

STR-DB798

SERVICE MANUAL

Ver. 1.0 2005.07

AEP Model
UK Model
Taiwan Model



This receiver incorporates Dolby* Digital and Pro Logic Surround and the DTS** Digital Surround System.

* Manufactured under license from Dolby Laboratories.

"Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

** "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.

SPECIFICATIONS

Amplifier section

Power Output

Models of area code CEL, CEK, TW

Rated Power Output at Stereo Mode
(8 ohms 20 Hz – 20 kHz, THD 0.09%)

100 W + 100 W¹⁾

(8 ohms 1 kHz, THD 0.7%)

110 W + 110 W¹⁾

(8 ohms 1 kHz, THD 10%)

135 W + 135 W¹⁾

Reference Power Output¹⁾

(8 ohms 20 Hz – 20 kHz, THD 0.09%)

FRONT²⁾: 100 W/ch

CENTER²⁾: 100 W

SURR²⁾: 100 W/ch

SURR BACK²⁾: 100 W/ch

(8 ohms 1 kHz, THD 0.7%)

FRONT²⁾: 110 W/ch

CENTER²⁾: 110 W

SURR²⁾: 110 W/ch

SURR BACK²⁾: 110 W/ch

(8 ohms 1 kHz, THD 10%)

FRONT²⁾: 135 W/ch

CENTER²⁾: 135 W

SURR²⁾: 135 W/ch

SURR BACK²⁾: 135 W/ch

1) Measured under the following conditions:

Area code	Power requirements
AEP, UK	230 V AC, 50 Hz
Taiwan	110 V AC, 60 Hz

2) Depending on the sound field settings and the source, there may be no sound output.

Frequency response

PHONO	RIAA equalization curve ±0.5 dB
MULTI CH IN, SA-CD/ CD, MD/TAPE, DVD, TV/SAT, VIDEO 1, 2, 3	10 Hz – 100 kHz +0.5/-2 dB (when ANALOG DIRECT is selected)

Inputs (Analog)

PHONO	Sensitivity: 2.5 mV Impedance: 50 k ohms S/N ³⁾ : 86 dB (A, 2.5 mV ⁴⁾)
MULTI CH IN, SA-CD/ CD, MD/TAPE, DVD, TV/SAT, VIDEO 1, 2, 3	Sensitivity: 150 mV Impedance: 50 k ohms S/N ³⁾ : 96 dB (A, 150 mV ⁴⁾)

3) INPUT SHORT.

4) Weighted network, input level.

Inputs (Digital)

DVD, SA-CD/CD (Coaxial)	Sensitivity: – Impedance: 75 ohms S/N: 100 dB (A, 20 kHz LPF)
DVD, TV/SAT, MD/TAPE, VIDEO 3 (Optical)	Sensitivity: – Impedance: – S/N: 100 dB (A, 20 kHz LPF)

Outputs (Analog)

MD/TAPE (OUT), VIDEO 1, 2 (AUDIO OUT)	Voltage: 150 mV Impedance: 2.2 k ohms
SUB WOOFER	Voltage: 2 V Impedance: 1 k ohm

Outputs (Digital)

MD/TAPE (Optical)	Sensitivity: –
Equalizer	
Gain levels	±10 dB, 1 dB step

– Continued on next page –

FM STEREO FM/AM RECEIVER

9-879-775-01
2005G05-1
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Sony Corporation
Audio Group
Published by Sony Engineering Corporation

SONY®

STR-DB798

FM tuner section

Tuning range	87.5 - 108.0 MHz
Antenna	FM wire antenna
Antenna terminals	75 ohms, unbalanced
Intermediate frequency	10.7 MHz
Sensitivity	
Mono:	18.3 dBf, 2.2 μV/75 ohms
Stereo:	38.3 dBf, 22.5 μV/75 ohms
Useable sensitivity	11.2 dBf, 1 μV/75 ohms
S/N	
Mono:	76 dB
Stereo:	70 dB
Harmonic distortion at 1 kHz	
Mono:	0.3%
Stereo:	0.5%
Separation	45 dB at 1 kHz
Frequency response	30 Hz – 15 kHz, +0.5/–2 dB
Selectivity	60 dB at 400 kHz

AM tuner section

Tuning range	
Models of area code AEP, UK, Taiwan	
With 9-kHz tuning scale:	531 – 1,602 kHz
Antenna	Loop antenna
Intermediate frequency	450 kHz
Usable sensitivity	50 dB/m (at 1,000 kHz or 999 kHz)
S/N	54 dB (at 50 mV/m)
Harmonic distortion	0.5% (50 mV/m, 400 Hz)
Selectivity	
At 9 kHz:	35 dB

Video section

Inputs/Outputs	
Video:	1 Vp-p, 75 ohms
S-video:	Y: 1 Vp-p, 75 ohms C: 0.286 Vp-p, 75 ohms
COMPONENT VIDEO:	Y: 1 Vp-p, 75 ohms P _B /C _B /B-Y: 0.7 Vp-p, 75 ohms P _R /C _R /R-Y: 0.7 Vp-p, 75 ohms 80 MHz HD Pass Through

General

Power requirements	
Area code	Power requirements
AEP, UK	230 V AC, 50/60 Hz
Taiwan	110 V AC, 50/60 Hz

Power consumption	
Area code	Power consumption
AEP, UK	290 W
Taiwan	520 W

Power consumption (during standby mode)	0.3 W
Dimensions (w/h/d) (Approx.)	397 160 .5 430 mm including projecting parts and controls
Mass (Approx.)	13.5 kg

Supplied accessories

- FM wire antenna (1)
- AM loop antenna (1)
- Remote commander RM-AAP002 (1)
- R6 (size-AA) batteries (2)
- AC power cord (1)

Design and specifications are subject to change without notice.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

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

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SECTION 1 SERVICING NOTES

• MODEL IDENTIFICATION

– Back Panel –



Model	PART No.
AEP model	2-594-539-0□
Taiwan model	2-594-539-1□
UK model	2-594-539-4□

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

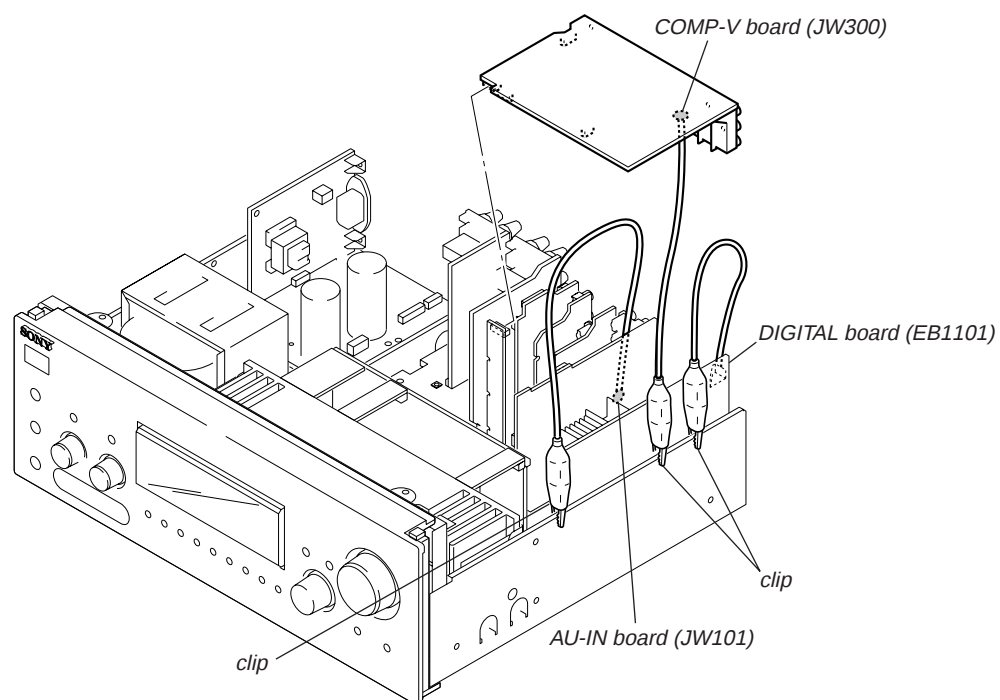
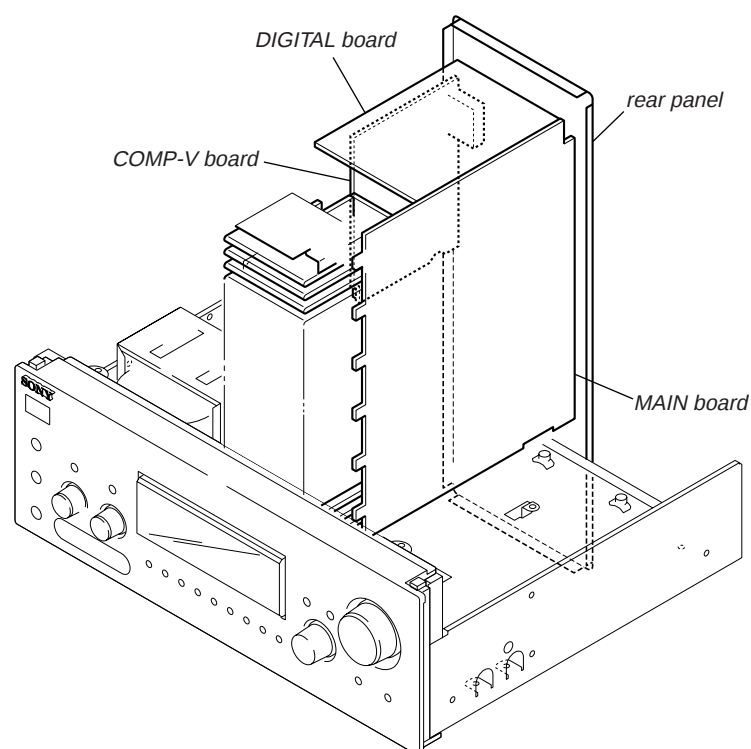
LF: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350 °C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SERVICE POSITION

When checking without back panel, it is necessary to connect the clip for GND to a chassis.

**-MAIN BOARD SERVICE POSITION-**

SECTION 2
GENERAL

This section is extracted from
instruction manual.

Receiver

ALPHABETICAL ORDER

A - L

- A.F.D. 17
- Cover 22
- DIRECT 12
- DISPLAY 9
- Display 7
- INPUT MODE 10
- INPUT SELECTOR 14
- IR (receptor) 1

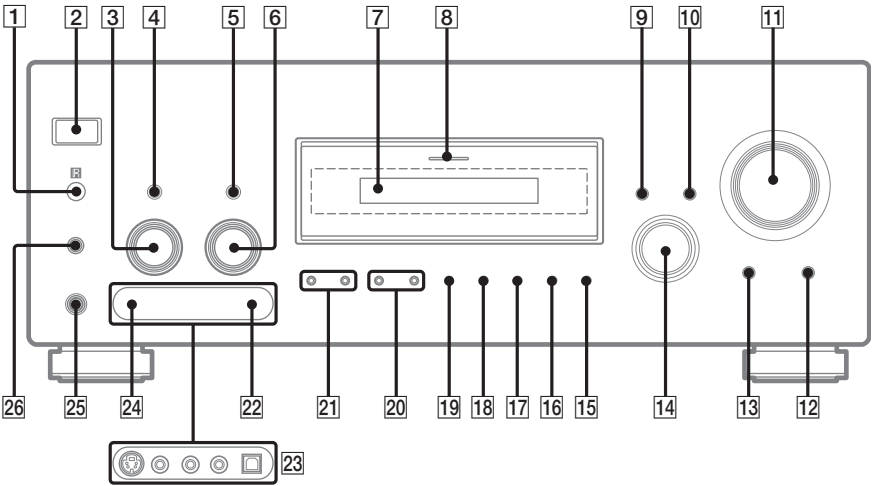
M - Z

- MAIN MENU 4
- MASTER VOLUME -/+ 11
- MEMORY/ENTER 5
- MENU 3
- MOVIE 16
- MULTI CHANNEL DECODING (indicator) 8
- MULTI CH IN 13
- MUSIC 15
- PHONES (jack) 25
- PRESET TUNING -/+ 21

- PUSH 24
- SPEAKERS (OFF/A/B/A+B) 26
- SURR BACK DECODING 19
- TUNING -/+ 20
- VIDEO 3 INPUT (jacks) 23

NUMBERS AND SYMBOLS

- 2CH 18
- /+ 6
- I/⏻ (power) 2



To remove the cover

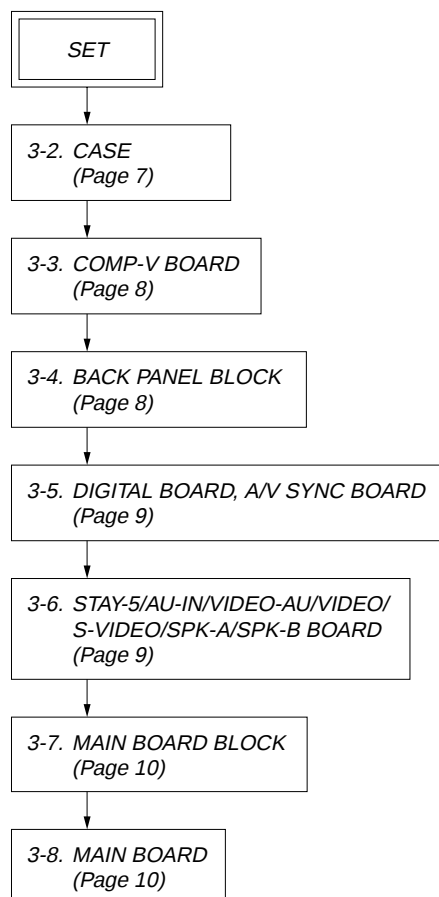


Press PUSH to remove the cover. When you remove the cover, keep the cover out of reach of the children.

SECTION 3 DISASSEMBLY

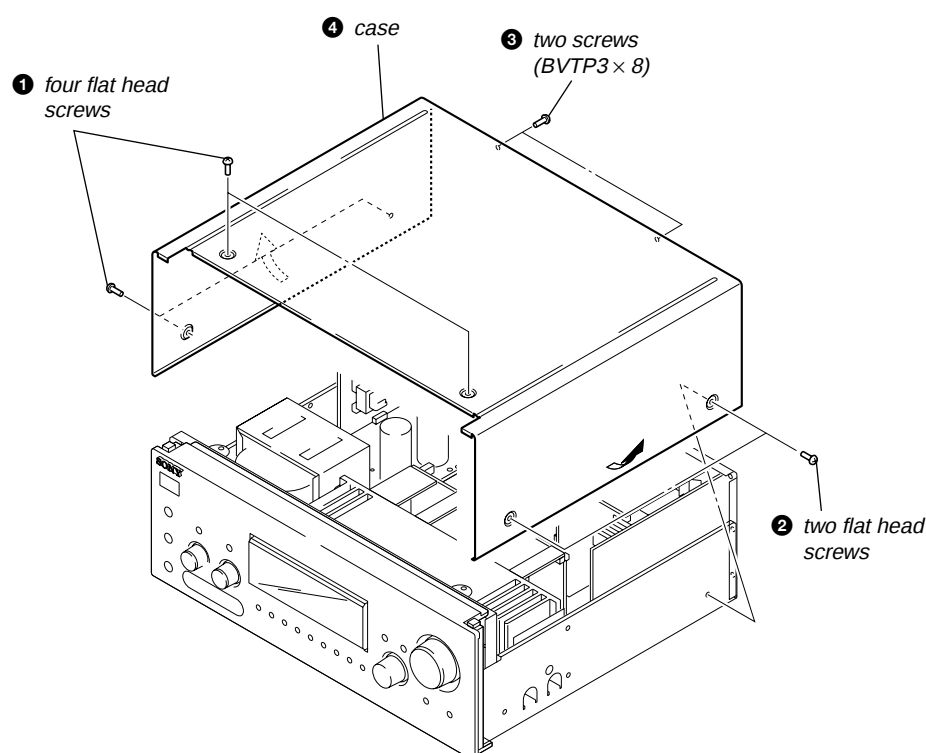
- This set can be disassembled in the order shown below.

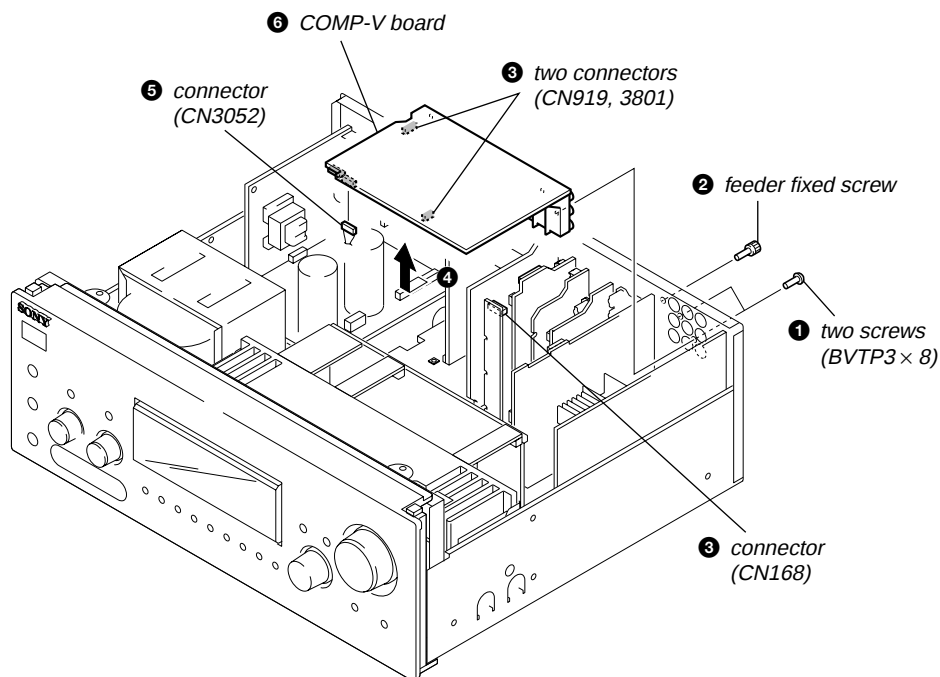
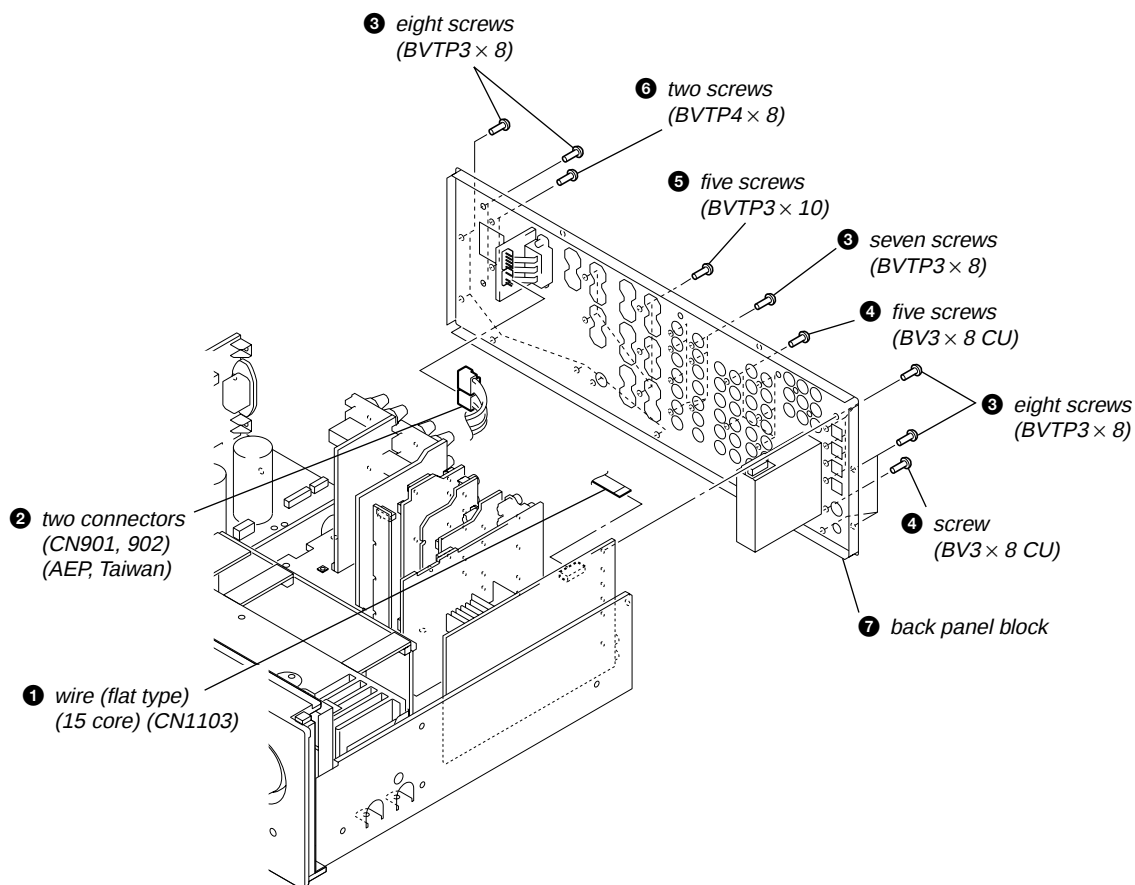
3-1. DISASSEMBLY FLOW



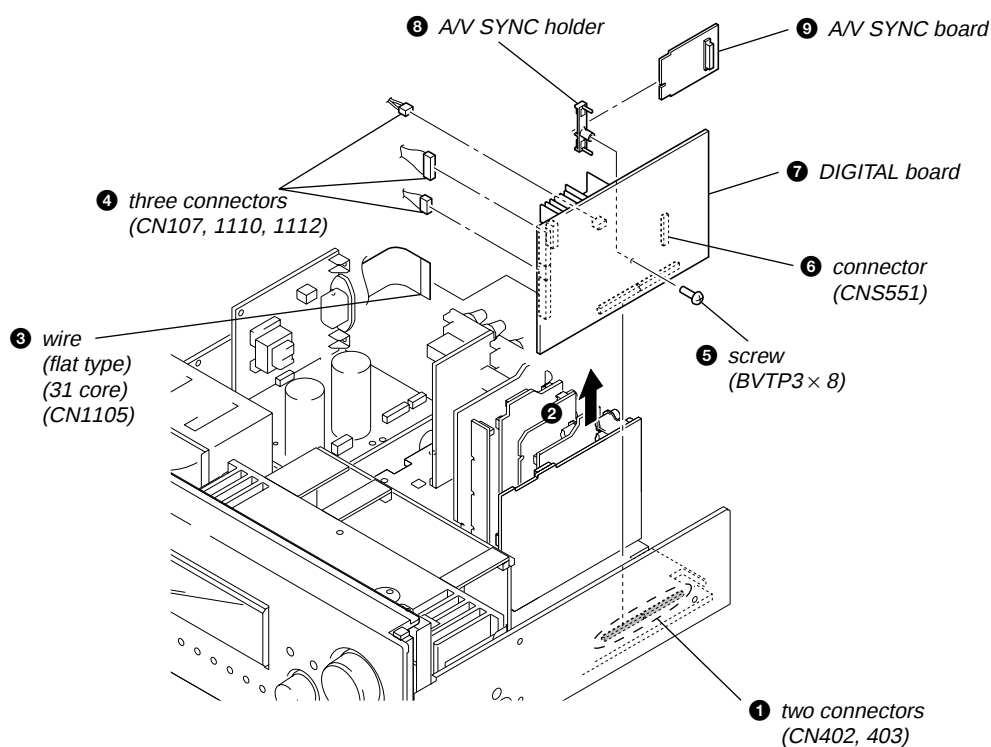
Note: Follow the disassembly procedure in the numerical order given.

3-2. CASE

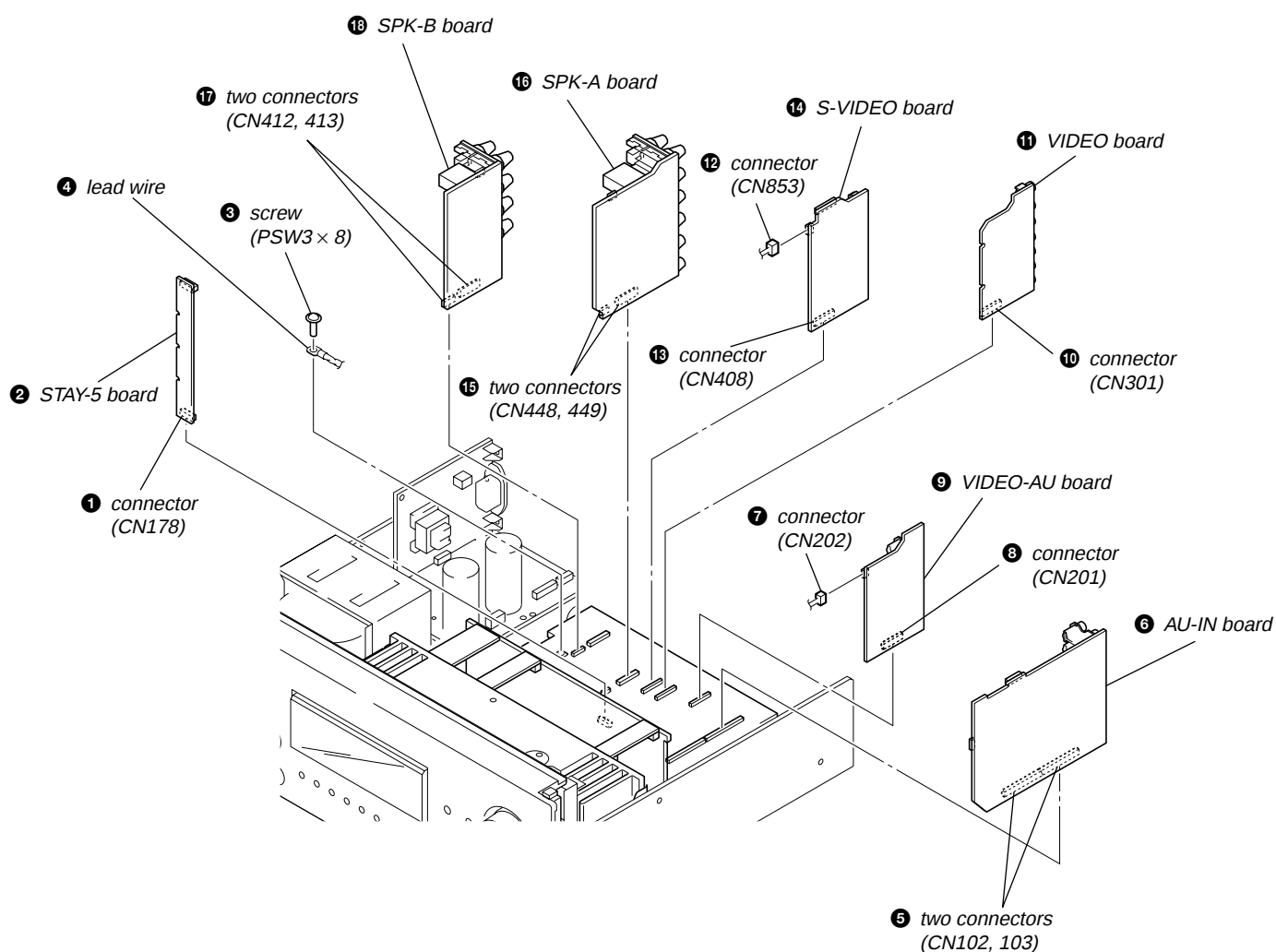


STR-DB798**3-3. COMP-V BOARD****3-4. BACK PANEL BLOCK**

3-5. DIGITAL BOARD, A/V SYNC BOARD

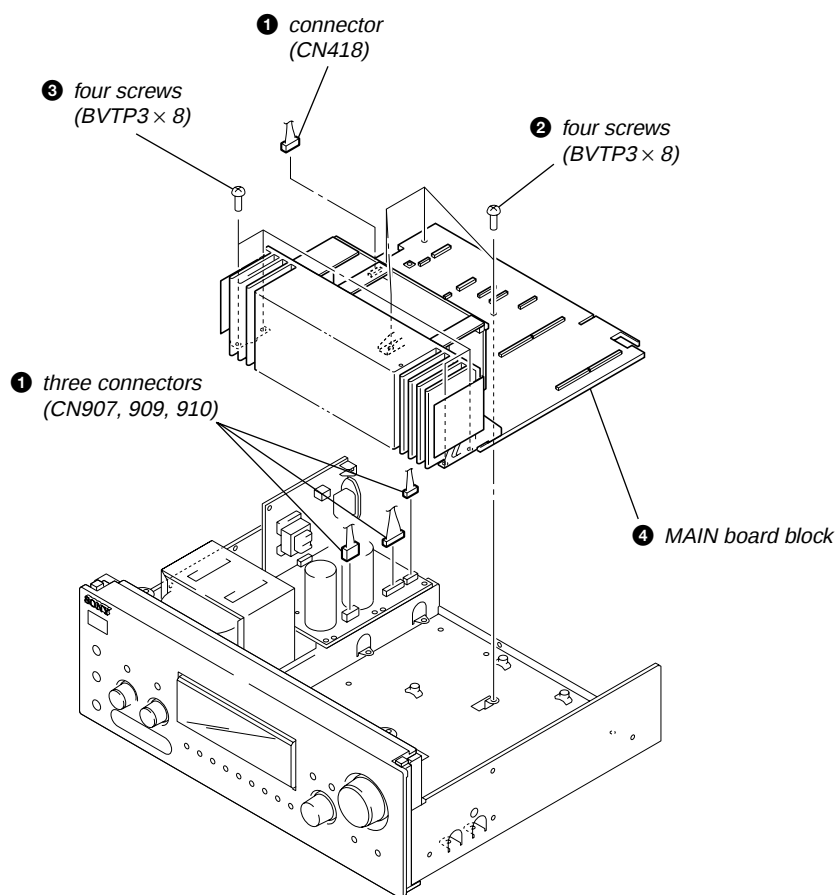


3-6. STAY-5/AU-IN/VIDEO-AU/VIDEO/S-VIDEO/SPK-A/SPK-B BOARD

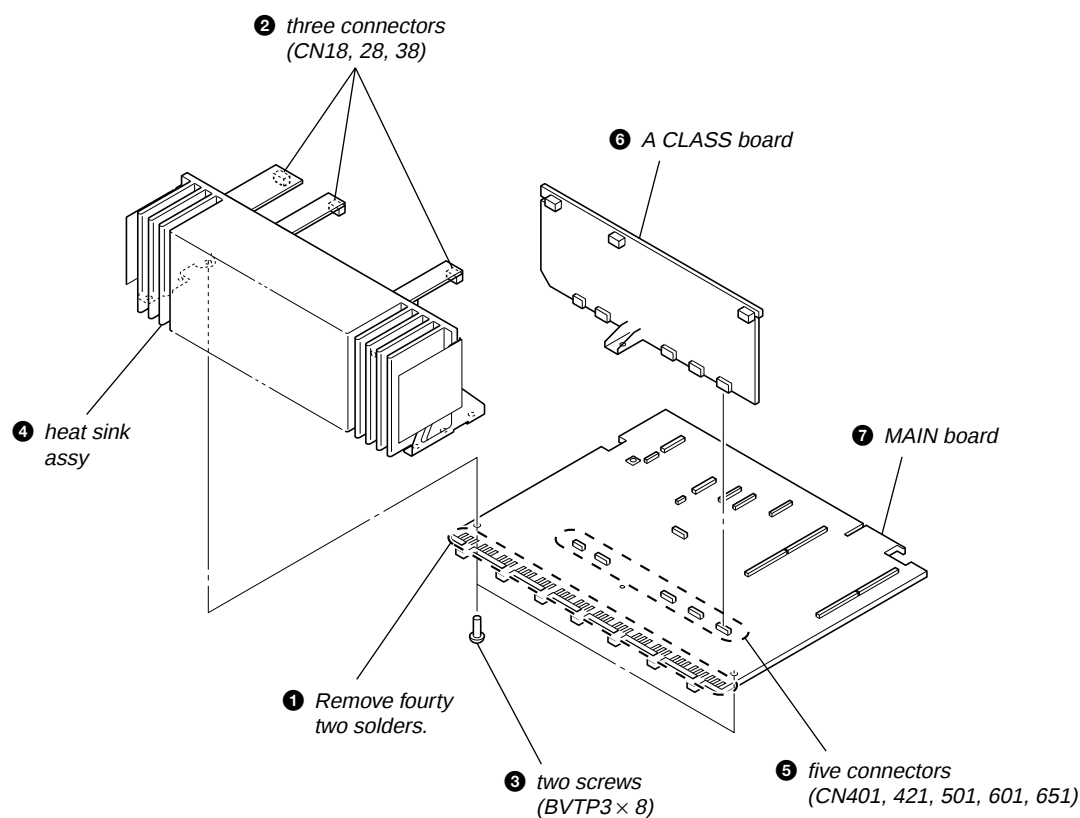


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3-7. MAIN BOARD BLOCK



3-8. MAIN BOARD



SECTION 4 TEST MODE

TUNER FACTORY PRESET MODE

All preset contents are reset to the default setting.

Procedure:

1. While pressing the **[MUSIC]** and **[PRESET TUNING -]** buttons, press the **[I/⏻]** button to turn on the main power.
2. The message "FACTORY" appears and the present contents are reset to the default values.

TUNER AUTOBETICAL TUNING MODE (AEP and UK models)

Procedure:

1. While pressing the **[MEMORY/ENTER]** button, press the **[I/⏻]** button to turn on the main power.
2. The message "AUTO-BETICAL SELECT" appears and scans and stores all the FM and FM RDS stations in the broadcast area.
3. When done, the message "FINISH" appears.

SOUND FIELD CLEAR MODE

The preset sound field is cleared when this mode is activated. Use this mode before returning the product to clients upon completion of repair.

Procedure:

1. While pressing the **[2CH]** button, press the **[I/⏻]** button to turn on the main power.
2. The message "SF. CLR." appears and initialization is performed.

FLUORESCENT INDICATOR TUBE PATTERN CHECK MODE

All fluorescent segments are tested. When this test is activated, all segments turn on at the same time, then each segment turns on one after another.

Procedure:

1. While pressing the **[PRESET TUNING -]** and **[A.F.D.]** buttons, press the **[I/⏻]** button to turn on the main power.
2. All segments and **[MULTI CHANNEL DECODING]** indicator LED turn on.

SHIPMENT MODE

All preset contents are cleared when this mode is activated. Use this mode before returning the product to clients upon completion of repair.

Procedure:

1. While pressing the **[PRESET TUNING -]** and **[SURR BACK DECODING]** buttons, press the **[I/⏻]** button to turn on the main power.
2. The message "CLEARING" appears and memories are reset to the default values and the main power turn off automatically.

SWAP ALL MODE

Procedure:

1. While pressing the **[PRESET TUNING +]** and **[A.F.D.]** buttons, press the **[I/⏻]** button to turn on the main power.
2. The message "SWAP" appears.

COMMAND MODE CHANGE MODE

The command mode of the remote-commander which this set receives can be changed.

Procedure:

1. While pressing the **[INPUT MODE]** buttons, press the **[I/⏻]** button to turn the main power.
2. Either the message "C.MODE.AV1" or "C.MODE.AV2" appears. Select the desired mode.

VERSION CHECK MODE

The version of the micro computer displayed.

Procedure:

1. While pressing the **[PRESET TUNING -]** and **[2CH]** buttons, press the **[I/⏻]** button to turn the main power.
2. The version of the micro computer and model destination are displayed.

DECODE AUTO ALL MODE

Procedure:

1. While pressing the **[PRESET TUNING -]** and **[MOVIE]** buttons, press the **[I/⏻]** button to turn the main power.
2. The message "DEC TEST" appears.

PROTECTOR AUTO OFF

When this mode is used, a protector on state is maintainable.

Procedure:

1. While pressing the **[PRESET TUNING +]** and **[MOVIE]** buttons, press the **[I/⏻]** button to turn on the main power.
2. The message "PROT EVER" appears.

SECTION 5

ELECTRICAL ADJUSTMENTS

BIAS ADJUSTMENT

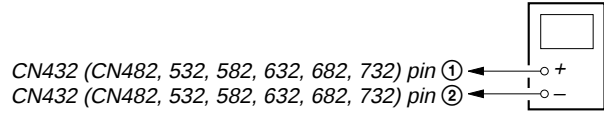
Condition:

input signal: no signal (no load)

volume: minimum

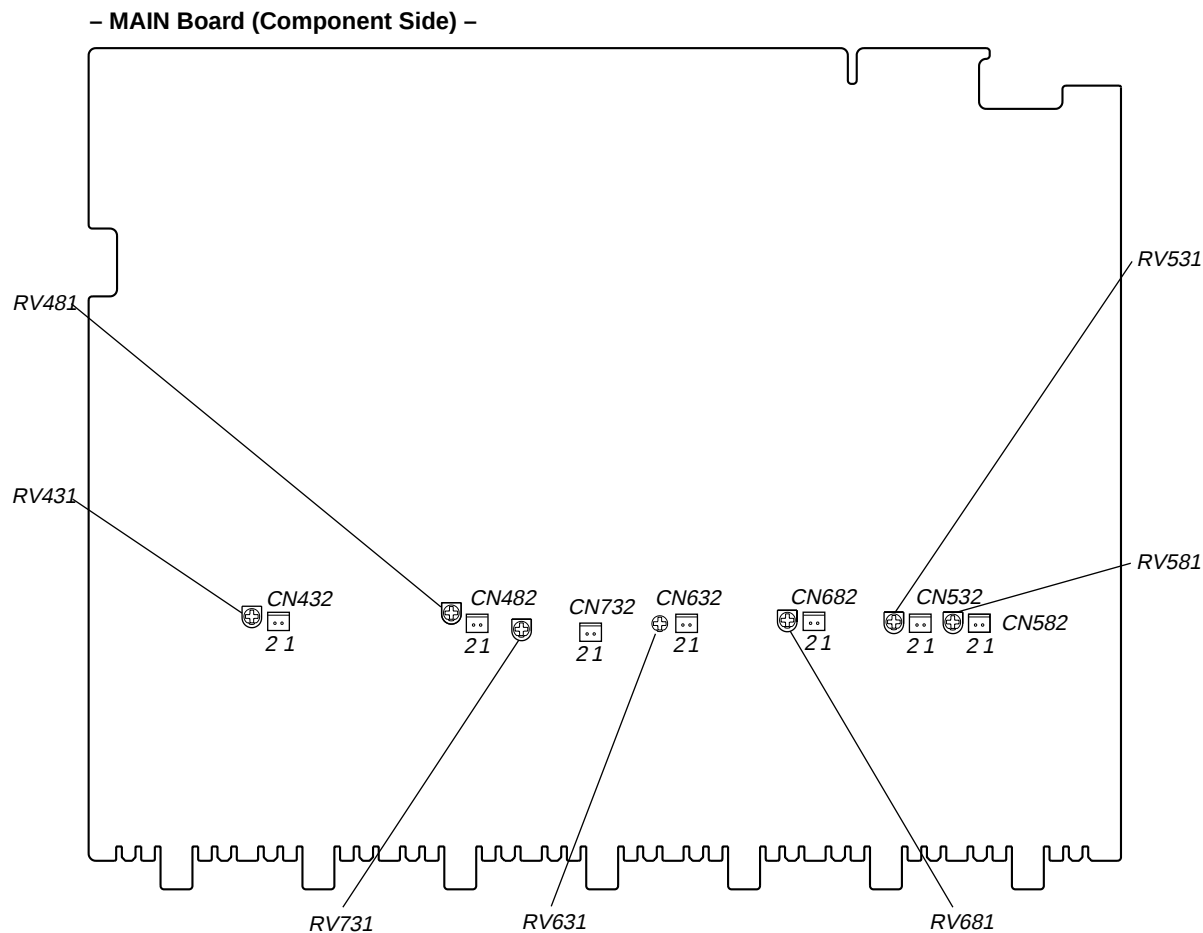
Connection

digital voltmeter


Procedure:

1. Connect a digital voltmeter to the CN432 (CN482, CN532, CN582, CN632, CN682, CN732) on the MAIN board.
2. Press the  button to turn on the main power.
3. Adjust the RV431 (RV481, RV531, RV581, RV631, RV681, RV731) on the MAIN board so that the digital voltmeter reading is 15 ± 2 mV.

Note: When the adjusting voltage is higher than 15 ± 2 mV, adjust the voltage to the minimum voltage.

Adjustment and Connection Location:


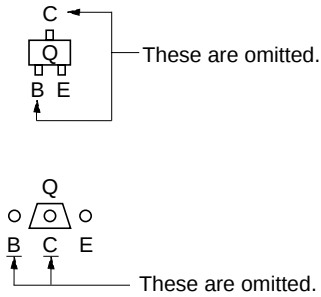
• Note for Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Board:

- — : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from
(Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from
(Component Side) the parts face are indicated.

• Indication of transistor



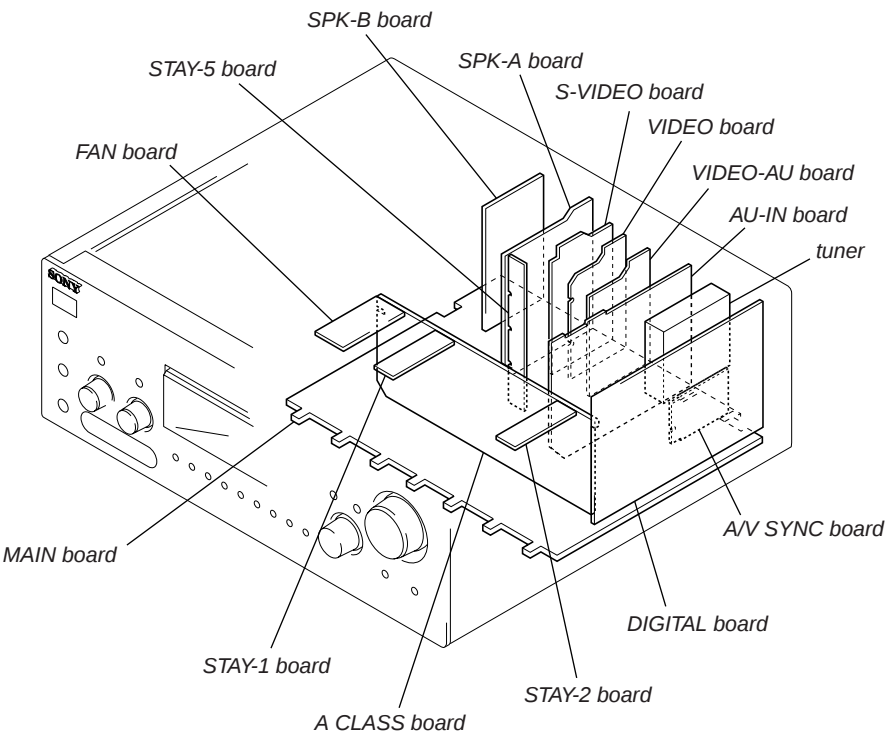
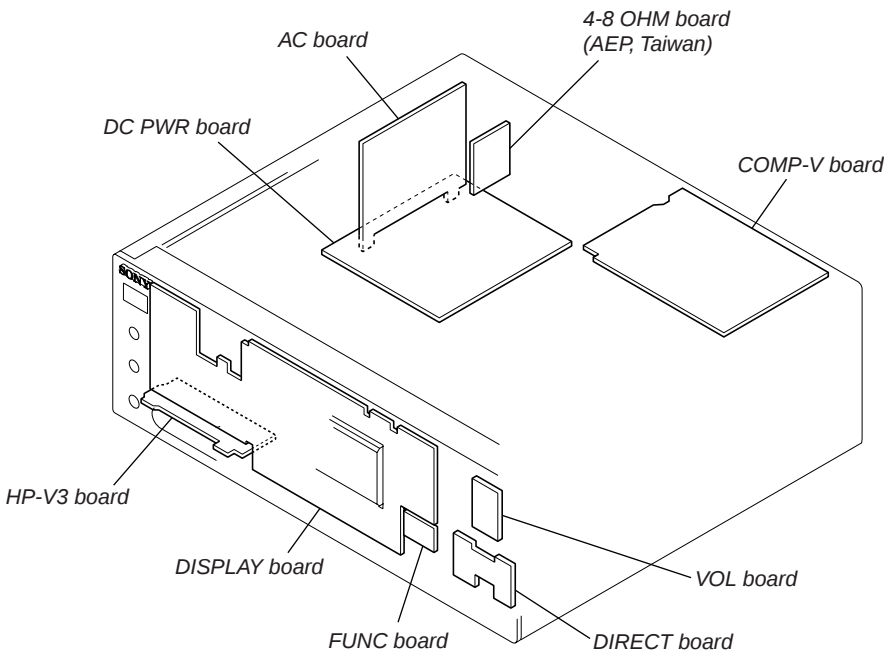
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. (p: pF)
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- $\triangle$: internal component.
- $\square$: nonflammable resistor.
- $\square$: panel designation.

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

- --- : B+ Line.
- --- : B- Line.
- $\square$: adjustment for repair.
- Voltagess and waveforms are dc with respect to ground under no-signal conditions.
no mark : TUNER
() : VIDEO 1
- Voltagess are taken with a VOM (Input impedance 10 MW).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 $\Rightarrow$: TUNER
 $\Rightarrow$: AUDIO (ANALOG)
 $\Rightarrow$: AUDIO (DIGITAL)
 $\Rightarrow$: VIDEO
- Abbreviation
TW : Taiwan model

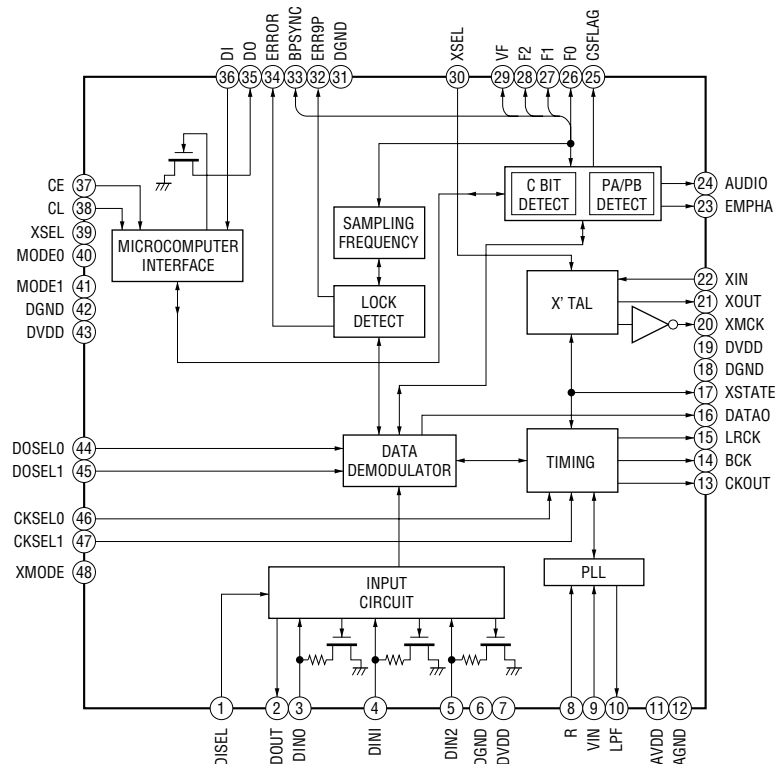
• Circuit Boards Location



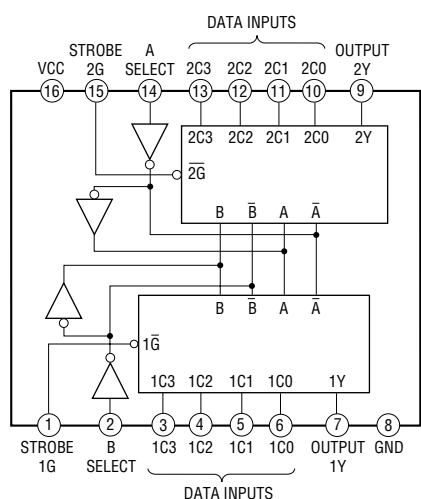
• IC Block Diagrams

– DIGITAL Board –

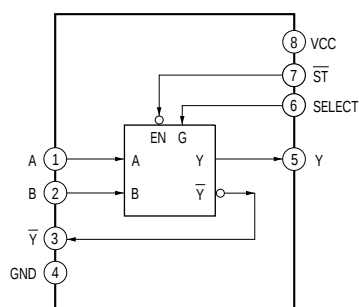
IC1101 LC89056W-E



IC1103 SN74HC153ANS

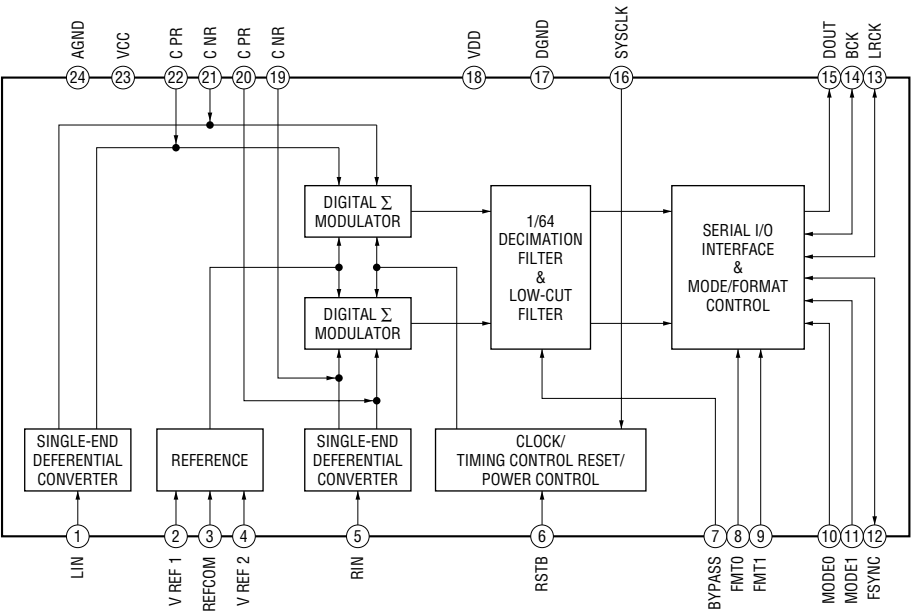


IC1204 TC7WH157FU (TE12R)

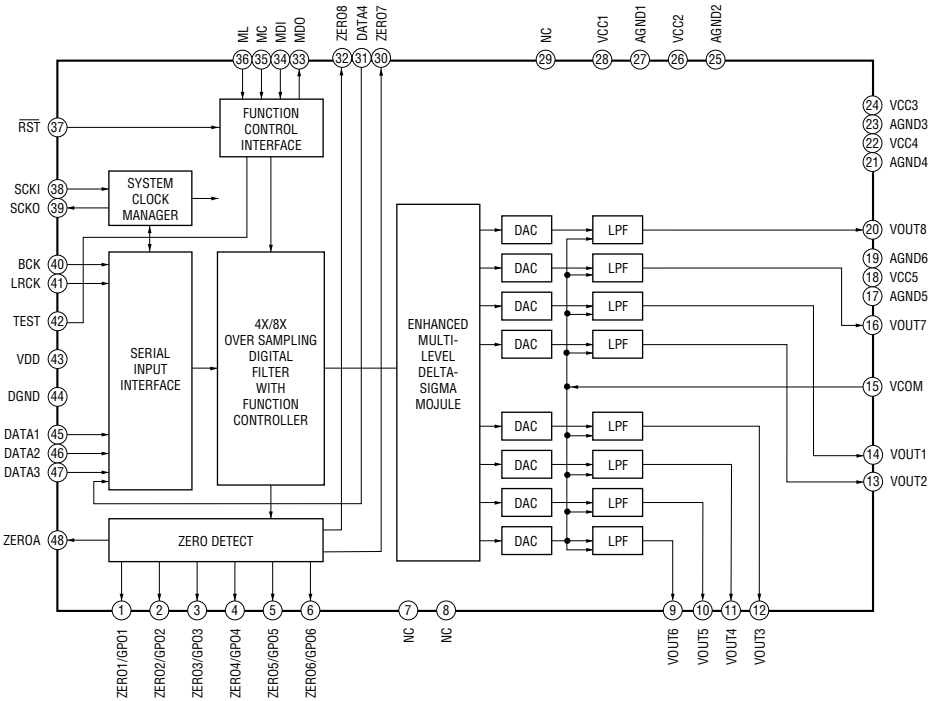


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IC1401 PCM1800E/2K

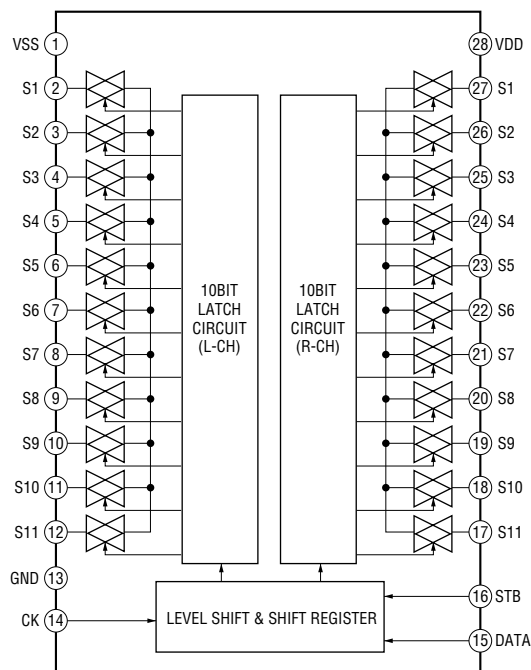


IC1501 PCM1609KPTR



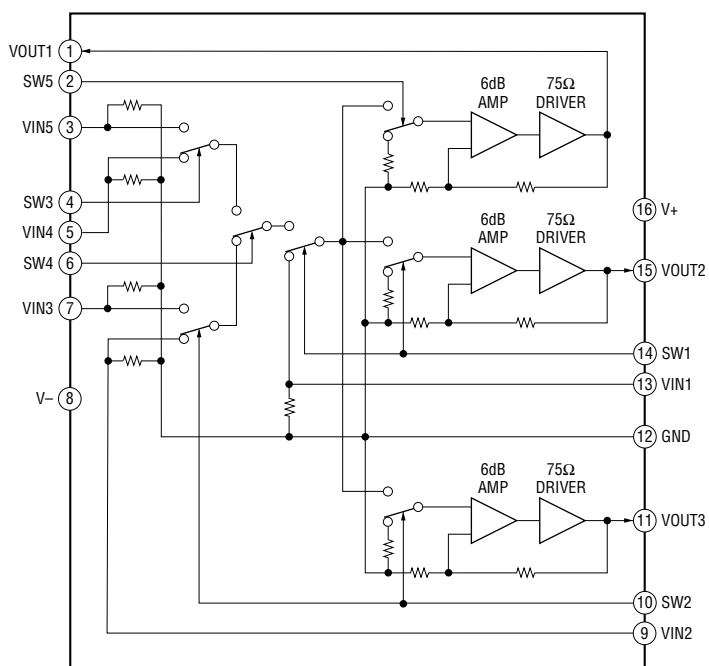
– VIDEO-AU Board –

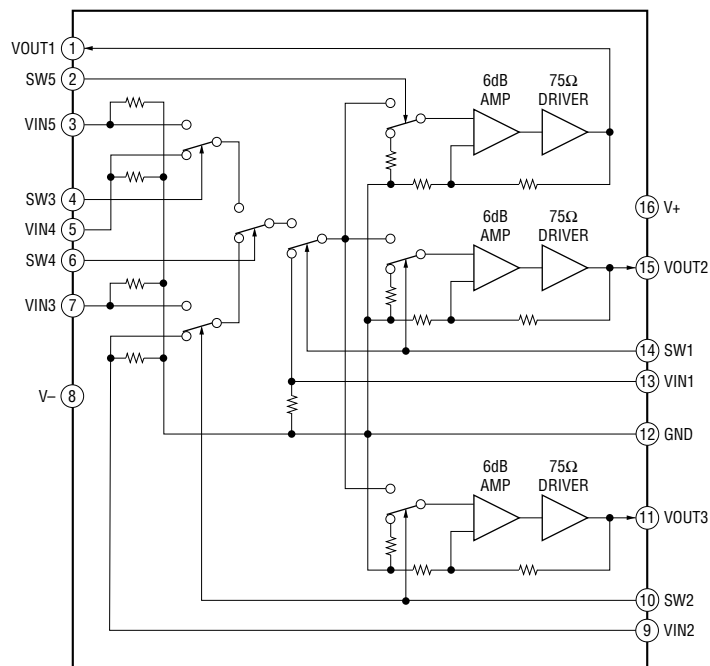
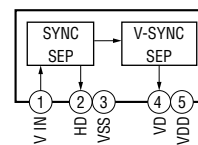
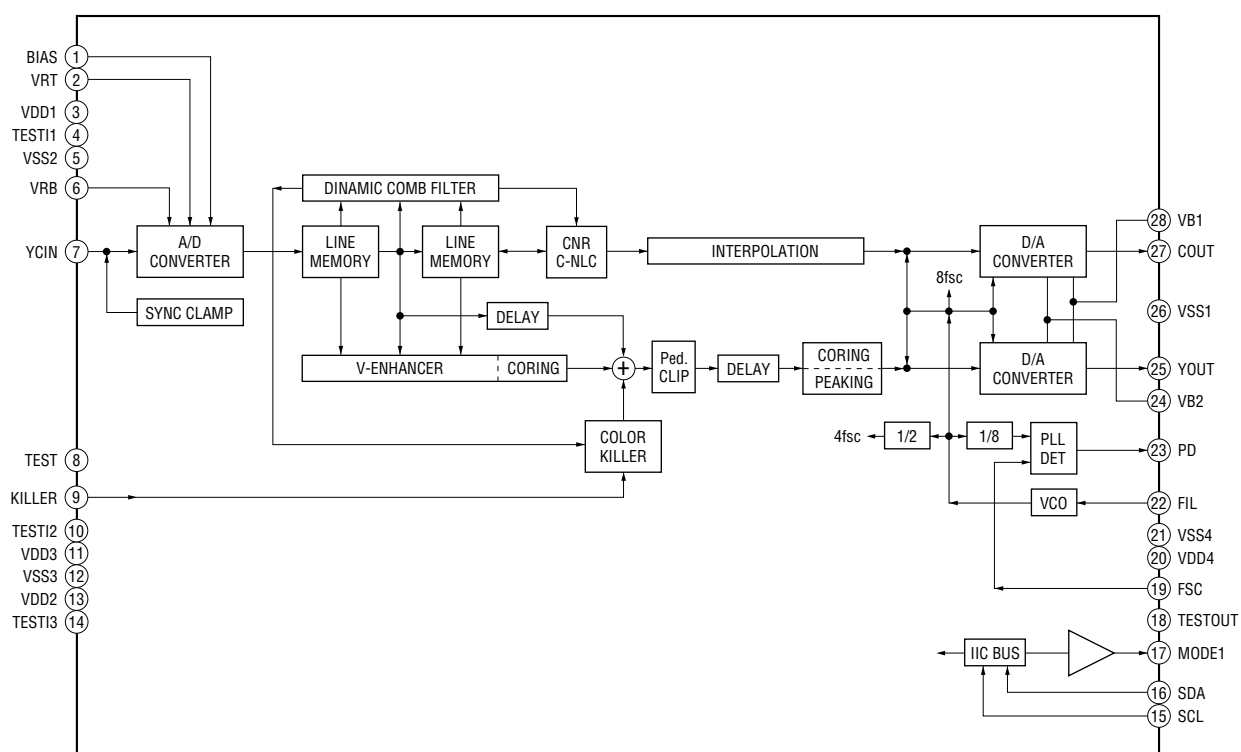
IC201 TC9273N-014



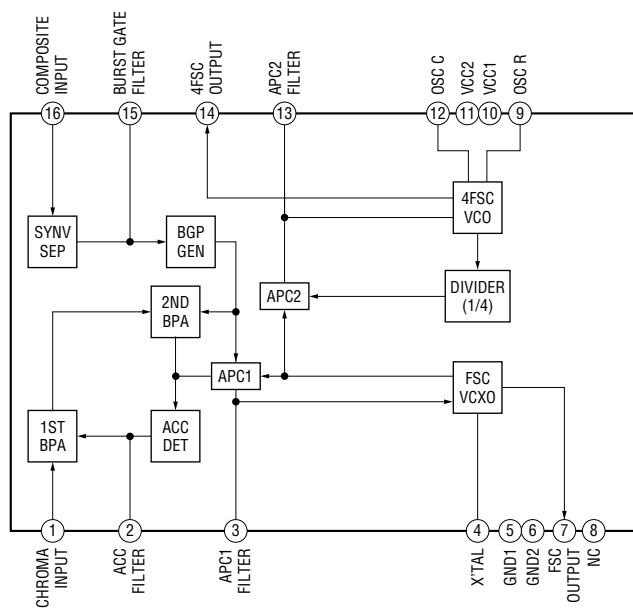
– VIDEO Board –

IC301 NJM2595D

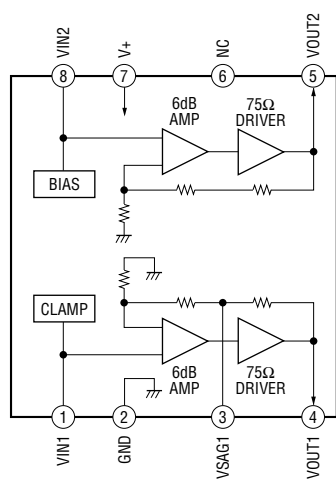


STR-DB798**– S-VIDEO Board –****IC850, 851 NJM2595D****IC852 LA7213****– COMP-V Board –****IC370 TC90A69N**

**IC371 MM1093PFB (AEP, UK model)
MM1093NF (Taiwan model)**

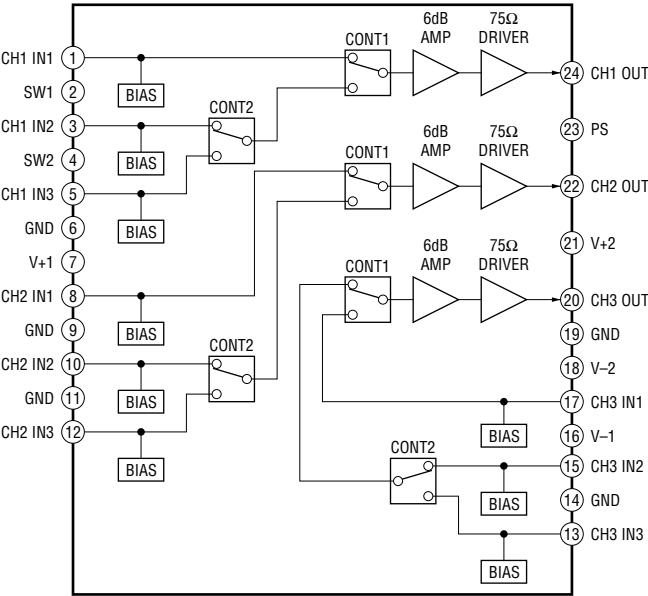


IC372 NJM2268D



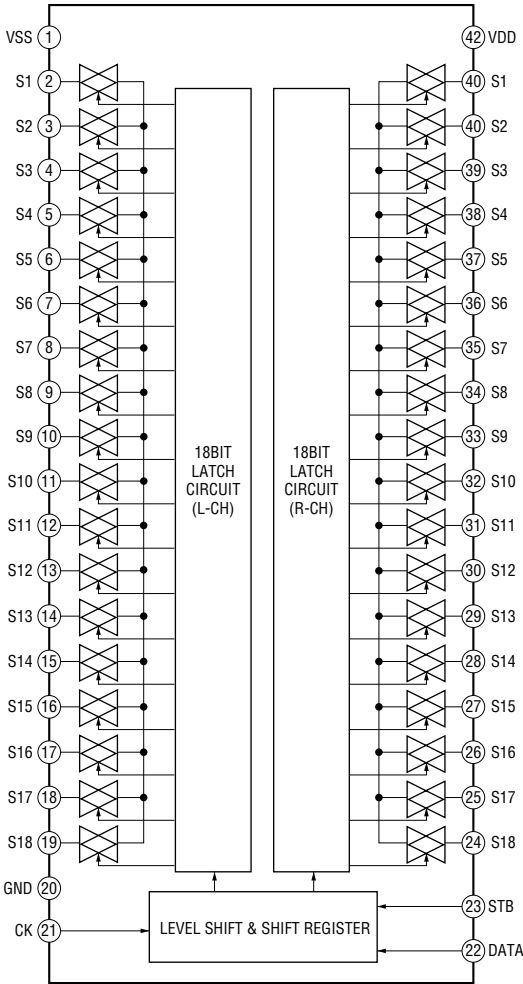
STR-DB798

IC1304 NJM2586AM

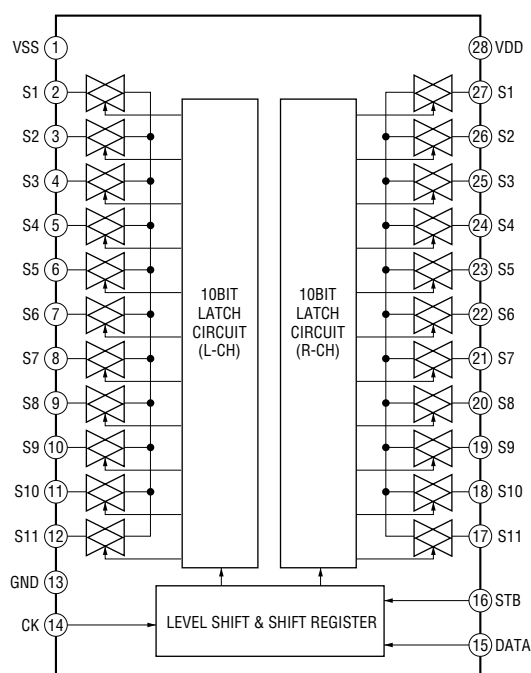


– AU-IN Board –

IC101 TC9274N-017

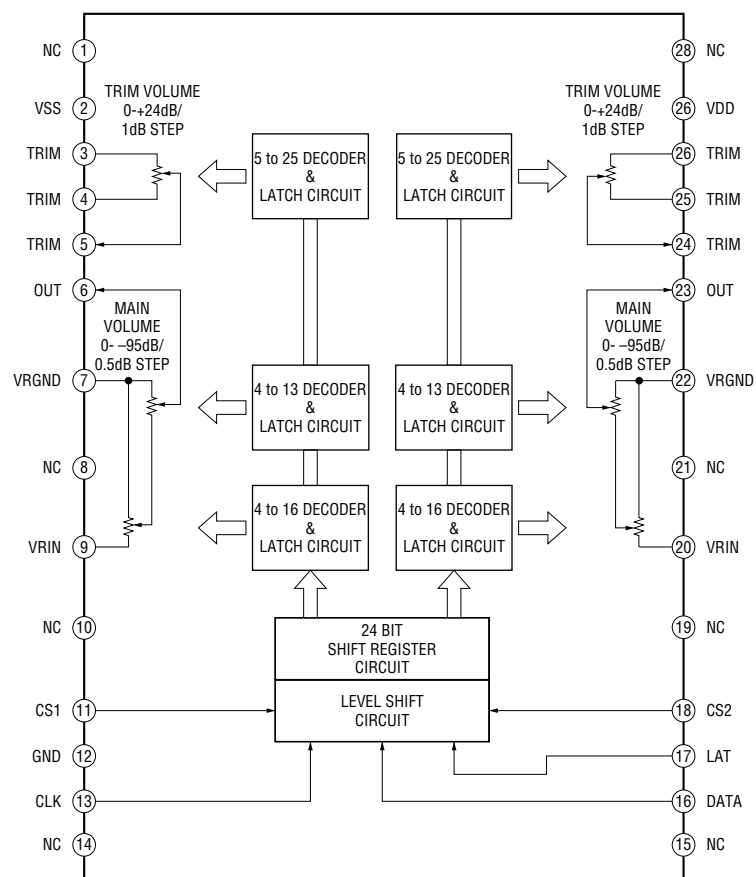


IC173 TC9273F-012 (EL)



– MAIN Board –

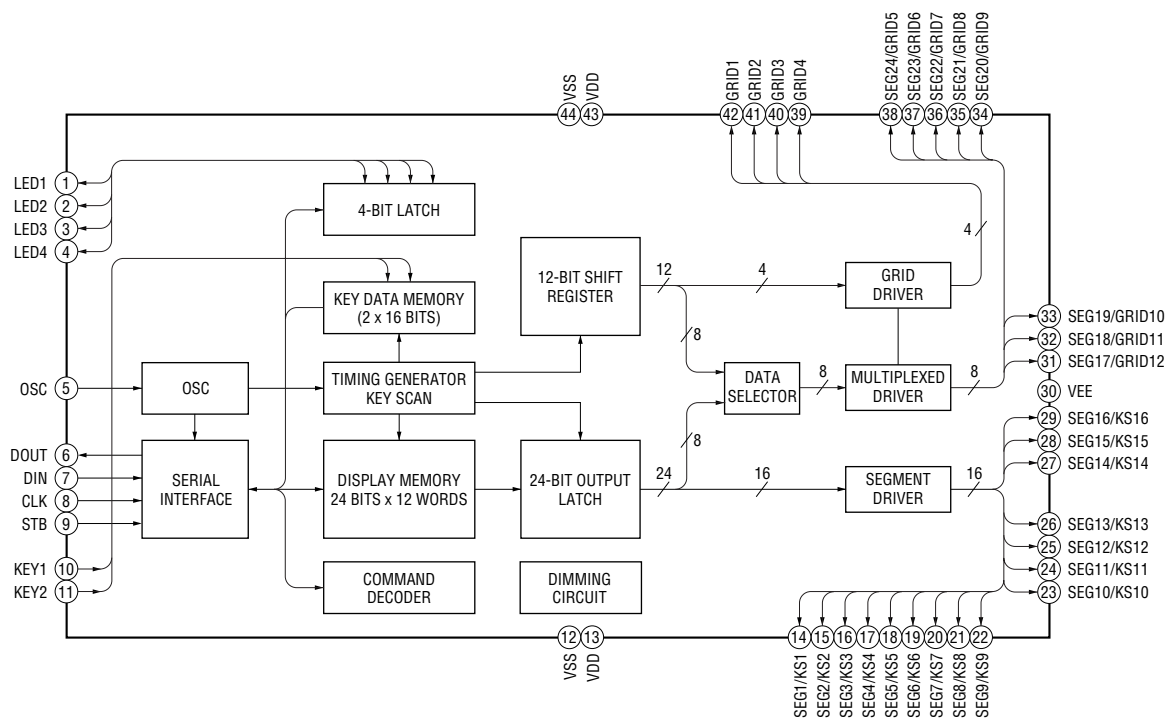
IC401, 501, 601, 651 CXD9725M



STR-DB798

- DISPLAY Board -

IC1001 uPD16315GB-3BS



NOTE:

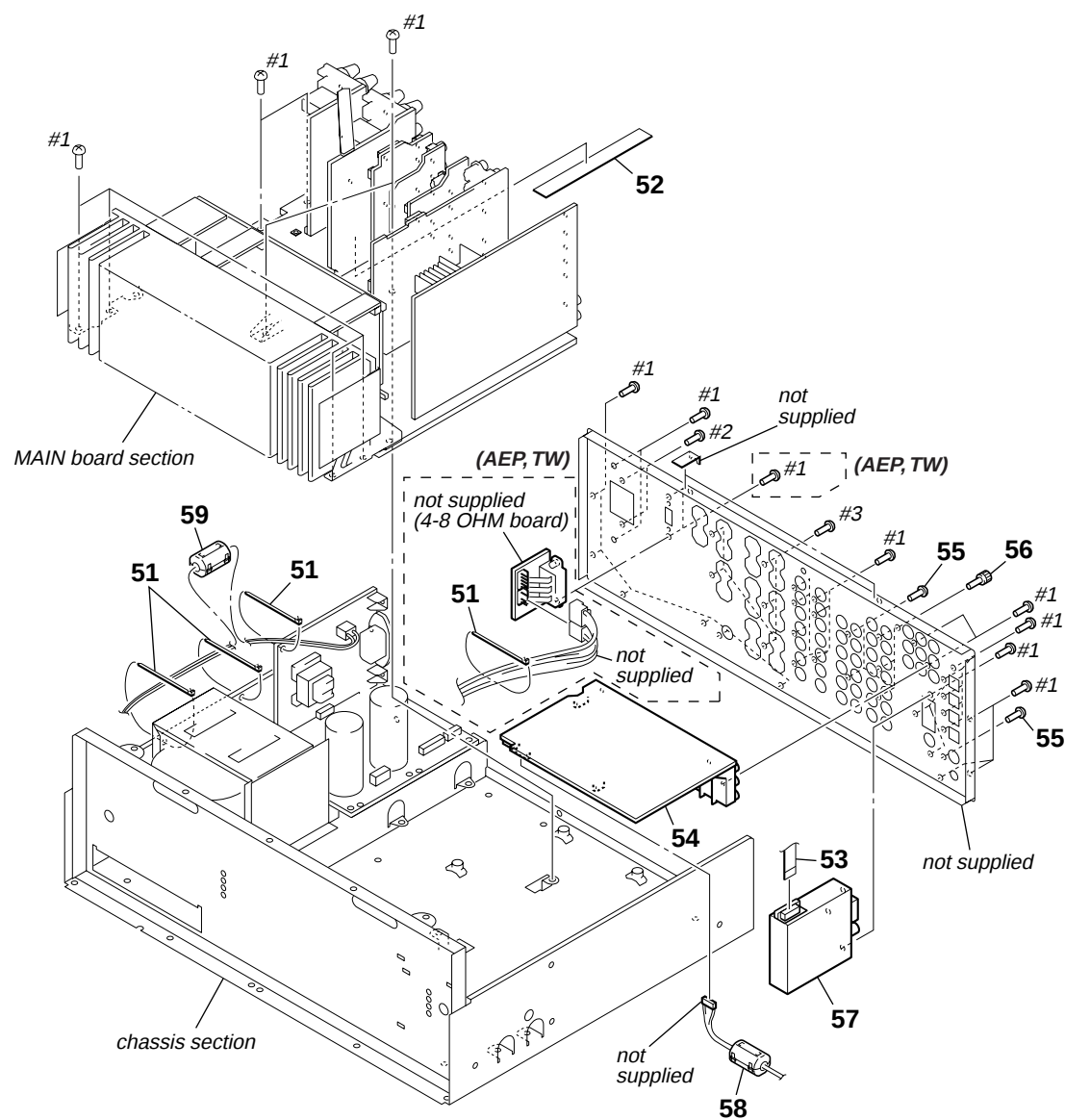
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

7-1. OVERALL SECTION

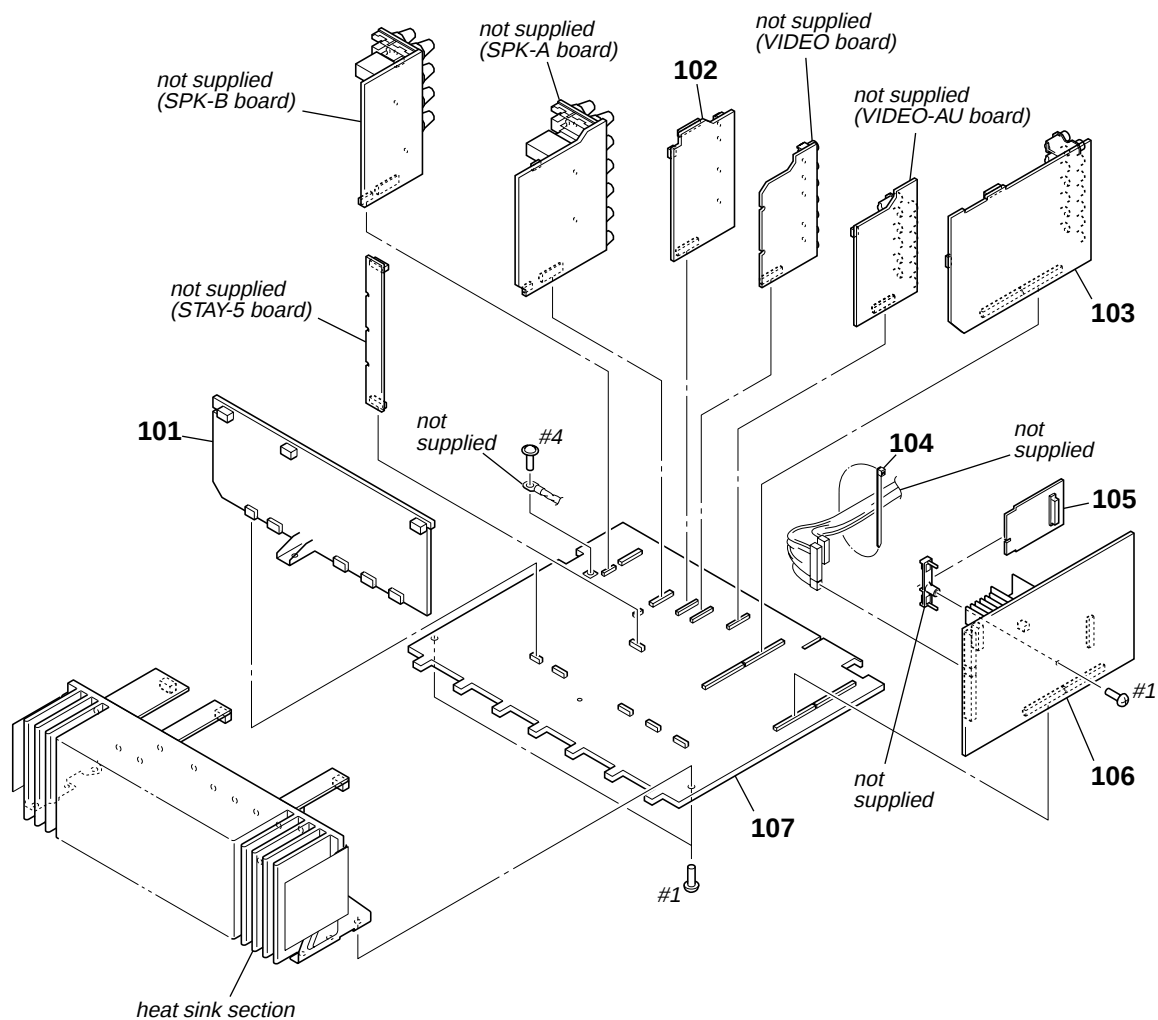


STR-DB798

7-2. BACK PANEL SECTION

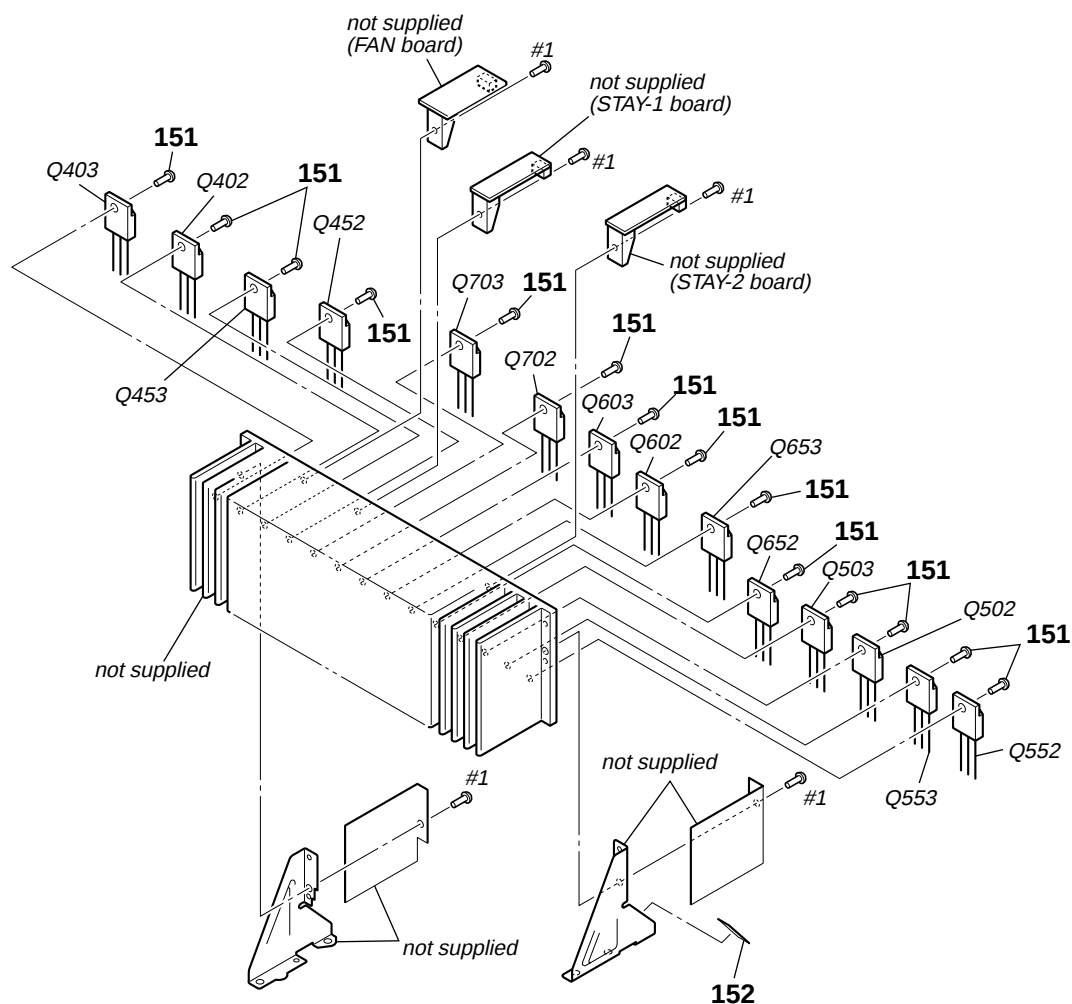


7-3. MAIN BOARD SECTION

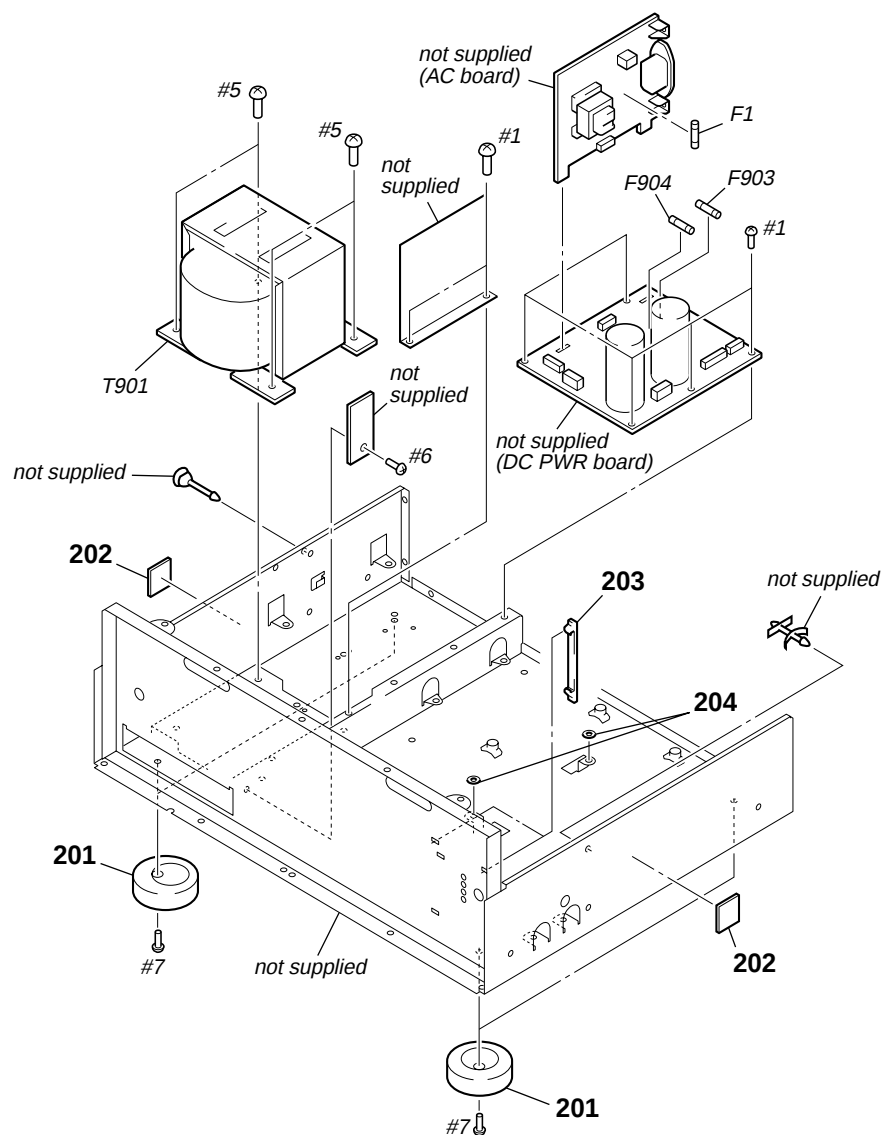


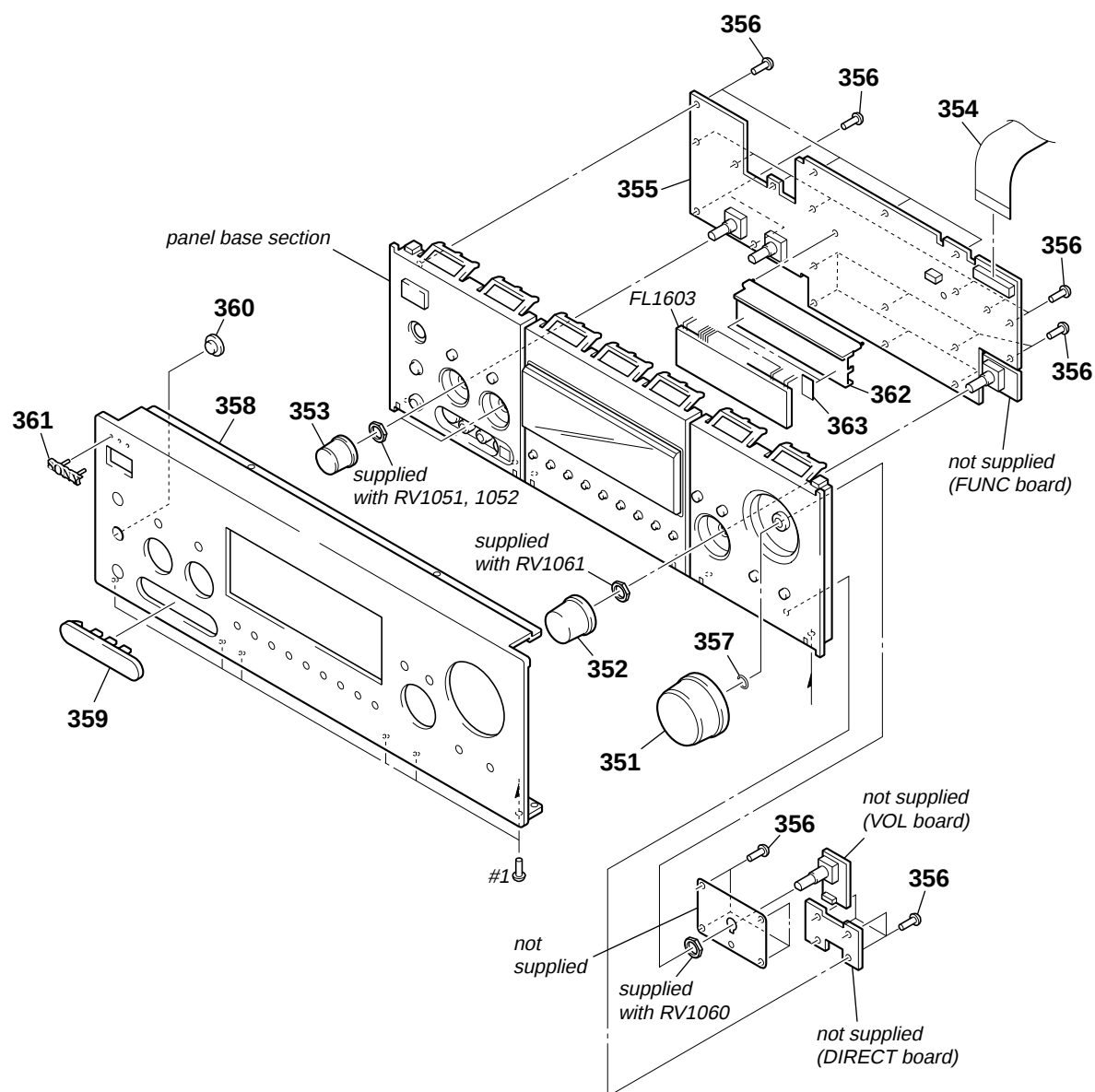
STR-DB798

7-4. HEAT SINK SECTION



7-5. CHASSIS SECTION





7-7. PANEL BASE SECTION

