

ST-S170

SERVICE MANUAL

Canadian Model
E Model



SPECIFICATIONS

Tuner

Circuit system FM stereo, FM/AM superheterodyne tuner
Quartz-locked PLL digital synthesizer system

FM tuner

Frequency range 87.5–108 MHz
Antenna terminals 75 ohms unbalanced
300 ohms balanced
Intermediate frequency 10.7 MHz
Sensitivity (at 46 dB quieting)
18.0 dBf, 4.4 μ V (mono)
40.0 dBf, 49 μ V (stereo)
Sensitivity (at 50 dB quieting)
22.1 dBf, 7 μ V (mono)
42.1 dBf, 70 μ V (stereo)
Usable sensitivity (IHF)
19.5 dBf (5 μ V)
Signal-to-noise ratio (at 40 kHz deviation)
74 dB (mono)
69 dB (stereo)
Signal-to-noise ratio (at 75 kHz deviation)
80 dB (mono)
75 dB (stereo)
Harmonic distortion
0.3% (mono), 0.5% (stereo) (at 1 kHz)
Separation 40 dB (at 1 kHz)
Frequency response 30 Hz–15 kHz ± 0.5 dB
Selectivity 65 dB (at 400 kHz)
Capture ratio 1.0 dB
AM suppression ratio 65 dB
Image response ratio 70 dB
IF response ratio 70 dB
Spurious response ratio 80 dB
Muting threshold 30 dBf
Automatic tuning threshold 30 dBf
Output 775 mV, 4.7 kohms (at 75 kHz deviation)

AM tuner

Frequency range Canadian model:
AM: 530–1,710 kHz at 10 kHz step
(531–1,710 kHz at 9 kHz step)
E model :
AM: 531–1,602 kHz at 9 kHz step
(530–1,710 kHz at 10 kHz step)
Antenna AM loop antenna
External antenna terminal
Intermediate frequency 450 kHz
Usable sensitivity (with AM loop antenna)
300 μ V/m (999 kHz)
1 mV/m (216 kHz)
Signal-to-noise ratio
54 dB (50 mV/m) (999 kHz)
50 dB (50 mV/m) (216 kHz)
Harmonic distortion 0.5% (50 mV/m, 400 Hz)
Selectivity 32 dB

General

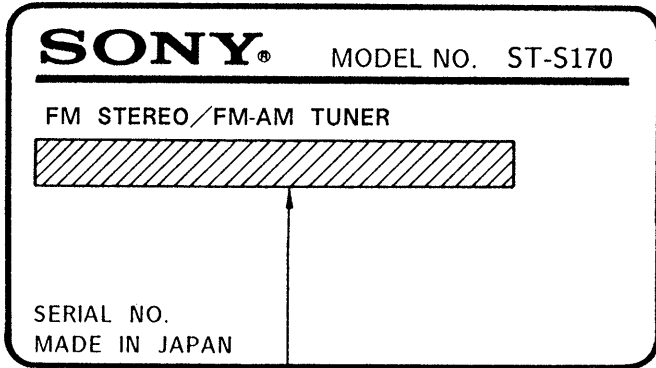
Power requirements
Canadian model: 120 V AC, 60 Hz
E model : 110–120 V or 220–240 V AC
adjustable, 50/60 Hz
Power consumption 10 W
Dimensions Approx. 430 × 85 × 295 mm (w/h/d)
(17 × 3 $\frac{3}{8}$ × 11 $\frac{3}{8}$ inches)
Weight Approx. 2.8 kg (6 lb 3 oz)
Accessories supplied
Remote control cord (1)
Connecting cord (1)
FM antenna (1)
AM loop antenna (1)

Design and specifications subject to change without notice.

FM STEREO / FM-AM TUNER
SONY®

MODEL IDENTIFICATION

-Specification Label-



Canadian Model : AC : 120V 60Hz 10W

E Model : AC : 110-120V/220-240V
50/60Hz 10W

On safety

- Before connecting the unit to the power source, check that the operating voltage of your unit is the same as the local power line voltage

Where purchased	Operating voltage
Canada	120 V AC, 60 Hz
E Model	110-120 or 220-240 V AC, 50/60 Hz (Adjustable using the voltage selector at the rear)

VOLTAGE SELECTOR
110-120V 220-240V

- Should any solid object or liquid fall into the unit, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Do not pull the cord itself.
- AC power cord must be changed only at the qualified service shop.

SAFETY-RELATED COMPONENT WARNING!!

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

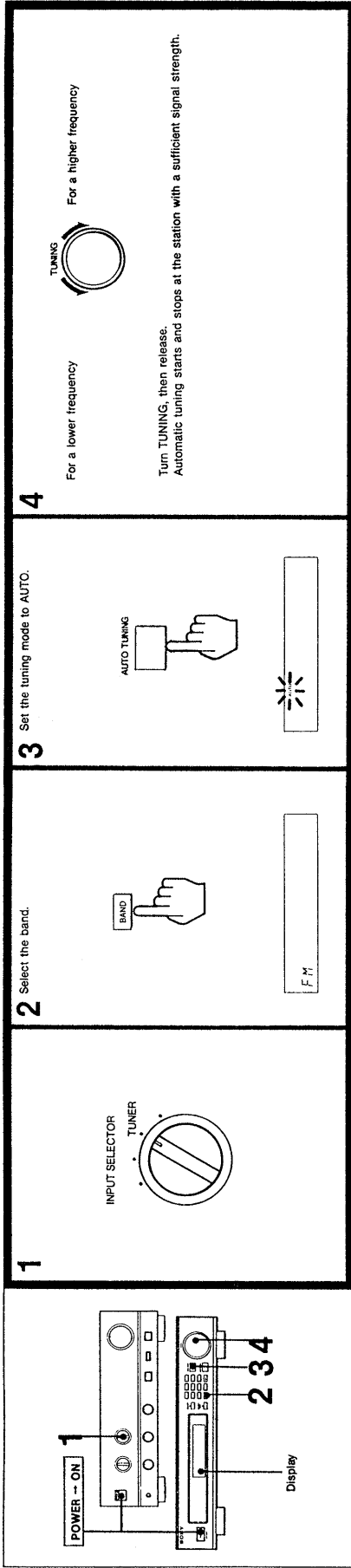
ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!

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

Receiving Broadcasts

Tuning in Automatically

Before reception, be sure to connect the AM and FM antenna.



To receive other stations
When the received station is not the one you want, turn TUNING again.

Indications in the display window

- The STEREO indication appears when an FM stereo program of sufficient signal strength is received.
- The SIGNAL meter indicates the signal strength of a station tuned in.

To change the AM tuning interval (except European and U.K. models)
The AM tuning interval is preset at the factory to 9 kHz or 10 kHz.
To use the unit where the frequency allocation system is based on the other interval, make the following adjustments.

- 1 Turn on the power and tune in any AM station.
- 2 Turn off the power.
- 3 Press POWER while pressing the "0"PRESET button to set to 10 kHz.
(To set to 9 kHz, press "9" instead.)

When the interval is changed, all preset stations which you have memorized will be erased. After changing the interval, be sure to preset the stations again.

SECTION 2 ELECTRICAL ADJUSTMENTS

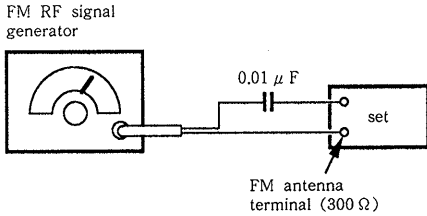
2-1. FM SECTION

FM NULL Adjustment

Setting :

BAND switch : FM

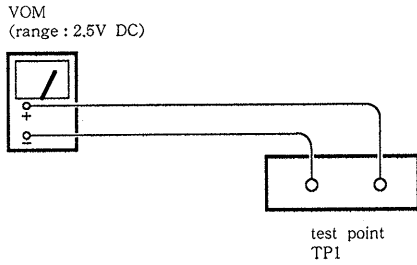
Procedure :



Carrier frequency : 98MHz
Output level : 1mV (60dB)
Modulation : 1kHz, 75kHz deviation (100%)

1. Tune the set to 98MHz.
2. Adjust T21 for a 0V reading on the VOM.

Note : When the ceramic filter is replaced, these adjustments should be made,

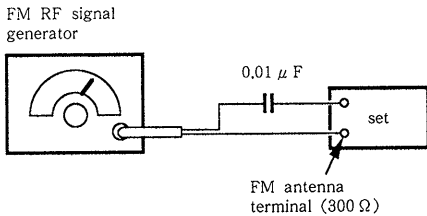


STEREO Indication Lighting Level Adjustment

Setting :

STEREO/MUTE switch : OFF
BAND switch : FM

Procedure :



Carrier frequency : 98MHz
Output level : 17.9 μV (25dB)
Mode : Stereo
Modulation :
Audio (1kHz) : 33.75kHz deviation (45%)
Pilot (19kHz) : 7.5kHz deviation (10%)
Sub-channel (38kHz) : 33.75kHz deviation (45%)

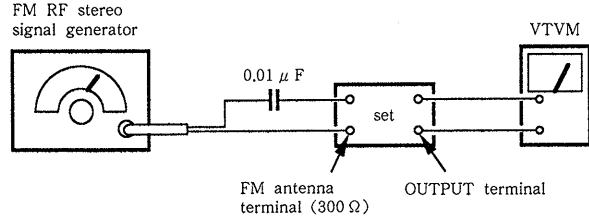
1. Tune the set to 98MHz.
2. Adjust RV24 so that the STEREO indicator goes on.

FM Stereo Separation Adjustment

Setting :

STEREO/MUTE switch : ON (STEREO)
BAND switch : FM

Procedure :



Carrier frequency : 98MHz
Output level : 1mV (60dB)
Mode : Stereo
Modulation :
Audio (1kHz) : 33.75kHz deviation (45%)
Pilot (19kHz) : 7.5kHz deviation (10%)
Sub-channel (38kHz) : 33.75kHz deviation (45%)

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.

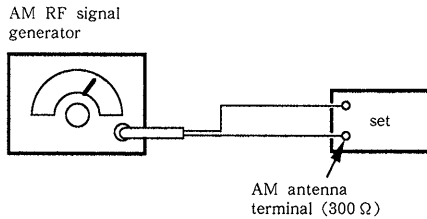
2.2. AM SECTION

SIGNAL LEVEL METER Lighting Level Adjustment

Setting :

BAND switch : AM (Canadian, E model)

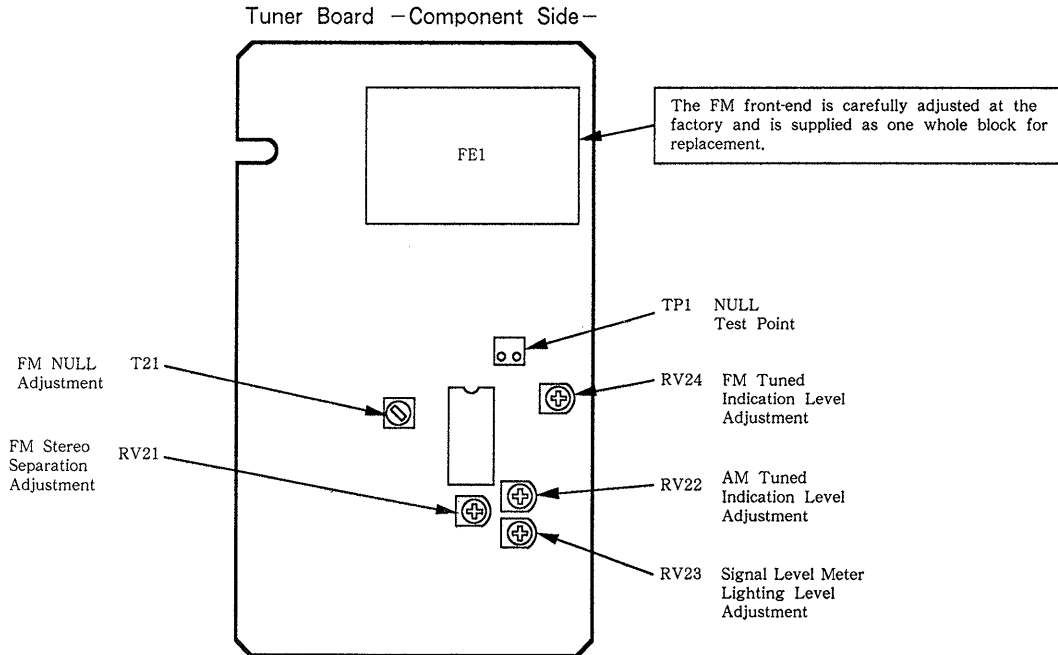
Procedure :



Carrier frequency : 999kHz
 Output level : 94dB μ /m
 Modulation : 400Hz, 30% modulation

1. Tune the set to 999kHz.
2. Adjust RV23 until the scale-5 on SIGNAL METER indicator lights up.

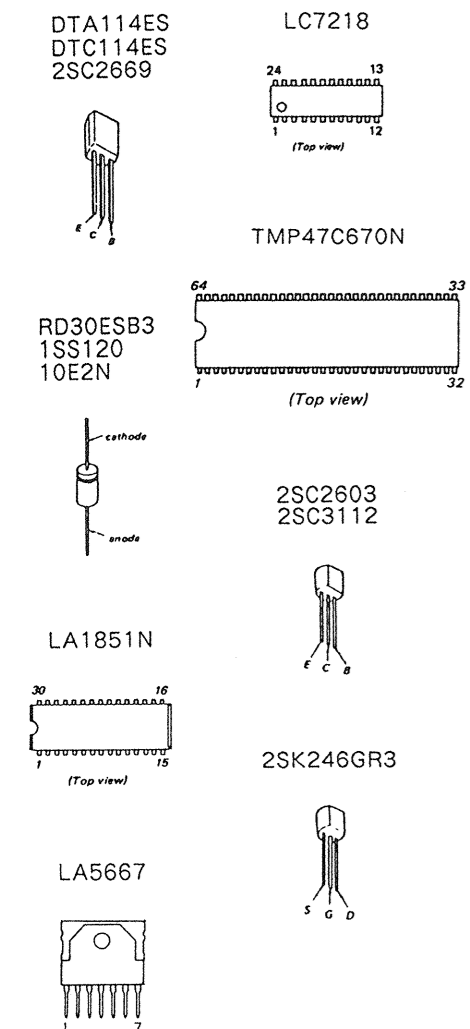
2.3. ADJUSTING PARTS LOCATION



SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

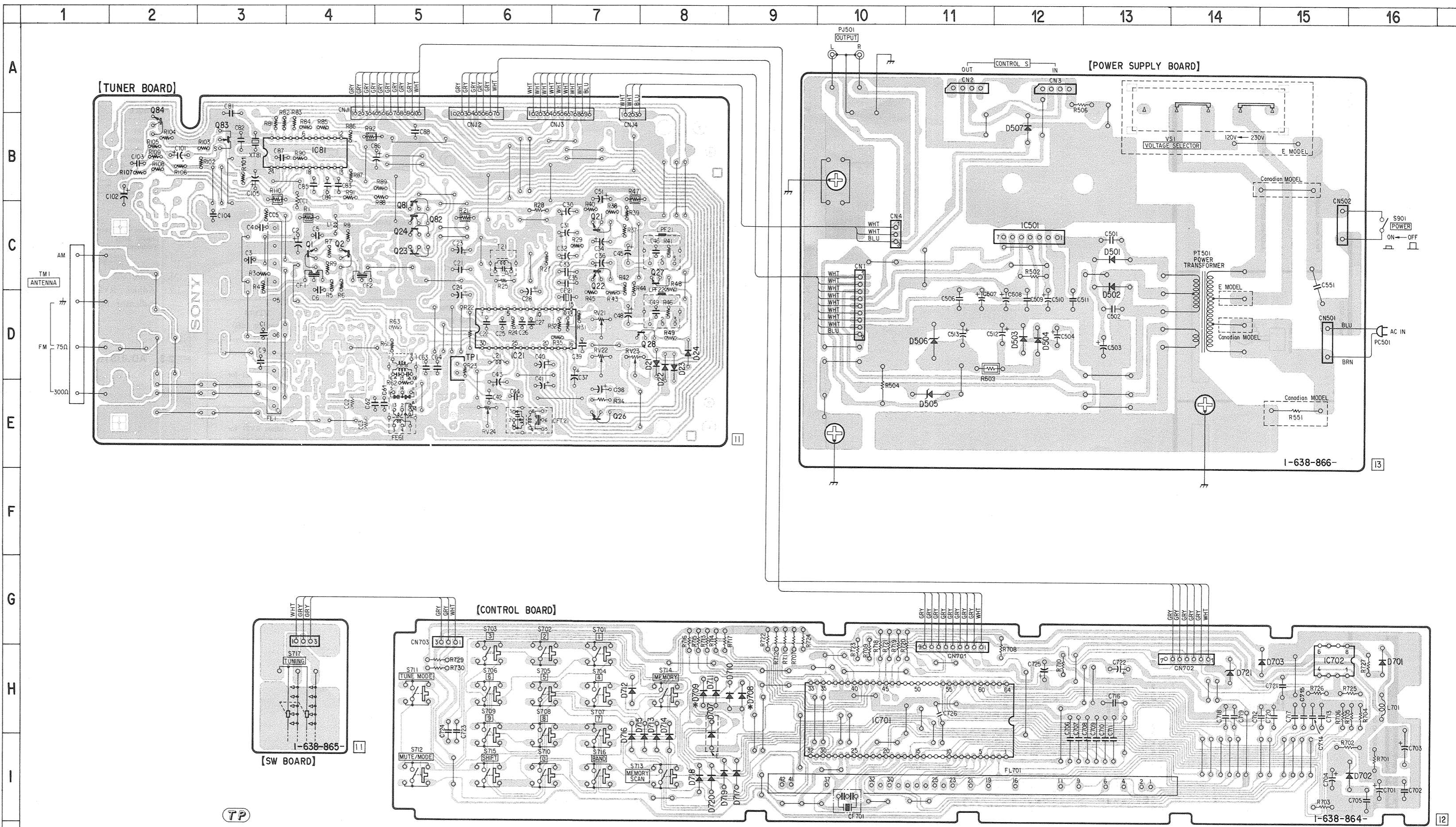
• SEMICONDUCTOR LOCATION



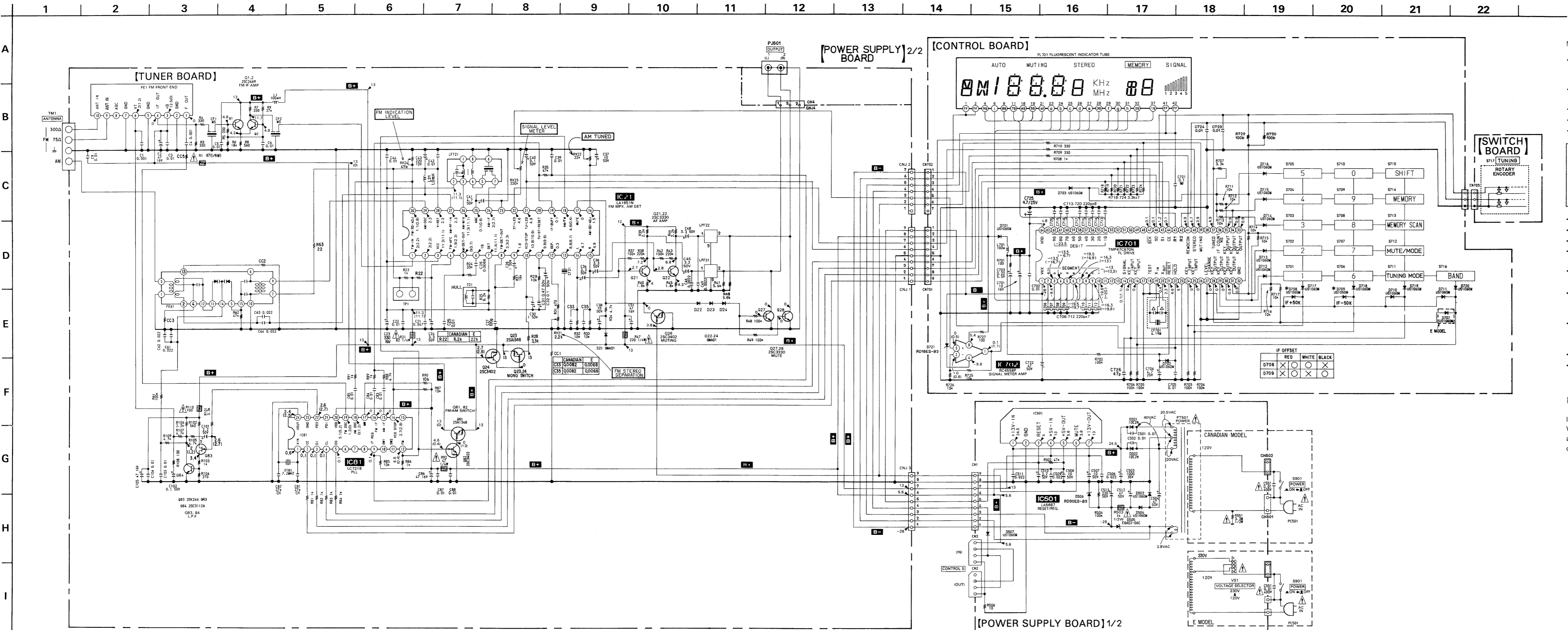
Ref. No.	Location
D21	D-8
D22	D-8
D23	D-8
D24	D-8
D501	C-13
D502	C-13
D503	D-12
D504	D-12
D505	E-11
D506	D-11
D507	B-12
D701	H-16
D702	I-16
D703	H-15
D707 (E)	H-8
D708	H-9
D709	H-8
D710	H-9
D711	H-8
D712	H-7
D713	I-8
D714	I-8
D715	I-8
D716	I-7
D717	I-9
D718	I-8
D719	I-8
D720	I-8
D721	H-14
IC21	D-6
IC501	C-12
IC701	H-10
IC702	H-15
IC81	B-4
Q1	C-4
Q2	C-4
Q21	C-7
Q22	C-7
Q23	C-5
Q24	C-5
Q26	E-7
Q27	C-8
Q28	D-8
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.

3-2. PRINTED WIRING BOARDS



3-3. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted.
- pF : μF 50WV or less are not indicated except for electrolytics
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- Δ : internal component.
- \square : nonflammable resistor.
- $\text{---}/\text{---}$: fusible resistor.

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

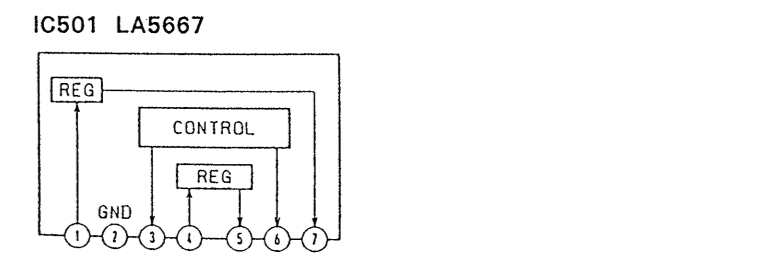
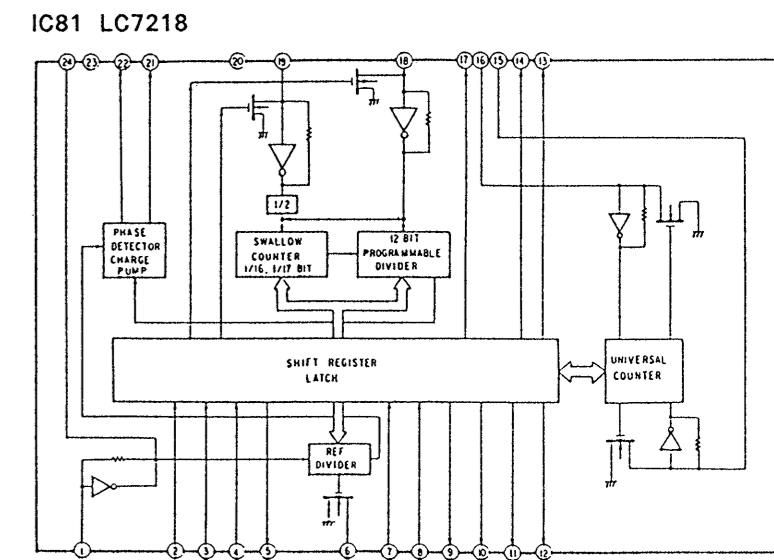
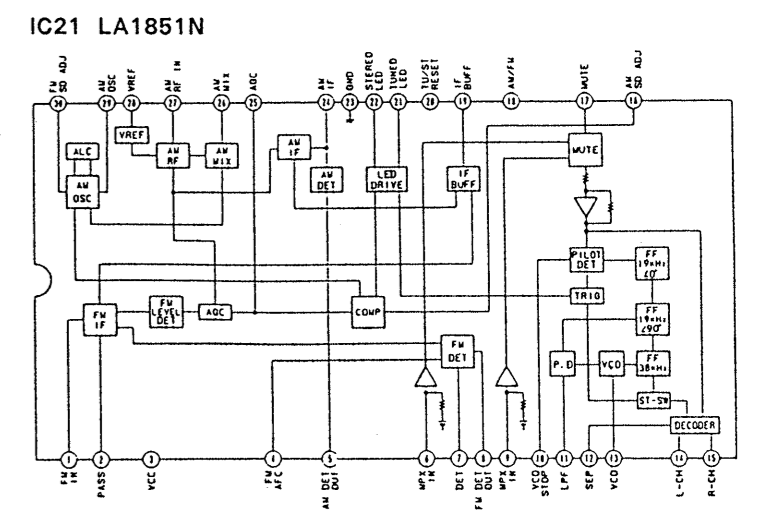
Note: Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+**: B+ Line
- B-**: B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- () : AM
- Voltagés are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \Rightarrow : FM

[Service Note]

INDICATOR TUBE ALL LIGHT-UP MODE
When turning POWER switch on while pressing PRESET 1 and AUTO TUNING KEYS simultaneously, all the segments of FL701 will light.

• IC BLOCK DIAGRAMS



● **IC701 SYSTEM CONTROLLER (TMP47C670N-1247)**

TMP47C670N-1247 contains the following function 4 bit signal chip microprocessor.

- FL tube drive circuit
- 4 bit A/D conversion input
- 14 bit A/D conversion output

Pin No.	Pin Name	I/ O	Description
1	VKK	—	Power supply for FL tube drive. (Built-in)
2 - 10	a - i	O	FL tube segment output.
11	—	O	FL tube segment output. (Not used)
12, 13	—	—	Not used.
14	SIGNAL	I	Signal meter input.
15, 16	KEY INPUT	I	Key scan input.
17	—	I	Key scan input. (Not used)
18	TEST	I	Test terminal. (GND)
19	XIN	I	} X'tal oscillator.
20	XOUT	O	
21	RESET	I	Reset signal input.
22	HOLD	I	Hold request/reject signal input.
23	—	—	Not used. (GND)
24, 25	KEY INPUT	I	Key scan input.
26	—	—	Not used. (Ground)
27	LEVEL CHANGE	I	Input for signal meter level selector.
28 - 31	KEY OUTPUT	O	Key scan output.
32	Vss	—	Ground.
33 - 35	KEY OUTPUT	O	Key scan output.
36	IF COUNT		Not used. (Open)
37	TUNED	I	Auto stop level input.
38	—	—	Not used. (Ground)
39	MUTING	O	Muting output.
40	STEREO	I	stereo indicator input.
41	REMOCON	I	Remote control input.
42, 43	R2, R1	I	Rotary encoder input.
44	CE	O	Chip enable output.
45	SI	I	Serial data input.
46	SO	O	serial data output.
47	SCK	O	serial data transfer clock output.
48 - 53	—	—	Not used. (Open)
54 - 62	1G - 9G	O	digit output for FL tube.
63	—	—	Not used. (Open)
64	VDD	—	Power supply voltage. (+5V)

SECTION 4 EXPLODED VIEWS

NOTE:

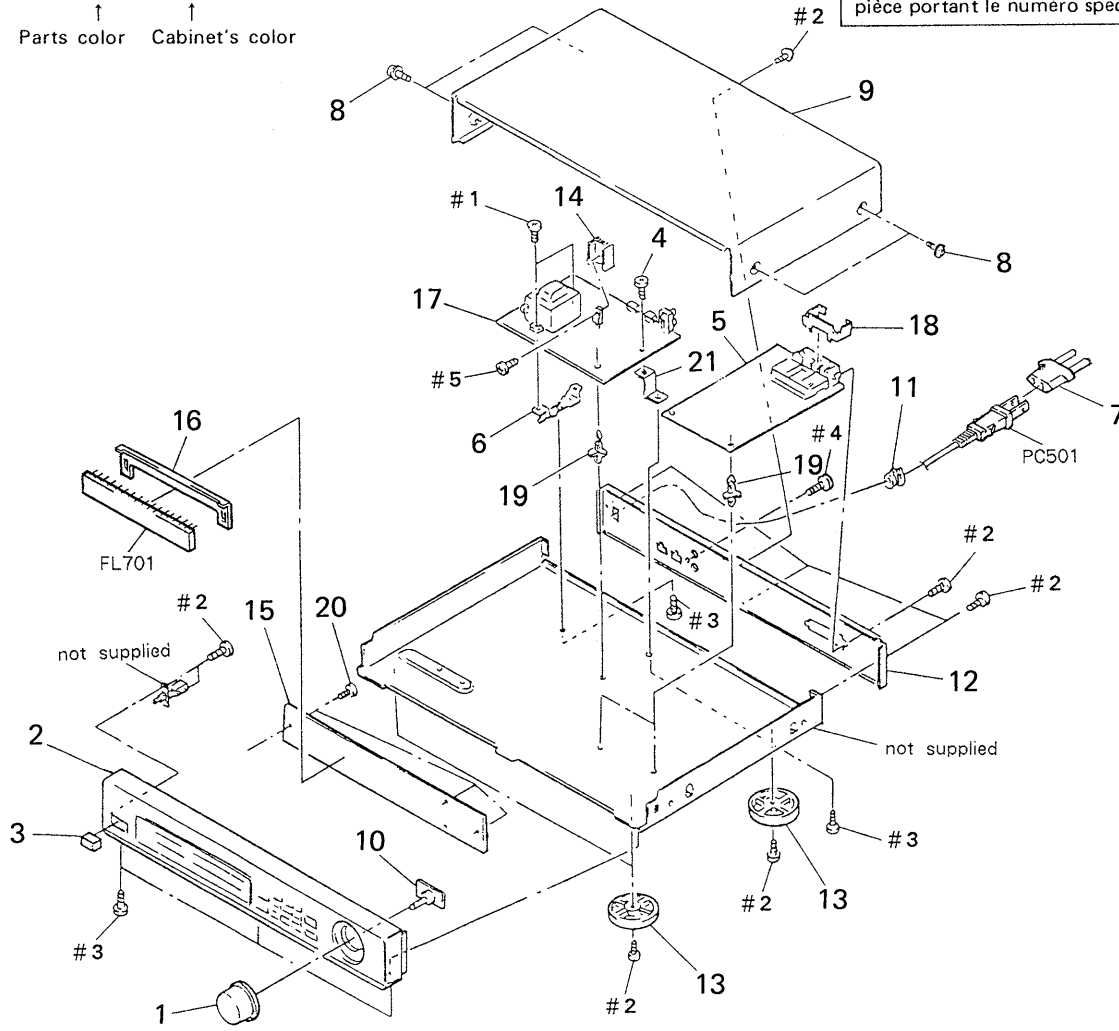
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)

↑ ↑
Parts color Cabinet's color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.

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	Remark
1	4-944-125-01	KNOB (DIA. 44)	
2	A-4323-929-A	PANEL ASSY, FRONT	
3	3-354-912-01	KNOB, POWER	
4	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
5	* A-4345-365-A	TUNER BOARD, COMPLETE (E)	
5	* A-4345-659-A	TUNER BOARD, COMPLETE (Canadian)	
6	* 4-917-044-01	BRACKET (PT)	
7	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
8	3-704-366-01	SCREW (CASE) (M3X8)	
9	4-923-457-01	CASE	
10	* 1-638-865-11	SWITCH BOARD	
11	* 3-703-244-00	BUSHING (2104), CORD (Canadian)	
11	3-703-571-00	BUSHING (S) (4516), CORD (E)	
12	* 4-944-121-51	PANEL, BACK (E)	
12	* 4-944-121-71	PANEL, BACK (Canadian)	

Ref. No.	Part No.	Description	Remark
13	X-3304-938-2	FOOT ASSY	
14	* 4-363-146-31	HEAT SINK, V. OUT	
15	* A-4341-897-A	CONTROL BOARD, COMPLETE (E)	
15	* A-4345-657-A	CONTROL BOARD, COMPLETE (Canadian)	
16	* 4-925-125-01	HOLDER, FL TUBE	
17	* A-4345-658-A	POWER BOARD, COMPLETE (Canadian)	
17	* 1-638-866-11	POWER BOARD	
18	* 3-346-265-11	HOLDER, PC BOARD	
19	* 3-346-265-11	HOLDER, PC BOARD	
20	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
21	* 3-332-563-01	BRACKET (P)	
FL701	1-519-513-11	INDICATOR TUBE, FLUORESCENT	
PC501	1-575-653-11	CORD, POWER (E)	
PC501	1-575-975-11	CORD, POWER (Canadian)	

SECTION 5 ELECTRICAL PARTS LIST

CONTROL

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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA.....: μ A....., uPA.....: μ PA.....
uPB.....: μ PB....., uPC.....: μ PC.....
uPD.....: μ PD.....
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark
	A-4345-657-A	CONTROL BOARD, COMPLETE (Canadian)					< FILTER >	

	A-4341-897-A	CONTROL BOARD, COMPLETE (E)			CF701	1-577-359-21	VIBRATOR, CERAMIC 4.19M	
		*****					< DIODE >	
	* 4-925-125-01	HOLDER, FL TUBE			D701	8-719-912-20	DIODE 1SS120	
		< CAPACITOR >			D702	8-719-912-20	DIODE 1SS120	
C701	1-126-157-11	ELECT	10uF	20%	16V	D703	8-719-912-20	DIODE 1SS120
C702	1-161-379-00	CERAMIC	0.01uF	20%	25V	D707	8-719-912-20	DIODE 1SS120 (E)
C703	1-125-486-11	DUBLE LAYERS	0.22F		5.5V	D708	8-719-912-20	DIODE 1SS120
C704	1-126-163-11	ELECT	4.7uF	20%	50V	D709	8-719-912-20	DIODE 1SS120
C705	1-161-379-00	CERAMIC	0.01uF	20%	25V	D710	8-719-912-20	DIODE 1SS120
C706	1-162-286-31	CERAMIC	220PF	10%	50V	D711	8-719-912-20	DIODE 1SS120
C707	1-162-286-31	CERAMIC	220PF	10%	50V	D712	8-719-912-20	DIODE 1SS120
C708	1-162-286-31	CERAMIC	220PF	10%	50V	D713	8-719-912-20	DIODE 1SS120
C709	1-162-286-31	CERAMIC	220PF	10%	50V	D714	8-719-912-20	DIODE 1SS120
C710	1-162-286-31	CERAMIC	220PF	10%	50V	D715	8-719-912-20	DIODE 1SS120
C711	1-162-286-31	CERAMIC	220PF	10%	50V	D716	8-719-912-20	DIODE 1SS120
C712	1-162-286-31	CERAMIC	220PF	10%	50V	D717	8-719-912-20	DIODE 1SS120
C713	1-162-286-31	CERAMIC	220PF	10%	50V	D718	8-719-912-20	DIODE 1SS120
C714	1-162-286-31	CERAMIC	220PF	10%	50V	D719	8-719-912-20	DIODE 1SS120
C715	1-162-286-31	CERAMIC	220PF	10%	50V	D720	8-719-912-20	DIODE 1SS120
C716	1-162-286-31	CERAMIC	220PF	10%	50V	D721	8-719-110-49	DIODE RD18ES-B2
C717	1-162-286-31	CERAMIC	220PF	10%	50V		< INDICATOR TUBE >	
C718	1-162-286-31	CERAMIC	220PF	10%	50V	FL701	1-519-513-11	INDICATOR TUBE, FLUORESCENT
C719	1-162-286-31	CERAMIC	220PF	10%	50V		< IC >	
C720	1-162-286-31	CERAMIC	220PF	10%	50V	IC701	8-759-246-23	IC TMP47C670N-1247
C721	1-136-165-00	FILM	0.1uF	5%	50V	IC702	8-759-945-58	IC RC4558P
C722	1-124-910-11	ELECT	47uF	20%	50V		< COIL >	
C723	1-161-379-00	CERAMIC	0.01uF	20%	25V	L701	1-410-521-11	INDUCTOR 100uH
C724	1-161-379-00	CERAMIC	0.01uF	20%	25V			
C725	1-123-616-91	ELECT	4.7uF	20%	25V			
C726	1-101-881-61	CERAMIC	47PF	10%	50V			

CONTROL

POWER

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R701	1-249-405-11	CARBON 100 5% 1/4W	
R702	1-249-441-11	CARBON 100K 5% 1/4W	
R703	1-249-441-11	CARBON 100K 5% 1/4W	
R704	1-249-441-11	CARBON 100K 5% 1/4W	
R705	1-249-441-11	CARBON 100K 5% 1/4W	
R706	1-249-441-11	CARBON 100K 5% 1/4W	
R707	1-249-423-11	CARBON 3.3K 5% 1/4W	
R708	1-249-417-11	CARBON 1K 5% 1/4W	
R709	1-249-411-11	CARBON 330 5% 1/4W	
R710	1-249-411-11	CARBON 330 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	1-249-429-11	CARBON 10K 5% 1/4W	
R718	1-249-423-11	CARBON 3.3K 5% 1/4W	
R719	1-249-423-11	CARBON 3.3K 5% 1/4W	
R720	1-249-423-11	CARBON 3.3K 5% 1/4W	
R721	1-249-423-11	CARBON 3.3K 5% 1/4W	
R722	1-249-423-11	CARBON 3.3K 5% 1/4W	
R723	1-249-423-11	CARBON 3.3K 5% 1/4W	
R724	1-249-423-11	CARBON 3.3K 5% 1/4W	
R725	1-249-429-11	CARBON 10K 5% 1/4W	
R726	1-249-429-11	CARBON 10K 5% 1/4W	
R727	1-249-405-11	CARBON 100 5% 1/4W	
R729	1-249-441-11	CARBON 100K 5% 1/4W	
R730	1-249-441-11	CARBON 100K 5% 1/4W	
< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (1)	
S702	1-554-303-21	SWITCH, TACTILE (2)	
S703	1-554-303-21	SWITCH, TACTILE (3)	
S704	1-554-303-21	SWITCH, TACTILE (4)	
S705	1-554-303-21	SWITCH, TACTILE (5)	
S706	1-554-303-21	SWITCH, TACTILE (6)	
S707	1-554-303-21	SWITCH, TACTILE (7)	
S708	1-554-303-21	SWITCH, TACTILE (8)	
S709	1-554-303-21	SWITCH, TACTILE (9)	
S710	1-554-303-21	SWITCH, TACTILE (0)	
S711	1-554-303-21	SWITCH, TACTILE (TUNE MODE)	
S712	1-554-303-21	SWITCH, TACTILE (MUTE/MODE)	
S713	1-554-303-21	SWITCH, TACTILE (MEMORY SCAN)	
S714	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S715	1-554-303-21	SWITCH, TACTILE (SHIFT)	
S716	1-554-303-21	SWITCH, TACTILE (BAND)	

Ref. No.	Part No.	Description	Remark
* 1-638-865-11 SWITCH BOARD *****			
< SWITCH >			
S717	1-466-513-11	ENCODER, ROTARY (TUNING)	

* 1-638-866-11 POWER BOARD *****			
* 4-363-146-31 HEAT SINK, V. OUT 7-685-646-79 SCREW +BVTP 3X8 TYPE2			
< CAPACITOR >			
C501	1-101-004-00	CERAMIC 0.01uF	50V
C502	1-101-004-00	CERAMIC 0.01uF	50V
C503	1-126-105-11	ELECT 1000uF	20% 35V
C504	1-124-910-11	ELECT 47uF	20% 50V
C506	1-101-005-00	CERAMIC 22000PF	50V
C507	1-124-907-11	ELECT 10uF	20% 50V
C508	1-124-907-11	ELECT 10uF	20% 50V
C509	1-101-005-00	CERAMIC 22000PF	50V
C510	1-124-925-11	ELECT 2.2uF	20% 100V
C511	1-101-005-00	CERAMIC 22000PF	50V
C512	1-124-910-11	ELECT 47uF	20% 50V
C513	1-124-911-11	ELECT 220uF	20% 50V
C551	1-161-744-00	CERAMIC 0.01uF	400V
< CONNECTOR >			
CN1	* 1-568-284-11	SOCKET, CONNECTOR 9P	
CN2	1-564-980-11	PIN, CONNECTOR 4P (CONTROL S OUT)	
CN3	1-564-980-11	PIN, CONNECTOR 4P	
CN4	1-568-278-11	SOCKET, CONNECTOR 3P	
CN501	* 1-564-321-00	PIN, CONNECTOR 2P	
CN502	1-580-628-21	PIN, CONNECTOR 2P (Canadian)	
CN502	* 1-564-321-21	PIN, CONNECTOR 2P (E)	
< DIODE >			
D501	8-719-200-77	DIODE 10E2N	
D502	8-719-200-77	DIODE 10E2N	
D503	8-719-912-20	DIODE 1SS120	
D504	8-719-912-20	DIODE 1SS120	
D505	8-719-912-81	DIODE EQA02-06B	
D506	8-719-110-73	DIODE RD30ES-B3	
D507	8-719-912-20	DIODE 1SS120	

POWER

TUNER

Ref. No.	Part No.	Description	Remark
		< IC >	
IC501	8-759-820-09	IC LA5667	
		< JACK >	
PJ501	1-565-352-11	JACK, PIN 2P (OUTPUT)	
		< TRANSFORMER >	
PT501	△ 1-449-402-11	TRANSFORMER, POWER (Canadian)	
PT501	△ 1-449-401-11	TRANSFORMER, POWER (E)	
		< RESISTOR >	
R502	1-249-437-11	CARBON 47K 5% 1/4W	
R503	△ 1-247-752-11	CARBON 1K 5% 1/2W F	
R504	1-249-441-11	CARBON 100K 5% 1/4W	
R506	1-249-393-11	CARBON 10 5% 1/4W	
R551	1-202-725-00	SOLID 3.3M 10% 1/2W (Canadian)	
		< VOLTAGE SWITCH >	
VS1	△ 1-571-722-11	SWITCH, VOLTAGE SELECTION (E)	

		* A-4345-659-A TUNER BOARD, COMPLETE (Canadian)	

		* A-4345-365-A TUNER BOARD, COMPLETE (E)	

		* 4-924-988-11 PLATE (ST), GROUND	
		< CAPACITOR >	
C1	1-162-294-31	CERAMIC CHIP 0.001MF 20% 16V	
C2	1-124-477-11	ELECT 47uF 20% 25V	
C3	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C4	1-162-294-31	CERAMIC CHIP 0.001MF 20% 16V	
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	
C21	1-101-006-00	CERAMIC 0.047uF 50V	
C22	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C23	1-124-119-00	ELECT 330uF 20% 16V	
C24	1-123-382-00	ELECT 3.3uF 20% 100V	
C25	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C26	1-162-527-11	CERAMIC CHIP 0.0068MF 20% 12V	
C27	1-162-516-11	CERAMIC CHIP 100PF 10% 50V	
C28	1-124-903-11	CAP, ELECT 1.0MF	
C30	1-124-903-11	CAP, ELECT 1.0MF	
C31	1-124-902-00	ELECT 0.47uF 20% 50V	
C32	1-124-463-00	ELECT 0.1uF 20% 50V	

Ref. No.	Part No.	Description	Remark
C33	1-130-481-00	MYLAR 0.0068uF 5% 50V (E)	
C33	1-130-482-00	MYLAR 0.0082uF 5% 50V (Canadian)	
C34	1-123-382-00	ELECT 3.3uF 20% 100V	
C35	1-130-481-00	MYLAR 0.0068uF 5% 50V (E)	
C35	1-130-482-00	MYLAR 0.0082uF 5% 50V (Canadian)	
C36	1-123-382-00	ELECT 3.3uF 20% 100V	
C37	1-124-907-11	CAP, ELECT 10MF	
C38	1-124-907-11	CAP, ELECT 10MF	
C39	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C40	1-124-463-00	ELECT 0.1uF 20% 50V	
C41	1-124-927-11	ELECT 4.7uF 20% 100V	
C42	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C43	1-126-176-11	ELECT 220uF 20% 10V	
C44	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	
C45	1-123-382-00	ELECT 3.3uF 20% 100V	
C46	1-162-524-11	CERAMIC CHIP 0.0022MF 20% 25V	
C48	1-123-382-00	ELECT 3.3uF 20% 100V	
C49	1-162-524-11	CERAMIC CHIP 0.0022MF 20% 25V	
C51	1-124-477-11	ELECT 47uF 20% 25V	
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 47uF 20% 25V	
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 2.2uF 20% 100V	
C102	1-124-463-00	ELECT 0.1uF 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 47uF 20% 25V	
		< CARBON MELF >	
CC1	1-249-366-11	CARBON MELF 0 5% 1/5W	
CC2	1-249-366-11	CARBON MELF 0 5% 1/5W	
CC3	1-249-366-11	CARBON MELF 0 5% 1/5W	
CC5	1-249-366-11	CARBON MELF 0 5% 1/5W	

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.

TUNER

Ref. No.	Part No.	Description	Remark
< FILTER >			
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)	
< CONNECTOR >			
CNJ1	* 1-564-666-11	PIN, CONNECTOR 10P	
CNJ2	* 1-564-341-11	PIN, CONNECTOR 7P	
CNJ3	* 1-568-313-11	SOCKET, CONNECTOR 9P	
CNJ4	* 1-568-269-11	SOCKET, CONNECTOR 3P	
< DIODE >			
D21	8-719-912-20	DIODE 1SS120	
D22	8-719-912-20	DIODE 1SS120	
D23	8-719-912-20	DIODE 1SS120	
D24	8-719-912-20	DIODE 1SS120	
< FRONT END >			
FE1	1-463-862-21	FRONT END, FM	
FE61	1-236-461-11	ENCAPSULATED COMPONENT	
< IC >			
IC21	8-759-821-45	IC LA1851N	
IC81	8-759-820-91	IC LC7218	
< COIL >			
L1	1-410-645-31	MICRO INDUCTOR 100uH	
L21	1-410-171-11	MICRO INDUCTOR 1mH	
< FILTER >			
LPF21	1-235-164-00	FILTER, LOW PASS	
LPF22	1-235-164-00	FILTER, LOW PASS	
< TRANSISTOR >			
Q1	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q2	8-729-230-XX	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	
Q27	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
Q28	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
Q81	8-729-900-61	TRANSISTOR DTA114ES	
Q82	8-729-900-80	TRANSISTOR DTC114ES	
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB	

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R1	△ 1-249-401-11	CARBON	47 5% 1/4W F
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	△ 1-249-404-00	CARBON	82 5% 1/4W F
R22	1-249-433-11	CARBON	22K 5% 1/4W (E)
R22	1-249-428-11	CARBON	8.2K 5% 1/4W (Canadian)
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 (SMALL)	8.2K 5% 1/8W
R27	1-249-432-11	CARBON	18K 5% 1/4W
R28	1-249-423-11	CARBON	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	1-249-425-11	CARBON	4.7K 5% 1/4W
R35	1-249-355-11	CARBON MELF	47K 5% 1/8W
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	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

Note:

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Note:

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TUNER

Ref. No.	Part No.	Description			Remark
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	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	100	5%	1/4W F

< VARIABLE RESISTOR >

RV21	1-238-013-11	RES. ADJ. CARBON 2.2K (FM SEPARATION)
RV22	1-238-017-11	RES. ADJ. CARBON 22K (AM TUNED)
RV23	1-238-021-11	RES. ADJ. CARBON 220K (SIGNAL LEVEL)
RV24	1-238-017-11	RES. ADJ. CARBON 22K (FM INDICATION)

< TRANSFORMER >

T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR (NULL)
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< TERMINAL >

TM1	1-537-238-21	TERMINAL BOARD (ANT)
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< CONNECTOR >

TP1	* 1-560-060-00	PIN, CONNECTOR 2P
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< CRYSTAL >

XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)
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MISCELLANEOUS

7	1-569-007-11	ADAPTER, CONVERSION 2P (E)
PC501	△ 1-575-653-11	CORD, POWER (E)
PC501	△ 1-575-975-11	CORD, POWER (Canadian)

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	

	1-501-224-00	ANTENNA, FEEDER	
	1-501-374-11	ANTENNA, LOOP	
	1-558-233-11	CORD (WITH CONNECTOR) (SIRCS) 4P	
	1-558-271-11	CORD, CONNECTION	
	1-559-533-11	CORD, CONNECTION	
	* 3-704-343-01	SHEET (STANDARD), PROTECTION	
	3-753-264-11	MANUAL, INSTRUCTION	
		(ENGLISH, FRENCH, SPANISH, ITALIAN)	
	* 4-930-835-01	CUSHION	
	* 4-944-049-01	INDIVIDUAL CARTON	

HARDWARE LIST

#1	7-682-550-04	SCREW +BVTT 3X12 (S)
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#3	7-682-547-09	SCREW +BV 3X6, S TIGHT
#4	7-621-849-00	SCREW (BV/RING)
#5	7-682-548-04	SCREW +BVTT 3X8 (S)

Note:

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Note:

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