

ST-H300

SERVICE MANUAL

*US Model
Canadian Model*



This set is the tuner section in MHC-3500.

SPECIFICATIONS

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 – 108 MHz
Antenna	Telescopic antenna
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	MW: 530 – 1,710 kHz
Antenna	AM loop antenna, External antenna terminals
Intermediate frequency	450 kHz

FM-AM TIMER TUNER
SONY®

SAFETY CHECK-OUT

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 microamperes). 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)

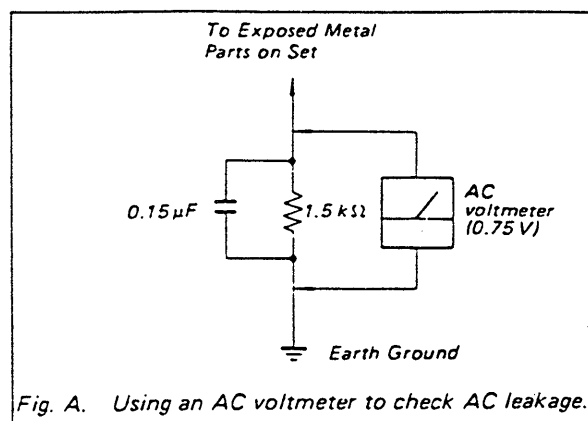


Fig. A. Using an AC voltmeter to check AC leakage.

• Power supply for service

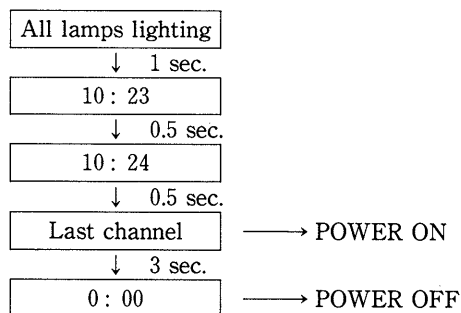
Since this machine has no power source in itself, the power is supplied from AMP TA-H300 used for this series. As shown in the following table, this machine requires 4 types of voltage, and supplying each type of voltage separately makes complicated connections.

Accordingly, make connection with TA-H300 at time of service, such as electrifying repair.

AC 3.9V	FL-tube filament voltage
DC -24V	Display controller IC701, grid voltage
DC 5V	Display controller IC701, V_{CC}
DC 13V	PLL control voltage

• Service mode for checking the timer ON/OFF

- 1) Connect with AMP TA-H300 and set the power switch of TA-H300 to the state of STANDBY.
- 2) Set the time of tuner to a proper time (any time).
- 3) Press 3 switches simultaneously, namely, TUNING-, SHIFT and ENTER.
- 4) FL-tube display



- 5) End

—Caution for Service—

• **Reset of IC701**

The display controller IC701 is reset by short-circuiting both edges of C702 (0.47 μ F) while power OFF and discharging electricity.

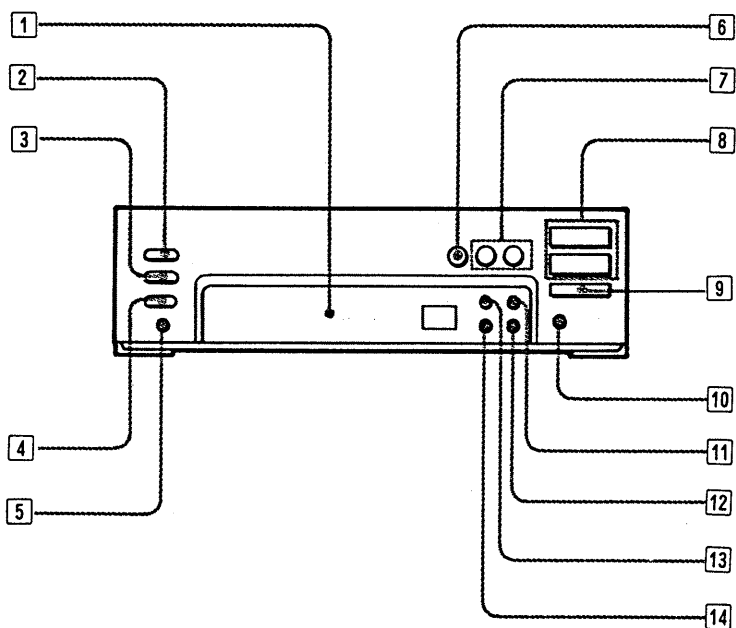
After resetting, the following frequencies are pre-set to the memory.

When the repair is completed, return the memory to the preceding state (content).

FM		AM	
A1	87.5 MHz	A6	530 kHz
A2	88.0 MHz	A7	620 kHz
A3	98.0 MHz	A8	1050 kHz
A4	100.0 MHz	A9	1490 kHz
A5	108.0 MHz	A0	1710 kHz

SECTION 1 GENERAL

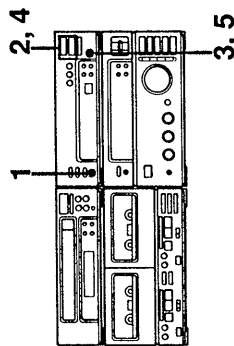
1-1. PARTS IDENTIFICATION



Tuner Section

- 1 Display window
- 2 TIMER CONTROL button
- 3 SLEEP timer button
- 4 TIMER SET button
- 5 CLOCK button
- 6 BAND selector
- 7 TUNING/-/+ buttons
- 8 PRESET/TIMER +/- buttons.
- 9 SHIFT (memory page select) button
- 10 ENTER/NEXT button
- 11 STEREO/MUTING button
- 12 MEMORY button
- 13 AUTO/MANUAL tuning button
- 14 TIME/FREQUENCY button
- 15 Remote control sensor

1-2. CLOCK SETTING



1



2



3



4



5



Setting the Clock

Example: Set to 9:25 in the morning.

- 1 Press **CLOCK**.
- 2 Set the hour with **PRESET/TIMER** +/- buttons.
- 3 Press **ENTER/NEXT**.
- 4 Set the minute with **PRESET/TIMER** +/- buttons.
- 5 Press **ENTER/NEXT**.
The clock starts operating.

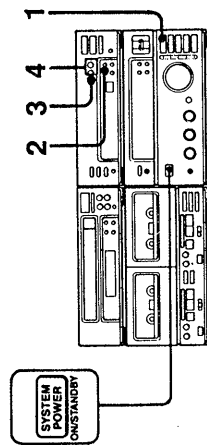
When a power interruption occurs

The time will blink and the clock will be behind by the length of time of the power interruption. After the power is restored, the display must be reset to the proper time. (Timer setting is not cancelled by power interruption.)

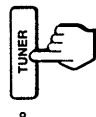
To change the frequency display into the time display

Press **TIME/FREQUENCY**. Each time you press **TIME/FREQUENCY**, the display changes.

1-3. RADIO



1



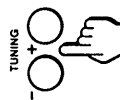
2



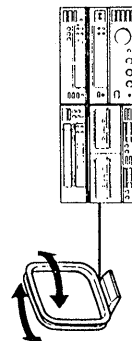
3



4



A



The automatic tuning allows you to receive stations whose signal is strong enough. When the signal is too weak, use the manual tuning.

Tuning in Automatically

- 1 Press **TUNER**.
- 2 Press **BAND** repeatedly until the desired band appears.
As you press **BAND**, the band changes as follows: FM → AM
- 3 Press **AUTO/MANUAL**.
Make sure that **AUTO** appears in the display.
- 4 Tune in to the station with **TUNING** + or -.
- 5 For receiving FM stations with the stereo effect, press **STEREO/MUTING** so that **MUTING** appears.

Tuning in Manually

- 1 Press **TUNER**.
- 2 Select band by pressing **BAND**.
- 3 Press **AUTO/MANUAL** so that **AUTO** disappears from the display.
- 4 Tune in to the station with **TUNING** + or -.

Indicator on the display

TUNED: Appears when a station of sufficient signal strength is tuned in.
STEREO: Appears when an FM stereo program of sufficient signal strength is received.

When an FM stereo program is noisy or hard to receive

Press **STEREO/MUTING** so that **MUTING** disappears from the display. There will be no stereo effect, but the reception will be improved. Press again to restore the stereo effect.

Antenna adjustment A

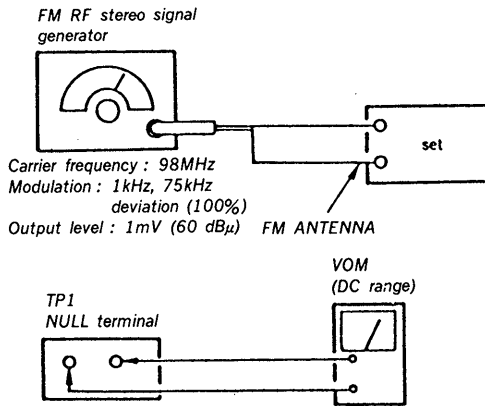
For MW and LW reception, find the best location for the AM loop antenna.

SECTION 2 ELECTRICAL ADJUSTMENTS

FM SECTION

• FM Discriminator Alignment (NULL check)

Setting :

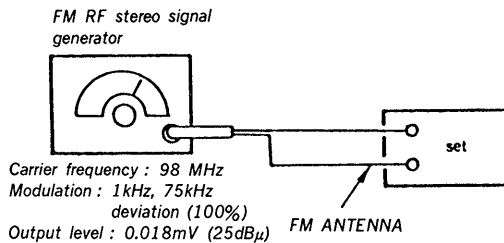


Procedure :

1. Tune the set to 98 MHz.
 2. Adjust T21 for 0 V reading on the VOM.
- Note: FM TUNING LEVEL adjustment should be made after FM discriminator alignment.

• FM TUNING LEVEL Adjustment

Setting :

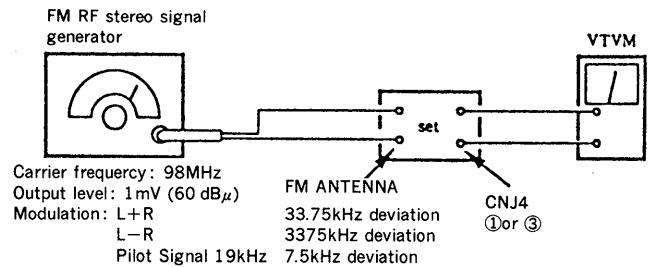


Procedure :

1. Tune the set to 98 MHz.
2. Adjust RV24 so that the TUNED LED goes on.

• FM Stereo Separation Adjustment

Setting :



Procedure :

Tune the set to 98 MHz

FM stereo Signal generator Output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

L-CH Stereo separation : Ⓐ—Ⓑ

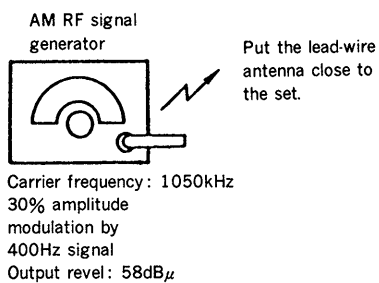
R-CH Stereo separation : Ⓒ—Ⓓ

The separations of both channels should be equal.

AM SECTION

• AM TUNING LEVEL Adjustment

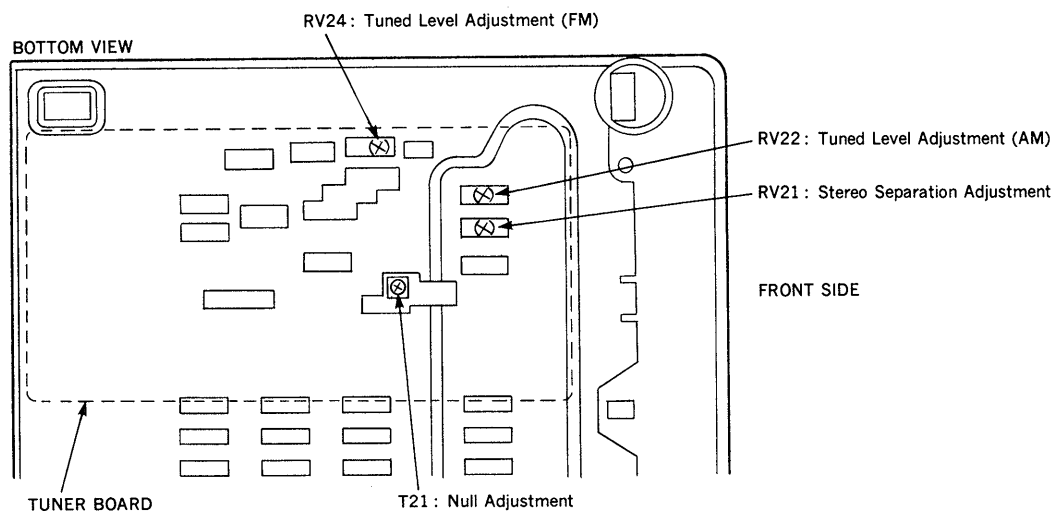
Setting :



Procedure :

1. Tune the set to 1050 kHz.
2. Adjust the RV22 so that the TUNED LED goes on.

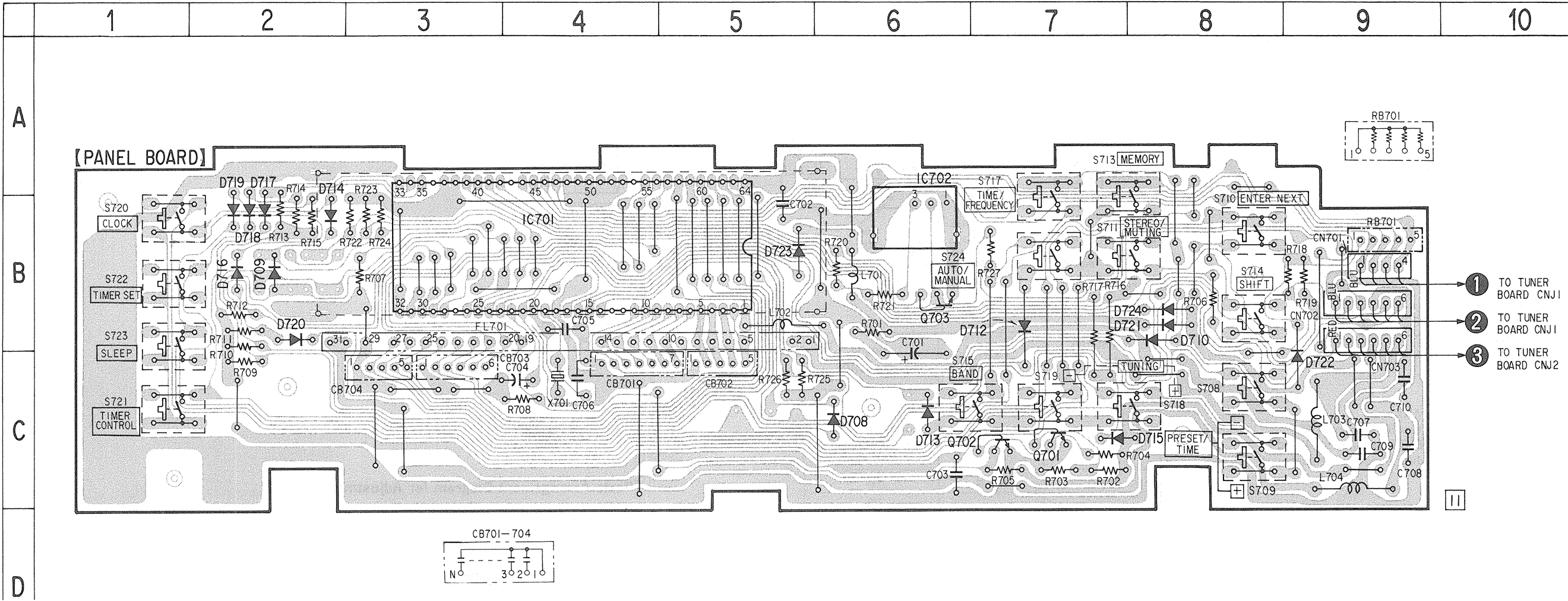
[Parts Arrangement Diagram for Adjustments]



SECTION 3

DIAGRAMS

3-1. PRINTED WIRING BOARD—PANEL SECTION—



• Semiconductor Location

Ref. No.	Location
D708	C-6
D709	B-2
D710	B-8
D712	B-7
D713	C-6
D714	B-2
D715	C-6
D716	B-2
D717	B-2
D718	B-2
D719	B-2
D720	B-2
D721	B-8
D722	C-9
D723	B-5
D724	B-8
IC701	B-4
IC702	B-6
Q701	C-1
Q702	C-7
Q703	B-6

Note:

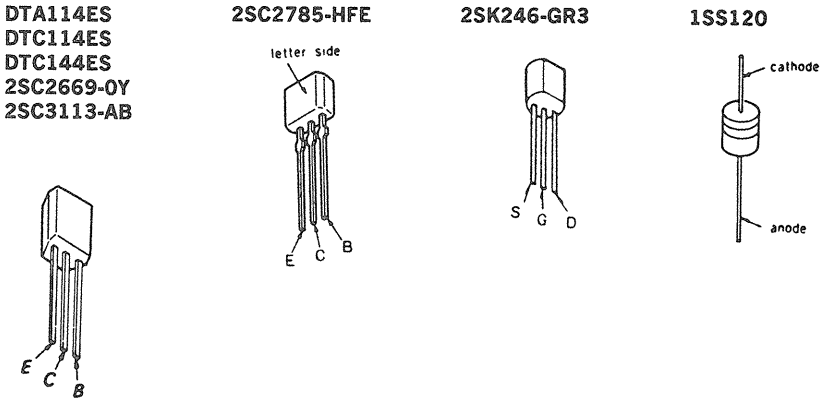
•

○

—

: parts extracted from the component side.

3-2. SEMICONDUCTOR LEAD LAYOUTS



[PANEL BOARD]

The schematic diagram illustrates the internal circuitry of the Panel Board, which interfaces with the Tuner Board (CNJ1) and the Remote Sensor (CNJ2). The board features a central IC701 (TMP4/C670N-1204 DISPLAY CONTROL) and an IC702 (A1QH3020S REMOTE SENSOR). The display section includes a 7-segment display (FL701) with segments labeled a through h, and a 7-segment display (FL702) with segments labeled a through h. The control section includes various switches (S701-S710), relays (R701-R710), and diodes (D701-D710). The circuit is powered by a 5V supply (TA-H300) and includes a 100V supply for the remote sensor. The schematic also shows the connection of various components such as resistors (R701-R710), capacitors (C701-C710), and inductors (L701-L710).

Note:

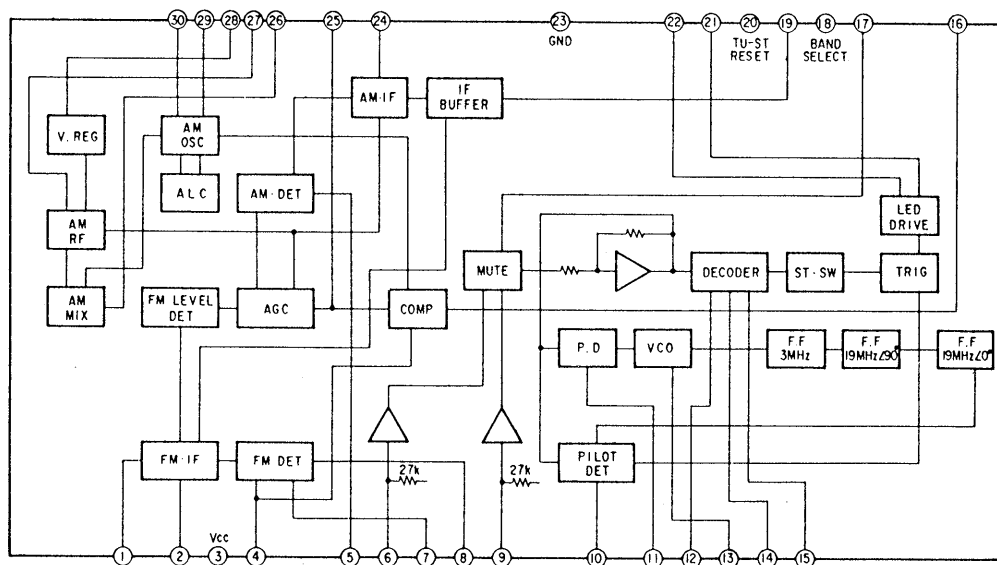
- All capacitors are in μF unless otherwise noted. pF: μpF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Power voltage is supply from TA-H300
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.

Note:

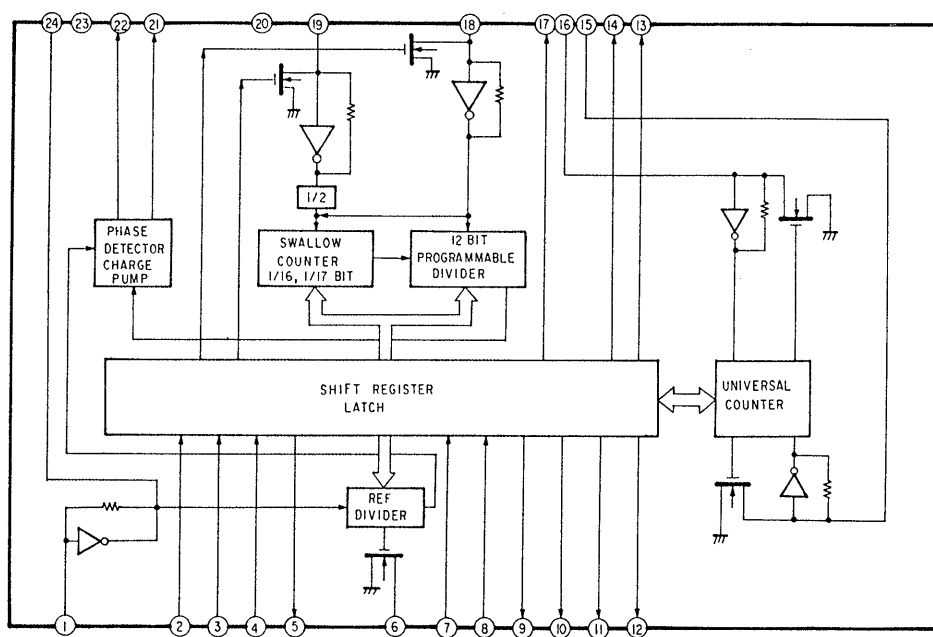
- All capacitors are in μF unless otherwise noted. pF: μmF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Power voltage is supply from TA-H300
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark: FM
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.

• IC Block Diagrams

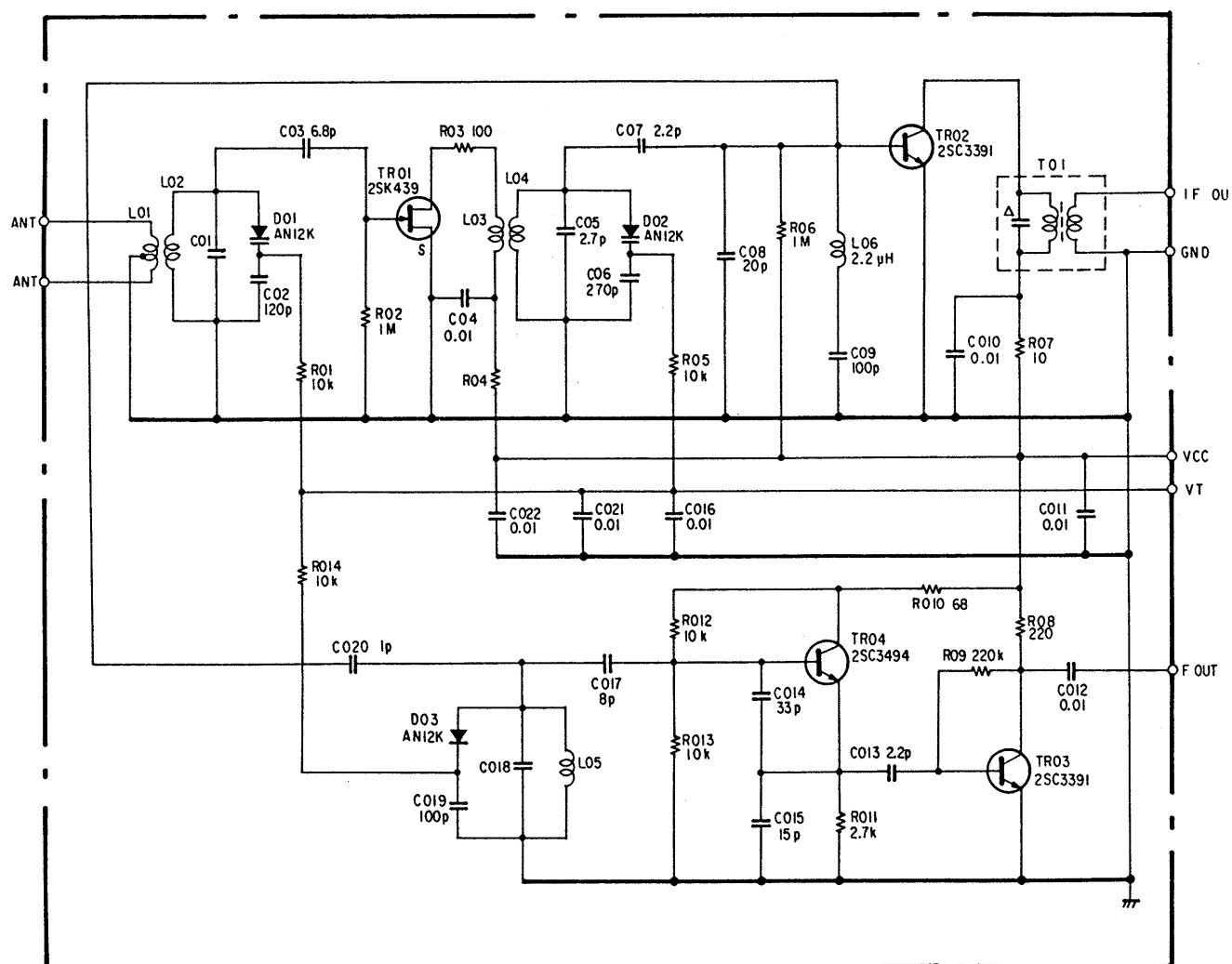
IC21 LA1858N



IC81 LC7218

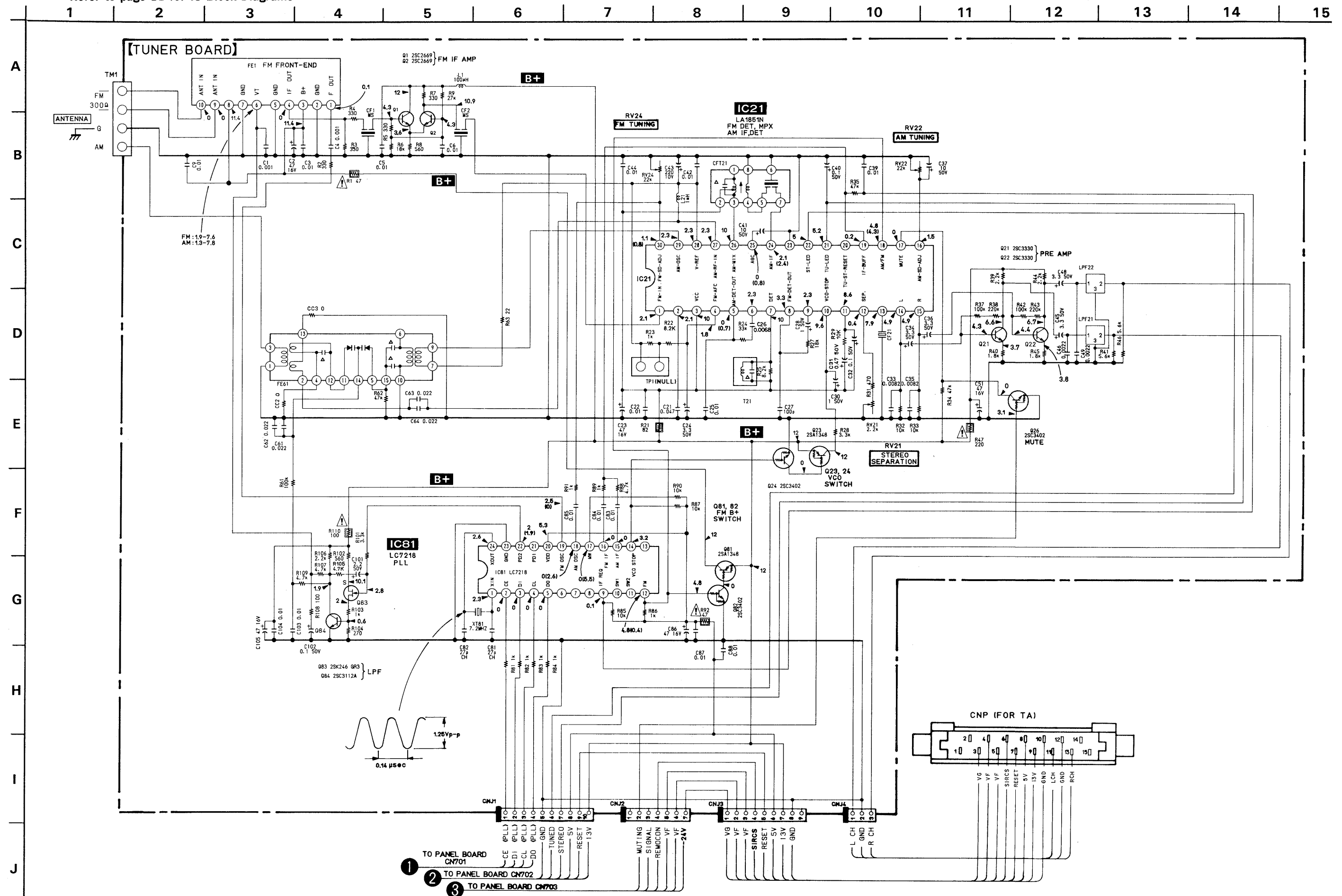


3-4. FM FRONT-END SCHEMATIC DIAGRAMS

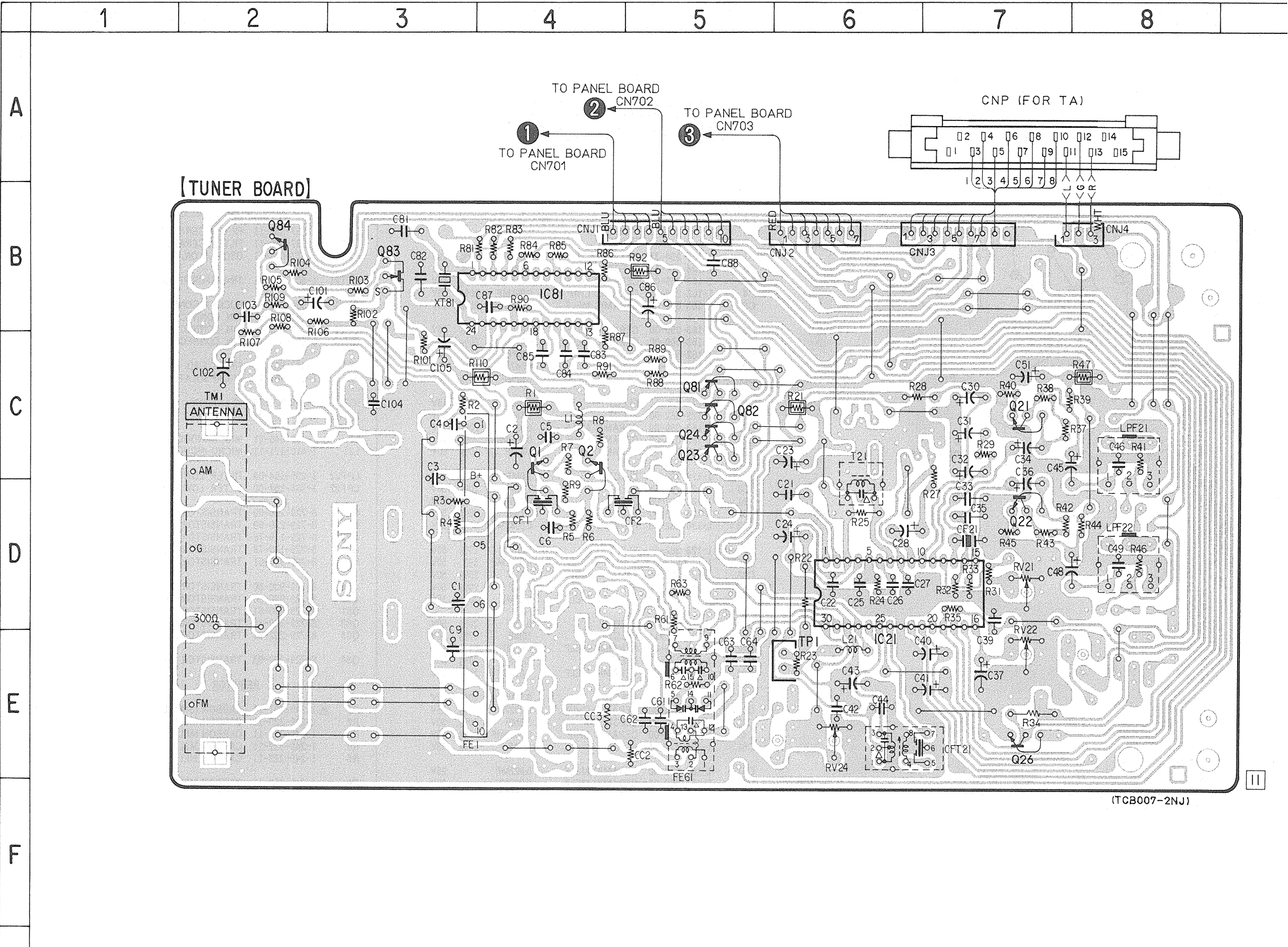


3-5. SCHEMATIC DIAGRAM—TUNER SECTION—

• Refer to page 11 for IC Block Diagrams



3-6. PRINTED WIRING BOARD—TUNER SECTION—



• Semiconductor Location

Ref. No.	Location
IC21	D-6
IC81	B-4
Q1	C-4
Q2	C-4
Q21	C-7
Q22	D-7
Q23	C-5
Q24	C-5
Q26	E-7
Q81	C-5
Q82	C-5
Q83	B-3
Q84	B-2

- Note:**
- : parts extracted from the component side.
 - : indicates side identified with part number.
- Note:**
- All capacitors are in μF unless otherwise noted. pF : μmF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
 - Δ : internal component.
 - $\square$: nonflammable resistor.
- Note:**
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
- Note:**
- $\square$: adjustment for repair.
 - Power voltage is supply from TA-H300
 - Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : AM
 - Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 $\Rightarrow$: FM

SECTION 4 EXPLODED VIEW

NOTE:

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

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

- Color Indication of Appearance Parts
Example:

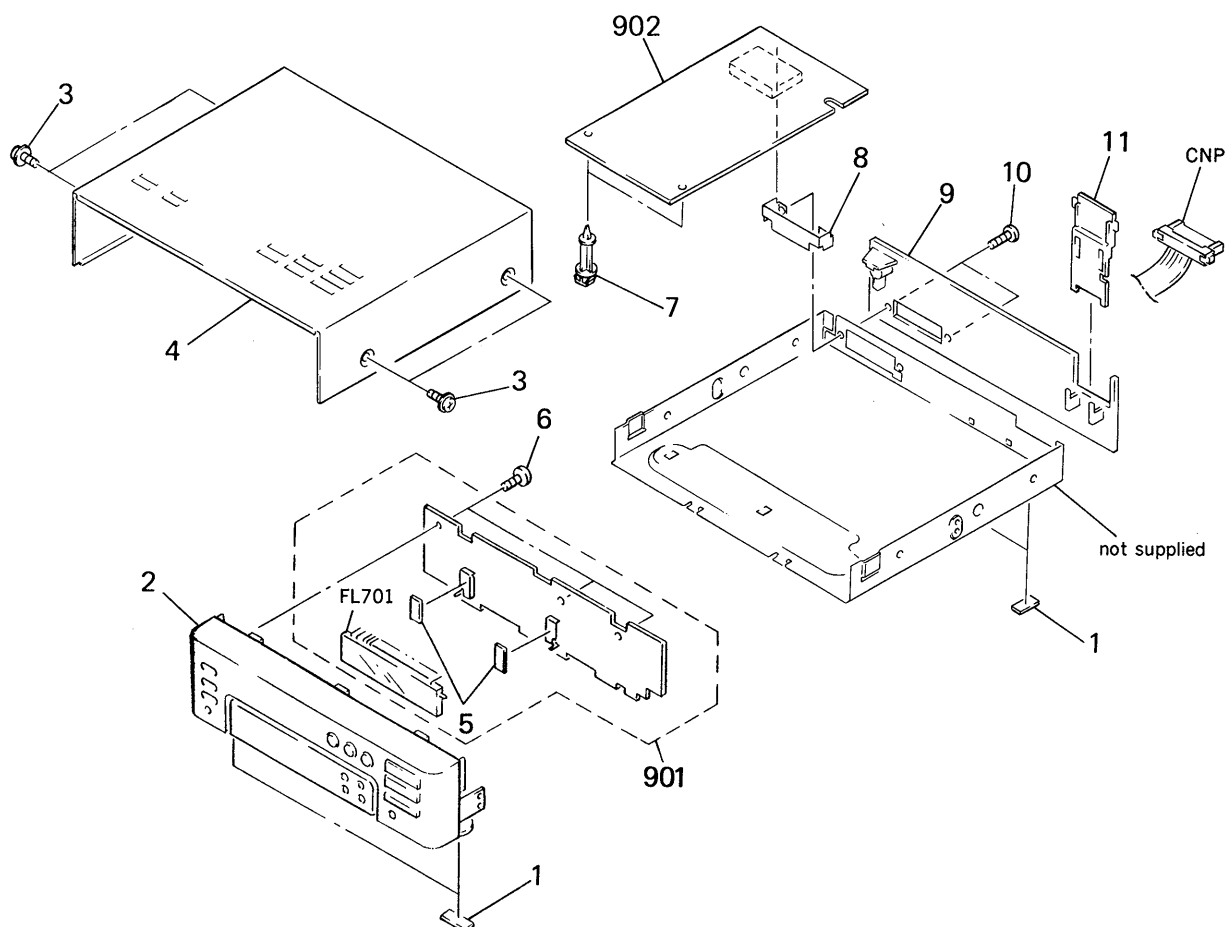
(RED) ... KNOB, BALANCE (WHITE)

↑
Cabinet's Color

↑
Parts' Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

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



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
1	4-930-336-01	FOOT (FELT)		9	*4-930-346-21	PANEL (ST), BACK	
2	X-4930-316-1	PANEL ASSY (EX), FRONT		10	7-685-647-79	SCREW + BVTP 3X10 TYPE2 N-S	
3	3-704-366-01	SCREW (CASE) (M3X8)		11	*4-930-344-01	HOLDER (CONNECTION CORD)	
4	4-932-844-11	CASE		901	*A-4334-655-A	MOUNTED PCB, PANEL	
5	4-932-810-01	CUSHION (FL)		902	*A-4303-186-A	MOUNTED PCB, TUNER (TCB007-2NJ)	
6	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S		CNP	1-575-679-11	CORD (WITH CONNECTOR)	
7	*4-914-008-01	HOLDER, PCB		FL701	1-519-517-11	INDICATOR TUBE, FLUORESCENT	
8	*4-924-988-11	PLATE (ST), GROUND					

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- 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 circuits in 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: μ F, PF: μ PF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

TUNER

Ref.No	Part No.	Description				
CAPACITOR						
C1	1-162-294-31	CERAMIC CHIP	0.001MF	20%	25V	
C2	1-124-477-11	ELECT	47MF	20%	16V	
C3	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C4	1-162-294-31	CERAMIC CHIP	0.001MF	20%	25V	
C5	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C6	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C9	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C10	1-162-516-11	CERAMIC CHIP	100PF	10%	50V	
C21	1-101-006-00	CERAMIC	0.047MF		50V	
C22	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C23	1-124-477-11	ELECT	47MF	20%	16V	
C24	1-123-382-00	ELECT	3.3MF	20%	50V	
C25	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C26	1-163-019-00	CERAMIC CHIP	0.0068MF	20%	16V	
C27	1-162-516-11	CERAMIC CHIP	100PF	10%	50V	
C28	1-124-791-11	ELECT	1.0MF	20%	50V	
C30	1-124-791-11	ELECT	1.0MF	20%	50V	
C31	1-124-902-00	ELECT	0.47MF	20%	50V	
C32	1-124-463-00	ELECT	0.1MF	20%	50V	
C33	1-130-482-00	FILM	0.0082MF	5%	50V	
C34	1-123-382-00	ELECT	3.3MF	20%	50V	
C35	1-130-482-00	FILM	0.0082MF	5%	50V	
C36	1-123-382-00	ELECT	3.3MF	20%	50V	
C37	1-123-875-11	ELECT	10MF	20%	50V	
C39	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C40	1-124-463-00	ELECT	0.1MF	20%	50V	
C41	1-123-875-11	ELECT	10MF	20%	50V	
C42	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C43	1-126-176-11	ELECT	220MF	20%	50V	
C44	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C45	1-123-382-00	ELECT	3.3MF	20%	50V	
C46	1-161-375-00	CERAMIC CHIP	0.0022MF	20%	25V	
C48	1-123-382-00	ELECT	3.3MF	20%	50V	
C49	1-161-375-00	CERAMIC CHIP	0.0022MF	20%	25V	
C51	1-124-477-11	ELECT	47MF	20%	16V	
C61	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C62	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C63	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C64	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C81	1-102-961-00	CERAMIC	27PF	5%	50V	
C82	1-102-961-00	CERAMIC	27PF	5%	50V	
C83	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C84	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C85	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C86	1-124-477-11	ELECT	47MF	20%	16V	
C87	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C88	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C101	1-124-925-11	ELECT	2.2MF	20%	50V	
C102	1-124-463-00	ELECT	0.1MF	20%	50V	
C103	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C104	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C105	1-124-477-11	ELECT	47MF	20%	16V	

Ref.No	Part No.	Description				
CF1	1-567-389-11	FILTER, CERAMIC				
CF2	1-567-389-11	FILTER, CERAMIC				
CF21	1-577-075-11	OSCILLATOR, CERAMIC				
CFT21	1-404-853-11	TRANSFORMER,IF(CERAMIC FILTER)				
CNJ1	*1-568-276-11	SOCKET, CONNECTOR 10P				
CNJ2	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P				
CNJ3	*1-568-419-11	PIN, CONNECTOR 9P				
CNJ4	*1-568-372-11	PIN, CONNECTOR 3P				
FE1	1-463-862-21	FRONT END, FM				
FE61	1-236-461-11	ENCAPSULATED COMPONENT				
IC21	8-759-821-45	IC LA1851N				
IC81	8-759-820-91	IC LC7218				
L1	1-410-645-31	MICRO INDUCTOR 100UH				
L21	1-410-171-11	MICRO INDUCTOR 1MMH				
LPF21	1-235-164-00	FILTER, LOW PASS				
LPF22	1-235-164-00	FILTER, LOW PASS				
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY				
Q2	8-729-230-99	TRANSISTOR 2SC2669-OY				
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q23	8-729-900-61	TRANSISTOR DTA114ES				
Q24	8-729-900-80	TRANSISTOR DTC114ES				
Q26	8-729-900-80	TRANSISTOR DTC114ES				
Q81	8-729-900-61	TRANSISTOR DTA114ES				
Q82	8-729-900-80	TRANSISTOR DTC114ES				
Q83	8-729-202-67	TRANSISTOR 2SK246GR3				
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB				
RESISTOR						
R1	Δ 1-249-401-11	CARBON (SMALL) 47	5%	1/4W		F
R2	1-249-329-11	CARBON MELF 330	5%	1/8W		
R3	1-249-329-11	CARBON MELF 330	5%	1/8W		
R4	1-249-329-11	CARBON MELF 330	5%	1/8W		
R5	1-249-329-11	CARBON MELF 330	5%	1/8W		
R6	1-249-350-11	CARBON MELF 18K	5%	1/8W		
R7	1-249-329-11	CARBON MELF 330	5%	1/8W		
R8	1-249-332-11	CARBON MELF 560	5%	1/8W		
R9	1-249-352-11	CARBON MELF 27K	5%	1/8W		
R21	Δ 1-249-404-00	CARBON (SMALL) 82	5%	1/4W		F
R22	1-249-428-11	CARBON (SMALL) 8.2K	5%	1/4W		
R23	1-249-335-11	CARBON MELF 1K	5%	1/8W		
R24	1-249-353-11	CARBON MELF 33K	5%	1/8W		
R25	1-249-346-11	CARBON MELF 8.2K	5%	1/8W		
R27	1-249-432-11	CARBON (SMALL) 18K	5%	1/4W		
R28	1-249-423-11	CARBON (SMALL) 3.3K	5%	1/4W		
R29	1-249-347-11	CARBON MELF 10K	5%	1/8W		
R31	1-249-331-11	CARBON MELF 470	5%	1/8W		
R32	1-249-347-11	CARBON MELF 10K	5%	1/8W		
R33	1-249-347-11	CARBON MELF 10K	5%	1/8W		
R34	1-249-437-11	CARBON (SMALL) 47K	5%	1/4W		
R35	1-249-355-11	CARBON MELF 47K	5%	1/8W		

Ref.No	Part No.	Description				
R37	1-249-359-11	CARBON MELF	100K	5%	1/8W	
R38	1-249-363-11	CARBON MELF	220K	5%	1/8W	
R39	1-249-339-11	CARBON MELF	2.2K	5%	1/8W	
R40	1-249-338-11	CARBON MELF	1.8K	5%	1/8W	
R41	1-249-344-11	CARBON MELF	5.6K	5%	1/8W	
R42	1-249-359-11	CARBON MELF	100K	5%	1/8W	
R43	1-249-363-11	CARBON MELF	220K	5%	1/8W	
R44	1-249-339-11	CARBON MELF	2.2K	5%	1/8W	
R45	1-249-338-11	CARBON MELF	1.8K	5%	1/8W	
R46	1-249-344-11	CARBON MELF	5.6K	5%	1/8W	
R47	1-249-409-11	CARBON (SMALL) 220	220	5%	1/4W	F
R48	1-249-359-11	CARBON MELF	100K	5%	1/8W	
R49	1-249-359-11	CARBON MELF	100K	5%	1/8W	
R61	1-249-359-11	CARBON MELF	100K	5%	1/8W	
R62	1-249-355-11	CARBON MELF	47K	5%	1/8W	
R63	1-249-315-11	CARBON MELF	22	5%	1/8W	
R81	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R82	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R83	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R84	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R85	1-249-347-11	CARBON MELF	10K	5%	1/8W	
R86	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R87	1-249-347-11	CARBON MELF	10K	5%	1/8W	
R88	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R89	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R90	1-249-347-11	CARBON MELF	10K	5%	1/8W	
R91	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R92	△ 1-249-401-11	CARBON (SMALL) 47	47	5%	1/4W	F
R101	1-249-341-11	CARBON MELF	3.3K	5%	1/8W	
R102	1-249-332-11	CARBON MELF	560	5%	1/8W	
R103	1-249-335-11	CARBON MELF	1K	5%	1/8W	
R104	1-249-328-11	CARBON MELF	270	5%	1/8W	
R105	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R106	1-249-339-11	CARBON MELF	2.2K	5%	1/8W	
R107	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R108	1-249-323-11	CARBON MELF	100	5%	1/8W	
R109	1-249-343-11	CARBON MELF	4.7K	5%	1/8W	
R110	△ 1-249-405-11	CARBON (SMALL) 100	100	5%	1/4W	
CC2	1-249-366-11	CARBON MELF	0	5%	1/5W	
CC3	1-249-366-11	CARBON MELF	0	5%	1/5W	
RV21	1-238-598-11	RES, ADJ, CARBON 2.2K				
RV22	1-238-601-11	RES, ADJ, CARBON 22K				
RV24	1-238-601-11	RES, ADJ, CARBON 22K				
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR				
TM1	1-536-708-00	TERMINAL BOARD, PUSH 4P (ANTENNA)				
TP1	*1-560-060-00	PIN, CONNECTOR 2P				
XT81	1-577-126-11	VIBRATOR, CRYSTAL (2.7MHz)				

Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note:

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

EXCEPT FOR TUNER

Ref.No	Part No.	Description				
901	*A-4334-655-A	MOUNTED PCB, PANEL				
902	*A-4303-186-A	MOUNTED PCB, TUNER (TCB007-2NJ)				
<u>CAPACITOR</u>						
C701	1-125-486-11	DUBLE LAYERS	0.22F			
C702	1-136-173-00	FILM	0.47MF	5%		
C703	1-162-306-11	CERAMIC	0.01MF	20%		
C704	1-126-094-11	ELECT	4.7MF	20%		
C705	1-162-200-31	CERAMIC	11PF	5%		
C706	1-162-200-31	CERAMIC	11PF	5%		
C707	1-136-173-00	FILM	0.47MF	5%		
C708	1-136-173-00	FILM	0.47MF	5%		
C709	1-164-159-11	CERAMIC	0.1MF			
C710	1-164-159-11	CERAMIC	0.1MF			
CB701	1-233-130-11	COMPOSITION CIRCUIT BLOCK				
CB702	1-233-148-11	COMPOSITION CIRCUIT BLOCK				
CB703	1-233-187-11	COMPOSITION CIRCUIT BLOCK				
CB704	1-233-148-11	COMPOSITION CIRCUIT BLOCK				
CN701	*1-568-279-11	SOCKET, CONNECTOR 4P				
CN702	*1-568-281-11	SOCKET, CONNECTOR 6P				
CN703	*1-568-281-11	SOCKET, CONNECTOR 6P				
CNP	1-575-679-11	CORD (WITH CONNECTOR)				
D708	8-719-912-20	DIODE 1SS120				
D709	8-719-912-20	DIODE 1SS120				
D710	8-719-912-20	DIODE 1SS120				
D712	8-719-912-20	DIODE 1SS120				
D713	8-719-912-20	DIODE 1SS120				
D714	8-719-912-20	DIODE 1SS120				
D715	8-719-912-20	DIODE 1SS120				
D716	8-719-912-20	DIODE 1SS120				
D717	8-719-912-20	DIODE 1SS120				
D718	8-719-912-20	DIODE 1SS120				
D719	8-719-912-20	DIODE 1SS120				
D720	8-719-912-20	DIODE 1SS120				
D721	8-719-912-20	DIODE 1SS120				
D722	8-719-912-20	DIODE 1SS120				
D723	8-719-912-20	DIODE 1SS120				
D724	8-719-912-20	DIODE 1SS120				
FL701	1-519-517-11	INDICATOR TUBE, FLUORESCENT				
IC701	8-759-239-79	IC TMP47C670N-1204				
IC702	8-749-920-59	IC A1QH3020S				
L701	1-410-521-11	INDUCTOR	100UH			
L702	1-410-521-11	INDUCTOR	100UH			
L703	1-408-080-00	INDUCTOR	100UH			
L704	1-408-080-00	INDUCTOR	100UH			
Q701	8-729-900-89	TRANSISTOR DTC144ES				
Q702	8-729-900-89	TRANSISTOR DTC144ES				
Q703	8-729-900-80	TRANSISTOR DTC114ES				
<u>RESISTOR</u>						
R701	1-249-405-11	CARBON	100	5%	1/4W	

Ref.No	Part No.	Description				
R702	1-249-438-11	CARBON	56K	5%	1/4W	
R703	1-249-435-11	CARBON	33K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-249-433-11	CARBON	22K	5%	1/4W	
R706	1-249-438-11	CARBON	56K	5%	1/4W	
R707	1-249-435-11	CARBON	33K	5%	1/4W	
R708	1-249-441-11	CARBON	100K	5%	1/4W	
R709	1-249-429-11	CARBON	10K	5%	1/4W	
R710	1-249-429-11	CARBON	10K	5%	1/4W	
R711	1-249-429-11	CARBON	10K	5%	1/4W	
R712	1-249-429-11	CARBON	10K	5%	1/4W	
R713	1-249-429-11	CARBON	10K	5%	1/4W	
R714	1-249-429-11	CARBON	10K	5%	1/4W	
R715	1-249-429-11	CARBON	10K	5%	1/4W	
R716	1-249-429-11	CARBON	10K	5%	1/4W	
R717	1-249-423-11	CARBON	3.3K	5%	1/4W	
R718	1-249-429-11	CARBON	10K	5%	1/4W	
R719	1-249-429-11	CARBON	10K	5%	1/4W	
R720	1-249-429-11	CARBON	10K	5%	1/4W	
R721	1-249-411-11	CARBON	330	5%	1/4W	
R722	1-249-441-11	CARBON	100K	5%	1/4W	
R723	1-249-441-11	CARBON	100K	5%	1/4W	
R724	1-249-441-11	CARBON	100K	5%	1/4W	
R725	1-249-441-11	CARBON	100K	5%	1/4W	
R726	1-249-441-11	CARBON	100K	5%	1/4W	
R727	1-249-421-11	CARBON	2.2K	5%	1/4W	
RB701	1-233-125-11	COMPOSITION CIRCUIT BLOCK				
S708	1-554-596-21	SWITCH, KEY BOARD (PRESET TIME -)				
S709	1-554-596-21	SWITCH, KEY BOARD (PRESET TIME +)				
S710	1-554-596-21	SWITCH, KEY BOARD (ENTER NEXT)				
S711	1-554-596-21	SWITCH, KEY BOARD (STEREO/MUTING)				
S713	1-554-596-21	SWITCH, KEY BOARD (MEMORY)				
S714	1-554-596-21	SWITCH, KEY BOARD (SHIFT)				
S715	1-554-596-21	SWITCH, KEY BOARD (BAND)				
S717	1-554-596-21	SWITCH, KEY BOARD (TIME/FREQUENCY)				
S718	1-554-596-21	SWITCH, KEY BOARD (TUNING +)				
S719	1-554-596-21	SWITCH, KEY BOARD (TUNING -)				
S720	1-554-596-21	SWITCH, KEY BOARD (CLOCK)				
S721	1-554-596-21	SWITCH, KEY BOARD (TIMER CONTROL)				
S722	1-554-596-21	SWITCH, KEY BOARD (TIMER SET)				
S723	1-554-596-21	SWITCH, KEY BOARD (SLEEP)				
S724	1-554-596-21	SWITCH, KEY BOARD (AUTO/MANUAL)				
X701	1-567-821-21	VIBRATOR, CRYSTAL (4.19MHz)				