

TA-D905

SERVICE MANUAL

AEP Model
UK Model
E Model



This set is a integrated stereo Amplifier
Block of the following models.
LBT-D905CD

SPECIFICATIONS

Continuous RMS power output

95 W + 95 W
(6 ohms, at 1 kHz, 5% THD)

80 W + 80 W
(6 ohms, at 1 kHz, DIN)

Music power output

160 W + 160 W
(6 ohms, at 1 kHz)

Audio section

Input

INPUT	Jack type	Sensitivity	Impedance
PHONO	Phono	2.8 mV	47 kohms
TUNER	Phono	220 mV	47 kohms
TAPE	Phono	220 mV	47 kohms
VIDEO1	Phono	220 mV	47 kohms
VIDEO2	Phono	220 mV	47 kohms
VIDEO3	Phono	220 mV	47 kohms
SDP	Phono	200 mV	47 kohms
MIC	Phono	0.7 mV	10 kohms

* At 80 W + 80 W output
With SDP IN and SDP OUT short-circuited

Output

OUTPUT	Jack type	Sensitivity	Impedance
TAPE	Phono	200 mV	2 kohms
DAT	Phono	200 mV	2 kohms
VIDEO1	Phono	200 mV	2 kohms
VIDEO2	Phono	200 mV	2 kohms
SDP	Phono	200 mV	2 kohms
SURROUND SPEAKER	Accepts speakers of 16 ohms		
HEADPHONES	Accepts headphones of 8 ohms or more		

Video section

Inputs

VIDEO1, VIDEO2, VIDEO3,
DBS: 1 Vp-p, 75 ohms

Outputs

VIDEO1, VIDEO2,
MONITOR: 1 Vp-p, 75 ohms

Frequency response

PHONO	RIAA curve ± 0.5 dB
VIDEO1	
VIDEO2	
VIDEO3	
SDP	
TUNER	10 Hz to 50 kHz $+0$ dB
TAPE	100 Hz to 10 kHz $+0$ dB
MIC	

General

Power requirements	120/220/240, 50/60Hz (E, Saudi Arabia models) 240V AC, 50/60Hz (UK model) 220 - 230V AC, 50/60Hz (AEP, Germany, Italian models)
Power consumption	230W (E, Saudi Arabia models) 400W (UK model) 200W (AEP, Germany, Italian models)
AC outlet	1 unswitched, 100 W max.
Dimensions	Approx. 355 × 132.5 × 325 mm (w/h/d) incl. projecting parts and controls
Weight	Approx. 6.9 kg

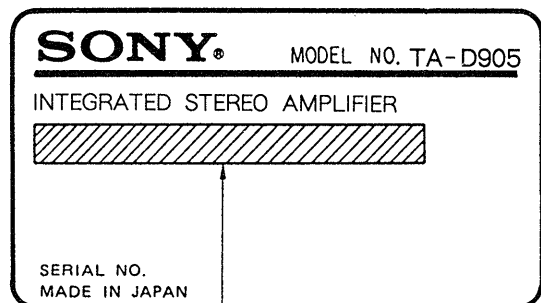
Design and specifications subject to change without notice.

INTEGRATED STEREO AMPLIFIER
SONY®

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MODEL IDENTIFICATION
 - Specification Label -





UK model : AC240V ~ 50/60Hz

AEP, Germany, Italian models : AC220 - 230V ~ 50/60Hz

E, Saudi Arabia models : AC120/220/240 ~ 50/60Hz

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.

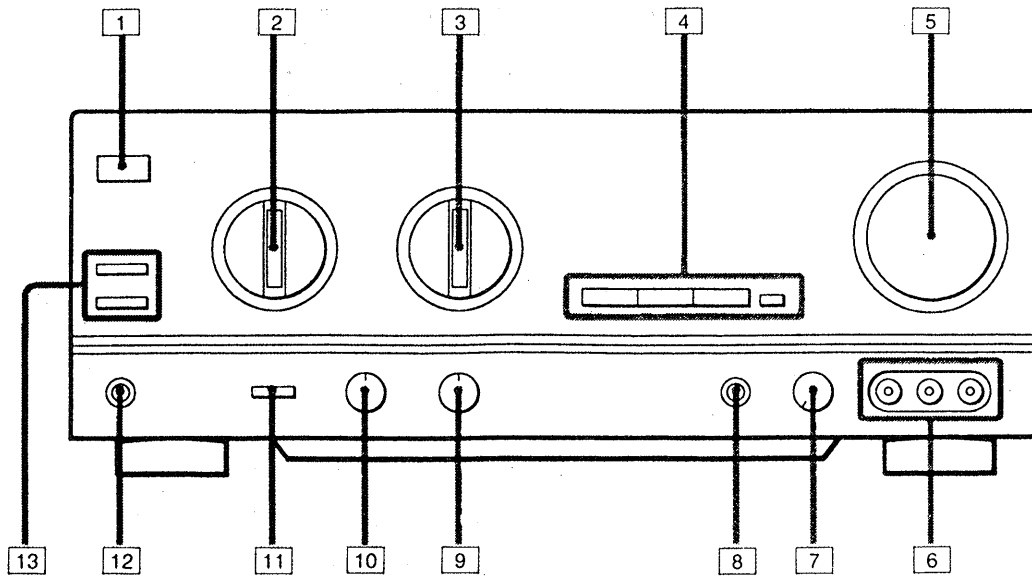
SECTION 1 GENERAL

This section is extracted from
instruction manual.

Location of Controls

Front Panel

Panneau frontal



Refer to the pages indicated in ● for details.

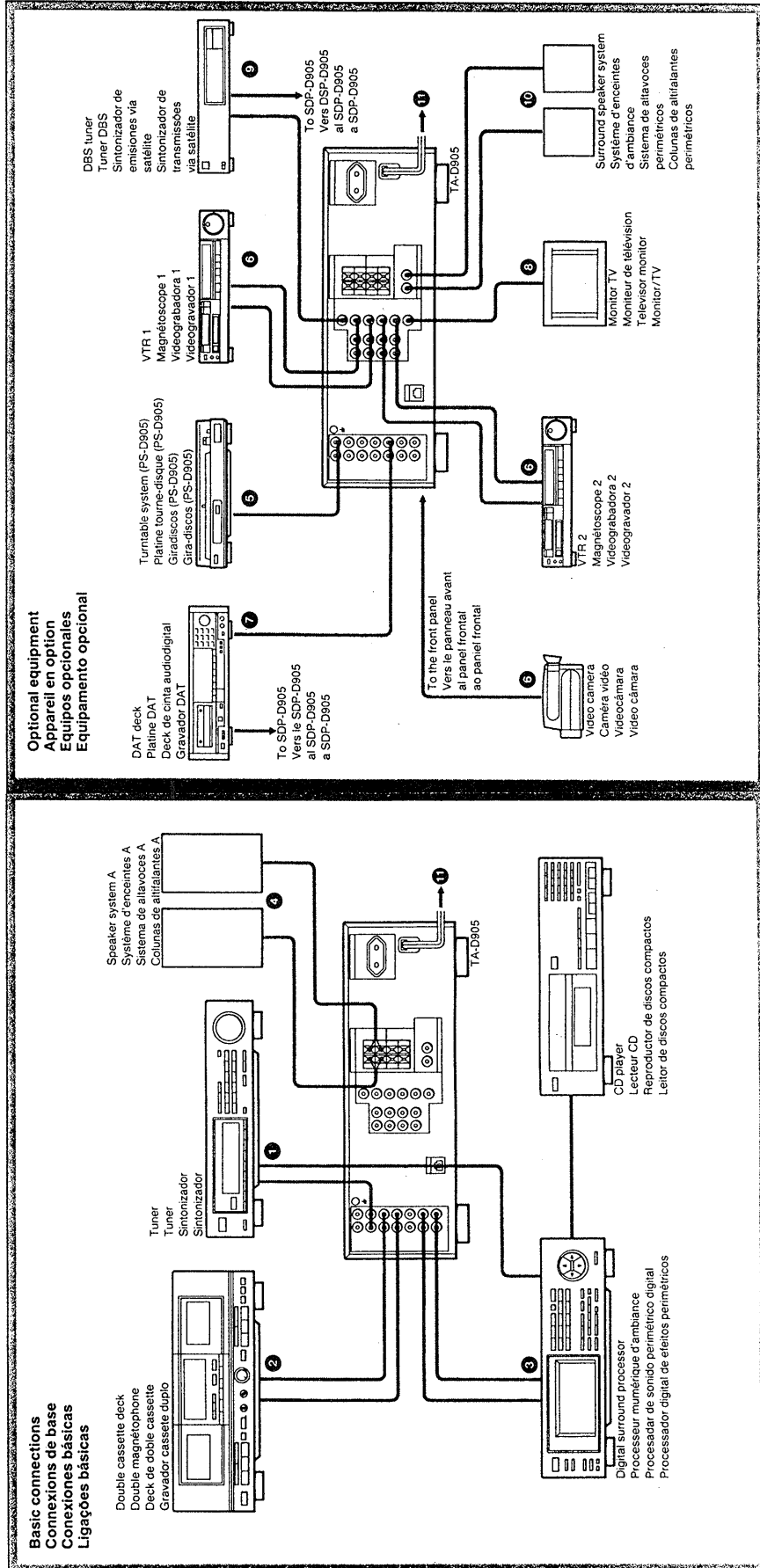
Amplifier

- 1 POWER switch
- 2 VIDEO FUNCTION selector ● 26
- 3 AUDIO FUNCTION selector ● 16
- 4 Buttons for storing sound quality settings
(PROGRAM FUNCTION) ● 23
- 5 VOLUME control ● 18
- 6 VIDEO3 input jacks
- 7 MIC LEVEL control ● 28, ● 29
- 8 MIC jack ● 28
- 9 BALANCE control ● 18
- 10 DBFB LEVEL control ● 20
- 11 DBFB button ● 20
- 12 HEADPHONES jack ● 20
- 13 SPEAKERS A/B selectors ● 20

Installation

Notes on Connection

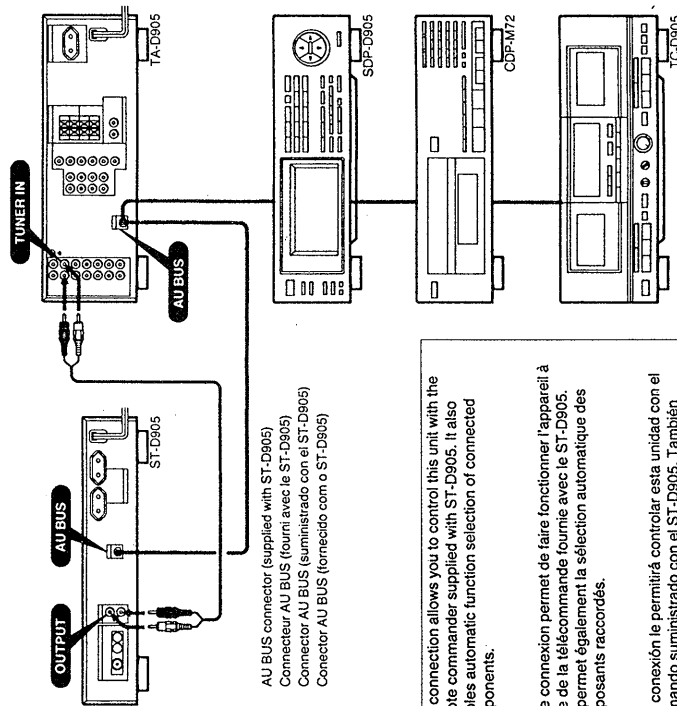
- Connect the AC power cord last. Make sure power is off.
- Cord plugs and jacks are color coded. Red plugs and jacks are for right channel (R) and white ones for left channel (L).
- Fully insert cable connectors into jacks. Loose connections may cause hum or noise.
- No audio or video connecting cords are supplied with this unit. They are supplied with other components.



Installation

1 Connecting a tuner

Connexion d'une tuner
 Conexión de un sintonizador
 Ligação de um sintonizador



AU BUS connector (supplied with ST-D905)
 Connecteur AU BUS (fourni avec le ST-D905)
 Conector AU BUS (suministrado con el ST-D905)
 Conector AU BUS (fornecido com o ST-D905)

This connection allows you to control this unit with the remote commander supplied with ST-D905. It also enables automatic function selection of connected components.

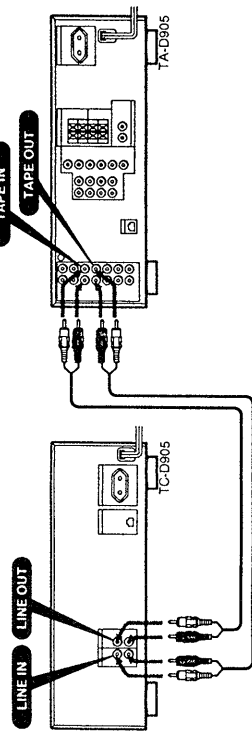
Cette connexion permet de faire fonctionner l'appareil à l'aide de la télécommande fournie avec le ST-D905. Elle permet également la sélection automatique des composants raccordés.

Esta conexión le permitirá controlar esta unidad con el telemando suministrado con el ST-D905. También permite la selección automática de función de los componentes conectados.

Esta ligação permite o controle do aparelho com o telemando fornecido com o ST-D905. Esta ligação permite também a seleção automática de funções nos componentes ligados.

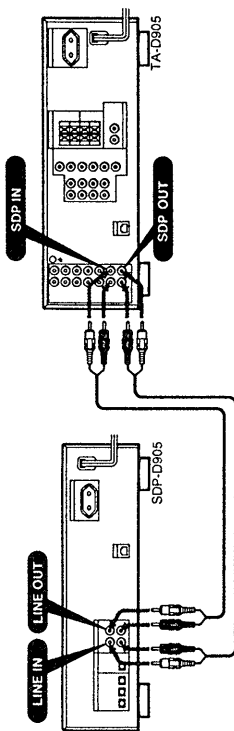
2 Connecting a double cassette deck

Connexion d'un double magnétophone
 Conexión de un deck de doble cassette
 Ligação de um gravador cassette duplo



3 Connecting a digital surround processor

Connexion d'un processeur numérique d'ambiance
 Conexión de un procesador de sonido perimétrico digital
 Ligação de um processador digital de efeitos perimétricos



Installation

7 Connecting a DAT deck

Connexion d'une platine DAT
 Conexión de un deck de cinta audiodigital
 Ligação de um gravador DAT

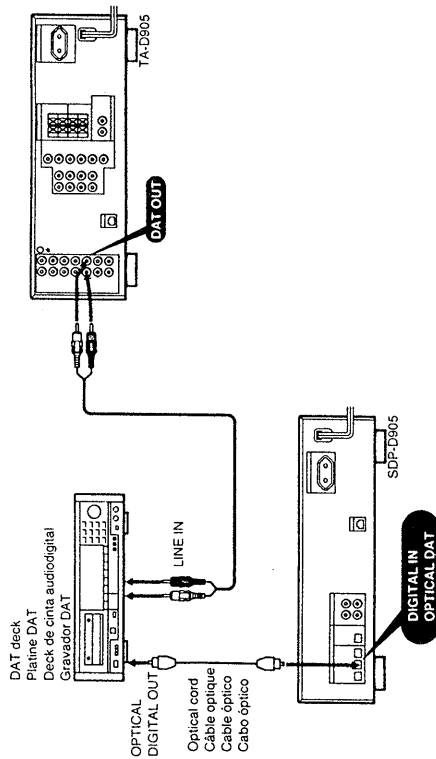
A DAT deck can be connected in 3 ways. When connecting a DAT, use only one of the following connections.

Une platine DAT peut être connectée de 3 manières différentes, mais les connexions doivent être effectuées selon un des systèmes suivant uniquement.

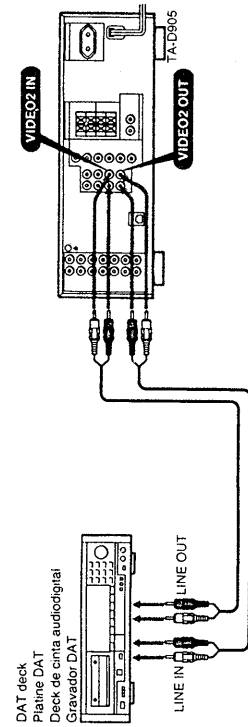
Usted podrá conectar un deck de cinta audiodigital de 3 formas. Cuando lo conecta, emplee solamente una de estas formas.

A ligação de um gravador DAT pode ser realizada de três maneiras. Utilize um dos seguintes modos para a ligação.

A

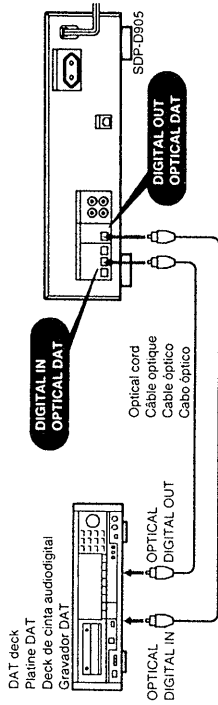


B



- *When playing back a DAT tape, select VIDEO2 with the AUDIO FUNCTION selector
- *Lors de la lecture d'une cassette DAT, sélectionner VIDEO2 avec le sélecteur AUDIO FUNCTION.
- *Para reproducir un cassette de cinta audio digital, elija VIDEO2 con el selector AUDIO FUNCTION.
- *Quando da reprodução de uma cassette no gravador DAT, posicione o selector AUDIO FUNCTION em VIDEO2.

C



Feature of these above connections

- Is the digital recording possible?
 Yes: No:
- connection enables you to record digital sound from a CD or DBS tuner connected with an optical cord without digital-analog conversion. Thus, this connection allows you to have your recording free of any deterioration in sound quality resulting from digital-analog conversion.
- Can the digital surround processor effects be recorded?
 Yes: No:

Particularidades de estas conexiones

- ¿Es posible la grabación digital?
 Si: No:
- La conexión le permitirá grabar sonido digital de un reproductor de discos compactos o de un receptor de emisiones vía satélite conectado con un cable óptico sin conversión digital-analógica. Por ello, esta conexión hará que pueda grabar sin que la calidad del sonido se vea deteriorada debido a la conversión digital-analógica.
- ¿Es posible grabar los efectos del procesador de sonido perimétrico digital?
 Si: No:

Caractéristique des connexions indiquées ci-dessus

- L'enregistrement numérique est-il possible?
 Oui: Non:
- La connexion permet d'enregistrer le son numérique d'un lecteur de CD ou d'un tuner DBS raccordés par un câble optique sans avoir à faire la conversion numérique-analogique. Aussi, cette connexion vous permet-elle d'effectuer des enregistrements ne souffrant pas de déteriorations provenant de la conversion du signal numérique en signal analogique.
- Les effets créés par le processeur numérique d'ambiance peuvent-ils être enregistrés?
 Oui: Non:

Características das ligações acima

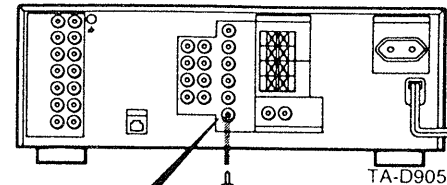
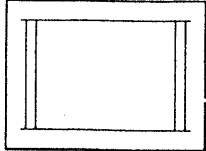
- É possível realizar gravações digitais?
 Sim: Não:
- A ligação C permite a gravação dos sinais digitais de um disco compacto ou sintonizador de transmissões via satélite ligado através de um cabo óptico, sem conversão digital-analógica. Esta ligação possibilita desta forma a obtenção de gravações livres de qualquer degradação na qualidade sonora resultante da conversão digital-analógica.
- Os efeitos do processador digital de efeitos perimétricos podem ser gravados?
 Sim: Não:

Installation

8 Connecting a monitor TV Connexion d'un moniteur de télévision

Conexión de un televisor monitor Ligaçao de um monitor/TV

Monitor TV
Moniteur de télévision
Televisor monitor
Monitor/TV



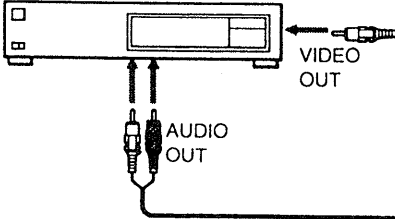
MONITOR OUT

TA-D905

9 Connecting a DBS tuner or a Laser Disc player Connexion d'un tuner DBS ou d'un lecteur de LD Conexión de un sintonizador de emisiones vía satélite o de un reproductor de discos láser Ligaçao de um sintonizador de transmissões via satélite ou leitor de disco laser «Laser Disc»

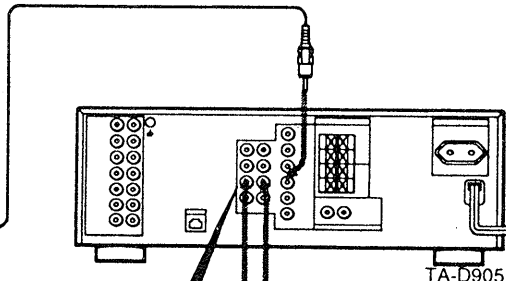
a For the equipment without an optical output/Pour appareil sans sortie optique/Para un equipo desprovisto de saída óptica/Equipamentos desprovidos de saída óptica

DBS tuner or Laser Disc player
Tuner DBS ou lecteur de LD
Sintonizador de emisiones vía satélite o reproductor de discos láser
Sintonizador de transmissões via satélite ou o «Laser Disc»



AUDIO OUT

VIDEO OUT

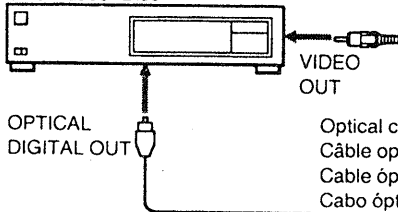


VIDEO2 IN

TA-D905

b For the equipment with an optical output/Pour appareil avec sortie optique/Para equipos provistos de saída óptica/Equipamentos providos de saída óptica

DBS tuner or Laser Disc player
Tuner DBS ou lecteur de LD
Sintonizador de emisiones vía satélite o reproductor de discos láser
Sintonizador de transmissões via satélite ou o «Laser Disc»

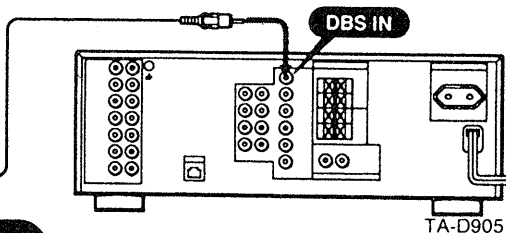


VIDEO OUT

OPTICAL DIGITAL OUT

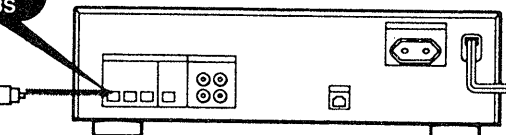
Optical cord
Câble optique
Cabo óptico
Cabo óptico

DIGITAL IN
OPTICAL DBS



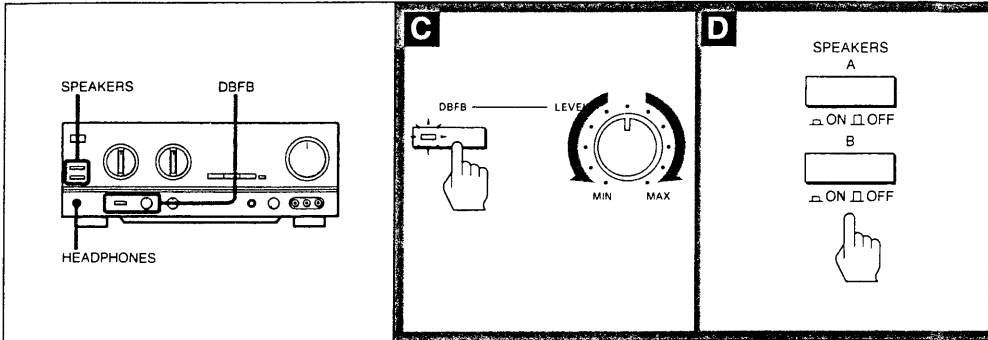
DBS IN

TA-D905



SDP-D905

Adjusting the Sound



Reinforcing the Bass

- 1 Press the DBFB button so that the indicator lights up.
- 2 Adjust the DBFB LEVEL control.

Selecting Speaker System

This amplifier provides for two speaker systems – system A and system B – which can be selected separately or simultaneously using the SPEAKERS selectors.

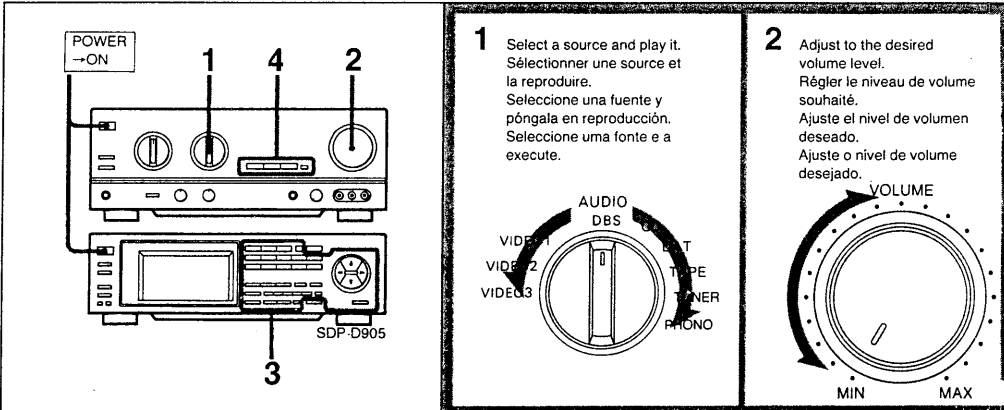
To drive speaker system A: Depress A.
 To drive speaker system B: Depress B.
 To drive both speaker systems A and B: Depress both A and B.

For private listening: Connect a pair of headphones to HEADPHONES and set both selectors to OFF (Δ).

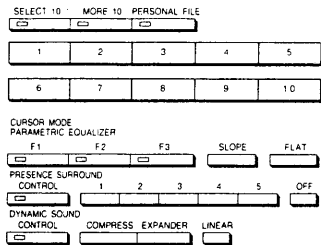
• Speaker systems A and B are series connected. No sound can be heard if both SPEAKERS selectors are pressed when only one speaker system is connected.

Storing a Desired Sound Setting

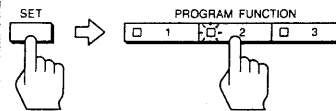
You can store and recall 3 different combinations of program source, volume level, and sound quality.
 Store the settings in the PROGRAM FUNCTION buttons 1 to 3 on the amplifier.



- 3 Set to the desired sound quality by using the digital surround processor.
 Régler la qualité du son souhaité avec le processeur numérique d'ambiance.
 Ajuste la cualidad de sonido deseada empleando el procesador de sonido perimétrico digital.
 Ajuste a qualidade sonora desejada com o processador digital de efeitos perimétricos.



- 4 Store the setting.
 Mémoriser le réglage.
 Almacene el ajuste.
 Armazene o ajuste.



Recalling a Sound Setting

Prepare the source and press the button for the desired setting.

Note on step 1

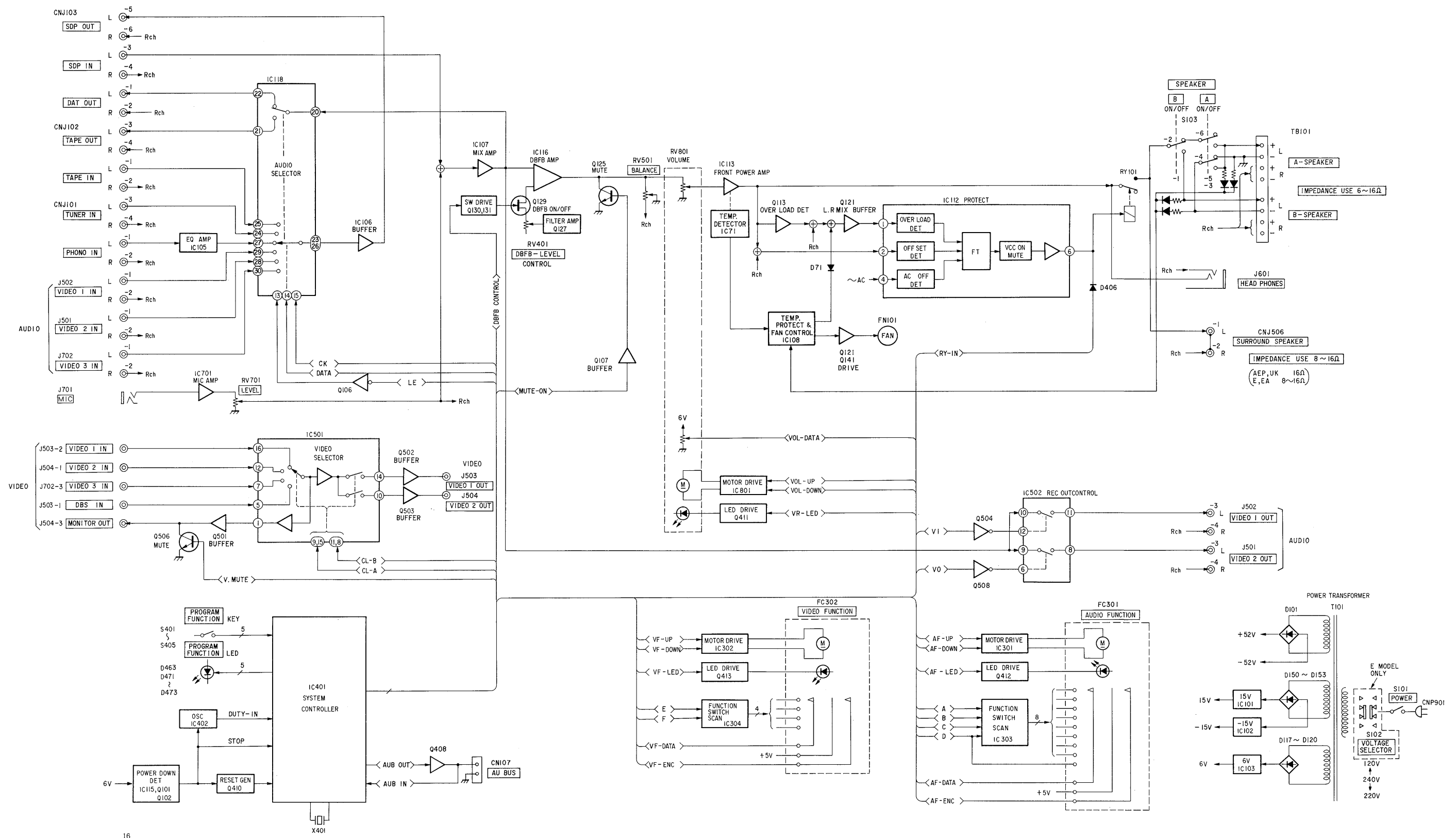
If you select the tuner ST-D905 as a source, the band and frequency of the station tuned in will be stored.

Notes on steps 2

- Adjust the VOLUME control within such a range that the volume level will not exceed half of the maximum volume.
- Be sure to set the VOLUME control to the position more than the second point from the minimum level. Otherwise, the stored setting will be recognized as the zero level.

SECTION 2 DIAGRAMS

2-1. BLOCK DIAGRAM



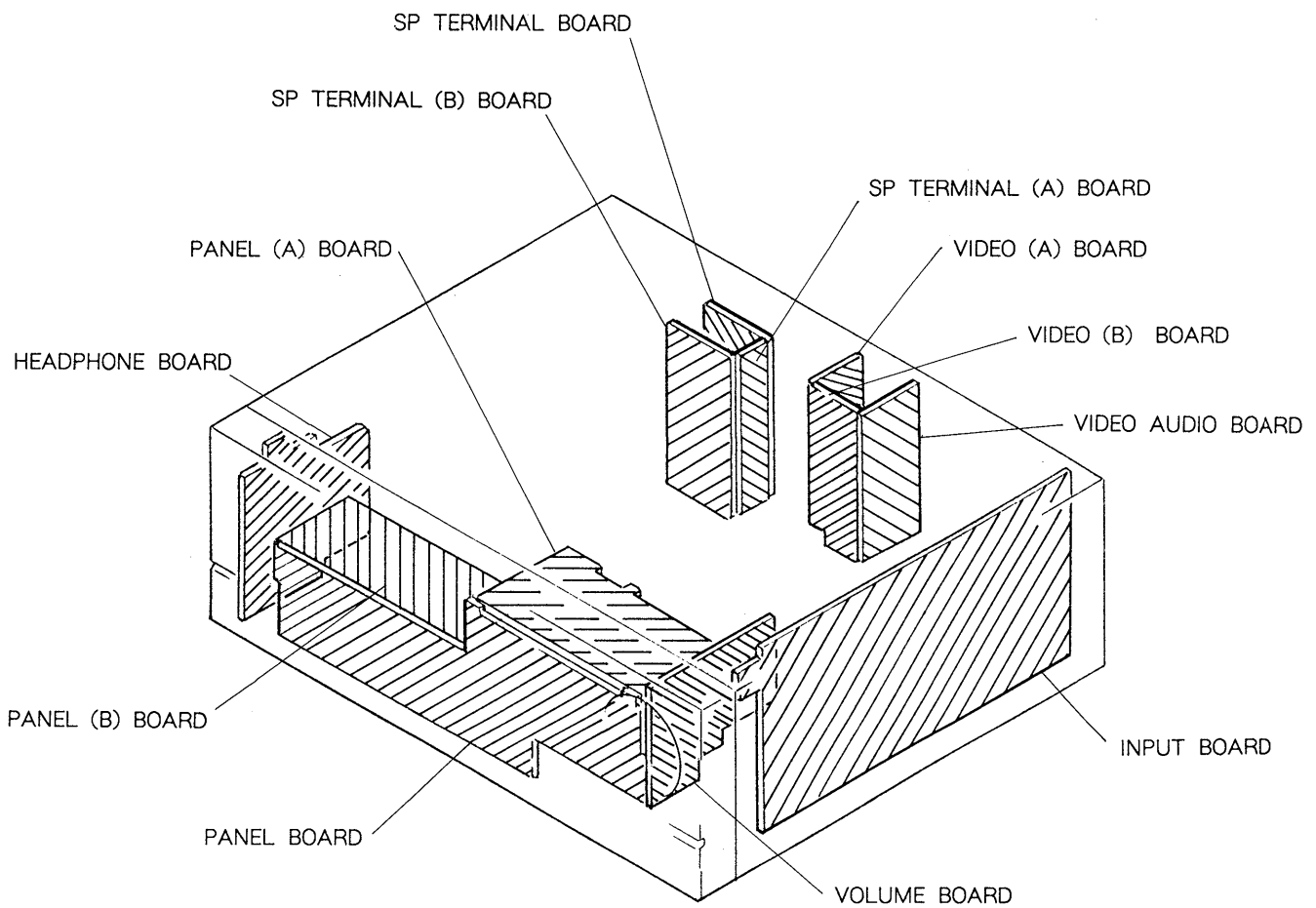
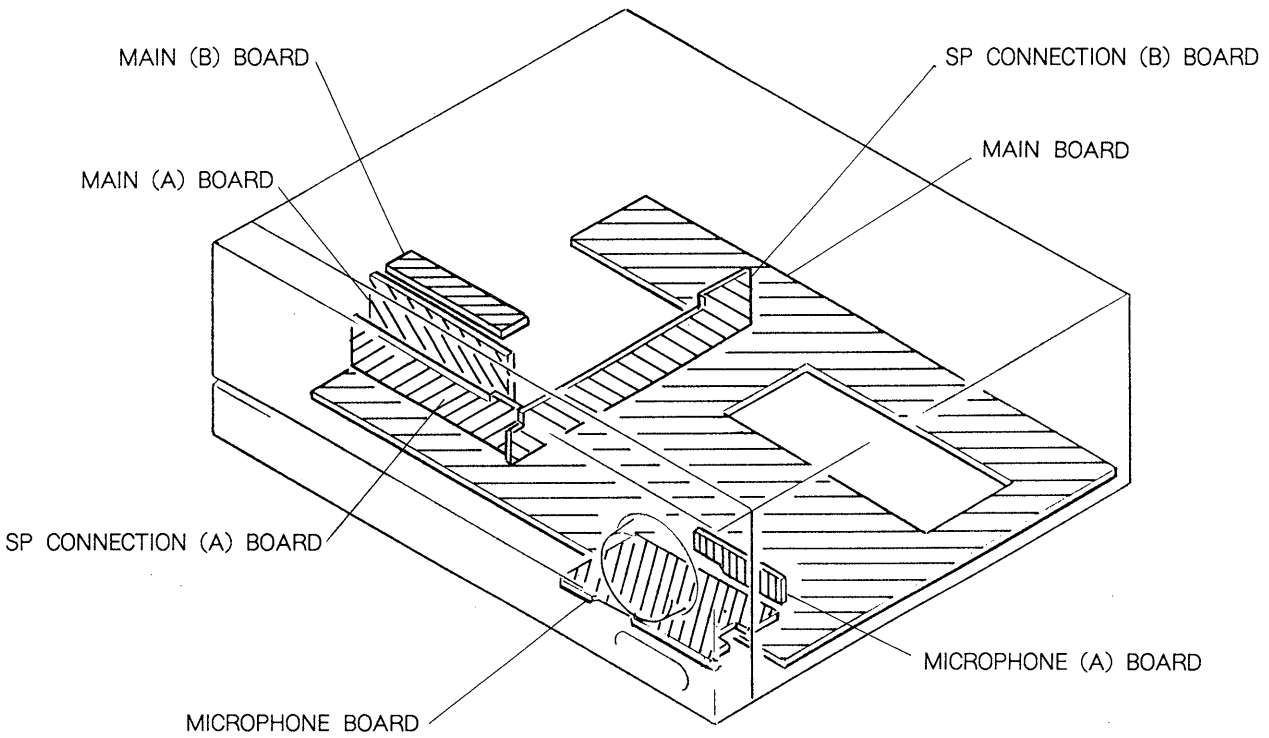
2- 2. IC DESCRIPTION

IC401 System Controller (μ PD75106CW-190)

Pin No.	Pin Name	I/O	Description
1	V-ENC	I	Select edge input of video function switch (FC302).
2	A-ENC	I	Select edge input of audio function switch (FC301).
3	DUTY-IN	I	Pulse input (sync T = approx. 20 mS) of function motor control.
4	AUB-IN	I	Audio BUS input.
5	NC	—	
6	NC	—	
7	RY-IN	I	Relay (RY101) ON/OFF detect.
8	VOL A/D	I	Position detect input (analog input) of volume (RV801).
9	TST	—	
10	TST	—	
11	AUB-OUT	O	Audio BUS output.
12	NC	—	
13	NC	—	
14	NC	—	
15	SI	—	
16	V-LOC	I	Position data scan input of video function switch (FC302).
17	A-LOC	I	Position data scan input of audio function switch (FC301).
18	AC-CUT	I	Power cut detect input.
19	A-MUTE	O	Mute signal output (audio).
20	V-MUTE	O	Mute signal output (video).
21	NC	—	
22	REAR-SP	O	Rear speaker relay (RY901) ON/OFF control output.
23	CL-B	O	Video image input/output select control output (IC501).
24	CL-A	O	
25	V1	O	Video audio input/output select control output (IC502).
26	V0	O	
27	SW-OFF	O	Super woofer ON/OFF control output.
28	CE	O	Audio input/output select (IC118) data latch output.
29	DI	O	Audio input/output select (IC118) serial data output.
30	CL	O	Audio input/output select (IC118) data clock output.
31	NC	—	
32	VDD	—	Power terminal (+5V).

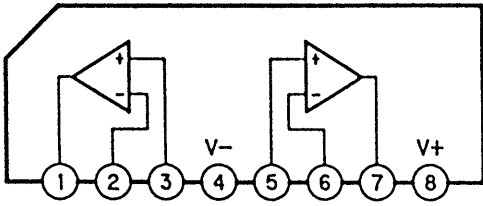
Pin No.	Pin Name	I/O	Description
33	AF-LED	O	Audio function LED control output.
34	REAR-K	I	Rear speaker ON/OFF switch (S407) input.
35	SW-K	I	Super woofer ON/OFF switch (S406) input.
36	DBFB-K	I	DBFB-K ON/OFF switch (S405) input.
37	PST1-K	I	PRESET 1 switch (S402) input.
38	PST2-K	I	PRESET 2 switch (S403) input.
39	PST-3K	I	PRESET 3 switch (S404) input.
40	SET-K	I	SET switch (S401) input.
41	A-SCN-3	O	Position data scan output of audio function switch.
42	A-SCN-2	O	
43	A-SCN-1	O	
44	A-SCN-0	O	
45	$\overline{\text{RESET}}$	I	System reset input.
46	X0	O	Ceramic oscillator generator circuit (4.19 MHz).
47	X1	I	
48	VOL-DWN	O	DOWN signal output of volume motor (RV801).
49	VOL-UP	O	UP signal output of volume motor (RV801).
50	V-SCAN-1	O	Position data scan output of video function switch.
51	V-SCAN-0	O	
52	VF-LED	O	Video function LED control output.
53	PST1-L	O	PRESET LED (D471) control output.
54	PST2-L	O	PRESET LED (D472) control output.
55	PST3-L	O	PRESET LED (D473) control output.
56	AF-DWN	O	Motor DOWN signal output of audio function switch (FC301).
57	AF-UP	O	Motor UP signal output of audio function switch (FC301).
58	VF-DWN	O	Motor DOWN signal output of video function switch (FC302).
59	VF-UP	O	Motor UP signal output of video function switch (FC302).
60	REAR-L	O	Rear speaker LED (D461) control output.
61	SW-L	O	Super woofer LED (D462) control output.
62	VOL-L	O	Volume LED control output.
63	DBFB-L	O	DBFB LED (D463) control output.
64	VSS	—	GN

2-3. CIRCUIT BOARDS LOCATION

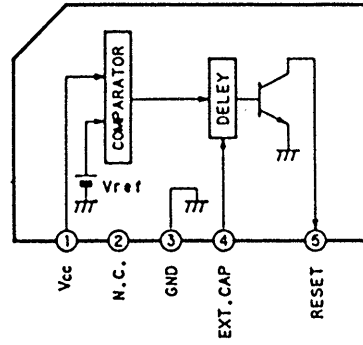


2-4. IC BLOCK DIAGRAM

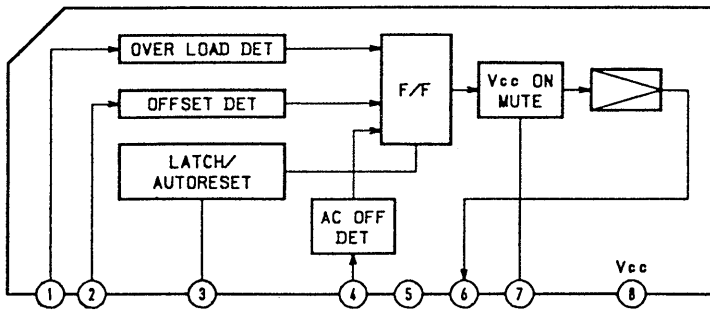
IC105-107, 116, 701 M5218AL



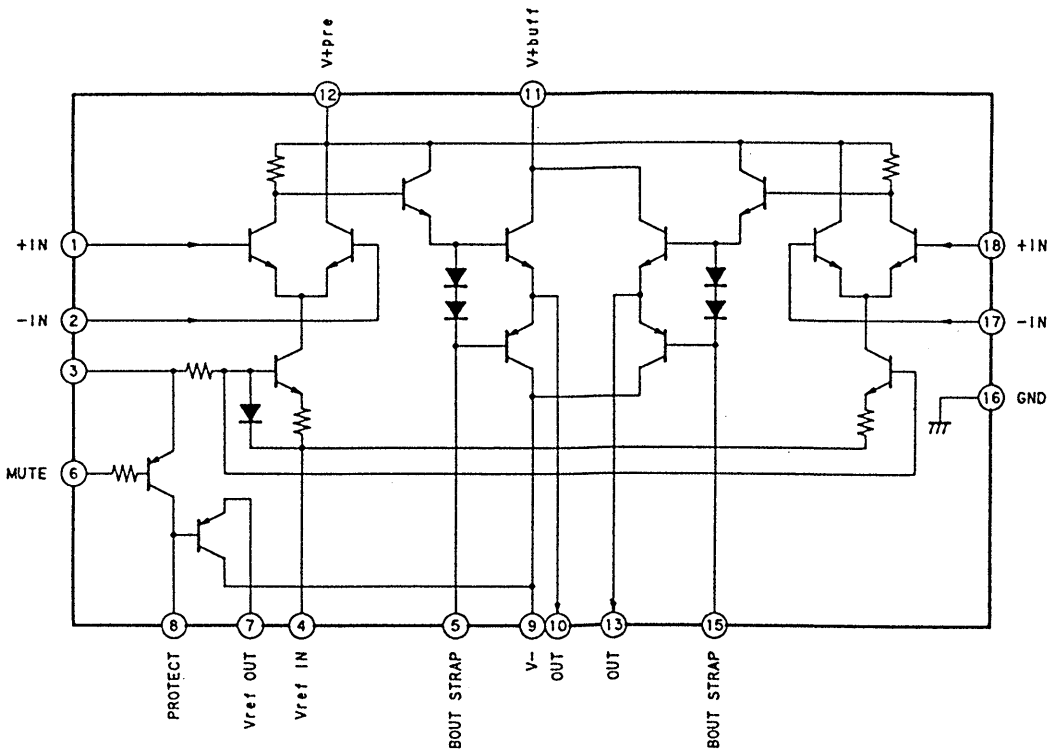
IC115 M51953BL



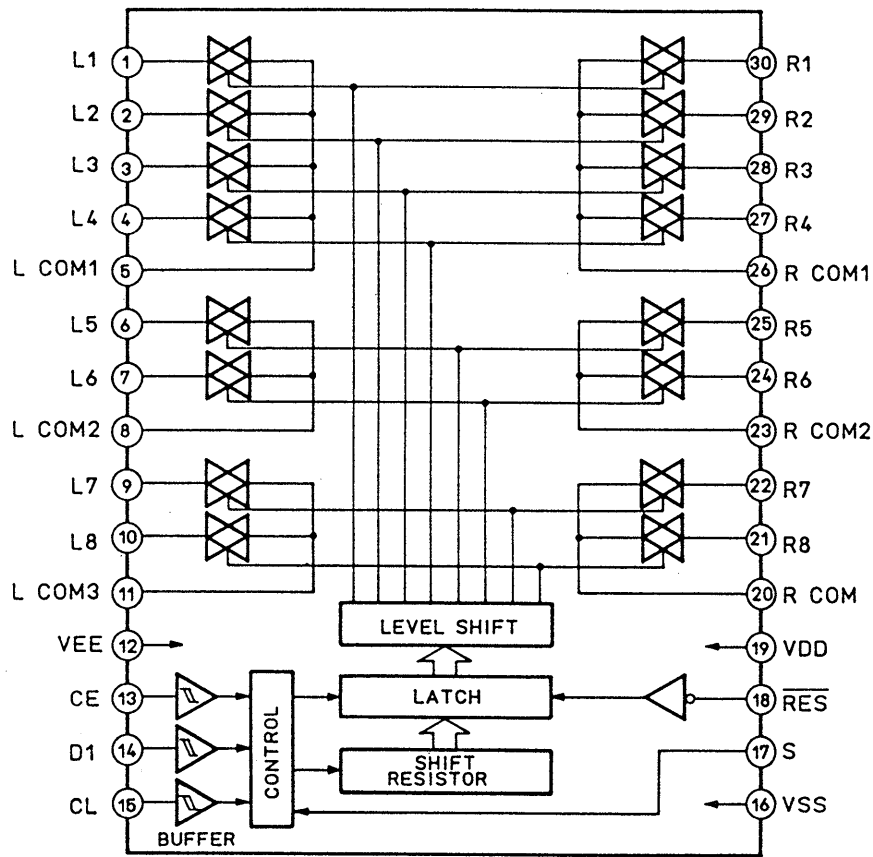
IC112 μ PC1237HA



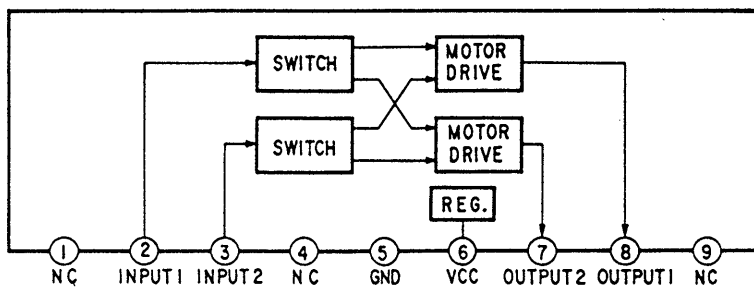
IC113 STK-4211MK2



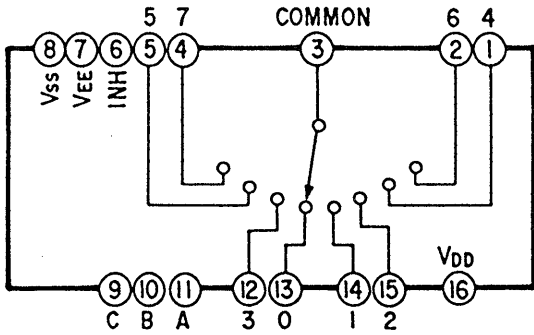
IC118 LC7821



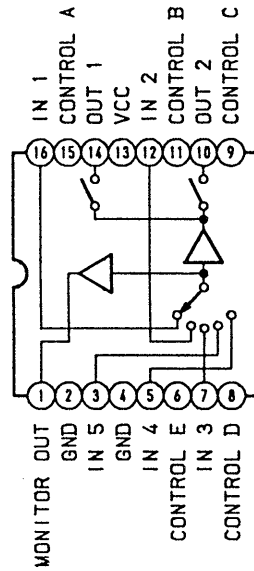
IC301, 302 BA6208



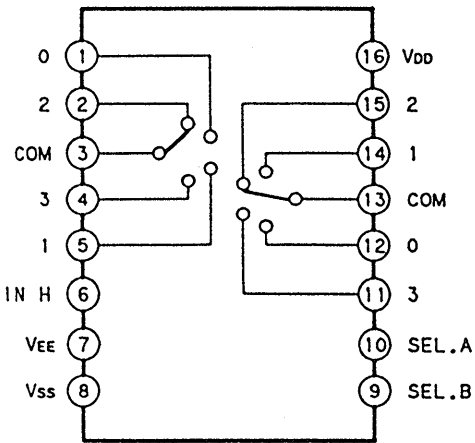
IC303 TC4051BPHB



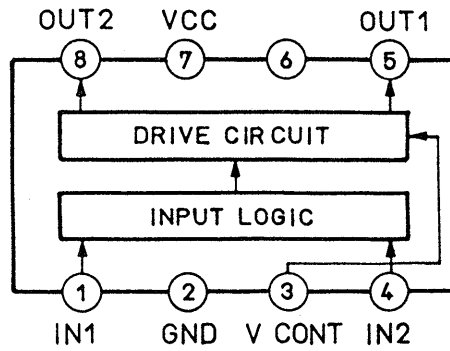
IC501 BA7625



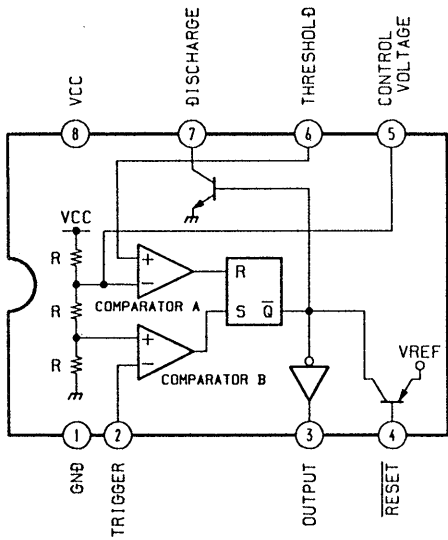
IC304 TC4052BPHB



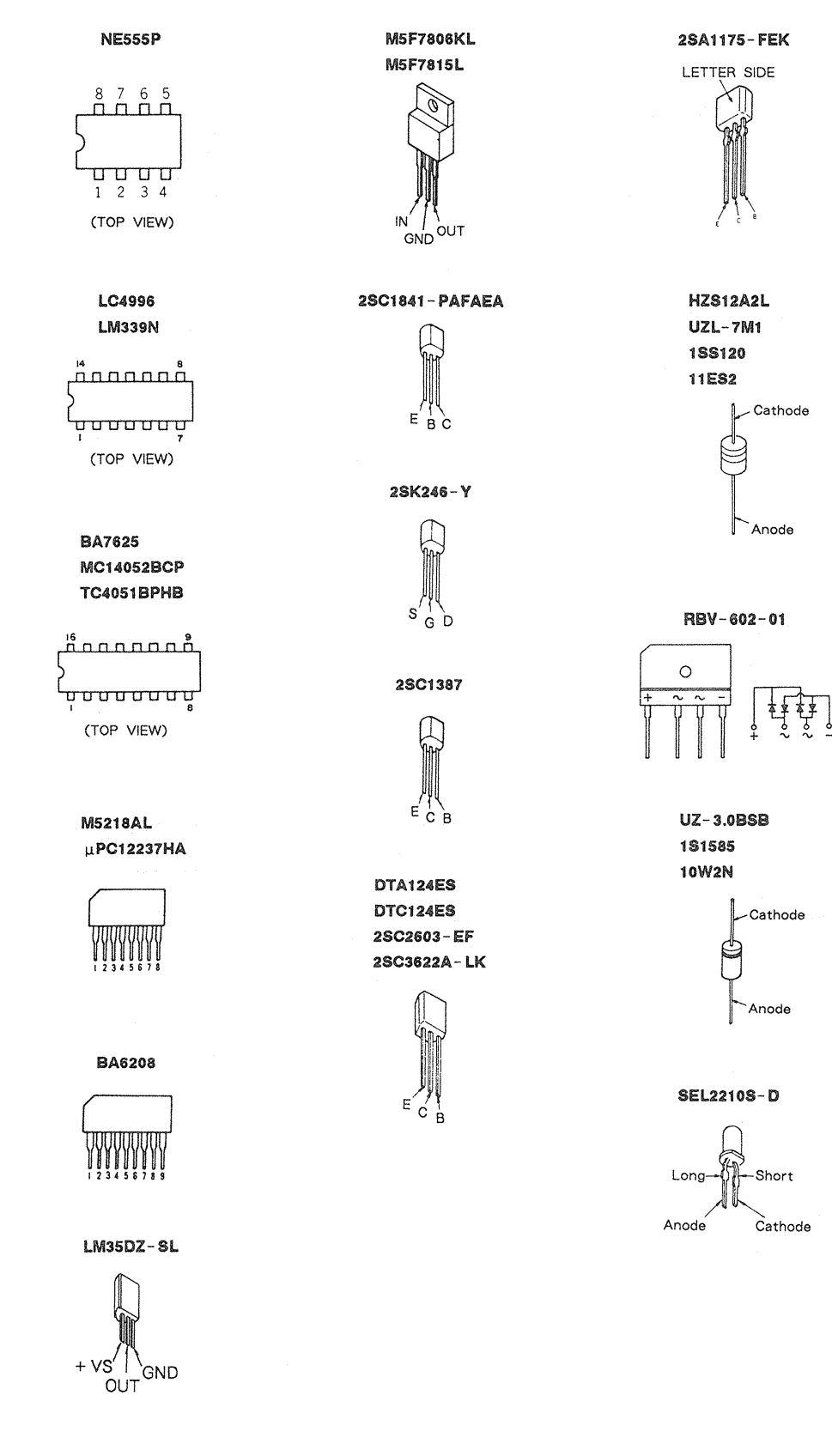
IC801 LB1639



IC402 NE555P



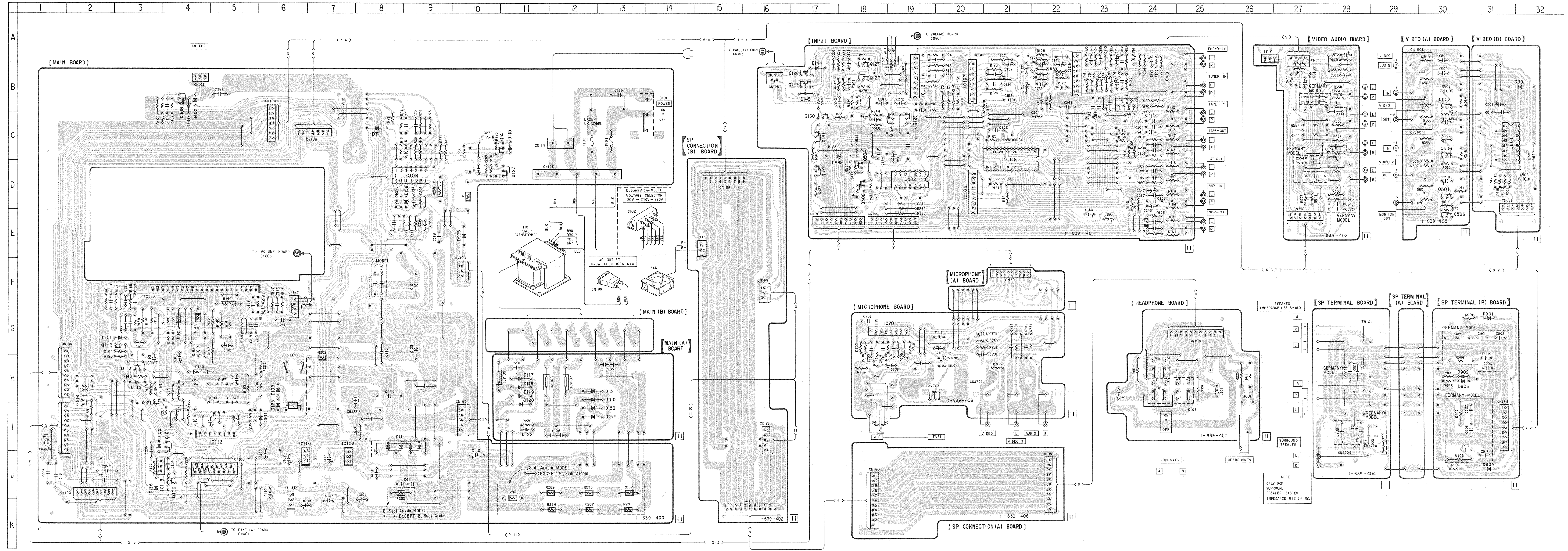
2-5. SEMICONDUCTOR LEAD LAYOUTS

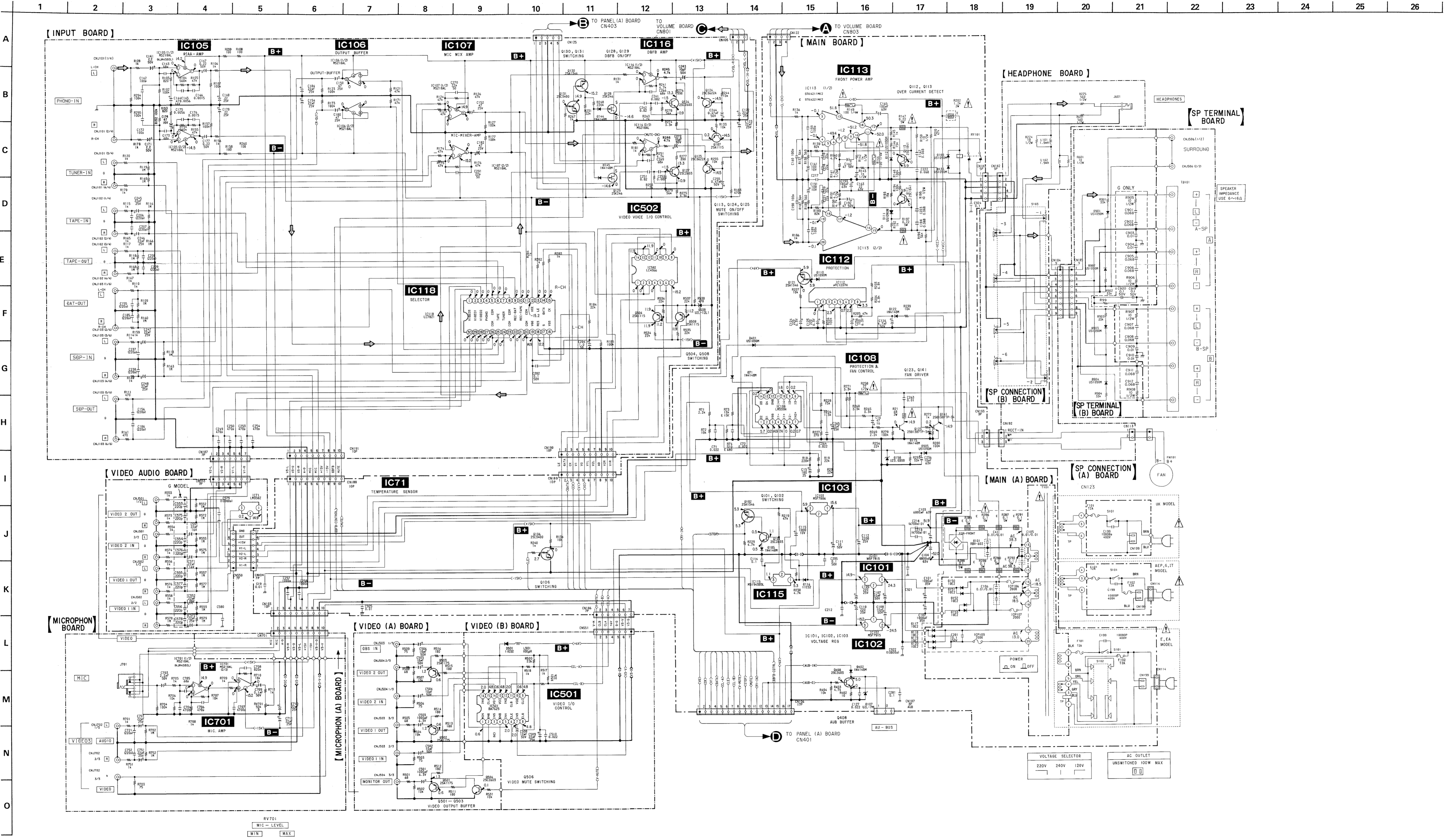


• Semiconductor Location

Ref. No.	Location
D71	C-8
D101	I-8
D105	I-3
D107	B-4
D109	H-6
D110	H-3
D111	G-3
D112	H-3
D115	C-11
D116	J-3
D117	H-11
D118	H-11
D120	H-11
D122	I-11
D135	I-6
D144	B-17
D145	B-17
D150	H-13
D151	H-13
D152	I-13
D153	I-13
D158	D-9
D401	I-6
D402	B-4
D501	D-32
D530	H-18
D901	G-31
D902	H-30
D903	H-30
D904	J-31
D905	E-10
IC71	A-26
IC101	J-6
IC102	J-6
IC103	J-7
IC105	B-22
IC106	D-20
IC107	D-20
IC108	D-9
IC112	I-5
IC113	F-4
IC115	J-3
IC116	B-19
IC118	C-21
IC501	C-31
IC502	D-19
IC701	G-19
Q101	I-4
Q102	J-4
Q106	H-2
Q107	D-17
Q112	G-3
Q113	H-3
Q121	H-3
Q123	D-11
Q124	C-19
Q125	C-19
Q126	B-18
Q127	B-17
Q128	B-17
Q129	B-17
Q130	C-17
Q131	C-17
Q132	C-17
Q133	C-17
Q134	C-17
Q135	C-17
Q136	C-17
Q137	C-17
Q138	C-17
Q139	C-17
Q140	C-17
Q141	C-11
Q408	B-4
Q501	D-30
Q502	B-30
Q503	C-30
Q504	D-18
Q505	E-30
Q508	D-18

Note on Mounting Diagram:
 • : parts extracted from the component side.
 • : component side.





Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

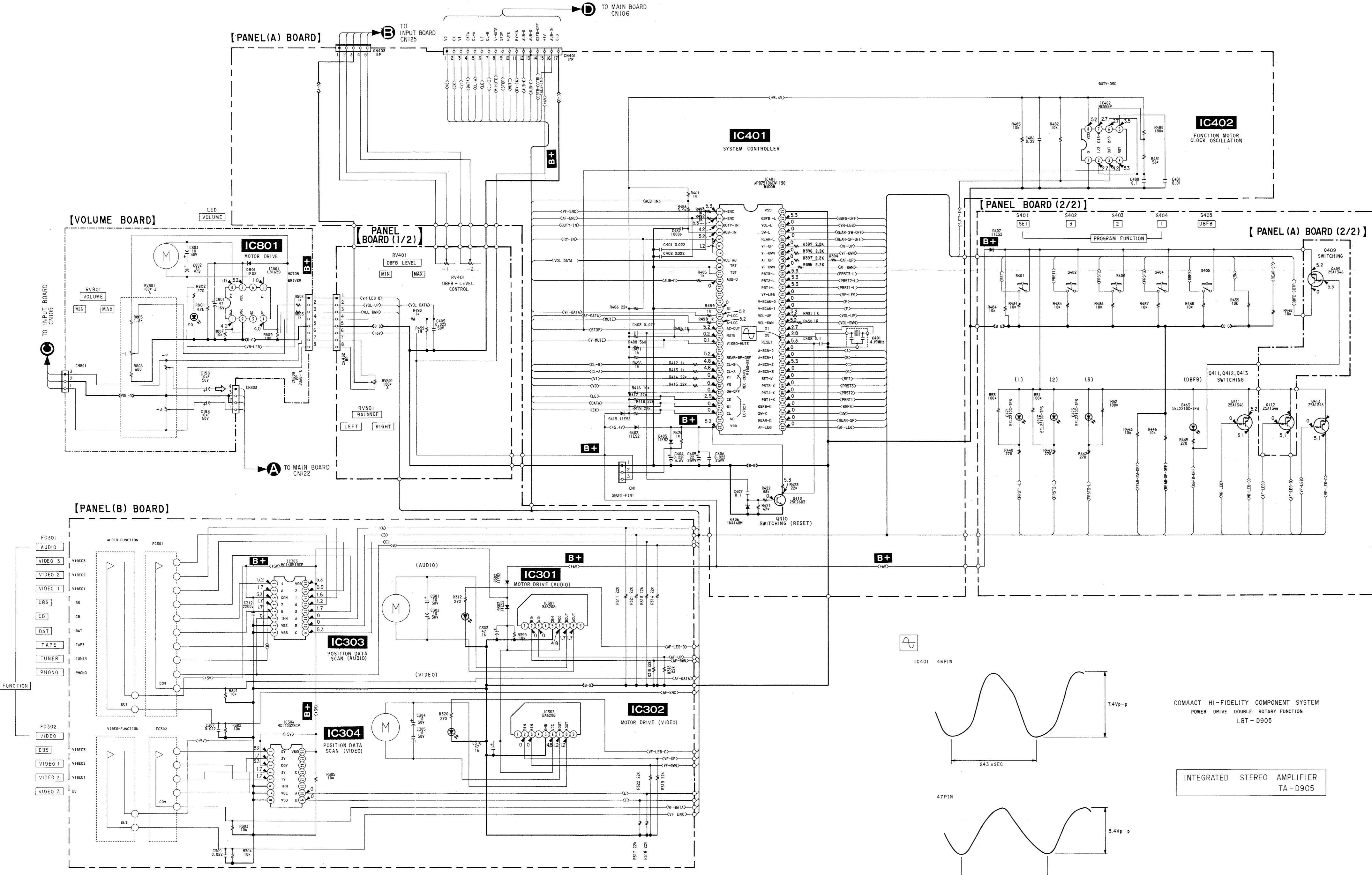
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- B+** : B+ Line
- B-** : B- Line
- no mark : No-signal, PHONO MODE
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltagess are taken with a VOM (Input impedance 10M Ω)
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \curvearrowright : PHONO

EA : SAUDI ARABIA MODEL
G : GERMANY MODEL
IT : ITALIAN MODEL

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

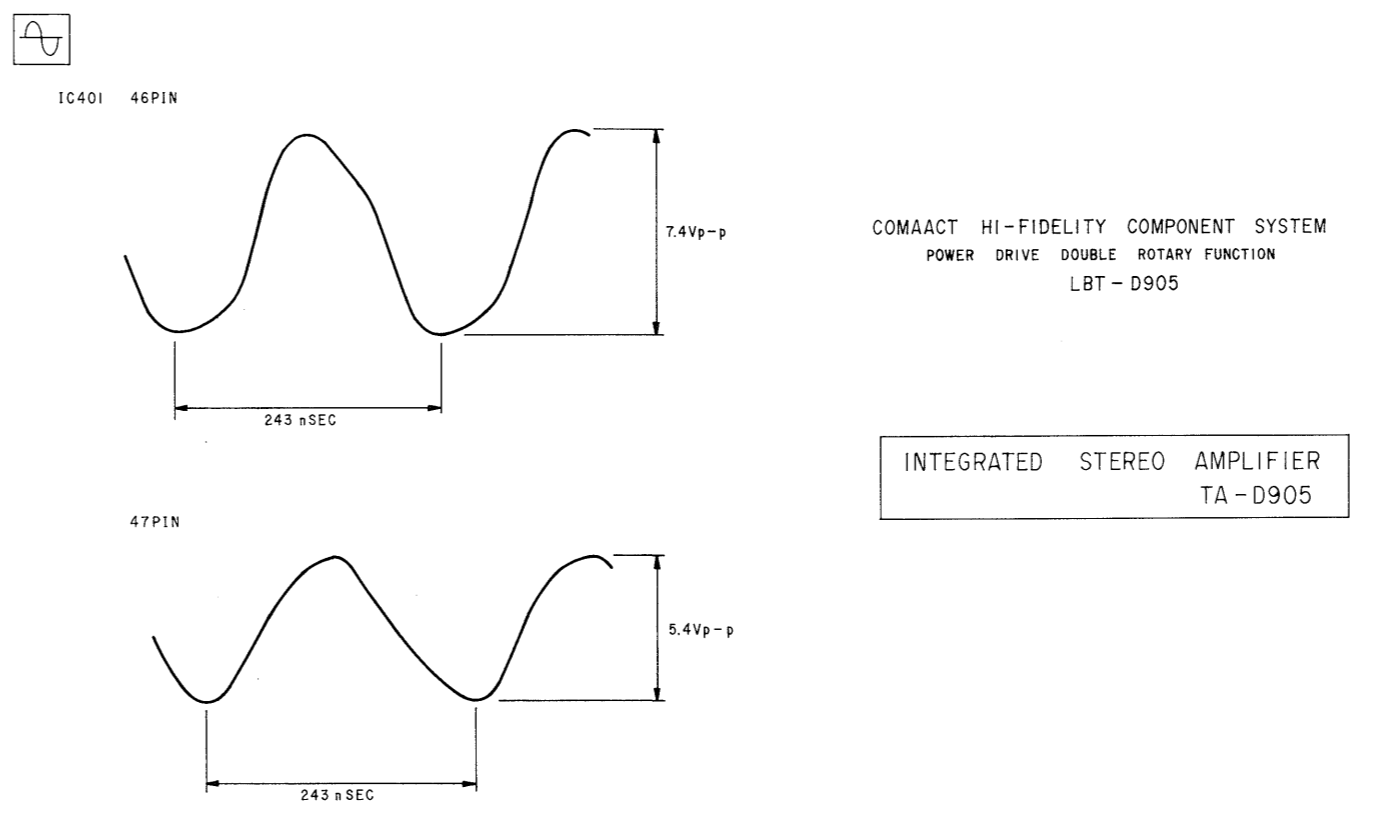


Note on Schematic Diagram:

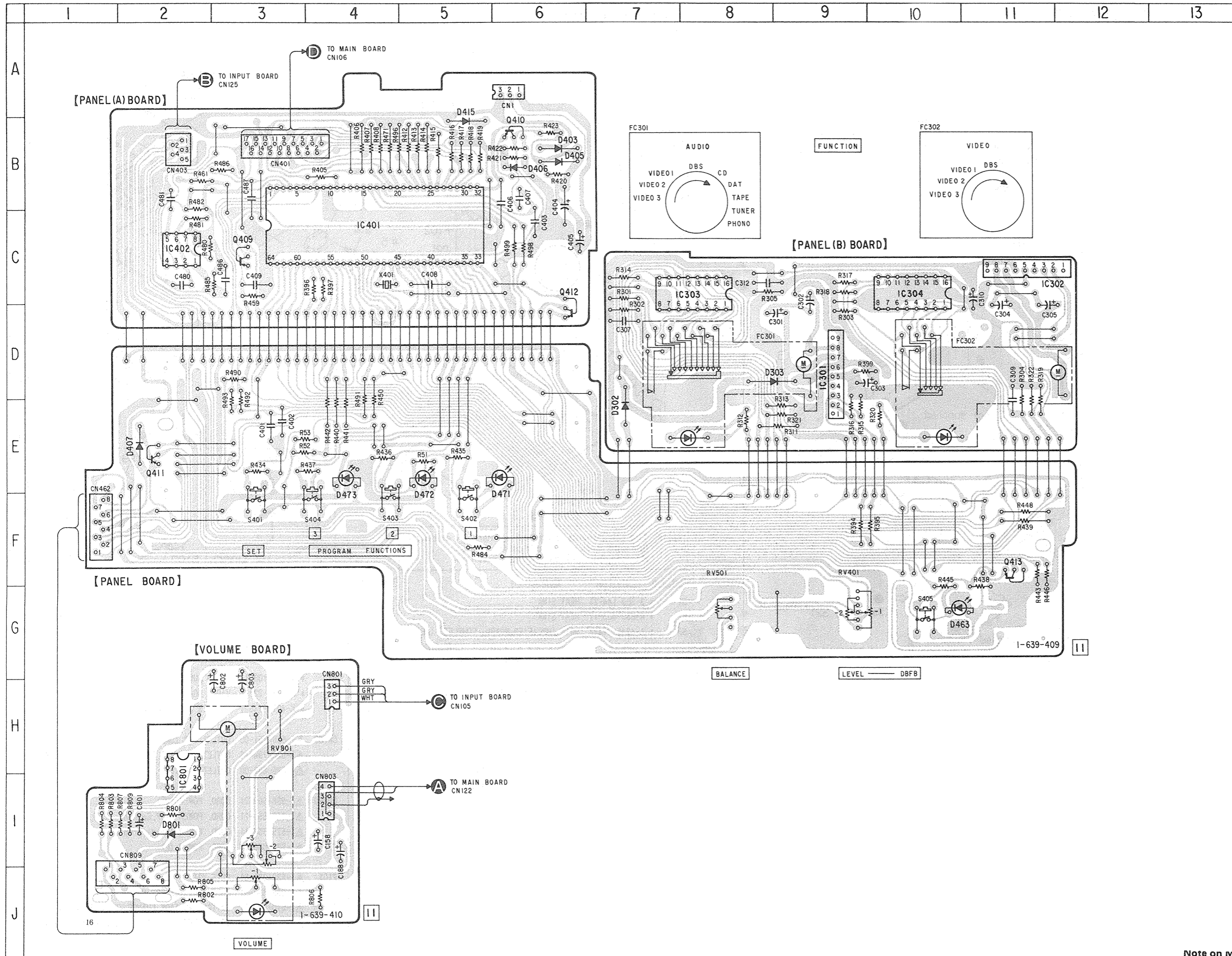
- All capacitors are in μF unless otherwise noted, pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
- \square : nonflammable resistor.
- \square : fusible resistor.

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

- \square : B+ Line
- \square : B- Line
- no mark: No-signal, PHONO MODE
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \rightarrow : PHONO



2-9. PRINTED WIRING BOARD - PANEL -



• Semiconductor Location

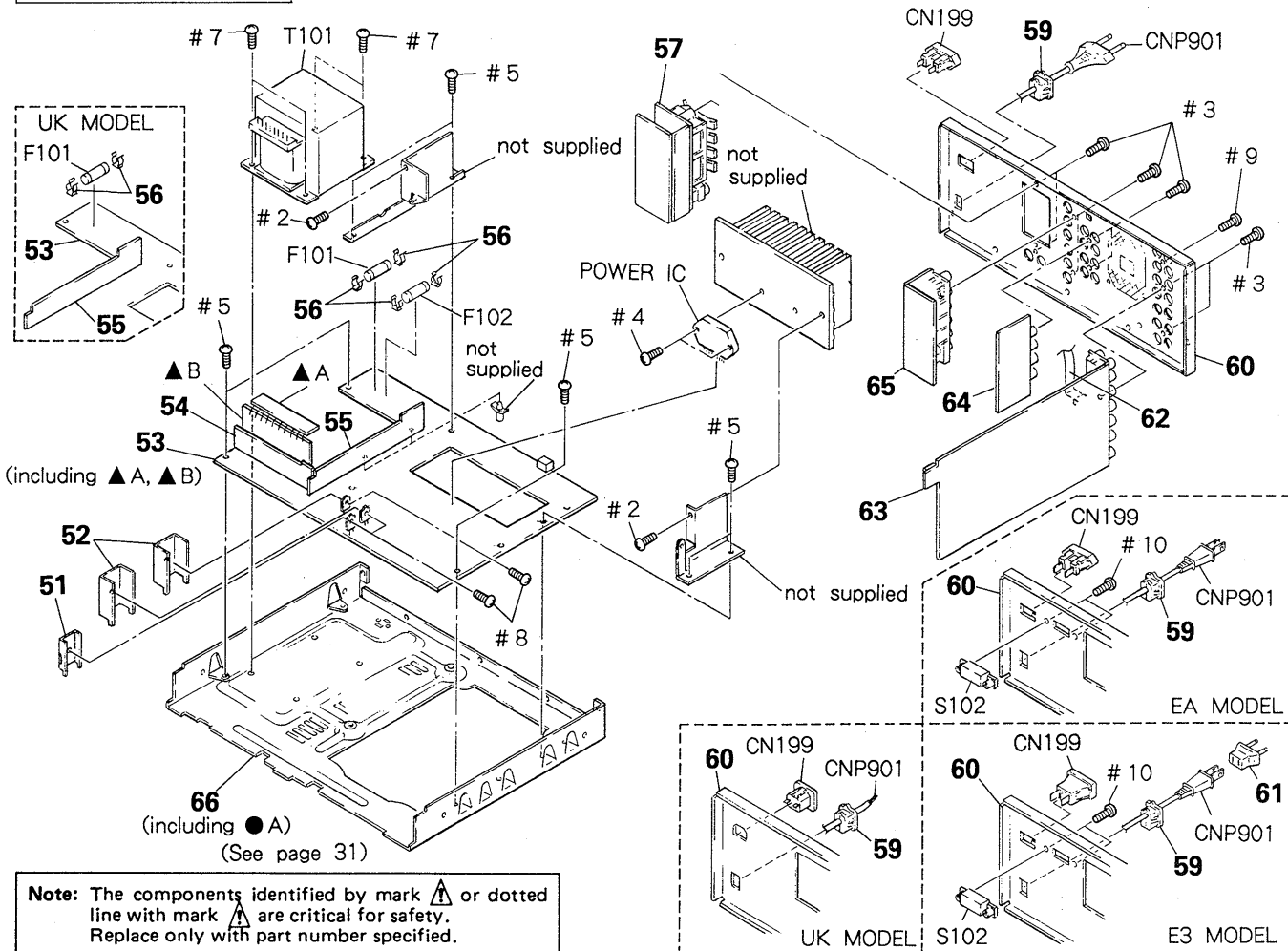
Ref. No.	Location
D302	E-7
D303	D-9
D403	B-6
D405	B-6
D406	B-6
D407	E-2
D415	B-5
D463	G-11
D471	E-6
D472	E-5
D473	E-4
D801	I-2
IC301	D-9
IC302	C-11
IC303	C-8
IC304	C-10
IC401	C-4
IC402	C-2
IC801	H-2
Q409	C-3
Q410	B-6
Q411	E-2
Q412	D-6
Q413	F-11

Note on mounting Diagram:
 • ○ — : parts extracted from the component side.
 • ⊙ : component side.

3-2. OVERALL SECTION 2

▲ A : MAIN (B) BOARD
 ▲ B : MAIN (A) BOARD

EA : Saudi Arabia



Ref. No.	Part No.	Description	Remarks
51	* 3-309-144-21	HEAT SINK	
52	* 4-880-403-11	HEAT SINK	
53	* A-4345-214-A	MAIN AMPLIFIER BOARD, COMPLETE (AEP, Italian)	(including ▲A, ▲B)
	* A-4345-215-A	MAIN AMPLIFIER BOARD, COMPLETE (Germany)	(including ▲A, ▲B)
	* A-4345-230-A	MAIN AMPLIFIER BOARD, COMPLETE (UK)	(including ▲A, ▲B)
	* A-4345-231-A	MAIN AMPLIFIER BOARD, COMPLETE (E, Saudi Arabia)	(including ▲A, ▲B)
54	* 1-639-406-11	SP CONNECTION (A) BOARD	
55	* 1-639-402-11	SP CONNECTION (B) BOARD	
56	* 1-533-213-31	HOLDER FUSE	
57	* 1-639-404-11	SP TERMINAL BOARD	
59	* 3-703-244-00	BUSHING (2104), CORD (AEP, UK, Germany, Italian, Saudi Arabia)	
	* 3-703-571-11	BUSHING (S) (4516), CORD (E)	
60	* 4-944-324-11	PANEL, BACK (AEP)	
	* 4-944-324-21	PANEL, BACK (UK)	
	* 4-944-324-31	PANEL, BACK (Germany)	
	* 4-944-324-41	PANEL, BACK (Italian)	
	* 4-944-324-51	PANEL, BACK (E)	
	* 4-944-324-61	PANEL, BACK (Saudi Arabia)	

Ref. No.	Part No.	Description	Remarks
62	1-690-101-11	WIRE, FLAT TYPE (7 CORE)	
63	* A-4345-216-A	INPUT BOARD, COMPLETE (AEP, UK, E, Italian, Saudi Arabia)	
	* A-4345-217-A	INPUT BOARD, COMPLETE (Germany)	
64	* 1-639-403-11	VIDEO AUDIO BOARD	
65	* A-4345-223-A	VIDEO BOARD, COMPLETE	
66	* X-4917-246-1	CHASSIS ASSY (including ●A)	
CN199	⚠1-526-751-00	OUTLET, AC (UK)	
	⚠1-526-794-11	OUTLET, AC (AEP, Germany, Italian, Saudi Arabia)	
	⚠1-526-882-00	OUTLET, AC (E)	
CNP901	⚠1-556-560-21	CORD, POWER (UK)	
	⚠1-575-651-11	CORD, POWER (AEP, Germany, Italian)	
	⚠1-575-654-11	CORD, POWER (Saudi Arabia)	
	⚠1-575-656-11	CORD, POWER (E)	
F101	⚠1-532-388-51	FUSE (2A)	
F102	⚠1-532-388-51	FUSE (2A) (EXCEPT UK)	
S102	⚠1-570-307-11	SWITCH, VOLTAGE CHANGE (E, Saudi Arabia)	
T101	⚠1-450-526-11	TRANSFORMER, POWER (AEP, UK, Germany, Italian)	
	⚠1-450-527-11	TRANSFORMER, POWER (E, Saudi Arabia)	

INPUT SP CONNECTION(B) VIDEO AUDIO SP TERMINAL

**SECTION 4
ELECTRICAL PARTS LIST**

NOTE :

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

- 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, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL : metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA... : μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...
- CAPACITORS :
uF : μ F
- COILS
uH : μ H

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* A-4345-216-A		INPUT BOARD, COMPLETE (AEP, UK, E, IT, Saudi Arabia)		C172	1-162-282-31	CERAMIC 100PF 10% 50V	
* A-4345-217-A		INPUT BOARD, COMPLETE (Germany)		C173	1-162-219-31	CERAMIC 68PF 5% 50V	
		*****		C174	1-126-022-11	ELECT 47uF 20% 16V	
* 1-639-402-11		SP CONNECTION (B) BOARD		C175	1-130-480-00	MYLAR 0.0056uF 5% 50V	
		*****		C176	1-130-473-00	MYLAR 0.0015uF 5% 50V	
* 1-639-403-11		VIDEO AUDIO BOARD		C177	1-124-464-11	ELECT 0.22uF 20% 50V	
		*****		C178	1-126-049-11	ELECT 22uF 20% 25V	
* 1-639-404-11		SP TERMINAL BOARD		C180	1-124-910-11	ELECT 47uF 20% 50V	
		*****		C182	1-124-910-11	ELECT 47uF 20% 50V	
		< CAPACITOR >		C184	1-126-049-11	ELECT 22uF 20% 25V	
C122	1-126-049-11	ELECT 22uF 20% 25V		C185	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C123	1-126-049-11	ELECT 22uF 20% 25V		C186	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C141	1-126-161-11	ELECT 2.2uF 20% 50V		C187	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C142	1-162-282-31	CERAMIC 100PF 10% 50V		C204	1-126-301-11	ELECT 1uF 20% 50V	
C143	1-162-219-31	CERAMIC 68PF 5% 50V		C206	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C144	1-126-022-11	ELECT 47uF 20% 16V		C207	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C145	1-130-480-00	MYLAR 0.0056uF 5% 50V		C208	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C146	1-130-473-00	MYLAR 0.0015uF 5% 50V		C209	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C147	1-124-464-11	ELECT 0.22uF 20% 50V		C237	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C148	1-126-049-11	ELECT 22uF 20% 25V		C238	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)	
C150	1-124-910-11	ELECT 47uF 20% 50V		C241	1-136-164-00	FILM 0.082uF 5% 50V	
C152	1-124-910-11	ELECT 47uF 20% 50V		C242	1-136-176-00	FILM 0.82uF 5% 50V	
C154	1-126-049-11	ELECT 22uF 20% 25V		C243	1-126-059-11	ELECT 10uF 20% 50V	
C155	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)					
C156	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)					
C157	1-162-286-31	CERAMIC 220PF 10% 50V (Germany)					
C171	1-126-161-11	ELECT 2.2uF 20% 50V					

INPUT

SP CONNECTION(B)

VIDEO AUDIO

SP TERMINAL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C244	1-126-300-11	ELECT	0.47uF 20% 50V	C903	1-161-379-00	CERAMIC	0.01uF 20% 25V (Germany)
C245	1-126-049-11	ELECT	22uF 20% 25V	C904	1-161-379-00	CERAMIC	0.01uF 20% 25V (Germany)
C246	1-126-049-11	ELECT	22uF 20% 25V	C905	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C247	1-126-049-11	ELECT	22uF 20% 25V	C906	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C248	1-126-049-11	ELECT	22uF 20% 25V	C907	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C249	1-162-290-31	CERAMIC	470PF 10% 50V	C908	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C250	1-162-290-31	CERAMIC	470PF 10% 50V	C909	1-161-379-00	CERAMIC	0.01uF 20% 25V (Germany)
C251	1-136-176-00	FILM	0.82uF 5% 50V	C910	1-161-379-00	CERAMIC	0.01uF 20% 25V (Germany)
C252	1-136-164-00	FILM	0.082uF 5% 50V	C911	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C253	1-162-290-31	CERAMIC	470PF 10% 50V	C912	1-136-163-00	FILM	0.068uF 5% 50V (Germany)
C254	1-162-290-31	CERAMIC	470PF 10% 50V	C919	1-164-159-11	CERAMIC	0.1uF 50V (Germany)
C255	1-126-300-11	ELECT	0.47uF 20% 50V	C920	1-164-159-11	CERAMIC	0.1uF 50V (Germany)
C266	1-162-219-31	CERAMIC	68PF 5% 50V				
C269	1-162-219-31	CERAMIC	68PF 5% 50V				
C270	1-162-207-31	CERAMIC	22PF 5% 50V				
C272	1-126-059-11	ELECT	10uF 20% 50V				
C282	1-164-159-11	CERAMIC	0.1uF 50V				
C291	1-162-207-31	CERAMIC	22PF 5% 50V				
C551	1-124-234-00	ELECT	22uF 20% 16V				
C552	1-126-049-11	ELECT	22uF 20% 25V				
C553	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C554	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C555	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C556	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C571	1-124-234-00	ELECT	22uF 20% 16V				
C572	1-126-049-11	ELECT	22uF 20% 25V				
C575	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C576	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C577	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C578	1-162-286-31	CERAMIC	220PF 10% 50V (Germany)				
C579	1-161-379-00	CERAMIC	0.01uF 20% 25V (Germany)				
C901	1-136-163-00	FILM	0.068uF 5% 50V (Germany)				
C902	1-136-163-00	FILM	0.068uF 5% 50V (Germany)				
						< CONNECTOR >	
				CN113	* 1-564-517-11	PLUG, CONNECTOR 2P	
				CN125	* 1-568-848-11	SOCKET, CONNECTOR 5P	
				CN181	1-569-497-11	SOCKET, CONNECTOR 11P	
				CN182	* 1-569-500-11	PIN, CONNECTOR 5P	
				CN184	* 1-569-504-11	PIN, CONNECTOR 9P	
				CN185	* 1-569-495-11	SOCKET, CONNECTOR 9P	
				CN187	* 1-568-826-11	SOCKET, CONNECTOR 7P	
				CN190	* 1-569-505-11	PIN, CONNECTOR 10P	
				CN191	* 1-569-505-11	PIN, CONNECTOR 10P	
				CN192	* 1-569-499-11	PIN, CONNECTOR 3P	
				CN550	* 1-569-502-11	PIN, CONNECTOR 7P	
				CN553	* 1-568-850-11	SOCKET, CONNECTOR 7P	
				CNJ101	1-565-352-11	JACK, PIN 2P (TUNER IN, PHONO IN)	
				CNJ102	1-565-320-11	JACK, PIN 6P (TAPE: IN/OUT)	
				CNJ103	1-565-320-11	JACK, PIN 6P (SDP: IN/OUT, DAT OUT)	
				CNJ501	1-565-258-11	JACK, PIN 4P (VIDEO 2 IN)	
				CNJ502	1-565-258-11	JACK, PIN 4P (VIDEO 1 IN)	
				CNJ506	1-568-572-11	JACK, PIN 2P (SURROUND SPEAKER)	
				TB101	1-537-336-21	TERMINAL BOARD (SP) (A/B)	

INPUT

SP CONNECTION(B)

VIDEO AUDIO

SP TERMINAL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< DIODE >					
D144	8-719-912-20	DIODE 1SS120		R113	1-247-903-00	CARBON 1M 5% 1/4W	
D145	8-719-912-20	DIODE 1SS120		R114	1-249-417-11	CARBON 1K 5% 1/4W	
D538	8-719-933-74	DIODE HZS12A2L		R115	1-249-417-11	CARBON 1K 5% 1/4W	
D901	8-719-815-85	DIODE 1S1585		R116	1-247-903-00	CARBON 1M 5% 1/4W	
D902	8-719-815-85	DIODE 1S1585		R117	1-249-417-11	CARBON 1K 5% 1/4W	
D903	8-719-815-85	DIODE 1S1585		R118	1-247-903-00	CARBON 1M 5% 1/4W	
D904	8-719-815-85	DIODE 1S1585		R119	1-247-903-00	CARBON 1M 5% 1/4W	
		< IC >		R120	1-249-417-11	CARBON 1K 5% 1/4W	
IC71	8-759-512-73	IC LM35DZ-SL		R121	1-249-437-11	CARBON 47K 5% 1/4W	
IC105	8-759-710-73	IC NJM4580L		R123	1-249-441-11	CARBON 100K 5% 1/4W	
IC106	8-759-634-50	IC M5218AL		R124	1-249-437-11	CARBON 47K 5% 1/4W	
IC107	8-759-634-50	IC M5218AL		R125	1-249-437-11	CARBON 47K 5% 1/4W	
IC116	8-759-634-50	IC M5218AL		R126	1-249-437-11	CARBON 47K 5% 1/4W	
IC118	8-759-805-13	IC LC7821		R127	1-249-441-11	CARBON 100K 5% 1/4W	
IC502	8-759-801-01	IC LC4966		R128	1-249-417-11	CARBON 1K 5% 1/4W	
		< TRANSISTOR >		R131	1-249-417-11	CARBON 1K 5% 1/4W	
Q107	8-729-119-76	TRANSISTOR 2SA1175-HFE		R133	1-249-429-11	CARBON 10K 5% 1/4W	
Q124	8-729-141-26	TRANSISTOR 2SC3622A-LK		R152	1-249-441-11	CARBON 100K 5% 1/4W	
Q125	8-729-141-26	TRANSISTOR 2SC3622A-LK		R153	1-249-416-11	CARBON 820 5% 1/4W	
Q126	8-729-620-05	TRANSISTOR 2SC2603-EF		R154	1-247-897-11	CARBON 560K 5% 1/4W	
Q127	8-729-620-05	TRANSISTOR 2SC2603-EF		R155	1-249-437-11	CARBON 47K 5% 1/4W	
Q128	8-729-224-61	TRANSISTOR 2SK246-Y		R156	1-249-417-11	CARBON 1K 5% 1/4W	
Q129	8-729-224-61	TRANSISTOR 2SK246-Y		R157	1-249-441-11	CARBON 100K 5% 1/4W	
Q130	8-729-900-63	TRANSISTOR DTA124ES		R158	1-249-405-11	CARBON 100 5% 1/4W	
Q131	8-729-900-36	TRANSISTOR DTC124ES		R159	1-249-417-11	CARBON 1K 5% 1/4W	
Q504	8-729-119-76	TRANSISTOR 2SA1175-HFE		R160	1-247-903-00	CARBON 1M 5% 1/4W	
Q508	8-729-119-76	TRANSISTOR 2SA1175-HFE		R161	1-249-413-11	CARBON 470 5% 1/4W	
		< RESISTOR >		R163	1-247-903-00	CARBON 1M 5% 1/4W	
R102	1-249-441-11	CARBON 100K 5% 1/4W(Germany)		R164	1-249-417-11	CARBON 1K 5% 1/4W	
R103	1-249-416-11	CARBON 820 5% 1/4W(Germany)		R165	1-249-417-11	CARBON 1K 5% 1/4W	
R104	1-247-897-11	CARBON 560K 5% 1/4W(Germany)		R166	1-247-903-00	CARBON 1M 5% 1/4W	
R105	1-249-437-11	CARBON 47K 5% 1/4W(Germany)		R167	1-249-417-11	CARBON 1K 5% 1/4W	
R106	1-249-417-11	CARBON 1K 5% 1/4W(Germany)		R168	1-247-903-00	CARBON 1M 5% 1/4W	
R107	1-249-441-11	CARBON 100K 5% 1/4W(Germany)		R169	1-247-903-00	CARBON 1M 5% 1/4W	
R108	1-249-405-11	CARBON 100 5% 1/4W		R170	1-249-417-11	CARBON 1K 5% 1/4W	
R109	1-247-903-00	CARBON 1M 5% 1/4W		R171	1-249-437-11	CARBON 47K 5% 1/4W	
R110	1-249-417-11	CARBON 1K 5% 1/4W		R173	1-249-441-11	CARBON 100K 5% 1/4W	
R111	1-249-413-11	CARBON 470 5% 1/4W		R174	1-249-437-11	CARBON 47K 5% 1/4W	
				R175	1-249-437-11	CARBON 47K 5% 1/4W	
				R176	1-249-437-11	CARBON 47K 5% 1/4W	
				R177	1-249-441-11	CARBON 100K 5% 1/4W	
				R178	1-249-417-11	CARBON 1K 5% 1/4W	
				R181	1-249-417-11	CARBON 1K 5% 1/4W	
				R183	1-247-895-00	CARBON 470K 5% 1/4W	
				R184	1-249-433-11	CARBON 22K 5% 1/4W	

INPUT

SP CONNECTION(B)

VIDEO AUDIO

SP TERMINAL

MAIN

Ref. No.	Part No.	Description	Remarks
R185	1-249-441-11	CARBON 100K 5% 1/4W	
R231	1-249-433-11	CARBON 22K 5% 1/4W	
R241	1-249-425-11	CARBON 4.7K 5% 1/4W	
R243	1-249-418-11	CARBON 1.2K 5% 1/4W	
R244	1-249-429-11	CARBON 10K 5% 1/4W	
R245	1-249-425-11	CARBON 4.7K 5% 1/4W	
R246	1-249-425-11	CARBON 4.7K 5% 1/4W	
R248	1-247-887-00	CARBON 220K 5% 1/4W	
R251	1-249-425-11	CARBON 4.7K 5% 1/4W	
R253	1-249-418-11	CARBON 1.2K 5% 1/4W	
R255	1-249-429-11	CARBON 10K 5% 1/4W	
R259	1-249-405-11	CARBON 100 5% 1/4W	
R260	1-249-405-11	CARBON 100 5% 1/4W	
R267	1-249-417-11	CARBON 1K 5% 1/4W	
R274	1-249-423-11	CARBON 3.3K 5% 1/4W	
R275	1-249-423-11	CARBON 3.3K 5% 1/4W	
R276	1-249-412-11	CARBON 390 5% 1/4W	
R277	1-249-412-11	CARBON 390 5% 1/4W	
R278	1-249-438-11	CARBON 56K 5% 1/4W	
R279	1-249-438-11	CARBON 56K 5% 1/4W	
R282	1-249-417-11	CARBON 1K 5% 1/4W	
R283	1-249-417-11	CARBON 1K 5% 1/4W	
R284	1-249-417-11	CARBON 1K 5% 1/4W	
R294	1-249-441-11	CARBON 100K 5% 1/4W	
R295	1-249-441-11	CARBON 100K 5% 1/4W	
R534	1-249-433-11	CARBON 22K 5% 1/4W	
R535	1-249-433-11	CARBON 22K 5% 1/4W	
R536	1-249-433-11	CARBON 22K 5% 1/4W	
R537	1-249-433-11	CARBON 22K 5% 1/4W	
R538	1-249-413-11	CARBON 470 5% 1/4W	
R552	1-247-903-00	CARBON 1M 5% 1/4W	
R553	1-249-417-11	CARBON 1K 5% 1/4W	
R554	1-249-417-11	CARBON 1K 5% 1/4W	
R555	1-247-903-00	CARBON 1M 5% 1/4W	
R556	1-249-417-11	CARBON 1K 5% 1/4W	
R557	1-247-903-00	CARBON 1M 5% 1/4W	
R558	1-249-417-11	CARBON 1K 5% 1/4W	
R559	1-247-903-00	CARBON 1M 5% 1/4W	
R572	1-247-903-00	CARBON 1M 5% 1/4W	
R573	1-249-417-11	CARBON 1K 5% 1/4W	
R574	1-249-417-11	CARBON 1K 5% 1/4W	
R575	1-247-903-00	CARBON 1M 5% 1/4W	
R576	1-249-417-11	CARBON 1K 5% 1/4W	
R577	1-247-903-00	CARBON 1M 5% 1/4W	
R578	1-249-417-11	CARBON 1K 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R579	1-247-903-00	CARBON 1M 5% 1/4W	
R901	1-249-435-11	CARBON 33K 5% 1/4W	
R902	1-249-435-11	CARBON 33K 5% 1/4W	
R903	1-249-435-11	CARBON 33K 5% 1/4W	
R904	1-249-435-11	CARBON 33K 5% 1/4W	
R905	1-247-727-11	CARBON 10 5% 1/2W	(Germany)
R906	1-247-727-11	CARBON 10 5% 1/2W	(Germany)
R907	1-247-727-11	CARBON 10 5% 1/2W	(Germany)
R908	1-247-727-11	CARBON 10 5% 1/2W	(Germany)

* A-4345-214-A	MAIN AMPLIFIER BOARD, COMPLETE (AEP, Italian)		*****
* A-4345-230-A	MAIN AMPLIFIER BOARD, COMPLETE (UK)		*****
* A-4345-231-A	MAIN AMPLIFIER BOARD, COMPLETE (E, Saudi Arabia)		*****
* A-4345-215-A	MAIN AMPLIFIER BOARD, COMPLETE (Germany)		*****
* 1-533-213-31	HOLDER, FUSE		
* 3-309-144-21	HEAT SINK		
* 4-880-403-11	HEAT SINK		
7-682-548-04	SCREW +BVTT 3X8 (S)		
< CAPACITOR >			
C15	1-124-478-11	ELECT 100uF 20% 25V	(EXCEPT. Germany)
C15	1-126-023-11	ELECT 100uF 20% 16V	(Germany)
C16	1-126-022-11	ELECT 47uF 20% 16V	(EXCEPT. Germany)
C16	1-124-478-11	ELECT 100uF 20% 25V	(Germany)
C19	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C20	1-161-061-11	CERAMIC 0.068uF 10% 50V	
C41	1-102-394-11	CERAMIC 0.01uF 250V	
C71	1-161-494-00	CERAMIC 0.022uF 25V	
C72	1-161-494-00	CERAMIC 0.022uF 25V	

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D117	8-719-200-77	DIODE 10E2N		R72	1-249-429-11	CARBON 10K 5% 1/4W	
D118	8-719-200-77	DIODE 10E2N		R73	1-247-858-11	CARBON 13K 5% 1/4W (AEP, UK, Germany, Italian)	
D119	8-719-200-77	DIODE 10E2N		R73	1-249-431-11	CARBON 15K 5% 1/4W (E, Saudi Arabia)	
D120	8-719-200-77	DIODE 10E2N		R74	1-249-442-11	CARBON 510 5% 1/4W (AEP, UK, Germany, Italian)	
D122	8-719-912-20	DIODE 1SS120		R74	1-249-415-11	CARBON 680 5% 1/4W (E, Saudi Arabia)	
D135	8-719-815-85	DIODE 1S1585		R134	1-249-429-11	CARBON 10K 5% 1/4W	
D150	8-719-200-77	DIODE 10E2N		R136	1-249-417-11	CARBON 1K 5% 1/4W	
D151	8-719-200-77	DIODE 10E2N		R137	1-247-874-11	CARBON 62K 5% 1/4W	
D152	8-719-200-77	DIODE 10E2N		R138	1-249-412-11	CARBON 390 5% 1/4W	
D153	8-719-200-77	DIODE 10E2N		R139	1-247-874-11	CARBON 62K 5% 1/4W	
D158	8-719-010-17	DIODE UZ-3. OBSB		R140	1-247-760-11	CARBON 4.7K 5% 1/2W	
D401	8-719-815-85	DIODE 1S1585		R141	1-247-760-11	CARBON 4.7K 5% 1/2W	
D402	8-719-912-20	DIODE 1SS120		R142	1-247-752-11	CARBON 1K 5% 1/2W	
D905	8-719-815-85	DIODE 1S1585		R143	1-247-752-11	CARBON 1K 5% 1/2W	
		< IC >		R144	△1-212-881-11	FUSIBLE 100 5% 1/4W F	
IC101	8-759-604-34	IC M5F7815L		R145	1-249-417-11	CARBON 1K 5% 1/4W	
IC102	8-759-245-87	IC TA7915S		R146	1-249-431-11	CARBON 15K 5% 1/4W	
IC103	8-759-630-49	IC M5F7806KL		R147	1-217-156-00	RES, METAL PLATE 0.22	
IC108	8-759-984-03	IC LM339N		R148	1-249-441-11	CARBON 100K 5% 1/4W	
IC112	8-759-111-68	IC uPC1237HA		R149	△1-212-881-11	FUSIBLE 100 5% 1/4W F	
IC113	8-749-921-04	IC STK4211MK2 (AEP, UK, Germany, Italian)		R150	1-247-727-11	CARBON 10 5% 1/2W	
IC113	8-749-922-65	IC STK4221MK2 (E, Saudi Arabia)		R186	1-249-417-11	CARBON 1K 5% 1/4W	
IC115	8-759-635-63	IC M51943BSL		R187	1-247-874-11	CARBON 62K 5% 1/4W	
ICP106	1-532-842-11	IC, LINK		R188	1-249-412-11	CARBON 390 5% 1/4W	
ICP107	1-532-842-11	IC, LINK		R189	1-247-874-11	CARBON 62K 5% 1/4W	
ICP109	1-532-842-11	IC, LINK		R190	1-247-760-11	CARBON 4.7K 5% 1/2W	
		< TRANSISTOR >		R191	1-247-760-11	CARBON 4.7K 5% 1/2W	
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF		R192	1-249-417-11	CARBON 1K 5% 1/4W	
Q102	8-729-900-63	TRANSISTOR DTA124ES		R193	1-249-431-11	CARBON 15K 5% 1/4W	
Q106	8-729-900-36	TRANSISTOR DTC124ES		R194	1-249-441-11	CARBON 100K 5% 1/4W	
Q112	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA		R195	1-247-727-11	CARBON 10 5% 1/2W	
Q113	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA		R196	1-249-437-11	CARBON 47K 5% 1/4W	
Q121	8-729-900-63	TRANSISTOR DTA124ES		R197	1-217-156-00	RES, METAL PLATE 0.22	
Q123	8-729-801-93	TRANSISTOR 2SD1387		R202	△1-216-457-00	METAL OXIDE 1.2K 5% 2W F	
Q141	8-729-801-93	TRANSISTOR 2SD1387		R203	1-249-427-11	CARBON 6.8K 5% 1/4W	
Q408	8-729-620-05	TRANSISTOR 2SC2603-EF		R204	1-249-427-11	CARBON 6.8K 5% 1/4W	
		< RESISTOR >		R205	1-249-437-11	CARBON 47K 5% 1/4W	
R18	1-247-887-00	CARBON 220K 5% 1/4W		R206	1-249-441-11	CARBON 100K 5% 1/4W	
R19	1-249-433-11	CARBON 22K 5% 1/4W		R207	1-249-429-11	CARBON 10K 5% 1/4W	
R20	1-249-433-11	CARBON 22K 5% 1/4W		R210	1-249-438-11	CARBON 56K 5% 1/4W	
R21	△1-215-885-00	METAL OXIDE 68 5% 2W F					
R71	1-249-421-11	CARBON 2.2K 5% 1/4W					

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

MAIN **PANEL** **SP CONNECTION(A)** **HEADPHONE** **MICROPHONE** **VOLUME**

Ref. No.	Part No.	Description	Remarks
R219	1-249-437-11	CARBON 47K 5% 1/4W	
R226	1-247-834-11	CARBON 1.3K 5% 1/4W	
R227	1-249-410-11	CARBON 270 5% 1/4W	
R228	1-249-431-11	CARBON 15K 5% 1/4W	
R229	1-249-425-11	CARBON 4.7K 5% 1/4W	
R238	1-249-425-11	CARBON 4.7K 5% 1/4W	
R239	1-249-429-11	CARBON 10K 5% 1/4W	
R240	1-249-417-11	CARBON 1K 5% 1/4W	
R256	1-249-433-11	CARBON 22K 5% 1/4W	
R258	△1-212-968-00	FUSIBLE 27 5% 1/2W F	
R265	1-249-423-11	CARBON 3.3K 5% 1/4W	
R268	1-249-423-11	CARBON 3.3K 5% 1/4W	
R269	1-249-421-11	CARBON 2.2K 5% 1/4W	
R270	1-249-441-11	CARBON 100K 5% 1/4W	
R271	1-249-423-11	CARBON 3.3K 5% 1/4W	
R272	1-249-417-11	CARBON 1K 5% 1/4W	
R280	1-249-441-11	CARBON 100K 5% 1/4W	
R285	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R286	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R287	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R288	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R289	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R290	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R291	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R292	△1-214-789-00	RES, METAL PLATE 0.1 10% 5W (E, Saudi Arabia)	
R402	1-249-393-11	CARBON 10 5% 1/4W	
R403	1-249-425-11	CARBON 4.7K 5% 1/4W	
R404	1-249-429-11	CARBON 10K 5% 1/4W	
		< RELAY >	
RY101	1-515-765-11	RELAY	
		< SWITCH >	
S101	△1-554-920-51	SWITCH, PUSH (AC POWER) (1 KEY)	

*	A-4345-228-A	PANEL BOARD, COMPLETE	*****
*	1-639-406-11	SP CONNECTION (A) BOARD	*****
*	1-639-407-11	HEADPHONE BOARD	*****
*	1-639-408-11	MICROPHONE BOARD	*****
*	1-639-410-11	VOLUME BOARD	*****

Ref. No.	Part No.	Description	Remarks
	* 4-942-010-01	HOLDER (1 GANG)	
	* 4-942-012-01	HOLDER (3 GANG), LED	
		< CAPACITOR >	
C158	1-126-059-11	ELECT 10uF 20% 50V	
C188	1-126-059-11	ELECT 10uF 20% 50V	
C301	1-126-059-11	ELECT 10uF 20% 50V	
C302	1-126-059-11	ELECT 10uF 20% 50V	
C303	1-126-022-11	ELECT 47uF 20% 16V	
C304	1-126-059-11	ELECT 10uF 20% 50V	
C305	1-126-059-11	ELECT 10uF 20% 50V	
C307	1-161-494-00	CERAMIC 0.022uF 25V	
C309	1-161-494-00	CERAMIC 0.022uF 25V	
C310	1-126-022-11	ELECT 47uF 20% 16V	
C312	1-161-494-00	CERAMIC 0.022uF 25V	
C401	1-161-494-00	CERAMIC 0.022uF 25V	
C402	1-161-494-00	CERAMIC 0.022uF 25V	
C403	1-161-494-00	CERAMIC 0.022uF 25V	
C404	1-125-486-11	DUBLE LAYERS 0.22F 5.5V	
C405	1-126-049-11	ELECT 22uF 20% 25V	
C406	1-161-494-00	CERAMIC 0.022uF 25V	
C407	1-136-153-00	FILM 0.01uF 5% 50V	
C408	1-164-159-11	CERAMIC 0.1uF 50V	
C409	1-161-494-00	CERAMIC 0.022uF 25V	
C480	1-136-165-00	FILM 0.1uF 5% 50V	
C481	1-136-153-00	FILM 0.01uF 5% 50V	
C486	1-161-494-00	CERAMIC 0.022uF 25V	
C487	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C501	1-124-471-00	ELECT 1000uF 20% 6.3V	
C502	1-126-059-11	ELECT 10uF 20% 50V	
C503	1-124-471-00	ELECT 1000uF 20% 6.3V	
C504	1-126-059-11	ELECT 10uF 20% 50V	
C505	1-124-471-00	ELECT 1000uF 20% 6.3V	
C506	1-126-059-11	ELECT 10uF 20% 50V	
C508	1-126-059-11	ELECT 10uF 20% 50V	
C509	1-126-049-11	ELECT 22uF 20% 25V	
C510	1-161-494-00	CERAMIC 0.022uF 25V	
C701	1-126-049-11	ELECT 22uF 20% 25V	
C703	1-126-161-11	ELECT 2.2uF 20% 50V	
C704	1-161-377-00	CERAMIC 0.0047uF 30% 16V	
C705	1-162-219-31	CERAMIC 68PF 5% 50V	
C706	1-162-290-31	CERAMIC 470PF 10% 50V	
C707	1-161-377-00	CERAMIC 0.0047uF 30% 16V	
C708	1-162-293-31	CERAMIC 820PF 10% 50V	

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

PANEL

SP CONNECTION(A)

HEADPHONE

MICROPHONE

VOLUME

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R311	1-249-433-11	CARBON 22K 5% 1/4W		R448	1-249-429-11	CARBON 10K 5% 1/4W	
R312	1-249-410-11	CARBON 270 5% 1/4W		R450	1-249-417-11	CARBON 1K 5% 1/4W	
R313	1-249-433-11	CARBON 22K 5% 1/4W		R459	1-247-903-00	CARBON 1M 5% 1/4W	
R314	1-249-433-11	CARBON 22K 5% 1/4W		R461	1-249-417-11	CARBON 1K 5% 1/4W	
R315	1-249-433-11	CARBON 22K 5% 1/4W		R471	1-249-417-11	CARBON 1K 5% 1/4W	
R316	1-249-433-11	CARBON 22K 5% 1/4W		R480	1-247-885-00	CARBON 180K 5% 1/4W	
R317	1-249-433-11	CARBON 22K 5% 1/4W		R481	1-249-438-11	CARBON 56K 5% 1/4W	
R318	1-249-433-11	CARBON 22K 5% 1/4W		R482	1-249-429-11	CARBON 10K 5% 1/4W	
R319	1-249-433-11	CARBON 22K 5% 1/4W		R484	1-249-429-11	CARBON 10K 5% 1/4W	
R320	1-249-410-11	CARBON 270 5% 1/4W		R485	1-249-429-11	CARBON 10K 5% 1/4W	
R321	1-249-433-11	CARBON 22K 5% 1/4W		R486	1-249-424-11	CARBON 3.9K 5% 1/4W	
R322	1-249-433-11	CARBON 22K 5% 1/4W		R490	1-249-417-11	CARBON 1K 5% 1/4W	
R394	1-249-421-11	CARBON 2.2K 5% 1/4W		R491	1-249-417-11	CARBON 1K 5% 1/4W	
R395	1-249-421-11	CARBON 2.2K 5% 1/4W		R492	1-249-417-11	CARBON 1K 5% 1/4W	
R396	1-249-421-11	CARBON 2.2K 5% 1/4W		R493	1-249-417-11	CARBON 1K 5% 1/4W	
R397	1-249-421-11	CARBON 2.2K 5% 1/4W		R496	1-249-417-11	CARBON 1K 5% 1/4W	
R399	1-249-429-11	CARBON 10K 5% 1/4W		R498	1-249-417-11	CARBON 1K 5% 1/4W	
R405	1-249-417-11	CARBON 1K 5% 1/4W		R499	1-249-417-11	CARBON 1K 5% 1/4W	
R406	1-249-433-11	CARBON 22K 5% 1/4W		R501	1-249-403-11	CARBON 68 5% 1/4W	
R407	1-249-417-11	CARBON 1K 5% 1/4W		R502	1-249-429-11	CARBON 10K 5% 1/4W	
R408	1-249-414-11	CARBON 560 5% 1/4W		R503	1-247-804-11	CARBON 75 5% 1/4W	
R412	1-249-417-11	CARBON 1K 5% 1/4W		R504	1-249-429-11	CARBON 10K 5% 1/4W	
R413	1-249-417-11	CARBON 1K 5% 1/4W		R505	1-249-403-11	CARBON 68 5% 1/4W	
R414	1-249-433-11	CARBON 22K 5% 1/4W		R506	1-247-804-11	CARBON 75 5% 1/4W	
R415	1-249-433-11	CARBON 22K 5% 1/4W		R507	1-249-429-11	CARBON 10K 5% 1/4W	
R416	1-249-429-11	CARBON 10K 5% 1/4W		R508	1-249-403-11	CARBON 68 5% 1/4W	
R417	1-249-433-11	CARBON 22K 5% 1/4W		R509	1-247-804-11	CARBON 75 5% 1/4W	
R418	1-249-433-11	CARBON 22K 5% 1/4W		R511	1-249-408-11	CARBON 180 5% 1/4W	
R419	1-249-433-11	CARBON 22K 5% 1/4W		R512	1-249-408-11	CARBON 180 5% 1/4W	
R420	1-249-417-11	CARBON 1K 5% 1/4W		R513	1-249-408-11	CARBON 180 5% 1/4W	
R421	1-249-437-11	CARBON 47K 5% 1/4W		R514	1-249-408-11	CARBON 180 5% 1/4W	
R422	1-249-435-11	CARBON 33K 5% 1/4W		R515	1-249-408-11	CARBON 180 5% 1/4W	
R423	1-249-433-11	CARBON 22K 5% 1/4W		R516	1-249-408-11	CARBON 180 5% 1/4W	
R434	1-249-429-11	CARBON 10K 5% 1/4W		R517	1-249-417-11	CARBON 1K 5% 1/4W	
R435	1-249-429-11	CARBON 10K 5% 1/4W		R518	1-249-417-11	CARBON 1K 5% 1/4W	
R436	1-249-429-11	CARBON 10K 5% 1/4W		R520	1-249-433-11	CARBON 22K 5% 1/4W	
R437	1-249-429-11	CARBON 10K 5% 1/4W		R521	1-249-433-11	CARBON 22K 5% 1/4W	
R438	1-249-429-11	CARBON 10K 5% 1/4W		R531	1-249-429-11	CARBON 10K 5% 1/4W	
R439	1-249-429-11	CARBON 10K 5% 1/4W		R601	1-247-727-11	CARBON 10 5% 1/2W	
R440	1-249-410-11	CARBON 270 5% 1/4W		R651	1-247-749-11	CARBON 560 5% 1/2W	
R441	1-249-410-11	CARBON 270 5% 1/4W		R701	1-249-417-11	CARBON 1K 5% 1/4W	
R442	1-249-410-11	CARBON 270 5% 1/4W		R702	1-247-903-00	CARBON 1M 5% 1/4W	
R443	1-249-429-11	CARBON 10K 5% 1/4W		R703	1-247-804-11	CARBON 75 5% 1/4W	
R445	1-249-410-11	CARBON 270 5% 1/4W		R704	1-249-441-11	CARBON 100K 5% 1/4W	
R446	1-249-429-11	CARBON 10K 5% 1/4W		R705	1-249-417-11	CARBON 1K 5% 1/4W	

PANEL

SP CONNECTION(A)

HEADPHONE

MICROPHONE

VOLUME

Ref. No.	Part No.	Description	Remarks
R706	1-249-429-11	CARBON 10K 5% 1/4W	
R707	1-249-432-11	CARBON 18K 5% 1/4W	
R708	1-249-417-11	CARBON 1K 5% 1/4W	
R709	1-249-417-11	CARBON 1K 5% 1/4W	
R710	1-249-432-11	CARBON 18K 5% 1/4W	
R711	1-249-417-11	CARBON 1K 5% 1/4W	
R751	1-249-417-11	CARBON 1K 5% 1/4W	
R752	1-247-903-00	CARBON 1M 5% 1/4W	
R801	1-249-425-11	CARBON 4.7K 5% 1/4W	
R802	1-249-410-11	CARBON 270 5% 1/4W	
R803	1-249-417-11	CARBON 1K 5% 1/4W	
R804	1-249-417-11	CARBON 1K 5% 1/4W	
R805	1-247-834-11	CARBON 1.3K 5% 1/4W	
R806	1-249-415-11	CARBON 680 5% 1/4W	
R807	1-249-429-11	CARBON 10K 5% 1/4W	
R809	1-249-429-11	CARBON 10K 5% 1/4W	
< VARIABLE RESISTOR >			
RV401	1-241-307-11	RES. VAR. CARBON 10K/10K (DBFB-LEVEL)	
RV501	1-238-459-11	RES. VAR. CARBON 100K (BALANCE)	
RV701	1-241-301-11	RES. VAR. CARBON 50K (LEVEL)	
RV801	1-238-708-11	RES. VAR. CARBON 10K/100K/100K (VOLUME)	
< SWITCH >			
FC301	1-572-460-11	SWITCH, ROTARY (AUDIO FUNCTION)	
FC302	1-572-554-11	SWITCH, ROTARY (VIDEO FUNCTION)	
S103	1-571-987-11	SWITCH, PUSH (2 KEY) (SPEAKER A/B)	
S401	1-554-303-21	SWITCH, TACTILE (SET)	
S402	1-554-303-21	SWITCH, TACTILE (PROG 1)	
S403	1-554-303-21	SWITCH, TACTILE (PROG 2)	
S404	1-554-303-21	SWITCH, TACTILE (PROG 3)	
S405	1-554-303-21	SWITCH, TACTILE (PROG 4)	
< VIBRATOR >			
X401	1-577-359-21	VIBRATOR, CERAMIC	

MISCELLANEOUS			

10	1-690-100-11	WIRE, FLAT TYPE (5 CORE)	
11	1-690-102-11	WIRE, FLAT TYPE (17 CORE)	
18	1-541-889-11	MOTOR, DC FAN	
62	1-690-101-11	WIRE, FLAT TYPE (7 CORE)	
CN199	△1-526-751-00	OUTLET, AC(UK)	

Ref. No.	Part No.	Description	Remarks
CN199	△1-526-794-11	OUTLET, AC(AEP, Germany, Italian, Saudi Arabia)	
CN199	△1-526-882-00	OUTLET, AC(E)	
CNP901	△1-556-560-21	CORD, POWER(UK)	
CNP901	△1-575-651-11	CORD, POWER(AEP, Germany, Italian)	
CNP901	△1-575-654-11	CORD, POWER(Saudi Arabia)	
CNP901	△1-575-656-11	CORD, POWER(E)	
F101	△1-532-388-51	FUSE (2A)	
F102	△1-532-388-51	FUSE (2A) (EXCEPT UK)	
S102	△1-570-307-11	SWITCH, VOLTAGE CHANGE (E, Saudi Arabia)	
T101	△1-450-526-11	TRANSFORMER, POWER (AEP, UK, Germany, Italian)	
T101	△1-450-527-11	TRANSFORMER, POWER (E, Saudi Arabia)	

ACCESSORY & PACKING MATERIAL			

3-701-630-00	BAG, POLYETHYLENE (Italian)		
3-753-427-11	MANUAL, INSTRUCTION (English, French, Spanish, portuguese) AEP		
3-753-427-41	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian)AEP, Germany, Italian		
4-920-940-01	SHEET (A), PROTECTION		
* 4-946-088-01	INDIVIDUAL CARTON (AEP, Germany, Italian)		
* 4-946-092-01	CUSHION		

HARDWARE LIST			

# 1	7-621-773-93	SCREW (PANEL 2.6 TP2)	
# 2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
# 3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
# 4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
# 5	7-682-547-04	SCREW +BVTT 3X6 (S)	
# 6	7-682-547-09	SCREW +BVTT 3X6 (S)	
# 7	7-682-560-04	SCREW +BVTT 4X6 (S)	
# 8	7-682-548-04	SCREW +BVTT 3X8 (S)	
# 9	7-621-849-00	SCREW, TAPPING	
#10	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S (E, Saudi Arabia)	

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