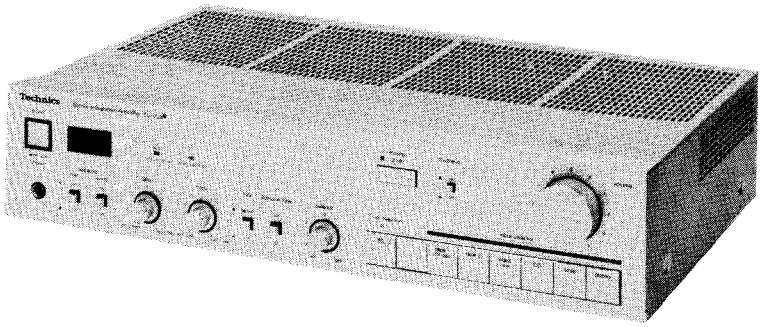
ORDER NO. HAD8407286OC8

Service Manual

Amplifier

SU-V2X

Stereo Integrated Amplifier
Computer Drive New Class A



Color

(K) · · · · Black Type
(S) · · · · Silver Type

Color	Area
(K)(S)	[E] · · · · · Switzerland and Scandinavia
(S)	[EF] · · · · France
(K)(S)	[Ei] · · · · Italy
(K)(S)	[EK] · · · · United Kingdom
(K)(S)	[EH] · · · · Holland
(K)(S)	[EGA] · · · F.R. Germany
(K)(S)	[EB] · · · · Belgium
(K)(S)	[XA] · · · Asia, Latin America, Africa, Middle Near East and Oceania
(K)(S)	[XL] · · · Australia

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

1 kHz continuous power output
both channels driven — 2×50 W (4Ω), 2×50 W (8Ω)

20 Hz~20 kHz continuous power output
both channels driven — 2×45 W (4Ω), 2×45 W (8Ω)

Total harmonic distortion
rated power at 20 Hz~20 kHz — 0.03% (4Ω), 0.005% (8Ω)
rated power at 1 kHz — 0.007% (4Ω), 0.003% (8Ω)
half power at 20 Hz~20 kHz — 0.003% (8Ω)
half power at 1 kHz — 0.001% (8Ω)

Intermodulation distortion
rated power at 250 Hz: 8 kHz=4:1, 8Ω — 0.03%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω — 0.005%

Power bandwidth
both channels driven, −3 dB — 5 Hz~40 kHz (4Ω, 0.03%), 5 Hz~50 kHz (8Ω, 0.02%)

Residual hum and noise — 0.9 mV

Damping factor — 30 (4Ω), 60 (8Ω)

Input sensitivity and impedance
PHONO — 2.5 mV/47 kΩ
TUNER, CD, VIDEO/AUX — 150 mV/22 kΩ
TAPE 1/DA TAPE, TAPE 2 — 150 mV/22 kΩ

PHONO maximum input voltage (1 kHz, RMS) — 160 mV

S/N
rated power (4Ω)
PHONO — 76 dB (IHF, A: 83 dB)
TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2 — 91 dB (IHF, A: 102 dB)

Tone controls
BASS — 50 Hz, +10 dB~−10 dB
TREBLE — 20 kHz, +10 dB~−10 dB

Frequency response
PHONO — RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2 — 5 Hz~120 kHz (−3 dB), +0, −0.2 dB (20 Hz~20 kHz)

Muting — −20 dB

Subsonic filter — 30 Hz, −6 dB/oct.

Loudness control (volume at −30 dB) — 50 Hz, +9 dB

Output voltage
REC OUT — 150 mV

Channel balance, VIDEO/AUX 250 Hz~6,300 Hz — ±1 dB

Channel separation, VIDEO/AUX 1 kHz — 60 dB

Headphones output level and impedance — 450 mV/330Ω

Load impedance
MAIN or REMOTE — 4Ω~16Ω
MAIN and REMOTE — 8Ω~16Ω

■ GENERAL

Power consumption — 295 W

Power supply
For United Kingdom — AC 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
For continental Europe — AC 50 Hz/60 Hz, 220 V
For others — AC 50 Hz/60 Hz, 110 V/120 V/220 V/240 V

Dimensions (W×H×D) — 430×97×290 mm (16-15/16"×3-27/32"×11-7/16")

Weight — 6.3 kg (13.9 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvent.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ CONTENTS

■ PROTECTION CIRCUITRY

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

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

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

If this occurs, follow the procedure outlines below:

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

Note

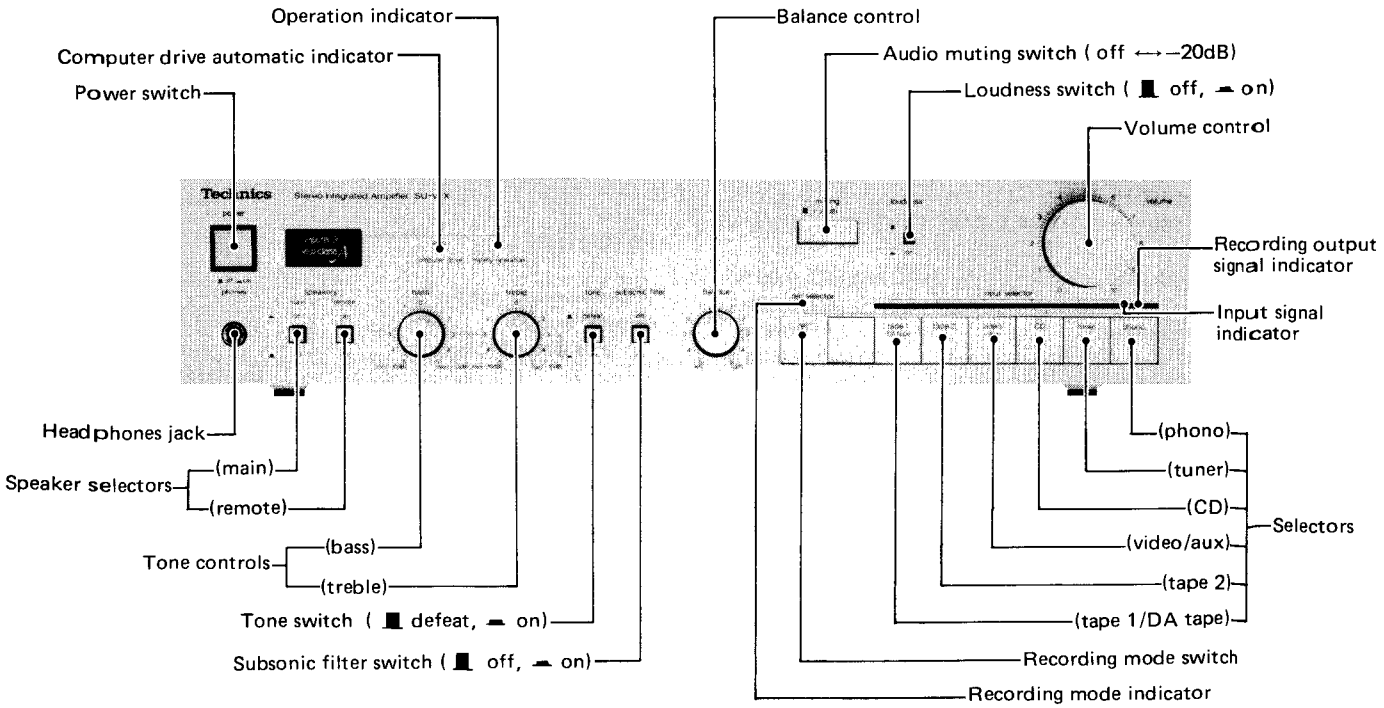
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

1. Disconnect AC power, Discharge both Power Supply Capacitors C701 and C702 (8200μF) through a 10Ω, 5W resistor to ground.
   DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may distroy solid state devices.
2. After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
   Current consumption at 50/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/120V/220V/240V.

Power supply voltage		AC110V	AC120V	AC220V	AC240V
Consumed current	50/60Hz	180 ~ 400mA	170 ~ 360mA	90 ~ 200mA	80 ~ 180mA

■ LOCATION OF CONTROLS



ESPAÑOL

■ ESPECIFICACIONES

(DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 1 kHz	
en ambos canales	2×50 W (4Ω)
	2×50 W (8Ω)
Potencia continua de 20 Hz~20 kHz	
en ambos canales	2×45 W (4Ω)
	2×45 W (8Ω)
Distorsión armónica total	
potencia de régimen a 20 Hz~20 kHz	0,03% (4Ω)
	0,005% (8Ω)
potencia de régimen a 1 kHz	0,007% (4Ω)
	0,003% (8Ω)
mitad de potecia a 20 Hz~20 kHz	0,003% (8Ω)
mitad de potencia a 1 kHz	0,001% (8Ω)
Distorsión por intermodulación	
potencia de régimen a 250 Hz: 8 kHz=4:1, 8Ω	0,03%
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,005%
Ancho de banda de potencia	
en ambos canales, −3 dB	5 Hz~40 kHz (4Ω, 0,03%)
	5 Hz~50 kHz (8Ω, 0,02%)
Zumbido residual y ruido	0,9 mV
Factor de amortiguamiento	30 (4Ω), 60 (8Ω)
Sensibilidad e impedancia de entrada	
TOCADISC. (PHONO)	2,5 mV/47 kΩ
SINTON., DISCO COMPACTOR, VIDEO/AUX. (TUNER, CD, VIDEO/AUX)	150 mV/22 kΩ
GRAB. 1/DIGITAL, GRAB. 2. (TAPE 1/DA TAPE, TAPE 2)	150 mV/22 kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)	160 mV
Relación de señal a ruido	
potencia de régimen (4Ω)	
TOCADIS. (PHONO)	76 dB (IHF, A: 83 dB)
SINTON., DISCO COMPACTO, VIDEO/AUX, GRAB. 1/DIGITAL, GRAB. 2 (TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2)	91 dB (IHF, A: 102 dB)
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)
SINTON., DISCO COMPACTO, VIDEO/AUX, GRAB. 1/DIGITAL, GRAB. 2 (TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE2)	5 Hz~120 kHz (−3 dB), +0, −0,2 dB (20 Hz~20 kHz)
Controles de tono	
BAJOS (BASS)	50 Hz, +10 dB~−10 dB
AGUDOS (TREBLE)	20 kHz, +10 dB~−10 dB
Silenciamiento	−20 dB
Filtro subsónico	30 Hz, −6 dB/oct.
Control de sonoridad (volumen a −30 dB)	50 Hz, +9 dB
Voltaje de salida	
SAL. GRAB. (REC OUT)	150 mV
Equilibrio de canales, VIDEO/AUX 250 Hz~6300 Hz	±1 dB
Separación de canales, VIDEO/AUX 1 kHz	60 dB
Impedancia y nivel de salida de los auriculares	450 mV/330Ω
Impedancia de carga	
MAIN o REMOTE	4Ω~16Ω
MAIN y REMOTE	8Ω~16Ω

■ GENERAL

Consumo de energia	295 W
Alimentación de energia	
Para Europa continental	CA 50/60 Hz, 220 V
Para otros paises	CA 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Dimensiones (An.×Al.×Prof.)	430×97×290 mm
Peso	6,3 kg

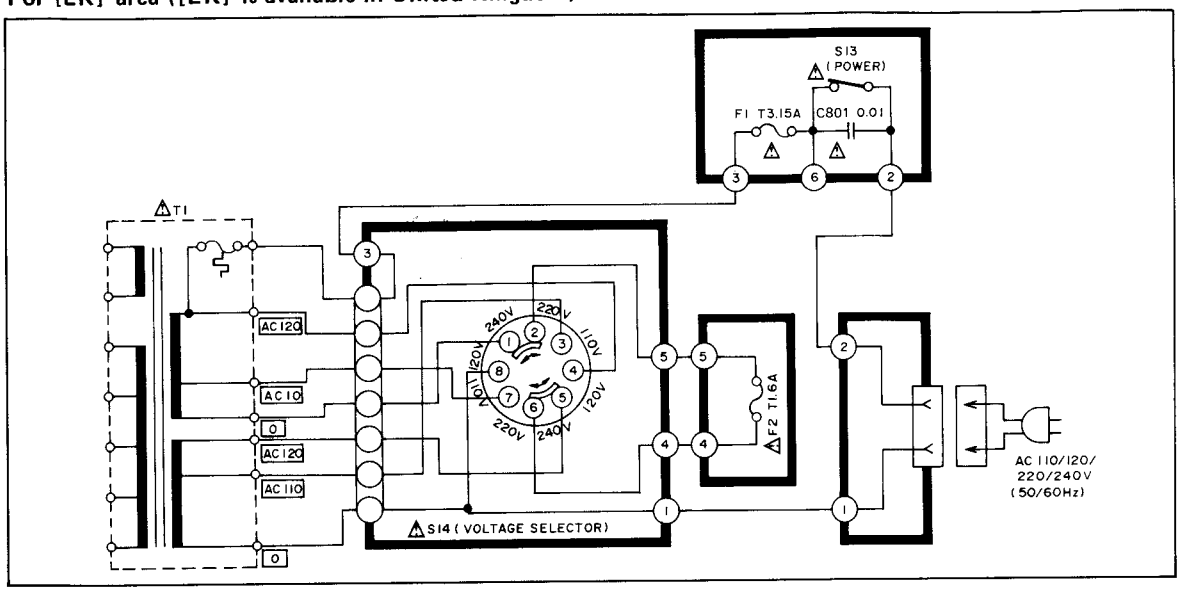
Nota:
La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

Estas especificaciones están sujetas a cualquier cambio sin previo eviso.

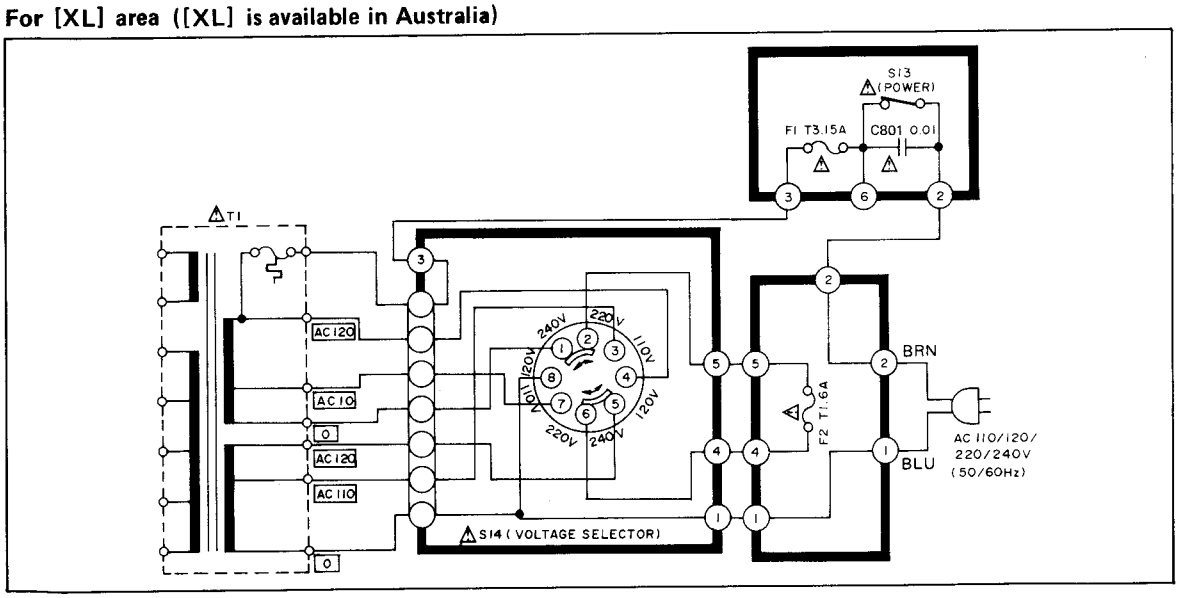
■ CIRCUITS TO BE CHANGED AND THE AREAS

- **Power supply circuits**

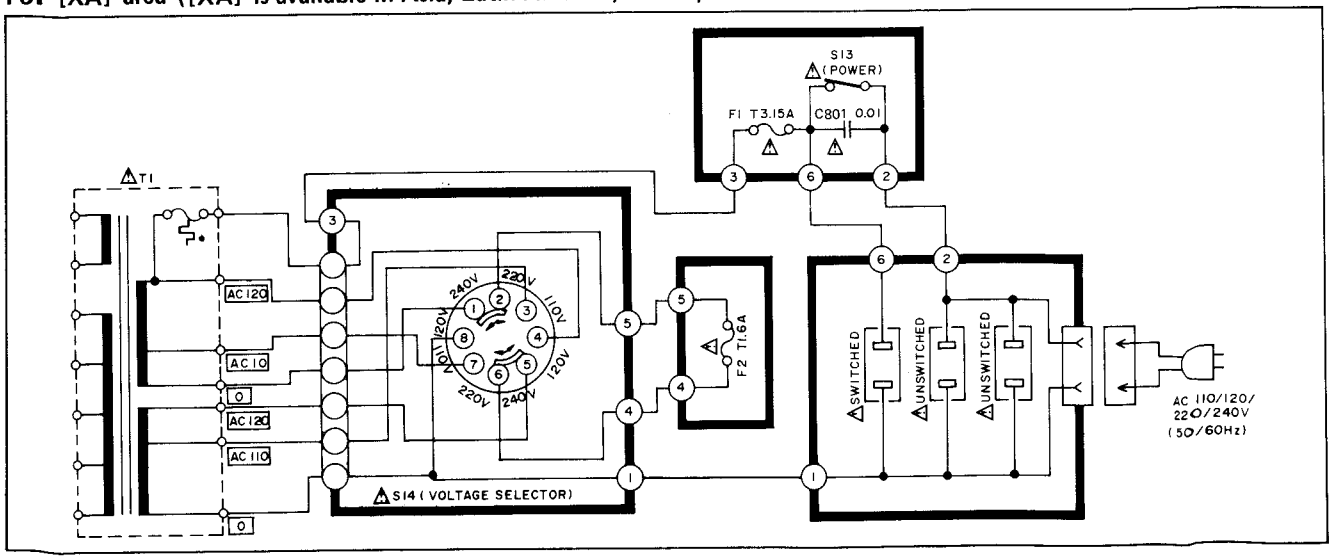
For [EK] area ([EK] is available in United Kingdom)



For [XL] area ([XL] is available in Australia)



For [XA] area ([XA] is available in Asia, Latin America, Africa, Middle Near East and Oceania)



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ORDER NO. HAD84072860C8–A

DEUTSCH

Stereo Integrated Amplifier

SU-V2X

- This booklet includes the specifications of Model SU-V2X (Order No. HAD84072860C8) written in German, French and Spanish.
- File this booklet together with the service manual of Model SU-V2X.

- Dieses Büchlein umfaßt die technischen Daten von Modell SU-V2X (Bestell-Nr. HAD84072860C8) in den Sprachen Deutsch, Französisch und Spanisch.
- Bewahren Sie dieses Büchlein zusammen mit dem Service-Handbuch von Modell SU-V2X auf.

- Cette brochure comprend les spécifications du Modèle SU-V2X (N° d'Ordre: HAD84072860C8) écrites en français, en allemand et en espagnol.
- Classer cette brochure en même temps qu'avec le manuel de service du Modèle SU-V2X.

- Este librito incluye las especificaciones de Modelo SU-V2X (Pedido Nº. HAD84072860C8) escritas en alemán, francés y español.
- Guardar este librito juntamente con el manual de servicio de Modelo SU-V2X.

DEUTSCH

■ TECHNISCHE DATEN

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2×50 W (4Ω)
	2×50 W (8Ω)
Dauerton-Ausgangsleistung bei 20 Hz~20 kHz	
beide Kanäle ausgesteuert	2×45 W (4Ω)
	2×45 W (8Ω)
Gesamtklirrfaktor	
Nennleistung bei 20 Hz~20 kHz	0,03% (4Ω)
	0,005% (8Ω)
Nennleistung bei 1 kHz	0,007% (4Ω)
	0,003% (8Ω)
halbe Nennleistung bei 20 Hz~20 kHz	0,003% (8Ω)
halbe Nennleistung bei 1 kHz	0,001% (8Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz=4:1, 8 Ω	0,03%
Nennleistung bei 60 Hz: 7 kHz=4:1, nach SMPTE, 8Ω	0,005%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	5 Hz~40 kHz (4Ω, 0,03%)
	5 Hz~50 kHz (8Ω, 0,02%)
Restbrumm und Geräusch	0,9 mV
Dämpfungsfaktor	30 (4Ω), 60 (8Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	160 mV
Geräuschspannungsabstand	
Nennleistung (4Ω)	
Phono	76 dB (nach IHF, A: 83 dB)
TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2	91 dB (nach IHF, A: 102 dB)
Frequenzgang	
Phono	RIAA-Standardkurve ±0.8 dB (30 Hz~15 kHz)
TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2	5 Hz~120 kHz (−3 dB) +0, −0,2 dB (20 Hz~20 kHz)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB~−10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB~−10 dB
Tondämpfung	−20 dB
Tiefenfilter	30 Hz, - 6 dB/Okt.
Lautstärkekorrektur (Loudness) (bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (VIDEO/AUX, 250 Hz~6 300 Hz)	±1 dB
Übersprechdämpfung (VIDEO/AUX, 1 kHz)	60 dB
Kopfhörerpegel und -impedanz	450 mV/330Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4Ω~16Ω
MAIN und REMOTE	8Ω~16Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	295 W
Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220 V
Für andere Länder	Wechselstrom 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Abmessungen (B×H×T)	430×97×290 mm
Gewicht	6,3 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

FRANCAIS

■ CARACTERISTIQUES

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue à 1 kHz
les deux canaux en circuit 2×50 W (4Ω)
2×50 W (8Ω)

Puissance de sortie continue de 20 Hz~20 kHz
les deux canaux en circuit 2×45 W (4Ω)
2×45 W (8Ω)

Distorsion harmonique totale
à puissance nominale (20 Hz~20 kHz) 0,03% (4Ω)
0,005% (8Ω)
à puissance nominale (1 kHz) 0,007% (4Ω)
0,003% (8Ω)
à demi-puissance (20 Hz~20 kHz) 0,003% (8Ω)
à demi-puissance (1 kHz) 0,001% (8Ω)

Distorsion d'intermodulation
à puissance nominale à 250 Hz: 8 kHz=4:1, 8Ω 0,03%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,005%

Réponse de fréquences
les deux canaux en circuit, −3 dB
5 Hz~40 kHz (4Ω, 0,03%)
5 Hz~50 kHz (8Ω, 0,02%)

Bruit et ronflement résiduels 0,9 mV
Coefficient d'amortissement 30 (4Ω), 60 (8Ω)
Sensibilité et impédance d'entrée
PHONO 2,5 mV/47 kΩ
SYNTONISATEUR, DISQUE COMPACT, VIDEO/AUX, BANDE 1/DIGITALE, BANDE 2 (TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2) 150 mV/22 kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS) 160 mV
Signal/Bruit
à puissance nominale (4Ω)
PHONO 76 dB (IHF, A: 83 dB)
SYNTONISATEUR, DISQUE COMPACTO, VIDEO/AUX, BANDE 1/DIGITALE, BANDE 2 (TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2) 91 dB (IHF, A: 102 dB)

Réponse de fréquence
PHONO Courbe nominale RIAA
±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, DISQUE COMPACTO, VIDEO/AUX, BANDE 1/DIGITALE, BANDE 2 (TUNER, CD, VIDEO/AUX, TAPE 1/DA TAPE, TAPE 2)
5 Hz~120 kHz (−3 dB)
+0, −0,2 dB (20 Hz~20 kHz)

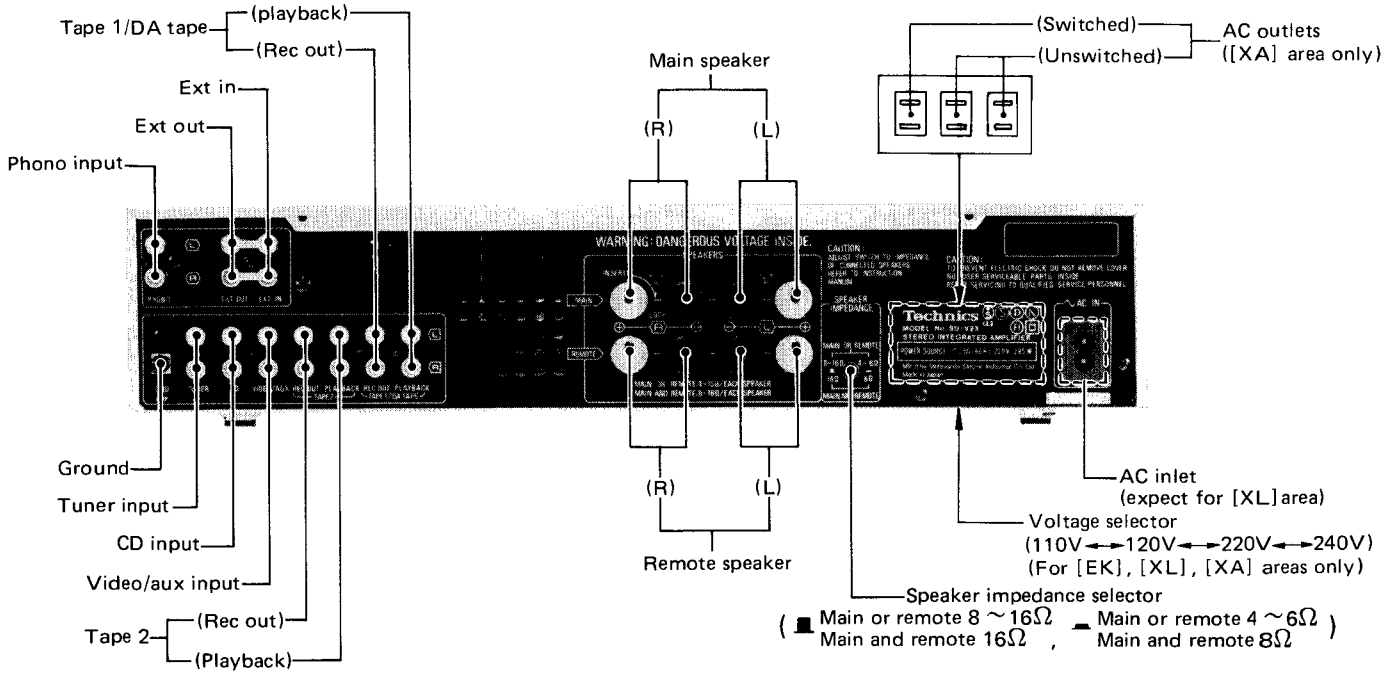
Réglage de la tonalité
BASSES (BASS) 50 Hz, +10 dB~−10 dB
AIGUS (TREBLE) 20 kHz, +10 dB~−10 dB
Réglage silencieux −20 dB
Filtre subsonique 30 Hz, −6 dB/oct.
Compensateur physiologique (volume à −30 dB) 50 Hz, +9 dB
Tension de sortie
SORTIE ENREGISTREMENT (REC OUT) 150 mV
Equilibrage des canaux, VIDEO/AUX 250 Hz~6300 Hz ±1 dB
Séparation des canaux, VIDEO/AUX 1 kHz 60 dB
Niveau de sortie des casques et impédance 450 mV/330Ω
Impédance de charge
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE) 4Ω~16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE) 8Ω~16Ω

■ DIVERS

Consommation 295 W
Alimentation
Pour l'Europe CA 50 Hz/60 Hz, 220 V
Autres CA 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
Dimensions (L×H×Pr) 430×97×290 mm
Poids 6,3 kg

Remarques:
1. On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).
2. La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889 /C.E.E. (arrêté 14 Janvier 1980).

Sujet á changement sans prearis.



• Speaker impedance selector

Set to the position corresponding to the impedance of the speaker systems being used.
If this setting is not correctly made, the result may be a deterioration of performance.

*** If either the main or the remote speaker systems are used:**

4~6Ω (■→▲):
For speaker impedance of 4~6Ω.

8~16Ω (▲→■):
For speaker impedance of 8~16Ω.

*** If both main and remote speaker systems are used:**

8Ω (■→▲):
For speaker impedance of 8Ω or more and less than 16Ω.

16Ω (▲→■):
For speaker impedance of 16Ω.

Note that, if 2 pairs of speaker systems are used at the same time, determine the composite impedance as described below.

$$R = \frac{R_1 \times R_2}{R_1 + R_2}$$

Where:
R =total impedance
R_1=impedance of speaker systems connected to "MAIN" terminals
R_2=impedance of speaker systems connected to "REMOTE" terminals

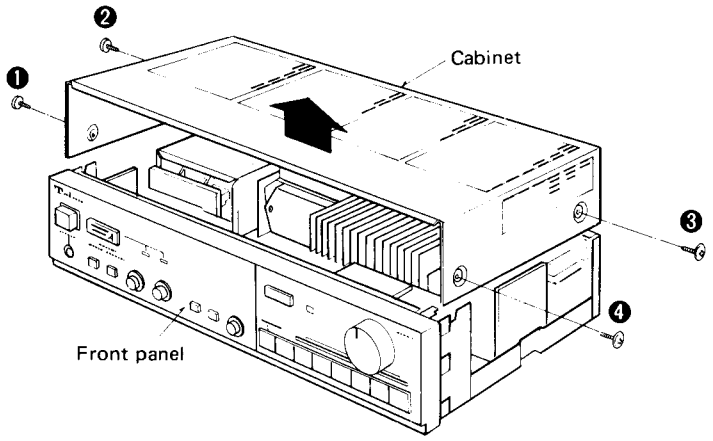
Note:
Be sure to make this setting before switching the power "on".

- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram (Separate service manual: Order No. HAD84072860C8—A) and the replacement parts list.

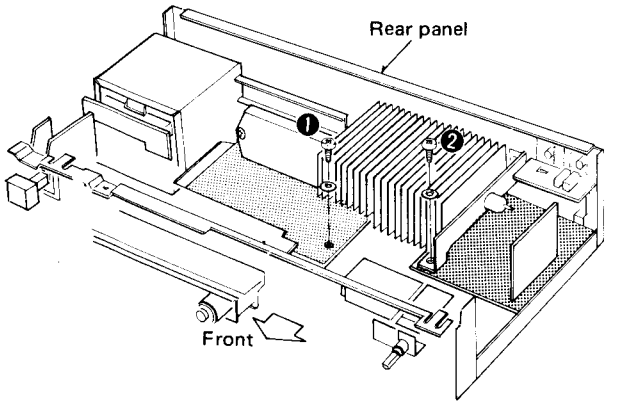
* [XA], [EK] and [XL] areas are provided with voltage selector.
* 220V (50/60Hz) for Continental Europe. (Except for United Kingdom)
* 110V/120V/220V/240V (50/60Hz) for [XA], [EK] and [XL] areas.
* Phono input capacitance is about 150pF.

■ DISASSEMBLY INSTRUCTIONS

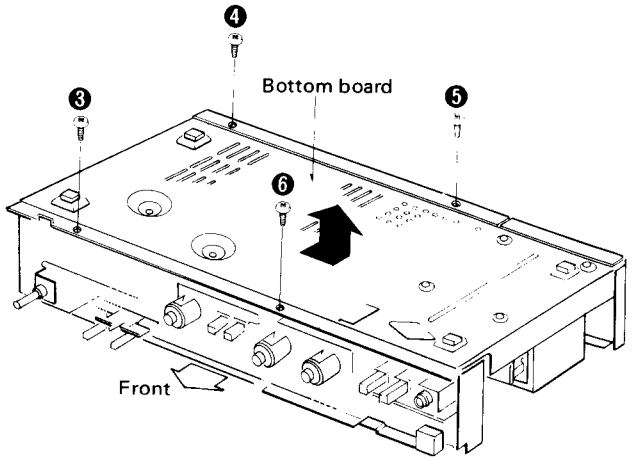
Ref. No. 1	How to remove the cabinet
Procedure 1	1. Remove the 4 screws (❶ ~ ❹)



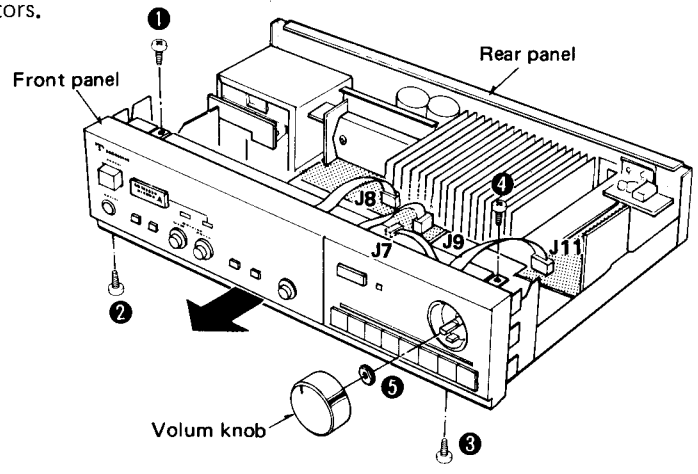
Ref. No. 2	How to remove the bottom board
Procedure 1 → 2	1. Remove the 2 screws (❶ , ❷)



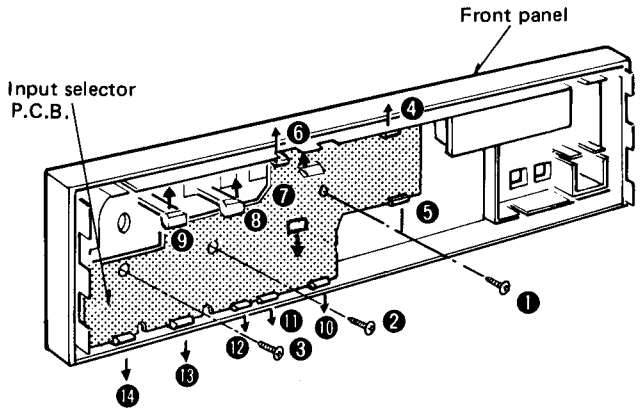
2. Remove the 4 screws. (❸ ~ ❻)



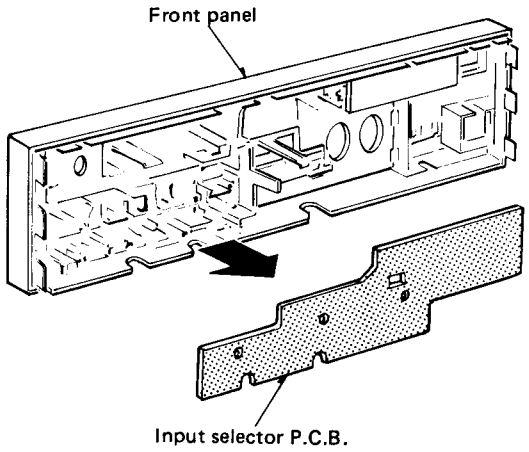
Ref. No. 3	How to remove the front panel
Procedure 1 → 3	1. Remove the 4 screws. (❶ ~ ❹) 2. Remove the volume knob. 3. Remove the 1 nut. (❺) 4. Pull out the 4 connectors. **(J7 ~ J9, J11)**



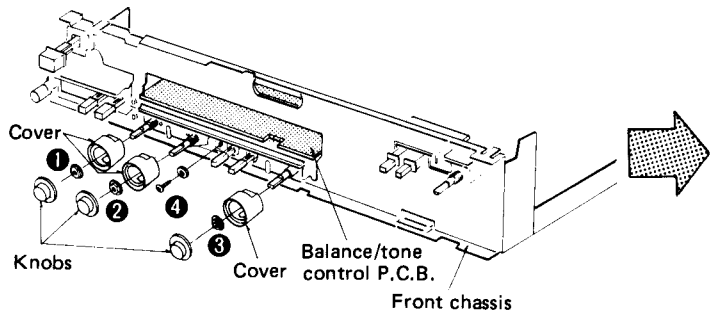
Ref. No. 4	How to remove the input selector P.C.B.
Procedure 1 →3 →4	1. Remove the 3 screws. (❶ ~ ❸) 2. Push the 11 tabs. (❹ ~ ⓮)



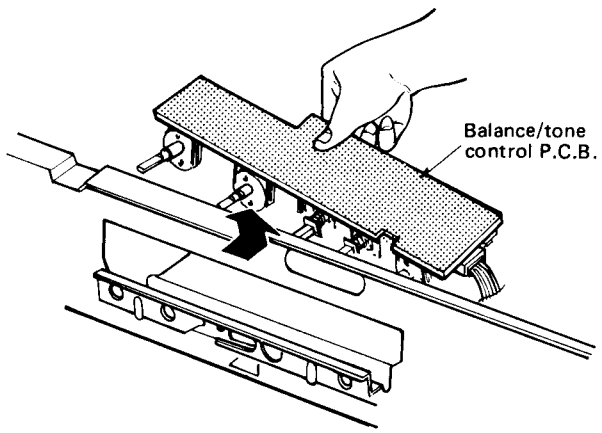
3. Remove the input selector P.C.B.



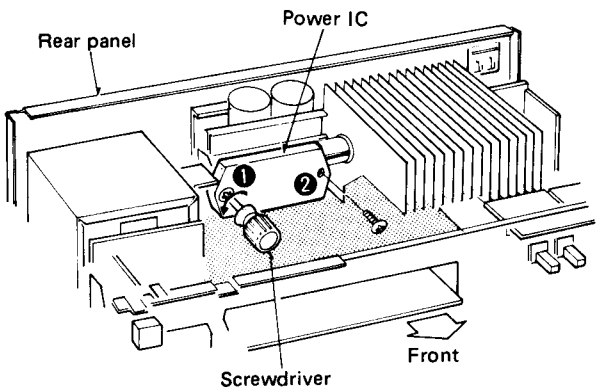
Ref. No. 5	How to remove the balance/tone control P.C.B.
Procedure 1 →3 →5	1. Remove the 3 knobs. 2. Remove the 3 nuts. (❶ ~ ❸) 3. Remove the 3 covers. 4. Remove the 1 screw. (❹)



5. Remove the balance/tone control P.C.B.

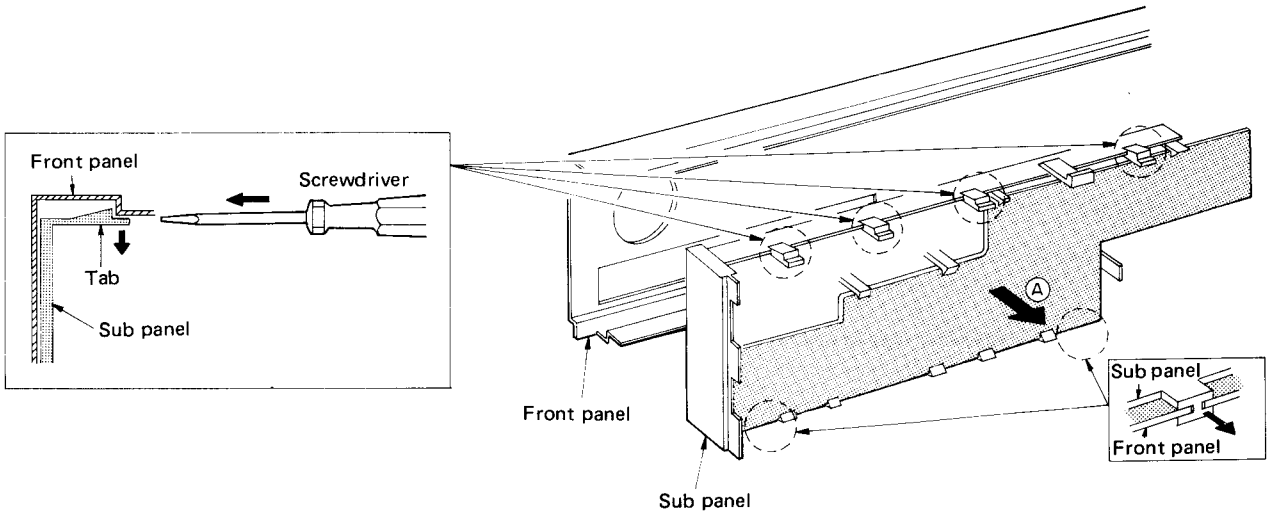


Ref. No. 6	How to remove the power IC
Procedure 1 →2 →6	1. Unsolder the power IC. 2. Remove the 2 screws (❶ , ❷)

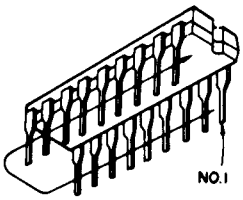
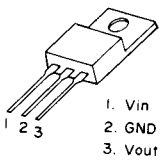
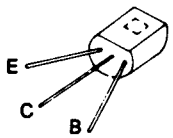
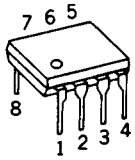
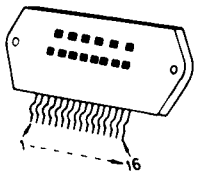
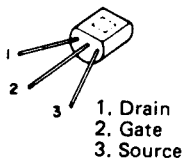
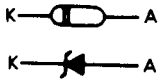
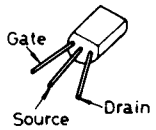
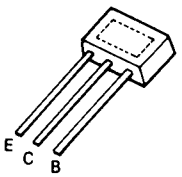
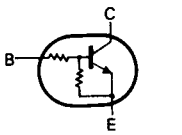
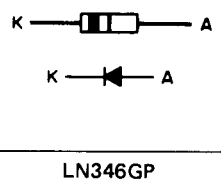
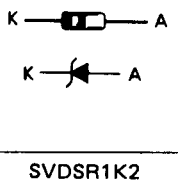
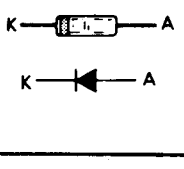
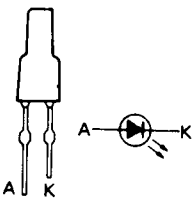
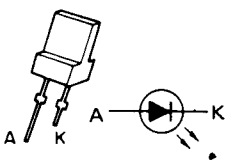
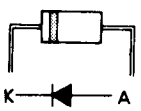


When mounting the power amplifier IC, apply silicon compound (SZZ0L15) to the rear of the power amplifier IC.

Ref. No. 7	How to remove the sub panel
Procedure 1 →3 →4 →7	1. Push the 4 tabs of the sub panel. 2. Remove the sub panel in the direction of the arrow Ⓐ.



■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

MN4069UB 14pin M53242P 16pin MN1404STE 16pin AN7062 18pin TC9163N 28pin UPD7506C043 28pin TC9164N 28pin		AN78M05	2SC1815, 2SA1015 2SC2631, 2SA1123 2SA992, 2SC3112	SVINJM2043DD AN6553F
				
SVI2003 or STK2038–4	2SK301	SVDMZ424	2SK246	UN4211, UN4212
				
MA162A	MA1160H	MA165, MA167 OA90	SVDAY5533K SVDPR5533K	
				
LN346GP LN446YP	SVDSR1K2 SVDS3V20			
				

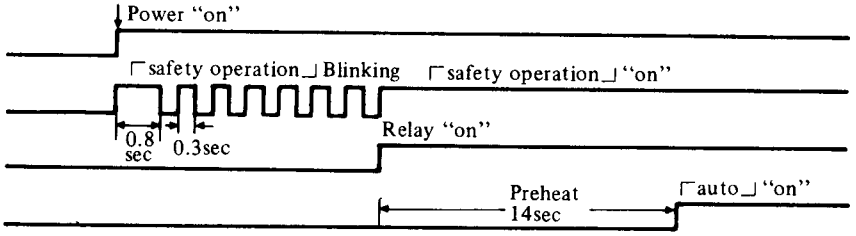
■ FUNCTION OF TERMINAL IC601 (ICQ control)----- MN1404STE

No.	Symbol	Name of block	Description of terminal
1	VSS	Power supply input terminal	Grounded. (0V)
2	AI3	Input port A	Not used in this unit
3	AI2		When effective output 4V signal sensor of L-ch power amplifier operates, "L" is put in causing the output of terminal 14 to go "H".
4	AI1		When effective output 2V signal sensors of both-ch power amplifiers operate, "L" is put in causing the output of terminal 15 to go "H".
5	AI0		When effective output 4V signal sensor of R-ch power amplifier operates, "L" is put in causing the output of terminal 16 to go "H".
6	TST	Test input terminal	Terminal for testing LSI. (Ground)
7	$\overline{RST}$	Reset input terminal	All outputs are cleared or reset with input at "L". (It is connected to power supply circuit)
8	SNSO	Sensor input terminal	When overload detection circuit of power amplifier output operates, "L" is put in causing the output of terminal 12 to go "L".
9	VDD	Power supply input terminal	Apply 5V.
10	OSC	OSC input terminal	Clock signal (about 415kHz) can be obtained by internal oscillation circuit.
11	CO5	Output port C	When protection circuit operates, "H" and "L" outputs are repeated and "safety operation" indicator blinks.
12	CO4		Output relay turn ON with "H" output.
13	CO3		Indicator "auto" lights up at "H".
14	CO2		ICQ control signal is emitted from A input port (signal sensor). ("H" output)
15	CO1		
16	CO0		

No.	Symbol	Time chart

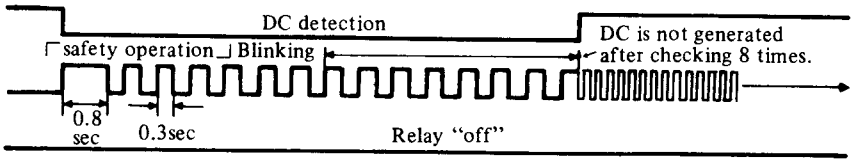
<Power "on" mode>

7	$\overline{RST}$	5V / 0V
11	CO5	5V / 0V
12	CO4	5V / 0V
13	CO3	5V / 0V



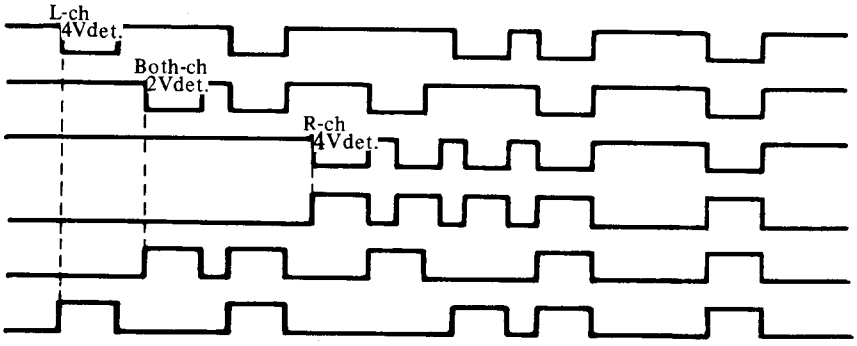
<DC detection or load shorting mode>

8	SNSO	5V / 0V
11	CO5	5V / 0V
12	CO4	0V



<ICQ control operation mode>

3	AI2	5V / 0V
4	AI1	5V / 0V
5	AI0	5V / 0V
14	CO2	5V / 0V
15	CO1	5V / 0V
16	CO0	5V / 0V

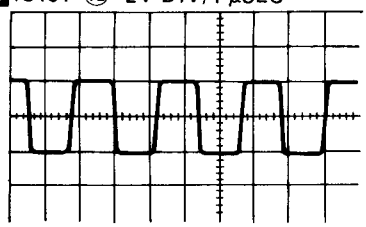


■ FUNCTION OF TERMINAL

IC401 (Analog function control) ---------- UPD7506C043

Pin. No.	Symbol	Input/Output	Active	Description of terminal
1	P43	Output	H	Indicater "muting" light up at "H". Muting "−20dB" 4.4V / 0V
2	x 2	—	—	Not used in this unit.
3	P03/x 1	Input	—	It detects the level of pin ⑤. Push (once) the "rec selector" Selection of input 4.4V / 0V selector
4	P20/PSTB	Output	H	Clock output port for analog switch. Clock signal output to IC201 pin ⑮ and IC202 pin ⑮ during data transmission. [Refer to A]
5	P21/PTOUT	Output	H	Indicater "rec selector" light up at "H". Push (once) the "rec selector" Selection of input 4.4V / 0V selector
6	P22	Output	H	Data output for analog switch. Data signal output to IC201 pin ⑯ and IC202 pin ⑯. [Refer to A]
7	P23	Output	H	Strobe output port for analog switch. Strobe signal output to IC201 pin ⑬ and IC202 pin ⑬ during data transmission. [Refer to A]
8	P60	Output	H	Rec side indicator 3-bit output. Rec indicator drive signal output to IC403 pins ⑬ ~ ⑮. [Refer to B]
9	P61			
10	P62			
11	P63	Input	H	Stop mode sensing input. With high pulse signal input, the stop command is executed and the mode is shifted to standby. 4.4V / 0V Power switch "OFF"
12	CL1	—	—	External clock oscillation frequency (400kHz) input port. [Refer to C]
13	CL2	—	—	Not used in this unit.
14	V_{DD}	—	—	Power supply input terminal. (Apply 4.4V)
15	RESET	Input	H	Input terminal for reset signal. Power switch "ON" 4.3V / 0V Power switch "OFF" 1V / 0V
16	P10	Input	H	Input terminal for key return signal from external key matrix. [Refer to D]
17	P11			
18	P12			
19	P13			
20	P50	Output	H	Output terminal for key scan signal for external key matrix. (Output voltage is 4.4V)
21	P51			
22	P52			
23	P53	Output	H	Muting signal output during input switch or Rec switch operation. 4.3V / 0V Push the each input selector or muting switch.
24	P00/INT	Input	—	Mode shifting port. [H = Function 1 mode, L = Function 2 mode] The input of this unit is "H" (4.9V) because the mode used is Function 1.
25	P40	Output	H	Input side indicator 3-bit output. Input indicator drive signal to IC402 pins ⑬ ~ ⑮. [Refer to E]
26	P41			
27	P42			
28	V_{SS}	—	—	Ground terminal.

C IC401 ⑫ 2V DIV/1 μSEC



① Push the rec selector switch. ("rec indicator" blinking)
② Push the each input selector switch.

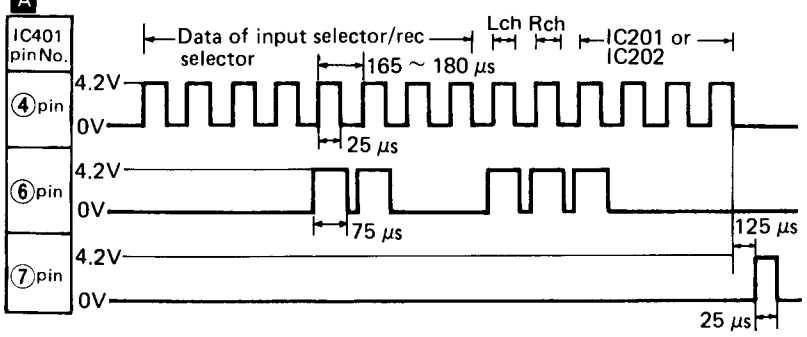
B L = 0V, H = 4.3V

Input selector \ Pin No. of IC401	⑧	⑨	⑩
phono	L	L	L
tuner	H	L	L
CD	L	H	L
video/aux	H	H	L
tape 2	H	L	H
tape 1/DA tape	L	L	H

D L = 0V, H = 4.3V

Input selector \ Pin No. of IC401	⑯	⑰	⑱	⑲
phono	L	L	L	H
tuner	L	L	H	L
CD	L	H	L	L
video/aux	H	L	L	L
tape 2	L	L	H	L
tape 1/DA tape	L	L	L	H
rec selector	H	L	L	L

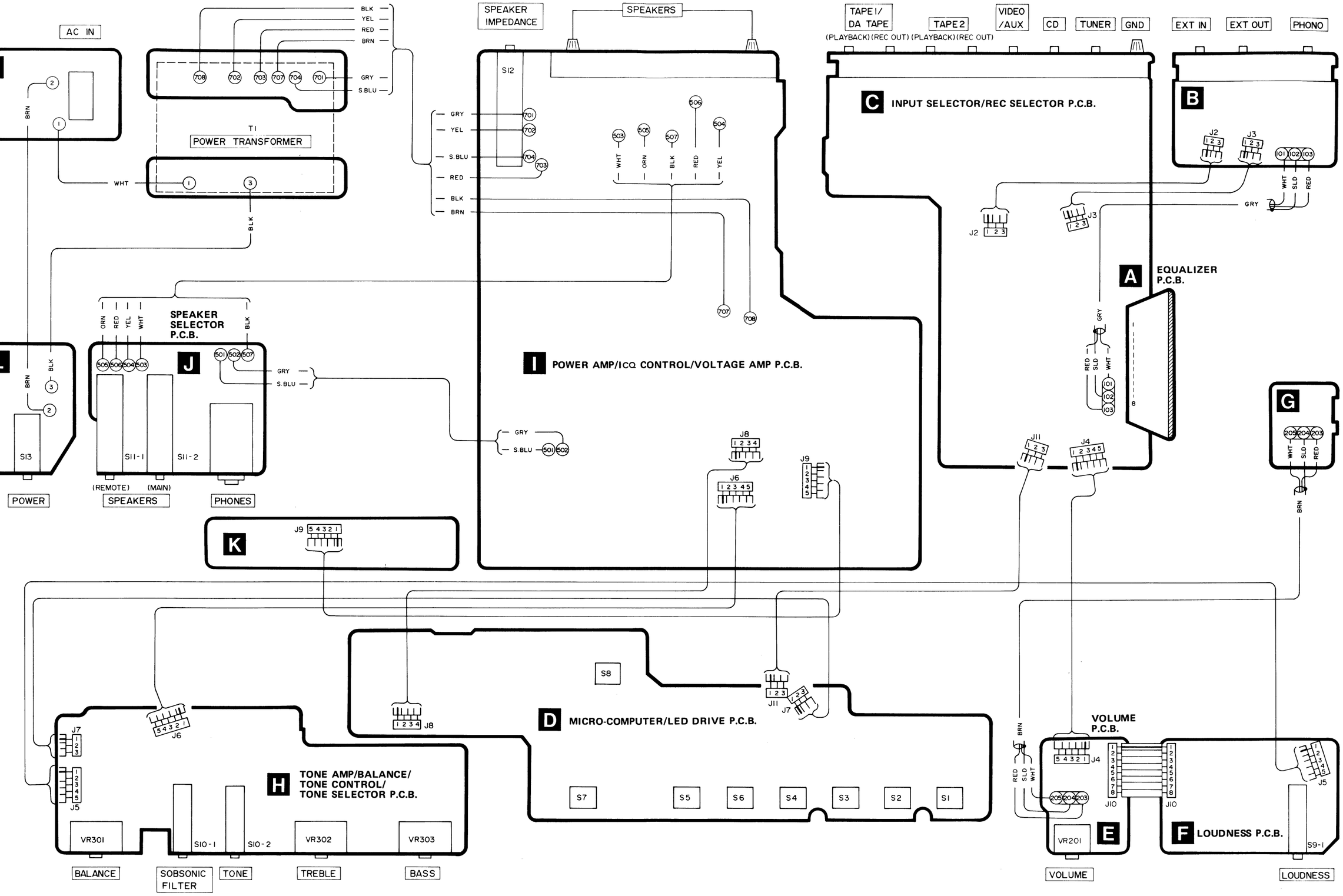
A



E

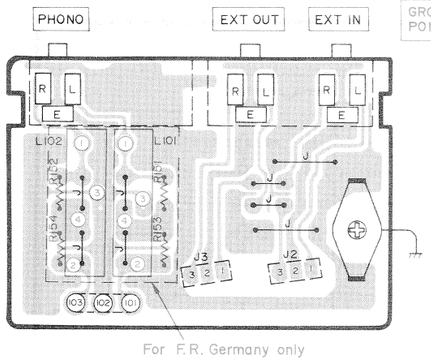
Input selector \ Pin No. of IC401	㉕	㉖	㉗
phono	L	L	L
tuner	H	L	L
CD	L	H	L
video/aux	H	H	L
tape 2	H	L	H
tape 1/DA tape	L	L	H
rec selector	L	L	L
muting	L	4.3V / 0V	L

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

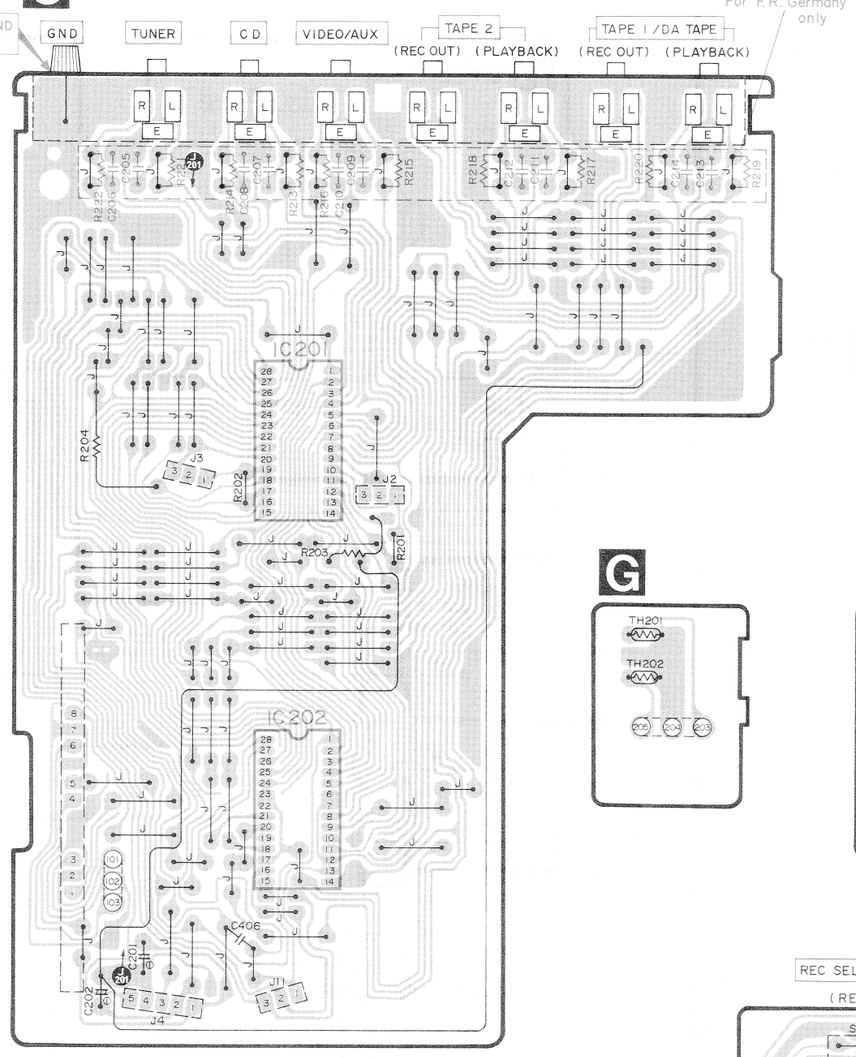


■ PRINTED CIRCUIT BOARDS

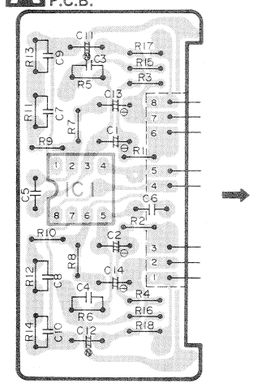
B



C INPUT SELECTOR/REC SELECTOR P.C.B.

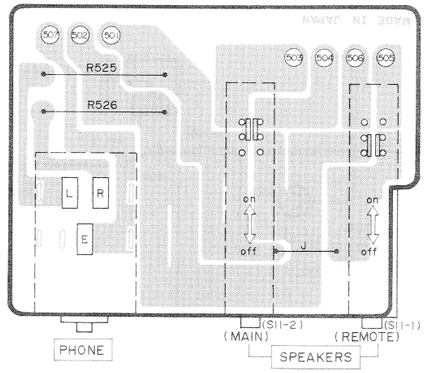


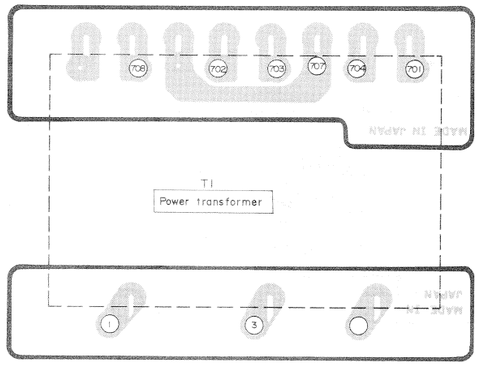
A PHONO EQUALIZER P.C.B.



G

J SPEAKER SELECTOR P.C.B.





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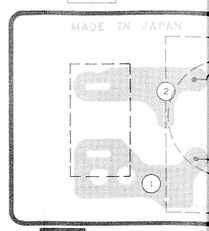
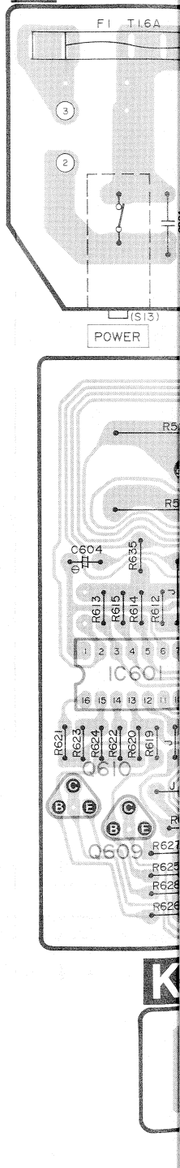
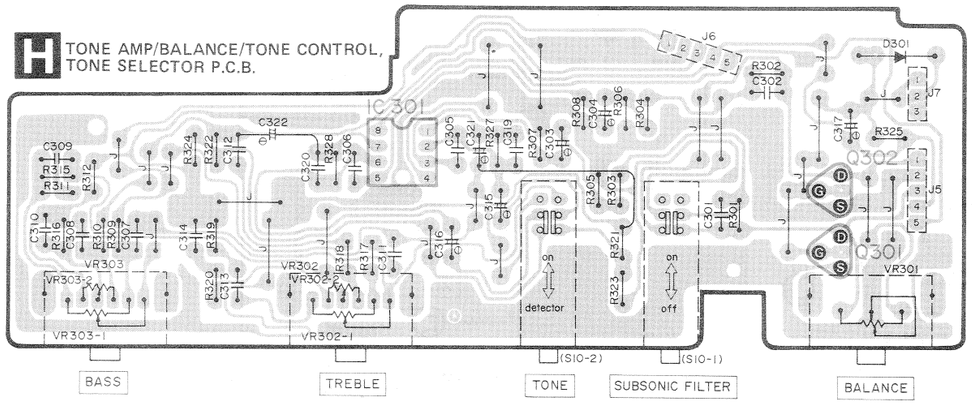


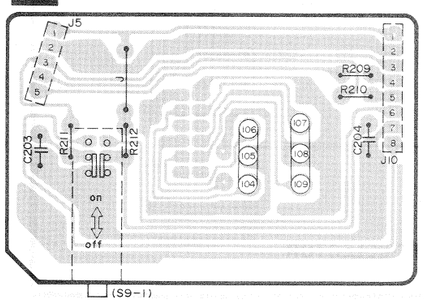
L



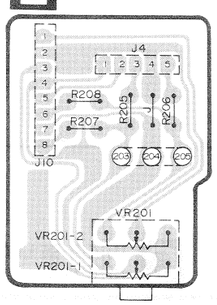
H TONE AMP/BALANCE/TONE CONTROL, TONE SELECTOR P.C.B.



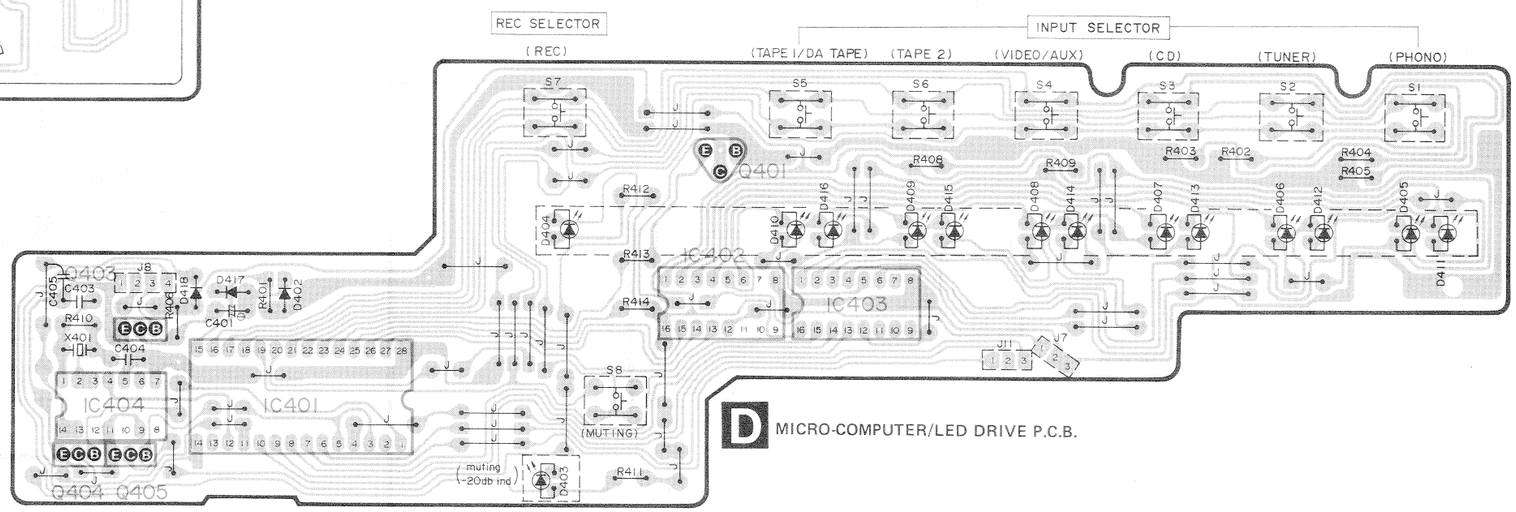
F LOUDNESS P.C.B.

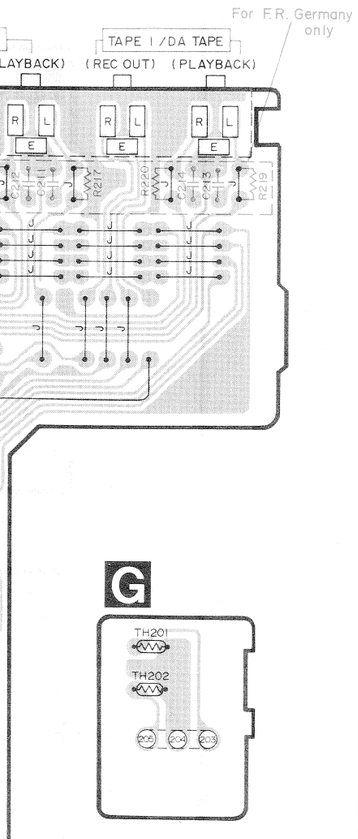


E VOLUME P.C.B.

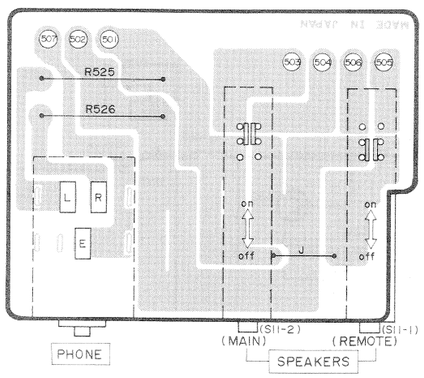


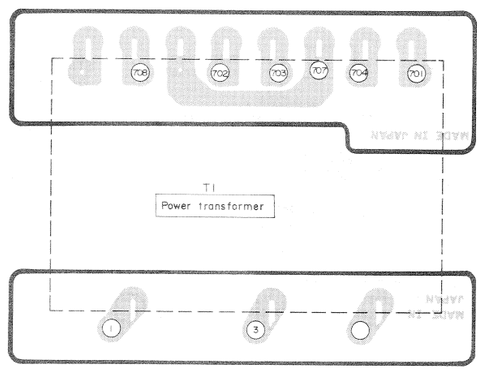
D MICRO-COMPUTER/LED DRIVE P.C.B.





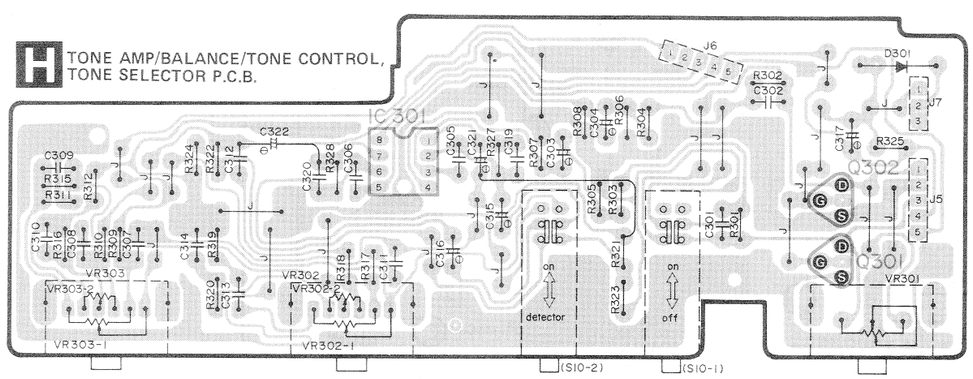
J SPEAKER SELECTOR P.C.B.

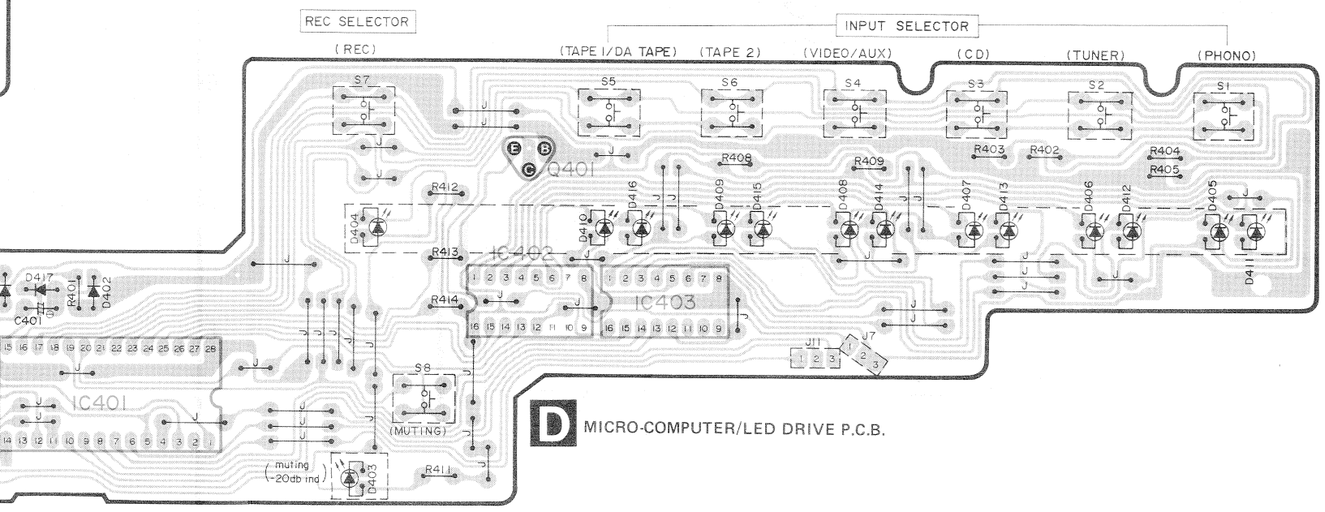




G

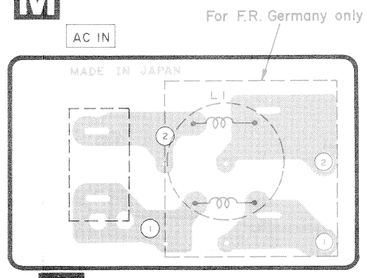
H TONE AMP/BALANCE/TONE CONTROL, TONE SELECTOR P.C.B.



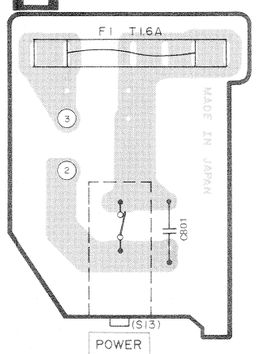


D MICRO-COMPUTER/LED DRIVE P.C.B.

M

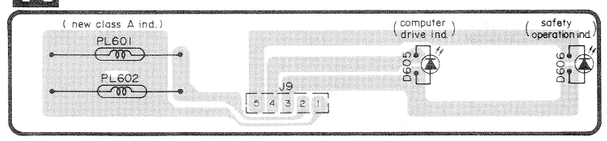


L



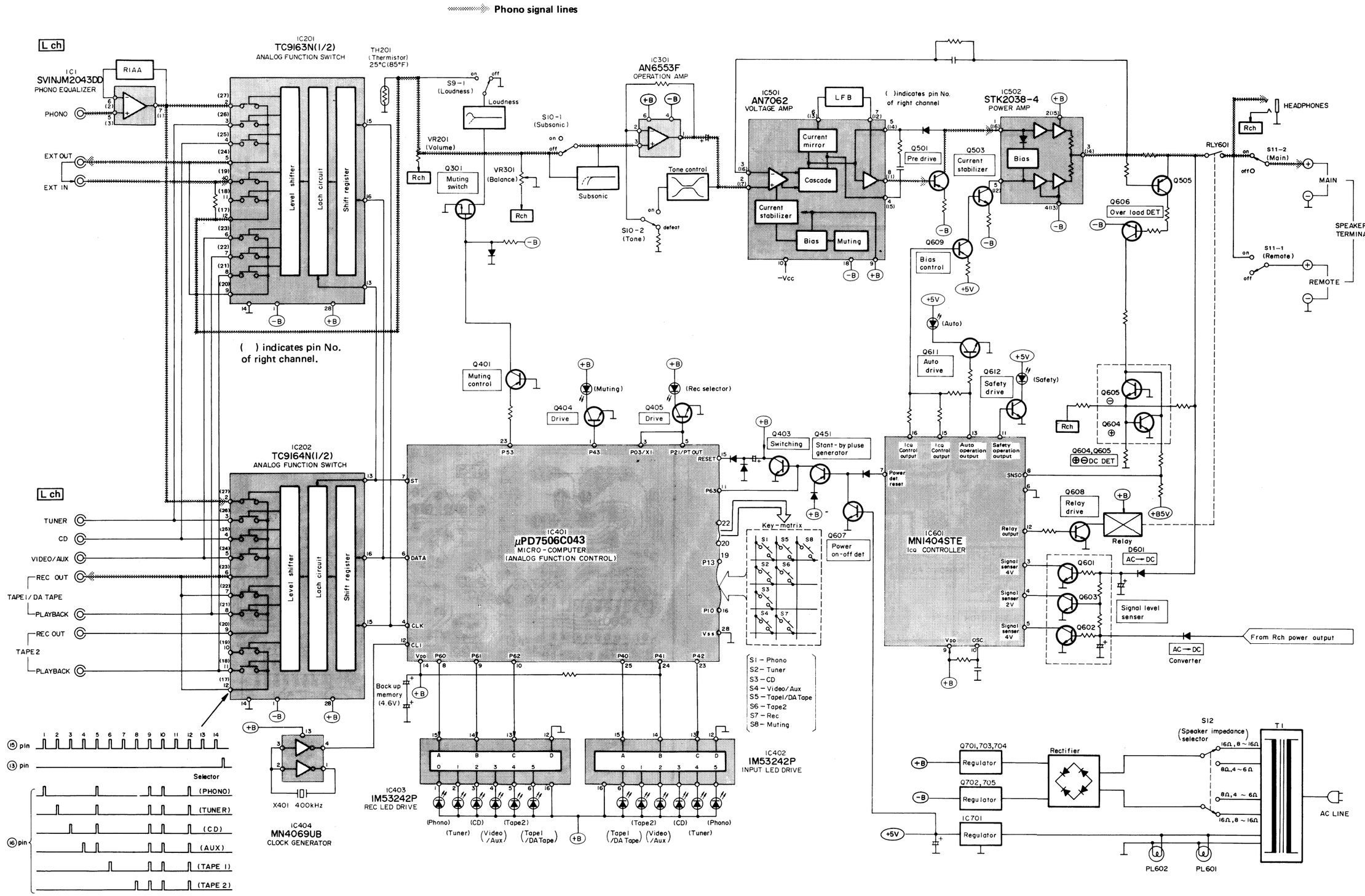
I POWER AMP/ICQ CONTROL/VOLUME AMP P.C.B.

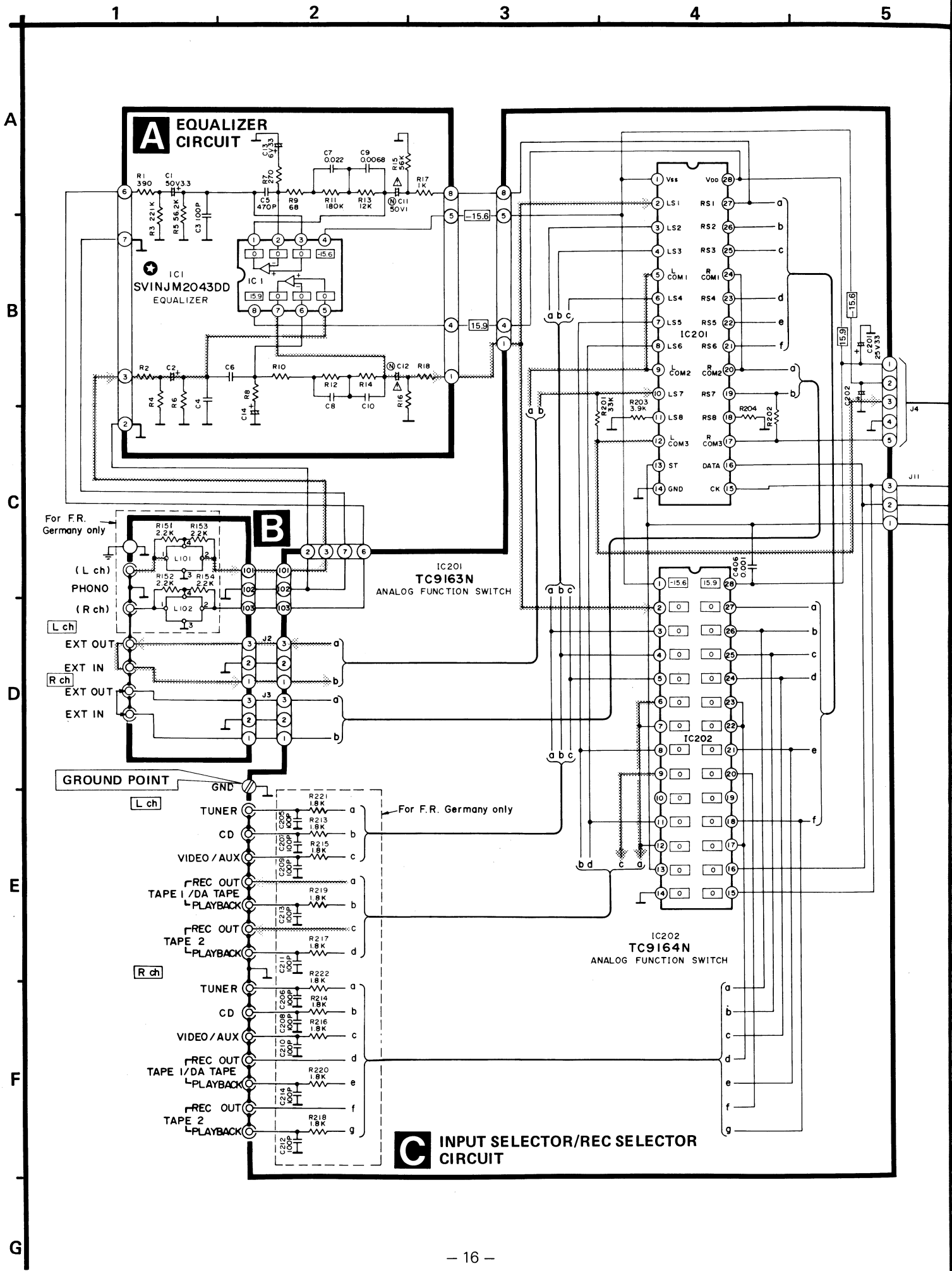
K



SU-V2X

■ BLOCK DIAGRAM




A EQUALIZER CIRCUIT
IC1
SVINJM2043DD
EQUALIZER
IC201
TC9163N
ANALOG FUNCTION SWITCH
IC202
TC9164N
ANALOG FUNCTION SWITCH
B
For F.R. Germany only
(L ch)
PHONO
(R ch)
L ch
EXT OUT
EXT IN
R ch
EXT OUT
EXT IN
GROUND POINT
GND
L ch
TUNER
CD
VIDEO / AUX
REC OUT
TAPE 1 /DA TAPE
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
R ch
TUNER
CD
VIDEO / AUX
REC OUT
TAPE 1/DA TAPE
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
For F.R. Germany only
C INPUT SELECTOR/REC SELECTOR CIRCUIT

D MICRO–COMPUTER/ LED DRIVE CIRCUIT

IC401
μPD7506C043
MICRO–COMPUTOR
(ANALOG FUNCTION CONTROL)

4.3V
0V

Push the each input selector or muting switch

S1 phono, S5 tape1, S8 muting, S2 tuner, S6 tape2, S3 CD, S4 video/aux, S7 rec

R402 100K, R403 100K, R404 100K, R405 100K

Vss P42 P41 P40 P00 /INT P53 P52 P51 P50 P13 P12 P11 P10 RESET
P43 X2 P20 /X1 P21 CLK /PTOUT DATE ST P60 P61 P62 P63 CL1 CL2 Vdd

Muting "–20dB"
4.4V
0V

Power switch "off"
4.4V
0V

D402,417,418
MA165

Q401
2SA1015
MUTING CONTROL

Q403
UN4211
SWITCHING, RESET

R411 180 D403 Q404 (muting –20dB) LED
R412 180 D404 Q405 (REC LED)

Q404,405
UN4211
LED DRIVE

D403
SVDPR5533K
MUTING IND

D404
SVDAY5533K-M
REC IND.

IC402,403
M53242P
LED DRIVE

IC402 (INPUT): phono, tuner, CD, video/aux, tape 1/DA tape, tape 2
IC403 (REC): phono, tuner, CD, video/aux, tape 1/DA tape, tape 2

R408 180
R409 180

IC404
AN4069UB
CLOCK GENERATOR

Crystal O.S.C. (400kHz)
X401 400kHz
R410 820K
C403 47P
C404 120P

D411~416
SVDAY5533K-M
REC IND.

D405~410
SVDPR5533K
LED. DRIVE

VOLUME CIRCUIT E

Volume control

LOUDNESS CIRCUIT F

S9-1 (LOUDNESS)
Loudness

G

Thermistor
TH201 100K
TH202 100K
25°C (85°F) SENSOR

H TONE AMPLIFIER/BALANCE/ TONE CONTROL, TONE SELECTOR CIRCUIT

D301
0A90

Balance

Q301
2SK301
MUTING, AUDIO PRO.

Q302

IC301
AN6553F
TONE AMP

S10-1 (SUBSONIC)
Subsonic filter

Tone selector
S10-2 (TONE)
Treble control
Bass control
Memory back-up

I POWER AMPLIFIER/ VOLTAGE AMPLIFIER Icq CONTROL CIRCUIT

Q501
Q501,502
2SA1123
PRE DRIV

D501
D502
Q502
D501, 502
MA162A

IC501
AN7062
VOLTAGE AMP

	High		Low		High		Low	
1	0	0	7	41	35.7	13	43	37.7
2	0	0	8	42.3	37	14	41.5	36.2
3	0	0	9	43.3	38	15	42	36.7
4	42	36.7	10	-15.9	-15.9	16	0	0
5	41.5	36.2	11	42.3	37	17	0	0
6	43	37.7	12	41	35.7	18	-11.5	-11.5

D601,602
MA167

Q601, 602
UN4212
SIGNAL LEVEL DET.

Q602
Q603
2SC1815
SIGNAL LEVEL DET

Q604
Q605
Q601

IC601
MN1404STE
Icq CONTROLLER

D607,608
MA165
Q607
2SC1815
POWER ON-OFF DETECTOR

Q451

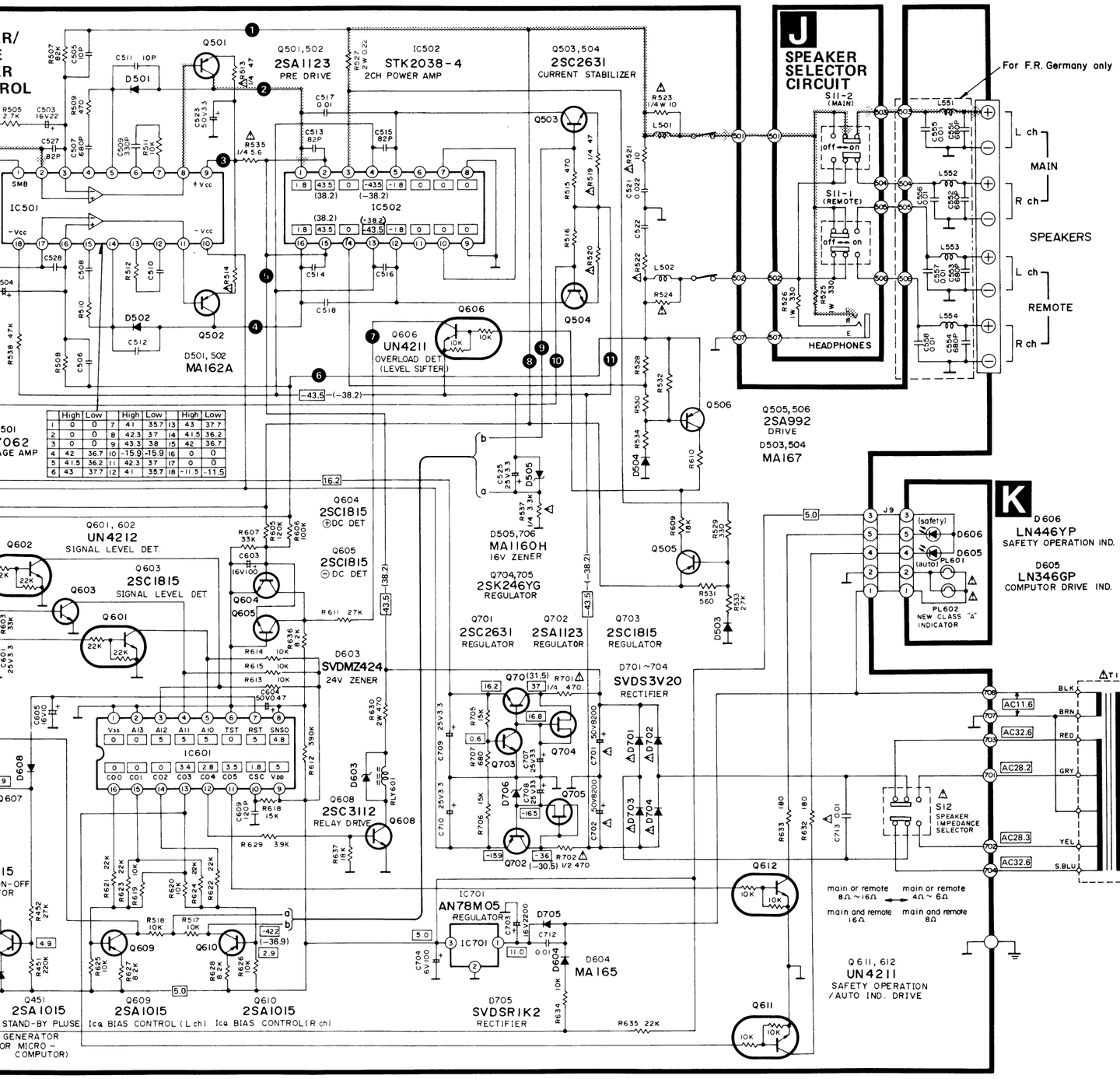
D401,451
MA165
Q451
2SA1015
STAND-BY PLUSE GENERATOR (FOR MICRO-COMPUTOR)

Q609
2SA1015
Icq BIAS CONTROL (L ch)

Q610
2SA1015
Icq BIAS CONTROL(R ch)

15 16 17 18 19 20

NOTE
This unit uses 2 types of power IC which are different in circuit. For a set using power IC (part No. SVI2003), refer to the circuit shown right side.



	High	Low		High	Low		High	Low
1	0	0	7	41	35.7	13	43	37.7
2	0	0	8	42.3	37	14	41.5	36.2
3	0	0	9	43.3	38	15	42	36.7
4	42	36.7	10	-15.9	-15.9	16	0	0
5	41.5	36.2	11	42.3	37	17	0	0
6	43	37.7	12	41	35.7	18	-11.5	-11.5

SCHEMATIC DIAGRAM

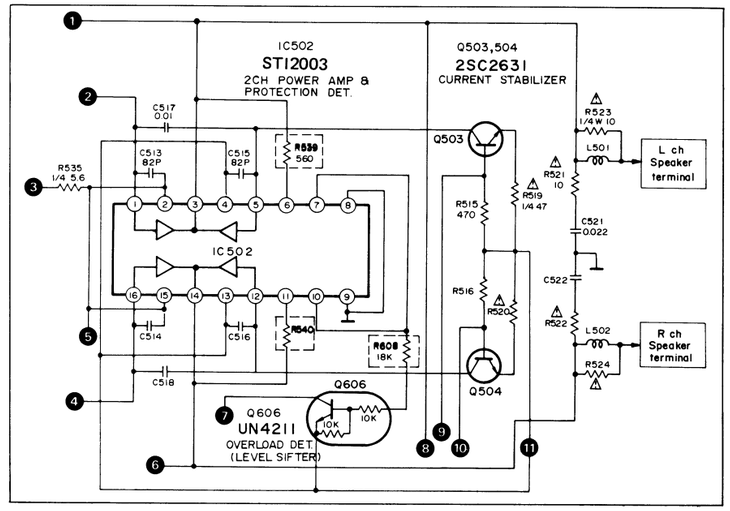
(This schematic diagram may be modified at any time with the development of new technology.)

* **The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement part list.**

Notes:

1. **S1~S6** : Input selector switch in **"phono"** position. S1: phono, S2: tuner, S3: CD, S4: video/aux, S5: tape 1/DA tape, S6: tape 2
2. **S7** : Recording selector switch in **"off"** position.
3. **S8** : Audio muting switch in **"off"** position. (off ⟷ –20dB)
4. **S9-1** : Loudness switch in **"off"** position. (on ⟷ off)
5. **S10-1** : Subsonic filter switch in **"off"** position (on ⟷ off)
6. **S10-2** : Tone switch in **"defeat"** position. (defeat ⟷ on)
7. **S11-1** : Main speakers selector switch in **"on"** position. (on ⟷ off)
8. **S11-2** : Remote speakers selector switch in **"off"** position. (on ⟷ off)
9. **S12** : Speaker impedance selector switch in **"8Ω~16Ω/16Ω"** position.
   [Main or remote 8~16Ω ⟷ Main or remote 4~6Ω
   [Main and remote 16Ω ⟷ Main and remote 8Ω
10. **S13** : Power switch in **"on"** position.
11. **S14 [XA, EK, XL] only** : Voltage selector switch in **"240V"** position. (110V ⟷ 120V ⟷ 240V ⟷ 220V)
12. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
13. ▭ Indicated voltage values are the standard values for the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester. [high tap → 16Ω/8~16Ω]
14. Figures in ( ) stand for DC voltage in low tap. [8Ω/4 ~ 6Ω]
15. ▨ Phono signal (Lch).
16. ——— Positive voltage lines or Negative voltage lines.
17. This is the basic circuit diagram (For continental Europe) of this unit. Note that part of the circuit is subject to change depending on the areas.
18. Regarding the circuits to be changed in the basic circuit diagram (For continental Europe) and related areas [EK], [XL], [XA] refer to the separate service manual (Order No. HAD84072860C8-A).

• Change in the parts list and schematic diagram in use of power IC (SVI2003)



Ref. No.	Change of Power Amp. IC Parts No. STK2038-4 → SVI2003		Part Name & Description
INTEGRATED CIRCUIT			
IC502	STK2038-4	SVI2003	Power Amplifier
TRANSISTORS			
Q505, 506	2SA992	Not used	– – – – – – – – – –
DIODES			
D503, 504	MA167	Not used	– – – – – – – – – –
RESISTORS			
R527, 528	ERX2ANJR22	Not used	– – – – – – – – – –
R529, 530	ERDS2TJ331	Not used	– – – – – – – – – –
R531, 532	ERDS2TJ561	Not used	– – – – – – – – – –
R533, 534	ERDS2TJ272	Not used	– – – – – – – – – –
R539, 540	Not used	ERD25FJ561	Carbon, 1/4W 560Ω
R608	Not used	ERDS2TJ183	Carbon, 1/4W 18kΩ
R609, 610	ERDS2TJ183	Not used	– – – – – – – – – –

■ RESISTORS & CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is Ω(ohm), K = 1000Ω, M = 1000kΩ.
5. The unit of capacitance is μF (microfarad). P = 10^{-6} μF
6. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Resistor Type	Wattage	Tolerance
ERD : Carbon ERG : Metal Oxide ERX : Metal Film ERO : Metal Film	25 : 1/4W S1 : 1/2W S2 : 1/4W 1A : 1W 2A : 2W	J : ±5% G : ±2%

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA : Electrolytic	0J : 6.3V	1H : 50V	D : ±0.5pF
ECCD : Ceramic	1A : 10V	KC : 400V AC	K : ±10%
ECKD : Ceramic	1C : 16V	2H : 500V	Z : +80%, –20%
ECQM : Polyester	1E : 25V	2R3 : 2.3V	P : +100%, –0%
ECET : Electrolytic	1H : 50V		
ECEA..N : Non Polar Electrolytic			
EECW : Liquid Electrolyte Double layer Capacitor			

●RESISTORS

Ref. No.	Part No.	Value
R1,2	ERD10TLJ391U	390
R3,4	ERO10MKG2213	221K
R5,6	ERO10MKG5622	56.2K
R7,8	ERD10TLJ271U	270
R9,10	ERD10TLJ680U	68
R11,12	ERD10TLJ184U	180K
R13,14	ERD10TLJ123U	12K
R15,16	ERD10TLJ563U	56K
R17,18	ERD10TLJ102U	1K
R151,152 (EGA) only	ERDS2TJ222	2.2K
R153,154 (EGA) only	ERDS2TJ222	2.2K
R201,202	ERDS2TJ333	33K
R203,204	ERDS2TJ392	3.9K
R205,206	ERDS2TJ472	4.7K
R207,208	ERDS2TJ183	18K
R209,210	ERDS2TJ101	100
R211,212	ERDS2TJ473	47K
R213,214 (EGA) only	ERDS2TJ182	1.8K
R215,216 (EGA) only	ERDS2TJ182	1.8K
R217,118 (EGA) only	ERDS2TJ182	1.8K

Ref. No.	Part No.	Value
R219,220 (EGA) only	ERDS2TJ182	1.8K
R221,222 (EGA) only	ERDS2TJ182	1.8K
R301,302	ERDS2TJ824	820K
R303,304	ERDS2TJ561	560
R305,306	ERDS2TJ154	150K
R307,308	ERDS2TJ224	220K
R309,310	ERDS2TJ223	22K
R311,312	ERDS2TJ392	3.9k
R315,316	ERDS2TJ183	18K
R317,318	ERDS2TJ562	5.6K
R319,320	ERDS2TJ102	1K
R321,322	ERDS2TJ223	22K
R323,324	ERDS2TJ392	3.9K
R325	ERDS2TJ334	330K
R327,328	ERDS2TJ224	220K
R401	ERDS2TJ473	47K
R402,403	ERDS2TJ104	100K
R404,405	ERDS2TJ104	100K
R406	ERDS2TJ472	4.7K
R408,409	ERDS2TJ181	180
R410	ERDS2TJ824	820K
R411,412	ERDS2TJ181	180
R413	ERDS2TJ472	4.7K
R414	ERDS2TJ103	10K

Ref. No.	Part No.	Value
R451	ERDS2TJ224	220K
R452	ERDS2TJ273	27K
R453	ERDS2TJ103	10K
R501,502	ERDS2TJ561	560
R503,504	ERDS2TJ823	82K
R505,506	ERDS2TJ272	2.7K
R507,508	ERDS2TJ823	82K
R509,510	ERDS2TJ471	470
R511,512	ERDS2TJ103	10K
R513,514 Ⓢ⚠	ERD25FJ470	47
R515,516	ERDS2TJ471	470
R517,518	ERDS2TJ103	10K
R519,520 Ⓢ⚠	ERD25FJ470	47
R521,522 ⚠	ERDS1FJ100	10
R523,524 Ⓢ⚠	ERD25FJ100	10
R525,526 Ⓢ	ERG1ANJ331	330
R527,528 ⚠	ERX2ANJR22	0.22
R529,530	ERDS2TJ331	330
R531,532	ERDS2TJ561	560
R533,534	ERDS2TJ272	2.7K
R535 Ⓢ⚠	ERD25FJ5R6	5.6
R537 Ⓢ⚠	ERD25FJ332	3.3K
R538	ERDS2TJ473	47K
R601,602	ERDS2TJ223	22K
R603,604	ERDS2TJ333	33K
R605	ERDS2TJ124	120K

Ref. No.	Part No.	Value
R606	ERDS2TJ104	100K
R607	ERDS2TJ333	33K
R609,610	ERDS2TJ183	18K
R611	ERDS2TJ273	27K
R612	ERDS2TJ394	390K
R613,614	ERDS2TJ103	10K
R615	ERDS2TJ103	10K
R618	ERDS2TJ153	15K
R619,620	ERDS2TJ103	10K
R621,622	ERDS2TJ223	22K
R623,624	ERDS2TJ223	22K
R625,626	ERDS2TJ103	10K
R627,628	ERDS2TJ822	8.2K
R629	ERDS2TJ392	3.9K
R630 Ⓢ	ERG2ANJ471	470
R632,633	ERDS2TJ181	180
R634	ERDS2TJ103	10K
R635	ERDS2TJ223	22K
R636	ERDS2TJ822	8.2K
R637	ERDS2TJ183	18K
R701,702 Ⓢ⚠	ERD25FJ471	470
R705,706	ERDS2TJ153	15K
R707,708	ERDS2TJ681	680

●CAPACITORS

Ref. No.	Part No.	Value
C1,2	ECEA1HU3R3	3.3
C3,4 Ⓢ	ECCD1H101K	100P
C5,6 Ⓢ	ECKD1H471KB	470P
C7,8	ECQM1H223JZ	0.022
C9,10	ECQM1H682JZ	0.0068
C11,12	ECEA1HN010S	1
C13,14	ECEA0JU330	33
C201,202	ECEA1EU330	33
C203,204	ECQM1H563JZ	0.056
C205,206 (EGA) only	ECCD1H101K	100P
C207,208 (EGA) only	ECCD1H101K	100P
C209,210 (EGA) only	ECCD1H101K	100P
C211,212 (EGA) only	ECCD1H101K	100P

Ref. No.	Part No.	Value
C213,214 (EGA) only	ECCD1H101K	100P
C301,302	ECQM1H563JZ	0.056
C303,304	ECEA1HU3R3	3.3
C305,306	ECCD1H820K	82P
C307,308	ECQM1H153JZ	0.015
C309,310	ECQM1H823JZ	0.082
C311,312	ECQM1H182JZ	0.0018
C313,314	ECQM1H183JZ	0.018
C315,316	ECEA1EU4R7	4.7
C317	ECEA1HUR22	0.22
C319,320 Ⓢ	ECCD1H390K	39P
C321	ECEA1EU100	10
C322	ECEA1EU100	10
C401	ECEA1CU100	10
C403,404 Ⓢ	ECCD1H121K	120P
C405,406 Ⓢ	ECKD1H102ZF	0.001
C451 Ⓢ	ECKD1H103ZF	0.01
C501,502	ECEA1HU3R3	3.3

Ref. No.	Part No.	Value
C503,504	ECEA1CU220	22
C505,506 Ⓢ	ECCD1H100KC	10P
C507,508 Ⓢ	ECKD1H681KB	680P
C509,510 Ⓢ	ECKD1H331KB	330P
C511,512 Ⓢ	ECCD1H100KC	10P
C513,514 Ⓢ	ECCD1H820K	82P
C515,516 Ⓢ	ECCD1H820K	82P
C517,518 Ⓢ	ECKD1H103MD	0.01
C521,522 Ⓢ	ECKD1H223ZF	0.022
C523	ECEA1HU3R3	3.3
C525	ECEA1EU3R3	3.3
C527,528 Ⓢ	ECCD1H820K	82P
C551,552 (EGA) only Ⓢ	ECKD1H681KB	680P
C553,554 (EGA) only Ⓢ	ECKD1H681KB	680P
C555,556 (EGA) only Ⓢ	ECKD1H103MD	0.01

Ref. No.	Part No.	Value
C557,558 (EGA) only Ⓢ	ECKD1H103MD	0.01
C601,602	ECEA1EU3R3	3.3
C603	ECEA1CU101	100
C604	ECEA1HUR47	0.47
C605	ECEA1CU100	10
C606	ECEA1EU4R7	4.7
C609 Ⓢ	ECCD1H121K	120P
C701,702 ⚠	ECETS1HV822U	8200
C703	ECEA1CU222	2200
C704	ECEA0JU101	100
C705,706	EECW2R3A3R3	3.3F
C707,708	ECEA1EU330	33
C709,710	ECEA1EU3R3	3.3
C712 Ⓢ	ECKD1H103ZF	0.01
C713 Ⓢ	ECKD2H103ZF	0.01
C801 ⚠	ECKDKC103PF2	0.01

■ REPLACEMENT PARTS LIST

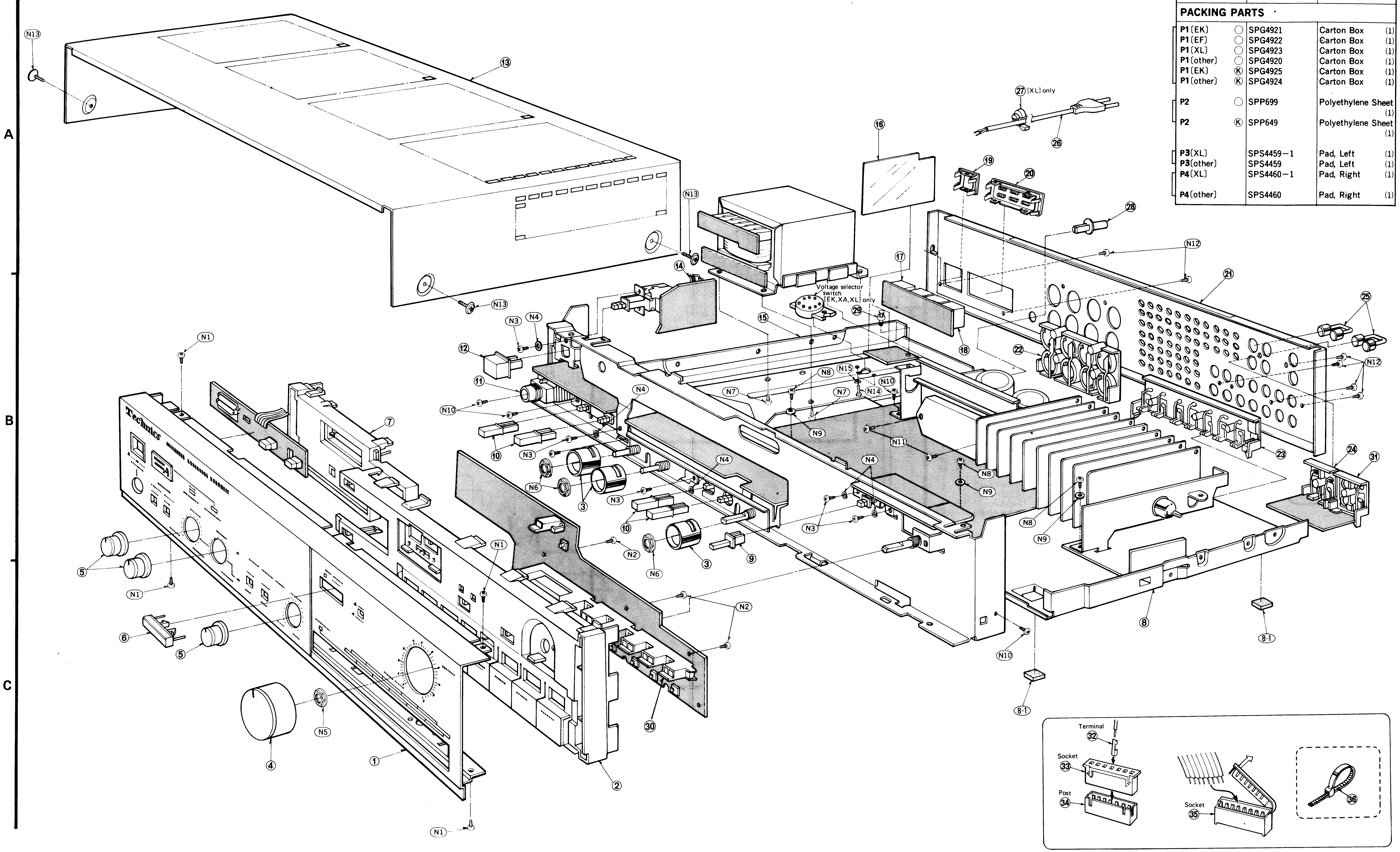
Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ —marked parts are used for black only, while ○ —marked parts are for silver type only.
4. Part other than Ⓚ — and ○ —marked are used for both black and silver type.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The " Ⓢ " mark is service standard parts and may differ from production parts.
7. The parenthesized numbers in the column of description stand for the quantity per set.
8. This parts list contains STK2038-4 (power IC). When SVI2003 (power IC) is used, refer to the parts list on page 20.

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1	SVINJM2043SE	Integrated Circuit
IC201	TC9163N	Integrated Circuit
IC202	TC9164N	Integrated Circuit
IC301	AN6553F	Integrated Circuit
IC401	UPD7506C043	Integrated Circuit
IC402,403	M53242P	Integrated Circuit
IC404	MN4069UB	Integrated Circuit
IC501	AN7062	Integrated Circuit
IC502	STK2038-4	Integrated Circuit
IC601	MN1404STE	Integrated Circuit
IC701	AN78M05	Integrated Circuit
TRANSISTORS		
Q301,302	2SK301-S	Transistor
Q401,451 Ⓢ 690,610	2SA1015Y	Transistor
Q403,404,405 606,611,612	UN4211	Transistor
Q501,502,702	2SA1123-R	Transistor
Q503,504,701	2SC2631-Q	Transistor
Q505,506 Ⓢ	2SA992E	Transistor
Q601,602	UN4212	Transistor
Q603,604,605 607,703	2SC1815-Y	Transistor
Q608	2SC3112	Transistor
Q704,705	2SK246-Y	
DIODES		
D301 Ⓢ	20A90	Diode
D401,402,417 418,451 604,607,608	MA165	Diode
D403,405~410	SVDPR5533K	Diode
D404,411~416	SVDAY5533K-M	Diode
D501,502 Ⓢ	MA162A	Diode
D503,504,601 602	MA167	Diode
D505,706	MA1160H	Diode
D603	SVDMZ424B	Diode
D605	LN346GP	LED
D606	LN446YP	LED
D701~704	SVDS3V40	Diode
D705 ⚠	SVDSR1K2	Diode
COILS		
L1(EGA)only	SLQZ650MH49	Coil
L101,102 (EGA)only	SLM1Z33	Coil
L501,502	SLQY18G-10	Coil
L551~554 (EGA)only	SLQY07G-30	Coil
TRANSFORMERS		
T1(EK,XL,XA) ⚠	SLT5U48	Power Transformer
T1(other) ⚠	SLT5U47	Power Transformer
CRYSTAL		
X401	SVFCSB400P-M	Crystal OSC
VARIABLE RESISTORS		
VR201	EWJKMAO54B15	Variable Resistor, 100K(B)
VR301	EWHF5AF25G15	Variable Resistor, 100K(G)
VR302,303	EWCXEA011C15	Variable Resistor, 100K(C)
THERMISTERS		
TH201,202	RRT104	Thermistor (100kΩ)
LAMPS		
PL601,602 ⚠	XAMR74S17	Lamp

Ref. No.	Part No.	Part Name & Description
FUSES		
F1(EK,XL,XA) ⚠	XBA2C31TRO	Fuse, 250V,T3.1A
F1(other) ⚠	XBA2C16TRO	Fuse, 250V,T1.6A
F2(EK,XL,XA) ⚠	XBA2C16TRO	Fuse, 250V, T1.6A
SWITCHES		
S1~8	SSG13	Switch, Input Selector
S9	SSH1165	Switch, Loudness
S10	SSH2082	Switch, Tone
S11	SSH2081	Switch, Speaker Selector
S12	SSH1152	Switch, Tap Selector
S13 ⚠	SSH1057-1	Switch, Power
S14(EK,XA, XL) ⚠	ESE37219	Switch, Voltage Selector
RELAY		
RLY601	SSY126	Relay
CABINET and CHASSIS PARTS		
1 ○	SGWUV2X-SE	Front panel Ass'y (1)
1 Ⓚ	SGWUV2X-KE	Front panel Ass'y (1)
2 ○	SGXUV2X-SE4	Sub panel Ass'y (1)
2 Ⓚ	SGXUV2X-KE4	Sub panel Ass'y (1)
3	SGX7701	Spacer, Bass, Treble, Balance (3)
4	SBN1125	Knob, Volume (1)
5	SBN1153	Knob, Bass, Treble, Balance (3)
6 ○	SBC668	Button, Muting (1)
6 Ⓚ	SBC668-1	Button, Muting (1)
7 ○	SGXUV2X-SE5	Sub Panel Ass'y (1)
7 Ⓚ	SGXUV2X-KE5	Sub Panel Ass'y (1)
8(XA)	SKUUV2X-SX	Bottom Board(W/ Feet) (1)
8(other)	SKUUV2X-SE	Bottom Board(W/ Feet) (1)
8-1	SHS2481	Foot, Bottom Board (4)
9	SBC621	Button,loudness (1)
10	SBC399T	Button, Speaker, tone, subsonic (4)
11	SJJ71B	Jack, Headphone(1)
12	SBC627	Button, Power (1)
13 ○	SKC1670S1	Cabinet (1)
13 Ⓚ	SKC1670BB1	Cabinet (1)
14	SJT347	Holder (2)
15(EK,XL,XA)	SMLUV2X-SK	Bottom Board (1)
15(other)	SMLUV4X-KM	Bottom Board (1)
16	SMX475-1	Insulation Cover, Transformer (1)
17 Except(XL)	SJS9231B	Cover, inlet (1)
18(XA)only	SJS9328B	Cover, inlet (1)

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
19 except(XL)	SJS9231A	Insulation Cover, AC Inlet (1)
20(XA)only	SJS9328A	Insulation Cover, AC Outlet (1)
21(EGA)	SGP6240B	Rear Panel (1)
21(XA)	SGP6240-2A	Rear Panel (1)
21(EK)	SGP6240-4A	Rear Panel (1)
21(XL)	SGP6240-5A	Rear Panel (1)
21(other)	SGP6240A	Rear Panel (1)
22	SJF4815-1	Terminal Board, Speaker (1)
23	SJF3059N	Terminal Board, Input (1)
24	SJF3057N	Terminal EXT (1)
25	SJP9205-2	Short pin (2)
26(other) ⚠	SFDAC05E02	AC Cord (1)
26(EK) ⚠	SFDAC05G02	AC Cord (1)
26(XA) ⚠	SJA168	AC Cord (1)
26(XL) ⚠	RJA79ZAK	AC Cord (1)
27(XL)only	SHR127	Bushing, AC Cord (1)
28	SBC165	Button, Speaker Inpedance (1)
29	SHR401-1	Clip, PCB (1)
30	SMP380	Holder, LED (1)
31	SJF3057-5N	Terminal Board, Phono (1)
32	SJT783	Terminal (13)
33	SJS5331	Socket, 3p (1)
33	SJS5523	Socket, 5p (2)
34	SJT3321	Post, 3p (1)
34	SJT3513	Post, 5p (2)
35	SJS5327	Socket, 3p (2)
35	SJS5421	Socket,4p (1)
35	SJS5519	Socket, 5p (1)
36	SHR301	Clamper, Read Wire (4)
SCREWS, WASHERS and NUTS		
N1 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (4)
N2 Ⓢ	XTB3+8BFN	Tapping, ⊕3×8 (3)
N3 Ⓢ	XSN3+6S	⊕3×6 (5)
N4 Ⓢ	XWA3B	Spring, φ3 (5)
N5	SNE4021	Nut, Main Volume (1)
N6	SNE4021	Nut, Tone Volume (3)
N7 Ⓢ	XTB4+10BFN	Tapping, ⊕4×10(4)
N8 Ⓢ	XTV3+8BFN	Tapping, ⊕3×8 (3)
N9 Ⓢ	XWG3	Washer, φ3 (3)
N10 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (2)
N11 Ⓢ	XTB3+14BFN	Tapping, ⊕3×14(2)
N12 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (9)
N13 ○	SNE2095-4	Cabinet (4)
N13 Ⓚ	SNE2095-5	Cabinet (4)
N14[EK,XA,XL]	XSN3+10S	⊕3 x 10 (2)
N15[EK,XA,XL]	XWA3B	Spring, φ3 (2)
ACCESSORIES		
A1(XA) ⚠	SJP9215	Plug (1)
A2(EGA)	SQF12135	Instruction Book (1)
A2(XA)	SQF12136	Instruction Book (1)
A2(other)	SQF12134	Instruction Book (1)

■ EXPLODED VIEW



Ref. No.		Part No.	Part Name & Description
PACKING PARTS			
P1〔EK〕	○	SPG4921	Carton Box (1)
P1〔EF〕	○	SPG4922	Carton Box (1)
P1〔XL〕	○	SPG4923	Carton Box (1)
P1〔other〕	○	SPG4920	Carton Box (1)
P1〔EK〕	Ⓚ	SPG4925	Carton Box (1)
P1〔other〕	Ⓚ	SPG4924	Carton Box (1)
P2	○	SPP699	Polyethylene Sheet (1)
P2	Ⓚ	SPP649	Polyethylene Sheet (1)
P3〔XL〕		SPS4459−1	Pad, Left (1)
P3〔other〕		SPS4459	Pad, Left (1)
P4〔XL〕		SPS4460−1	Pad, Right (1)
P4〔other〕		SPS4460	Pad, Right (1)

A	⑬ ⑭ ⑯ ⑰ ⑲ ㉗ ⑳ ㉖ ㉘
B	⑦ ⑫ ⑪ ⑩ ③ ⑩ ⑮ ㉙ ⑱ ㉒ ㉑ ㉓ ㉔ ㉕ ㉛
C	⑤ ⑥ ⑤ ④ ① ② ㉚ ③ ⑨ (8-1) ⑧ (8-1)

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