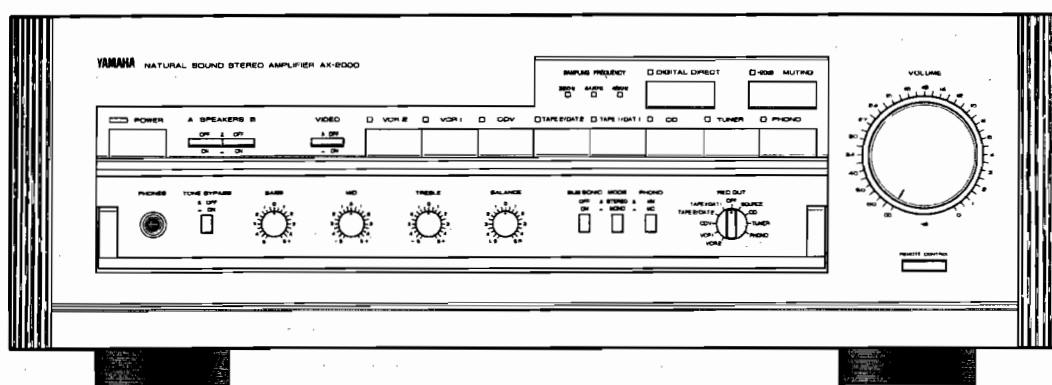
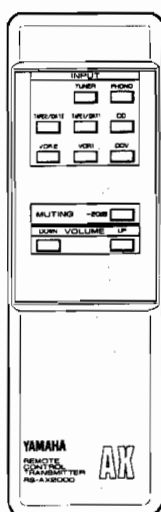


STEREO INTEGRATED AMPLIFIER

AX-2000

SERVICE MANUAL

● RS-AX2000



IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.


WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

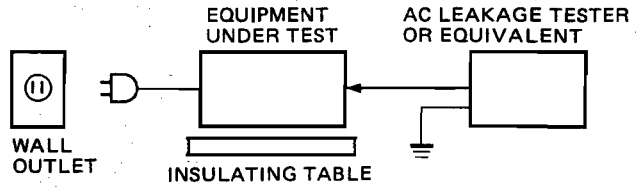
IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■ CONTENTS

TO SERVICE PERSONNEL	1	IC BLOCK	6 ~ 12
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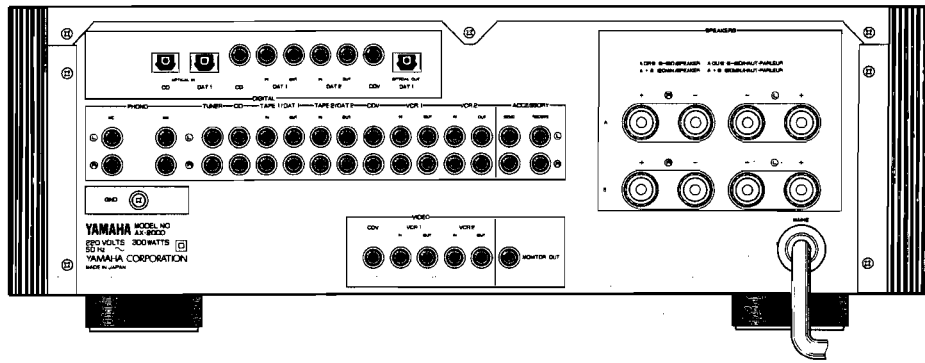
■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Model Only).
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.

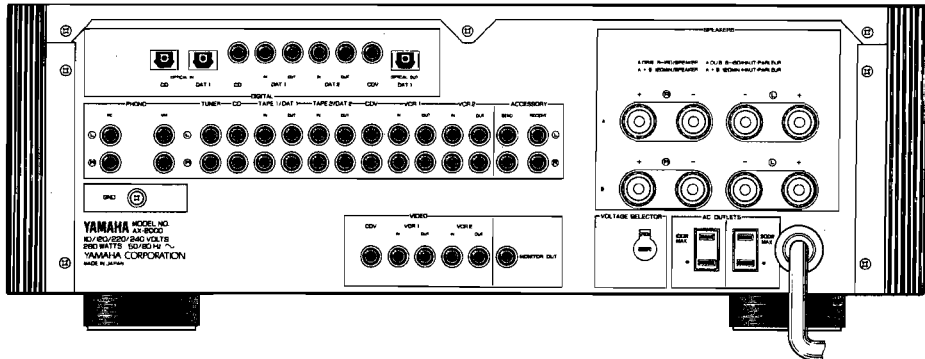


■ REAR PANELS

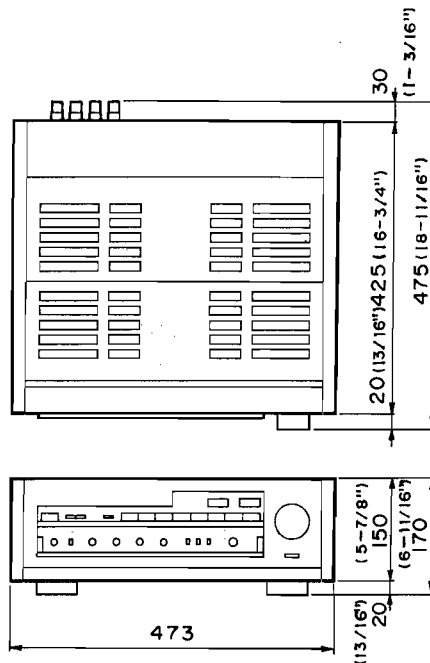
• W MODEL



• R MODEL



■ DIMENSIONS



■ SPECIFICATIONS

AMPLIFIER SECTION

Maximum RMS Output Power per Channel

20Hz ~ 20kHz 0.003% THD 8Ω 130W

20Hz ~ 20kHz 0.003% THD 6Ω 150W

DIN Standard Output Power per Channel

(European model)

1kHz 1% THD 4Ω 220W

Dynamic Power per Channel

(by IHF Dynamic Headroom Measuring Method)

1kHz 1% THD 8/6/4Ω 180W/240W/340W

IEC Power (European model)

1kHz 0.004% THD 8Ω 130W

Power Band Width

0.02% THD 65W 8Ω 20Hz ~ 50kHz

Damping Factor

1kHz 8Ω 130W

Input Sensitivity/Impedance

Phono MC 100mV/1kΩ

MM 2.6mV/47kΩ

CD, etc. 185mV/47kΩ

ACCESSORY IN 185mV/47kΩ

Maximum Input Signal

(0.007% THD 1kHz) Phono MC 6mV

(0.007% THD 1kHz) Phono MM 140mV

Output Level/Impedance

REC OUT 150mV/1kΩ

Headphone Jack Socket Rated Output/Impedance

0.004% THD 0.86V/8Ω

Frequency Response

CD, TUNER, TAPE, DAT, CDV, VCR

. 20Hz ~ 20kHz ± 0.2dB

ACCESSORY IN 20Hz ~ 20kHz ± 0.2dB

RIAA Equalization Deviation

Phono MC ±0.2dB

MM ±0.2dB

Total Harmonic Distortion (20Hz ~ 20kHz)

Phono MC to REC OUT 3V 0.003%

Phono MM to REC OUT 3V 0.003%

CD, etc. to SP OUT 130W/8Ω 0.003%

ACCESSORY IN to SP OUT 130W/8Ω 0.003%

Intermodulation Distortion

CD, etc. Rated Output/8Ω 0.004%

Signal to Noise Ratio (IHF-A-Network)

Phono MC (500μV Input Shorted) 85dB

MM (5mV Input Shorted) 88dB

Residual Noise (IHF-A-Network) 30μV

Channel Separation (Vol -30dB)

Phono MM (Input Shorted 1kHz/10kHz) 82dB/72dB

Phono MC (Input Shorted 1kHz/10kHz) 84dB/65dB

CD, etc. (Input 5.1kΩ Terminated 1kHz/10kHz)

. 76dB/57dB

Tone Control Characteristics

BASS boost/cut ±10dB (at 20Hz)

BASS turnover frequency 350Hz

TREBLE boost/cut ±10dB (at 20kHz)

TREBLE turnover frequency 3.5kHz

MID boost/cut ±10dB (at 1kHz)

MID center frequency 1kHz

Filter Characteristics

Subsonic 15Hz -6dB/oct

Audio Muting -20dB

Gain Tracking Error (0 ~ -60dB) 3dB

Power Supply

General model AC110/120/220V/240V 60/50Hz

European model AC220V 50Hz

Power Consumption

General model 280W

European models 300W

AC Outlet (General Model only)

Switched x 1 100W max.

Unswitched x 2 300W max.

Dimensions (W x H x D) 473 x 170 x 475mm

(18.6 x 6.7 x 18.7in)

Weight 28kg

(10.1lbs)

D/A CONVERTER SECTION

Output Voltage REC OUT OUTPUT (0dB signal input)

. 2V

Frequency Characteristics (20 ~ 20kHz) ±0.3dB

Diemphasis Deviation (EIAJ) ±0.3dB

Harmonic Distortion Ratio (1kHz, EIAJ) 0.002%

Dynamic Range (EIAJ) 100dB

S/N Ratio (EIAJ) 118dB

Channel Separation (1kHz) 100dB

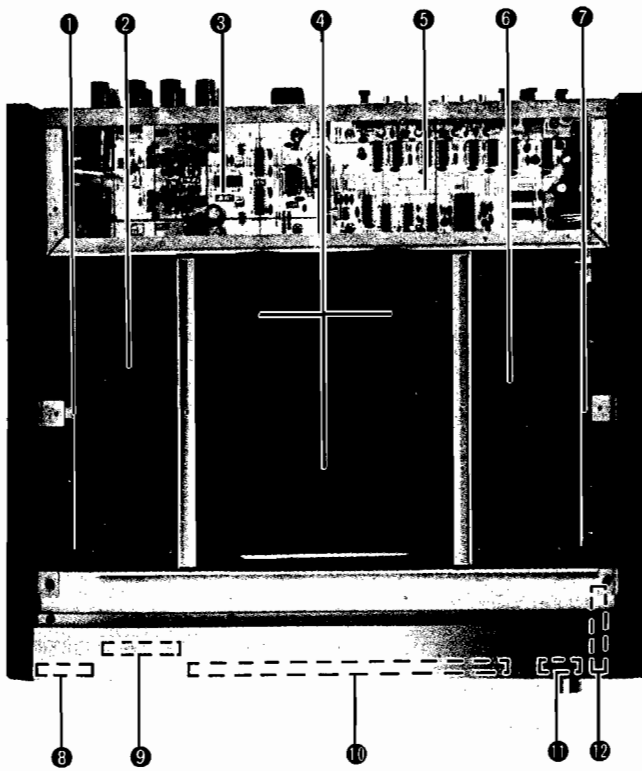
* Specifications subject to change without notice.

(W) European model

(R) General model

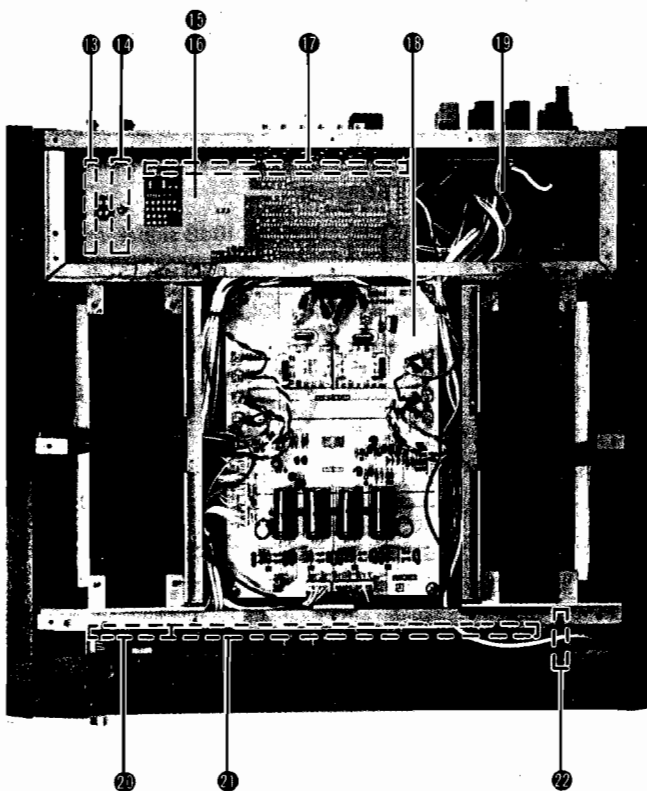
INTERNAL VIEW

(TOP VIEW)



- ① MAIN CIRCUIT BOARD (L)
- ② RADIATOR (L)
- ③ SELECTOR 2 CIRCUIT BOARD (1)
- ④ POWER TRANSFORMER and ELECTROLYTIC CAP.
- ⑤ TONE CONTROL CIRCUIT BOARD (1)
- ⑥ RADIATOR (R)
- ⑦ MAIN CIRCUIT BOARD (R)
- ⑧ FRONT PANEL CIRCUIT BOARD (4)
- ⑨ FRONT PANEL CIRCUIT BOARD (2)
- ⑩ FRONT PANEL CIRCUIT BOARD (1)
- ⑪ FRONT PANEL CIRCUIT BOARD (3)
- ⑫ TONE CONTROL CIRCUIT BOARD (4)

(BOTTOM VIEW)



- ⑬ SELECTOR 1 CIRCUIT BOARD (4)
- ⑭ SELECTOR 1 CIRCUIT BOARD (3)
- ⑮ SELECTOR 1 CIRCUIT BOARD (1): TOP SIDE
- ⑯ SELECTOR 1 CIRCUIT BOARD (2): BOTTOM SIDE
- ⑰ SELECTOR 2 CIRCUIT BOARD (2)
- ⑱ FRONT PANEL CIRCUIT BOARD (5)
- ⑲ SELECTOR 2 CIRCUIT BOARD (3)
- ⑳ TONE CONTROL CIRCUIT BOARD (3)
- ㉑ TONE CONTROL CIRCUIT BOARD (2)
- ㉒ TONE CONTROL CIRCUIT BOARD (5)

■ **DISASSEMBLY PROCEDURES** (Remove parts in disassembly order as numbered)

1. Removal of Bottom Cover:

- a. Remove 24 screws of ①.

2. Removal of Top Cover (A), (B) & (C):

- a. Remove 3 screws of ②, and remove the cover lifting up the back of Top Cover (C).
- b. Remove 4 screws of ③, and remove the cover lifting up the back of Top Cover (B).
- c. Remove 4 screws of ④, and remove the cover (A).

3. Removal of Front Panel Unit:

- a. Pull out 5 knobs located at inside of Sealing Panel of ⑤.
- b. Remove connector which is projected out of circuit board located at inside of front panel.

- c. Remove 6 screws of ⑥, then remove the unit trying to pull the front panel toward you.

- d. Remove 1 plastic rivet of ⑦.

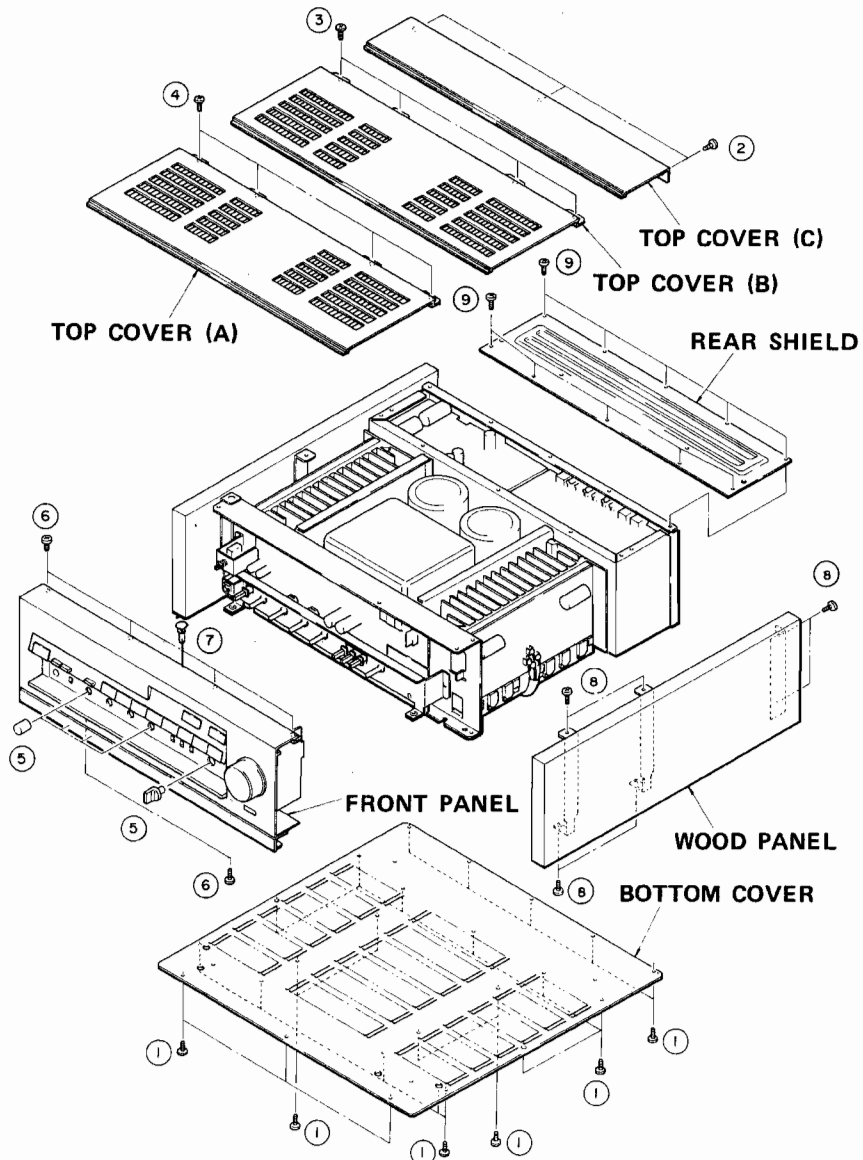
4. Removal of Wood Panel:

- a. Remove 6 screws of ⑧, and remove the panel sliding it to the side.

Precaution: Remove both left and right wood panels with the same removal procedure. Also, if you removed the wood panel, the strength weakens.

5. Removal of Rear Shield:

- a. Remove 10 screws of ⑨.



■ ADJUSTMENTS

Before adjustment

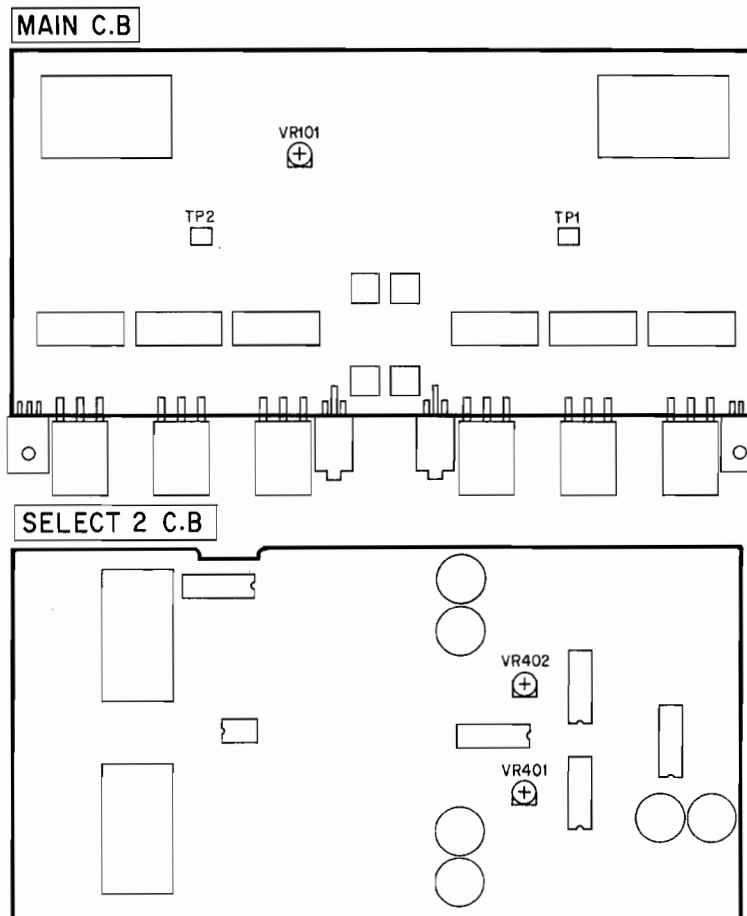
- In order to stabilize the operation of Amplifier, conduct the adjustment after having done 3 minutes aging under no-load status.

Adjustment	Place to be measured	Place to be adjusted	Specification
Idling of Electric Current	Main Circuit Board TP1 ↔ TP2 (Both L & R)	VR101 (Both L & R)	DC60mV-5mV
Distortion Rate Adjustment of D/A Converter	Selector 2 Circuit Board Digital 1kHz, 0dB Signal	VR401 (L) VR402 (R)	Adjust it so as to be the best condition. (See Note 1.)

Note 1:

- Use 20 kHz, LPF.
- Switch on Digital Direct.
- Let the Main Volume be the minimum
- Set REC OUT SELECTOR at the position of SOURCE REC, and measure output (analogue) of REC OUT. For the Input, input Digital Signal of 1kHz 0dB to DIGITAL CD INPUT Terminal. (CD Player with DIGITAL OUT is connected with it.)
- Digital Signal from either CD or TAPE 1/DAT 1 Terminal chosen by INPUT SELECTOR has to be outputting to DIGITAL OUT Terminal.
- Rated Input is 0.5+0.1V_{P-P}, and Impedance of Signal Source is R_s = 75 Ω
- Rated Output is 0.5-0.1V_{P-P} (when its load is 75 Ω.)

• TESTPOINT

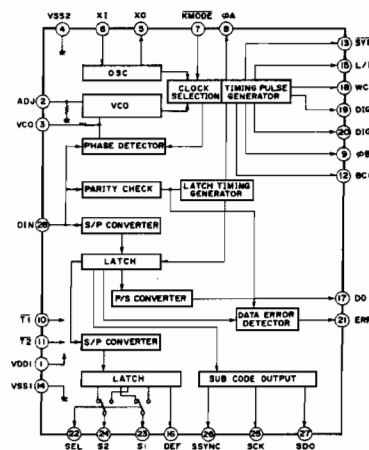
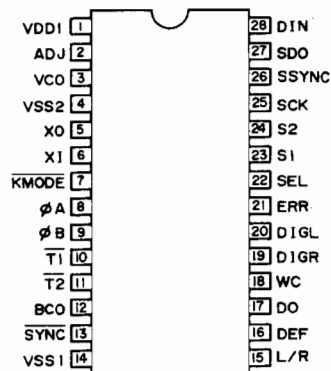


IC BLOCK

IC312: YM3623B
(Digital I/O)

The pin with (PU) in the I/O column is pulled up internally.

Pin No.	Pin Name	I/O	Function
1	VDD1		Power supply for system (+5V)
2	ADJ	I	For adjustment of VCO oscillation frequency, non-connected
3	VCO	I/O	External capacitor terminal for VCO circuit
4	Vss2		Ground of VCO circuit Connect commonly with Vss1 (Inside of IC is not used in common.)
5	XO	O	For crystal oscillator (16.9344MHz)
6	XI	I	For crystal oscillator
7	KMODE	I (PU)	H: Activates PLL circuit if input is entered to DIN pin but if not, it operates by using crystal oscillator. L: Uses crystal oscillator regardless of DIN pin
8	φA	O	Crystal oscillator oscillation frequency output (16.9344MHz)
9	φB	O	1/3 division of φA when crystal oscillator is used With PLL circuit in operation, it varies depending on data speed entered to DIN pin (About 5.6448 MHz when fs = 44.1 kHz)
10	T1	I (PU)	For checking internal circuit
11	T2	I (PU)	For checking internal circuit
12	BCO	O	Timing clock of output signal from DO pin
13	SYNC	O	Synchronizing signal
14	Vss1	O	System ground (+0V)
15	L/R	O	Indicates that H = L channel and L = R channel data is output from DO pin
16	DEF	O	H: Indicates that input data is emphasized L: Indicates that input data isn't emphasized
17	DO	O	16 bit data output
18	MC	O	Indicates that data is output at DO pin
19	DIGR	O	Signal for R channel deglitch
20	DIGL	O	Signal for L channel deglitch
21	ERR	O	H: Indicates parity error or in operation with crystal L: Indicates that there is no error
22	SEL	I (PU)	Refer to the separate table.
23	S1	O	Refer to the separate table.
24	S2	O	Refer to the separate table.
25	SCK	O	Clock for sub-code output
26	SSYNC	O	Signal for sub-code
27	SDO	O	For output of sub-code data
28	DIN	I (PU)	For data input



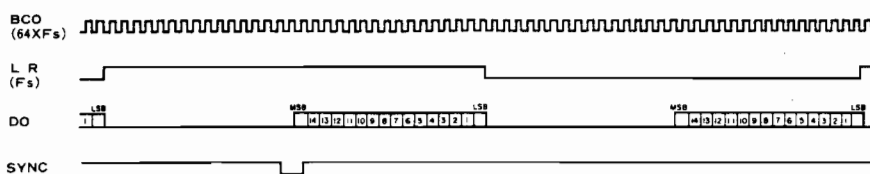
● S1, S2 SEL

The output function of S1 and S2 pins is increased. Switching the SEL pin input will switch to S1 or S2 pin output.

Input	Output		Output	
	SEL	S1	S2	Function
L	L	Copy forbidden	L	CD (except DAT)
	H	Copy enable	H	DAT
H	L		L	Sampling frequency of DIN input signal 44.1KHz
	L		H	48.1KHz
	H		H	32kHz
	H		L	-

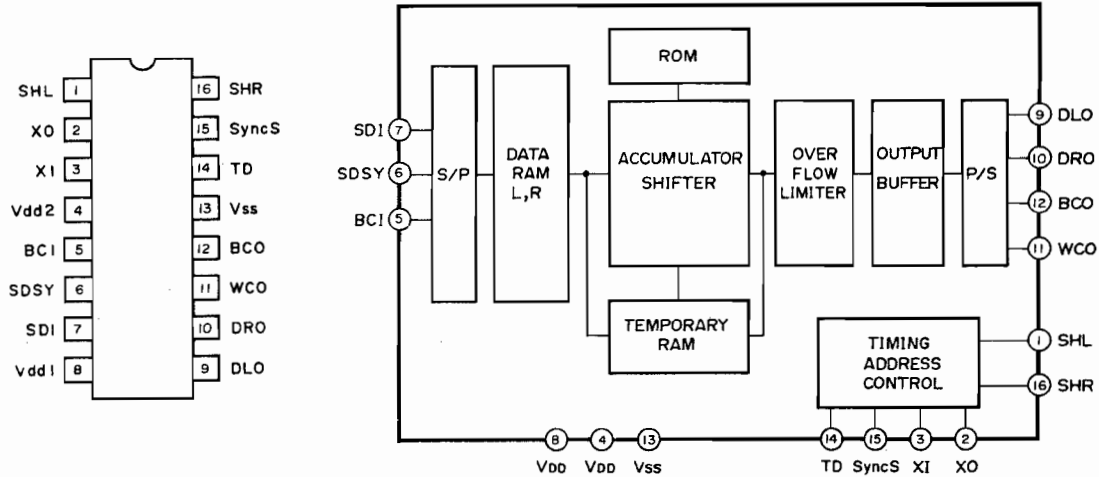
As in the above table, necessary data is drawn out of the digital audio interface format signals which have been entered and output at S1 and S2 pins.

● OUTPUT TIMING



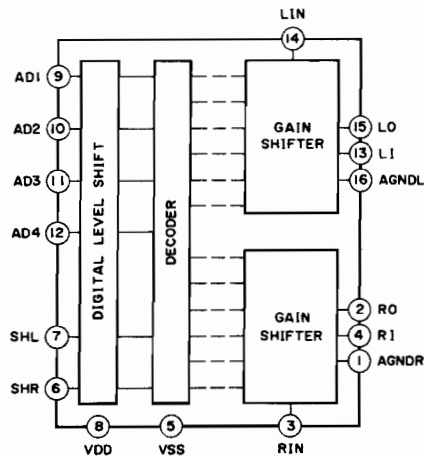
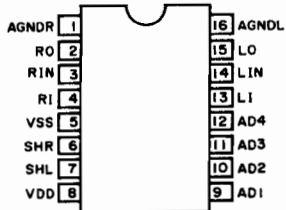
Note) FS shows the sampling frequency. For example, it is 44.1kHz with the compact disk and 48kHz with the DAT. The internal sampling frequency Fa of AX-2000 at analog-in is 48kHz (and internal crystal oscillation is 18.432MHz).

IC314: YM3414
(2-ch, 8th Digital Filter)

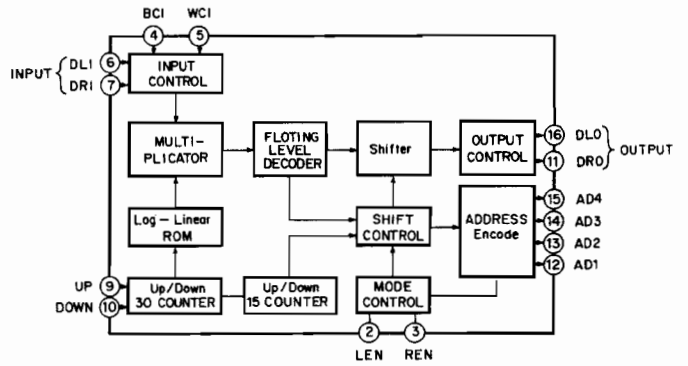
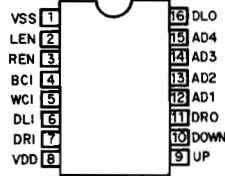


Symbol	Pin No.	I/O	Description
SHL	1	0	When it is 1DAC (TD="L"):Deglitcher Signal (Quadrupled Time) When it is 2DAC (TD="H"):Deglitcher Signal (Quadrupled Time)
XO	2	0	Crystal Oscillation is done between XI-XO.
XI	3	I	It can be input in 16.9344MHz XI directly from outside.
Vdd2	4		Crystal Oscillation & Deglitcher Signal with +5V Power Source Terminal
BCI	5	I	Bit Clock Input Terminal of Input Data
SDSY	6	I	Clock which shows division of Input Data's L/R ch and Input Timing
SDI	7	I	Data Input Terminal
Vdd 1	8		Digital Signal System with +5V Power Source Terminal
DLO	9	0	When it is 1DAC (TD="L").L. R ch Data Output Terminal (Quadrupled Time) When it is 2DAC (TD="L").L ch Data Output Terminal (Quadrupled Time)
DRO	10	0	R ch Data Output Terminal
WCO	11		Output Data DLO. Word Clock of DRO
BCO	12	0	Bit Clock of Output Data
Vss	13		GND Terminal
TD	14	I	1DAC/2DAC Switching Terminal (1DAC (Quaduple) = "L". (2DAC (Octuple) = "H")
Syacs	15	I	Synchronous Signal for use in Asynchronous Input Jitter Breathing (Syncs= "H":Perfect Synchronous Input. Syncs = "L":SDSY Prohibition)
SHR	16	0	R ch Deglitcher Signal for IDAC time

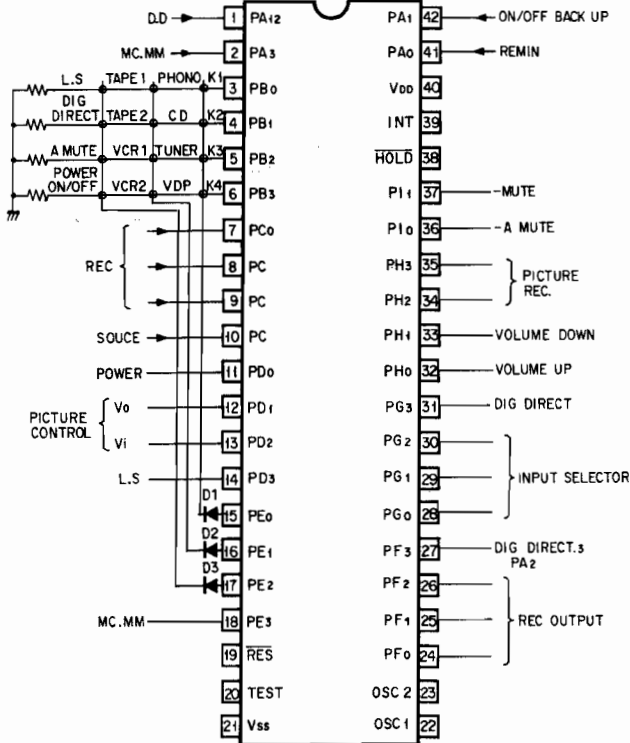
IC404: YM3023
(Floating Sample Hold)



IC402: YM6013
(8-Bit Over Sampling)



IC208: LC6505C-3556
(4 Bit μ -COM)

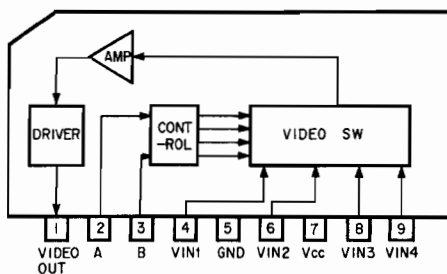


FUNCTION DATA

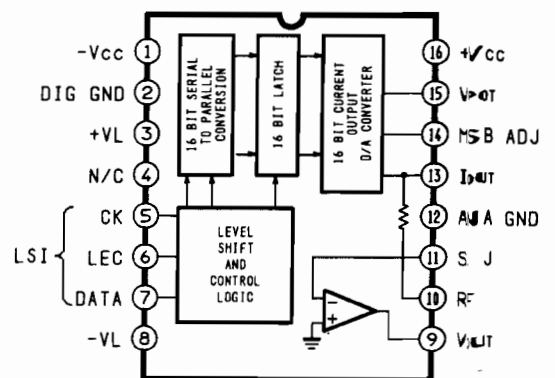
PORT G (INPUT SELECTOR)								FUNCTION
PIN No.								
31	30	29	28					
0	1	0	0	0	0	0	0	PHONO
0	0	0	0	0	0	0	0	CD
0	1	0	1	0	0	0	0	TUNER
0	0	0	1	0	0	0	0	VDP
0	0	1	0	0	0	0	0	TAPE 1
0	0	1	1	0	0	0	0	TAPE 2
0	1	1	0	0	0	0	0	VCR 1
0	1	1	1	0	0	0	0	VCR 2

PORT D (PICTURE CONTROL)		FUNCTION
PIN No.		
13	12	
0	1	VDP
1	0	VCR 1
1	1	VCR 2

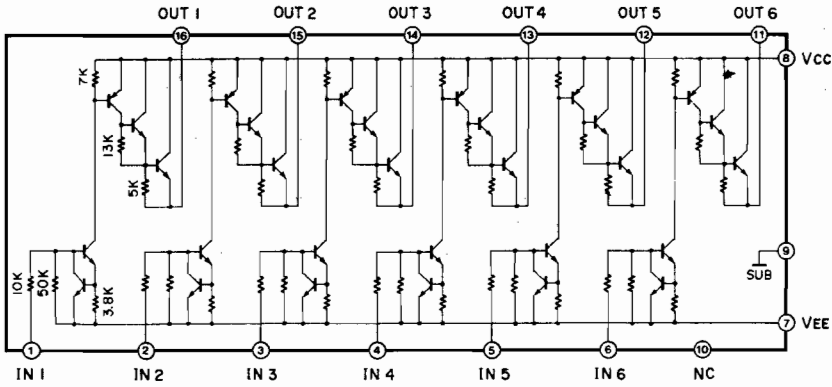
IC707 ~ 709: LA7952
(Video Switch)



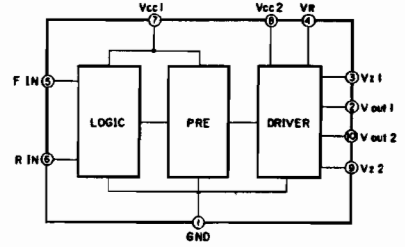
IC401, 403: PCM56P
(D/A Converter)



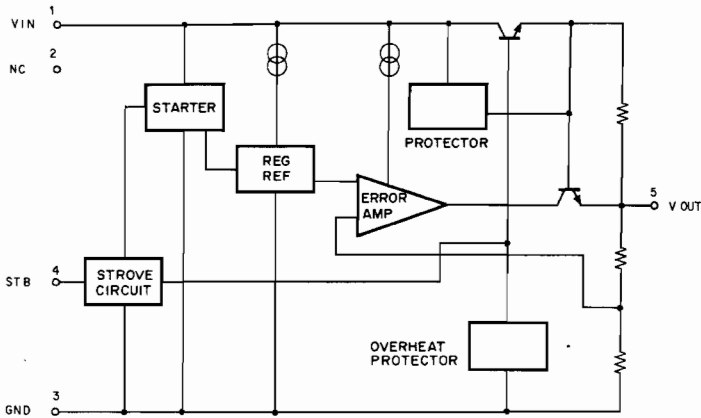
**IC407, 711 ~ 714: LB1294
(LED Driver)**



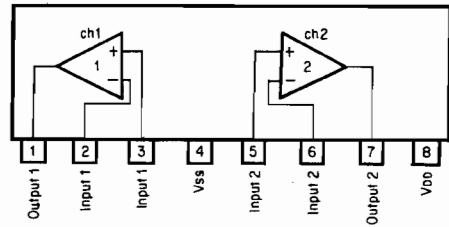
**IC210: BA6209
(Motor Driver)**



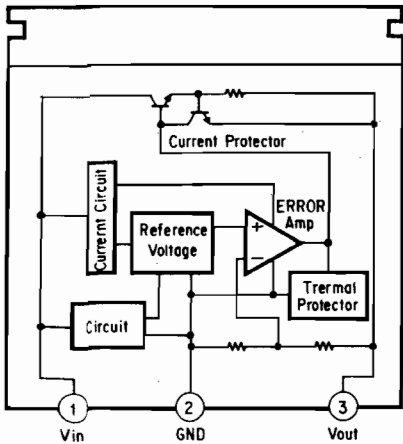
**IC710: L780S12
(Voltage Regulator)**



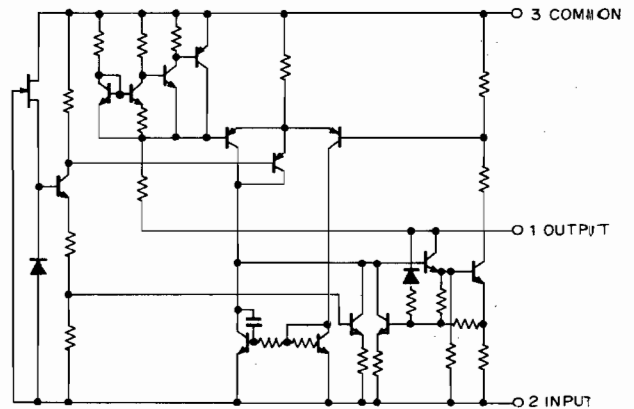
**IC203: M5219L
(Dual Low Noise Pre-Amp.)**



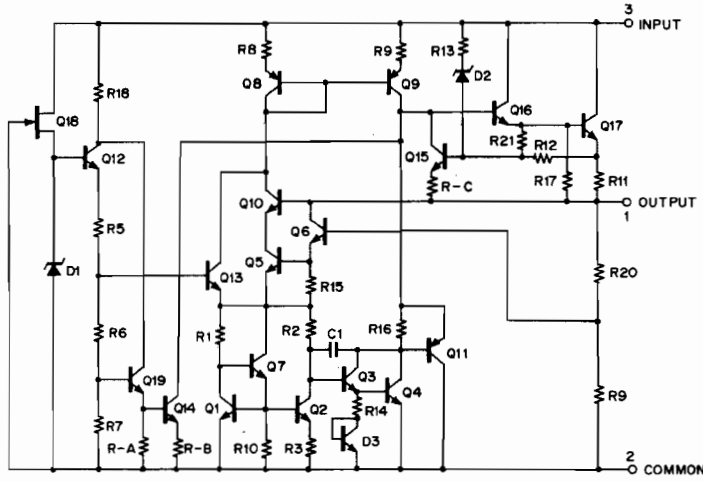
**IC209: NJM78M05
IC410, 411: NJM78M05A
(Regulator)**



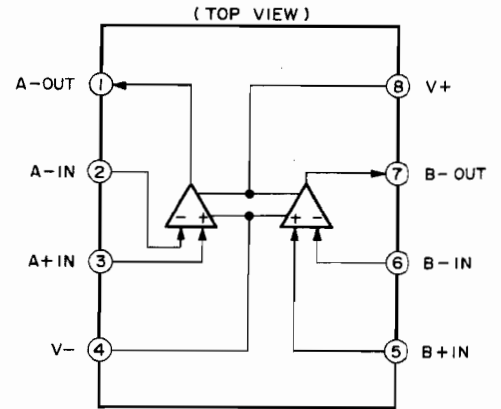
**IC412: NJM79L05A
(Regulator)**



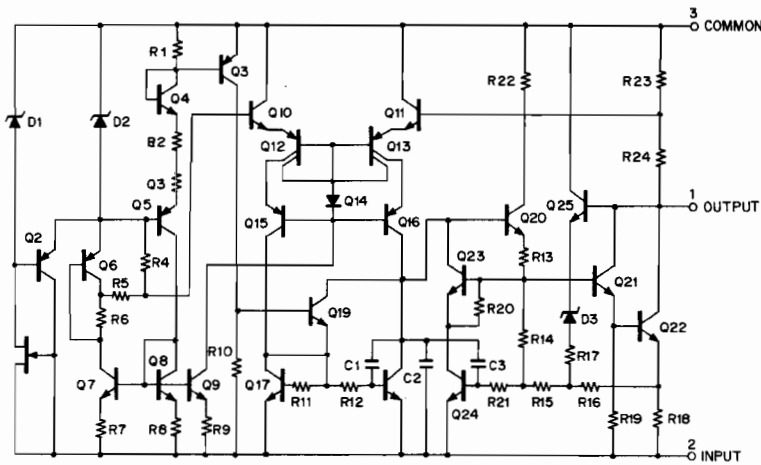
IC204, 408, 705: NJM78M18
(Regulator)



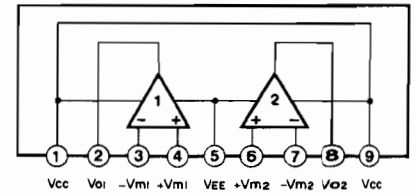
IC405, 406, 413, 603, 701, 702: NJM5532D
IC703: NJM2041D
(Dual Ope-Amp.)



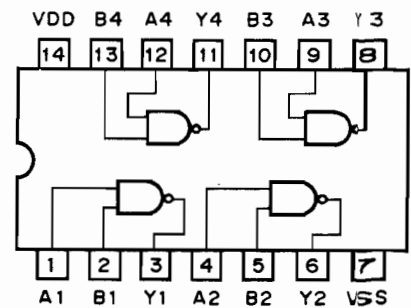
IC205, 409, 706: NJM79M18
(Regulator)



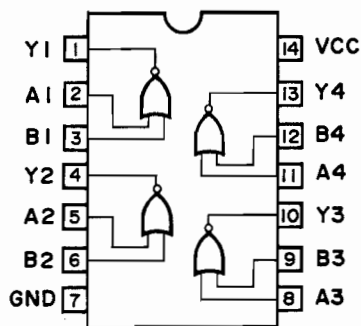
IC201, 202, 212, 405, 406, 601, 602:
NJM5532S
(Dual Ope-Amp.)



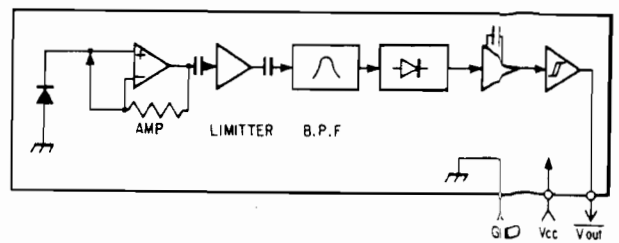
IC302, 304, 316: TC74HC00P,
M74HC00P
(Quad 2-Input Nand Gate)



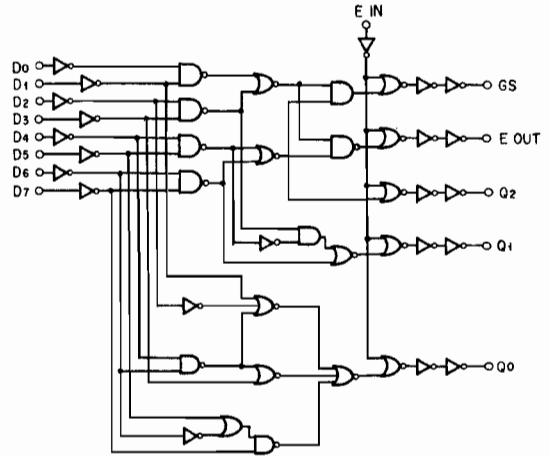
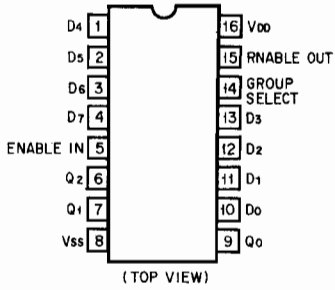
IC315: TC74HC02P, M74HC02P
(Quad 2-Input NOR Gate)



U801: GP1U101, 501
(Remote Control Receptor)



IC211: TC4532BP
(8-Bit Priority Encoder)

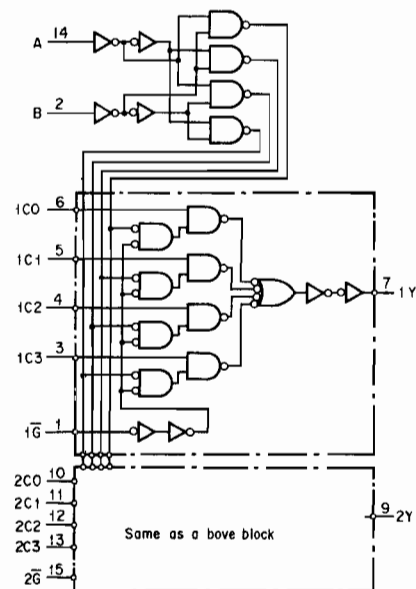
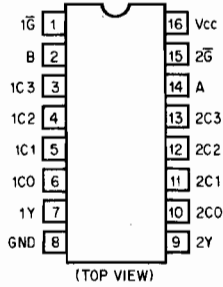


Truth Table

INPUT								OUTPUT					
EIN	D7	D6	D5	D4	D3	D2	D1	D0	GS	Q2	Q1	Q0	K OUT
L	*	*	*	*	*	*	*	*	L	L	L	L	L
H	L	L	L	L	L	L	L	L	L	L	L	L	H
H	H	*	*	*	*	*	*	*	H	H	H	H	L
H	L	H	*	*	*	*	*	*	H	H	H	L	L
H	L	L	H	*	*	*	*	*	H	H	L	H	L
H	L	L	L	H	*	*	*	*	H	H	L	L	L
H	L	L	L	L	H	*	*	*	H	L	H	H	L
H	L	L	L	L	L	H	*	*	H	L	H	L	L
H	L	L	L	L	L	L	H	*	H	L	L	H	L
H	L	L	L	L	L	L	L	H	H	L	L	L	L

* Don't Care

IC310, 311: TC74HC153P
(Dual 4-Channel Multiplexer)

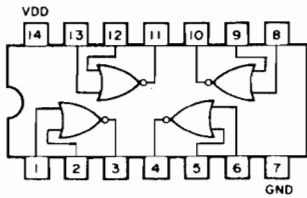


Truth Table

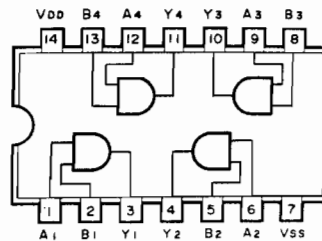
SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT Y	
B	A	C0	C1	C2	C3	\bar{G}	HC153	HC253
X	X	X	X	X	X	H	L	Z
L	L	L	X	X	X	L	L	L
L	L	H	X	X	X	L	H	H
L	H	X	L	X	X	L	L	L
L	H	X	H	X	X	L	H	H
H	L	X	X	L	X	L	L	L
H	L	X	X	H	X	L	H	H
H	H	X	X	X	L	L	L	L
H	H	X	X	X	H	L	H	H

X : Don't care
Z : High Impedance

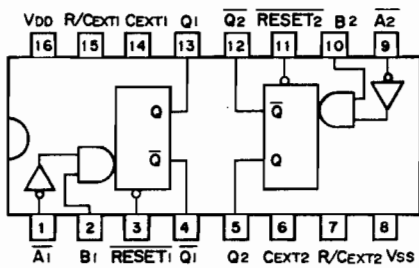
IC716: TC4001BP
(Quad 2-Input Positive NAND Gates)



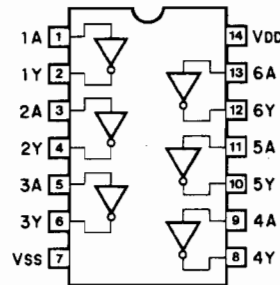
IC717: TC4081BP
(Quad 2-Input and Gate)



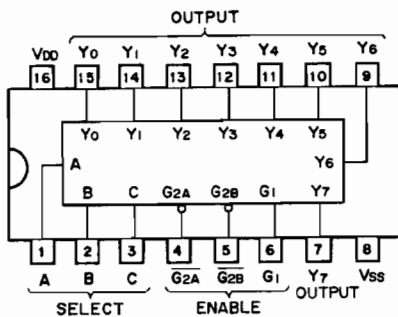
IC309, 313, 317: μPD74HC123AC
(Dual Retriggerable Single Shot)



IC301, 303, 305 ~ 308: μPD74HCU04C
(Hex Inverters)



IC207, 715, 718: μPD74HC238C
(Decoder/Demultiplexer)



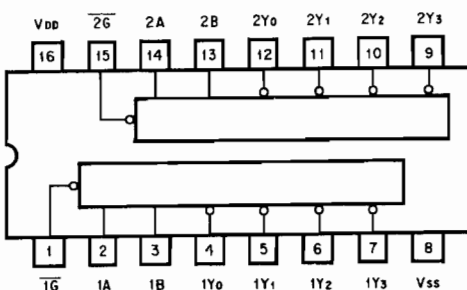
Truth Table

INPUT		OUTPUT										
ENABLE	SELECT											
G ₁	G ₂ *	C	B	A	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇
X	H	X	X	X	L	L	L	L	L	L	L	L
L	X	X	X	X	L	L	L	L	L	L	L	L
H	L	L	L	L	H	L	L	L	L	L	L	L
H	L	L	L	H	L	H	L	L	L	L	L	L
H	L	L	H	H	L	L	L	H	L	L	L	L
H	L	H	H	L	L	L	L	L	H	L	L	L
H	L	H	L	H	L	L	L	L	L	H	L	L
H	L	H	H	H	L	L	L	L	L	L	H	L
H	L	H	H	H	L	L	L	L	L	L	L	H

$G_2^* = \overline{G_2A} \times G_2B$

H: HIGH LEVEL L: LOW LEVEL X: H or L

IC206: μPD74HC239C
(Decoder/Demultiplexer)

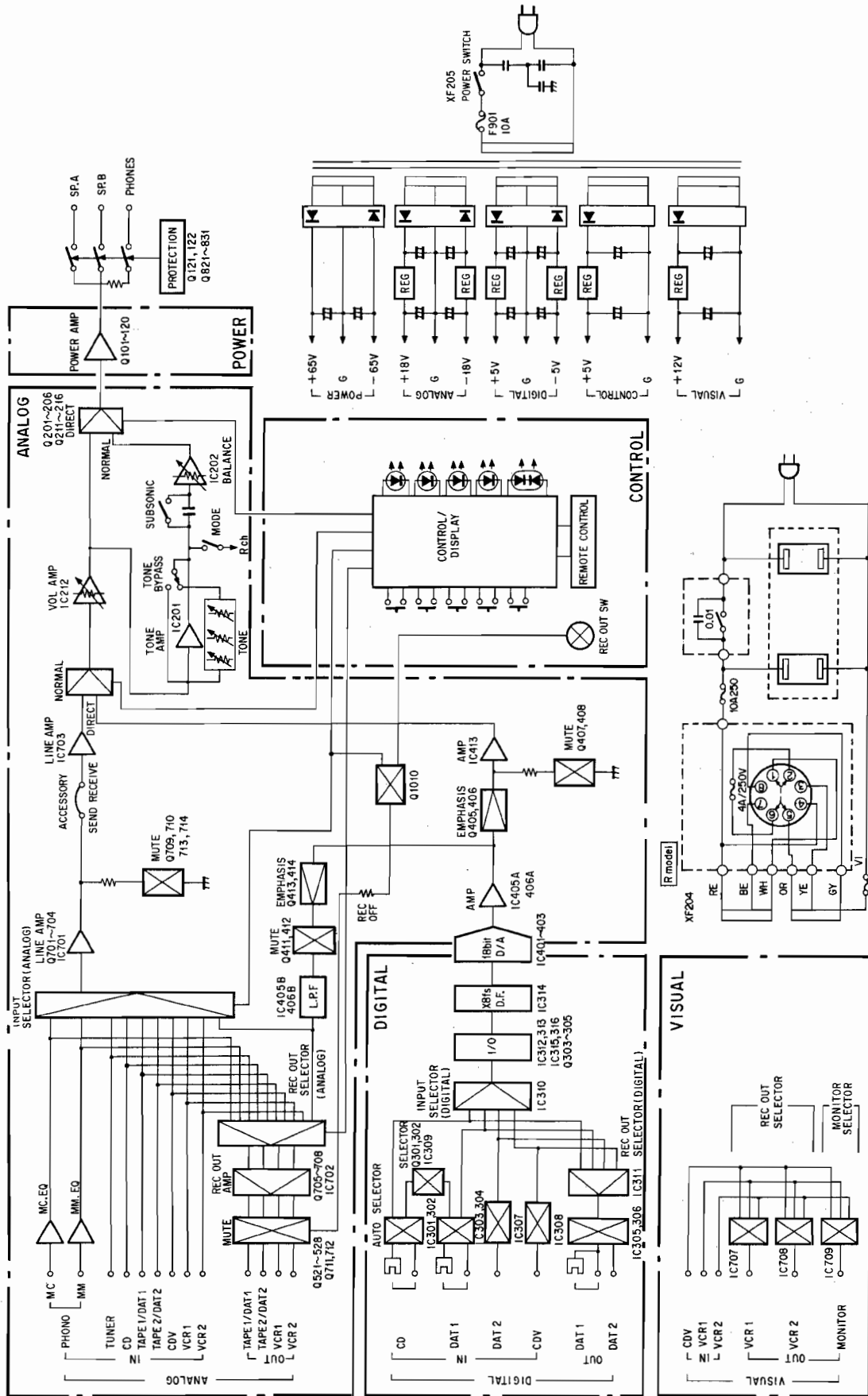


Input			Output			
ENABLE	SELECT					
G	B	A	Y ₀	Y ₁	Y ₂	Y ₃
H	X	X	L	L	L	L
L	L	L	H	L	L	L
L	L	H	L	H	L	L
L	H	L	L	L	H	L
L	H	H	L	L	L	H

H: HIGH LEVEL L: LOW LEVEL X: H or L

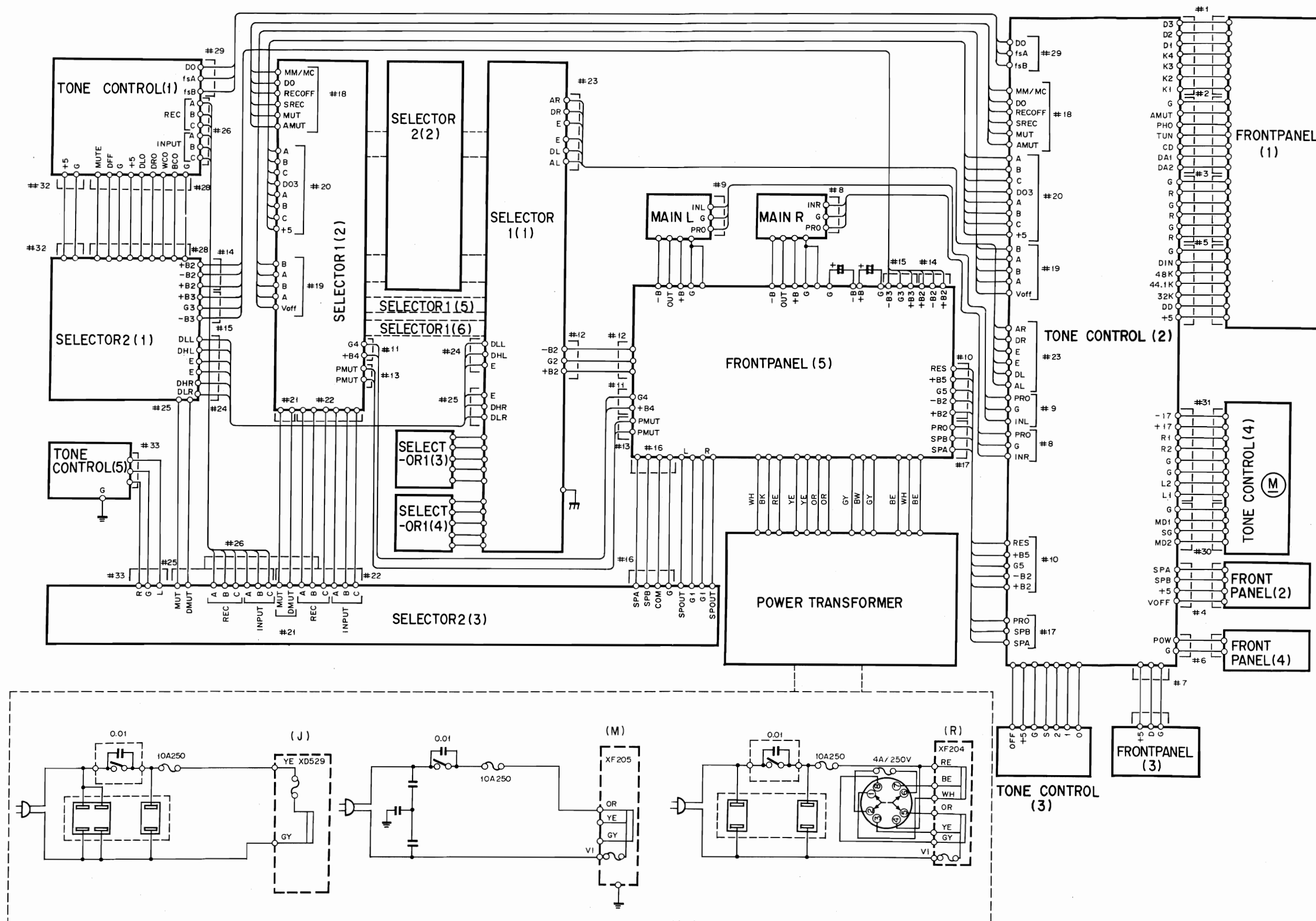
BLOCK DIAGRAM

AX-2000



WIRING

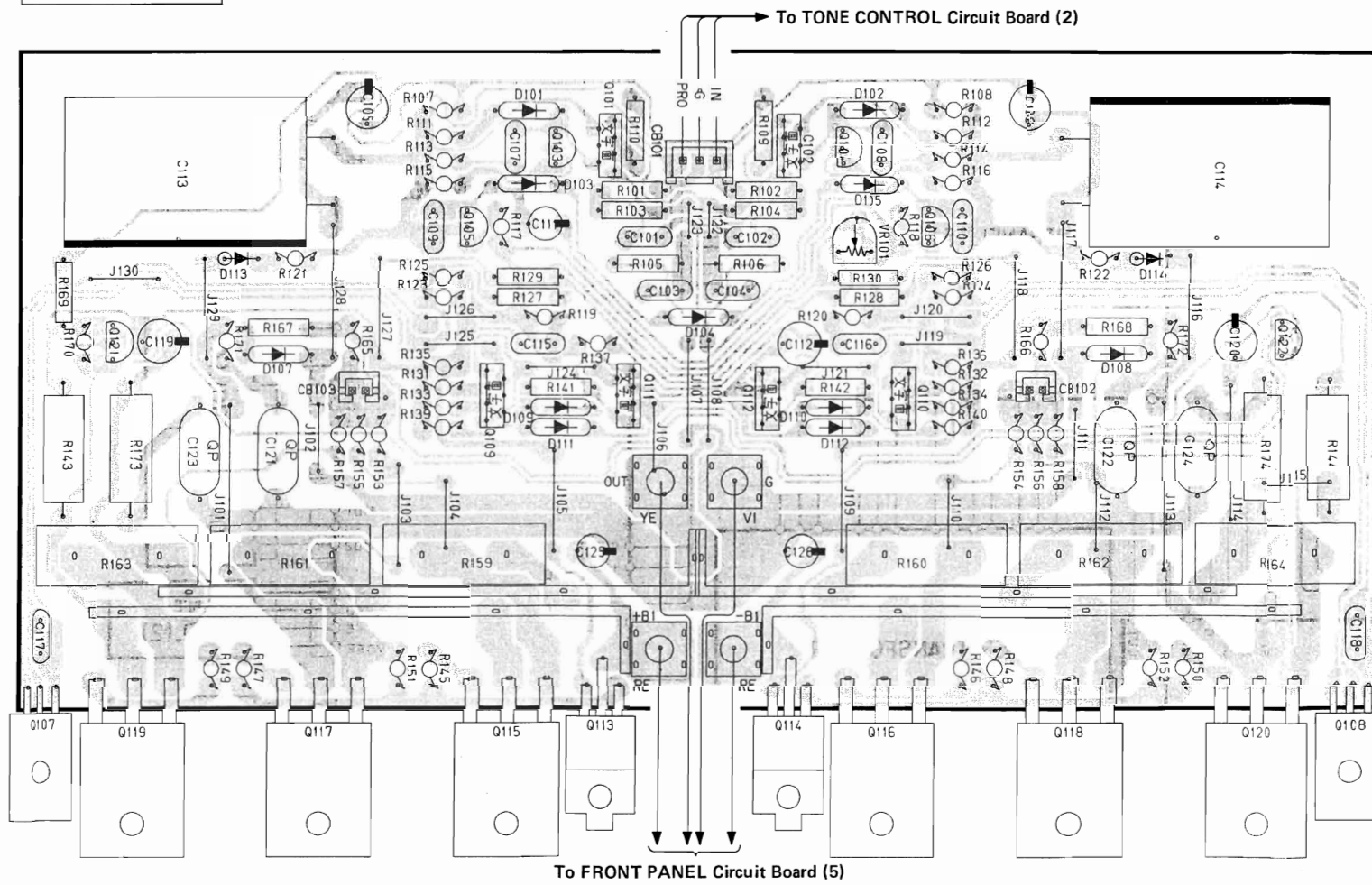
AX-2000



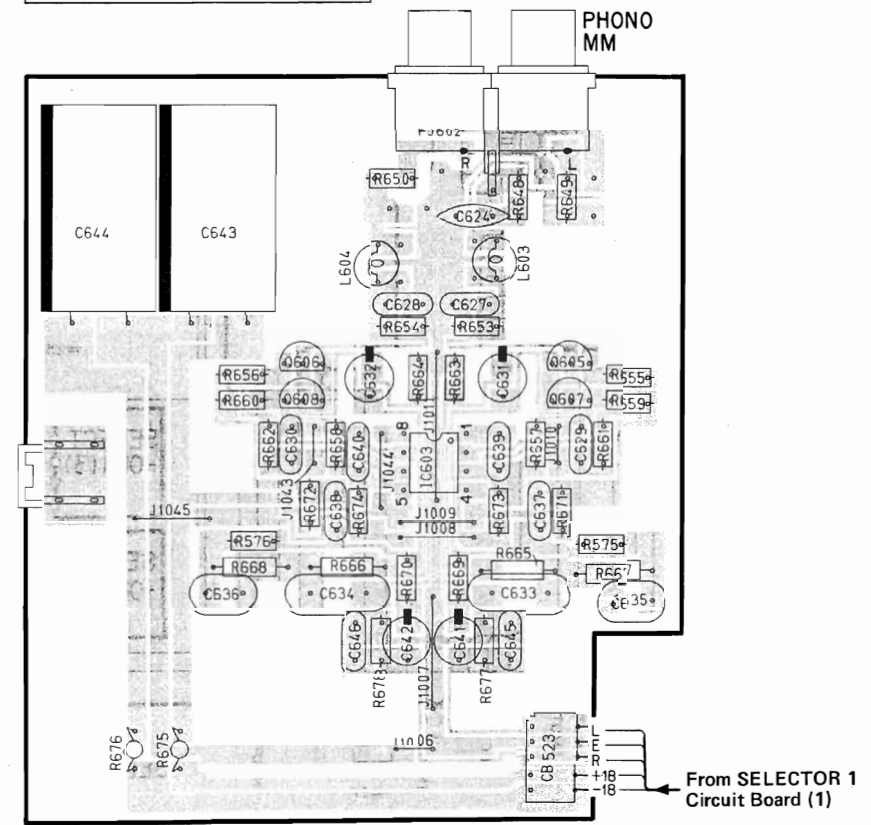
AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (MAIN Circuit Board)
 (SELECTOR 1 Circuit Board)

Note: Selector 1 Circuit Board and Tone Control Circuit Board used differ by the destination.
 Unless otherwise stated specially, it is common to all destinations.

MAIN Circuit Board



SELECTOR 1 Circuit Board (3) (W Model)



A

B

C

D

E

F

G

H

I

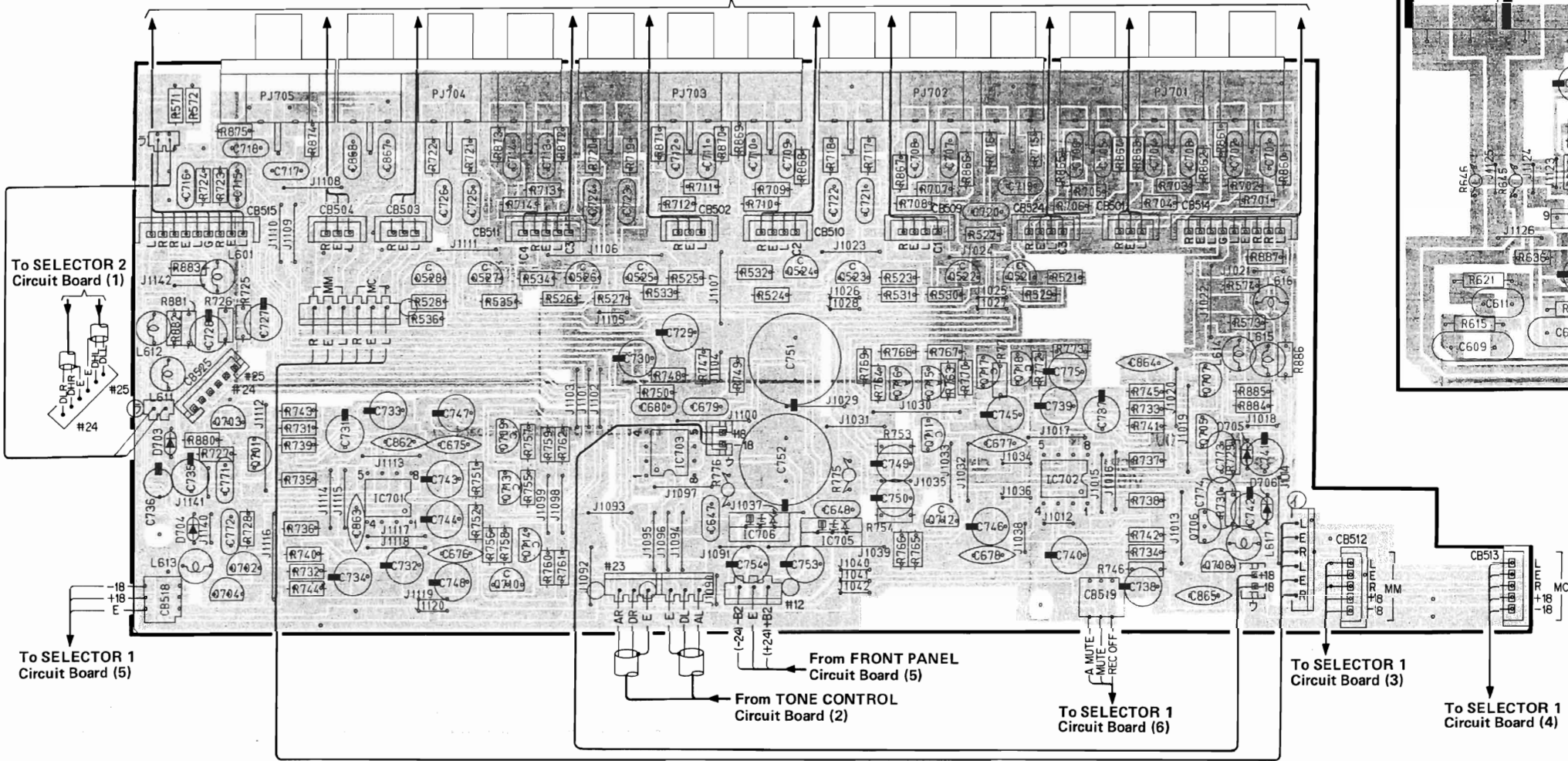
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
(SELECTOR 1 Circuit Board)

AX-2000

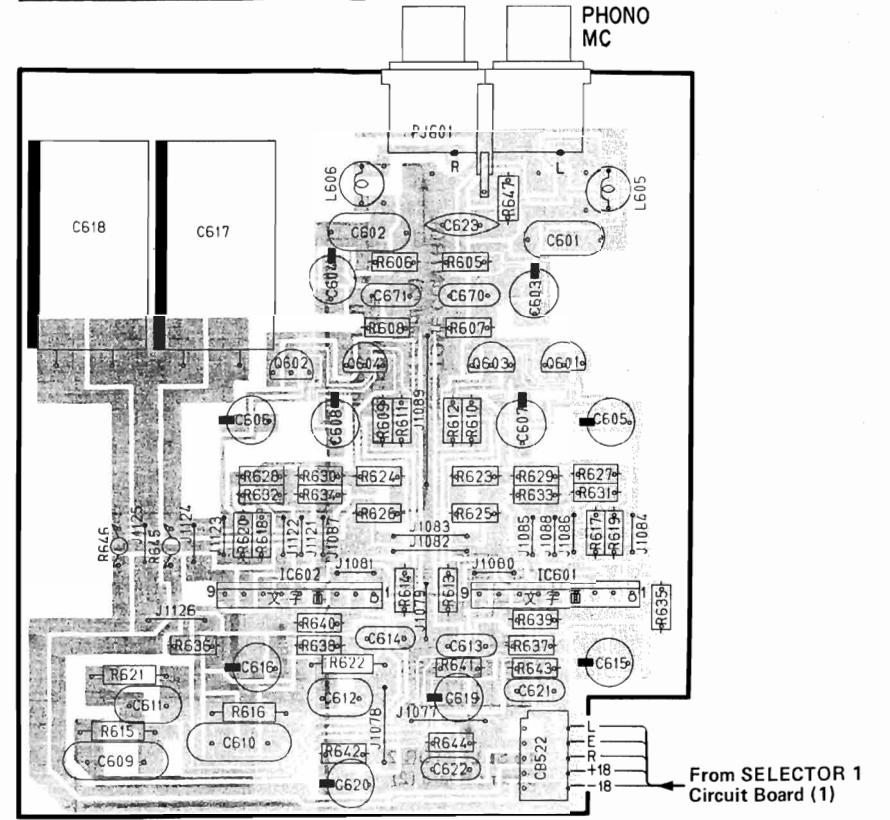
1
2
3
4
5
6
7

SELECTOR 1 Circuit Board (1) (W Model)

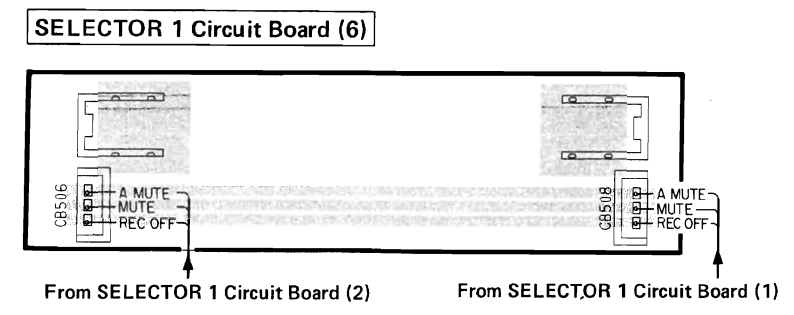
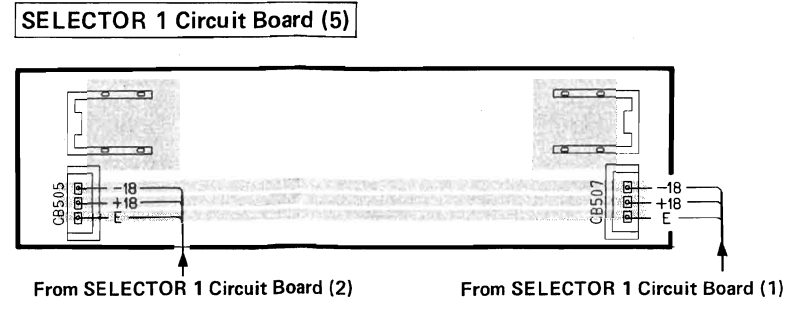
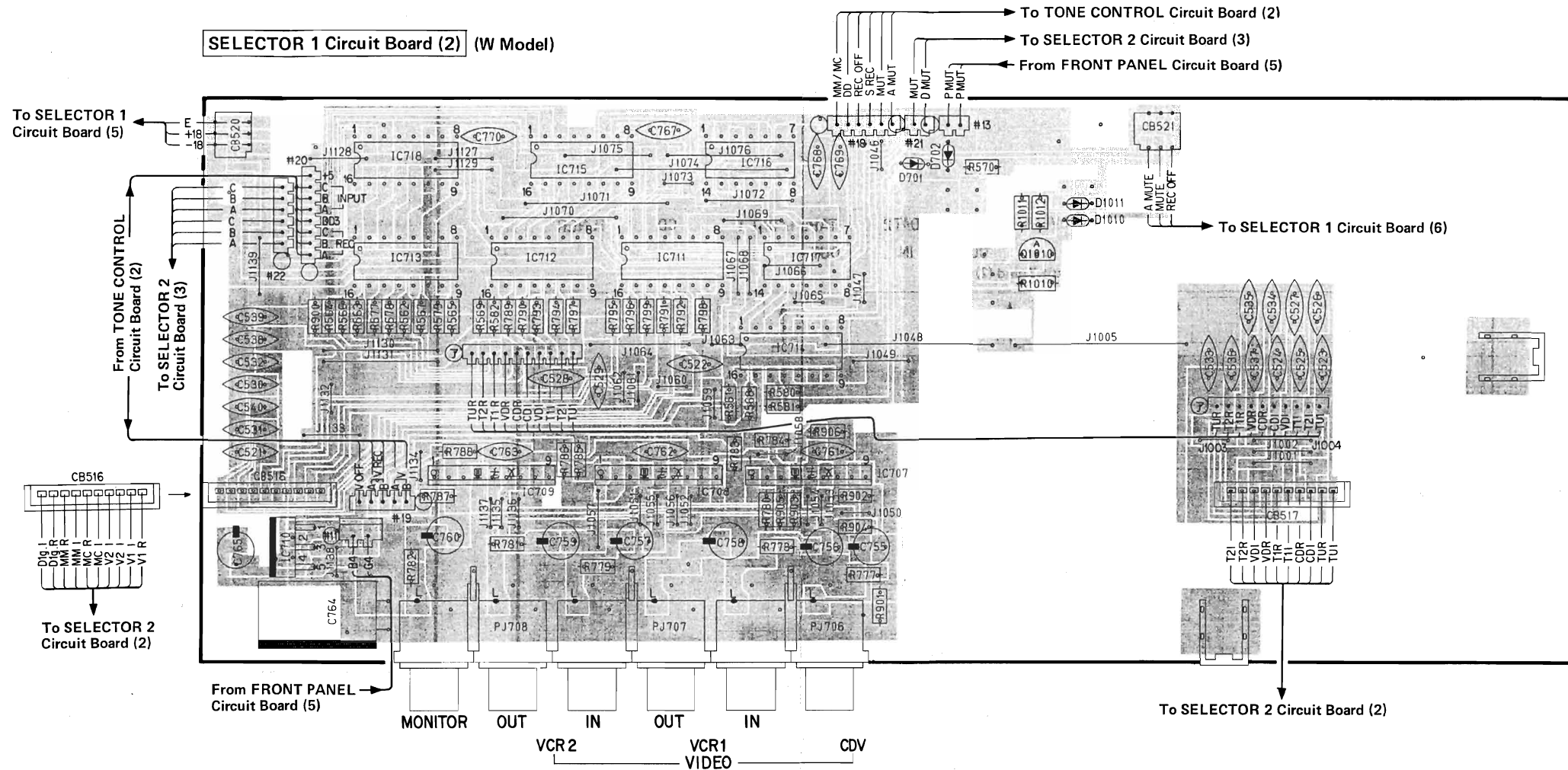
ACCESSORY VCR 2 VCR 1 CDV TAPE 2 / DAT 2 TAPE 1 / DAT 1 CD TUNER
RECEIVE SEND OUT IN OUT IN OUT IN
To SELECTOR 2 Circuit Board (2)



SELECTOR 1 Circuit Board (4) (W Model)



AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (SELECTOR 1 Circuit Board)

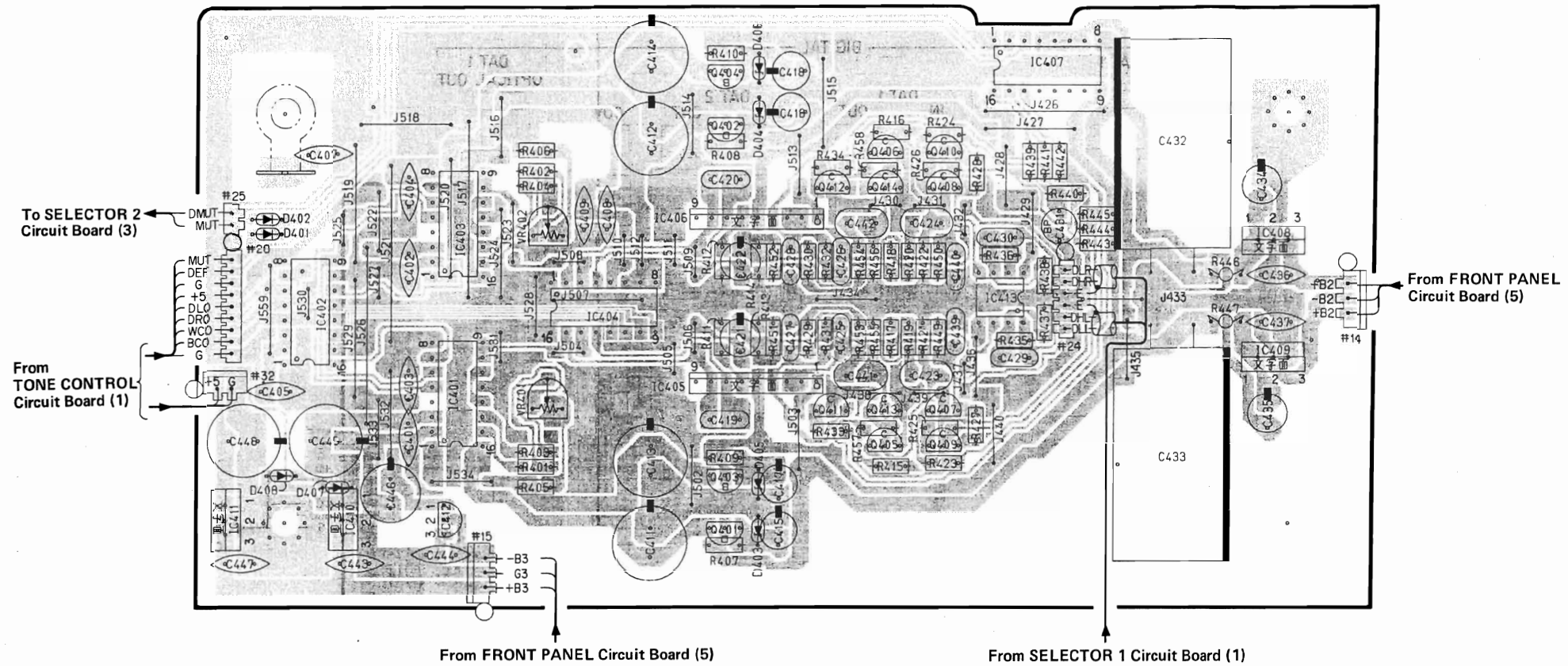


1
2
3
4
5
6
7

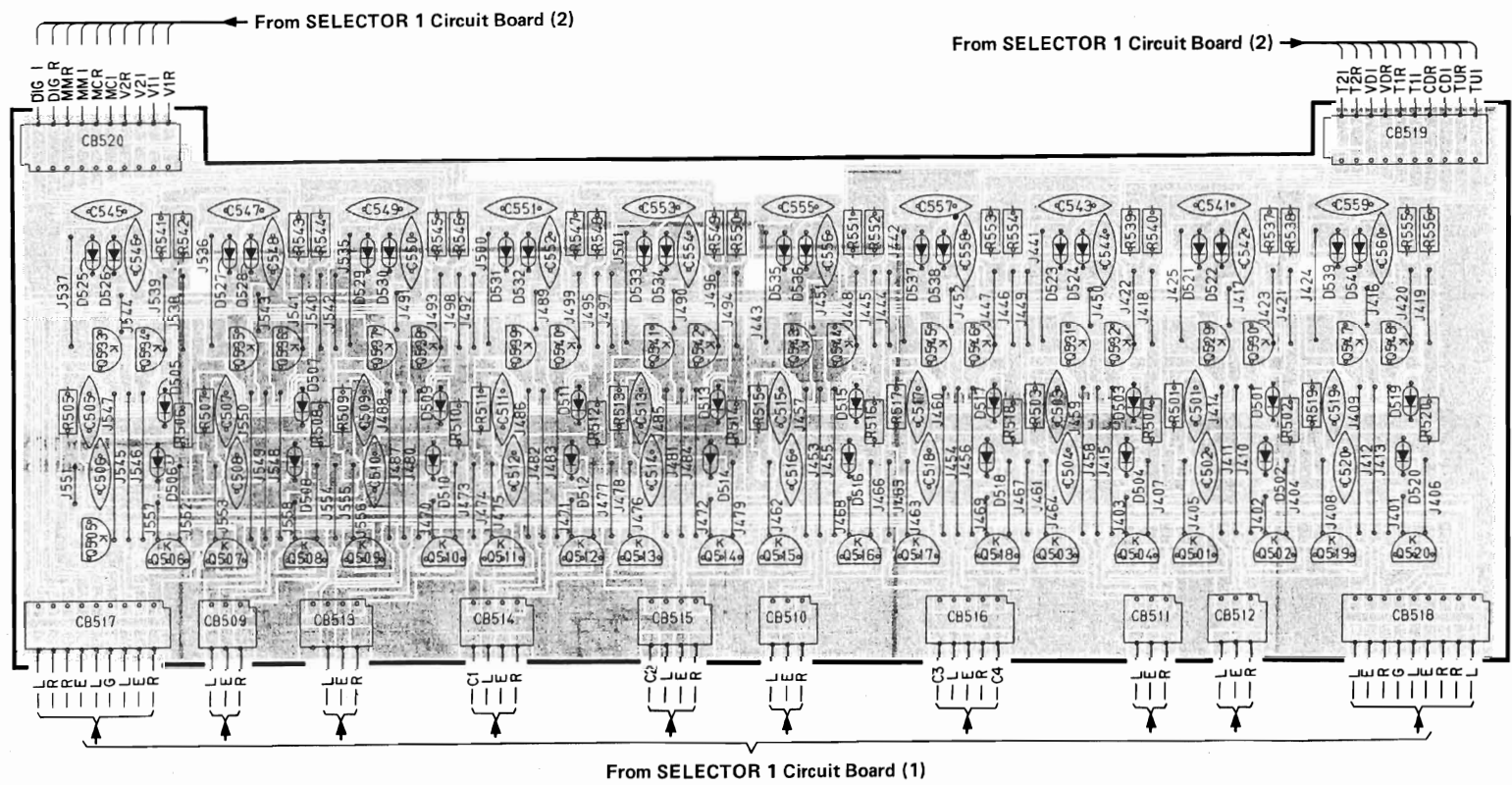
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
(SELECTOR 2 Circuit Board)

1
2
3
4
5
6
7

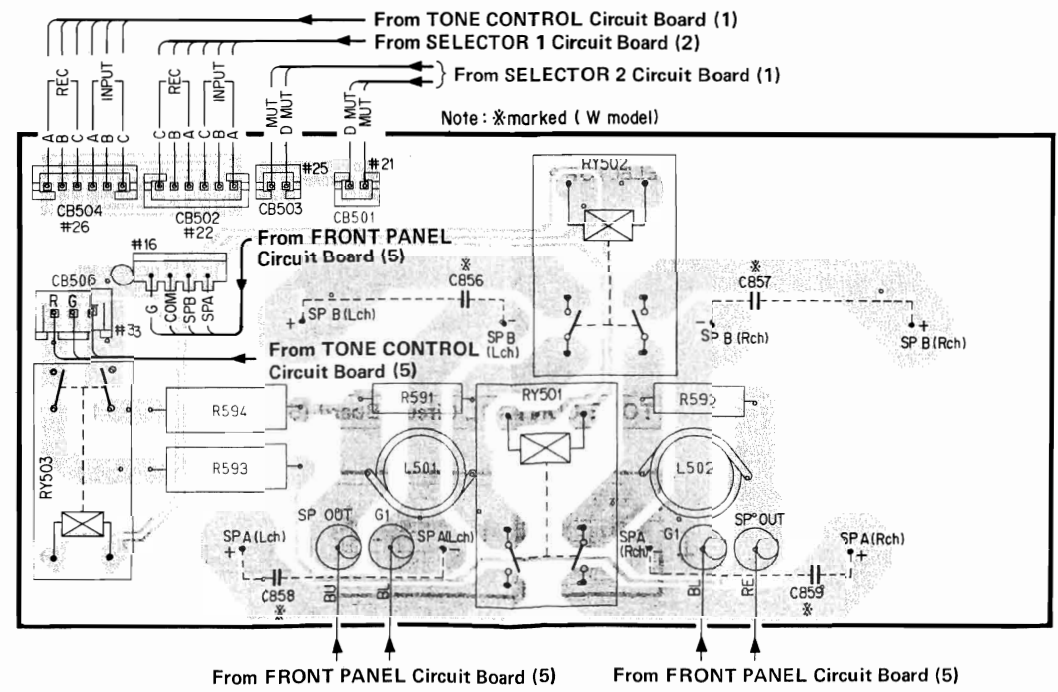
SELECTOR 2 Circuit Board (1)



SELECTOR 2 Circuit Board (2)

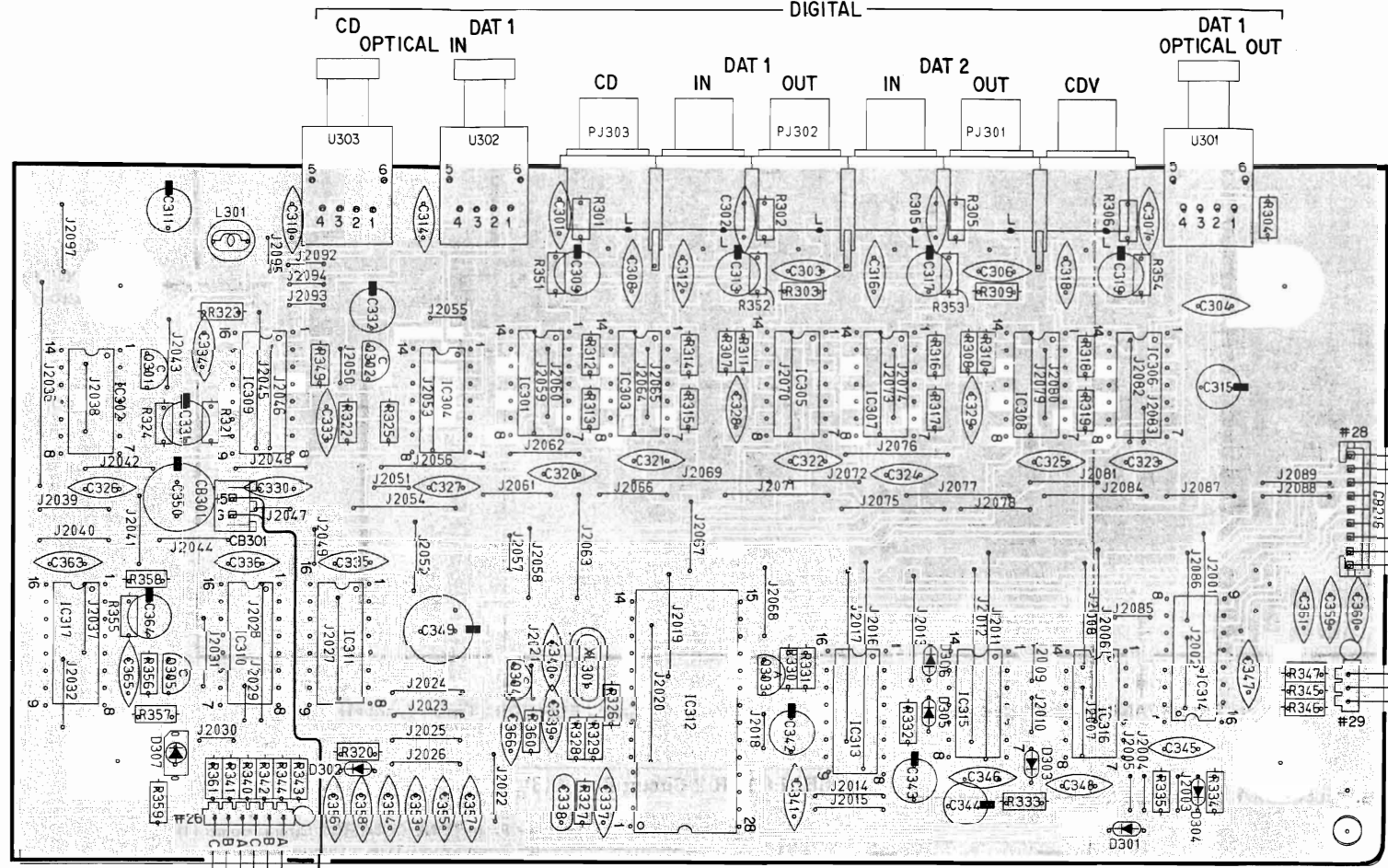


SELECTOR 2 Circuit Board (3)

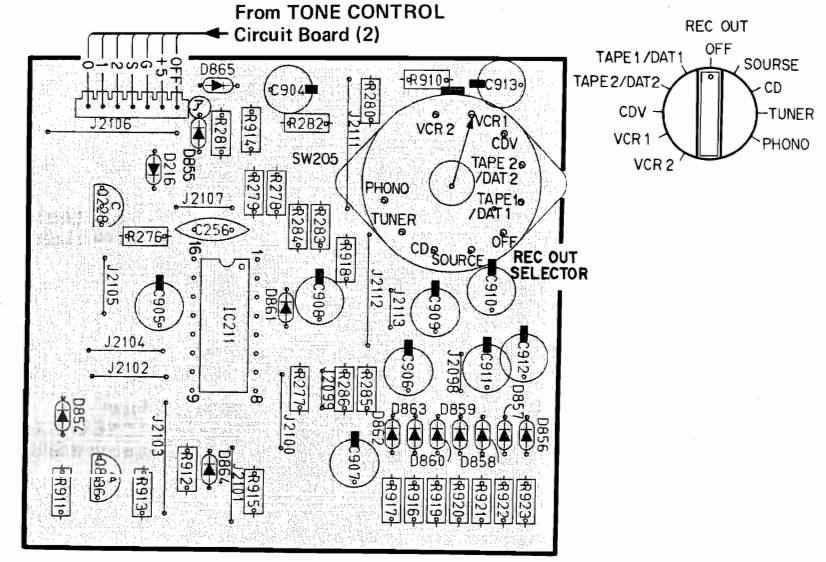


AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (TONE CONTROL Circuit Board)

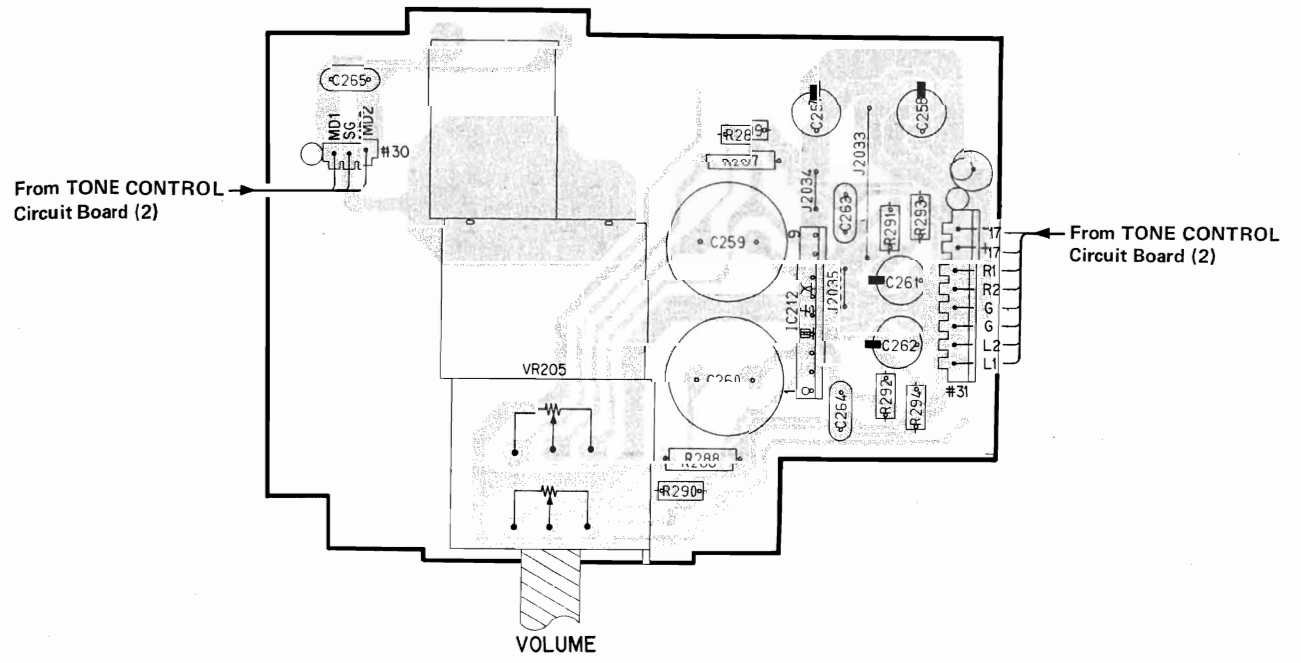
TONE CONTROL Circuit Board (1) (W Model)



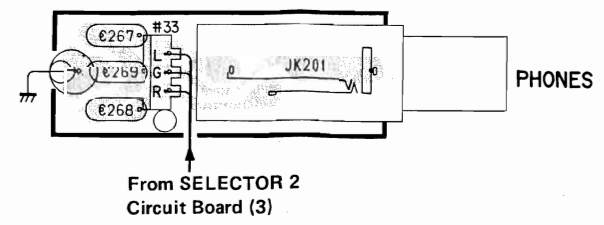
TONE CONTROL Circuit Board (3) (W Model)



TONE CONTROL Circuit Board (4) (W Model)



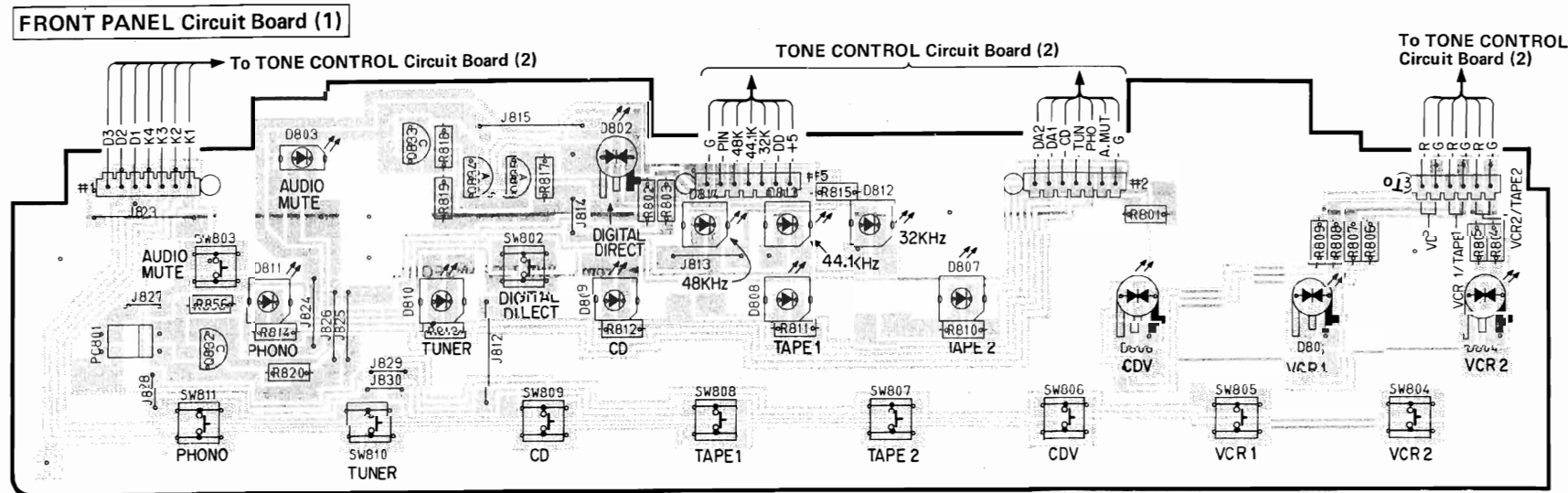
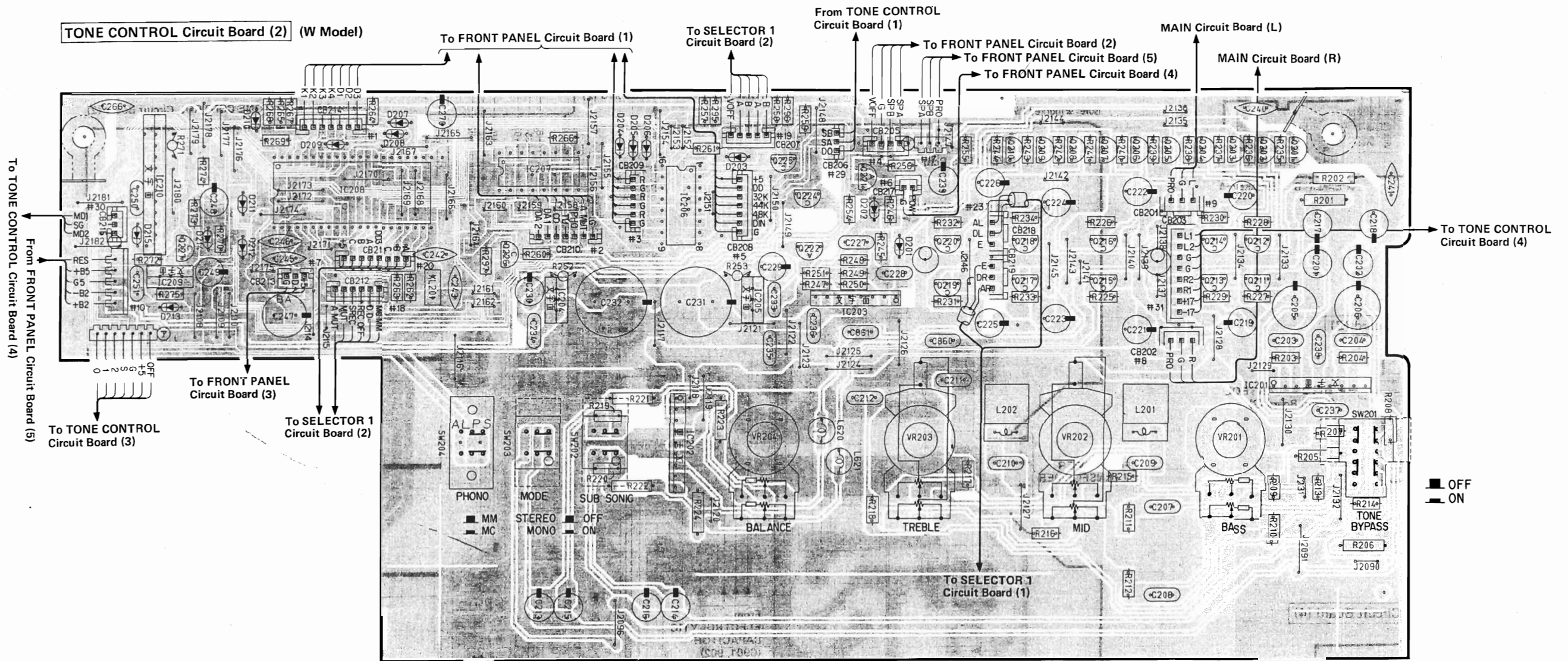
TONE CONTROL Circuit Board (5)



1
2
3
4
5
6
7

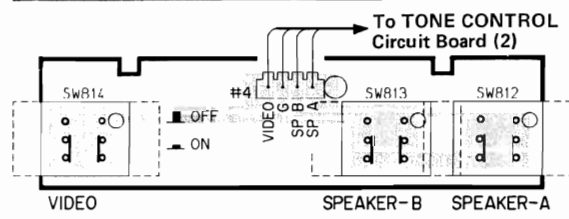
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
(TONE CONTROL Circuit Board)

AX-2000

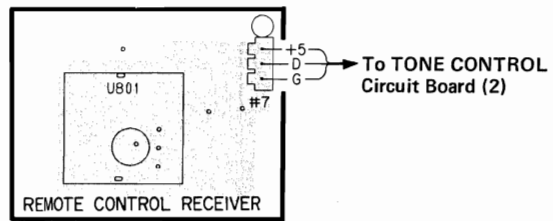


AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (FRONT PANEL Circuit Board)

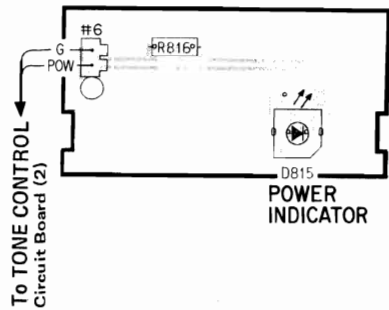
FRONT PANEL Circuit Board (2)



FRONT PANEL Circuit Board (3)

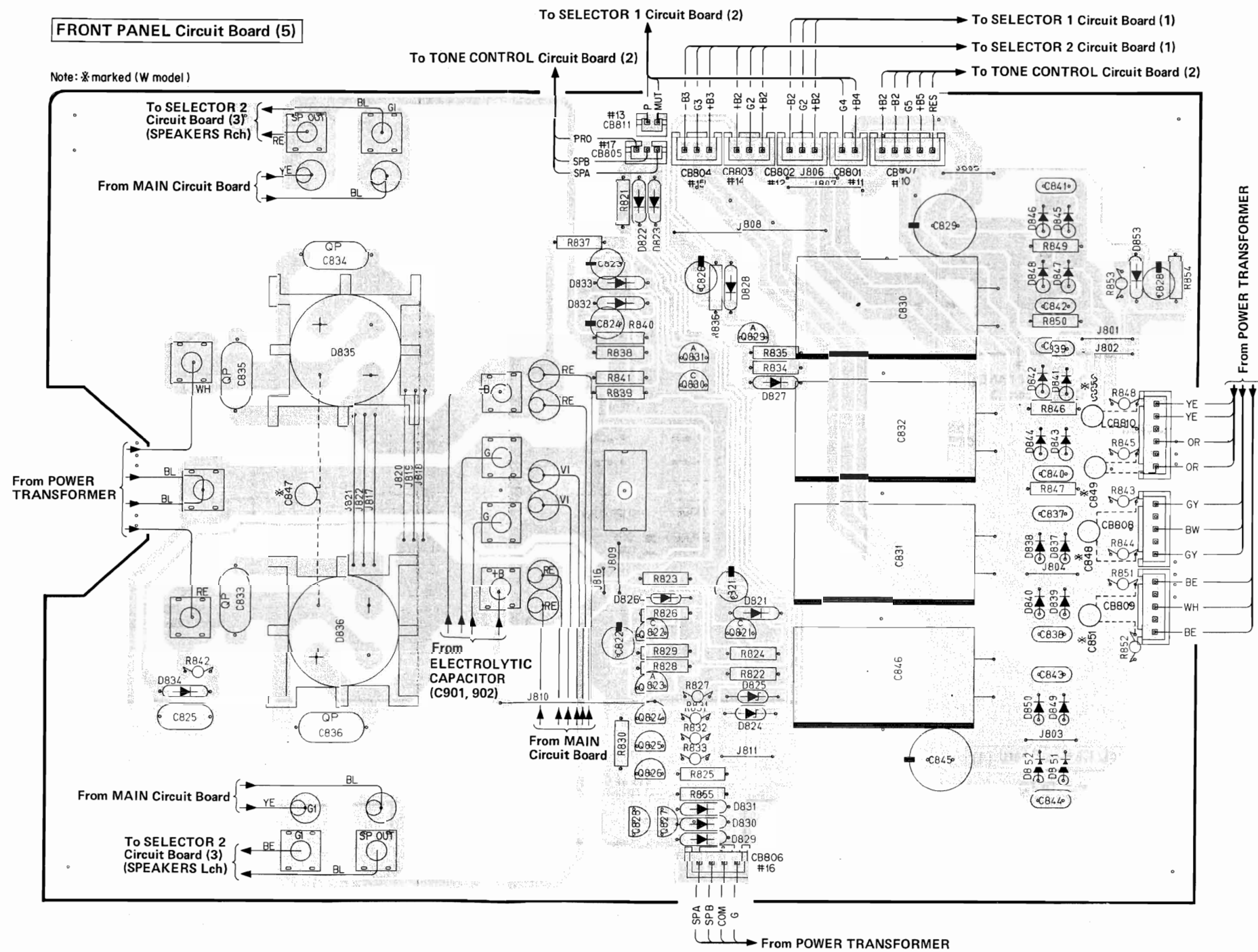


FRONT PANEL Circuit Board (4)



FRONT PANEL Circuit Board (5)

Note: * marked (W model)



1
2
3
4
5
6
7

■ PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (SELECTOR 1 Circuit Board)

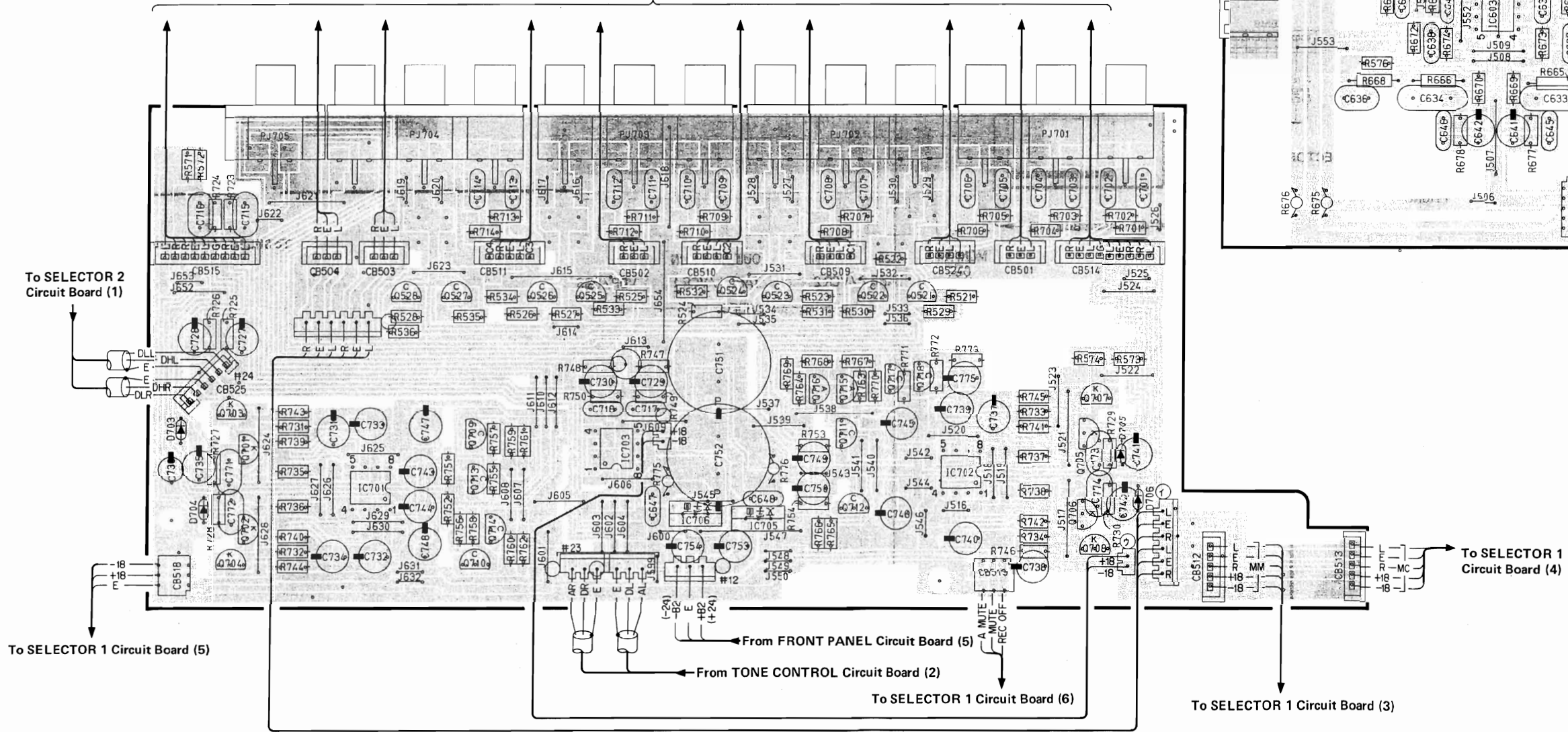
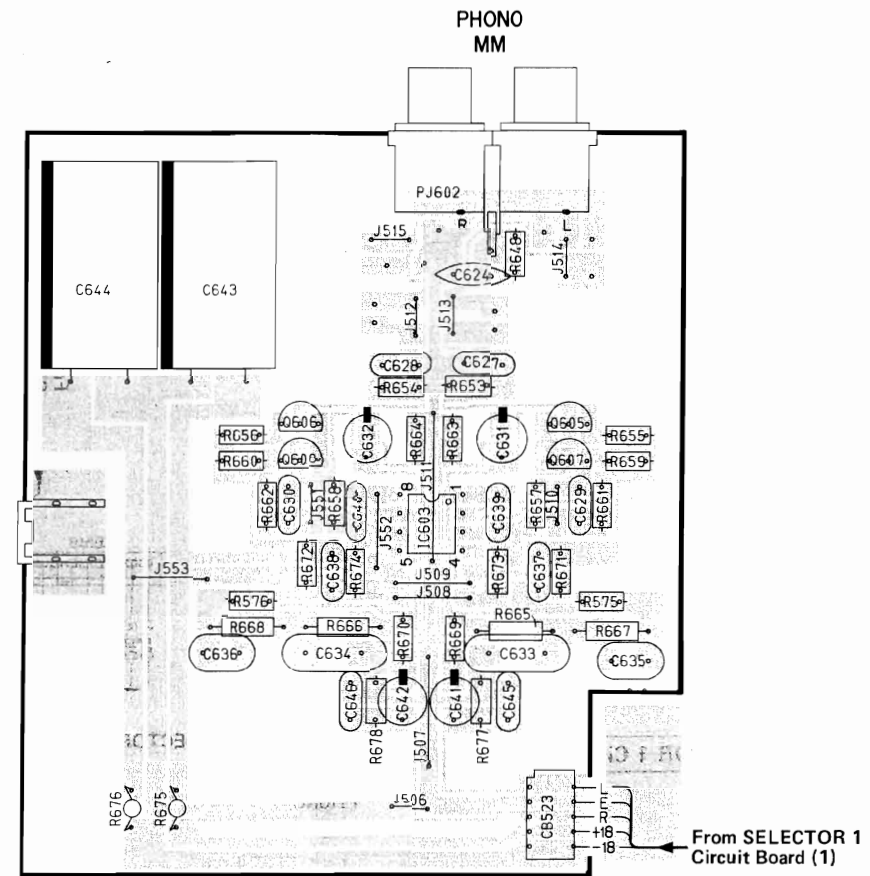
Note: Selector 1 Circuit Board and Tone Control Circuit Board used differ by the destination.
 Unless otherwise stated specially, it is common to all destinations.

SELECTOR 1 Circuit Board (1) (R Model)

ACCESSORY	TAPE 2/VCR2		TAPE 1/VCR1		VDP/DBS	DAT 2		DAT 1		CD	TUNER
RECEIVE	SEND	OUT	IN	OUT	IN	OUT	IN	OUT	IN		

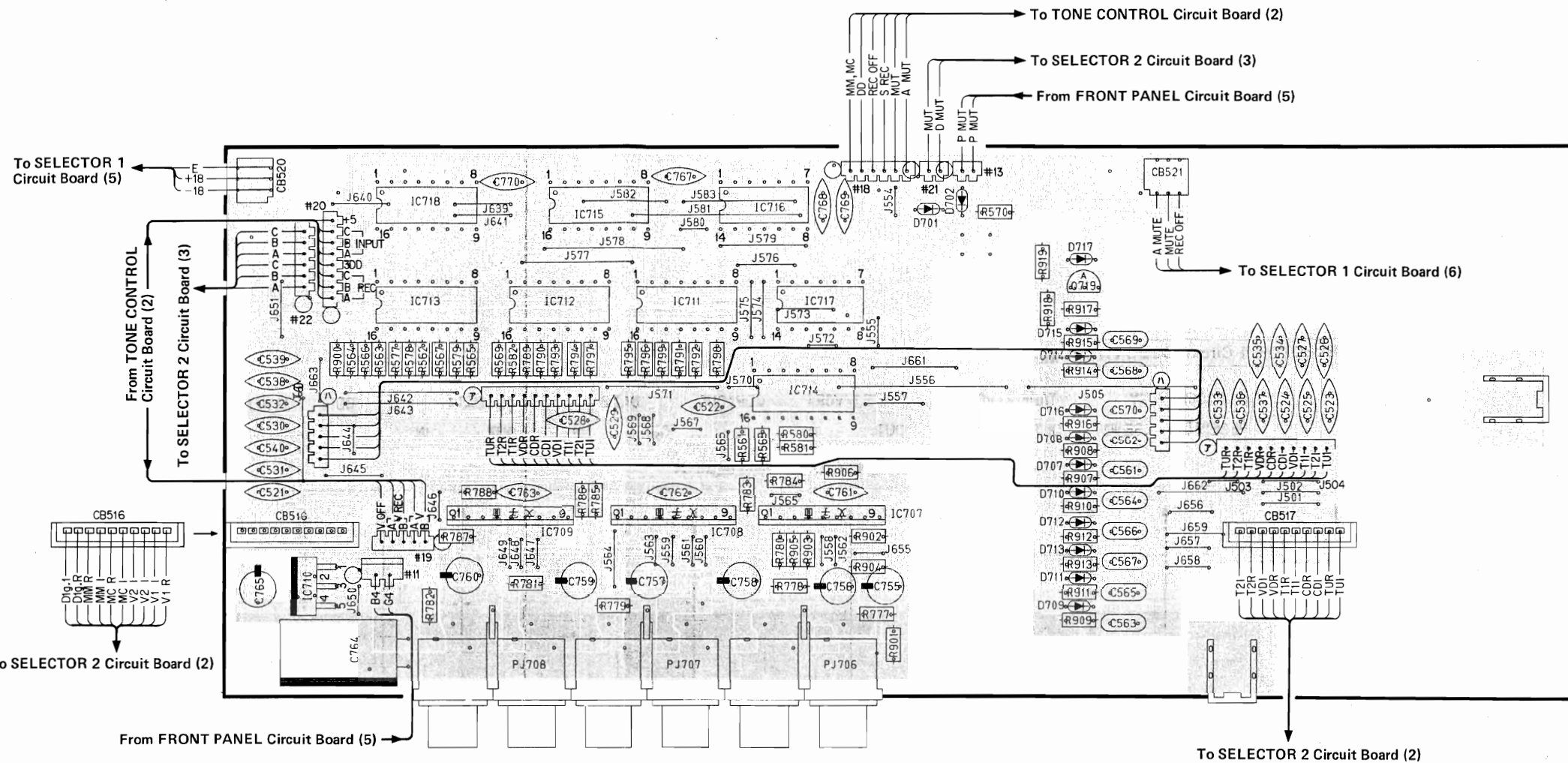
To SELECTOR 2 Circuit Board (2)

SELECTOR 1 Circuit Board (3) (R Model)

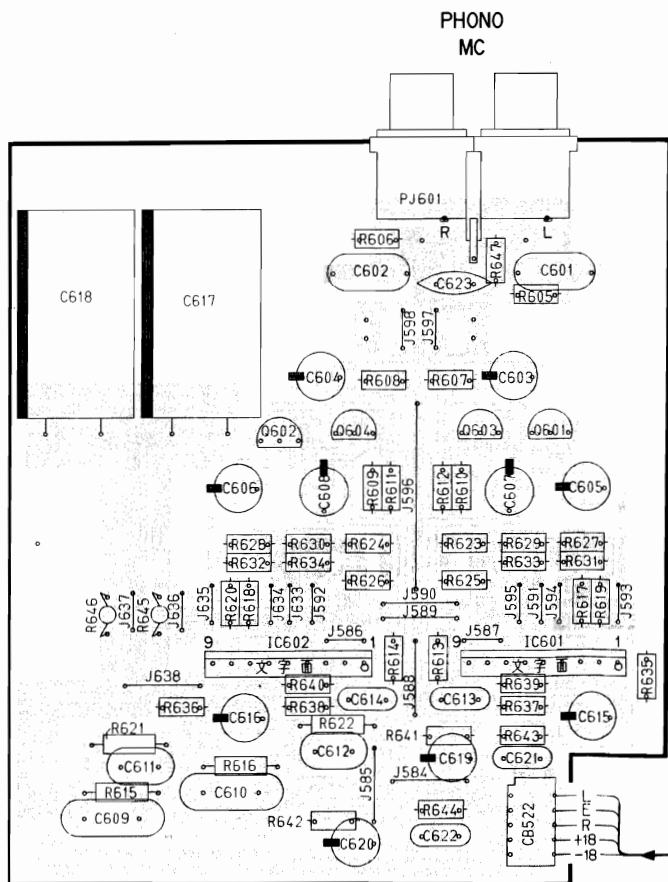


AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (SELECTOR 1 Circuit Board)

SELECTOR 1 Circuit Board (2) (R Model)



SELECTOR 1 Circuit Board (4) (R Model)



MONITOR OUT
 OUT IN
 TAPE 2/VCR 2 TAPE 1/VCR 1
 VIDEO
 VDP/DBS

From SELECTOR 1 Circuit Board (1)

A

B

C

D

E

F

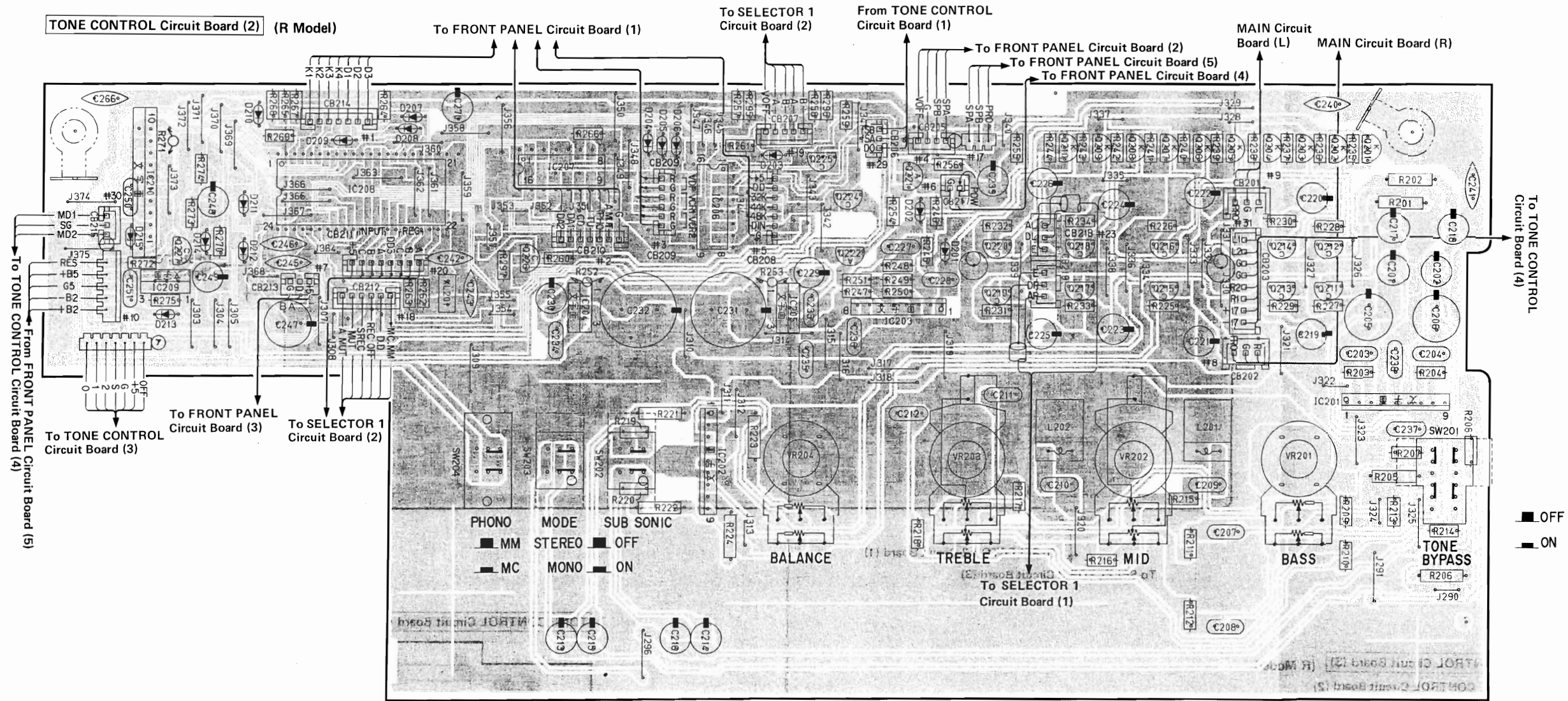
G

H

I

PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
(TONE CONTROL Circuit Board)

AX-2000



1

2

3

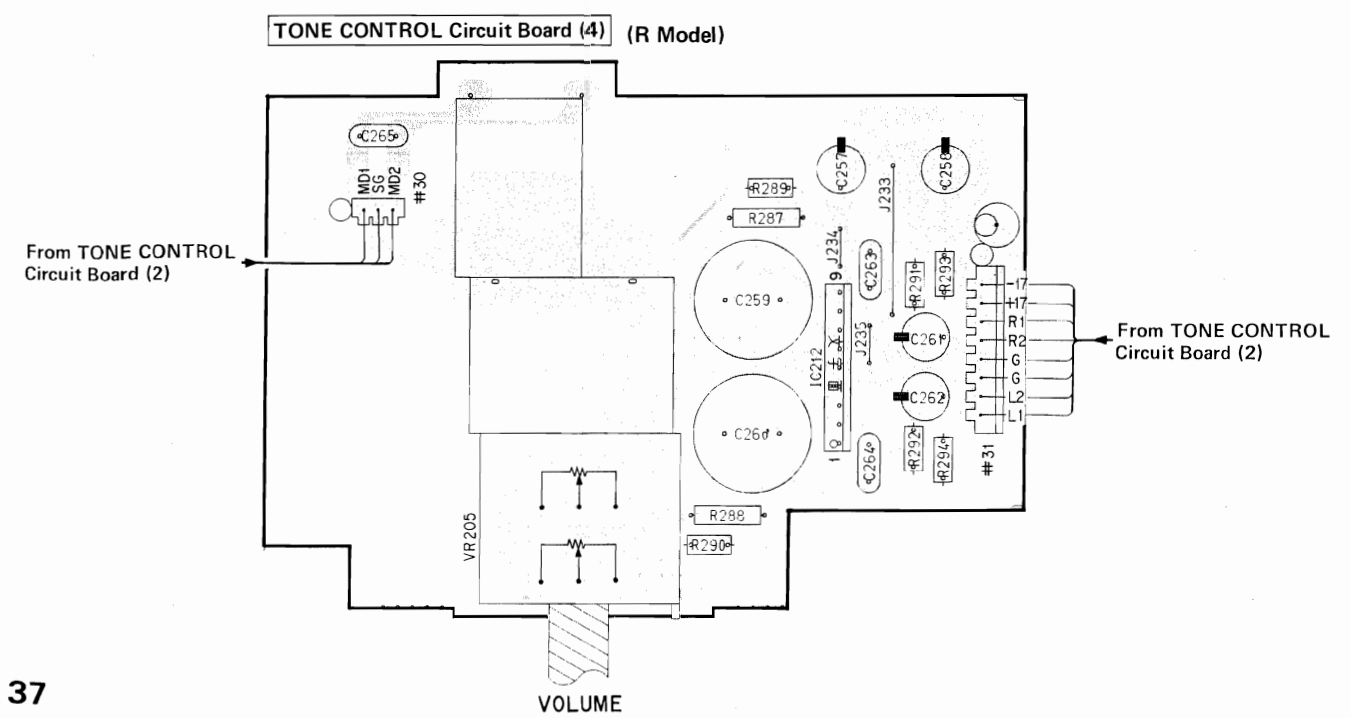
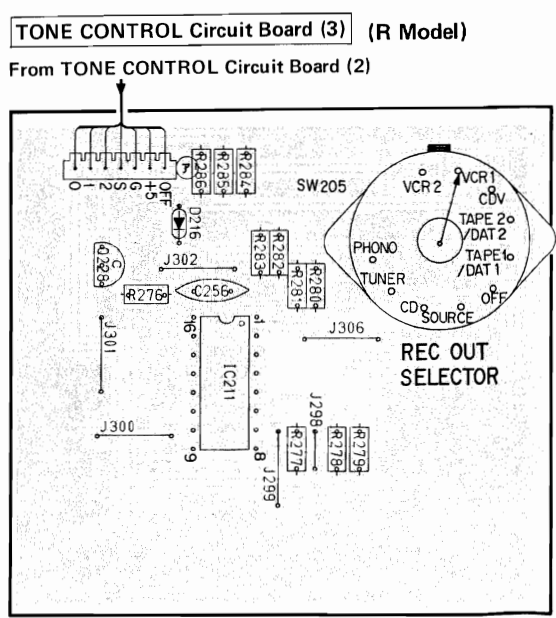
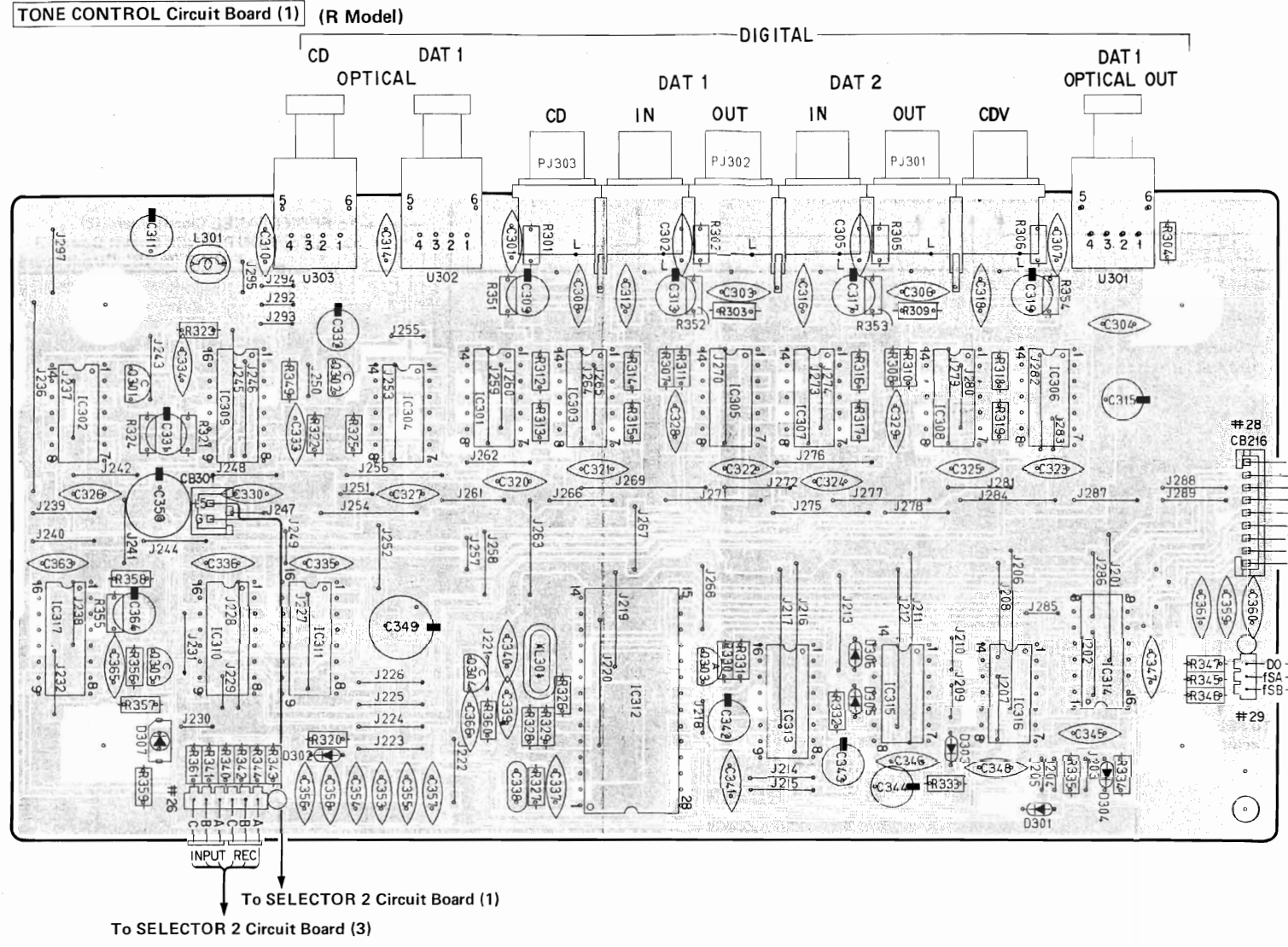
4

5

6

7


AX-2000
PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side
 (TONE CONTROL Circuit Board)



PARTS LIST

ELECTRICAL PARTS

WARNING

Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
 Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to the last Page.

AX-2000

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
*	NA 09 65 60	Main Circuit Board	メ イ ン シ ー ト				
	FC 27 51 00	Polypropylene Film Cap.	0.1 μ F 100V	Q P コ ン			C121,122
	FC 29 44 70	//	0.047 μ F 250V	//			C123,124
	FU 35 12 20	Mica Cap.	22pF 500V	F E マ イ カ コ ン			C103,104
	FU 35 16 80	//	68pF 500V	//			C109,110
	UT 45 22 20	Polypropylene Film Cap.	220pF 100V	ポ リ プ ロ コ ン			C117,118
	UT 45 28 20	//	820pF 100V	//			C107,108
	UT 45 31 20	//	1200pF 100V	//			C101,102
	UT 65 33 30	//	3300pF 100V	//			C115,116
*	VE 01 88 00	Electrolytic Cap.	220 μ F 25V	ケ ミ コ ン			C119,120
	UH 14 74 70	//	47 μ F 25V	//			C112
*	VE 02 03 00	//	22 μ F 50V	//			C105,106
	VE 74 30 00	// (Duorex)	33 μ F 100V	//			C125,126
	FZ 00 59 80	//	1000 μ F 80V	//			C113,114
	FZ 00 54 10	//	100 μ F 6.3V	ブ ラ ッ ク ゲ ー ト コ ン			C111
	HV 45 34 70	Flame Proof Carbon Resistor	4.7 Ω 1/4W	不 燃 化 カ ー ボ ン 抵 抗			R145~150
	HV 45 41 00	//	10 Ω 1/4W	//			R153~158
	HV 45 45 60	//	56 Ω 1/4W	//			R113,114,117,118, 171,172
	HV 45 46 80	//	68 Ω 1/4W	//			R151,152
	HV 45 51 00	//	100 Ω 1/4W	//			R119~122
	HV 45 52 20	//	220 Ω 1/4W	//			R115,116
	HV 45 55 60	//	560 Ω 1/4W	//			R170
	HV 45 58 20	//	820 Ω 1/4W	//			R123,124
	HV 45 61 00	//	1k Ω 1/4W	//			R125,126,131~134,137
	HV 45 61 20	//	1.2k Ω 1/4W	//			R111,112
	HV 45 61 50	//	1.5k Ω 1/4W	//			R135,136,165,166
	HV 45 71 00	//	10k Ω 1/4W	//			R107,108,139,140
	HL 32 41 00	Metal Oxide Film Resistor	10 Ω 2 W	酸 金 抵 抗			R173,174
	HL 32 65 60	//	5.6k Ω 2 W	//			R143,144
*	VE 33 25 00	Wire-Wound Resistor	0.33 Ω 3 W	セ メ ン ト 抵 抗			R159~164
	VB 86 16 00	Pre-set Potentiometer	B22k Ω	半 固 定 抵 抗			VR101
	iA 13 49 00	Dual Transistor	2SA1349(GR,BL)	デュアルトランジスタ			Q102,109,112
	iC 33 81 00	//	2SC3381(GR,BL)	//			Q101,110,111
	iA 11 45 00	Transistor	2SA1145(O,Y)	ト ラ ン ジ ス タ			Q103,106,121
	iC 27 05 00	//	2SC2705(O,Y)	//			Q104,105,122
	iX 60 85 10	//	2SA1358(O,Y)	//			Q107
	iX 60 85 20	//	2SC3421(O,Y)	//			Q108
*	iX 60 81 50	//	2SA1306(O,Y)	//			Q114
	iX 60 81 60	//	2SC3298(O,Y)	//			Q113
*	iX 60 97 30	//	2SA1491A(O,P,Y)	//			Q116,118,120
	iX 60 97 40	//	2SC3855A(O,P,Y)	//			Q115,117,119
*	iX 61 10 40	//	2SB1362NY(P,S)	//			Q116,118,120
	iX 61 10 50	//	2SD2053NY(P,S)	//			Q115,117,119
	iF 00 00 40	Diode	IS1555	ダ イ オ ー ド			D101~105,109~112
	iF 00 14 00	//	ISS82	//			D107,108
	VE 46 65 00	//	11DQ09 FE-2	シ ョ ッ ト キ ー ダ イ オ ー ド			D113,114
	LB 91 80 30	Base Pin	3P i-Type	X H ベ ー ス ピ ン			CB101
	VD 00 45 00	//	2P i-Type	P H ベ ー ス ピ ン			CB102,103

*New Parts (新規部品)

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AX-2000

Ref. No.	Part No.	Description	部品名		Remarks	Common Model	Markets	ランク
※	VE 80 85 00	Terminal,Screw	M4	ネジ端子				
※	VE 46 67 00	Bus Bar	AX-L	バスバー				
※	VE 46 91 00	//	AX-R	//				
	CB 81 85 40	Binding Tie	T30R	インシュロックタイ				
※	NA 09 65 70	Selector 1 Circuit Board		セレクターシート(1)			R	
※	VG 18 74 00	//		//			W	
	FG 21 21 00	Ceramic Cap.	100pF 50V	セラコン	C862~865		W	
	FU 35 12 20	Mica Cap.	22pF 500V	マイカコン	C771~774			
	FG 24 41 00	Ceramic Cap.	0.01μF 50V	セラコン	C521~530			
	FA 15 51 00	Mylar Cap.	0.1μF 50V	マイラーコン	C647,648			
	FA 15 51 00	//	0.1μF 50V	//	C561~570		R	
	UT 45 21 00	Polypropylene Film Cap.	100pF 100V	ポリプロコン	C701~714		R	
	UT 45 23 30	//	330pF 100V	//	//		W	
	UT 45 21 00	//	100pF 100V	//	C679,680		W	
	UT 45 21 80	//	180pF 100V	//	C719~726		W	
	UT 45 22 20	//	220pF 100V	//	C627,628,717,718		R	
	UT 45 23 30	//	330pF 100V	//	//		W	
	UT 45 22 20	//	220pF 100V	//	C867,868		W	
	UT 45 23 30	//	330pF 100V	//	C670,671		W	
	UT 45 26 80	//	680pF 100V	//	C637~640			
	UT 65 33 30	//	3300pF 100V	C Q コン	C715,716			
	UT 45 33 90	//	3900pF 100V	ポリプロコン	C629,630			
	UT 45 34 70	//	4700pF 100V	//	C621,622,645,646			
	UT 65 38 20	//	8200pF 100V	//	C613,614			
	FT 16 41 60	//	0.016μF 100V	//	C611,612,635,636			
	FT 16 45 60	//	0.056μF 100V	//	C609,610,633,634			
	VC 93 80 00	Electrolytic Cap.	0.01μF 50V	銅ハクポリプロコン	C601,602			
	UJ 15 71 00	//	10μF 35V	ケミコン	C755~757,775			
	UJ 13 73 30	//	33μF 16V	//	C731~742			
	VE 74 27 00	//	10μF 50V	//	C619,620,641,642,729,730,745~750,765			
	UH 14 74 70	//	47μF 25V	//	C727,728,743,744			
	VE 01 98 00	//	1μF 50V	//	C753,754			
	UJ 11 91 00	//	1000μF 6.3V	//	C758~760			
	UJ 13 91 00	//	1000μF 16V	//	C764			
	UJ 14 91 00	//	1000μF 25V	//	C643,644			
	VE 01 66 00	//	220μF 6.3V	//	C603,604			
※	VE 01 67 00	//	330μF 6.3V	//	C631,632			
※	VE 01 68 00	//	470μF 6.3V	//	C605~608,615,616			
※	UJ 24 93 30	//	3300μF 25V	オーディオケミコン	C751,752			
※	UH 13 94 70	//	4700μF 16V	//	C617,618			
	FZ 00 58 80	Ceramic Cap.	0.1μF 25V	積層セラコン	C531~540,623,624,761~763,767~770			
	FZ 00 47 90	//	0.1μF 50V	//	C675~678		W	
	VA 98 36 00	Coil	220μH	コイル	L603~606,610~617		W	
	HU 57 64 70	Metal Film Resistor	4.7kΩ 1/4W	金属被膜抵抗	R621,622,667,668			
※	HU 57 75 60	//	56kΩ 1/4W	//	R615,616,665,666			
	HV 45 43 30	Flame Proof Carbon Resistor	33Ω 1/4W	不燃化カーボン抵抗	R775,776			

Ref. No.	Part No.	Description	部 品 名			Remarks	Common Model	Markets	ランク
	HV 45 44 70	Flame Proof Carbon Resistor	47Ω	1/4W	不燃化カーボン抵抗	R675,676			
	HV 45 51 00	//	100Ω	1/4W	//	R645,646			
	iA 10 15 21	Transistor	2SA1015(Y)		トランジスタ	Q715,716			
	iA 10 15 21	//	2SA1015(Y)		//	Q719	R		
	iC 18 15 20	//	2SC1815(Y)		//	Q717,718			
	iA 10 15 21	//	2SA1015(Y)		//	Q1010	W		
	iC 28 78 20	//	2SC2878(A,B)		//	Q521~528,709~714			
	iB 07 37 00	//	2SB737(Q,R,S)		//	Q601,602			
	iD 07 86 00	//	2SD786(Q,R,S)		//	Q603,604			
	iE 10 12 10	FET	2SK105(E)		F E T	Q701~708			
	iE 10 24 20	//	2SK170(GR,BL)		//	Q605~608			
	iF 00 34 50	Diode	ISS133		ダイオード	D701~706			
	iF 00 34 50	//	ISS133		//	D707~717	R		
	iF 00 34 50	//	ISS133		//	D1010,1011	W		
	iG 00 11 70	IC	TC4001BP		I C	IC716			
	iG 00 17 60	//	TC4081BP		//	IC717			
	iG 12 14 00	//	NJM2041D		//	IC703			
*	iG 14 28 00	//	NJM5532D		//	IC603,701,702			
	XA 42 60 01	//	NJM5532S		//	IC601,602			
	XA 54 90 01	//	LB1294		//	IC711~714			
*	XD 49 30 01	//	L780S12		//	IC710			
*	XD 52 10 01	//	NJM78M18		//	IC705			
*	XD 52 20 01	//	NJM79M18		//	IC706			
*	XD 52 40 01	//	LA7952		//	IC707~709			
	iR 02 38 20	//	μPD74HC238C		//	IC715,718			
	VE 38 45 00	Pin Jack		2P	ピンジャック	PJ601,602			
*	VE 33 26 00	//		2P	//	PJ706~708			
*	VE 33 29 00	//		2P	//	PJ705			
*	VE 33 36 00	//		6P	//	PJ701~704			
*	VE 27 90 00	//	5512-03P	3P	ウェハーソケット	CB501~508			
*	VE 27 91 00	//	5512-04P	4P	//	CB509,510,524			
*	VE 27 92 00	//	5512-05P	5P	//	CB511~513			
*	VE 27 96 00	//	5512-09P	9P	//	CB514,515			
*	VE 27 97 00	//	5512-10P	10P	//	CB516,517			
*	VE 28 09 00	Housing	5513-03APB	3P	ハウジング	CB518~521			
*	VE 28 11 00	//	5513-05APB	5P	//	CB522,523			
	VB 21 93 00	Base Pin	6P	i-Type	PHベースピン	CB525			
	BB 07 13 60	Terminal,Screw			ネジ端子				
*	NA 09 65 80	Selector 2 Circuit Board			セレクターシート(2)		R		
*	VG 23 52 00	//			//		W		
	UT 45 46 80	Polypropylene Film Cap.	0.068μF	100V	C Q コ ン	C423,424,441,442			
	UT 45 26 80	//	680pF	100V	ポリプロコン	C856~859	W		

*New Parts (新規部品)

Ref. No.	Part No.	Description			部 品 名	Remarks	Common Model	Markets	ランク
	UT : 45 : 21 : 00	Polypropylone Film Cap.	100pF	100V	ポ リ プ ロ コ ン	C419,420			
	UT : 65 : 22 : 20	//	220pF	100V	C Q コ ン	C429,430			
※	UT : 65 : 38 : 20	//	8200pF	100V	//	C425,426			
※	UT : 65 : 24 : 70	//	470pF	100V	//	C439,440			
※	UT : 65 : 33 : 30	Polypropyleme Film Cap.	3300pF	100V	ポ リ プ ロ コ ン	C427,428			
	FZ : 00 : 64 : 50	Ceramic Cap.	0.1μ	50V	積 層 セ ラ コ ン	C436,437,443,444,447			
	VE : 41 : 57 : 00	Electrolytic Cap.	1000μF	10V	ケ ミ コ ン	C411~414,445,448			
	UJ : 11 : 84 : 70	//	470μF	6.3V	//	C446			
	UJ : 24 : 93 : 30	//	3300μF	25V	//	C432,433			
	VE : 39 : 45 : 00	//	47μF	25V	//	C421,422			
	UJ : 14 : 72 : 20	//	22μF	25V	//	C415~418			
	UK : 14 : 71 : 00	//	10μF	25V	B P コ ン	C431			
	UJ : 16 : 61 : 00	//	1μF	50V	ケ ミ コ ン	C434,435			
	FZ : 00 : 58 : 80	Ceramic Cap.	0.1μF	25V	積 層 セ ラ コ ン	C401~405,407~409, 501~520,541~560			
	VB : 86 : 19 : 00	Pre-set Potentiometer	B100kΩ		半 固 定 抵 抗	VR401,402			
	HL : 31 : 41 : 00	Metal Oxide Film Resistor	10Ω	1W	酸 金 抵 抗	R591,592			
	HL : 32 : 52 : 70	//	270Ω	2W	//	R593,594			
	HV : 45 : 43 : 30	Flame Proof Carbon Resistor	33Ω	1/4W	不 燃 化 カ ー ボ ン 抵 抗	R446,447			
	iB : 05 : 44 : 10	Transistor	2SB544		ト ラ ン ジ ス タ	Q403,404			
	iD : 04 : 00 : 10	//	2SD400		//	Q401,402			
	iC : 28 : 78 : 20	//	2SC2878(A,B)		//	Q405~414			
	iE : 10 : 12 : 80	FET	2SK105(F,H)		F E T	Q501~520,529~548			
	iF : 00 : 34 : 50	Diode	ISS133		ダ イ オ ー ド	D401,402,407,408,501~540			
	iF : 00 : 86 : 30	Zener Diode	MTZ6.2A		ツ ェ ナ ー ダ イ オ ー ド	D403~406			
	XA : 42 : 60 : 01	IC	NJM5532S		I C	IC405,406			
	XA : 54 : 90 : 01	//	LB1294		//	IC407			
	XB : 63 : 70 : 01	//	PCM56P		//	IC401,403			
※	XD : 52 : 10 : 01	//	NJM78M18		//	IC408			
※	XD : 52 : 20 : 01	//	NJM79M18		//	IC409			
※	iG : 14 : 28 : 00	//	NJM5532D		//	IC413			
	XB : 70 : 30 : 01	//	YM3023		//	IC404			
	XD : 71 : 10 : 01	//	YM6013		//	IC402			
	iG : 07 : 56 : 00	//	NJM78M05A		//	IC410,411			
	iG : 08 : 79 : 00	//	NJM79L05A		//	IC412			
※	VG : 73 : 01 : 00	Relay	JC2ad-DC48V		リ レ ー	RY501,502			
※	VE : 29 : 77 : 00	//	JR2ad-DC48V		//	RY503			
	VC : 79 : 37 : 00	Coil	1.5μH		コ イ ル	L501,502			
	VD : 00 : 45 : 00	Base Pin	2P	i-Type	P H ベ ー ス ピ ン	CB501,503			
	VD : 00 : 49 : 00	//	6P	i-Type	//	CB502,504			
	LB : 91 : 80 : 30	//	3P	i-Type	X H ベ ー ス ピ ン	CB506			
※	VE : 28 : 09 : 00	Housing	3P		ハ ウ ジ ン グ	CB509~512			
※	VE : 28 : 10 : 00	//	4P		//	CB513~515			
※	VE : 28 : 11 : 00	//	5P		//	CB516			
※	VE : 28 : 15 : 00	//	9P		//	CB517,518			
※	VE : 28 : 16 : 00	//	10P		//	CB519,520			

※New Parts (新規部品)

Ref. No.	Part No.	Description			部 品 名	Remarks	Common Model	Markets	ランク
※	VD 85 20 00	Terminal, Speaker			S P ターミナル				
	BB 06 62 90	Ground Washer			アース金具				
※	NA 09 65 90	Tone Control Circuit Board			トーンコンシート			R	
※	VG 23 53 00	"			"			W	
	FG 21 21 00	Ceramic Cap.	100pF	50V	セラコン	C333,334,365			
	FG 21 22 20	"	220pF	50V	"	C243			
	FG 21 24 70	"	470pF	50V	"	C242			
	FG 24 42 20	"	0.022μF	50V	"	C240,241,266			
	FU 35 12 20	Mica Cap.	22pF	500V	F E マイカコン	C263,264			
	VA 76 10 00	Ceramic Cap.	22pF(CH)	50V	セラコン	C301~303,305~307,339,340			
	FZ 00 58 80	"	0.1μF	25V	積層セラコン	C245,246,256,304,308,310,312,314,316,318,320~330,335~337,341,345~348,353~361,363,366			
	FC 34 44 70	Mylar Cap.	0.047μF	50V	マイラーコン	C235~238			
	FA 15 43 30	"	0.033μF	50V	"	C211,212			
	FA 15 51 00	"	0.1μF	50V	"	C227,228,233,234,250,251,265			
	FA 15 51 20	"	0.12μF	50V	"	C207,208			
	FA 15 54 70	"	0.47μF	50V	"	C209,210			
	UT 45 21 00	Polypropylene Film Cap.	100pF	100V	ポリプロコン	C203,204			
	UT 45 22 20	"	220pF	100V	"	C860,861		W	
	UT 65 38 20	"	8200pF	100V	"	C338			
	UT 45 41 00	"	0.01μF	100V	"	C267~269			
	UJ 11 81 00	Electrolytic Cap.	100μF	6.3V	ケミコン	C315,349,350			
	UJ 11 84 70	"	470μF	6.3V	"	C239,311			
	UJ 12 74 70	"	47μF	10V	"	C249,270			
	UJ 14 72 20	"	22μF	25V	"	C309,313,317,319,331,332,344,364			
	UH 14 71 00	"	10μF	25V	"	C248			
	UJ 16 61 00	"	1μF	25V	"	C904~913		W	
	UJ 16 61 00	"	1μF	50V	"	C342,343			
	VB 17 01 00	"	4700μF	5.5V	"	C247			
	VE 39 45 00	"	47μF	25V	"	C215~226			
※	VE 74 26 00	"	47μF	25V	"	C257,258			
※	VE 01 98 00	"	1μF	50V	"	C201,202,213,214,229,230,261,262			
※	VE 41 57 00	"	1000μF	10V	"	C205,206			
	FZ 00 74 10	"	1000μF	25V	ブラックゲートケミコン	C231,232			
	FM 17 73 30	"	33μF	50V	B P コン	C259,260			
	VC 25 94 00	Coil	47mH		コイル	L201,202			
	VA 98 36 00	"	220μH		"	L620,621		W	
	GE 90 19 70	"	68μH		"	L301			
	HV 45 41 00	Flame Proof Carbon Resistor	10Ω	1/4W	不燃化カーボン抵抗	R271			
	HV 45 45 60	"	56Ω	1/4W	"	R252,253			
※	VE 27 82 00	Rotary Potentiometer	16KΩ×2		ロータリーボリューム	VR201			
※	VE 27 83 00	"	20KΩ×2		"	VR202,203			
※	VE 32 74 00	"	250KΩ MN×2		"	VR204			
※	VE 24 41 00	Potentiometer with Motor	27KΩ		モーター付ボリューム	VR205			

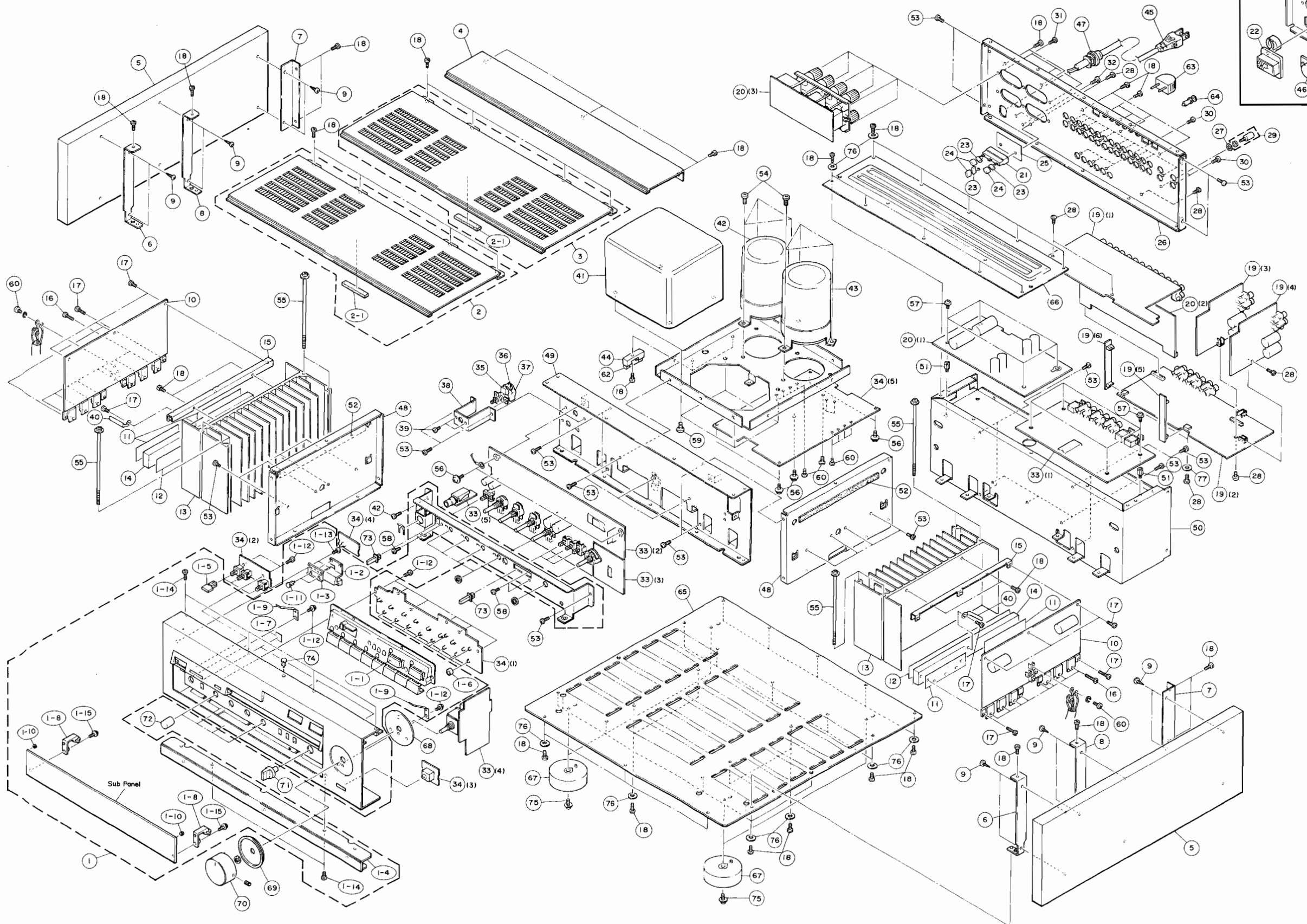
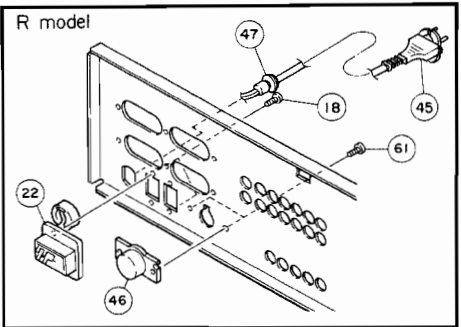
* New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名		Remarks	Common Model	Markets	ランク
	iA 10 15 21	Transistor	2SA1015(Y)	ト ラ ン ジ ス タ	Q836		W	
	iA 10 15 21	//	2SA1015(Y)	//	Q221,222,303			
	iC 18 15 20	//	2SC1815(Y)	//	Q224~228,301,302,305			
	iC 28 78 20	//	2SC2878(A,B)	//	Q211~220			
	iC 05 35 40	//	2SC535(A,B,C)	//	Q304	} inter-changeable		
	VB 17 04 00	//	2SC1923(R,O,Y)	//	//			
	VB 43 33 00	//	2SC1809(M,N,P)	//	//			
	IE 10 12 00	FET	2SK105(H)	F E T	Q201~210			
	XA 42 60 01	IC	NJM5532S	I C	IC201,202,212			
※	XD 52 10 01	//	NJM78M18	//	IC204			
※	XD 52 20 01	//	NJM79M18	//	IC205			
	iG 14 22 20	//	μPD74HCU04C	//	IC301,303,305~308			
	iG 07 56 00	//	NJM78M05	//	IC209			
	iG 10 11 00	//	BA6209	//	IC210			
	iG 09 21 00	//	M5219L	//	IC203			
	iR 00 00 00	//	TC74HC00P	//	IC302,304,316	} inter-changeable		
	iR 00 00 80	//	M74HC00P	//	//			
	iR 00 02 00	//	TC74HC02P	//	IC315	} inter-changeable		
	iR 00 02 80	//	M74HC02P	//	//			
	iR 01 23 20	//	μPD74HCl23AC	//	IC309,313,317			
※	iR 01 53 00	//	TC74HCl53P	//	IC310,311			
	iR 02 38 20	//	μPD74HC238C	//	IC207			
※	iR 02 39 20	//	μPD74HC239C	//	IC206			
※	XD 52 70 01	//	TC4532BP	//	IC211			
※	XD 52 60 01	//	LC5505C-3556	//	IC208			
	XD 22 20 01	//	YM3623B	//	IC312			
※	XD 71 20 01	//	YM3414	//	IC314			
	iF 00 87 30	LED	SLR-34URC3H3	L E D	D307			
	VD 98 21 00	Module,Transmitter	TOTX172	送 信 モ ジ ュ ー ル	U301			
※	VD 98 22 00	Module,Receiver	TORX172	受 信 モ ジ ュ ー ル	U302,303			
	iF 00 34 50	Diode	ISS133	ダ イ オ ー ド	D201~214,216,301~306			
	iF 00 34 50	//	ISS133	//	D854~865		W	
	iF 01 06 80	Zener Diode	MTZ5.1A	ツェナーダイオード	D215			
※	VE 33 27 00	Pin Jack	2P	ピ ン ジャ ッ ク	PJ301~303			
※	VE 27 77 00	Push Switch	4-2S	プ ッ シ ュ ス イ ッ チ	SW201			
※	VE 27 78 00	//	2-2NS	//	SW204			
※	VE 18 51 00	Rotary Switch	1-10S	ロ ー タ リ ー ス イ ッ チ	SW205			
	VC 24 55 00	Push Switch	2-2NS	プ ッ シ ュ ス イ ッ チ	SW202,203			
	GG 00 07 00	Ceramic Resonator	FCR400K	セ ラ ミ ッ ク 振 動 子	XL201			
	VD 61 38 00	Quartz Crystal	17.9MHz	水 晶 振 動 子	XL301			
	VA 31 63 00	Phone Jack		ヘ ッ ト ホ ン ジャ ッ ク	JK201			
	LB 91 80 20	Base Pin	2P i-Type	X H ベ ー ス ピ ン	CB301			
	LB 91 80 30	//	3P i-Type	//	CB201,202,218,219			
	LB 91 80 80	//	8P i-Type	//	CB203			
	VD 00 45 00	//	2P	P H ベ ー ス ピ ン	CB217			

※ New Parts (新規部品)

A B C D E F G H I J

AX-2000
EXPLODED VIEW



Sub Panel

1
2
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4
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EXPLODED VIEW PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	I	VG 18 29 00	Front Panel Unit				
※	I-1	VE 30 36 00	Button Ass'y				
※	I-2	VE 27 21 00	Button				
※	I-3	VE 27 26 00	Spring				
※	I-4	VE 27 42 00	Sub Panel				
	I-5	VD 91 88 00	Button	3×14			
	I-6	VE 27 47 00	Cushion				
	I-7	VE 79 82 00	//				
	I 8	VE 27 45 00	Stopper				
	I-9	BB 07 04 50	Stopper, Hinge			A-950/1000	
※	I-10	VE 79 81 00	Dumper				
	I-11	CB 09 96 00	Plastic Rivet				
	I-12	EK 93 00 10	BW Head Tapping Screw	3×8×φ8 ZMC2-BI			
	I-13	Ei 03 00 66	Binding Head Tyte Screw	3×6 ZMC2-BI			
	I-14	Ei 33 00 86	//	3×8 ZMC2-BI			
	I-15	EK 33 60 10	BW Head Screw	3×8×φ8 FCRM3-3g			
※	2	VF 01 24 00	Top Cover (A)				
	2-1	CB 66 11 40	Cushion			AX-900	
※	3	VF 01 25 00	Top Cover (B)				
※	4	VF 01 26 00	// (C)				
※	5	VE 27 54 10	Wood Panel	L+R			
※	6	VE 27 55 00	Holder, Wood Panel (F)				
※	7	VE 27 56 00	// (R)				
※	8	VE 41 38 00	Stay, Top Cover				
※	9	EQ 03 11 66	Round Head Wood Screw	3.1×16 ZMC2-Y			
※	10	NA 09 65 60	Main C. Board				
※	11	VE 35 30 00	Sheet	T0-5			
※	12	VE 82 68 00	Sheet, Block				
※	13	VE 27 64 00	Radiator				
※	14	VE 27 65 00	TR Block				
	15	AA 62 00 50	Holder, C. Board			A-2000	
※	16	EK 33 00 40	BW Head Tapping Screw	3×24×φ10 FCRM3-BI			
	17	EK 33 60 10	//	3×8×φ8 FCRM3-BI			
	18	Ei 33 00 86	Binding Head Tapping Screw	3×8 ZMC2-BI			
※	19	NA 09 65 70	Selector C. Board (1)				R
※	//	VG 18 74 00	//				W
※	20	NA 09 65 80	Selector C. Board (2)				R
※	//	VG 23 52 00	//				W
	21	LA 00 10 00	Relay Terminal	3P			W
※	22	VG 18 10 00	AC Outlet	2P			R
※	23	VB 38 06 00	Capacitor	3300pF		C852~854	W
	24	CB 09 52 60	Cover, Capacitor				W
※	25	VG 61 64 00	Sheet				W
※	26	VG 07 43 00	Rear Panel				W
※	//	VG 07 44 00	//				R
	27	EV 90 13 60	Sems Plain Washer	φ10×φ3.6×t0.8 FNM3-3g			
	28	ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI			
	29	AA 62 73 10	Ground Terminal Screw	STG3×13 FNM3-3g			
	30	EN 04 00 10	Binding Head Bonding Screw	3×8 FCRM3-BI			
	31	Ei 03 00 86	Binding Head Tyte Screw	3×8 ZMC2-Y			
	32	Ei 13 01 20	Binding Head Tapping Screw	3×12 FNM3-3g			
※	33	NA 09 65 90	Tone Control C. Board				R
※	//	VG 23 53 00	//				W

※New Parts (新規部品)

AX-2000

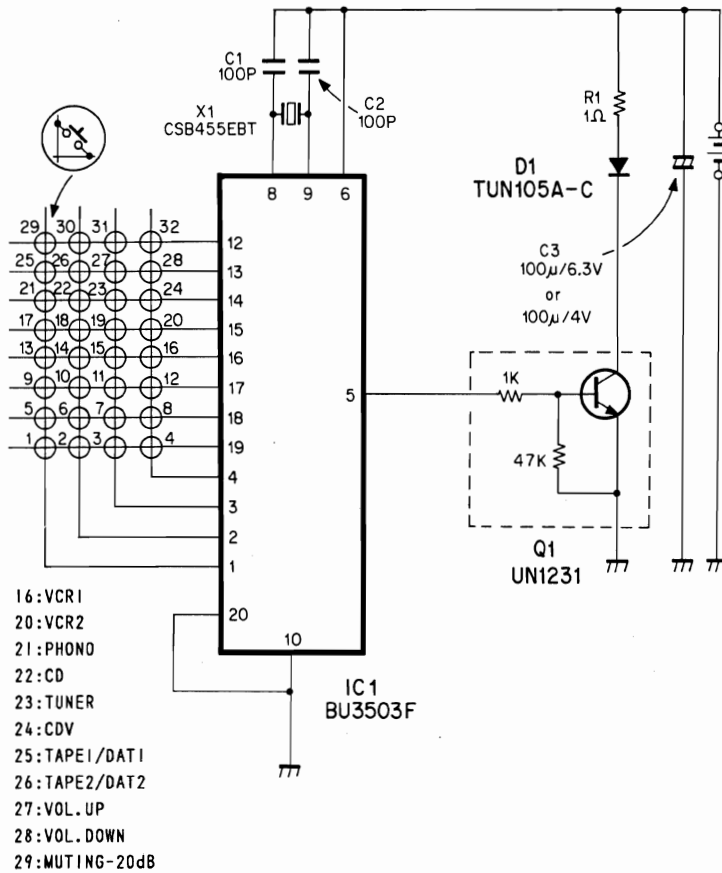
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Ref. No	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	34	NA 09 66 00	Front Panel C. Board			R	
※	//	VG 31 82 00	//			W	
	35	KA 80 43 00	Power Switch	TV-8			
	36	Fi 38 41 00	Ceramic Cap.	0.01μF AC400V			
	37	CB 09 52 60	Cover, Capacitor				
	38	VE 27 62 00	Holder, Power Switch				
	39	ED 03 00 61	Binding Head Screw	3×6 ZMC2-Y			
	40	LA 00 53 50	Terminal	SRA-21T-4			
※	41	XF 20 4A 00	Power Transformer			R	
※	//	XF 20 5A 00	//			W	
※	42	VF 07 49 00	Electrolytic Cap.	27000μF 80V		L	
※	43	VF 07 50 00	//	27000μF 80V		R	
	44	LB 20 13 00	Fuse Holder				R
	//	LB 20 21 10	//				W
	45	VE 37 10 00	AC Power Cord	6A 250V			R
※	//	VG 38 80 00	//	6A 250V			W
	46	VA 93 29 00	Voltage Selector				R
	47	CB 62 01 90	Cord Stopper	CM-22B			R
	//	CB 07 27 50	//	SR-4N-4			W
※	48	VE 27 58 00	Side Frame				
※	49	VE 27 59 00	Front Frame				
※	50	VE 27 60 00	Rear Frame				
※	51	VE 27 63 00	Post C. Board	L=8.4			
※	52	VE 35 28 00	Dumper	10×180			
	53	Ei 33 00 86	Binding Head Bonding Screw	3×8 FCRM3-BI		PACK	
	54	EK 95 00 50	Binding Head Tyte Screw	4×6 ZMC2-BI			
	55	EX 60 00 30	BW Head Screw	4×132 FCRM3-BI			
	56	EK 93 00 10	BW Head Tapping Screw	3×8 ZMC2-BI			
	57	EX 60 07 50	BW Head Screw	3×6 FCRM3-3g			
	58	ED 13 00 66	Binding Head Screw	3×6 FNM3-3g		PACK	
	59	ED 04 01 06	Binding Head Tyte Screw	4×10 ZMC2-Y		PACK	
※	60	VE 98 95 00	Pan Head Sems Screw	4×6 BS金メッキ			
	61	ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI		PACK	R
	62	KB 00 07 90	Fuse	T4A 250V			
	//	VD 37 09 00	//	10A 250V			R
	63	VE 40 28 00	Short Plug	PI6HQ			
	64	LB 10 01 80	//				
※	65	VE 27 49 00	Bottom Cover				
※	66	VE 27 48 00	Shield, Rear				
	67	VD 17 61 00	Leg Ass'y				
※	68	VE 27 38 00	Shield Plate				
※	69	VE 27 23 00	Base, Knob				
※	70	VE 27 22 00	Knob				VOLUME
※	71	VE 27 24 00	//				REC OUT
※	72	VE 27 25 00	//				BASS, MID, TREBLE, BLANCE
※	73	VE 27 43 00	Button				ボ タ ン TONE, BYPASS, SUBSONIC MODE, PHONO
	74	CB 60 56 20	Plastic Rivet				
	75	EK 33 60 10	BW Head Tapping Screw	3×8 FCM3-BI			
	76	EV 41 30 36	Toothed Lock Washer	M3 FCRM3-BI		PACK	
	77	VF 42 10 00	Washer				
		CB 06 92 50	Binding Tie	BK-1			
			Accessories				
※		VG 07 45 00	Remote Control Transmitter	RS-AX2000			
			Dry Cell	AA, R6			

※New Parts (新規部品)

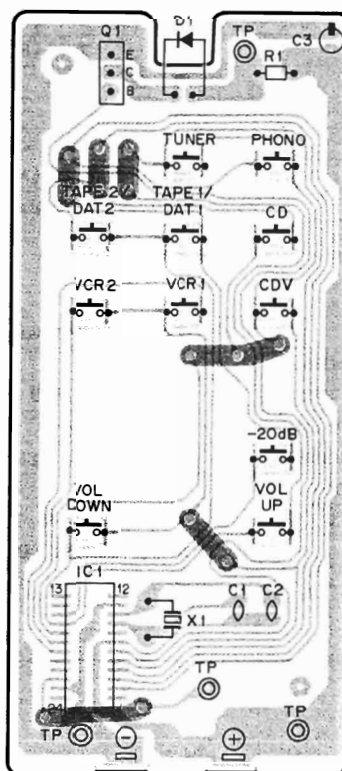
RS-AX2000 REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



KEY NO.	FUNCTION	DATA CODE
K 1		0 0
K 2		0 1
K 3		0 2
K 4		0 3
K 5		0 4
K 6		0 5
K 7		0 6
K 8		0 7
K 9		0 8
K10		0 9
K11		0 A
K12		0 B
K13		0 C
K14		0 D
K15		0 E
K16	VCR1	0 F
K17		1 0
K18		1 1
K19		1 2
K20	VCR2	1 3
K21	PHONO	1 4
K22	CD	1 5
K23	TUNER	1 6
K24	CDV	1 7
K25	TAPE1/DAT1	1 8
K26	TAPE2/DAT2	1 9
K27	VOL. UP	1 A
K28	VOL. DOWN	1 B
K29	MUTING-20dB	1 C
K30		1 D
K31		1 E
K32		1 F
CUSTOM CODE		
7A		

● PRINTED CIRCUIT BOARD



A

B

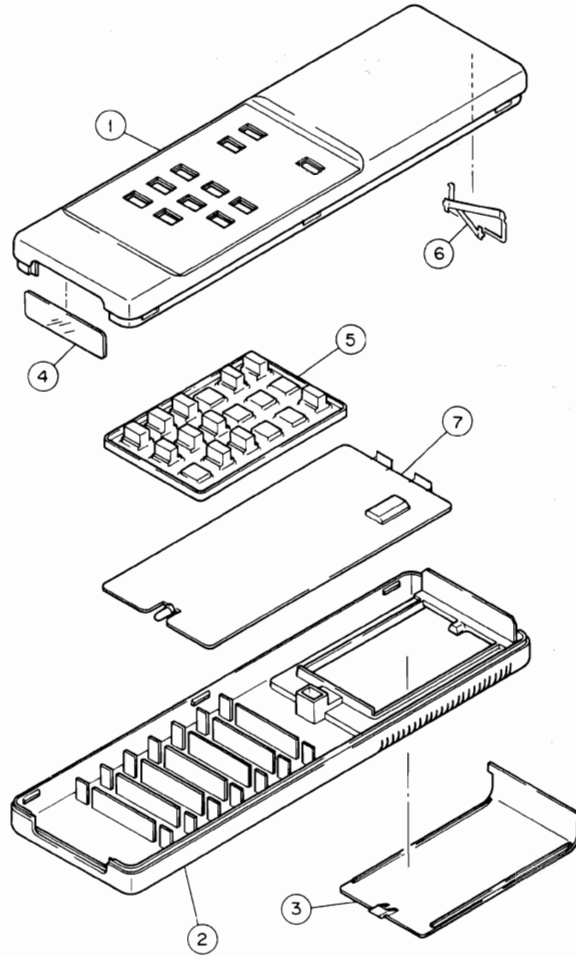
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D

E

AX-2000

EXPLODED VIEW



Ref. No.	Part No.	Description	部品名	Remarks/Markets	Common Model	ランク
※	VG 07 45 00	Remote Control Transmitter	RS-AX2000	リモートコントロールトランスミッター		EUR64428
※	1	CX 60 55 90	Case (A)	ケース (A)		UR64UCS651
	2	CX 60 04 80	Case (B)	ケース (B)	RS-KW5	UR64CS263
	3	CX 60 05 00	Lid	電池カバー	//	UR64EC264
	4	CX 60 05 10	Filter	スモーク板	//	UR52SB327
※	5	CX 60 27 90	Rubber	ゴム接点		UR64CT690
	6	LX 60 02 80	Battery Terminal	電池電極板 (A)	RS-KW5	UR52TD101
※	7	NX 60 15 80	P. C Board Ass'y	プリント基板 Ass'y		UR64VPB411
※	NX 60 15 80	P. C Board Ass'y		プリント基板 Ass'y		
	iX 60 89 70	IC	BU3503F	I C	IC 1	
	QX 60 00 20	Ceramic Resonator	CSB455EB1	セラミック振動子	X 1	
	iX 60 53 10	Transistor	UNI231	トランジスター	Q 1	
	iX 60 86 10	LED	TLN105A-C	赤外線 LED	D 1	
	FG 21 21 00	Ceramic Cap.	100pF 50V	セラコン	C 1, 2	
	HJ 35 31 00	Carbon Film Resistor	1 Ω	カーボン抵抗	R 1	
	LX 60 02 90	Battery Terminal (B)		電池電極板 (B)		
	UH 14 64 70	Electrolytic Cap.	4.7μ 25V	ケミコン	C 3	

※ New Parts (新規部品)

Parts List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	HF853100	12KΩ	HJ357120	HF857120
1.8 "	HJ353180	*	15 "	HJ357150	HF857150
2.2 "	HJ353220	HF853220	18 "	HJ357180	HF857180
3.3 "	HJ353330	HF853330	22 "	HJ357220	HF857220
4.7 "	HJ353470	HF853470	27 "	HJ357270	HF857270
5.6 "	HJ353560	HF853560	33 "	HJ357330	HF857330
10 "	HJ354100	HF854100	39 "	HJ357390	HF857390
15 "	HJ354150	HF854150	47 "	HJ357470	HF857470
22 "	HJ354220	HF854220	56 "	HJ357560	HF857560
27 "	HJ354270	HF854270	68 "	HJ357680	HF857680
33 "	HJ354330	HF854330	82 "	HJ357820	HF857820
39 "	HJ354390	HF854390	91 "	HJ357910	HF857910
47 "	HJ354470	HF854470	100 "	HJ358100	HF858100
56 "	HJ354560	HF854560	120 "	HJ358120	HF858120
68 "	HJ354680	HF854680	150 "	HJ358150	HF858150
82 "	HJ354820	HF854820	180 "	HJ358180	HF858180
100 "	HJ355100	HF855100	220 "	HJ358220	HF858220
110 "	HJ355110	HF855110	270 "	HJ358270	HF858270
120 "	HJ355120	HF855120	330 "	HJ358330	HF858330
150 "	HJ355150	HF855150	390 "	HJ358390	HF858390
160 "	HJ355160	*	470 "	HJ358470	HF858470
180 "	HJ355180	HF855180	560 "	HJ358560	HF858560
220 "	HJ355220	HF855220	680 "	HJ358680	HF858680
270 "	HJ355270	HF855270	820 "	HJ358820	HF858820
330 "	HJ355330	HF855330	1.0MΩ	HJ359100	HF859100
390 "	HJ355390	HF855390	1.2 "	HJ359120	*
470 "	HJ355470	HF855470	1.5 "	HJ359150	HF859150
510 "	*	HF855510	1.8 "	HJ359180	HF859180
560 "	HJ355560	HF855560	2.2 "	HJ359220	HF859220
680 "	HJ355680	HF855680	3.3 "	HJ359330	HF859330
820 "	HJ355820	HF855820	3.9 "	HJ359390	*
910 "	HJ355910	HF855910	4.7 "	HJ359470	HF859470
1.0KΩ	HJ356100	HF856100			
1.2 "	HJ356120	HF856120			
1.5 "	HJ356150	HF856150			
1.8 "	HJ356180	HF856180			
2.0 "	HJ356200	HF856200			
2.2 "	HJ356220	HF856220			
2.4 "	HJ356240	HF856240			
2.7 "	HJ356270	HF856270			
3.0 "	HJ356300	HF856300			
3.3 "	HJ356330	HF856330			
3.6 "	HJ356360	HF856360			
3.9 "	HJ356390	HF856390			
4.7 "	HJ356470	HF856470			
5.1 "	HJ356510	HF856510			
5.6 "	HJ356560	HF856560			
6.8 "	HJ356680	HF856680			
8.2 "	HJ356820	HF856820			
9.1 "	HJ356910	HF856910			
10 "	HJ357100	HF857100			

1/4W Type

HJ35 ○○○○

10mm

1/6W Type

HF85 ○○○○

5mm

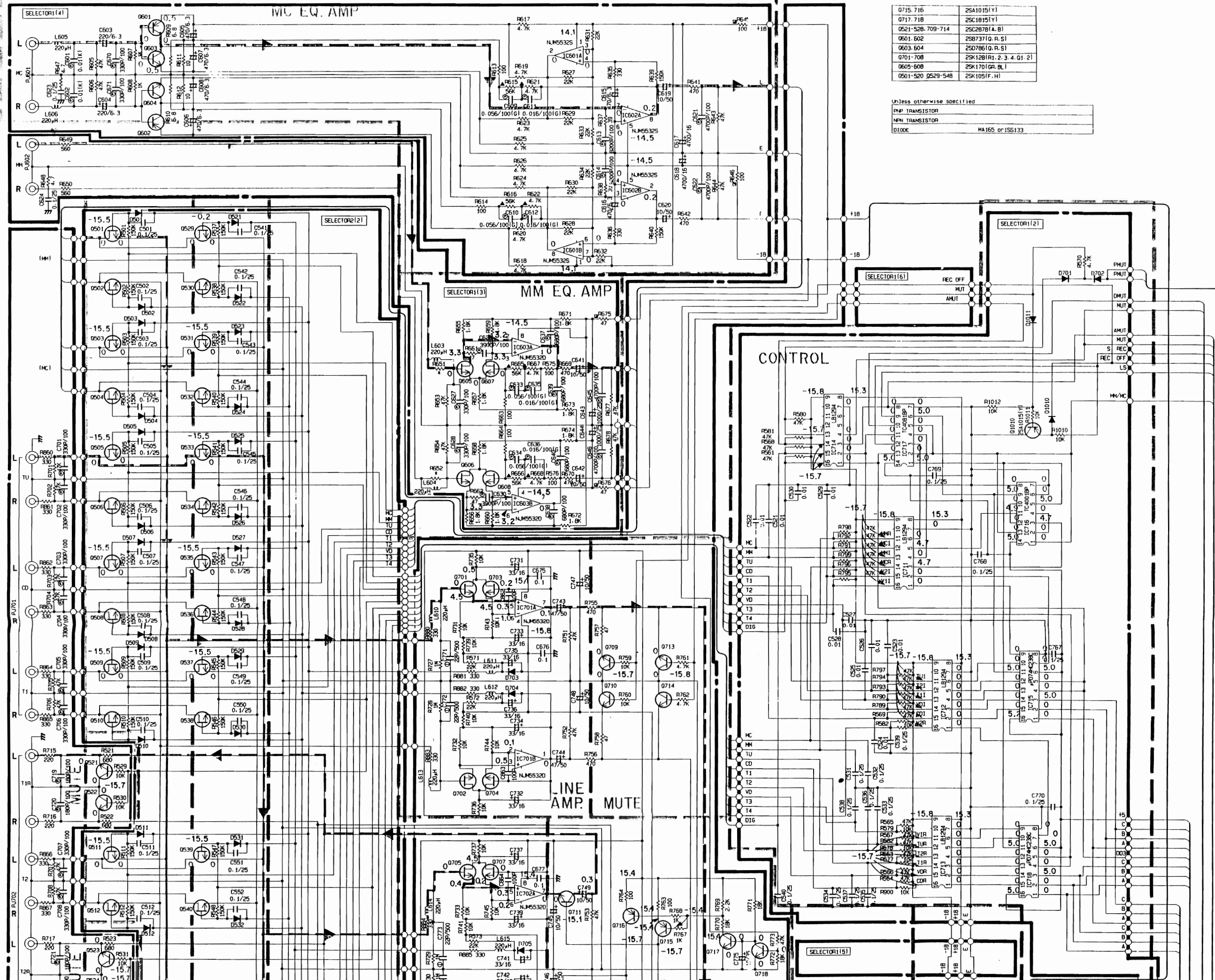
AX-2000

YAMAHA

SCHEMATIC DIAGRAM (W Model)

0715-716	2SA1015(Y)
0717-718	2SC1815(Y)
0521-528-709-714	2SC2878(A, B)
0601-602	2SB737(G, R, S)
0603-604	2SD7861(G, R, S)
0701-708	2SK1281(R1, 2, 3, 4, Q1, 2)
0605-608	2SK1701(G, B, L)
0501-520 0529-548	2SK1051(F, H)

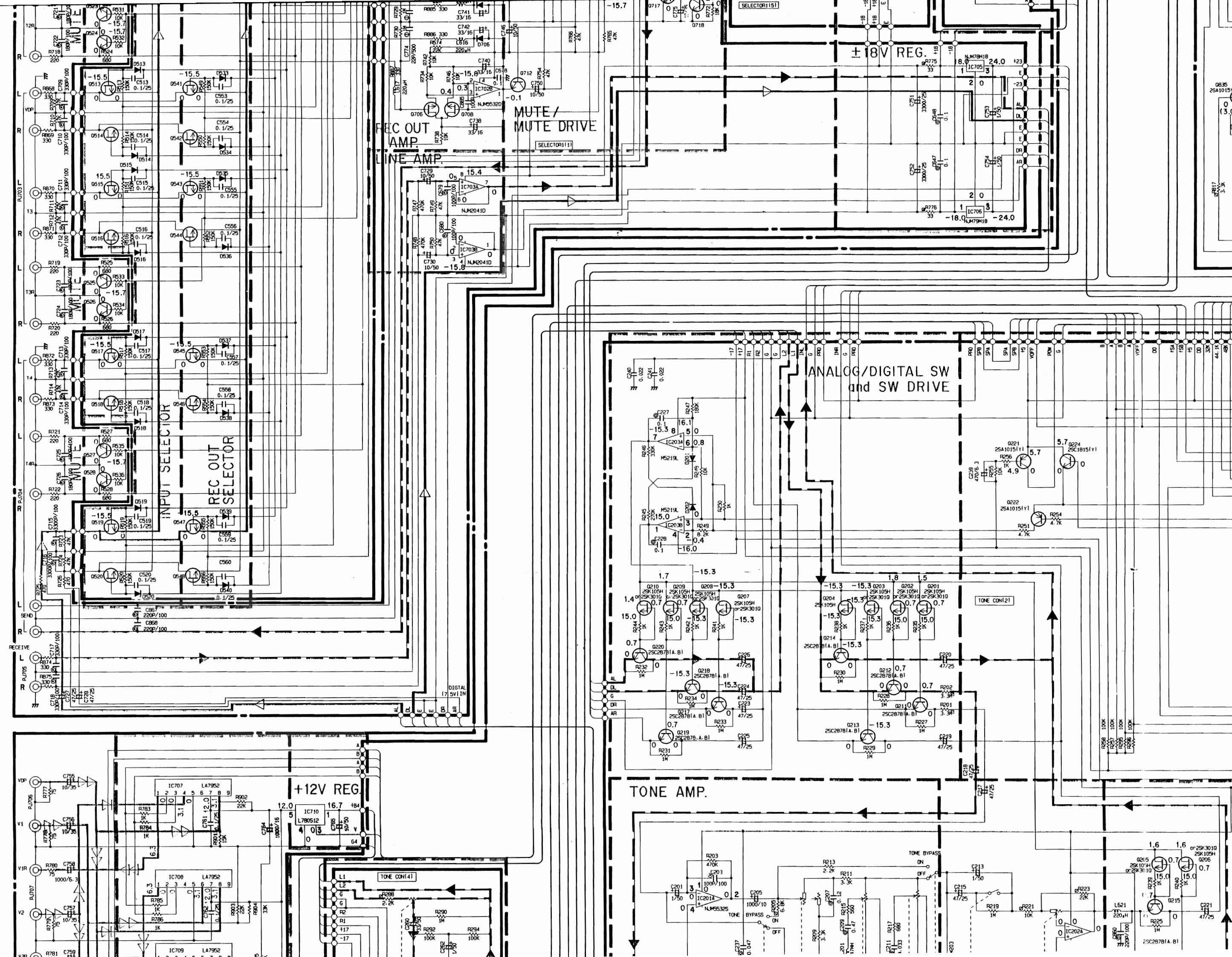
Unless otherwise specified
 PNP TRANSISTOR
 NPN TRANSISTOR
 DIODE MA165 or 1SS133



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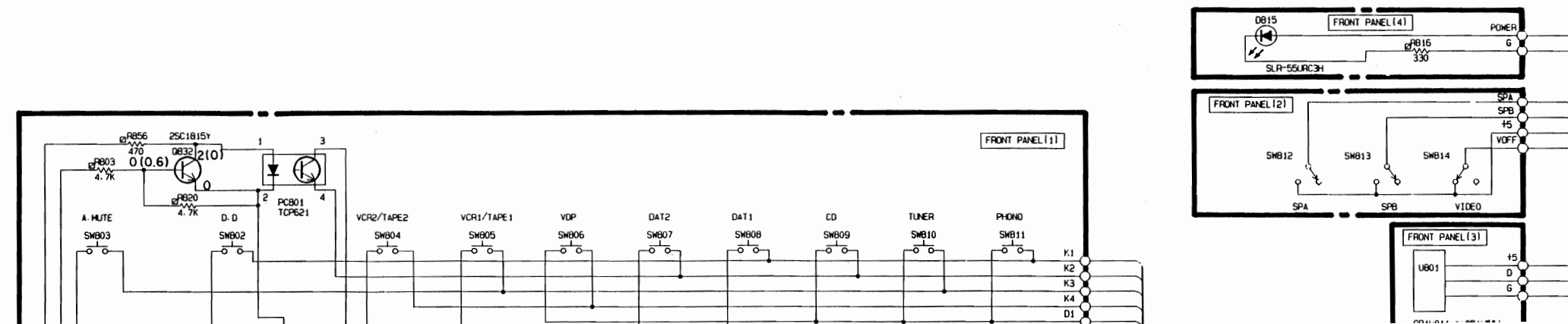
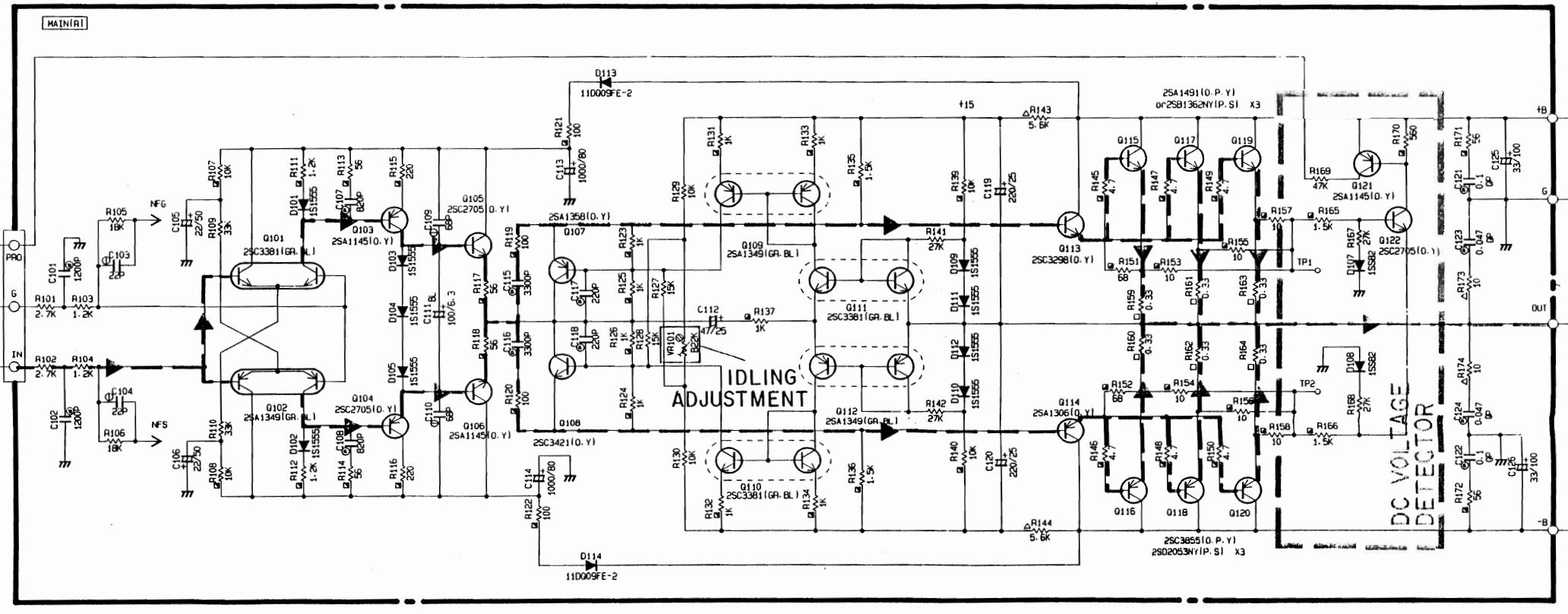
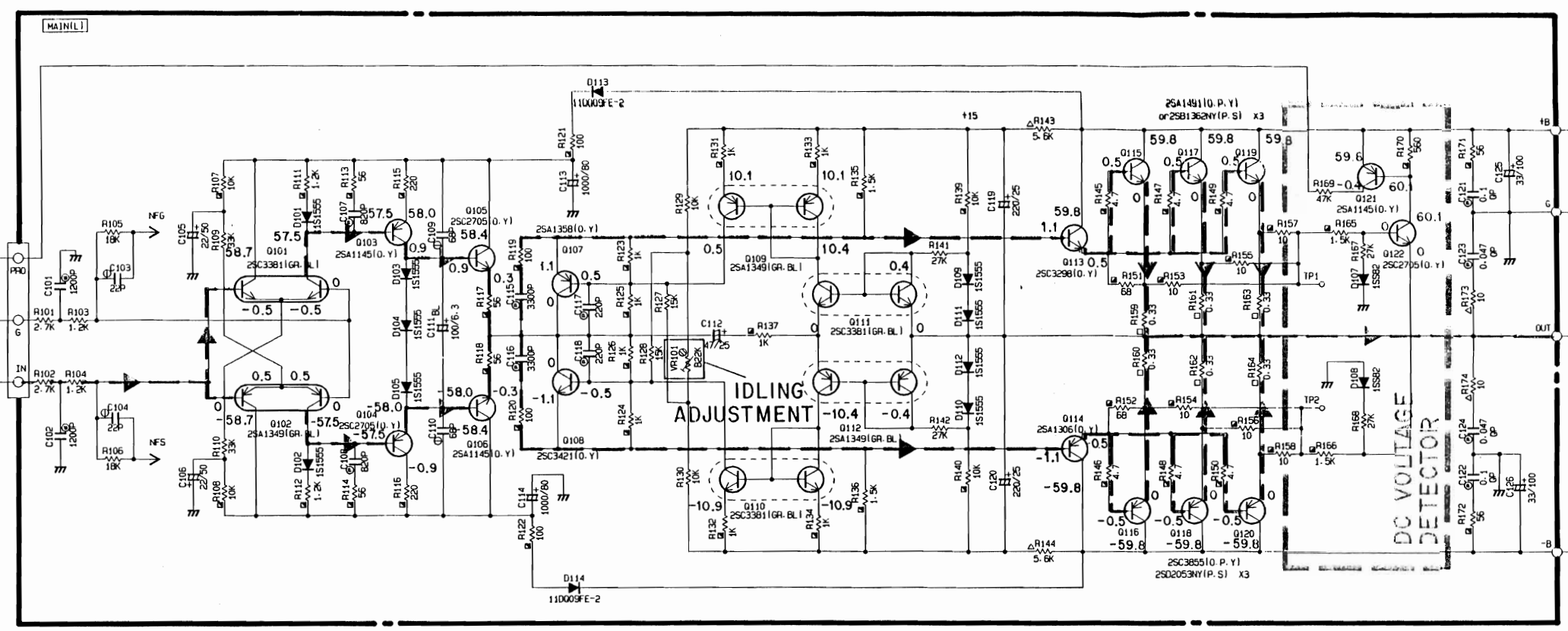
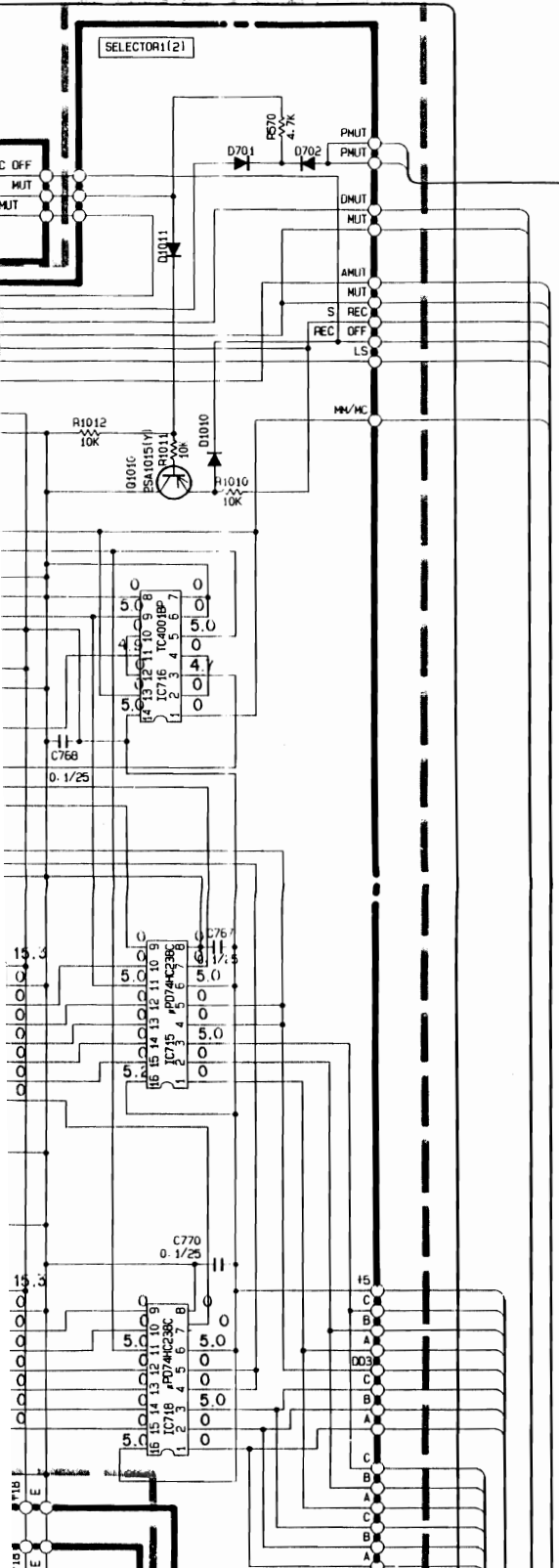
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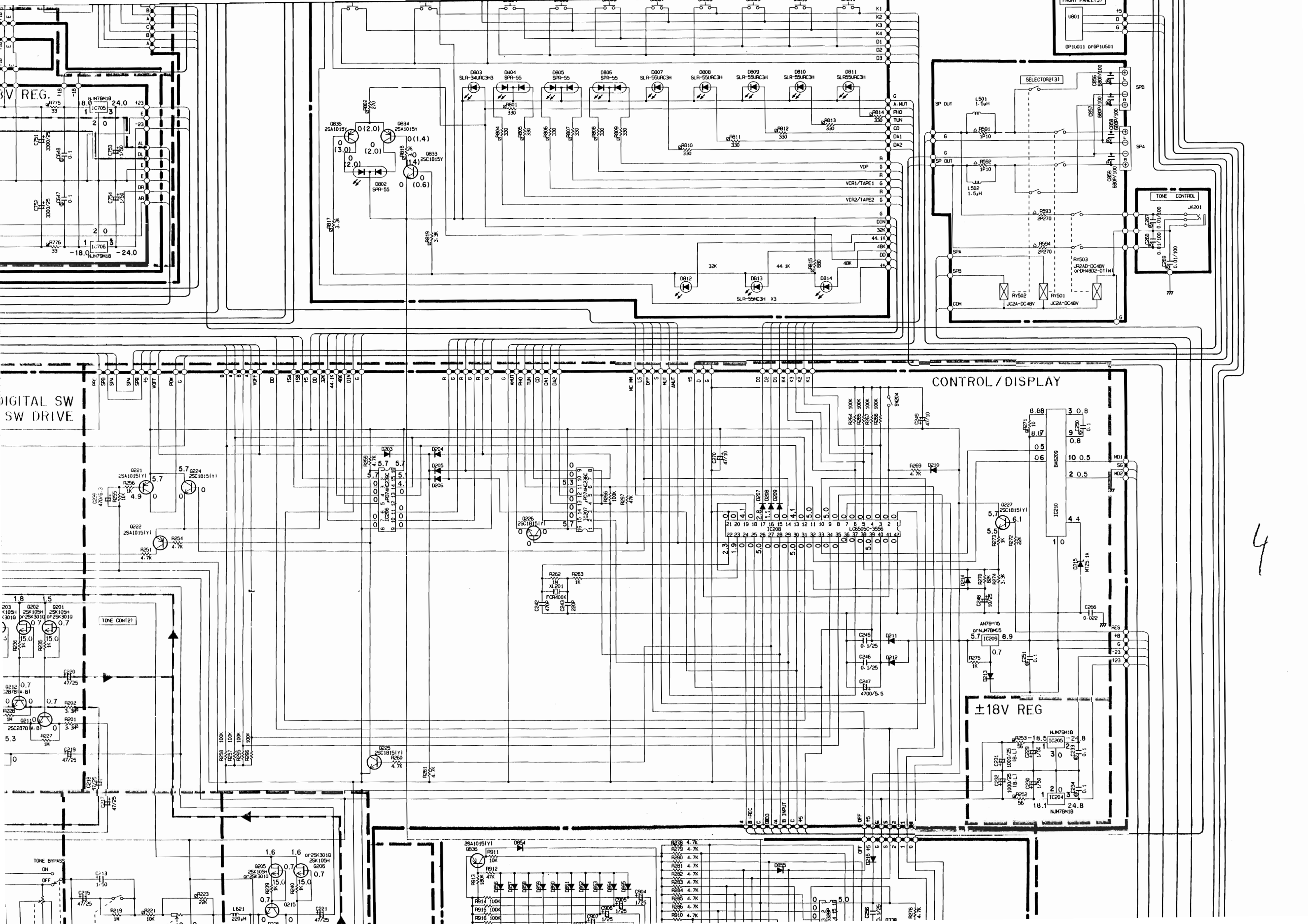
SCHEMATIC DIAGRAM
MODEL AX-2000
KEC-

2SA1015(Y)
2SC1815(Y)
2SC2878(A, B)
2SB737(G, R, S)
2SD786(G, R, S)
2SK128(R1, 2, 3, 4, Q1, 2)
2SK170(GR, BL)
2SK105(F, HI)

MA165 or 1S133



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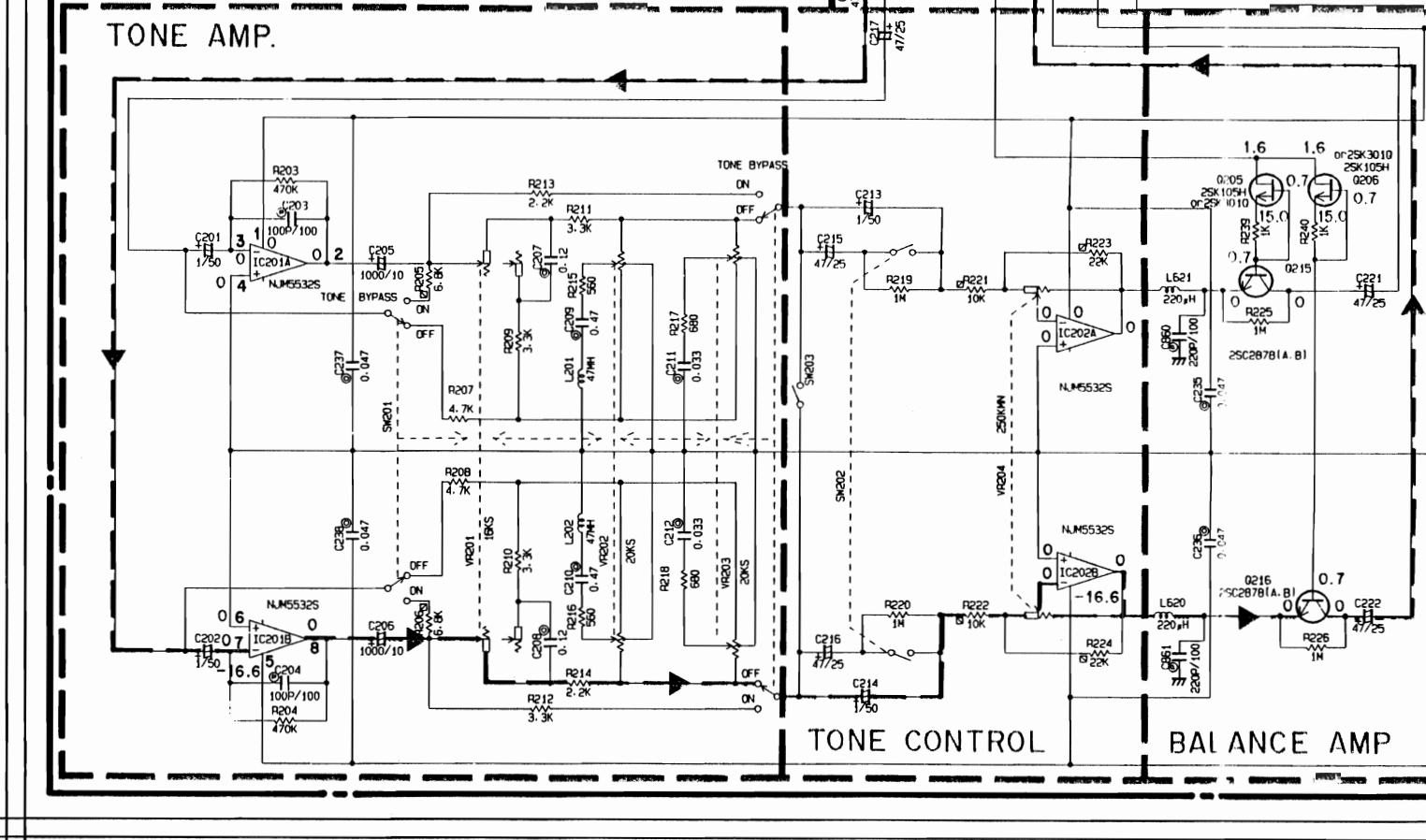
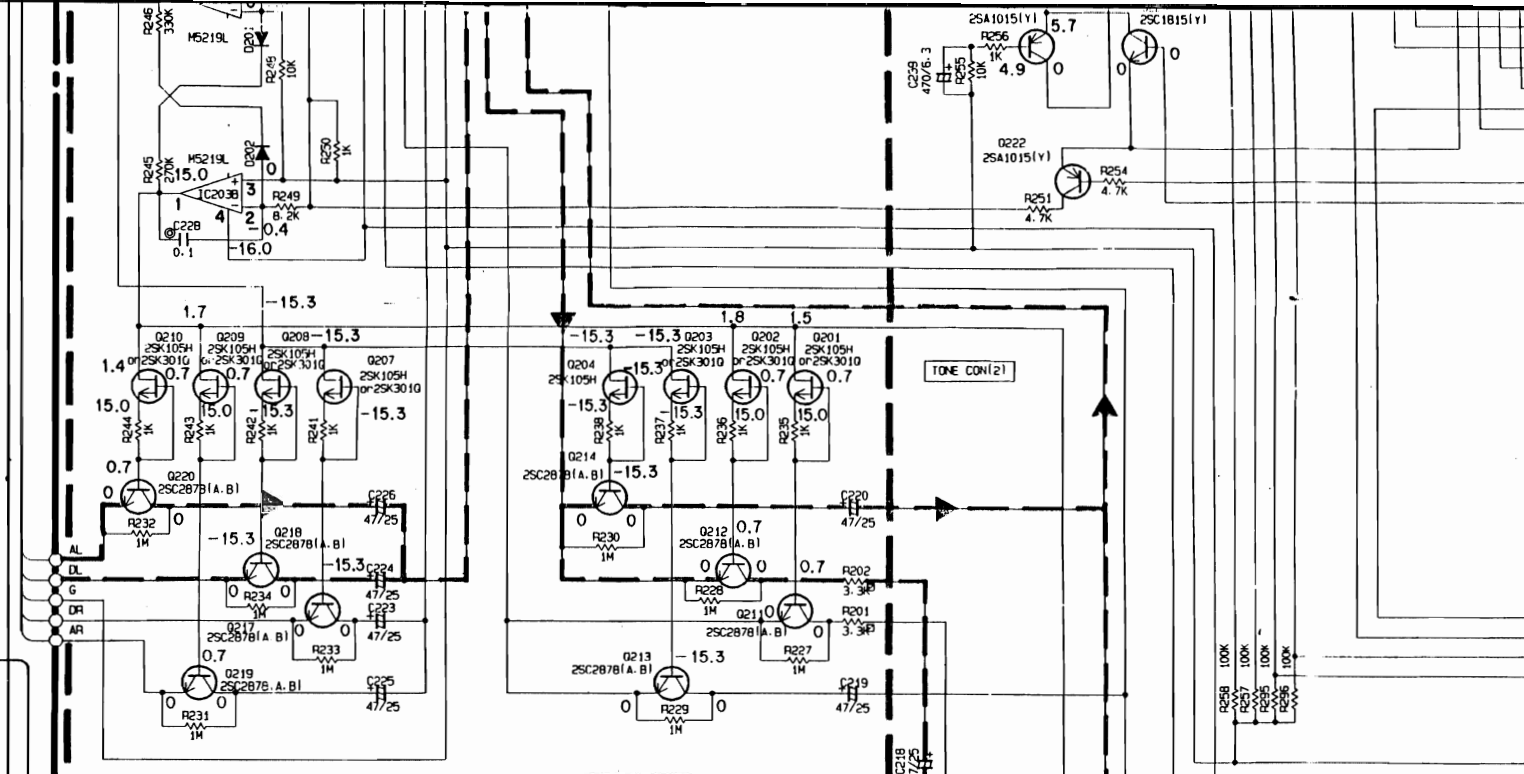
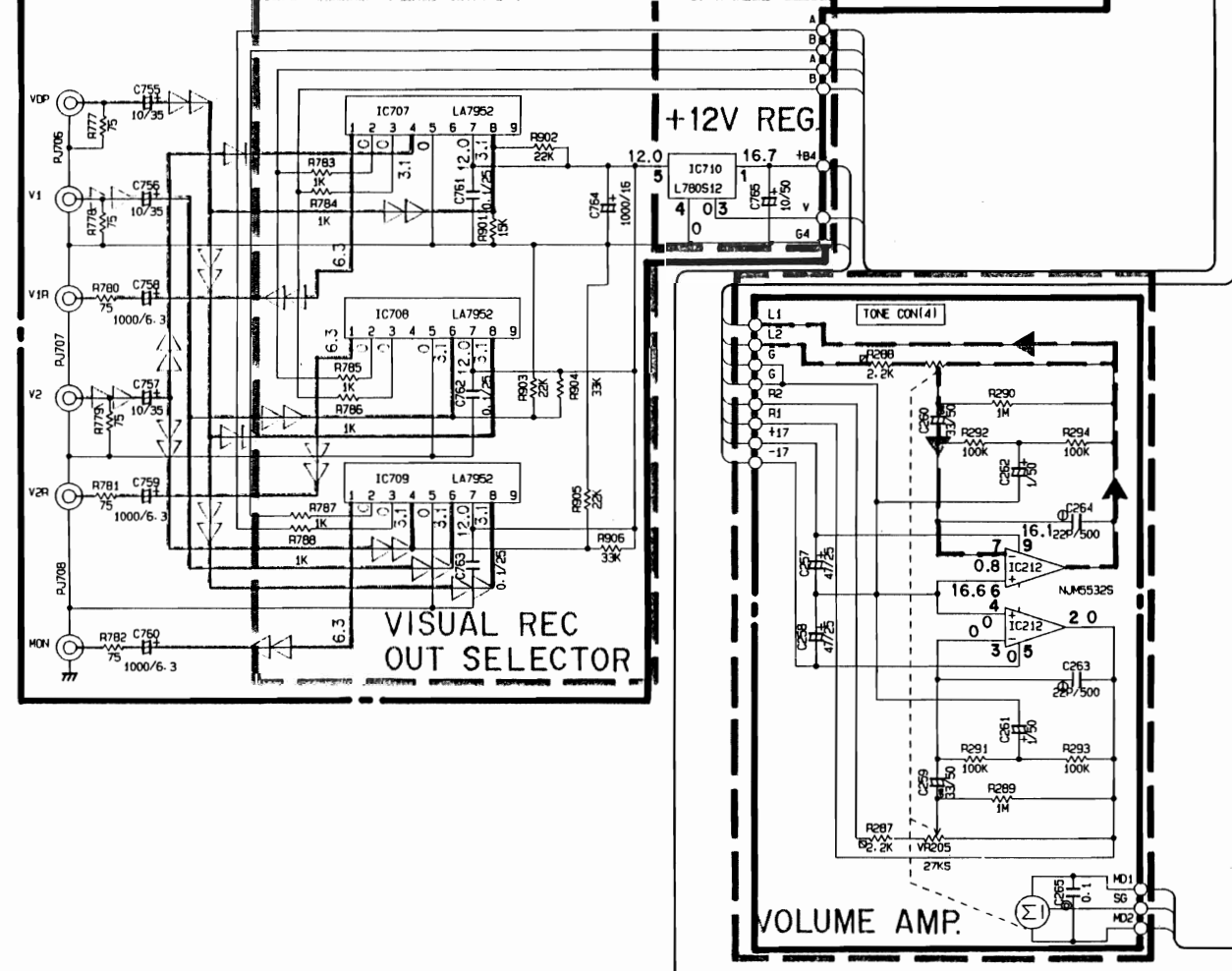
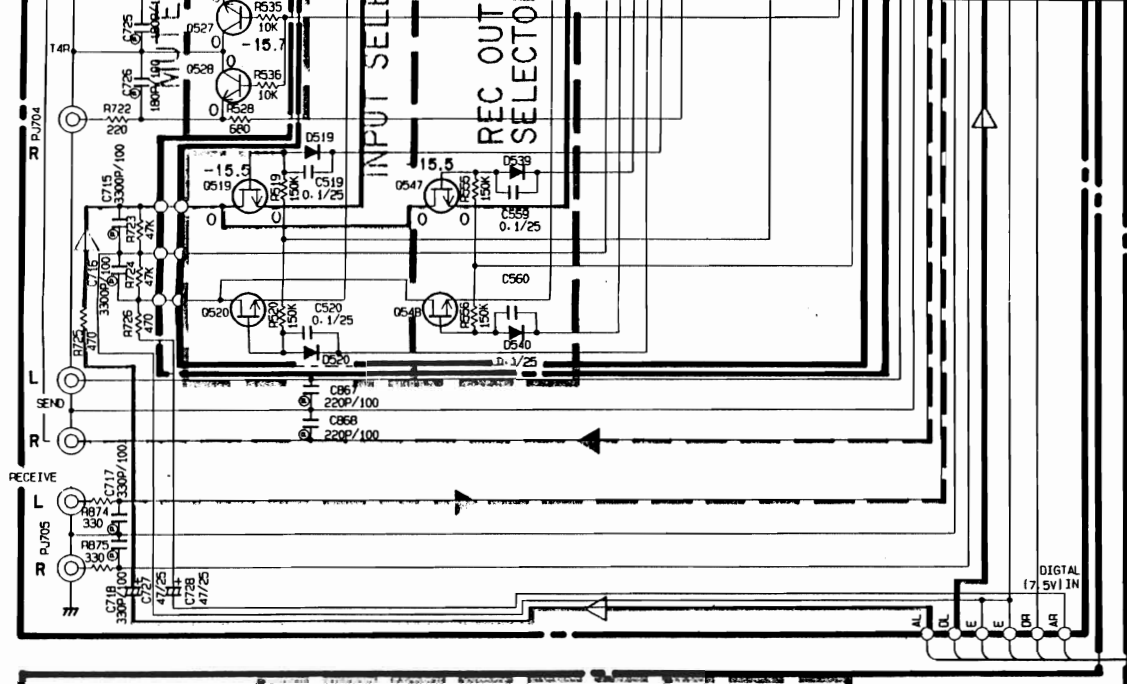
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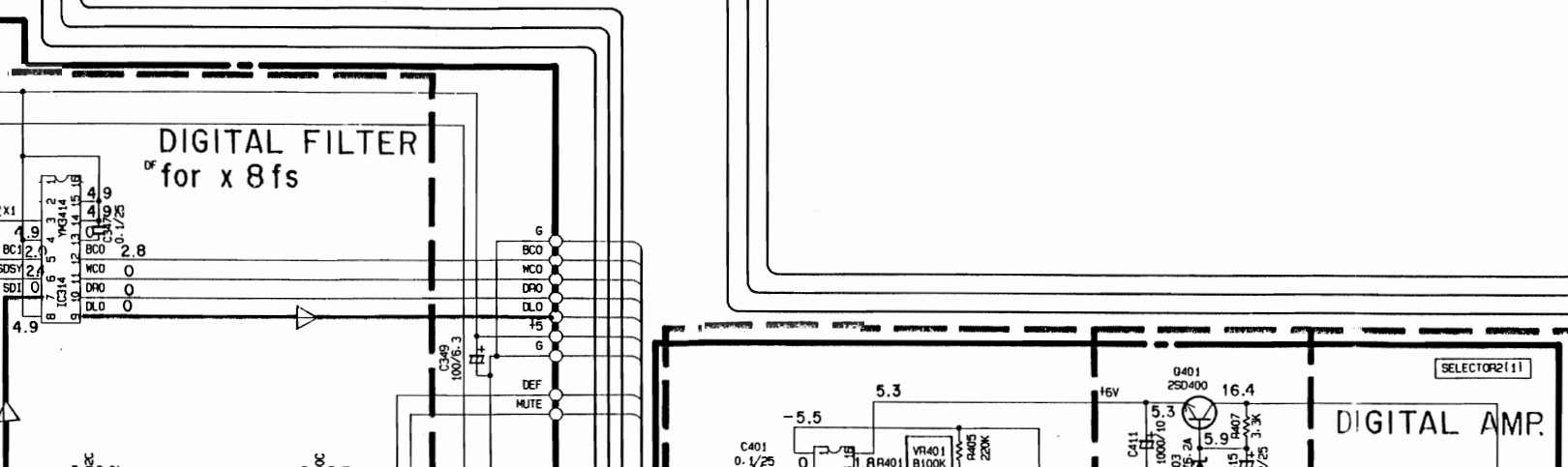
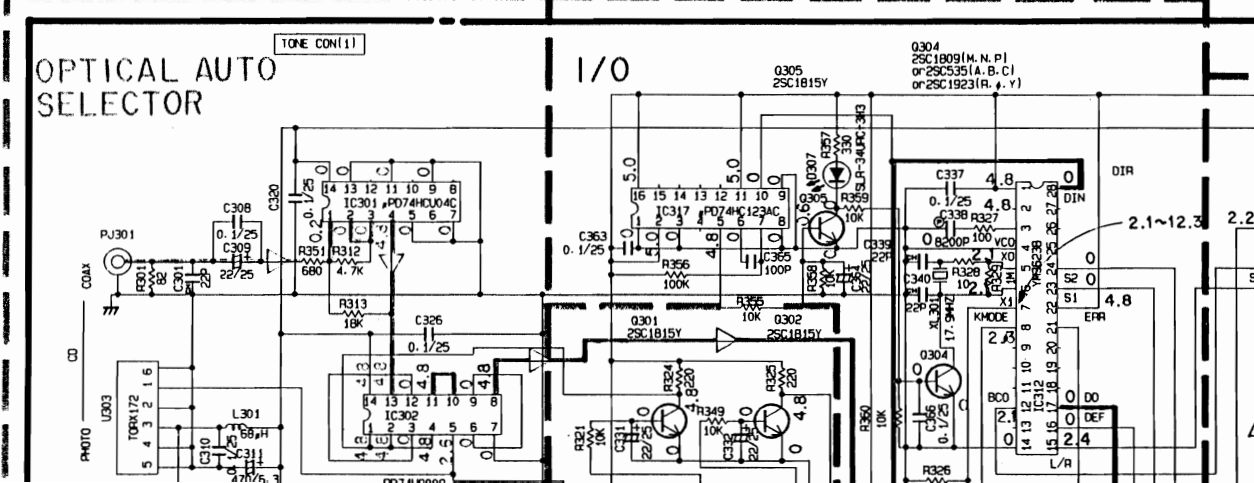
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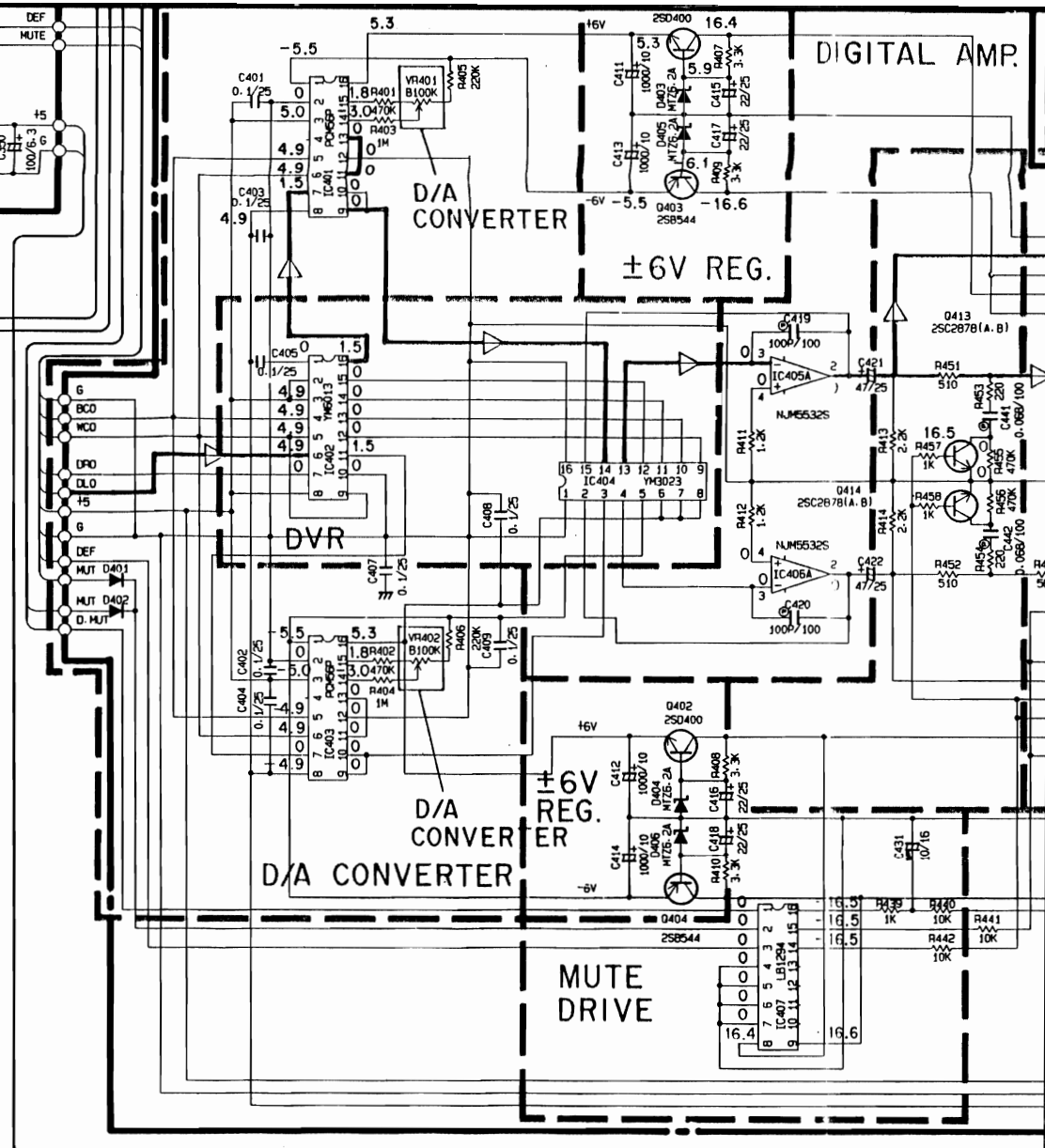
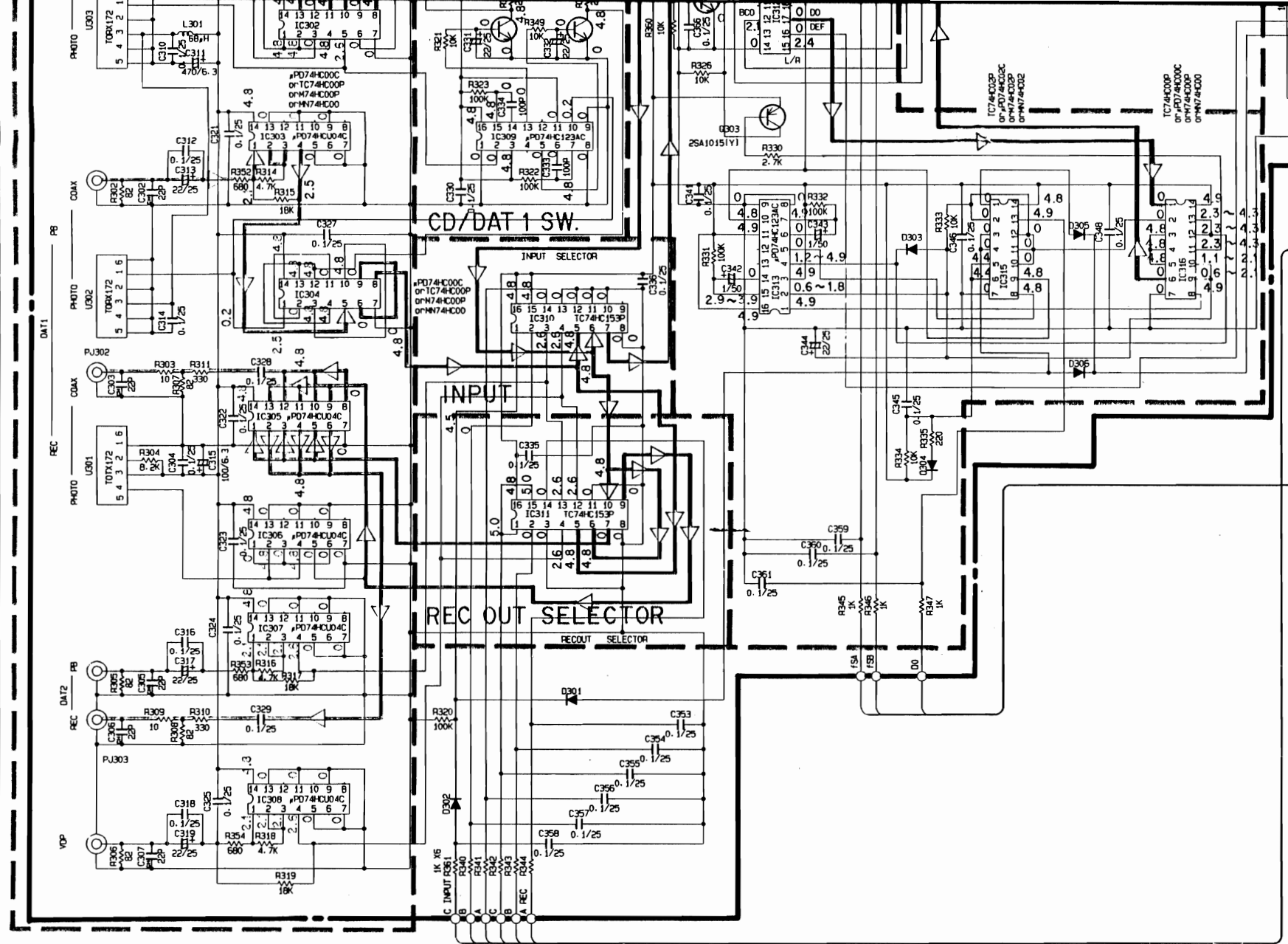
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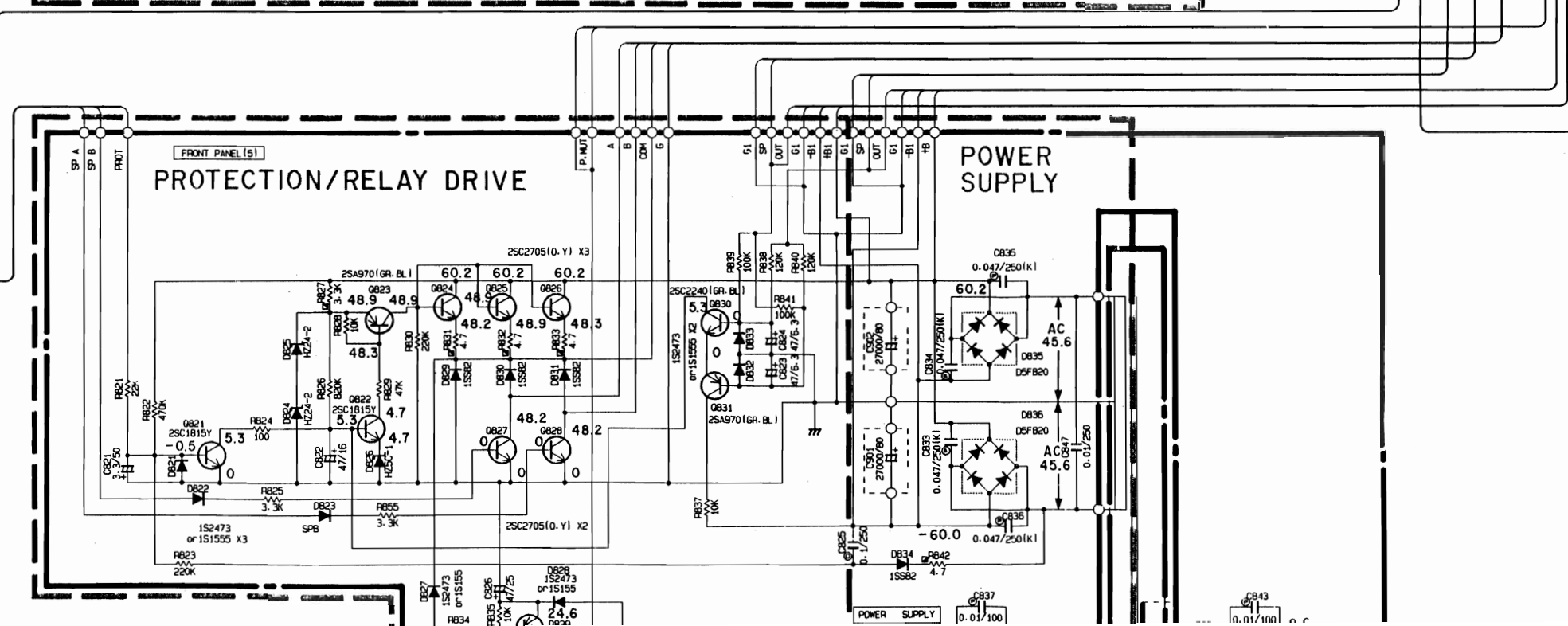
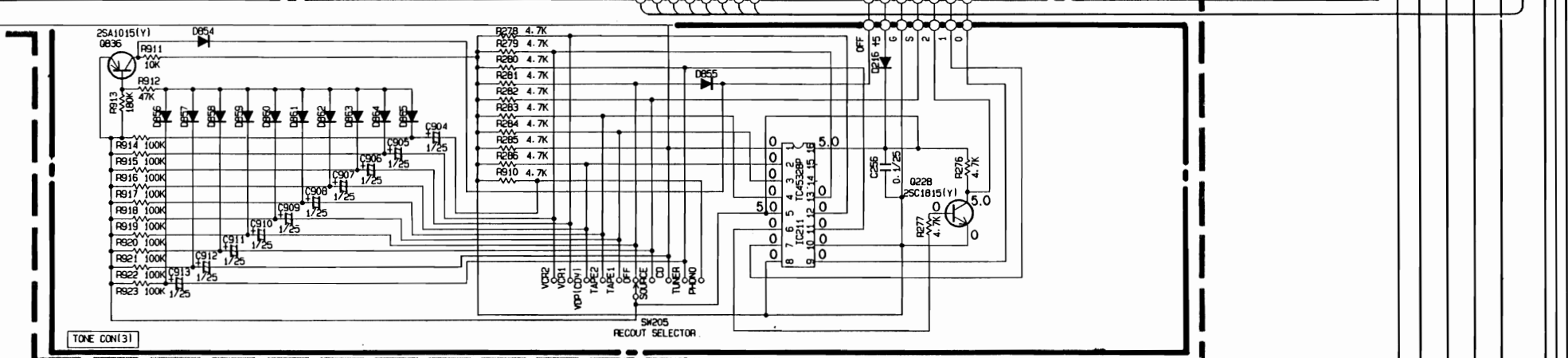
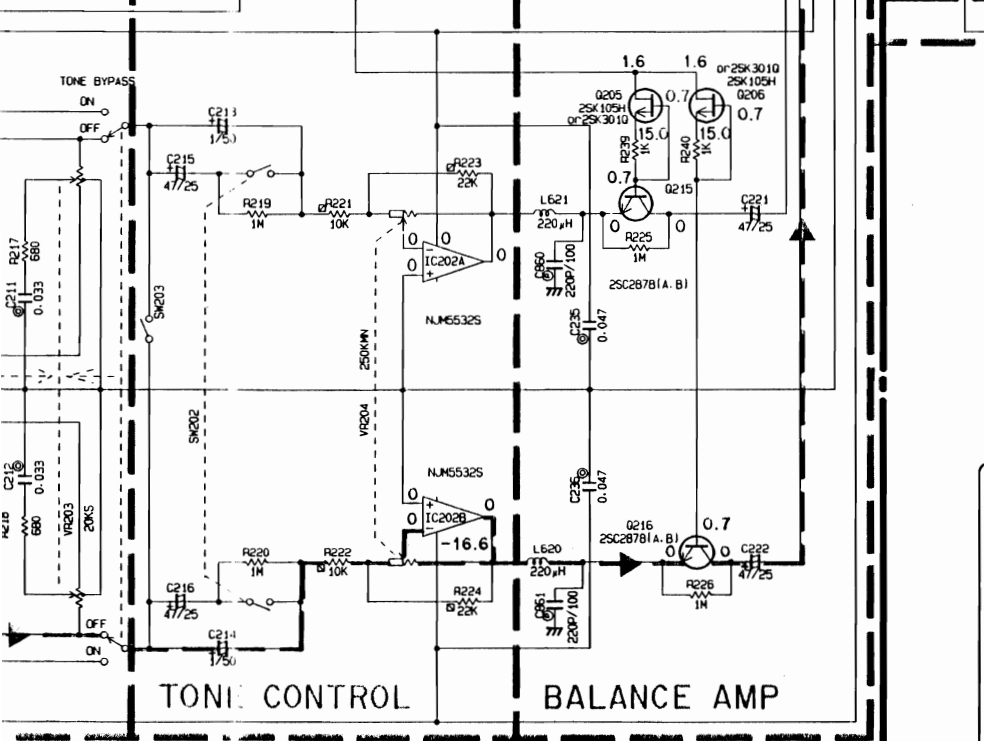
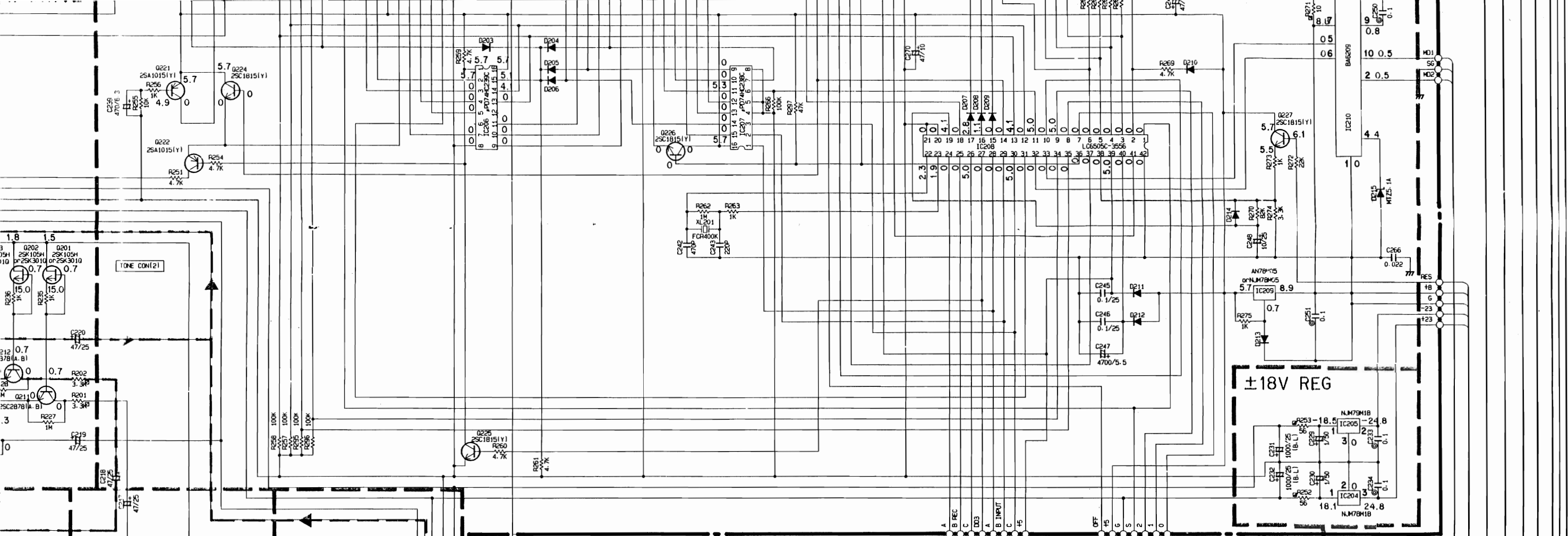
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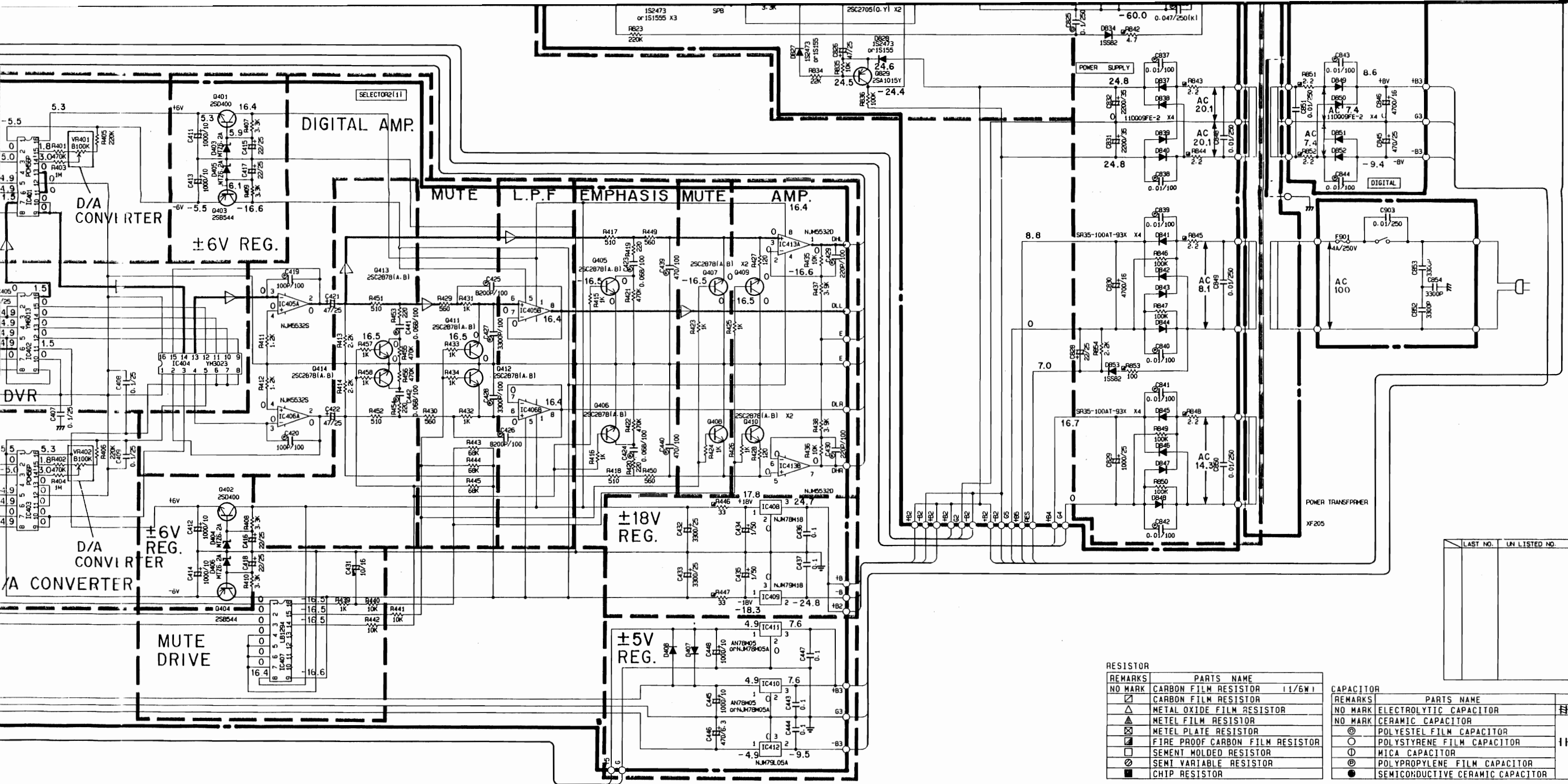
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<p>2SA970 (GR, BL) 2SA1015 (Y) 2SA1145 (O, Y) 2SB544 2SB737 (Q, R, S) 2SC535 (A, B, C) 2SC1809 (M, N, P) 2SC1815 (Y) 2SC1923 (R, O, Y)</p>	<p>2SC2240 (GR, BL) 2SC2705 (O, Y) 2SC2878 (A, B) 2SD400 2SD786 (Q, R, S)</p>	<p>2SA1358 2SC3421</p>	<p>2SA1306 (O, Y) 2SC3298 (O, Y)</p>	<p>2SA1491A (O, P, Y) 2SB1362NY (P, S) 2SC3855A (O, P, Y) 2SD2053NY (P, S)</p>	<p>2SA1349 (GR, BL) 2SC3381 (GR, BL)</p>	<p>2SK105 (F, H) 2SK170 (GR, BL)</p>	<p>11DQ09FE-2 1S1555 1S2473 1SS82 1SS133 1SR35-100AT-93X MA165 MTZ5.1A MTZ6.2A</p>	<p>HZ5C-1 HZ24-2</p>	<p>D5FB20</p>	<p>SLR-34URC3H3 SLR-55MC3H SLR-55URC3H</p>	<p>NJM79L05A</p>
<p>NJM78M05 NJM78M05A NJM78M18 NJM79M18</p>	<p>L780S12</p>	<p>M5219L</p>	<p>NJM5532D</p>	<p>LA7952 NJM532S</p>	<p>BA6209</p>	<p>TC4001BP TC4081BP M74HC00P TC74HC00P M74HC02P TC74HC02PP μPD74HCU04C</p>	<p>TC4532BP TC74HC153P μPD74HC123AC μPD74HC238C μPD74HC239C LB1294 PCM56P YM3023</p>	<p>YM3413 YM6013</p>	<p>YM3623B</p>	<p>LC6505C-3556</p>	



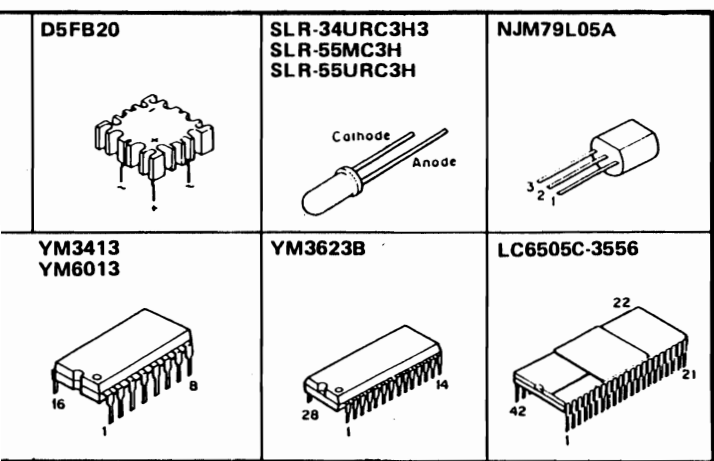
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RESISTOR		CAPACITOR	
REMARKS	PARTS NAME	REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR 1/16W	NO MARK	ELECTROLYTIC CAPACITOR
□	CARBON FILM RESISTOR	NO MARK	CERAMIC CAPACITOR
△	METAL OXIDE FILM RESISTOR	⊖	POLYESTER FILM CAPACITOR
▲	METAL FILM RESISTOR	○	POLYSTYRENE FILM CAPACITOR
⊗	METAL PLATE RESISTOR	Ⓜ	MICA CAPACITOR
■	FIRE PROOF CARBON FILM RESISTOR	Ⓟ	POLYPROPYLENE FILM CAPACITOR
□	CEMENT MOLDED RESISTOR	●	SEMICONDUCTIVE CERAMIC CAPACITOR
⊙	SEMI VARIABLE RESISTOR		
■	CHIP RESISTOR		

LAST NO.	UN LISTED NO.



CAUTION

- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- All voltages are measured with a 10M Ω /V DC electric volt meter.
- Schematic diagram is subject to change without notice.

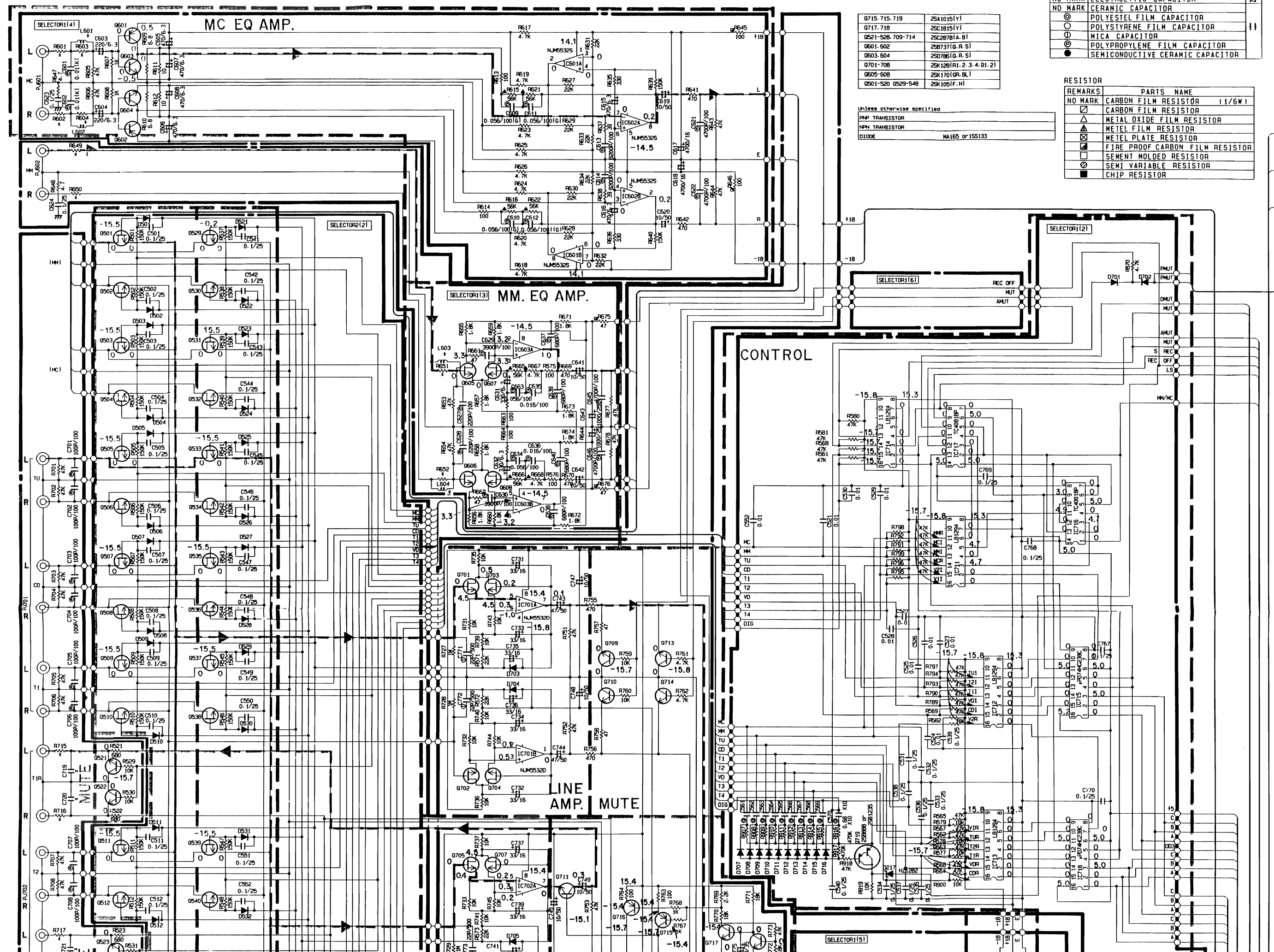
SCHEMATIC DIAGRAM (R Model)

CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊖	CERAMIC CAPACITOR
⊙	POLYESTER FILM CAPACITOR
⊕	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

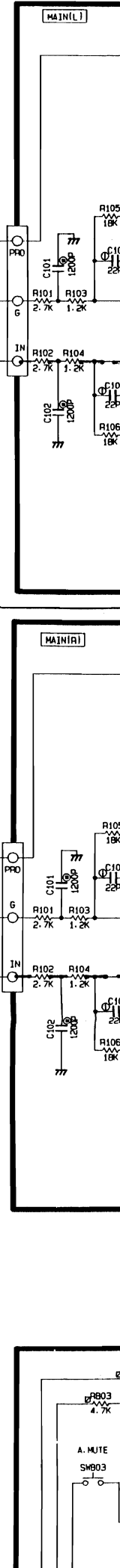
RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
⊠	CARBON FILM RESISTOR
⊡	METAL OXIDE FILM RESISTOR
⊢	METAL FILM RESISTOR
⊣	METAL FLAME RESISTOR
⊤	FIRE PROOF CARBON FILM RESISTOR
⊥	SEMENT MOLDED RESISTOR
⊦	SEMI VARIABLE RESISTOR
⊧	CHIP RESISTOR

0715-715-719	25A1015(V)
0717-718	25C1815(V)
0521-526-709-714	25C2878(A,B)
0601-602	25B737(Q,R,S)
0603-604	25D786(Q,R,S)
0701-708	25K128(R1, 2, 3, 4, 01, 2)
0605-606	25K170(GR, BL)
0501-520 0529-548	25K105(F, H)

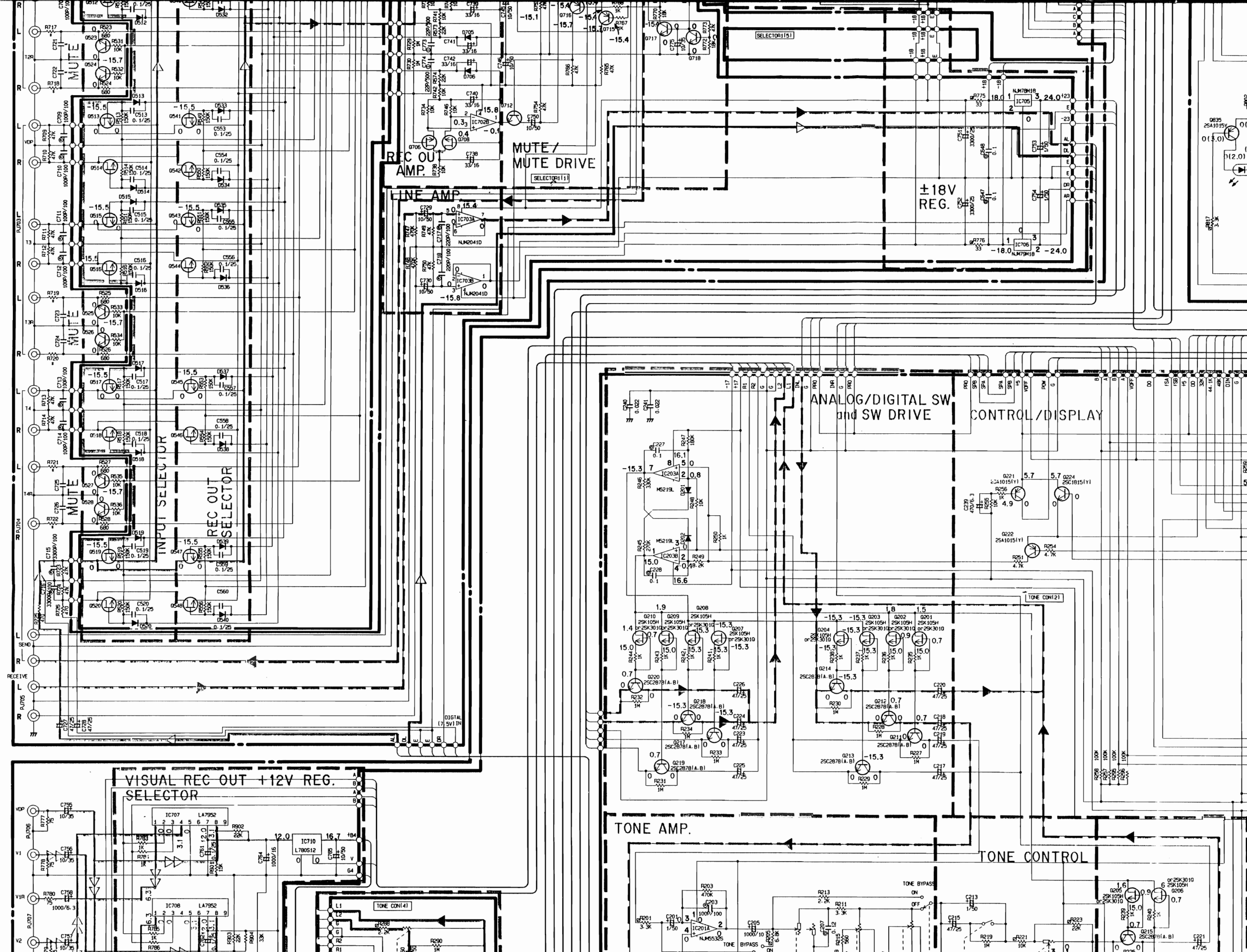
Unless otherwise specified
 PNP TRANSISTOR
 NPN TRANSISTOR
 DIODE MA165 or 1SS133



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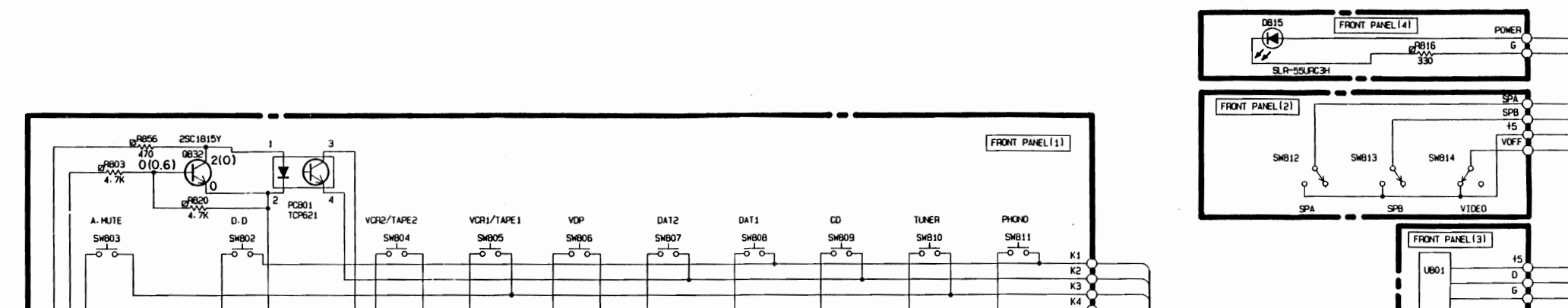
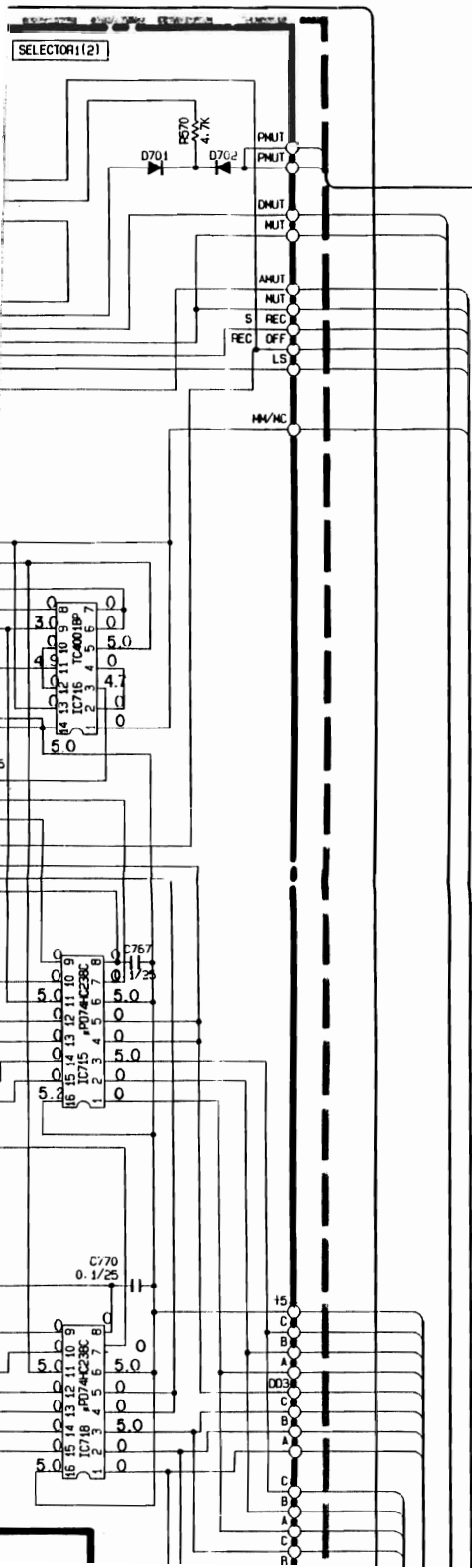
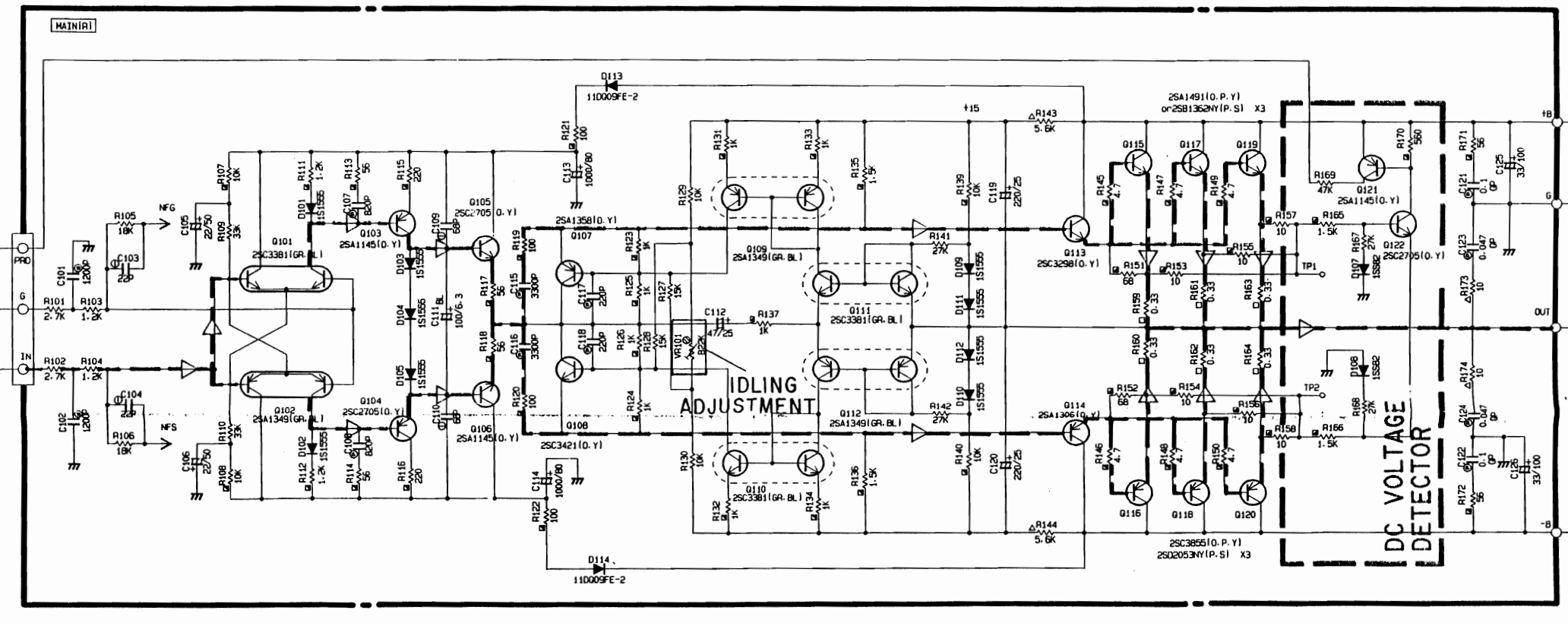
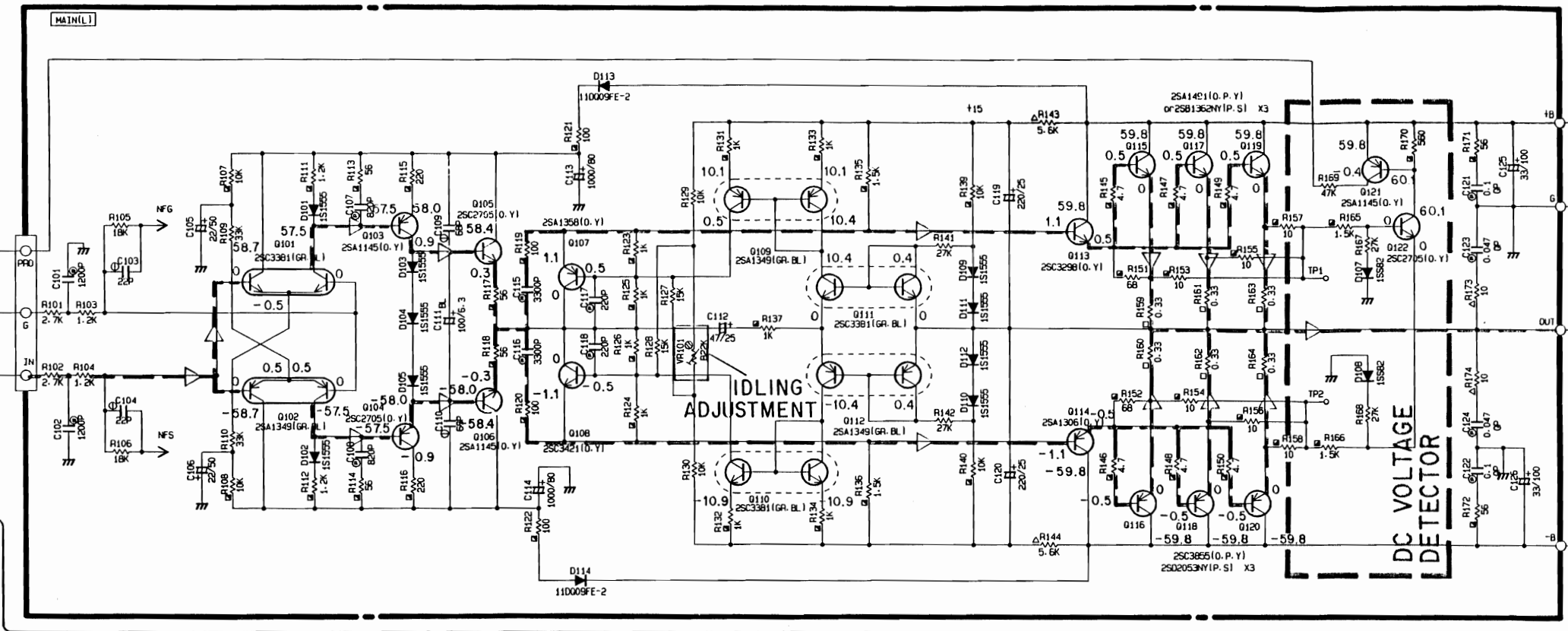
CAPACITOR

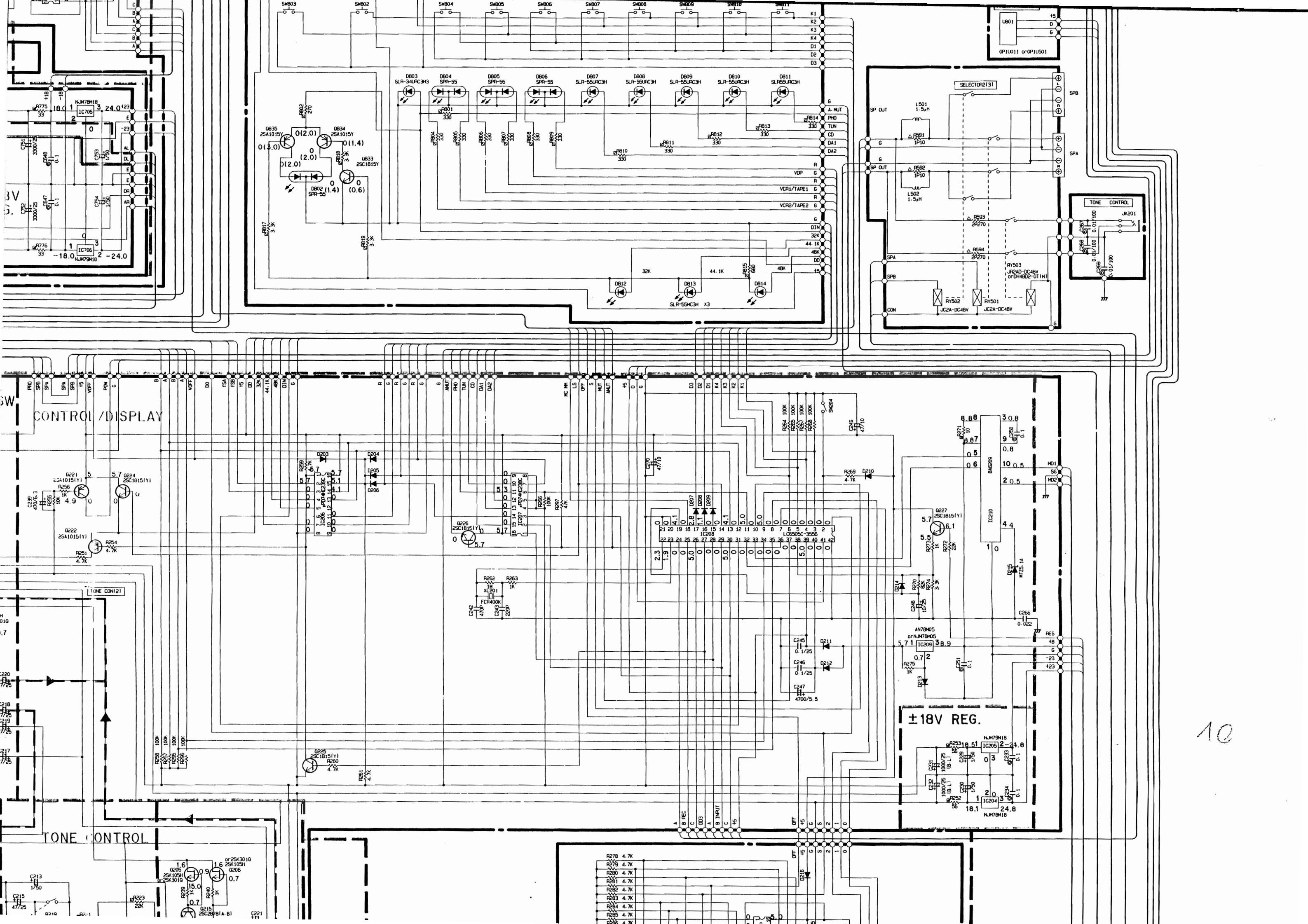
REMARKS	PARTS NAME
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NO MARK	CERAMIC CAPACITOR
⊙	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR

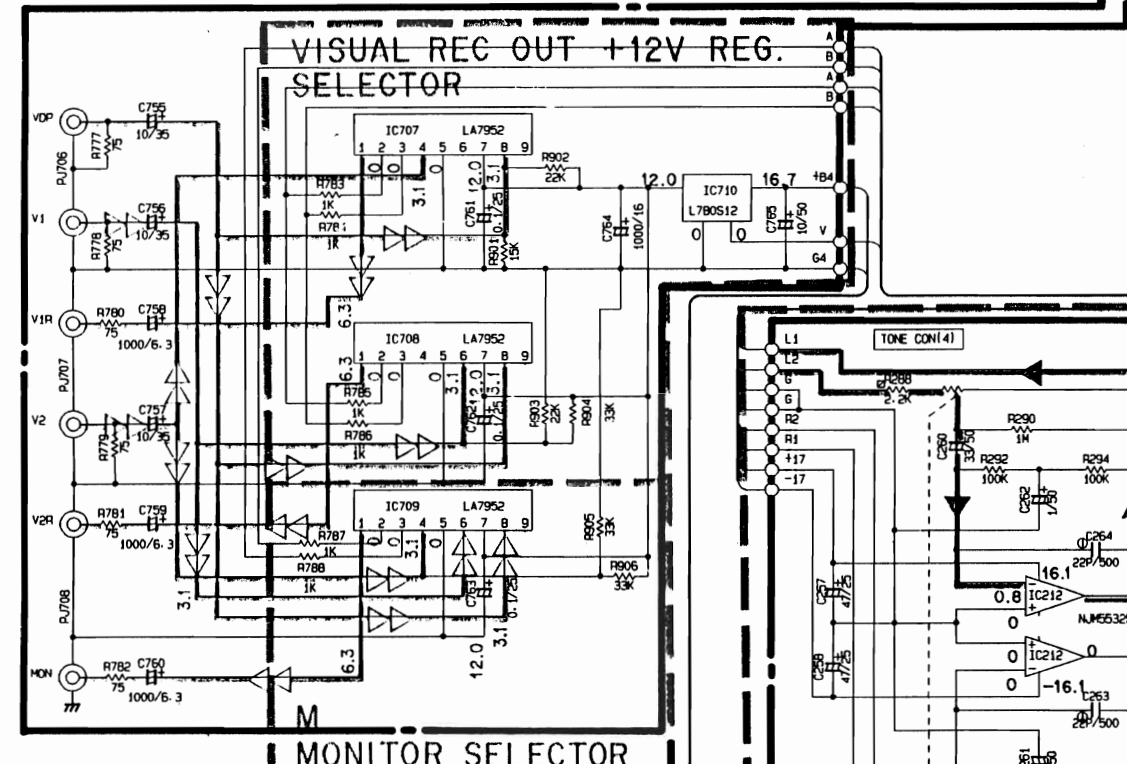
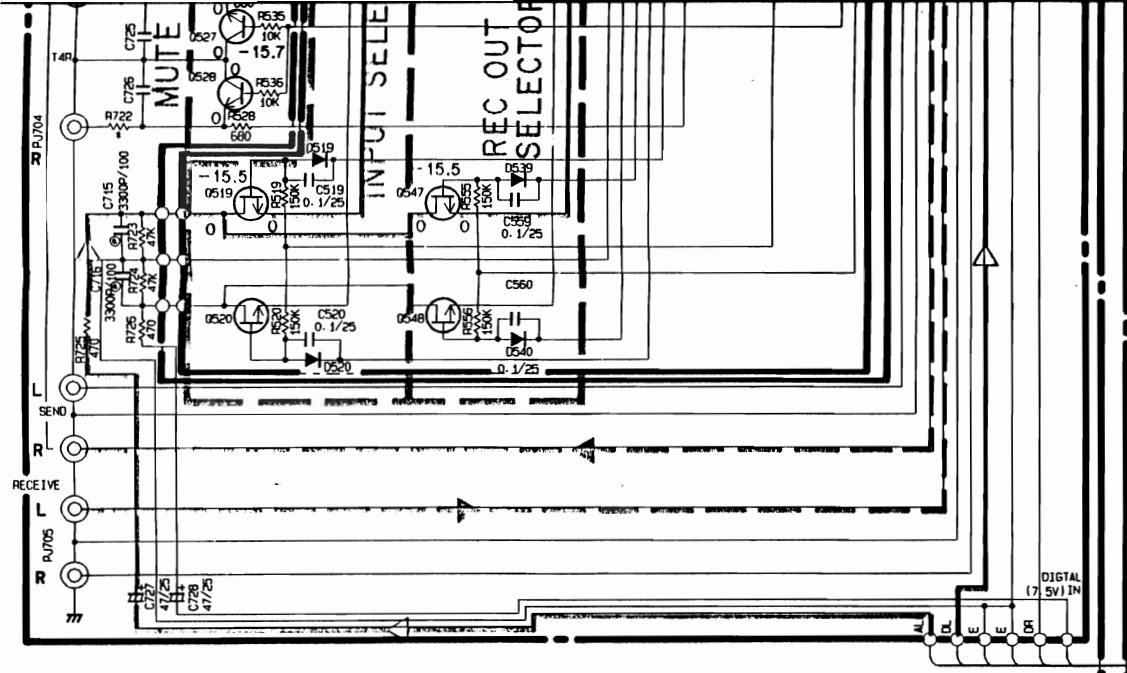
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
⊠	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
⊞	METAL FILM RESISTOR
⊟	METAL PLATE RESISTOR
⊡	FIRE PROOF CARBON FILM RESISTOR
⊢	CEMENT MOLDED RESISTOR
⊣	SEMI VARIABLE RESISTOR
⊤	CHIP RESISTOR

SCHEMATIC DIAGRAM
MODEL AF-2000
REC-

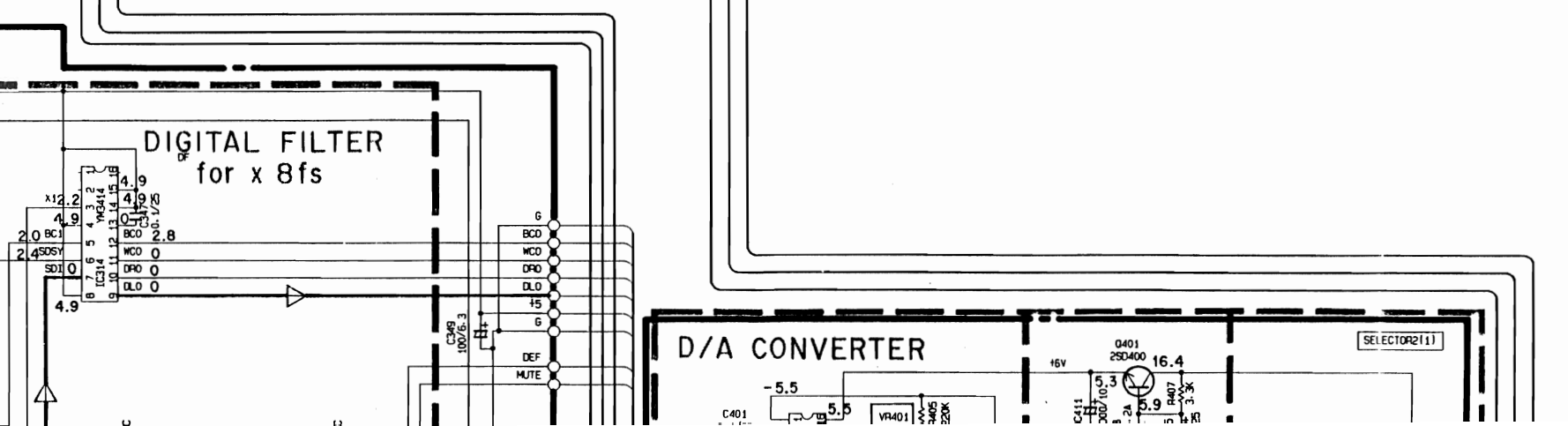
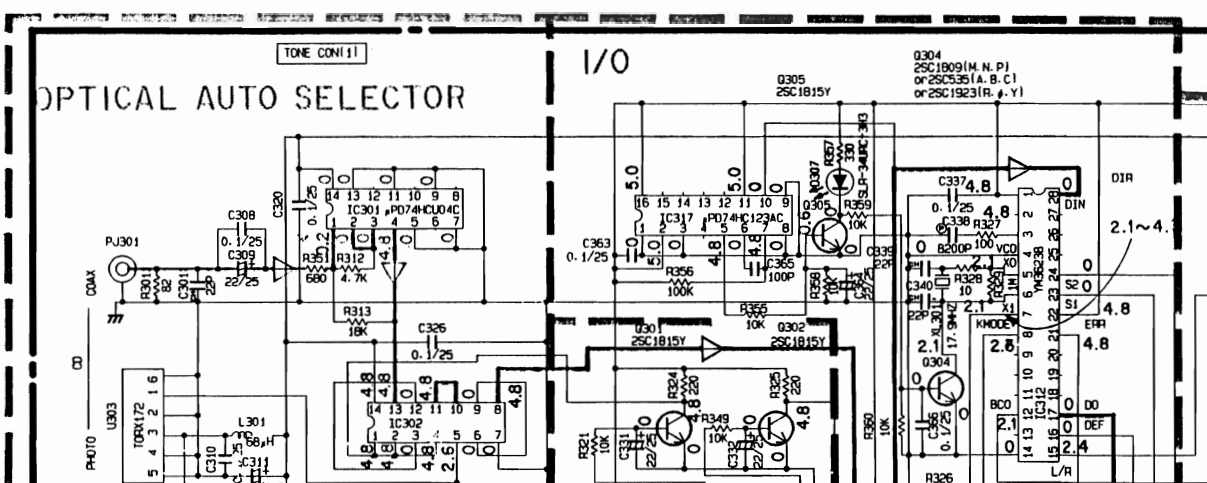
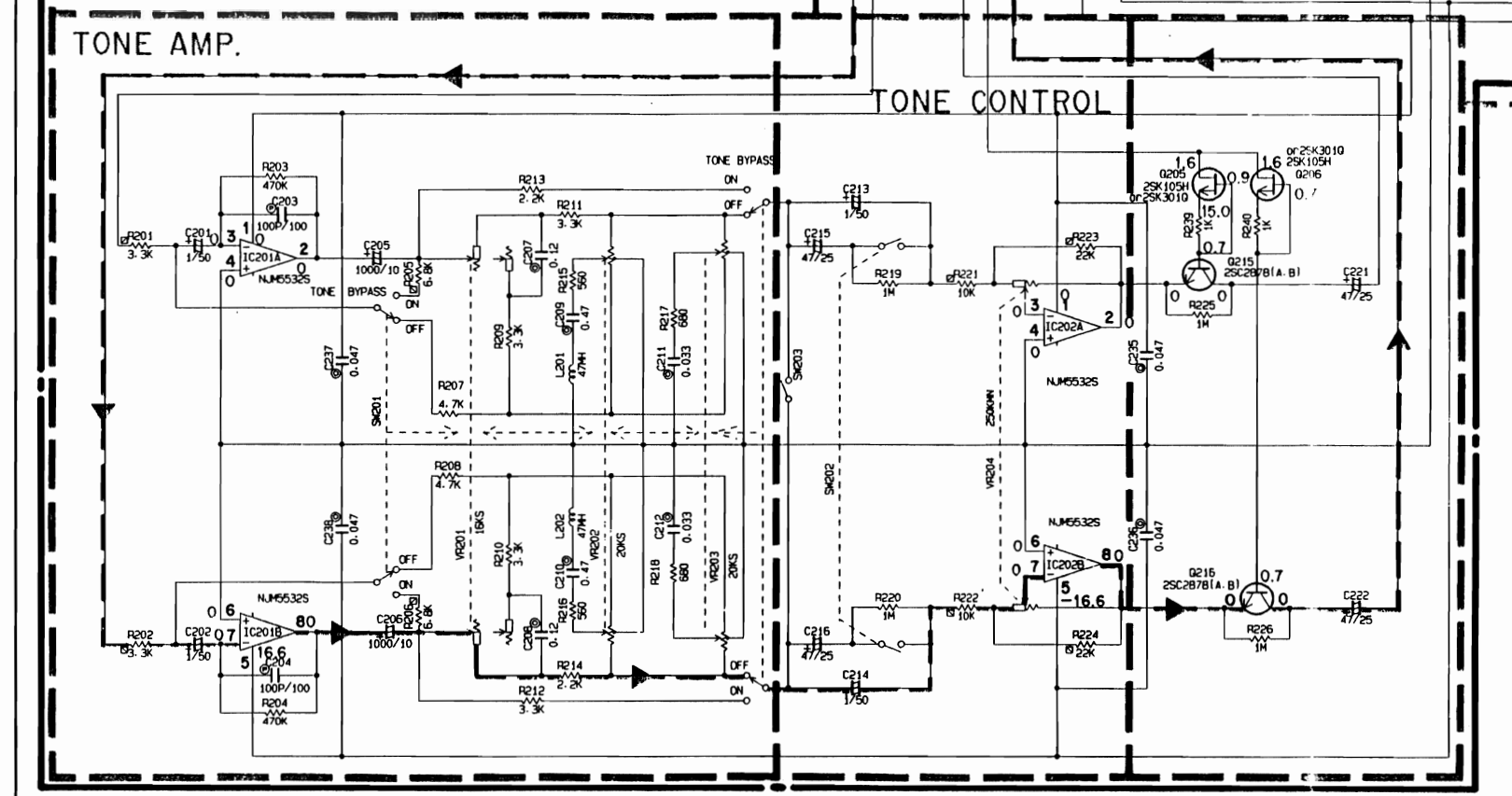
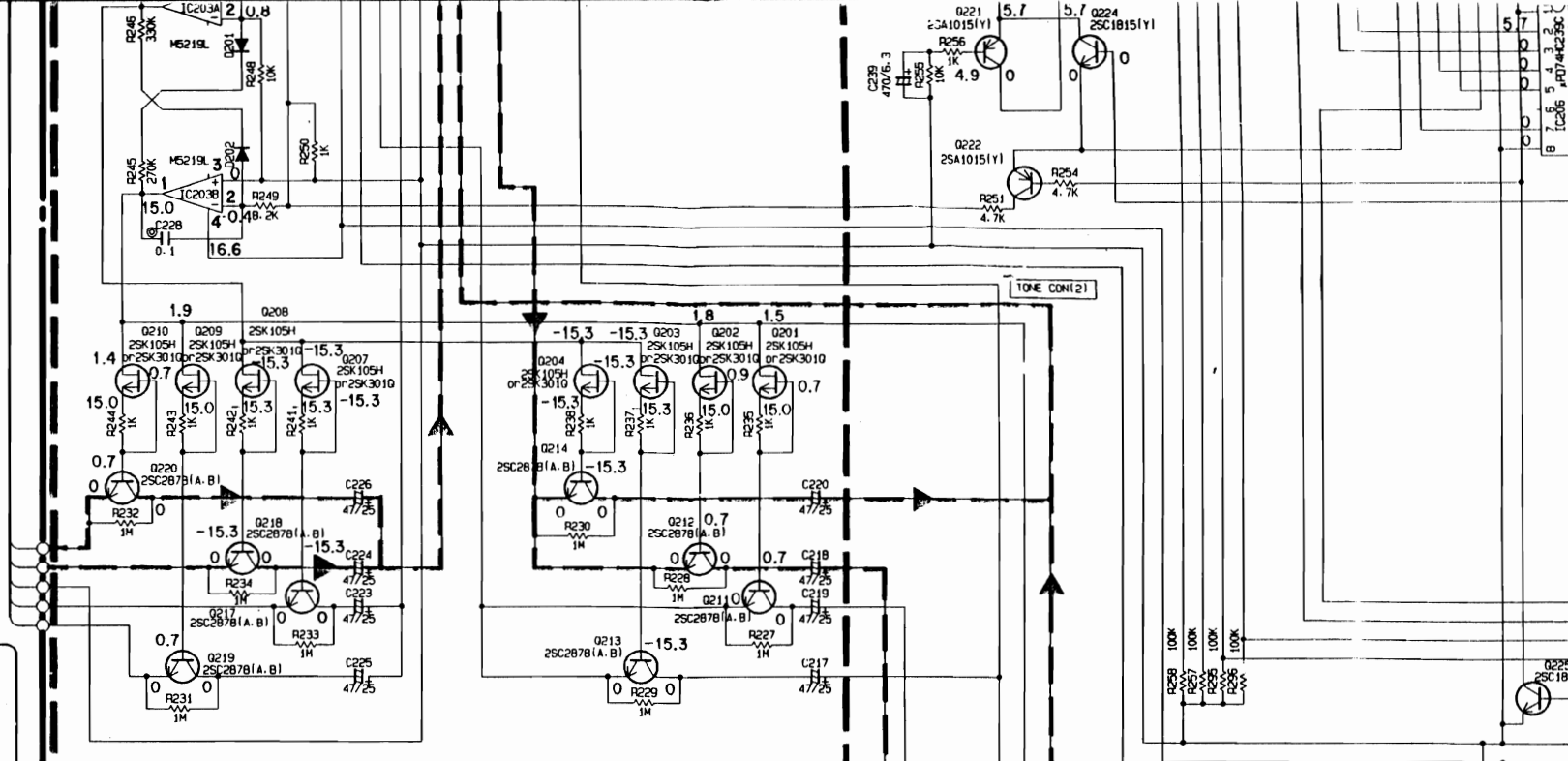
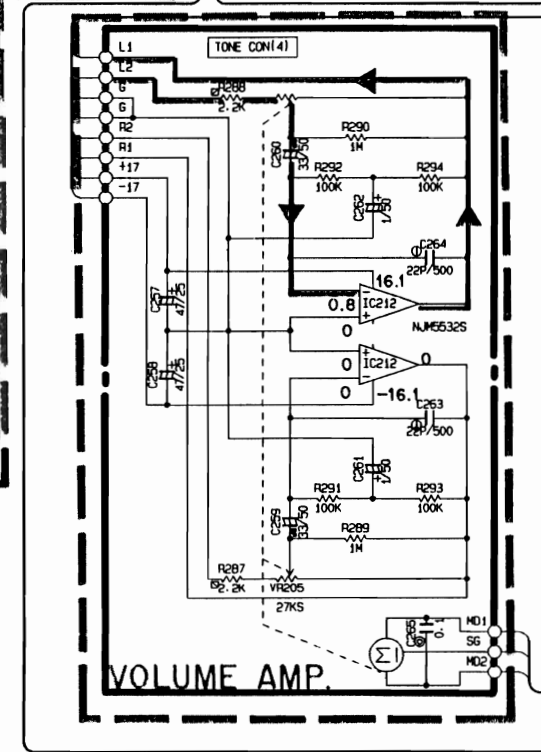




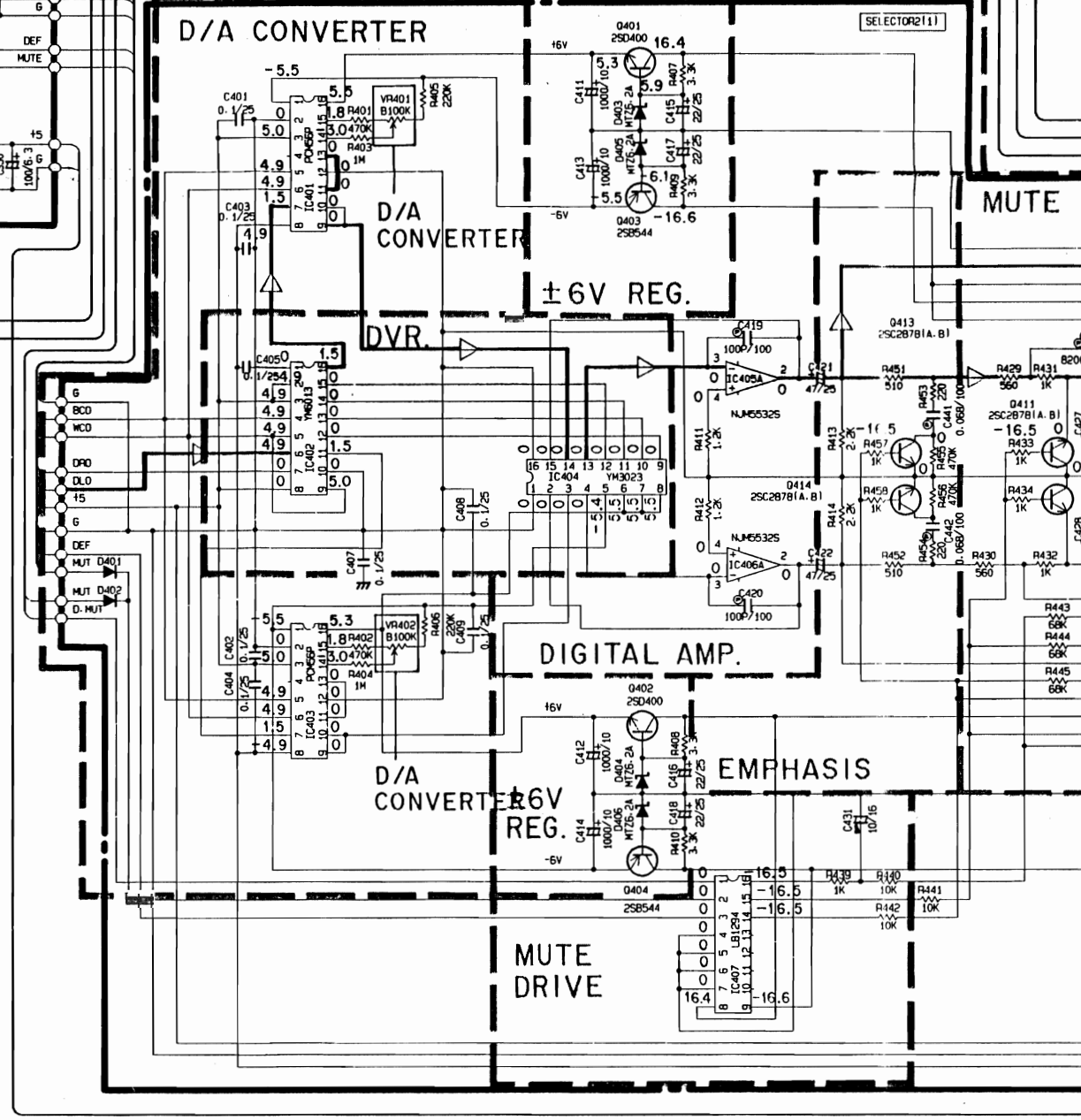
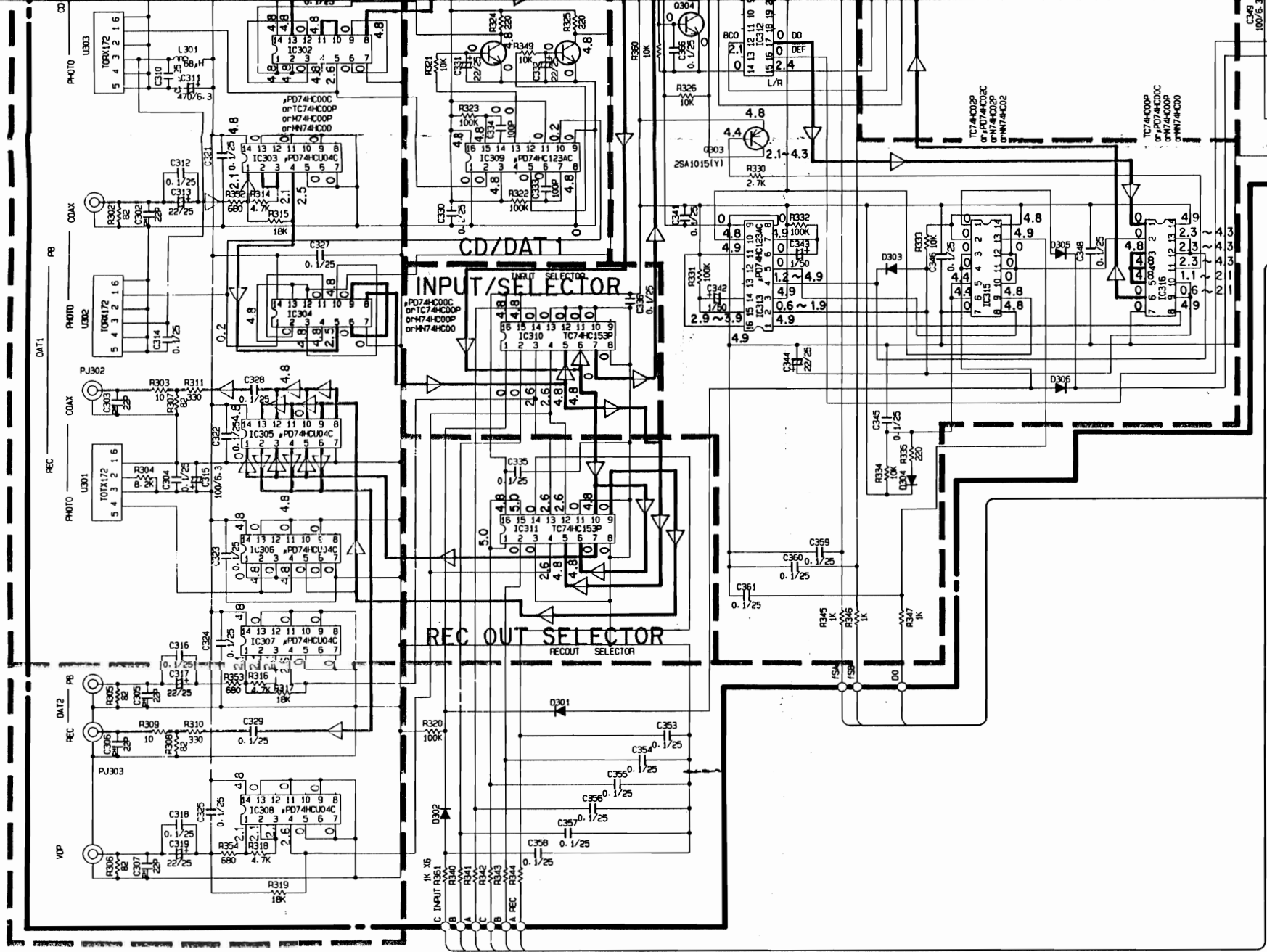
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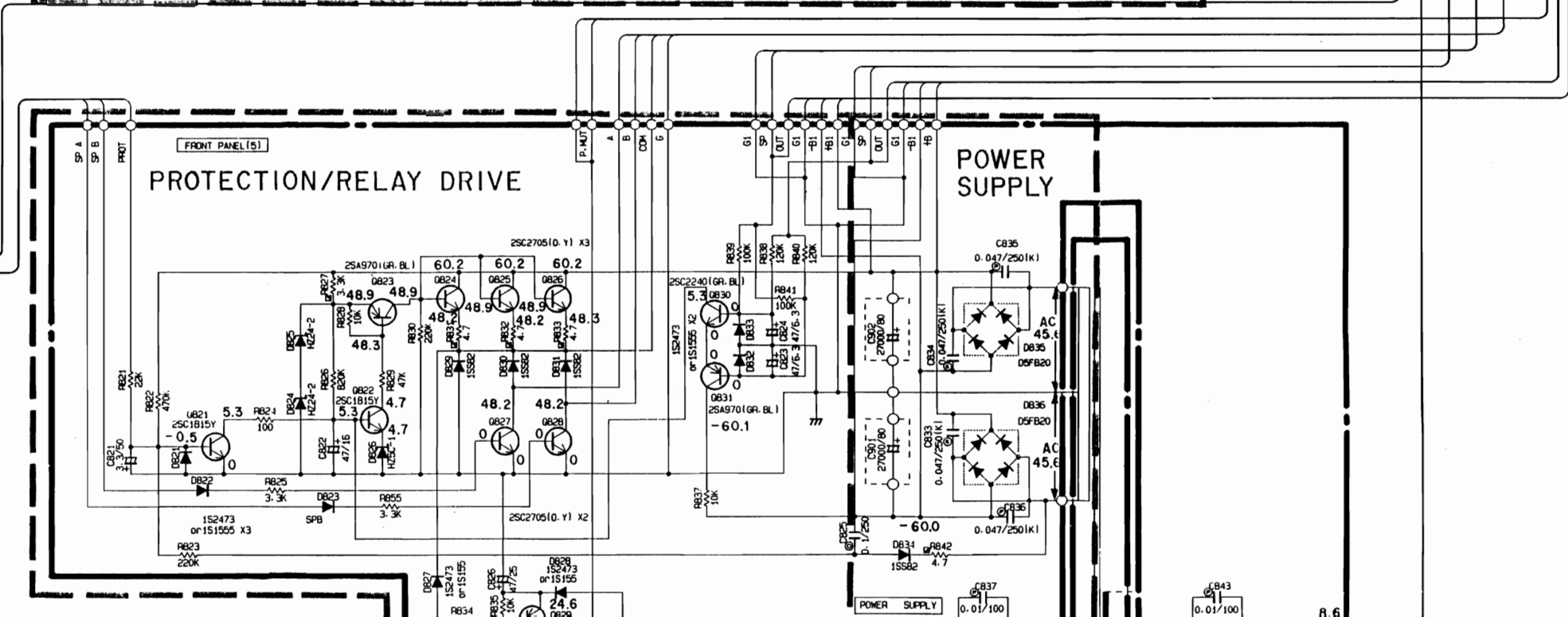
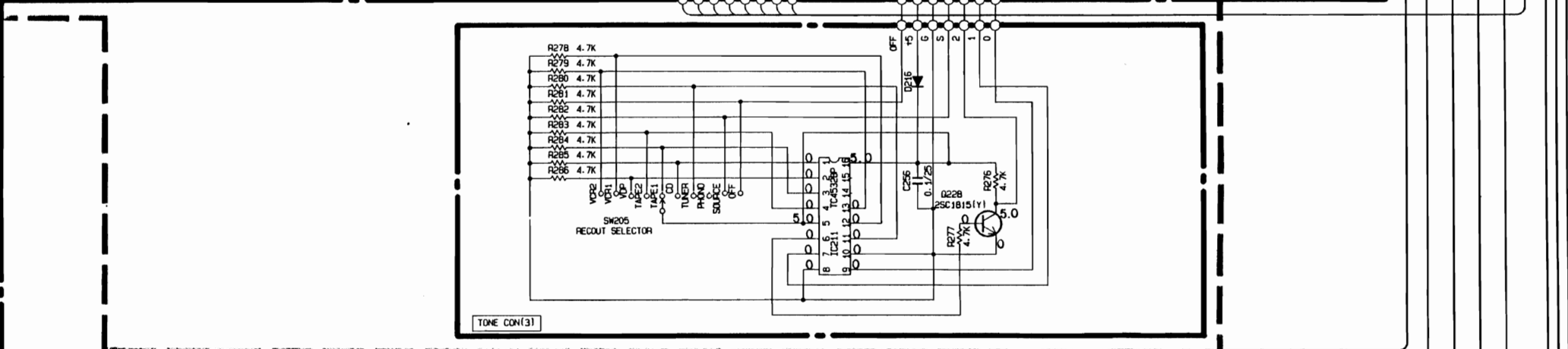
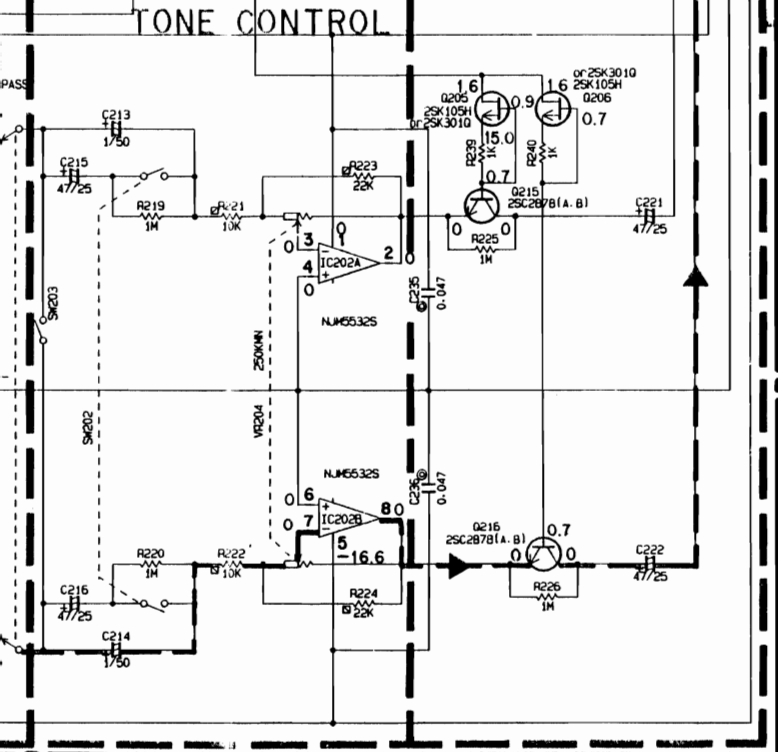
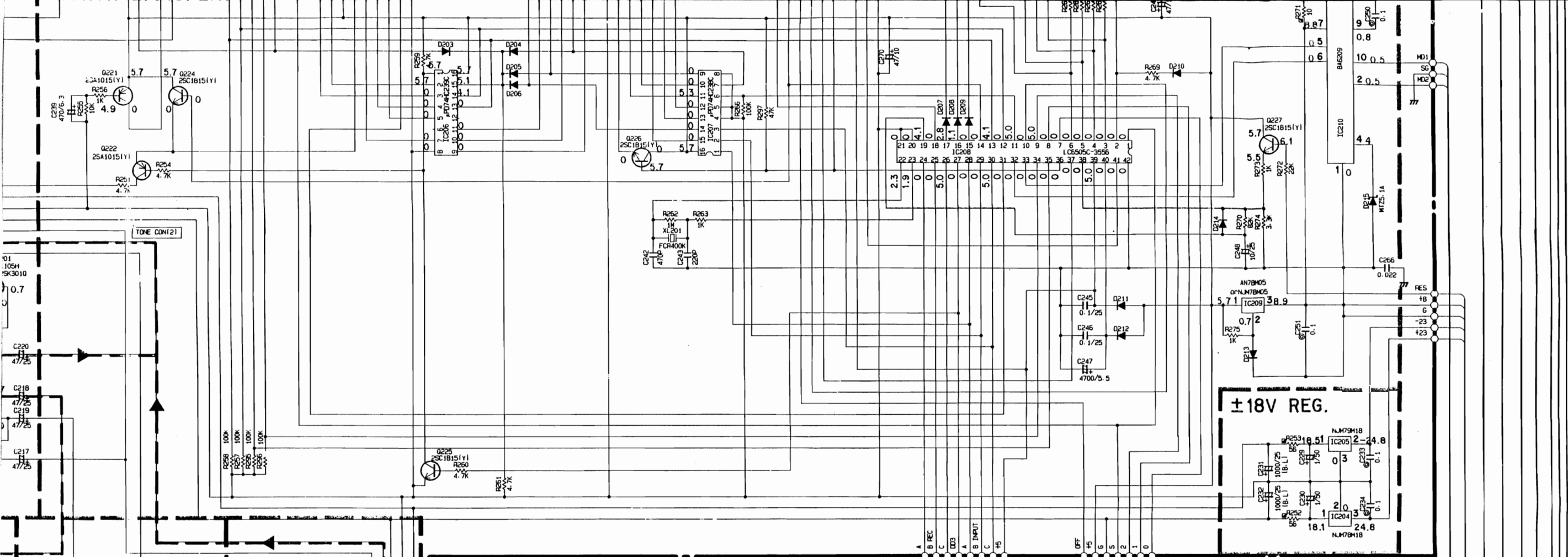
LAST NO.	LN LISTED NO.



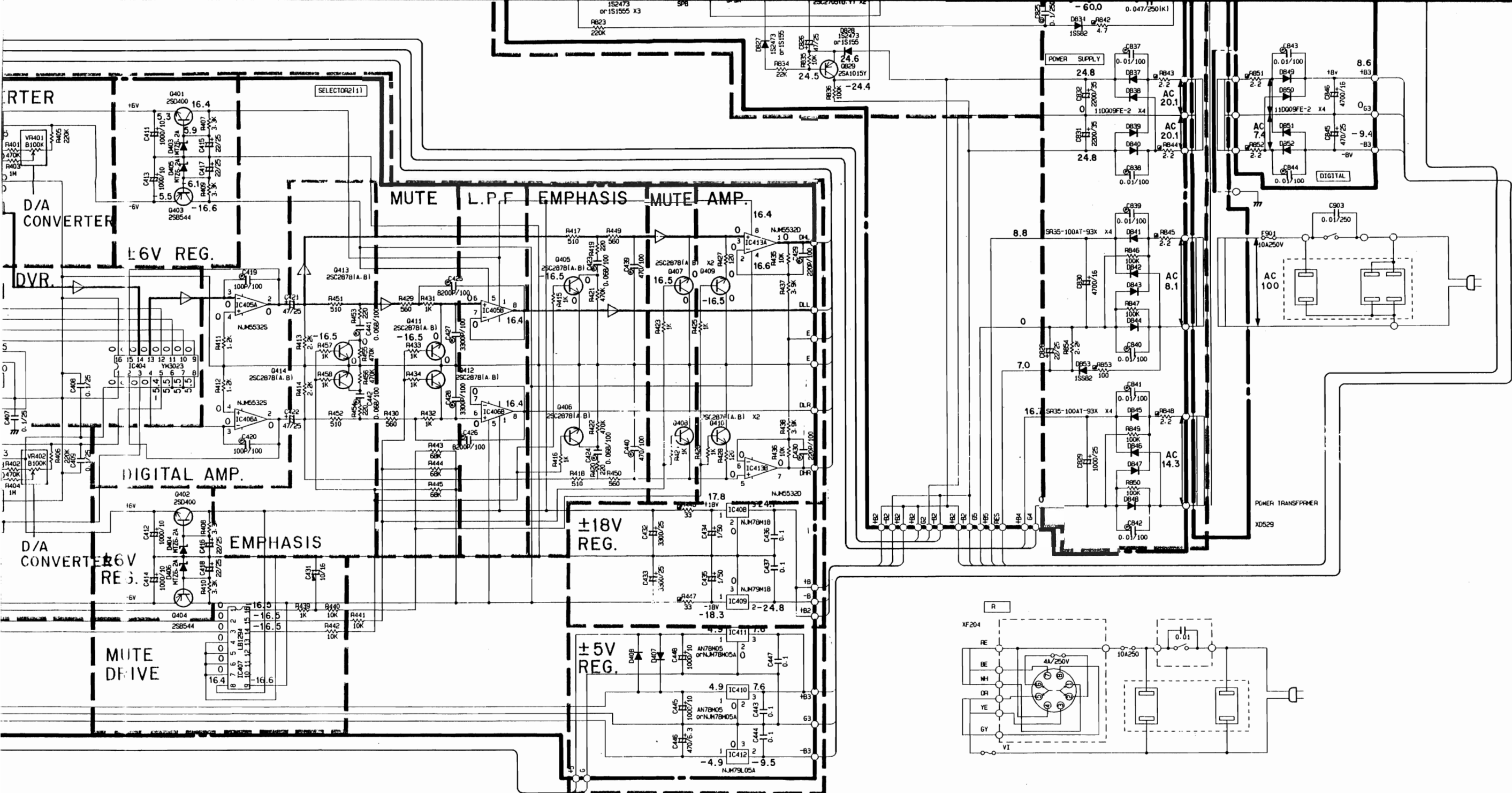
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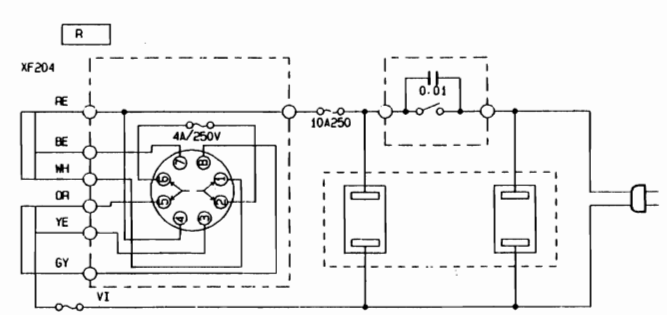
<p>2SA970 (GR, BL) 2SA1015 (Y) 2SA1145 (O, Y) 2SB544 2SB737 (Q, R, S) 2SC535 (A, B, C) 2SC1809 (M, N, P) 2SC1815 (Y) 2SC1923 (R, O, Y)</p>	<p>2SC2240 (GR, BL) 2SC2705 (O, Y) 2SC2878 (A, B) 2SD400 2SD786 (Q, R, S)</p>	<p>2SA1358 2SC3421</p>	<p>2SA1306 (O, Y) 2SC3298 (O, Y)</p>	<p>2SA1491A (O, P, Y) 2SB1362NY (P, S) 2SC3855A (O, P, Y) 2SD2053NY (P, S)</p>	<p>2SA1349 (GR, BL) 2SC3381 (GR, BL)</p>	<p>2SK105 (F, H) 2SK170 (GR, BL)</p>	<p>11DQ09FE-2 1S1555 1S2473 1SS82 1SS133 1SR35-100AT-93X MA165 MT25.1A MT26.2A</p>	<p>HZ5C-1 HZ24-2</p>	<p>D5FB20</p>	<p>SLR-34URC3H3 SLR-55MC3H SLR-55URC3H</p>	<p>NJM79L05A</p>
<p>NJM78M05 NJM78M05A NJM78M18 NJM79M18</p>	<p>L780S12</p>	<p>M5219L</p>	<p>NJM5532D</p>	<p>LA7952 NJM532S</p>	<p>BA6209</p>	<p>TC4001BP TC4081BP M74HC00P TC74HC00P M74HC02P TC74HC02PP μPD74HC04C</p>	<p>TC4532BP TC74HC153P μPD74HC123AC μPD74HC238C μPD74HC239C LB1294 PCM56P YM3023</p>	<p>YM3413 YM6013</p>	<p>YM3623B</p>	<p>LC6505C-3556</p>	



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SLR-34URC3H3 SLR-55MC3H SLR-55URC3H 	NJM79L05A
YM3623B 	LC6505C-3556

CAUTION

- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- All voltages are measured with a 10M Ω /V DC electric volt meter.
- Schematic diagram is subject to change without notice.