

FM/AM STEREO RECEIVER

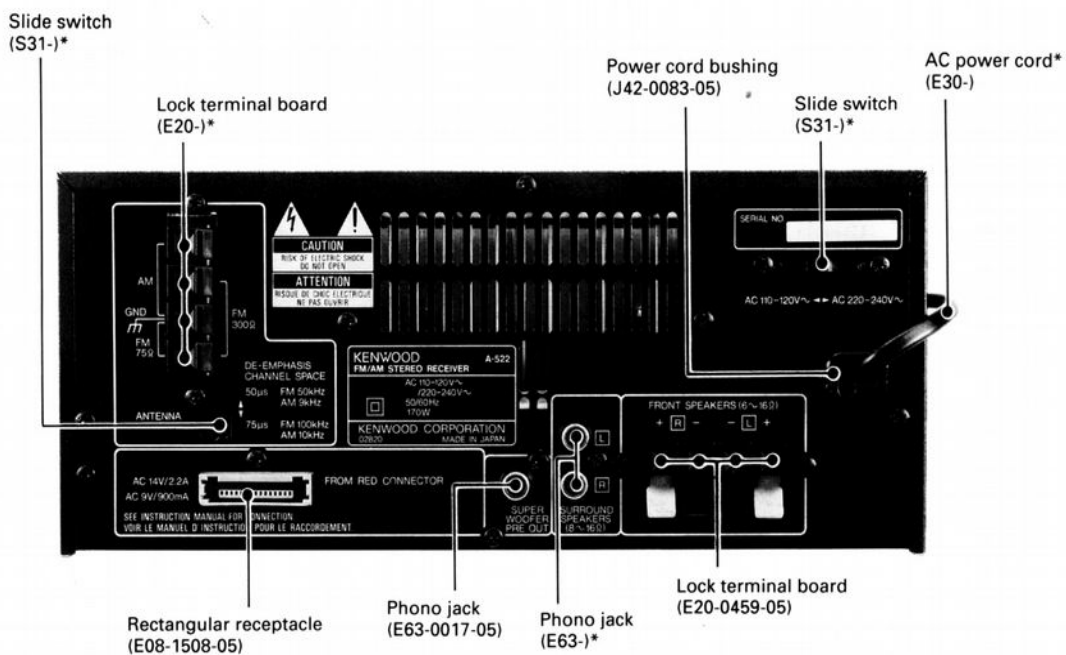
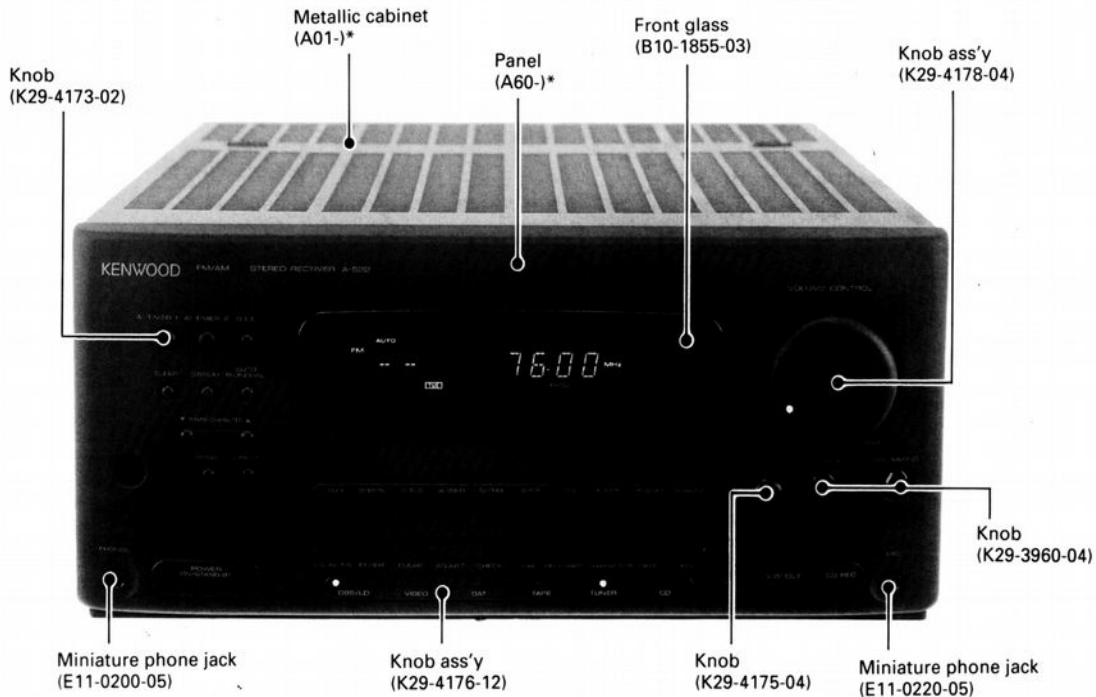
KENWOOD

A-522/522L

SERVICE MANUAL

(COMPACT HI-FI SYSTEM
UD COMPONENT SYSTEM

UD-70)



[A-522 : K, P, Y, M, X type]
[A-522L : T, E, L type]

* Refer to parts list on page 33.
Photo is A-522

Refer to the SERVICING NOTES on page 2 before repair.

A-522/522L

CONTENTS/SERVICING NOTES

CONTENTS/SERVICING NOTES	2	ADJUSTMENT	16
PACKING/ACCESSORIES.....	3	WIRING DIAGRAM	18
CONTROLS AND INDICATORS	4	PC BOARD (Component side view)	19
DISASSEMBLY FOR REPAIR	5	SCHEMATIC DIAGRAM	23
BLOCK DIAGRAM	6	EXPLODED VIEW	31
CIRCUIT DESCRIPTION	7	PARTS LIST	33
		SPECIFICATIONS	Back cover

SERVICING NOTES

① This unit does not contain a selector IC. Since each speaker relay of this unit is operated according to the data that is serially transmitted from the graphic equalizer (GE-522), the receiver cannot output sound alone. To output a signal to each speaker terminal, follow the following procedures.

Procedure 1)

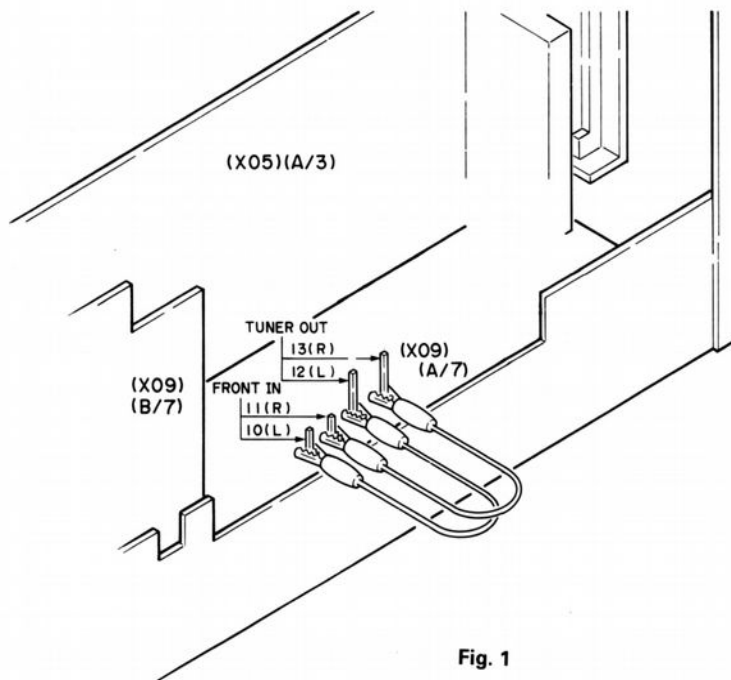
Direct the tuner output to the main amplifier input. Connect the test pin on the right (lower right of the tuner board) of the main amplifier board (X09, A/7). (Fig. 1)

Front amplifier Pins 12 and 10 (Left channel)
 Pins 13 and 11 (Right channel)

Procedure 2)

Enter the test mode. (Hold down the CHARACTER key, and insert the AC plug into the outlet.)

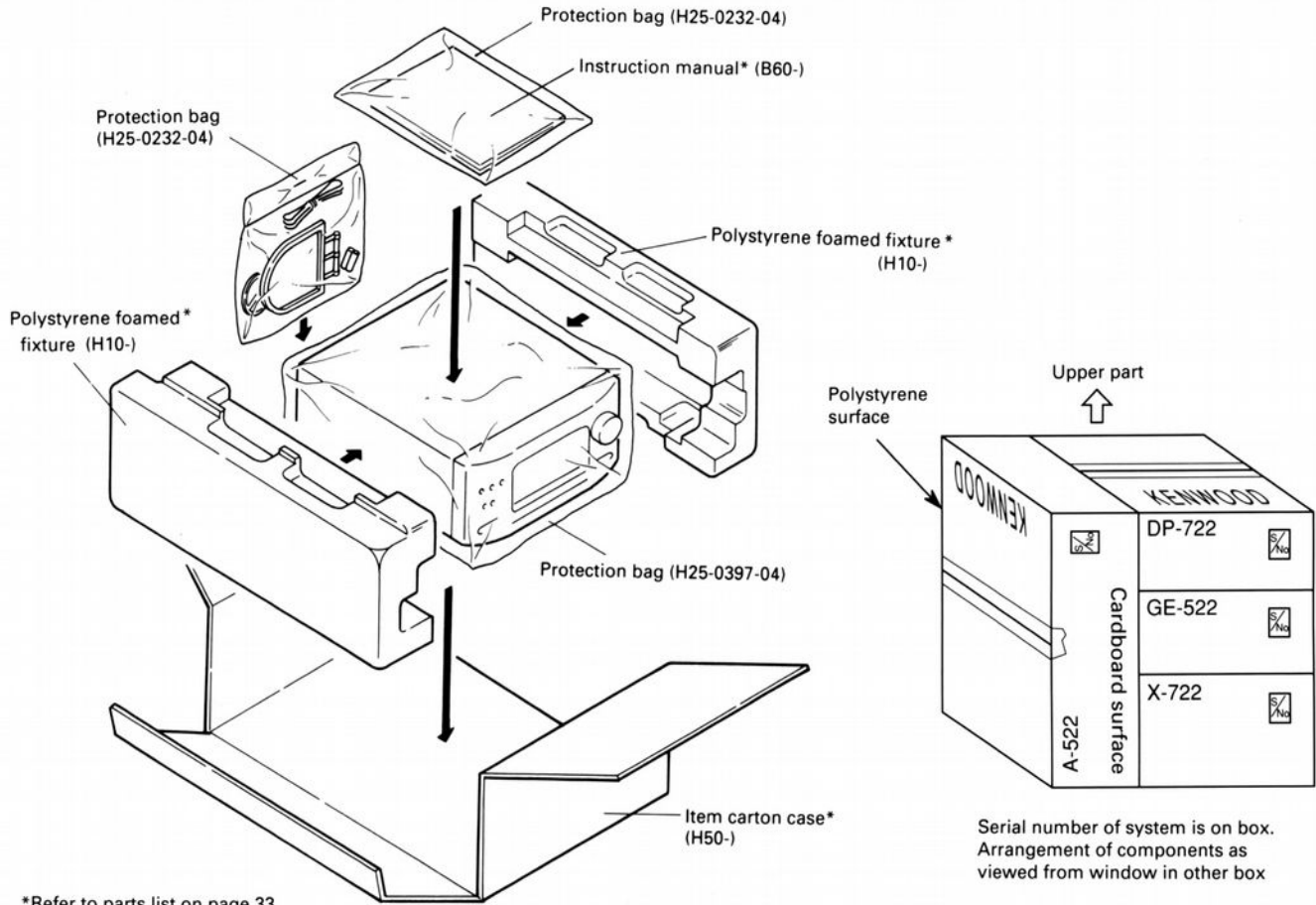
- 1) Press the DAT key or DBS/LD key. (Only the front speaker outputs sound.)
- 2) Press the VIDEO key. (The surround mode is entered, and the front and surround speakers outputs sound.)



A-522/522L

PACKING/ACCESSORIES

The A-522/522L is supplied with all the accessories, except the remote controller (X94-1000-21) for the GE-522.

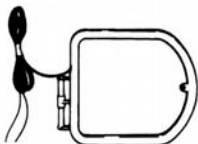


*Refer to parts list on page 33

The sleeve method is K, P, Y, M types, and E, X, T, L types are corrugated fiberboard boxes.

Accessories

- AM (MW, LW) loop antenna 1
(T90-0173-05): Japan made
(T90-0174-05): Singapore and France made



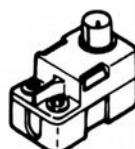
- Loop antenna stand 1
(J19-2815-04)



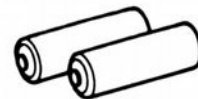
- FM indoor antenna 1
(T90-0176-05): Japan made
(T90-0175-05): Singapore and France made



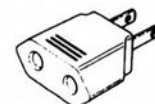
- Antenna adaptor (75 Ω/300 Ω) .. 1
(A-522L only) (T90-0136-05)



- Batteries 2



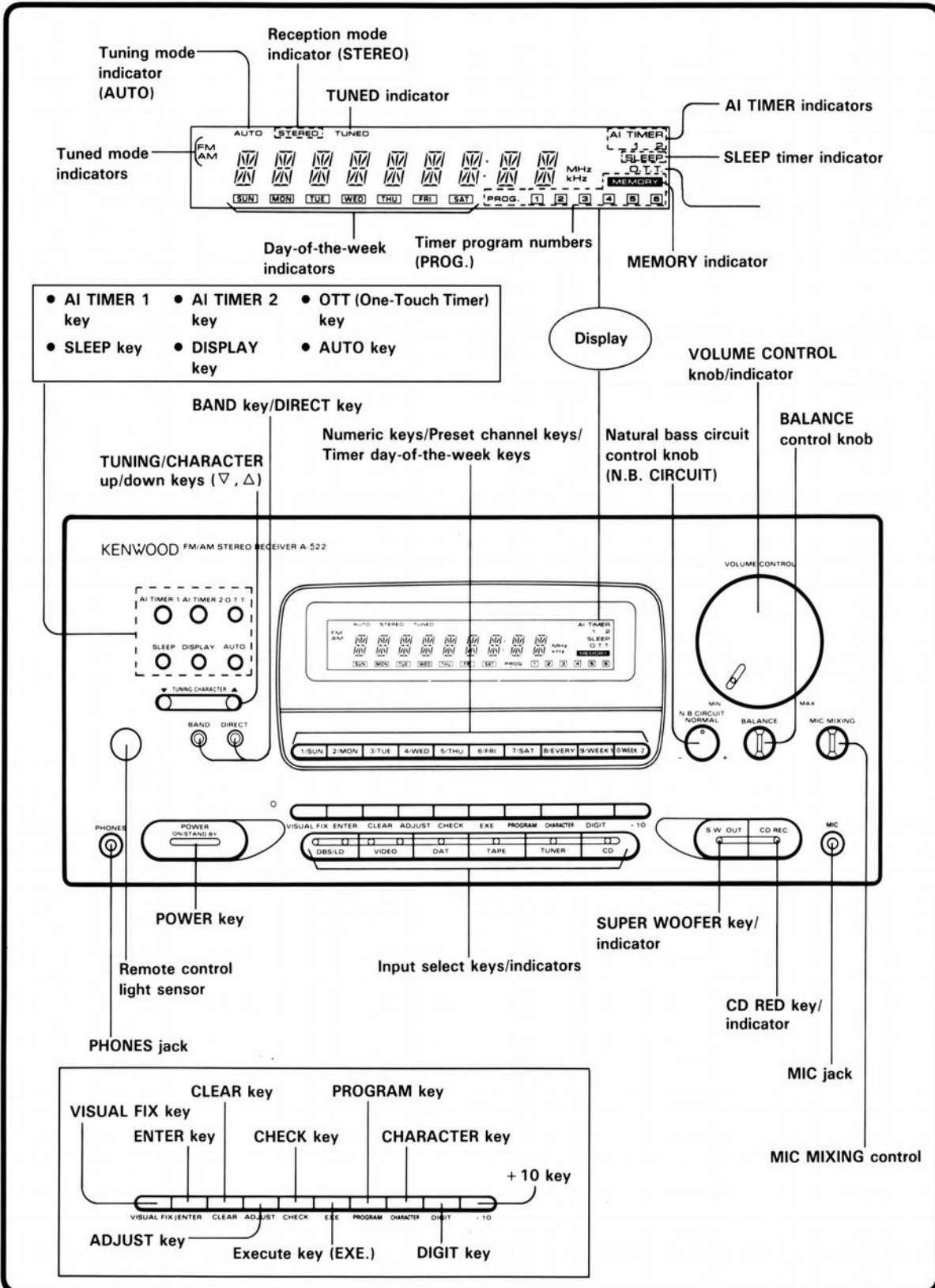
- AC plug adaptor 1
(M type only) (E03-0115-05)



A-522/522L

Controls and indicators

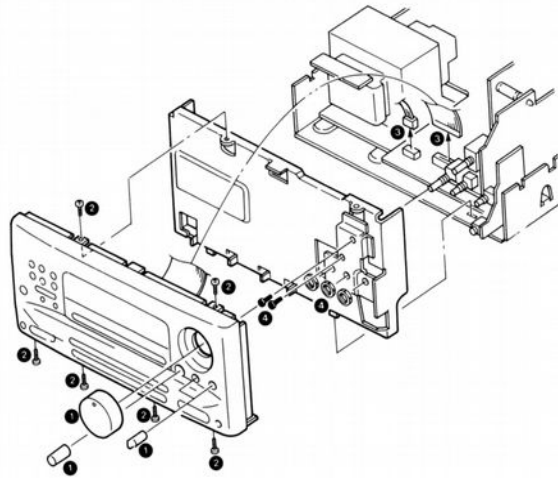
Receiver



DISASSEMBLY FOR REPAIR

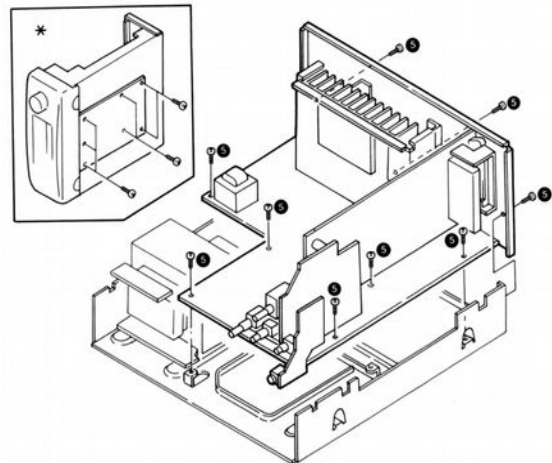
Removing the front panel and sub panel

1. Remove the four knobs ①.
2. Remove the six screws ②.
Disconnect the two connectors ③, then remove the front panel.
3. Remove the two screws and three nuts ④, then remove the sub panel.



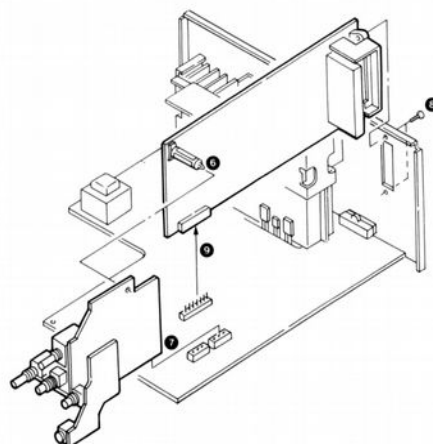
Removing the main PC board (X09: A/7)

4. Remove the nine screws ⑤, then remove the main PC board (X09: A/7).
* To adjust the main PC board, cover, as shown in the figure.



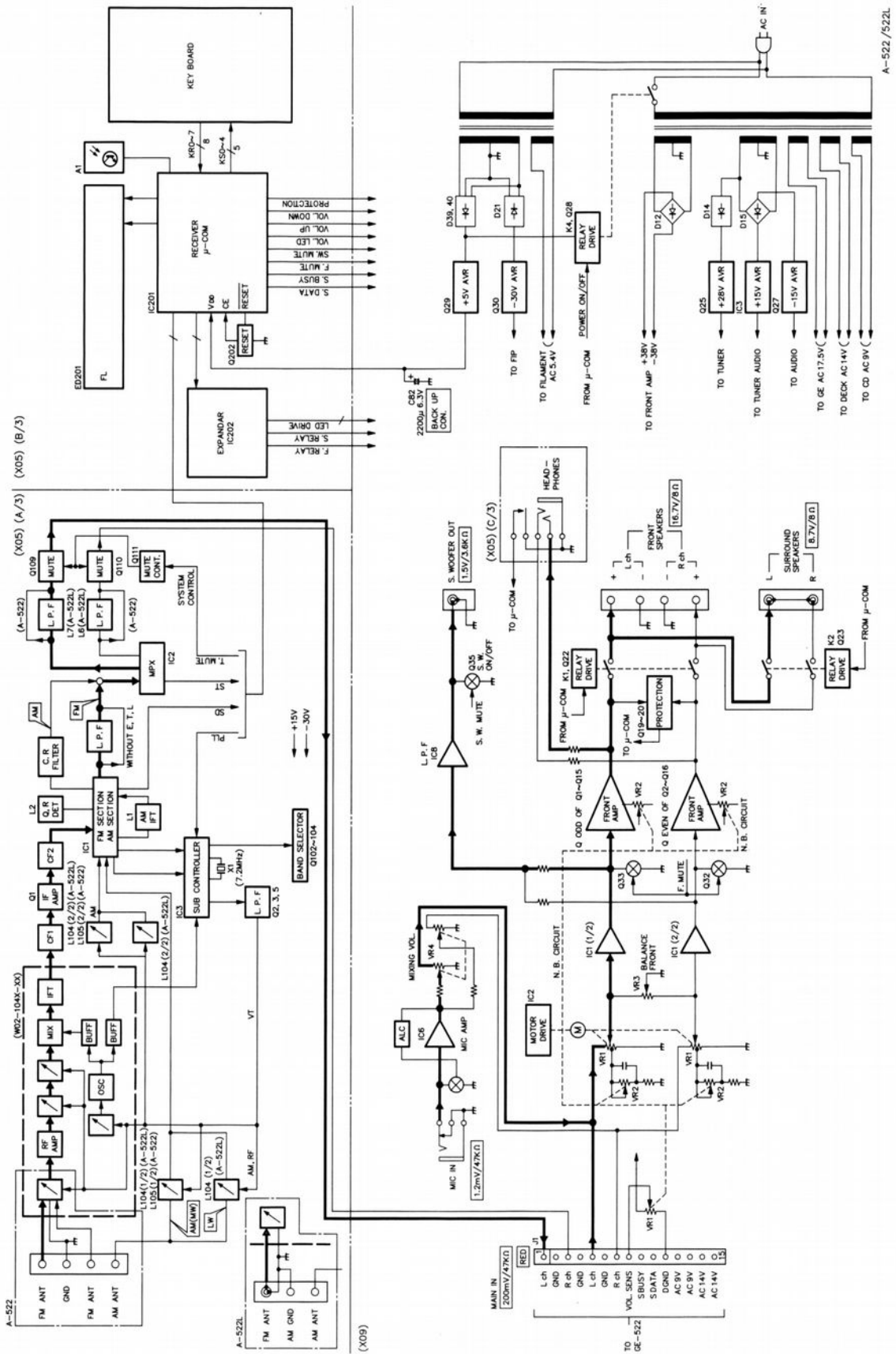
Removing the tuner PC board (X05: A/3) and the volume PC boards (X09: B/7, C/7, D/7)

5. Remove the unit holder ⑥.
6. Disconnect the volume PC boards (X09: B/7, C/7, D/7) from connector ⑦.
7. Remove the two screws ⑧.
8. Disconnect the tuner PC board (X05: A/3) from connector ⑨.



A-522/522L

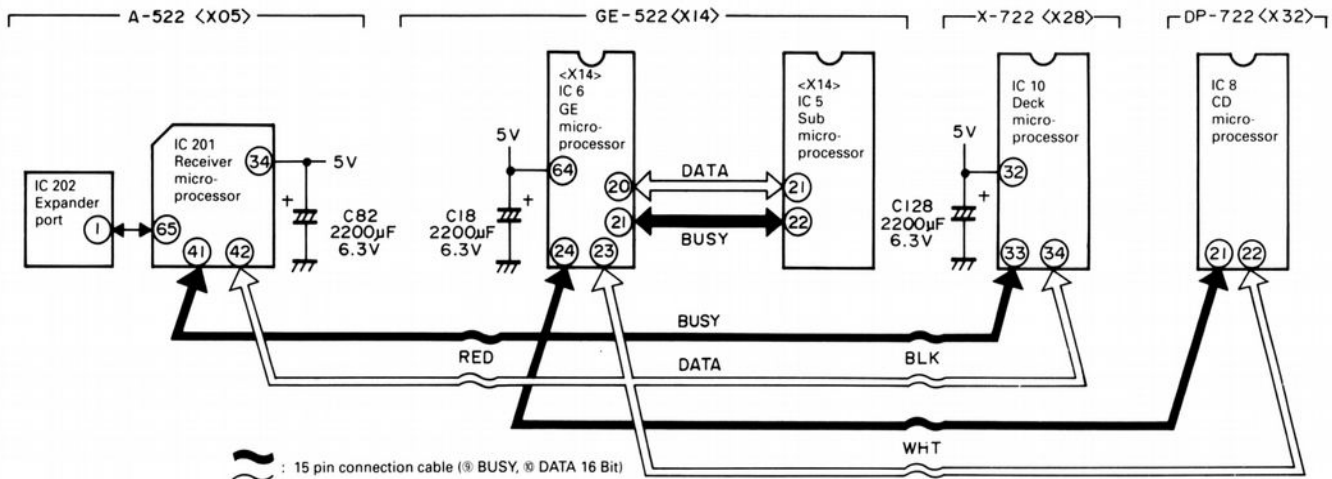
BLOCK DIAGRAM



A-522 /522L

CIRCUIT DESCRIPTION

Microprocessor and back-up condenser of this unit (16-bit serial transmission is supported unlike the UD-7/9 series (8 bits).)



Microprocessor initialization (reset) and test mode

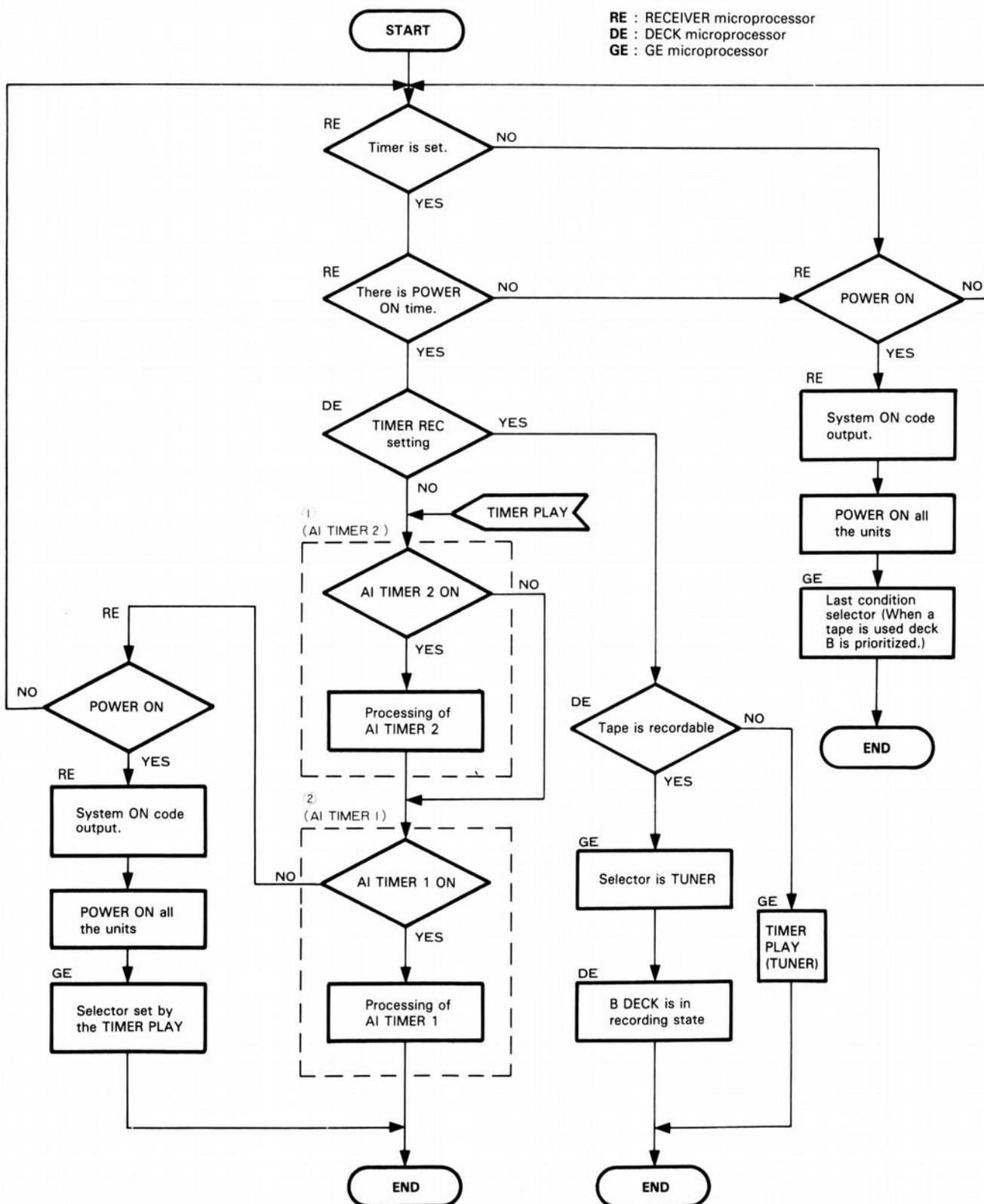
	A-522	GE-522	X-722	DP-722
	RECEIVER microprocessor (X09) IC201 CXP50116-360Q	GE microprocessor Main (X14) IC6 M50945-115SP Sub (X14) IC5 M50747-E68SP	DECK microprocessor (X28) IC10 μPD75112CW-133	CD microprocessor (X32) IC8 μPD75216ACW-C26
Backup condenser	(X05) C82 2200 μF 6.3 V	(X14) C18 2200 μF 6.3 V	(X28) C128 2200 μF 6.3 V	None
Initialization (reset)	Hold down the ENTER key, and insert the AC plug into the outlet.	Hold down the MEMORY key, and turn AC on.	Turn AC off in the CRLS test mode (see below).	Turn AC off again
Test mode	Operation	<ul style="list-style-type: none"> • Selector test: Hold down the EFFECT key, and turn AC on. • FL all lit test: Hold down the FLAT key, and turn AC on. • Segment test: Hold down the R/M key, and turn AC on. 	Short test pin ⑤ — ⑥, and turn AC on.	See the DP-711 service manual.
	Release	Remove the AC plug from the outlet.	Release — AC off.	Press the PAUSE key.
	Contents	① All fluorescent displays light. For details, see the service manual for each model.		No fluorescent display.

A-522/522L

CIRCUIT DESCRIPTION

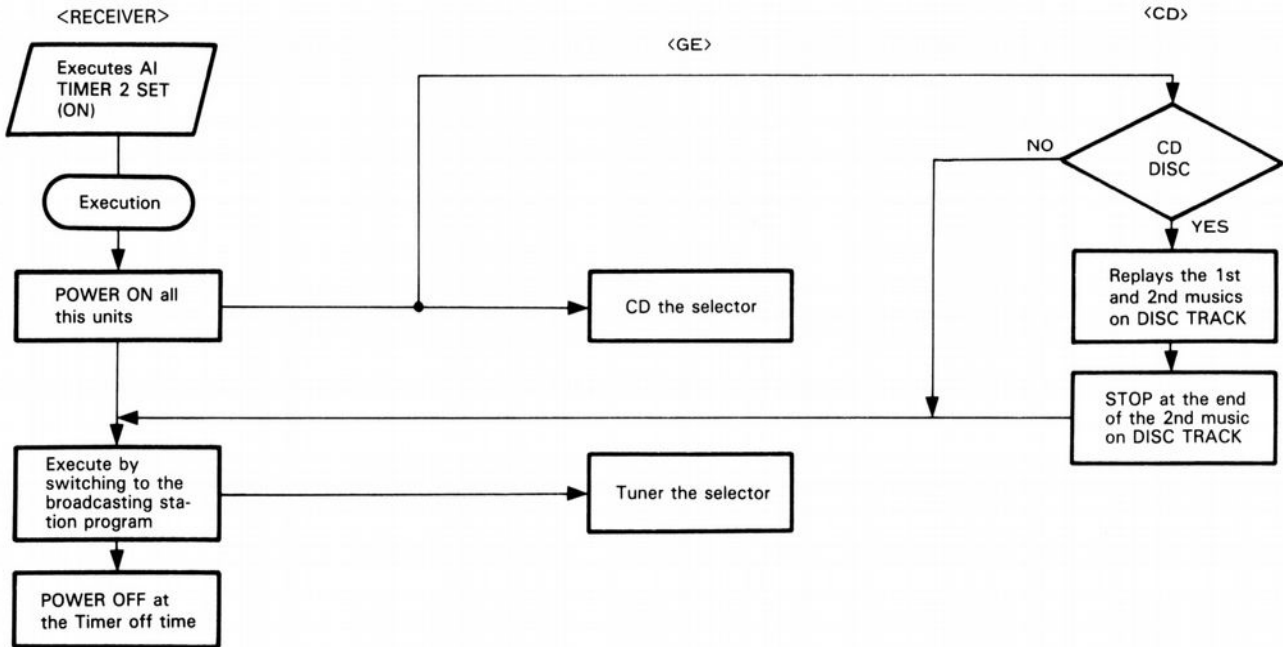
Operation of UD-70 system

The flow chart from power on through sound generation

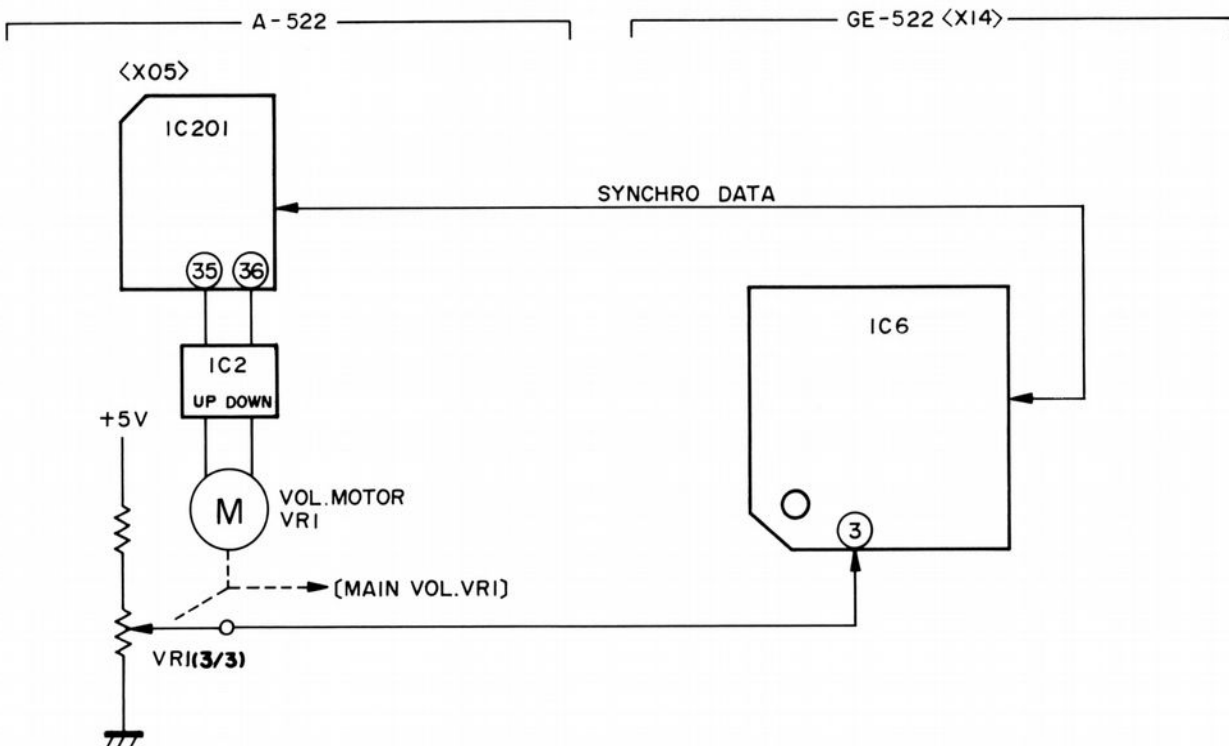


CIRCUIT DESCRIPTION

① Flow chart of AI TIMER 2

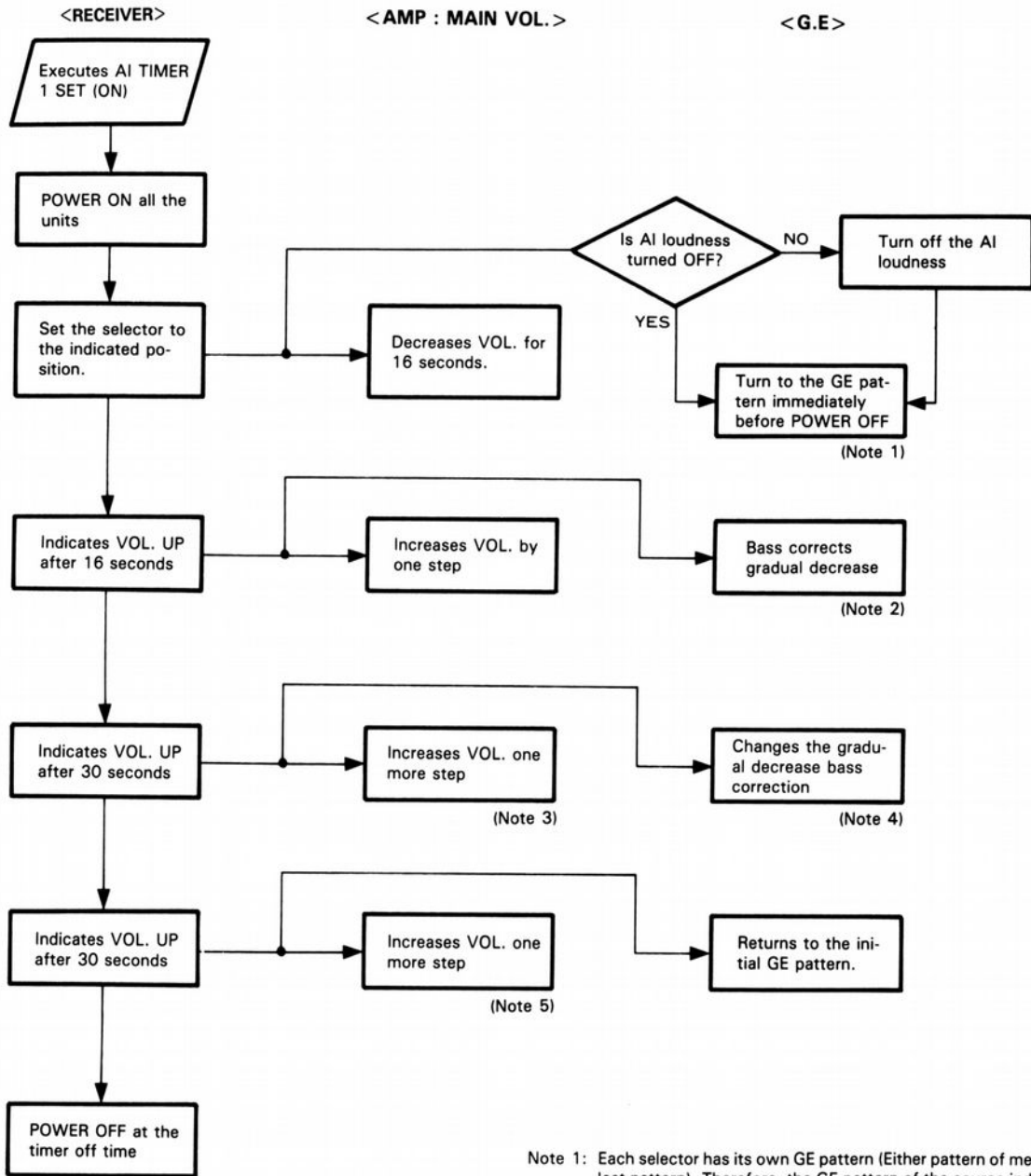


Operation of AI TIMER 2



CIRCUIT DESCRIPTION

② Indication flow of AI TIMER 1



Note 1: Each selector has its own GE pattern (Either pattern of memory and last pattern). Therefore, the GE pattern of the source indicated by the timer appears.

Note 2: Shifts to the pattern which has the loudness effect (There are two patterns of the gradual decrease bass correction of AI TIMER 1).

Note 3: The three steps of increase volume can be selected.

Note 4: Decrease correction volume is lowered in accordance with VR UP.

Note 5: Same as Note 3. However, the VR position is limited at the position of 12.

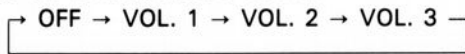
CIRCUIT DESCRIPTION

Function description

a) AI TIMER 1

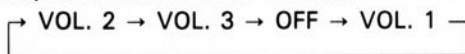
- With the program timer mode set to PLAY, when the timer is turned ON, the setting contents for the AI TIMER 1 is activated if the AI TIMER 1 is set to ON (the FL indicator is lit).
- When the AI TIMER 1 is turned ON, first playback starts with the minimum volume level, then the volume level is increased in three steps.
- The third-step volume level (the maximum volume level) can be selected among the three types of the volume levels (VOL. 1-3). Each time the AI TIMER 1 key is pressed, the maximum volume level is changed in order from VOL. 1 to VOL. 3 and TIMER OFF setting cyclically.

① When the key is pressed with the AI TIMER 1 is OFF (FL indicator is not lit):

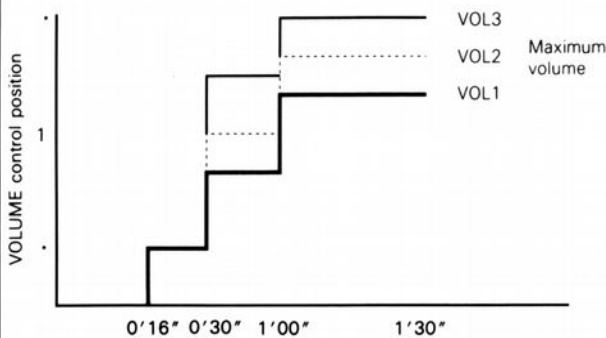


② When the key is pressed in the volume setting mode (FL indicator is lit):

Example: When VOL. 2 is selected



Reference for volume selection



- The VOLUME control rotates as the volume changes.
- The graphic equalizer curve also varies accordingly.

b) AI TIMER 2

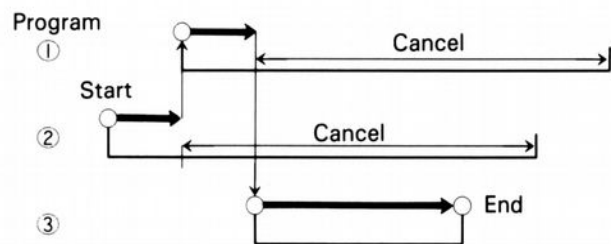
- With the program timer mode set to PLAY, when the timer is turned ON, the setting contents for the AI TIMER 2 is activated if the AI TIMER 2 is set to ON (FL indicator is lit).
- When the AI TIMER 2 is turned ON, if the disc is loaded in the CD player, the two tracks on the disc is played regardless whether the other source is set for play. Then, the playback source is changed to tuner automatically.
- Each time the AI TIMER 2 key is pressed, the timer setting is changed alternately.

Timer program operation

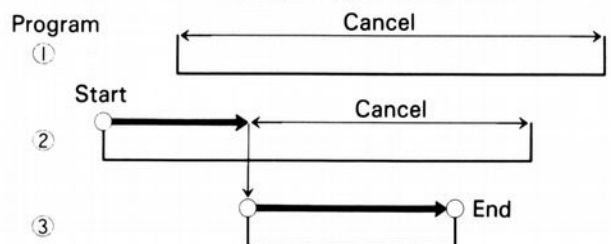
<When the program settings are registered within the same period>

- When the two or more program settings are to be started at the same time:
The program having the least number is activated and others will be cancelled.
- When the setting time for two or more programs differ:
First, the program with the earliest setting time is activated. Then, if the same mode (REC mode or PLAY mode) has been designated for the other program, the operation is changed to the program in which the same mode as the first one is designated and the end time for the above program will be cancelled. If another mode is set for of other programs, the contents will be cancelled.

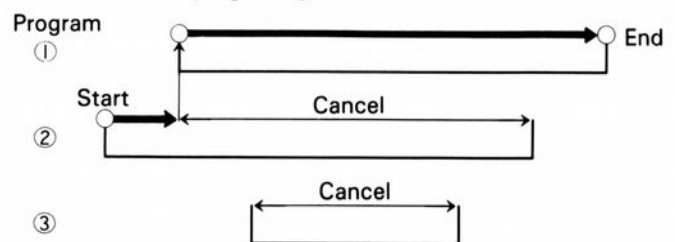
Example 1: When the operation modes for all three programs are set to PLAY:



Example 2: When the operation modes for programs ②, ③ are set to PLAY and that for the program ① is set to REC:



Example 3: When the operation mode for programs ①, ② are set to REC and that for program ③ is set to PLAY:

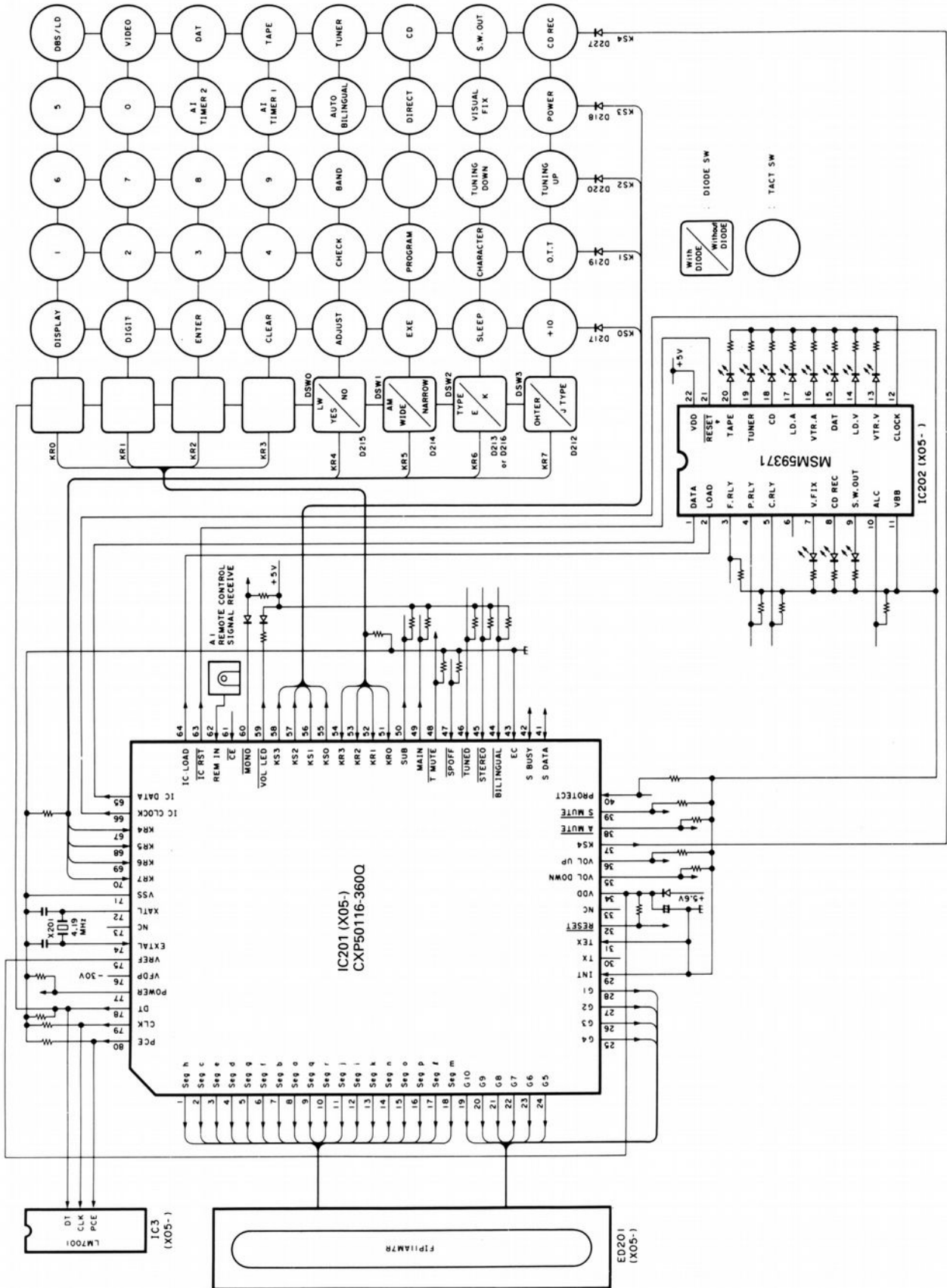


The program end is determined by the OFF time of the program which is activated at the last.

A-522/522L

CIRCUIT DESCRIPTION

Block diagram of surrounding microprocessor



CIRCUIT DESCRIPTION

Function initial setting

(1) Tuner section

POWER	OFF
BAND	FM
Last frequency	Lower most limit of each band
Last preset	"--" display
Preset memory	Test frequency of each memory
AUTO/MONO	AUTO
BILINGUAL	BOTH MODE
Display mode	POWER ON ... Frequency display POWER OFF ... Clock display

(2) Clock, calendar, and timer section

Calendar	January 1, 1991
Clock	0:00 Power failure mode
Programmable timer	Day of week : TUE ON : 0:00 OFF : 0:00 MODE : PLAY SOURCE : TUNER SET ch : 01 ch Execution mode : OFF
Sleep timer	OFF
One touch timer	OFF

(3) Amplifier section

Selector	Audio system : TUNER Video system : LD
V-FIX	OFF
CDREC	OFF
SUPER WOOFER	OFF

Setting of initial conditions (reset)

(1) Method

While pressing ENTER key, turn the AC ON.

(2) Contents

Clears all the memory and returns to the initial conditions. However, the test frequency is newly memorized in the preset memory at this time. (The same as when the back-up data is NG.)

Conditions by destination

Destination type	Destination switches (DSW)				Band	Receiving frequency range	Inter-channel space	Intermediate frequency	PLL reference frequency	
	B3	B2	B1	B0						
A-522	M, Y	1	1 or 0	0	0	FM	87.5 ~ 108.0 MHz	50 kHz /100 kHz	+10.7 MHz	50 kHz (25 kHz)
						AM	531 ~ 1602 kHz /530 ~ 1610 kHz	9 kHz /10 kHz	+450 kHz	10 kHz
	K, P	1	0	0	0	FM	87.5 ~ 108.0 MHz	100 kHz	+10.7 MHz	50 kHz (25 kHz)
						AM	530 ~ 1610 kHz	10 kHz	+450 kHz	10 kHz
	X	1	1	0	0	FM	87.5 ~ 108.0 MHz	50 kHz	+10.7 MHz	50 kHz (25 kHz)
						AM	531 ~ 1602 kHz	9 kHz	+450 kHz	9 kHz
A-522L	T, E, L	1	1	0	1	FM	87.5 ~ 108.0 MHz	50 kHz	+10.7 MHz	50 kHz (25 kHz)
						MW	531 ~ 1602 kHz	9 kHz	+450 kHz	9 kHz
						LM	153 ~ 281 kHz	1 kHz	+450 kHz	1 kHz

Test mode

(1) Setting method

While pressing CHARACTER key, turn the AC on.

(2) Clearing method

AC off.

(3) Contents

- All fluorescent lamps and LEDs light.
- Speaker relay ON/OFF. (The front and surround speakers output sounds)
- Receive the minimum FM value.

The test is performed with the following keys.

1) Preset channel calling

Normally, the +10 key changes the high-order digits 1-, 2-, and 0- alternately, but it changes the high-order digits 1- and 0- alternately in the test mode. The 0 key does not call any channel, but in the test mode, if the high-order digit is 0, 10 ch is called, and if it is 1, 20 ch is called. Table 1 lists the channels to be called.

Table 1

High order / Low order	TEN KEY									
	1	2	3	4	5	6	7	8	9	0
0	1	2	3	4	5	6	7	8	9	10
1	11	12	13	14	15	16	17	18	19	20

2) Motor volume test

If the DIGIT key is pressed, the volume keeps increasing for 16 seconds, and then keeps decreasing for 16 seconds. To stop the test in the middle, switch the power off.

3) O.T.T key test (one-touch-timer)

Normally, the O.T.T key is not accepted if the clock is not functioning. Only in the test mode, it is indicated that the key is accepted, but it does not cause any operation. When the key is pressed the first time, ON 0:30 O.T.T appears on the fluorescent display, and after five seconds, only O.T.T is displayed. When the key is pressed the second time, O.T.T disappears, and the original state before the key is pressed returns.

A-522/522L

CIRCUIT DESCRIPTION

Microprocessor: CXP50116-360Q (X05: IC201)

Pin functions

Pin No.	Pin name	I/O	Name	Description
1 ~ 18	S4 ~ S21/PG0 ~ PG3 PK0 ~ PK3, PJ0 ~ PJ3 T15 ~ T10	O	Segment	Segment (h, c, e, d, g, f, b, a, q, r, j, i, k, n, o, p, l, m)
19 ~ 28	S22, S23/T9, T8, T7 ~ T0	O	G10 ~ G1	Grid 10 ~ 1
29 ~ 31	INT, TX, TEX		INT, TX, TEX	No used.
32	RST	I	$\overline{\text{RESET}}$	Reset pin Low: RESET High: NORMAL
33	NC		NC	No used.
34	Vdd		Vdd	+5 V power supply
35	PI0	O	VOLD	Motor volume down Low: STOP High: ACTIVE
36	PI1	O	VOLU	Motor volume up Low: STOP High: ACTIVE
37	PI2	O	KS4	Key scan signal output (KS4)
38	PI3	O	$\overline{\text{AMUTE}}$	Amplifier mute Low: ON High: OFF
39	PB0	O	$\overline{\text{SMUTE}}$	Super woofer mute Low: ON High: OFF
40	PB1	I	PROTECT	Protection detection Low: OFF High: ON
41	PB2	I/O	SDATA	Serial communication DATA
42	PB3	I/O	SBUSY	Serial communication BUSY
43	EC		EC	No used.
44	PX0	I	$\overline{\text{BILINGUAL}}$	TV bilingual signal detection Low: BILINGUAL High: NORMAL
45	PX1	I	$\overline{\text{STEREO}}$	Stereo signal detection Low: STEREO High: MONAURAL
46	PX2	I	$\overline{\text{TUNED}}$	SD signal detection Low: TUNED High: OFF
47	PA0	I	$\overline{\text{SPOFF}}$	Head phone use detection Low: Use High: No use
48	PA1	O	TMUTE	Tuner mute Low: OFF High: ON
49	PA2	O	MAIN	TV main selection signal output
50	PA3	O	SUB	TV sub selection signal output
51 ~ 54	PF0 ~ PF3	I	KR0 ~ KR3	Key return signal input (KR0 ~ KR3)
55 ~ 58	PE0 ~ PE3	O	KS0 ~ KS3	Key scan signal output (KS0 ~ KS3)
59	PY0	O	$\overline{\text{VOLLED}}$	Volume LED drive Low: ON High: OFF
60	PY1	O	$\overline{\text{MONO}}$	Forced monaural output Low: ON High: OFF
61	PY2	I	CE	Chip enable signal input Low: OFF High: ON
62	PY3	I	REMIN	Remote control signal input
63	PD0	O	$\overline{\text{ICRST}}$	Expansion port IC (MSM59371RS) RESET
64	PD1	O	ICLOAD	Expansion port IC (MSM59371RS) STROBE
65	PD2	O	ICDATA	Expansion port IC (MSM59371RS) DATA
66	PD3	O	ICCLOCK	Expansion port IC (MSM59371RS) CLOCK
67 ~ 70	PC0 ~ PC3	I	KR4 ~ KR7	Key return signal input (KR4 ~ KR7)
71	Vss		Vss	GND
72	XTAL		XTAL	Crystal oscillator input (4.19 MHz)
73	NC		NC	No used.
74	EXTAL		EXTAL	Crystal oscillator input (4.19 MHz)
75	Vref		Vref	No used.
76	Vfdp		Vfdp	-30 V power supply.
77	S0/PH0	O	POWER	Power ON/OFF signal output Low: OFF High: ON
78	S1/PH1	O	DT	PLL IC (LM7001) DATA
79	S2/PH2	O	CLK	PLL IC (LM7001) CLOCK
80	S3/PH3	O	PCE	PLL IC (LM7001) STROBE

CIRCUIT DESCRIPTION

Test frequency

CH	TYPE	A-522			A-522L	
		Y.M	K.P	Y.M.X	T.E.L	
1	FM	98.0MHz	FM 98.0MHz	FM 98.0MHz	FM	98.0MHz
2	FM	108.0MHz	FM 108.0MHz	FM 108.0MHz	FM	108.0MHz
3	AM	630KHz	AM 630KHz	AM 630KHz	AM	630KHz
4	AM	990KHz	AM 990KHz	AM 990KHz	AM	990KHz
5	AM	1440KHz	AM 1440KHz	AM 1440KHz	AM	1440KHz
6	AM	1610KHz	AM 1610KHz	AM 1602KHz	AM	1602KHz
7	FM	87.5MHz	AM 1700KHz	FM 87.5MHz	LW	162KHz
8	FM	87.5MHz	FM 87.5MHz	FM 87.5MHz	LW	216KHz
9	FM	87.5MHz	FM 87.5MHz	FM 87.5MHz	LW	270KHz
10	FM	89.1MHz	FM 89.1MHz	FM 89.1MHz	FM	89.1MHz
11	FM	87.5MHz	FM 87.5MHz	FM 87.5MHz	LW	280KHz
12	FM	90.0MHz	FM 90.0MHz	FM 90.0MHz	FM	90.0MHz
13	FM	106.0MHz	FM 106.0MHz	FM 106.0MHz	FM	106.0MHz
14	AM	530KHz	AM 530KHz	AM 531KHz	AM	531KHz
15	FM	87.5MHz	FM 87.5MHz	FM 87.5MHz	LW	153KHz
16~20	FM	87.5MHz	FM 87.5MHz	FM 87.5MHz	FM	87.5MHz

Expansion port IC: MSM59371 (X05: IC202)

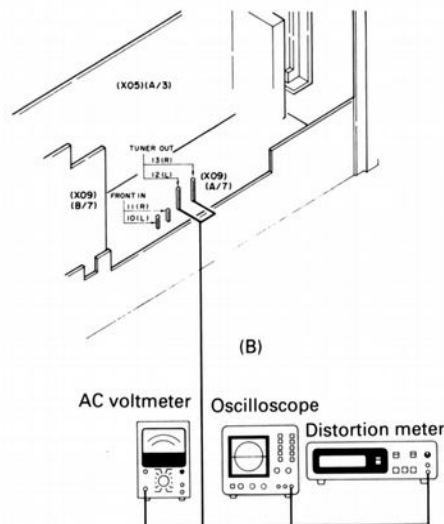
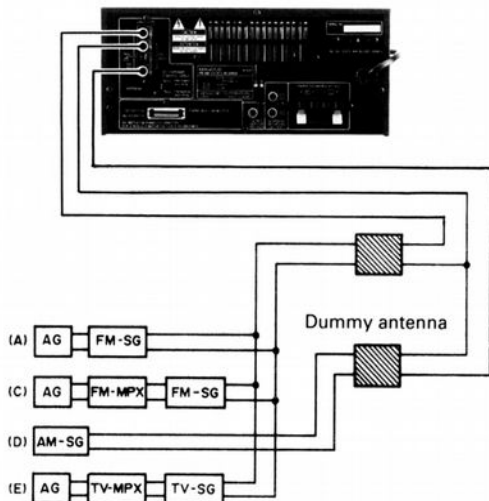
Pin functions

Pin No.	Pin name	I/O	Name	Description
1	DATA	I	ICDATA	DATA input
2	LOAD	I	ICLOAD	Strobe input
3	016	O	F. RLY	Front speaker relay
4	015	O	P. RLY	Presence speaker relay
5	014	O	C:RLY	Center and surround speaker relay
6	013	O		No used.
7	012	O	VFIX	V-FIX LED drive
8	011	O	CDREC	CD REC LED drive
9	010	O	S.W.OUT	SUPER WOOFER LED drive
10	09	O	ALC	ALC signal output
11	Vbb		Vbb	GND
12	CLOCK	I	ICCLOCK	Clock input
13	08	O	VTR.V	Selector VIDEO (V) LED drive
14	07	O	LD.V	Selector LD (V) LED drive
15	06	O	DAT	Selector DAT LED drive
16	05	O	VTR.A	Selector VIDEO (A) LED drive
17	04	O	LD.A	Selector LD (A) LED drive
18	03	O	CD	Selector CD LED drive
19	02	O	TUNER	Selector TUNER LED drive
20	01	O	TAPE	Selector TAPE LED drive
21	RESET	I	ICRST	Reset signal input
22	Vdd		Vdd	+5 V power supply

A-522/522L

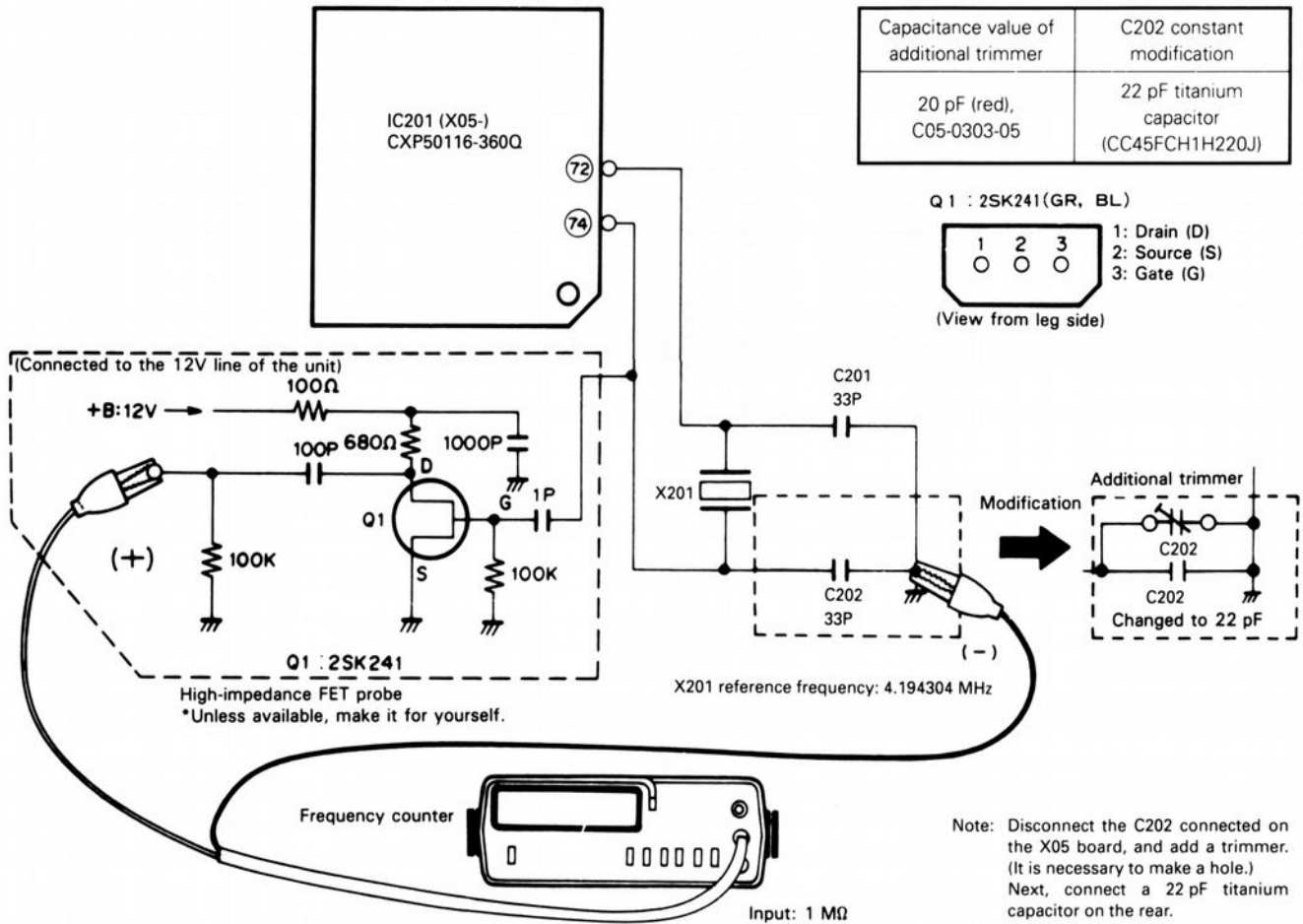
ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION		SELECTOR: FM					
1	DISCRIMINATOR	(A) 98.0MHz 1kHz, ±75kHz dev (K, P, M, Y, X type) 1kHz, ±40kHz dev (E, T, L, M, Y type) 60dBμ (ANT input)	Connect a DC voltmeter between TP3 and TP4. (X05-)	AUTO or MONO 98.0MHz	L2 (X05-)	0V	(a)
2	VCO	(A) 98.0MHz 0 dev 60dBμ (ANT input)	Connect a frequency counter to TP5 and TP6 (GND). (X05-)	AUTO 98.0MHz	VR2 (X05-)	19.00kHz	(b)
3	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, ±68.25kHz dev Pilot: ±7.5kHz dev (K, P, M, Y, X type) 1kHz, ±40kHz dev Pilot: ±6kHz dev (E, T, L, M, Y type) 60dBμ (ANT input)	(B)	MONO 98.0MHz	IFT (W02-)	Minimum distortion	
4	SEPARATION (E, T, L type only)	(C) 98.0MHz 1kHz, ±40kHz dev Pilot ±6kHz dev Selector: L or R 60dBμ (ANT input)	(B)	AUTO 98.0MHz	VR4 (X05-)	Minimum crosstalk	
5	TUNING LEVEL	(A) 98.0MHz 1kHz, ±75kHz dev (K, P, M, Y, X type) 1kHz, ±45kHz dev (E, T, L, M, Y type) 14dBμ (ANT input) 750μV 18dBμ (ANT input) 3000μV	(B)	AUTO or MONO 98.0MHz	VR1 (X05-)	Adjust VR1 and stop at the point where ED201(TUNED) goes on.	
AM (MW) SELECTION		SELECTOR: AM(MW)					
(1)	TUNING LEVEL	(D) 1008kHz 400Hz, 30% mod 26dBμ (ANT input)	(B)	1008kHz	VR3 (X05-)	Adjust VR3 and stop at the point where ED201 (TUNED) goes on.	



ADJUSTMENT

Timer accuracy improvement method



The timer accuracy is within ± 40 seconds for one month as a standard. For improved timer accuracy, perform the following procedure:

- (1) If the timer accuracy is without the standard, replace X201 (L77-1176-05) near the microprocessor IC on a printed board (X05-).
- (2) Even if within the standard, for further improved accuracy, change the constant of C202 in the crystal oscillation circuit of microprocessor IC201 and add a trimmer.

Adjustment method (Use a high-impedance buffer to avoid frequency deviation.)

Connect a high-accuracy frequency counter to pin 74 by way of the FET probe shown above, and adjust the frequency fully up to the first digit of the X201 reference frequency 4,194,304 Hz. (Connect the negative (-) side of the frequency counter to the GND side of C202.)

Note (a) As regards the positive (+) side of the frequency counter, arrange as short a distance as possible between pin 74 of IC201 and 1P of the input stage of the FET probe.

Note (b) Perform the trimmer adjustment after energization of around 10 minutes at normal temperature.

- (3) Monthly error calculation method
For example, when the result of measurement at pin 74 by the frequency counter is $f_x = 4,194,275$ Hz...
(Reference frequency $f_0 = 4,194,304$ [Hz])

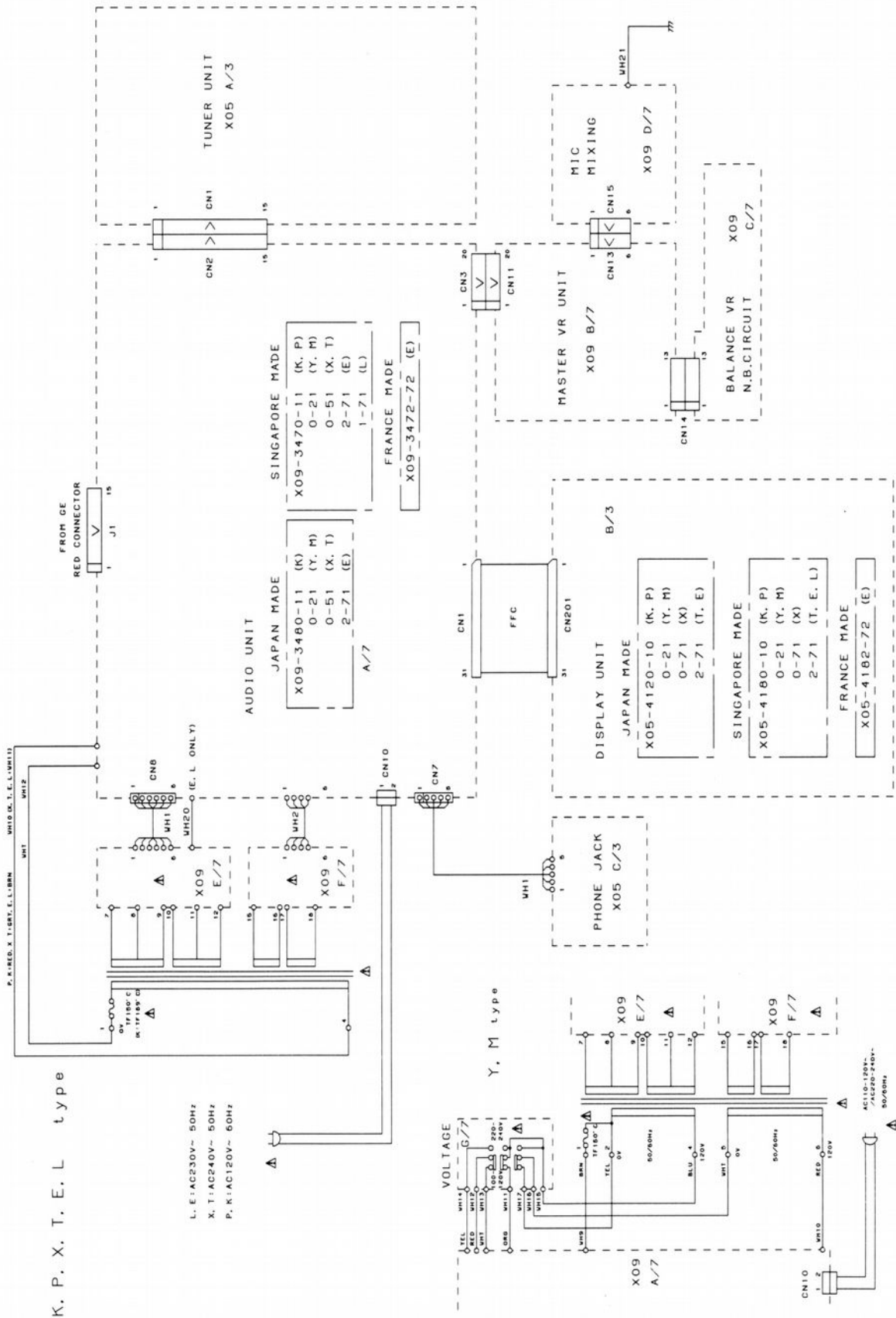
$$\text{Monthly error [sec]} = \frac{f_x - f_0}{f_0} \times \text{the number of seconds}$$

$$\begin{aligned} \text{taken for one month} &= \frac{4,194,275 - 4,194,304}{4,194,304} \\ &\quad \times (60 \times 60 \times 24 \times 30) \\ &= -17.9 \text{ [sec]} \end{aligned}$$

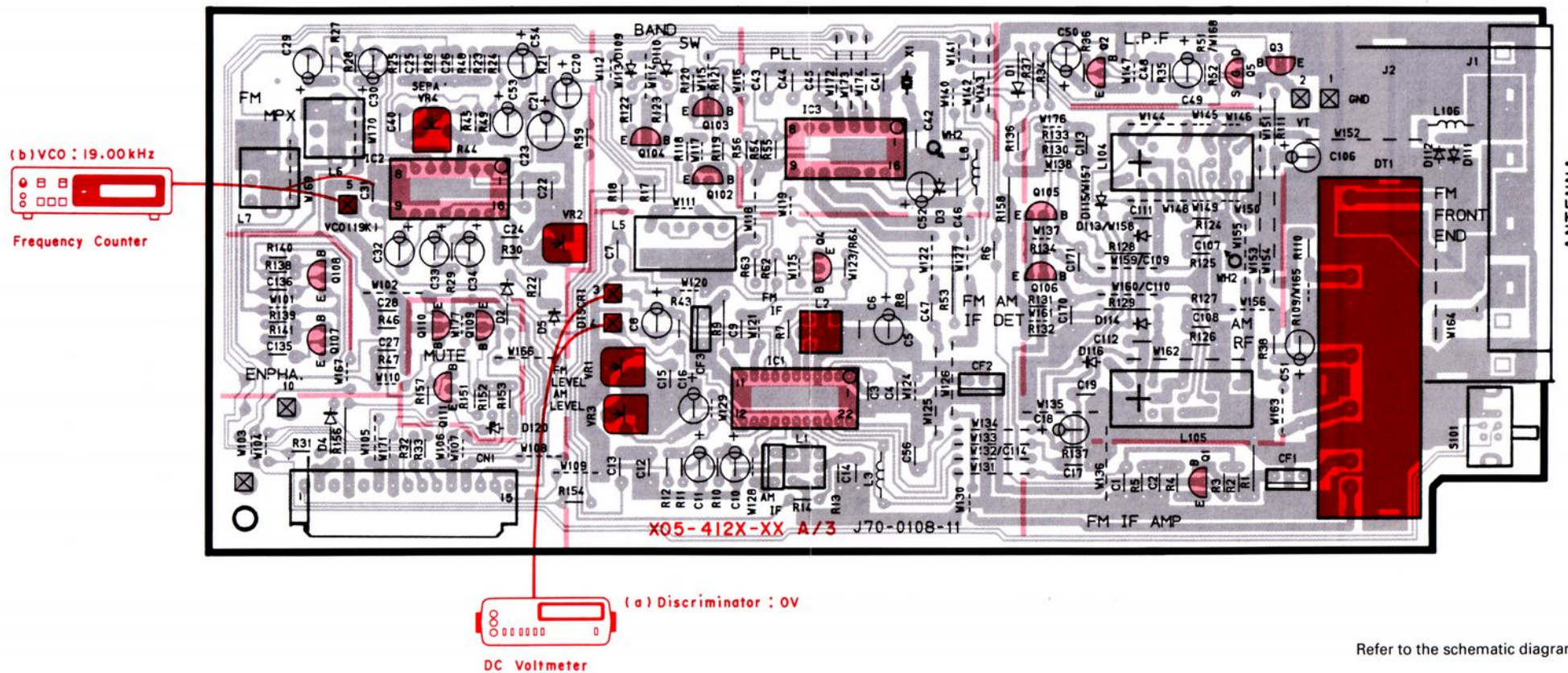
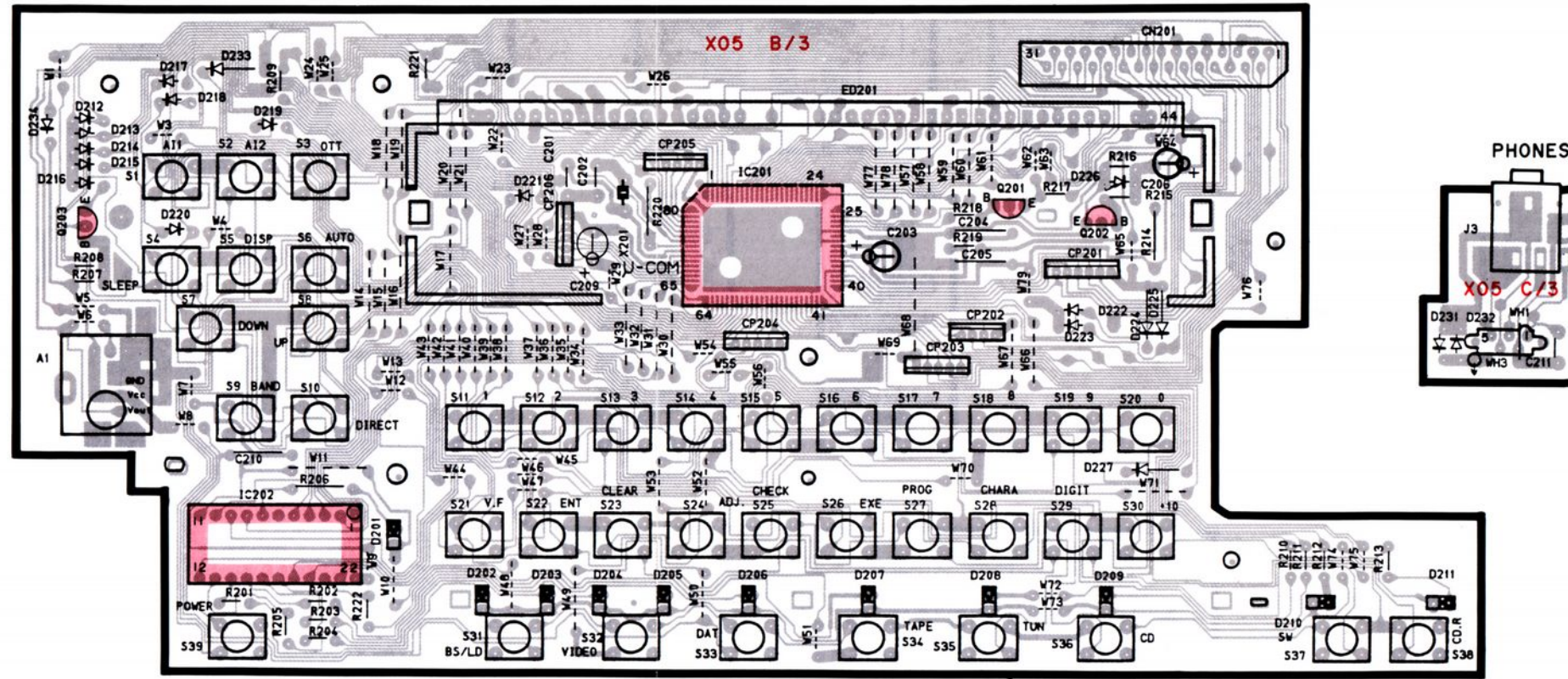
* A minus value as the monthly error means a loss.

A-522/522L

WIRING DIAGRAM

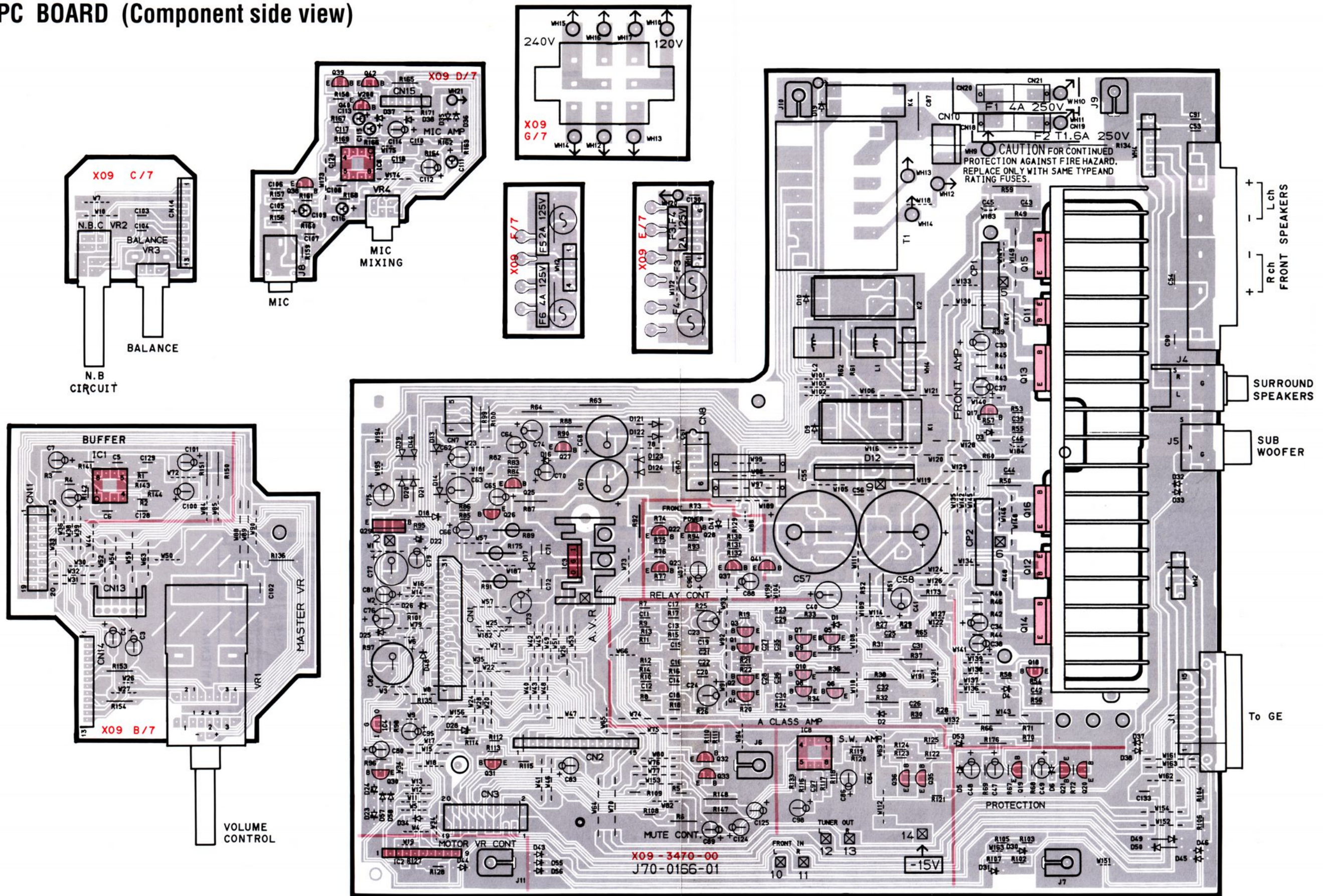


PC BOARD (Component side view)



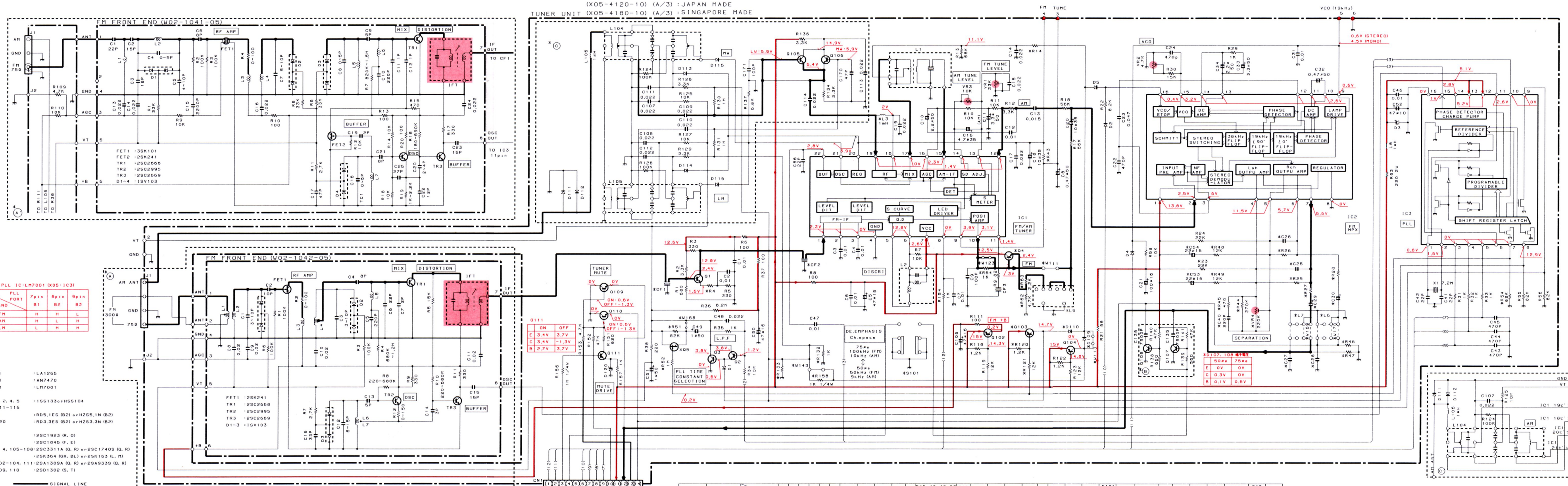
Refer to the schematic diagram for the values of registers and capacitors.

PC BOARD (Component side view)



Refer to the schematic diagram for the values of registers and capacitors.

- | | | | | | | | | | | | | | | |
|---------|---------|---------|---------|----------|----------|------------|--------|---------|-----------|----------|--------|---------|--------|-----------|
| 2SA1123 | 2SB1531 | 2SD1266 | PST529C | DTC124ES | UN4212 | NJM4565D-D | AN7470 | TA8409S | TA7815HF | BA17815T | LA1265 | 2SC4137 | LM7001 | RC4565D-D |
| 2SA954 | 2SD2340 | | | 2SA933S | 2SA1309A | | | | UPC7815HF | | | | | |
| 2SA992 | | | | 2SC1740S | 2SC3311A | | | | | | | | | |
| 2SB764 | | | | | | | | | | | | | | |
| 2SC1845 | | | | | | | | | | | | | | |
| 2SC1923 | | | | | | | | | | | | | | |
| 2SC2878 | | | | | | | | | | | | | | |
| 2SD1302 | | | | | | | | | | | | | | |
| | | | 2SK163 | | | | | | | | | | | |
| | | | 2SK364 | | | | | | | | | | | |



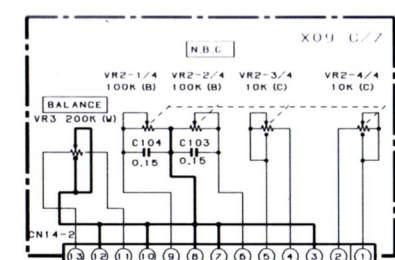
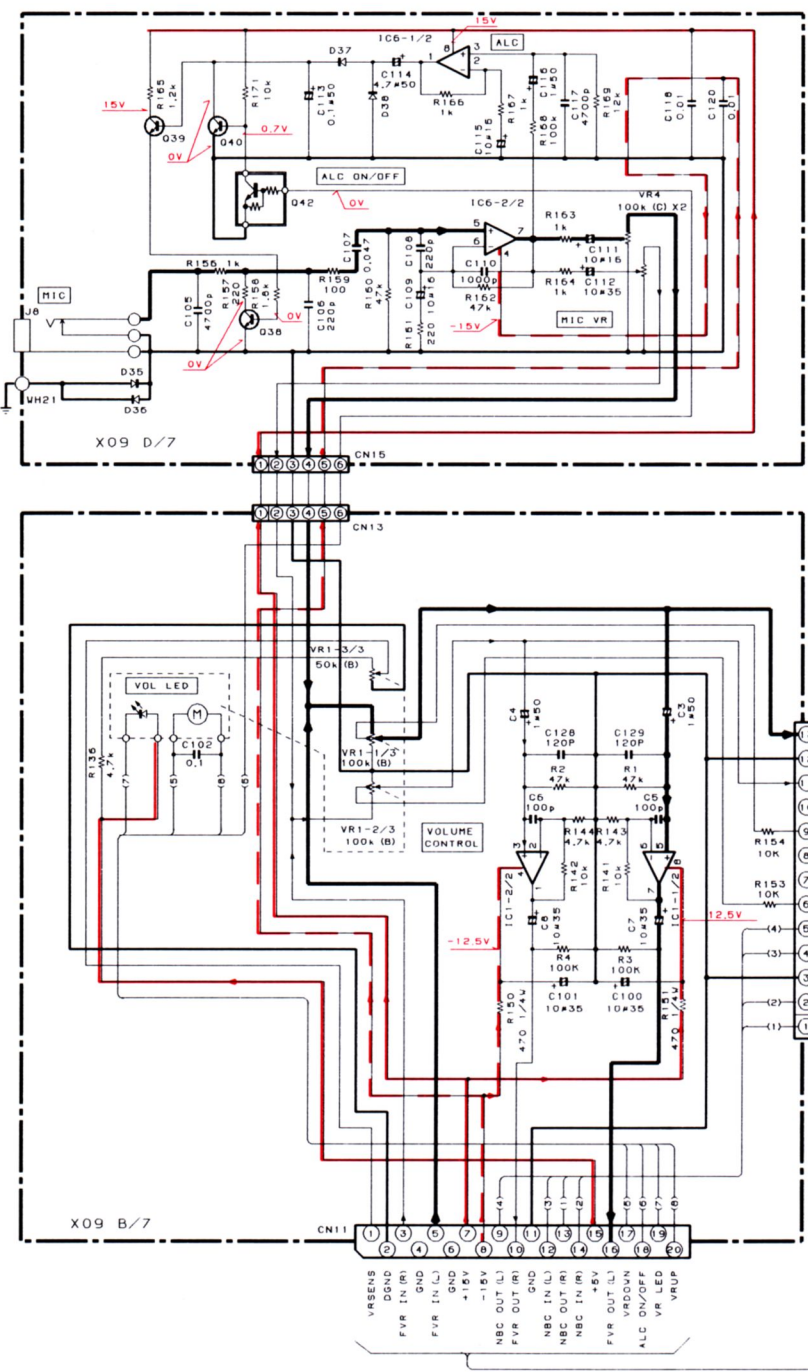
PLL IC: LA7001 (X05-IC3)				
BAND	PLL PORT	Zpin	Bpin	Spin
FM	H	H	L	
AM	H	L	H	
LR	L	H	H	

- | | |
|----------------|-----------------------------------|
| IC1 | LA1265 |
| IC2 | AN7470 |
| IC3 | LM7001 |
| D1, 2, 4, 5 | 1S5133H+H55104 |
| 111-116 | |
| D3 | RD5.1ES (B2) + HZ55.1N (B2) |
| D120 | RD3.3ES (B2) + HZ53.3N (B2) |
| D1 | 2SC1923 (R, O) |
| D2 | 2SC1845 (F, E) |
| Q3, 4, 105-108 | 2SC3311A (G, R) + 2SC1740S (G, R) |
| Q5 | 2SK364 (GR, BL) + 2SK163 (L, R) |
| Q102-104, 111 | 2SA1309A (G, R) + 2SA933S (G, R) |
| Q109, 110 | 2SD1302 (S, T) |

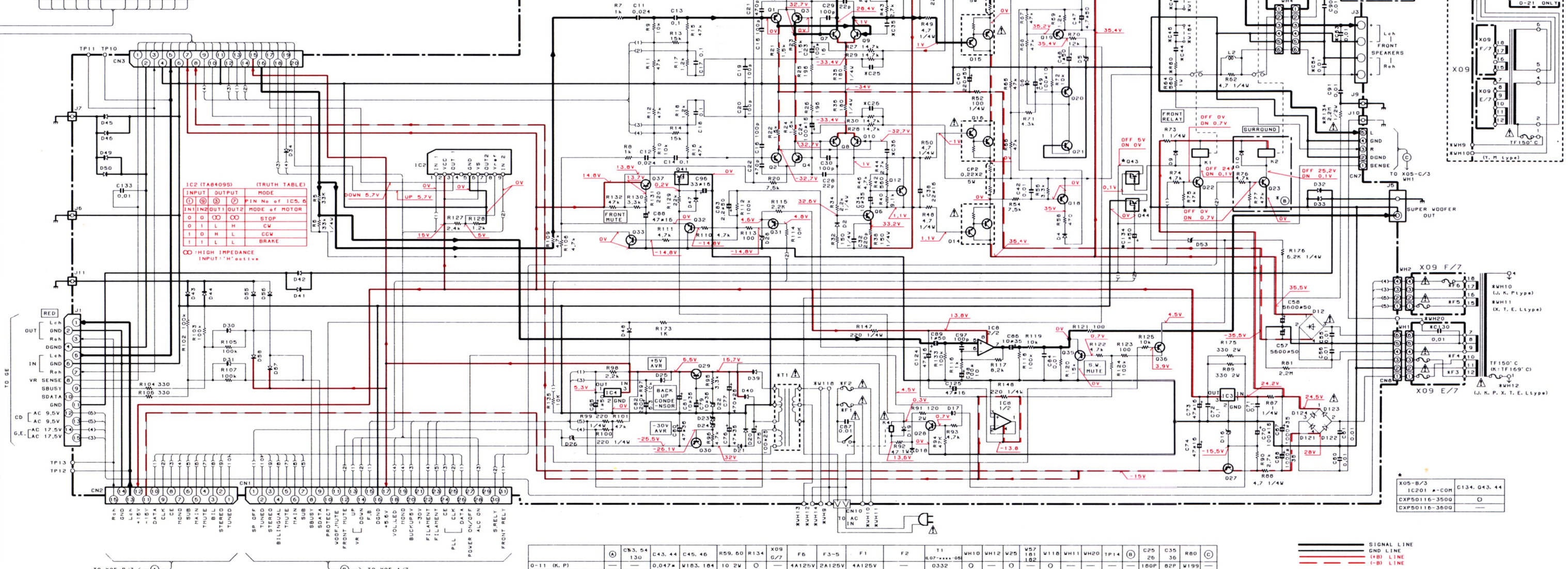
JAPAN MADE	SINGAPORE MADE	Ref No	(A)	(B)	(C)	(E)	R4	R14	R26	R27	R28	R43	R44	R45, 48, 49, 62	R46	R51	R64	R133	R158	L3	L6	L7	Q4, 6	D101	D103	D110	D109	CF 1, 2	VR4	S101	C26	C27	C28	C30	C39	C40	C53	C54	W111							
X05-412	X05-418	0-10 (R, F)	○	○	○	○	56	4.7k	66k	3.6k	15k	○	○	—	39k	100k	10k	220	1k	—	W170	W169	—	—	W113	L72-0531	—	X	150P	0.022	1k50	—	—	—	—	—	—	—	—	—	—	—	—	—		
		0-21 (Y, M)	○	○	○	○	56	4.7k	66k	3.6k	39k	○	○	—	39k	100k	10k	220	1k	—	W170	W169	—	—	W113	L72-0531	—	○	150P	0.012	1k50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0-71 (X)	○	○	○	○	56	4.7k	66k	3.6k	39k	○	○	—	39k	100k	10k	220	1k	—	W170	W169	—	—	W113	L72-0531	—	X	150P	0.012	1k50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Z-71 (T, E, L)	○	○	○	○	22	2.7k	47k	3.3k	39k	○	○	—	3.3k	82k	○	470	W143	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
		Z-72 (E)	○	○	○	○	22	2.7k	47k	3.3k	39k	○	○	—	3.3k	82k	○	470	W143	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.



D1-4, 6, 9, 10	1H5S104A	G1-6	28A900 (F, E)	G25	28C2003 (L, A)	IC1, 6, 6	RC4565D-D
17-19	1F5S131	G7-10, 17, 18	28C1845 (F, E)	G27	28A904 (L, R)	IC2	TA8A905-D
D13, 14, 20, 21	58S688B	20, 21	28C4137 (V, W)	G29	28D1266 (Q, P)	IC3	TA8A905
38, 40, 121-124	1SR139-100	G11, 12	28C4137 (V, W)	G30	28B704	IC3	TA7B15HF
D25, 27, 30-38	1H5S104	G13, 14	28C2340	G31, 36	28A9335 (Q, R)	IC4	UFC7B15HF+BA17B15T
41-50, 55-58	1S5133	G15, 16	28B1931	G32, 33, 35	28C2878 (B)		PST529C
D5	HZ55.1N (B2) + RD6.1ES (B2)	G19	28A1123 (R, S)	G41-44	DT1C1245		
D12	RBV-60ZLF+D55BA20F03	G22, 23, 26, 28	28C17405 (Q, R)		UN4212		
D16, 24	HZ516N (B2) + RD15ES (B2)	37-40	28C3311A (Q, R)				
D22	HZ58.2N (B2) + RD6.2ES (B2)						
D23	HZ511N (B2) + RD11ES (B2)						
D26	HZ56.8N (B2) + RD6.8ES (B2)						
D28, 53	HZ54.7N (B) + RD4.7ES (B)						



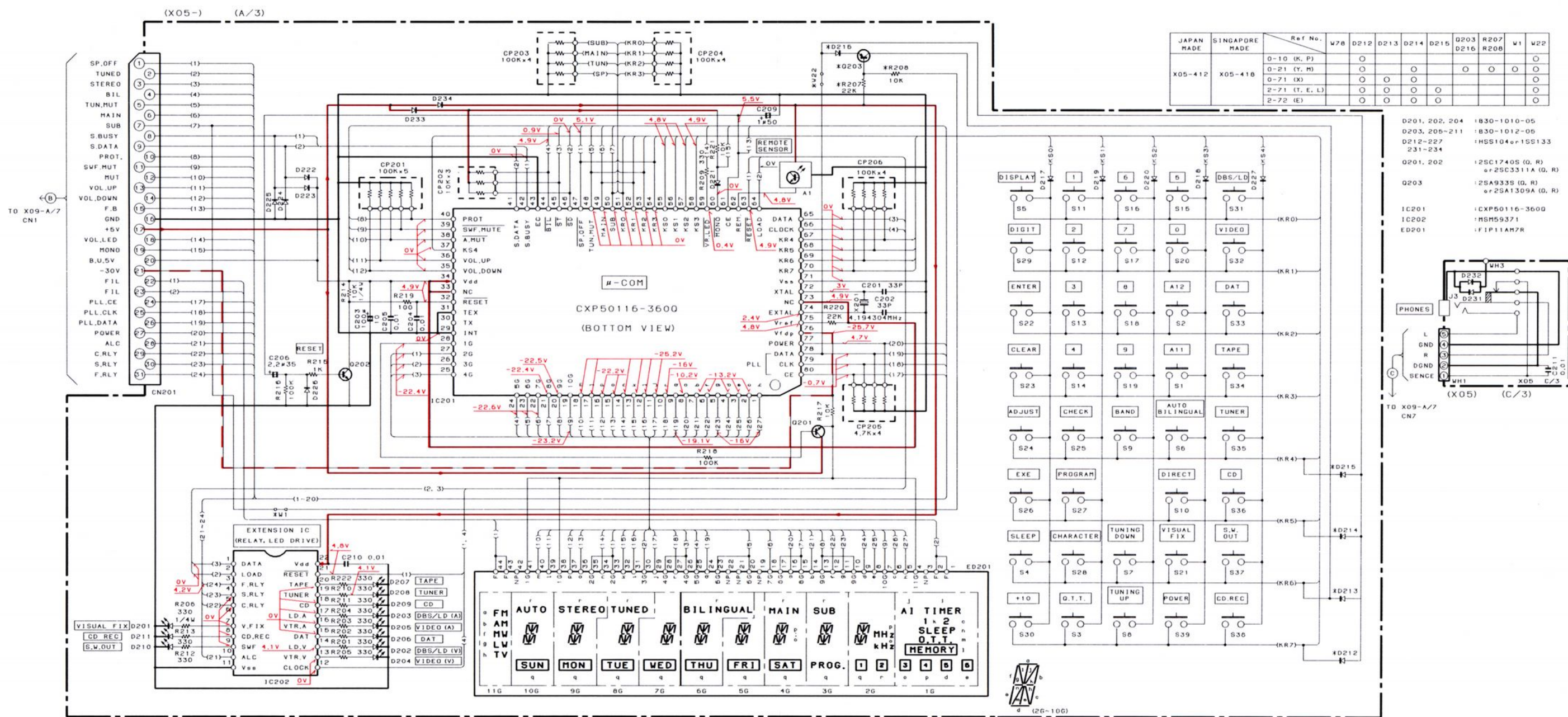
AUDIO UNIT
(X09-3480-11) (A/7) : JAPAN MADE
(X09-3470-11) (A/7) : SINGAPORE MADE

	(A)	CX3, 04 130	C43, 44	C45, 46	R59, 60	R134	X09 D/7	F6	F3-5	F1	T1	VH10	VH12	V25	V57 102	V118	VH11	VH20	TP14	(B)	C25	C35	R80	(C)
0-11 (K, P)		0.047	0.047	0.047	0.1	0.2	0	4A125V	2A125V	4A125V	100P	0	0	0	0	0	0	0	0	0	0	0	0	0
0-21 (Y, M)		0.047	0.047	0.047	0.1	0.2	0	4A125V	2A125V	4A125V	100P	0	0	0	0	0	0	0	0	0	0	0	0	0
0-51 (X, T)		0.047	0.047	0.047	0.1	0.2	0	4A125V	2A125V	4A125V	100P	0	0	0	0	0	0	0	0	0	0	0	0	0
1-71, 2-71, 2-72 (E)		0.22	0.22	0.22	0.1	0.2	0	4A125V	2A125V	4A125V	100P	0	0	0	0	0	0	0	0	0	0	0	0	0

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

1
2
3
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7



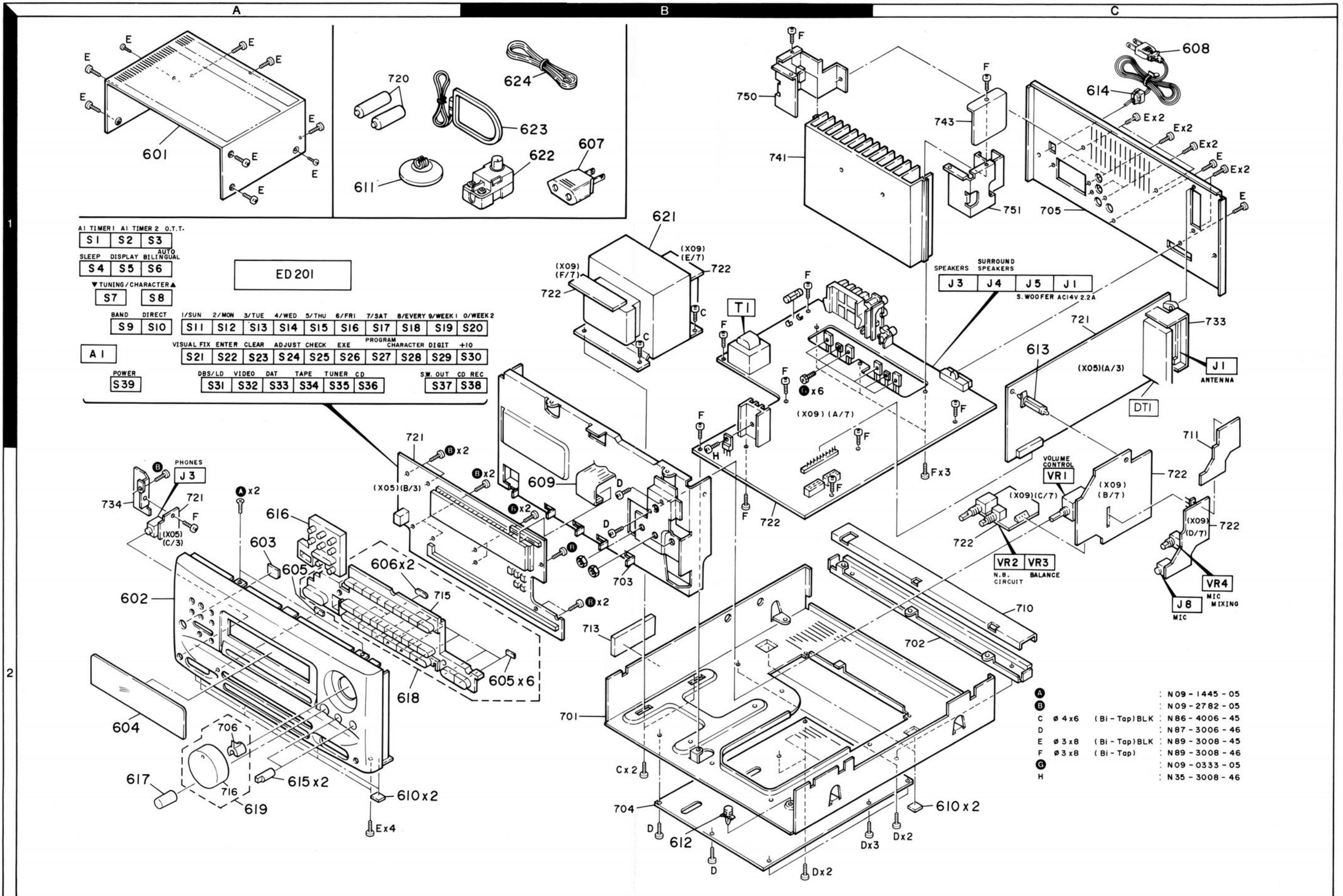
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

A-522/522L

A-522/522L

EXPLODED VIEW



PARTS LIST

No. 2

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向備考
F		N89-3008-46	BINDING HEAD TAPITTE SCREW	
623	1B	T90-0173-05	LOOP ANTENNA	
624	1B	T90-0176-05	T TYPE ANTENNA	
A - 522 (Singapore made)				
601	1A	A01-1978-01	METALLIC CABINET	
602	2A	A60-0121-01	PANEL	
603	2A	B03-2728-04	DRESSING PLATE	K
604	2A	B10-1855-03	FRONT GLASS	Y
605	2A, 2B	B12-0160-04	INDICATOR	X
606	2A	B12-0161-04	INDICATOR	X
-		B46-0092-13	WARRANTY CARD	P
-		B46-0094-03	WARRANTY CARD	Y
-		B46-0095-03	WARRANTY CARD	Y
-		B46-0096-23	WARRANTY CARD	X
-		B46-0121-03	WARRANTY CARD	P
-		B58-0513-04	CAUTION CARD (PRESET220-240)	Y
-		B60-0671-00	INSTRUCTION MANUAL(ENGLISH)	P
-		B60-0672-00	INSTRUCTION MANUAL(FRENCH)	M
-		B60-0676-00	INSTRUCTION MANUAL(SPANISH)	M
-		B60-0677-00	INSTRUCTION MANUAL(CHINESE)	M
607	1B	E03-0115-05	AC PLUG ADAPTER	M
608	1C	E30-2592-15	AC POWER CORD	M
608	1C	E30-2594-15	AC POWER CORD	X
608	1C	E30-2605-05	AC POWER CORD	X
608	1C	E30-2650-05	AC POWER CORD	Y
609	2B	E31-4599-15	WIRING HARNESS	KP
610	2A, 2C	G11-2052-14	CUSHION	
-		H10-5188-12	POLYSTYRENE FOAMED FIXTURE	KPYM
-		H10-5189-02	POLYSTYRENE FOAMED FIXTURE	KPYM
-		H10-5212-12	POLYSTYRENE FOAMED FIXTURE	X
-		H10-5213-02	POLYSTYRENE FOAMED FIXTURE	X
-		H25-0232-04	PROTECTION BAG (235X350X0.03)	
-		H25-0397-04	PROTECTION BAG	KPYM
-		H50-0193-04	ITEM CARTON CASE	X
-		H50-0194-04	ITEM CARTON CASE	
611	1A	J19-2815-04	ANTENNA HOLDER	
612	2B	J19-3301-05	UNIT HOLDER	
613	1C	J19-3330-05	UNIT HOLDER	
614	1C	J42-0083-05	POWER CORD BUSHING	
-		J61-0307-05	WIRE BAND	
615	2A	K29-3960-04	KNØB(BALANCE, MIC MIXING)	K
616	2A	K29-4173-02	KNØB(AT TIMER 1, 2 etc.)	P
617	2A	K29-4175-04	KNØB(N.B.CIRCUIT)	Y
618	2A	K29-4176-12	KNØB ASSY(INPUT SELECTØR)	YM
619	2A	K29-4178-04	KNØB ASSY(VOLUME CONTROL)	X
621	1B	L07-0326-05	POWER TRANSFORMER	
621	1B	L07-0327-05	POWER TRANSFORMER	
621	1B	L07-0328-05	POWER TRANSFORMER	
621	1B	L07-0329-05	POWER TRANSFORMER	
-		N29-0067-05	PUSH RIVET (3.5X4.5)	K
-		N09-1445-05	SET SCREW (M3X8)	P
A		N09-2782-05	TAPITTE SCREW (2.6X8)	Y
B		N86-4006-45	BINDING HEAD TAPITTE SCREW	YM
C		N87-3006-46	BRAZIER HEAD TAPITTE SCREW	X
D				
E		N89-3008-45	BINDING HEAD TAPITTE SCREW	

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AMFES(Europe) X:Australia M:Other Areas
A indicates safety critical components

No. 1

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Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向備考
A - 522 (Japan made)				
601	1A	A01-1949-01	METALLIC CABINET	
602	2A	A60-0121-01	PANEL	
603	2A	B03-2728-04	DRESSING PLATE	K
604	2A	B10-1855-03	FRONT GLASS	Y
605	2A, 2B	B12-0160-04	INDICATOR	X
606	2A	B12-0161-04	INDICATOR	X
-		B46-0092-13	WARRANTY CARD	P
-		B46-0094-03	WARRANTY CARD	Y
-		B46-0095-03	WARRANTY CARD	Y
-		B46-0096-23	WARRANTY CARD	X
-		B46-0121-03	WARRANTY CARD	P
-		B58-0513-04	CAUTION CARD (PRESET220-240)	Y
-		B60-0671-00	INSTRUCTION MANUAL(ENGLISH)	P
-		B60-0672-00	INSTRUCTION MANUAL(FRENCH)	M
-		B60-0676-00	INSTRUCTION MANUAL(SPANISH)	M
-		B60-0677-00	INSTRUCTION MANUAL(CHINESE)	M
607	1B	E03-0115-05	AC PLUG ADAPTER	M
608	1C	E30-2592-15	AC POWER CORD	M
608	1C	E30-2594-15	AC POWER CORD	X
608	1C	E30-2605-05	AC POWER CORD	X
608	1C	E30-2650-05	AC POWER CORD	Y
609	2B	E31-4599-15	WIRING HARNESS	KP
610	2A, 2C	G11-2052-14	CUSHION	
-		H10-5151-02	POLYSTYRENE FOAMED FIXTURE	X
-		H10-5152-02	POLYSTYRENE FOAMED FIXTURE	
-		H11-0042-04	POLYSTYRENE FOAMED BOARD	
-		H25-0232-04	PROTECTION BAG (235X350X0.03)	
-		H25-0397-04	PROTECTION BAG	KPYM
-		H50-0189-04	ITEM CARTON CASE	X
-		H50-0190-04	ITEM CARTON CASE	
611	1A	J19-2815-04	ANTENNA HOLDER	
612	2B	J19-3301-05	UNIT HOLDER	
613	1C	J19-3330-05	UNIT HOLDER	
614	1C	J42-0083-05	POWER CORD BUSHING	
-		J61-0307-05	WIRE BAND	
615	2A	K29-3960-04	KNØB(BALANCE, MIC MIXING)	K
616	2A	K29-4173-02	KNØB(AT TIMER 1, 2 etc.)	P
617	2A	K29-4175-04	KNØB(N.B.CIRCUIT)	Y
618	2A	K29-4176-12	KNØB ASSY(INPUT SELECTØR)	YM
619	2A	K29-4178-04	KNØB ASSY(VOLUME CONTROL)	X
621	1B	L07-0326-05	POWER TRANSFORMER	
621	1B	L07-0327-05	POWER TRANSFORMER	
621	1B	L07-0328-05	POWER TRANSFORMER	
621	1B	L07-0329-05	POWER TRANSFORMER	
-		N29-0067-05	PUSH RIVET (3.5X4.5)	K
-		N09-1445-05	SET SCREW (M3X8)	P
A		N09-2782-05	TAPITTE SCREW (2.6X8)	Y
B		N86-4006-45	BINDING HEAD TAPITTE SCREW	YM
C		N87-3006-46	BRAZIER HEAD TAPITTE SCREW	X
D				
E		N89-3008-45	BINDING HEAD TAPITTE SCREW	

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AMFES(Europe) X:Australia M:Other Areas
A indicates safety critical components

PARTS LIST

x New Parts
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No.3

Ref. No. 参照番号	Address 位置	New Parts 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
B C D E F		N09-2782-05 N86-4006-45 N87-3006-46 N89-3008-45 N89-3008-46	TAPITTE SCREW (2.6X8) BINDING HEAD TAPITTE SCREW BRAZIER HEAD TAPITTE SCREW BINDING HEAD TAPITTE SCREW BINDING HEAD TAPITTE SCREW		
623 624	1B 1B	T90-0174-05 T90-0175-05	LOOP ANTENNA T TYPE ANTENNA		
A - 522L (Japan made)					
601 602	1A 2A	A01-1949-01 A60-0122-01	METALLIC CABINET PANEL		
603 604 605 606	2A 2A 2A,2B 2A	803-2728-04 810-1855-03 812-0160-04 812-0161-04 846-0122-13	DRESSING PLATE FRONT GLASS INDICATOR INDICATOR WARRANTY CARD		E
-		846-0143-13	WARRANTY CARD		T
-		858-0923-14	CAUTION CARD		E
-		860-0671-00	INSTRUCTION MANUAL(ENGLISH)		E
-		860-0672-00	INSTRUCTION MANUAL(FRENCH)		E
-		860-0673-00	INSTRUCTION MANUAL(GERMAN)		E
-		860-0674-00	INSTRUCTION MANUAL(DUTCH)		E
-		860-0675-00	INSTRUCTION MANUAL(ITALIAN)		E
608 609	1C 2B	E30-2592-15 E30-2593-15 E31-4599-15	AC POWER CORD AC POWER CORD WIRING HARNESS		E T
610	2A,2C	G11-2052-14	CUSHION		
-		H10-5151-02 H10-5152-02	POLYSTYRENE FOAMED FIXTURE POLYSTYRENE FOAMED FIXTURE		E
-		H11-0042-04 H25-0232-04 H25-0397-04	POLYSTYRENE FOAMED BOARD PROTECTION BAG (235X350X0.03) PROTECTION BAG		E
-		H25-0451-04 H25-0459-04 H50-0191-04	PROTECTION BAG (0232 PRINTED) PROTECTION BAG (0397 PRINTED) ITEM CARTON CASE		T T
611 612 613 614	1A 2B 1C 1C	J19-2815-04 J19-3300-05 J19-3331-05 J42-0083-05 J61-0307-05	ANTENNA HOLDER UNIT HOLDER UNIT HOLDER POWER CORD BUSHING WIRE BAND		
615 616 617 618 619	2A 2A 2A 2A 2A	K29-3960-04 K29-4173-02 K29-4175-04 K29-4176-12 K29-4178-04	KNØB(BALANCE, MIC MIXING) KNØB(AI TIMER1.2 etc.) KNØB(N.B. CIRCUIT) KNØB ASSY(INPUT SELECTØR) KNØB ASSY(VOLUME CONTROL)		T E
621 622	1B 1B	L07-0329-05 L07-0330-05	POWER TRANSFORMER POWER TRANSFORMER		E E
-		N29-0067-05 N09-1445-05 N09-2782-05 N86-4006-45 N87-3006-46	PUSH RIVET (3.5X4.5) SET SCREW (M3X8) TAPITTE SCREW (2.6X8) BINDING HEAD TAPITTE SCREW BRAZIER HEAD TAPITTE SCREW		E

x New Parts
 Parts without Parts No. are not supplied.
 Les articles non mentionnés dans le Parts No. ne sont pas fournis.
 Teile ohne Parts No. werden nicht geliefert.

No.4

Ref. No. 参照番号	Address 位置	New Parts 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
E F		N89-3008-45 N89-3008-46	BINDING HEAD TAPITTE SCREW BINDING HEAD TAPITTE SCREW		
622 623 624	1B 1B 1B	T90-0136-05 T90-0173-05 T90-0176-05	ANTENNA ADAPTOR LOOP ANTENNA T TYPE ANTENNA		
A - 522L (Singapore and France made)					
601 602	1A 2A	A01-1978-01 A60-0122-01	METALLIC CABINET PANEL		
603 604 605 606	2A 2A 2A,2B 2A	803-2728-04 810-1855-03 812-0160-04 812-0161-04 846-0122-13	DRESSING PLATE FRONT GLASS INDICATOR INDICATOR WARRANTY CARD		E L
-		846-0143-13	WARRANTY CARD		T
-		858-0923-14	CAUTION CARD		E
-		860-0671-00	INSTRUCTION MANUAL(ENGLISH)		E
-		860-0672-00	INSTRUCTION MANUAL(FRENCH)		E
-		860-0673-00	INSTRUCTION MANUAL(GERMAN)		E
-		860-0674-00	INSTRUCTION MANUAL(DUTCH)		E
-		860-0675-00	INSTRUCTION MANUAL(ITALIAN)		E
-		860-0682-00 860-0683-00 860-0684-00	INSTRUCTION MANUAL(FRENCH) INSTRUCTION MANUAL(GERMAN) INSTRUCTION MANUAL(GERMAN)		L L L
-		860-0485-00	INSTRUCTION MANUAL(DUTCH)		L
-		860-0686-00	INSTRUCTION MANUAL(ITALIAN)		L
608 609	1C 2B	E30-2592-15 E30-2593-15 E31-4599-15	AC POWER CORD AC POWER CORD WIRING HARNESS		E L T
610	2A,2C	G11-2052-14	CUSHION		
-		H10-5212-12 H10-5213-02 H10-5241-02 H10-5242-02 H25-0232-04	POLYSTYRENE FOAMED FIXTURE POLYSTYRENE FOAMED FIXTURE POLYSTYRENE FOAMED FIXTURE POLYSTYRENE FOAMED FIXTURE PROTECTION BAG (235X350X0.03)		T S S S F F F F
-		H25-0397-04 H25-0451-04 H25-0459-04 H50-0192-04 H50-0195-04	PROTECTION BAG (0232 PRINTED) PROTECTION BAG (0397 PRINTED) PROTECTION BAG (0397 PRINTED) ITEM CARTON CASE ITEM CARTON CASE		E L T T E F T T
-		H50-0196-04	ITEM CARTON CASE		E L
611 612 613 614	1A 2B 1C 1C	J19-2815-04 J19-3300-05 J19-3331-05 J42-0083-05 J61-0307-05	ANTENNA HOLDER UNIT HOLDER UNIT HOLDER POWER CORD BUSHING WIRE BAND		
615 616 617 618 619	2A 2A 2A 2A 2A	K29-3960-04 K29-4173-02 K29-4175-04 K29-4176-12 K29-4178-04	KNØB(BALANCE, MIC MIXING) KNØB(AI TIMER1.2 etc.) KNØB(N.B. CIRCUIT) KNØB ASSY(INPUT SELECTØR) KNØB ASSY(VOLUME CONTROL)		E L T T E
621 622	1B 1B	L07-0329-05 L07-0330-05	POWER TRANSFORMER POWER TRANSFORMER		E E

L:Scandinavia
 Y:PX(Far East, Hawaii)
 Y:AAFE(S)Europe

K:USA
 T:England
 X:Australia
 M:Other Areas

P:Canada
 E:Europe
 M:Other Areas

S : Singapore made
 F : France made

⚠ indicates safety critical components.

A-522/522L

PARTS LIST

No.8

Ref. No. 参照番号	Address 位置	New Parts 新部品	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
Q201,202			2SC1740S(Q,R)	TRANSISTOR		
Q201,202			2SC3311A(Q,R)	TRANSISTOR	YM	
Q203			2SA1309A(Q,R)	TRANSISTOR	YM	
			2SA933S(Q,R)	TRANSISTOR		
A1	1A		M02-1046-05	ELECTRIC CIRCUIT MODULE		
DT1	1C		M02-1041-05	FM FRONT-END ASSY	TEL	
DT1	1C		M02-1042-05	FM FRONT-END ASSY	KPYMX	
AUDIO UNIT (X09 - 3480 - 11)						
C3 ,4			CE04KW1H010M	ELECTRO		
C5 ,6			CC45FSL1H101J	CERAMIC		
C7 ,8			CE04KW1V100M	ELECTRO		
C11 ,12			CF92FV1H243J	MF		
C13 ,14			CF92FV1H104J	MF		
C15 ,16			CC45FSL1H101J	CERAMIC		
C17 ,18			CF92FV1H104J	MF		
C19 ,20			CC45FSL1H101J	CERAMIC		
C21 ,22			CK45FF1H471K	CERAMIC		
C23 ,24			C90-1851-05	ELECTRO		
C25 ,26			CC45FSL1H101J	CERAMIC		
C25 ,26			CC45FSL1H181J	CERAMIC		
C27 ,28			CC45FSL1H220J	CERAMIC		
C29 ,30			CC45FSL1H101J	CERAMIC		
C31 ,32			CC45FSL1H221J	CERAMIC		
C33 ,34			CE04KW1V100M	ELECTRO		
C35 ,36			CC45FSL1H101J	CERAMIC		
C35 ,36			CC45FSL1H620J	CERAMIC		
C37 ,38			CE04KW1C225M	ELECTRO		
C39			CK45FF1H103Z	CERAMIC		
C40			CE04KH1H221M	ELECTRO		
C41			CE04KH1H470M	ELECTRO		
C42			CK45FF1H103Z	CERAMIC		
C43 ,44			CF92FV1H224J	MF		
C43 ,44			CF92FV1H473J	MF		
C45 ,46			CF92FV1H224J	MF		
C47			CE04KH1H470M	ELECTRO		
C48			CE04KH1H010M	ELECTRO		
C49			CE04KH1A101M	ELECTRO		
C53 ,54			CK45FF1H103Z	CERAMIC		
C55 ,56			CK45FF1H103Z	CERAMIC		
C57 ,58			C90-1947-05	ELECTRO		
C60 ,61			CK45FF1H103Z	CERAMIC		
C67 ,68			CE04KH1V102M	ELECTRO		
C70			CE04KH1C470M	ELECTRO		
C71 ,72			CF92FV1H104J	MF		
C73 ,74			CE04KH1C470M	ELECTRO		
C75			CE04KH1E101M	ELECTRO		
C76			CE04KH1V470M	ELECTRO		
C77			CE04KH1E471M	ELECTRO		
C79			CE04KH1V100M	ELECTRO		
C80			CE04KH1V470M	ELECTRO		
C81			CE04KH1V100M	ELECTRO		
C82			CE04KH0J222M	ELECTRO		
C83			CE04KH1H2R2M	ELECTRO		
C84			CF92FV1H104J	MF		

L:Scandinavia
 K:USA
 P:Canada
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△ indicates safety critical components.

No.7

Ref. No. 参照番号	Address 位置	New Parts 新部品	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
D1 ,2			HSS104	DIODE	TEL	
D1 ,2			1SS133	DIODE	TEL	
D3			HZS5.1K(B2)	ZENER DIODE		
D3			R05.1ES(B2)	ZENER DIODE		
D4 ,5			HSS104	DIODE		
D4 ,5			1SS133	DIODE		
D109,110			HSS104	DIODE		
D109,110			1SS133	DIODE		
D111,112			HSS104	DIODE		
D111,112			1SS133	DIODE		
D113-116			HSS104	DIODE		
D113-116			1SS133	DIODE		
D120			HZS3.3K(B2)	ZENER DIODE		
D120			R03.3ES(B2)	ZENER DIODE		
D212			HSS104	DIODE		
D212			1SS133	DIODE		
D212-214			HSS104	DIODE		
D212-214			1SS133	DIODE		
D212-215			HSS104	DIODE		
D212-215			1SS133	DIODE		
D214			HSS104	DIODE		
D214			1SS133	DIODE		
D216-227			HSS104	DIODE		
D216-227			1SS133	DIODE		
D217-227			HSS104	DIODE		
D217-227			1SS133	DIODE		
D21-234			HSS104	DIODE		
D21-234			1SS133	DIODE		
E0201	1A		F111M7R	FLUORESCENT INDICATOR TUBE	KPXTEL	
IC1			LA1265	IC(FM/AM TUNER)	KPXTEL	
IC2			AN7470	IC(BM MPX)		
IC3			LM7001	IC(BL FREQUENCY SYNTHESIZER)		
IC201		*	CXP50116-360Q	IC(ICR00PROCESSOR)		
IC202			KMS59371	IC(EXPANSION IC)		
Q1			2SC1923(R,θ)	TRANSISTOR		
Q2			2SC1845(F,E)	TRANSISTOR		
Q3			2SC1740S(Q,R)	TRANSISTOR		
Q3			2SC3311A(Q,R)	TRANSISTOR		
Q4			2SC1740S(Q,R)	TRANSISTOR		
Q4			2SC3311A(Q,R)	TRANSISTOR		
Q5			2SK163(L,M)	FET		
Q5			2SK364(GR,BL)	FET		
Q102			2SA1309A(Q,R)	TRANSISTOR		
Q102			2SA933S(Q,R)	TRANSISTOR		
Q103			2SA1309A(Q,R)	TRANSISTOR		
Q103			2SA933S(Q,R)	TRANSISTOR		
Q104			2SA1309A(Q,R)	TRANSISTOR		
Q104			2SA933S(Q,R)	TRANSISTOR		
Q105,106			2SC1740S(Q,R)	TRANSISTOR		
Q105,106			2SC3311A(Q,R)	TRANSISTOR		
Q107,108			2SC1740S(Q,R)	TRANSISTOR		
Q107,108			2SC3311A(Q,R)	TRANSISTOR		
Q109,110			2SD1302(S,T)	TRANSISTOR		
Q111			2SA1309A(Q,R)	TRANSISTOR		
Q111			2SA933S(Q,R)	TRANSISTOR		

L:Scandinavia
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* New Parts

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 Teile ohne Parts No. werden nicht geliefert.

A-522/522L

PARTS LIST

No.9

* New Parts
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Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
C86		GE04KW1V100M	ELECTR0 10UF		
C87		C91-1421-05	FILM 35WV		
C88		GE04KW1C470M	0.01UF 250AC		
C89		GE04KW1H010M	47UF 16WV		
C90, *91		CK45FF1H103Z	1.0UF 50WV		
C95		GE04KW1H010M	0.010UF Z		
C96		GE04KW1C350M	1.0UF 50WV		
C97		CC45FS1H101J	33UF 16WV		
C98		GE04KW1A101M	100PF J		
C100, 101		GE04KW1V100M	100UF 10WV		
C102		CE92FV1H104J	10UF 35WV		
C103, 104		CE92FV1H105J	0.10UF J		
C105		CK45FF1H122J	0.15UF J		
C106		CC45FS1H221J	4700PF Z		
C107		CE92FV1H473J	0.047UF J		
C108		CC45FS1H221J	220PF J		
C109		GE04JH1C100M	10UF 16WV		
C110		CK45F81H102K	1000PF K		
C111		GE04JH1C100M	10UF 16WV		
C112		GE04JH1V100M	10UF 35WV		
C113		CE04JH1H0R1M	0.1UF 50WV		
C114		GE04JH1H4R7M	4.7UF 50WV		
C115		GE04JH1C100M	10UF 16WV		
C116		GE04JH1H010M	1.0UF 50WV		
C117		CK45FF1H472Z	4700PF Z		
C118		CK45FF1H103Z	0.010UF Z		
C120		CK45FF1H103Z	0.010UF Z		
C124, 125		CE04K1C470M	47UF 16WV		
C128, 129		CC45FS1H121J	120PF J		
C130		CK45FF1H103Z	0.010UF Z		
C133		CK45FF1H103Z	0.010UF Z		
C134		GE04KW1H010M	1.0UF 50WV		
J1	1C	E08-1508-05	RECTANGULAR RECEPTACLE(RED)		
J3	1C	E20-0459-05	LOCK TERMINAL BOARD(F.SPEAKER)		
J4	1C	E63-0027-05	PHONE JACK(SURROUND SPEAKERS)		
J5	1C	E63-0017-05	PHONE JACK(SUPER WOOFER)		
J8	2C	E11-0220-05	MINIATURE PHONE JACK(MIC)		
F1		F05-1623-05	FUSE (SEM00) (250V T1.6A)		
F2		F05-4028-05	FUSE (UL) (125V 4A)		
F3	-5	F05-1623-05	FUSE (SEM00) (250V T1.6A)		
F3	-5	F53-0006-05	FUSE (125V 2A)		
F6		F53-0042-05	FUSE(SEM00) (250V T2A)		
F6		F53-0010-05	FUSE (125V 4A)		
F6		F53-0044-05	FUSE(SEM00) (250V T4A)		
CN18, 19		J13-0075-05	FUSE CLIP		
CN20, 21		J13-0075-05	FUSE CLIP		
L1, *2	1B	L39-0085-05	PHASE-COMPENSATION COIL		
T1	1B	L07-0332-05	POWER TRANSFORMER		
T1	1B	L07-0333-05	POWER TRANSFORMER		
T1	1B	L07-0334-05	POWER TRANSFORMER		
T1	1B	L07-0335-05	POWER TRANSFORMER		
F		N89-3008-46	BINDING HEAD TAPPIE SCREW		
G		N09-0333-05	TAPPING SCREW (3X12)		

No.10

* New Parts
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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
H		N35-3008-46	BINDING HEAD MACHIN SCREW		
CP1, *2		R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R25, *26		RN148K2C1960F	196.0 F 1/6W		
R27, *30		RN148K2C1472F	14.7K F 1/6W		
R31, *32		RD14N82E151J	150 J 1/4W		
R33, *34		RD14N82E222J	2.2K J 1/4W		
R35, *36		RD14N82E181J	180 J 1/4W		
R37, *38		RD14N82E151J	150 J 1/4W		
R47, *50		RD14N82E4R7J	4.7 J 1/4W		
R51		RD14N82E21J	220 J 1/4W		
R52		RD14N82E101J	100 J 1/4W		
R59, *60		RS14K83D100J	FL-PR00F RS 10 J 2W		KPYMXT
R59, *60		RS14K83D140J	FL-PR00F RS 14 J 2W		EL
R62, *64		RS14K83D6K1J	FL-PR00F RS 660 J 1W		
R73		RD14N82E180J	RD 1.0 J 1/4W		
R77		RD14N82E180J	RD 1.0 J 1/4W		
R88		RD14N82E4R7J	RD 4.7 J 1/4W		
R89		RS14K83D331J	FL-PR00F RS 330 J 2W		
R91		RS14K83D121J	FL-PR00F RS 120 J 2W		
R92		RS14K83A470J	FL-PR00F RS 47 J 1W		
R134		R92-0173-05	RC 2.2M J 1/2W		KP
R147, 148		RD14N82E221J	RD 220 J 1/4W		
R150, 151		RD14N82E471J	RD 470 J 1/4W		
R175		RS14K83D331J	FL-PR00F RS 330 J 2W		
VR2	2C	R29-5060-05	POTENTIOMETER(VOLUME CONTROL)		
VR3	2C	R11-9021-05	POTENTIOMETER(N.B.CIRCUIT)		
VR4	2C	R05-5046-05	POTENTIOMETER(BALANCE)		
K1		R10-5044-05	POTENTIOMETER(MIC MIXING)		
K1		S51-2078-05	MAGNETIC RELAY		
K1		S51-2092-05	MAGNETIC RELAY		
K2		S76-0005-05	MAGNETIC RELAY		YMXTEL
K2		S51-2078-05	MAGNETIC RELAY		YMXTEL
K2		S51-2092-05	MAGNETIC RELAY		
K4		S76-0005-05	MAGNETIC RELAY		YMXTEL
S1		S31-3010-05	SLIDE SWITCH(VOLTAGE SELECTOR)		YM
D1	-4	HSS104A	DIODE		
D1	-4	ISS131	DIODE		
D5		HZ55.1N(B2)	ZENER DIODE		
D5		RD5.1ES(B2)	ZENER DIODE		
D6		HSS104A	DIODE		
D6		ISS131	DIODE		
D9		HSS104A	DIODE		
D9		ISS131	DIODE		
D10		HSS104A	DIODE		
D10		ISS131	DIODE		
D12		D55BA20F03	DIODE		
D12		RBV-602LFA	DIODE		
D16		HZ516N(B2)	ZENER DIODE		
D16		RD16ES(B2)	ZENER DIODE		
D17 -19		HSS104A	DIODE		
D17 -19		ISS131	DIODE		
D20, *21		S56666	DIODE		

A-522/522L

PARTS LIST

No.12

* New Parts
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Teil ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新部品	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
Q32, *33			25C2878(B)	TRANSISTOR		
Q35			25C2878(B)	TRANSISTOR		
Q36			25A1309A(Q,R)	TRANSISTOR		
Q37 -40			25A933S(Q,R)	TRANSISTOR		
			25C1740S(Q,R)	TRANSISTOR		
Q37 -40			25C3311A(Q,R)	TRANSISTOR		
Q41 -44			DTC124ES	DIGITAL TRANSISTOR		
Q41 -44			UN4212	TRANSISTOR		

No.11

* New Parts
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Teil ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新部品	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
D20, *21			1SR139-100	D100E		
D22			HZ56.2N(B2)	ZENER D100E		
D22			RD6.2ES(B2)	ZENER D100E		
D23			HZ511N(B2)	ZENER D100E		
D23			RD11ES(B2)	ZENER D100E		
D24			HZ516N(B2)	ZENER D100E		
D24			RD16ES(B2)	ZENER D100E		
D25			HSS104	D100E		
D25			1SS133	D100E		
D26			HZ56.8N(B2)	ZENER D100E		
D26			RD6.8ES(B2)	ZENER D100E		
D28			HZ54.7N(B)	ZENER D100E		
D28			RD4.7ES(B)	ZENER D100E		
D30 -38			HSS104	D100E		
D30 -38			1SS133	D100E		
D39, *40			S5688B	D100E		
D39, *40			1SR139-100	D100E		
D41 -50			HSS134	D100E		
D41 -50			SS135	D100E		
D53			HZ54.7N(B)	ZENER D100E		
D53			RD4.7ES(B)	ZENER D100E		
D55 -58			HSS104	D100E		
D55 -58			SS133	D100E		
D52-68B			S5268B	D100E		
D121-124			1SR139-100	D100E		
D121-124			NJM4565D-D	IC(ØP AMP X2)		
IC1			RC4565D-D	IC(ØP AMP X2)		
IC1			T48409S	IC(MOTOR CONTROL)		
IC2			BA1781ST	IC(VOLTAGE REGULATOR) +15V)		
IC3			T47815HF	IC(VOLTAGE REGULATOR/ +15V)		
IC3			UPC7815HF	IC(VOLTAGE REGULATOR/ +15V)		
IC4			PST529C	IC(SYSTEM RESET)		
IC6			NJM4565D-D	IC(ØP AMP X2)		
IC6			RC4565D-D	IC(ØP AMP X2)		
IC8			NJM4565D-D	IC(ØP AMP X2)		
IC8			RC4565D-D	IC(ØP AMP X2)		
Q1 -6			25A992(F,E)	TRANSISTOR		
Q7 -10			25C1845(F,E)	TRANSISTOR		
Q11, *12			25C4137(V,W)	TRANSISTOR		
Q13, *14			25D2340	TRANSISTOR		
Q15, *16			25B1531	TRANSISTOR		
Q17, *18			25C1845(F,E)	TRANSISTOR		
Q19			25A1123(R,S)	TRANSISTOR		
Q20, *21			25C1845(F,E)	TRANSISTOR		
Q22			25C1740S(Q,R)	TRANSISTOR		
Q22			25C3311A(Q,R)	TRANSISTOR		
Q23			25C1740S(Q,R)	TRANSISTOR		
Q23			25C3311A(Q,R)	TRANSISTOR		
Q27			25A954(L,K)	TRANSISTOR		
Q28			25C1740S(Q,R)	TRANSISTOR		
Q28			25C3311A(Q,R)	TRANSISTOR		
Q29			25D1266(Q,P)	TRANSISTOR		
Q30			25B764	TRANSISTOR		
Q31			25A1309A(Q,R)	TRANSISTOR		
Q31			25A933S(Q,R)	TRANSISTOR		
Q31				YMKTEL		
Q31				YMKTEL		

L:Scandinavia
Y:PX(Far East, Hawaii)
Y:AFES(Europe)

K:USA
T:England
X:Australia

P:Canada
E:Europe
M:Other Areas

△ indicates safety critical components.

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A-522/522L

A-522/522L

SPECIFICATIONS

Receiver unit (A-522/522L)

Amplifier section

Rated power output

40 watts per channel minimum RMS, both channels driven, at 6 Ω from 40 Hz to 20,000 Hz with no more than 0.09% total harmonic distortion (FTC).

(IEC/NF) From 63 to 12,500 Hz, 0.7% T.H.D.	
at 8 Ω	30 W + 30 W
(DIN) 1 kHz, at 6 Ω	43 W + 43 W
(IHF'66) From 40 to 20 kHz, 0.09% T.H.D.	
at 6 Ω	36 W + 36 W
Total harmonic distortion	0.09% at rated power 0.06% at 1 kHz, 1/2 rated power
Frequency response	
CD, TUNER, AUX, TAPE	40 Hz ~ 50 kHz, 0 dB, -3 dB
Signal to noise ratio (IHFA'66)	
DAT INPUT	80 dB
Input sensitivity/Impedance	
DAT INPUT	150 mV/47 k Ω
N.B. circuit (-30 dB VOLUME level)	+16 dB (at 60 Hz)
Output level/Impedance	
SUPER WOOFER OUT	1.5 V/3.6 k Ω
Power consumption	170 W (IEC)
	140 W (for U.S.A. and Canada)
Dimensions	W: 270 mm (10-5/8") H: 120 mm (4-3/4") D: 300 mm (11-4/5")
Weight (Net)	6.5 kg (14.32 lb)

A-522L FM tuner section

Tuning frequency range	87.5 MHz ~ 108 MHz
Usable sensitivity (DIN at 75 Ω)	
MONO	0.7 μ V
STEREO	22 μ V
Total harmonic distortion (DIN at 1 kHz)	
MONO	0.6% (65.2 dBf input)
STEREO	0.8% (65.2 dBf input)
Signal to noise ratio (DIN weighted at 1 kHz)	
MONO	70 dB (65.2 dBf input)
STEREO	64 dB (65.2 dBf input)

Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be without notice.

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Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

Note

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the General Market (M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Stereo separation (DIN)

1 kHz	45 dB
Frequency response	30 Hz ~ 15 kHz, +0.5 dB, -3.0 dB

MW tuner section

Tuning frequency range	531 kHz ~ 1,602 kHz
Usable sensitivity	20 μ V/(500 μ V/m)
Signal to noise ratio	
(at 30% mod, 1 mV input)	48 dB

LW tuner section

Tuning frequency range	153 kHz ~ 281 kHz
Usable sensitivity	22 μ V
Signal to noise ratio	
(at 30% mod, 1 mV input)	45 dB

A-522 FM tuner section

Tuning frequency range	87.5 MHz ~ 108 MHz
Usable sensitivity (MONO at 75 Ω)	1.2 μ V/12.8 dBf
Total harmonic distortion (at 1 kHz)	
MONO	0.5% (65 dBf input)
STEREO	0.6% (65 dBf input)
Signal to noise ratio (at 1 kHz)	
MONO	80 dB (65 dBf input)
STEREO	74 dB (65 dBf input)
Stereo separation 1 kHz	38 dB
Frequency response	30 Hz ~ 15 kHz, +0.5 dB, -3.0 dB

AM tuner section

Tuning frequency range	
9 kHz step	531 kHz ~ 1,602 kHz
10 kHz step	530 kHz ~ 1,610 kHz
Usable sensitivity	20 μ V/500 μ V/m)
Signal to noise ratio	
(at 30% mod, 1 mV input)	48 dB

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