PSG1405011AE
A6

Service Manual

CD Stereo System

Simplified

Model No. SA-AKX18P

Product Color: (K)...Black Type

Notes: Please use this manual together with service manual Model No.[SA-AKX18PN-K], Order no. (PSG1401007CE).
● Speaker system SB-AKX18P-K, Order No. PSG1406006AE

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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Panasonic®

1 Safety Precautions

1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

(This "Safety Precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞

1.1.2. Leakage Current Hot Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1-1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

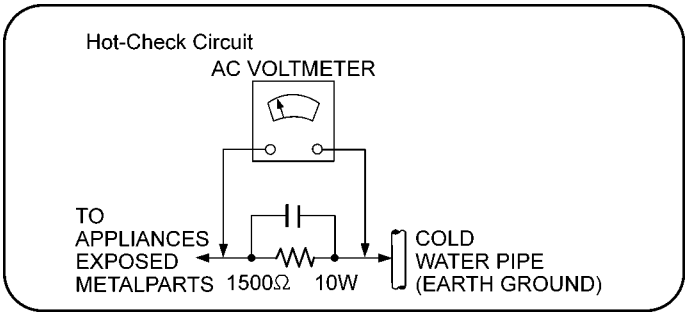

Figure 1-1

1.2. Before Repair and Adjustment

Disconnect AC power to discharge AC capacitor as indicate below diagram through a 10 Ω, 10 W resistor to ground.

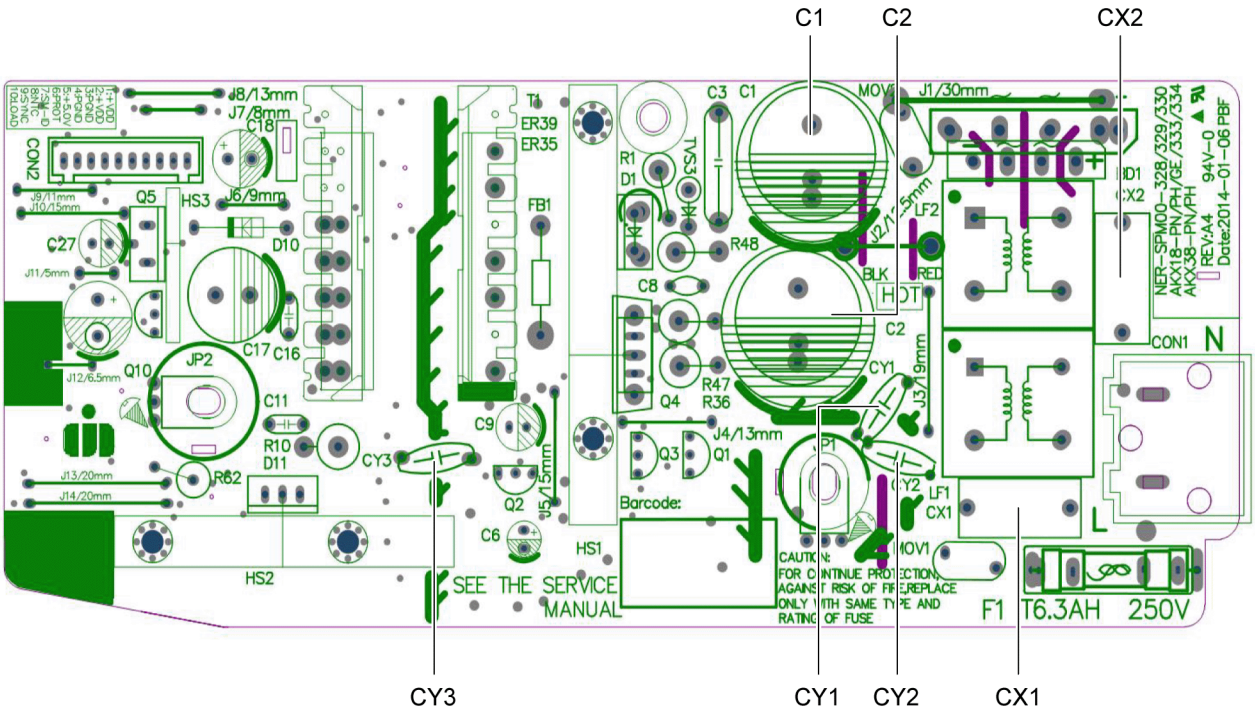

Figure 1-2

Caution:

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac to avoid overcurrent.

Current consumption at AC 120 V, 60 Hz in Power ON, FM Tuner at volume minimal mode should be ~ 250 mA.

1.3. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are “shorted”, or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

1.4. Power Supply using SMPS

This model uses Switching Mode Power Supply (SMPS) to provide the power supply to the unit. Here is the supplied part no. for the SMPS Module

1) N0AB2GK00002

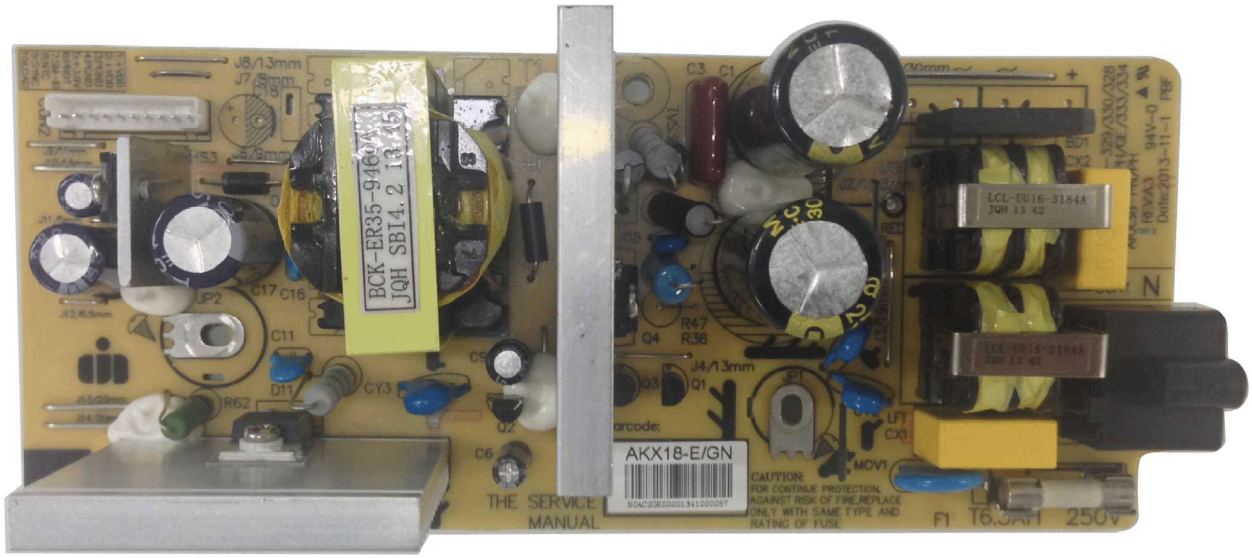

Figure 1-3

1.5. Safety Parts Information

Safety Parts List:

There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the Schematic Diagrams, Exploded View & Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Safety	Ref No.	Part No.	Part Name & Description	Remarks
⚠	13	RGR0443T-AA	REAR PANEL	
⚠	26	RKM0713-K1	TOP CABINET	
⚠	301	RAE1044Z-V	TRAVERSE UNIT	
⚠	A2	K2CB2CB00022	AC CORD	
⚠	A3	RQT9899-P	O/I BOOK (En)	
⚠	PCB6	N0AB2GK00002	SMPS MODULE	

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.

Examples of typical ES devices are IC (integrated circuits) and some field-effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

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2.2. Precaution of Laser Diode

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Caution:

This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wavelength: 790 nm (CD)
Maximum output radiation power from pickup: 100 μW/VDE
Laser radiation from the pickup unit is safety level, but be sure the followings:

1. Do not disassemble the pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

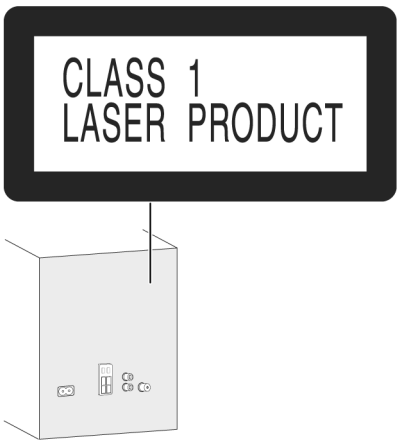


Figure 2-1

2.3. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of “PbF” is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
  (Definition: The letter of “PbF” is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
  RFKZ03D01K----------(0.3mm 100g Reel)
  RFKZ06D01K----------(0.6mm 100g Reel)
  RFKZ10D01K----------(1.0mm 100g Reel)

Note

* Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

2.4. Handling Precautions for Traverse Unit

The laser diode in the optical pickup unit may break down due to static electricity of clothes or human body. Special care must be taken avoid caution to electrostatic breakdown when servicing and handling the laser diode in the traverse unit.

2.4.1. Cautions to Be Taken in Handling the Optical Pickup Unit

The laser diode in the optical pickup unit may be damaged due to electrostatic discharge generating from clothes or human body. Special care must be taken avoid caution to electrostatic discharge damage when servicing the laser diode.

1. Do not give a considerable shock to the optical pickup unit as it has an extremely high-precise structure.
2. To prevent the laser diode from the electrostatic discharge damage, the flexible cable of the optical pickup unit removed should be short-circuited with a short pin or a clip.
3. The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the flexible cable.
4. The antistatic FPC is connected to the new optical pickup unit. After replacing the optical pickup unit and connecting the flexi-

ble cable, cut off the antistatic FPC.

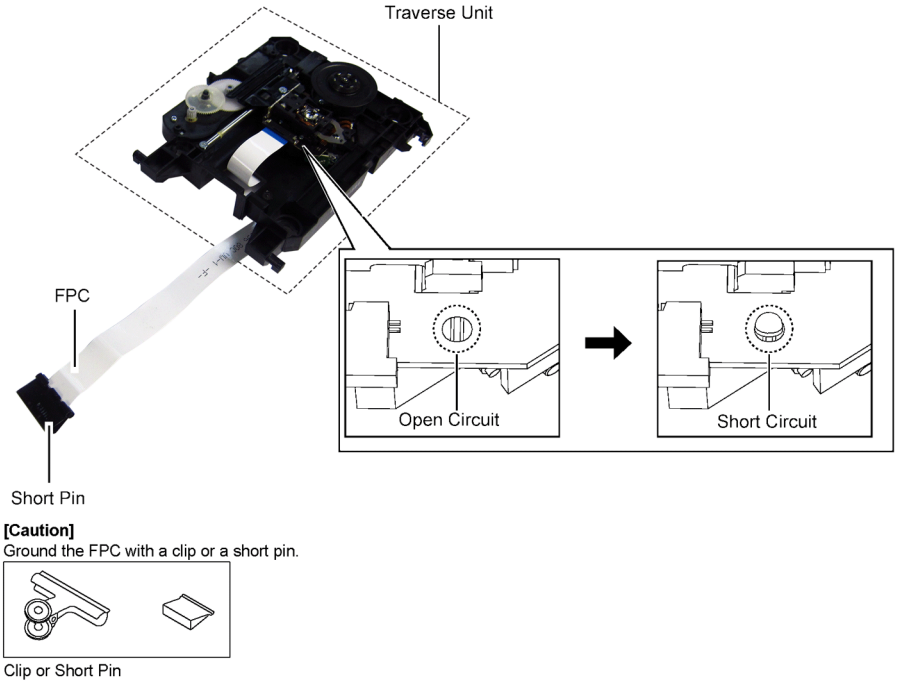


Figure 2-2

2.5. Grounding for electrostatic breakdown prevention

- As for parts that use optical pick-up (laser diode), the optical pick-up is destroyed by the static electricity of the working environment.
  Repair in the working environment that is grounded.

2.5.1. Worktable grounding

- Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed and ground the sheet.

2.5.2. Human body grounding

- Use the anti-static wrist strap to discharge the static electricity form your body Figure 2-3.

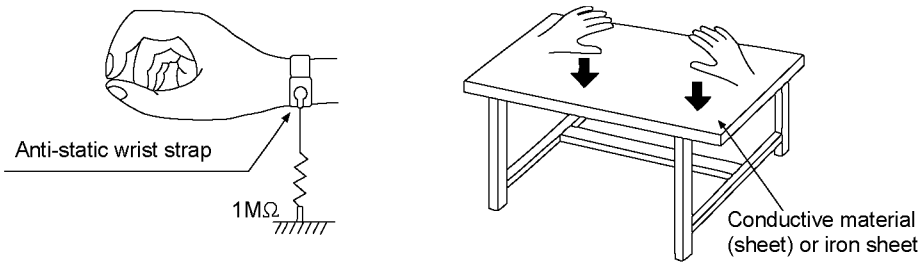


Figure 2-3

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model. Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

3.2. Notes

1) This service manual does not contains the following information

This simplified service manual is base on SA-AKX18PN-K. Please refer to the original service manual, SA-AKX18PN-K (Order No. PSG1401007CE) for the below mention contents.

- Location of Controls and Components
- Service Mode
- Troubleshooting Guide
- Disassembly and Assembly Instructions
- Service Position
- Block Diagram
- Wiring Connection Diagram
- Appendix Information of Schematic Diagram

3.3. Different Points

Ref. No.	Parts No.		Parts name & Description	Remarks
	SA-AKX18PN-K	SA-AKX18P-K		
7	RFKGAKX18LK	RFKGAKX18PK	FRONT PANEL	
13	RGR0443M-A1A	RGR0443T-AA	REAR PANEL	⚠
41	RFKNAKX18PNL	RFKNAKX18PKL	LEFT BUTTON ORNAMENT ASS'Y	
P1	RPG0K57	RPG0M70	PACKING CASE	
A3	RQT9894-1M	RQT9899-P	O/I BOOK	⚠
A5	N1DYYYY00011	-	-	
PCB1	REP5061A	REP5061N	MAIN P.C.B.	(RTL)
PCB2	REP5062AA	REP5062BA	PANEL P.C.B.	
PCB3	REP5062AA	REP5062BB	LCD P.C.B.	
PCB4	REP5062AC	REP5062BC	USB P.C.B.	
PCB6	N0AB2GK00001	N0AB2GK00002	SMPS MODULE	⚠
IC2003	RFKWFAKX18LM	RFKWFAKX18PM	IC	(E.S.D) JIGS & ADJ
Q1007	B1DHCC000034	-	-	
QR1003	B1GBCFJJ0051	-	-	
L52	G2A380Y00002	-	-	
L53	D0GBR00J0004	-	-	
LB9303	-	J0JCC0000117	INDUCTOR	
LB9304	-	J0JCC0000117	INDUCTOR	
LB9305	-	J0JCC0000117	INDUCTOR	
LB9306	-	J0JCC0000117	INDUCTOR	
JK52	K4AC02B00042	-	-	
W100	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W101	D0GBR00JA008	ERJ3GEY0R00V	0 1/10W	
W102	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W103	D0GDR00JA017	ERJ6GEY0R00V	0 1/8W	
W104	D0GDR00JA017	ERJ6GEY0R00V	0 1/8W	
W105	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W106	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W200	D0GDR00JA017	ERJ6GEY0R00V	0 1/8W	
W201	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W202	D0GDR00JA017	ERJ6GEY0R00V	0 1/8W	
W203	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W204	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W205	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W206	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W207	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W208	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W209	D0GDR00JA017	ERJ6GEY0R00V	0 1/8W	
W210	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W211	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W212	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W213	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W214	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
W215	D0GFR00JA017	ERJ8GEY0R00V	0 1/4W	
R935	D0GD181JA052	D0GD471JA052	470 1/8W	
R2021	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2051	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2052	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2054	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2099	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2100	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2102	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2129	D0GBR00J0004	D0GB333JA065	33K 1/10W	
R2135	D0GB123JA065	D0GB102JA065	1K 1/10W	
R2222	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R2321	-	D0GBR00J0004	0 1/10W	
R2496	D0GBR00J0004	J0JCC0000309	INDUCTOR	
R9001	D0GB272JA065	D0GB222JA065	2.2K 1/10W	
C52	F1H1A474A107	-	-	
C65	-	D0GB103JA065	10K 1/10W	
C904	-	F1H1H221B047	220pF 50V	
C905	-	F1H1H221B047	220pF 50V	

4 Specifications

■ **Amplifier section**

RMS output power stereo mode

Front Ch (both ch driven)	175 W per channel (4 Ω), 1 kHz, 30% THD
Total RMS stereo mode power	350 W (30% THD)

FTC output power stereo mode

Front Ch (both ch driven)	80 W per channel (4 Ω), 50 Hz to 20 kHz, 1% THD
Total FTC stereo mode power	160 W

■ **Tuner, terminals section**

Preset memory	FM 30 stations
Frequency modulation (FM)	
Frequency range	87.9 MHz to 107.9 MHz (200 kHz step) 87.5 MHz to 108.0 MHz (100 kHz step)
Antenna terminals	75 Ω (unbalanced)
Analog audio input	Pin jack (1 system)

■ **Disc section**

Discs played [8 cm (3”) or 12 (5”)cm]	CD, CD-R/RW(CD-DA, MP3*)
Pick up	
Wavelength	790 nm(CD)

*MPEG-1 Layer 3

■ **Bluetooth® section**

Version	Bluetooth® Ver.2.1 +EDR
Output	Class 2
Supported profile	A2DP, AVRCP, SPP
Operating frequency	2.4 GHz band, FH-SS
Operating distance	10 m (33ft) line of sight

■ **USB section**

USB Port	
USB standard	USB 2.0 full speed
Media file format support	MP3 (*.mp3)
USB device file system	FAT12, FAT16, FAT32
USB port power	500 mA (max)

■ **General**

Power supply	AC 120 V, 60 Hz
Power consumption	50 W
Dimensions (W x H x D)	230 mm × 335 mm × 243 mm 9 1/4” × 13 1/4” × 9 3/4”
Mass (Weight)	2.7 kg (6 lbs)
Operating temperature range	0 °C to +40 °C (+32 °F to +104 °F)
Operating humidity range	35% to 80% RH (no condensation)
Power Consumption in standby mode	0.4 W (approximate)
Power Consumption in standby mode (With "STANDBY BLUETOOTH" set to "ON")	0.5 W (approximate)

1. Specifications are subject to change without notice. Mass (weight) and dimension are appropriate
2. Total harmonic distortion is measured by the digital spectrum analyzer.

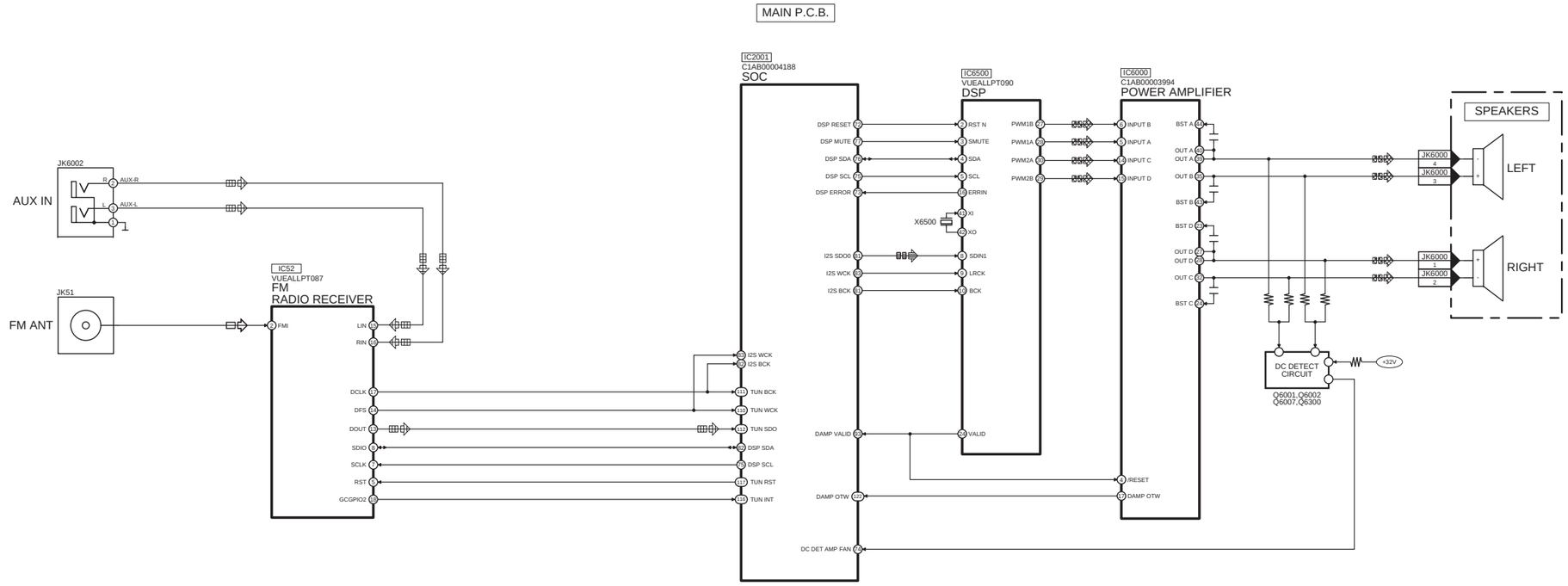
■ **System: SC-AKX18P-K**

Main Unit: SA-AKX18P-K
Front Speakers: SB-AKX18P-K

5 Block Diagram

5.1. Audio

: CD AUDIO INPUT SIGNAL LINE : TUNER/AUX AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : FM SIGNAL LINE



SA-AKX18P AUDIO BLOCK DIAGRAM

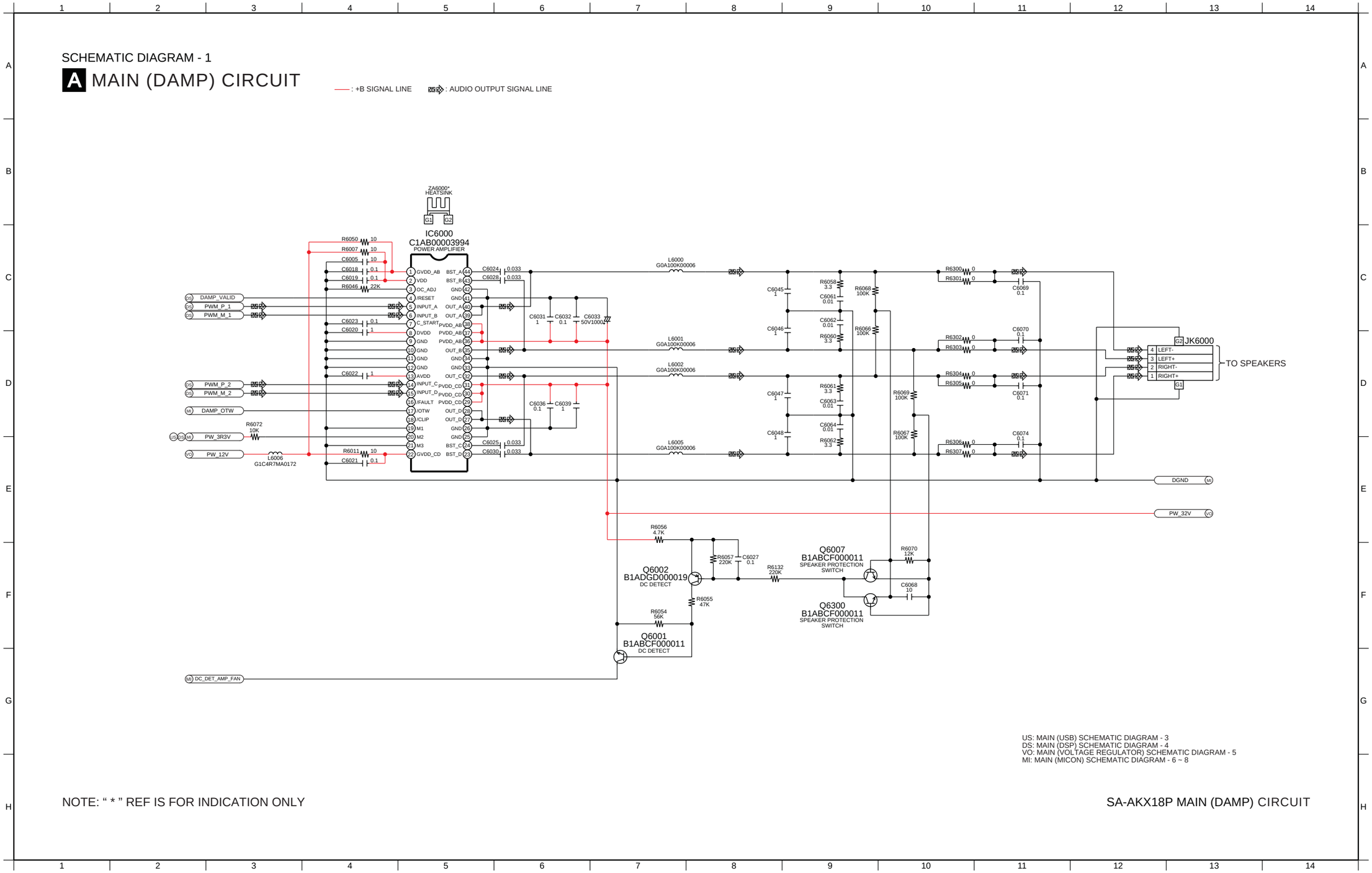
6 Schematic Diagram

6.1. Main (Damp) Circuit

SCHEMATIC DIAGRAM - 1

A MAIN (DAMP) CIRCUIT

—— : +B SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE



US: MAIN (USB) SCHEMATIC DIAGRAM - 3
DS: MAIN (DSP) SCHEMATIC DIAGRAM - 4
VO: MAIN (VOLTAGE REGULATOR) SCHEMATIC DIAGRAM - 5
MI: MAIN (MICON) SCHEMATIC DIAGRAM - 6 ~ 8

NOTE: " * " REF IS FOR INDICATION ONLY

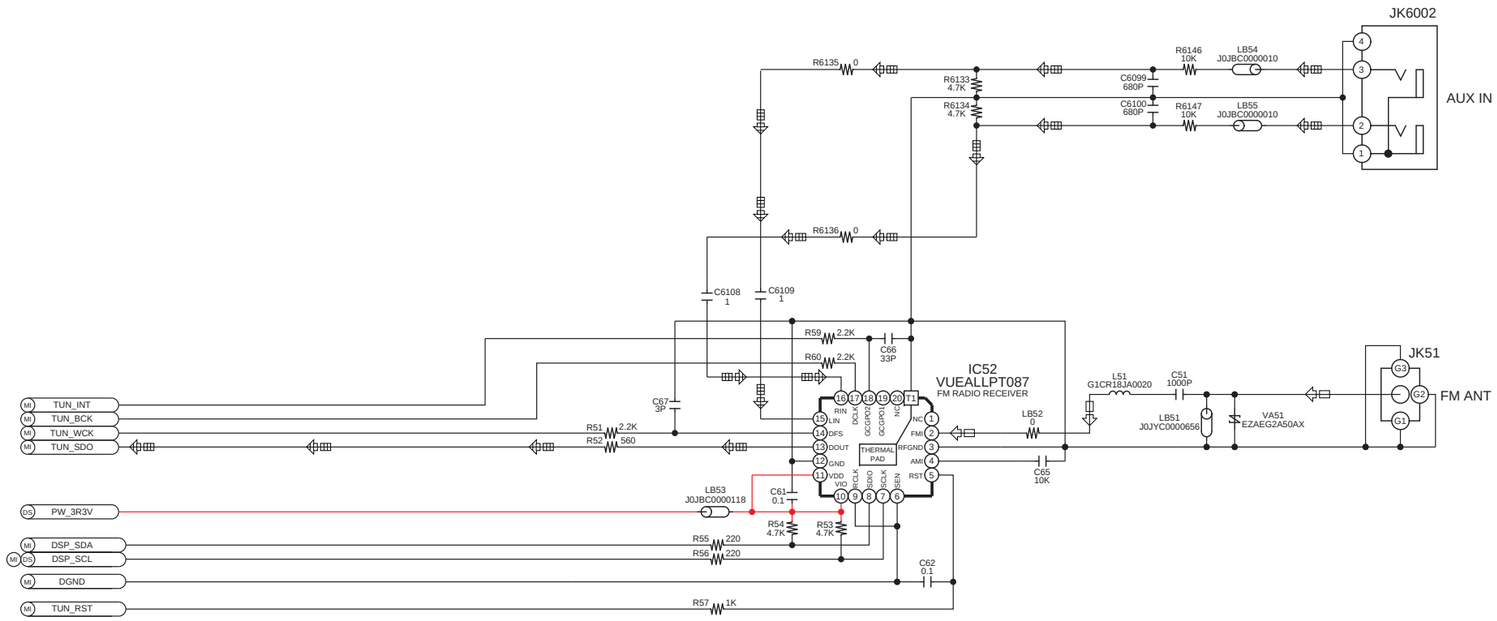
SA-AKX18P MAIN (DAMP) CIRCUIT

6.2. Main (Tuner / AUX) Circuit

SCHEMATIC DIAGRAM - 2

A MAIN (TUNER / AUX) CIRCUIT

—— : +B SIGNAL LINE : TUNER/AUX AUDIO INPUT SIGNAL LINE : FM SIGNAL LINE



DS: MAIN (DSP) SCHEMATIC DIAGRAM - 4
MI: MAIN (MICON) SCHEMATIC DIAGRAM - 6 ~ 8

NOTE: " * " REF IS FOR INDICATION ONLY

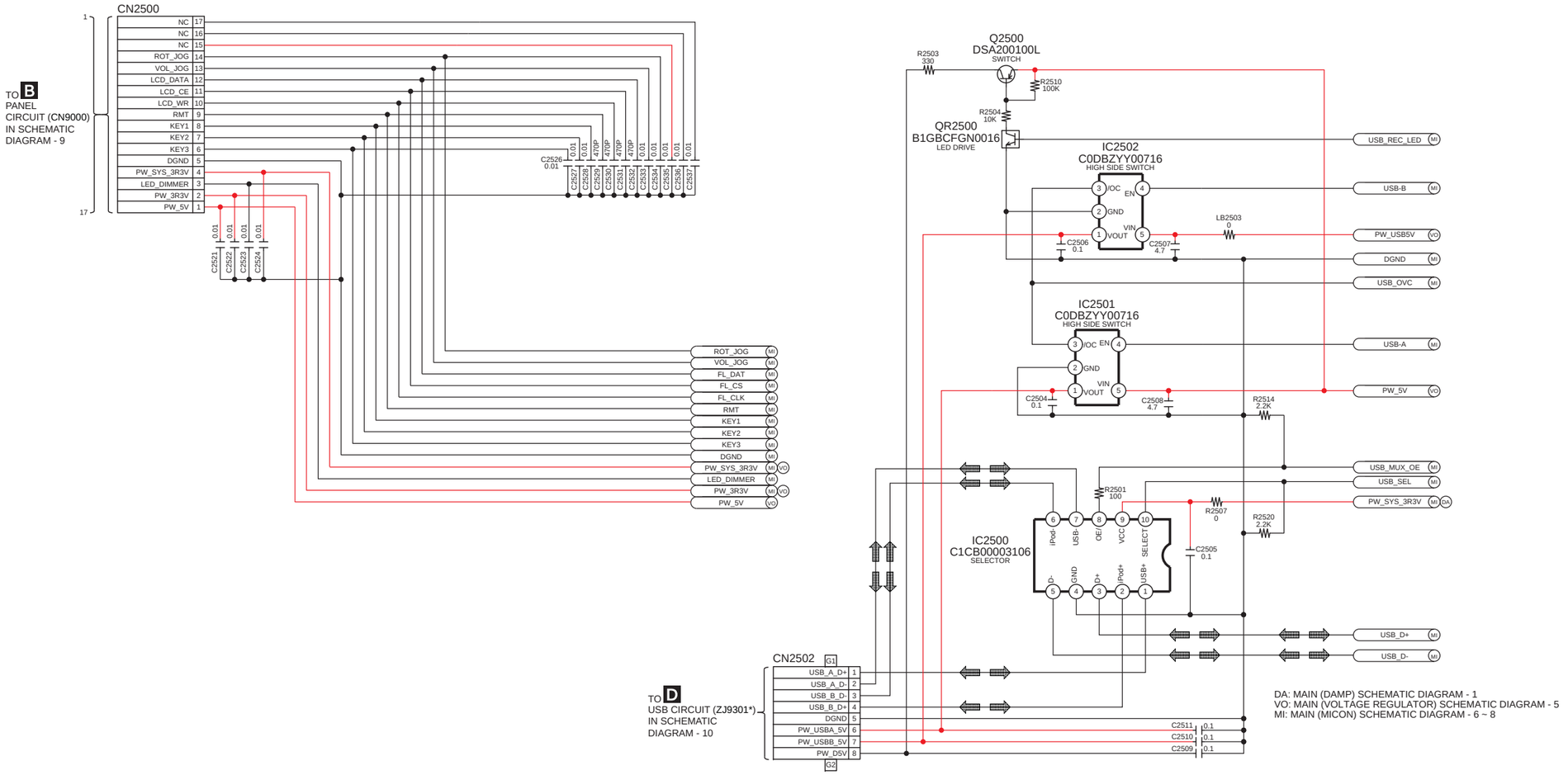
SA-AKX18P MAIN (TUNER / AUX) CIRCUIT

6.3. Main (USB) Circuit

SCHEMATIC DIAGRAM - 3

A MAIN (USB) CIRCUIT

——— : +B SIGNAL LINE ⇒ : USB SIGNAL LINE



NOTE: " * " REF IS FOR INDICATION ONLY

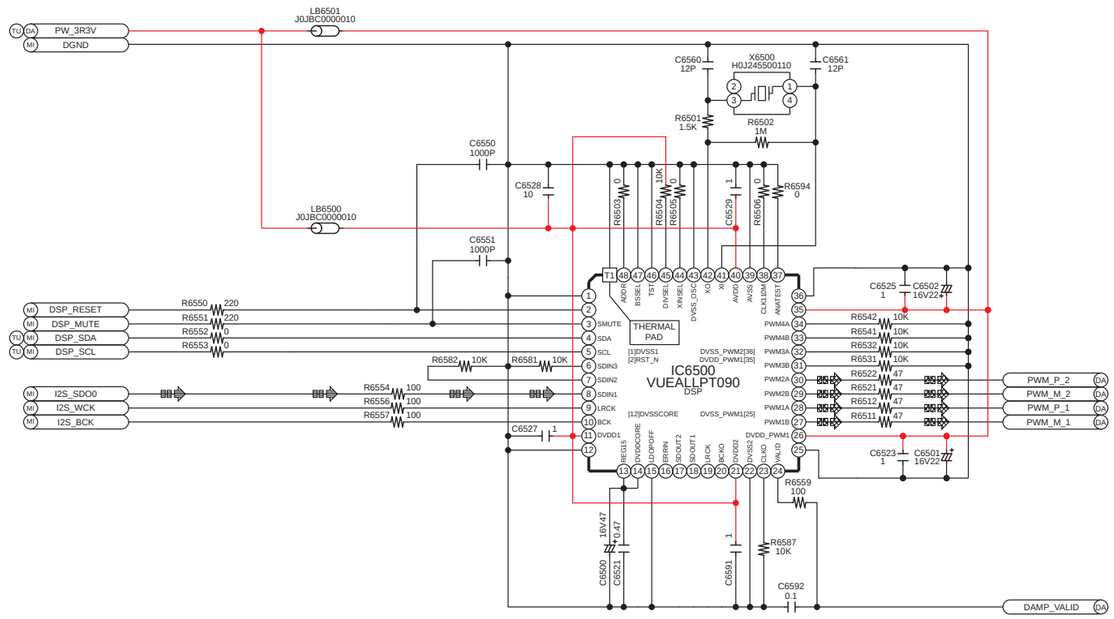
SA-AKX18P MAIN (USB) CIRCUIT

6.4. Main (DSP) & Main (Bluetooth) Circuit

SCHEMATIC DIAGRAM - 4

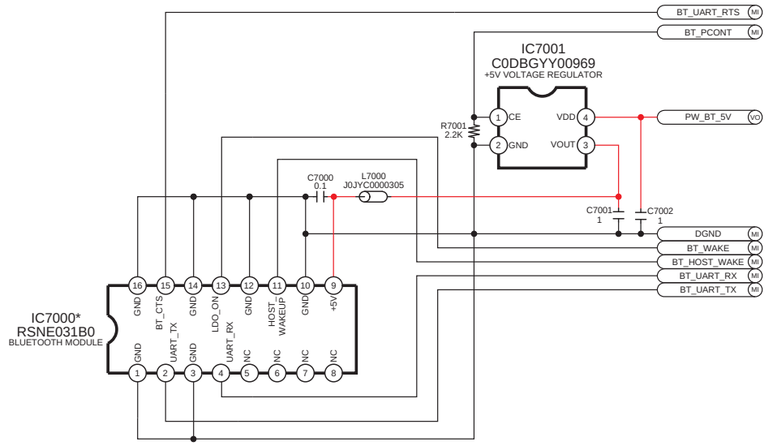
A MAIN (DSP) CIRCUIT

—— : +B SIGNAL LINE ▤▤▶ : CD AUDIO INPUT SIGNAL LINE ▨▨▶ : AUDIO OUTPUT SIGNAL LINE



A MAIN (BLUETOOTH) CIRCUIT

—— : +B SIGNAL LINE



DA: MAIN (DAMP) SCHEMATIC DIAGRAM - 1
TU: MAIN (TUNER/AUX) SCHEMATIC DIAGRAM - 2
VO: MAIN (VOLTAGE REGULATOR) SCHEMATIC DIAGRAM - 5
MI: MAIN (MICON) SCHEMATIC DIAGRAM - 6 ~ 8

NOTE: " * " REF IS FOR INDICATION ONLY

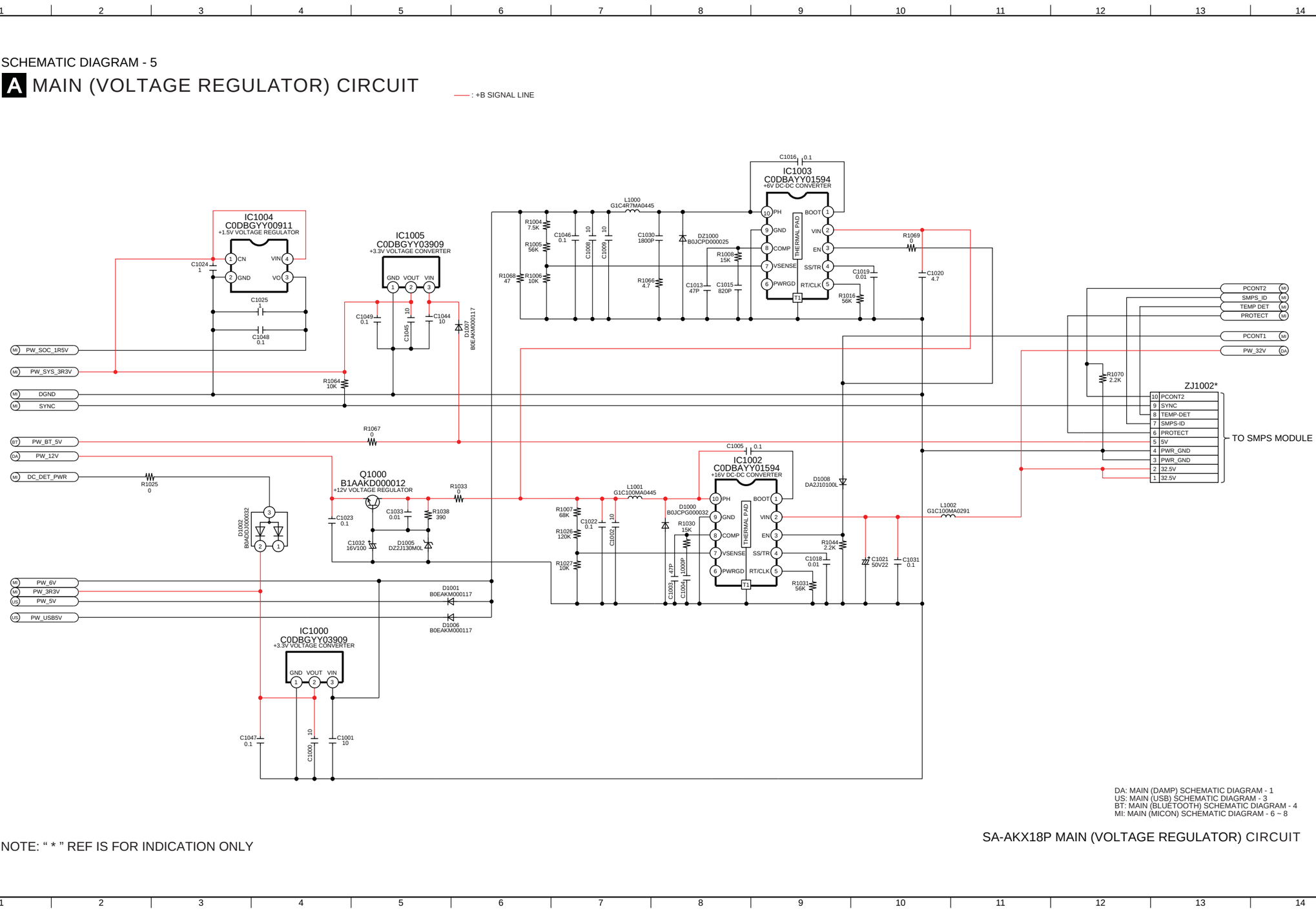
SA-AKX18P MAIN (DSP) / MAIN (BLUETOOTH) CIRCUIT

6.5. Main (Voltage Regulator) Circuit

SCHEMATIC DIAGRAM - 5

A MAIN (VOLTAGE REGULATOR) CIRCUIT

—— : +B SIGNAL LINE



NOTE: " * " REF IS FOR INDICATION ONLY

DA: MAIN (DAMP) SCHEMATIC DIAGRAM - 1
US: MAIN (USB) SCHEMATIC DIAGRAM - 3
BT: MAIN (BLUETOOTH) SCHEMATIC DIAGRAM - 4
MI: MAIN (MICON) SCHEMATIC DIAGRAM - 6 ~ 8

SA-AKX18P MAIN (VOLTAGE REGULATOR) CIRCUIT

6.6. Main (Micon) Circuit (1/3)

SCHEMATIC DIAGRAM - 6

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE : CD AUDIO INPUT SIGNAL LINE : USB SIGNAL LINE : TUNER/AUX AUDIO INPUT SIGNAL LINE

US: MAIN (USB) SCHEMATIC DIAGRAM - 3
BT: MAIN (BLUETOOTH) SCHEMATIC DIAGRAM - 4
VO: MAIN (VOLTAGE REGULATOR) SCHEMATIC DIAGRAM - 5

IC2001
C1AB00004188
SOC

IC2005
C0EBY0000861
VOLTAGE DETECTOR

Q2002
B1ABCF000011
SWITCH

P2002
FOR DEBUG

TO MAIN (MICON) CIRCUIT (2/3)

1/3 | 2/3 | 3/3

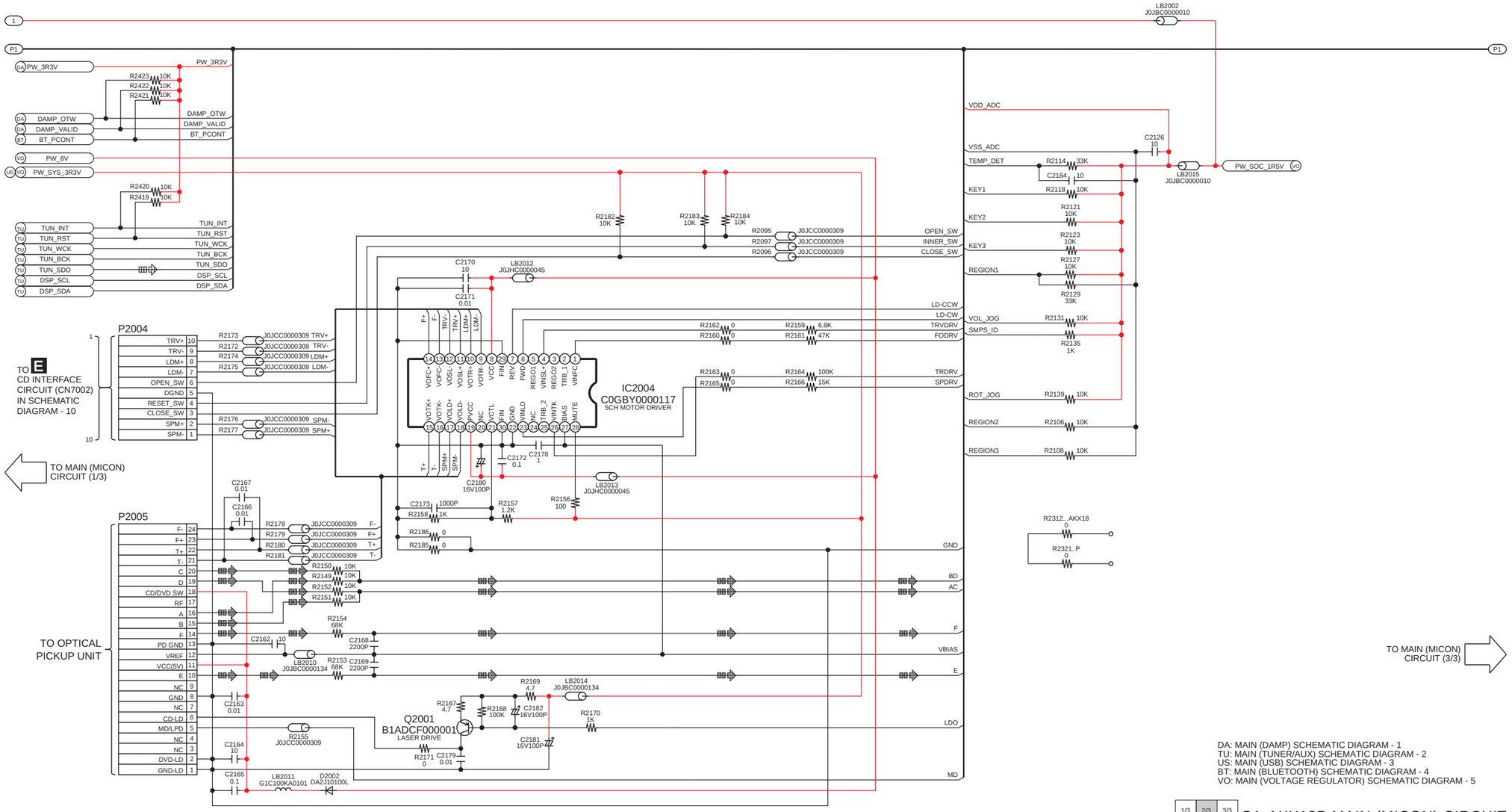
SA-AKX18P MAIN (MICON) CIRCUIT

6.7. Main (Micon) Circuit (2/3)

SCHEMATIC DIAGRAM - 7

A MAIN (MICON) CIRCUIT

: +B SIGNAL LINE : CD AUDIO INPUT SIGNAL LINE : TUNER/AUX AUDIO INPUT SIGNAL LINE



DA: MAIN (DAMP) SCHEMATIC DIAGRAM - 1
TU: MAIN (TUNER/AUX) SCHEMATIC DIAGRAM - 2
US: MAIN (USB) SCHEMATIC DIAGRAM - 3
BT: MAIN (BLUETOOTH) SCHEMATIC DIAGRAM - 4
VO: MAIN (VOLTAGE REGULATOR) SCHEMATIC DIAGRAM - 5

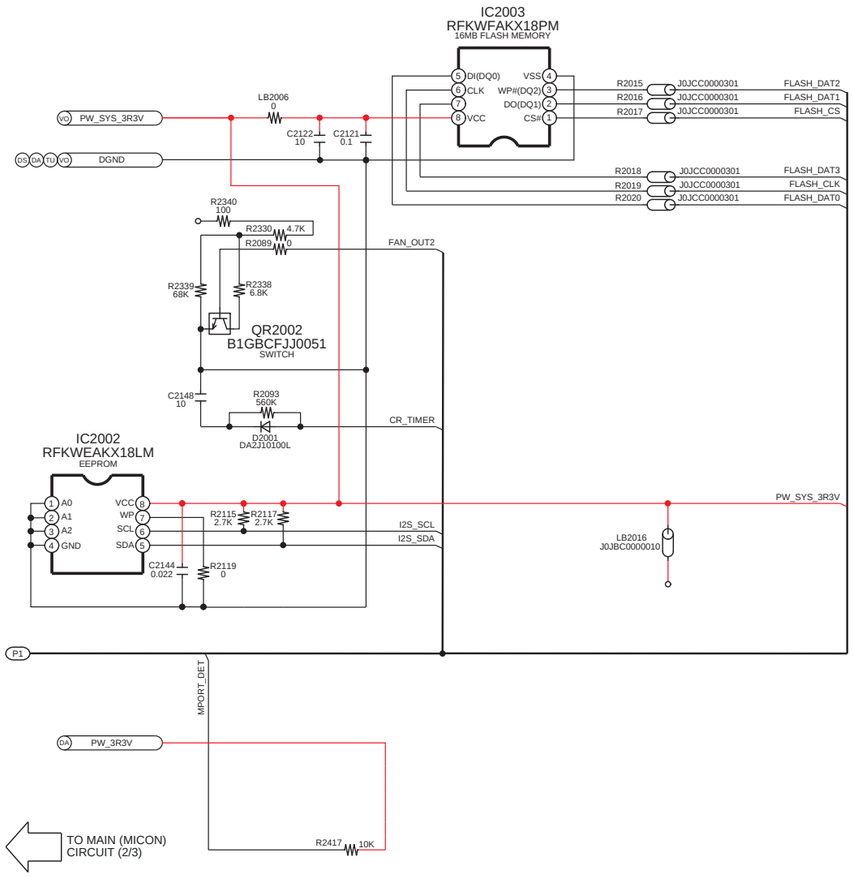
1/3 | 2/3 | 3/3 SA-AKX18P MAIN (MICON) CIRCUIT

6.8. Main (Micon) Circuit (3/3)

SCHEMATIC DIAGRAM - 8

A MAIN (MICON) CIRCUIT

—— : +B SIGNAL LINE



DA: MAIN (DAMP) SCHEMATIC DIAGRAM - 1
TU: MAIN (TUNER/AUX) SCHEMATIC DIAGRAM - 2
DS: MAIN (DSP) SCHEMATIC DIAGRAM - 4
VO: MAIN (VOLTAGE REGULATOR) SCHEMATIC DIAGRAM - 5

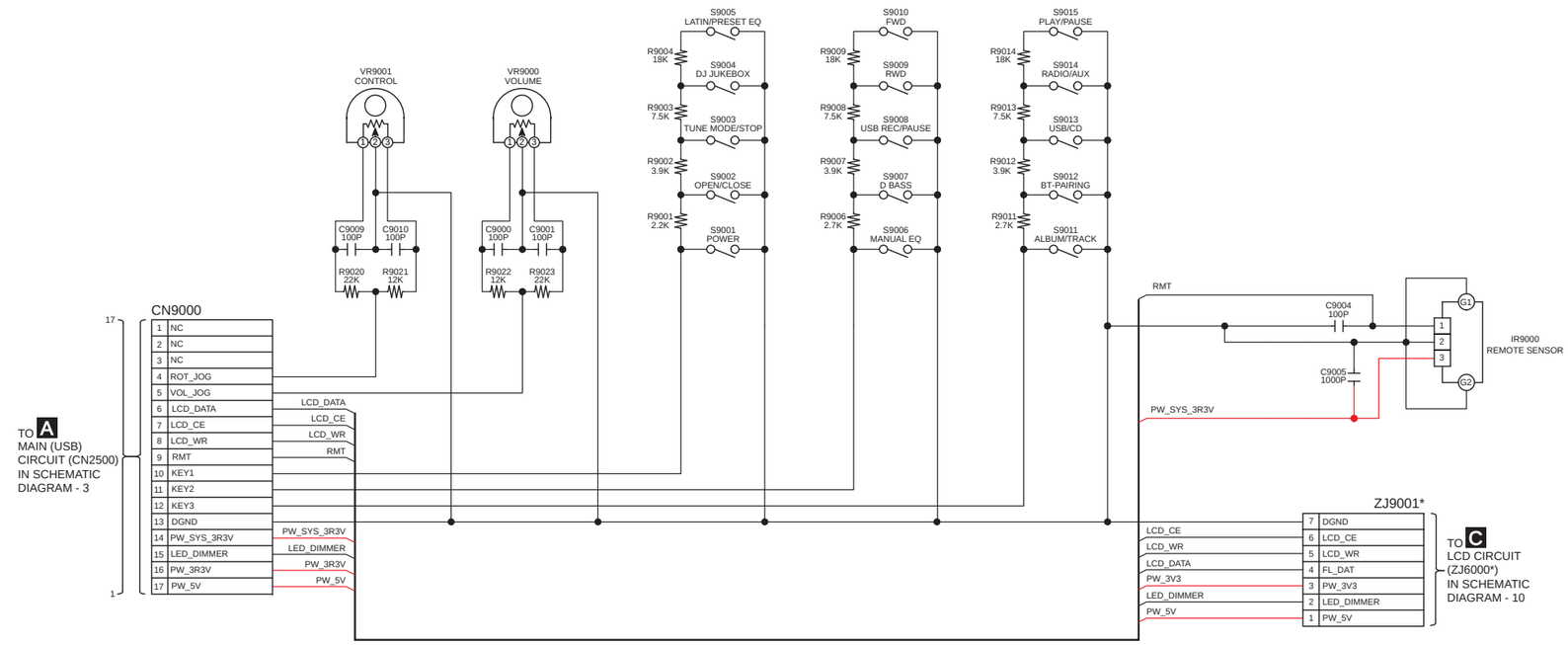
1/3 2/3 **3/3** SA-AKX18P MAIN (MICON) CIRCUIT

6.9. Panel Circuit

SCHEMATIC DIAGRAM - 9

B PANEL CIRCUIT

—— : +B SIGNAL LINE



NOTE: " * " REF IS FOR INDICATION ONLY

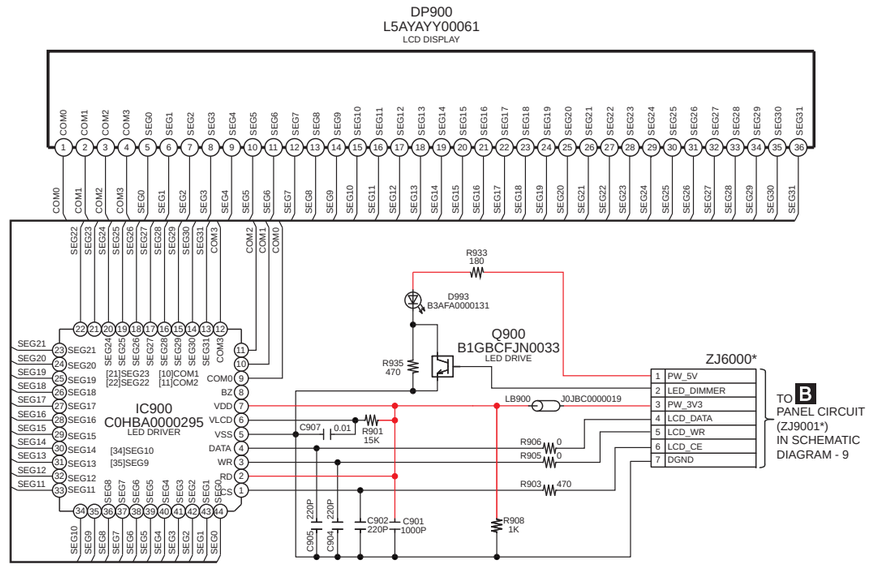
SA-AKX18P PANEL CIRCUIT

6.10. LCD, USB & CD Interface Circuit

SCHEMATIC DIAGRAM - 10

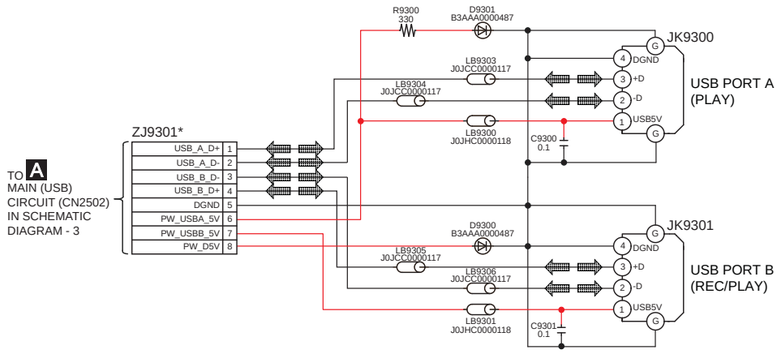
C LCD CIRCUIT

—— : +B SIGNAL LINE

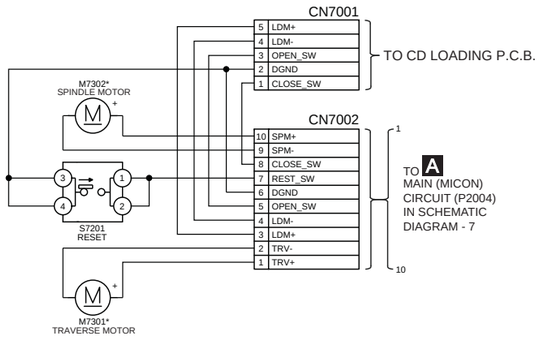


D USB CIRCUIT

—— : +B SIGNAL LINE : USB SIGNAL LINE



E CD INTERFACE CIRCUIT



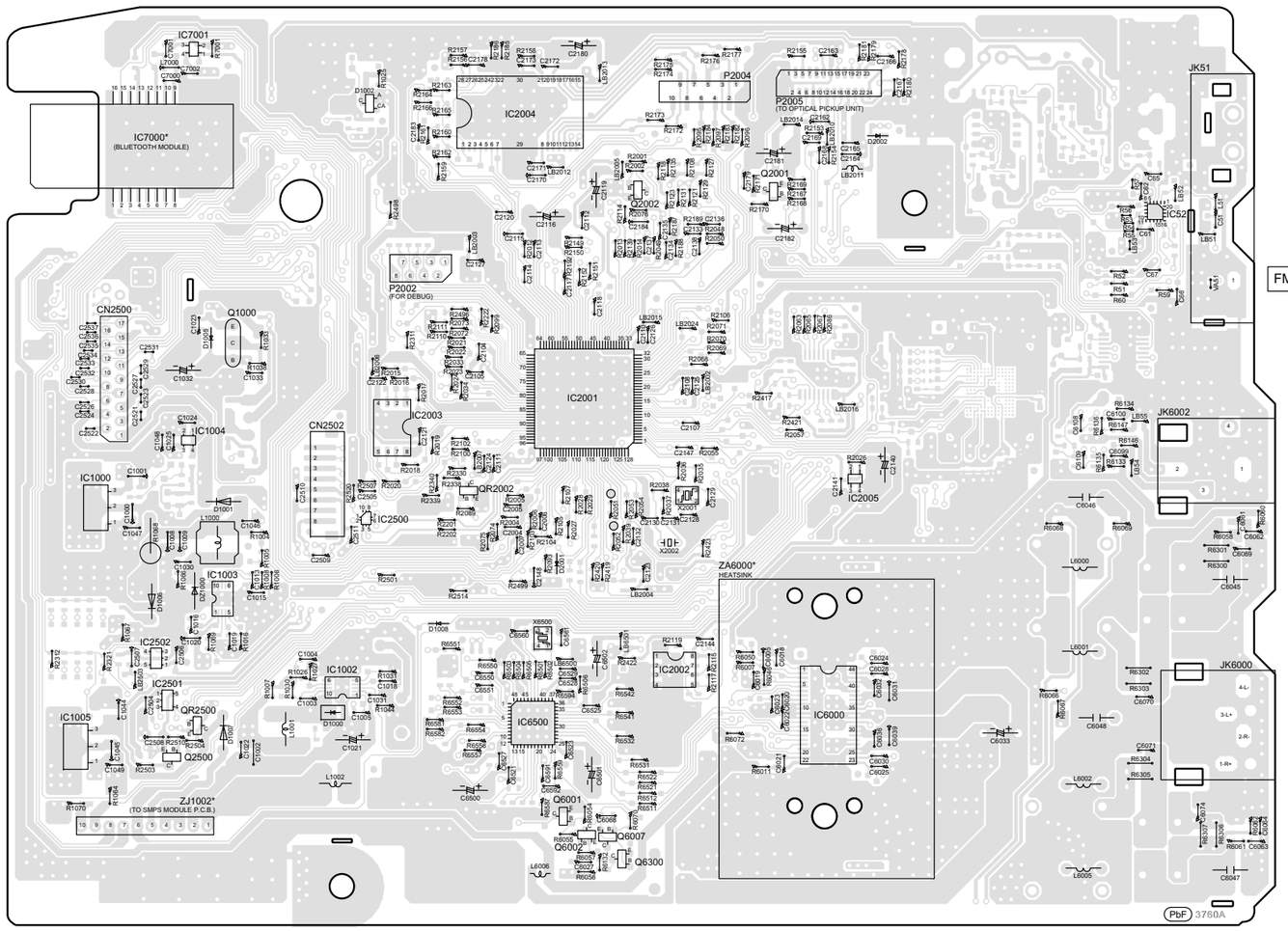
NOTE: " * " REF IS FOR INDICATION ONLY

SA-AKX18P LCD / USB / CD INTERFACE CIRCUIT

7 Printed Circuit Board

7.1. Main P.C.B.

A MAIN P.C.B. (REP5061N)

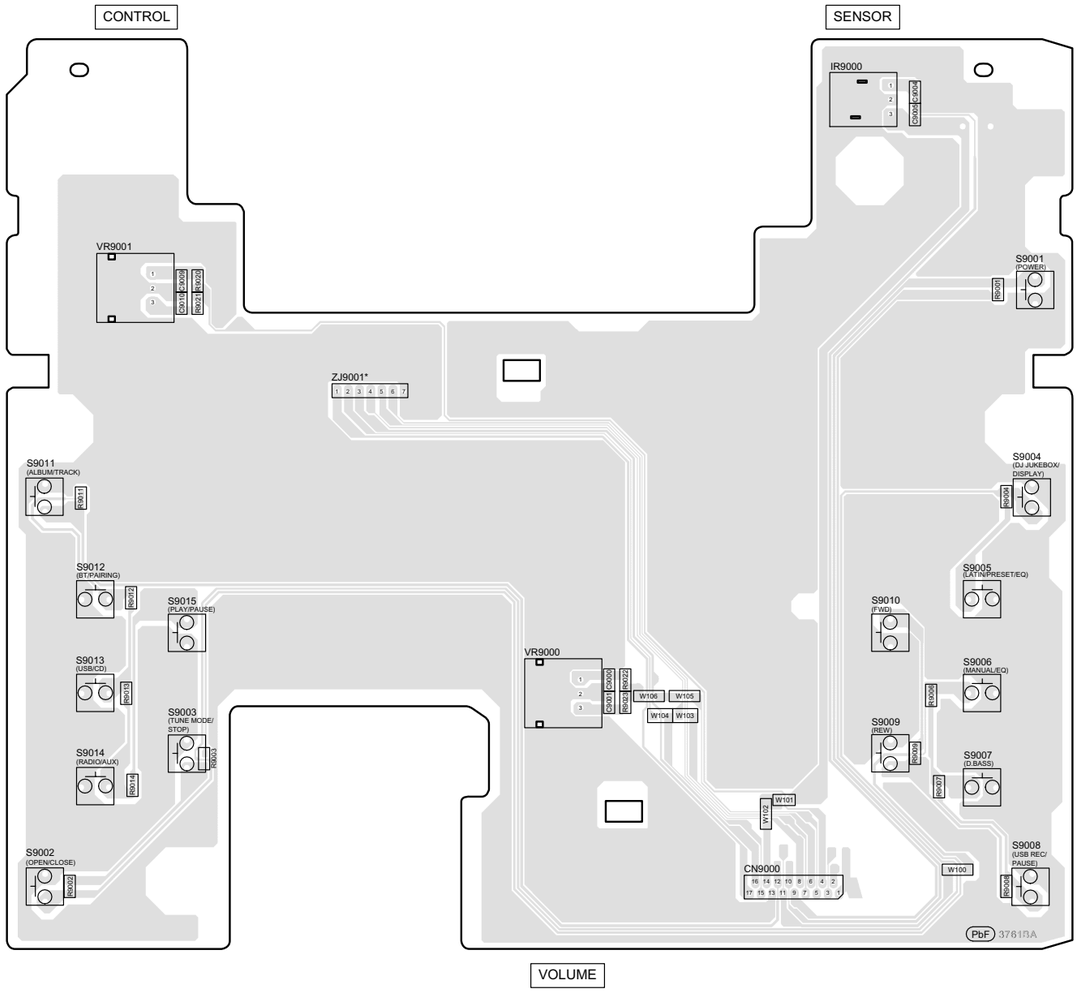


NOTE: " * " REF IS FOR INDICATION ONLY

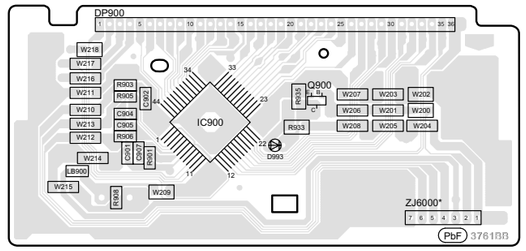
SA-AKX18P-K
MAIN P.C.B.

7.2. Panel, LCD & USB P.C.B.

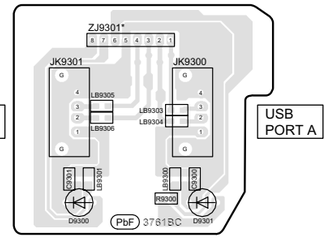
B PANEL P.C.B. (REP5062BA)



C LCD P.C.B. (REP5062BB)



D USB P.C.B. (REP5062BC)

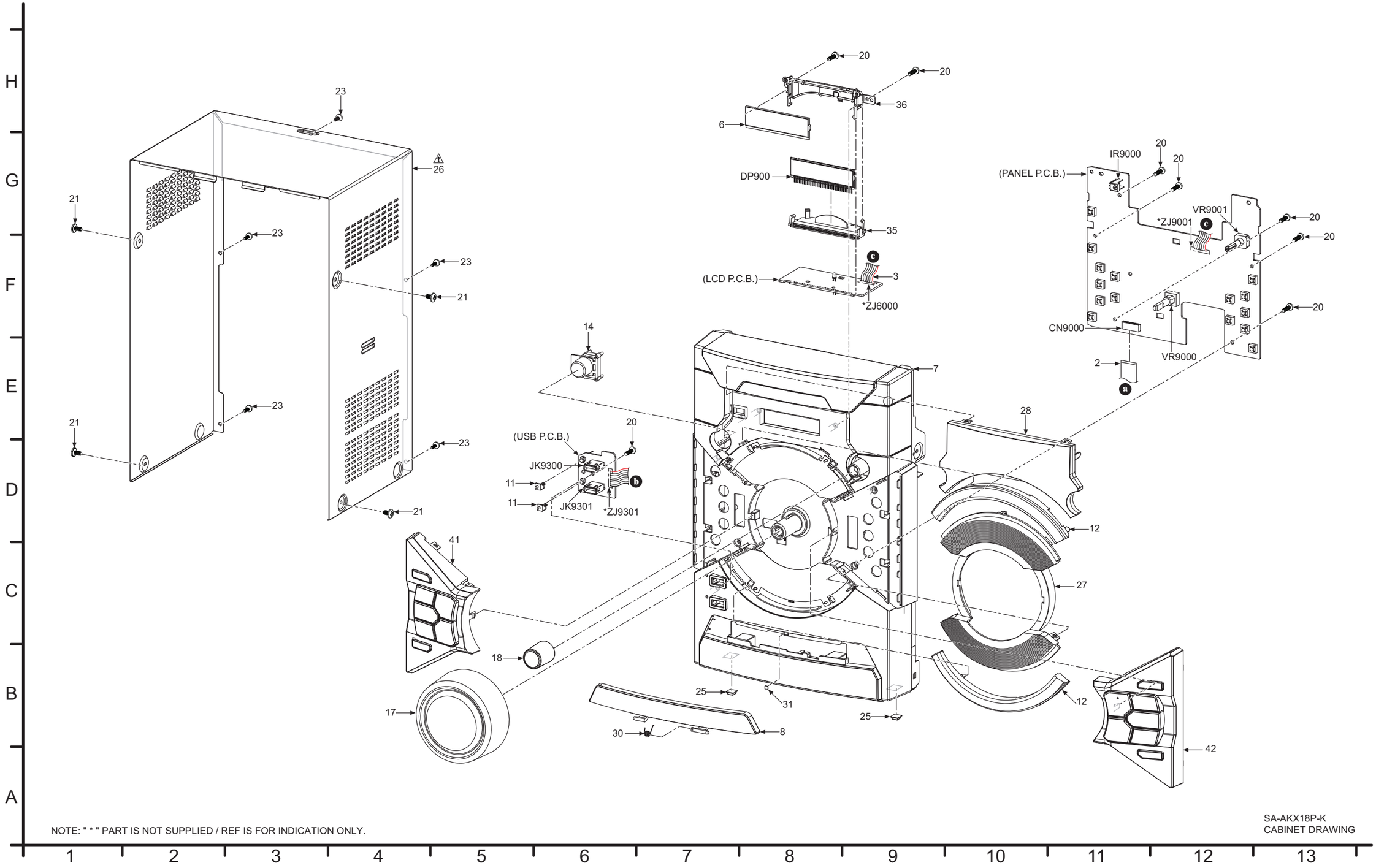


NOTE: " * " REF IS FOR INDICATION ONLY

SA-AKX18P-K
PANEL / LCD / USB P.C.B.

8 Exploded View and Replacement Parts List

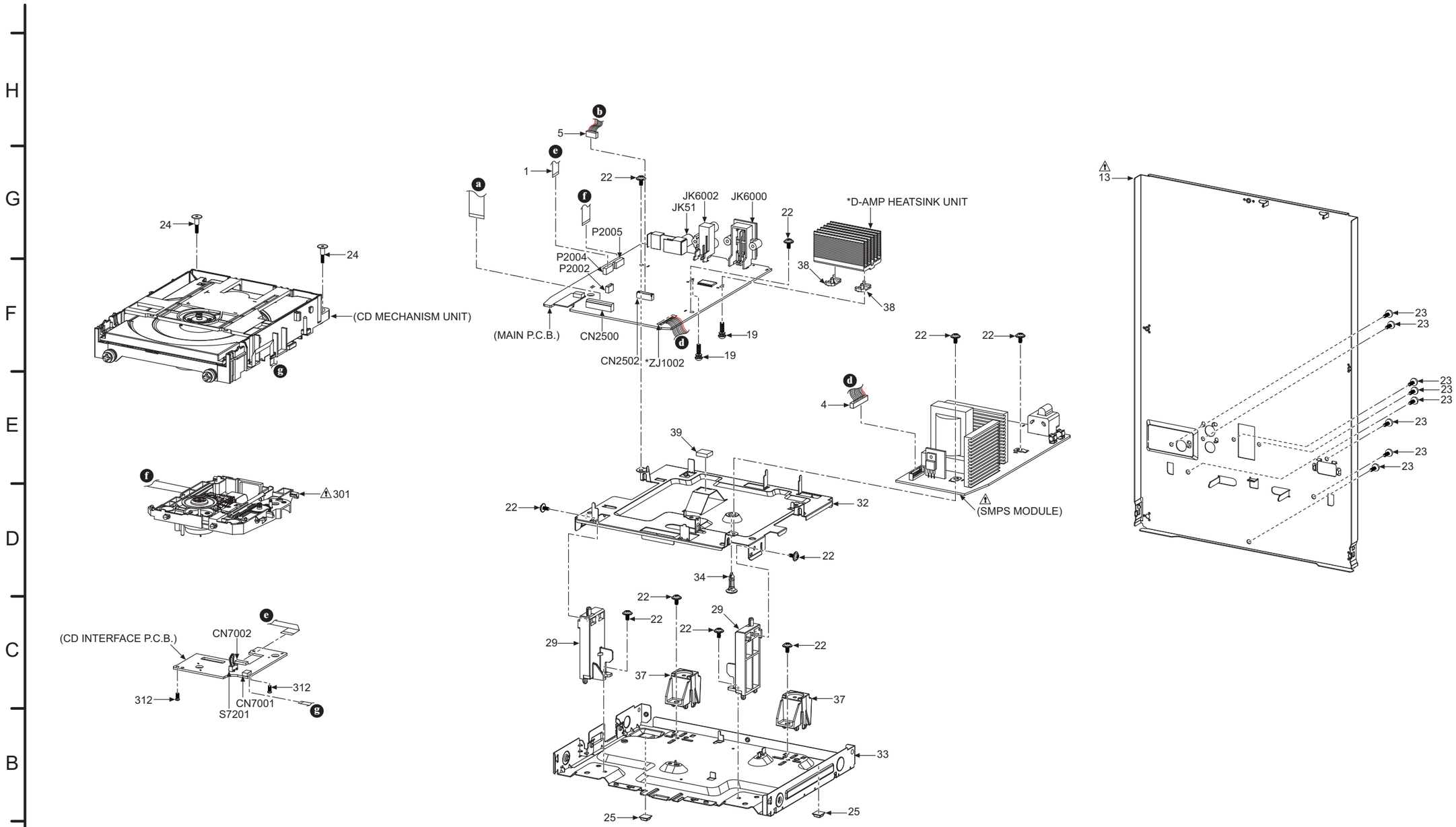
8.1. Cabinet Parts Location 1



NOTE: " * " PART IS NOT SUPPLIED / REF IS FOR INDICATION ONLY.

SA-AKX18P-K
CABINET DRAWING

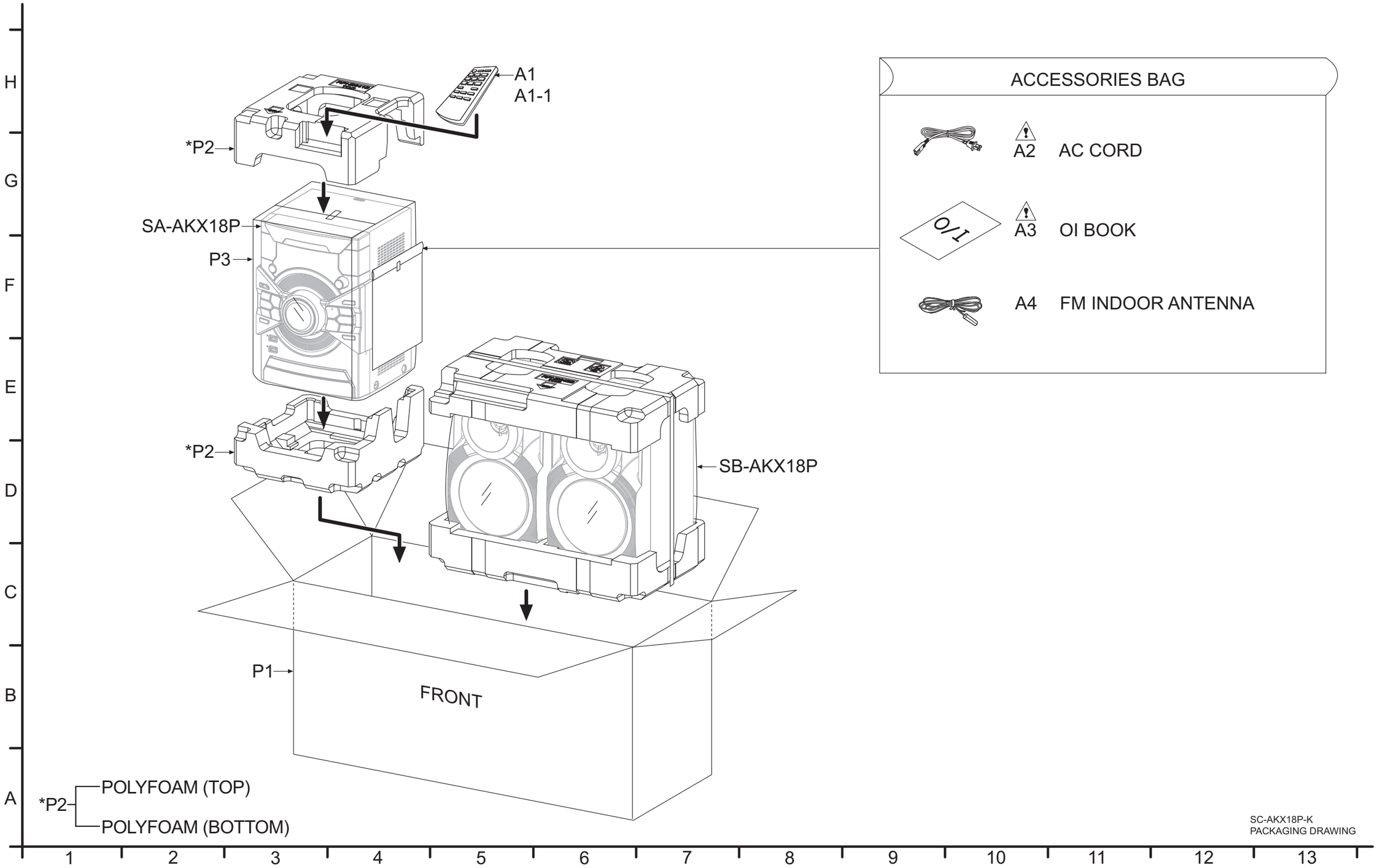
8.2. Cabinet Parts Location 2



NOTE: " * " PART IS NOT SUPPLIED / REF IS FOR INDICATION ONLY.

SA-AKX18P-K
CABINET DRAWING

8.3. Packaging



8.4. Mechanical Replacement Part List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- All parts mentioned are supplied by PAVCJM unless indicated likewise.
- Reference for O/I book languages are as follows:

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp:	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	Sw:	Swedish
Cz:	Czech	Fr:	French	Po:	Polish	Co:	Traditional Chinese
Da:	Danish	Ge:	German	Ru:	Russian	Cn:	Simplified Chinese
Pe:	Persian	Ur:	Ukraine	Pr:	Portuguese	Fi:	Finnish

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			CABINET AND CHASSIS		
	1	REE1730	10P FFC (MAIN-CD INTERFACE)	1	
	2	REE1733	17P FFC (MAIN-PANEL)	1	
	3	REX1588	7P WIRE (PANEL-LCD)	1	
	4	REX1683	10P WIRE (SMPS-MAIN)	1	
	5	REX1688	8P WIRE (USB-MAIN)	1	
	6	RMXX1008-2	LCD DIFFUSER SHEET	1	
	7	RFKGAKX18PK	FRONT PANEL ASS'Y	1	
	8	RGK2544-K	CD LID	1	
	11	RGL0800-Q	USB REC LIGHT PIECE	2	
	12	RGK2449-K	RING ORNAMENT TOP/BOTTOM	2	
⚠	13	RGR0443T-AA	REAR PANEL	1	
	14	RGU2948-K	POWER BUTTON	1	
	17	RGW0428-S2	VOLUME KNOB	1	
	18	RGW0435-K	SKIP KNOB	1	
	19	RHD26043-1	SCREW	2	
	20	RHD26046-L	SCREW	8	
	21	RHD30007-K2J	SCREW	4	
	22	RHD30111-31	SCREW	10	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	23	RHD30119-S	SCREW	13	
	24	RHDX031008	SCREW	2	
	25	RKAX0042-K	LEG CUSHION	4	
⚠	26	RKM0713-K1	TOP CABINET	1	
	27	RKW1027-Q	CENTER ORNAMENT	1	
	28	RKW1063-Q	FL WINDOW	1	
	29	RMA2442-1	CHASSIS SUPPORT	2	
	30	RMB0930	CD LID SPRING	1	
	31	RMGX0033A-K	CD LID CUSHION	1	
	32	RMK0837-1	INNER CHASSIS	1	
	33	RMKX1031A-1	BOTTOM CHASSIS	1	
	34	RMNX0298	PCB SPACER	1	
	35	RMNX1011-W2	LCD HOLDER BASE	1	
	36	RMNX1012A-W2	LCD HOLDER COVER	1	
	37	RMQ2134	MECHA HOLDER	2	
	38	RMZX1022-1	HEATSINK SPACER	2	
	39	RSC1228	RADIATOR SHEET	1	
	41	RFKNAKX18PKL	LEFT BUTTON ORNAMENT ASS'Y	1	
	42	RFKNAKX18PNR	RIGHT BUTTON ORNAMENT ASS'Y	1	
			TRAVERSE DECK		
⚠	301	RAE1044Z-V	TRAVERSE UNIT	1	
	312	XTN2+6GFJ	SCREW	2	
			PACKING MATERIALS		
	P1	RPG0M70	PACKING CASE	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	P2	RPN2641-1	POLYFOAM	1	
	P3	RPFX0198-1	BAG (MIRAMAT SHEET)	1	
			ACCESSORIES		
	A1	N2QAYB000944	REMOTE CONTROL	1	
	A1-1	RKK-AKX18PHK	R/C BATTERY COVER	1	
⚠	A2	K2CB2CB00022	AC CORD	1	
	A3	RQT9899-P	O/I BOOK (En)	1	
	A4	RSAX0002	FM INDOOR ANTENNA	1	

8.5. Electrical Replacement Parts List

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- Capacitor value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1000 (OHM).
- All parts mentioned are supplied by PAVCJM unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by JAPAN.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATIC SENSITIVE (ES) DEVICES" section.

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	REP5061N	MAIN P.C.B.	1	(RTL)
	PCB2	REP5062BA	PANEL P.C.B.	1	(RTL)
	PCB3	REP5062BB	LCD P.C.B.	1	(RTL)
	PCB4	REP5062BC	USB P.C.B.	1	(RTL)
	PCB5	REP4945A	CD INTERFACE P.C.B.	1	(RTL)
⚠	PCB6	N0AB2GK00002	SMPS MODULE	1	
			INTEGRATED CIRCUITS		
	IC2003	RFKWFAKX18PM	IC	1	(E.S.D) JIGS & ADJ
			COILS AND INDUCTORS		
	LB9303	J0JCC0000117	INDUCTOR	1	
	LB9304	J0JCC0000117	INDUCTOR	1	
	LB9305	J0JCC0000117	INDUCTOR	1	
	LB9306	J0JCC0000117	INDUCTOR	1	
	R2021	J0JCC0000309	INDUCTOR	1	
	R2051	J0JCC0000309	INDUCTOR	1	
	R2052	J0JCC0000309	INDUCTOR	1	
	R2054	J0JCC0000309	INDUCTOR	1	
	R2099	J0JCC0000309	INDUCTOR	1	
	R2100	J0JCC0000309	INDUCTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2102	J0JCC0000309	INDUCTOR	1	
	R2222	J0JCC0000309	INDUCTOR	1	
	R2496	J0JCC0000309	INDUCTOR	1	
			CHIP JUMPERS		
	W100	ERJ8GEY0R00V	0 1/4W	1	
	W101	ERJ3GEY0R00V	0 1/10W	1	
	W102	ERJ8GEY0R00V	0 1/4W	1	
	W103	ERJ6GEY0R00V	0 1/8W	1	
	W104	ERJ6GEY0R00V	0 1/8W	1	
	W105	ERJ8GEY0R00V	0 1/4W	1	
	W106	ERJ8GEY0R00V	0 1/4W	1	
	W200	ERJ6GEY0R00V	0 1/8W	1	
	W201	ERJ8GEY0R00V	0 1/4W	1	
	W202	ERJ6GEY0R00V	0 1/8W	1	
	W203	ERJ8GEY0R00V	0 1/4W	1	
	W204	ERJ8GEY0R00V	0 1/4W	1	
	W205	ERJ8GEY0R00V	0 1/4W	1	
	W206	ERJ8GEY0R00V	0 1/4W	1	
	W207	ERJ8GEY0R00V	0 1/4W	1	
	W208	ERJ8GEY0R00V	0 1/4W	1	
	W209	ERJ6GEY0R00V	0 1/8W	1	
	W210	ERJ8GEY0R00V	0 1/4W	1	
	W211	ERJ8GEY0R00V	0 1/4W	1	
	W212	ERJ8GEY0R00V	0 1/4W	1	
	W213	ERJ8GEY0R00V	0 1/4W	1	
	W214	ERJ8GEY0R00V	0 1/4W	1	
	W215	ERJ8GEY0R00V	0 1/4W	1	
			RESISTORS		
	R935	D0GD471JA052	470 1/8W	1	

Safety	Ref. No.	Part No.	Part Name & Description	Qty	Remarks
	R2129	D0GB333JA065	33K 1/10W	1	
	R2135	D0GB102JA065	1K 1/10W	1	
	R2321	D0GBR00J0004	0 1/10W	1	
	R9001	D0GB222JA065	2.2K 1/10W	1	
			CAPACITORS		
	C65	D0GB103JA065	10K 1/10W	1	
	C904	F1H1H221B047	220pF 50V	1	
	C905	F1H1H221B047	220pF 50V	1	

MMH1405