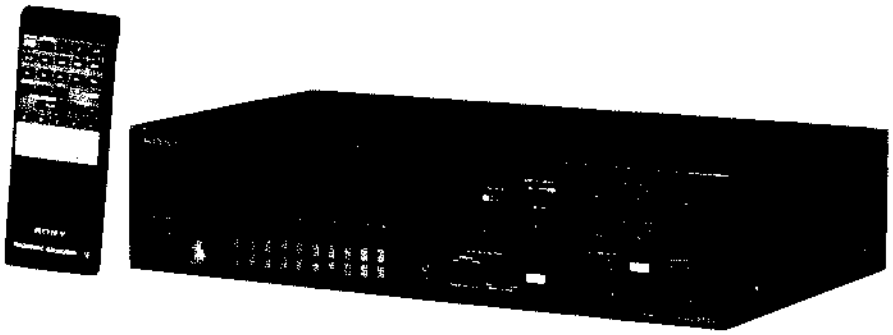
SEQ-333ES
RM-32

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



Refer to ECM-333SEQ (MICROPHONE) Service Manual issued previously for information of remote commander supplied with this set.

SPECIFICATIONS

Inputs (0 dBs = 0.775 V)

	Reference input level	Input impedance	Connector
MIC	——	Low impedance	Minijack
LINE IN	−10 dBs (245 mV)	50 k ohms	Phono jack
TAPE 1, 2	−10 dBs (245 mV)	50 k ohms	Phono jack

Outputs (0 dBs = 0.775 V)

	Reference output level	Max. output level	Output impedance	Connector
LINE OUT REC OUT 1, 2	−10 dBs (245 mV)	+20 dBs (7.75 V)	1 k ohm	Phono jack

Frequency response LINE: 10 Hz - 100 kHz $^{+0}_{-1}$ dB
Total harmonic distortion
LINE: Less than 0.0015% (1 V output, 1 kHz, flat)
Signal-to-noise ratio LINE: More than 116 dB (A network, flat, 2 V output)
Center frequencies 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz
Adjustable range L, R or L+R
±12 dB (2 dB step)
Frequency response reverse function (CHARACTER button)
Gain 0 dB

Automatic sound field adjustment
Measuring level: About 74 dB ±10 dB SPL (at microphone position)
(±10 dB by SENSE control)
Measuring time: About 2 seconds for each channel after level reaches the measurable level
Number of measurements (averaged): Max. 8 times

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

PROGRAM EQUALIZER

SONY®

AUD

Fixed memories	A: for rhythm music B: for female vocal C: Loudness FLAT: 0 dB (flat response)
General	
Power requirements	AEP, UK model: 220 – 240 V ac, 50/60 Hz US, Canadian model: 120 V ac, 60 Hz E model: 110 – 120 or 220 – 240 V ac adjustable, 50/60 Hz
Power consumption	14 watts
AC outlets	AEP, E model: 1 unswitched, 500 watts max. UK model: not provided US, Canadian model: 1 unswitched, 600 watts max.
Dimensions	Approx. 430 x 105 x 275 mm (w/h/d) (17 x 4 1/4 x 10 7/8 inches) including projecting parts and controls
Weight	Approx. 4.9 kg (10 lb 13 oz) Approx. 6.0 kg (13 lb 4 oz) in shipping carton

FEATURES

The SEQ-333ES allows you to adjust the frequency response of the audible spectrum to match your listening room. It performs this automatic sound-field adjustment by emitting pink noise (in which all frequencies are equally represented) and analyzing the reverberations at the listening position and calculating an equalization curve which will assure that the frequency response is flat.

Remote commander
The supplied remote commander allows you to adjust the equalization curve while listening to music in the listening position. All the functions of the SEQ-333ES except for power on/off, pink noise level and microphone sensitivity can be remotely controlled.

Easy recall of a preset equalization curve with the memory buttons
One of eight preset equalization can be recalled by simply pressing a button.

Convenient display
The real-time frequency level of any source, including microphone can be displayed. The desired equalization curve can also be displayed.

AUTOMATIC MEMORY RECALL WITH THE AVH-555ES

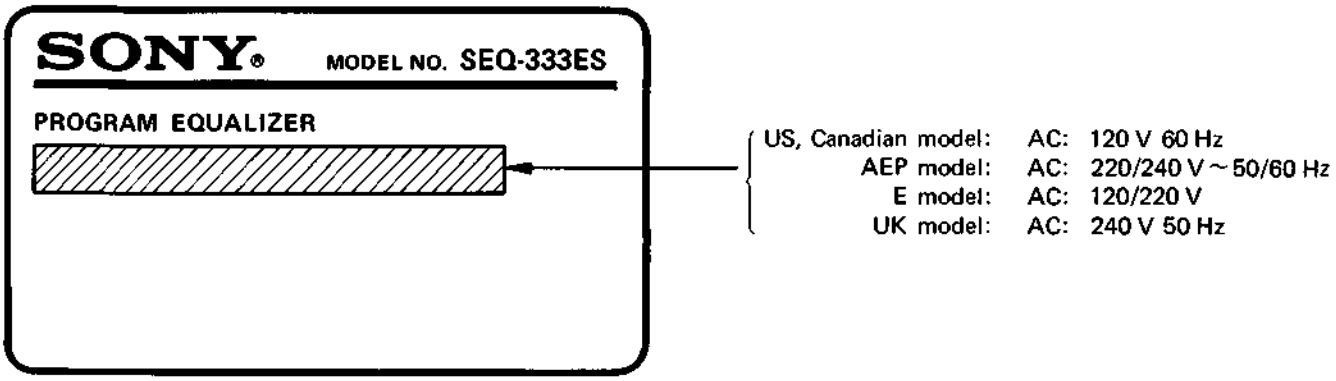
When a program source is selected with the AVH-555ES, the corresponding memory button of the SEQ-333ES is automatically recalled.
The following table shows the MEMORY button of the SEQ-333ES which is recalled when a function select button of the AVH-555ES is pressed.

AVH-555ES	MEMORY button of the SEQ-333ES
TUNER,CD,AUX,TAPE 1,2	1
VIDEO 1	2
VIDEO 2	3
TV	4

For automatic memory recall, press the AEQ or EQ button of the SEQ-333ES.
When you do not want remote control operation to be done through the AVH-555ES, or when you do not want to recall one of the equalization curves automatically, disconnect the remote control cord.

MODEL IDENTIFICATION

– Specification Label –



SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

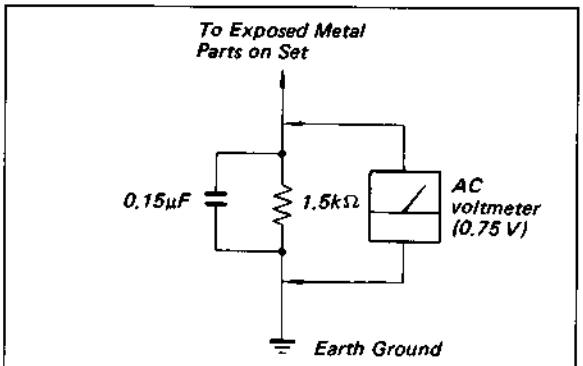
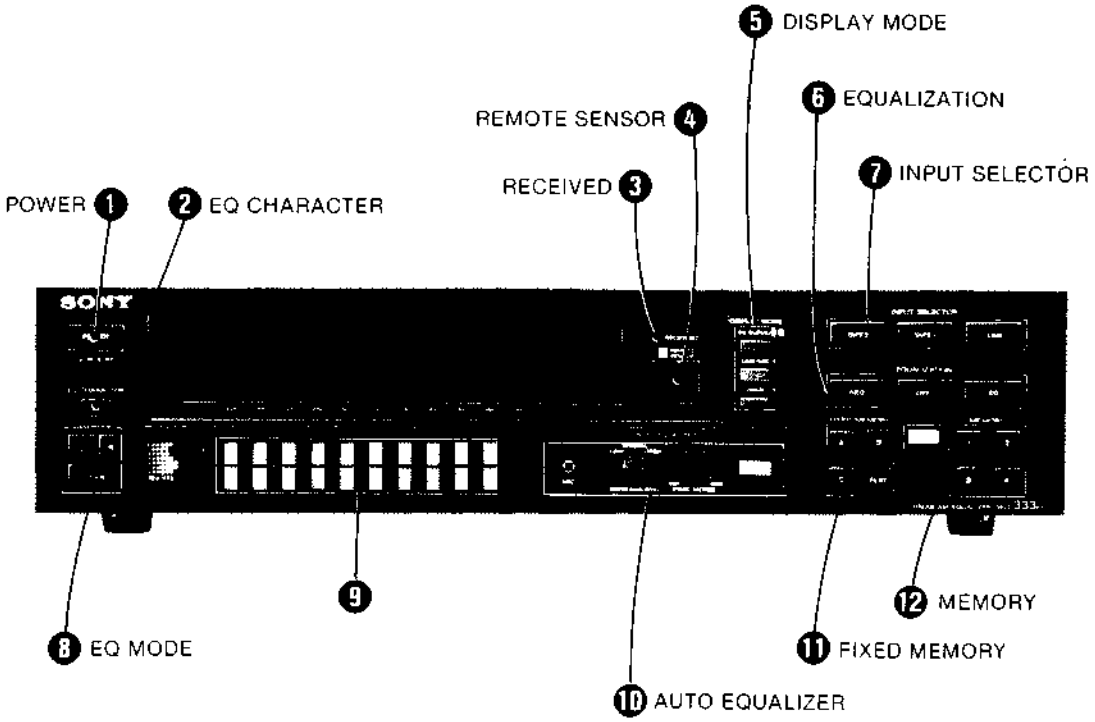


Fig. A. Using an AC voltmeter to check AC leakage.

LOCATION AND FUNCTION OF CONTROLS

Front panel



Front panel

❶ POWER switch

❷ EQ CHARACTER button

Press this button to reverse the equalization curve. The CHARACTER indicator lights.

This button can also be used to obtain an effect similar to that of a noise-reduction system. During recording, boost the frequency signals higher than 4 kHz. The high-frequency signals which tend to be obscured by tape hiss will be boosted so that they are higher in level than tape noise. Press the EQ CHARACTER button during playback. The level of these signals will be lowered to the original input level and tape noise will be reduced.

Press the EQ CHARACTER button again to display the actual frequency of the listening position during automatic equalization.

❸ RECEIVED indicator

Lights when signals from the remote commander are received.

❹ REMOTE SENSOR window

Receives signals from the remote commander.

❺ DISPLAY MODE button

EQ CURVE/RTA: Press this button to display either the equalization curve or the real-time frequency level of the source. Set the EQUALIZATION select button to AEQ or EQ to activate this button.

The LINE/MIC button and the HOLD button can be activated when the real-time frequency response is displayed.

LINE/MIC: Press this button to display either the frequency response of a program source connected to the LINE IN jacks or the frequency response of the microphone.

HOLD: Press this button to hold the real-time frequency response momentarily. Press again to disengage.

The display last selected will appear when the power is turned on.

❻ EQUALIZATION select button

Selects the equalization mode. The appropriate EQ indicator lights up.

AEQ: Press this button for automatic sound field adjustment.

EQ: Press this button for manual adjustment.

OFF: Press this button when equalization is not desired.

❼ INPUT SELECTOR buttons

Selects the input source to listen to or to equalize. The appropriate INPUT indicator lights.

LINE: Press this button for program sources connected to the amplifier.

TAPE 1: Press this button for the tape deck connected to the TAPE 1 inputs.

TAPE 2: Press this button for the tape deck connected to the TAPE 2 inputs.

❽ EQ MODE buttons

L: Press this button to equalize the left channel independently. The letter L of the MODE indicator lights.
Only the left channel of the equalization curve will be displayed.

R: Press this button to equalize the right channel independently.
The letter R of the MODE indicator blinks and only the right channel of the equalization curve will be displayed.

L + R: Press this button to equalize the left and right channels simultaneously. The letter L of the MODE indicator lights up while the letter R blinks. On the equalizer display also, initially the L channel lights up and the R channel blinks but when both channels are at the same level, all indicators will light up.

❾ +/— (equalizer level adjust) buttons

Press these buttons to adjust the frequency band of the equalization curve.

❿ AUTO EQUALIZER

MIC jack: Connect the supplied microphone to this jack.

SENSE (MIC/RTA) control: During automatic sound field adjustment, use this control to adjust the input level of the supplied microphone.
When the real-time frequency response is displayed, use this control to select the sensitivity level.

PINK NOISE control: During automatic sound field adjustment, use this control to adjust the level of pink noise.

START button: Press this button to start sound-field adjustment.
Pink noise will be generated from the built-in generator and adjustment will begin.

⓫ FIXED MEMORY buttons

Press one of these buttons to recall an equalization curve preset at the factory. The appropriate letter lights up in the display window.

A: for jazz and rock

B: for female vocal (the letter "b" lights up)

C: for boosting only low and high frequencies when listening to music at low volume

FLAT: for a flat frequency response, used to make a comparison

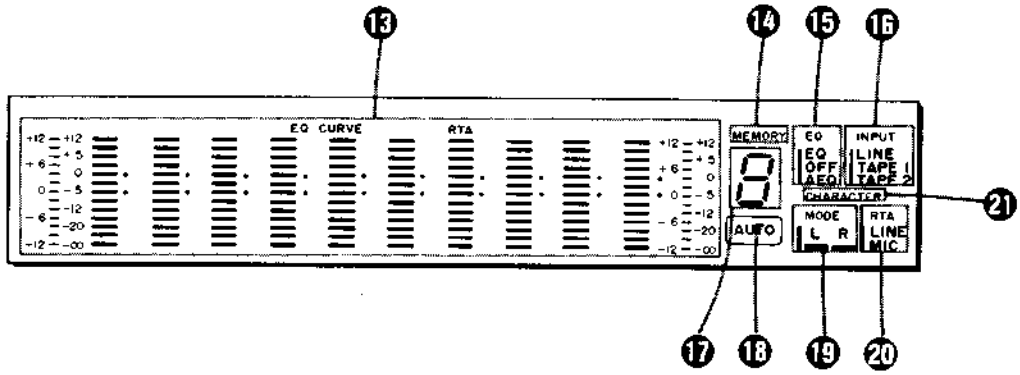
⓬ MEMORY buttons

Press these buttons to memorize the equalization curves.

SET: Press this button to prepare the SEQ-333ES to memorize an equalization curve. MEMORY indicator will light up for a few seconds during which time equalization curve can be memorized on preset buttons [1] - [4].
The previous memory can only be erased by a new input.

[1] [2] [3] [4]: Press one of these buttons just after pressing the SET button to memorize the equalization curve. Once memorized, you can recall a equalization curve by pressing the appropriate button.

Display section



Display section

⑬ EQ CURVE/RTA display
Shows the curves of sound-field adjustment or real-time frequency response. When the real-time frequency is displayed, the acoustic energy of the line input or microphone input is shown in the same frequency band.

⑭ MEMORY indicator
Lights up for a few seconds when the MEMORY button is pressed to indicate that the memory circuit is standing by.

⑮ EQ indicator
Shows the mode of equalization—manual, automatic or off—that is to be made.

⑯ INPUT indicator
Shows the input selected by the INPUT SELECTOR buttons.

⑰ Memory indicator
Shows the letter or number of the recalled adjustment.

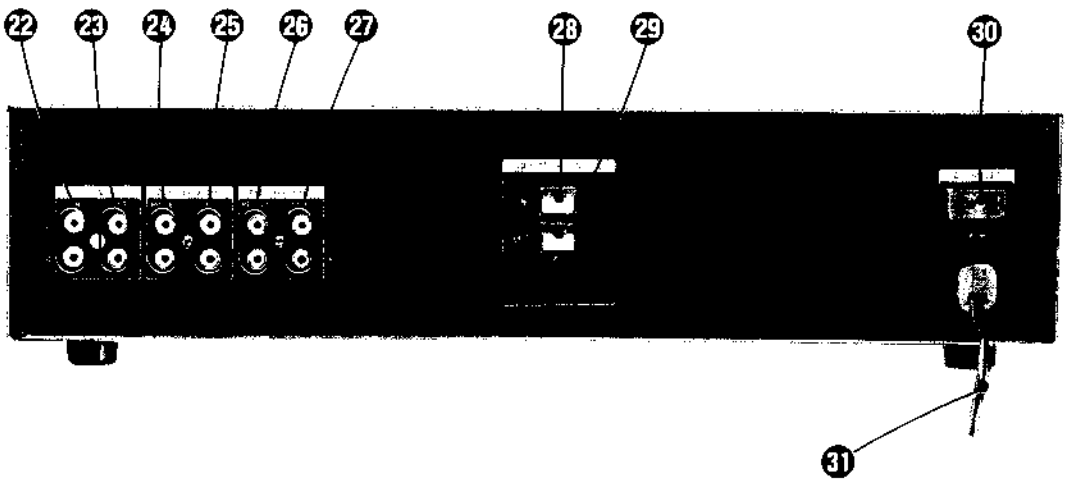
⑱ AUTO indicator
Lights when the level of pink noise is adequete during sound field adjustment. The indicator blinks when the level of pink noise is too low or too high.

⑲ MODE indicator
Shows the channel selected by the EQ MODE button.

⑳ RTA input indicator
Shows the input selected by the LINE/MIC button.

㉑ CHARACTER indicator
Lights when the EQ CHARACTER button is pressed to reverse the equalization curve.

Rear panel



Rear panel

㉒ LINE IN inputs
Accept the tape outputs or graphic equalizer outputs of an amplifier.

㉓ LINE OUT outputs
Accept the tape inputs or graphic equalizer inputs of an amplifier.

㉔ TAPE RECORDER 1 REC OUT outputs
Accept the inputs of a tape deck for recording. These outputs also accept the line inputs of a hi-fi video recorder.

㉕ TAPE RECORDER 1 TAPE inputs
Accept the outputs of a tape deck for playback. These inputs also accept the line outputs of a hi-fi video recorder.

㉖ TAPE RECORDER 2 REC OUT outputs
Accept the inputs of a second tape deck for recording.

㉗ TAPE RECORDER 2 TAPE inputs
Accept the outputs of a second tape deck for playback.

㉘ REMOTE CONTROL IN connector (4-pin)
Connect to the REMOTE CONTROL OUT connector of the optional hi-fi audio/video selector Sony AVH-555ES (not available in West Germany, Italy and France).

㉙ REMOTE CONTROL OUT connector (4-pin)
Connect to the ■ REMOTE IN or CONTROL S IN connector of Sony audio equipment with a flat 4-pin remote control input.

㉚ Unswitched AC OUTLET (not provided for UK models)
Used to power other audio components whose power consumption is less than the wattage indicated on the ac outlet.
This outlet is not controlled by the POWER switch.

㉛ Power cord

Remote commander RM-32

㉜ CHARACTER button

㉝ START button

㉞ Equalizer mode buttons

㉟ Display mode buttons

㊱ FIXED MEMORY buttons

㊲ Input select buttons

㊳ Equalization select buttons

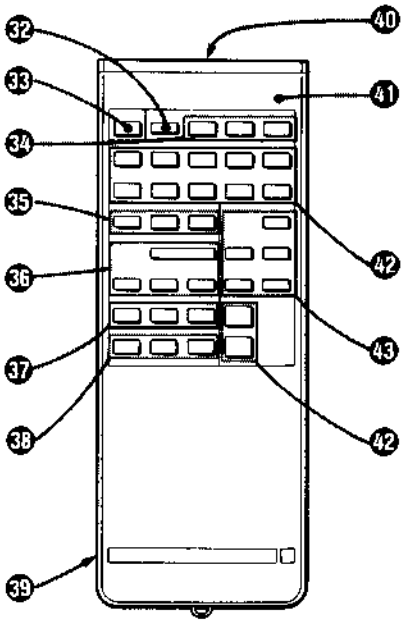
㊴ Battery compartment (rear panel)

㊵ Infrared ray transmitter

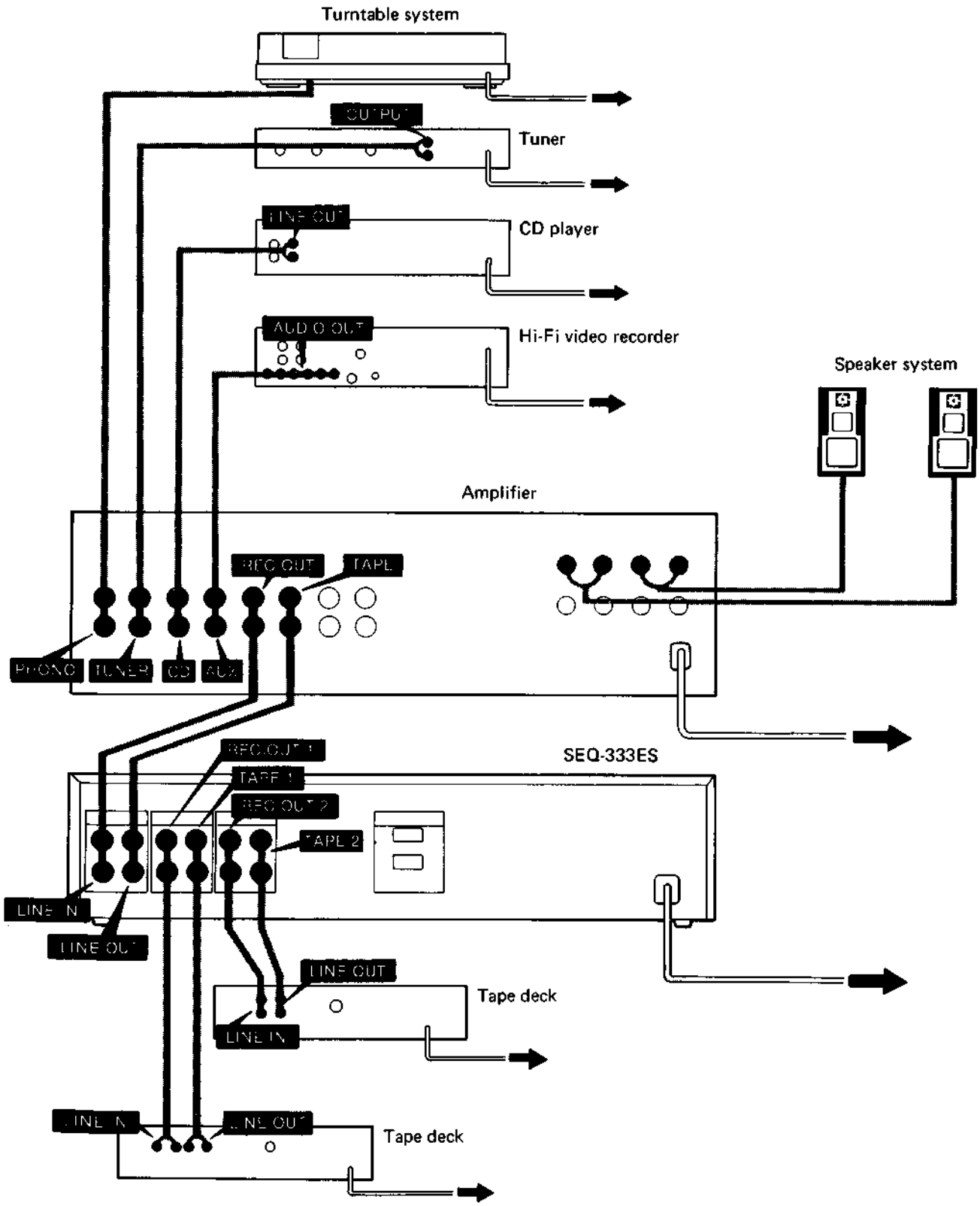
㊶ Output indicator
Lights when the remote commander is operating. When the batteries become weak, this indicator will light faintly.

㊷ Frequency select buttons and UP/DOWN buttons
Press one of the frequency select buttons to choose the frequency band to be adjusted, then press the UP or DOWN button.

㊸ MEMORY buttons



CONNECTIONS



HOW THE SEQ-333ES PROVIDES

The acoustics of every room differ according to the position of the audio system, the presense of furniture, curtains, etc., and even the type of walls in the room. To precisely adjust the equalizer, the room that you use for listening to your audio equipment should be quiet and ideally have a flat frequency response. With the SEQ-333ES, you can check the noise level of your room and also set the equalizer to make the audio equipment sound as if it were being used in an ideal room.

TO CHECK AMBIENT NOISE

1 Connect the supplied microphone to the MIC jack.
2 Depress the POWER switch (⏏ ON).
3 Set the SENSE (MIC/RTA) control to NORMAL.
4 Press the EQ CURVE/RTA button so that the real-time frequency response is displayed.
5 Press the LINE/MIC button so that the MIC indicator lights up.
6 Place the microphone at your listening position. The ambient noise level will be displayed.

Automatic sound-field adjustment can be made when the ambient noise level shown is less than −20 dB. When the ambient noise level is higher than −20 dB, set the SENSE (MIC/RTA) control to LOW.
If the level is still higher than −20 dB, the listening room should be re-arranged for better acoustics.
Set the SENSE (MIC/RTA) control to HIGH to lower the pink noise level and perform automatic sound field adjustment in a quiet listening room.

AUTOMATIC SOUND FIELD ADJUSTMENT

The SEQ-333ES generates pink noise, a signal used for acoustic measurement, and emits it through the speakers. When the pink noise is picked up by the supplied microphone, its characteristics have been changed by the acoustics of the room. The altered pink noise is fed back to the SEQ-333ES and compared to the original signals to determine the enhancement required for your room

1 Connect the supplied microphone to the MIC jack.
2 Depress the POWER switches of the equalizer and amplifier (⏏ ON).
3 Set the SENSE (MIC/RTA) control to the position used to check ambient noise.
4 Set the PINK NOISE control to MIN.
5 Place the supplied microphone to the height of your ears at listening position.
6 Press the appropriate tape function button on the amplifier.
7 Adjust the volume of the amplifier to the normal listening level.
Release or set to 0 all the switches and controls on the amplifier that may affect the frequency response.
8 Press the START button.
The equalizer display will appear for approximately 2 seconds and the AUTO indicator will blink. Then the display will change to that of the real-time frequency response.
9 Turn the PINK NOISE control towards MAX. Pink noise will be emitted from the left channel. When the level of the pink noise reaches the reference level (−5 dB at 1 kHz), the AUTO indicator lights up and pink noise will be emitted from each channel for approximately 2 seconds. After sound field adjustment has been completed, the AEQ indicator lights up and the sound field adjustment curve will be shown on the display.
10 While the AUTO indicator is illuminated (approx. 1 minute), move the microphone within 20 cm from the listening point and then press the START button. The measured data will be averaged with the previous data.

By repeating step 10, a maximum of 8 measurements can be averaged. When the 8th measurement is made, the AUTO indicator goes off.

To see the actual frequency response of your listening room, press the EQ CHARACTER button.

Notes

- If the AUTO indicator does not light up with the PINK NOISE control set to MAX, increase the volume of the amplifier.
- If the level of the pink noise is higher than the reference level from the beginning, automatic sound field adjustment cannot be made. In this case, set the PINK NOISE control to MIN.

TO RESTART AUTOMATIC SOUND FIELD ADJUSTMENT

If an unexpected loud sound occurs, automatic sound-field adjustment must be started again. Press the START button while pink noise is emitted. Press the START button again to start the measurement from the beginning.

MEMO

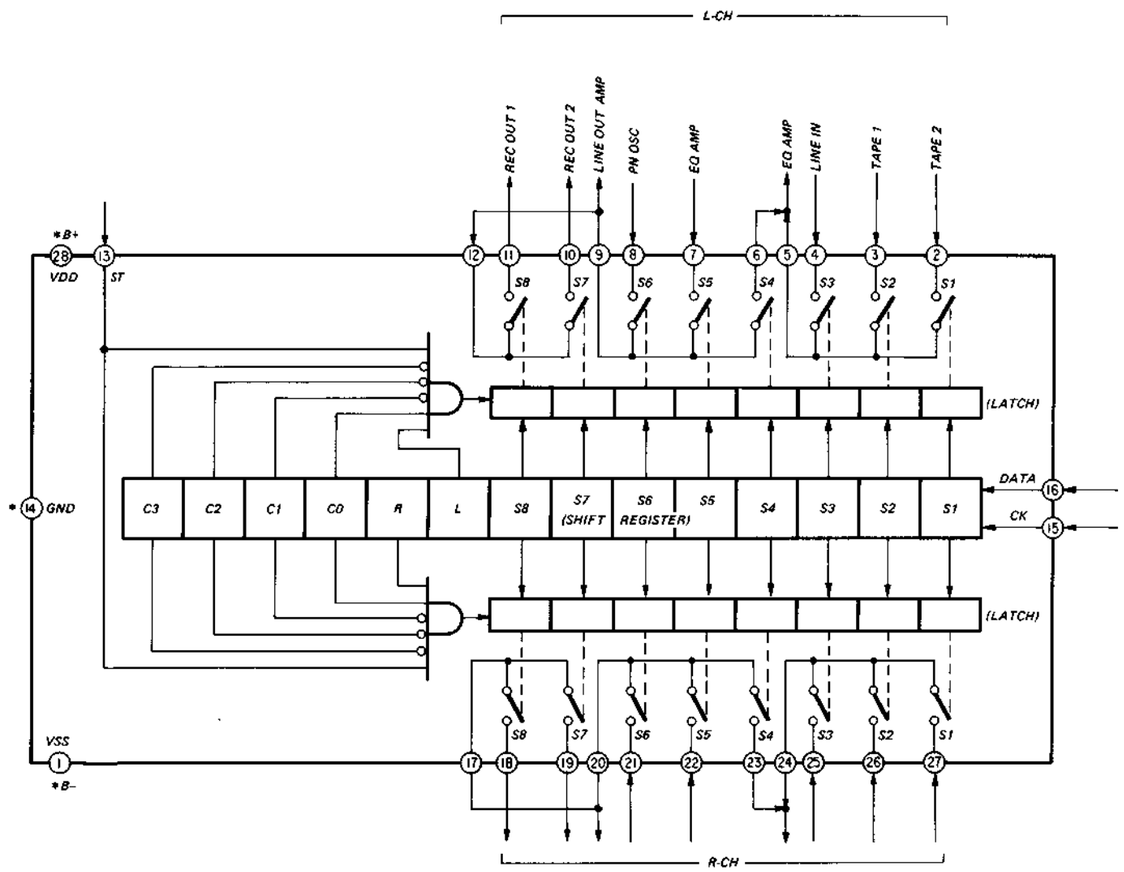
SECTION 2
CIRCUIT DESCRIPTION

- **IC Operation Description (Refer to the Service Manual for SEQ-555ES for CX7976.)**

1. TC9163 (IC101), IC for Function Switches

Figure 1 is a block diagram of TC9163.
Three signals are sent from the control microcomputer; DATA, CLOCK and STROBE. (See the section on the control microcomputer for an explanation of the timing.)
The DATA signal is input to the 14 bit shift register by the CLOCK signal.

When STROBE is applied in this state, and if R="1", L="1", C_0="1", C_1=C_2=C_3="0", then S_1~S_8 of the shift register shift to latch, and the function is switched. (If either R or L is "0", that channel's function will not switch.)
In this way, IC101 internal analog switches are controlled by the serial data transmitted from the control microcomputer.



*The analog switch section can be used with both (+) and (-) power supply, and CK, DATA and ST can be controlled by the 5 V system CMOS IC.

Figure 1 TC-9163 (IC101) Block Diagram

2. Control Microcomputer M50742 (IC505)

M50742 has 4 modes: single chip mode, evaluation chip mode, memory expansion mode and microprocessor mode. On this set it is used in single chip mode and the external RAM (IC506) is accessed by the program.

a) Outline of IC505 Program

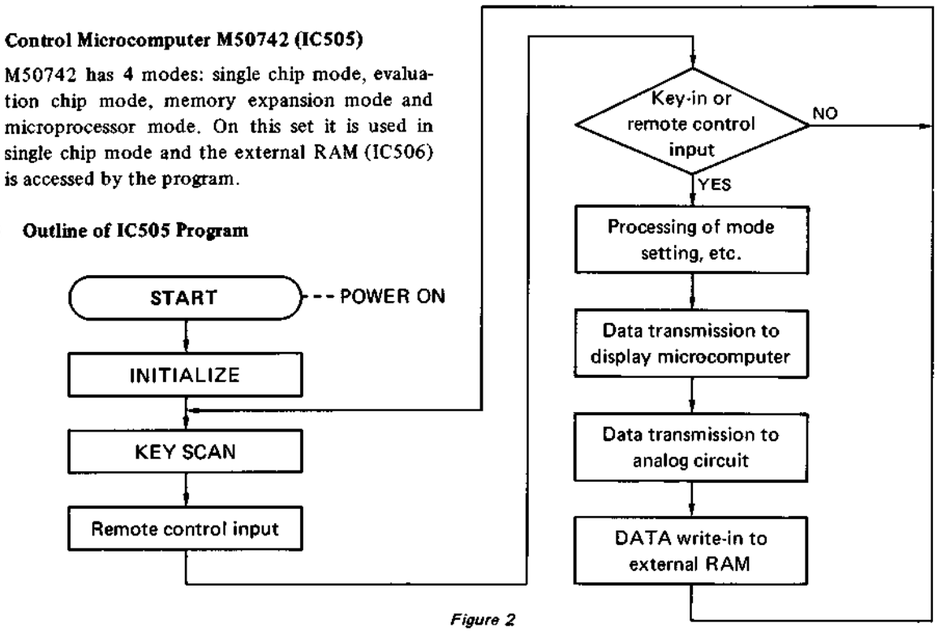


Figure 2

b) IC505 (M50742) Pin Functions

Pin No.	Pin	I/O	Symbol	Function
1			VCC	+B pin, 5V ±10%
2 ~ 9	P6–7 ~ P6–0	O	A7 ~ A0	External RAM (IC506) address setting.
10	P2–7	O	$\overline{\text{RECEIVE}}$	Lights up LED when remote control input is decoded.
11	P2–6	O	$\overline{\text{RESET}}$	Display microcomputer reset control.
12	P2–5	O	$\overline{\text{OE}}$	External RAM (IC506) enable control.
13	P2–4	O	R/$\overline{\text{W}}$	External RAM (IC506) read/write switching.
14 ~ 17	P2–3 ~ P2–0	I/O	D4 ~ D1	Data buses with external RAM (IC506).
18	P3–7			Not used.
19	P3–6			Not used.
20	P3–5	O	RQST	Data transmission request to display microcomputer.
21	P3–4	I	ACK	Data transmission permission input from display microcomputer.
22 ~ 25	P3–3 ~ P3–0	I/O	D4 ~ D1	Communication data buses with display microcomputer.
26		I	$\overline{\text{INT1}}$	Power OFF detection (interrupt pin).
27		I	CNVSS	CPU mode setting pin. This set is single chip mode.
28		I	$\overline{\text{RESET}}$	Reset pin. Reset when "L" for more than 2μs.
29		I	X IN	Clock input pin (4.19 MHz on this set).
30		O	X OUT	Not used.
31			φ	Not used (Timing output. 1/4 oscillation frequency is output.)
32			VSS	Ground.
33 ~ 40	P5–7 ~ P5–0	I		Key return pins.

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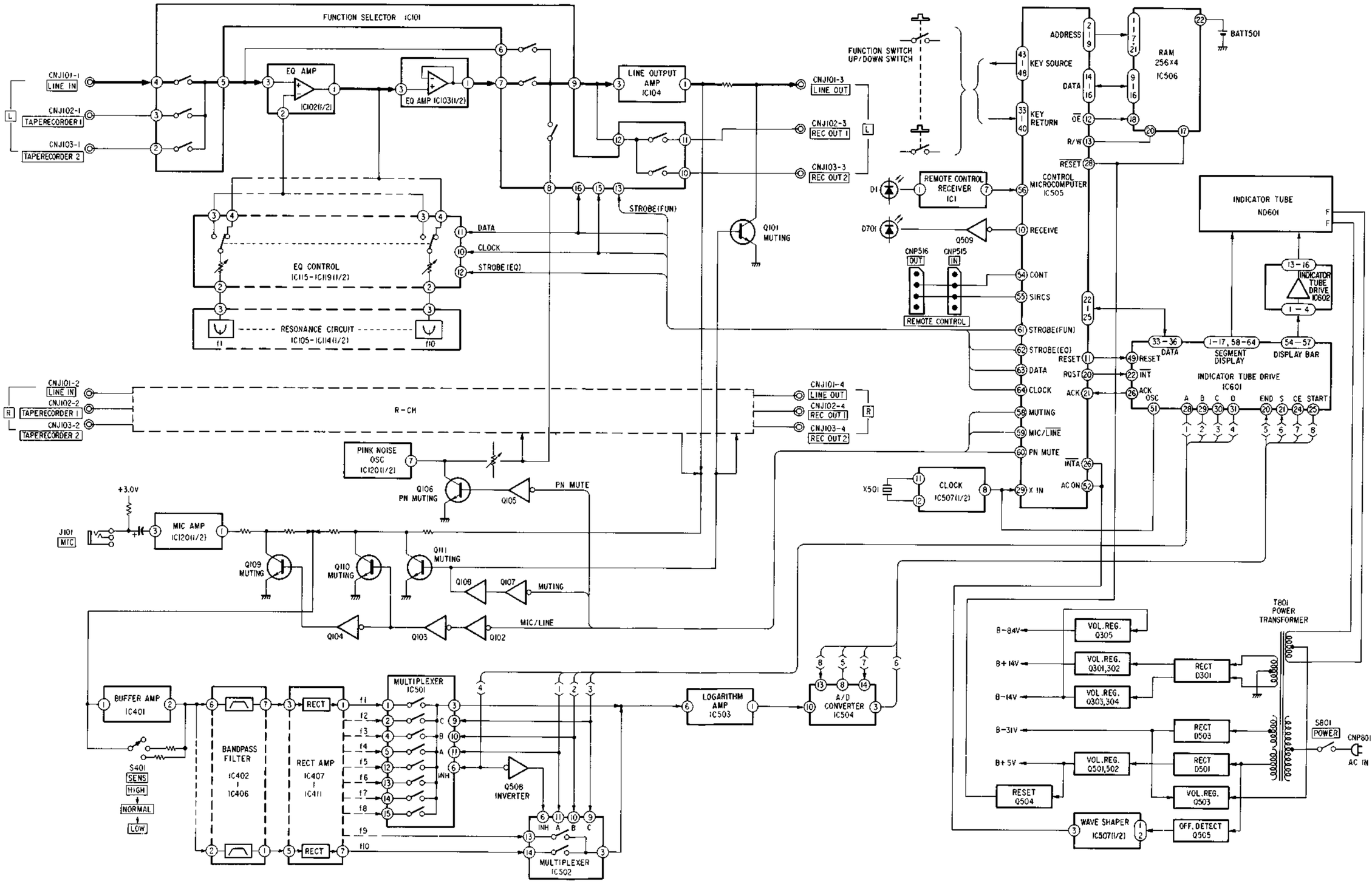
SECTION 1
BLOCK DIAGRAM



41	P1–7			Not used.
42	P1–6			Not used.
43 ~ 48	P1–5 ~ P1–0	O		Key source pins.
49	P0–7			Not used.
50	P0–6			Not used.
51	P0–5			Not used.
52	P0–4	I	AC ON	Power ON detection (This input is used for sudden power outage.)
53	P0–3			Not used.
54	P0–2	I	CONT	Serial input signal port switching. "H": remote control (1), "L": remote control (2).
55	P0–1	I	SIRCS	Remote control (1) input.
56	P0–0	I	REMOTE	Remote control (2) input.
57	P4–7			Not used.
58	P4–6	O	MUTE	Mutes analog signal.
59	P4–5	O	MIC/$\overline{\text{LINE}}$	When analyzer input is selected, goes "H" and MIC signal is input.
60	P4–4	O	$\overline{\text{PNMUTE}}$	Goes "H" for AEQ execution (sound field equalization mode) and pink noise is output.
61	P4–3	O	ST-FUNC	IC101 strobe signal output.
62	P4–2	O	ST•EQ	IC115~119 strobe signal output.
63	P4–1	O	DATA	Outputs serial data to IC101, IC115~119.
64	P4–0	O	CLOCK	Outputs clock for serial transmission to IC101, IC115~119.

Table 1

c) Power ON (Initialize) Process Timing Chart

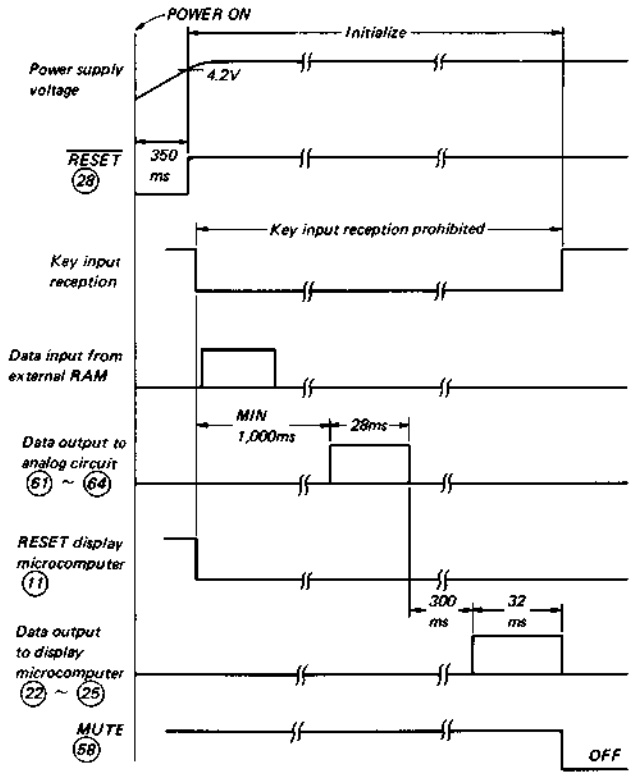
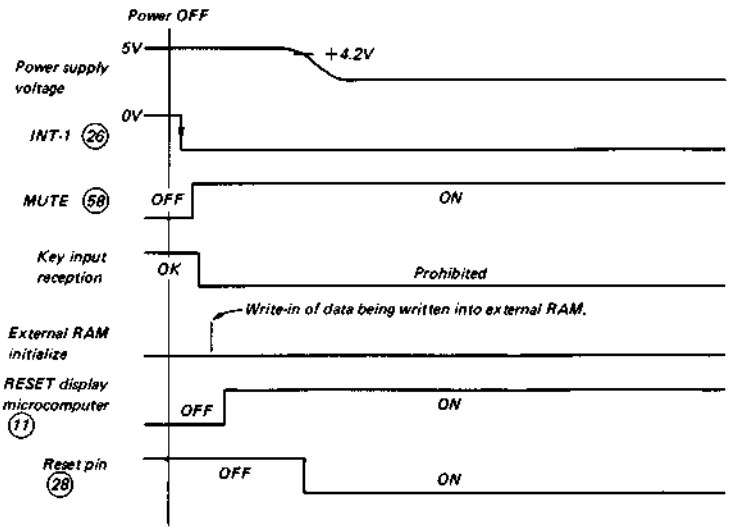


Figure 3

d) Power OFF (INTO interrupt) Process Timing Chart



(After power OFF, if power goes ON before reset goes ON, (sudden power outage), intialize processing is performed.)

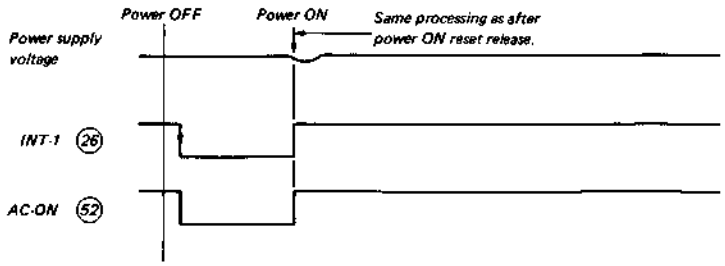


Figure 4

e) **Timing Chart of Data Transmission to IC101. IC115~119**

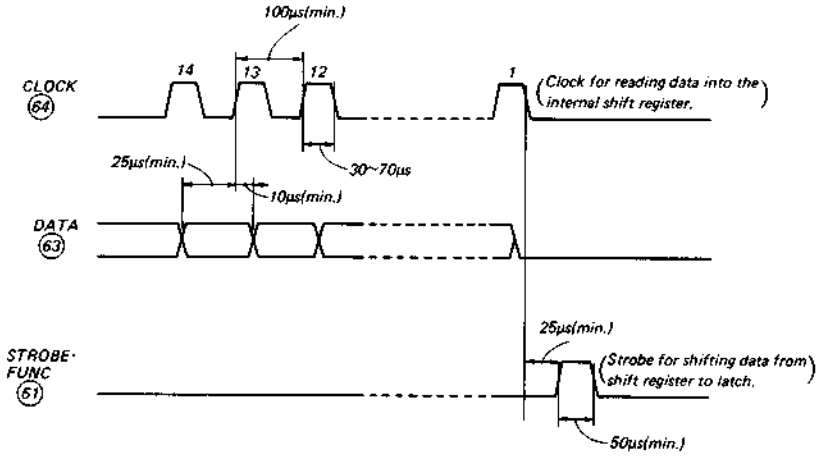


Figure 5

f) **Key input and Processing**

Key Input	Processing
S751~760 (+ ... f_1~f_{10})	1. Corresponding f_1~f_{10} data is raised 1 step. 2. Data of corresponding external RAM is rewritten. 3. Data is sent to corresponding IC from among IC115~119. 4. Data is sent to display microcomputer.
S761~770 (- ... f_1~f_{10})	1. Corresponding f_1~f_{10} data is lowered 1 step. 2. Same as S751~760 2~4.
S712~715 MEMORY 1, 2, 3, 4 For input of these keys only.	1. If EQUALIZATION is EG mode, the graphic data corresponding to the key pressed is read out from the external RAM and written in the external RAM last area. If EQUALIZATION is AEQ, data corresponding to key input is added to AEQ data and written in external RAM last status. 2. Data processed in step 1 is transmitted to analog circuit. 3. Data processed in 1 is sent to display microcomputer. Reception of S712~714 commands is transmitted to display microcomputer.
S712~715 MEMORY 1, 2, 3, 4 When one of these keys in pressed within 5 seconds of pressing S707.	1. Last status graphic data is written in to the corresponding external RAM area. If EQUALIZATION is AEQ mode, sets to EQ mode. 2. Reception of S712~715 commands is transmitted to display microcomputer. When S707 is received, that fact is transmitted to the display microcomputer. Next, after 5 seconds elapse or the above process is completed, completion of command processing is transmitted to the display microcomputer.
S708~711 FIXED MEMORY A, B, C, FLAT	1. If EQUALIZATION is EQ mode, data corresponding to the key pressed is read out from the external RAM, and written in the external RAM last status area. If EQUALIZATION is AEQ mode, data corresponding to the key pressed and AEQ data are added, and this is written in external RAM last status area. 2. Data processed in 1 is sent to the analog circuit. 3. Reception of S708~711 commands and the readout data are sent to the display microcomputer.
S701~703 INPUT SELECTOR LINE, TAPE1 TAPE2	1. Code corresponding to the key pressed is compared to the last status area, and the external RAM last status is rewritten is there is error (if the same, nothing more is done). 2. Result processed in 1 is sent to the analog circuit. 3. Result processed in 1 is sent to the display microcomputer.
S706 (EQUALIZATION AEQ)	1. Graphic mode is turned ON. 2. Graphic data read in during AEQ operation is called. (EQ•CHARACTER is turned OFF if it is ON.) 3. The data processed in 2. and the mode are written in to external RAM last status. 4. Data processed in 2. and the mode are sent to the display microcomputer.

— Continued on next page —

S704 (EQUALIZATION EQ)	1. Graphic mode is turned ON. 2. Data (not last status) in the last MEMORY used is called. 3. The above data and the mode are written in the external RAM last status. 4. Data processed in 2. and the mode are sent to the analog circuits. 5. Data processed in 2. and the mode are sent to the display microcomputer.
S705 (EQUALIZATION OFF)	1. Graphic mode is turned OFF. 2. Graphic mode OFF data is sent to external RAM. 3. Graphic mode OFF data is sent to the analog circuits. 4. Graphic mode OFF data is sent to the display microcomputer.
S602~604 EQ·MODE L, R, L+R	1. Set to mode of key pressed. 2. Mode processed in 1. is written in external RAM last status. 3. Mode processed in 1. is sent to display microcomputer.
S601 (CHARACTER)	1. Last status data is inverted, and the result is written in last status. 2. Result processed in 1. is sent to the analog circuits and display microcomputer.
S716 (EQ/RTA)	1. Display mode is inverted (analyzer/equalizer). However, not accepted when EQ is OFF. 2. Data is sent to external RAM last status and to display microcomputer.
S717 (LINE/MIC)	1. If analyzer (RTA) mode, LINE/MIC mode is inverted. 2. Data is sent to external RAM, analog circuits and display microcomputer.
S718 (HOLD)	1. Analyzer display hold or hold release command is sent to display microcomputer.

Table 2

g) Remote Control Signal Format

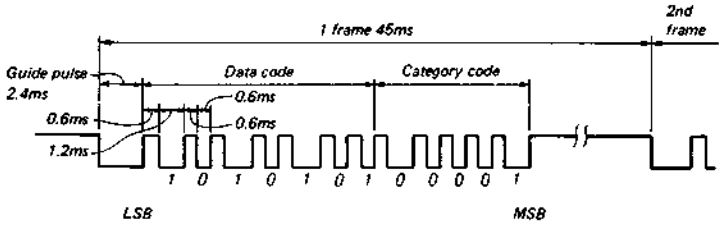


Figure 6

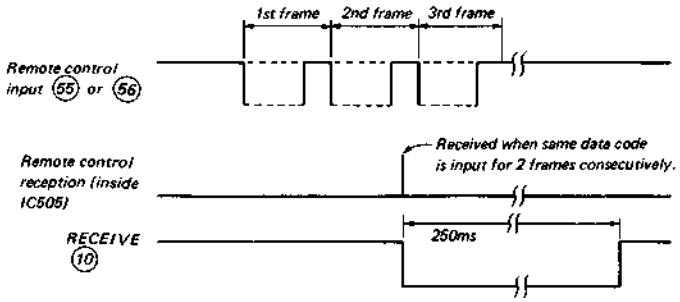
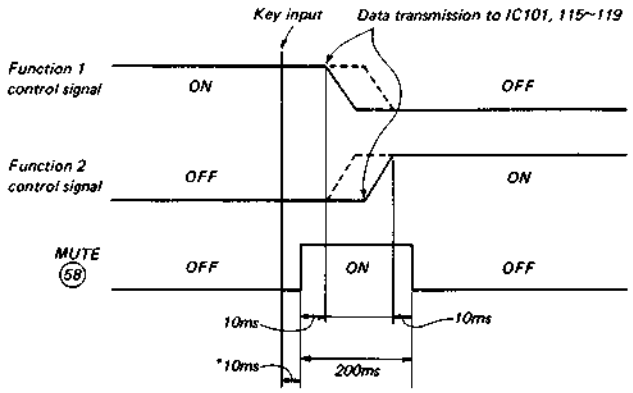


Figure 7

h) Muting during Function (INPUT SELECTOR) Switching: Muting is applied when data is transmitted to the analog circuits



*"Cancel time: Checks for the same key input within 10ms of receiving the first key input, and if it is the same, key input is confirmed.

Figure 8

i) **Muting during Graphic Mode ON/OFF (S704, 706←→S705)**

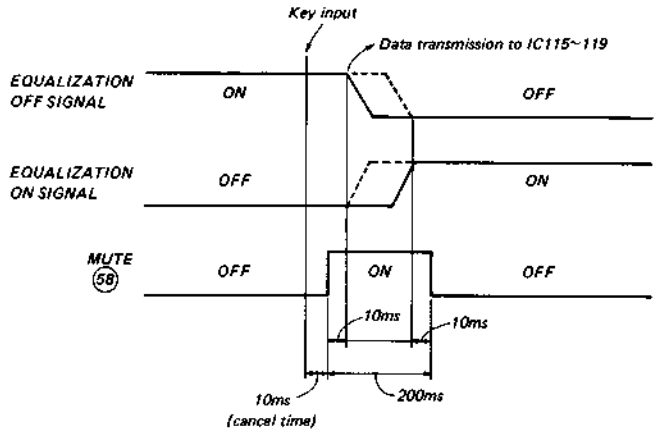


Figure 9

3. Display Microcomputer HMCS-404C (IC601)

IC601 is programmed for initalization, timer control, mode control, display data editing, A/D conversion control, data communication with the control microcomputer, dynamic scanning (display), etc.

a) **IC601 (HMCS-404C) Pin Functions**

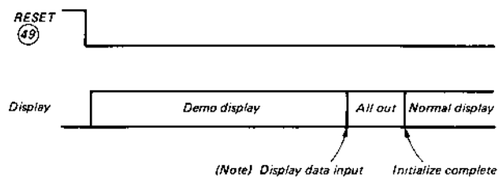
Pin No.	Pin	I/O	Symbol	Function
28 ~ 31	R6–0 ~ R6–3	O	A ~ D	Multiplexer address designation output.
37 ~ 40	R7–0 ~ R7–3			Not used.
41 ~ 44	R8–0 ~ R8–3			
45 ~ 48	R9–0 ~ R9–3			
5 6 ~ 13	D–15 R0–0 ~ R0–3 R1–0 ~ R1–3	O	S1 ~ S13	Display tube segment drive.
14 ~ 17	R2–0 ~ R2–3			
20	R3–0	I	END	A/D conversion processing end signal input.
21	R3–1	I	DATA	A/D conversion processing end serial data input.
22	R3–2	I	$\overline{\text{INT}}$	Request from control microcomputer.
23	R3–3	I		Not used.
33 ~ 36	R4–0 ~ R4–3	I/O	D0 ~ D3	Communication data buses with control microcomputer.
24	R5–0	O	START	Start signal to A/D converter.
25	R5–1	O	CE	CE signal to A/D converter.
26	R5–2	O	ACK	Permission signal to control microcomputer.
27	R5–3			Not used.
54	D–0	O	S15	EQ curve display level.
57	D–3	O	S14	TRA display level.

– Continued on next page –

55 56 58 ≀ 64 1 ≀ 4	D–1 D–2 D–4 ≀ D–14	O	IG ≀ 13G	Display tube digit drive.
18	RA–0			Not used.
19	RA–1		VDISP	Pull down circuit; –30V is applied. Therefore output is +5 and –30V.
32			VCC	+B pin.
49		I	RESET	Input for reset signal sent from control microcomputer.
50		I	TEST	Connected to "H". Not used.
51		I	OSC1	Clock input.
52		O	OSC2	Clock output. Not used.
53			GND	Ground.

Table 3

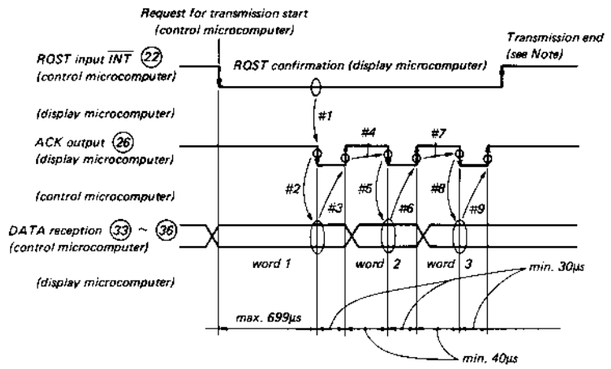
b) Initialize



(Note); Display data is input in the following order: L-f_1, R-f_1, L-f_2, R-f_2 ... R-f_{10}, A/B mode setting, inversion ON/OFF, L/R ON, EQ ON/OFF, FUNCTION F_1~F_3, C mode, SET ON/OFF MEMORY E_{17}~E_{20}, MEMORY OFF E_{13}~E_{16}, PAUSE ON/OFF, MIC ON/OFF.

Figure 10

c) Data Reception (Control microcomputer→ Display microcomputer) Timing Chart

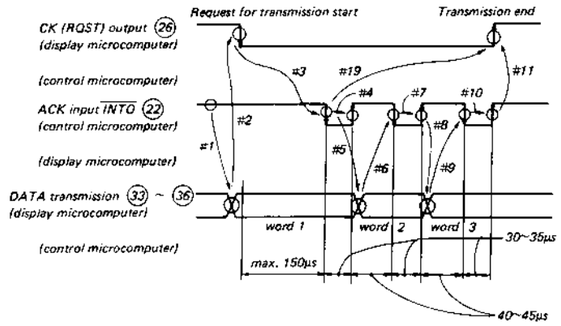


#1: INTO signal is tested after display processing at timer module, and if "L", reception processing is done as shown by #2~#9.

(Note): When the control microcomputer sends test status, etc. continuously, INTO signal is "L" while it is being sent.

Figure 11

d) Data Transmission (Display microcomputer→ Control microcomputer) Timing Chart



#1: Confirms that INTO is "H" and performs set.
#2: Outputs transmission request ROST.
#3: Waits for ACK to go "L" (max. 150µs).
#19: If ACK does not go low after 150µs, stops transmission. Starts over from #1 for next interrupt process.
#4~#8: After confirming ACK rise, outputs word 1, word 2 data.
#9~#11: After word 3 data transmission and after confirming ACK input "H", ROST output goes "H" and transmission ends.

Figure 12

e) Fluorescent Tube Dynamic Display

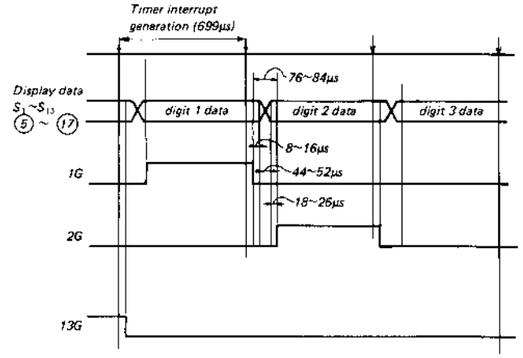


Figure 13

f) A/D Conversion Processing Timing Chart

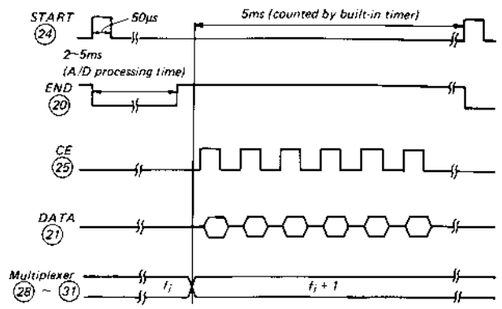


Figure 14

4. A/D Converter LC7910 (IC504)

LC7910 has a built-in 6 bit (64 step) A/D, D/A converter, and can transmit conversion data between the CPU both serially and in parallel. On this set, only the A/D converter is used, and the analog level of the frequencies (f_1~f_{10}) is converted to digital value and transmitted serially to the display microcomputer (IC601). Control is done by IC601.

IC504 Pin Functions

Symbol	Pin No.	Function
P1/P5 P2/P6 P3 P4	4 5 6 7	Not used on this set. (Parallel output for A/D conversion, parallel input for D/A conversion.)
S	3	Serial output pin. Output when CE="1", impedance when CE="0". CE input signal is output from MSB as clock.
START	13	Internal counter is reset at "1"; A/D conversion begins at fall (A/D conversion takes 2~5ms.)
CE	14	When END="1" (after A/D conversion end), conversion data is output from S each time CE rises.
END	8	"1" is output when A/D conversion ends and oscillation stops. Becomes "0" when there is reset (START) input.
CR-DR	2	Oscillation circuit. CR connected externally. Oscillates at 30kHz on this set.
VSS	9	–B pin.
S/P	16	Serial mode for "1", parallel mode for "0".
A/D	15	A/D mode for "1", D/A mode for "0".
VDD	1	+B pin.
Vref	11	Reference voltage for A/D conversion. A/D output is 1, 1, 1, 1, 1, 1 for AIN=Vref.
A IN	10	Analog input pin.
A OUT		Not used on this set (D/A conversion output pin).

Table 4

f) A/D Conversion Processing Timing Chart

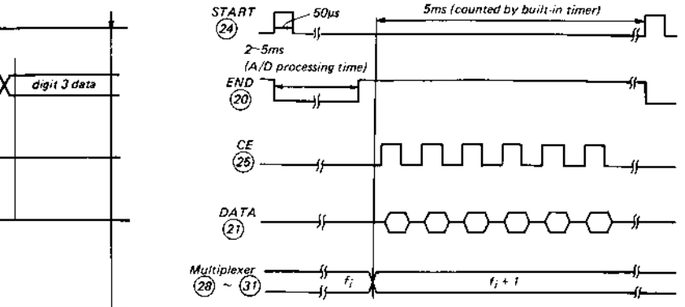


Figure 14

) A/D, D/A
ion data be-
parallel. On
sed, and the
f_{10}) is con-
d serially to
. Control is

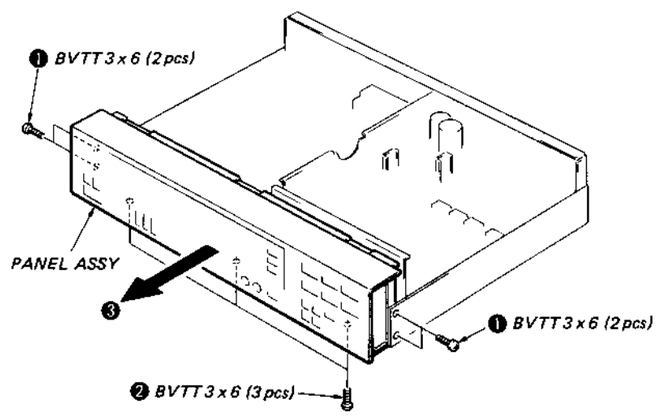
Function
.
A/D conversion, parallel input for D/A conversion.)
t when CE="1", impedance when CE="0". CE input signal is output from MSB as clock.
at "1"; A/D conversion begins at fall (A/D conversion takes 2~5ms.)
/D conversion end), conversion data is output from S each time CE rises.
conversion ends and oscillation stops. is reset (START) input.
nnected externally. Oscillates at 30kHz on this set.
llel mode for "0".
mode for "0".
D conversion. A/D output is 1, 1, 1, 1, 1, 1 for AIN=Vref.
A conversion output pin).

Table 4

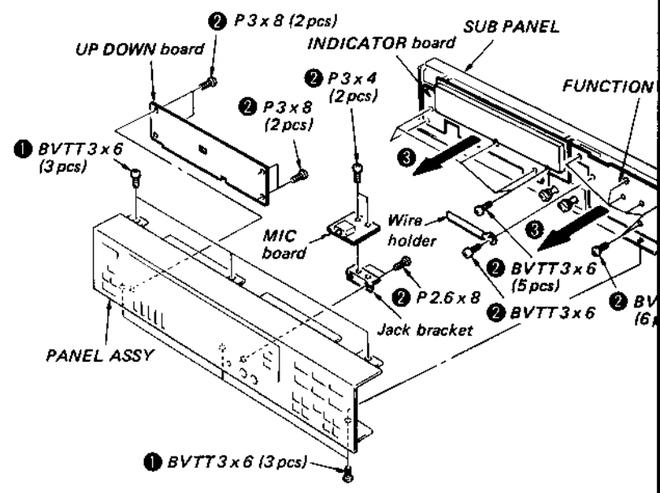
DISASSEMBLY
SECTION 3

Note: Follow the disassembly procedure in the numerical order given.

PANEL ASSY

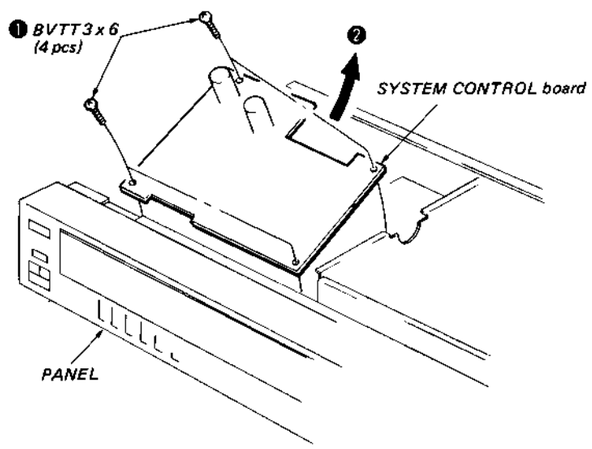


UP DOWN BOARD, MIC BOARD, INDICATOR BOARD, FUNCTION BOARD

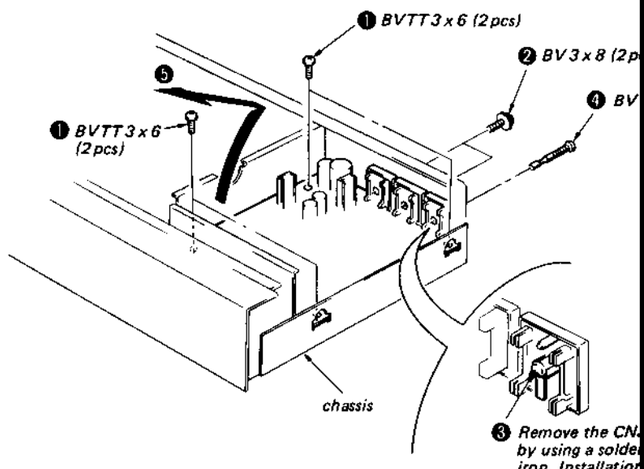


REMOVE THE CASE.

SISTEM CONTROL BOARD

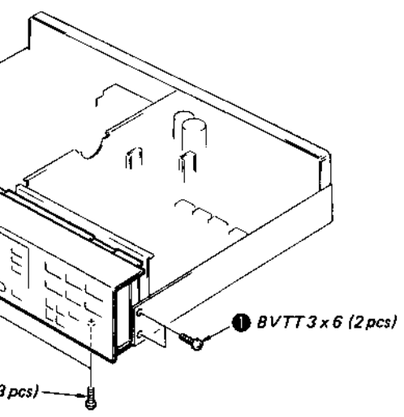


ANALOG BOARD

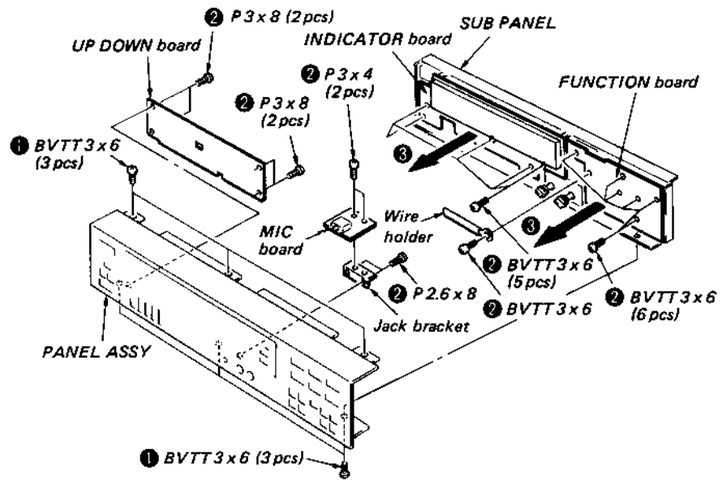


SASSEMBLY
SECTION 3

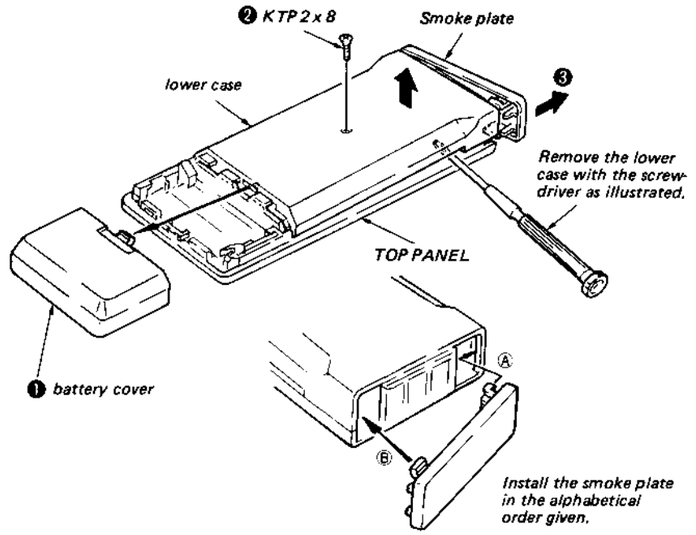
order given.

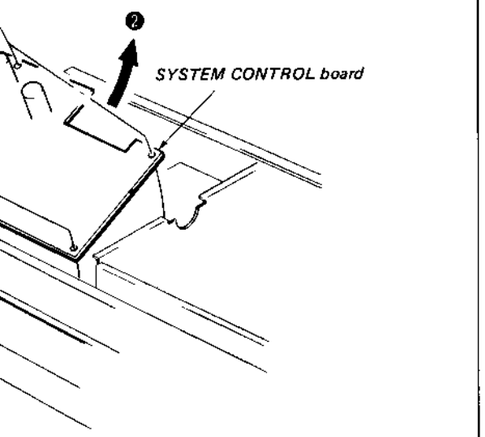


UP DOWN BOARD, MIC BOARD, INDICATOR BOARD, FUNCTION BOARD

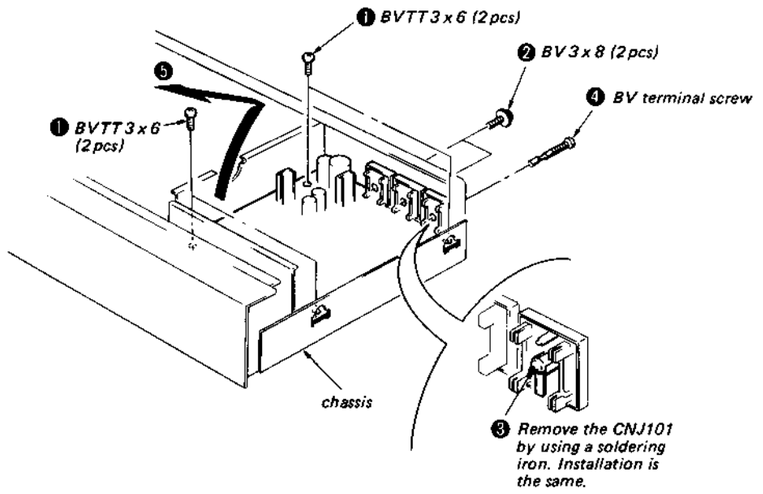


COMMANDER TOP PANEL





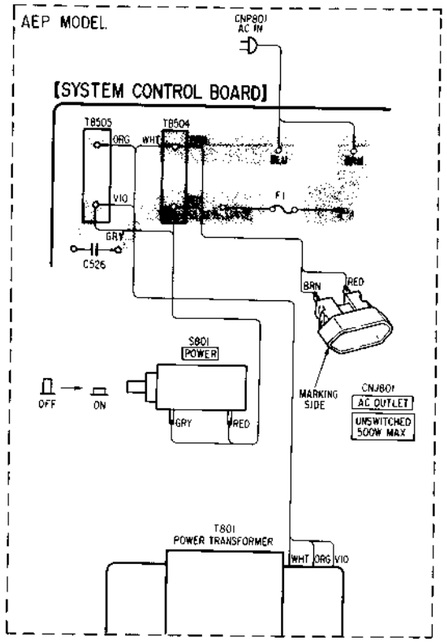
ANALOG BOARD

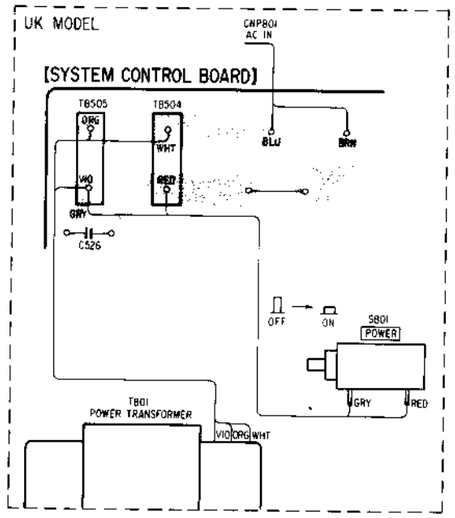


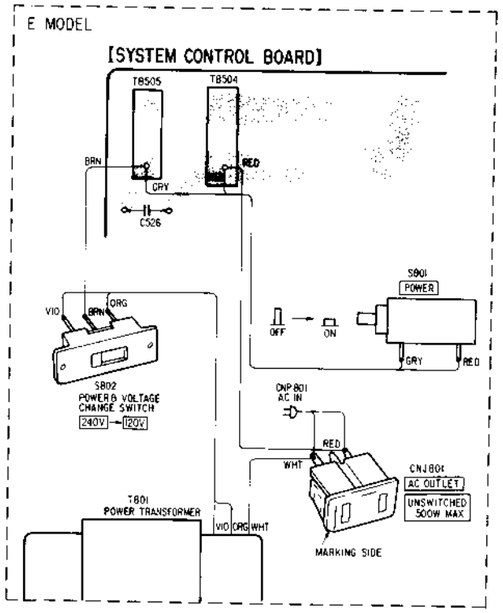
SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM

• See page 35 for Semiconductor Lead Layouts.

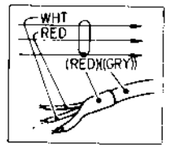




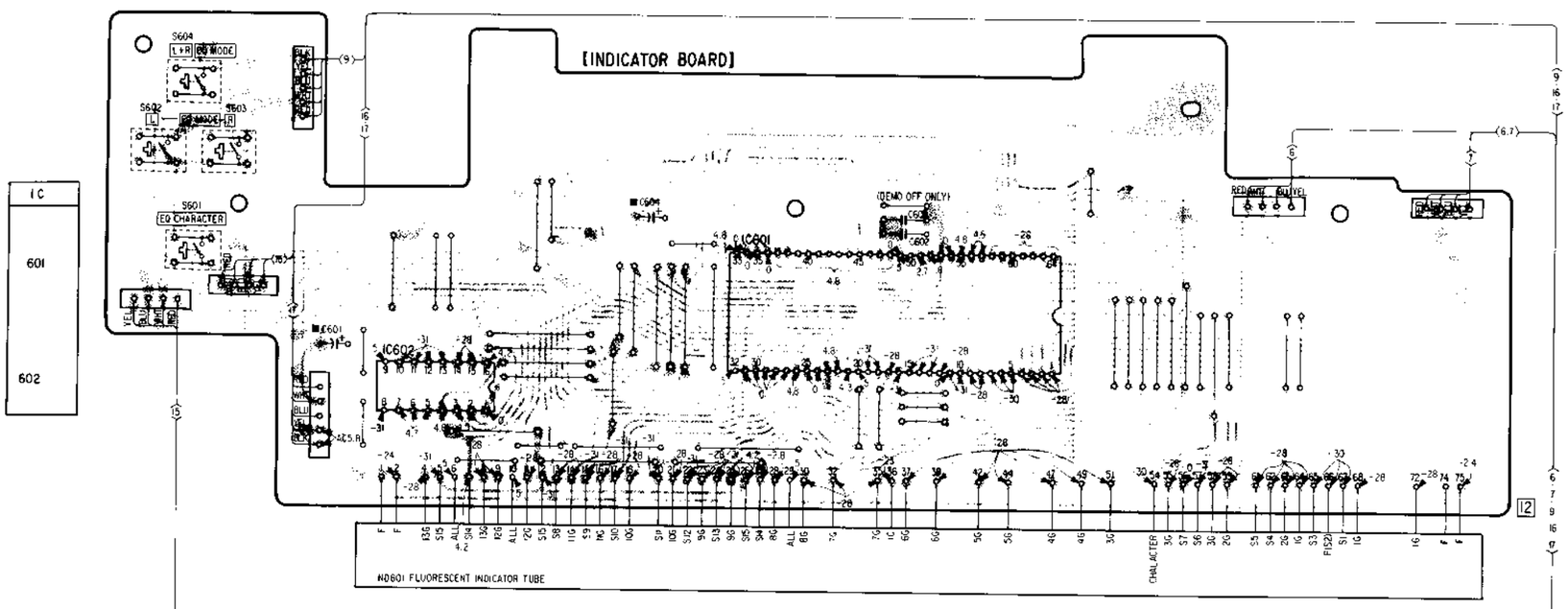


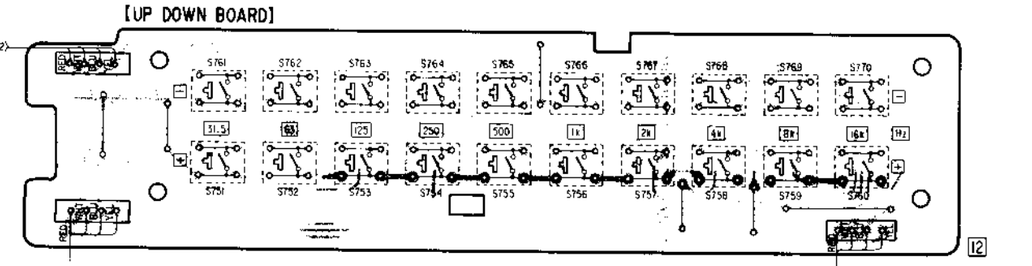
Note:

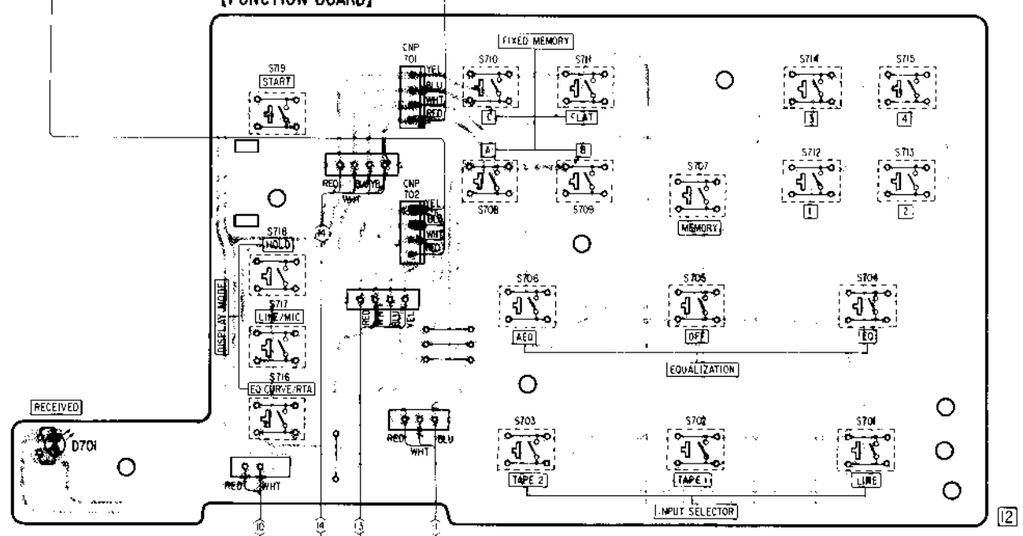
- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- : B+ pattern
- ▬▶ : signal path
- ▬·▶ : L-CH signal path
- ▬··▶ : R-CH signal path







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IC501
IC507
IC505
IC101
IC106
IC105
IC115
US,Canadian MODEL
S801
POWER
OFF
ON
CNP801
AC IN 120V
CNJ 801
AC OUTLET
UNSWITCHED
600W MAX
MARKING SIDE
T801
POWER TRANSFORMER
SYSTEM CONTROL BOARD
TB505
TB504
TB501
TB502
TB503
AC 25
AC 5.8
IC508
IC506
OFF CHECK
5Vp-p
0.25mS
60mS
12mS
BATT
N BOARD
REMOTE SENSOR
CIRCS BOARD
CNJ101
LINE
IN
OUT
MICROPHONE BOARD
J101
MIC
ROTARY SW BOARD
LOW
NORMAL
HIGH
S401
SENS
MIC/RTA
VOLUME BOARD
MAX
MIN
RV101
PINK NOISE
EQUALIZATION
MEMORY
SELECTOR
CHALLATER
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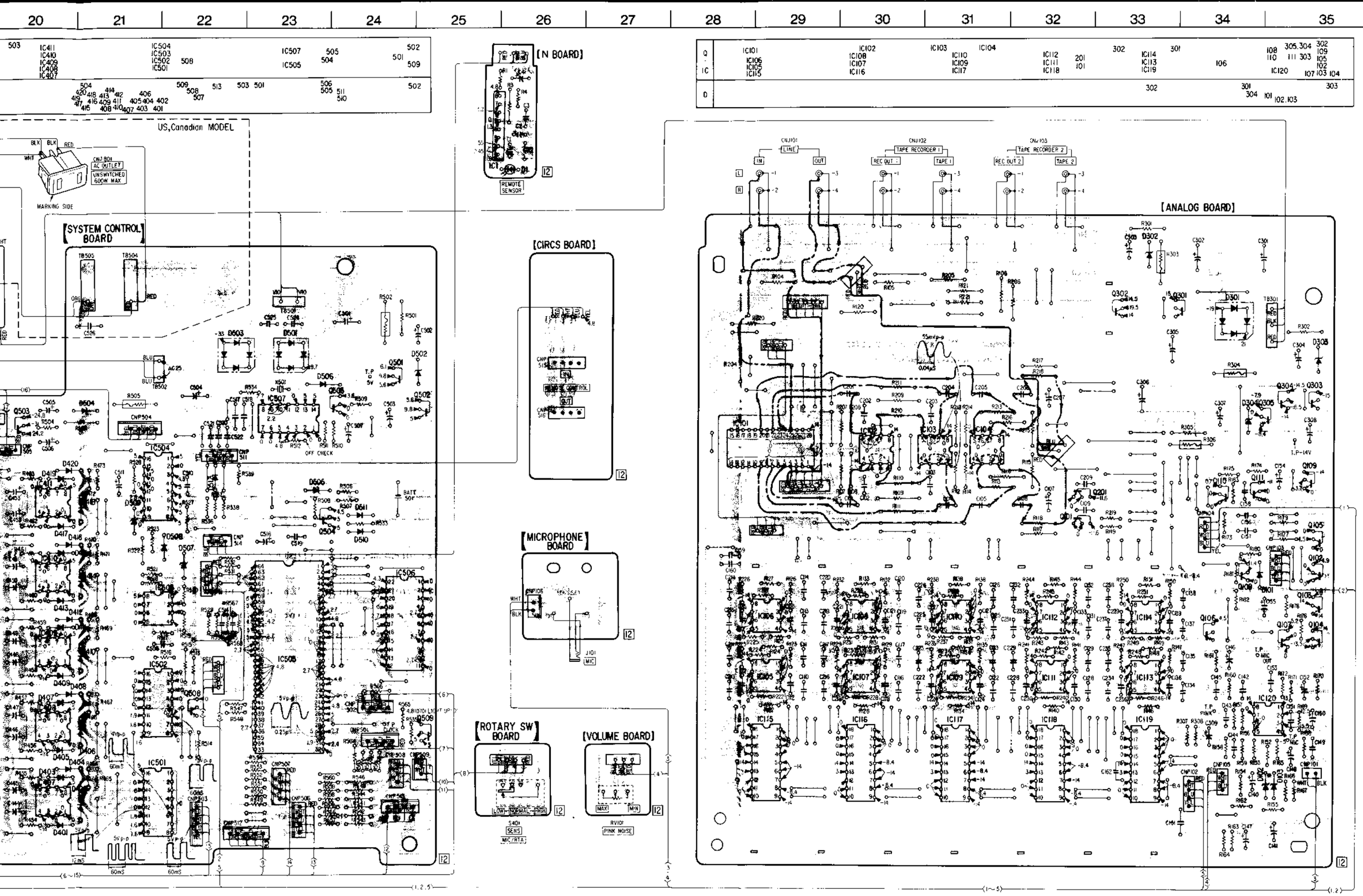
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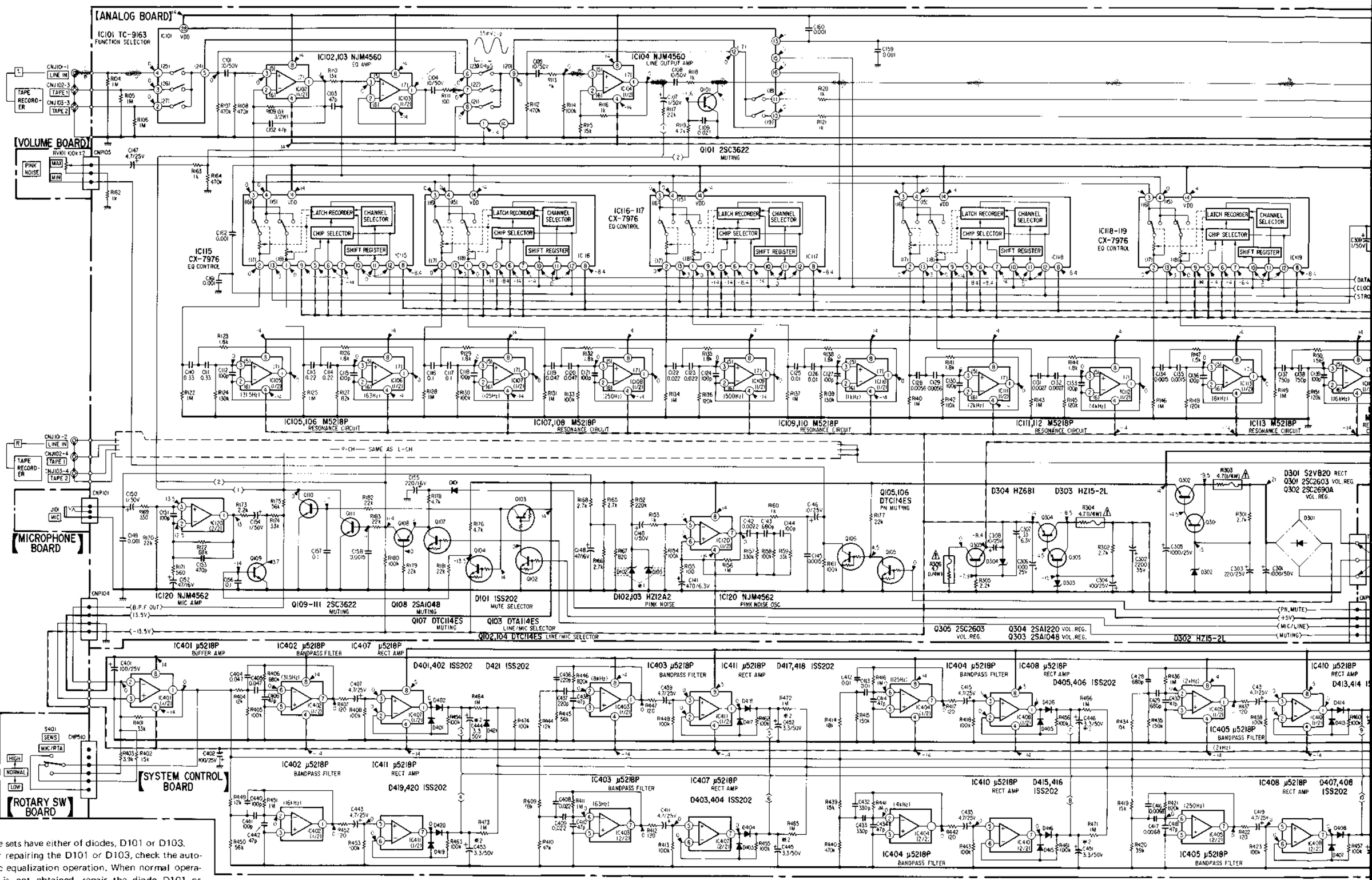
US,Canadian MODEL
CNJ801
AC OUTLET
UNSWITCHED
600W MAX
MARKING SIDE
[SYSTEM CONTROL] BOARD
[N BOARD]
REMOTE SENSOR
[CIRCS BOARD]
[MICROPHONE] BOARD
[ROTARY SW] BOARD
S401
SENS
MIC/RTA
[VOLUME BOARD]
RV101
PINK NOISE
[ANALOG BOARD]
CNJ101
LINE
IN
OUT
CNJ102
TAPE RECORDER 1
REC OUT
TAPE 1
CNJ103
TAPE RECORDER 2
REC OUT 2
TAPE 2
OFF CHECK
J101
MIC

4-2. SCHEMATIC DIAGRAM ● See page 35 for Note.



Note:

*1 Some sets have either of diodes, D101 or D103.

*2 After repairing the D101 or D103, check the automatic equalization operation. When normal operation is not obtained, repair the diode D101 or D103. In this case, the level of low frequency response will be high.

[UP DOWN BOARD]

[FUNCTION BOARD]

D701 SEL2410E

IC118-119 CX-7976 EQ CONTROL

IC111,112 M5218P RESONANCE CIRCUIT

IC113 M5218P RESONANCE CIRCUIT

IC114 M5218P RESONANCE CIRCUIT

[CIRCS BOARD]

[N BOARD]

IC1 CX20106 REMOTE CONTROL RECEIVER

D1 PH3028

IC501,502 TC4051BC MULTI PLEXER

IC503 µ5218P LOGARITHM AMP

IC504 LC7910 A/D CONVERTER

IC505 M50742-402SP CONTROL MICROCOMPUTER

IC506 µPD5101 RAM

IC507 TC40H006 CLOCK

IC601 HD614042SA98 INDICATOR TUBE DRIVE

Q508 DTC144ES INVERTER

Q509 DTA114ES LED DRIVE

Q505 DTC114ES DETECT

D509 RD3.0ELI

D507 HZ3ALL D508 ISS202

D513,514 ISS202

D510,511 ISS202

IC408 µ5218P RECT AMP D405,406 ISS202

IC410 µ5218P RECT AMP D413,414 ISS202

IC406 µ5218P BANDPASS FILTER

IC409 µ5218P RECT AMP D409,410 ISS202

IC405 µ5218P BANDPASS FILTER

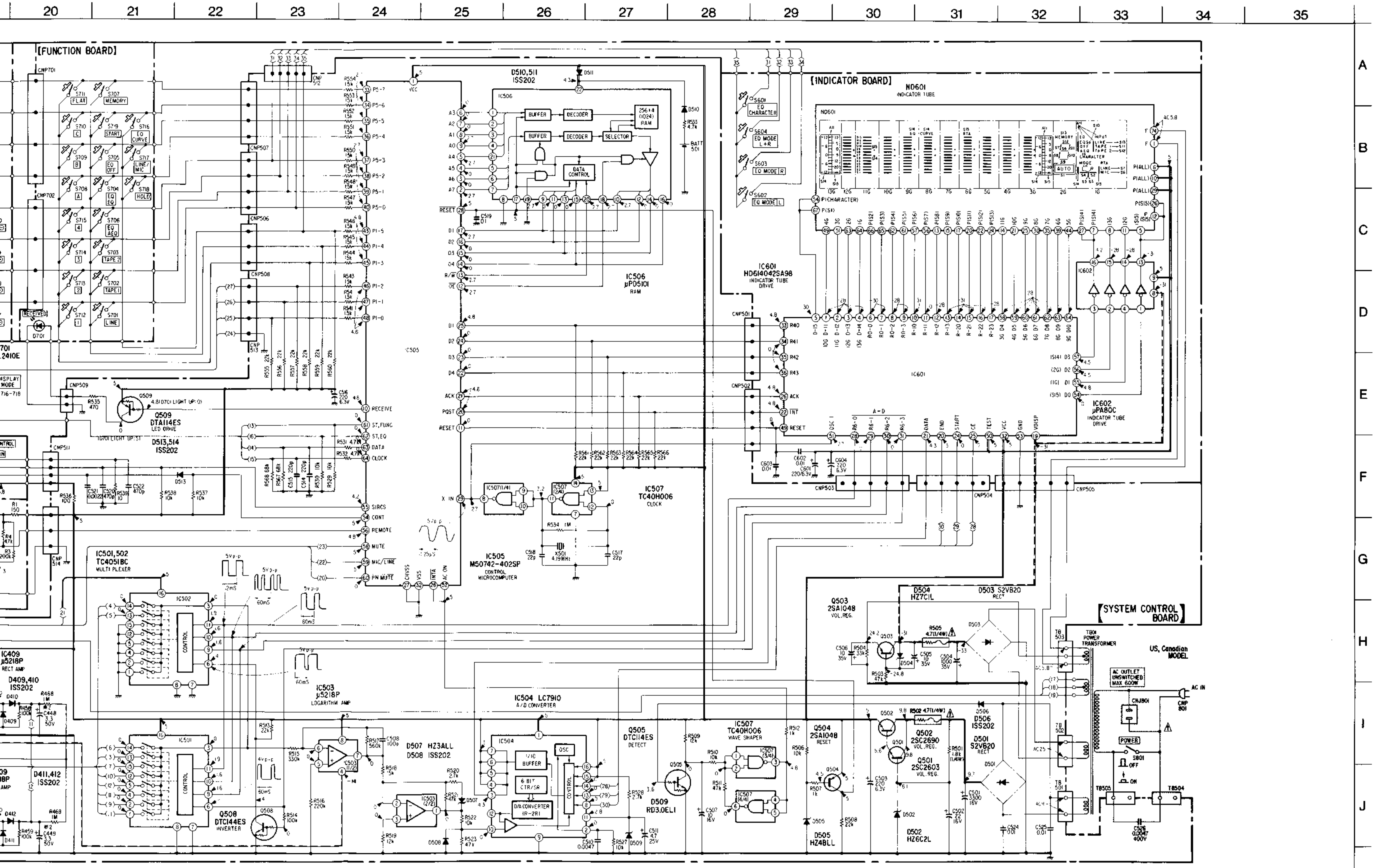
IC408 µ5218P RECT AMP D407,408 ISS202

IC406 µ5218P BANDPASS FILTER

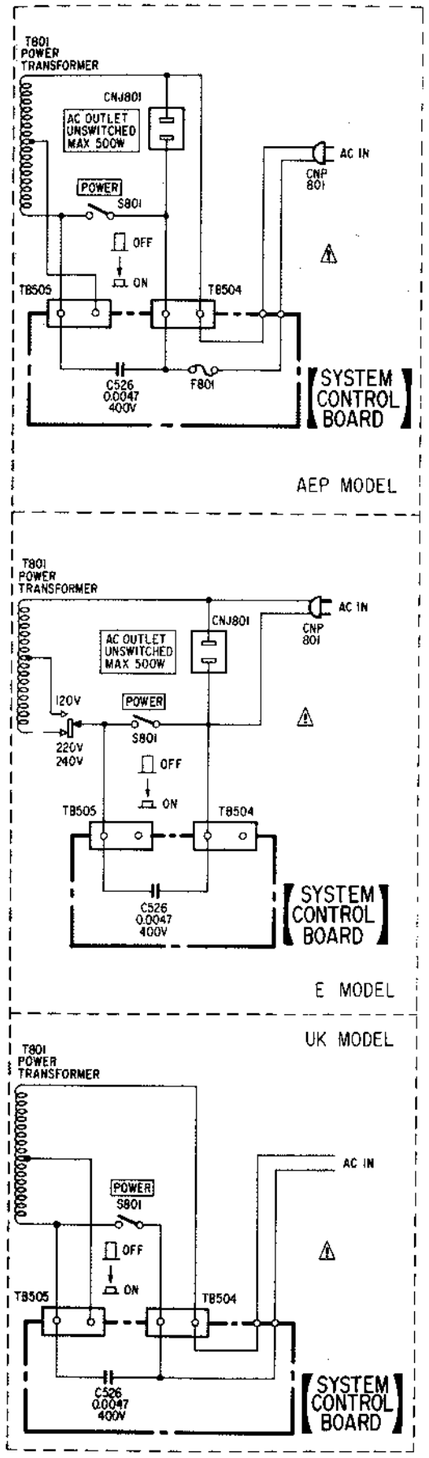
IC409 µ5218P RECT AMP D411,412 ISS202

IC405 µ5218P BANDPASS FILTER

D301 S2VB20 RECT
Q301 2SC2603 VOL.REG.
Q302 2SC2690A VOL.REG.
Q304 2SA1220 VOL.REG.
Q303 2SA1048 VOL.REG.


[FUNCTION BOARD]
[INDICATOR BOARD]
[SYSTEM CONTROL BOARD]
ND601 INDICATOR TUBE
D510,511 ISS202
IC506 µPD5101 RAM
IC505 M50742-402SP CONTROL MICROCOMPUTER
IC507 TC40H006 CLOCK
IC601 HD614042SA98 INDICATOR TUBE DRIVE
IC602 µPA80C INDICATOR TUBE DRIVE
Q509 DTA114ES LED DRIVE
D513,514 ISS202
IC501,502 TC4051BC MULTI PLEXER
IC503 µ5218P LOGARITHM AMP
IC504 LC7910 A/D CONVERTER
Q505 DTC114ES DETECT
IC507 TC40H006 WAVE SHAPER
D507 HZ3ALL
D508 ISS202
Q508 DTC144ES INVERTER
D509 RD3.0EL1
Q504 2SA1048 RESET
D505 HZ4BLL
Q503 2SA1048 VOL.REG.
D504 HZ7C1L
D503 S2VB20 RECT
Q502 2SC2690 VOL.REG.
Q501 2SC2603 VOL.REG.
D506 ISS202
D501 S2VB20 RECT
D502 HZ6C2L
T801 POWER TRANSFORMER
US, Canadian MODEL
AC OUTLET UNSWITCHED MAX 600W
POWER
S801
AC IN
IC409 µ5218P RECT AMP
D409,410 ISS202
D411,412 ISS202
BUFFER
DECODER
SELECTOR
256×4 (1024) RAM
DATA CONTROL
OSC
CONTROL
D/A CONVERTER
6 BIT CTR/SR
S711 FLAT
S707 MEMORY
S710 C
S719 START
S716 EQ CURVE
S709 B
S705 EQ OFF
S717 LINE/MIC
S708 A
S704 EQ EQ
S718 HOLD
S715 4
S706 EQ REQ
S714 3
S703 TAPE 2
S713 2
S702 TAPE 1
S712 1
S701 LINE
S601 EQ CHARACTER
S604 EQ MODE L+R
S603 EQ MODE R
S602 EQ MODE L
RECEIVE
ST.FUNC
ST.EQ
DATA
CLOCK
SIRCS
CONT
REMOTE
MUTE
MIC/LINE
PN MUTE
X501 4.19MHz
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
A
B
C
D
E
F
G
H
I
J
K

• TRANSFORMER for EACH MODELS



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- ⚡ : signal path.
- : nonflammable resistor.
- : fusible resistor.
- ——— : B+ bus.
- – – – : B– bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with VOM (50 kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- Switches

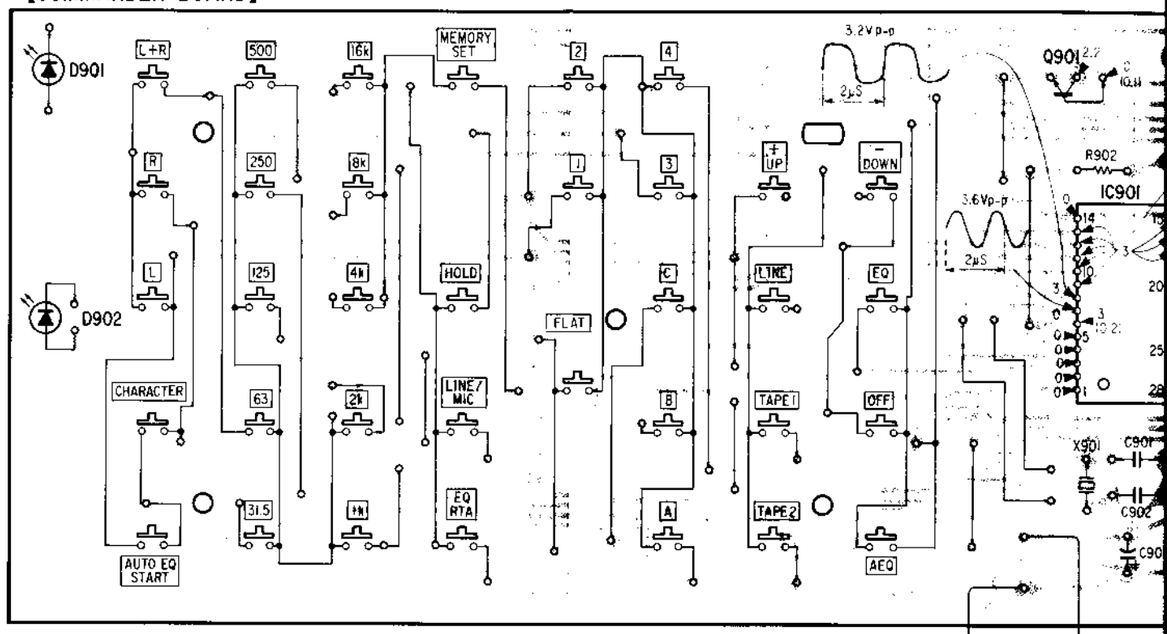
Ref. No.	Switch	Position
S401	SENS	NORMAL
S601	EQ MODE L + R	OFF
S602	EQ MODE L	OFF
S603	EQ MODE R	OFF
S604	EQ CHARACTER	OFF
S701	LINE	OFF
S702	TAPE 1	OFF
S703	TAPE 2	OFF
S704	EQ	OFF
S705	OFF	OFF
S706	AEQ	OFF
S707	MEMORY	OFF
S708	FIXED MEMORY A	OFF
S709	FIXED MEMORY B	OFF
S710	FIXED MEMORY C	OFF
S711	FIXED MEMORY FLAT	OFF
S712	MEMORY 1	OFF
S713	MEMORY 2	OFF
S714	MEMORY 3	OFF
S715	MEMORY 4	OFF
S716	EQ CURVE	OFF
S717	LINE/MIC	OFF
S718	HOLD	OFF
S719	START	OFF
S751	31.5 Hz +	OFF
S752	63 Hz +	OFF
S753	125 Hz +	OFF
S754	250 Hz +	OFF
S755	500 Hz +	OFF
S756	1 kHz +	OFF
S757	2 kHz +	OFF
S758	4 kHz +	OFF
S759	8 kHz +	OFF
S760	16 kHz +	OFF
S761	31.5 Hz –	OFF
S762	63 Hz –	OFF
S763	125 Hz –	OFF
S764	250 Hz –	OFF
S765	500 Hz –	OFF
S766	1 kHz –	OFF
S767	2 kHz –	OFF
S768	4 kHz –	OFF
S769	8 kHz –	OFF
S770	16 kHz –	OFF
S801	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

4-3. MOUNTING DIAGRAM

– Commander Section –

[COMMANDER BOARD]

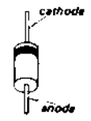
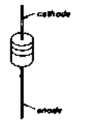
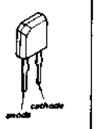
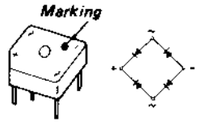
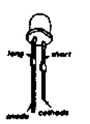
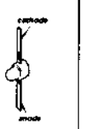


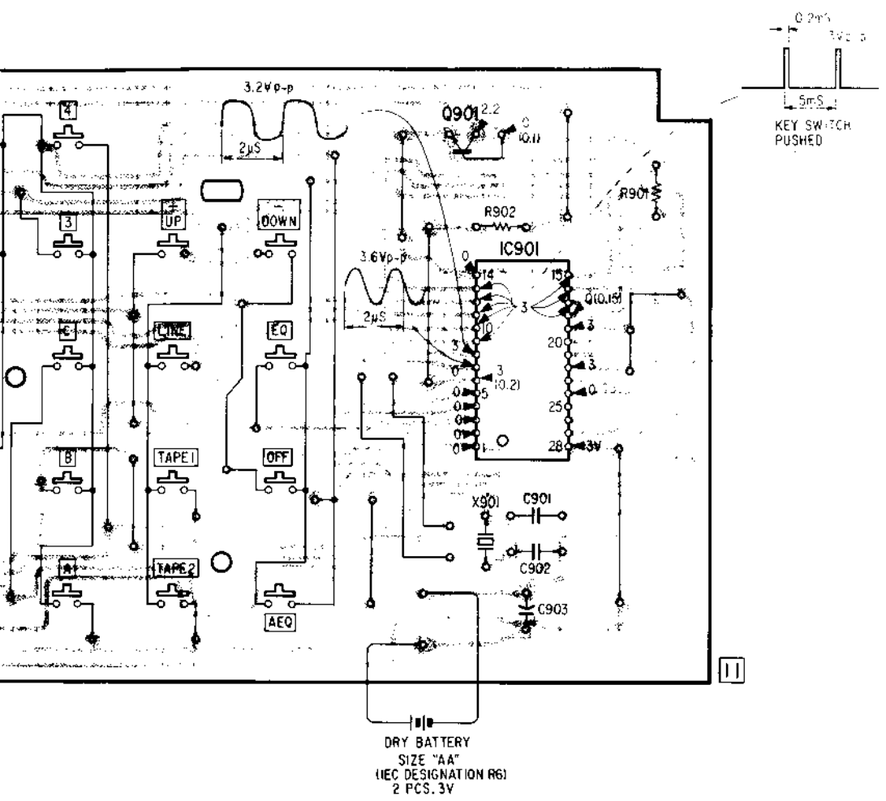
- ○— : carbon pattern

Note for SCHEMATIC DIAGRAM on page 37

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- ——— : B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under Key Switch-ON conditions with a VOM (50 kΩ/V).
  No mark: Key Switch-OFF
- Voltage tion to
- Wavefo by usin Voltage tion to

• Semiconductor Lead Layouts

HZ3ALL HZ4BLL HZ6B1L HZ6C2L HZ7C1L HZ15-2L HZ12A2 RD3.0E-L1	1SS202-1	PH302B	S2VB20	SEL2410E-C	SR106C	SLR-932A
						



Note for SCHEMATIC DIAGRAM on page 37

All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.

All resistors are in Ω and ¼W or less unless otherwise specified.

———: B+ bus.

Voltages are dc with respect to ground unless otherwise noted.

Readings are taken under Key Switch-ON conditions with a VOM (50 kΩ/V).

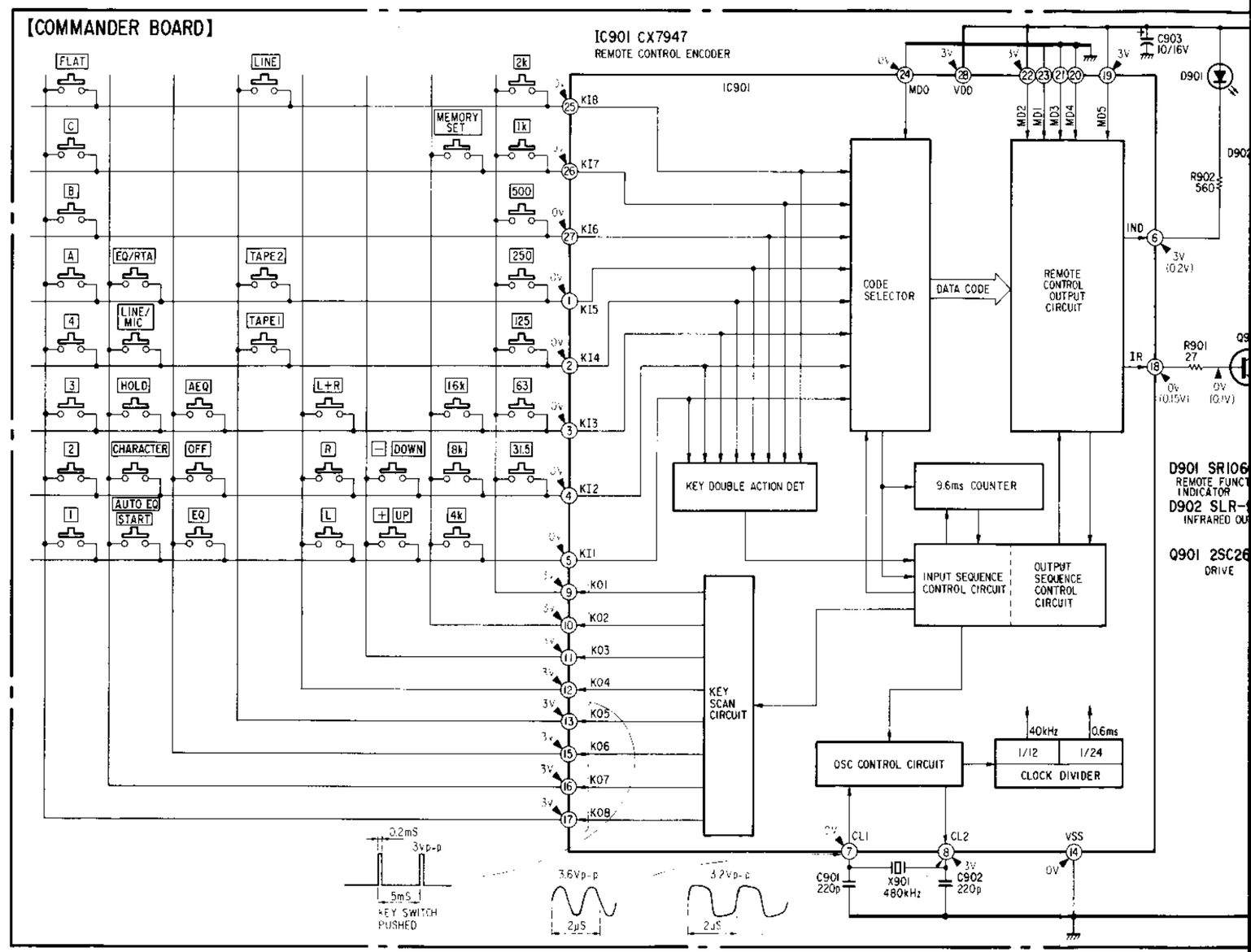
No mark: Key Switch-OFF

- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground in Key Switch-ON mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.

4-4. SCHEMATIC DIAGRAM

• See page 36 for Note.

– Commander Section –

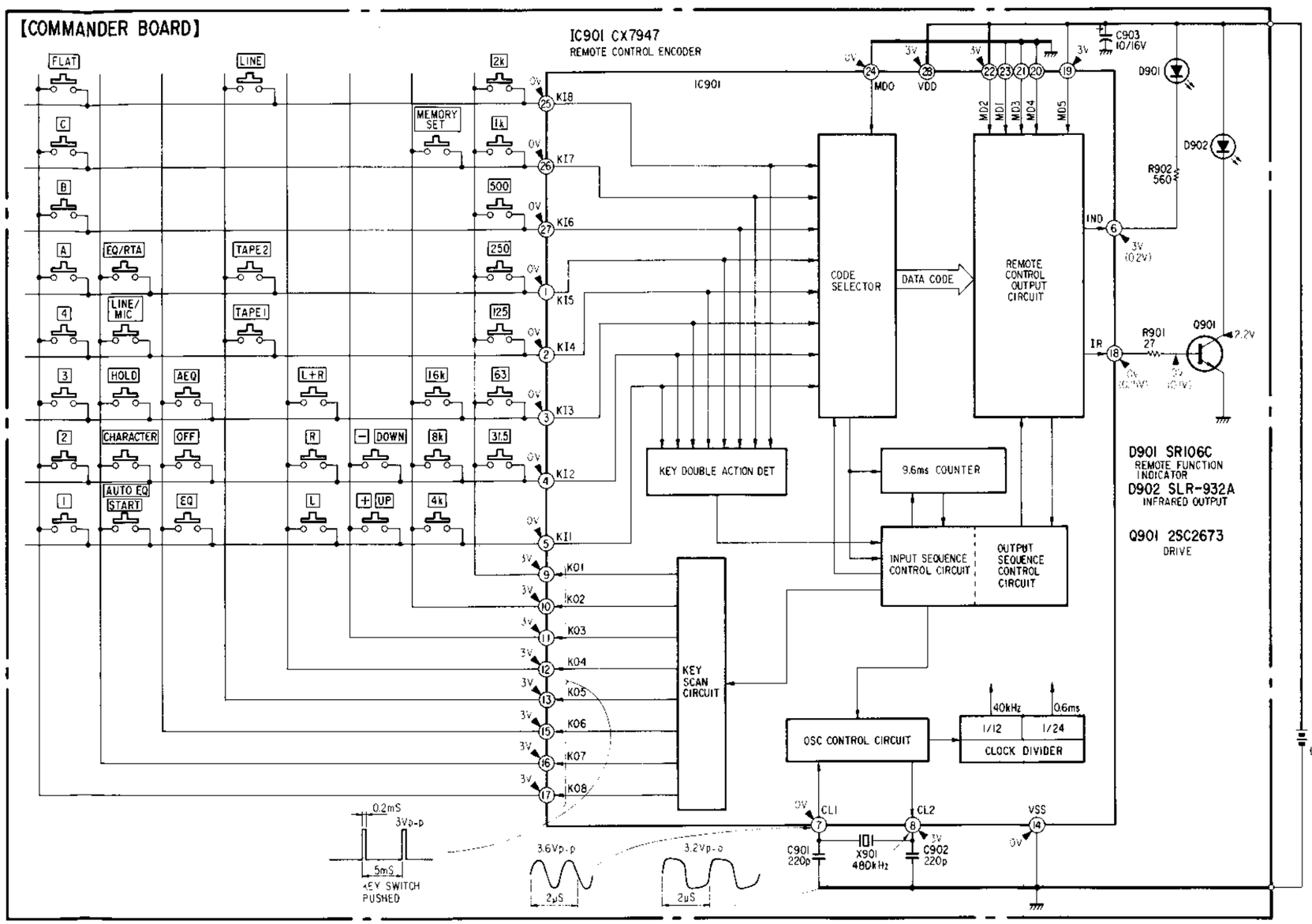


	SEL2410E-C	SR106C	SLR-932A	NJM4560D NJM4562D M5218P	LC7910 μPA80C μPD4051BC	CX-7976	TC40H000P	TC5501P	TC9163N	M50742-402SP HD6142SA98	CX-7947	CX20106	2SA733 2SC3622A-L	2SC2603-F DTA114ES DTC114ES DTC144ES
	long — short anode cathode	cathode anode	anode cathode	(Top view)	(Top view)	(Top view)	(Top view)	(Top view)	(Top view)	(Top view)	(Top view)		E C B	E C B

4-4. SCHEMATIC DIAGRAM

• See page 36 for Note.

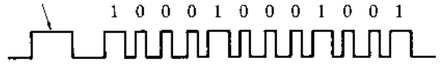
– Commander Section –



• **Key Switch Pushed**

Key	Data Code												Ward Code	
START	0	0	0	0	1	1	0	0	1	0	0	1		
CHARACTER	1	0	0	0	1	1	0	0	1	0	0	1		
L	0	0	0	1	1	0	0	0	1	0	0	1		
R	1	0	0	1	1	0	0	0	1	0	0	1		
L + R	0	1	0	1	1	0	0	0	1	0	0	1		
31.5 Hz	1	0	0	0	0	0	0	0	1	0	0	1		
63 Hz	0	1	0	0	0	0	0	0	1	0	0	1		
125 Hz	1	1	0	0	0	0	0	0	1	0	0	1		
250 Hz	0	0	1	0	0	0	0	0	1	0	0	1		
500 Hz	1	0	1	0	0	0	0	0	1	0	0	1		
1 kHz	0	1	1	0	0	0	0	0	1	0	0	1		
2 kHz	1	1	1	0	0	0	0	0	1	0	0	1		
4 kHz	0	0	0	1	0	0	0	0	1	0	0	1		
8 kHz	1	0	0	1	0	0	0	0	1	0	0	1		
16 kHz	0	1	0	1	0	0	0	0	1	0	0	1		
EQ/RTA	0	0	1	0	1	1	0	0	1	0	0	1		
LINE/MIC	1	1	0	0	1	1	0	0	1	0	0	1		
HOLD	0	1	0	0	1	1	0	0	1	0	0	1		
SET	0	1	1	1	0	0	0	0	1	0	0	1		
1	0	0	0	1	1	1	0	0	1	0	0	1		
2	1	0	0	1	1	1	0	0	1	0	0	1		
3	0	1	0	1	1	1	0	0	1	0	0	1		
4	1	1	0	1	1	1	0	0	1	0	0	1		
A	0	0	1	1	1	1	0	0	1	0	0	1		
B	1	0	1	1	1	1	0	0	1	0	0	1		
C	0	1	1	1	1	1	0	0	1	0	0	1		
FLAT	1	1	1	1	1	1	0	0	1	0	0	1		
TAPE 2	0	0	1	0	0	1	0	0	1	0	0	1		
TAPE 1	1	1	0	0	0	1	0	0	1	0	0	1		
LINE	1	1	1	0	0	1	0	0	1	0	0	1		
AEQ	0	1	0	1	0	1	0	0	1	0	0	1		
OFF	1	0	0	1	0	1	0	0	1	0	0	1		
EQ	0	0	0	1	0	1	0	0	1	0	0	1		
+	0	0	0	0	1	0	0	0	1	0	0	1		
–	1	0	0	0	1	0	0	0	1	0	0	1		

(Ex.) guide pulse



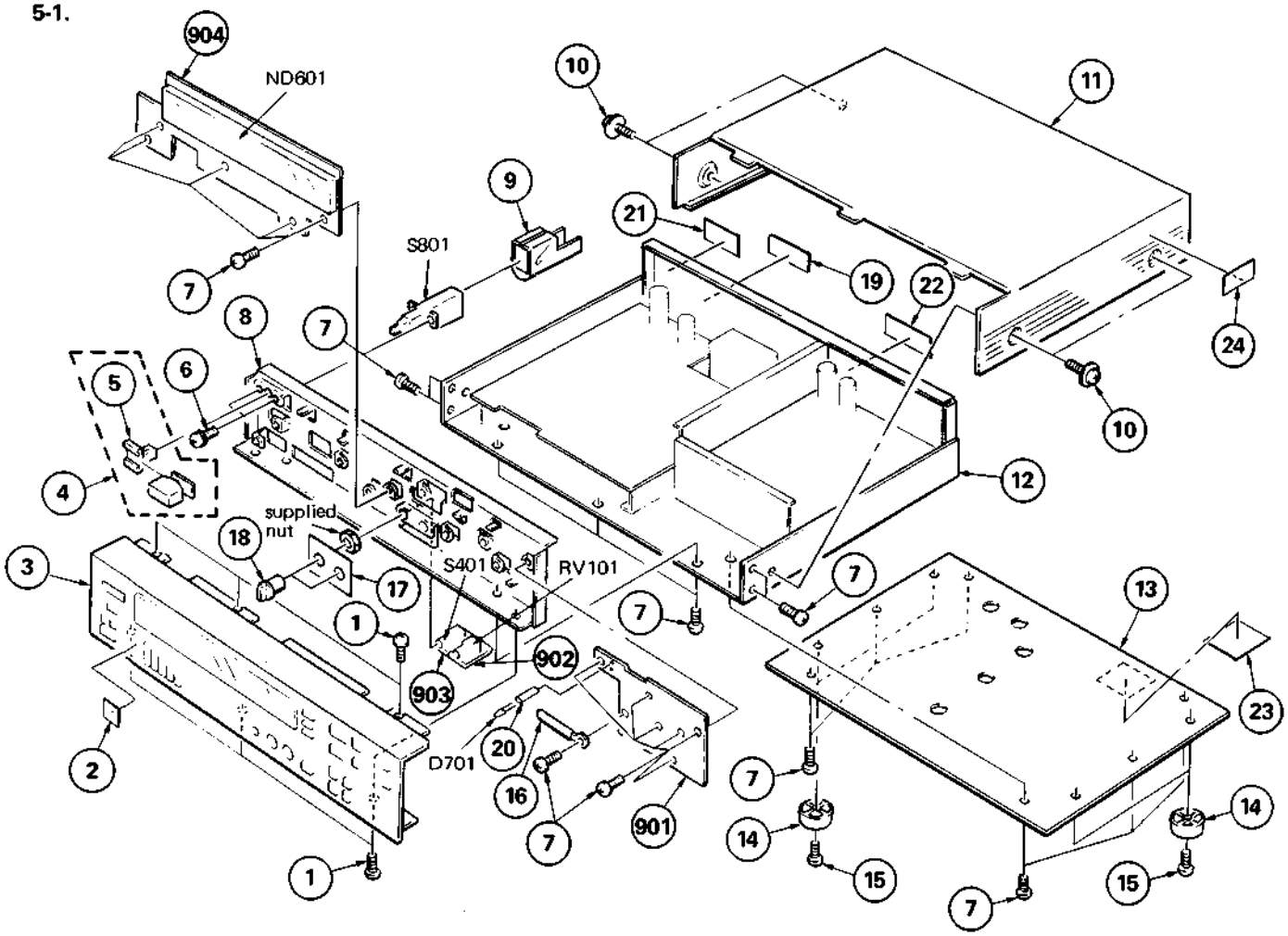
	TC40H000P	TC5501P	TC9163N	M50742-402SP HD6142SA98	CX-7947	CX20106	2SA733 2SC3622A-L	2SC2603-F DTA114ES DTC114ES DTC144ES	2SA1220A 2SC2690A-Q

SECTION 5
EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

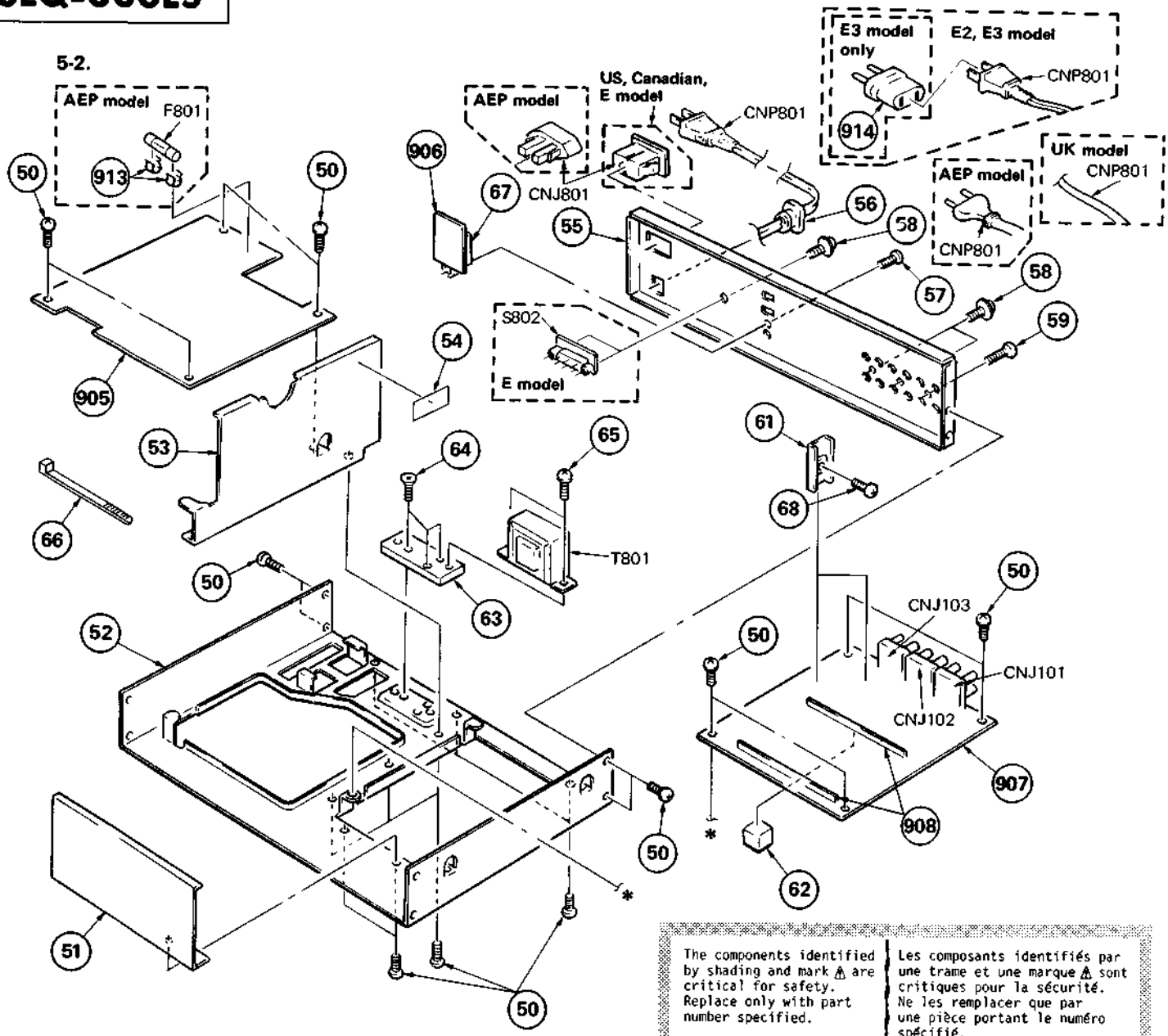
5-1.



No.	Part No.	Description	Remarks
1	7-685-751-09	SCREW +BVTT 3X6 (S)	
2	3-703-710-41	STICKER, SONY SYMBOL (12)	
3	X-4905-417-1	PANEL ASSY	
4	X-4885-901-0	KNOB ASSY, POWER	
5	4-866-342-00	JOINT (B), KNOB	
6	7-682-647-01	SCREW +PS 3X6	
7	7-685-871-01	SCREW +BVTT 3X6 (S)	
8	*4-905-496-01	PANEL, SUB	
9	3-575-524-00	COVER, POWER SWITCH	
10	4-889-321-11	SCREW	
11	3-575-539-41	CASE	
12	*4-905-428-01	CHASSIS	
13	*4-905-425-01	PLATE, BOTTOM	
14	X-3556-910-0	FOOT ASSY, MF	
15	7-685-873-01	SCREW +BVTT 3X10 (S)	
16	3-701-822-00	HOLDER, WIRE	
17	*4-905-487-01	SCREEN	
18	4-905-478-01	KNOB, ROUND	
19	4-905-472-01	(Canadian)...LABEL, MODEL NUMBER (CA)	
	4-905-475-01	(UK).....LABEL, MODEL NUMBER (UK)	
	4-905-476-01	(AEP).....LABEL, MODEL NUMBER (AE)	
	4-905-473-01	(US).....LABEL, MODEL NUMBER (U)	
20	*4-886-543-11	TUBE, CUSHION	
21	*4-809-246-00	(US,Canadian)...LABEL, AC 120V 60HZ	
22	4-905-474-01	(E2/E3)...LABEL, MODEL NUMBER (E2/3)	
23	3-703-680-00	(US)....LABEL, CAUTION, SUB, NEW UL	
24	3-703-081-21	(UK)....LABEL (SIDE), SUB CAUTION	
901	*1-615-786-11	PC BOARD, FUNCTION	
902	*1-615-787-11	PC BOARD, VOLUME	
903	*1-615-790-11	PC BOARD, ROTARY SW	
904	*1-615-785-11	PC BOARD, INDICATOR	
5801	⚠ 1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	

SEQ-333ES

5-2.



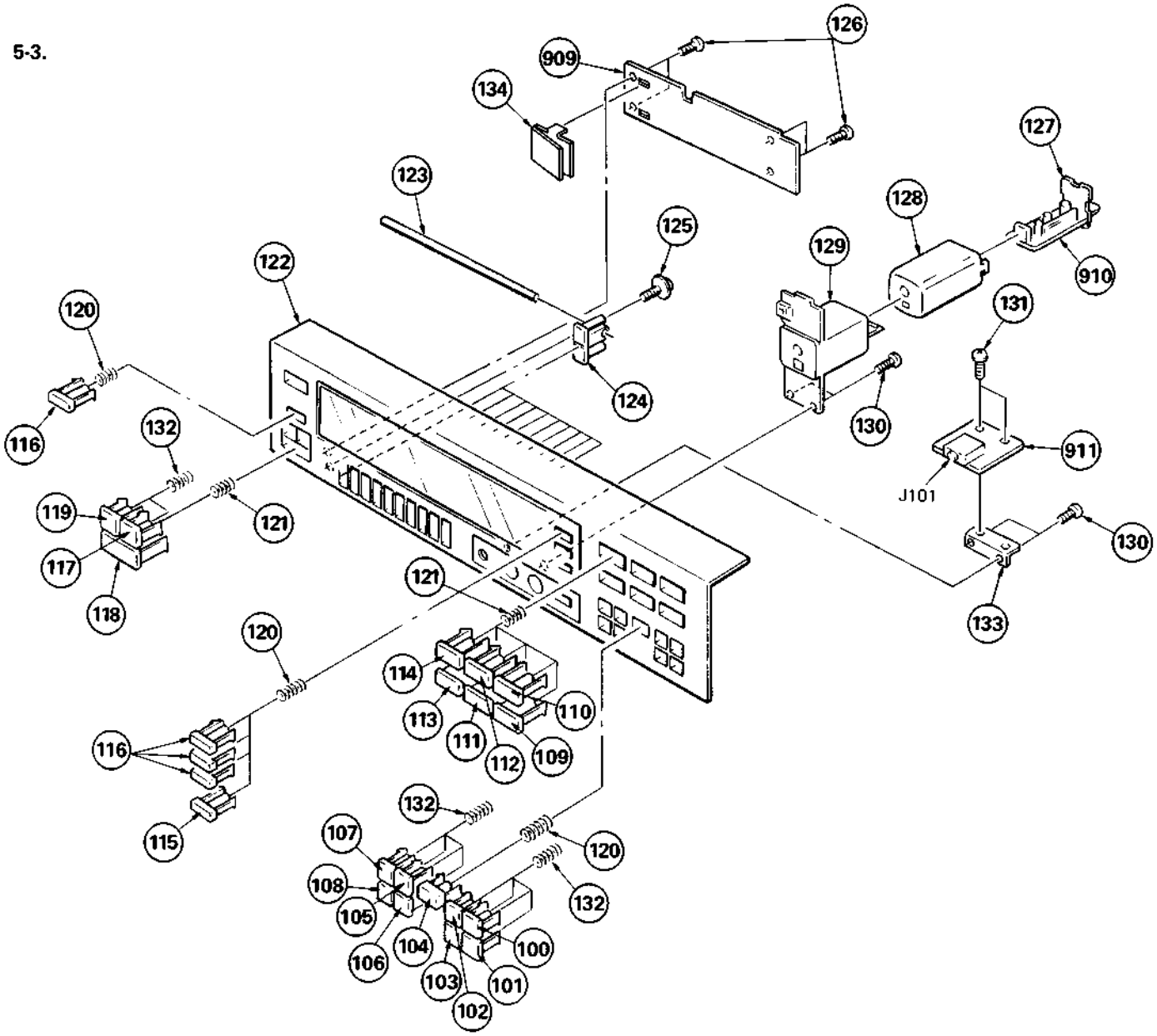
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
50	7-685-871-01	SCREW +BVTT 3X6 (S)	
51	*4-905-419-01	PLATE (A), SHIELD	
52	*4-905-428-01	CHASSIS	
53	*4-905-420-01	PLATE (B), SHIELD	
54	3-701-030-00	LABEL, SERIAL NUMBER	
55	*4-905-497-01	(US,Canadian)...PLATE, JACK	
	*4-905-497-11	(AEP).....PLATE, JACK	
	*4-905-497-21	(E2/E3).....PLATE, JACK	
	*4-905-497-31	(UK).....PLATE, JACK	
56	3-703-571-00	(US).....BUSHING (S)(4516), CORD	
	3-703-571-11	(E2/E3).....BUSHING (S)(4516), CORD	
	3-703-244-00	(Canadian,AEP,UK)...BUSHING (2104), CORD	
57	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
58	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
59	3-703-473-00	SCREW, TERMINAL	
60	*3-312-615-11	HEAT SINK	
62	*4-905-488-01	CUSHION, PC BOARD	
63	*4-905-489-01	INSULATOR	
64	4-908-004-01	SCREW (4X10), TAP TIGHT, +K	
65	7-682-559-04	SCREW +B 4X5	
66	3-701-748-00	CLAMP	

No.	Part No.	Description	Remarks
67	*3-322-818-01	HOLDER, CONNECTOR	
68	2-259-121-00	SCREW, TR	
905	*A-4375-221-A	(US,Canadian,E2/E3) ....MOUNTED PCB, SYSTEM CONTROL	
	*A-4375-222-A	(UK)....MOUNTED PCB, SYSTEM CONTROL	
	*A-4375-223-A	(AEP)...MOUNTED PCB, SYSTEM CONTROL	
906	*1-615-791-11	PC BOARD, CIRCS	
907	*A-4358-151-A	MOUNTED PCB	
908	*1-560-242-51	BUS BAR 7P	
913	1-533-162-00	(AEP)...HOLDER, FUSE	
914	⚠1-526-565-00	(E3)....AC PLUG ADAPTOR	
⚠CNJ801	1-526-774-11	(US)....OUTLET, AC	
⚠CNJ801	1-526-794-11	(AEP)...OUTLET, AC	
⚠CNJ801	1-526-882-00	(Canadian,E2/E3)...OUTLET, AC	
⚠CNP801	1-556-874-00	(US).....CORD, POWER	
⚠CNP801	1-555-795-00	(AEP).....CORD, POWER	
⚠CNP801	1-556-035-00	(UK).....CORD, POWER	
⚠CNP801	1-556-091-00	(E2/E3).....CORD, POWER	
⚠CNP801	1-557-577-11	(Canadian)...CORD, POWER	
F801	⚠1-532-286-00	(AEP)....FUSE, TIME-LAG	
T801	⚠1-448-184-11	(US,Canadian)....TRANSFORMER, POWER	
T801	⚠1-448-185-11	(AEP,UK,E2/E3)...TRANSFORMER, POWER	

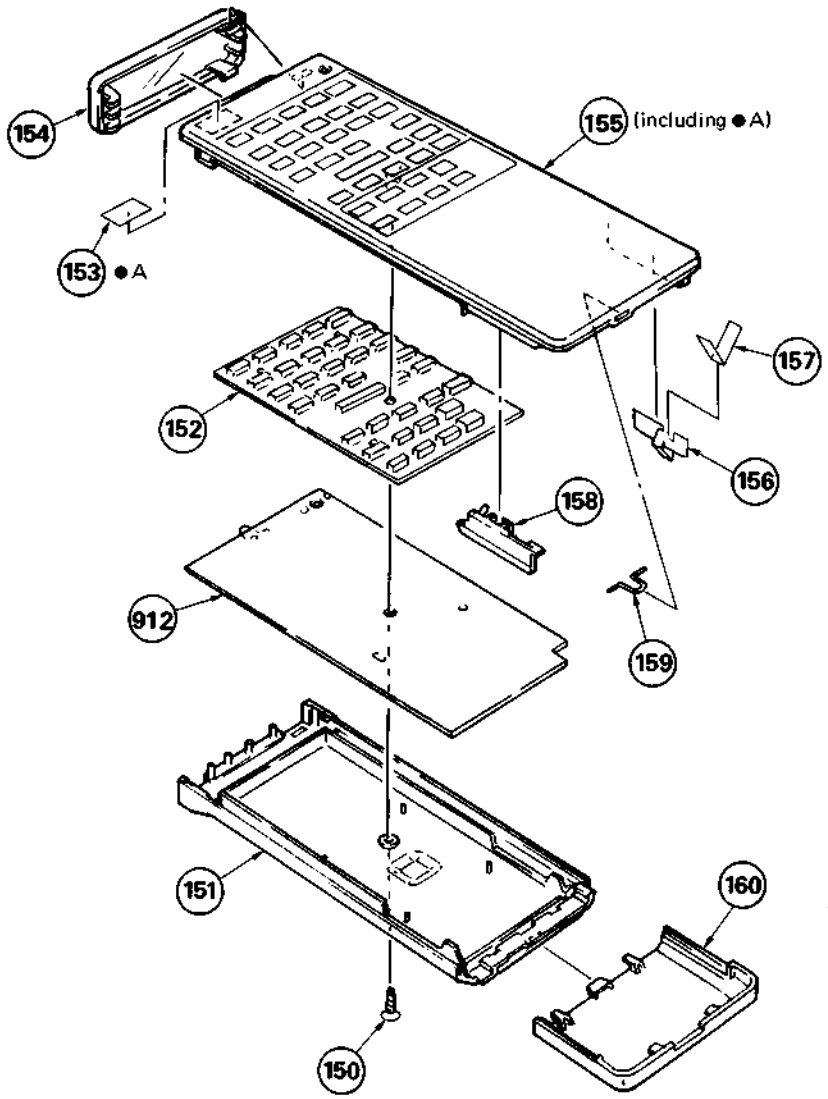
5-3.



No.	Part No.	Description	Remarks
100	4-905-477-71	KNOB (B), SQUARE	
101	4-905-477-91	KNOB (B), SQUARE	
102	4-905-477-61	KNOB (B), SQUARE	
103	4-905-477-81	KNOB (B), SQUARE	
104	4-905-486-01	KNOB (C), SQUARE	
105	4-905-477-31	KNOB (B), SQUARE	
106	4-905-477-51	KNOB (B), SQUARE	
107	4-905-477-21	KNOB (B), SQUARE	
108	4-905-477-41	KNOB (B), SQUARE	
109	4-905-494-61	KNOB, PUSH	
110	4-905-494-31	KNOB, PUSH	
111	4-905-494-51	KNOB, PUSH	
112	4-905-494-11	KNOB, PUSH	
113	4-905-494-41	KNOB, PUSH	
114	4-905-494-21	KNOB, PUSH	
115	4-905-486-11	KNOB (C), SQUARE	
116	4-905-486-21	KNOB (C), SQUARE	
117	4-905-477-11	KNOB (B), SQUARE	
118	4-905-494-01	KNOB, PUSH	

No.	Part No.	Description	Remarks
119	4-905-477-01	KNOB (B), SQUARE	
120	4-886-032-00	SPRING, COMPRESSION	
121	4-905-470-01	SPRING, COMPRESSION	
122	X-4905-417-1	PANEL ASSY	
123	*4-905-485-01	SHAFT, HOLDING	
124	4-905-492-01	KNOB (A), SQUARE	
125	4-303-483-00	HEAD, WASHER, TAPPING SCREW	
126	7-685-146-11	SCREW +P 3X8 TYPE2 NON-SLIT	
127	*4-342-118-00	LID, SHIELD CASE, R	
128	*4-342-117-00	CASE, SHIELD (MAIN), R	
129	*4-905-490-01	HOLDER	
130	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
131	7-682-545-04	SCREW +P 3X4	
132	3-568-388-01	SPRING, COMPRESSION	
133	*4-905-483-01	BRACKET (A), JACK	
134	*4-905-484-01	TERMINAL BOARD, GROUND	
909	*1-615-788-11	PC BOARD, UP DOWN	
910	*1-611-717-11	PC BOARD, N	
911	*1-615-789-11	PC BOARD, MICROPHONE	

5-4.



No.	Part No.	Description	Remarks
150	7-685-205-19	SCREW +KTP 2X8 TYPE2 NON-SLIT	
151	4-907-606-01	CASE, LOWER	
152	4-905-498-01	RUBBER, CONTACT	
153	9-911-863-XX	INSULATOR	
154	4-907-619-01	PLATE, FROSTED	
155	A-4322-717-A	PANEL ASSY, TOP	

No.	Part No.	Description	Remarks
156	4-350-925-00	TERMINAL (C), BATTERY	
157	9-911-845-XX	CUSHION	
158	X-2363-601-0	HOLDER ASSY, TERMINAL	
159	*2-290-630-00	STOPPER, HOLDER	
160	4-907-603-01	COVER, BATTERY	
912	*1-615-783-11	PC BOARD, COMMANDER	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*1-615-786-11	PC BOARD, FUNCTION
902	*1-615-787-11	PC BOARD, VOLUME
903	*1-615-790-11	PC BOARD, ROTARY SW
904	*1-615-785-11	PC BOARD, INDICATOR
905	*A-4375-221-A	(US,Canadian,E2/E3)....MOUNTED PCB, SYSTEM CONTROL
	*A-4375-222-A	(UK)....MOUNTED PCB, SYSTEM CONTROL
	*A-4375-223-A	(AEP)...MOUNTED PCB, SYSTEM CONTROL
906	*1-615-791-11	PC BOARD, CIRCS
907	*A-4358-151-A	MOUNTED PCB
908	*1-560-242-51	BUS BAR 7P
909	*1-615-788-11	PC BOARD, UP DOWN
910	*1-611-717-11	PC BOARD, N
911	*1-615-789-11	PC BOARD, MICROPHONE
912	*1-615-783-11	PC BOARD, COMMANDER
913	1-533-162-00	(AEP)...HOLDER, FUSE
914 ⚠	1-526-565-00	(E3)....AC PLUG ADAPTOR
915	*1-562-249-00	SOCKET, CONNECTOR 4P
916	*1-562-249-00	SOCKET, CONNECTOR 4P
917	*1-562-249-00	SOCKET, CONNECTOR 4P
918	*1-562-249-00	SOCKET, CONNECTOR 4P
919	*1-562-249-00	SOCKET, CONNECTOR 4P
920	*1-562-250-00	SOCKET, CONNECTOR 5P
921	*1-562-250-00	SOCKET, CONNECTOR 5P
922	*1-562-327-00	SOCKET, CONNECTOR 3P
923	*1-562-327-00	SOCKET, CONNECTOR 3P
924	*1-562-327-00	SOCKET, CONNECTOR 3P
925	1-535-416-00	(AEP,UK)....TERMANAL
BATT501	1-528-120-00	BATTERY, LITHIUM (CR-2025)

C1	1-123-611-00	ELECT	1MF	20%	50V
C2	1-123-613-00	ELECT	3.3MF	20%	50V
C3	1-162-288-31	CERAMIC	330PF	10%	50V
C4	1-123-821-00	ELECT	47MF	20%	16V
C101	1-124-186-00	ELECT	10MF	20%	50V
C102	1-101-880-00	CERAMIC	47PF	5%	50V
C103	1-101-880-00	CERAMIC	47PF	5%	50V
C104	1-124-186-00	ELECT	10MF	20%	50V
C105	1-124-186-00	ELECT	10MF	20%	50V
C107	1-123-380-00	ELECT	1MF	20%	50V
C108	1-124-186-00	ELECT	10MF	20%	50V
C109	1-108-589-00	MYLAR	0.027MF	5%	50V
C110	1-130-774-00	FILM	0.33MF	5%	63V
C111	1-130-774-00	FILM	0.33MF	5%	63V
C112	1-162-282-31	CERAMIC	100PF	10%	50V
C113	1-130-772-00	FILM	0.22MF	5%	63V
C114	1-130-772-00	FILM	0.22MF	5%	63V
C115	1-162-282-31	CERAMIC	100PF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C116	1-130-768-00	FILM	0.1MF	5%	63V
C117	1-130-768-00	FILM	0.1MF	5%	63V
C118	1-162-282-31	CERAMIC	100PF	10%	50V
C119	1-108-595-00	MYLAR	0.047MF	5%	50V
C120	1-108-595-00	MYLAR	0.047MF	5%	50V
C121	1-162-282-31	CERAMIC	100PF	10%	50V
C122	1-108-587-00	MYLAR	0.022MF	5%	50V
C123	1-108-587-00	MYLAR	0.022MF	5%	50V
C124	1-162-282-31	CERAMIC	100PF	10%	50V
C125	1-108-579-00	MYLAR	0.01MF	5%	50V
C126	1-108-579-00	MYLAR	0.01MF	5%	50V
C127	1-162-282-31	CERAMIC	100PF	10%	50V
C128	1-106-190-00	MYLAR	0.0056MF	5%	50V
C129	1-106-190-00	MYLAR	0.0056MF	5%	50V
C130	1-162-282-31	CERAMIC	100PF	10%	50V
C131	1-106-182-00	MYLAR	0.0027MF	5%	50V
C132	1-106-182-00	MYLAR	0.0027MF	5%	50V
C133	1-162-282-31	CERAMIC	100PF	10%	50V
C134	1-106-176-00	MYLAR	0.0015MF	5%	50V
C135	1-106-176-00	MYLAR	0.0015MF	5%	50V
C136	1-162-282-31	CERAMIC	100PF	10%	50V
C137	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C138	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C139	1-162-282-31	CERAMIC	100PF	10%	50V
C140	1-123-380-00	ELECT	1MF	20%	50V
C141	1-123-298-00	ELECT	470MF	20%	6.3V
C142	1-104-085-11	POLYSTYRENE	0.0022MF	5%	50V
C143	1-103-721-00	POLYSTYRENE	680PF	5%	50V
C144	1-103-701-00	POLYSTYRENE	100PF	5%	50V
C145	1-106-176-00	MYLAR	0.0015MF	5%	50V
C146	1-123-356-00	ELECT	10MF	20%	25V
C147	1-123-369-00	ELECT	4.7MF	20%	25V
C148	1-123-332-00	ELECT	47MF	20%	16V
C149	1-162-294-31	CERAMIC	0.001MF	10%	50V
C150	1-123-380-00	ELECT	1MF	20%	50V
C151	1-162-282-31	CERAMIC	100PF	10%	50V
C152	1-123-332-00	ELECT	47MF	20%	16V
C153	1-162-290-31	CERAMIC	470PF	10%	50V
C154	1-123-380-00	ELECT	1MF	20%	50V
C155	1-123-321-00	ELECT	220MF	20%	16V
C156	1-130-768-00	FILM	0.1MF	5%	63V
C157	1-130-768-00	FILM	0.1MF	5%	63V
C158	1-106-176-00	MYLAR	0.0015MF	5%	50V
C159	1-162-294-31	CERAMIC	0.001MF	10%	50V
C160	1-162-294-31	CERAMIC	0.001MF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C161	1-162-294-31	CERAMIC	0.001MF	10%	50V
C162	1-162-294-31	CERAMIC	0.001MF	10%	50V
C201	1-124-186-00	ELECT	10MF	20%	50V
C202	1-101-880-00	CERAMIC	47PF	5%	50V
C203	1-101-880-00	CERAMIC	47PF	5%	50V
C204	1-124-186-00	ELECT	10MF	20%	50V
C205	1-124-186-00	ELECT	10MF	20%	50V
C207	1-123-380-00	ELECT	1MF	20%	50V
C208	1-124-186-00	ELECT	10MF	20%	50V
C209	1-108-589-00	MYLAR	0.027MF	5%	50V
C210	1-130-774-00	FILM	0.33MF	5%	63V
C211	1-130-774-00	FILM	0.33MF	5%	63V
C212	1-162-282-31	CERAMIC	100PF	10%	50V
C213	1-130-772-00	FILM	0.22MF	5%	63V
C214	1-130-772-00	FILM	0.22MF	5%	63V
C215	1-162-282-31	CERAMIC	100PF	10%	50V
C216	1-130-768-00	FILM	0.1MF	5%	63V
C217	1-130-768-00	FILM	0.1MF	5%	63V
C218	1-162-282-31	CERAMIC	100PF	10%	50V
C219	1-108-595-00	MYLAR	0.047MF	5%	50V
C220	1-108-595-00	MYLAR	0.047MF	5%	50V
C221	1-162-282-31	CERAMIC	100PF	10%	50V
C222	1-108-587-00	MYLAR	0.022MF	5%	50V
C223	1-108-587-00	MYLAR	0.022MF	5%	50V
C224	1-162-282-31	CERAMIC	100PF	10%	50V
C225	1-108-579-00	MYLAR	0.01MF	5%	50V
C226	1-108-579-00	MYLAR	0.01MF	5%	50V
C227	1-162-282-31	CERAMIC	100PF	10%	50V
C228	1-106-190-00	MYLAR	0.0056MF	5%	50V
C229	1-106-190-00	MYLAR	0.0056MF	5%	50V
C230	1-162-282-31	CERAMIC	100PF	10%	50V
C231	1-106-182-00	MYLAR	0.0027MF	5%	50V
C232	1-106-182-00	MYLAR	0.0027MF	5%	50V
C233	1-162-282-31	CERAMIC	100PF	10%	50V
C234	1-106-176-00	MYLAR	0.0015MF	5%	50V
C235	1-106-176-00	MYLAR	0.0015MF	5%	50V
C236	1-162-282-31	CERAMIC	100PF	10%	50V
C237	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C238	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C239	1-162-282-31	CERAMIC	100PF	10%	50V
C301	1-124-729-51	ELECT	1000MF	20%	50V
C302	1-124-715-51	ELECT	2200MF	20%	35V
C303	1-124-699-51	ELECT	220MF	20%	25V
C304	1-124-698-81	ELECT	100MF	20%	25V
C305	1-124-702-51	ELECT	1000MF	20%	25V
C306	1-124-702-51	ELECT	1000MF	20%	25V
C307	1-123-318-00	ELECT	33MF	20%	6.3V
C308	1-123-356-00	ELECT	10MF	20%	25V
C309	1-123-380-00	ELECT	1MF	20%	50V
C401	1-123-333-00	ELECT	100MF	20%	25V
C402	1-123-333-00	ELECT	100MF	20%	25V
C404	1-108-595-00	MYLAR	0.047MF	5%	50V
C405	1-108-595-00	MYLAR	0.047MF	5%	50V
C406	1-162-215-31	CERAMIC	47PF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C407	1-123-369-00	ELECT	4.7MF	20%	25V
C408	1-108-587-00	MYLAR	0.022MF	5%	50V
C409	1-108-587-00	MYLAR	0.022MF	5%	50V
C410	1-162-215-31	CERAMIC	47PF	5%	50V
C411	1-123-369-00	ELECT	4.7MF	20%	25V
C412	1-108-579-00	MYLAR	0.01MF	5%	50V
C413	1-108-579-00	MYLAR	0.01MF	5%	50V
C414	1-162-215-31	CERAMIC	47PF	5%	50V
C415	1-123-369-00	ELECT	4.7MF	20%	25V
C416	1-106-192-00	MYLAR	0.0068MF	5%	50V
C417	1-106-192-00	MYLAR	0.0068MF	5%	50V
C418	1-162-215-31	CERAMIC	47PF	5%	50V
C419	1-123-369-00	ELECT	4.7MF	20%	25V
C420	1-106-184-00	MYLAR	0.0033MF	5%	50V
C421	1-106-184-00	MYLAR	0.0033MF	5%	50V
C422	1-162-215-31	CERAMIC	47PF	5%	50V
C423	1-123-369-00	ELECT	4.7MF	20%	25V
C424	1-106-176-00	MYLAR	0.0015MF	5%	50V
C425	1-106-176-00	MYLAR	0.0015MF	5%	50V
C426	1-162-215-31	CERAMIC	47PF	5%	50V
C427	1-123-369-00	ELECT	4.7MF	20%	25V
C428	1-162-292-31	CERAMIC	680PF	10%	50V
C429	1-162-292-31	CERAMIC	680PF	10%	50V
C430	1-162-215-31	CERAMIC	47PF	5%	50V
C431	1-123-369-00	ELECT	4.7MF	20%	25V
C432	1-162-288-31	CERAMIC	330PF	10%	50V
C433	1-162-288-31	CERAMIC	330PF	10%	50V
C434	1-162-215-31	CERAMIC	47PF	5%	50V
C435	1-123-369-00	ELECT	4.7MF	20%	25V
C436	1-162-286-31	CERAMIC	220PF	10%	50V
C437	1-162-286-31	CERAMIC	220PF	10%	50V
C438	1-162-215-31	CERAMIC	47PF	5%	50V
C439	1-123-369-00	ELECT	4.7MF	20%	25V
C440	1-162-282-31	CERAMIC	100PF	10%	50V
C441	1-162-282-31	CERAMIC	100PF	10%	50V
C442	1-162-215-31	CERAMIC	47PF	5%	50V
C443	1-123-369-00	ELECT	4.7MF	20%	25V
C444	1-123-382-00	ELECT	3.3MF	20%	50V
C445	1-123-382-00	ELECT	3.3MF	20%	50V
C446	1-123-382-00	ELECT	3.3MF	20%	50V
C447	1-123-382-00	ELECT	3.3MF	20%	50V
C448	1-123-382-00	ELECT	3.3MF	20%	50V
C449	1-123-382-00	ELECT	3.3MF	20%	50V
C450	1-123-382-00	ELECT	3.3MF	20%	50V
C451	1-123-382-00	ELECT	3.3MF	20%	50V
C452	1-123-382-00	ELECT	3.3MF	20%	50V
C453	1-123-382-00	ELECT	3.3MF	20%	50V
C501	1-123-326-00	ELECT	3300MF	20%	16V
C502	1-123-330-00	ELECT	22MF	20%	16V
C503	1-123-308-00	ELECT	220MF	20%	6.3V
C504	1-123-349-00	ELECT	1000MF	20%	35V
C505	1-123-356-00	ELECT	10MF	20%	35V
C506	1-123-356-00	ELECT	10MF	20%	35V
C507	1-123-356-00	ELECT	10MF	20%	16V
C508	1-162-282-31	CERAMIC	100PF	10%	50V
C510	1-106-188-00	MYLAR	0.0047MF	5%	50V
C511	1-123-369-00	ELECT	4.7MF	20%	25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C514	1-162-286-31	CERAMIC	220PF	10%	50V
C515	1-162-286-31	CERAMIC	220PF	10%	50V
C516	1-123-308-00	ELECT	220MF	20%	6.3V
C517	1-162-207-31	CERAMIC	22PF	5%	50V
C518	1-162-207-31	CERAMIC	22PF	5%	50V
C519	1-130-768-00	FILM	0.1MF	5%	63V
C520	1-162-290-31	CERAMIC	470PF	10%	50V
C521	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C522	1-162-290-31	CERAMIC	470PF	10%	50V
C524	1-101-004-00	CERAMIC	0.01MF		50V
C525	1-101-004-00	CERAMIC	0.01MF		50V
C526 ⚠	1-161-743-00	CERAMIC	0.0047MF		400V
C601	1-123-308-00	ELECT	220MF	20%	6.3V
C602	1-162-306-31	CERAMIC	0.01MF	30%	16V
C603	1-162-306-31	CERAMIC	0.01MF	30%	16V
C604	1-123-308-00	ELECT	220MF	20%	6.3V
C901	1-162-286-31	CERAMIC	220PF	10%	50V
C902	1-162-286-31	CERAMIC	220PF	10%	50V
C903	1-123-617-00	ELECT	10MF	20%	16V
CNJ101	1-507-788-00	JACK, PIN 4P (LINE)			
CNJ102	1-507-908-11	JACK, PIN 4P (TAPE RECORDER 1)			
CNJ103	1-507-908-11	JACK, PIN 4P (TAPE RECORDER 2)			
⚠CNJ801	1-526-774-11	(US)...OUTLET, AC			
⚠CNJ801	1-526-794-11	(AEP)...OUTLET, AC			
⚠CNJ801	1-526-882-00	(Canadian,E2/E3)...OUTLET, AC			
CNP101*1	1-564-505-11	PLUG, CONNECTOR 2P			
CNP102*1	1-564-507-11	PLUG, CONNECTOR 4P			
CNP103*1	1-564-507-21	PLUG, CONNECTOR 4P			
CNP104*1	1-564-507-31	PLUG, CONNECTOR 4P			
CNP105*1	1-564-506-11	PLUG, CONNECTOR 3P			
CNP106*1	1-564-505-41	PLUG, CONNECTOR 2P			
CNP501*1	1-564-507-11	PLUG, CONNECTOR 4P			
CNP502*1	1-564-507-21	PLUG, CONNECTOR 4P			
CNP503*1	1-564-508-11	PLUG, CONNECTOR 5P			
CNP504*1	1-564-508-11	PLUG, CONNECTOR 5P			
CNP505*1	1-564-508-11	PLUG, CONNECTOR 5P			
CNP506*1	1-564-507-31	PLUG, CONNECTOR 4P			
CNP507*1	1-564-507-41	PLUG, CONNECTOR 4P			
CNP508*1	1-564-506-11	PLUG, CONNECTOR 3P			
CNP509*1	1-564-505-11	PLUG, CONNECTOR 2P			
CNP510*1	1-564-509-11	PLUG, CONNECTOR 6P			
CNP511*1	1-564-507-31	PLUG, CONNECTOR 4P			
CNP512*1	1-564-508-11	PLUG, CONNECTOR 5P			
CNP513*1	1-564-507-21	PLUG, CONNECTOR 4P			
CNP514*1	1-564-506-11	PLUG, CONNECTOR 3P			
CNP515*1	1-560-039-00	PIN, CONNECTOR (REMOTE CONTROL IN)			
CNP516*1	1-560-039-00	PIN, CONNECTOR (REMOTE CONTROL OUT)			
CNP701*1	1-564-507-21	PLUG, CONNECTOR 4P			
CNP702*1	1-564-507-11	PLUG, CONNECTOR 4P			
⚠CNP801	1-556-874-00	(US).....CORD, POWER			
⚠CNP801	1-556-795-00	(AEP).....CORD, POWER			
⚠CNP801	1-556-035-00	(UK).....CORD, POWER			
⚠CNP801	1-556-001-00	(E2/E3).....CORD, POWER			
⚠CNP801	1-557-577-11	(Canadian)...CORD, POWER			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D1	8-719-110-32	DIODE PH302B
D101	8-719-107-94	DIODE 1SS202-1
D102	8-719-904-22	DIODE HZ12A2
D103	8-719-904-22	DIODE HZ12A2
D301	8-719-502-20	DIODE S2VB20
D302	8-719-910-52	DIODE HZ15-2L
D303	8-719-910-52	DIODE HZ15-2L
D304	8-719-910-64	DIODE HZ6B1L
D401	8-719-107-94	DIODE 1SS202-1
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
D411	8-719-107-94	DIODE 1SS202-1
D412	8-719-107-94	DIODE 1SS202-1
D413	8-719-107-94	DIODE 1SS202-1
D414	8-719-107-94	DIODE 1SS202-1
D415	8-719-107-94	DIODE 1SS202-1
D416	8-719-107-94	DIODE 1SS202-1
D417	8-719-107-94	DIODE 1SS202-1
D418	8-719-107-94	DIODE 1SS202-1
D419	8-719-107-94	DIODE 1SS202-1
D420	8-719-107-94	DIODE 1SS202-1
D421	8-719-107-94	DIODE 1SS202-1
D501	8-719-502-20	DIODE S2VB20
D502	8-719-910-68	DIODE HZ6C2L
D503	8-719-502-20	DIODE S2VB20
D504	8-719-910-77	DIODE HZ7C1L
D505	8-719-914-12	DIODE HZ4BLL
D506	8-719-107-94	DIODE 1SS202-1
D507	8-719-942-31	DIODE HZ3ALL
D508	8-719-107-94	DIODE 1SS202-1
D509	8-719-101-34	DIODE RD3.0E-L1
D510	8-719-107-94	DIODE 1SS202-1
D511	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	DIODE 1SS202-1
D701	8-719-301-43	DIODE SEL2410E-C
D901	8-719-100-06	DIODE SR106C
D902	8-719-912-39	DIODE SLR-932A
F801 ⚠	1-532-286-00	(AEP)....FUSE, TIME-LAG
IC1	8-752-010-60	IC CX20106
IC101	8-759-204-29	IC TC9163N
IC102	8-759-745-60	IC NJM4560D
IC103	8-759-745-60	IC NJM4560D
IC104	8-759-745-60	IC NJM4560D
IC105	8-759-601-02	IC M5218P
IC106	8-759-601-02	IC M5218P
IC107	8-759-601-02	IC M5218P
IC108	8-759-601-02	IC M5218P
IC109	8-759-601-02	IC M5218P
IC110	8-759-601-02	IC M5218P
IC111	8-759-601-02	IC M5218P

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC112	8-759-601-02	IC M5218P
IC113	8-759-601-02	IC M5218P
IC114	8-759-601-02	IC M5218P
IC115	8-759-909-98	IC CX-7976
IC116	8-759-909-98	IC CX-7976
IC117	8-759-909-98	IC CX-7976
IC118	8-759-909-98	IC CX-7976
IC119	8-759-909-98	IC CX-7976
IC120	8-759-700-62	IC NJM4562D
IC401	8-759-601-02	IC M5218P
IC402	8-759-601-02	IC M5218P
IC403	8-759-601-02	IC M5218P
IC404	8-759-601-02	IC M5218P
IC405	8-759-601-02	IC M5218P
IC406	8-759-601-02	IC M5218P
IC407	8-759-601-02	IC M5218P
IC408	8-759-601-02	IC M5218P
IC409	8-759-601-02	IC M5218P
IC410	8-759-601-02	IC M5218P
IC411	8-759-601-02	IC M5218P
IC501	8-759-140-51	IC TC4051BC
IC502	8-759-140-51	IC TC4051BC
IC503	8-759-601-02	IC M5218P
IC504	8-759-800-93	IC LC7910
IC505	8-759-602-39	IC M50742-402SP
IC506	8-759-201-33	IC TC5501P
IC507	8-759-220-00	IC TC40H000P
IC601	8-759-303-02	IC HD614042SA98
IC602	8-759-103-69	IC UPA80C
IC901	8-759-902-22	IC CX-7947
J101	1-507-893-00	JACK, MICROPHONE (MIC)
ND601	1-519-346-11	INDICATOR TUBE, FLUORESCENT
Q101	8-729-107-98	TRANSISTOR 2SC3622A-L
Q102	8-729-900-80	TRANSISTOR DTC114ES
Q103	8-729-900-80	TRANSISTOR DTA114ES
Q104	8-729-900-80	TRANSISTOR DTC114ES
Q105	8-729-900-80	TRANSISTOR DTC114ES
Q106	8-729-900-80	TRANSISTOR DTC114ES
Q107	8-729-900-80	TRANSISTOR DTC114ES
Q108	8-729-173-37	TRANSISTOR 2SA733
Q109	8-729-107-98	TRANSISTOR 2SC3622A-L
Q110	8-729-107-98	TRANSISTOR 2SC3622A-L
Q111	8-729-107-98	TRANSISTOR 2SC3622A-L
Q201	8-729-107-98	TRANSISTOR 2SC3622A-L
Q301	8-729-606-33	TRANSISTOR 2SC2603-F
Q302	8-729-102-39	TRANSISTOR 2SC2690A-Q
Q303	8-729-173-37	TRANSISTOR 2SA733
Q304	8-729-122-02	TRANSISTOR 2SA1220A
Q305	8-729-606-33	TRANSISTOR 2SC2603-F
Q501	8-729-606-33	TRANSISTOR 2SC2603-F
Q502	8-729-102-39	TRANSISTOR 2SC2690A-Q
Q503	8-729-173-37	TRANSISTOR 2SA733
Q504	8-729-173-37	TRANSISTOR 2SA733

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q505	8-729-900-80	TRANSISTOR DTC114ES			
Q508	8-729-900-89	TRANSISTOR DTC144ES			
Q509	8-729-900-62	TRANSISTOR DTA114ES			
Q901	8-729-967-32	TRANSISTOR 2SC2673			
R1	1-247-811-00	CARBON	150	5%	1/6W
R2	1-247-791-00	CARBON	22	5%	1/6W
R3	1-215-476-00	METAL	200K	1%	1/6W
R4	1-247-847-00	CARBON	4.7K	5%	1/6W
R104	1-246-545-00	CARBON	1M	5%	1/4W
R105	1-246-545-00	CARBON	1M	5%	1/4W
R106	1-246-545-00	CARBON	1M	5%	1/4W
R107	1-246-537-00	CARBON	470K	5%	1/4W
R108	1-246-537-00	CARBON	470K	5%	1/4W
R109	1-214-891-00	METAL	13K	1%	1/2W
R110	1-214-891-00	METAL	13K	1%	1/2W
R111	1-247-107-00	CARBON	100	5%	1/4W
R112	1-246-537-00	CARBON	470K	5%	1/4W
R113	1-247-131-00	CARBON	1K	5%	1/4W
R114	1-247-179-00	CARBON	100K	5%	1/4W
R115	1-247-159-00	CARBON	15K	5%	1/4W
R116	1-247-131-00	CARBON	1K	5%	1/4W
R117	1-247-863-00	CARBON	22K	5%	1/6W
R118	1-247-131-00	CARBON	1K	5%	1/4W
R119	1-247-847-00	CARBON	4.7K	5%	1/6W
R120	1-247-131-00	CARBON	1K	5%	1/4W
R121	1-247-131-00	CARBON	1K	5%	1/4W
R122	1-247-903-00	CARBON	1M	5%	1/6W
R123	1-247-837-00	CARBON	1.8K	5%	1/6W
R124	1-247-882-00	CARBON	130K	5%	1/6W
R125	1-247-903-00	CARBON	1M	5%	1/6W
R126	1-247-837-00	CARBON	1.8K	5%	1/6W
R127	1-247-877-00	CARBON	82K	5%	1/6W
R128	1-247-903-00	CARBON	1M	5%	1/6W
R129	1-247-837-00	CARBON	1.8K	5%	1/6W
R130	1-247-879-00	CARBON	100K	5%	1/6W
R131	1-247-903-00	CARBON	1M	5%	1/6W
R132	1-247-837-00	CARBON	1.8K	5%	1/6W
R133	1-247-879-00	CARBON	100K	5%	1/6W
R134	1-247-903-00	CARBON	1M	5%	1/6W
R135	1-247-837-00	CARBON	1.8K	5%	1/6W
R136	1-247-881-00	CARBON	120K	5%	1/6W
R137	1-247-903-00	CARBON	1M	5%	1/6W
R138	1-247-837-00	CARBON	1.8K	5%	1/6W
R139	1-247-882-00	CARBON	130K	5%	1/6W
R140	1-247-903-00	CARBON	1M	5%	1/6W
R141	1-247-837-00	CARBON	1.8K	5%	1/6W
R142	1-247-880-00	CARBON	110K	5%	1/6W
R143	1-247-903-00	CARBON	1M	5%	1/6W
R144	1-247-837-00	CARBON	1.8K	5%	1/6W
R145	1-247-881-00	CARBON	120K	5%	1/6W
R146	1-247-903-00	CARBON	1M	5%	1/6W
R147	1-247-835-00	CARBON	1.5K	5%	1/6W
R148	1-247-881-00	CARBON	120K	5%	1/6W
R149	1-247-903-00	CARBON	1M	5%	1/6W
R150	1-247-835-00	CARBON	1.5K	5%	1/6W
R151	1-247-881-00	CARBON	120K	5%	1/6W
R152	1-247-887-00	CARBON	220K	5%	1/6W
R153	1-247-831-00	CARBON	1K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R154	1-247-879-00	CARBON	100K	5%	1/6W
R155	1-247-807-00	CARBON	100	5%	1/6W
R156	1-247-903-00	CARBON	1M	5%	1/6W
R157	1-247-891-00	CARBON	330K	5%	1/6W
R158	1-247-879-00	CARBON	100K	5%	1/6W
R159	1-247-867-00	CARBON	33K	5%	1/6W
R160	1-247-831-00	CARBON	1K	5%	1/6W
R161	1-247-879-00	CARBON	100K	5%	1/6W
R162	1-247-831-00	CARBON	1K	5%	1/6W
R163	1-247-831-00	CARBON	1K	5%	1/6W
R164	1-247-895-00	CARBON	470K	5%	1/6W
R165	1-247-841-00	CARBON	2.7K	5%	1/6W
R166	1-247-841-00	CARBON	2.7K	5%	1/6W
R167	1-247-829-00	CARBON	820	5%	1/6W
R168	1-247-841-00	CARBON	2.7K	5%	1/6W
R169	1-247-819-00	CARBON	330	5%	1/6W
R170	1-247-863-00	CARBON	22K	5%	1/6W
R171	1-247-825-00	CARBON	560	5%	1/6W
R172	1-247-875-00	CARBON	68K	5%	1/6W
R173	1-249-421-11	CARBON	2.2K	5%	1/6W
R174	1-247-867-00	CARBON	33K	5%	1/6W
R175	1-247-873-00	CARBON	56K	5%	1/6W
R176	1-247-847-00	CARBON	4.7K	5%	1/6W
R177	1-247-863-00	CARBON	22K	5%	1/6W
R178	1-247-847-00	CARBON	4.7K	5%	1/6W
R179	1-247-863-00	CARBON	22K	5%	1/6W
R180	1-247-879-00	CARBON	100K	5%	1/6W
R181	1-247-863-00	CARBON	22K	5%	1/6W
R182	1-247-863-00	CARBON	22K	5%	1/6W
R183	1-247-863-00	CARBON	22K	5%	1/6W
R204	1-246-545-00	CARBON	1M	5%	1/4W
R205	1-246-545-00	CARBON	1M	5%	1/4W
R206	1-246-545-00	CARBON	1M	5%	1/4W
R207	1-246-537-00	CARBON	470K	5%	1/4W
R208	1-246-537-00	CARBON	470K	5%	1/4W
R209	1-214-891-00	METAL	13K	1%	1/2W
R210	1-214-891-00	METAL	13K	1%	1/2W
R211	1-247-107-00	CARBON	100	5%	1/4W
R212	1-246-537-00	CARBON	470K	5%	1/4W
R213	1-247-131-00	CARBON	1K	5%	1/4W
R214	1-247-179-00	CARBON	100K	5%	1/4W
R215	1-247-159-00	CARBON	15K	5%	1/4W
R216	1-247-131-00	CARBON	1K	5%	1/4W
R217	1-247-863-00	CARBON	22K	5%	1/6W
R218	1-247-131-00	CARBON	1K	5%	1/4W
R219	1-247-847-00	CARBON	4.7K	5%	1/6W
R220	1-247-131-00	CARBON	1K	5%	1/4W
R221	1-247-131-00	CARBON	1K	5%	1/4W
R222	1-247-903-00	CARBON	1M	5%	1/6W
R223	1-247-837-00	CARBON	1.8K	5%	1/6W
R224	1-247-882-00	CARBON	130K	5%	1/6W
R225	1-247-903-00	CARBON	1M	5%	1/6W
R226	1-247-837-00	CARBON	1.8K	5%	1/6W
R227	1-247-877-00	CARBON	82K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R228	1-247-903-00	CARBON	1M	5%	1/6W
R229	1-247-837-00	CARBON	1.8K	5%	1/6W
R230	1-247-879-00	CARBON	100K	5%	1/6W
R231	1-247-903-00	CARBON	1M	5%	1/6W
R232	1-247-837-00	CARBON	1.8K	5%	1/6W
R233	1-247-879-00	CARBON	100K	5%	1/6W
R234	1-247-903-00	CARBON	1M	5%	1/6W
R235	1-247-837-00	CARBON	1.8K	5%	1/6W
R236	1-247-881-00	CARBON	120K	5%	1/6W
R237	1-247-903-00	CARBON	1M	5%	1/6W
R238	1-247-837-00	CARBON	1.8K	5%	1/6W
R239	1-247-882-00	CARBON	130K	5%	1/6W
R240	1-247-903-00	CARBON	1M	5%	1/6W
R241	1-247-837-00	CARBON	1.8K	5%	1/6W
R242	1-247-880-00	CARBON	110K	5%	1/6W
R243	1-247-903-00	CARBON	1M	5%	1/6W
R244	1-247-837-00	CARBON	1.8K	5%	1/6W
R245	1-247-881-00	CARBON	120K	5%	1/6W
R246	1-247-903-00	CARBON	1M	5%	1/6W
R247	1-247-835-00	CARBON	1.5K	5%	1/6W
R248	1-247-881-00	CARBON	120K	5%	1/6W
R249	1-247-903-00	CARBON	1M	5%	1/6W
R250	1-247-835-00	CARBON	1.5K	5%	1/6W
R251	1-247-881-00	CARBON	120K	5%	1/6W
R301	1-247-141-00	CARBON	2.7K	5%	1/4W
R302	1-247-141-00	CARBON	2.7K	5%	1/4W
R303 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R304 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R305	1-247-717-11	CARBON	2.2K	5%	1/4W
R306 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R307	1-247-857-00	CARBON	12K	5%	1/6W
R308	1-247-844-00	CARBON	3.6K	5%	1/6W
R401	1-247-867-00	CARBON	33K	5%	1/6W
R402	1-247-869-00	CARBON	15K	5%	1/6W
R403	1-247-845-00	CARBON	3.9K	5%	1/6W
R404	1-247-857-00	CARBON	12K	5%	1/6W
R405	1-247-879-00	CARBON	100K	5%	1/6W
R406	1-247-899-00	CARBON	680K	5%	1/6W
R407	1-247-809-00	CARBON	120	5%	1/6W
R408	1-247-879-00	CARBON	100K	5%	1/6W
R409	1-247-861-00	CARBON	18K	5%	1/6W
R410	1-247-871-00	CARBON	47K	5%	1/6W
R411	1-247-903-00	CARBON	1M	5%	1/6W
R412	1-247-809-00	CARBON	120	5%	1/6W
R413	1-247-879-00	CARBON	100K	5%	1/6W
R414	1-247-861-00	CARBON	18K	5%	1/6W
R415	1-247-883-00	CARBON	150K	5%	1/6W
R416	1-247-903-00	CARBON	1M	5%	1/6W
R417	1-247-809-00	CARBON	120	5%	1/6W
R418	1-247-879-00	CARBON	100K	5%	1/6W
R419	1-247-859-00	CARBON	15K	5%	1/6W
R420	1-247-869-00	CARBON	39K	5%	1/6W
R421	1-247-901-00	CARBON	820K	5%	1/6W
R422	1-247-809-00	CARBON	120	5%	1/6W
R423	1-247-879-00	CARBON	100K	5%	1/6W
R424	1-247-859-00	CARBON	15K	5%	1/6W
R425	1-247-871-00	CARBON	47K	5%	1/6W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R426	1-247-901-00	CARBON	820K	5%	1/6W
R427	1-247-809-00	CARBON	120	5%	1/6W
R428	1-247-879-00	CARBON	100K	5%	1/6W
R429	1-247-861-00	CARBON	18K	5%	1/6W
R430	1-247-865-00	CARBON	27K	5%	1/6W
R431	1-247-903-00	CARBON	1M	5%	1/6W
R432	1-247-809-00	CARBON	120	5%	1/6W
R433	1-247-879-00	CARBON	100K	5%	1/6W
R434	1-247-859-00	CARBON	15K	5%	1/6W
R435	1-247-883-00	CARBON	150K	5%	1/6W
R436	1-247-903-00	CARBON	1M	5%	1/6W
R437	1-247-809-00	CARBON	120	5%	1/6W
R438	1-247-879-00	CARBON	100K	5%	1/6W
R439	1-247-859-00	CARBON	15K	5%	1/6W
R440	1-247-895-00	CARBON	470K	5%	1/6W
R441	1-247-903-00	CARBON	1M	5%	1/6W
R442	1-247-809-00	CARBON	120	5%	1/6W
R443	1-247-879-00	CARBON	100K	5%	1/6W
R444	1-247-857-00	CARBON	12K	5%	1/6W
R445	1-247-873-00	CARBON	56K	5%	1/6W
R446	1-247-901-00	CARBON	820K	5%	1/6W
R447	1-247-809-00	CARBON	120	5%	1/6W
R448	1-247-879-00	CARBON	100K	5%	1/6W
R449	1-247-857-00	CARBON	12K	5%	1/6W
R450	1-247-873-00	CARBON	56K	5%	1/6W
R451	1-247-903-00	CARBON	1M	5%	1/6W
R452	1-247-809-00	CARBON	120	5%	1/6W
R453	1-247-879-00	CARBON	100K	5%	1/6W
R454	1-247-879-00	CARBON	100K	5%	1/6W
R455	1-247-879-00	CARBON	100K	5%	1/6W
R456	1-247-879-00	CARBON	100K	5%	1/6W
R457	1-247-879-00	CARBON	100K	5%	1/6W
R458	1-247-879-00	CARBON	100K	5%	1/6W
R459	1-247-879-00	CARBON	100K	5%	1/6W
R460	1-247-879-00	CARBON	100K	5%	1/6W
R461	1-247-879-00	CARBON	100K	5%	1/6W
R462	1-247-879-00	CARBON	100K	5%	1/6W
R463	1-247-879-00	CARBON	100K	5%	1/6W
R464	1-247-903-00	CARBON	1M	5%	1/6W
R465	1-247-903-00	CARBON	1M	5%	1/6W
R466	1-247-903-00	CARBON	1M	5%	1/6W
R467	1-247-903-00	CARBON	1M	5%	1/6W
R468	1-247-903-00	CARBON	1M	5%	1/6W
R469	1-247-903-00	CARBON	1M	5%	1/6W
R470	1-247-903-00	CARBON	1M	5%	1/6W
R471	1-247-903-00	CARBON	1M	5%	1/6W
R472	1-247-903-00	CARBON	1M	5%	1/6W
R473	1-247-903-00	CARBON	1M	5%	1/6W
R474	1-247-879-00	CARBON	100K	5%	1/6W
R501	1-247-137-00	CARBON	1.8K	5%	1/4W
R502 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R503	1-247-871-00	CARBON	47K	5%	1/6W
R504	1-247-867-00	CARBON	33K	5%	1/6W
R505 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R506	1-247-855-00	CARBON	10K	5%	1/6W
R507	1-247-831-00	CARBON	1K	5%	1/6W
R508	1-247-863-00	CARBON	22K	5%	1/6W
R509	1-247-857-00	CARBON	12K	5%	1/6W
R510	1-247-855-00	CARBON	10K	5%	1/6W
R511	1-247-871-00	CARBON	47K	5%	1/6W
R512	1-247-831-00	CARBON	1K	5%	1/6W
R513	1-247-863-00	CARBON	22K	5%	1/6W
R514	1-247-879-00	CARBON	100K	5%	1/6W
R515	1-247-891-00	CARBON	330K	5%	1/6W
R516	1-247-887-00	CARBON	220K	5%	1/6W
R517	1-247-897-00	CARBON	560K	5%	1/6W
R518	1-247-859-00	CARBON	15K	5%	1/6W
R519	1-247-857-00	CARBON	12K	5%	1/6W
R520	1-247-841-00	CARBON	2.7K	5%	1/6W
R521	1-247-871-00	CARBON	47K	5%	1/6W
R522	1-247-855-00	CARBON	10K	5%	1/6W
R523	1-247-871-00	CARBON	47K	5%	1/6W
R527	1-247-855-00	CARBON	10K	5%	1/6W
R528	1-247-841-00	CARBON	2.7K	5%	1/6W
R529	1-247-855-00	CARBON	10K	5%	1/6W
R530	1-247-855-00	CARBON	10K	5%	1/6W
R531	1-247-847-00	CARBON	4.7K	5%	1/6W
R532	1-247-847-00	CARBON	4.7K	5%	1/6W
R533	1-247-847-00	CARBON	4.7K	5%	1/6W
R534	1-247-903-00	CARBON	1M	5%	1/6W
R535	1-247-823-00	CARBON	470	5%	1/6W
R536	1-247-807-00	CARBON	100	5%	1/6W
R537	1-247-855-00	CARBON	10K	5%	1/6W
R538	1-247-855-00	CARBON	10K	5%	1/6W
R539	1-247-783-00	CARBON	10	5%	1/6W
R541	1-247-835-00	CARBON	1.5K	5%	1/6W
R542	1-247-835-00	CARBON	1.5K	5%	1/6W
R543	1-247-835-00	CARBON	1.5K	5%	1/6W
R544	1-247-835-00	CARBON	1.5K	5%	1/6W
R545	1-247-835-00	CARBON	1.5K	5%	1/6W
R546	1-247-835-00	CARBON	1.5K	5%	1/6W
R547	1-247-835-00	CARBON	1.5K	5%	1/6W
R548	1-247-835-00	CARBON	1.5K	5%	1/6W
R549	1-247-835-00	CARBON	1.5K	5%	1/6W
R550	1-247-835-00	CARBON	1.5K	5%	1/6W
R551	1-247-835-00	CARBON	1.5K	5%	1/6W
R552	1-247-835-00	CARBON	1.5K	5%	1/6W
R553	1-247-835-00	CARBON	1.5K	5%	1/6W
R554	1-247-835-00	CARBON	1.5K	5%	1/6W
R555	1-247-863-00	CARBON	22K	5%	1/6W
R556	1-247-863-00	CARBON	22K	5%	1/6W
R557	1-247-863-00	CARBON	22K	5%	1/6W
R558	1-247-863-00	CARBON	22K	5%	1/6W
R559	1-247-863-00	CARBON	22K	5%	1/6W
R560	1-247-863-00	CARBON	22K	5%	1/6W
R561	1-247-863-00	CARBON	22K	5%	1/6W
R562	1-247-863-00	CARBON	22K	5%	1/6W
R563	1-247-863-00	CARBON	22K	5%	1/6W
R564	1-247-863-00	CARBON	22K	5%	1/6W
R565	1-247-863-00	CARBON	22K	5%	1/6W
R566	1-247-863-00	CARBON	22K	5%	1/6W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R567	1-247-875-00	CARBON 68K 5% 1/6W
R568	1-247-875-00	CARBON 68K 5% 1/6W
R901	1-247-793-00	CARBON 27 5% 1/6W
R902	1-247-825-00	CARBON 560 5% 1/6W
RV101	1-230-369-11	RES, VAR, CARBON 100K/100K (PINK NOISE)
S401	1-570-275-11	SWITCH, ROTARY (SENS)
S601	1-554-303-00	SWITCH, KEY BOARD (EQ CHARACTER)
S602	1-554-303-00	SWITCH, KEY BOARD (L)
S603	1-554-303-00	SWITCH, KEY BOARD (R)
S604	1-554-303-00	SWITCH, KEY BOARD (L+R)
S701	1-554-303-00	SWITCH, KEY BOARD (LINE)
S702	1-554-303-00	SWITCH, KEY BOARD (TAPE 1)
S703	1-554-303-00	SWITCH, KEY BOARD (TAPE 2)
S704	1-554-303-00	SWITCH, KEY BOARD (EQ)
S705	1-554-303-00	SWITCH, KEY BOARD (OFF)
S706	1-554-303-00	SWITCH, KEY BOARD (AEQ)
S707	1-554-303-00	SWITCH, KEY BOARD (SET)
S708	1-554-303-00	SWITCH, KEY BOARD (A)
S709	1-554-303-00	SWITCH, KEY BOARD (B)
S710	1-554-303-00	SWITCH, KEY BOARD (C)
S711	1-554-303-00	SWITCH, KEY BOARD (FLAT)
S712	1-554-303-00	SWITCH, KEY BOARD (1)
S713	1-554-303-00	SWITCH, KEY BOARD (2)
S714	1-554-303-00	SWITCH, KEY BOARD (3)
S715	1-554-303-00	SWITCH, KEY BOARD (4)
S716	1-553-856-00	SWITCH, KEY BOARD (EQ CURVE/RTA)
S717	1-553-856-00	SWITCH, KEY BOARD (LINE/MIC)
S718	1-553-856-00	SWITCH, KEY BOARD (HOLD)
S719	1-554-303-00	SWITCH, KEY BOARD (START)
S751	1-554-303-00	SWITCH, KEY BOARD (+)
S752	1-554-303-00	SWITCH, KEY BOARD (+)
S753	1-554-303-00	SWITCH, KEY BOARD (+)
S754	1-554-303-00	SWITCH, KEY BOARD (+)
S755	1-554-303-00	SWITCH, KEY BOARD (+)
S756	1-554-303-00	SWITCH, KEY BOARD (+)
S757	1-554-303-00	SWITCH, KEY BOARD (+)
S758	1-554-303-00	SWITCH, KEY BOARD (+)
S759	1-554-303-00	SWITCH, KEY BOARD (+)
S760	1-554-303-00	SWITCH, KEY BOARD (+)
S761	1-554-303-00	SWITCH, KEY BOARD (-)
S762	1-554-303-00	SWITCH, KEY BOARD (-)
S763	1-554-303-00	SWITCH, KEY BOARD (-)
S764	1-554-303-00	SWITCH, KEY BOARD (-)
S765	1-554-303-00	SWITCH, KEY BOARD (-)
S766	1-554-303-00	SWITCH, KEY BOARD (-)
S767	1-554-303-00	SWITCH, KEY BOARD (-)
S768	1-554-303-00	SWITCH, KEY BOARD (-)
S769	1-554-303-00	SWITCH, KEY BOARD (-)
S770	1-554-303-00	SWITCH, KEY BOARD (-)
S801 ⚠	1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
S802 ⚠	1-552-535-00	(E2/E3)...SWITCH, POWER & VOLTAGE CHANGE
T801 ⚠	1-448-184-11	(US,Canadian)...TRANSFORMER, POWER
T801 ⚠	1-448-185-11	(AEP,UK,E2/E3)...TRANSFORMER, POWER

ELECTRICAL PARTS

Ref.No.	Part No.	Description
TB301	*1-535-116-00	TERMINAL
TB501	*1-535-115-00	TERMINAL
TB502	*1-535-115-00	TERMINAL
TB503	*1-535-116-00	TERMINAL
TB504	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
TB505	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
X501	1-567-160-00	OSCILLATOR, CERAMIC
X901	1-527-476-00	OSCILLATOR, CERAMIC

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
200	1-551-734-11	CORD, CONNECTION (RK-74A)
201	2-375-012-00	BAG, PROTECTION
202	3-304-973-00	SHEET, PROTECTION
203	3-701-630-00	BAG, POLYETHYLENE
204	3-703-390-01	(US)...INSTRUCTION
205	3-760-302-11	MANUAL, INSTRUCTION
206	3-764-062-21	(US)....CARD, CUSTOMER INQUIRY
207	4-905-465-01	CUSHION (LEFT), LOWER
208	4-905-466-01	CUSHION (RIGHT), LOWER
209	4-905-467-01	CUSHION (LEFT), UPPER
210	4-905-468-01	CUSHION (RIGHT), UPPER
211	4-905-469-01	INDIVIDUAL CARTON
212	4-907-610-01	JOINT
213	8-814-214-00	ECM-333SEQ
214	A-4410-043-A	COMMANDER ASSY

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