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**ROTEL**®

# Technical Manual

## STEREO OCTAVE EQUALIZER

# RE-1010

### TABLE OF CONTENTS

Chassis Layout (Top View) . . . . .	3
Checking of Operation . . . . .	4
Repair Parts List . . . . .	5
Specifications . . . . .	5
Circuit Board Diagrams. . . . .	6
Schematic Diagram . . . . .	7

### TABLE DES MATIERES

Installation du châssis (vue de dessus) . . . . .	3
Contrôle du fonctionnement . . . . .	4
Liste des pièces de rechange . . . . .	5
Caractéristique . . . . .	5
Diagrammes des plaquettes de circuits imprimés . . . . .	6
Diagramme schématique. . . . .	7

Serial No. Beginning  
NC 54316

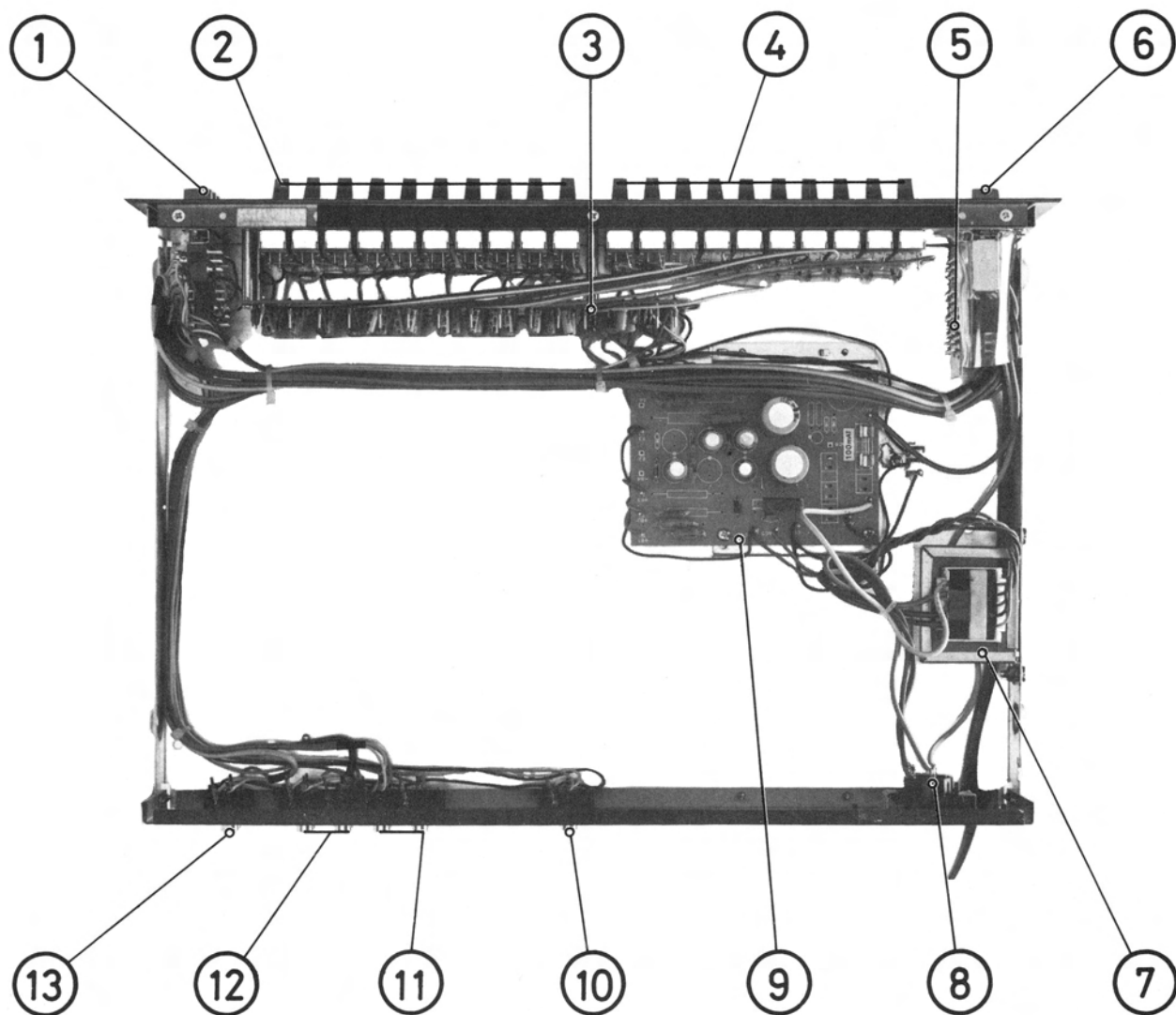
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**ROTEL ELECTRONICS CO., LTD.**  
**ROTEL OF AMERICA, INC.**  
**ROTEL HI FI LIMITED**

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# Chassis Layout (Top View)

## Installation du châssis (vue de dessus)



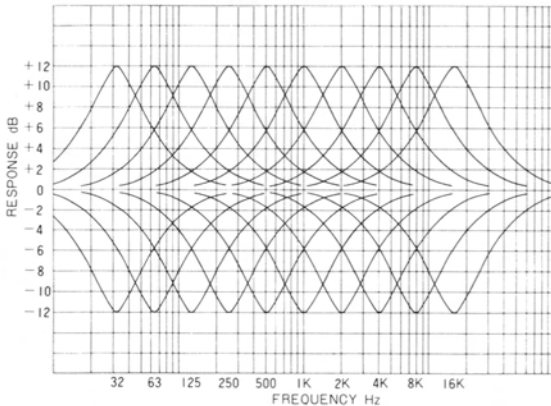
1. MODE SELECTOR (NORMAL, BYPASS, EQ REC)
2. R-CH ACOUSTIC CONTROLS
3. RESONATOR PCB
4. L-CH ACOUSTIC CONTROLS
5. MONITOR SWITCH PCB
6. POWER SWITCH
7. POWER TRANSFORMER
8. VOLTAGE SELECTOR
9. POWER SUPPLY PCB
10. OUTPUT TERMINALS
11. TAPE 2 IN/OUT TERMINALS
12. TAPE 1 IN/OUT TERMINALS
13. INPUT TERMINALS

# Checking of Operation

## Checking Procedures

**Instruments:** Audio Generator, Oscilloscope and AC Voltmeter

1. Set Power and Monitor (Tape 1, 2) switches to OFF, and NORMAL switch to ON. Set Acoustic Controls to 0 (mid-position).
2. Connect Audio Generator to LINE IN and feed in 1,000 Hz (sine wave), 0.775 V signal. Connect the oscilloscope and AC voltmeter to LINE OUT.
3. Set Power switch to ON. (From the moment Power switch is turned on, 4 to 7 seconds should elapse before an output waveform appears on the oscilloscope.) Then check the following items.
  - a) The output signal level in this instance should be 0.775 V $\pm$ 1 dB.
  - b) The difference in the output level between L-ch and R-ch should be within 1 dB.
  - c) In this state, the output level at LINE OUT terminal should be considered 0 dB. When the 1 kHz acoustic control is set at +12 position, the output level should be +12 dB $\pm$ 1 dB; and at -12 dB, the output level should be -12 dB $\pm$ 1 dB.
  - d) Follow the same procedures for all remaining acoustic controls (2 kHz, 4 kHz, 8 kHz, 16 kHz, 500 Hz, 250 Hz, 125 Hz, 63 Hz and 32 Hz), by matching the input signal frequency from Audio Generator with each control. Be sure that each output level is within the specified range. (For frequency response, see Fig. 1.)



# Contrôle du fonctionnement

## Processus de contrôle

**Instruments:** Générateur d'audio-fréquences, oscilloscope et voltmètre à courant alternatif

1. Placer l'interrupteur d'alimentation (POWER) et les commutateurs MONITOR (TAPE 1 et TAPE 2) sur l'arrêt (OFF). Placer le commutateur NORMAL sur la position ON. Régler les commandes acoustiques sur 0 (position médiane).
2. Raccorder le générateur d'audio-fréquences à l'entrée de ligne (LINE IN) et envoyer un signal de 1.000 Hz (onde sinusoïdale) 0,775 V. Brancher l'oscilloscope en sortie de ligne (LINE OUT).
3. Mettre l'appareil sous tension. De 4 à 7 secondes doivent s'écouler, à partir du moment où l'appareil est mis sous tension, avant que la forme de l'onde de sortie se matérialise sur l'oscilloscope. Puis vérifier les points suivants:
  - a) Dans ces circonstances, le niveau du signal de sortie doit être de 0,775 V  $\pm$  1 dB.
  - b) La différence de niveau de sortie entre le canal gauche et le canal droit doit être de moins d'1 dB.
  - c) Dans ces conditions, le niveau de sortie aux bornes LINE OUT doit être considéré comme étant 0 dB. Lorsque la commande acoustique 1 kHz est placée sur la position +12, le niveau de sortie doit être +12 dB  $\pm$  1 dB; sur -12, le niveau de sortie doit être de -12 dB  $\pm$  1 dB.
  - d) Suivre le même processus pour toutes les autres commandes acoustique (2 kHz, 4 kHz, 8 kHz, 16 kHz, 500 Hz, 250 Hz, 125 Hz, 63 Hz et 32 Hz) en faisant coïncider la fréquence du signal d'entrée en provenance du générateur d'audio-fréquences avec chaque commande. S'assurer que le niveau d'entrée est bien à l'intérieur de la plage spécifiée. (Pour la réponse en fréquence, voir la fig. 1.)

Fig. 1 Frequency Response

## Switch Positioning Vis-à-vis Input/Output Signals

## Position du commutateur vis-à-vis signaux d'entrée/sortie

INPUT	MODE	MONITOR SWITCH	TAPE 1 OUT	TAPE 2 OUT	LINE OUT
LINE IN	EQ REC	TAPE 1 TAPE 2 "OFF"	VIA EQ		DIRECT
	BYPASS		DIRECT		
	NORMAL		DIRECT		
TAPE 1 (or 2) IN	EQ REC	TAPE 1 (or 2) "ON"	---	---	DIRECT
	BYPASS		---	---	
	NORMAL		---	---	VIA EQ
TAPE 1 TAPE 2 IN (Dubbing) 1 - 2	EQ REC	TAPE 1 TAPE 2 "ON"	---	VIA EQ (Tape 1 signal)	DIRECT (Tape 2 signal)
	BYPASS		---	DIRECT (Tape 1 signal)	VIA EQ (Tape 2 signal)
	NORMAL		---		

### DIRECT:

- indicates circuit passage of input signal to output, without passing through the equalizer circuit.
- indique le passage direct du signal d'entrée à la sortie, sans passer par le circuit de l'égalisateur.

### VIA EQ:

- indicates passage of input signal to output through the equalizer circuit before reaching output.
- indique qu'il y a un passage du signal d'entrée par le circuit de l'égalisateur avant de parvenir à la sortie.

# Repair Parts List

## Liste des pièces de rechange

Schematic Location	Description	Part No.
<b>TRANSISTORS, DISODES AND IC'S</b>		
Q501, 502	2SC828 (R), (S), Buffer	301201115
D901	RB-152, Rectifier	300919039
D902, 909	SR1K-4, Rectifier	300919024
D903	BZ-240, Zener Regulator, 24V, 1W	300313009
D905, 906	WZ-150, Zener Regulator, 15V, 0.5W	300313027
D907	WZ-120, Zener Regulator, 12V, 0.5W	300313013
D910	SEL-305GC, LED, Power Ind.	300414015
IC501	NJM4558D-D (Low Noise), Tone Amp.	303452152
IC502	AN6135, Muting Delay	303452227
IC503 to 512	NJM4558D, Resonator	303452215
<b>OTHERS</b>		
VR001 to 020	Variable Resistor, 100kW	581005054
S1	Switch, Push 3-key, Mode	614030833
S2, 3	Switch, Push 2-key, Tape	614020439
S4	Switch, Power	614010138
	Volatage Selector	648211247
T001	Power Transformer	207001483
	Pin Jack, 2P, Line IN, Line OUT	624200202
	Pin Jack, 4P, Tape IN/OUT	624200204
F001	Fuse, 0.3A, 250V, Long T type	341222030
	Fuse, 100mAT, 250V, Midget Type	345952010
	Tone Amp and Resonator PCB Ass'y	141810990
	Acoustic Control PCB Ass'y	141810989
	Power Indicator PCB Ass'y	141810994
	Tape Switch PCB Ass'y	141810991
	Power Supply PCB Ass'y (w/long Fuse)	141810992
	Power Supply PCB Ass'y (w/Midget Fuse)	141810993
	Fuse Clip, for Long Fuse	648211146
	Fuse Clip, for Midget Fuse	648211147
	Power Supply Cord, (STD)	796301115
	Power Supply Cord, (UK)	796301138
	Power Supply Cord, (Europe)	796301148
	Power Supply Cord, (Australia, etc.)	796301140
	Cord Stopper, (STD)	675201111
	Cord Stopper, (Europe, etc.)	675201114
	Cord Stopper, (UK)	675201116
	Signal Cord Ass'y	791001112
	Front Panel Ass'y, (Black)	111911497
	Front Panel Ass'y, (Metallic Brown)	111911496
	Bonnet	138011307
	Knob, Acoustic Control, (Black)	116310233
	Button, Push, Monitor, (Black)	116210057
	Button, Push, Power, etc. (Black)	116210059
	Knob, Acoustic Control, (Metallic Brown)	116310291
	Button, Push, Monitor, (Metallic Brown)	116210056
	Button, Push, Power, etc. (Metallic Brown)	116210058
	Foot	673402021
	Screw, ⊕3 x 6 mm, Binding Head, (Ni)	705213006
	Screw, ⊕3 x 6 mm, Oval-countersunk, (Ni)	702213006
	Screw, ⊕3 x 10 mm, Tapping, (BLZ)	726223010
	Screw, ⊕3 x 8 mm, Tapping, (Ni)	726213008
	Screw, ⊕3 x 12 mm, Tapping, (Ni)	726213012
	Screw, ⊕3 x 6 mm, Tapping, Oval-countersunk (Ni)	722213006

Schematic Location	Description	Part No.
	Screw, ⊕4 x 10 mm, Tap-tight, Binding Head, (Ni)	765214010
	Screw, ⊕3 x 8 mm, Binding Head, (BLZ)	705223008
	Screw, ⊕3 x 6 mm, Countersunk, (Ni)	701213006
	Screw, ⊕3 x 10 mm, Tapping, (Ni)	726213010
	Screw, ⊕4 x 8 mm, Binding Head w/washer, (BLZ)	755224008
	Insert Screw, M3, 33mm(L), Resonator PCB mtg.	770911165
	Screw, 3 x 9 mm, Ind PCB Mtg.	770911131
	Flat Screw, 3 x 6 mm, (BLZ)	770911166
	Washer, ø3.2 x ø8 x t0.5, (Ni)	770500003
	Spring Washer, M4	770500011
	Nut, M3, (Ni)	770402201
	Nut, M4, (Ni)	770402202

### Addition to Parts List (October, 1981)

Front Panel Ass'y (Silver)	111911567
Knob, Acoustic Control (Silver)	116310363
Button, Power (Silver)	116210105
Button, Monitor (Silver)	116210104

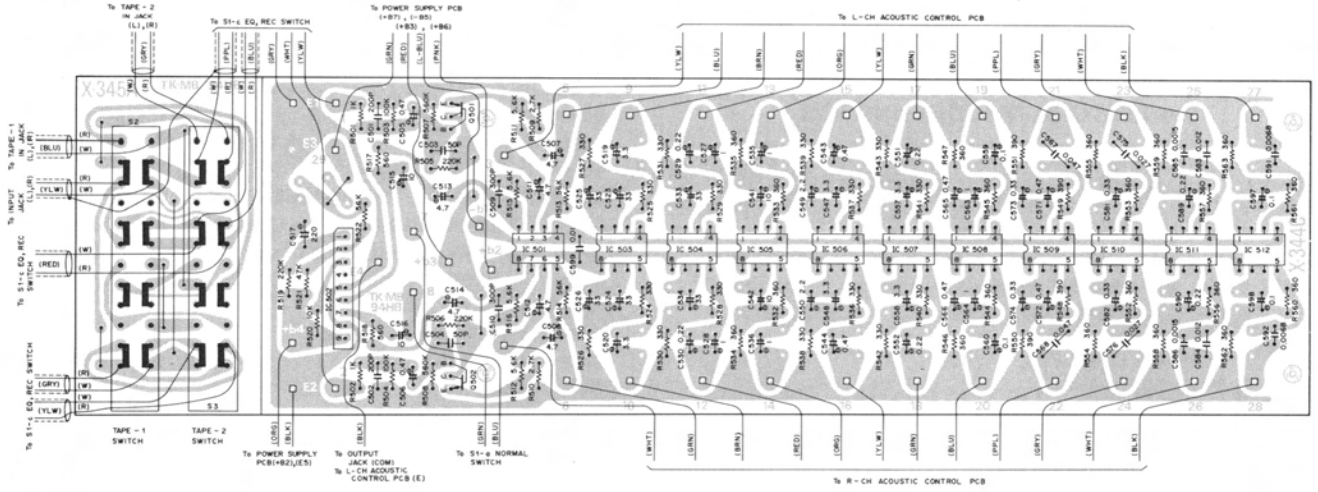
## Specifications

## Caracteristiques

Band . . . . .	10 bands per channel (10 center frequencies)
Band Control Characteristics	
Increase . . . . .	+12dB
Decrease . . . . .	-12dB
Center Frequency (Hz) . . . . .	.32, 63, 125, 250, 500, 1000, 2000, 4000, 8000, 16,000
Input Sensitivity/Impedance	
LINE, TAPE MONITOR 1, 2 . . .	1.0 V/50 kilohms
Output Voltage/Impedance	
LINE, TAPE MONITOR 1, 2 . . .	1.0 V/600 ohms
Hum and Noise . . . . .	.108 dB
Residual Noise . . . . .	.3.9 μV
Frequency Response . . . . .	.15 Hz to 20,000 Hz, +0 dB, -1 dB
Harmonic Distortion . . . . .	.0.009%(20 Hz to 20,000 Hz, 1 V)
Power Requirement . . . . .	.120 V/60 Hz, 220 V/50 Hz, 240 V/50 Hz, or 120, 220, 240 V/50-60 Hz
Power Consumption . . . . .	.8 watts max.

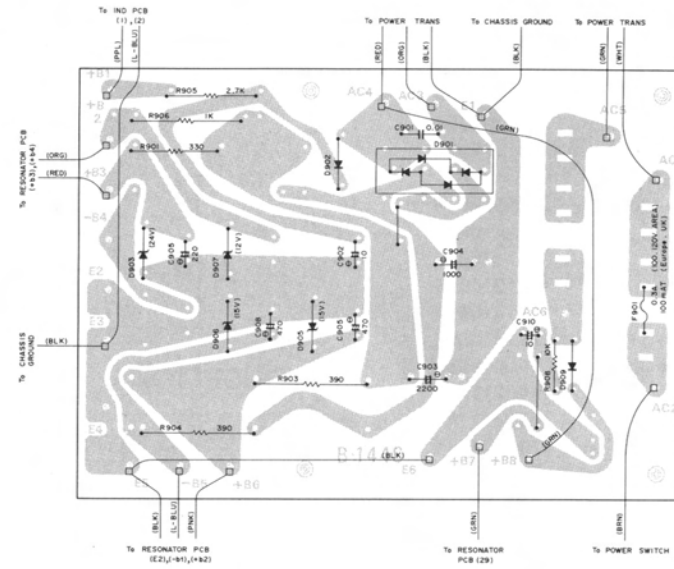
Specifications and design subject to possible modification without notice.

# STONE AMP AND RESONATOR CIRCUIT CIRCUIT DE L'AMPLI DE TONALITE ET RESONATEUR

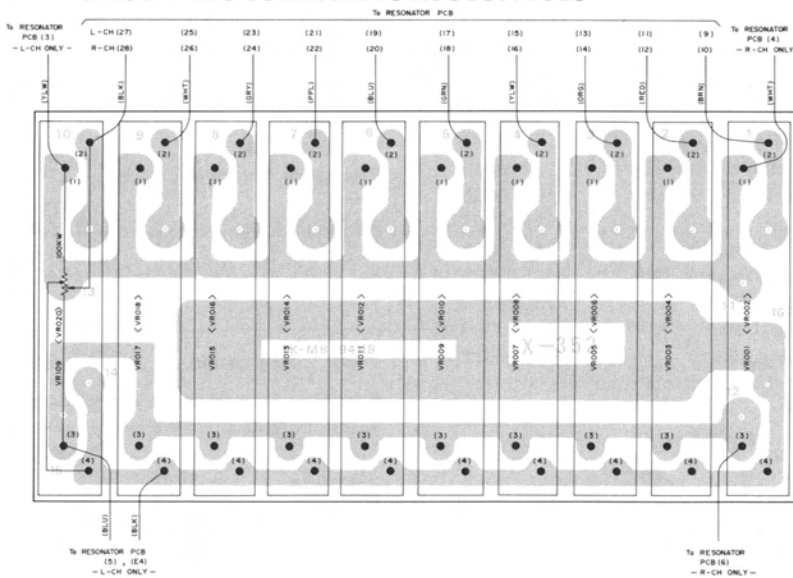


Note: IC501 is a low noise type.

## POWER SUPPLY CIRCUIT CIRCUIT DE L'ALIMENTATION

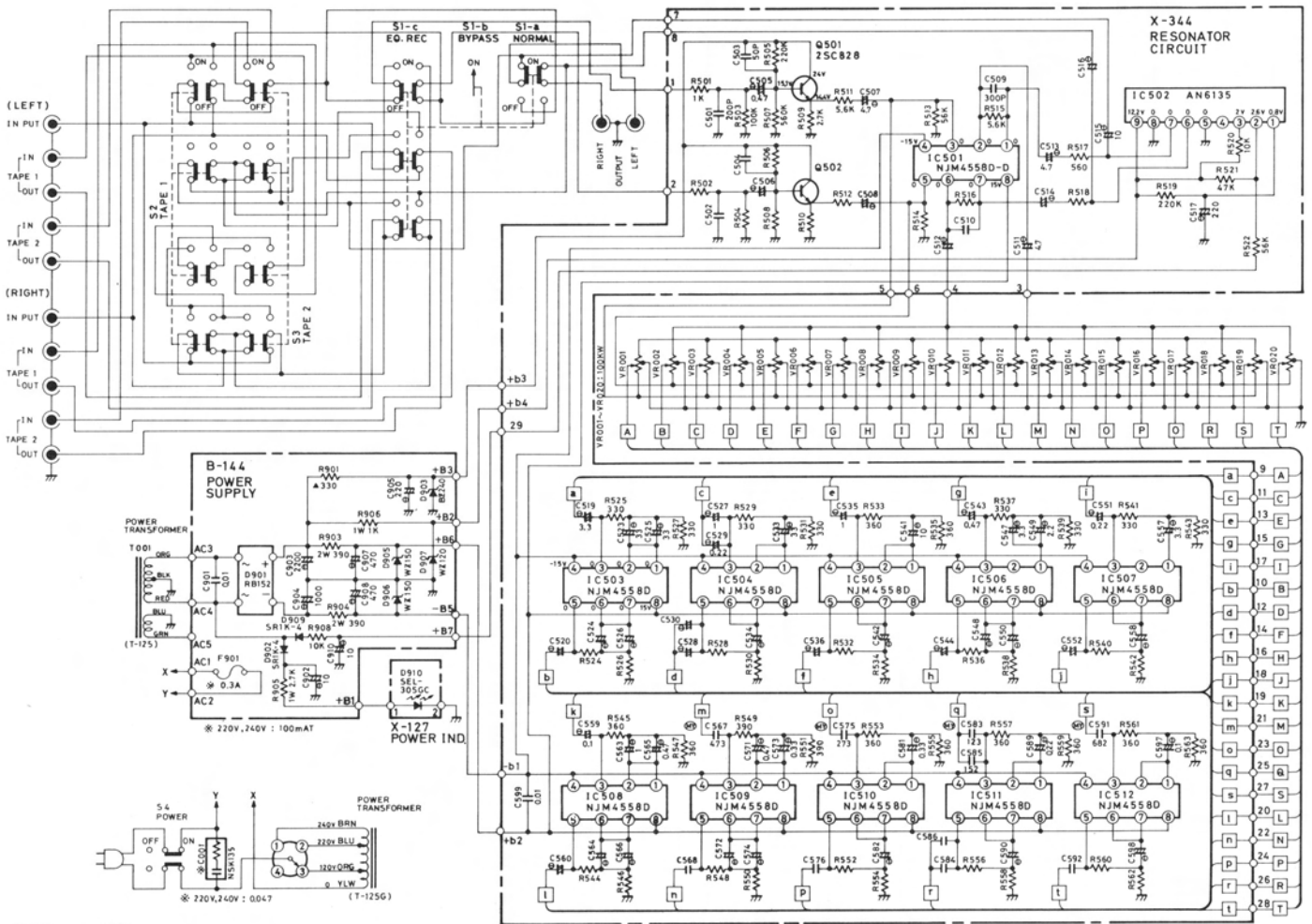


## ACOUSTIC CONTROL CIRCUIT CIRCUIT DES COMMANDES ACOUSTIQUES



# Schematic Diagram

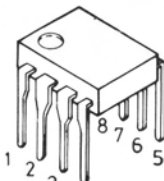
## Diagramme schématique



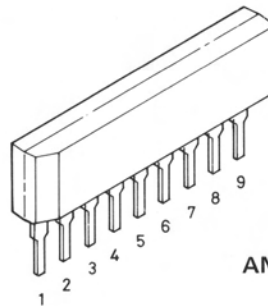
MODEL RE-1010  
1980. 2. 21. TERAYAMA



2SC828



NJM4558D  
NJM4558DD



AN6135

### RESISTORS

- K . . . . . kilohm,
- M . . . . . Megohm
- ▲ . . . . . Uninflammable carbon film resistors, 1/2 watts
- Non-marked . . . . . 1/4 watts, carbon film resistor (low noise type)
- . . . . . More than 1 watt, uninflammable metal oxide film resistor

### CAPACITORS

- MY . . . . . Mylar film capacitor
- |— . . . . . Electrolytic capacitor
- Non-marked . . . . . Ceramic capacitor

• Unless otherwise noted in schematic diagram, all capacitance values are expressed in mfd.

#### Notes:

- Voltage reading with VTVM: across the point shown and the chassis ground.
- Tolerance in voltage reading: within ±20%