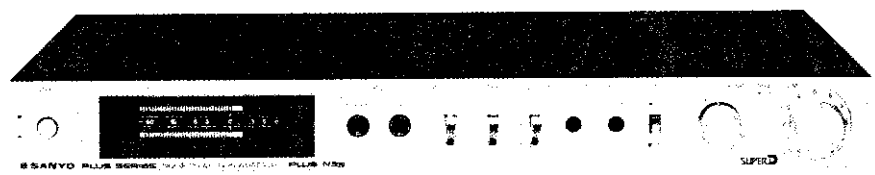
SERVICE MANUAL

NOISE REDUCTION

SANYO

PLUS N33

(EUROPE)



SPECIFICATIONS

Systems	Level compansion & complementary band division
Compansion rates	Compression rate: 1/2
	Expansion rate: 2/1
SN ratio improvement	35 ~ 40dB (concerning tape decks with SN ration of 50dB or more)
Distortion rate	0.08% (reference input level: 1kHz)
No. of channels	2 (recording and playback channels)
Input impedance/sensitivity	MIC: 400 ohms – 10 kohms/0.3mV
	ENCODE IN: 50KΩ/85mV
	DECODE IN: 50KΩ/100mV
Output impedance/level	DECODE OUT: 2KΩ or lower/0.53V (at 50KΩ load)
	ENCODE OUT: 2KΩ or lower/80mV (at 50KΩ load)
Frequency response	10Hz ~ 30kHz (during encoding & decoding processes)
Power supply	AC 115/220V, 50Hz
Power consumption	9W
Outside dimensions	17-3/8"(W) x 10-11/16"(D) x 1-3/4"(H)
	(440 x 270 x 44 mm)
Weight	7 lbs (3.1 kg)

* The specifications and design change without notice.

HOW TO DISASSEMBLE THE SET

1. REMOVING THE CABINET
   Remove four screws Y1 (binding head tapping screw 4 x 10 mm) from both sides of the set, and lift the both sides up straightly. Then, the cabinet will be separated off.
2. REMOVING THE FRONT PANEL
   Take out operation knobs (MIC input level adjusting knob, line input level adjusting knob, and lever knob), and remove seven upper and lower screws Y2 (binding head tapping screw 3 x 10 mm) from the front panel. Then, the front panel can be detached.
3. REMOVING THE CHASSIS (BACK LID)
   Remove four screws Y3 (binding head tapping screw 3 x 6 mm) and two washers Y5 (soft washer 3 mm) from both ends of back lid (23).
   Then, remove two screws Y3 (binding head tapping screw 3 x 6 mm) securing power transformer (51) and another two screws Y3 (binding head tapping screw 3 x 6 mm) securing bracket (25). Further, remove a screw Y4 (pan head tapping screw WH 3 x 6 mm) fastening the amplifier PCB and chassis, and a screw Y3 (binding head tapping screw 3 x 6 mm) fastening back lid (23) and bracket (25). Then, the chassis can be dismounted.

CIRCUIT DESCRIPTION OF SUPER D

Figure one is the block diagram of this unit. The playback input terminal is connected to the playback output terminal of the deck, the record output terminal to the record input terminal of the deck, the input terminal to the record output terminal of the preamplifier, and the output terminal to the tape playback terminal of the preamplifier.

When the tape monitor switch of the preamplifier is set to the tape side, the source signal and MIC signal can be directly monitored through speaker by turning of the SUPER D switch and setting the REC/PLAY switch to REC side. The meter indicates the input level of the ENCODER, and its input level can be adjusted by RECORD LEVEL knob. The meter is a peak meter of 10 msec. attack time and 1.5 sec. recovery time.

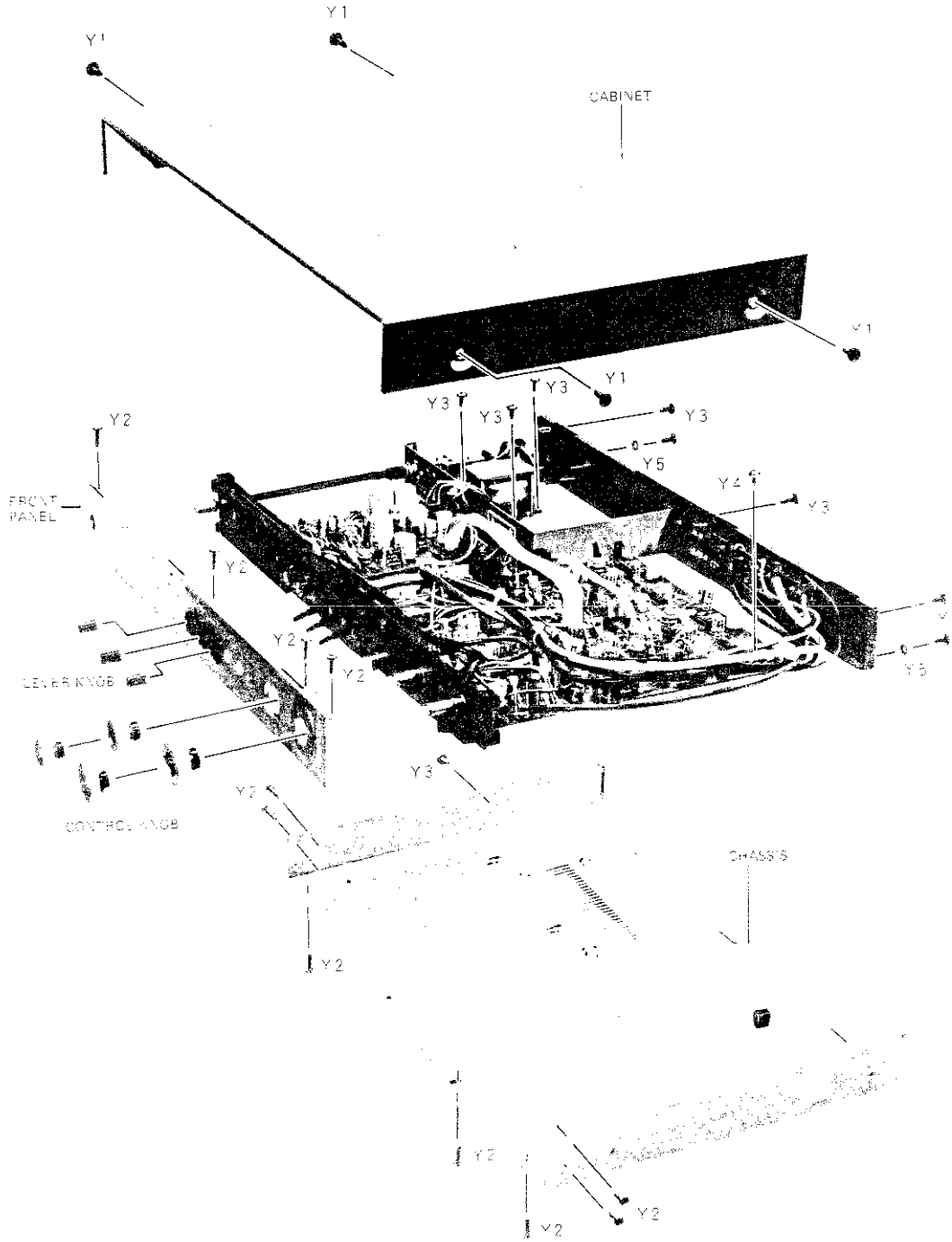
When the REC/PLAY switch is set to PLAY side, the output of the deck can be monitored. At this time, the meter shows the output signal of the DECODER circuit. When the SUPER D switch is turned off, the record signal passes only through the RECORD LEVEL and the playback signal is directly delivered, so that the recording level of the deck can be set by the RECORD LEVEL knob. Besides, since this circuit does not include amplifier, it can be similarly whether the power switch is turned on or off.

The flat preamplifier is designed to amplify the input signal to the level to permit the DECODER circuit and ENCODER circuit to function at the optimum S/N ratio point.

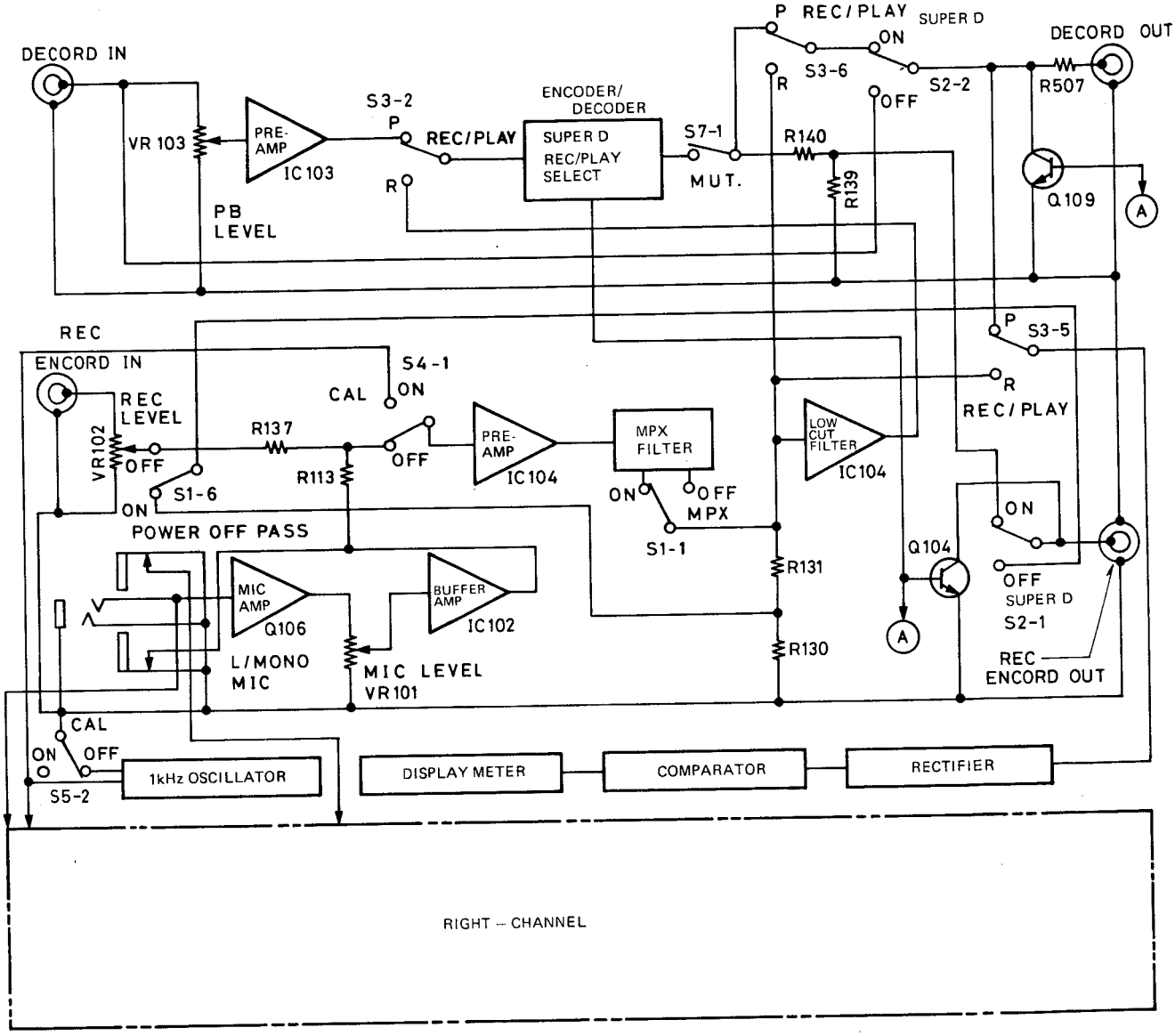
The MPX filter in the ENCODER circuit is designed to remove pilot signal in order to prevent ma function of the ENCOFER circuit due to pilot signal when recording FM broadcast. The low filter circuit prevents malfunction of ENCODER circuit due to ultralow sound caused by "warp" of disc when recording from disc record.

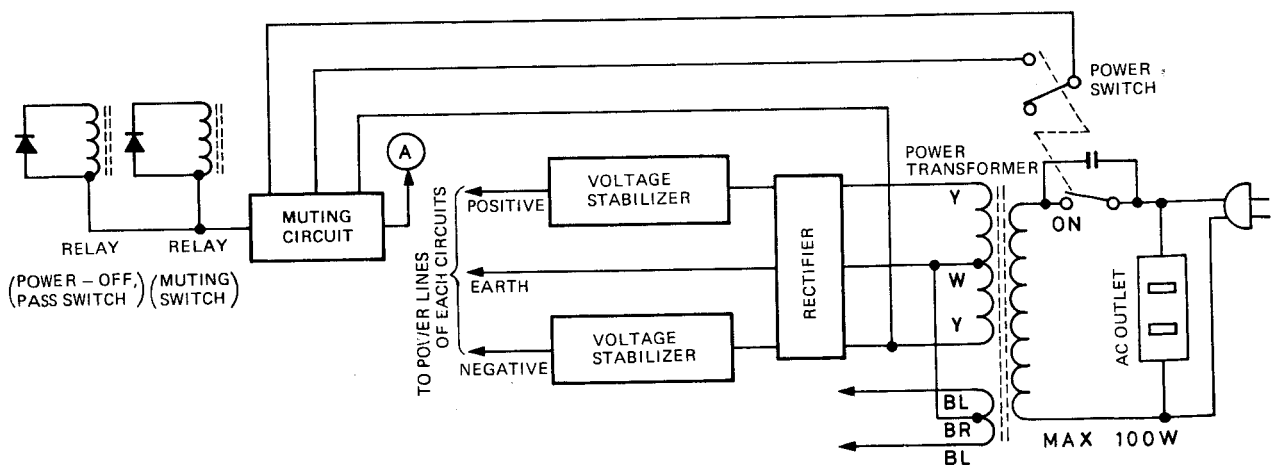
The 1kHz generator is intended to facilitate input and output level setting of SUPER D and the deck. Once set, it is not necessary to set again if tapes are changed.

NOTE: Refer to the service manual of PLJS N86 for general information about SUPER D.



BLOCK DIAGRAM



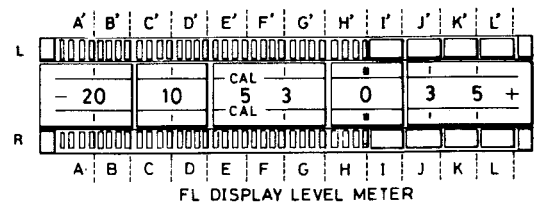


When adjusting, set the switches and knobs in the following positions.

SUPER D switch → ON
REC/PLAY switch → PLAY
MPX filter switch → OFF
CAL switch → OFF
MIC input level adjusting knob → 0 (MIN)
Line input level adjusting knob → 0 (MIN)
Play level control knob → MAX

Pick up the input signal from audio frequency oscillator, and feed into PB (playback input) terminal of the TAPE (deck). As the output, connect VTVM and oscilloscope to the LINE OUT (output) terminal.
Set the input signal level to 100 mV (1 kHz), and take the output at this time as 0 dB.
The part numbers for SVR refer to those of the left channel, and those for the right channel are shown in parentheses.

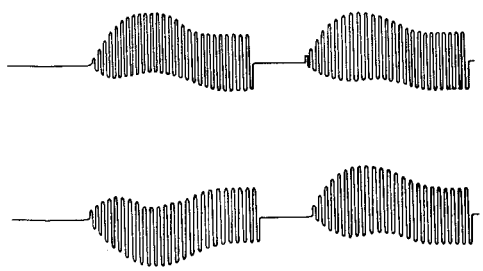
1. **Tracking adjustment (1 kHz)**
   Set the input signal to 3 mV (1 kHz). Turn SVR102 (SVR202) to find the level transforming point of the output value. Set to the position just before this level transforming point.
2. **Tracking adjustment (10 kHz)**
   Set the input signal to 3 mV (10 kHz). Adjust SVR103 (SVR203) in the similar manner as in item 1.
3. **Output adjustment**
   Set the input signal to 30 mV (1 kHz), and record the output value at this time. Change the input signal to 30 mV (10 kHz), and turn SVR101 (SVR201) until the output value at this time becomes +5.5 ± 0.5 dB as compared with that of 1 kHz signal.
4. **DC bias adjustment**
   Cut input signal to set in no-input state. Turn SVR106 (SVR206) until the DC voltage between jumper [C]-L ([C]-R and wrapper pin REC-IN (E) becomes 0.025 V.
5. **DC shift adjustment (1 kHz)**
   Set the input signal to 30 mV (1 kHz) by means of tone burst oscillator (e.g. TRIO MODEL 5201), and adjust SVR104 (SVR204) to obtain the waveform as shown below.
6. **DC shift adjustment (10 kHz)**
   In the same manner as above, set the input signal to 30 mV (10 kHz), and adjust SVR105 (SVR205) to obtain the waveform as shown below.
7. **Meter adjustment (0 dB)**
   Set the input signal to 560 mV (1 kHz). Make sure the display tube is lit up to 0 dB position (segment H,H' in Fig. 3) when the output value is 530 mv ± 0.5 dB. If not lighting as specified, adjust by means of SVR3 (SVR4).
   * If the output value does not become 530 mV ±0.5 dB, adjust the input signal level.
8. **Meter adjustment (–20 dB)**
   Change the input signal to –18 dB from the setting in item 7 (lowering 18 dB from 560 mV). Make sure the display tube is lit up to –20 dB position (segment A,A' in Fig. 3) at this time. Next, change the input signal to 63 mV (1 kHz), and make sure the display tube is extinguished. If these requirements are not satisfied, adjust by means of SVR1 (SVR2).
   * When adjusting items 7 and 8, repeat in the procedure of → 7, → 8, → 7, → 8, → 7.



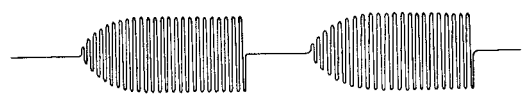
FL DISPLAY LEVEL METER

9. **Output adjustment**
   Set the input signal to 100 mv (1 kHz). Make sure the output value is found within 0.5 dB in both right and left channels. If not successful, short-circuit the jumpers [A] and [B] or cut the jumper [B] in the direction to cause the output value to approach 530 mV, and adjust. (See parts layout drawing.)
   [A], [B] short-circuited
   → Output value lowered 0.7 dB
   [B] cut
   → Output value increased 0.7 dB
10. **MPX filter adjustment**
    When adjusting, set as follows:
    REC/PLAY switch → REC
    Input level adjusting knob → 10 (MAX)
    Play level control knob → MIN
    Connect the input signal to the IN (input) terminal of the LINE (phono).
    Set the input signal to 85 mV (1 kHz), and take the output value at this time as 0 dB. Next, feed 85 mV (19 kHz ± 100 Hz), and adjust L101 (L201) until the output value becomes more than –30 dB.

BEFORE ADJUSTMENT



AFTER ADJUSTMENT



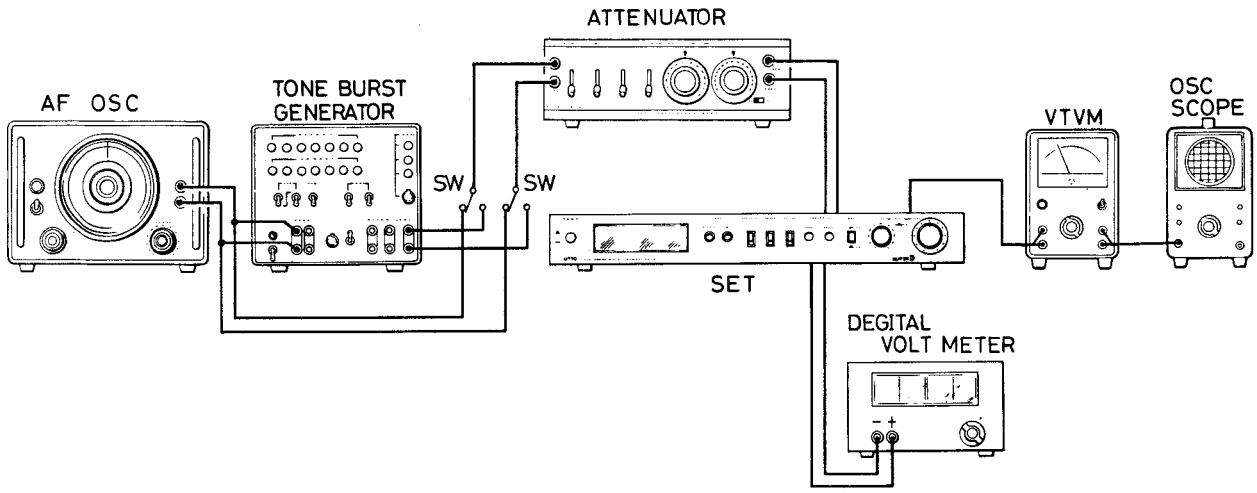
Make these parts as linearly as possible, and set the waveform parts symmetrical vertically.

WAVEFORM CHART

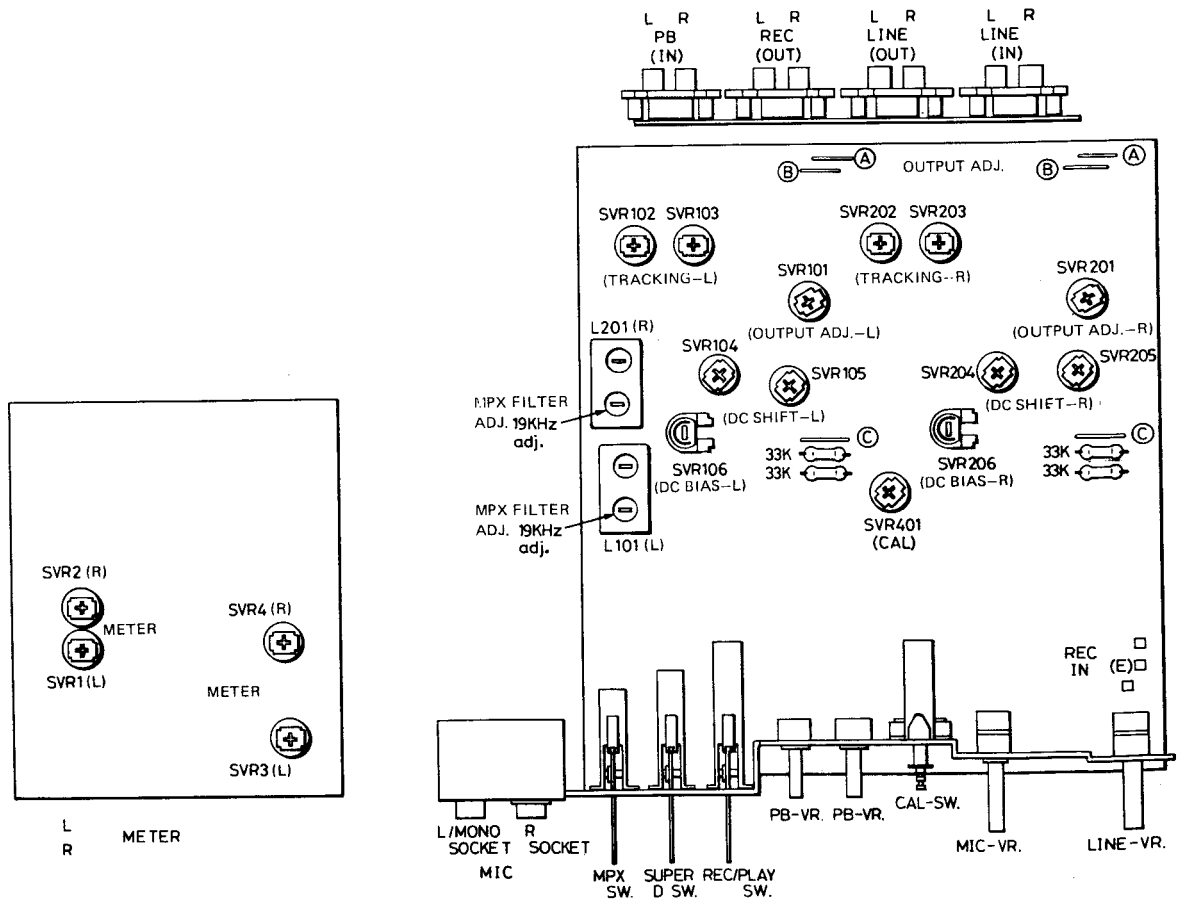
11. CAL adjustment

In addition to the preparatory conditions in item 10, set the CAL switch to ON position, and cut input signal to set in no-input state.

First find the output level to light up the display tube to −5 dB (segment 6 in Fig. 3) on both right and left channel. Then, increase by 0.7 dB by means of SVR401. Next, turning on and off the MPX filter switch, make sure the CAL lighting level does not change.



PARTS LOCATIONS



PARTS LIST

Key No.	Part No.	Description	Q'ty
PACKING			
	141-6-133T-15500	Individual Carton (Silver)	1
	141-6-133T-15501	Individual Carton (Black)	1
	141-6-144T-57900	Foam Plastic Case	2
	141-6-231T-40550	Inner Polye Cover, Set	1
	141-6-231T-20300	Inner Polye Cover, Inst M	1
	141-6-231T-10300	Inner Polye Cover, AC Cord	1
ACCESSORY			
	141-2-862T-00500	Driver Tuning	1
	141-6-410T-49000	Instruction Manual	1
	4-243T-13302	Cord Ass'y	1
	4-241T-13971	Cassette Tape C-8	1
CABINET			
1	141-0-122T-33801	Front Panel Ass'y (Silver)	1
	141-0-122T-33831	Front Panel Ass'y (Black)	1
2	141-0-163T-59600	Rotary Knob Ass'y (Silver)	1
	141-0-163T-59630	Rotary Knob Ass'y (Black)	1
3	141-0-163T-59700	Rotary Knob Ass'y (Silver)	1
	141-0-163T-59730	Rotary Knob Ass'y (Black)	1
4	141-0-163T-59800	Rotary Knob Ass'y (Silver)	1
	141-0-163T-59830	Rotary Knob Ass'y (Black)	1
5	141-0-163T-59900	Rotary Knob Ass'y (Silver)	1
	141-0-163T-59930	Rotary Knob Ass'y (Black)	1
6	141-2-111T-43300	Cabinet (Silver)	1
	141-2-111T-43330	Cabinet (Black)	1
7	141-2-162T-16001	Lever Knob (Silver)	3
	141-2-162T-16030	Lever Knob (Black)	3
8	141-2-174T-05100	Stand	4
9	141-2-441T-05000	Felt Cushion	4
CHASSIS			
21	141-0-161T-74900	Push Button Ass'y (Silver)	1
	141-0-161T-74930	Push Button Ass'y (Black)	1
22	141-0-161T-75000	Push Button Ass'y (Silver)	1
	141-0-161T-75030	Push Button Ass'y (Black)	1
23	141-2-126T-33001	Back Lid (Silver)	1
	141-2-126T-33031	Back Lid (Black)	1
24	141-2-311T-34500	Chassis	1
25	141-2-310T-36900	Blacket, Power SW	1
26	141-2-210T-21400	Blacket, Front Chassis	1
27	141-2-365T-51200	Bracket, Switch	1
28	141-2-464T-14400	Fixer, AC Cord	1
29	141-2-163T-61100	Rotary Knob	2
30	141-2-210T-11500	Bracket, Dedital	1
31	141-2-132T-14300	Sign Window	1
32	141-2-246T-72301	Sheet	1
33	141-2-447T-46800	Cushion 10x20x3t, Blacket	2
34	141-2-447T-34200	Cushion 6x10x6t, PCB	2
35	141-2-447T-28200	Cushion 12x12x12t, Power SW PCB	1
36	141-2-447T-62100	Cushion, Bracket	1
37	141-2-210T-08900	Bracket	1
38	141-2-447T-03000	Cushion 5x30, Back Lid	4
39	141-2-447T-45900	Cushion 20x40x8t, PT	1
40	141-2-246T-76300	Sheet, Voltage Select	1
41	141-2-411T-08100	Plate Nut, Voltage Select	1
42	141-2-464T-20671	Fixer	4
43	141-2-246T-80500	Sheet, Chassis	1
SCREW & OTHERS			
Y1		Binding Head Tapping Screw 4x10mm	4
Y2		Binding Head Tapping Screw 3x10mm	18
Y3		Binding Head Tapping Screw 3x6mm	13
Y4		Washer Head Tapping Screw 3x6mm	9
Y5		Eaternal Toothlock Washer 3mm	2

Key No.	Part No.	Description	Q'ty
SCREW & OTHERS			
Y6		Pan Head Screw 3x6mm	2
Y7		Binding Head Tapping Screw 3x8mm	5
Y8		Flat Head Screw 3x6mm	5
Y9		Washer Head Tapping Screw 3x14mm	1
Y10		Tapping Screw 3x6mm	1
Y11		Binding Head Screw 3x10mm	2
ELECTRICAL PARTS			
51	4-300T-04671	Power Trans	1
52	4-243T-77172	Power Cord	1
53	4-231T-53677	Switch, Voltage Select	1
METER & POWER SUPPLY PCB ASS'Y			
55	141-4-233T-41301	P.C Board Ass'y, Meter & Power Supply	1
	4-985T-01100	Fluorescent Display	1
SVR1,2	4-222T-62081	Semifixed Variable Resistor 4.7K	2
SVR3,4	4-222T-62089	Semifixed Variable Resistor 100K	2
	4-235T-69471	Socket 6P	1
	141-2-368T-18700	Heat Sink	1
	141-2-381T-04200	Bracket, Fuse	4
	4-234T-04001	Fuse 200mA	2
	141-6-476T-13400	Indication Label, Fuse	1
IC1,2		IC BA658	2
IC3,4		IC NJM4558D DIP08	2
Q304,306 305,308 311,314 316		Transistor 2SC536 AUD	7
Q307		Transistor 2SB632	1
Q309		Transistor 2SD330	1
D1~10 301		Diode 1S2473	11
D305,306 307,308 302		Diode 1N4003	5
D303		Zener Diode WZ162	1
D304		Zener Diode RD5.6EB3	1
	CAPACITORS		
C312,313		Electrolytic 1000μF 35V	2
C322,323		Electrolytic 220μF 25V	2
C315,314		Electrolytic 220μF 25V	2
C316,324		Electrolytic 220μF 25V	2
C311		Electrolytic 100μF 25V	1
C304		Electrolytic 470μF 6.3V	1
C8,9		Electrolytic 10μF 25V	2
C303		Electrolytic 1μF 25V	1
C321		Electrolytic 470μF 25V	1
C7		Electrolytic 220μF 25V	1
C2,5		Electrolytic 4.7μF 25V	2
C1,4,31 36		Electrolytic 1μF 50V Nonpolar	4
C317		Ceramic 0.01μF 500V +80–20%	1
C2,6		Tantal 2.2μF 16V ±20%	2
	RESISTORS		
R4,14		Carbon 10K ohm ±2% ¼W	2
R1,11		Carbon 20K ohm ±2% ¼W	2
R2,12		Carbon 20K ohm ±2% ¼W	2
R3,13		Carbon 20K ohm ±2% ¼W	2
R24		Solid 82 ohm ±10% ½W	1
R32,62		Carbon 1M ohm ±5% ¼W	2
R34,64		Carbon 100K ohm ±5% ¼W	2
R25,26		Carbon 6.8K ohm ±5% ¼W	2
R5,15		Carbon 10K ohm ±5% ¼W	2

PARTS LIST

Key No.	Part No.	Description	Q'ty
METER & POWER SUPPLY PCB ASS'Y			
	RESISTORS		
R6,16		Carbon 10K ohm ±5% ¼W	2
R7,17		Carbon 150K ohm ±5% ¼W	2
R8,18		Carbon 270 ohm ±5% ¼W	2
R10,20		Carbon 1K ohm ±5% ¼W	2
R31,61		Carbon 4.7K ohm ±5% ¼W	2
R9,19		Carbon 680K ohm ±5% ¼W	2
R21,27		Carbon 10K ohm ±5% ¼W	2
R22		Carbon 820 ohm ±5% ¼W	1
R321		Metal 5.6 ohm ±5% 1W	1
R310		Metal 100 ohm ±5% ½W	1
R325		Carbon 6.8K ohm ±5% ¼W	1
R326		Carbon 5.6K ohm ±5% ¼W	1
R315		Carbon 5.6K ohm ±5% ¼W	1
R324		Carbon 10K ohm ±5% ¼W	1
R318		Carbon 1.2K ohm ±5% ¼W	1
R303		Carbon 22K ohm ±5% ¼W	1
R302		Carbon 27K ohm ±5% ¼W	1
R304		Carbon 150K ohm ±5% ¼W	1
R308		Carbon 15K ohm ±5% ¼W	1
R305		Carbon 33K ohm ±5% ¼W	1
R319		Carbon 5.6K ohm ±5% ¼W	1
R307		Carbon 100K ohm ±5% ¼W	1
R311		Carbon 820 ohm ±5% ¼W	1
R312		Carbon 820 ohm ±5% ¼W	1
R316		Carbon 15K ohm ±5% ¼W	1
R317		Carbon 10K ohm ±5% ¼W	1
AMP PCB ASS'Y			
56	141-4-233T-41400	P.C. Board Ass'y, AMP	1
L101,201	4-255T-01600	MX Coil	2
S1	4-231T-78700	Special Switch, MPX	1
S2	4-231T-82300	Switch, Super D	1
S3	4-231T-87971	Switch, R/P	1
S4	4-231T-80771	Switch, Cal	1
VR103 203	4-222T-74290	Variable Resistor 50K	2
VR101A 101B 102A 102B	4-222T-78000	Variable Resistor 50K	2
SVR101 201,102 202,103 203,104 204,105 205,106 206,401	4-222T-62083	Semifixed Variable Resistor 10K	13
	4-232T-04500	Relay, Muting	1
	4-232T-05900	Relay, Power Off	1
	141-2-464T-20671	Fixer	4
	141-2-464T-08700	Fixer	1
IC102 103,104 204,105 205,106 206,401		IC NJM4558DD DIP08	9
IC107 207		IC LM324N	2
IC108 208		IC μA747CN	2
IC111 211		IC LM301AP	2
		IC NE570N	2
Q101,201 102,202 107,207 108,208 301,302 303,305		Transistor 2SC536	12
Q106,206		Transistor 2SC1571	2
D101,201 102,202 103,203 104,204 105,205 106,206 311,312		Diode DS442X	14

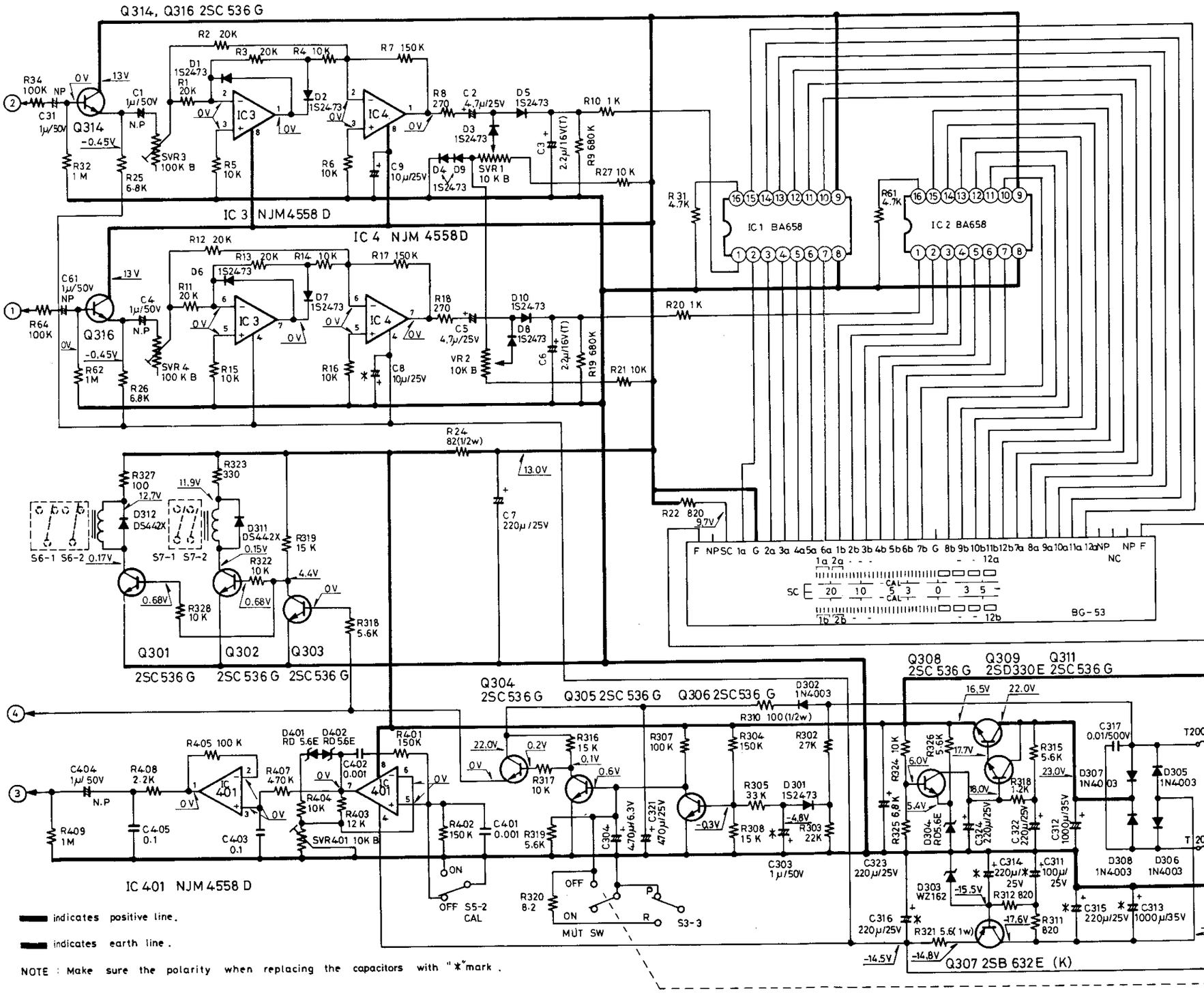
Key No.	Part No.	Description	Q'ty
AMP PCB ASS'Y			
D107,207 401,402		Zenes Diode RD5.6E B3	4
D108,208 109,209		Diode 02BZ4.7	4
	CAPACITORS		
C147,247		Ceramic 100pF 50V ±5%	2
C149,249		Ceramic 0.001μF 50V ±10%	2
C151,251		Ceramic 47pF 50V ±5%	2
C152,252		Ceramic 10pF 50V ±0.5pF	2
C153,253		Ceramic 0.001μF 50V ±10%	2
C118,218		Ceramic 470pF 50V ±10%	2
C117,217		Ceramic 100pF 50V ±5%	2
C111,211		Ceramic 10pF 50V ±10%	2
C116,216		Ceramic 33pF 50V ±10%	2
C103,203		Ceramic 0.001μF 50V ±10%	2
C107,207		Ceramic 100pF 50V ±5%	2
C905		Ceramic 0.01μF 50V +80—20%	1
C131,231		Ceramic 270pF 50V ±5%	2
C134,234		Mylar 0.001μF 50V ±5%	2
C136,236		Mylar 0.001μF 50V ±5%	2
C132,232		Mylar 0.001μF 50V ±5%	2
C133,233 155,255		Mylar 0.0022μF 50V ±5%	4
C129,229 139,239 403,405		Mylar 0.1μF 50V ±5%	6
C119,219		Mylar 0.15μF 50V ±5%	2
C121,221		Mylar 0.15μF 50V ±5%	2
C401,402		Mylar 0.001μF 50V ±5%	2
C122,222 123,223		Mylar 0.001μF 50V ±5%	4
C142,242 159,259 161,261		Electrolytic 10μF 25V	6
C141,241 156,256		Electrolytic 1μF 50V	4
C144,244		Electrolytic 3.3μF 25V	2
C143,243		Electrolytic 3.3μF 25V	2
		Electrolytic 47μF 25V	2
C127,227 128,228 158,258 331,332 333,334 336,327		Electrolytic 100μF 25V	12
C157,257		Electrolytic 22μF 25V	2
C102,202 154,254		Electrolytic Nonpolar 4.7μF 25V	4
C106,206 138,238		Electrolytic Nonpolar 2.2μF 50V	4
C101,201		Electrolytic Nonpolar 1μF 50V	2
C105,205		Electrolytic Nonpolar 1μF 50V	2
C901,902		Electrolytic 220μF 25V	2
C108,208 126,226 137,237 124,224		Electrolytic Nonpolar 1μF 50V	8
C112,212 113,213 202,162		Electrolytic Nonpolar 4.7μF 25V	6
C114,214		Electrolytic Nonpolar 4.7μF 25V	2
C404		Electrolytic Nonpolar 1μF 50V	1
	RESISTORS		
R142,242 143,243 327		FP-Carbon 100 ±5% ¼W	5
R144,244		Carbon 6.8K ohm ±5% ¼W	2
R153,253		Carbon 6.8K ohm ±5% ¼W	2
R147,247		Carbon 330 ohm ±5% ¼W	2
R148,248 199,299		Carbon 33K ohm ±5% ¼W	4

PARTS LIST

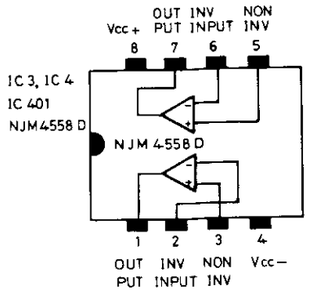
Key No.	Part No.	Description	Q'ty
AMP PCB ASS'Y			
	RESISTORS		
R151,251 323		Carbon 330 ohm ±5% ¼W	3
R149,249		Carbon 3.3M ohm ±5% ¼W	2
R146,246		Carbon 6.8K ohm ±5% ¼W	2
R152,252		Carbon 33K ohm ±5% ¼W	2
R154,254		Carbon 3.9K ohm ±5% ¼W	2
R156,256		Carbon 15K ohm ±5% ¼W	2
R157,257		Carbon 15K ohm ±5% ¼W	2
R158,258 159,259 502,602		Carbon 68K ohm ±5% ¼W	6
R190,290		Carbon 1K ohm ±5% ¼W	2
R196,296		Carbon 2.7K ohm ±5% ¼W	2
R197,297 504,604 506,606		Carbon 10K ohm ±5% ¼W	6
R198,298		Carbon 68K ohm ±5% ¼W	2
R501,601		Carbon 33K ohm ±5% ¼W	2
R183,283		Carbon 1K ohm ±5% ¼W	2
R184,284		Carbon 1K ohm ±5% ¼W	2
R181,281		Carbon 1K ohm ±5% ¼W	2
R182,282		Carbon 1K ohm ±5% ¼W	2
R186,286		Carbon 56 ohm ±5% ¼W	2
R193,293		Carbon 2.2K ohm ±5% ¼W	2
R187,287		Carbon 56 ohm ±5% ¼W	2
R194,294		Carbon 2.2K ohm ±5% ¼W	2
R192,292		Carbon 220 ohm ±5% ¼W	2
R188,288		Carbon 2.2K ohm ±5% ¼W	2
R191,291		Carbon 220 ohm ±5% ¼W	2
R189,289		Carbon 2.2K ohm ±5% ¼W	2
R169,269		Carbon 33K ohm ±5% ¼W	2
R171,271		Carbon 100K ohm ±5% ¼W	2
R176,276		Carbon 68K ohm ±5% ¼W	2
R177,277		Carbon 680K ohm ±5% ¼W	2
R178,278		Carbon 680K ohm ±5% ¼W	2
R168,268		Carbon 47K ohm ±5% ¼W	2
R174,274		Carbon 100K ohm ±5% ¼W	2
R173,273		Carbon 330 ohm ±5% ¼W	2
R172,272		Carbon 33K ohm ±5% ¼W	2
R167,267		Carbon 100K ohm ±5% ¼W	2
R166,266		Carbon 33K ohm ±5% ¼W	2
R164,264		Carbon 33K ohm ±5% ¼W	2
R163,263		Carbon 33K ohm ±5% ¼W	2
R161,261		Carbon 8.2K ohm ±2% ¼W	2
R162,262		Carbon 82K ohm ±2% ¼W	2
R179,279		Carbon 10K ohm ±5% ¼W	2
R128,228		Carbon 2.7K ohm ±5% ¼W	2
R129,229		Carbon 2.7K ohm ±5% ¼W	2
R139		Carbon 1.5K ohm ±5% ¼W	1
R320		Carbon 8.2 ohm ±5% ¼W	1
R239		Carbon 1.5K ohm ±5% ¼W	1
R140		Carbon 8.2K ohm ±5% ¼W	1
R121		Carbon 1M ohm ±5% ¼W	1
R221		Carbon 1M ohm ±5% ¼W	1
R119,219		Carbon 56K ohm ±5% ¼W	2
R118,218		Carbon 15K ohm ±5% ¼W	2
R117,217		Carbon 330 ohm ±5% ¼W	2
R116,216		Carbon 100K ohm ±5% ¼W	2
R403		Carbon 12K ohm ±5% ¼W	1
R404		Carbon 10K ohm ±5% ¼W	1
R407		Carbon 470K ohm ±5% ¼W	1
R405		Carbon 100K ohm ±5% ¼W	1
R401,402		Carbon 150K ohm ±5% ¼W	2
R408		Carbon 2.2K ohm ±5% ¼W	1
R409		Carbon 1M ohm ±5% ¼W	1
R133,233 511,611 512,612		Carbon 100K ohm ±5% ¼W	6
R134,234		Carbon 330 ohm ±5% ¼W	2
R136,236		Carbon 120K ohm ±5% ¼W	2
R132,232		Carbon 39K ohm ±5% ¼W	2
R123,223		Carbon 100K ohm ±5% ¼W	2
R124,224		Carbon 330 ohm ±5% ¼W	2
R126,226		Carbon 2.2K ohm ±5% ¼W	2
R127,227		Carbon 56K ohm ±5% ¼W	2
R122,222		Carbon 1M ohm ±5% ¼W	2
R318		Carbon 5.6K ohm ±5% ¼W	1
R319		Carbon 15K ohm ±5% ¼W	1
R322		Carbon 10K ohm ±5% ¼W	1
R328		Carbon 10K ohm ±5% ¼W	1

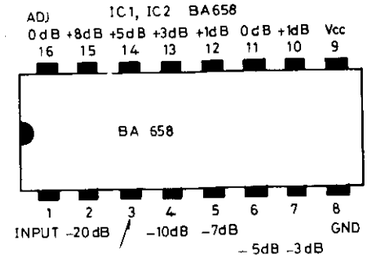
Key No.	Part No.	Description	Q'ty
AMP PCB ASS'Y			
	RESISTORS		
R102,202		Carbon 4.7K ohm ±5% ¼W	2
R106,206		Carbon 68 ohm ±5% ¼W	2
R103,203		Carbon 390K ohm ±5% ¼W	2
R108,208		Carbon 100K ohm ±5% ¼W	2
R107,207		Carbon 330 ohm ±5% ¼W	2
R109,209		Carbon 5.6K ohm ±5% ¼W	2
R137,237		Carbon 56K ohm ±5% ¼W	2
R112,212		Carbon 1K ohm ±5% ¼W	2
R113,213		Carbon 47K ohm ±5% ¼W	2
R901		Carbon 680 ohm ±5% ¼W	1
R902		Carbon 1K ohm ±5% ¼W	1
R111,211		Carbon 22K ohm ±5% ¼W	2
R101,201		Carbon 100 ohm ±5% ¼W	2
R105,205		Carbon 4.7K ohm ±5% ¼W	2
R240		Carbon 8.2K ohm ±5% ¼W	1
R131,231		Carbon 4.7K ohm ±5% ¼W	2
R130,230		Carbon 820 ohm ±5% ¼W	2
R135,235		Carbon 120 ohm ±5% ¼W	2
R503,603		Carbon 22K ohm ±2% ¼W	2
SOCKET PCB ASS'Y			
57	141-4-233T-41501	P.C Board Ass'y, Socket	1
Q109,209		Transistor 2SD1012	2
Q104,204		Transistor 2SD536	2
D317,315 316		Diode DS442X	3
R507,607		Carbon Res. 5.6K ohm ±5% ¼W	2
R141,241		Carbon Res. 1K ohm ±5% ¼W	2
R508,608		Carbon 5.6K ohm ±5% ¼W	2
C906		Ceramic Cap. 0.01μF 50V +80—20%	1
	4-235T-68500	Socket (2p)	4
MIC PCB ASS'Y			
58	141-4-233T-41600	P.C Board Ass'y, Mic	1
	4-235T-45200	Socket	2
POWER SWITCH PCB ASS'Y			
59	141-4-233T-21911	P.C Board Ass'y, Power Switch	1
	4-238T-07973	Push Switch, Power	1
	4-223T-11700	Capacitor 0.01μF 250V	1

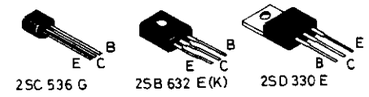
SCHEMATIC DIAGRAM (METER/POWER SUPPLY)



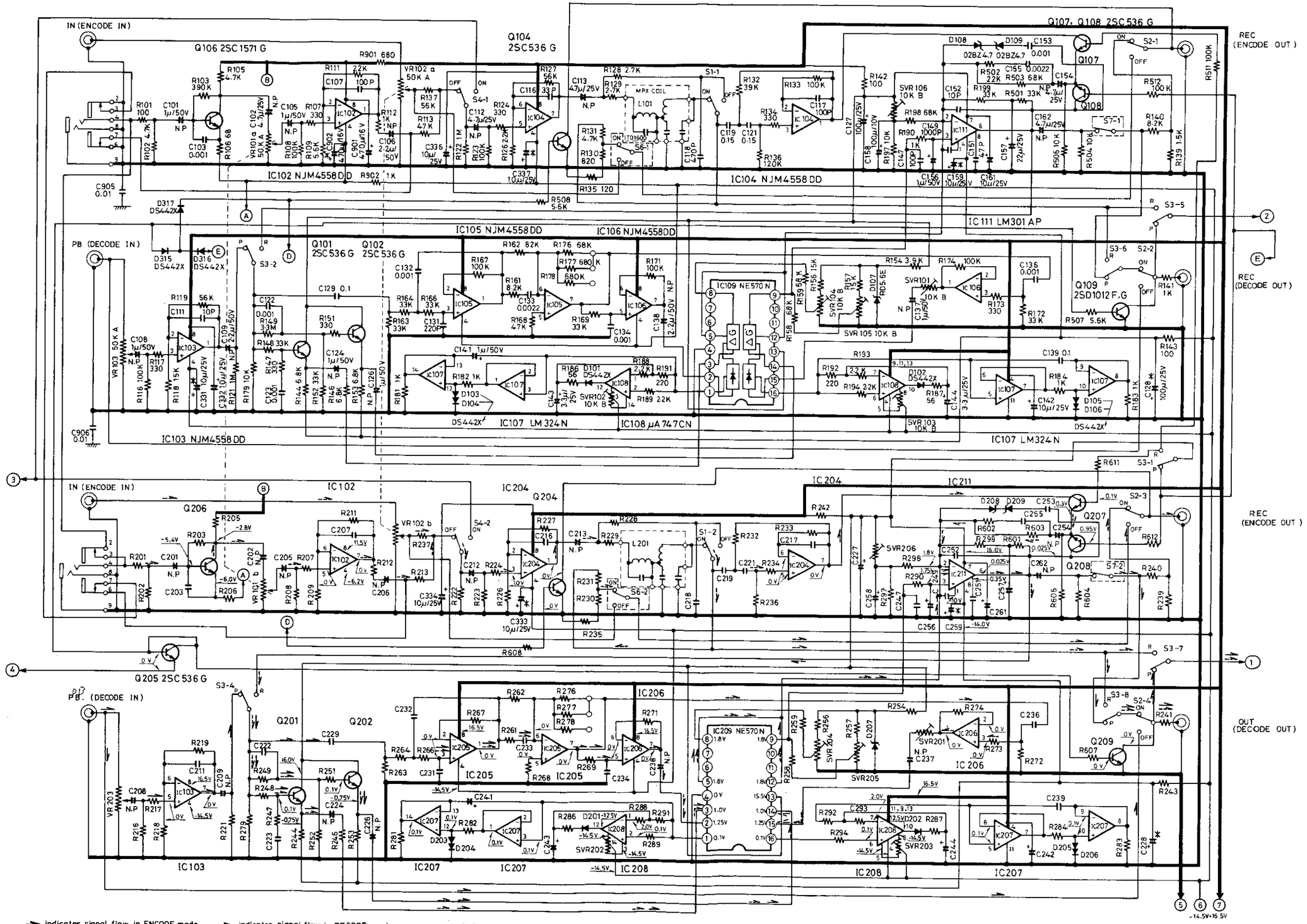
NOTE: Refer to the service manual of PLUS N55 for the block diagrams of other IC.





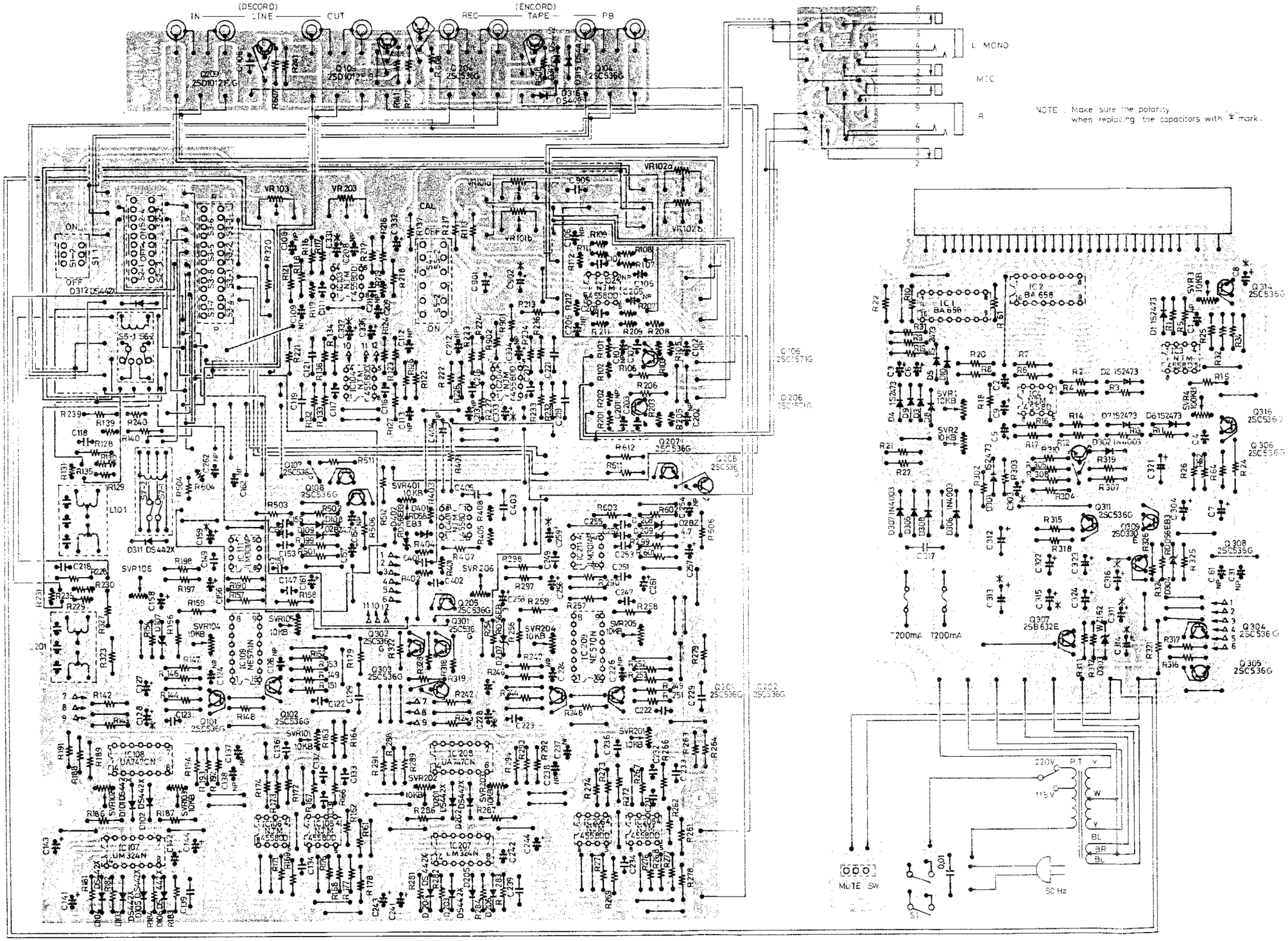


SCEMATIC DIAGRAM (MAIN)



indicates signal flow in ENCODE mode. indicates signal flow in DECODE mode. indicates positive line. indicates negative line.

NOTE : Make sure the polarity when replacing the capacitors with "*" mark.


(DECORD)
IN
LINE
CUT
(ENCORD)
REC
TAPE
PB
L
MONO
MIC
R
NOTE : Make sure the polarity
when replacing the capacitors with "*" mark.
ON
OFF
CAL
IC1 BA 658
IC2 BA 658
IC107 UM 324N
IC108 UA747CN
IC109 NE570N
IC208 UA747CN
IC209 NE570N
MUTE SW
T200mA
T200mA
220V
115V
50 Hz

MODIFICATION NOTICE

NOISE REDUCTION SYSTEM

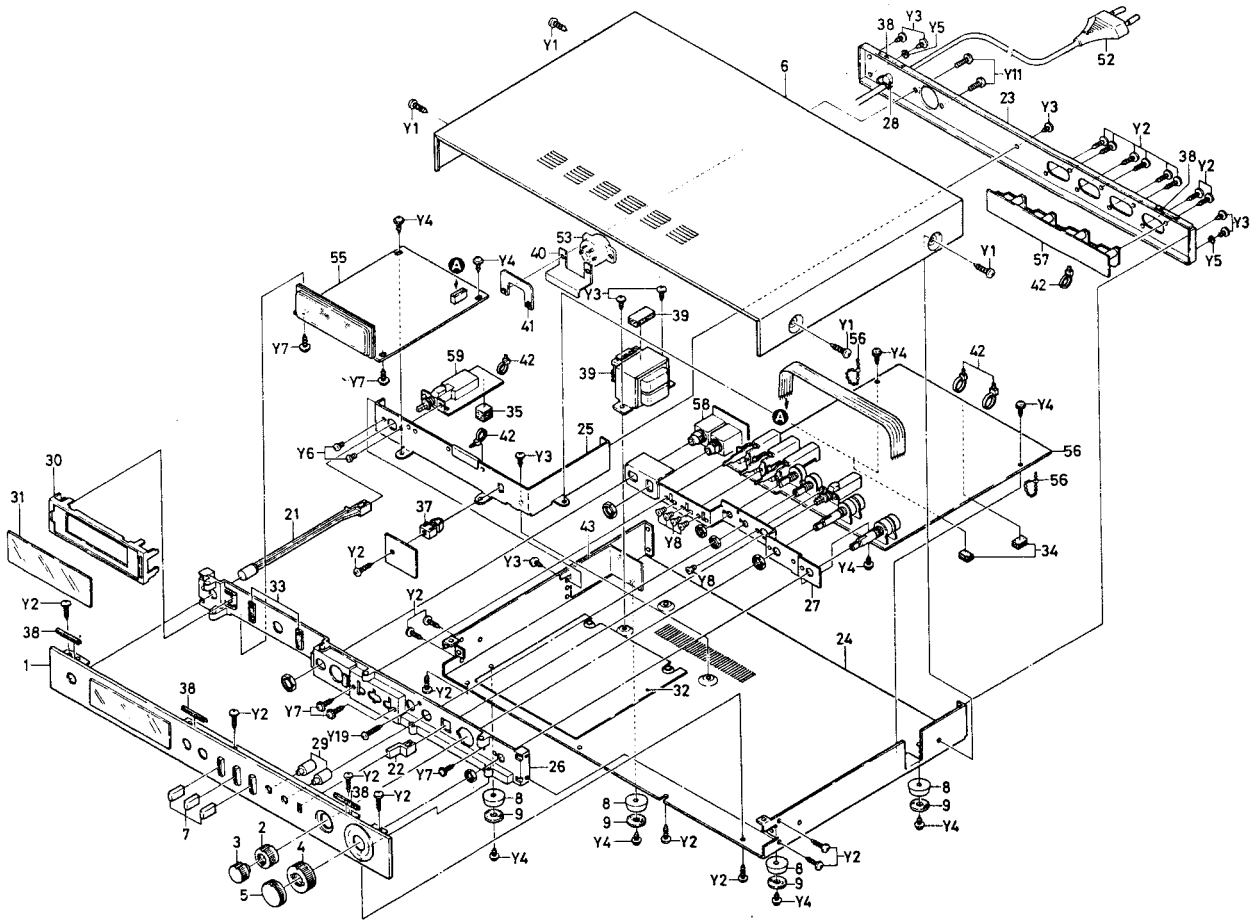
SANYO

PLUS N33 (EUROPE)

Date Oct. 15, 1980 Issued by _____

Add this sheet to Service Manual for Model PLUS N33.

CABINET & CHASSIS EXPLODED VIEW.



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