

Service Manual

Space Dimension Controller

SH-8030

[E], [EG], [EK], [XL],
[XA], [EF], [EH], [EB],
[E]

SH-8030(K)

[E], [EG], [XL],
[XA], [EH]



* The cabinet and front panel are available in black color and silver types.

* The black type model is provided with (K) in the service manual.

Areas

- * [E] and [EG] are available in Scandinavia and European except United Kingdom, France, Holland, Belgium and Italy.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [XA] is available in Asia, Latin America, Middle East and Africa.
- * [EF] is available in France.
- * [EH] is available in Holland.
- * [EB] is available in Belgium.
- * [E] is available in Italy.

TECHNICAL SPECIFICATIONS (Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

Frequency response		7 Hz~150 kHz, +0 dB, -3 dB
line in		20 Hz~20 kHz, RIAA±0.5 dB
phono		35 Hz~30 kHz, -3 dB
mic 1, mic 2		5V (20 Hz~20 kHz)
Maximum output voltage		150 mV
Rated total harmonic distortion		0.005% (20 Hz~20 kHz, 150 mV output)
line in		150 mV
line in, aux		170 mV
tape		2.5 mV
phono		1.5 mV
mic 1, mic 2		150 mV
Rated output voltage		150 mV
line out		150 mV
rec out		77 dB (80 dB, IHF, A)
Signal to noise ratio		70 dB
line in		±1.0 dB
Maximum input voltage (T.H.D. 0.2%)		5V (1 kHz)
line in		120 mV (1 kHz)
phono		70 mV (1 kHz)
mic 1, mic 2		70 dB
Channel separation, 1 kHz		±1.0 dB
Channel balance, 250 Hz~6300 Hz		

Input impedance	line in, aux, tape	30 kilohms
	phono	47 kilohms
	mic 1, mic 2	10 kilohms
Output impedance	line out	600 ohms
	rec out	600 ohms
Dimension controller		
	echo time	90 msec.
	sound image localization	30 deg. (backward)
Frequency equalizer		
	band level controls	+12 dB~-12 dB
		(5 elements continually variable per channel)
	center frequency	60 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz

■ GENERAL

Power consumption	25W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 120 × 280 mm (16-15/16" × 4-23/36" × 11-1/32")
Weight	4.8 kg (10.6 lb.)

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

SH-8030

TECHNISCHE DATEN Spezifikationen können infolge von verbesserungen ohne Ankündigung geändert werden.

(DIN 45 500)

Frequenzgang		7 Hz ~ 150 kHz, +0 dB, -3 dB
line in		20 Hz ~ 20 kHz, RIAA ± 0.5 dB
phono		35 Hz ~ 30 kHz, -3 dB
mic 1, mic 2		5V (20 Hz ~ 20 kHz)
Maximate Ausgangsspannung		150 mV
Nennklirrfaktor		0.005% (20 Hz ~ 20 kHz, 150 mV ausgang)
line in		150 mV
Eingangsempfindlichkeit		170 mV
line in, aux		2.5 mV
tape		1.5 mV
phono		150 mV
mic 1, mic 2		150 mV
Nennausgangsspannung		77 dB (80 dB, IHF, A)
line out		5V (1 kHz)
rec out		120 mV (1 kHz)
Geräuschabstand		70 mV (1 kHz)
line in		70 dB
Maximale Eingangsspannung (T.H.D. 0.2%)		± 1.0 dB
line in		
phono		
mic 1, mic 2		
Übersprechdämpfung		
1 kHz		
Kanalabweichung		
250 Hz ~ 6300 Hz		

Eingangsimpedanz	line in, aux, tape	30kΩ
	phono	47kΩ
	mic 1, mic 2	10kΩ
Ausgangsimpedanz	line out	600Ω
	rec out	600Ω

Raumklangregelung		90 msec.
nachhall		30° (rückwärts)
lokalisierung		
Frequenzgangregelung		+12 dB ~ -12 dB
regelbereich		(in fünf voneinander unabhängigen Frequenzbereichen stufenlos einstellbar)
mittenfrequenzen		60 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz

ALLGEMEINE DATEN

Leistungsaufnahme	25W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 x 120 x 280 mm
Gewicht	4.8 kg

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

DONNEES TECHNIQUES Sujet à changment sans préanis.

(DIN 45 500)

Réponse de fréquence		7 Hz~150 kHz, +0 dB, -3 dB
line in		20 Hz~20 kHz, RIAA±0.5 dB
phono		35 Hz~30 kHz, -3 dB
mic 1, mic 2		5V (20 Hz~20 kHz)
Tension de sortie maximum		150 mV
Distortion harmonique totale		0.005% (20 Hz~20 kHz, sortie 150 mV)
line in		150 mV
Sensibilité d'entrée		170 mV
line in, aux		2.5 mV
tape		1.5 mV
phono		150 mV
mic 1, mic 2		150 mV
Tension de sortie nominale		150 mV
line out		150 mV
rec out		77 dB (80 dB, IHF, A)
Signal/Bruit		70 dB
line in		± 1.0 dB
Tension d'entrée maximum (T.H.D. 0.2%)		5V (1 kHz)
line in		120 mV (1 kHz)
phono		70 mV (1 kHz)
mic 1, mic 2		70 dB
Séparation des canaux, 1 kHz		± 1.0 dB
Equilibrage des canaux, 250 Hz~6300 Hz		

Impédance d'entrée	line in, aux, tape	30kΩ
	phono	47kΩ
	mic 1, mic 2	10kΩ
Impédance de sortie	line out	600Ω
	rec out	600Ω

Compensateur ambiophonique		90 msec.
décali d'echo		30 deg (Vers l'arrière)
localisation de l'image sonore		
Egalisateur de fréquences		+12 dB~-12 dB
courseurs linéaires		(5 éléments valiables par canal)
fréquences fondamentales		60 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz

■ DIVERS

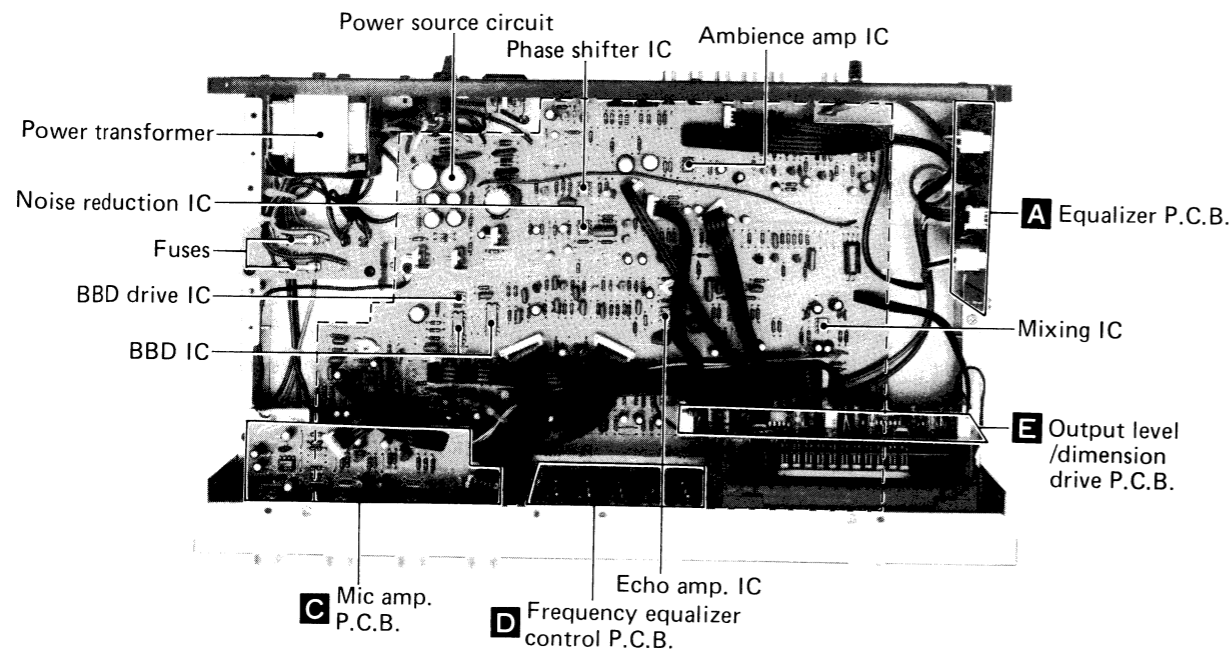
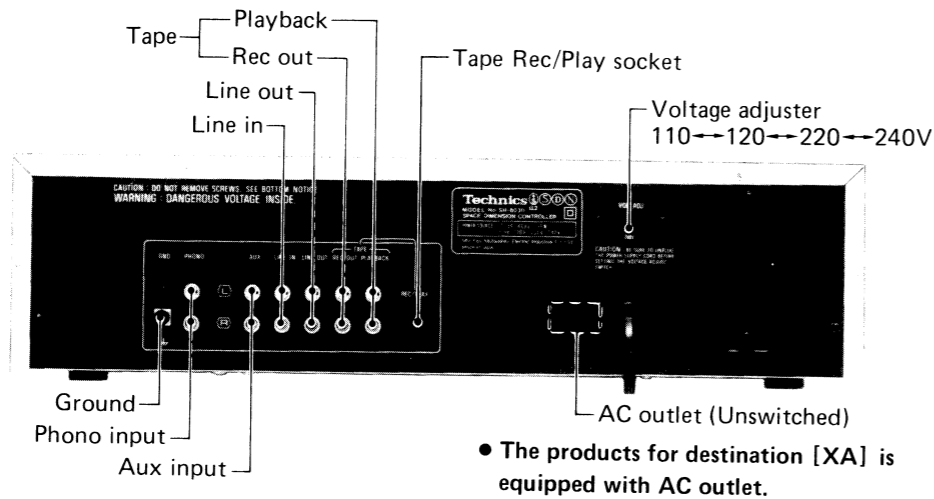
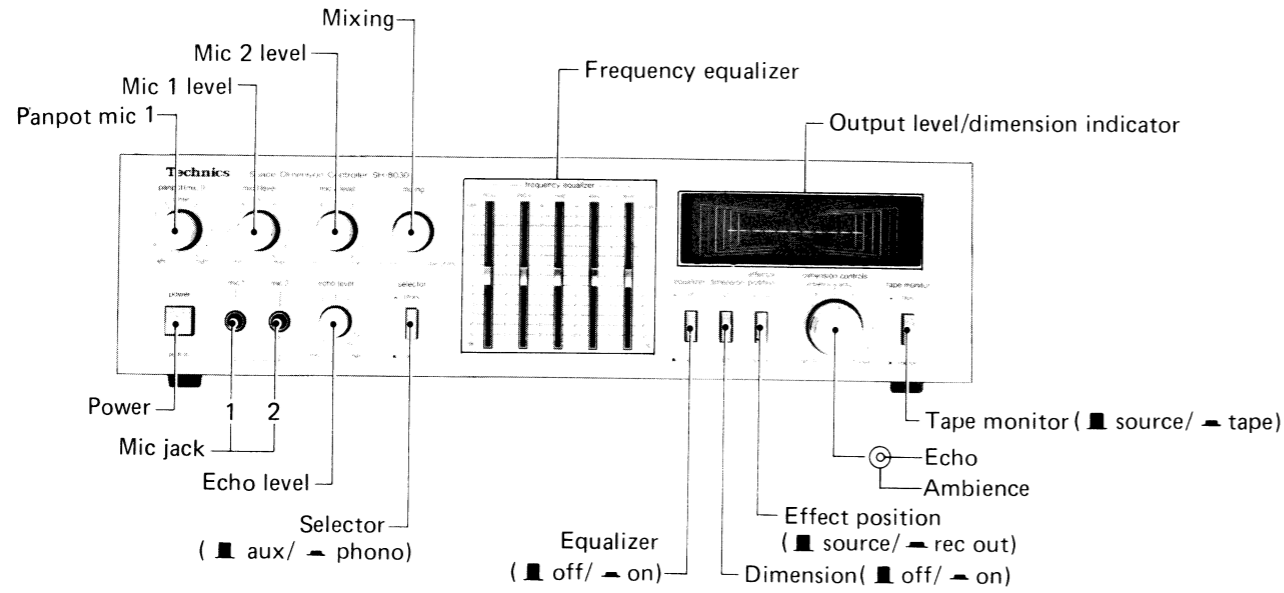
Consommation	25W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 120 × 280 mm
Poids	4.8 kg

Remarque: On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système HP. 3045).

■ CONTENTS

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LOCATION OF CONTROLS



DISASSEMBLY INSTRUCTIONS

How to remove the front panel and bottom board

1. Remove the 4 setscrews (Fig. 1 : ① ~ ④) on the side of the cabinet.
Slightly push the cabinet and then lift it to remove.
2. Remove the 6 (Fig. 2 : ⑤ ~ ⑩) setscrews of the bottom board.
Slightly push the bottom board in the direction of the arrow and then lift it to remove.

How to remove the front panel

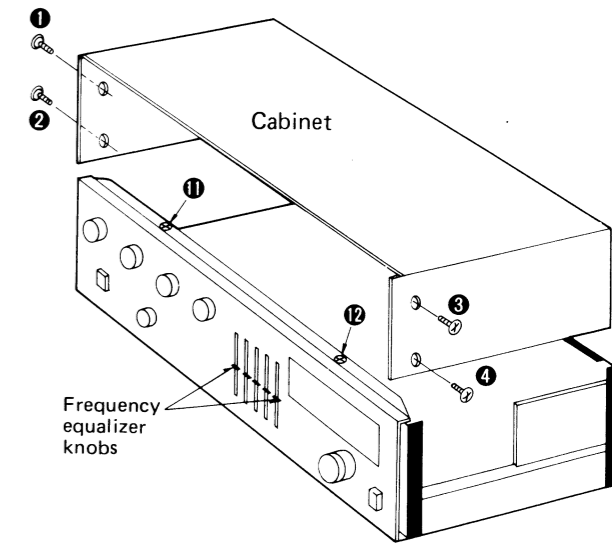
1. Remove the cabinet.
2. Remove the 5 frequency equalizer knobs (Fig. 1).
3. Remove the 4 setscrews (Fig. 1 : ⑪ ~ ⑭, Fig. 2 : ⑬ ~ ⑮) of the front panel.
4. Remove the fixing lug for the frequency equalizer and dimension indicator printed circuit board (Fig. 3 : ⑯).

How to remove the output level/dimension indicator printed circuit board

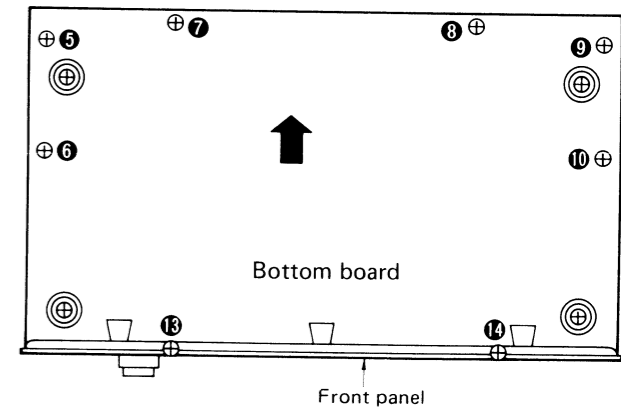
1. Remove the cabinet.
2. Remove the front panel.
3. Press the output level/dimension indicator printed circuit board fixing lugs (Photo 1 : ⑰ ~ ⑱) in the direction of the arrows A and B.
Then remove the printed circuit board in the direction of the arrow C.
4. Press the output level indicator printed circuit board fixing claws (Photo 2 : ⑲ ~ ⑳) in the direction of the arrows D and E.
Then remove the printed circuit board in the direction of the arrow F.
5. Detach the setscrew (Photo 3 : ㉔) and remove the output level/dimension indicator toward you.
6. Remove the right or left lamp printed circuit board fixing lugs (Photo 4 : ㉕ ~ ㉗) of the output level/dimension indicator in the direction of the arrows H, J and K respectively.
7. When replacing the scale, disengage the reflection plate lugs (Photo 5 : ㉘ ~ ㉚) in the direction of the arrow and remove the reflection plate.
Then the scale can be replaced.

NOTE:

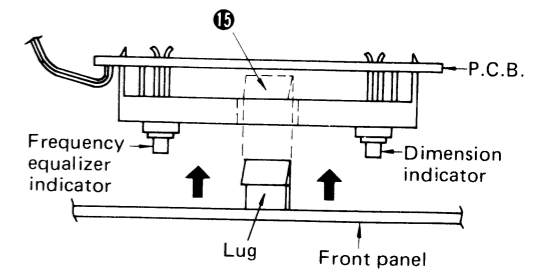
1. When inserting the scale into the case, make sure that the scale is clean.
2. For the position of each scale, refer to Fig. 4.



[Fig. 1]

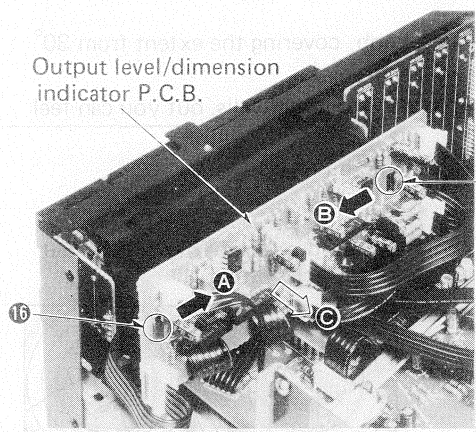


[Fig. 2]

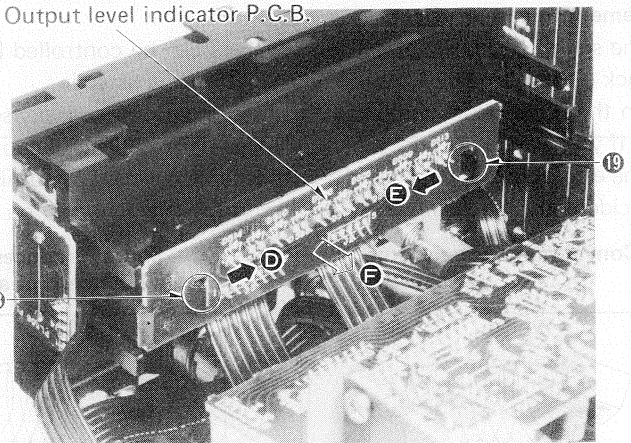


[Fig. 3]

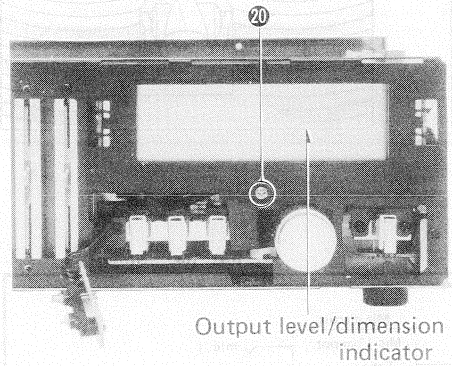
FEATURES



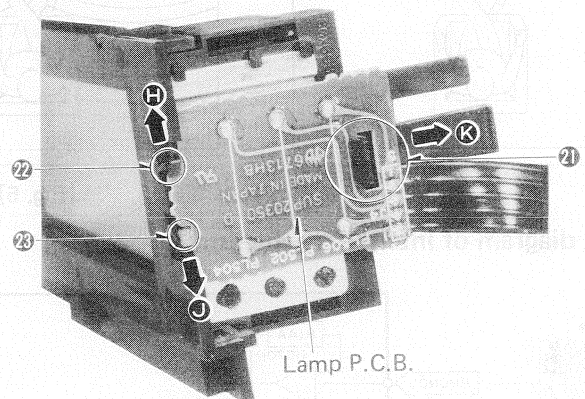
[Photo 1]



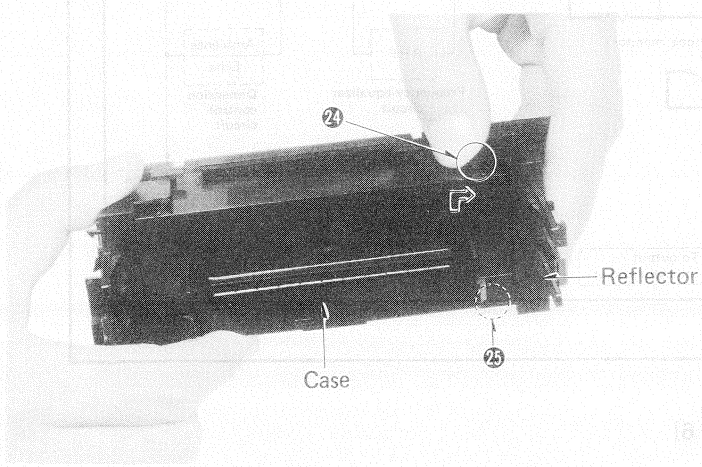
[Photo 2]



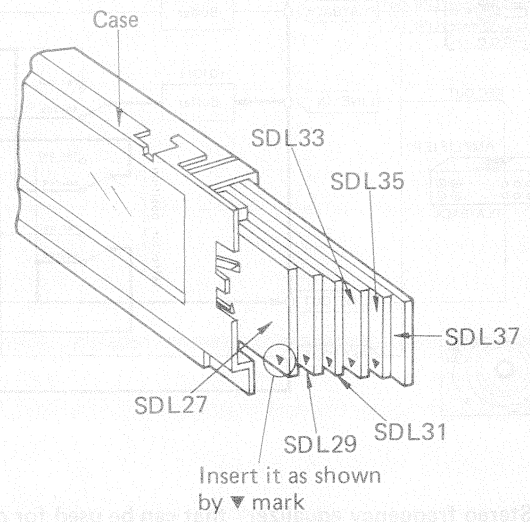
[Photo 3]



[Photo 4]



[Photo 5]



[Fig. 4]

FEATURES

1. The dimension control consists of "ambience" to control the sound extension and "echo" that uses BBD delay element to add an effect.

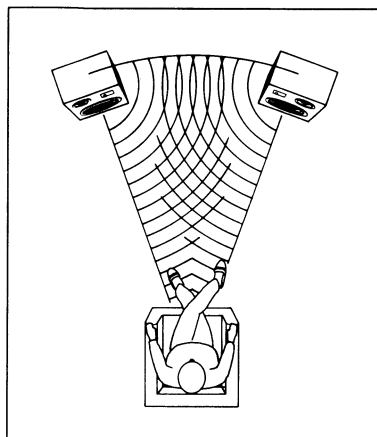
The sounds from the two front speakers can be controlled by the "ambience" knob, covering the extent from 30° back on the right to 30° back on the left of the listener.

On the other hand, the size of the listening room is usually sensed through the echo from the walls, but you can feel as if you were in a concert hall by adjusting the "echo" knob.

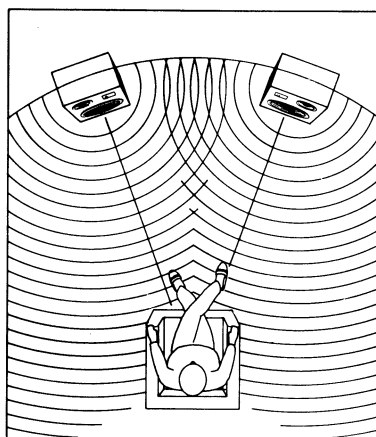
The effects of the dimension control can be checked by turning the "dimension" switch on and off.

Incidentally, the "ambience" of this unit is effective only on stereo signal.

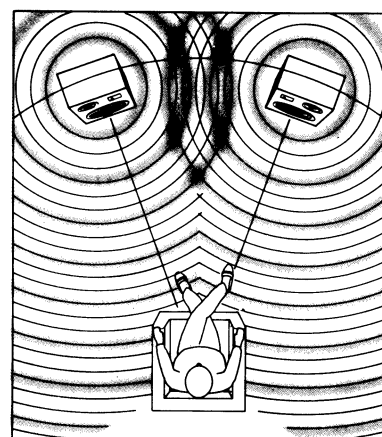
Conventional stereo sound



Sound produced after adjustment of ambience

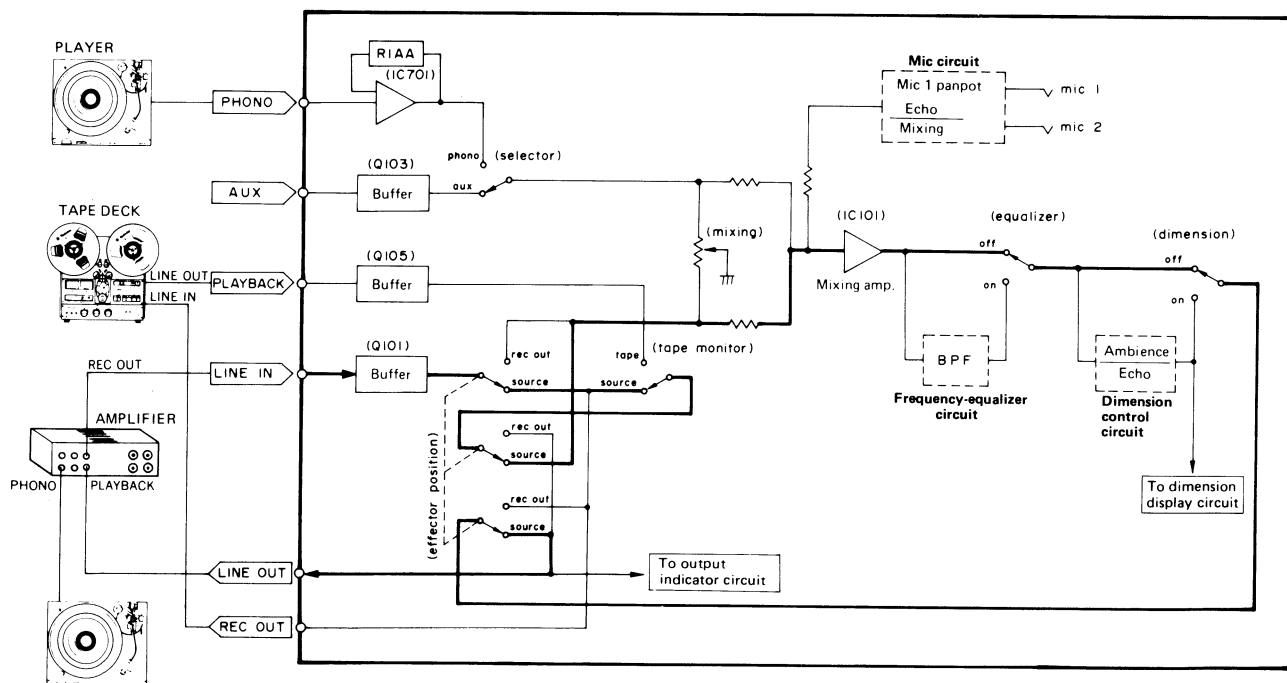


Sound produced after adjustment of the echo effect



[Fig. 5]

Block diagram of internal mechanism



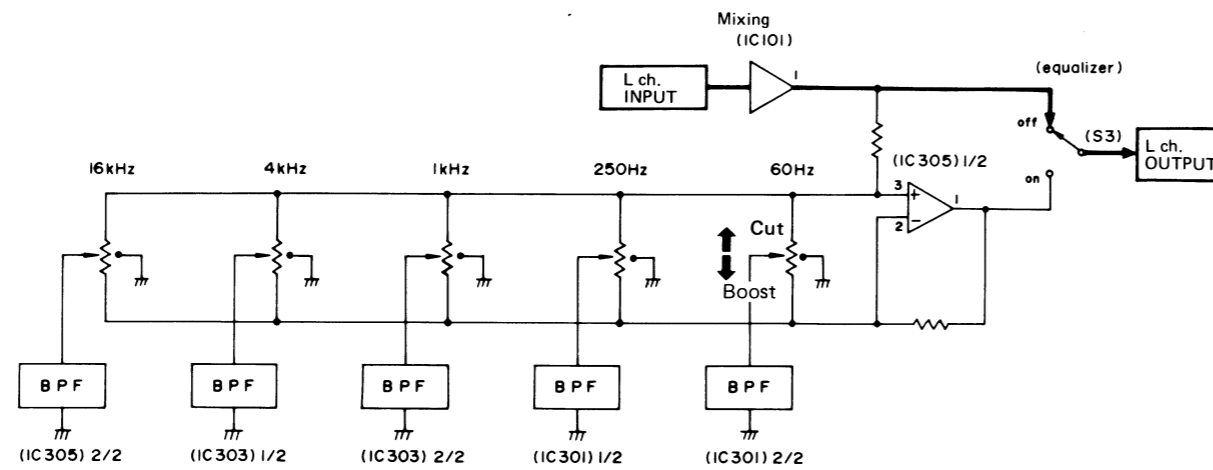
[Fig. 6]

2. "Stereo frequency equalizer" that can be used for correcting tone quality and for creating desired tones.

The five elements of frequency equalizer (60Hz, 250Hz, 1kHz, 4kHz, 16kHz) arranged at 2 octave intervals are capable of $\pm 12\text{dB}$ level control of sound of each band. This mechanism can be widely used for prevention of howling during use of microphone, for vocal emphasis and for correction of listening room characteristics.

Also, the effects of the stereo frequency equalizer can be checked by turning the "equalizer" switch on and off.

● Block diagram of frequency equalizer circuit

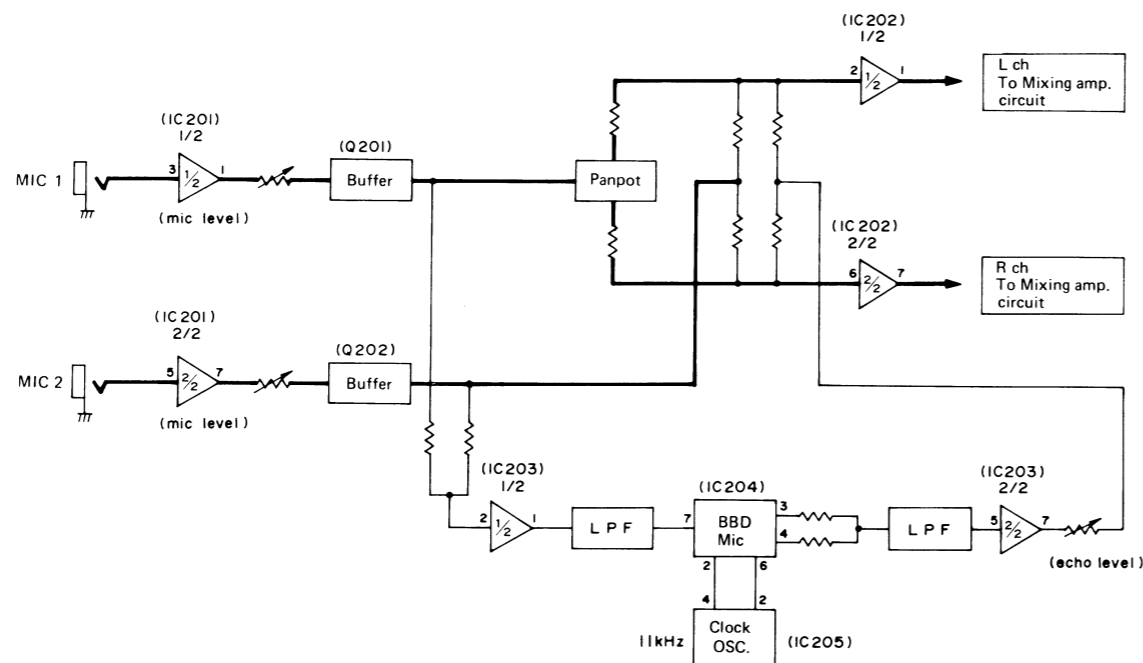


[Fig. 7]

3. Two microphones, provided with BBD electronic echo, can be used.

Both mic 1 and 2 are provided with independent level control so that you can enjoy mixing of tape and record. The echo circuit is of electronic system using BBD delay elements, and the echo level can be freely controlled. The mic 2 is fixed at the center, while the mic 1 can be shifted to the right or left by the "panpot" knob.

● Block diagram of mic circuit



[Fig. 8]

4. Phase-in and phase-out can be obtained by use of two players.

Connect another player to the "PHONO" terminal on the rear, set the "selector" switch on the front to "phono" and turn the "mixing" knob, thus mixing with the player connected to the amplifier can be achieved. This function can be used for non-stop performance.

A similar performance can be obtained by connecting a tape deck or tuner to the "AUX" terminal on the rear. In this case, set the "selector" switch to "aux".

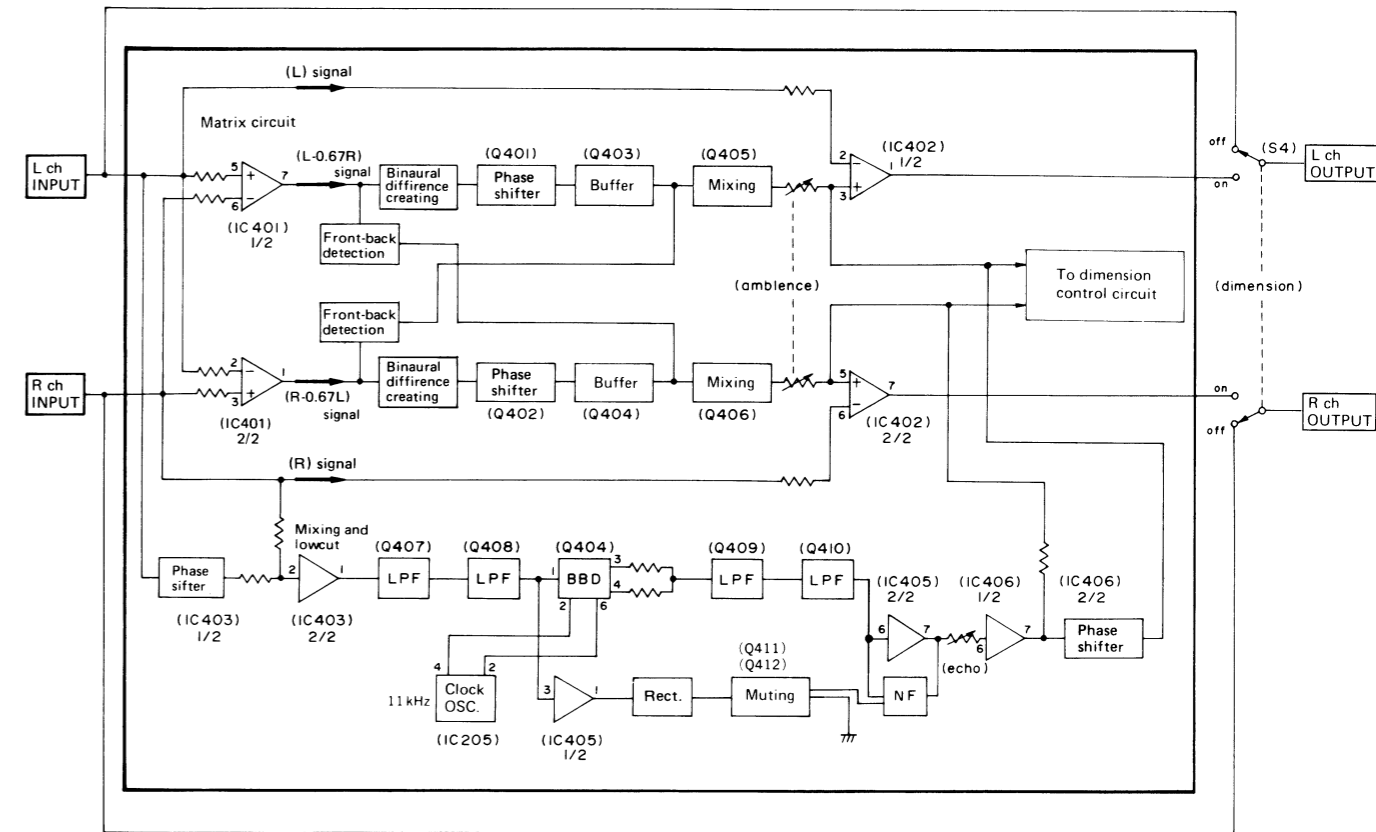
5. You can record the effects of this unit into the tape deck to enjoy the sound through car stereo.

This unit is connected to the tape deck terminal of the amplifier, and the tape deck must be connected to this unit. Therefore, the tape monitor is switched by the "tape monitor" switch of this unit. Recording into the tape deck can be performed with the "tape monitor" switch set to the "source" position. When the "effector position" switch is at "source", the signal from the amplifier is recorded without passing through the circuit of this unit, and with the switch set to "rec out", the effects of this unit are recorded into the deck.

6. Sound extension and output signal level are displayed.

The extension of sound and the output signal level are displayed in combination of LED and lamp. This function gives the listener a visual enjoyment. When the "dimension" switch is set to "off", the peak level indicator of LED displays the output signal level of this unit by 5dB step.

● Block diagram of dimension control circuit



[Fig. 9]

● Principle of dimension control

The sound image expansion technology based on ambience is that the direction of sound image can be controlled irrespective of speaker positions while using two speakers located ahead on the right and left.

When a man listens to the sound from the speakers as in Fig. 10, the direct sounds **L** and **R'** enter the left ear, while **R** and **L'** go into the right ear.

The man senses the position of speaker (position of sound image) through the frequency characteristic of **L** and **R**, time different ΔT between **L** and **L'**, **R** and **R'** to reach the ears, and sound pressure difference ΔP .

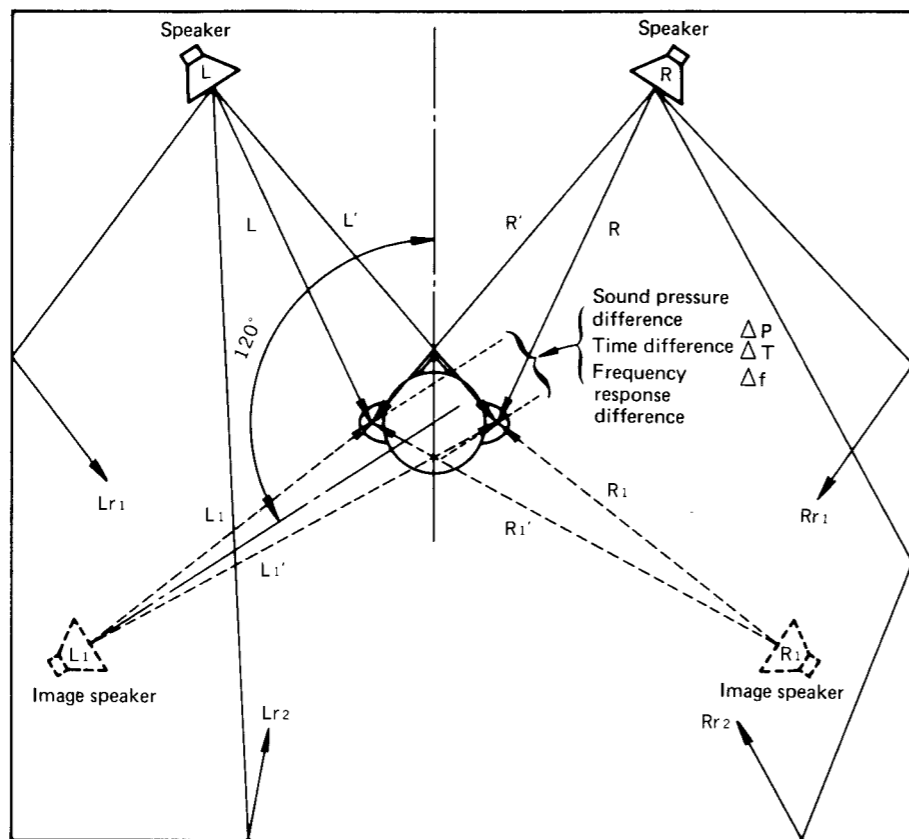
The relations can be represented as follows:

$$L' = L + (\Delta T, \Delta P) \quad R' = R + (\Delta T, \Delta P)$$

Accordingly, it is possible to set the sound image at a desired position by controlling the frequency response difference Δf , time difference ΔT and sound pressure difference ΔP .

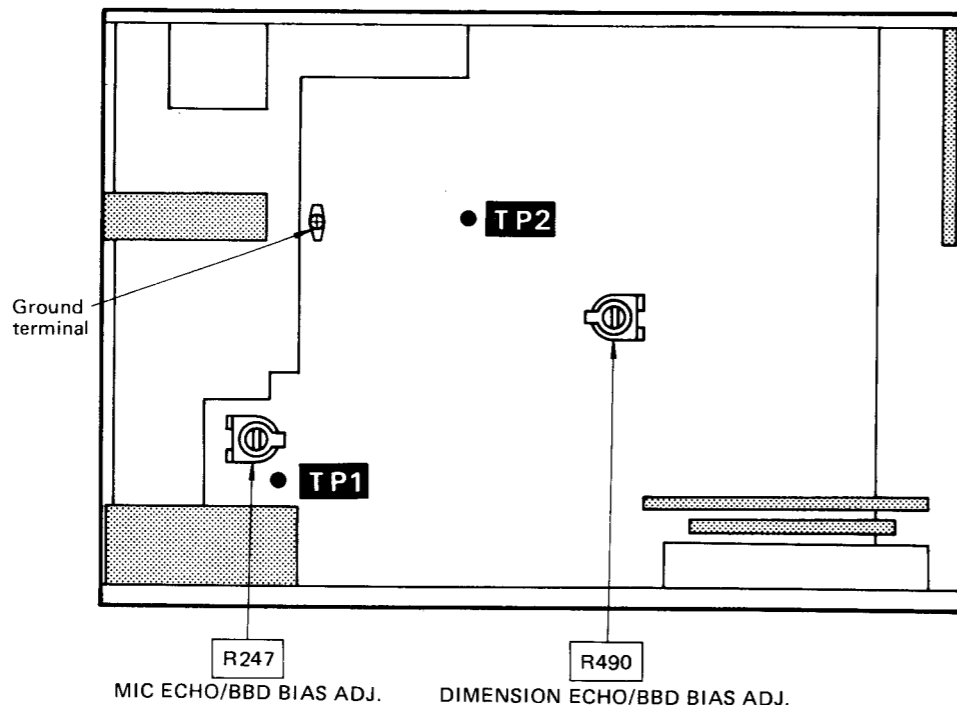
In this unit, indirect sound component is created by signal of **L** and **R**, to which Δf_1 , ΔT_1 and ΔP_1 equivalent to the image speaker located at 30° back are added, then the signal is applied to the front speaker, thus the listener is given a feeling of sound extension up to 240° .

Incidentally, only direct sounds are taken into consideration in the above explanation. Actually, however, echo from the walls such as **Rr₁**, **Rr₂** **Lr₁**, **Lr₂** will enter the ears. Since the man senses the size of the room through the level of such echo and its timing, it is possible to control the size of the room, that is, the hall effect, by controlling the echo level.

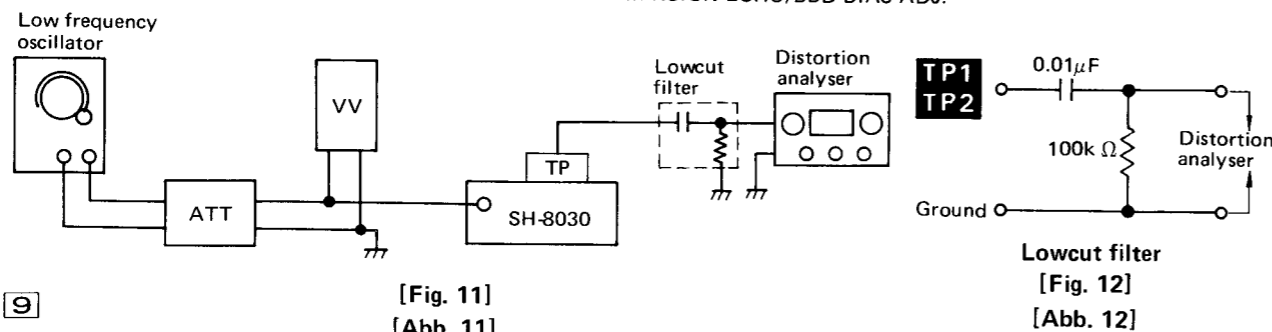


[Fig. 10]

■ ADJUSTING POINTS



[Fig. 11]
[Abb. 11]



Lowcut filter
[Fig. 12]
[Abb. 12]

■ ADJUSTING INSTRUCTIONS ENGLISH

● Setting of controls and instruments to be used

1. Distortion analyser
2. Low frequency oscillator
(Distortion factor 0.01% or less)
3. AC electronic voltmeter
4. Attenuator
5. Low cut filter (Fig. 12)
6. Mic 1 volume Maximum
7. Echo (Mic) volume. Minimum

● BBD bias (mic echo) adjustment

1. Connect the distortion analyser between TP1 and ground through lowcut filter.
2. Apply 1 kHz, 10 mV signal to microphone jack. (mic 1)
3. Adjust R247 so that the distortion minimum. (0.7% or less)

● BBD bias (dimension echo) adjustment

1. Connect the distortion analyser between TP2 and ground through lowcut filter.
2. Apply 1 kHz, 0.5V signal to LINE IN terminal.
3. Adjust R490 so that the distortion minimum. (0.7% or less)

■ EINSTELLUNGSANWEISUNGEN DEUTSCH

● Einstellung der verwendeten Regler und Instrumente

1. Verzerrungsmesser.
2. Unterbandoszillator (Klirrfaktor 0.01% oder weniger).
3. Elektronisches Wechselstrom-Voltmeter.
4. Dämpfungsglied.
5. Niederfrequenzfilter (Abb. 12).
6. Lautstärke Mikrofon 1 Maximum
7. Lautstärke Echo (Mikrofon). Minimum

● BBD-Vormagnetisierungs-Abgleichung (Mikrofon-Echo)

1. Den Verzerrungsmesser zwischen TP1 und Masse durch das Niederfrequenzfilter anschließen.
2. Signal von 1kHz, 10mV an die Mikrofon-Anschlußbuchse (mic 1) geben.
3. R247 auf kleinstmögliche Verzerrung abgleichen (0.7% oder weniger).

● BBD-Vormagnetisierungs-Abgleichung (Dimension-Echo)

1. Den Verzerrungsmesser zwischen TP2 und Masse durch das Niederfrequenzfilter anschließen.
2. Signal von 1kHz, 0.5V an die LINE IN schließen geben.
3. R490 auf kleinstmögliche Verzerrung abgleichen (0.7% oder weniger).

■ INSTRUCTIONS DE REGLAGE FRANÇAIS

● Réglage des commandes et des instruments à utiliser

1. Analyseur de distorsion.
2. Oscillateur à bases fréquences.
(Facteur de distorsion de 0.01% ou moins.)
3. Voltmètre électronique C.A.
4. Atténuateur.
5. Filtre de coupure de gammes basses (Fig. 12.)
6. Volume du micro 1. Maximum
7. Volume (micro) d'écho. Minimum

● Mise au point de la polarisation (écho du micro) BBD

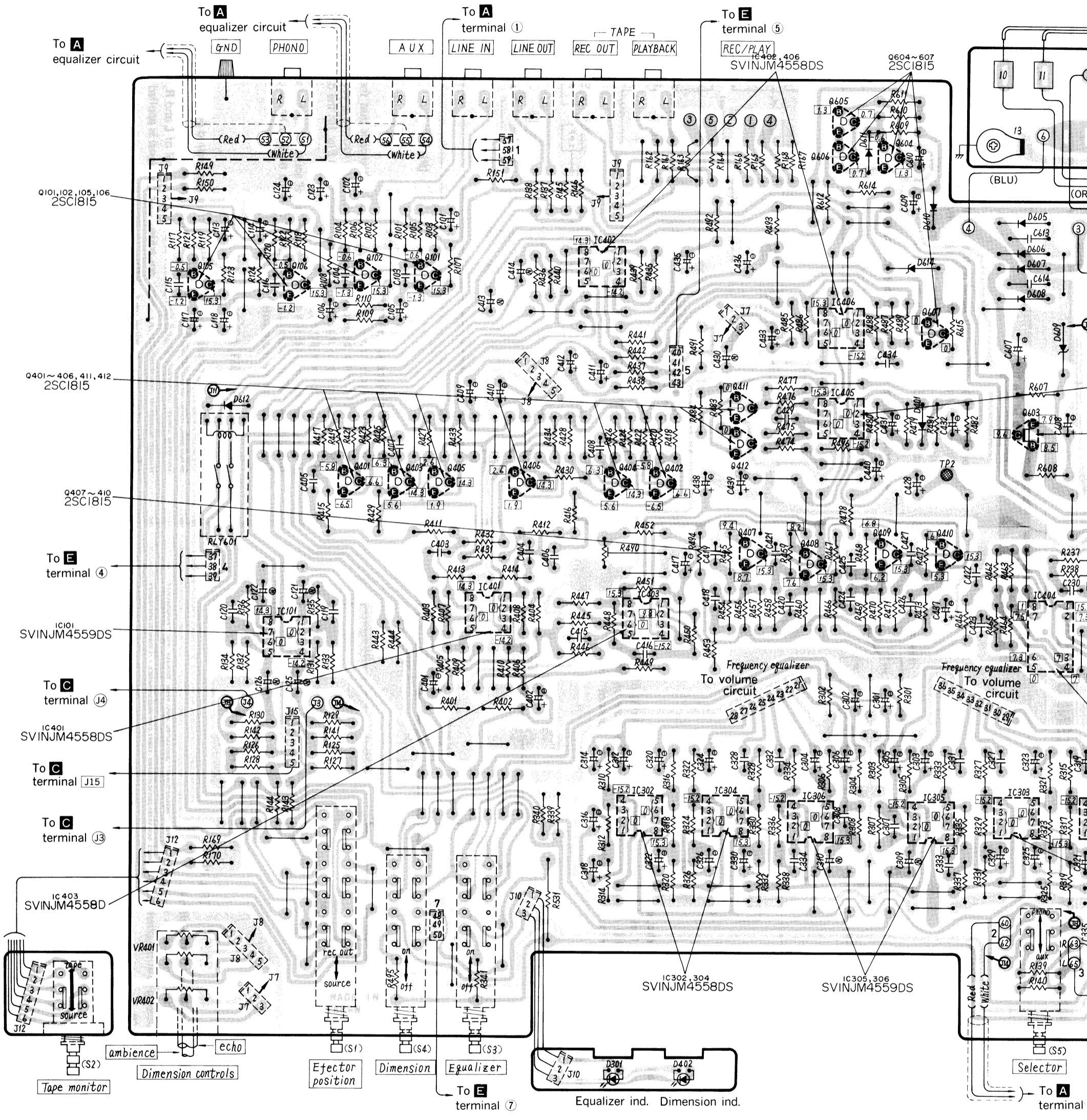
1. Brancher l'analyseur de distorsion entre TP1 et la masse par l'intermédiaire du filtre de coupure de gammes basses.
2. Appliquer un signal de 1kHz, 10mV au jack du microphone (micro 1).
3. Régler R247 de façon à ce que la distorsion soit minimale (0.7% ou moins).

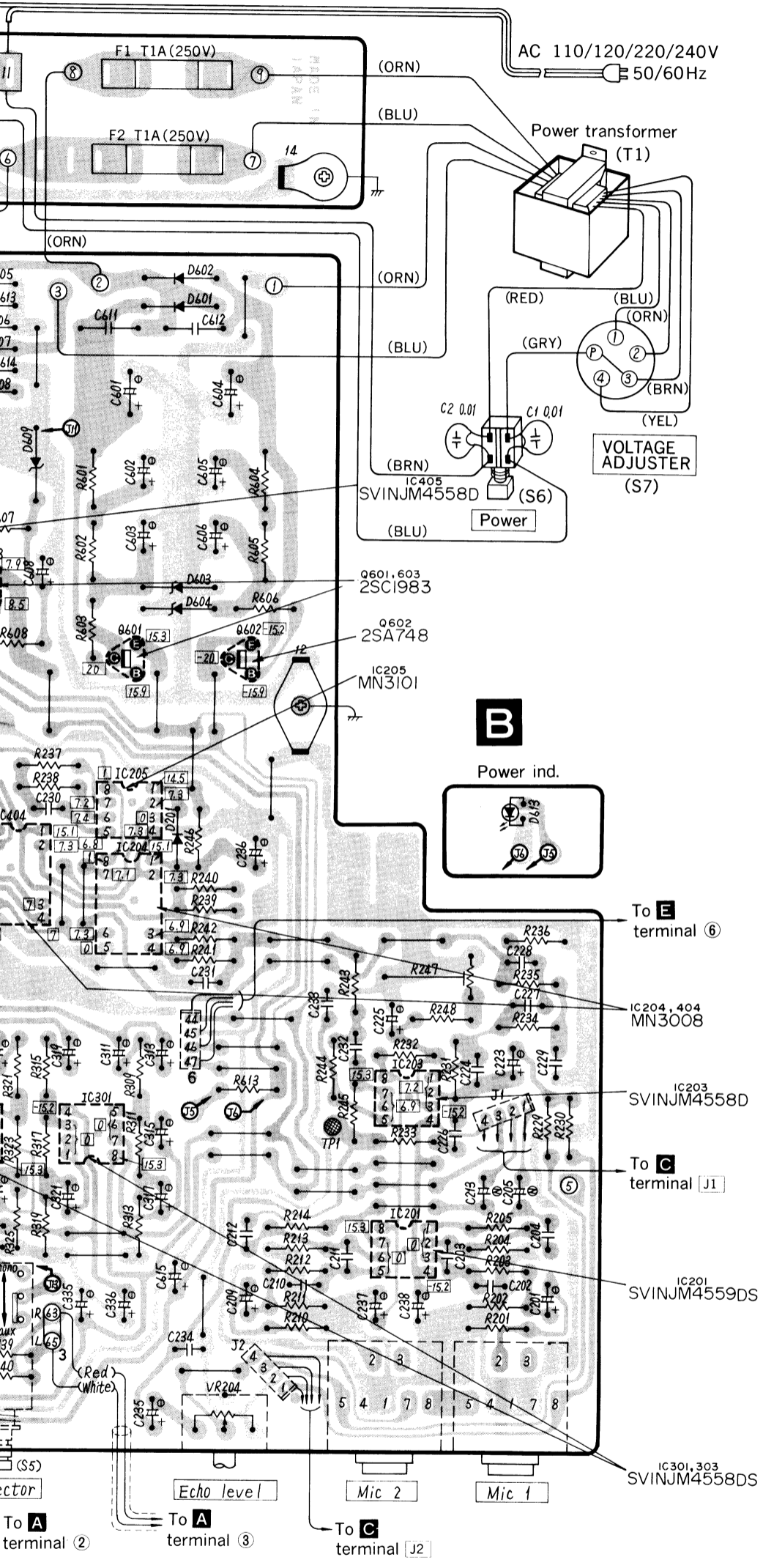
● Mise au point de la polarisation (écho du dimension) BBD

1. Brancher l'analyseur de distorsion entre TP2 et la masse par l'intermédiaire du filtre de coupure de gammes basses.
2. Appliquer un signal de 1kHz, 0.5V au LINE IN.
3. Régler R490 de façon à ce que la distorsion soit minimale (0.7% ou moins).

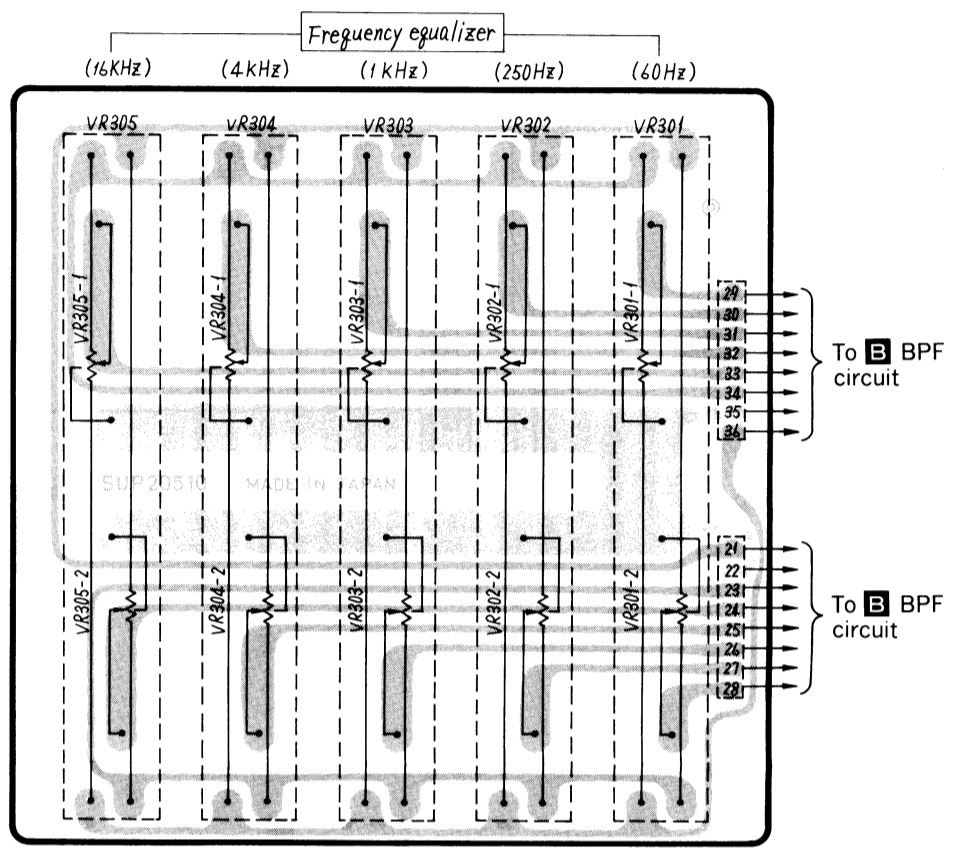
B

Mic amp./frequency equalizer/BBD/dimension control/power source P.C.B.





D Frequency equalizer control P.C.B.



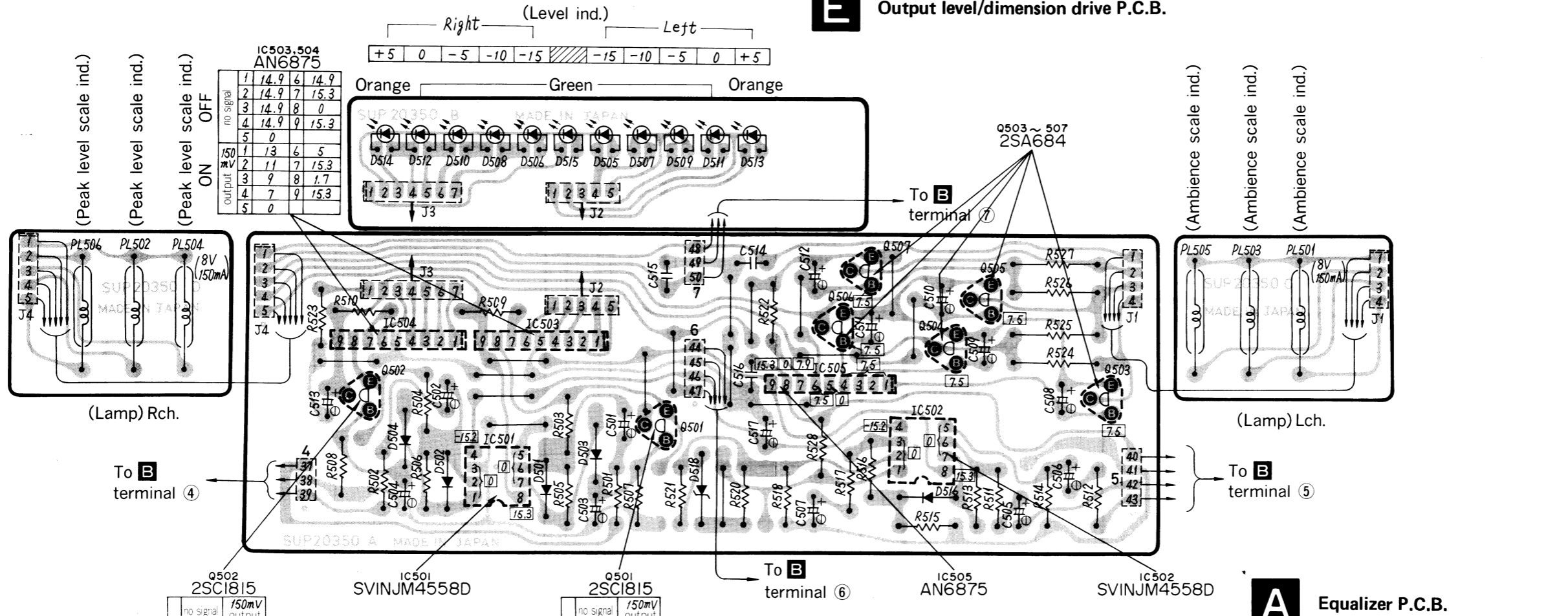
PRINTED CIRCUIT BOARDS

Ground (Earth) lines

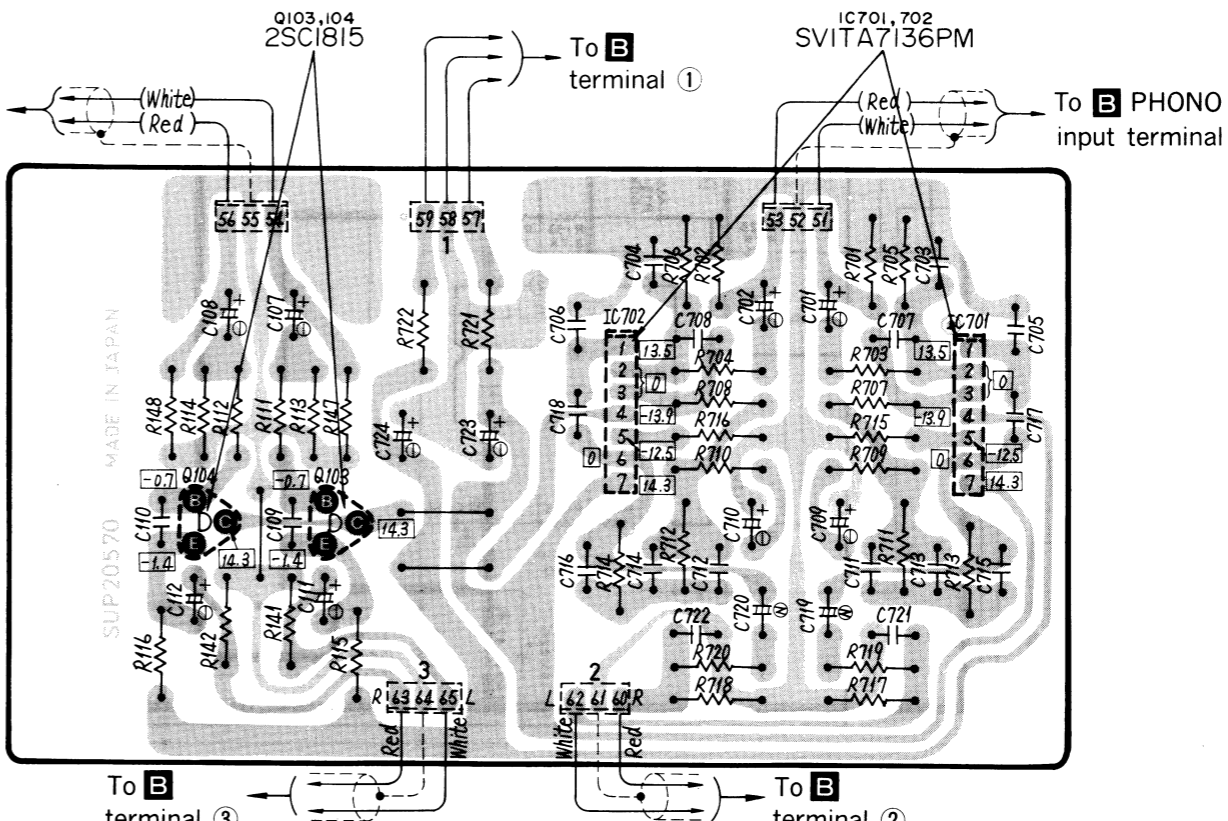
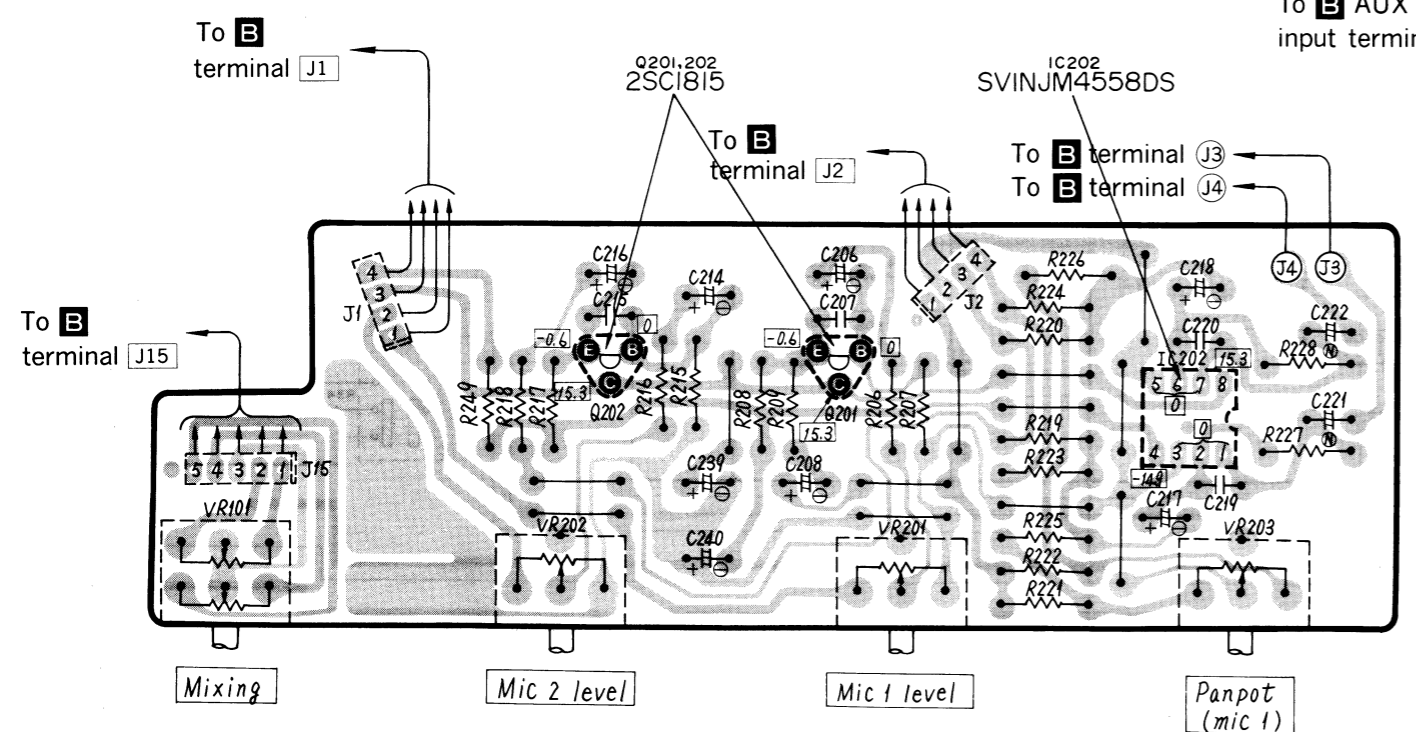
E Output level/dimension drive P.C.B.

REPLACEMENT PARTS

Notes: 1. ...
2. ...



C Mic amp. P.C.B.



INTEGRATED CIRCUITS	
IC101, 201, 305, 306	
IC202, 203, 301 ~ 304, 401 ~ 403, 405, 406, 501, 502	
IC204, 404	
IC205	
IC503 ~ 505	
IC701, 702	
TRANSISTORS	
Q101 ~ 106, 201, 202, 401 ~ 412, 501, 502, 604 ~ 607, Q503 ~ 507, Q601, 603, Q602	
DIODES	
D201, 401, 501 ~ 504, 516, 610 ~ 612, D301, 402, D505 ~ 512, 515, D513, 514, D518, D601, 602, 605 ~ 608, D603, 604, D609, 614, D613	
TRANSFORMER	
T1	
VARIABLE RESISTORS	
VR101, VR201, 201, VR203, VR204, VR301 ~ 305, VR401, 402, R247, 490	
RELAY	
RLY601	
LAMP	
PL501 ~ 506	
FUSE	
F1	
SWITCHES	
S1, 3, 4, S2, 5, S6, S7	
RESISTORS	
R101, 102, R103, 104, R105, 106, R107, 108, R109, 110, R111, 112, R113, 114, R115, 116, R117, 118, R119, 120, R121, 122, R123, 124, R125, 126	

ic Parts

3. Bracket indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Table with columns: Ref. No., Part No., Part Name & Description. Contains rows for parts like ERD25FJ472, ERD25TJ123, ERD25TJ104, etc.

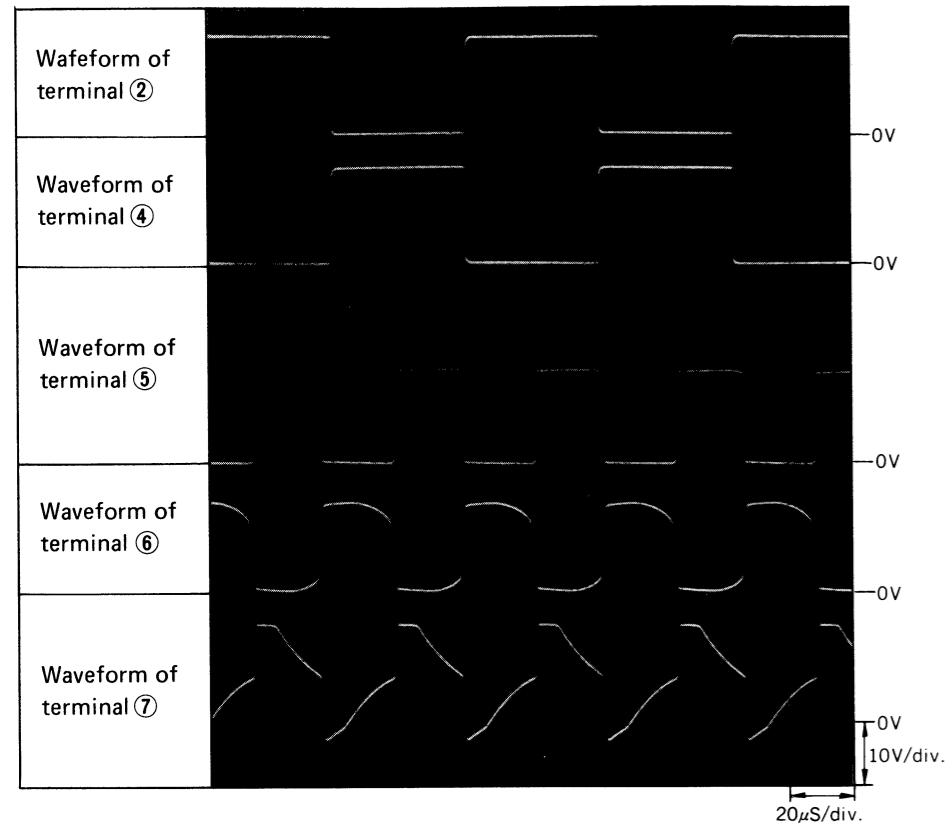
Table with columns: Ref. No., Part No., Part Name & Description. Contains rows for parts like ERD25TJ333, ERD25TJ333, ERD25TJ683, etc.

Table with columns: Ref. No., Part No., Part Name & Description. Includes a section for CAPACITORS and rows for parts like ERD25FJ471, ERD25FJ3R9, etc.

Table with columns: Ref. No., Part No., Part Name & Description. Contains rows for parts like ECDD1H181K, ECEA1CN330S, ECEA50Z1, etc.

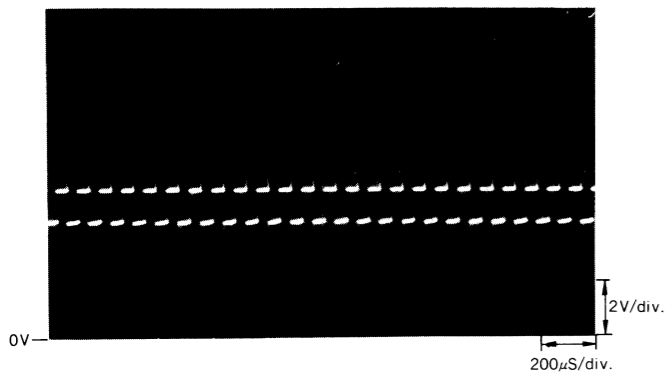
WAVEFORM

Waveform of each terminal of IC205 (MN3101)

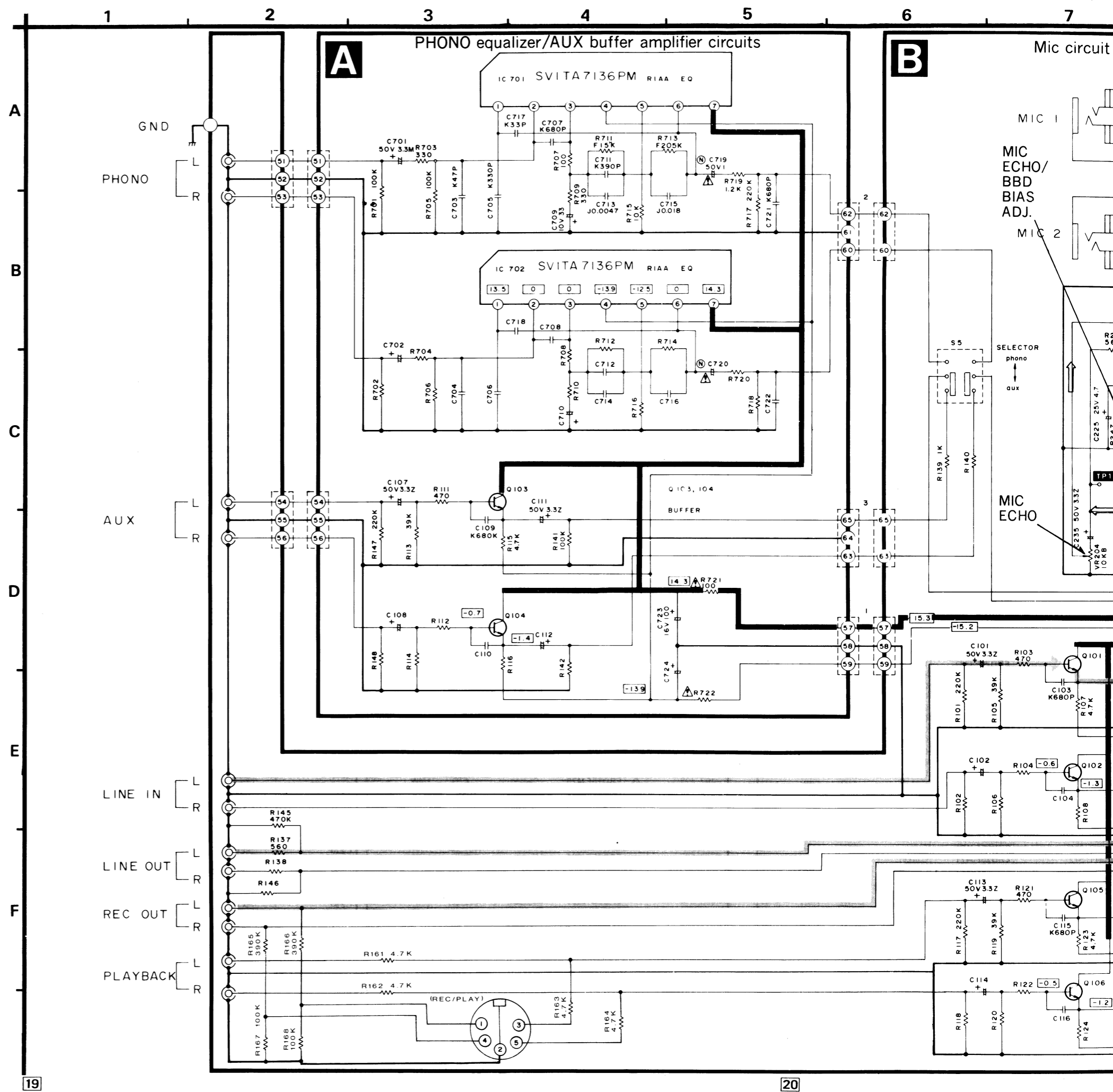
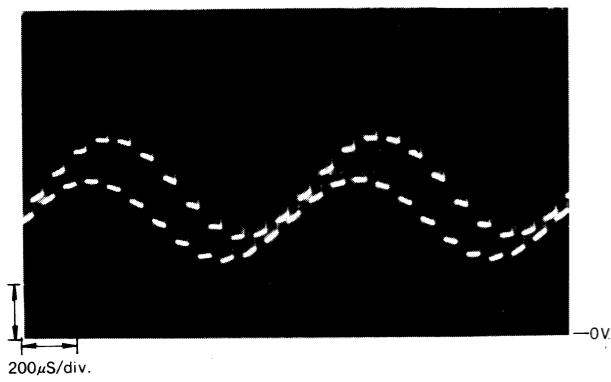


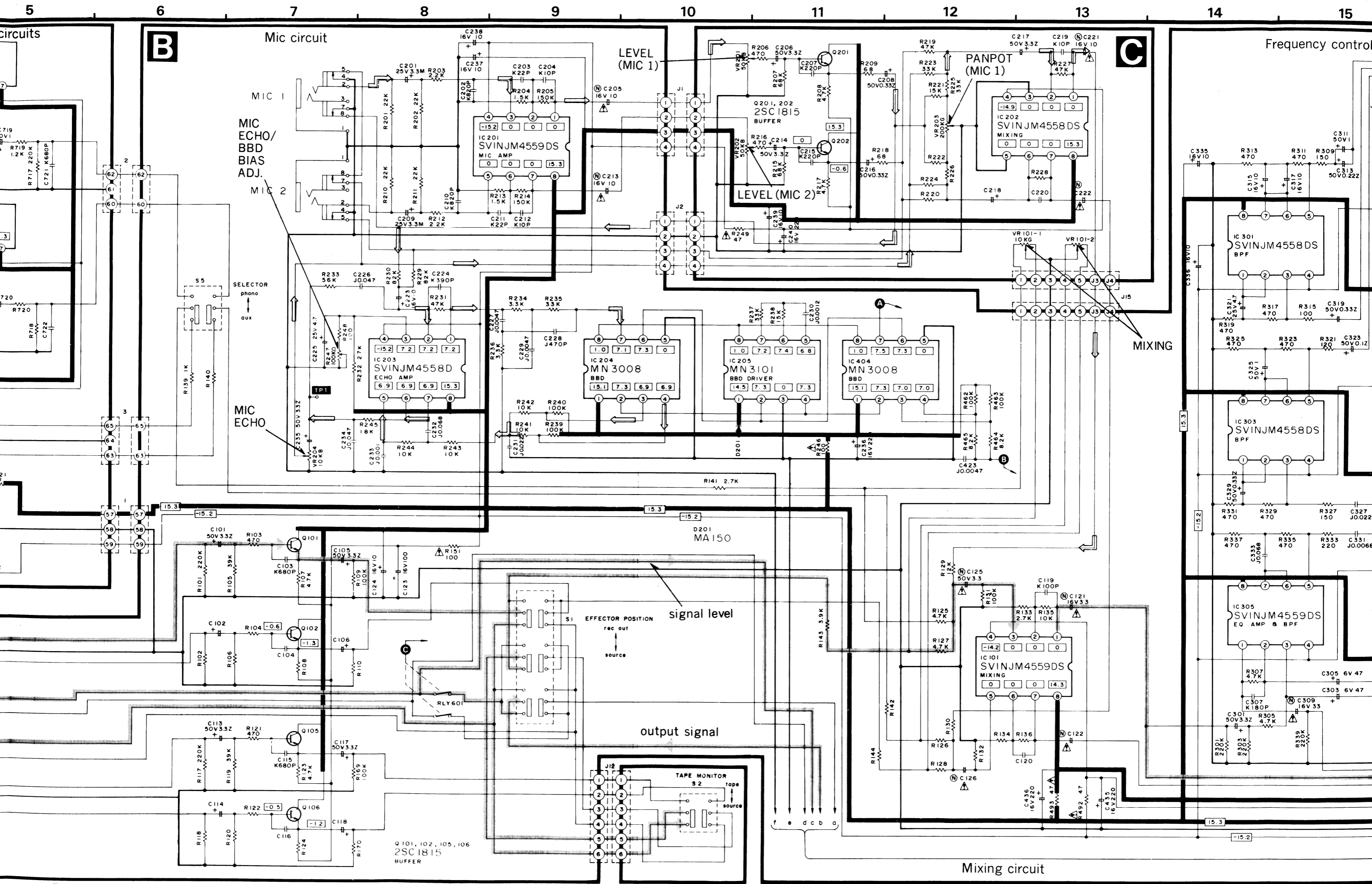
Waveform of terminals 3 and 4 of IC204, 404 (MN3008)

(No input signal)



(Input signal (1 kHz))





B

Mic circuit

C

PANPOT (MIC 1)

LEVEL (MIC 1)

LEVEL (MIC 2)

MIXING

signal level

output signal

Mixing circuit

Frequency control

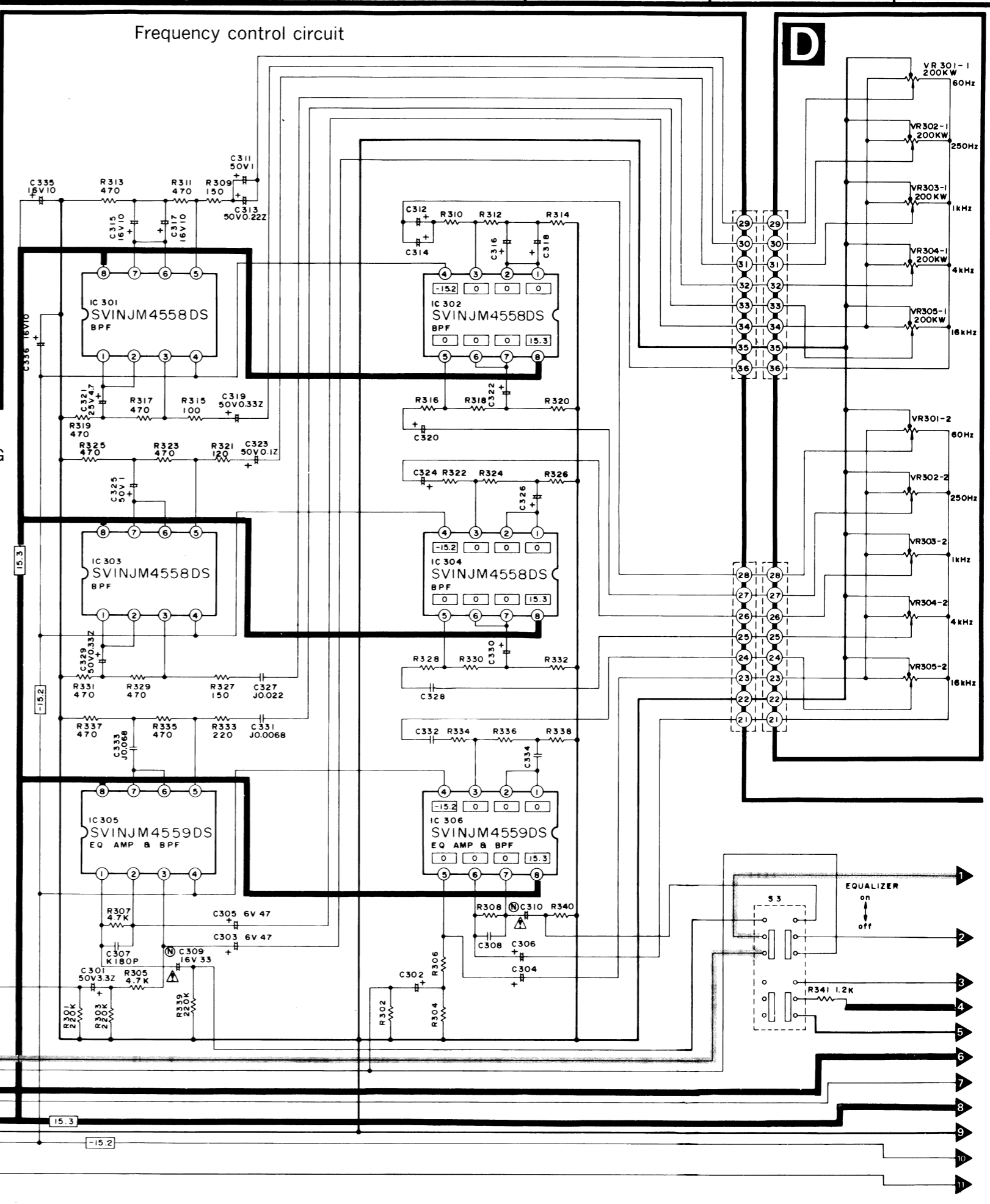
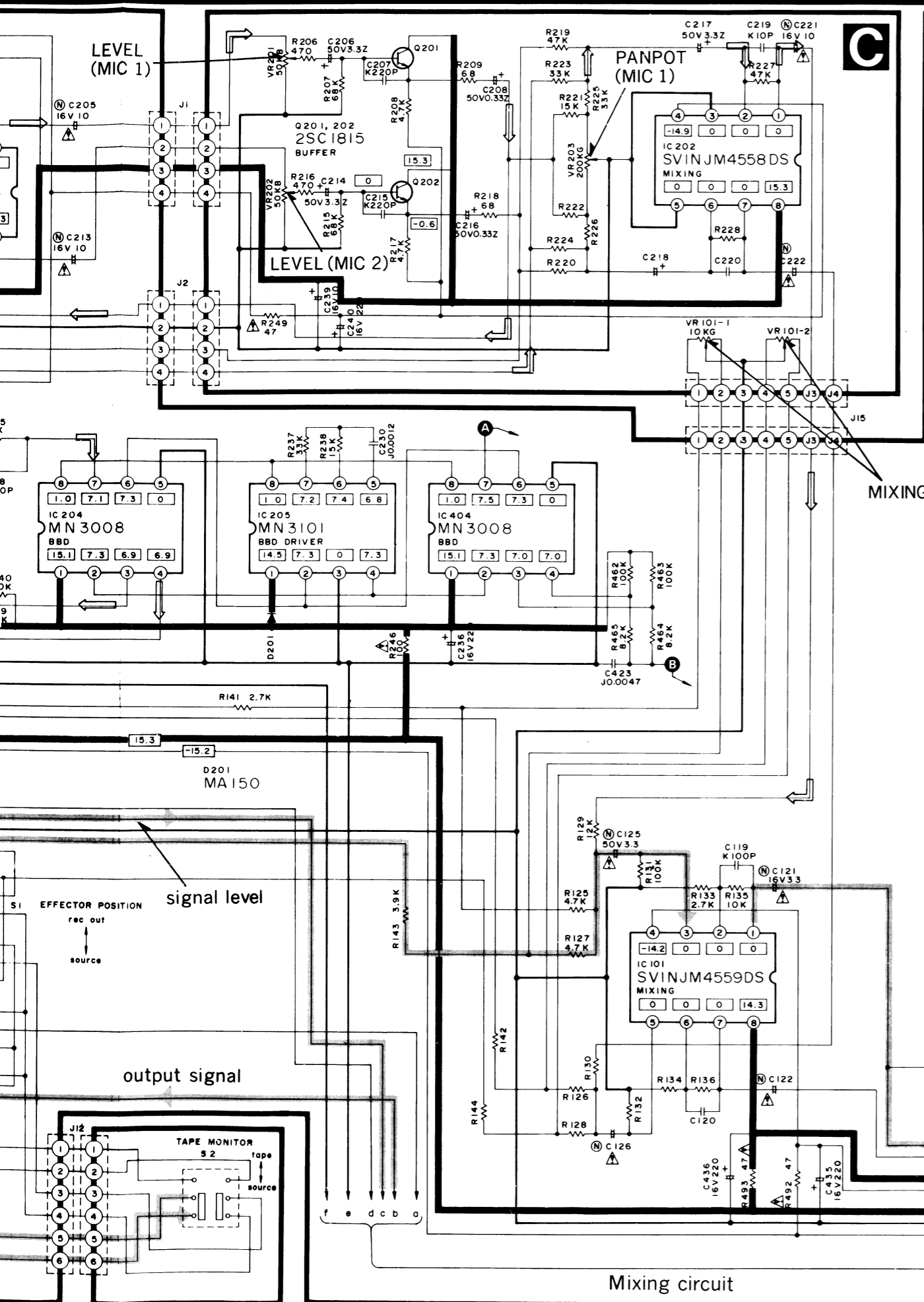
MIC ECHO/
BBE
BIAS
ADJ.

SELECTOR
phone
aux

MIC ECHO

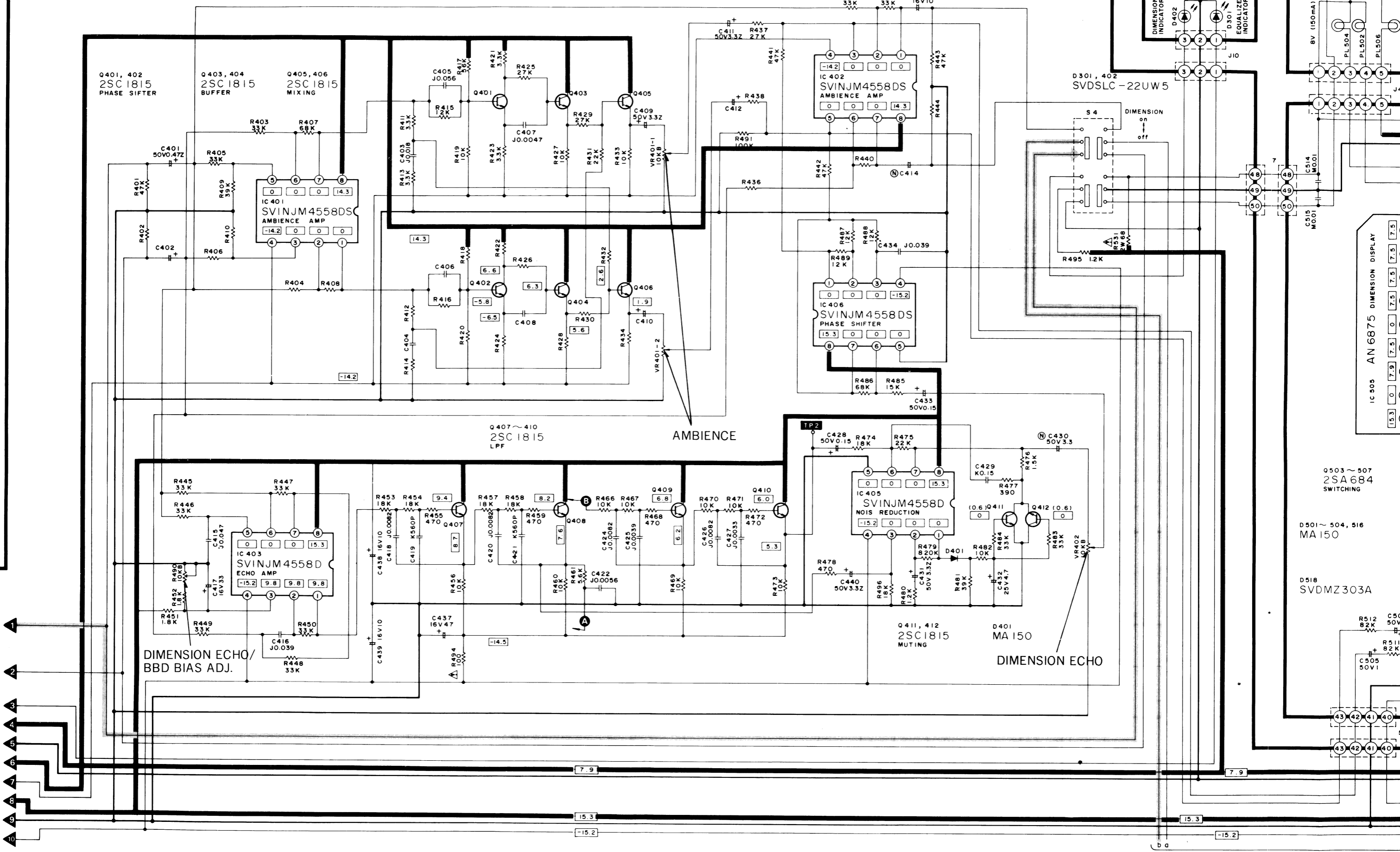
EFFECTOR POSITION
rec out
source

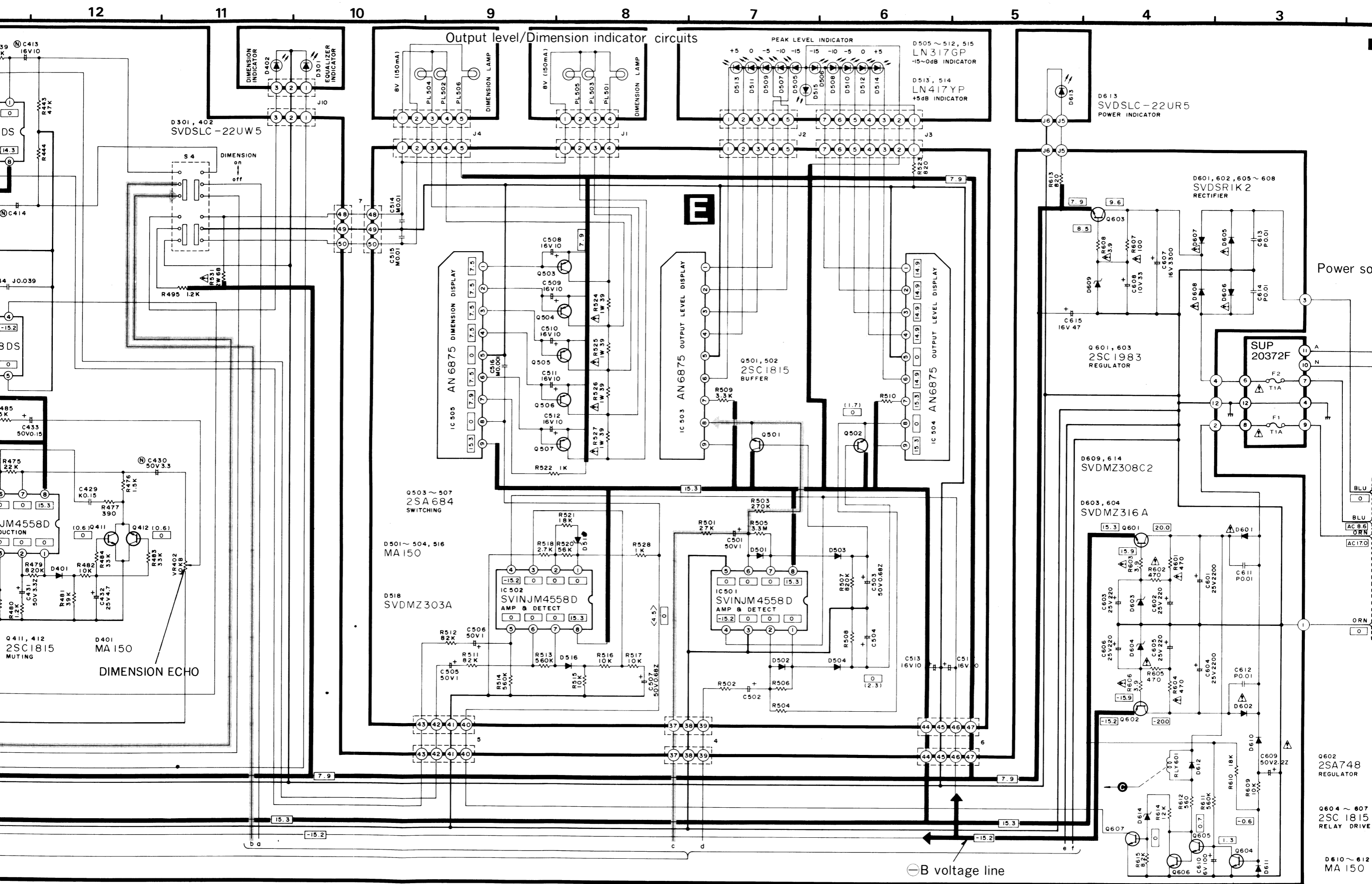
TAPE MONITOR
9 2
tape
source

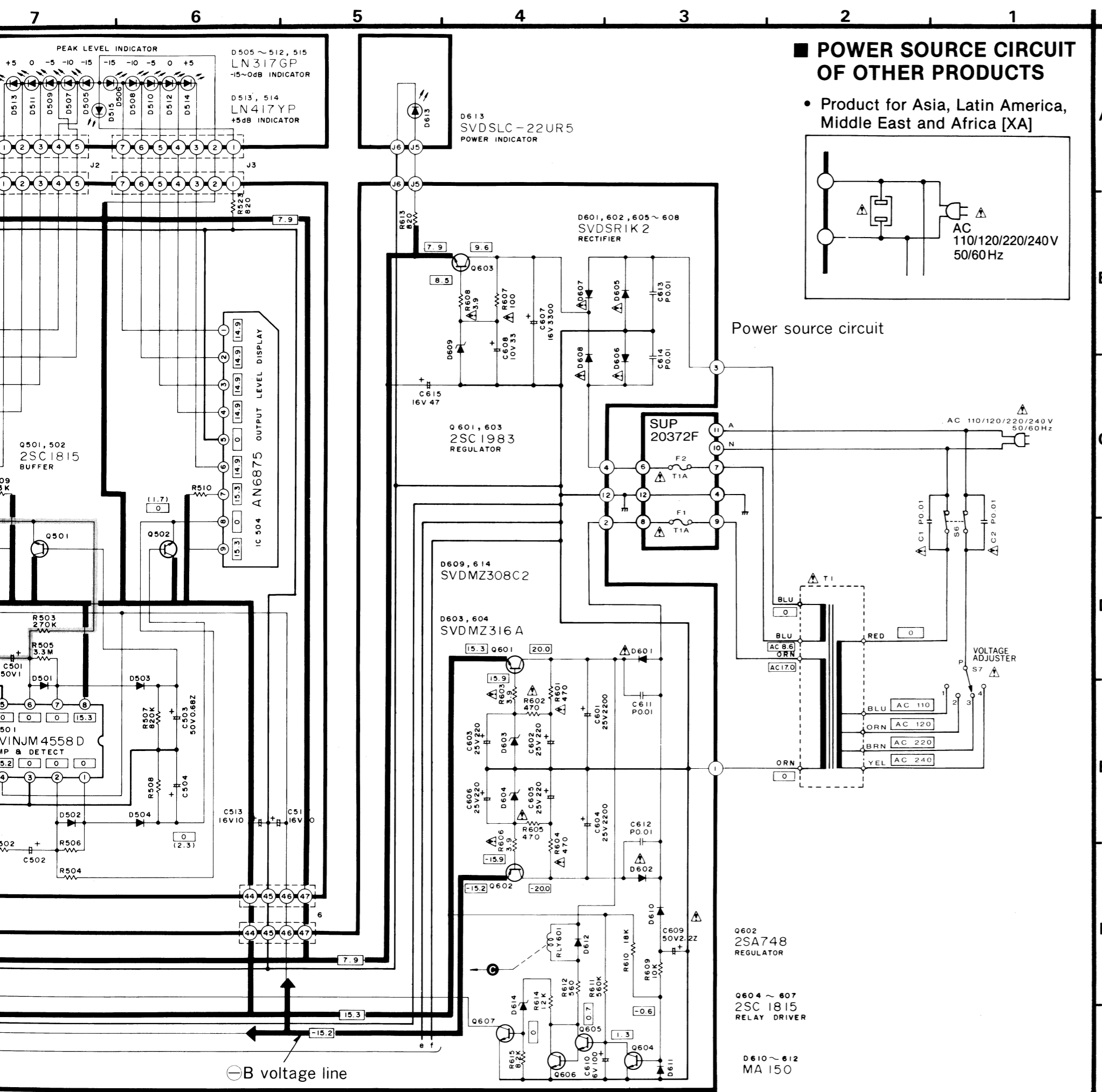


Dimension control circuit

Output

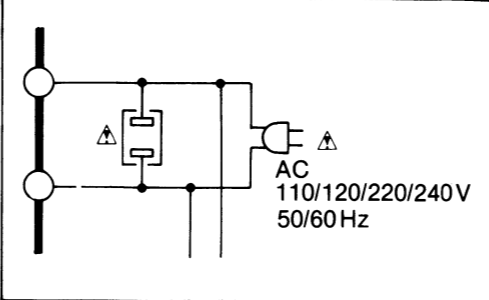






POWER SOURCE CIRCUIT OF OTHER PRODUCTS

- Product for Asia, Latin America, Middle East and Africa [XA]



Power source circuit

SCHEMATIC DIAGRAM

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

Notes:

- S1** : Effector position switch in "source" position.
 ■ (source), ▲ (rec out)
- S2** : Tape monitor switch in "source" position.
 ■ (source), ▲ (tape)
- S3** : Equalizer switch in "off" position.
 ■ (off), ▲ (on)
- S4** : Dimension switch in "off" position.
 ■ (off), ▲ (on)
- S5** : Selector switch in "aux" position.
 ■ (aux), ▲ (phono)
- S6** : Power switch in "on" position.
- S7** : Voltage adjuster switch in "220V" position.
 110V ↔ 120V ↔ 220V ↔ 240V
- Indicated voltage values are the standard values for the unit measured by 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.
 * Figures in □ stand for DC voltage in non signal.
 * Figures in () stand for DC voltage in 1kHz-150mV at line output both channel.
 * Figures in < > stand for DC voltage in 1kHz-150mV at line output L channel (dimension switch in "on" position, ambience control volume in "max").
- Signal line
 - - - Audio frequency (Lch) — ⊕ B voltage line
 → Mic signal
- ▲ indicates that only parts specified by the manufacturer be used for safety.

Terminal guide of transistors and IC's

SVINJM4559, SVINJM4558 	MN3008 	MN3101
AN6875 	SVITA7136 	2SC1815, 2SA684
2SC1983 	2SA748 	LN317GP, LN47YP

REPLACEMENT PARTS LIST (Cabinet and Chassis Parts)

- Notes:**
- Parts numbers are indicated on most mechanical parts. Please use this part number for parts orders.
 - △ indicates that only parts specified by the manufacturer be used for safety.
 - Ⓚ-marked parts are used for black type only, while ○-marked parts are for silver type only.
 - Parts other than Ⓚ- and ○-marked are used for both black and silver types.
 - Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

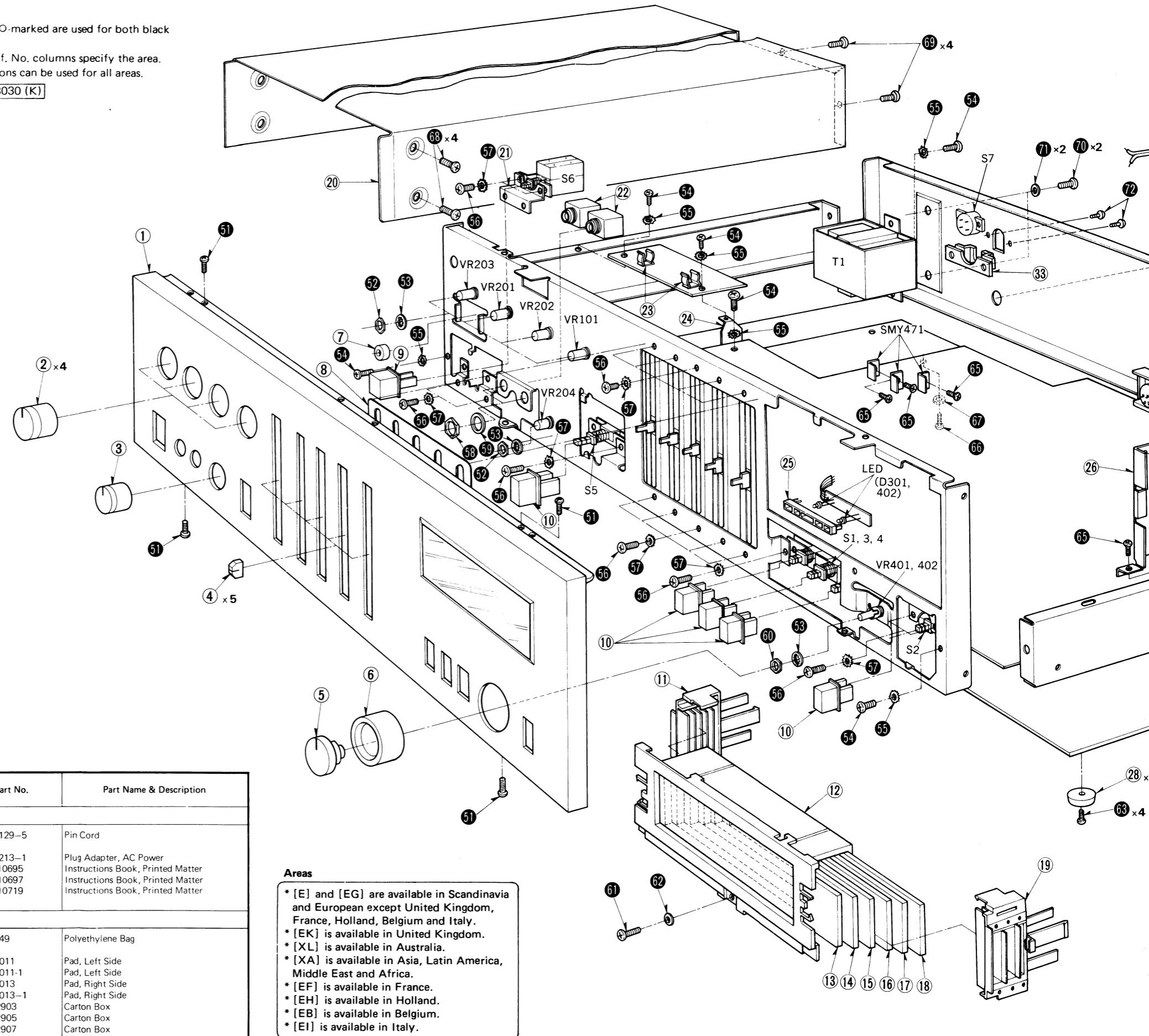
Black type model No. SH-8030 (Ⓚ)

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
1	○ SYW353	Front Panel
1	Ⓚ SYW353-1	Front Panel (Black)
2	SBN983	Knob, Panport, Mic, Mixing
3	SBN985	Knob, Echo
4	SBC333	Button, Frequency Equalizer
5	SBN987	Knob, Dimension Control
6	SBN989	Knob, Dimension Control
7	SHG1579	Spacer, Power L.E.D.
8	SHS1041	Felt
9	SBC337	Button, Power
10	SBC339	Button, Push Switch
11	SGXH8030N	Reflector Plate
12	SGX6941	Case, Dimension Control
13	SDL27	Panel, Dimension
14	SDL29	Panel, Dimension
15	SDL31	Panel, Dimension
16	SDL33	Panel, Dimension
17	SDL35	Panel, Dimension
18	SDL37	Panel, Dimension
19	SGXH8030N1	Reflector Plate
20	○ SKC610S1	Cabinet Cover
20	Ⓚ SKC610B1	Cabinet Cover (Black)
21	SUW1745	Bracket, Power Switch
22	XCJS6P21E-A	Jack, Headphone
23	SJT347	Terminal, Fuse
24	SUW1731	Bracket, Fuse P.C.B. Ass'y
25	SMP297	Holder, L.E.D.
26	SUW1737	Bracket, Equalizer P.C.B. Ass'y
27	SKUH8030M	Bottom Board
28	SKL227	Foot
29	SJF3045-7N	Terminal Board
30 [E] only	SGP2490-1A	Rear Panel
30	SGPH8030E	Rear Panel
30 [X, XA] only	SGP2490-2A	Rear Panel
31	SHR127	Bushing, AC Cord
31 [EK] only	SHR129	Bushing, AC Cord
31	△ SJA88	AC Cord
32 [EK] only	△ QFC1205M	AC Cord
32 [XL] only	△ QFC1208M	AC Cord
33	SMN1635	Bracket, Voltage Adjustment Switch
34 [X, XA] only	△ SJSAA66-2	Socket, AC Outlet

SCREWS, WASHERS and NUTS		
①	XTB3+8B	Screw, Tapping, + 3 x 8
②	XNS8	Nut, M8
③	XWC9B	Washer, External Toothed Lock, φ9
④	XTB3+8BFZ	Screw, Tapping, + 3 x 8
⑤	XWC3B	Washer, External Toothed Lock, φ3
⑥	XSN3+6BVS	Screw, + 3 x 6
⑦	XWC3B	Washer, External Toothed Lock, φ3
⑧	XNS12	Nut, M12
⑨	SNE59-1	Washer
⑩	XNS9	Nut, M9
⑪	XTN3+10B	Screw, Tapping, + 3 x 10
⑫	XWG3	Washer, Plain, φ3
⑬	XTB3+10BFZ	Screw, Tapping, + 3 x 10
⑭	XTB3+8BFN	Screw, Tapping, + 3 x 8
⑮	XTB3+8B	Screw, Tapping, + 3 x 8
⑯	XSN3+8S	Screw, + 3 x 8
⑰	XWA3B	Washer, Spring, φ3
⑱	○ XTB4+8BFN	Screw, Tapping, + 4 x 8
⑲	Ⓚ XTB4+8BFZ	Screw, Tapping, + 4 x 8
⑳	○ XTB3+8BFN	Screw, Tapping, + 3 x 8
㉑	Ⓚ XTB3+8BFZ	Screw, Tapping, + 3 x 8
㉒	XSN4+10BVS	Screw, + 4 x 10
㉓	XWA3B	Washer, Spring, φ3
㉔	XTB3+16BFZ	Screw, Tapping, + 3 x 16

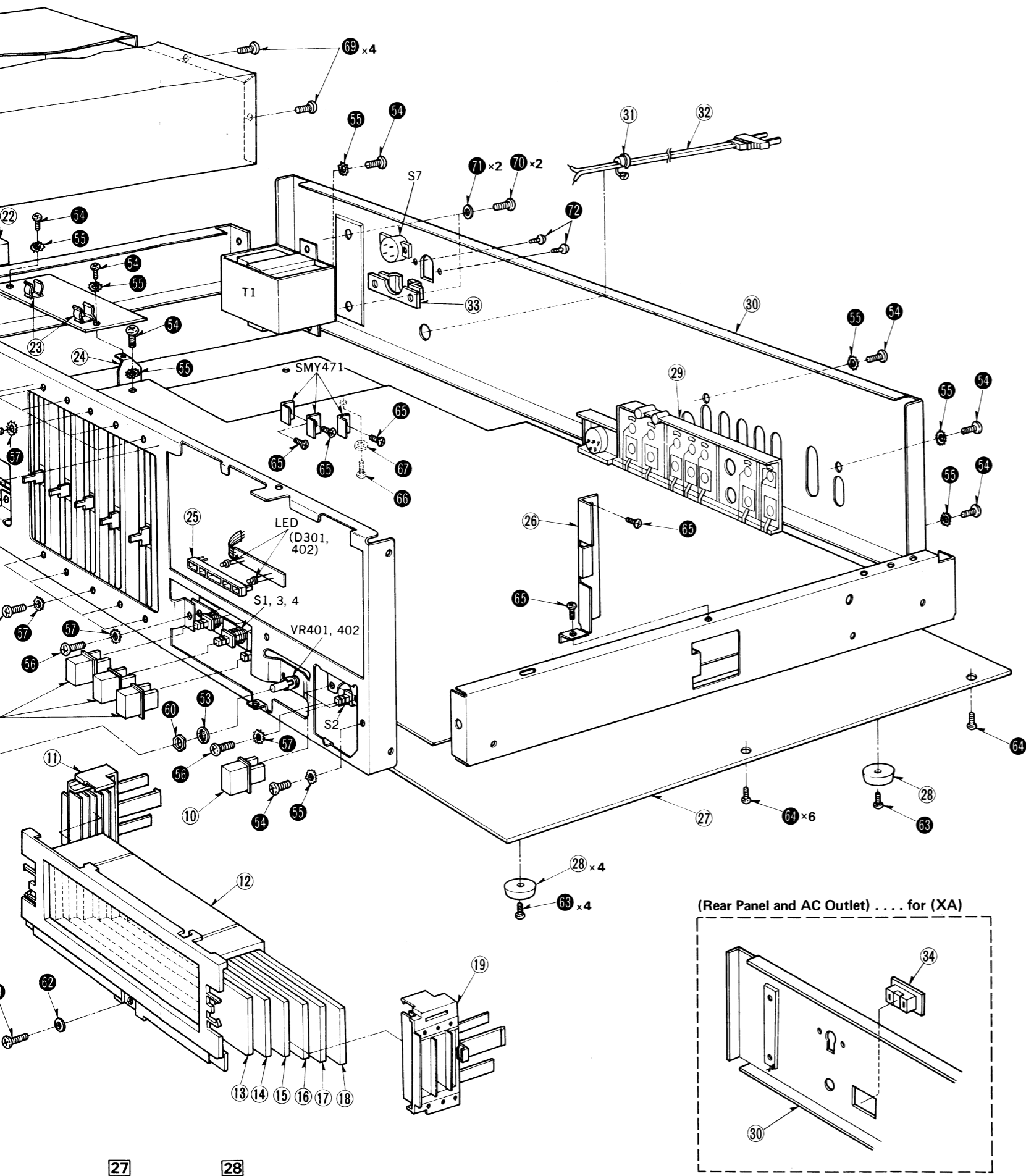
Ref. No.	Part No.	Part Name & Description
ACCESSORIES		
A1	SJP2129-5	Pin Cord
A2 [X, XA] only	△ SJP5213-1	Plug Adapter, AC Power
A3	SQF10695	Instructions Book, Printed Matter
A3 [X, XA] only	SQF10697	Instructions Book, Printed Matter
A3 [Ei] only	SQF10719	Instructions Book, Printed Matter
PACKING PARTS		
P1	SPP649	Polyethylene Bag
P2	SPS3011	Pad, Left Side
P2 [XL] only	SPS3011-1	Pad, Left Side
P3	SPS3013	Pad, Right Side
P3 [XL] only	SPS3013-1	Pad, Right Side
P4	SPG2903	Carton Box
P4 [XL] only	SPG2905	Carton Box
P4 [EF] only	SPG2907	Carton Box

EXPLODED VIEW

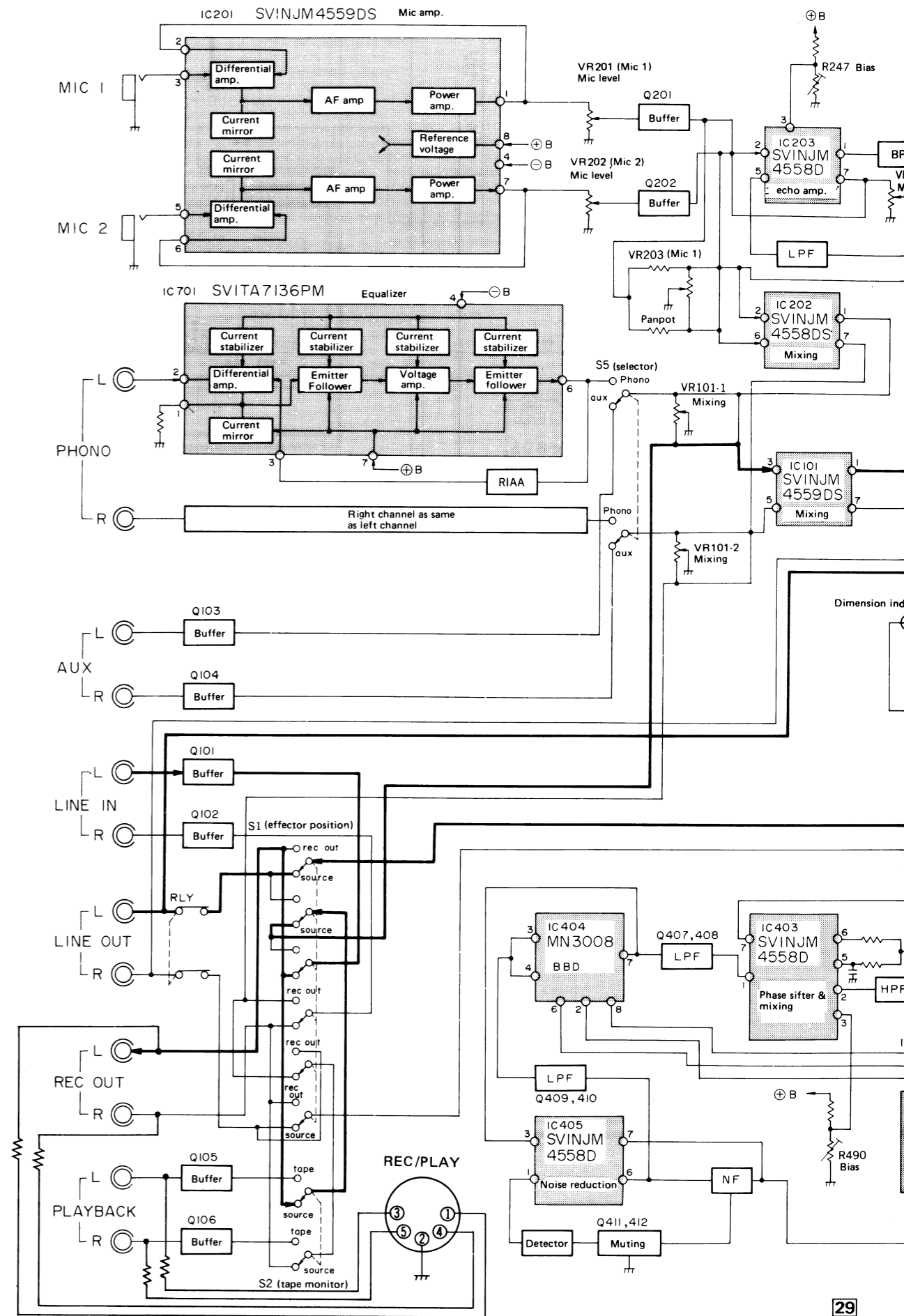


Areas

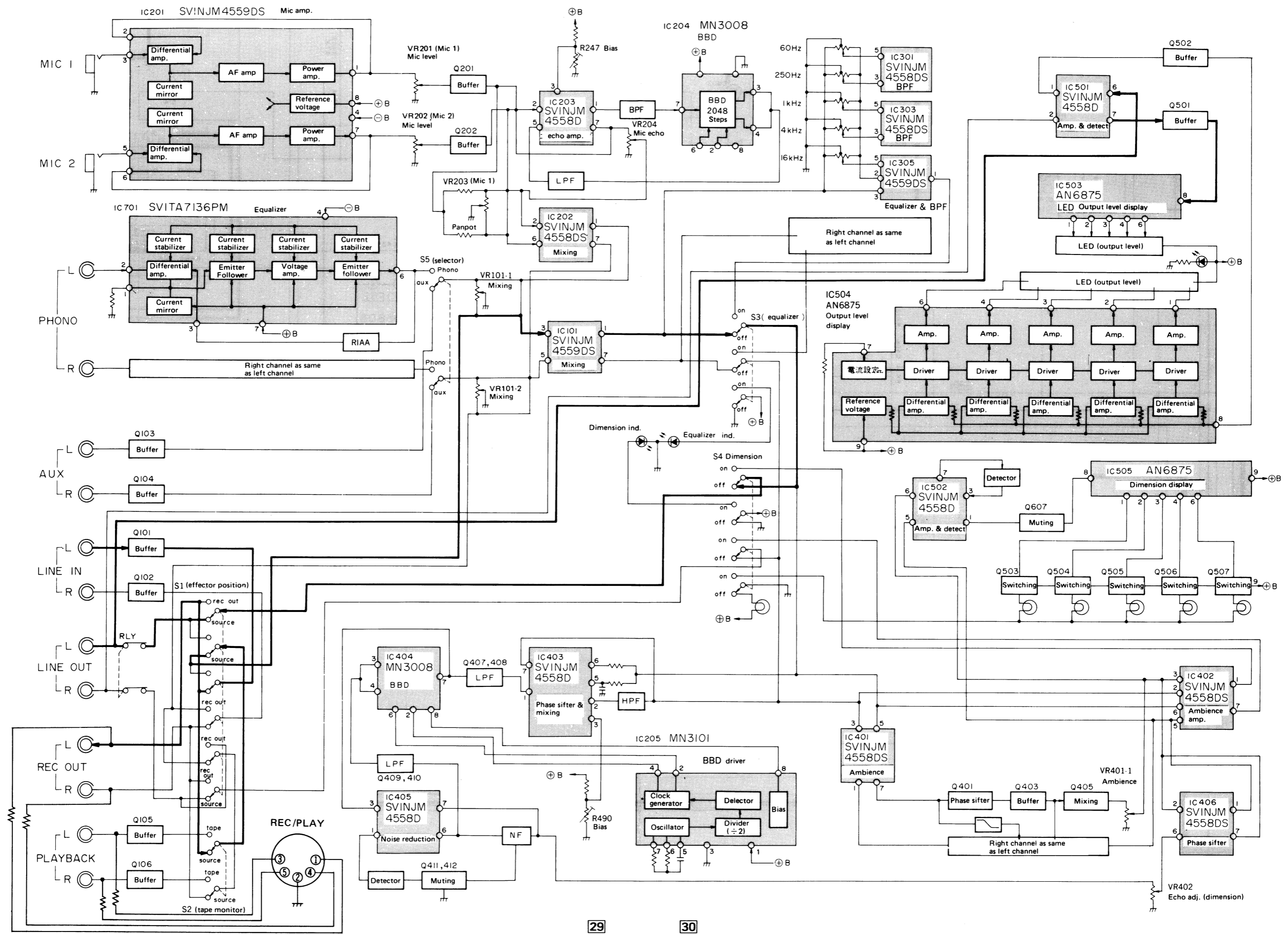
- * [E] and [EG] are available in Scandinavia and European except United Kingdom, France, Holland, Belgium and Italy.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [XA] is available in Asia, Latin America, Middle East and Africa.
- * [EF] is available in France.
- * [EH] is available in Holland.
- * [EB] is available in Belgium.
- * [Ei] is available in Italy.



■ BLOCK DIAGRAM



■ BLOCK DIAGRAM



Service Manual

Space Dimension Controller

SH-8030(K)

Area

* [Ei] is available in Italy.

[Ei]


* The cabinet and front panel are available in black color and silver types.











* The black type model is provided with (K) in the Service Manual.

Please use this manual together with the service manual for Model No. SH-8030/K Order No. SD8012-1817.

CHANGES

REPLACEMENT PARTS LIST


Note: -marked parts are used for black only.

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)	Remarks
	SH-8030/K (ORDER NO. SD8012-1817)	SH-8030 (K) [Ei]			
CABINET and CHASSIS PARTS					
1	SYW353	SYW353-1 	Front Panel (Black)	1	
	SYW353-1 				
20	SKC610S1	SKC610B1 	Cabinet Cover (Black)	1	
	SKC610B1 				
30	SGP2490-1A	SGPH8030E	Rear Panel	1	
	SGPH8030E				
	SGP2490-2A				
31	SHR127	SHR127	Bushing, AC Cord	1	
	SHR129				
32	SJA88	SJA88	AC Cord	1	
	QFC1205M				
	QFC1208M				
SCREWS, WASHERS and NUTS					
	XTB4+8BFN	XTB4+8BFZ 	Screw, Tapping, \oplus 4 x 8	4	WDD
	XTB4+8BFZ 				
	XTB3+8BFN	XTB3+8BFZ 	Screw, Tapping, \oplus 3 x 8	5	WDD
	XTB3+8BFZ 				
ACCESSORIES					
A3	SQF10695	SQF10719-1	Instructions Book Printed Matter	1	
	SQF10697				
	SQF10719				
PACKING PARTS					
P2	SPS3011	SPS3011	Pad, Left Side	1	
	SPS3011-1				
P3	SPS3013	SPS3013	Pad, Right Side	1	
	SPS3013-1				
P4	SPG2903	SPG2903	Carton Box	1	
	SPG2905				
	SPG2907				

Technics

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P.O. Box 288, Central Osaka Japan

8106500  SH/TN