

Service Manual

Tuner

 **QUARTZ** Synthesizer
AM/FM Stereo Tuner

ST-K50

Color

(K) Black Type



Area

Country Code	Area	Color
(P)	U.S.A.	(K)
(PC)	Canada	(K)

SPECIFICATIONS (IHF '78)

■ FM TUNER SECTION

Frequency range	87.9~107.9 MHz (100 kHz step)
Sensitivity	10.8 dBf (0.95 μ V/75 Ω , IHF '58)
50 dB quieting sensitivity	
MONO	18.1 dBf (2.2 μ V/75 Ω , IHF '58)
STEREO	38.1 dBf (22 μ V/75 Ω , IHF '58)
Total harmonic distortion	0.2% (MONO), 0.3% (STEREO)
S/N	75 dB (MONO), 70 dB (STEREO)
Frequency response	20 Hz~15 kHz, +0.5 dB, -1.5 dB
Alternate channel selectivity $\pm$ 400 kHz	55 dB
Stereo separation 1 kHz	40 dB
10 kHz	30 dB
Carrier leak 19 kHz	-35 dB
38 kHz	-50 dB
Antenna terminals	300 ohms (balanced) 75 ohms (unbalanced)

■ AM TUNER SECTION

Frequency range	530 kHz~1720 kHz (10 kHz step)
Sensitivity (S/N 20 dB)	20 μ V, 300 μ V/m
Selectivity ($\pm$ 10 kHz)	50 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	60 dB

■ GENERAL

Output voltage	0.6 V
Power consumption	9 W
Power supply	AC 120 V, 60 Hz
Dimensions (W×H×D)	430×64×290 mm (16 ¹⁵ / ₁₆ "×2 ¹⁷ / ₃₂ "×11 ¹³ / ₃₂ ")
Weight	2.3 kg (5.1 lb.)

Notes:

- Specifications are subject to change without notice.
Weight and dimensions shown are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

Technics

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■ CONTENTS

	Page
SAFETY PRECAUTION	2
ACCESSORIES	2, 3
LOCATIONS OF CONTROLS	3
CONNECTIONS	3, 4
DISASSEMBLY INSTRUCTIONS	5
MEASUREMENTS AND ADJUSTMENTS	6, 7
DESCRIPTION OF FL PANEL	7
SCHEMATIC DIAGRAM	8~11

	Page
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES	11
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM	12, 13
BLOCK DIAGRAM	14, 15
FUNCTIONS OF IC TERMINALS	16
REPLACEMENT PARTS LIST	17~20
EXPLODED VIEW	21

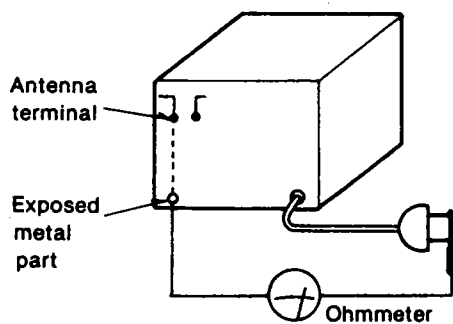
■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

● INSULATION RESISTANCE TEST

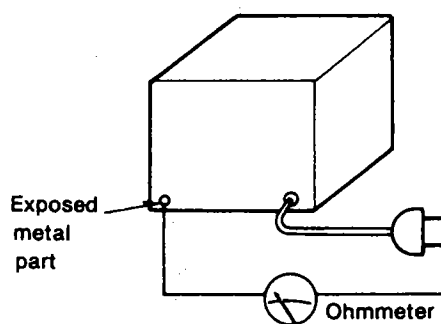
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between $3\text{M}\Omega$ and $5.2\text{M}\Omega$ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = $3\text{M}\Omega$ — $5.2\text{M}\Omega$



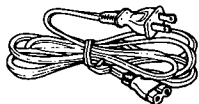
(Fig. B)

Resistance = Approx ∞

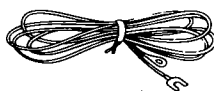
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ ACCESSORIES

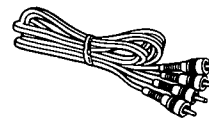
- AC power supply cord
(polarized) 1
(SJA175-1)...(P)
(SJA175)...(PC)
Long thin type
(SPT-1)



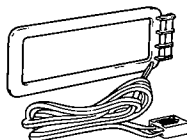
- FM indoor antenna 1
(SSA272M)



- Stereo connection cables (short) 1
(SJPk2203-2)



- AM loop antenna 1
(SPB1163T)



- AM antenna holder 1
(SMA233-1M)

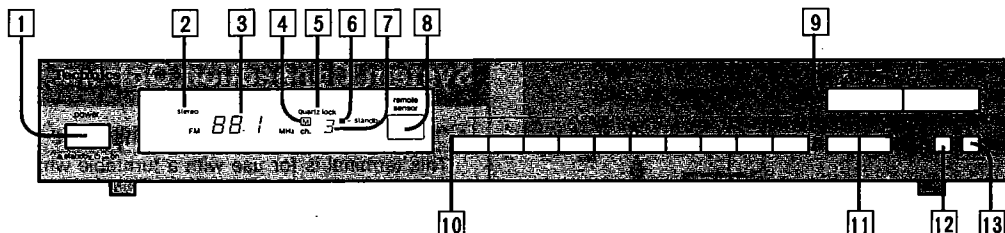


- Screws 2
(XTN3+10AFZ)



■ LOCATIONS OF CONTROLS

Quartz Synthesizer AM/FM Stereo Tuner



- 1 Power "standby ϕ /on" switch**
(power/ $\blacksquare$ standby ϕ $\blacksquare$ on)

- 2 FM stereo indicator (stereo)**

This indicator automatically illuminates when an FM stereo broadcast is being received.

Note:

It will not illuminate if the FM mode selector is set to the monaural mode.

- 3 Digital frequency display**

- 4 Memory indicator (M)**

This indicator illuminates when the memory button is pressed.

- 5 Quartz-lock indicator (quartz lock)**

This indicator illuminates when the unit is tuned precisely to a broadcast station.

- 6 "standby" indicator (standby)**

This indicator illuminates when the power switch of this unit or that of the remote control is switched "OFF". Its purpose is to alert the user of the constant supply voltage to the internal circuitry even with the power switch OFF.

- 7 Channel display**

This display shows the channel number selected by one of the preset-tuning buttons.

- 8 Remote-control signal receptor**
(remote sensor)

- 9 Tuning buttons (tuning)**

These buttons are used for tuning to the desired broadcast station. If the button is pressed momentarily and then released, the frequency will change at intervals of 0.1 MHz for FM and 10 kHz for AM.

- 10 Preset-tuning buttons (1-0)**
(24 channel random preset tuning)

These buttons are used to preset and recall broadcast frequencies into (from) the memory of this unit.

- 11 Band selectors (band)**

FM: Press this button to listen to an FM broadcast.

AM: Press this button to listen to an AM broadcast.

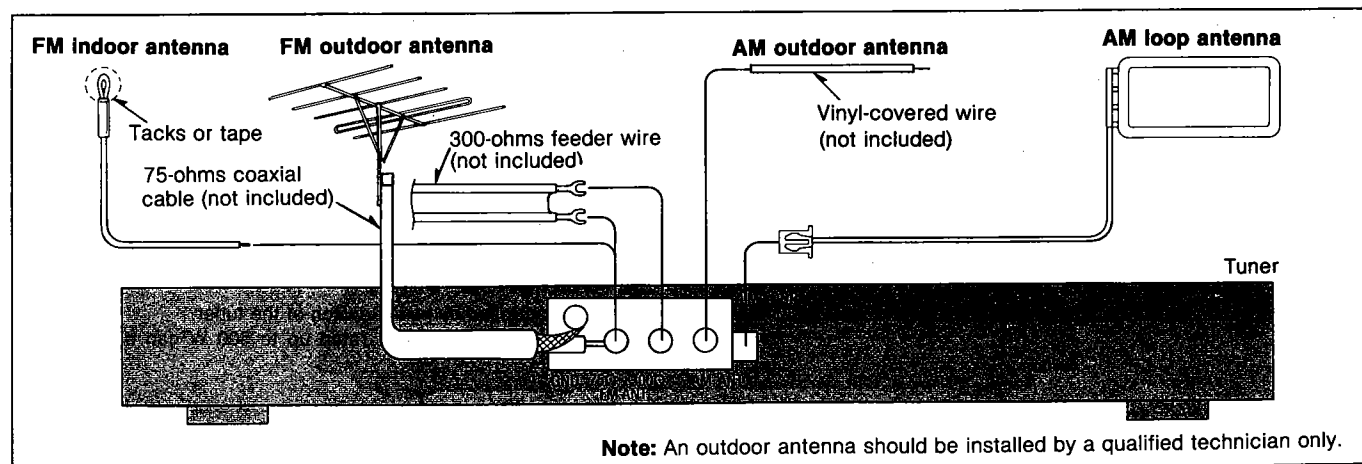
- 12 Memory button (memory)**

This button is used when presetting broadcast station frequencies into memory.

- 13 FM mode selector (FM mode)**

This unit automatically switches to the stereo mode when an FM stereo broadcast is received. This selector is used to select the mode (stereo or monaural) of FM broadcast signals.

■ CONNECTIONS



Note: Components capable of receiving remote-control transmission via the remote control cable, will not respond to the remote-control transmitter commands unless the audio cables are connected. The same applies to components connected for the "synchro-edit" operation.

The followings are the included cords and cables, etc. Please make connections correctly referring to the indicated number below.
Note: The cords without the indicated number are packed with the compact disc player or graphic equalizer.

1 Stereo connection cable (long)

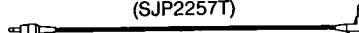


2 Stereo connection cable (short)



Note: Be sure that (L) and (R) terminals are connected correctly.

3 Connection cable for remote-control (SJP2257T)



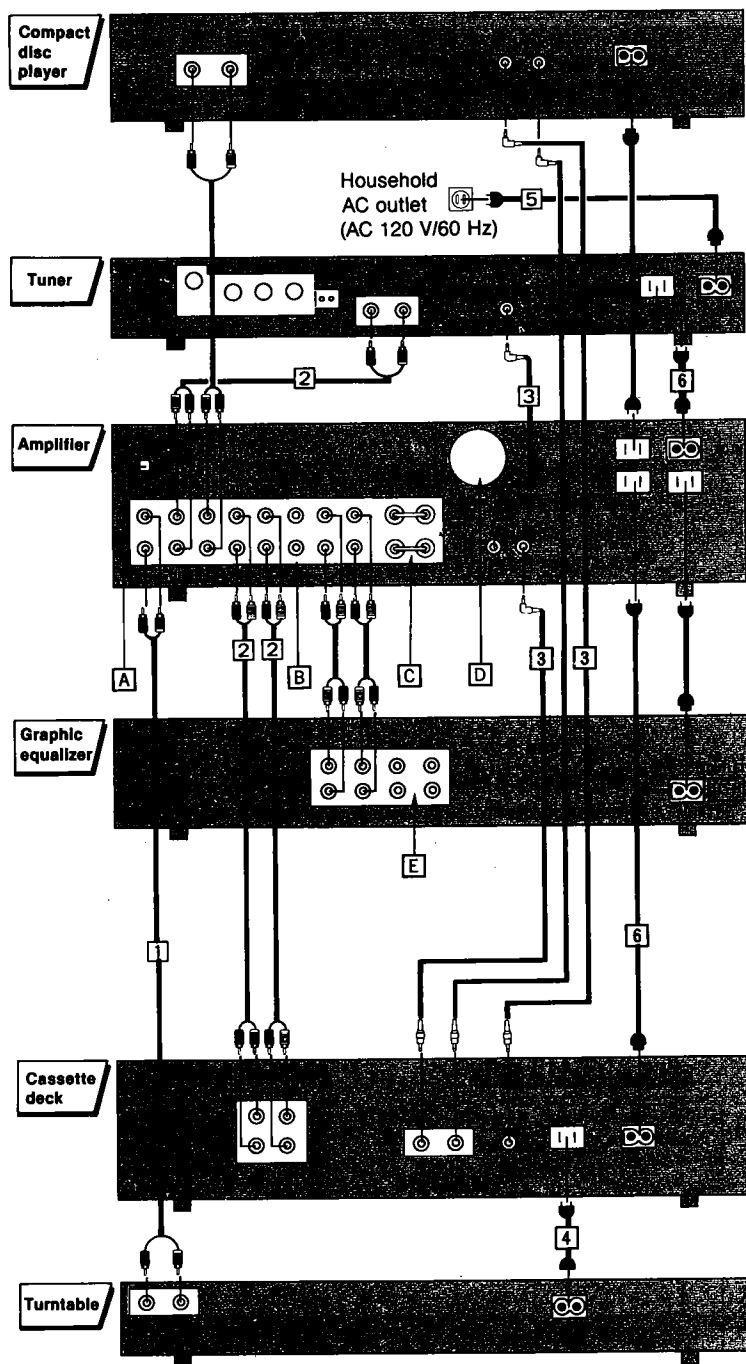
4 AC power supply cord (non-polarized)



5 AC power supply cord (polarized)
Long thin type (SPT-1)



6 AC power supply cord (polarized)



System Connection Options

A "GND" terminal of the amplifier

This terminal is for use with a turntable which has a ground wire.

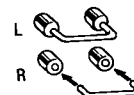
B "VCR 2/TV" terminals of the amplifier

For connection to the audio output of a VCR, TV, etc. (Refer to the operating instructions of the optional equipment.)

C "PRE OUT/MAIN IN" terminals of the amplifier

Use these terminals to operate the amplifier as an independent preamplifier, main amplifier.

Do not remove these pins otherwise. (No sound will be heard if they are removed.)



D Cooling fan of the amplifier

The cooling fan operates only at high output power levels.

E "TAPE" terminals of the graphic equalizer

For SH-8017 only

For connections to the second audio tape deck or VCR.

AC outlets

■ "UNSWITCHED" outlets

Power is always available, regardless of the unit's power switch setting.

Note: The power rating of any particular AC outlet, listed as follows, is the rating for the total allowable power directly or indirectly connected to this outlet.

For amplifier: Audio equipment rated up to 100 W (total for all outlets) can be connected here.

For cassette deck: Audio equipment rated up to 100 W can be connected here.

For graphic equalizer (For SH-8017 only): Audio equipment rated up to 150 W can be connected here.

Note: If the "AC IN" of the amplifier is connected to the "SWITCHED" outlet of the tuner, power for each unit is only available when the tuner's power switch is "on".

■ "SWITCHED" outlet

Power is controlled by power switch of the tuner.

For tuner: Audio equipment rated up to 500 W can be connected here.

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1 Procedure 1	Ref. No. 2 Procedure 1→2
• Remove the 5 screws (1~5). Ref. No. 3 Procedure 1→2→3 Removal of the Operation switch P.C.B. and Remote Sensor P.C.B.	Ref. No. 4 Procedure 1→4 Removal of the Main P.C.B.
■ Remote Sensor P.C.B. • Remove the 1 screw (1). ■ Operation Switch P.C.B. • Remove the 4 screws (2~5). Ref. No. 5 Procedure 1→5 Removal of the FL Drive P.C.B.	Removal of the connector • Release the 2 claws
1. Remove the 2 connector (CN701, CN702). 2. Remove the 3 screws (1~3). 3. Remove the FL drive P.C.B. in the direction of the arrow.	1. Remove the 2 screws (1, 2). 2. Remove the front panel in the direction of the arrow. 3. Remove the 4 screws (5~8). 4. Release the 2 claws of AC outlet cover. 5. Remove the main P.C.B. in the direction of the arrow.

"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

■ MEASUREMENTS AND ADJUSTMENTS

FM ADJUSTMENT

Control positions and equipment used

- FM signal generator(FM-SG)
- Stereo modulator
- Distortion analyser
- DC electronic voltmeter(EVM)

- Frequency counter
- Choke coil(100 μ H)
- Resistor(100k Ω)

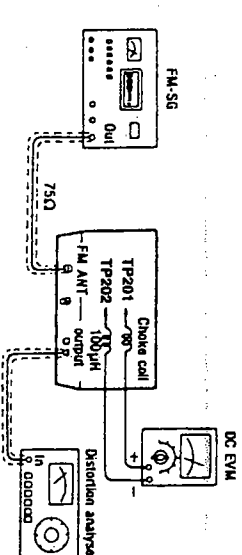
Note: For Z201 (AM ANT and OSC coil), Z202 (AM-IFT), they are supplied as adjusted parts. So, do not turn the cores of the parts.

FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "FM" mode.
3. Set the radio frequency display and signal generator to 100.10MHz.

FM SIGNAL GENERATOR CONDITION

Modulation	100%
Modulation frequency	1kHz
Output level.....	66dB



MPX: VCO ADJUSTMENT

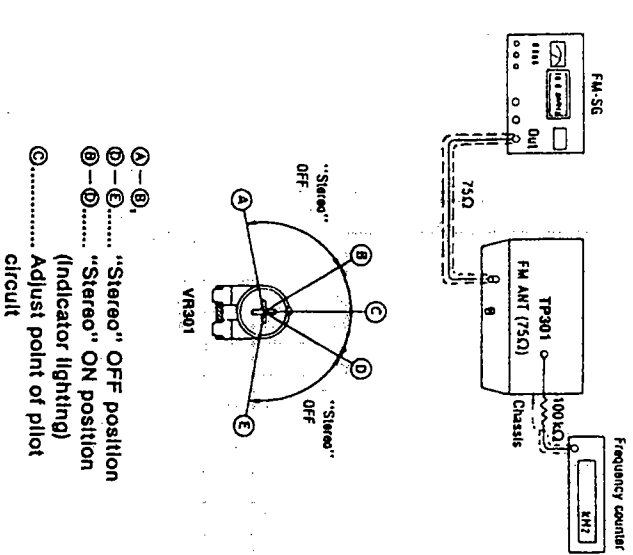
1. Test equipment connection is shown in figure.
2. Set the unit to "stereo" position.
3. Set the radio frequency display and signal generator to 100.10MHz.
4. Adjust VR301 for 13kHz±50Hz on frequency counter reading.

USING ALTERNATE SYSTEM

1. Receive the stereo broadcast.
2. Adjust VR301 until stereo indicator lights up. Fix the arm of VR301 as shown in figure.

FM SIGNAL GENERATOR CONDITION

```
Modulation ..... 100%
Modulation frequency ..... 0kHz
Output level ..... 66dB
```



"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

MEASUREMENTS AND ADJUSTMENTS

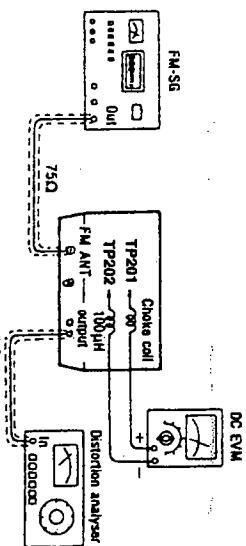
FM ADJUSTMENT

- Control positions and equipment used
- FM signal generator(FM-SG)
 - Stereo modulator
 - Distortion analyser
 - DC electronic voltmeter(EVM)
 - Frequency counter
 - Choke coil(100μH)
 - Resistor(100KΩ)

Note: For Z201 (AM ANT and OSC coil), Z202 (AM-IFT), they are supplied as adjusted parts. So, do not turn the cores of the parts.

FM MONO DISTORTION ADJUSTMENT

- Test equipment connection is shown in figure.
 - Set the unit to "FM" mode.
 - Set the radio frequency display and signal generator to 100.10MHz.
 - Adjust the core of T201 so that the voltage measured in signal mode is 0mV(0±20mV) in 300mV range.
 - Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.
- Note: The adjusting screwdriver used should be made of resin.



FM SIGNAL GENERATOR CONDITION

Modulation 100%
Modulation frequency 1kHz
Output level 66dB

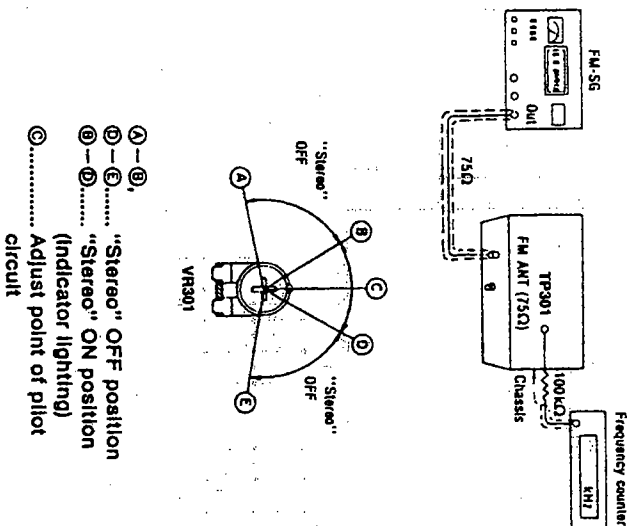
MPX VCO ADJUSTMENT

- Test equipment connection is shown in figure.
- Set the unit to "stereo" position.
- Set the radio frequency display and signal generator to 100.10MHz.
- Adjust VR301 for 19kHz±30Hz on frequency counter reading.

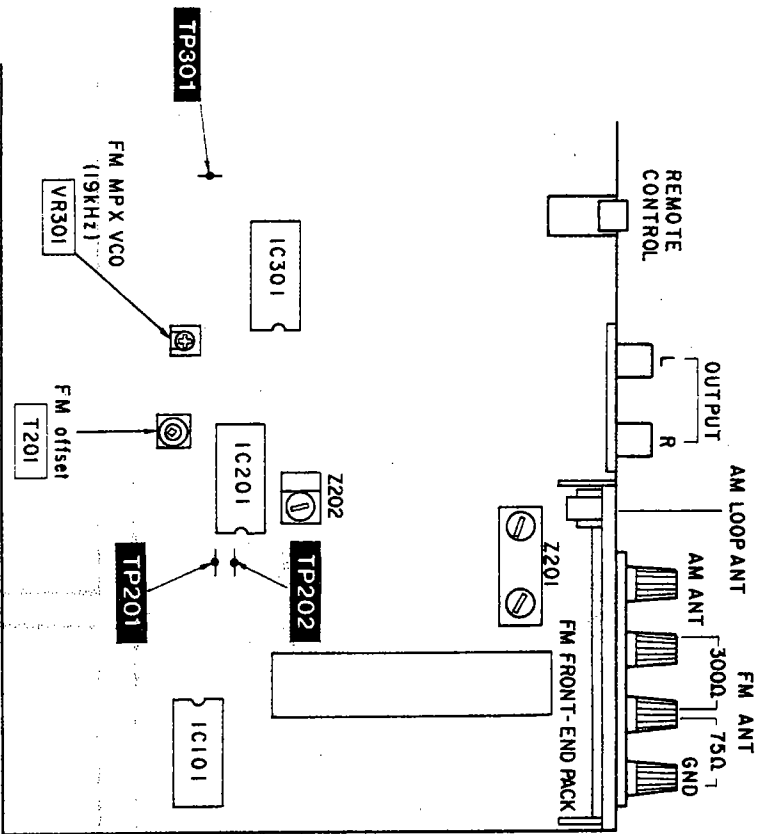
USING ALTERNATE SYSTEM

- Receive the stereo broadcast.
- Adjust VR301 until stereo indicator lights up. Fix the arm of VR301 as shown in figure.

FM SIGNAL GENERATOR CONDITION
Modulation 100%
Modulation frequency 0kHz
Output level 66dB

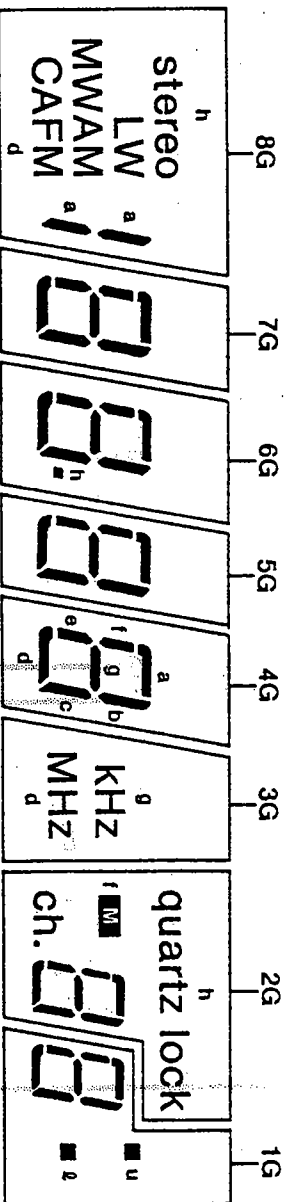


ADJUSTMENT POINTS



DESCRIPTION OF FL PANEL [FL901 (SAD8MT10ZYK)]

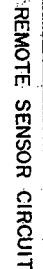
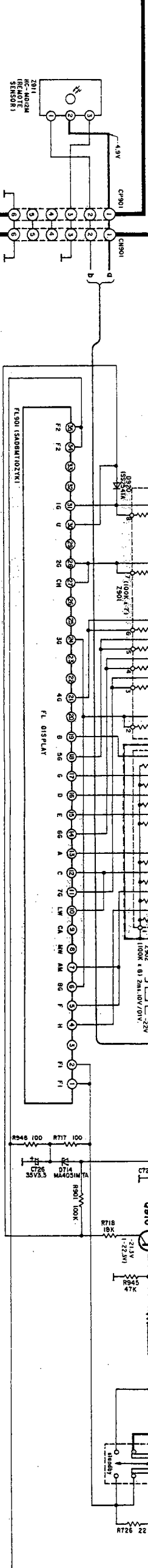
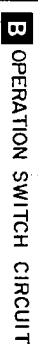
GRID ASSIGNMENT

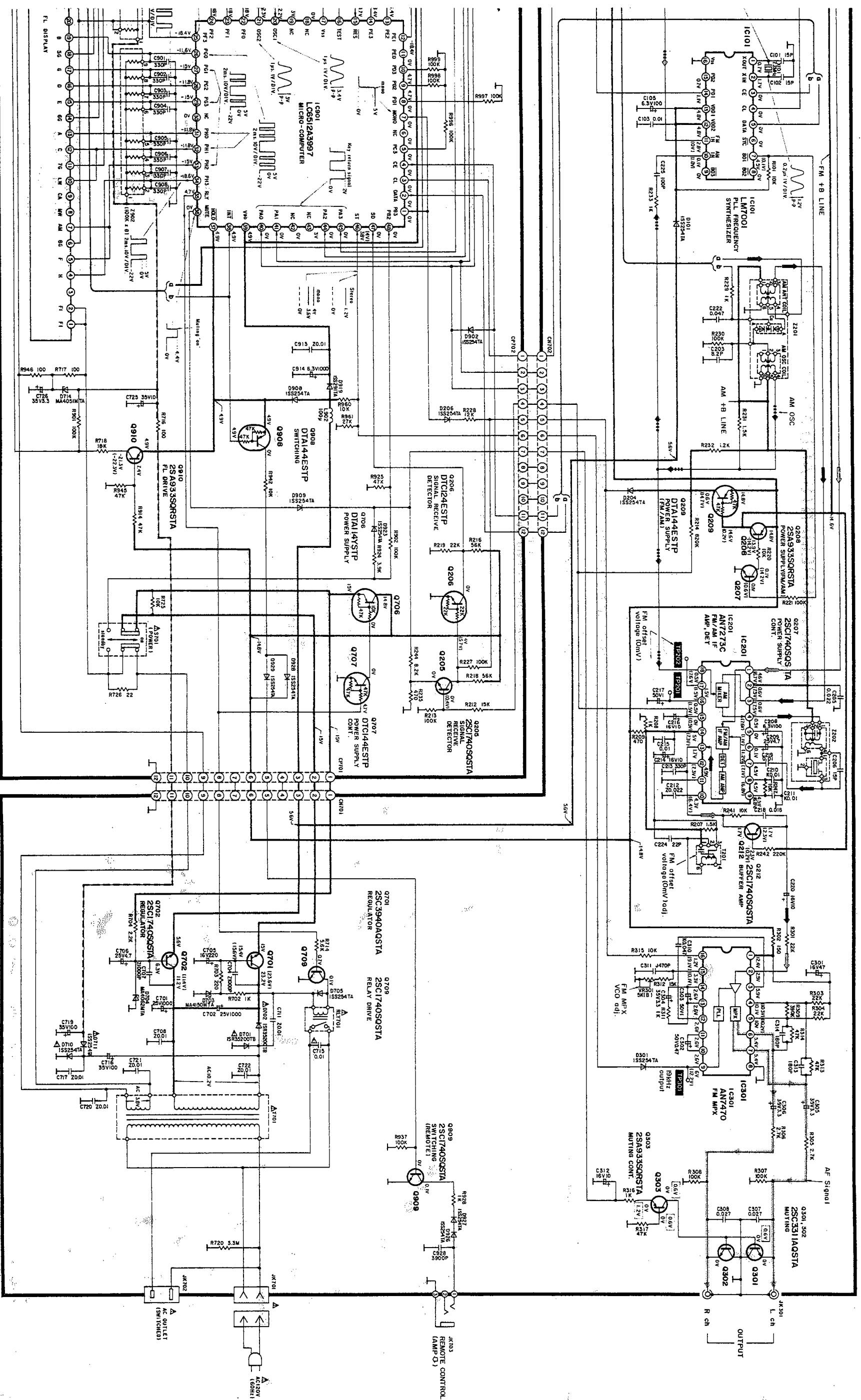


Note: The grid of 3G and 8G are used for external connection.

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CONNECTION	F1	F1	NP	h	i	8G	AM	MW	CA	LW	7G	c	a	6G	e	d	g	5G
PIN NO.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
CONNECTION	b	NP	4G	NP	NP	3G	NP	NP	ch	2G	NP	u	1G	NP	F2	F2		





■ SCHEMATIC DIAGRAM (Parts list on pages 17~19)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- S701 : Power source switch in "on" position.
- S901~910 : Preset tuning switches.
[S901: CH1, S902: CH2, S903: CH3, S904: CH4,
S905: CH5, S906: CH6, S907: CH7, S908: CH8,
S909: CH9, S910: CH0]
- S911, S912 : Band selector switches.
(S911: FM, S912: AM)
- S914 : Memory set switch.
- S915 : FM mode selector switch.
- S916, S917 : Tuning switches.
(S916: down, S917: up)

•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage volues, depending on the internal impedance of the DC circuit tester.

- () : AM voltage, [] : MUTING voltage
- Positive voltage lines
FM OSC
AM OSC
- Negative voltage lines
FM signal
AM signal
- AF signal lines

•Important safety notice
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

•Caution!

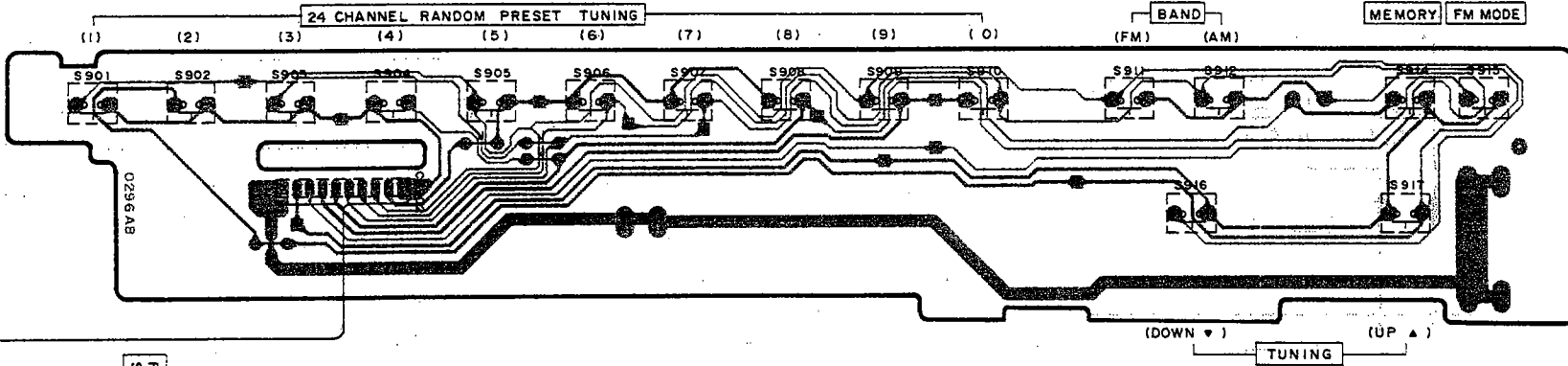
- IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum coil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

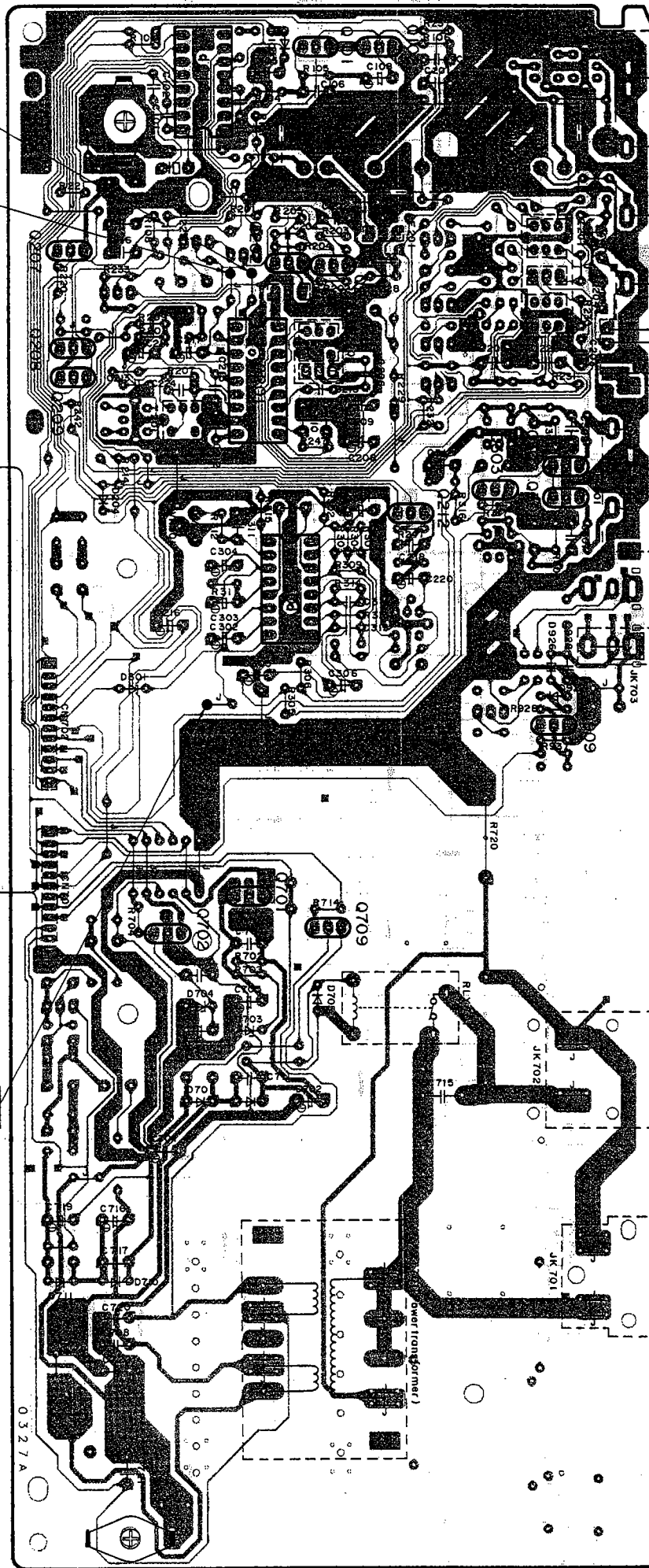
LM7001 	AN7470 	AN7273C 	LC6512A3997 	28A933SQBSTA 28C174QSOSTA DTA114YSTP DAT144ESTP DTC124ESTP DTC144ESTP
2SC2787LTA 2SC3311AQSTA 	2SC3940AQSTA 	1SS254TA 1SS291TA 1SR35200TB 	MA4150MTA 	MA4051MTA MA4062MTA

CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (Parts list on pages 17-19)

B OPERATION SWITCH P.C.B.



A MAIN P.C.B.





FUNCTIONS OF IC TERMINALS (IC901: LC6512A3997) DATA SHEET

DESCRIPTION OF TERMINAL																																	
PIN NO.	IN/OUT	MARK																															
1	INPUT	PB3	Computer drive terminal.																														
2	OUTPUT	DATA	Computer drive terminal.																														
		CL																															
3	OUTPUT	CE	Not used in this unit.																														
4		CE	Not used in this unit.																														
5	—	PC3	Not used in this unit.																														
6	—	NC	Not used in this unit.																														
7	OUTPUT	PD0	Auto/mono changeover terminal. (auto → 0V, mono → 5V)																														
8	OUTPUT	PD1	Computer drive terminal.																														
9	—	PD2	Not used in this unit.																														
10		PD3																															
11		PE0																															
12	OUTPUT	PE1	Digital signal terminal for display. Terminal for key return signal to external key matrix.																														
14		PE3																															
22		PF0																															
25		PF3																															
15	INPUT	RES	Reset terminal.																														
16	—	TEST	Ground terminal.																														
17		Vss																															
18	—	NC	Not used in this unit.																														
19																																	
20	INPUT	OSC1	Connecting terminal for crystal oscillator.																														
21	OUTPUT	OSC2																															
26	OUTPUT	PG0	Segment signal terminal for display.																														
29		PG3																															
31		PH0																															
34		PH3																															
30	—	NC	Not used in this unit.																														
35	OUTPUT	P10	Control signal terminal for relay (RLY701).																														
36	OUTPUT	P11	Muting signal terminal. (Muting → High level)																														
37	INPUT	HOLD	Terminal for power failure detection.																														
38	INPUT	INT	Terminal for remote control cord.																														
39	INPUT	V _{DD}	Power supply terminal of device. Voltage of 5V is supplied during operation of device.																														
40	INPUT	PA0 PA3	Terminal for key return signal to external key matrix. [KEY MATRIX]<table><tr><td>PIN NO.</td><td>45</td><td>44</td><td>41</td><td>40</td></tr><tr><td>14</td><td>CH4</td><td>CH9</td><td>CH2</td><td>CH1</td></tr><tr><td>22</td><td>CH6</td><td>CH7</td><td>CH6</td><td>CH5</td></tr><tr><td>23</td><td>—</td><td>—</td><td>CH0</td><td>CH8</td></tr><tr><td>24</td><td>—</td><td>—</td><td>AM</td><td>FM</td></tr><tr><td>25</td><td>MODE</td><td>MEMORY</td><td>UP</td><td>DOWN</td></tr></table>	PIN NO.	45	44	41	40	14	CH4	CH9	CH2	CH1	22	CH6	CH7	CH6	CH5	23	—	—	CH0	CH8	24	—	—	AM	FM	25	MODE	MEMORY	UP	DOWN
PIN NO.				45	44	41	40																										
14				CH4	CH9	CH2	CH1																										
22				CH6	CH7	CH6	CH5																										
23	—	—	CH0	CH8																													
24	—	—	AM	FM																													
25	MODE	MEMORY	UP	DOWN																													
42																																	
43																																	
46																																	
47	INPUT	PB0 PB2	Stereo signal terminal.																														
48			SD signal terminal.																														
			Tuner select terminal. (Ground connection)																														

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
• The parenthesized indications in the Remarks column specify the areas (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT (S)		D926-929	1SS2547A	DIODE	
						VARIABLE RESISTOR (S)	
IC101	LM7001	IC, PLL FREQUENCY		VR301	EVQ0XAD0853	MAIN VOLUME	
IC201	AM7273C	IC, FM/AM IF AMP. DET				COMPONENT COMBINATION (S)	
IC301	AM7470	IC, FM MPX					
IC901	LC6512A3997	IC, MICROCOMPUTER					
		TRANSISTOR (S)		Z101	RA10006	COMPONENT COMBINATION	
				Z201	RA22001-T	COMPONENT COMBINATION	
Q101, 102	2SC1740SQSTA	TRANSISTOR		Z202	RL122003M-T	COMPONENT COMBINATION	
Q201, 202	2SC2787L1TA	TRANSISTOR		Z901	EXP93E104J	COMPONENT COMBINATION	
Q205	2SC1740SQSTA	TRANSISTOR		Z902	EXP93E104J	COMPONENT COMBINATION	
Q206	DTG124ESTP	TRANSISTOR		Z911	HC-HD12M	COMPONENT COMBINATION	
Q207	2SC1740SQSTA	TRANSISTOR					
Q208	2SA933SQSTA	TRANSISTOR				COIL (S)	
Q209	DTA144ESTP	TRANSISTOR					
Q212	2SC1740SQSTA	TRANSISTOR		L101	RLQ2P82K-T	COIL	
Q301, 302	2SC3311AQSTA	TRANSISTOR		L203, 204	ELP8R88MA	COIL	
Q303	2SA933SQSTA	TRANSISTOR		L902	RLQ2P101KT-Y	COIL	
Q701	2SC3940AQSTA	TRANSISTOR				TRANSFORMER (S)	
Q702	2SC1740SQSTA	TRANSISTOR					
Q706	DTA114YSTP	TRANSISTOR		T201	RL14B007-2	TRANSFORMER	
Q707	DTG144ESTP	TRANSISTOR		T701	SL75J248	POWER TRANSFORMER	Δ
Q709	2SC1740SQSTA	TRANSISTOR				FILTER (S)	
Q907	2SC1740SQSTA	TRANSISTOR					
Q908	DTA144ESTP	TRANSISTOR					
Q909	2SC1740SQSTA	TRANSISTOR					
Q910	2SA933SQSTA	TRANSISTOR		CP201, 202	RLFFETWNA01L	CERAMIC FILTER	
		DIODE (S)				OSCILLATOR (S)	
D101	1SS2547A	DIODE		X101	SVQ49U722T-S	OSCILLATOR	
D204	1SS2547A	DIODE		X902	EFQ49B01M4A	OSCILLATOR	
D206	1SS2547A	DIODE				DISPLAY TUBE	
D301	1SS2547A	DIODE					
D701, 702	1SR35200TB	DIODE	Δ				
D703	MA4150M7A	DIODE		FL901	SADWTT10ZYK	DISPLAY TUBE	
D704	MA4062M7A	DIODE				SWITCH (S)	
D705	1SS2547A	DIODE					
D710, 711	1SS2547A	DIODE	Δ				
D714	MA4051M7A	DIODE		S701	RSP38001-J	SW. POWER	Δ
D902	1SS2547A	DIODE		S901	EVQ21405R	SW. CH1	
D906-918	1SS2547A	DIODE		S902	EVQ21405R	SW. CH2	
D919	1SS2917A	DIODE		S903	EVQ21405R	SW. CH3	
D920	1SS2547A	DIODE		S904	EVQ21405R	SW. CH4	
D923	1SS2547A	DIODE		S905	EVQ21405R	SW. CH5	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
S306	EVQ21405R	SW. CH6		JK301	RA10201N	OUT/PUT TERMINAL	
S307	EVQ21405R	SW. CH7		JK701	SL5016	AC INLET	Δ
S308	EVQ21405R	SW. CH8		JK702	SL5931B	AC OUTLET	
S309	EVQ21405R	SW. CH9		JK703	RA133TR01	REMOTE OUT	
S310	EVQ21405R	SW. CH10		CK701, 702	RA1005M012	SOCKET (12P)	
S311	EVQ21405R	SW. BAND FM		CK901	RA1003K009M1	SOCKET (8P)	
S312	EVQ21405R	SW. BAND AM		CK902	RA1003K010M1	SOCKET (10P)	
S314	EVQ21405R	SW. MEMORY		CP701, 702	RA1005M012	CONNECTOR (12P)	
S315	EVQ21405R	SW. FM MODE		CP901	RA1003K009M1	CONNECTOR (8P)	
S316	EVQ21405R	SW. TUNING DOWN		CP902	RA1003K010M1	CONNECTOR (10P)	
S317	EVQ21405R	SW. TUNING UP					
		JACK (S)				DELAY	
				RL701	RSY0003	DELAY	Δ
JK101	RA1H4405	ANTENNA TERMINAL					

Notes : * Capacity value are in microfarads (μF) unless specified otherwise, P-Pico-farads (pF) F-Farads (F)
* Resistance values are in ohms, unless specified otherwise, K=1,000 (OHM) , M=1,000K (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R229	EBDS2TJ102T	1/4W 1K	R718	EBDS2TJ183T	1/4W 18K
			R230	EBDS2TJ104T	1/4W 100K	R720	EMC1226K350	1/2W 3.3K
			R231	EBDS2TJ152T	1/4W 1.5K	R725	EBDS2TJ103T	1/4W 10K
R101	EBDS2TJ103T	1/4W 10K	R232	EBDS2TJ122T	1/4W 1.2K	R726	EBDS2TJ220T	1/4W 22
R104	EBDS2TJ102T	1/4W 1K	R233	EBDS2TJ102T	1/4W 1K	R901, 902	EBDS2TJ104T	1/4W 100K
R105	EBDS2TJ1561T	1/4W 560	R235	EBDS2TJ471T	1/4W 470	R914	EBDS2TJ473T	1/4W 47K
R106	EBDS2TJ1562T	1/4W 5.6K	R237	EBDS2TJ151T	1/4W 150	R915	EBDS2TJ821T	1/4W 820
R107	EBDS2TJ103T	1/4W 10K	R241	EBDS2TJ103T	1/4W 10K	R916	EBDS2TJ272T	1/4W 2.7K
R108	EBDS2TJ151T	1/4W 150	R242	EBDS2TJ224T	1/4W 220K	R917	EBDS2TJ103T	1/4W 10K
R201	EBDS2TJ222T	1/4W 2.2K	R244	EBDS2TJ822T	1/4W 8.2K	R918	EBDS2TJ224T	1/4W 220K
R202	EBDS2TJ824T	1/4W 820K	R247	EBDS2TJ103T	1/4W 10K	R920	EBDS2TJ105T	1/4W 1M
R203	EBDS2TJ331T	1/4W 330	R301	EBDS2TJ223T	1/4W 22K	R924	EBDS2TJ392T	1/4W 3.9K
R204	EBDS2TJ474T	1/4W 470K	R302	EBDS2TJ151T	1/4W 150	R925	EBDS2TJ473T	1/4W 47K
R205	EBDS2TJ331T	1/4W 330	R303, 304	EBDS2TJ223T	1/4W 22K	R928	EBDS2TJ102T	1/4W 1K
R207	EBDS2TJ152T	1/4W 1.5K	R305, 306	EBDS2TJ272T	1/4W 2.7K	R930-933	EBDS2TJ104T	1/4W 100K
R208	EBDS2TJ102T	1/4W 1K	R307, 308	EBDS2TJ104T	1/4W 100K	R937	EBDS2TJ104T	1/4W 100K
R209	EBDS2TJ471T	1/4W 470	R309	EBDS2TJ394T	1/4W 390K	R942	EBDS2TJ103T	1/4W 10K
R212	EBDS2TJ153T	1/4W 15K	R311	EBDS2TJ102T	1/4W 1K	R945	EBDS2TJ473T	1/4W 47K
R213	EBDS2TJ104T	1/4W 100K	R312	EBDS2TJ153T	1/4W 15K	R946	EBDS2TJ101T	1/4W 100
R214	EBDS2TJ824T	1/4W 820K	R313, 314	EBDS2TJ473T	1/4W 47K	R950-954	EBDS2TJ83T	1/4W 68K
R216	EBDS2TJ563T	1/4W 56K	R315	EBDS2TJ103T	1/4W 10K	R960	EBDS2TJ103T	1/4W 10K
R218	EBDS2TJ563T	1/4W 56K	R316	EBDS2TJ102T	1/4W 1K	R961	EBDS2TJ273T	1/4W 27K
R219	EBDS2TJ223T	1/4W 22K	R317	EBDS2TJ473T	1/4W 47K	R996-999	EBDS2TJ104T	1/4W 100K
R220	EBDS2TJ103T	1/4W 10K	R702	EBDS2TJ102T	1/4W 1K			
R221	EBDS2TJ104T	1/4W 100K	R703	EBDS2TJ221T	1/4W 220			CAPACITORS
R223	EBDS2TJ471T	1/4W 470	R704	EBDS2TJ222T	1/4W 2.2K			
R227	EBDS2TJ104T	1/4W 100K	R714	EBDS2TJ562T	1/4W 5.6K	C101, 102	EC8T1H150ACS	50V 15P
R228	EBDS2TJ123T	1/4W 12K	R716, 717	EBDS2TJ101T	1/4W 100	C103	EC8T1C103N55	16V 0.01U

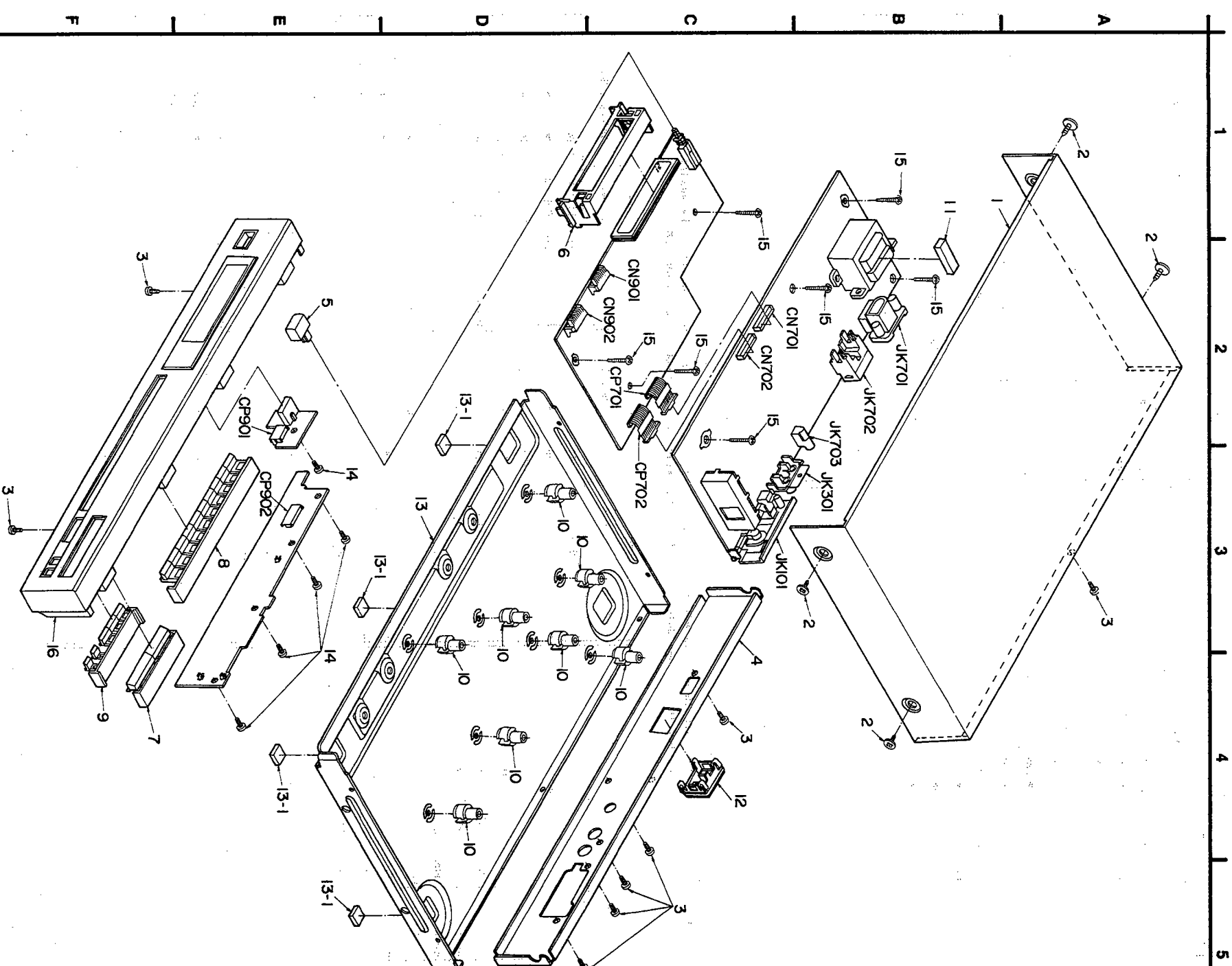
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks				
C105	ECFAJU0101B	6. 3V 100U	C915	ECFA1HK228	50V 0. 22U				
C106, 107	ECGR1H103ZF5	50V 0. 01U	C916	ECBTH101K85	50V 100P				
C108	ECFA1EK4R78	25V 4. 7U	C917	ECBTH121K05	50V 120P				
C109	ECFA1C1330B	16V 33U	C928	ECBTHC92M65	16V 3900P				
C116	ECGR1H103ZF5	50V 0. 01U							
C201, 202	ECGR1H103ZF5	50V 0. 01U							
C203	ECBT1H82K65	50V 8. 2P							
C204	ECBTC103N55	16V 0. 01U							
C205	ECGR1U223ZF5	50V 0. 022U							
C206	ECBT1H1501C5	50V 15P							
C208	ECFAJU0101B	6. 3V 100U							
C209	ECFA1EK4R78	25V 4. 7U							
C210, 211	ECFR1E103KR	25V 0. 01U							
C212	ECBT1E223ZF5	25V 0. 022U							
C213	ECBT1H31K85	50V 330P							

Notes : * Capacity values are in microfarads (μF) unless specified otherwise, P-Pico-farads (pF)
* Resistance values are in ohms, unless specified otherwise, K=1,000 (OHM) , 1M=1,000K (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks				
C105	ECFAJU0101B	6. 3V 100U	C915	ECFA1HK22B	50V 0. 22U				
C106, 107	ECGR1H103ZF5	50V 0. 01U	C916	ECBTH101K85	50V 100P				
C108	ECFA1EK4R7B	25V 4. 7U	C917	ECBTH121K85	50V 120P				
C109	ECFA1C1330B	16V 33U	C928	ECBTH121K85	50V 120P				
C116	ECGR1H103ZF5	50V 0. 01U		ECBTH121K85	50V 120P				
C201, 202	ECGR1H103ZF5	50V 0. 01U							
C203	ECBTH182KCS	50V 8. 2P							
C204	ECBTH1C103N5S	16V 0. 01U							
C205	ECGR1H223ZF5	50V 0. 022U							
C206	ECGR1H1501CS	50V 15P							
C208	ECFAJU0101B	6. 3V 100U							
C209	ECFA1EK4R7B	25V 4. 7U							
C210, 211	ECGR1E103KR	25V 0. 01U							
C212	ECBTH1E223ZF5	25V 0. 022U							
C213	ECBTH1H31K85	50V 330P							
C214	ECFA1CK100B	16V 10U							
C215	ECBTH1C103N5S	16V 0. 01U							
C216	ECFA1CK100B	16V 10U							
C217	ECFA1H0101B	50V 1U							
C218	ECGR1E183KR	25V 0. 018U							
C219	ECBTH1C103N5S	16V 0. 01U							
C220	ECFA1CK100B	16V 10U							
C222	ECGR1E473KR	25V 0. 047U							
C224	ECBTH1H220J15	50V 22P							
C225	ECBTH1H101K85	50V 100P							
C228	ECBTH1H102K85	50V 1000P							
C301	ECFA1C10470B	16V 47U							
C302	ECFA1H847B	50V 0. 47U							
C303	ECFA1H0101B	50V 1U							
C304- 306	ECFA1VK3B	35V 3. 3U							
C307, 308	ECGR1E273KR	25V 0. 027U							
C310	ECGR1E473KR	25V 0. 047U							
C311	ECBTH1471J23	50V 470P							
C312	ECFA1CK100B	16V 10U							
C313, 314	ECBTH1H81K85	50V 180P							
C701, 702	ECFA1EU102B	25V 1000U							
C704	ECGR1H102ZF5	50V 1000P							
C705	ECFA1C10221B	16V 220U							
C706	ECFA1EK4R7B	25V 4. 7U							
C707	ECGR1H102ZF5	50V 1000P							
C708	ECGR1H103ZF5	50V 0. 01U							
C711	ECGR1H103ZF5	50V 0. 01U							
C715	ECMMHS1032V	500V 0. 01U Δ							
C716	ECFA1VU0101B	35V 100U							
C717	ECGR1H103ZF5	50V 0. 01U							
C719	ECFA1VU0101B	35V 100U							
C720- 722	ECGR1H103ZF5	50V 0. 01U							
C725	ECFA1VK100B	35V 10U							
C726	ECFA1VK3R3B	35V 3. 3U							
C901- 908	ECGR1H331K85	50V 330P							
C913	ECGR1H103ZF5	50V 0. 01U							
C914	ECFAJU102B	6. 3V 1000U							

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■ EXPLODED VIEW



Service Manual

Supplement

QUARTZ Synthesizer
AM/FM Stereo Tuner

Tuner
ST-K50

Colour

(K) Black Type

Please file and use this supplement manual together with the service manual for Model No. ST-K50, Order No. AD9003038C1.

■ ADDITION OF SUFFIX FOR MODEL NO. (Original)

Areas

Country Code	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada	



(New)

Areas

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada	
(PP)	U.S.A. and Canada	

■ LINE-UP OF COMPONENTS

System Name	Unit
SC-S1300 (for Canada)	ST-K50 (PP) : Tuner
	SU-G50 (PC1) : Amplifier
	RS-TR210 (PP) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-WA30 (PC) : Accessories Box
	SB-A13 (PC) : Speakers (Made in MICA)
	SH-KS13 (PC) : Ruck (Made in MICA)
SC-S2300 (for U.S.A.)	ST-K50 (PP) : Tuner
	SU-G91 (PP) : Amplifier
	RS-TR210 (PP) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-8017 (PP) : Equalizer
	SH-WA10 (P) : Accessories Box
	SB-A33 (P) : Speakers (Made in MEP)
SC-S2300 (for Canada)	ST-K50 (PP) : Tuner
	SU-G91 (PP) : Amplifier
	RS-TR210 (PP) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-WA40 (PC) : Accessories Box
	SB-A32 (PC) : Speakers (Made in MEP)
	SH-KS33 (PC) : Ruck (Made in MEP)

System Name	Unit
SC-S3300 (for U.S.A.)	ST-K50 (PP) : Tuner
	SU-G91 (PP) : Amplifier
	RS-TR311 (P1) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-8017 (PP) : Equalizer
	SH-WA10 (P) : Accessories Box
	SB-A53 (P) : F. Speakers (Made in MEP)
	SB-S16A (P) : R. Speakers (Made in MEP)
	SH-KS53 (P) : Ruck (Made in MEP)
SC-S3300 (for Canada)	ST-K50 (PP) : Tuner
	SU-G91 (PP) : Amplifier
	RS-TR210 (PP) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-8017 (PP) : Equalizer
	SH-WA60 (PC) : Accessories Box
	SB-A52 (PC) : Speakers (Made in MEP)
	SH-KS53 (PC) : Ruck (Made in MEP)
SC-S4300 (for U.S.A.)	ST-K50 (PP) : Tuner
	SU-G91 (PP) : Amplifier
	RS-TR311 (P1) : Cassette Deck
	SL-PD825 (PP) : CD Changer
	SH-GS71 (P1) : Equalizer
	SH-WA20 (P) : Accessories Box
	SB-A63 (P) : F. Speakers (Made in MEP)
	SB-S16A (P) : R. Speakers (Made in MEP)
	SH-KS63 (P) : Ruck (Made in MEP)

Technics

CHANGES

■ LIST OF CHANGED REPLACEMENT PARTS

ST-K50 (Page 20 of service manual.)

Ref. No.	Part Number		Description	Remarks
	ST-K50 (P)	ST-K50 (PP)		
CABINET PARTS				
4	※RGR0081A-A	RGR0081A-B1	REAR PANEL	
7	RGU0357-K	RGU0357-K1	TUNING BUTTON	Change
8	RGU0358-K	RGU0358-K1	CHANNEL BUTTON	Change
9	RGU0360-K	RGU0360-K1	MODE BUTTON	Change
16	RFKGTK50P-K	RFKGTK50PP-K	FRONT PANEL ASS'Y	Change
PACKING MATERIALS				
P1	RPG0440	RPG0440-1	CARTON BOX	* Change
ACCESSORIES				
A1	※RQT0396-P	RFKSCS1300PC	INSTRUCTIONS MANUAL	* SC-S1300 (PC)
		RFKSCS4300PK	INSTRUCTIONS MANUAL	* SC-S4300 (P)
	※RQT0397-P	RFKSCS3300PK	INSTRUCTIONS MANUAL	* SC-S2300 (P) * SC-S3300 (P)
		RFKSCS3300PC	INSTRUCTIONS MANUAL	* SC-S2300 (PC) * SC-S3300 (PC)
A2	※SQX7179	—	WARRANTY CARD	*
A3	※SQX9129-1	—	SERVICE CENTER LIST	*
A4	※SJA175-1	—	AC POWER SUPPLY CORD	*
A5	※SJPK2203-2	—	STEREO CONNECTION CABLE	*
A6	※SPB1163T	—	AM ANTENNA ASS'Y	*
A6-1	※SMA233-1M	—	HOLDER	*
A6-2	※XTN3+10AFZ	—	SCREW	*
A7	※SSA272M	—	FM ANTENNA	*

Notes: •Parts identified by the "*" mark are contained in the carton (accessories box) of SH-WA10 (P), SH-WA20 (P), SH-WA30 (PC) or SH-WA60 (PC) listed in the table "LINE-UP OF COMPONENTS" on the previous page.
•Parts identified by "※" mark in the list of ST-K50 (P) are supplied as usual.