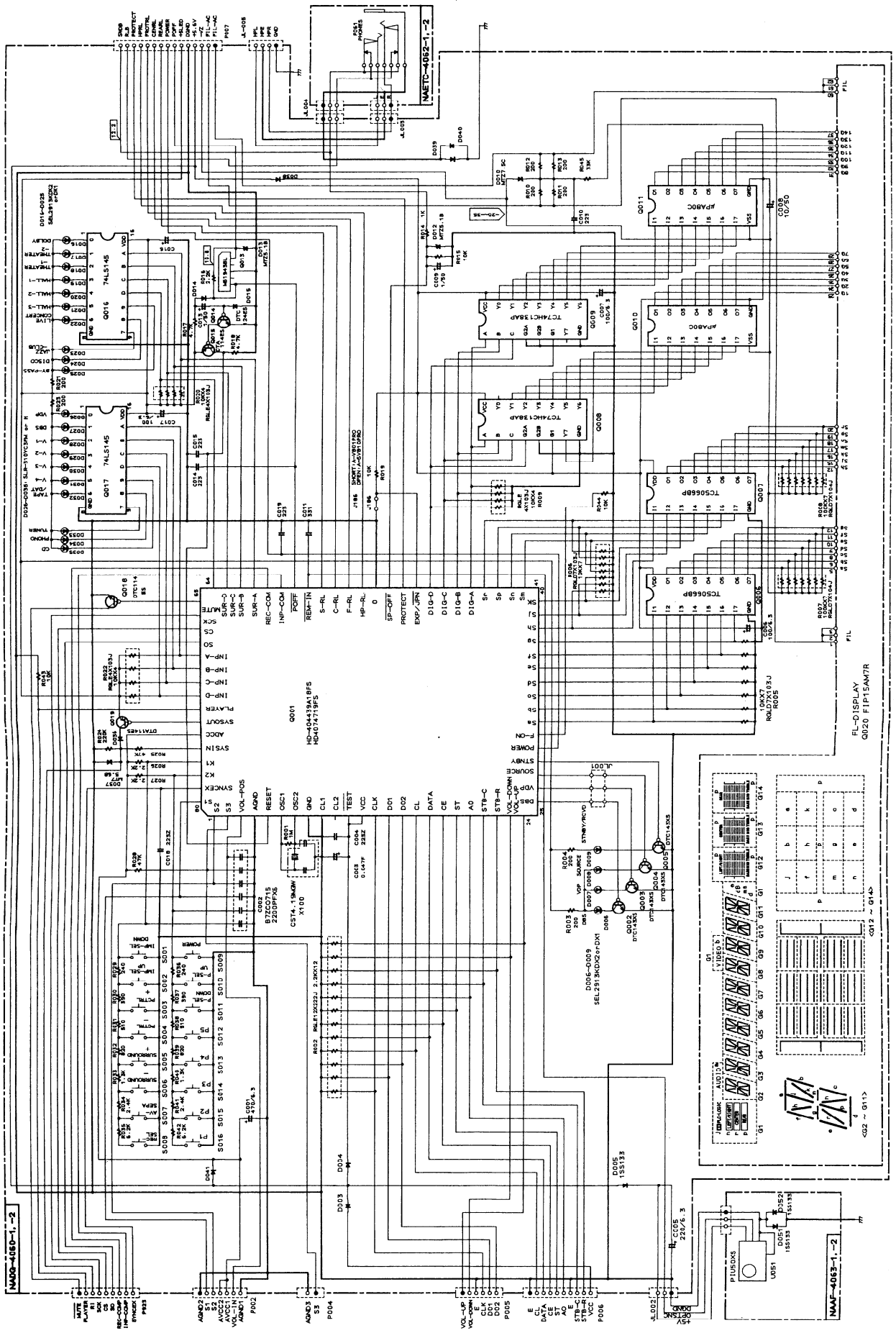
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A B C D E F G

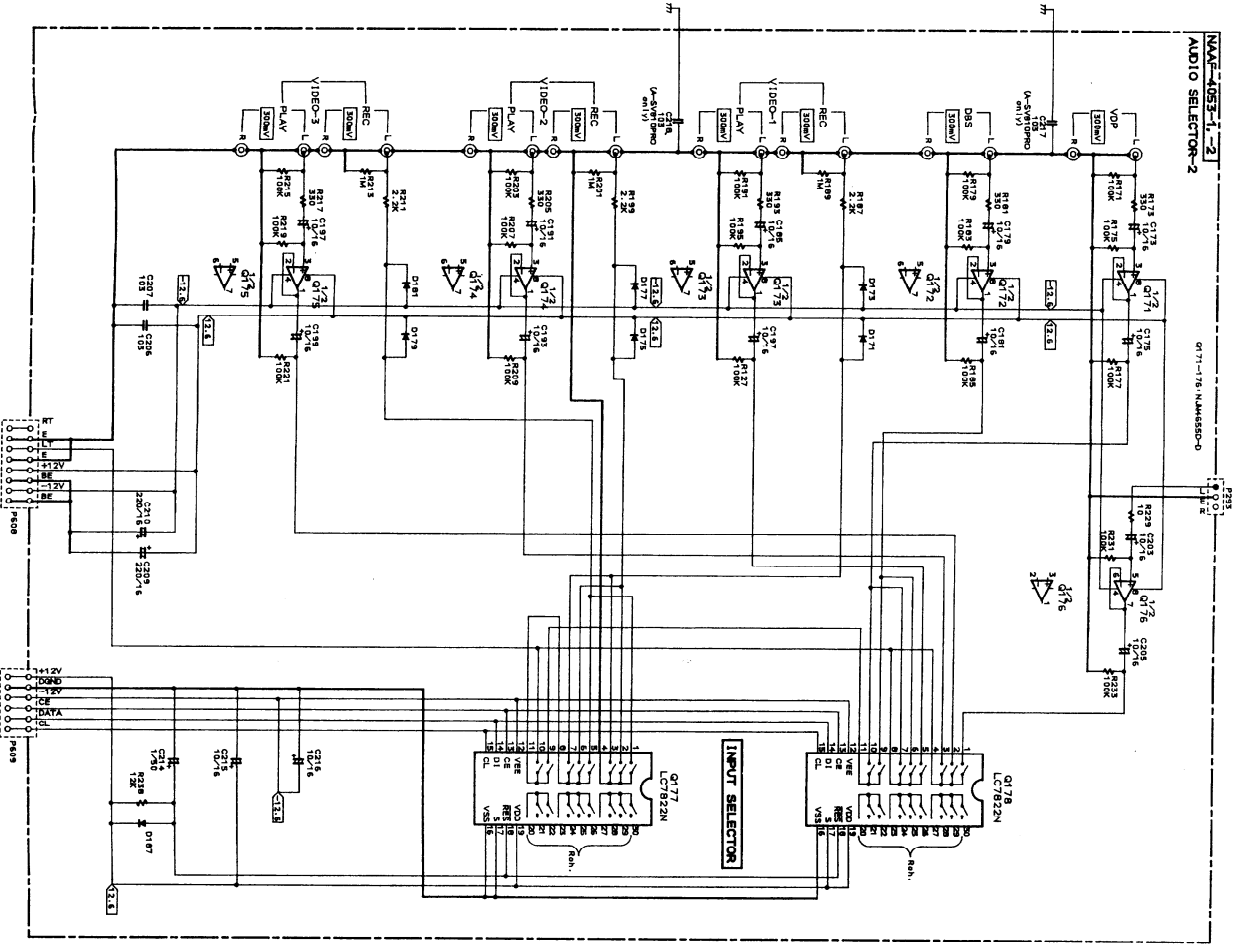
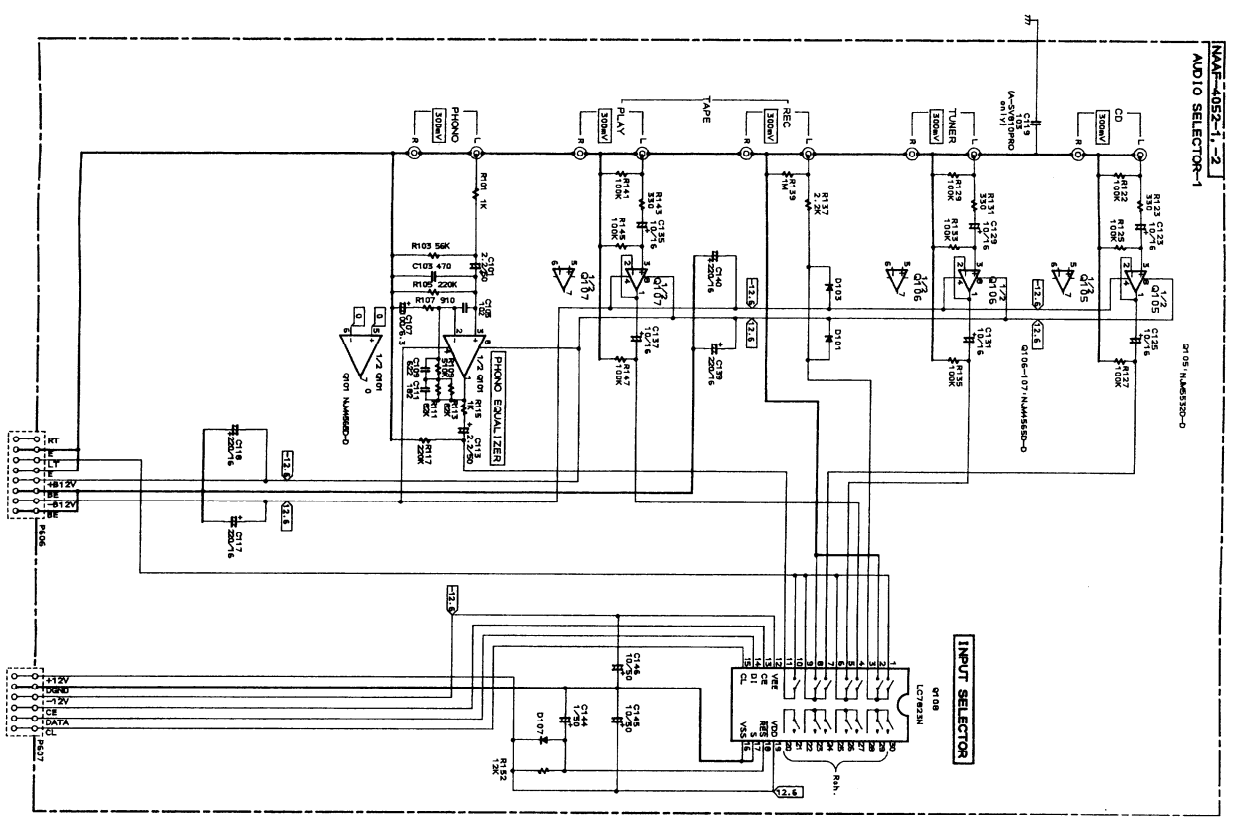




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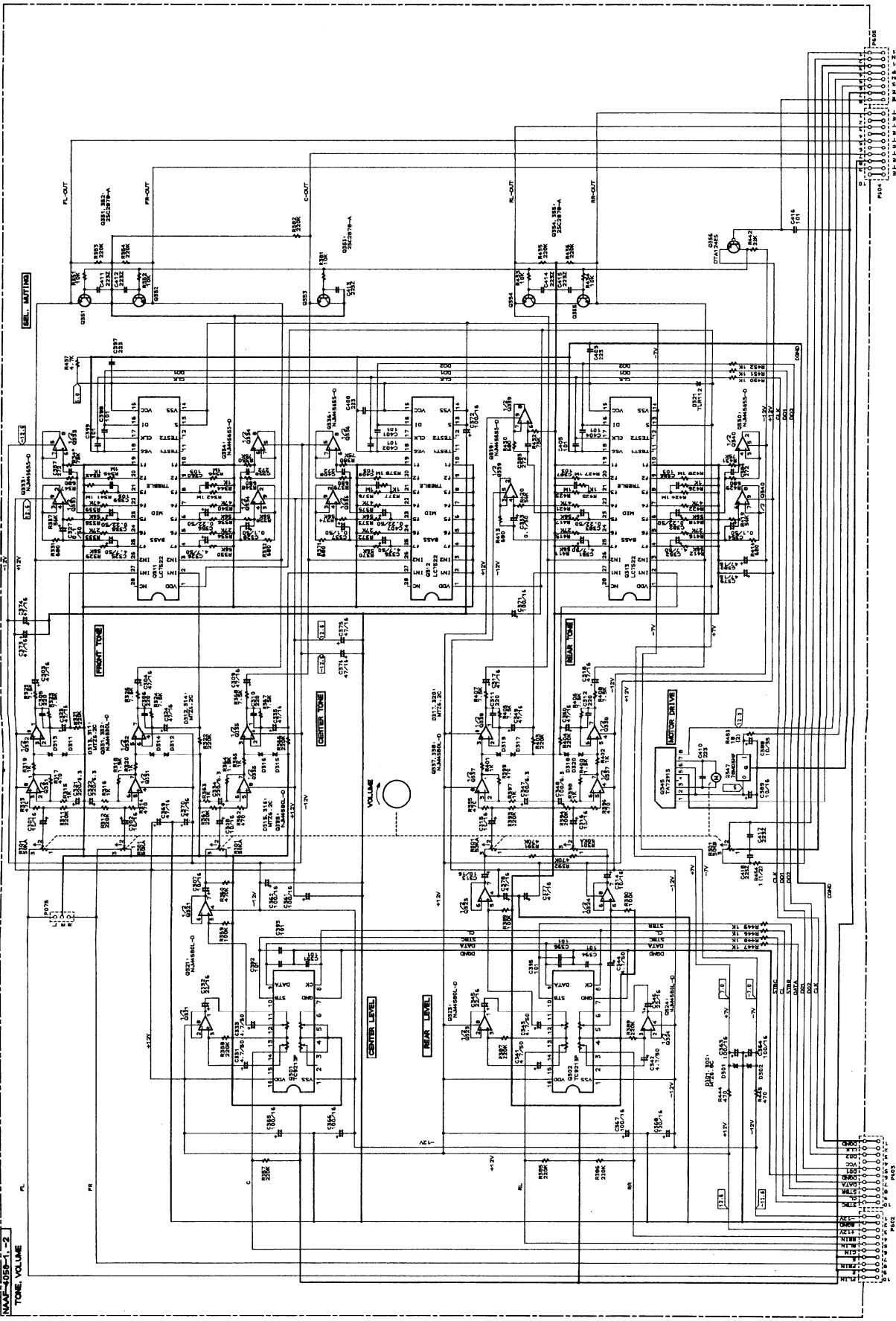
# SCHEMATIC DIAGRAM PART-5 MODEL A-SV810PRO



ONKYO CORPORATION

A B C D E F G H

**SCHEMATIC DIAGRAM PART-6  
MODEL A-SV810PRO**



NAME: 4053-1, -2  
TONE, VOLUME

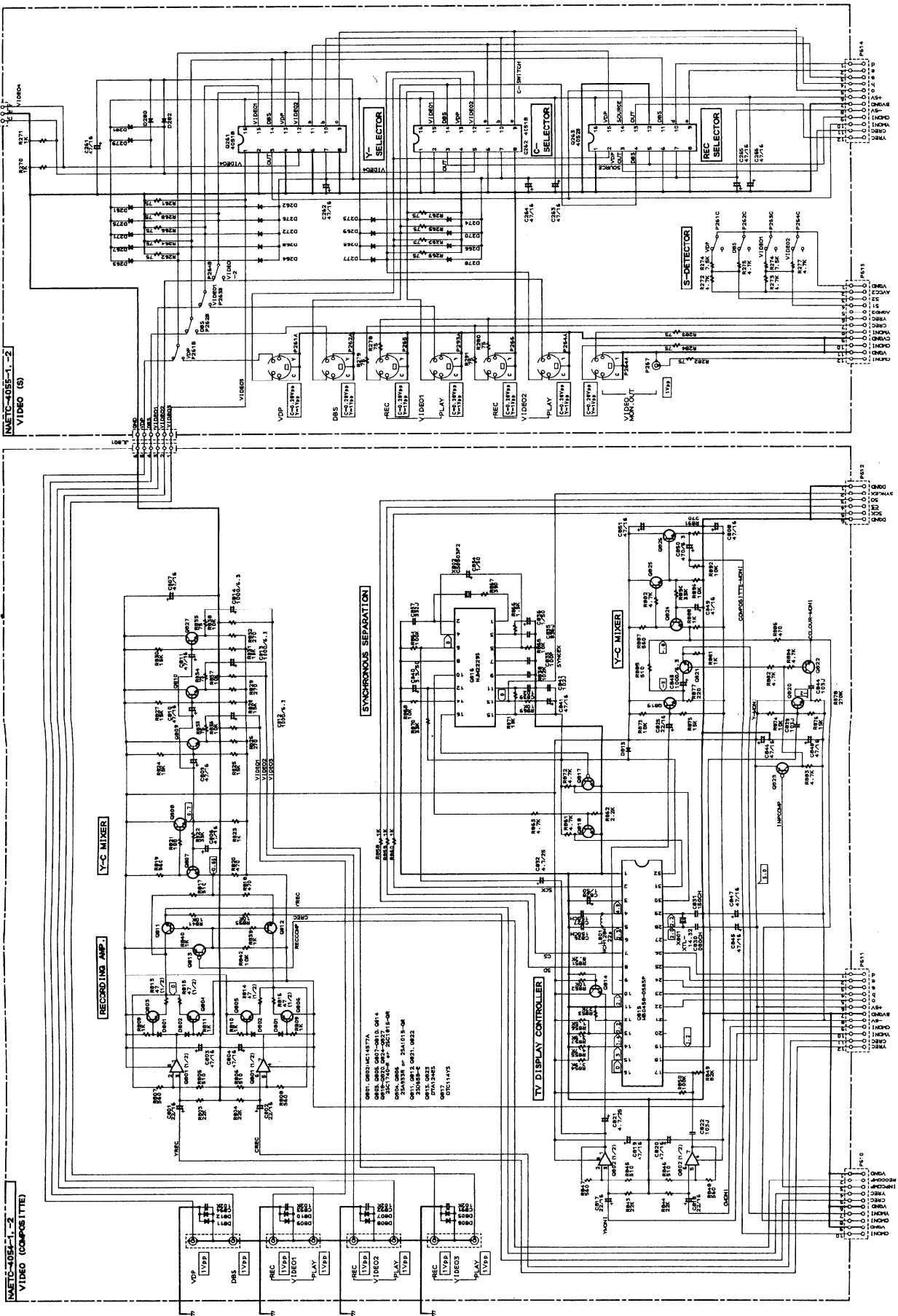
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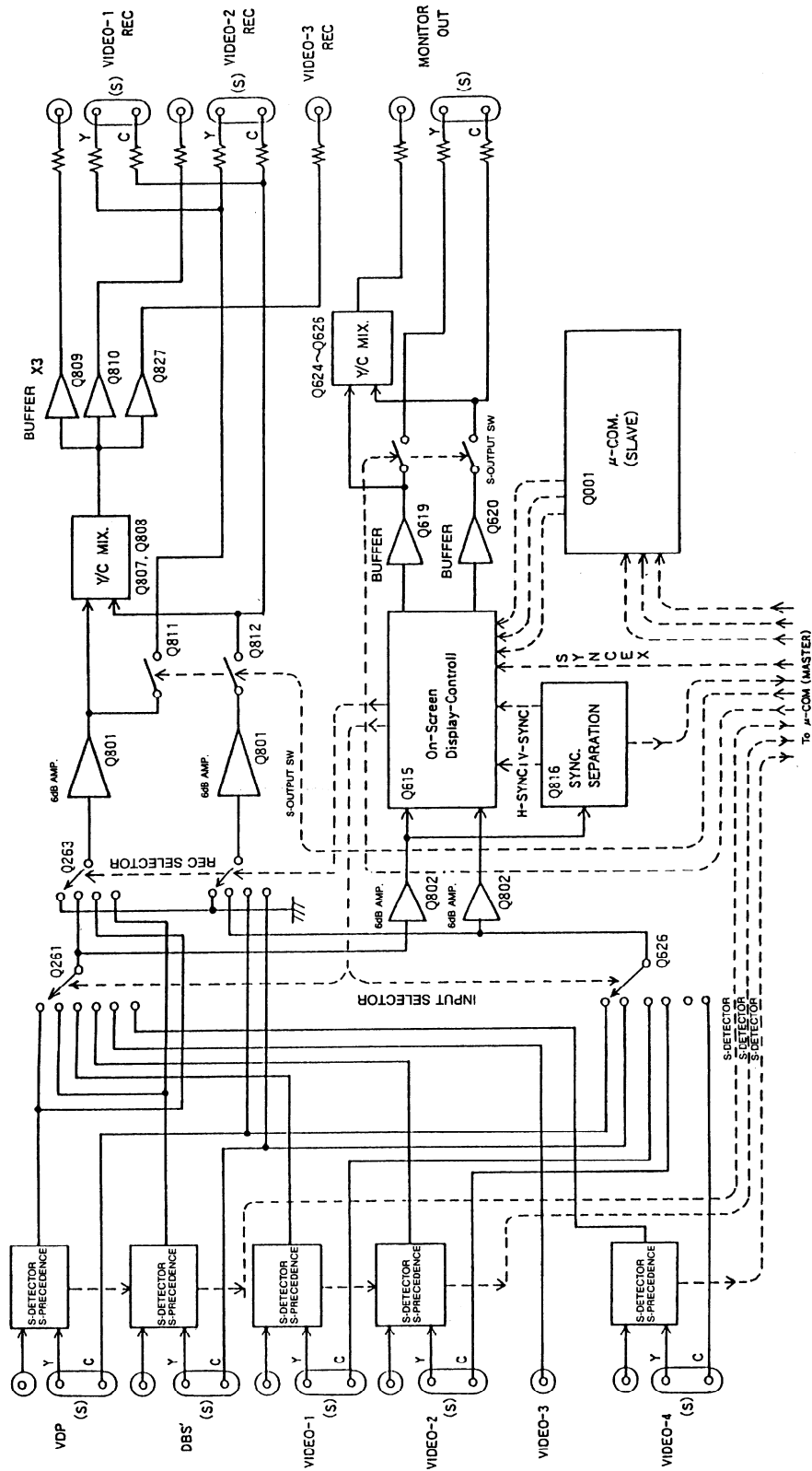


**SCHEMATIC DIAGRAM PART-8  
MODEL A-SV810PRO**

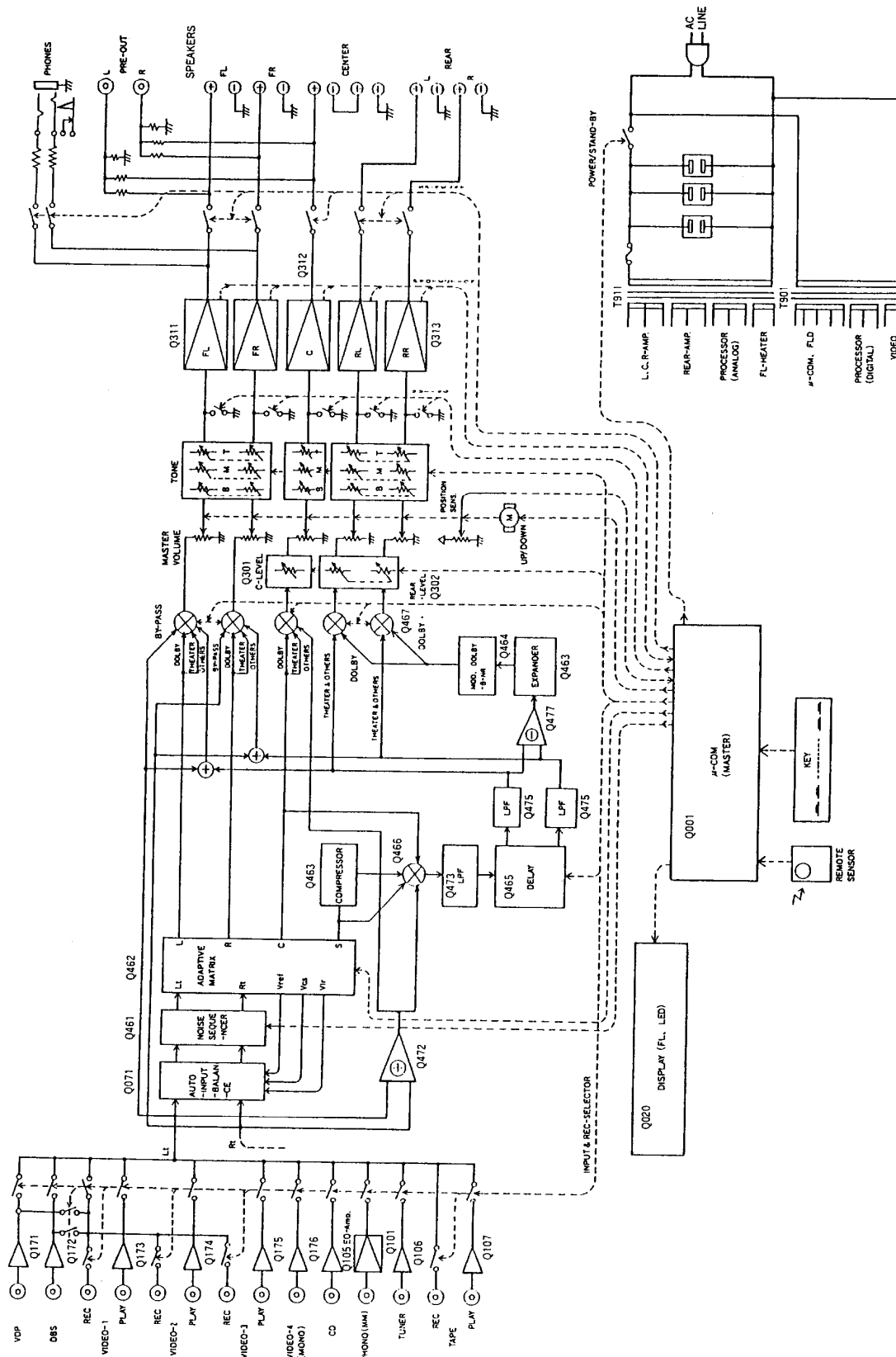
A B C D E F G



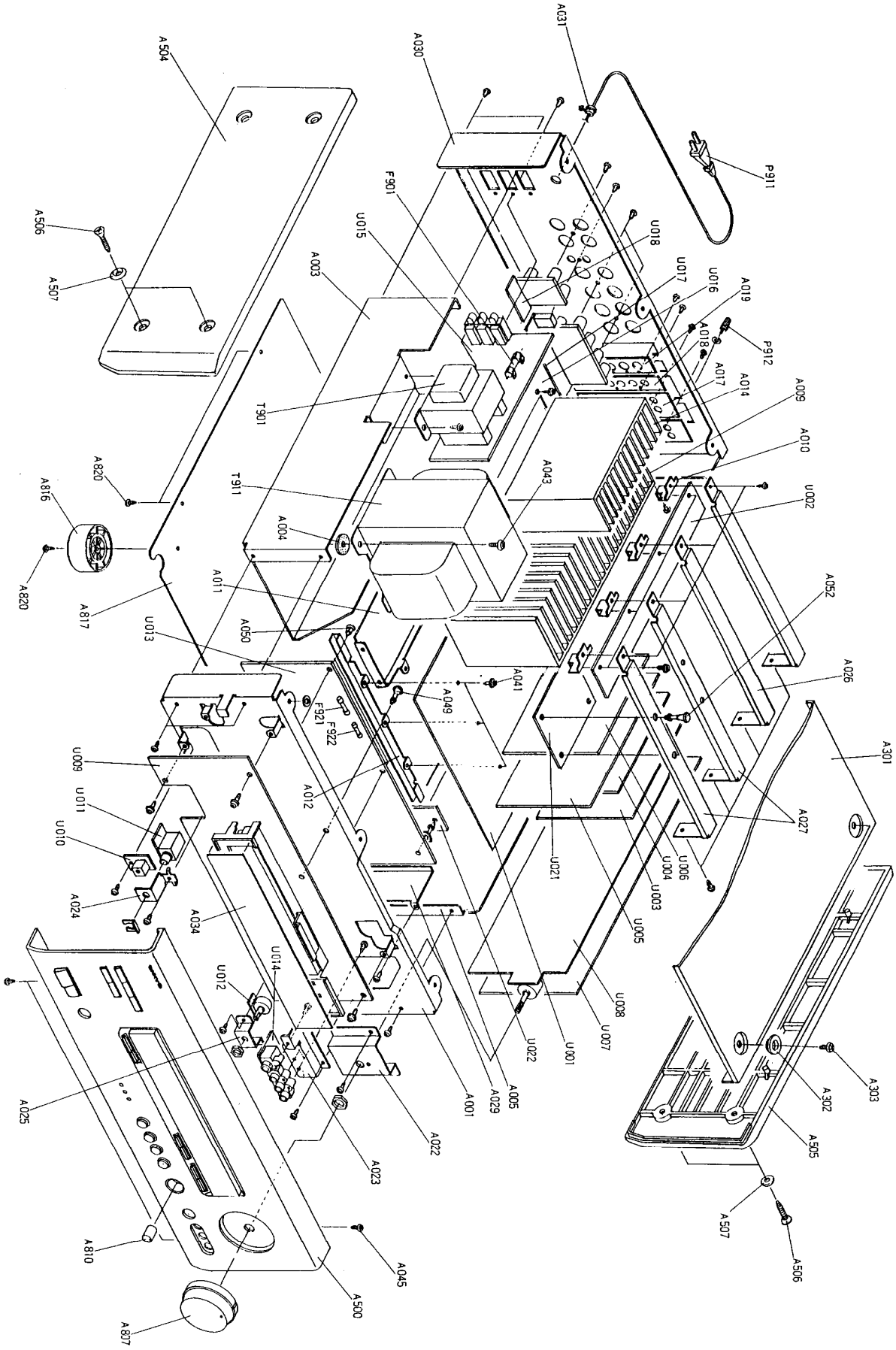
# BLOCK DIAGRAM (VIDEO)



# BLOCK DIAGRAM (AUDIO)



CHASSIS-EXPLODED VIEW





# CHASSIS-EXPLODED VIEW-PARTS LIST

| REF.NO    | PART NO.    | DESCRIPTION                       | REF.NO       | PART NO.   | DESCRIPTION                  |
|-----------|-------------|-----------------------------------|--------------|------------|------------------------------|
| A001      | 27110589A   | FRONT BRACKET                     | Q755, Q756   | 2202352 or | 2SC3180N-R or                |
| A003      | 27130629A   | BRACKET (PT)                      |              | 2202353 or | 2SC3180N-O or                |
| A004      | 27270213    | SPACER (PT)                       |              | 2202374 or | 2SC4466-Y or                 |
| A005      | 27115248A   | SIDE BRACKET                      |              | 2202375 or | 2SC4466-P or                 |
| A009      | 27160266A   | HEATSINK                          |              | 2202373    | 2SC4466-O, TRANSISTOR        |
| A010      | 27141414    | BRACKET (HE)                      | Q757, Q758   | 2202342 or | 2SA1263N-R or                |
| A011      | 27130633    | BRACKET (HE)                      |              | 2202343 or | 2SA1263N-O or                |
| A012      | 27141415    | BRACKET (PC)                      |              | 2202364 or | 2SA1693-Y or                 |
| A013      | 27141469    | BRACKET (HT)                      |              | 2202365 or | 2SA1693-P or                 |
| A014      | 27160267B   | HEATSINK (SUB)                    |              | 2202363    | 2SA1693-O, TRANSISTOR        |
| A017      | 27141433    | BRACKET (AD)                      | △ T911       | 2300610A   | NPT-1091D, POWER             |
| A018      | 27141434    | BRACKET (VD)                      |              |            | TRANSFORMER                  |
| A019      | 27190788    | HOLDER (VD)                       | △ T901       | 2300608B   | NPT-1090D, POWER             |
| A022      | 27141418    | BRACKET (VOL)                     |              |            | TRANSFORMER                  |
| A023      | 27141419    | BRACKET (PIN)                     | △ P911       | 253123 or  | AS-UC-6 #18 or               |
| A024      | 27141420    | BRACKET (HP)                      |              | 253161 or  | AS-UC-6 #18 or               |
| A025      | 27141421    | BRACKET (BAL)                     |              | 253146     | AS-UC-6 #18, ACCORD          |
| A026      | 27141422    | BRACKET (REN)                     |              | P912       | 25060044                     |
| A027      | 27141422-1  | BRACKET (REN)                     | △ F901       | 252052     | TERMINAL (GROUND)            |
| A029      | 27150312    | SHIELD PLATE                      | △ F921, F922 | 252051     | 7A ST-6, FUSE                |
| A030      | 27121392-1A | BACK PANEL                        |              | 79092      | 6A ST-6, FUSE                |
| A031      | 27300750    | BUSHING (CORD)                    | U001         | 1A241548-2 | ESG-3, GLASS TUBE            |
| A034      | 28133253A   | BACK PLATE                        |              |            | NAAF-4048-2, MAIN CIRCUIT PC |
| A041      | 831130088   | 3TTW+8B, TAP-TIGHT SCREW          | U002         | 1A241549-2 | BOARD ASS'Y                  |
| A043      | 830440109   | 4TTC+10C(BC), TAP-TIGHT SCREW     | U003         | 1A241552-2 | NAAF-4049-2, OUT PUT CIRCUIT |
| A045      | 801230      | 3STS+8BQ(BC), TAP-TIGHT SCREW     | U004         | 1A241553-2 | PC BOARD ASS'Y               |
| A046      | 801433      | 3SMS8WSW+14B(BC), TAP-TIGHT SCREW | U005         | 1A241554-2 | NAAF-4052-2, CD/PHONO        |
| A047      | 838440129   | 4TTB+12C(BC), TAP-TIGHT SCREW     | U006         | 1A241555-2 | CIRCUIT PC BOARD ASS'Y       |
| A049      | 27190428A   | KGLS-10RT, HOLDER                 | U007         | 1A241557-2 | NAETC-4054-2, C-VIDEO        |
| A050      | 880009      | NPR-345, RIVET                    |              |            | CIRCUIT PC BOARD ASS'Y       |
| A052      | 27190814    | KGLS-24RT, HOLDER                 |              |            | NAETC-4055-2, S-VIDEO        |
| A500      | 1A241121    | FRONT PANEL ASS'Y                 | U008         | 1A241558-2 | CIRCUIT PC BOARD ASS'Y       |
| (A502)    | 27267682    | GUIDE (VOL)                       |              |            | NAAF-4057-2, SURROUND        |
| (A503)    | 28135199    | NAME PLATE                        | U009         | 1A241560-2 | CIRCUIT PC BOARD ASS'Y       |
| (A801)    | 27215194A   | COSMETIC FRAME                    |              |            | NAAF-4058-2, VR CIRCUIT PC   |
| (A802)    | 28324096B   | KNOB (PRE) ASS'Y                  | U010         | 1A241561-2 | BOARD ASS'Y                  |
| (A804)    | 28324099    | KNOB (SEL) ASS'Y                  |              |            | NADG-4060-2, DISPLAY CIRCUIT |
| (A805)    | 28324101A   | KNOB (POW) ASS'Y                  |              |            | PC BOARD ASS'Y               |
| (A806)    | 28198742    | FACET                             | U011         | 1A241562-2 | NADG-4061-2, REMOTE          |
| (A812)    | 28191569    | CLEAR PLATE                       |              |            | CONTROL SENSOR PC BOARD      |
| (A813)    | 28191568    | CLEAR PLATE (RE)                  | U012         | 1A241563-2 | ASS'Y                        |
| A301      | 28184464    | TOP COVER                         |              |            | NAETC-4062-2, PHONE CIRCUIT  |
| A302      | 27265155A   | COSMETIC RING (TOP COVER)         | U013         | 1A241564-2 | PC BOARD ASS'Y               |
| A303      | 838440089   | 4TTB+8C(BC), TAP-TIGHT SCREW      | U014         | 1A241565-2 | NAPS-4064-2, POWER SUPPLY    |
| A504      | 28185359    | SIDE BOARD (L)                    |              |            | CIRCUIT (1) PC BOARD ASS'Y   |
| A505      | 25185360    | SIDE BOARD (R)                    | U015         | 1A241567-2 | NAETC-4065-2, VIDEO CIRCUIT  |
| A506      | 836440303   | 4STV+30CQ(BC), TAP-TIGHT SCREW    | U016         | 1A241568-2 | PC BOARD ASS'Y               |
| A507      | 870086      | W4×12(BC), WASHER                 |              |            | NAPS-4067-2, POWER SUPPLY    |
| A807      | 28324126    | KNOB (VOL)                        | U017         | 1A241569-2 | CIRCUIT (2) PC BOARD ASS'Y   |
| A810      | 28324128-1  | KNOB (BAL)                        |              |            | NAAF-4068-2, REAR AMP.       |
| A816      | 27175251    | LEG ASS'Y                         | U018         | 1A241570-2 | CIRCUIT PC BOARD ASS'Y       |
| A817      | 27170273A   | BOTTOM BOARD                      |              |            | NAETC-4069-2, FRONT SPEAKER  |
| A820      | 834430088   | 3TTS+8B(BC), TAP-TIGHT SCREW      | U019         | 1A241571-2 | CIRCUIT PC BOARD ASS'Y       |
| Q683~Q685 | 2202273 or  | 2SC3907-O or                      | U020         | 1A241572-2 | NAETC-4070-2, REAR SPEAKER   |
|           | 2202272 or  | 2SC3907-R or                      |              |            | CIRCUIT PC BOARD ASS'Y       |
|           | 2201654 or  | 2SC3856-Y or                      | U021         | 1A241575-2 | NAETC-4071-2, RELAY (1) PC   |
|           | 2201655 or  | 2SC3856-P or                      |              |            | BOARD ASS'Y                  |
|           | 2201653     | 2SC3856-O, TRANSISTOR             |              |            | NAETC-4072-2, RELAY (2) PC   |
| Q687~Q689 | 2202263 or  | 2SA1516-O or                      |              |            | BOARD ASS'Y                  |
|           | 2202262 or  | 2SA1516-R or                      |              |            | NAAF-4075-2, AUTO INPUT      |
|           | 2201664 or  | 2SA1492-Y or                      |              |            | BALANCE CIRCUIT PC BOARD     |
|           | 2201665 or  | 2SA1492-P or                      |              |            | ASS'Y                        |
|           | 2201663     | 2SA1492-O, TRANSISTOR             |              |            |                              |

NOTE:  
THE COMPONENTS IDENTIFIED BY MARK △ ARE  
CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK.  
REPLACE ONLY WITH PART NUMBER SPECIFIED.

# PRINTED CIRCUIT BOARD PARTS LIST

## MAIN CIRCUIT PC BOARD (NAAF-4048-2)-PART LIST

| CIRCUIT NO.  | PART NO.              | DESCRIPTION                            |
|--------------|-----------------------|--|
|              | <b>ICs</b>            |  |
| Q961         | 222780120NEC          | 7812                                   |
| Q962         | 222790125NEC          | 79M12HF                                |
| Q963         | 222780052NEC          | 78M05                                  |
| Q964         | 222790052NEC          | 79M05                                  |
|              | <b>Transistors</b>    |  |
| Q601~Q603    | 2213677 or<br>2213678 | 2SC3067-G or<br>2SC3067-H              |
| Q605~Q607    | 2213667 or<br>2213666 | 2SA1240-G or<br>2SA1240-F              |
| Q609~Q611    | 2211732 or<br>2211733 | 2SC1845-F or<br>2SC1845-E              |
| Q613~Q615    | 2211455 or<br>2211454 | 2SA1015-GR or<br>2SA1015-Y             |
| Q617~Q619    | 2211354 or<br>2211353 | 2SA949-Y or<br>2SA949-O                |
| Q621~Q623    | 2211634 or<br>2211633 | 2SC2229-Y or<br>2SC2229-O              |
|              | <b>Diodes</b>         |  |
| D601~D607    | 225251                | TLR112                                 |
| D961         | 22380040              | RBV-602L                               |
| D962, D963   | 22380003              | 1N5402F                                |
| D968, D969   | 223163                | 1SS133                                 |
| D971, D972   |                       |  |
|              | <b>Coils</b>          |  |
| L721~L723    | 231134                | S-0.8E                                 |
|              | <b>Capacitors</b>     |  |
| C601~C603    | 393081007             | 10 $\mu$ F, 50V, Elect. (ARE)          |
| C605~C607    | 372121014             | 100 PF, 50V, Styrene                   |
| C613~C615    | 354761019T            | 100 $\mu$ F, 35V, Elect.               |
| C621~C623    | 354721019             | 100 $\mu$ F, 6.3V, Elect.              |
| C625~C627    |                       |  |
| C629~C631    | 391971017             | 100 $\mu$ F, 63V, Elect. (RA2)         |
| C633~C635    |                       |  |
| C731~C733    | 374724734             | 0.047 $\mu$ F, 50V, Film (TF)          |
| C961, C962   | 374792244             | 0.22 $\mu$ F, 63V, Film (TF)           |
| C963         | 374503345             | 0.33 $\mu$ F, 125V, Film (ME)          |
| C968, C969   | 3504243               | 12000 $\mu$ F, 63V, Elect.             |
| C971, C972   | 354761009             | 10 $\mu$ F, 35V, Elect.                |
| C975, C976   | 354741029             | 1000 $\mu$ F, 16V, Elect.              |
| C984, C985   | 354741009             | 10 $\mu$ F, 16V, Elect.                |
| C986, C987   | 354742219             | 220 $\mu$ F, 16V, Elect.               |
|              | <b>Resistors</b>      |  |
| R617~R619    | 442522204             | 22 $\Omega$ , 1/2W, Metal oxide film   |
| R621~R623    |                       |  |
| R625~R627    | 442526214             | 620 $\Omega$ , 1/2W, Metal oxide film  |
| R629~R631    | 441722434             | 24 K $\Omega$ , 2W, Metal oxide film   |
| R633~R635    | 442520434             | 4.3 $\Omega$ , 1/2W, Metal oxide film  |
| R637~R639    | 442522714             | 270 $\Omega$ , 1/2W, Metal oxide film  |
| R649~R651    | 442521014             | 100 $\Omega$ , 1/2W, Metal oxide film  |
| R657~R659    | 442522294             | 0.22 $\Omega$ , 1/2W, Metal oxide film |
| R661~R663    |                       |  |
| R731~R733    | 442520564             | 5.6 $\Omega$ , 1/2W, Metal oxide film  |
| R735~R737    | 441620434             | 4.3 $\Omega$ , 1W, Metal oxide film    |
| R961         | 441720334             | 3.3 $\Omega$ , 2W, Metal oxide film    |
| R962, R968   | 441720564             | 5.6 $\Omega$ , 2W, Metal oxide film    |
| R969         |                       |  |
|              | <b>Radiator</b>       |  |
| Q961a        | 27160265              | RAD-82                                 |
| Q962a, Q963a | 27160179              | RAD-57                                 |
| Q964a        | 27160250              | RAD-81                                 |
| D961a        | 27160265              | RAD-82                                 |
|              | <b>Screw</b>          |  |
|              | 82143008              | 3P+8FN(BC)                             |

| CIRCUIT NO.  | PART NO.             | DESCRIPTION      |
|--------------|----------------------|------------------|
|              | <b>Sockets ass'y</b> |                  |
| P001         | 2000597              | NSAS-18P553      |
| P002         | 2000966              | NSAS-14P918      |
| P005         | 2002391240           | NSAS-12P0192     |
| P006         | 2002392040           | NSAS-20P0193     |
| P073         | 2009990170           | NSAS-4P0240      |
|              | <b>Plugs</b>         |                  |
| P600a, P611a | 25055500             | NPLG-12P475      |
| P613a, P614a |                      |                  |
| P601a, P612a | 25055497             | NPLG-6P472       |
| P607a, P609a |                      |                  |
| P602a, P603a | 25055499             | NPLG-10P474      |
| P604a, P610a |                      |                  |
| P618a        |                      |                  |
| P605a, P606a | 25055498             | NPLG-8P473       |
| P608a, P619a |                      |                  |
| P615a        | 25055261             | NPLG-9P244       |
| P616a        | 25055133             | NPLG-3P117       |
|              | <b>Jumper socket</b> |                  |
| JL617        | 25050270             | NSCT-6P98        |
|              | <b>Relay</b>         |                  |
| RL601, RL602 | 25065275             | NRL-2P5A-DC12-38 |
|              | <b>Bracket</b>       |                  |
|              | 27141059             | (Ground)         |
|              | <b>Holder</b>        |                  |
|              | 27190803             | UEGR-08-O        |

## OUT PUT CIRCUIT PC BOARD (NAAF-4049-2)-PART LIST

| CIRCUIT NO. | PART NO.              | DESCRIPTION                           |
|-------------|-----------------------|---------------------------------------|
|             | <b>Transistors</b>    |                                       |
| Q671~Q673   | 2201945 or<br>2201944 | 2SD1763-E or<br>2SD1763-D             |
| Q675~Q677   | 2201935 or<br>2201934 | 2SB1186-E or<br>2SB1186-D             |
| Q679~Q681   | 2211255               | 2SC1815-GR                            |
| Q691~Q693   | 2211732 or            | 2SC1845-F or                          |
| Q695, Q696  | 2211733               | 2SC1845-E                             |
| Q694        | 2211792 or<br>2211793 | 2SA992-F or<br>2SA992-E               |
|             | <b>Diodes</b>         |                                       |
| D671~D673   | 223163                | 1SS133                                |
| D675~D677   |                       |                                       |
| D701        |                       |                                       |
|             | <b>Capacitors</b>     |                                       |
| C671~C673   | 374722235             | 0.022 $\mu$ F, 50V, Film (TF)         |
| C683~C685   | 354764709             | 47 $\mu$ F, 35V, Elect.               |
| C687~C689   | 374722244             | 0.22 $\mu$ F, 50V, Film (TF)          |
| C705        | 354722219             | 220 $\mu$ F, 6.3V, Elect.             |
| C691~C697   | 374792244             | 0.22 $\mu$ F, 63V, Film (TF)          |
|             | <b>Resistors</b>      |                                       |
| R671~R673   | 5215045               | N08HR10KBC, Semi-fixed                |
| R679~R681   | 442522214             | 220 $\Omega$ , 1/2W, Metal oxide film |
| R683~R685   | 442520224             | 2.2 $\Omega$ , 1/2W, Metal oxide film |
| R687~R689   |                       |                                       |
| R691~R693   | 4500031               | 0.22 $\Omega$ , 5W, Metal plate       |
| R695~R697   | 442521004             | 10 $\Omega$ , 1/2W, Metal oxide film  |
|             | <b>Plugs</b>          |                                       |
| P671~P673   | 25055495              | NPLG-2P470                            |

## CD/PHONO CIRCUIT PC BOARD (NAAF-4052-2)-PART LIST

| CIRCUIT NO. | PART NO.   | DESCRIPTION |
|-------------|------------|-------------|
|             | <b>ICs</b> |             |
| Q101, Q106  | 22240191   | NJM4565DD   |

| CIRCUIT NO.       | PART NO.  | DESCRIPTION                  |
|-------------------|-----------|------------------------------|
| Q107              | 22240191  | NJM4565DD                    |
| Q105              | 222902    | NJM5532DD                    |
| Q108              | 22240339  | LC7823N                      |
| <b>Diodes</b>     |           |                              |
| D101~D104<br>D107 | 223163    | 1SS133                       |
| <b>Capacitors</b> |           |                              |
| C101, C102        | 354780229 | 2.2 $\mu$ F, 50V, Elect.     |
| C103, C104        | 372124704 | 47 pF, 50V, Styrene          |
| C105, C106        | 372121024 | 1000 pF, 50V, Styrene        |
| C107, C108        | 354721019 | 100 $\mu$ F, 6.3V, Elect.    |
| C109, C110        | 371126224 | 6200 pF, 50V, Mylar          |
| C111, C112        | 371121824 | 1800 pF, 50V, Mylar          |
| C113, C114        | 354780229 | 2.2 $\mu$ F, 50V, Elect.     |
| C117, C118        | 354742219 | 220 $\mu$ F, 16V, Elect.     |
| C119              | 374721034 | 0.01 $\mu$ F, 50V, Film (TF) |
| C123~C126         | 354741009 | 10 $\mu$ F, 16V, Elect.      |
| C129~C132         |           |                              |
| C135~C138         |           |                              |
| C139, C140        | 354742219 | 220 $\mu$ F, 16V, Elect.     |
| C144              | 353780109 | 1 $\mu$ F, 50V, Elect.       |
| C145, C146        | 353781009 | 10 $\mu$ F, 50V, Elect.      |
| <b>Terminals</b>  |           |                              |
| P101              | 25045316  | NPJ-4PDBL173                 |
| P102              | 25045317  | NPJ-6PDBL174                 |
| <b>Sockets</b>    |           |                              |
| P606              | 25050445  | NSCT-8P269                   |
| P607              | 25050444  | NSCT-6P268                   |

**DBS/VIDEO CIRCUIT PC BOARD (NAAF-4053-2)-PART LIST**

| CIRCUIT NO.       | PART NO.  | DESCRIPTION                  |
|-------------------|-----------|------------------------------|
| <b>ICs</b>        |           |                              |
| Q171~Q176         | 22240191  | NJM4565DD                    |
| Q177, Q178        | 22240270  | LC7822N                      |
| <b>Diodes</b>     |           |                              |
| D171~D182<br>D187 | 223163    | 1SS133                       |
| <b>Capacitors</b> |           |                              |
| C173~C176         | 354741009 | 10 $\mu$ F, 16V, Elect.      |
| C179~C182         |           |                              |
| C185~C188         |           |                              |
| C191~C194         |           |                              |
| C197~C200         |           |                              |
| C203~C206         |           |                              |
| C215, C216        |           |                              |
| C207, C208        | 374721044 | 0.1 $\mu$ F, 50V, Film (TF)  |
| C209, C210        | 354742219 | 220 $\mu$ F, 16V, Elect.     |
| C214              | 354780109 | 1 $\mu$ F, 50V, Elect.       |
| C217, C218        | 374721034 | 0.01 $\mu$ F, 50V, Film (TF) |
| <b>Plug</b>       |           |                              |
| P293a             | 25055234  | NPI.G-3P218                  |
| <b>Terminals</b>  |           |                              |
| P171              | 25045316  | NPJ-4PDBL173                 |
| P172, P173        | 25045318  | NPJ-6PDBL175                 |
| <b>Sockets</b>    |           |                              |
| P608              | 25050445  | NSCT-8P269                   |
| P609              | 25050444  | NSCT-6P268                   |

**C-VIDEO CIRCUIT PC BOARD (NAETC-4054-2)-PART LIST**

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|-------------|
| <b>ICs</b>  |          |             |
| Q801, Q802  | 22240401 | MC14577A    |

| CIRCUIT NO.                       | PART NO.   | DESCRIPTION                          |
|-----------------------------------|------------|--------------------------------------|
| Q815                              | 22240402A  | M50458-058SP                         |
| Q816                              | 22240374   | NJM2229S                             |
| <b>Transistors</b>                |            |                                      |
| Q803, Q805                        | 2211183 or | 2SC1740-R or                         |
| Q807~Q810                         | 2211255    | 2SC1815-GR                           |
| Q818~Q820                         |            |                                      |
| Q814                              |            |                                      |
| Q824~Q827                         |            |                                      |
| Q804, Q806                        | 2213074 or | 2SA933-R or                          |
|                                   | 2211455    | 2SA1015-GR                           |
| Q811, Q812                        | 2211705    | 2SD655-E                             |
| Q813, Q823                        | 2212600    | DTA124ES                             |
| Q817                              | 221281     | DTC114YS                             |
| Q821, Q822                        | 2211705    | 2SD655-E                             |
| <b>Diodes</b>                     |            |                                      |
| D801~D813                         | 223163     | 1SS133                               |
| <b>Osc. element</b>               |            |                                      |
| X801                              | 3010167    | XTL-14.32M                           |
| X802                              | 3010168    | CSB503F2                             |
| <b>Coil</b>                       |            |                                      |
| L801                              | 233409K220 | NCH-1284                             |
| <b>Capacitors</b>                 |            |                                      |
| C801, C802                        | 354742209  | 22 $\mu$ F, 16V, Elect.              |
| C817, C818                        |            |                                      |
| C825                              |            |                                      |
| C803, C804                        | 354744709  | 47 $\mu$ F, 16V, Elect.              |
| C806~C811                         |            |                                      |
| C819, C820                        |            |                                      |
| C812~C814                         | 354721029  | 1000 $\mu$ F, 6.3V, Elect.           |
| C821, C832                        | 354780479  | 4.7 $\mu$ F, 50V, Elect.             |
| C822, C829                        | 371121034  | 0.01 $\mu$ F, 50V, Mylar             |
| C828, C834                        | 354780109  | 1 $\mu$ F, 50V, Elect.               |
| C836                              |            |                                      |
| C835                              | 371126834  | 0.068 $\mu$ F, 50V, Mylar            |
| C837                              | 371123324  | 3300 pF, 50V, Mylar                  |
| C840                              | 354780339  | 3.3 $\mu$ F, 50V, Elect.             |
| C841, C851                        | 354744709  | 47 $\mu$ F, 16V, Elect.              |
| C845~C849                         |            |                                      |
| C842, C844                        | 371121024  | 1000 pF, 50V, Mylar                  |
| C843                              | 354721029  | 1000 $\mu$ F, 6.3V, Elect.           |
| C850                              | 354724719  | 470 $\mu$ F, 6.3V, Elect.            |
| <b>Resistors</b>                  |            |                                      |
| R813~R816                         | 442524704  | 47 $\Omega$ , 1/2W, Metal oxide film |
| <b>Sockets</b>                    |            |                                      |
| P610                              | 25050446   | NSCT-10P270                          |
| P611                              | 25050447   | NSCT-12P271                          |
| P612                              | 25050444   | NSCT-6P268                           |
| <b>Terminals</b>                  |            |                                      |
| P801a, (P801b)<br>~P804a, (P804b) | 25045319   | NPJ-2PDYE176                         |
| <b>Jumper sockets</b>             |            |                                      |
| JL801                             | 25050283   | NSCT-6P111                           |

**S-VIDEO CIRCUIT PC BOARD (NAETC-4055-2)-PART LIST**

| CIRCUIT NO.       | PART NO.     | DESCRIPTION             |
|-------------------|--------------|-------------------------|
| <b>ICs</b>        |              |                         |
| Q261, Q262        | 222840511    | 4051B                   |
| Q263              | 222840521TOS | 4052B                   |
| <b>Diodes</b>     |              |                         |
| D261~D282         | 223163       | 1SS133                  |
| <b>Capacitors</b> |              |                         |
| C261~C266         | 354744709    | 47 $\mu$ F, 16V, Elect. |

| CIRCUIT NO. | PART NO.        | DESCRIPTION  |
|-------------|-----------------|--------------|
|             | <b>Sockets</b>  |              |
| P261~P264   | 25050452        | NSCT-4P276   |
| P265~P267   | 25050390        | NSCT-4P217   |
| P613, P614  | 25050447        | NSCT-12P271  |
|             | <b>Terminal</b> |              |
| P268        | 25045320        | NPJ-1PDYE177 |
|             | <b>Plug</b>     |              |
| P294a       | 25055234        | NPLG-3P218   |

### SURROUND CIRCUIT PC BOARD (NAAF-4057-2, NAETC-4198-2)-PART LIST

| CIRCUIT NO. | PART NO.                | DESCRIPTION                   |
|-------------|-------------------------|-------------------------------|
|             | <b>ICs</b>              |                               |
| Q461        | 22240371                | LA2775                        |
| Q462        | 22240279                | LA2770                        |
| Q463        | 22240131                | MPC1571C                      |
| Q464        | 22240139                | LA2730                        |
| Q465        | 22240397                | YM7128                        |
| Q466        | 22240398                | TC6162N                       |
| Q467        | 22240399                | TC9163N                       |
| Q470        | 22240296                | NJM5532SD                     |
| Q472        | 22240312                | NJM4580LD                     |
| Q473, Q474  | 22240273                | NJM4565SD                     |
| Q475        | 22240400 or<br>22240407 | NJM2082L or<br>NJM2082S       |
| Q476~Q479   | 22240273                | NJM4565SD                     |
| Q484        |                         |                               |
| Q480~Q482   | 22240312                | NJM4580LD                     |
| Q483        | 222780055               | 78M05HF                       |
| Q485        | 222840692               | 4069UBP                       |
| Q493        | 22240293                | NJM4558LD                     |
|             | <b>Transistors</b>      |                               |
| Q490, Q491  | 2213290                 | DTC114ES                      |
| Q494, Q495  | 2212185 or<br>2212186   | 2SK170-GR or<br>2SK170-BL     |
|             | <b>Diode</b>            |                               |
| D461        | 223163                  | 1SS133                        |
| D463~D466   |                         |                               |
|             | <b>Coils</b>            |                               |
| L301        | 233409K220              | NCH-1284                      |
| L302        | 230906                  | BL02RN2-R62                   |
|             | <b>Osc. element</b>     |                               |
| X301        | 3010171                 | CSA7.68MT040                  |
|             | <b>Capacitors</b>       |                               |
| C420~C423   | 354781099               | 0.1 $\mu$ F, 50V, Elect.      |
| C532        |                         |                               |
| C424, C426  | 354781599               | 0.15 $\mu$ F, 50V, Elect.     |
| C428, C429  |                         |                               |
| C425, C427  | 354783399               | 0.33 $\mu$ F, 50V, Elect.     |
| C430        | 371123324               | 3300 pF, 50V, Mylar           |
| C431~C433   | 371121034               | 0.01 $\mu$ F, 50V, Mylar      |
| C436, C437  | 371126824               | 6800 pF, 50V, Mylar           |
| C444        |                         |                               |
| C438, C441  | 371124724               | 4700 pF, 50V, Mylar           |
| C439, C453  | 371122734               | 0.027 $\mu$ F, 50V, Mylar     |
| C454        |                         |                               |
| C440        | 371123334               | 0.033 $\mu$ F, 50V, Mylar     |
| C443        | 393041007               | 10 $\mu$ F, 16V, Elect. (ARE) |
| C445        | 371123034               | 0.03 $\mu$ F, 50V, Mylar      |
| C446, C455  | 371121224               | 1200 pF, 50V, Mylar           |
| C456        |                         |                               |
| C447        | 371121234               | 0.012 $\mu$ F, 50V, Mylar     |
| C448, C451  | 371121034               | 0.01 $\mu$ F, 50V, Mylar      |
| C452        |                         |                               |
| C449        | 371121824               | 1800 pF, 50V, Mylar           |
| C450        | 371123924               | 3900 pF, 50V, Mylar           |

| CIRCUIT NO. | PART NO.            | DESCRIPTION                           |
|-------------|---------------------|---------------------------------------|
| C457, C458  | 371124734           | 0.047 $\mu$ F, 50V, Mylar             |
| C459        | 354784799           | 0.47 $\mu$ F, 50V, Elect.             |
| C461, C462  | 393041007           | 10 $\mu$ F, 16V, Elect. (ARE)         |
| C474~C480   |                     |                                       |
| C484        |                     |                                       |
| C491~C495   |                     |                                       |
| C465, C466  | 352980476           | 4.7 $\mu$ F, 50V, Elect. (NP)         |
| C471~C473   | 393042207           | 22 $\mu$ F, 16V, Elect. (ARE)         |
| C481, C487  |                     |                                       |
| C488, C497  |                     |                                       |
| C498        |                     |                                       |
| C467~C470   | 393080477           | 4. $\mu$ F, 50V, Elect.               |
| C482        | 354780109           | 1 $\mu$ F, 50V, Elect.                |
| C510, C483  | 354741019           | 100 $\mu$ F, 16V, Elect.              |
| C489        |                     |                                       |
| C490, C496  | 354780339           | 3.3 $\mu$ F, 50V, Elect.              |
| C509, C534  | 354744709           | 47 $\mu$ F, 16V, Elect.               |
| C511~C514   | 392850477           | 4.7 $\mu$ F, 25V, Elect. (LL)         |
| C517, C518  |                     |                                       |
| C535        | 354780479           | 4.7 $\mu$ F, 50V, Elect. (ARE)        |
| C515, C516  | 374722244           | 0.22 $\mu$ F, 50V, Film (TF)          |
| C525, C526  |                     |                                       |
| C519, C521  | 354744719           | 470 $\mu$ F, 16V, Elect.              |
| C520, C524  | 354741009           | 10 $\mu$ F, 16V, Elect.               |
| C533, C555  |                     |                                       |
| C556, C564  |                     |                                       |
| C565, C542  |                     |                                       |
| C574        | 354741029           | 1000 $\mu$ F, 16V, Elect.             |
| C527, C530  | 354742209           | 22 $\mu$ F, 16V, Elect.               |
| C539~C541   |                     |                                       |
| C528        | 354783399           | 0.33 $\mu$ F, 50V, Elect.             |
| C529        | 354780109           | 1 $\mu$ F, 50V, Elect.                |
| C531, C536  | 354741019           | 100 $\mu$ F, 16V, Elect.              |
| C557~C563   |                     |                                       |
| C566, C567  |                     |                                       |
| C569        |                     |                                       |
| C571~C573   |                     |                                       |
| C577, C578  |                     |                                       |
| C581, C582  |                     |                                       |
| C589        |                     |                                       |
| C532        | 354781099           | 0.1 $\mu$ F, 50V, Elect.              |
| C537, C538  | 371124734           | 0.047 $\mu$ F, 50V, Mylar             |
| C583, C585  | 354724719           | 470 $\mu$ F, 6.3V, Elect.             |
| C587        |                     |                                       |
| C594        | 371123334           | 0.033 $\mu$ F, 50V, Mylar             |
|             | <b>Resistors</b>    |                                       |
| R481        | 442520474           | 4.7 $\Omega$ , 1/2W, Metal oxide film |
| R538        | 442524704           | 47 $\Omega$ , 1/2W, Metal oxide film  |
| R539        | 441624704           | 47 $\Omega$ , 1W, Metal oxide film    |
|             | <b>Sockets</b>      |                                       |
| P600        | 25050447            | NSCT-12P271                           |
| P601        | 25050444            | NSCT-6P268                            |
|             | <b>Socket ass'y</b> |                                       |
| P071        | 2009990137B         | NSAS-12P0219                          |
| P072        | 2009990168A         | NSAS-6P0238                           |
|             | <b>Holder</b>       |                                       |
|             | 27190458            | WLS-06-0                              |
|             | <b>Cushion</b>      |                                       |
|             | 28141105            |                                       |

### VR CIRCUIT PC BOARD (NAAF-4058-2)-PART LIST

| CIRCUIT NO. | PART NO.   | DESCRIPTION |
|-------------|------------|-------------|
|             | <b>ICs</b> |             |
| Q301, Q302  | 22240266   | TC9213P     |
| Q311~Q313   | 22240219   | LC7522      |
| Q321, Q323  | 22240312   | NJM4580LD   |
| Q324, Q331  |            |             |

| CIRCUIT NO. | PART NO.          | DESCRIPTION                         | CIRCUIT NO. | PART NO.             | DESCRIPTION                          |
|-------------|-------------------|-------------------------------------|-------------|----------------------|--------------------------------------|
| Q332, Q335  | 22240312          | NJM4580LD                           | Q013        | 22240396             | M51943BL                             |
| Q337, Q338  |                   |                                     | Q016, Q017  | 222741451            | 74LS145                              |
| Q333, Q334  | 22240273          | NJM4565SD                           |             | <b>Transistors</b>   |                                      |
| Q336, Q339  |                   |                                     | Q002~Q005   | 2213860              | DTC143XS                             |
| Q340        |                   |                                     | Q014        | 2213160              | DTC124ES                             |
| Q345        | 22240239          | TA7291S                             | Q015, Q019  | 2213510              | DTA114ES                             |
| Q347        | 222780055         | 78M05HF                             | Q018        | 2213290              | DTC114ES                             |
|             | <b>Transistor</b> |                                     |             | <b>FL tube</b>       |                                      |
| Q351~Q355   | 2212285           | 2SC2878-A                           | Q020        | 212091               | FIP15AM7R                            |
| Q356        | 2212600           | DTA124ES                            |             | <b>Diodes</b>        |                                      |
|             | <b>Diodes</b>     |                                     | D001~D005   | 223163               | 1SS133                               |
| D301, D302  | 224450683         | MTZ6.8C                             | D014, D015  |                      |                                      |
| D311~D320   | 224450623         | MTZ6.2C                             | D036        |                      |                                      |
| D321        | 225251            | TLR112                              | D038~D041   |                      |                                      |
|             | <b>Capacitors</b> |                                     | D006~D009   | 225142DX2 or         | SEL2913K-DX2 or                      |
| C301, C302  | 393041007         | 10 $\mu$ F, 16V, Elect.(ARE)        | D016~D025   | 225142DX1            | SEL2913K-DX1, LED                    |
| C307, C308  |                   |                                     | D010        | 224450753            | MTZ7.5C, Zener                       |
| C313~C316   |                   |                                     | D012, D013  | 224450512            | MTZ5.1B, Zener                       |
| C303, C304  | 393044707         | 47 $\mu$ F, 16V, Elect.(ARE)        | D026~D035   | 225262M or           | SLR-320YC3FM or                      |
| C309, C317  |                   |                                     |             | 225262N              | SLR-320YC-FN, LED                    |
| C318        |                   |                                     | D037        | 224450562            | MTZ5.6B, Zener                       |
| C321, C322  | 354722219         | 220 $\mu$ F, 6.3V, Elect.           |             | <b>Osc. element</b>  |                                      |
| C334        |                   |                                     | X001        | 3010163              | CST4.19MGW                           |
| C323, C324  | 354744709         | 47 $\mu$ F, 16V, Elect.             |             | <b>Capacitors</b>    |                                      |
| C335, C349  |                   |                                     | C001        | 354724719            | 470 $\mu$ F, 6.3V, Elect.            |
| C350        |                   |                                     | C002        | 3020032              | B7ZC0715-33N, C-Block                |
| C325, C326  | 354780479         | 4.7 $\mu$ F, 50V, Elect.            | C003        | 3000051              | 0.047F, 5.5V, A-Con                  |
| C331, C333  |                   |                                     | C005        | 354722219            | 220 $\mu$ F, 6.3V, Elect.            |
| C336, C351  |                   |                                     | C006, C007  | 355721019            | 100 $\mu$ F, 6.3V, Elect.            |
| C352        |                   |                                     | C016, 017   |                      |                                      |
| C341~C344   |                   |                                     | C008        | 355781009            | 10 $\mu$ F, 50V, Elect.              |
| C327, C328  | 354781099         | 0.1 $\mu$ F, 50V, Elect.            | C009, C013  | 354780109            | 1 $\mu$ F, 50V, Elect.               |
| C353, C354  |                   |                                     |             | <b>Resistors</b>     |                                      |
| C332, C345  | 354742209         | 22 $\mu$ F, 16V, Elect.             | R002        | 49163222412          | RM1/101J 2.2K $\times$ 12, R-network |
| C346        |                   |                                     | R005, R006  | 49121103407          | RM1/8GJ 10k $\times$ 7, R-network    |
| C337, C355  | 354782299         | 0.22 $\mu$ F, 50V, Elect.           | R007, R008  | 49121104407          | RM1/8GJ 100k $\times$ 7, R-network   |
| C356        |                   |                                     | R009, R020  | 49163103404          | RM1/101J 10k $\times$ 4, R-network   |
| C347, C348  | 354721019         | 100 $\mu$ F, 6.3V, Elect.           | R022        |                      |                                      |
| C382, C383  |                   |                                     |             | <b>Switches</b>      |                                      |
| C407        |                   |                                     | S001~S016   | 25035548             | NPS-111-S510                         |
| C357, C358  | 371122724         | 2700 pF, 50V, Mylar                 |             | <b>Plugs</b>         |                                      |
| C384, C385  |                   |                                     | P923a       | 25055153             | NPLG-9P137                           |
| C408        |                   |                                     | P002a       | 25055151             | NPLG-7P135                           |
| C359, C360  | 371121034         | 0.01 $\mu$ F, 50V, Mylar            | P004a       | 25055146             | NPLG-2P130                           |
| C386, C387  |                   |                                     | P005a       | 25055150             | NPLG-6P134                           |
| C409        |                   |                                     | P006a       | 25055154             | NPLG-10P138                          |
| C361~C368   | 354741019         | 100 $\mu$ F, 16V, Elect.            | P007a       | 25055159             | NPLG-15P143                          |
| C371, C372  |                   |                                     |             | <b>Jumper socket</b> |                                      |
| C369, C370  | 354744709         | 47 $\mu$ F, 16V, Elect.             | JL005       | 25050268             | NSCT-4P96                            |
| C373~C380   |                   |                                     |             | <b>Holders</b>       |                                      |
| C388        | 354761009         | 10 $\mu$ F, 35V, Elect.             |             | 27190790             | (LED-FL)                             |
| C389        | 354741009         | 10 $\mu$ F, 16V, Elect.             |             | 27190789             | (LED-3)                              |
| C410        | 371122234         | 0.022 $\mu$ F, 50V, Mylar           |             | 27190620             | (LED)                                |
|             | <b>Resistors</b>  |                                     |             | <b>Bracket</b>       |                                      |
| R301        | 5140003           | N16RSL50KA50KB30, Variable          |             | 27141059             |                                      |
| R453        | 441721804         | 18 $\Omega$ , 2W, Metal oxide film  |             |                      |                                      |
| R454        | 442520104         | 1 $\Omega$ , 1/2W, Metal oxide film |             |                      |                                      |
|             | <b>Sockets</b>    |                                     |             |                      |                                      |
| P602~P604   | 25050446          | NSCT-10P270                         |             |                      |                                      |
| P605        | 25050445          | NSCT-8P269                          |             |                      |                                      |

### DISPLAY CIRCUIT PC BOARD (NADG-4060-2)-PART LIST

| CIRCUIT NO. | PART NO.     | DESCRIPTION    |
|-------------|--------------|----------------|
|             | <b>ICs</b>   |                |
| Q001        | 22240395     | HD-404439A18FS |
| Q006, Q007  | 222824       | TC5066BP       |
| Q008, Q009  | 222741385TOS | TC74HC138AP    |
| Q010, Q011  | 222801       | MPA80C         |

### REMOTE CONTROL SENSOR PC BOARD (NADG-4061-2)-PART LIST

| CIRCUIT NO. | PART NO.                    | DESCRIPTION |
|-------------|-----------------------------|-------------|
|             | <b>Photo receiving unit</b> |             |
| U051        | 24130003                    | GPIU50XS    |
|             | <b>Diodes</b>               |             |
| D051, D052  | 223163                      | 1SS133      |

## PHONE CIRCUIT PC BOARD (NAETC-4062-2)-PART LIST

| CIRCUIT NO. | PART NO.         | DESCRIPTION               |
|-------------|------------------|---------------------------|
|             | <b>Capacitor</b> |                           |
| C061        | 354784799        | 0.47 $\mu$ F, 50V, Elect. |
|             | <b>Jack</b>      |                           |
| P061        | 25045232         | HLJ4307-01-3140           |

## BALANCE-VR CIRCUIT PC BOARD (NAAF-4063-2)-PART LIST

| CIRCUIT NO. | PART NO.        | DESCRIPTION            |
|-------------|-----------------|------------------------|
|             | <b>Resistor</b> |                        |
| R081        | 5146059         | N16RL10KB25F, Variable |

## POWER SUPPLY CIRCUIT (1) PC BOARD (NAPS-4064-2)-PART LIST

| CIRCUIT NO.             | PART NO.                | DESCRIPTION                            |
|-------------------------|-------------------------|--|
|                         | <b>ICs</b>              |  |
| Q915                    | 22240427                | HD404728A-39S                          |
| Q916                    | 22240429                | M51944BSL                              |
| Q920, Q921              | 222780055NEC            | 78M05HF                                |
| Q929                    | 222807                  | MPA81C                                 |
|                         | <b>Transistors</b>      |  |
| Q922                    | 2211455                 | 2SA1015-GR                             |
| Q923                    | 2201935 or<br>2201936   | 2SB1186-E or<br>2SB1186-F              |
| Q924                    | 2211255                 | 2SC1815-GR                             |
| Q925                    | 2202176 or<br>2202175   | 2SB1370-F or<br>2SB1370-E              |
| Q926                    | 2211504                 | 2SA950-Y                               |
| Q927                    | 2211455                 | 2SA1015-GR                             |
| Q928                    | 2202116 or<br>2202115   | 2SD2061-F or<br>2SD2061-E              |
|                         | <b>Diodes</b>           |  |
| D921                    | 22380022                | RBV402                                 |
| D922~D937               | 22380035 or<br>22380032 | GP104003E or<br>1SR139-100             |
| D944~D950<br>D915, D953 | 223163                  | 1SS133                                 |
| D951                    | 224450683               | MTZ6.8C                                |
| D954                    | 224450512               | MTZ5.1B                                |
|                         | <b>Osc. element</b>     |  |
| X915                    | 3010163                 | CST4.19MGW                             |
|                         | <b>Capacitors</b>       |  |
| C915                    | 375524744               | 0.47 $\mu$ F, 50V, Film (MMT)          |
| C920                    | 354790109               | 1 $\mu$ F, 100V, Elect.                |
| C923~C928               | 374721044               | 0.1 $\mu$ F, 50V, Film (TF)            |
| C929~C936               | 374721035               | 0.01 $\mu$ F, 50V, Film (TF)           |
| C937, C938              | 354763329               | 3300 $\mu$ F, 35V, Elect.              |
| C941                    | 354754729               | 4700 $\mu$ F, 25V, Elect.              |
| C942                    | 354752229               | 2200 $\mu$ F, 25V, Elect.              |
| C943                    | 354746829               | 6800 $\mu$ F, 16V, Elect.              |
| C944                    | 354761019               | 100 $\mu$ F, 35V, Elect.               |
| C945                    | 3500130                 | 470 $\mu$ F, 80V, Elect.               |
| C946                    | 354751029               | 1000 $\mu$ F, 25V, Elect.              |
| C947                    | 354744709               | 47 $\mu$ F, 16V, Elect.                |
| C948, C949              | 354781009               | 10 $\mu$ F, 50V, Elect.                |
| C951, C953<br>C954      | 354741009               | 10 $\mu$ F, 16V, Elect.                |
|                         | <b>Resistors</b>        |  |
| R923~R926               | 442522294               | 0.22 $\Omega$ , 1/2W, Metal oxide film |
| R927, R930<br>R931      | 442520104               | 1 $\Omega$ , 1/2W, Metal oxide film    |
| R928, R929              | 441623914               | 390 $\Omega$ , 1W, Metal oxide film    |
| R959                    | 442523904               | 39 $\Omega$ , 1/2W, Metal oxide film   |

| CIRCUIT NO.           | PART NO.             | DESCRIPTION      |
|-----------------------|----------------------|------------------|
|                       | <b>Radiators</b>     |                  |
| Q920a, Q923a<br>D921a | 27160211<br>27160166 | RAD-68           |
|                       | <b>Plugs</b>         |                  |
| P001a                 | 25055153             | NPLG-9P137       |
| P915a                 | 25055517             | NPLG-10P492      |
| P916a                 | 25055510             | NPLG-3P485       |
|                       | <b>Socket ass'y</b>  |                  |
| P007                  | 2002393010           | NSAS-30P-0211    |
| P923                  | 2000597              | NSAS-18P553      |
|                       | <b>Sockets</b>       |                  |
| P618                  | 25050446             | NSCT-10P270      |
| P619                  | 25050445             | NSCT-8P269       |
|                       | <b>Fuse holders</b>  |                  |
| F921a, F922a          | 250113               | S-N5051          |
|                       | <b>Relay</b>         |                  |
| RL921                 | 25065174             | NRL-2P1A-DC12-09 |

## VIDEO CIRCUIT PC BOARD (NAETC-4065-2)-PART LIST

| CIRCUIT NO. | PART NO.             | DESCRIPTION  |
|-------------|----------------------|--------------|
|             | <b>Diodes</b>        |              |
| D291~D294   | 223163               | 1SS133       |
|             | <b>Socket ass'y</b>  |              |
| P004        | 2002390410           | NSAS-4P0231  |
|             | <b>Terminal</b>      |              |
| P291        | 25045266             | NPJ-3PDBL133 |
|             | <b>Socket</b>        |              |
| P292        | 25050453             | NSCT-4P277   |
|             | <b>Sockets ass'y</b> |              |
| P293        | 2000786              | NSAS-6P742   |
| P294        | 2000943A             | NSAS-6P895   |

## POWER SUPPLY CIRCUIT (2) PC BOARD (NAPS-4067-2)-PART LIST

| CIRCUIT NO.       | PART NO.           | DESCRIPTION                            |
|-------------------|--------------------|--|
|                   | <b>Diodes</b>      |  |
| D901, D902        | 22380041           | 1SR139-200                             |
| D903~D906<br>D909 | 223163             | 1SS133                                 |
|                   | <b>Capacitors</b>  |  |
| C901, C902        | 3500065A           | 0.01 $\mu$ F, AC400V/125V, Film (IS)   |
| C905, C906        | 374792734          | 0.027 $\mu$ F, 63V, Film (TF)          |
| C907~C911         | 374721035          | 0.01 $\mu$ F, 50V, Film (TF)           |
|                   | <b>Resistors</b>   |  |
| R901~R908         | 442522294          | 0.22 $\Omega$ , 1/2W, Metal oxide film |
|                   | <b>Relay</b>       |  |
| RL901             | 25065248           | NRL-1P15A-DC12-29                      |
|                   | <b>Fuse holder</b> |  |
| F901a             | 250113             | S-N5051                                |
|                   | <b>Fuse label</b>  |  |
| F901b             | 29360486           | 7A/125V                                |
|                   | <b>AC socket</b>   |  |
| P901              | 25050388           | NSCT-6P215                             |

**REAR AMP. CIRCUIT PC BOARD (NAAF-4068-2)-PART LIST**

| CIRCUIT NO.  | PART NO.  | DESCRIPTION  |
|--|---|--|
|  | <b>ICs</b>  |  |
| Q751, Q752   | 22240108  | MPC1225H   |
|  | <b>Transistors</b>  |  |
| Q753, Q754<br>Q762, Q763<br>Q759, Q760   | 2211255   | 2SC1815-GR   |
|  | 2211732 or<br>2211733   | 2SC1845-F or<br>2SC1845-E  |
| Q761<br>Q764   | 2211455<br>221282   | 2SA1015-GR<br>DTC144ES   |
|  | <b>Diodes</b>   |  |
| D751, D755<br>D753, D754   | 223163<br>22380003  | 1SS133<br>1N5402F  |
|  | <b>Coils</b>  |  |
| L751, L752   | 231176  | S-1.3C   |
|  | <b>Capacitors</b>   |  |
| C751, C752<br>C755, C756<br>C761, C762<br>C759, C760<br>C763, C764<br>C767, C768<br>C771, C772<br>C774<br>C775, C776 | 354781009<br>354741019<br>374722235<br>374721044<br>374723334<br>354721019<br>3504207 | 10 $\mu$ F, 50V, Elect.<br>100 $\mu$ F, 16V, Elect.<br>0.022 $\mu$ F, 50V, Film (TF)<br>0.1 $\mu$ F, 50V, Film (TF)<br>0.033 $\mu$ F, 50V, Film (TF)<br>100 $\mu$ F, 6.3V, Elect.<br>6800 $\mu$ F, 50V, Elect. |
|  | <b>Resistors</b>  |  |
| R759<br>R765~R768<br>R769, R770<br>R775~R778   | 442520224<br>4500031<br>442521004   | 2.2 $\Omega$ , 1/2W, Metal oxide film<br>0.22 $\Omega$ , 5W, Metal plate<br>10 $\Omega$ , 1/2W, Metal oxide film   |
|  | <b>Relay</b>  |  |
| RL751  | 25065275  | NRL-2P5A-DC12-38   |
|  | <b>Socket ass'y</b>   |  |
| P616   | 2009990125  | NSAS-6P0190  |
|  | <b>Plugs</b>  |  |
| P753, P754   | 25055493  | NPLG-2P468   |
|  | <b>Mini jack</b>  |  |
| P751   | 25045172  | HSJ1003-01-020   |
|  | <b>Bracket</b>  |  |
|  | 27141059  |  |
|  | <b>Glass tube</b>   |  |
|  | 79087   | ESG-3  |

**FRONT SPEAKER CIRCUIT PC BOARD (NAETC-4069-2)-PART LIST**

| CIRCUIT NO. | PART NO.             | DESCRIPTION  |
|-------------|----------------------|--------------|
|             | <b>Terminal</b>      |              |
| P791        | 25060155             | NTM-8PDMN082 |
|             | <b>Terminal</b>      |              |
| P792        | 25045304             | NPJ-2PDBL163 |
|             | <b>Jumper socket</b> |              |
| JL793       | 25050271             | NSCT-7P99    |

**REAR SPEAKER CIRCUIT PC BOARD (NAETC-4070-2)-PART LIST**

| CIRCUIT NO. | PART NO.        | DESCRIPTION  |
|-------------|-----------------|--------------|
|             | <b>Terminal</b> |              |
| P761        | 25060147        | NTM-4PDMN075 |

**RELAY PC BOARD (NAETC-4071-2, NAETC-4072-2)-PART LIST**

| CIRCUIT NO. | PART NO.      | DESCRIPTION |
|-------------|---------------|-------------|
|             | <b>Socket</b> |             |
| P915        | 25050461      | NSCT-10P285 |
| P916        | 25050454      | NSCT-3P278  |

**AUTO INPUT BALANCE CIRCUIT PC BOARD (NAAF-4075-2)-PART LIST**

| CIRCUIT NO.                              | PART NO.   | DESCRIPTION  |
|--|--|--|
|  | <b>ICs</b>                                       |  |
| Q071<br>Q072, Q074                       | 22240412<br>22240400 or<br>22240407              | TDA1074A<br>NJM2082L or<br>NJM2082S  |
|  | <b>Transistors</b>                               |  |
| Q073                                     | 2211944 or<br>2211945                            | 2SK246-Y or<br>2SK246-GR   |
|  | <b>Diodes</b>                                    |  |
| D071~D075                                | 223163   | 1SS133   |
|  | <b>Capacitors</b>                                |  |
| C071, C072<br>C073<br>C074, C078<br>C077 | 354741009<br>374721044<br>354741019<br>392841007 | 10 $\mu$ F, 16V, Elect.<br>0.1 $\mu$ F, 50V, Film (TF)<br>100 $\mu$ F, 16V, Elect.<br>10 $\mu$ F, 16V, Elect. (LL) |
|  | <b>Resistors</b>                                 |  |
| R075, R092                               | 5210064  | N06HR10KBD, Semi fixed   |
|  | <b>Plugs</b>                                     |  |
| P071<br>P072<br>P073                     | 25055136<br>25055133<br>25055132                 | NPLG-6P120<br>NPLG-3P117<br>NPLG-2P116   |

**NOTE:**

THE COMPONENTS IDENTIFIED BY MARK  $\Delta$  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.


**PACKING PARTS LIST**

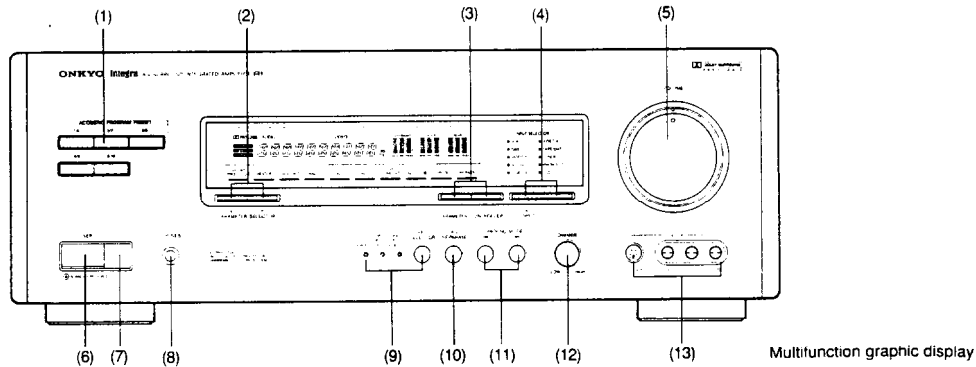
| <b>REF. NO.</b> | <b>PART NO.</b>  | <b>DESCRIPTION</b>            |
|-----------------|------------------|-------------------------------|
| A851            | 29052115A        | MASTER CARTON BOX             |
| A852            | 29091425A        | PAD, LEFT                     |
| A853            | 29091426A        | PAD, RIGHT                    |
| A855            | 29095108-1       | 1000×600 mm. PROTECTION SHEET |
| A856            | 29100035A        | 1020×720 mm, POLY-VINYL BAG   |
| A857            | 282321 or 282301 | SEALING HOOK or SEALING HOOK  |
| A858            | 29110071         | DAMPLON TAPE                  |
| A859            | 261504           | PAPER TAPE                    |
|                 | <b>ACCESSARY</b> |                               |
| A901            | 29341569A        | INSTRUCTION MANUAL            |
| A903            | 29100097         | 250 × 350, POLY-VINYL BAG     |
| A906            | 24140189A        | RC-189M, REMOTE CONTROL UNIT  |
| (A906a)         | 3010109          | AM-4, FOUR BATTERIES          |
| A909            | 2010200          | 3.5 MINI PLUG                 |
|                 | 29365019A        | WARRANTY CARD [N]             |
|                 | 29358002J        | SERVICE STATION LIST [N]      |









NOTE: [N]: ONLY U.S.A. MODELS





# FRONT PANEL FACILITIES

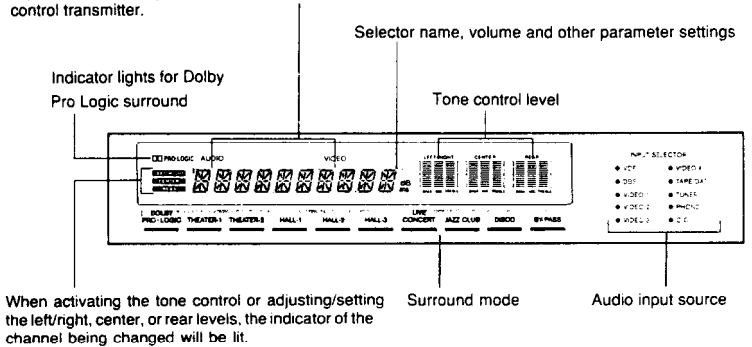
1. The  mark indicates that the function can be operated by remote control.
2. Except in the case of timer-activated recording (page 20), be sure to press only one button at a time. Pressing two or more buttons simultaneously can lead to a malfunction.



- (1) **Acoustic Program Preset (ACOUSTIC PROGRAM PRESET) **  
The acoustic program can be called by pressing any button on the front panel or by using the remote control transmitter. In standby mode or recording standby mode, pressing one of these buttons switches power on and activates preset. Pressing any button once calls each button's primary function (nos. 1 - 5), pressing the button twice calls the button's secondary function (nos. 6 - 10). The same procedure is followed when using the remote control transmitter. For example, pressing button 1/6 once calls it to 1, pressing it twice calls it to 6.
- (2) **Parameter Selector (PARAMETER SELECTOR  )**  
Set the parameters (room size, tone controls, etc.) according to the present listening environment. Press the  button for advance; the  button for return. The parameters are indicated in the display. These can be changed with the parameter controller.
- (3) **Parameter Controller (PARAMETER CONTROLLER +/-)**  
These buttons change the parameters selected by the parameter selector buttons.
- (4) **Input Selector (INPUT SELECTOR) **  
These buttons select the inputs in forward or reverse sequence. (CD, Phono, Tuner, Tape/DAT, Video-4, Video-3, Video-2, Video-1, DBS, VDP, CD, etc.)
- (5) **Volume Control (VOLUME) **  
Turn the knob clockwise to increase the volume and counter-clockwise to reduce it. The volume level is indicated in the display on the front panel and on the screen display of the monitor-TV. Some static or acoustic interference may be heard at very low volume levels. To eliminate the sound, use the muting button of the remote control transmitter.
- (6) **Power Switch (POWER) and Standby/Received Indicator **  
Press to switch the power on. The standby/received indicator goes out. Press again to switch the power off. The standby/received indicator lights. The standby/received indicator also lights when a signal is received from the remote control transmitter.

- (8) **Phones Jack (PHONES)**  
Connecting a headphone plug cuts off the sound from all speakers. Sound can be heard only from the headphones. The audio signal to the headphones comes from the front L/R speaker channels.
- (9) **REC Selector (REC SELECTOR) and indicator **  
Selects the sound and picture source for recording. REC standby is activated by turning off the main power switch during that this button is being depressed.
- (10) **A/V Separate (A/V SEPARATE)**  
Selects the input source mode for video only, audio only or video and audio together.
- (11) **Surround Mode (SURROUND MODE) **  
These buttons select the surround mode in forward or reverse sequence. (Dolby Pro Logic, Theater-1, Theater-2, Hall-1, Hall-2, HALL-3, Live Concert, Jazz Club, Disco, Bypass, Dolby Pro Logic, etc.)
- (12) **Dimmer Control (DIMMER)**  
Adjusts the brightness of the display. Turn clockwise to increase brightness; counter-clockwise to dim.
- (13) **Video-4 Inputs (Equipped with S Connector)**  
Can be used to connect a video camera, auxiliary tape deck, etc. If monaural sound is desired, connect the audio cable to R (Mono), only.

Flashes or lights when the input source is selected by the A/V separate button or by the cursor commander of the remote control transmitter.



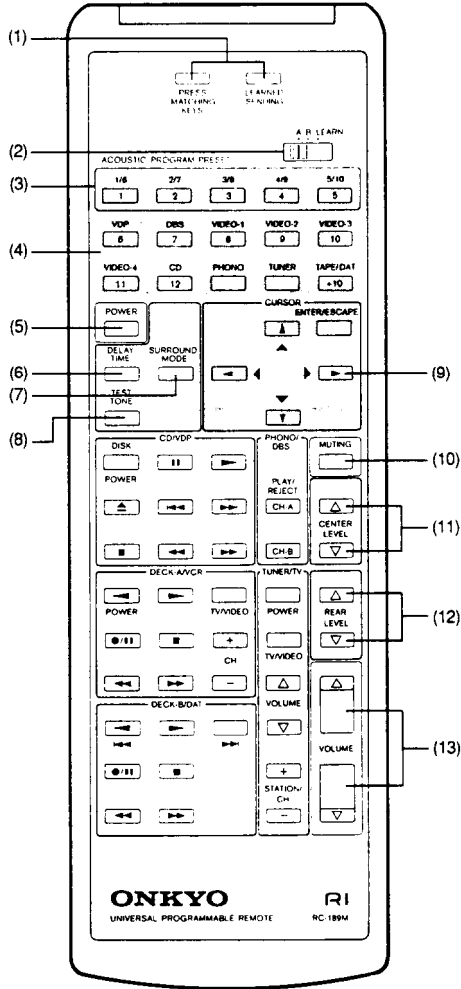
When activating the tone control or adjusting/setting the left/right, center, or rear levels, the indicator of the channel being changed will be lit.

Multifunction Graphic Display

In order to store the memory data and allow remote control transmitter operation, a small amount of current is supplied to the processor regardless of the power switch setting. This is termed the standby mode and its status is indicated by the standby/received indicator.

- (7) **Remote Sensor**  
Receives signals from the remote control transmitter. The standby/received indicator lights whenever a signal is received.

**Remote Control Transmitter (RC-190M)**



The following buttons are used to control the A-SV810PRO.

**(1) Operation Indicators**

The two indicators function as guides when codes are stored in the remote control transmitter. If the encoding process is incomplete or the battery depleted, both indicators will flash whenever a button is pressed.

**(2) A/B/Learn Switch**

A: Set to this position during operation for (3) - (13) buttons and other white characters.

B: Set to this position during operation for (3) - (13) buttons and Onkyo DAT deck with the RI mark or when intending to use buttons with an encoded function.

LEARN: Use this position to input the code of another remote control transmitter.

\* Regardless of the user's choice of A or B position, the operating codes for buttons (3) - (13) are encoded in the memory.

**(3) Acoustic Program Preset**

Operation is the same as that of the mainframe.

**(4) Input Selector**

Select the desired input source.

**(5) Power Button (POWER)**

Operation is the same as that of the mainframe.

**(6) Delay Time (DELAY TIME)**

When the surround mode is set for Dolby Pro Logic, use this button to select the delay time.

**(7) Surround Mode (SURROUND MODE)**

Surround mode selector button. Operation is the same as that of the surround mode button of the mainframe.

**(8) Test Tone (TEST TONE)**

Test tone on/off.

**(9) Cursor (▲ / ▼ / ◀ / ▶) and Enter/Escape (ENTER/ESCAPE) Buttons (Cursor Commander)**

Control menu display and cursor movement within the display.

**(10) Muting Button (MUTING)**

Press to activate muting and cut off the sound. Press again to deactivate the muting and return to original volume level. Switching off power to the unit also deactivates the muting.

**(11) Center Level (CENTER LEVEL ▲/▼)**

Adjust the center speaker volume.

▲: Increases the volume  
▼: Decreases the volume

**(12) Rear Level (REAR LEVEL ▲/▼)**

Adjust the rear speaker volume.

▲: Increases the volume  
▼: Decreases the volume

**(13) Volume Control (VOLUME ▲/▼)**

Adjust volume level

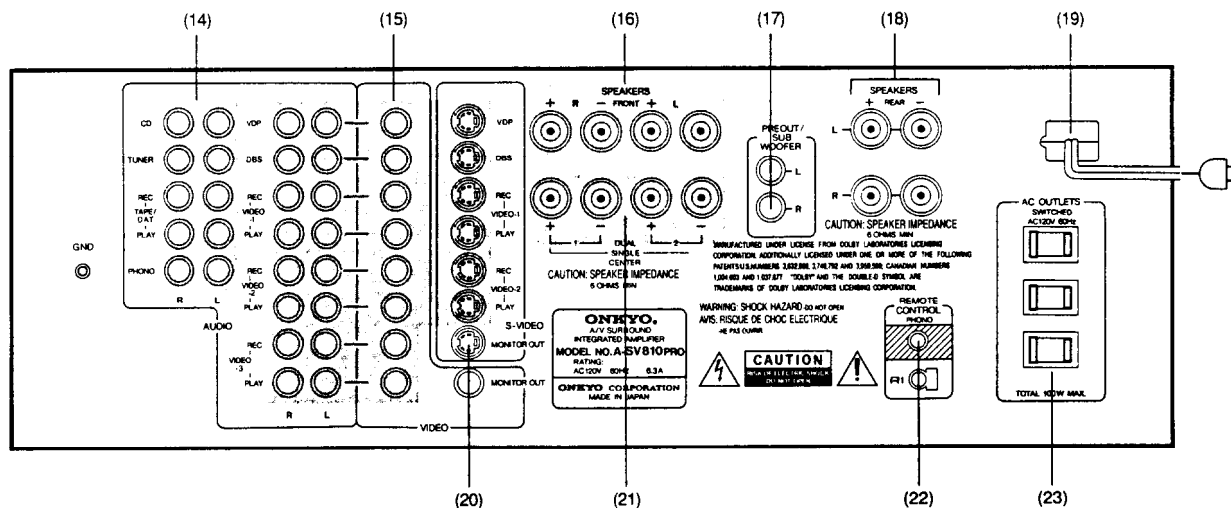
▲: Increases the volume  
▼: Decreases the volume

\* Set the A/B/LEARN switch to B to use the stored remote control codes.

\* All buttons except (11), (12) are capable of being encoded.

\* Refer to remote control operation on page 36.

# REAR PANEL FACILITIES



## (14) Audio Equipment Connectors

- CD connector:  
Connect a CD player.
- Tuner Connector:  
Connect a tuner.
- Tape/DAT connector:  
Connect a cassette deck or DAT.
- Phono jacks and GND (ground) connector:  
Connect a record player that uses an MM cartridge.  
Connect the ground lead to GND.

## (15) Video Equipment Connectors

- VDP connector:  
Connect a video disc player.
- DBS connector:  
Connect a broadcast satellite tuner or other types of tuners.
- Video-1 (with S connector):  
Connect a video deck.
- Video-2 (With S connector):  
Connect a video deck.
- Video-3:  
Connect a video deck.

## (16) Front L/R Speaker Terminals

- Terminals for connecting the front L/R speakers.

## (17) Pre-out/Sub-woofer Jacks

- Mixed front and center signal outputs. Level adjusted by the volume control (5). A super-woofer (with amplifier) can be connected.

## (18) Rear Speaker Terminals

- Terminals for connecting the rear speakers

## (19) Power Cord Plug (Source)

- Connect to AC 120V, 60Hz. (USA & Canadian models)  
See page 5 when you have a worldwide model.

## (20) Monitor Out

- Connect to a monitor-TV that has a normal video input or S connector.

## (21) Center Speaker Terminals

- Terminals for connecting the center speakers.

## (22) Remote Control Jacks

- Connect remote control cables. (See page 9.)

## (23) Switched AC Outlets

- Convenience outlets for plugging in other equipment. Power is switched on and off with the front panel power switch. Up to 3 units with a combined power consumption of less than 100 watts may be connected. Do not use for large-size TV sets or heavy appliances.