

XM-N1004

SERVICE MANUAL

Ver. 1.0 2013.07

Canadian Model
AEP Model
UK Model
E Model



SPECIFICATIONS

Circuit system	OTL (output transformerless) circuit	Frequency response 5 Hz – 50 kHz ($^{+0}_{-3}$ dB)
Inputs	Pulse power supply RCA pin jacks High level input connector (E and Indian models only)	Harmonic distortion 0.05 % or less (at 1 kHz, 4 Ω)
Input level adjustment range	0.3 – 6 V (RCA pin jacks) 2.8 – 12 V (High level input) (E and Indian models only)	Low-pass filter 80 Hz, 18 dB/oct
Outputs	Speaker terminals	High-pass filter 80 Hz, 12 dB/oct
Speaker impedance	2 – 8 Ω (stereo) 4 – 8 Ω (when used as a bridging amplifier)	Power requirements 12 V DC car battery (negative ground)
Maximum output	4 Speakers: 170 W × 4 (at 4 Ω) 3 Speakers: 250 W × 2 (at 2 Ω) + 500 W × 1 (BTL, at 4 Ω) 2 Speakers: 500 W × 2 (BTL, at 4 Ω)	Power supply voltage 10.5 – 16 V at rated output: 36 A (4 Ω, 70 W × 4)
Rated output (supply voltage at 14.4 V, 20 Hz – 20 kHz, 1 % THD)	4 Speakers: 70 W × 4 (at 4 Ω) 85 W × 4 (at 2 Ω) 2 Speakers: 175 W × 2 (BTL, at 4 Ω)	Dimensions Approx. 342 × 55 × 232 mm (w/h/d) not incl. projecting parts and controls
		Mass Approx. 2.7 kg not incl. accessories
		Supplied accessories Mounting screws (4) High level input cord (1) (E and Indian models only) Protection cap (1)
		Design and specifications are subject to change without notice.

STEREO POWER AMPLIFIER

9-893-784-01

2013G33-1

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Accessories are given in the last of the electrical parts list.

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.

SECTION 1

SERVICING NOTES

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.

CONFIRMING THE OPERATION (E and Indian models)

Please confirm the car audio unit works even if REM output is not connected when you connect this unit with the car audio unit by the HIGH LEVEL input.

PROTECTOR OPERATION CHECK

Thermal Protect

1. Short across TH501 with the power on.
2. Verify that the protector is operated and D918 illuminates green. When input the signal and verify that there is no output on the SP-OUT even when the volume is increased.
3. Verify that the protector is released and there is an output on the SP-OUT when the short is removed.
4. Likewise, perform items 1 to 3 for TH502, TH503 and TH504.

Over Current Protect

1. Short between the positive and negative sides of the speaker output terminals CN903 and CN904 with the power on.
(Perform this shorting for each channel on FRONT and REAR)
2. Verify that the protector is operated and D918 illuminates red.
3. Verify that the protector is not released and D918 remains red even when the short is removed.
4. Verify that the protector is released and D918 illuminates green when the power is turned off and then on again.

Offset Protect

1. Short between the +12V terminal of CN904 and the (L+R) + or (L+R) - of the speaker output terminal CN904.
(Short between +12V terminal and (L+R) + and between +12V terminal and (L+R) -)
2. Verify that the protector is operated and D918 illuminates red.
3. Verify that the protector is not released and D918 remains red even when the short is removed.
4. Verify that the protector is released and D918 illuminates green when the power is turned off and then on again.

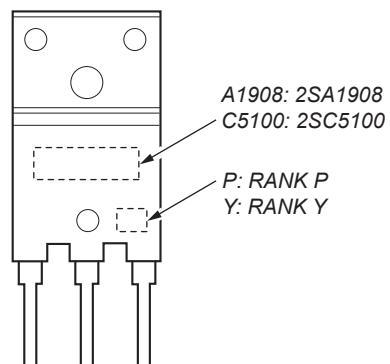
NOTE FOR REPLACEMENT OF THE TRANSISTORS

The transistors Q110, 111, 210, 211, 310, 311, 410 and 411 have two different ranks: P rank and Y rank.

The rank of these transistors need to be selected properly according to each channel. When replacing any one of these transistors, check its rank and replace with the appropriate transistor of the same rank.

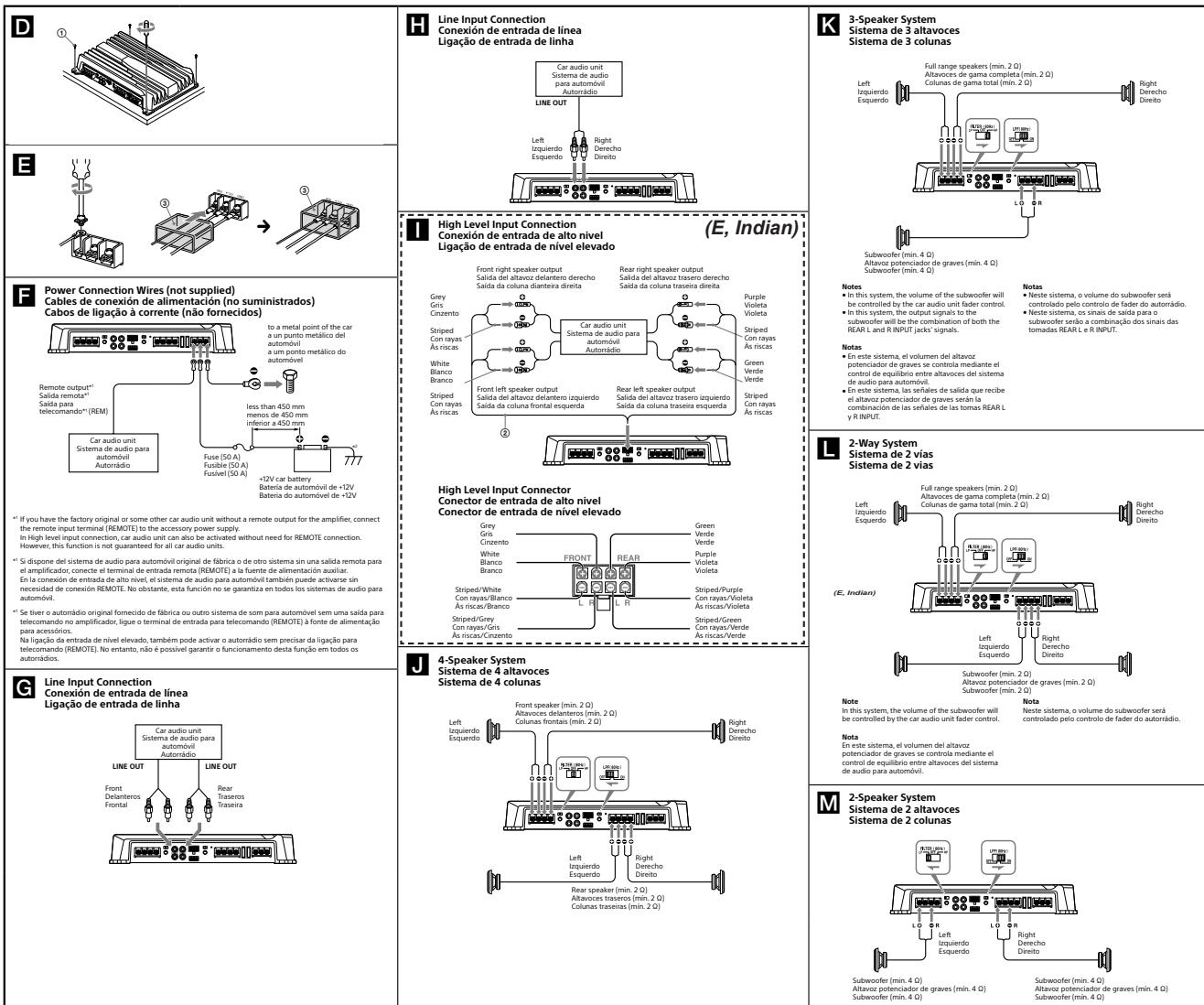
Rank	Q110, 210, 310, 410	Q111, 211, 311, 411
P	2SC5100-P	2SA1908-P
Y	2SC5100-Y	2SA1908-Y

DISCRIMINATION:



SECTION 2 GENERAL

This section is extracted from instruction manual.



English

Connections

Cautions

- Before making any connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Be sure to use speakers with an adequate power rating. If you use small capacity speakers, they may be damaged.
- This is a Phase-Inverted Amplifier.
- Do not connect the ground terminal of the speaker system to the car chassis, and do not connect the G terminal of the right speaker with that of the left speaker.
- Install the input and output cords away from the power supply wire as running them close together may cause interference.
- This is a high power amplifier. Therefore, it may run hot in full power if used with an ordinary car battery.
- If your car is equipped with a computer system for navigation or some other purpose, do not remove the car's memory card or the car key. If you disconnect the wire, the computer memory may be erased. To avoid short circuits when making the connections, disconnect the +12V power supply wires until all the other wires have been connected.

Installation

Before Installation

- Mount the unit either inside the trunk or under the seats.
- Choose a mounting location vertically so the unit does not interfere with the normal movements of the driver and it will not be exposed to direct sunlight or hot air from the heater.

- Do not install the unit under the floor carpet, where the heat dissipation from the unit will be considerably impaired.

Mount the unit (D)

First, mark the positions of the 4 screw holes on the mounting board (not supplied). Then drill a 3 mm diameter hole at each position and fit the unit onto the board with the supplied mounting screws. The mounting screws are 15 mm long, so make sure that the mounting board is thicker than 15 mm.

Power connections

Make the terminal connections (E)

- For the wires through the cap, connect the wires, then cover the terminals with the cap.
- Note**
When you tighten the screw, be careful not to apply too much torque* as doing so may damage the screw.
- The torque value should be less than 1 Nm.
 - For the wires, connect the remote control wire of the car audio unit to the remote terminal.
 - When using a car audio unit with a remote control, connect the remote input terminal (REMOTE) to the accessory power supply.
 - Use a power supply wire with a fuse attached.
 - All power wires connected to the positive battery post should be fused with 450 mm of the battery post.
 - Make sure that the vehicle's battery wires connected to the vehicle (ground to chassis)* are of a sufficient gauge. If the wires are too thin, a main power wire connected from the battery to the amplifier.
 - During normal power operation, a current of more than 50 A will run through the system. Therefore, make sure that the wires to be connected to the +12V and GND terminals of this unit are at least 10-Gauge (AWG-10) or have a sectional area of more than 5 mm².

Input Connections

For details on input connections, see **G**, **H** and **I**.

Speaker Connections

Turn on or off the LPF and HPF switch at the unit rear. For details on speaker connections, see **J**, **K** and **M**.

Español

Conexiones

Precaución

- Antes de realizar las conexiones, desconecte el terminal de tierra de la batería del automóvil para evitar cortocircuitos.
- Asegúrese de utilizar altavoces con una potencia adecuada. Si utiliza altavoces de capacidad reducida, pueden dañarse.
- Este amplificador es de fase invertida.
- No conecte el terminal G del sistema de altavoces al chasis del automóvil ni el terminal G del terminal de tierra del altavoz.
- Instale los cables de entrada y salida alejados del cable de la fuente de alimentación, ya que este cable genera una corriente que puede generar ruido por interferencias.
- Este unidad es un amplificador de alta potencia. Por lo tanto, no funcione el sistema de rendimiento si se utiliza con los cables de altavoz suministrados con el amplificador.
- Compruebe que conecta el cable de control remoto del sistema de altavoces al terminal de control remoto (REMOTE).
- Si utiliza un sistema de alimentación de 12V sólo después de haber conectado los otros cables.
- Algunas veces es necesario conectar firmemente el cable de tierra a la tierra de un punto metálico del automóvil. Una conexión floja puede causar fallos del sistema de altavoces.
- Compruebe que conecta el cable de control remoto del sistema de altavoces al terminal de control remoto (REMOTE).
- Si utiliza un sistema de alimentación de 12V para el amplificador, conecte el terminal de alimentación (REMOTE) a la fuente de alimentación auxiliar.
- Empieza el cable de la fuente de alimentación con el polo positivo de la batería conectándose a un fusible de 450 mm de la terminal de polo positivo de la batería y antes de poner la pieza metálica.
- Todos los cables de alimentación conectados al polo positivo de la batería deben conectarse a un fusible de 450 mm de la terminal de polo positivo de la batería y antes de poner la pieza metálica.
- Aplicar la fuerza de los cables de la batería del vehículo conectados al mismo (*a la masa del chasis*) tienen una anchura igual o superior a la del cable de tierra principal que conecta la batería al amplificador.
- Durante el funcionamiento a pleno rendimiento, el calor que libera el sistema de altavoces puede ser considerable. Por lo tanto, conecte el conductor y no quite expuesto al sol o al aire caliente de la cabina.
- Al instalar la unidad debajo de la moqueta del suelo, en caso de la disipación de calor de la misma, disminuir considerablemente.

Instalación

Antes de realizar la instalación

- Monte la unidad en el interior del maletero o debajo de un asiento.
 - Elija cuidadosamente el lugar de instalación de la unidad para que no interfiera con el sistema de dirección o el conductor y no quede expuesta a la luz solar directa o al aire caliente de la cabina.
 - Monte la unidad debajo de la moqueta del suelo, en caso de la disipación de calor de la misma, disminuir considerablemente.
- Monte la unidad (D)**
- Emplique la unidad en la parte trasera del tablero de montaje (no suministrado). Poco a poco, perfore los agujeros con un diámetro de aproximadamente 3 mm y Monte la unidad sobre el tablero de montaje. A continuación, perfore los orificios con un diámetro de 15 mm y Monte la unidad sobre el tablero de montaje. Una vez que la longitud de los tornillos es de 15 mm, compruebe que el grosor del tablero de montaje sea superior a 15 mm.

Português

Conexões de alimentação

Realize as conexões de terminal (E)

- Passo 1: Faça as conexões a través da cubierta, conecte-as e cubra os terminais com dicha cubierta.
- Nota**

Al apretar el tornillo, tenha cuidado de no aplicar demasiada fuerza de torsión, ya que puede dañarlo.

* El valor de fuerza de torsión debe ser inferior a 1 Nm.

Realize as conexões de alimentação (F)

Notas sobre la conexión de alimentación

- Conecte la terminal G de la fuente de alimentación.
- Conecte la terminal de tierra de la fuente de alimentación de 12V sólo después de haber conectado los otros cables.

Algunas veces es necesario conectar firmemente el cable de tierra a la tierra de un punto metálico del automóvil.

Una conexión floja puede causar fallos del sistema de altavoces.

Compruebe que conecta el cable de control remoto del sistema de altavoces al terminal de control remoto (REMOTE).

Si utiliza un sistema de alimentación de 12V para el amplificador, conecte el terminal de alimentación (REMOTE) a la fuente de alimentación auxiliar.

Empieza el cable de la fuente de alimentación con el polo positivo de la batería conectándose a un fusible de 450 mm de la terminal de polo positivo de la batería y antes de poner la pieza metálica.

Todos los cables de alimentación conectados al polo positivo de la batería deben conectarse a un fusible de 450 mm de la terminal de polo positivo de la batería y antes de poner la pieza metálica.

Aplicar la fuerza de los cables de la batería del vehículo conectados al mismo (*a la masa del chasis*) tienen una anchura igual o superior a la del cable de tierra principal que conecta la batería al amplificador.

Durante el funcionamiento a pleno rendimiento, el calor que libera el sistema de altavoces puede ser considerable. Por lo tanto, conecte el conductor y no quite expuesto al sol o al aire caliente de la cabina.

Al instalar la unidad debajo de la moqueta del suelo, en caso de la disipación de calor de la misma, disminuir considerablemente.

Conexões de entrada

Para obtener más información sobre las conexões de entrada, consulte **G**, **H** e **I**.

Conexões dos altavoces

Encienda o apague los interruptores LPF y HPF situados en la parte posterior de la unidad. Para obtener más información sobre las conexões dos altavoces, consulte **J**, **K** e **M**.

Português

Ligações

Cuidados

- Antes de fazer qualquer ligação, desligue o terminal de terra da bateria do automóvel para evitar cortocircuitos.
- Verifique se as colunas utilizadas têm uma capacidade suficiente. Colunas com capacidade de baixa capacidade, podem danificá-las.

Este amplificador é um amplificador de fase invertida.

Não ligue o terminal G do sistema de colunas de áudio ao chassi do automóvel nem o terminal G do terminal de terra do altavoz.

Instale os cabos de entrada e saída alejados do cabo de alimentação, para estiverem muito distantes entre si.

Verifique se o terminal G da coluna de alimentação é só para uso com a bateria.

Este é um amplificador de grande potência. Como tal, pode não conseguir obter o máximo rendimento se usar colunas com capacidade baixa.

Não ligue o terminal G do sistema de colunas de áudio ao chassi do automóvel nem o terminal G do terminal de terra do altavoz.

Se utilizar o terminal G da coluna de alimentação para alimentar o sistema de colunas de áudio, certifique-se de que o terminal G da coluna de alimentação é só para uso com a bateria.

Verifique se o terminal G da coluna de alimentação é só para uso com a bateria.

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Português

Ligações elétricas

Ligue os terminais (E)

Passe os fios pelas capas de proteção, ligue-os e deslique tape os terminais com a capa de proteção.

Nota

Aprete bem o parafuso, mas não com binário exagerado, para evitar danificar a cubierta.

O valor do binário aplicado deve ser inferior a 1 Nm.

Estabelecer as ligações elétricas (E)

Notas sobre o fornecimento de corrente

Ligue o cabo de ligação à corrente de 12V somente depois de ter ligado todos os outros cabos.

Ligue o fio de massa do aparelho a um ponto neutro da rede eléctrica, para evitar ligação mal feita devido a variações de tensão.

Verifique se liga o cabo de televisor.

Verifique se o terminal G do sistema de colunas de áudio do automóvel não tem terminal G da coluna de alimentação.

Verifique se o terminal G da coluna de alimentação é só para uso com a bateria.

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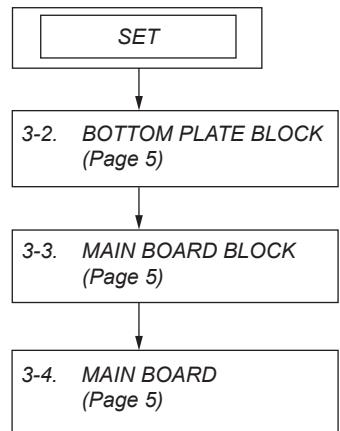
Verifique se o terminal G da coluna de alimentação é só para uso com a bateria.

Verifique se o terminal G da coluna de alimentação é só para uso com a bateria.

SECTION 3 DISASSEMBLY

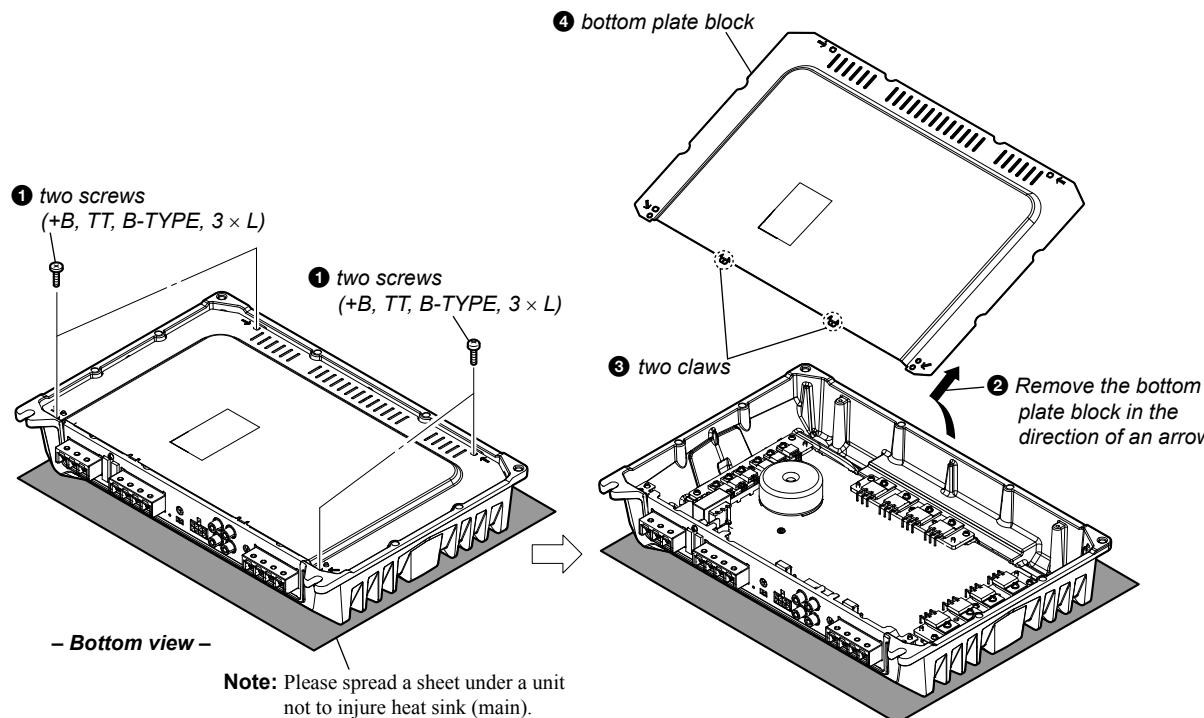
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

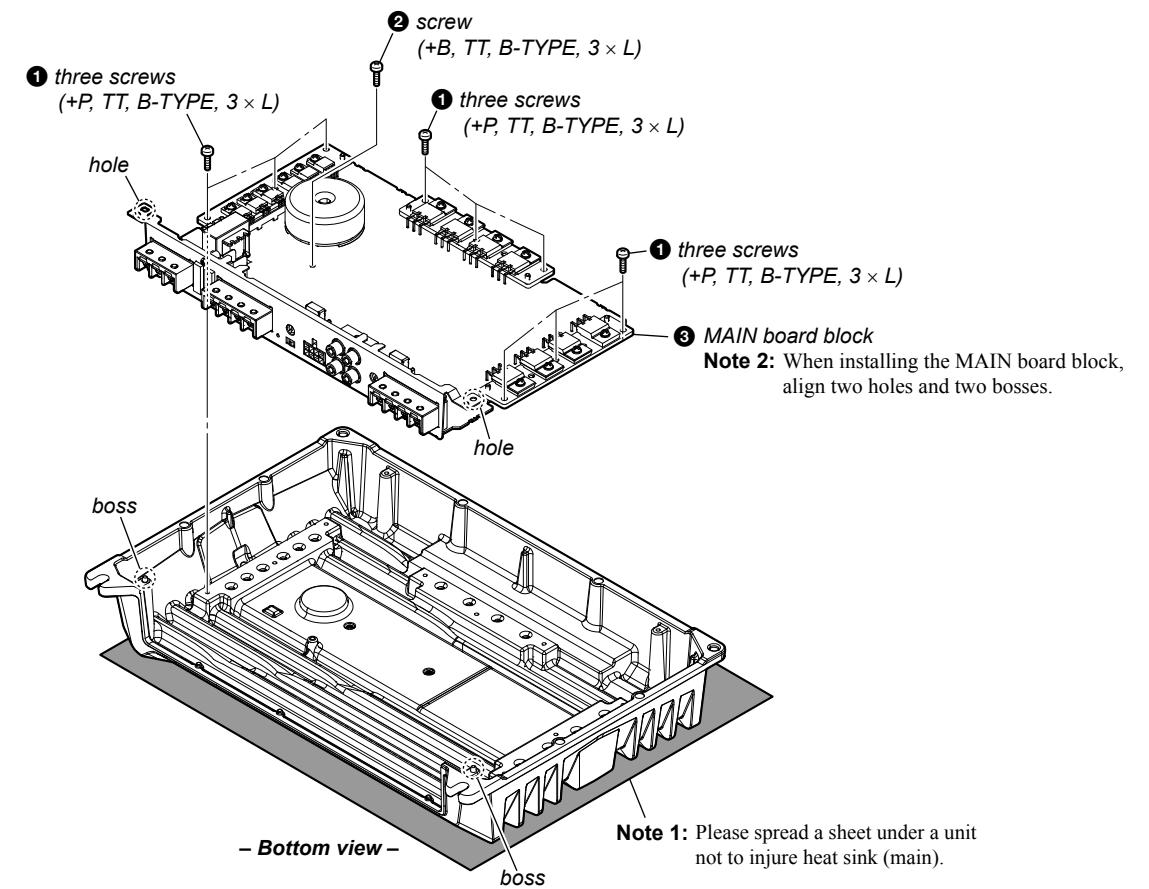


Note: Follow the disassembly procedure in the numerical order given.

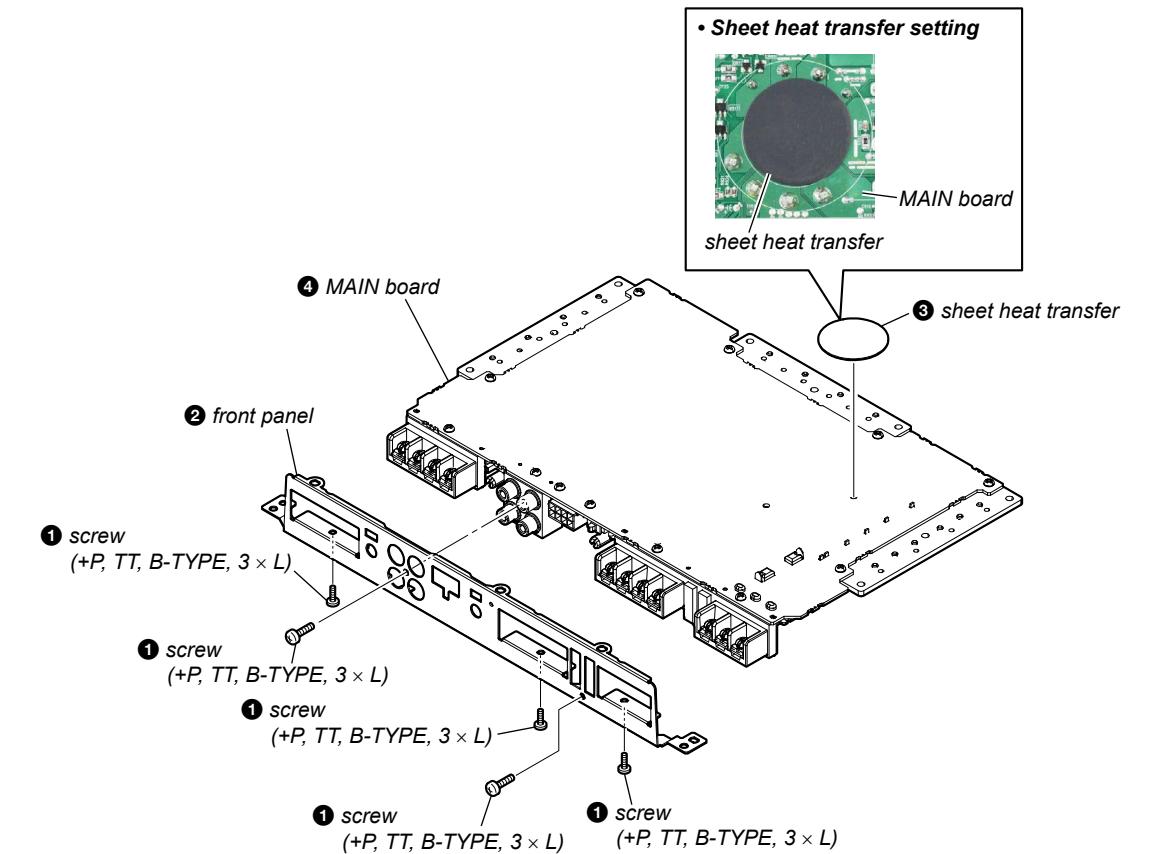
3-2. BOTTOM PLATE BLOCK



3-3. MAIN BOARD BLOCK



3-4. MAIN BOARD



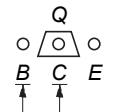
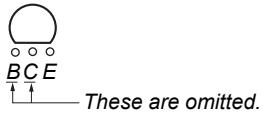
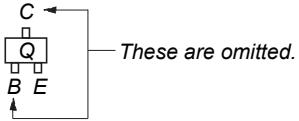
SECTION 4 DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For Printed Wiring Boards.

Note:

- : 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.)
- Indication of transistor.



- Abbreviation
IND : Indian model

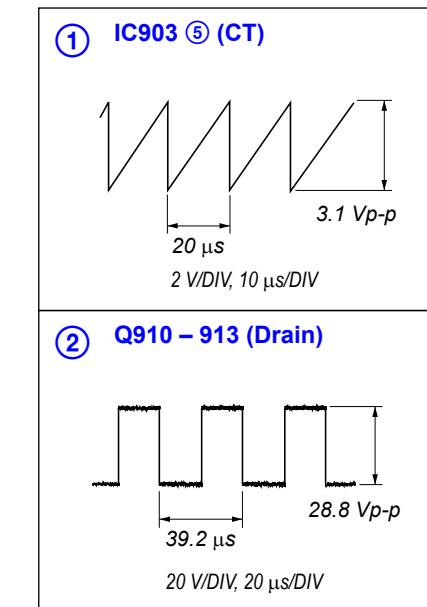
For Schematic Diagrams.

Note:

- 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 1/4 W or less unless otherwise specified.
- : Nonflammable resistor.
- : Panel designation.
- : B+ Line.
- : B- Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from +12 V and REM terminals.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark: POWER ON
- Voltages are taken with VOM (Input impedance 10 $\text{M}\Omega$). 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.
- Abbreviation
IND : Indian model

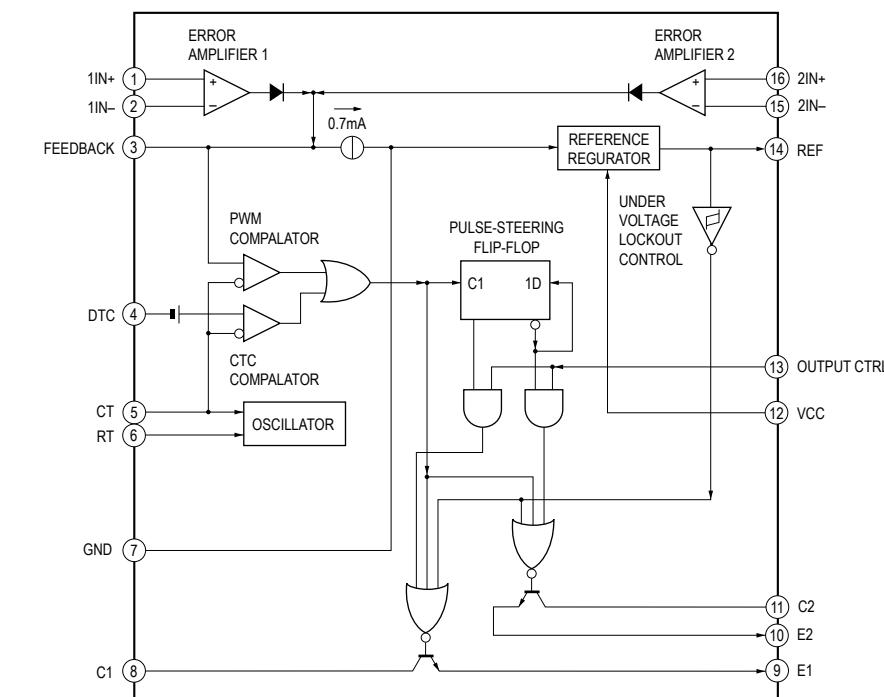
• Waveforms

– MAIN Board –



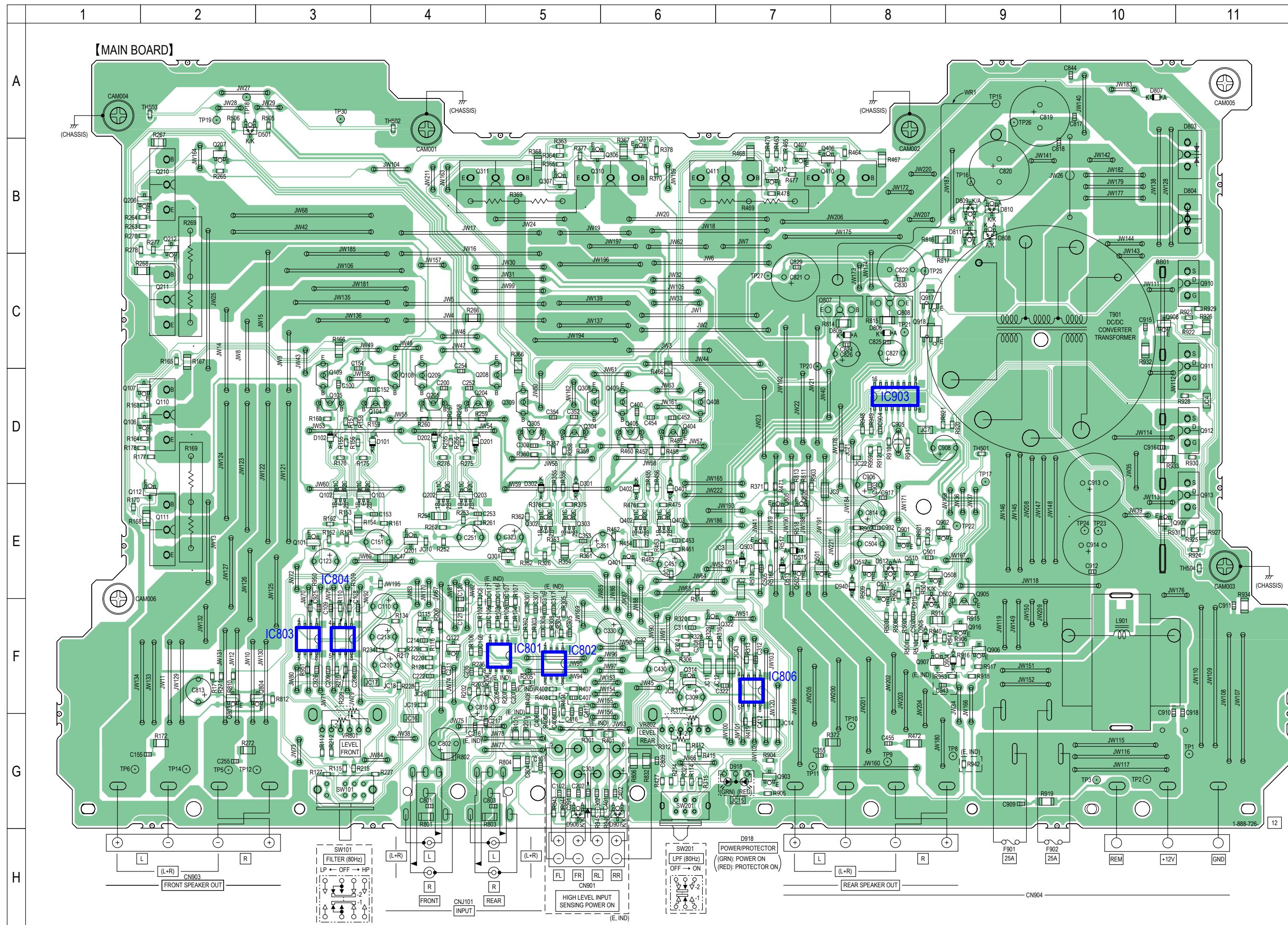
• IC Block Diagram

– MAIN Board – IC903 TL594CD-R2



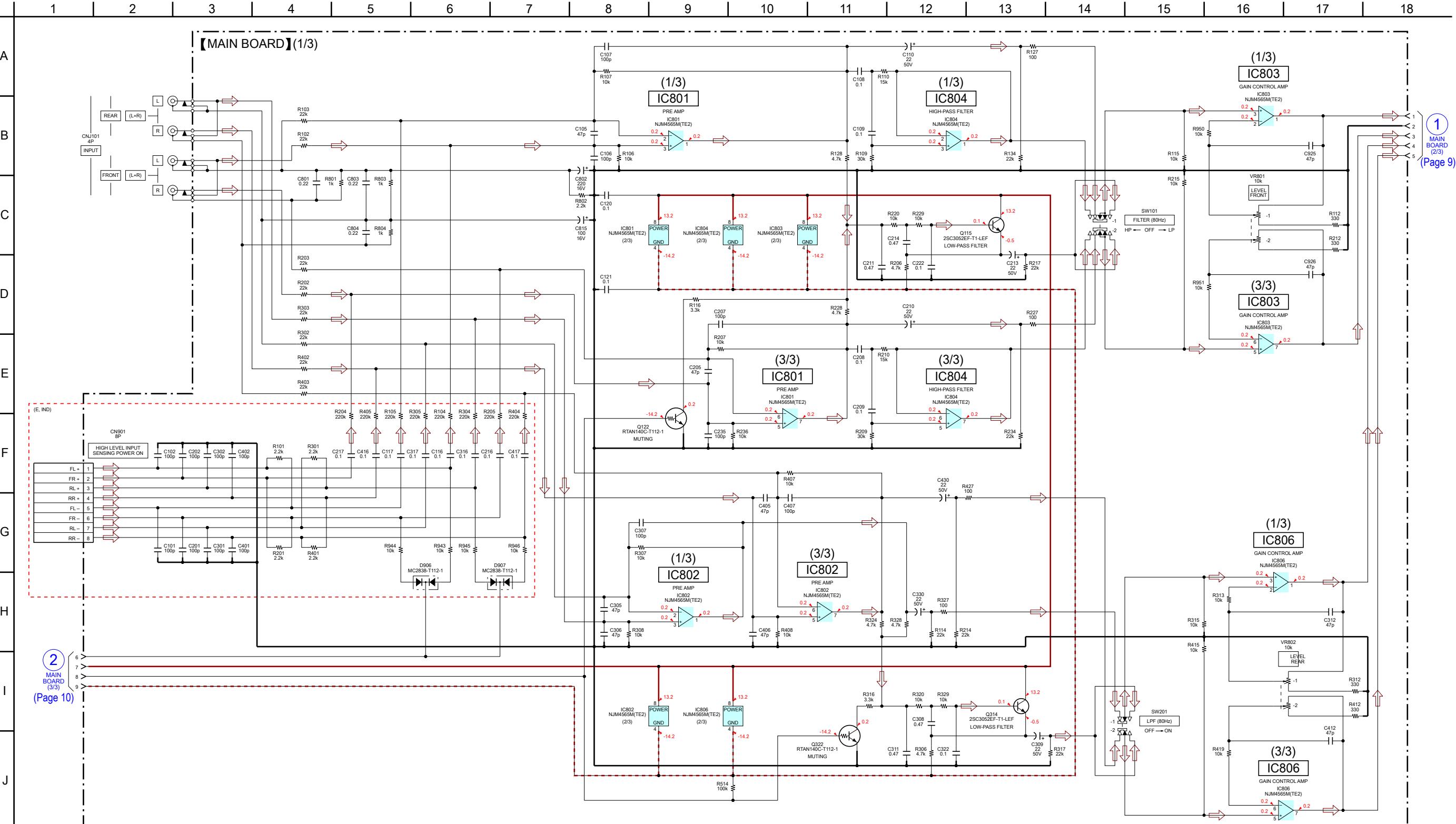
4-1. PRINTED WIRING BOARD - MAIN Board - •  : Uses unleaded solder

 : Uses unleaded solder

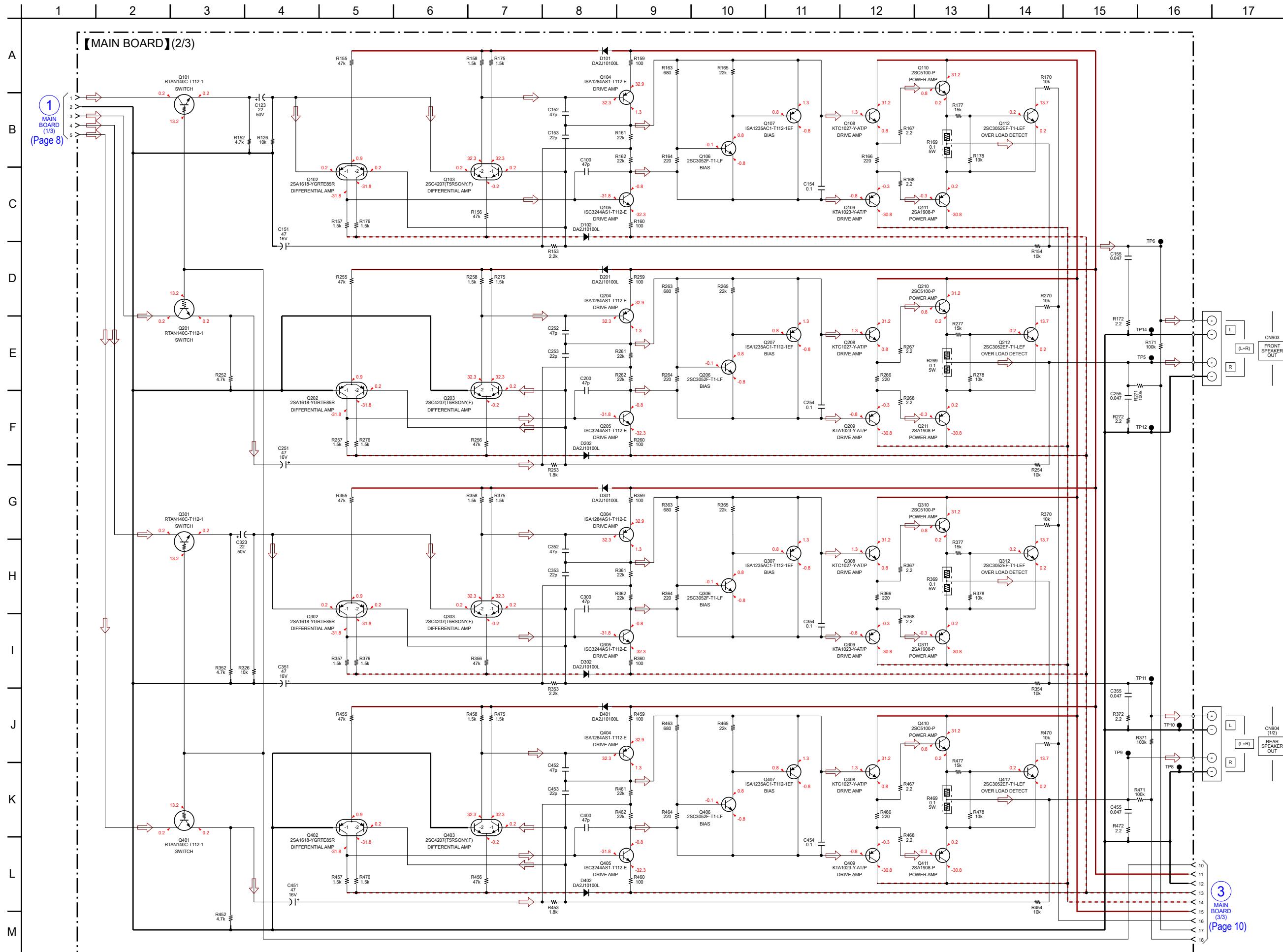


Note: When replacing the Q110, Q111, Q210, Q211, Q310, Q311, Q410 and Q411 on the MAIN board, refer to "NOTE FOR REPLACEMENT OF THE TRANSISTORS" on page 3.

4-2. SCHEMATIC DIAGRAM - MAIN Board (1/3) -

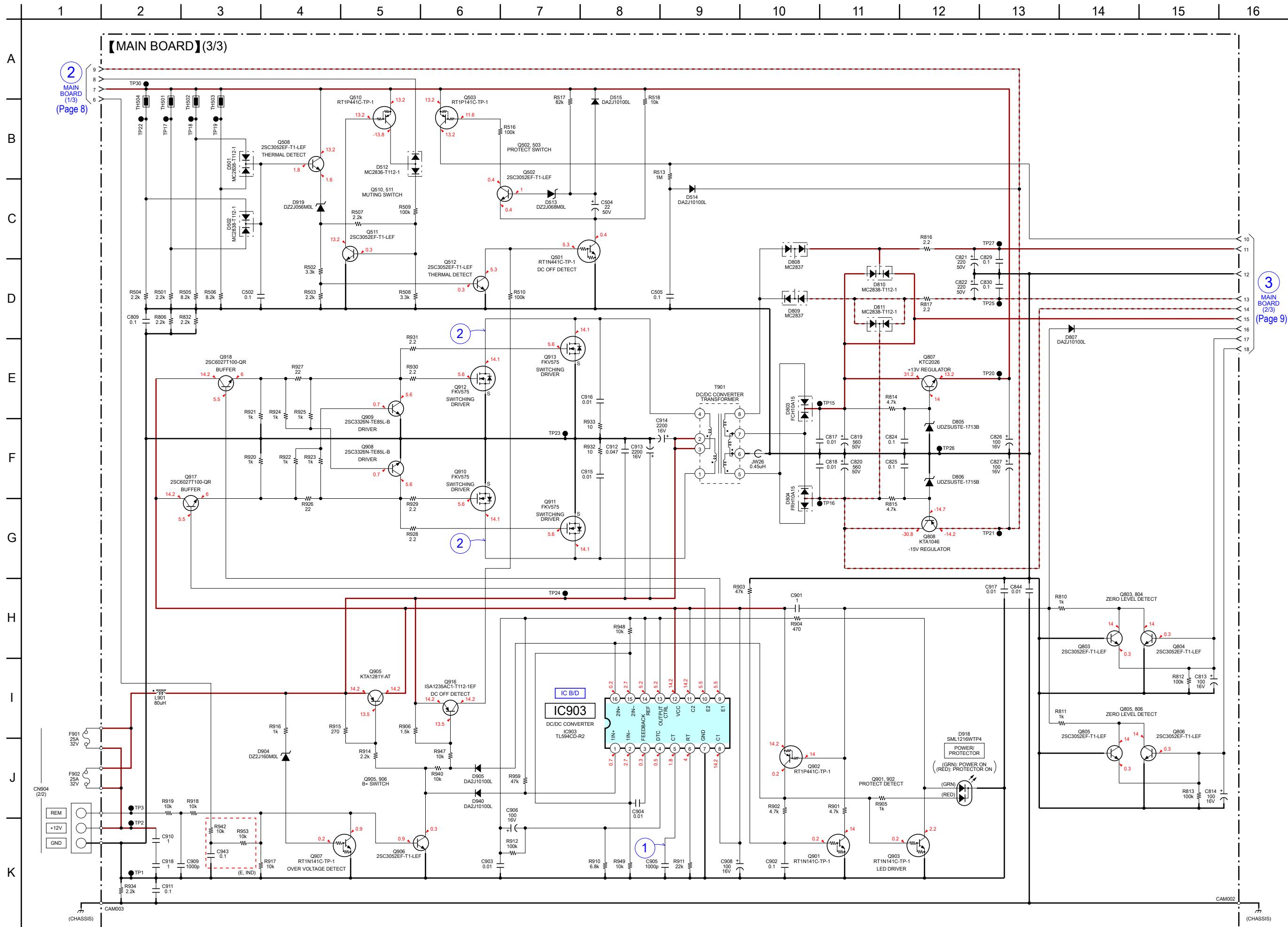


4-3. SCHEMATIC DIAGRAM - MAIN Board (2/3) -



Note: When replacing the Q110, Q111, Q210, Q211, Q310, Q311, Q410 and Q411 on the MAIN board, refer to “NOTE FOR REPLACEMENT OF THE TRANSISTORS” on page 3.

4-4. SCHEMATIC DIAGRAM - MAIN Board (3/3) - • See page 6 for Waveforms. • See page 6 for IC Block Diagram



SECTION 5 EXPLODED VIEWS

Note:

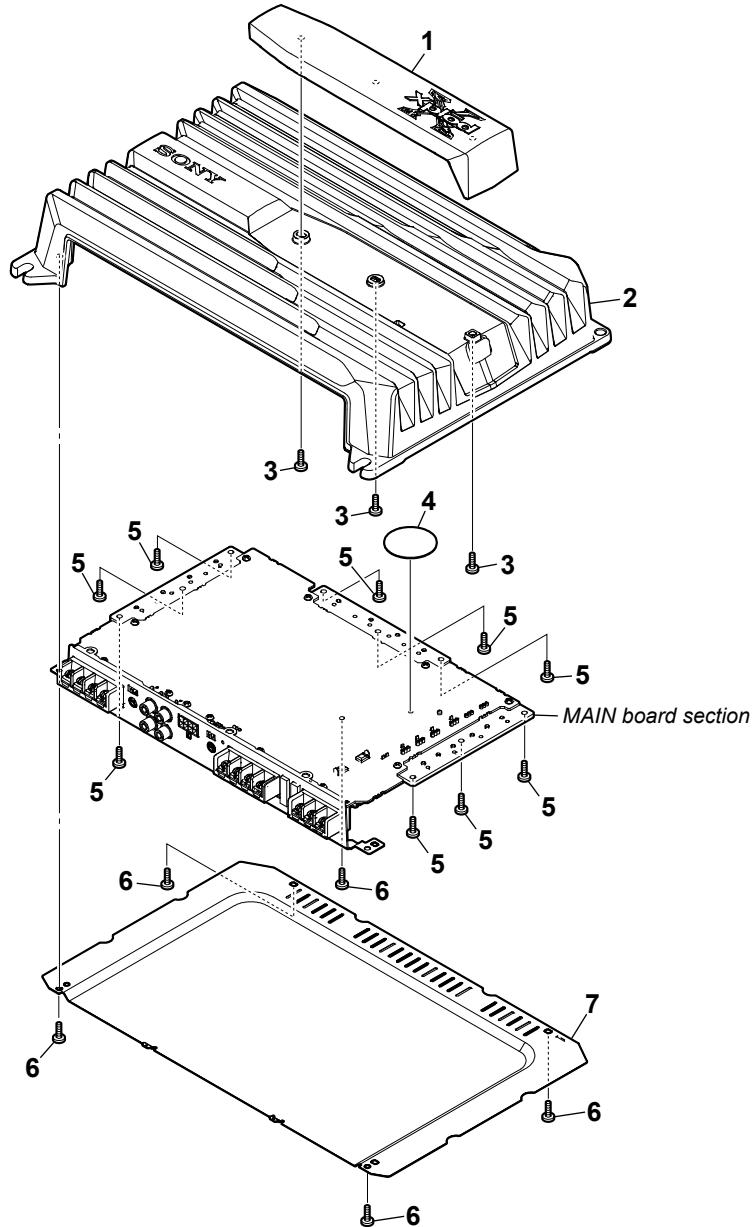
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:

KNOB, BALANCE (WHITE) . . . (RED)
 ↑ ↑
 Parts Color Cabinet's Color

- Abbreviation
- | | |
|-----|------------------|
| CND | : Canadian model |
| IND | : Indian model |
| MX | : Mexican model |

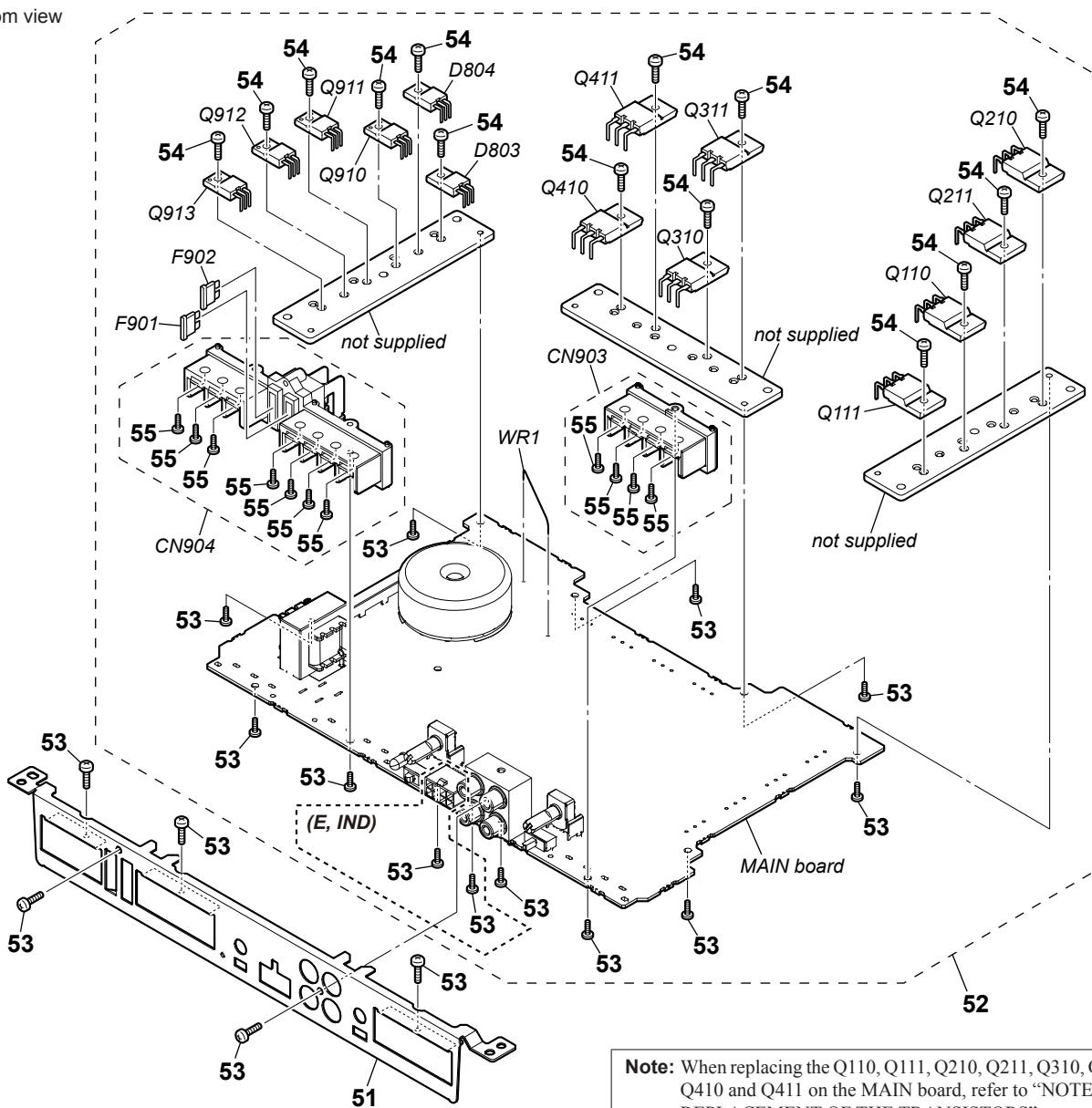
5-1. HEAT SINK (MAIN) SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-2587-556-1	PLATE TOP, ASSY		5	4-410-613-01	SCREW (+P, TT, B-TYPE, 3XL)	
2	4-455-368-11	HEAT SINK (MAIN)		6	3-273-612-01	SCREW (+B, TT, B-TYPE, 3XL)	
3	3-275-728-11	SCREW (+B, TT, P-TYPE, 2XL)		7	4-455-371-01	PLATE, BOTTOM	
4	4-455-373-01	SHEET HEAT TRANSFER					

5-2. MAIN BOARD SECTION

- Bottom view



Note: When replacing the Q110, Q111, Q210, Q211, Q310, Q311, Q410 and Q411 on the MAIN board, refer to "NOTE FOR REPLACEMENT OF THE TRANSISTORS" on page 3.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-290-815-02	PANEL, FRONT (E, IND)		Q111	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
51	4-290-815-12	PANEL, FRONT (MX)		Q210	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)
51	4-290-815-21	PANEL, FRONT (CND, AEP, UK)		Q210	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)
52	A-1944-071-A	MAIN BOARD, COMPLETE (CND, AEP, UK, MX)		Q211	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)
52	A-1944-200-A	MAIN BOARD, COMPLETE (E, IND)		Q211	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
53	4-410-613-01	SCREW (+P, TT, B-TYPE, 3XL)		Q310	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)
54	4-410-614-01	SCREW (+PS, TT, 3X8)		Q310	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)
55	3-912-431-01	SCREW (+-P)		Q311	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)
CN903	1-780-132-11	TERMINAL BOARD (Including Screws) (FRONT SPEAKER OUT)		Q311	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
CN904	1-780-134-12	TERMINAL BOARD (4P+3P+2FUSE) (Including Screws) (REAR SPEAKER OUT, 25A, REM, +12V, GND)		Q410	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)
D803	8-719-079-00	DIODE FCH10A15		Q410	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)
D804	8-719-079-01	DIODE FRH10A15		Q411	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
F901	1-576-256-11	FUSE (25 A/32 V)		Q910	6-552-281-01	FET	FKV575
F902	1-576-256-11	FUSE (25 A/32 V)		Q911	6-552-281-01	FET	FKV575
Q110	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)	Q912	6-552-281-01	FET	FKV575
Q110	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)	Q913	6-552-281-01	FET	FKV575
Q111	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)	WR1	1-846-925-11	WIRE, HFUL3385 AWG16 BLK 75 mm	

SECTION 6

ELECTRICAL PARTS LIST

MAIN

Note:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- CAPACITORS
uF: μ F
- COILS
uH: μ H
- SEMICONDUCTORS
In each case, u: μ , for example:
uA... : μ A..., uPA... , μ PA... ,
uPB... : μ PB..., uPC... , μ PC... ,
uPD... : μ PD... .
- Abbreviation
CND : Canadian model
IND : Indian model
MX : Mexican model

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-1944-071-A	MAIN BOARD, COMPLETE (CND, AEP, UK, MX)		C217	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V
	A-1944-200-A	MAIN BOARD, COMPLETE (E, IND)	*****	C222	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V
	4-410-613-01	SCREW (+P, TT, B-TYPE, 3XL)		C235	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
	4-410-614-01	SCREW (+PS, TT, 3X8)		C251	1-116-868-11	ELECT	47uF 20% 16V
		< CAPACITOR >		C252	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C100	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C253	1-162-919-11	CERAMIC CHIP	22PF 5% 50V
C101	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)	C254	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V
C102	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)	C255	1-100-756-91	CERAMIC CHIP	0.047uF 10% 50V
C105	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C300	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C106	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	C301	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)
C107	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	C302	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)
C108	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C305	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C109	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C306	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C110	1-116-872-11	ELECT	22uF 20% 50V	C307	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C116	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)	C308	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V
C117	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)	C309	1-116-872-11	ELECT	22uF 20% 50V
C120	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C311	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V
C121	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C312	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C123	1-116-872-11	ELECT	22uF 20% 50V	C316	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)
C151	1-116-868-11	ELECT	47uF 20% 16V	C317	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)
C152	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C322	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V
C153	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	C323	1-116-872-11	ELECT	22uF 20% 50V
C154	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C330	1-116-872-11	ELECT	22uF 20% 50V
C155	1-100-756-91	CERAMIC CHIP	0.047uF 10% 50V	C351	1-116-868-11	ELECT	47uF 20% 16V
C200	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C352	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C201	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)	C353	1-162-919-11	CERAMIC CHIP	22PF 5% 50V
C202	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)	C354	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V
C205	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C355	1-100-756-91	CERAMIC CHIP	0.047uF 10% 50V
C207	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	C400	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C208	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C401	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)
C209	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V	C402	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (E, IND)
C210	1-116-872-11	ELECT	22uF 20% 50V	C405	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C211	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V	C406	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C213	1-116-872-11	ELECT	22uF 20% 50V	C407	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C214	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V	C412	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C216	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)	C416	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)
				C417	1-118-347-11	CERAMIC CHIP	0.1uF 10% 25V (E, IND)
				C430	1-116-872-11	ELECT	22uF 20% 50V

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description		Remark
C451	1-116-868-11	ELECT	47uF	20%	16V			< JACK >		
C452	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	CNJ101	1-779-078-21	JACK, PIN 4P (INPUT FRONT/REAR)		
C453	1-162-919-11	CERAMIC CHIP	22PF	5%	50V			< DIODE >		
C454	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D101	6-502-961-01	DIODE DA2J10100L		
C455	1-100-756-91	CERAMIC CHIP	0.047uF	10%	50V	D102	6-502-961-01	DIODE DA2J10100L		
C502	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D201	6-502-961-01	DIODE DA2J10100L		
C504	1-116-872-11	ELECT	22uF	20%	50V	D202	6-502-961-01	DIODE DA2J10100L		
C505	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D301	6-502-961-01	DIODE DA2J10100L		
C801	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V	D302	6-502-961-01	DIODE DA2J10100L		
C802	1-116-870-11	ELECT	220uF	20%	16V	D401	6-502-961-01	DIODE DA2J10100L		
C803	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V	D402	6-502-961-01	DIODE DA2J10100L		
C804	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V	D501	6-500-335-01	DIODE MC2838-T112-1		
C809	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D502	6-500-335-01	DIODE MC2838-T112-1		
C813	1-116-869-11	ELECT	100uF	20%	16V	D512	6-500-334-01	DIODE MC2836-T112-1		
C814	1-116-869-11	ELECT	100uF	20%	16V	D513	6-502-970-01	DIODE DZ2J068M0L		
C815	1-116-869-11	ELECT	100uF	20%	16V	D514	6-502-961-01	DIODE DA2J10100L		
C817	1-114-323-11	CERAMIC CHIP	0.01uF	10%	50V	D515	6-502-961-01	DIODE DA2J10100L		
C818	1-114-323-11	CERAMIC CHIP	0.01uF	10%	50V	D803	8-719-079-00	DIODE FCH10A15		
C819	1-114-991-11	ELECT	560uF	20%	50V	D804	8-719-079-01	DIODE FRH10A15		
C820	1-114-991-11	ELECT	560uF	20%	50V	D805	8-719-083-63	DIODE UDZSUSTE-1713B		
C821	1-116-873-11	ELECT	220uF	20%	50V	D806	8-719-083-83	DIODE UDZSUSTE-1715B		
C822	1-116-873-11	ELECT	220uF	20%	50V	D807	6-502-961-01	DIODE DA2J10100L		
C824	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D808	6-501-579-01	DIODE MC2837		
C825	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D809	6-501-579-01	DIODE MC2837		
C826	1-116-869-11	ELECT	100uF	20%	16V	D810	6-500-335-01	DIODE MC2838-T112-1		
C827	1-116-869-11	ELECT	100uF	20%	16V	D811	6-500-335-01	DIODE MC2838-T112-1		
C829	1-118-361-11	CERAMIC CHIP	0.1uF	10%	50V	D904	6-503-030-01	DIODE DZ2J160M0L		
C830	1-118-361-11	CERAMIC CHIP	0.1uF	10%	50V	D905	6-502-961-01	DIODE DA2J10100L		
C844	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V	D906	6-500-335-01	DIODE MC2838-T112-1 (E, IND)		
C901	1-100-352-91	CERAMIC CHIP	1uF	20%	16V	D907	6-500-335-01	DIODE MC2838-T112-1 (E, IND)		
C902	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	D918	8-719-025-62	LED SML1216W (POWER/PROTECTOR)		
C903	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V	D919	6-502-966-01	DIODE DZ2J056M0L		
C904	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V	D940	6-502-961-01	DIODE DA2J10100L		
C905	1-164-720-91	CERAMIC	0.001uF	5%	50V			< FUSE >		
C906	1-116-869-11	ELECT	100uF	20%	16V	F901	1-576-256-11	FUSE (25 A/32 V)		
C908	1-116-869-11	ELECT	100uF	20%	16V	F902	1-576-256-11	FUSE (25 A/32 V)		
C909	1-118-290-11	CERAMIC CHIP	0.001uF	10%	50V			< IC >		
C910	1-100-352-91	CERAMIC CHIP	1uF	20%	16V	IC801	8-759-274-71	IC NJM4565M (TE2)		
C911	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	IC802	8-759-274-71	IC NJM4565M (TE2)		
C912	1-100-756-91	CERAMIC CHIP	0.047uF	10%	50V	IC803	8-759-274-71	IC NJM4565M (TE2)		
C913	1-131-731-12	ELECT	2200uF	20%	16V	IC804	8-759-274-71	IC NJM4565M (TE2)		
C914	1-131-731-12	ELECT	2200uF	20%	16V	IC806	8-759-274-71	IC NJM4565M (TE2)		
C915	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V	* IC903	8-759-346-78	IC TL594CD-R2		
C916	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V			< JUMPER RESISTOR >		
C917	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V	JC1	1-216-864-11	SHORT CHIP 0		
C918	1-100-352-91	CERAMIC CHIP	1uF	20%	16V	JC2	1-216-296-11	SHORT CHIP 0		
C925	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	JC3	1-216-296-11	SHORT CHIP 0		
C926	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	JC4	1-216-296-11	SHORT CHIP 0		
C943	1-118-347-11	CERAMIC CHIP	0.1uF	10%	25V	JC6	1-216-864-11	SHORT CHIP 0		
			(E, IND)			JC7	1-216-296-11	SHORT CHIP 0		
		< CONNECTOR >				JC8	1-216-864-11	SHORT CHIP 0		
CN901	1-580-283-11	PIN, CONNECTOR (PC BOARD) 8P (HIGH LEVEL INPUT, SENSING POWER ON) (E, IND)				JC9	1-216-296-11	SHORT CHIP 0		
CN903	1-780-132-11	TERMINAL BOARD (Including Screws) (FRONT SPEAKER OUT)				JC10	1-216-864-11	SHORT CHIP 0		
CN904	1-780-134-12	TERMINAL BOARD (4P+3P+2FUSE) (Including Screws) (REAR SPEAKER OUT, 25A, REM, +12V, GND)				JC11	1-216-296-11	SHORT CHIP 0		
						JC12	1-216-296-11	SHORT CHIP 0		

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
JC14	1-216-296-11	SHORT CHIP	0	Q309	6-552-810-01	TRANSISTOR	KTA1023-Y-AT/P
JC15	1-216-296-11	SHORT CHIP	0	Q310	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)
JC16	1-216-296-11	SHORT CHIP	0	Q310	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)
JC17	1-216-296-11	SHORT CHIP	0	Q311	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)
JC18	1-216-864-11	SHORT CHIP	0	Q311	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
JC19	1-216-864-11	SHORT CHIP	0	Q312	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
JC20	1-216-864-11	SHORT CHIP	0	Q314	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
JC21	1-216-864-11	SHORT CHIP	0	Q322	6-551-863-01	TRANSISTOR	RTAN140C-T112-1
JC22	1-216-864-11	SHORT CHIP	0	Q401	6-551-863-01	TRANSISTOR	RTAN140C-T112-1
JC26	1-216-296-11	SHORT CHIP	0	Q402	8-729-014-85	TRANSISTOR	2SA1618-YGRTE85R
JC32	1-216-296-11	SHORT CHIP	0	Q403	8-729-014-87	TRANSISTOR	2SC4207 (T5RSONY, F)
JC43	1-216-296-11	SHORT CHIP	0	Q404	6-553-184-01	TRANSISTOR	ISA1284AS1-T112-E
JC47	1-216-296-11	SHORT CHIP	0	Q405	6-553-185-01	TRANSISTOR	ISC3244AS1-T112-E
			< FERRITE BEAD/JUMPER RESISTOR >	Q406	8-729-600-91	TRANSISTOR	2SC3052F-T1-LF
JW26	1-410-396-41	FERRITE	0.45uH	Q407	6-551-696-01	TRANSISTOR	ISA1235AC1-T112-1EF
JW195	1-216-864-11	SHORT CHIP	0	Q408	6-552-812-01	TRANSISTOR	KTC1027-Y-AT/P
			< COIL >	Q409	6-552-810-01	TRANSISTOR	KTA1023-Y-AT/P
L901	1-460-660-11	CHOKE COIL	80uH	Q410	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)
			< TRANSISTOR >	Q410	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)
Q101	6-551-863-01	TRANSISTOR	RTAN140C-T112-1	Q411	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)
Q102	8-729-014-85	TRANSISTOR	2SA1618-YGRTE85R	Q411	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)
Q103	8-729-014-87	TRANSISTOR	2SC4207 (T5RSONY, F)	Q412	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q104	6-553-184-01	TRANSISTOR	ISA1284AS1-T112-E	Q501	8-729-038-28	TRANSISTOR	RT1N441C-TP-1
Q105	6-553-185-01	TRANSISTOR	ISC3244AS1-T112-E	Q502	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q106	8-729-600-91	TRANSISTOR	2SC3052F-T1-LF	Q503	8-729-027-23	TRANSISTOR	DTA114EKA-T146
Q107	6-551-696-01	TRANSISTOR	ISA1235AC1-T112-1EF	Q508	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q108	6-552-812-01	TRANSISTOR	KTC1027-Y-AT/P	Q510	8-729-027-38	TRANSISTOR	DTA144EKA-T146
Q109	6-552-810-01	TRANSISTOR	KTA1023-Y-AT/P	Q511	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q110	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)	Q512	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q110	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)	Q803	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q111	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)	Q804	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q111	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)	Q805	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q112	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF	Q806	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q115	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF	Q807	6-553-395-01	TRANSISTOR	KTC2026
Q115	8-729-027-38	TRANSISTOR	RT1N441C-TP-1	Q808	6-553-396-01	TRANSISTOR	KTA1046
Q122	6-551-863-01	TRANSISTOR	RTAN140C-T112-1	Q901	8-729-038-23	TRANSISTOR	RT1N441C-TP-1
Q201	6-551-863-01	TRANSISTOR	RTAN140C-T112-1	Q902	8-729-027-38	TRANSISTOR	DTA144EKA-T146
Q202	8-729-014-85	TRANSISTOR	2SA1618-YGRTE85R	Q903	8-729-038-23	TRANSISTOR	RT1N441C-TP-1
Q203	8-729-014-87	TRANSISTOR	2SC4207 (T5RSONY, F)	Q905	8-729-052-82	TRANSISTOR	KTA1281Y-AT
Q204	6-553-184-01	TRANSISTOR	ISA1284AS1-T112-E	Q906	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q205	6-553-185-01	TRANSISTOR	ISC3244AS1-T112-E	Q907	8-729-038-23	TRANSISTOR	RT1N441C-TP-1
Q206	8-729-600-91	TRANSISTOR	2SC3052F-T1-LF	Q908	8-729-203-25	TRANSISTOR	2SC3326N-TE85L-B
Q207	6-551-696-01	TRANSISTOR	ISA1235AC1-T112-1EF	Q909	8-729-203-25	TRANSISTOR	2SC3326N-TE85L-B
Q208	6-552-812-01	TRANSISTOR	KTC1027-Y-AT/P	Q910	6-552-281-01	FET	FKV575
Q209	6-552-810-01	TRANSISTOR	KTA1023-Y-AT/P	Q911	6-552-281-01	FET	FKV575
Q210	8-729-024-79	TRANSISTOR	2SC5100-P (See Note)	Q912	6-552-281-01	FET	FKV575
Q210	8-729-024-80	TRANSISTOR	2SC5100-Y (See Note)	Q913	6-552-281-01	FET	FKV575
Q211	8-729-024-76	TRANSISTOR	2SA1908-P (See Note)	Q916	6-551-696-01	TRANSISTOR	ISA1235AC1-T112-1EF
Q211	8-729-024-77	TRANSISTOR	2SA1908-Y (See Note)	Q917	6-551-431-01	TRANSISTOR	2SC6027T100-QR
Q212	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF	Q918	6-551-431-01	TRANSISTOR	2SC6027T100-QR
			< RESISTOR >	R101	1-216-057-00	METAL CHIP	2.2K 5% 1/10W (E, IND)
Q301	6-551-863-01	TRANSISTOR	RTAN140C-T112-1	R102	1-218-879-11	METAL CHIP	22K 0.5% 1/10W
Q302	8-729-014-85	TRANSISTOR	2SA1618-YGRTE85R	R103	1-218-879-11	METAL CHIP	22K 0.5% 1/10W
Q303	8-729-014-87	TRANSISTOR	2SC4207 (T5RSONY, F)	R104	1-216-849-11	METAL CHIP	220K 5% 1/10W (E, IND)
Q304	6-553-184-01	TRANSISTOR	ISA1284AS1-T112-E	R105	1-216-849-11	METAL CHIP	220K 5% 1/10W (E, IND)
Q305	6-553-185-01	TRANSISTOR	ISC3244AS1-T112-E				
Q306	8-729-600-91	TRANSISTOR	2SC3052F-T1-LF				
Q307	6-551-696-01	TRANSISTOR	ISA1235AC1-T112-1EF				
Q308	6-552-812-01	TRANSISTOR	KTC1027-Y-AT/P				

Note: When replacing the Q110, Q111, Q210, Q211, Q310, Q311, Q410 and Q411 on the MAIN board, refer to "NOTE FOR REPLACEMENT OF THE TRANSISTORS" on page 3.

MAIN

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark		
R106	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R254	1-216-222-00	METAL CHIP	10K	5%	1/8W
R107	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R255	1-216-841-11	METAL CHIP	47K	5%	1/10W
R109	1-218-882-11	METAL CHIP	30K	0.5%	1/10W	R256	1-216-841-11	METAL CHIP	47K	5%	1/10W
R110	1-218-875-11	METAL CHIP	15K	0.5%	1/10W	R257	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R112	1-216-815-11	METAL CHIP	330	5%	1/10W	R258	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R114	1-216-837-11	METAL CHIP	22K	5%	1/10W	R259	1-216-809-11	METAL CHIP	100	5%	1/10W
R115	1-216-833-11	METAL CHIP	10K	5%	1/10W	R260	1-216-809-11	METAL CHIP	100	5%	1/10W
R116	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R261	1-216-837-11	METAL CHIP	22K	5%	1/10W
R126	1-216-833-11	METAL CHIP	10K	5%	1/10W	R262	1-216-837-11	METAL CHIP	22K	5%	1/10W
R127	1-216-809-11	METAL CHIP	100	5%	1/10W	R263	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R128	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R264	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R134	1-216-837-11	METAL CHIP	22K	5%	1/10W	R265	1-216-837-11	METAL CHIP	22K	5%	1/10W
R152	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R266	1-216-182-00	METAL CHIP	220	5%	1/8W
R153	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R267	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R154	1-216-222-00	METAL CHIP	10K	5%	1/8W	R268	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R155	1-216-841-11	METAL CHIP	47K	5%	1/10W	R269	1-205-991-11	ENCAPSULATED COMPONENT 0.1	5W	F	
R156	1-216-841-11	METAL CHIP	47K	5%	1/10W	R270	1-216-833-11	METAL CHIP	10K	5%	1/10W
R157	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R271	1-216-845-11	METAL CHIP	100K	5%	1/10W
R158	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R272	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R159	1-216-809-11	METAL CHIP	100	5%	1/10W	R275	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R160	1-216-809-11	METAL CHIP	100	5%	1/10W	R276	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R161	1-216-837-11	METAL CHIP	22K	5%	1/10W	R277	1-218-875-11	METAL CHIP	15K	0.5%	1/10W
R162	1-216-837-11	METAL CHIP	22K	5%	1/10W	R278	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R163	1-218-843-11	METAL CHIP	680	0.5%	1/10W	R301	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R302	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R165	1-216-837-11	METAL CHIP	22K	5%	1/10W	R303	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R166	1-216-182-00	METAL CHIP	220	5%	1/8W	R304	1-216-849-11	METAL CHIP	220K	5%	1/10W
R167	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R305	1-216-849-11	METAL CHIP	220K	5%	1/10W
R168	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R306	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R169	1-205-991-11	ENCAPSULATED COMPONENT 0.1	5W	F		R307	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R170	1-216-833-11	METAL CHIP	10K	5%	1/10W	R308	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R171	1-216-845-11	METAL CHIP	100K	5%	1/10W	R312	1-216-815-11	METAL CHIP	330	5%	1/10W
R172	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R313	1-216-833-11	METAL CHIP	10K	5%	1/10W
R175	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R315	1-216-833-11	METAL CHIP	10K	5%	1/10W
R176	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R316	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R177	1-218-875-11	METAL CHIP	15K	0.5%	1/10W	R317	1-216-837-11	METAL CHIP	22K	5%	1/10W
R178	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R320	1-216-833-11	METAL CHIP	10K	5%	1/10W
R201	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R324	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R202	1-218-879-11	METAL CHIP	22K	0.5%	1/10W	R326	1-216-833-11	METAL CHIP	10K	5%	1/10W
R203	1-218-879-11	METAL CHIP	22K	0.5%	1/10W	R327	1-216-809-11	METAL CHIP	100	5%	1/10W
R204	1-216-849-11	METAL CHIP	220K	5%	1/10W	R328	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R205	1-216-849-11	METAL CHIP	220K	5%	1/10W	R329	1-216-833-11	METAL CHIP	10K	5%	1/10W
R206	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R324	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R207	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R326	1-216-833-11	METAL CHIP	10K	5%	1/10W
R209	1-218-882-11	METAL CHIP	30K	0.5%	1/10W	R327	1-216-809-11	METAL CHIP	100	5%	1/10W
R210	1-218-875-11	METAL CHIP	15K	0.5%	1/10W	R328	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R212	1-216-815-11	METAL CHIP	330	5%	1/10W	R329	1-216-833-11	METAL CHIP	10K	5%	1/10W
R214	1-216-837-11	METAL CHIP	22K	5%	1/10W	R352	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W	R353	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R217	1-216-837-11	METAL CHIP	22K	5%	1/10W	R354	1-216-222-00	METAL CHIP	10K	5%	1/8W
R220	1-216-833-11	METAL CHIP	10K	5%	1/10W	R355	1-216-841-11	METAL CHIP	47K	5%	1/10W
R227	1-216-809-11	METAL CHIP	100	5%	1/10W	R356	1-216-841-11	METAL CHIP	47K	5%	1/10W
R228	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R357	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R229	1-216-833-11	METAL CHIP	10K	5%	1/10W	R358	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R234	1-216-837-11	METAL CHIP	22K	5%	1/10W	R359	1-216-809-11	METAL CHIP	100	5%	1/10W
R236	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R360	1-216-809-11	METAL CHIP	100	5%	1/10W
R252	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R361	1-216-837-11	METAL CHIP	22K	5%	1/10W
R253	1-216-824-11	METAL CHIP	1.8K	5%	1/10W	R362	1-216-837-11	METAL CHIP	22K	5%	1/10W
					R363	1-218-843-11	METAL CHIP	680	0.5%	1/10W	
					R364	1-218-831-11	METAL CHIP	220	0.5%	1/10W	
					R365	1-216-837-11	METAL CHIP	22K	5%	1/10W	
					R366	1-216-182-00	METAL CHIP	220	5%	1/8W	

Ref. No.	Part No.	Description		Remark		Ref. No.	Part No.	Description		Remark	
R367	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R516	1-216-845-11	METAL CHIP	100K	5%	1/10W
R368	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R517	1-216-844-11	METAL CHIP	82K	5%	1/10W
R369	1-205-991-11	ENCAPSULATED COMPONENT 0.1	5W	F		R518	1-216-222-00	METAL CHIP	10K	5%	1/8W
R370	1-216-833-11	METAL CHIP	10K	5%	1/10W	R801	1-216-198-91	METAL CHIP	1K	5%	1/8W
R371	1-216-845-11	METAL CHIP	100K	5%	1/10W	R802	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R372	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R803	1-216-198-91	METAL CHIP	1K	5%	1/8W
R375	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R804	1-216-198-91	METAL CHIP	1K	5%	1/8W
R376	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R806	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R377	1-218-875-11	METAL CHIP	15K	0.5%	1/10W	R810	1-216-821-11	METAL CHIP	1K	5%	1/10W
R378	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R811	1-216-821-11	METAL CHIP	1K	5%	1/10W
R401	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (E, IND)	R812	1-216-845-11	METAL CHIP	100K	5%	1/10W
R402	1-218-879-11	METAL CHIP	22K	0.5%	1/10W	R813	1-216-845-11	METAL CHIP	100K	5%	1/10W
R403	1-218-879-11	METAL CHIP	22K	0.5%	1/10W	R814	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R404	1-216-849-11	METAL CHIP	220K	5%	1/10W (E, IND)	R815	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R405	1-216-849-11	METAL CHIP	220K	5%	1/10W (E, IND)	R816	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R407	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R817	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R408	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R832	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R412	1-216-815-11	METAL CHIP	330	5%	1/10W	R901	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R415	1-216-833-11	METAL CHIP	10K	5%	1/10W	R902	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R419	1-216-833-11	METAL CHIP	10K	5%	1/10W	R903	1-216-841-11	METAL CHIP	47K	5%	1/10W
R427	1-216-809-11	METAL CHIP	100	5%	1/10W	R904	1-216-817-11	METAL CHIP	470	5%	1/10W
R452	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R905	1-216-821-11	METAL CHIP	1K	5%	1/10W
R453	1-216-824-11	METAL CHIP	1.8K	5%	1/10W	R906	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R454	1-216-222-00	METAL CHIP	10K	5%	1/8W	R910	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R455	1-216-841-11	METAL CHIP	47K	5%	1/10W	R911	1-216-837-11	METAL CHIP	22K	5%	1/10W
R456	1-216-841-11	METAL CHIP	47K	5%	1/10W	R912	1-216-845-11	METAL CHIP	100K	5%	1/10W
R457	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R914	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R458	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R915	1-216-814-11	METAL CHIP	270	5%	1/10W
R459	1-216-809-11	METAL CHIP	100	5%	1/10W	R916	1-216-821-11	METAL CHIP	1K	5%	1/10W
R460	1-216-809-11	METAL CHIP	100	5%	1/10W	R917	1-216-833-11	METAL CHIP	10K	5%	1/10W
R461	1-216-837-11	METAL CHIP	22K	5%	1/10W	R918	1-216-833-11	METAL CHIP	10K	5%	1/10W
R462	1-216-837-11	METAL CHIP	22K	5%	1/10W	R919	1-216-222-00	METAL CHIP	10K	5%	1/8W
R463	1-218-843-11	METAL CHIP	680	0.5%	1/10W	R920	1-216-821-11	METAL CHIP	1K	5%	1/10W
R464	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R921	1-216-821-11	METAL CHIP	1K	5%	1/10W
R465	1-216-837-11	METAL CHIP	22K	5%	1/10W	R922	1-216-821-11	METAL CHIP	1K	5%	1/10W
R466	1-216-182-00	METAL CHIP	220	5%	1/8W	R923	1-216-821-11	METAL CHIP	1K	5%	1/10W
R467	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R925	1-216-821-11	METAL CHIP	1K	5%	1/10W
R468	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R926	1-216-158-00	METAL CHIP	22	5%	1/8W
R469	1-205-991-11	ENCAPSULATED COMPONENT 0.1	5W	F		R927	1-216-158-00	METAL CHIP	22	5%	1/8W
R470	1-216-833-11	METAL CHIP	10K	5%	1/10W	R928	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R471	1-216-845-11	METAL CHIP	100K	5%	1/10W	R929	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R472	1-216-134-00	METAL CHIP	2.2	5%	1/8W	R930	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R475	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R931	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R476	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R932	1-216-150-91	METAL CHIP	10	5%	1/8W
R477	1-218-875-11	METAL CHIP	15K	0.5%	1/10W	R933	1-216-150-91	METAL CHIP	10	5%	1/8W
R478	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R934	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R501	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	R930	1-216-833-11	METAL CHIP	10K	5%	1/10W
R502	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R942	1-216-833-11	METAL CHIP	10K	5%	(E, IND)
R503	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R943	1-216-833-11	METAL CHIP	10K	5%	1/10W
R504	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	R944	1-216-833-11	METAL CHIP	10K	5%	(E, IND)
R505	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W	R945	1-216-833-11	METAL CHIP	10K	5%	1/10W
R506	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W	R946	1-216-833-11	METAL CHIP	10K	5%	(E, IND)
R507	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R947	1-216-833-11	METAL CHIP	10K	5%	1/10W
R508	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R948	1-216-833-11	METAL CHIP	10K	5%	(E, IND)
R509	1-216-845-11	METAL CHIP	100K	5%	1/10W	R949	1-216-833-11	METAL CHIP	10K	5%	(E, IND)
R510	1-216-845-11	METAL CHIP	100K	5%	1/10W	R947	1-216-833-11	METAL CHIP	10K	5%	1/10W
R513	1-216-857-11	METAL CHIP	1M	5%	1/10W	R948	1-216-833-11	METAL CHIP	10K	5%	1/10W
R514	1-216-845-11	METAL CHIP	100K	5%	1/10W	R949	1-216-833-11	METAL CHIP	10K	5%	1/10W

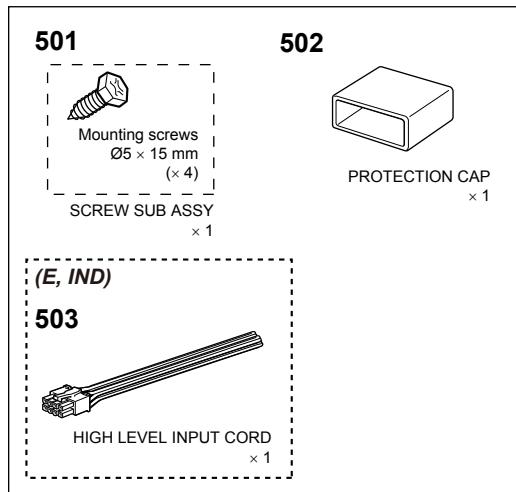
MAIN

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		<u>Remark</u>	
R950	1-216-833-11	METAL CHIP	10K	5%	1/10W
R951	1-216-833-11	METAL CHIP	10K	5%	1/10W
R953	1-216-833-11	METAL CHIP	10K	5%	1/10W (E, IND)
R959	1-216-841-11	METAL CHIP	47K	5%	1/10W < SWITCH >
SW101	1-786-916-11	SWITCH, SLIDE (LPF (80Hz))			
SW201	1-798-257-11	SWITCH, SLIDE (FILTER (80Hz))			
					< TRANSFORMER >
T901	1-697-276-11	D.C-D.C CONVERTER TRANSFORMER			
					< THERMISTOR >
TH501	1-805-074-11	THERMISTOR			
TH502	1-805-074-11	THERMISTOR			
TH503	1-805-074-11	THERMISTOR			
TH504	1-805-074-11	THERMISTOR			
					< VARIABLE RESISTOR >
VR801	1-227-768-11	RES, VAR, CARBON 10K/10K (LEVEL FRONT)			
VR802	1-227-768-11	RES, VAR, CARBON 10K/10K (LEVEL REAR)			
					< WIRE >
WR1	1-846-925-11	WIRE, HFUL3385 AWG16 BLK 75 mm			

ACCESSORIES

4-464-857-21	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (CND, AEP, UK, MX)
4-464-857-31	MANUAL, INSTRUCTION (FRENCH, GERMAN, ITALIAN) (CND, AEP, UK)
4-464-857-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, PORTUGUESE) (CND, AEP, UK)
4-464-857-51	MANUAL, INSTRUCTION (POLISH, RUSSIAN, UKRAINIAN) (CND, AEP, UK)
4-464-857-61	MANUAL, INSTRUCTION (ENGLISH, SPANISH, PORTUGUESE) (E, IND)
4-464-857-71	MANUAL, INSTRUCTION (TRADITIONAL CHINESE, ARABIC, PERSIAN) (E)

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		PARTS FOR INSTALLATION AND CONNECTIONS	*****
501	X-2108-372-1	SCREW SUB ASSY (Mounting screws) (Tapping Screw (DIA. 5X15), 4 pieces, 1 set)	
502	4-166-803-01	COVER (POWER) (Protection cap)	
503	1-839-574-11	CORD (WITH CONNECTOR) (High level input cord) (E, IND)	



MEMO

REVISION HISTORY

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