

ST-JX295/JX390

SERVICE MANUAL

US Model
E Model

ST-JX295/JX390

Canadian Model
ST-JX295

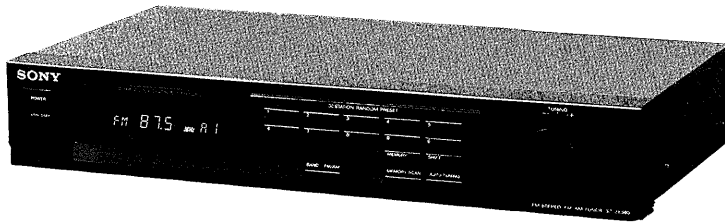


Photo: ST-JX390

ST-JX290: This set is the tuner section in
SEN-290 (CND, E)/SEN-390 (US).

SPECIFICATIONS

FM tuner

Frequency range 87.5 — 108 MHz
Antenna terminal 300 ohms, balanced
75 ohms, unbalanced
IF 10.7 MHz
Sensitivity

| | | |
|--------------------------|--------|-----------------------|
| S/N 50 dB sensitive | Mono | 22.1 dBf (7 μ V) |
| | Stereo | 42.1 dBf (70 μ V) |
| Usable sensitivity (IHF) | | 19.5 dBf (5 μ V) |

Signal-to-noise ratio 80 dB (mono), 75 dB (stereo)
Harmonic distortion 0.3% (mono), 0.5% (stereo) at 1 kHz
Separation 40 dB (1 kHz)
Frequency response 30 Hz — 15 kHz ± 2.0 dB
Selectivity 55 dB (400 kHz)
AM suppression ratio 54 dB
Image response ratio 50 dB
IF response ratio 90 dB
Spurious response ratio 70 dB
Automatic tuning threshold 17.8 μ V (30 dBf)
Output 775 mV, 4.7 kohms (at 75 kHz deviation) (ST-JX390)

AM tuner

Frequency range $\left. \begin{array}{l} 530 - 1,710 \text{ kHz (10 kHz)} \\ 531 - 1,710 \text{ kHz (9 kHz)} \end{array} \right\}$ US/CA Model
 $\left. \begin{array}{l} 530 - 1,710 \text{ kHz (10 kHz)} \\ 531 - 1,602 \text{ kHz (9 kHz)} \end{array} \right\}$ E Model
Antenna Loop antenna, External antenna terminal
IF 450 kHz
Sensitivity (999 kHz or 1,000 kHz) 500 μ V/m (when the loop antenna is in use)
Signal-to-noise ratio 54 dB (mono, normal)
Harmonic distortion 0.5% (mono, normal)
Selectivity 35 dB (9 kHz, normal)
38 dB (10 kHz, normal)
Frequency response 40 Hz — 3.5 kHz ± 0 dB (normal)

General

Power requirements 120 V AC, 60 Hz } ST-JX390
Power consumption 8 W }
Dimensions Approx. 430 x 80 x 260 mm (w/h/d)
(17 x 3 1/4 x 10 1/4 inches)
Weight Approx. 2.4 kg (5 lb 5 oz) (ST-JX390)
Approx. 2.0 kg (4 lb 7 oz) (ST-JX295)

Supplied accessories (ST-JX390)

Remote control cord (1)
Connecting cord (1)
FM wire antenna (1)
AM loop antenna (1)

Sony Corporation Printed in

Design and specifications subject to change without notice.



FM STEREO/FM-AM 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 2V AC range are suitable. (See Fig. A)

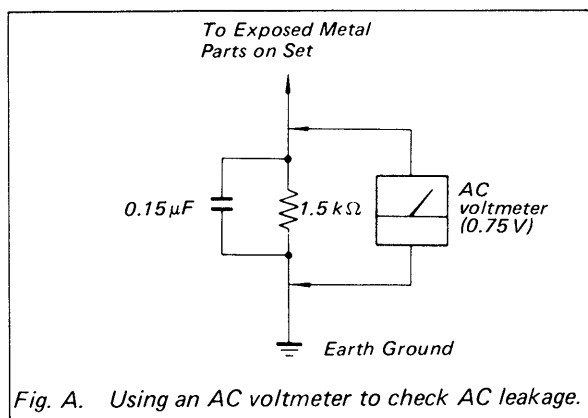


Fig. A. Using an AC voltmeter to check AC leakage.

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To change the AM tuning interval

The AM tuning interval is preset at the factory to 10 kHz to match the frequency allocation system of your country. To change the interval to 9 kHz, proceed as follows.

- 1 Depress the POWER switch to turn on the unit.
- 2 Set the BAND FM/AM selector to AM.
- 3 Press the POWER switch to turn off the unit.
- 4 Hold the TUNING knob in the "+" position, and depress the POWER switch to turn on the unit. To reset the interval to 10 kHz, follow the same procedure.

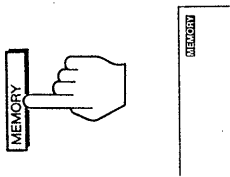
Note

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

SECTION 1
GENERAL

Storing Station Frequencies into Memory

1 Tune in a desired station.

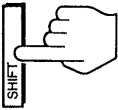


2

Allot one of the following codes:

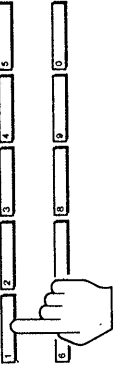
- A-1, A-2, ... A-9,
- B-1, ... B-9,
- C-1, ... C-9, C-0

First, select alphabet.



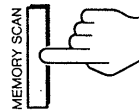
3

4 Select number.



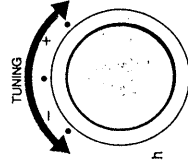
Scanning Stored Stations — Memory Scanning

1



The code indication flashes in the window.

2

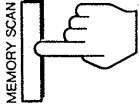


To scan stations with preceding codes.

Stored stations are tuned in successively.

3

As soon as the desired station is received:



Scanning stops.

More information on storing stations

How many stations can be stored?

Up to 10 stations can be stored in any order for each alphabet (A, B, C). Therefore, 30 stations can be stored in total.

If you cannot store a station successfully

You can store a station only while "MEMORY" is displayed. If the "MEMORY" indication has gone off, press MEMORY again.

More information on scanning stored stations

Which stations are skipped during memory scanning?

The memory scan will skip stations which have a very weak signal.

If you cannot scan successfully

Turn the TUNING knob while the code indication is flashing. If the flashing has stopped, press MEMORY SCAN again.

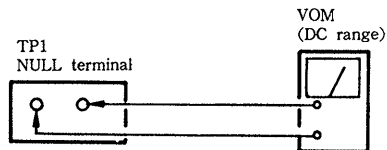
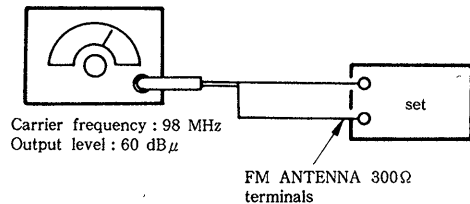
SECTION 2 ELECTRICAL ADJUSTMENT

FM SECTION

• FM Discriminator Alignment (NULL check)

Setting :

FM RF stereo signal generator



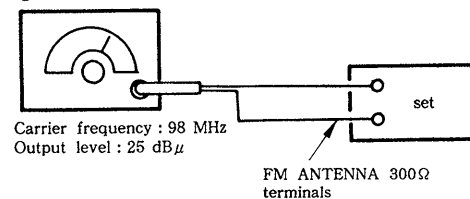
Procedure :

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 :

FM RF stereo signal generator



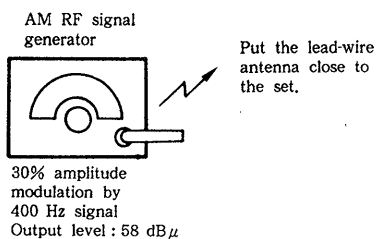
Procedure :

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

AM SECTION

• AM Tuned Indication Lighting Level Adjustment

Setting :



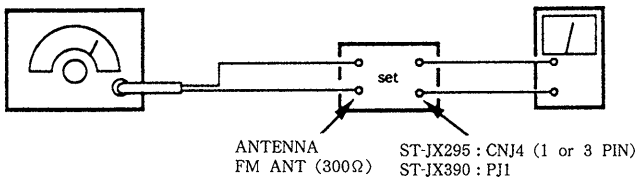
Procedure :

1. Tune the set to 1,050 kHz (US, CANADIAN), 999 kHz (E).
2. Adjust RV22 so that the TUNED LED goes on.

• FM Stereo Separation Adjustment

Setting :

FM RF stereo signal generator



Carrier frequency : 98 MHz
Output level : 60 dB μ

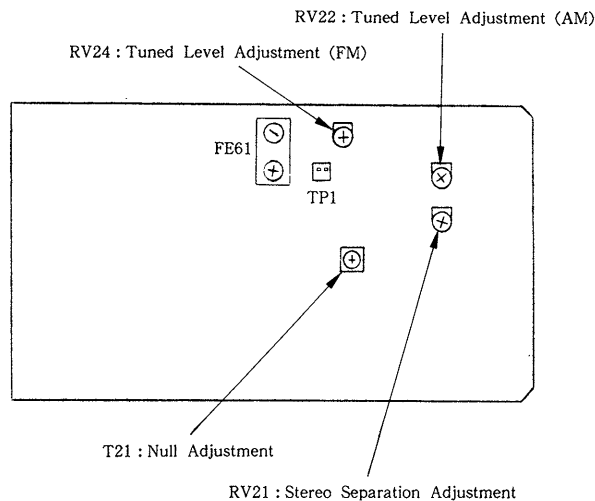
Procedure :

Tune the set to 98 MHz.

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

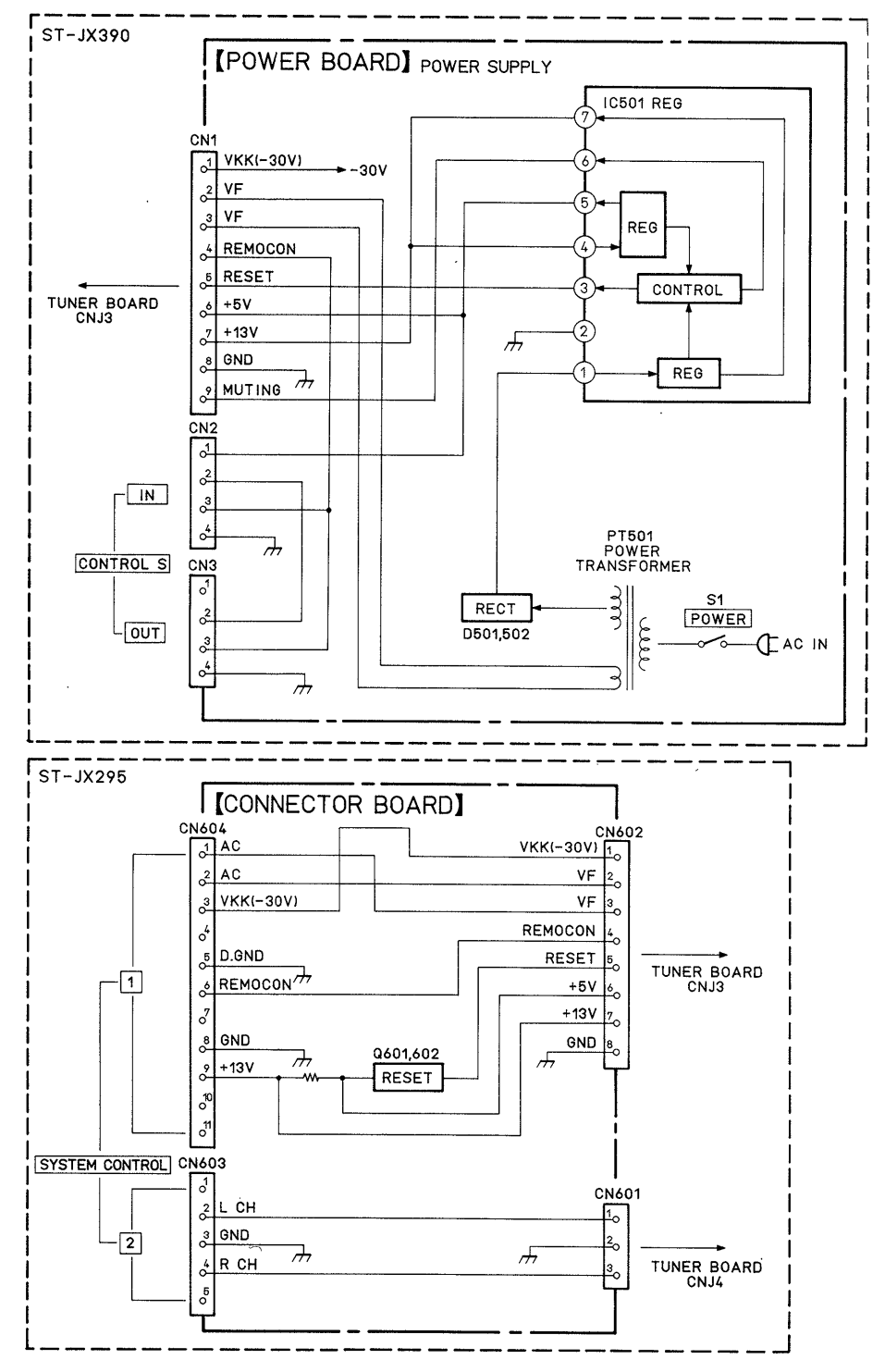
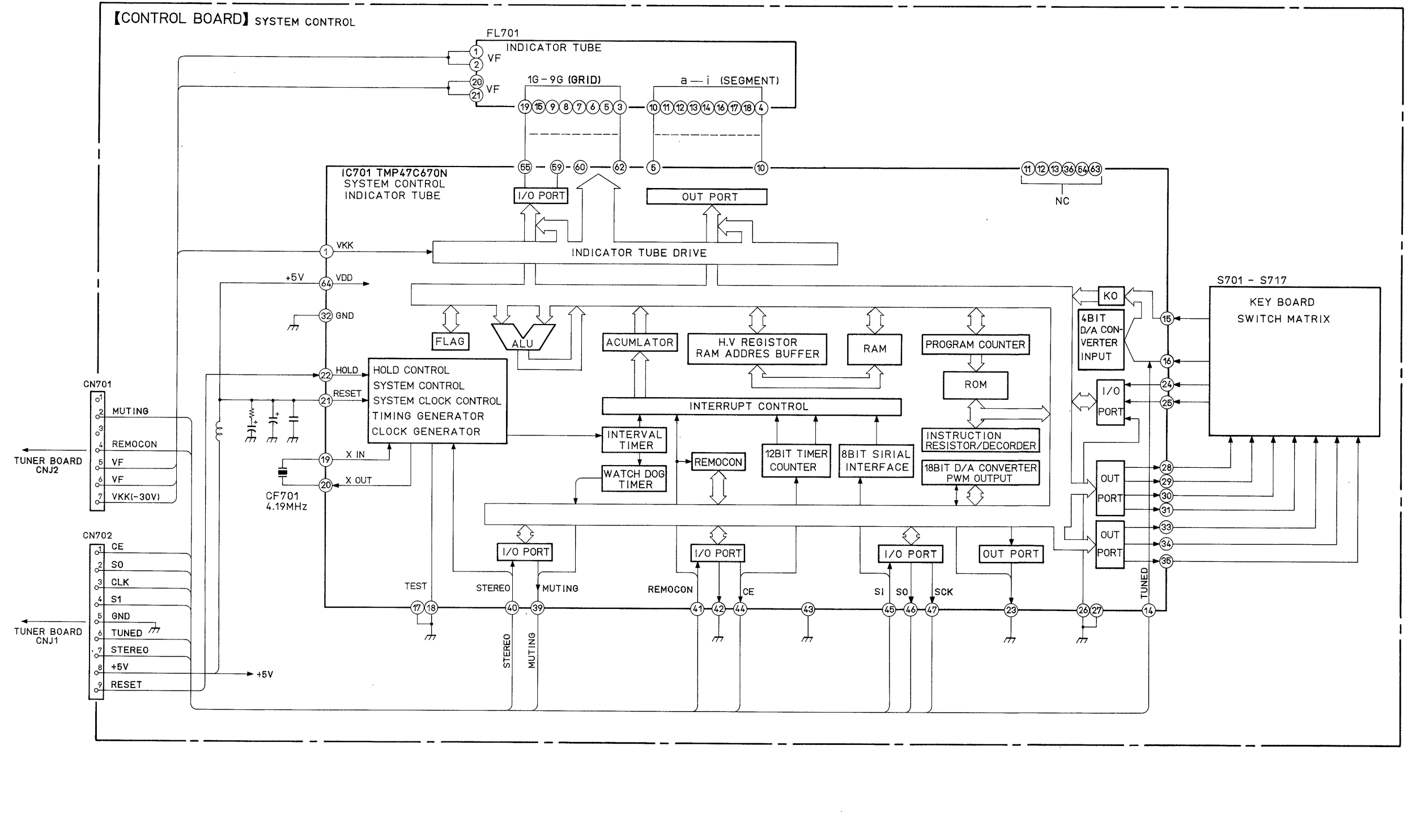
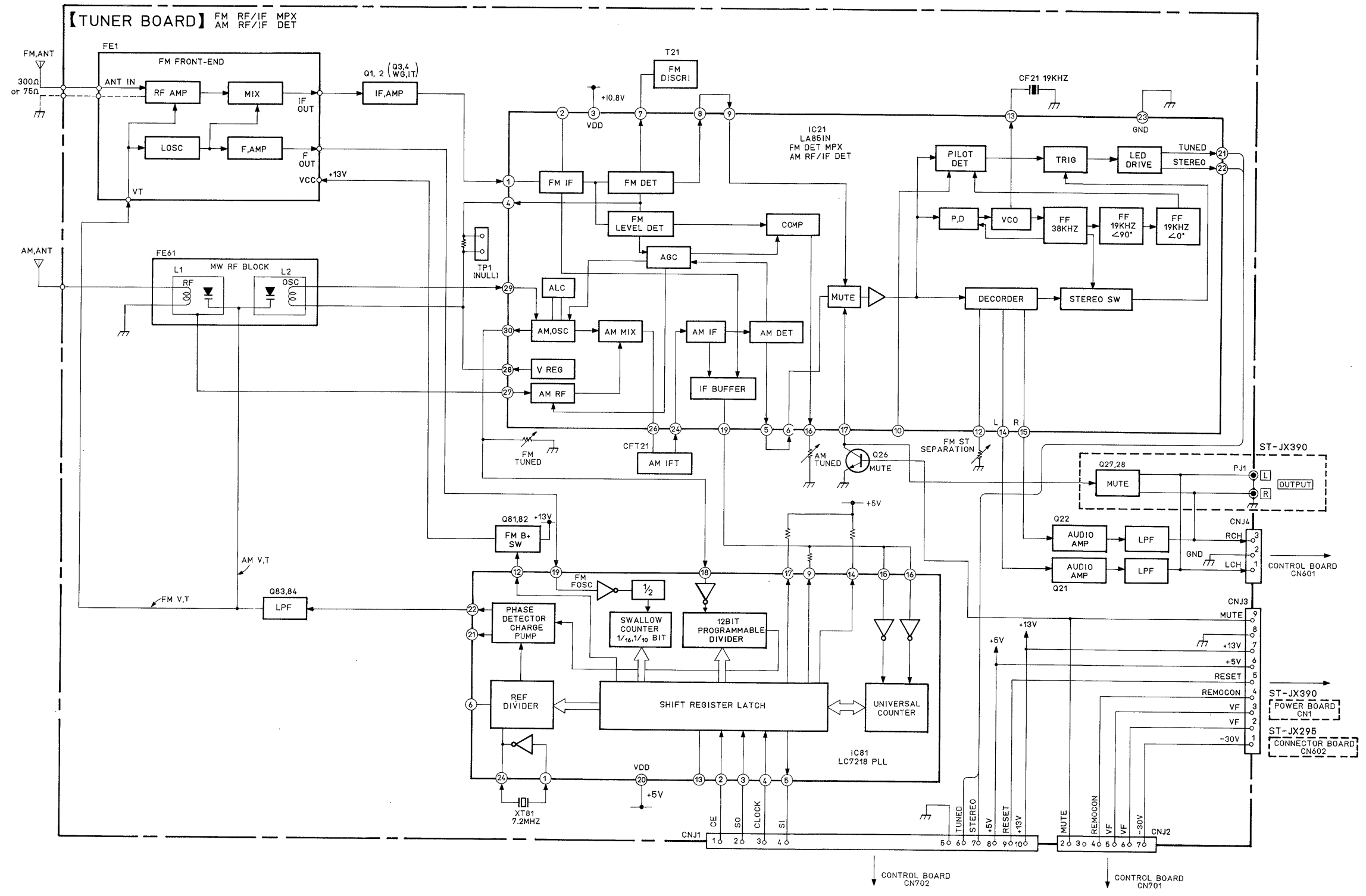
L-CH Stereo separation : (A) - (B)
R-CH Stereo separation : (C) - (D)

The separations of both channels should be equal.



SECTION 3
DIAGRAMS

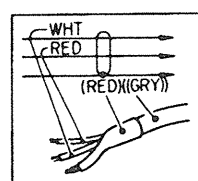
3-1. BLOCK DIAGRAMS



3-2. PRINTED WIRING BOARDS

Note :

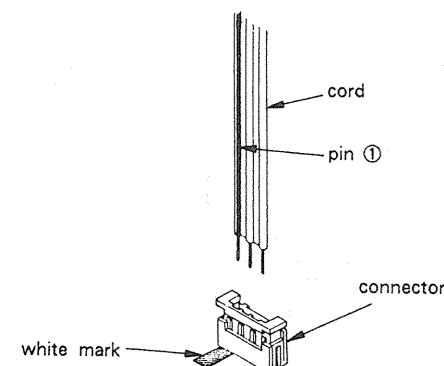
- Color code or sleeving over the end of the jacket.



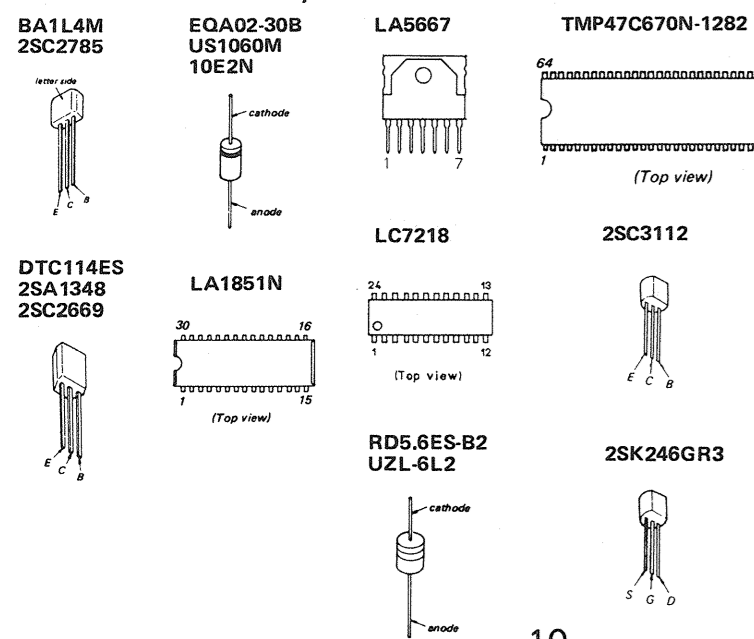
- : parts extracted from the component side.
- : indicates side identified with part number.

[Note on Inserting the Cord to the Connector on Tuner Board]

- Insert the cord to the connector fitting Pin ① of the cord in accordance with the white mark on the board at the connector as shown in the figure.

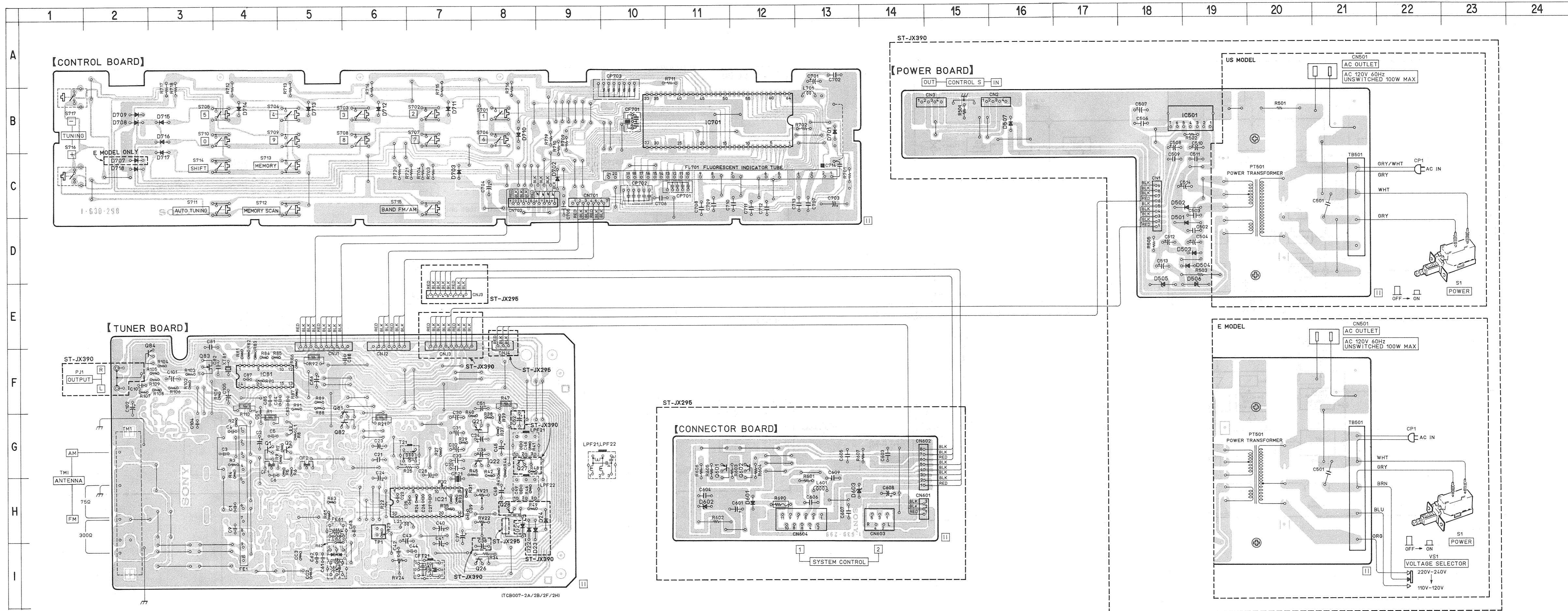


• Semiconductor Lead Layouts

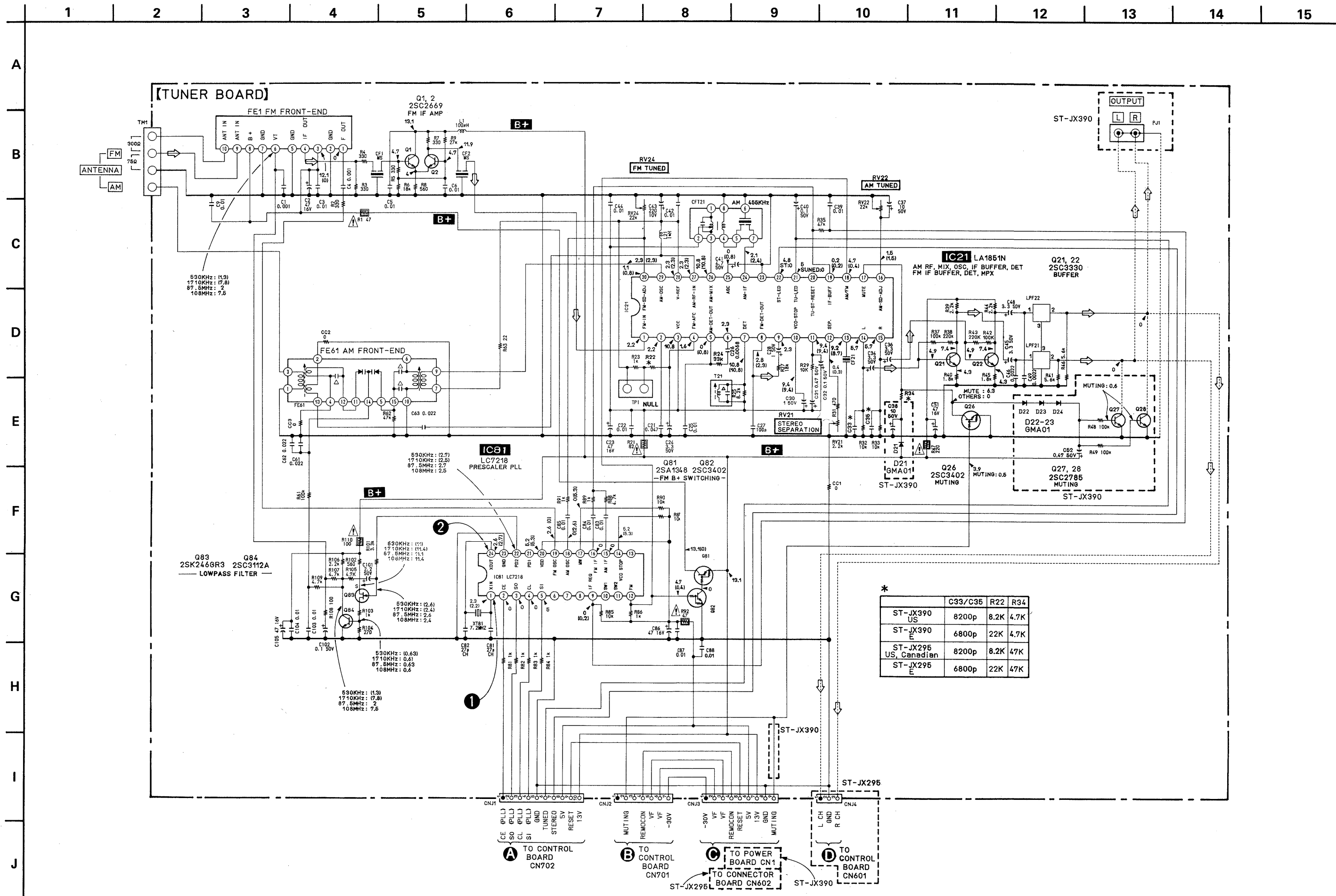


• Semiconductor Location

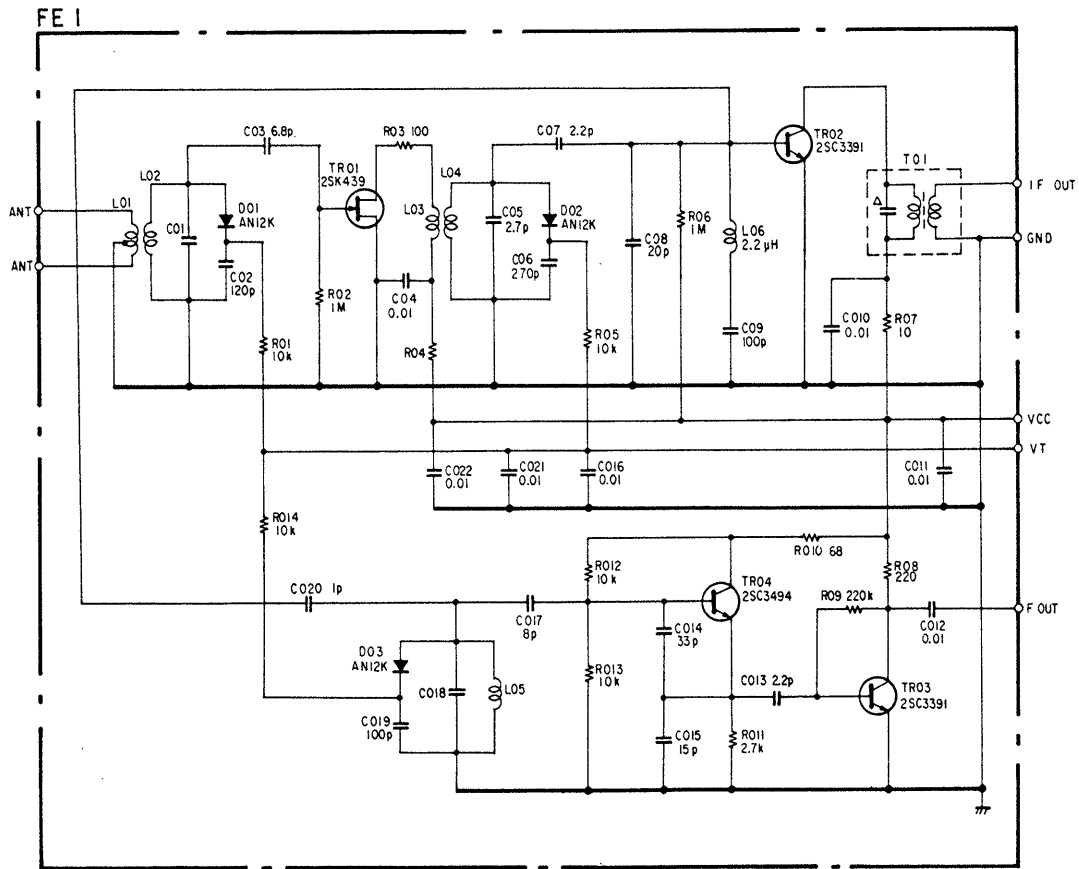
| Ref. No. | Location |
|----------|----------|
| D21 | H-8 |
| D22 | I-8 |
| D23 | I-8 |
| D24 | H-9 |
| D501 | D-19 |
| D502 | D-19 |
| D503 | D-19 |
| D504 | D-19 |
| D505 | E-18 |
| D506 | E-19 |
| D507 | B-16 |
| D801 | H-12 |
| D802 | H-11 |
| D803 | H-13 |
| D701 | C-13 |
| D702 | C-9 |
| D703 | C-7 |
| D707 | C-2 |
| D708 | B-2 |
| D709 | B-2 |
| D710 | B-8 |
| D711 | B-7 |
| D712 | B-6 |
| D713 | B-5 |
| D714 | B-4 |
| D715 | B-3 |
| D716 | C-3 |
| D717 | C-3 |
| D718 | C-2 |
| IC21 | H-7 |
| IC81 | F-4 |
| IC501 | B-19 |
| IC701 | B-11 |
| Q1 | G-4 |
| Q2 | G-5 |
| Q22 | G-8 |
| Q21 | G-8 |
| Q26 | I-8 |
| Q27 | G-8 |
| Q28 | H-8 |
| Q81 | G-6 |
| Q82 | G-6 |
| Q83 | F-3 |
| Q84 | F-3 |
| Q601 | H-11 |
| Q602 | H-12 |



3-3. SCHEMATIC DIAGRAM — Tuner Section —



● FE1(Front End) Schematic Diagram



● Wave Forms

| No. | Wave Forms | No. | Wave Forms |
|-----|------------|-----|------------|
| ① | | ③ | |
| ② | | ④ | |
| | | ⑤ | |

3-4. SCHEMATIC DIAGRAM — Control and Power Section —

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

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

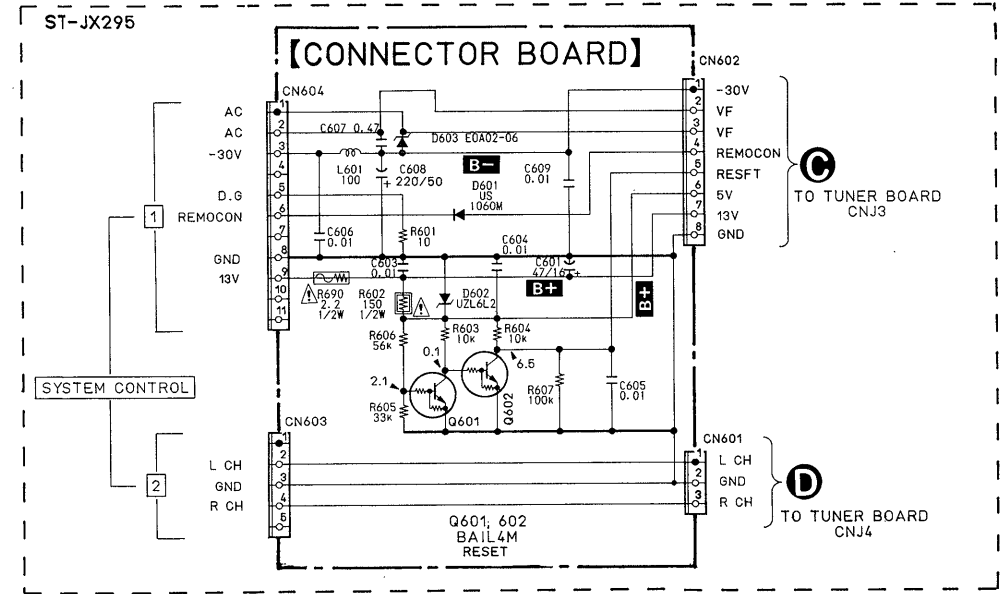
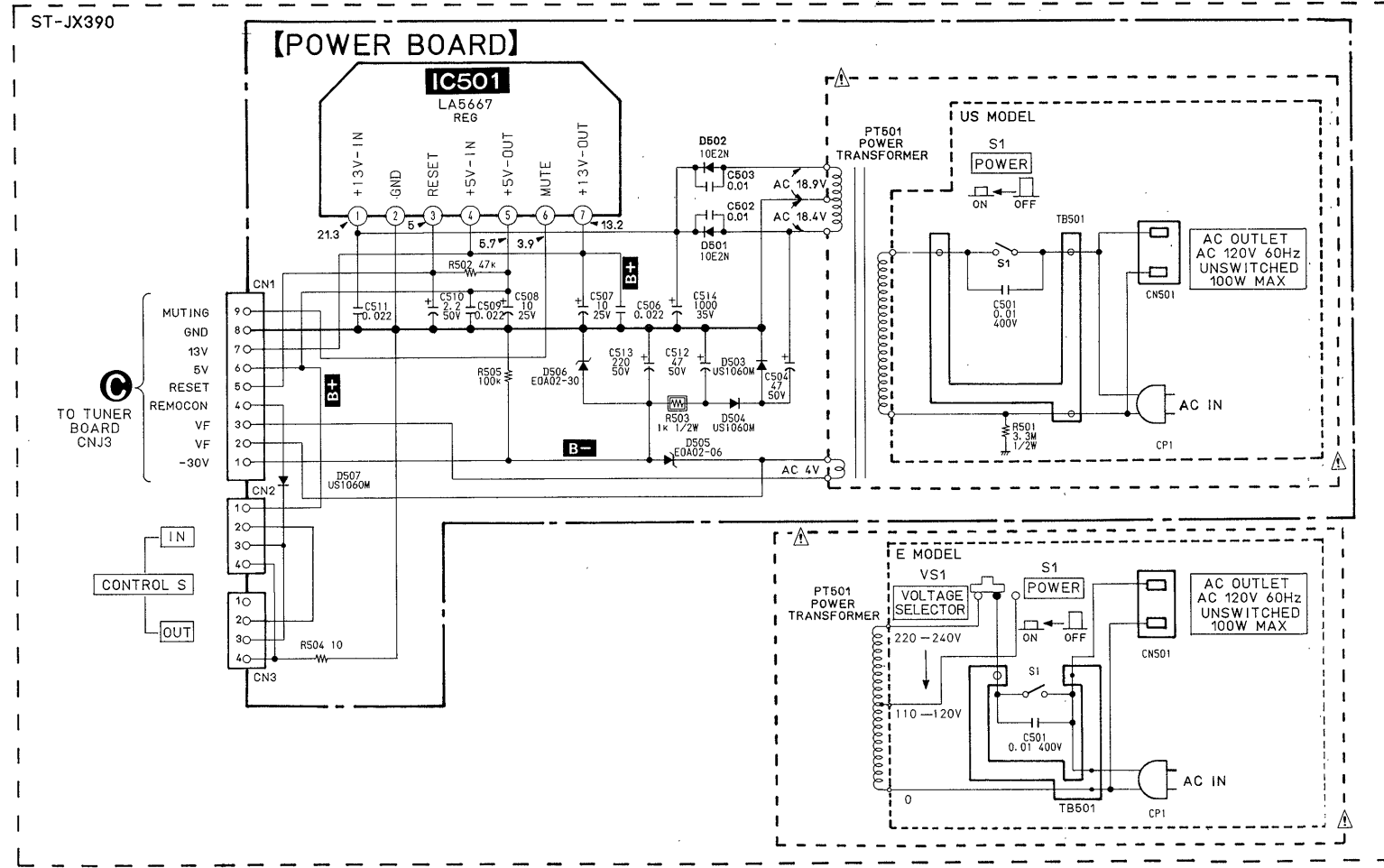
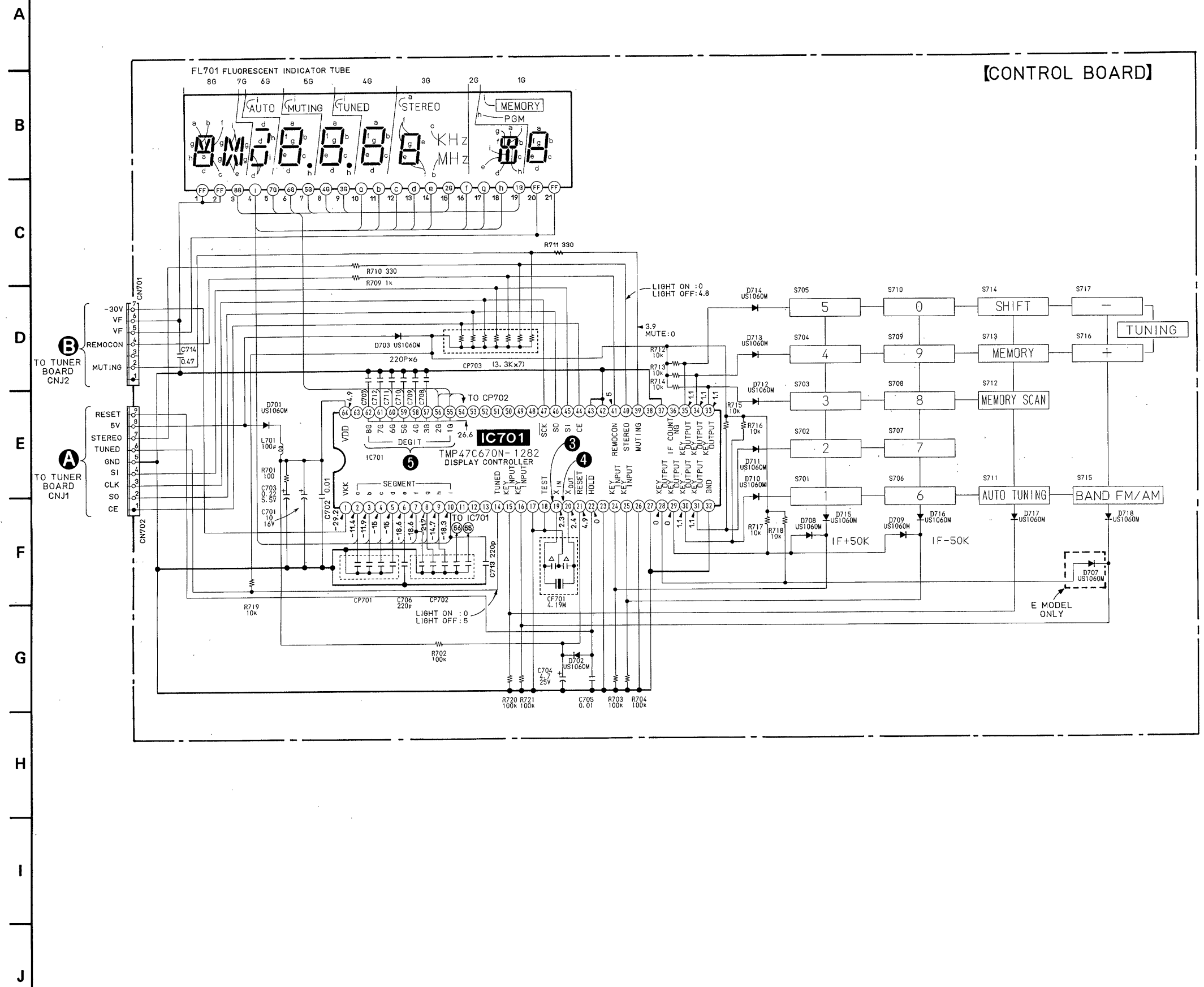
Note :
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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.
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- () : AM
- Voltage are taken with a VOM (Input impedance 10 M 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.
- : 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.



**SECTION 4
EXPLODED VIEW**

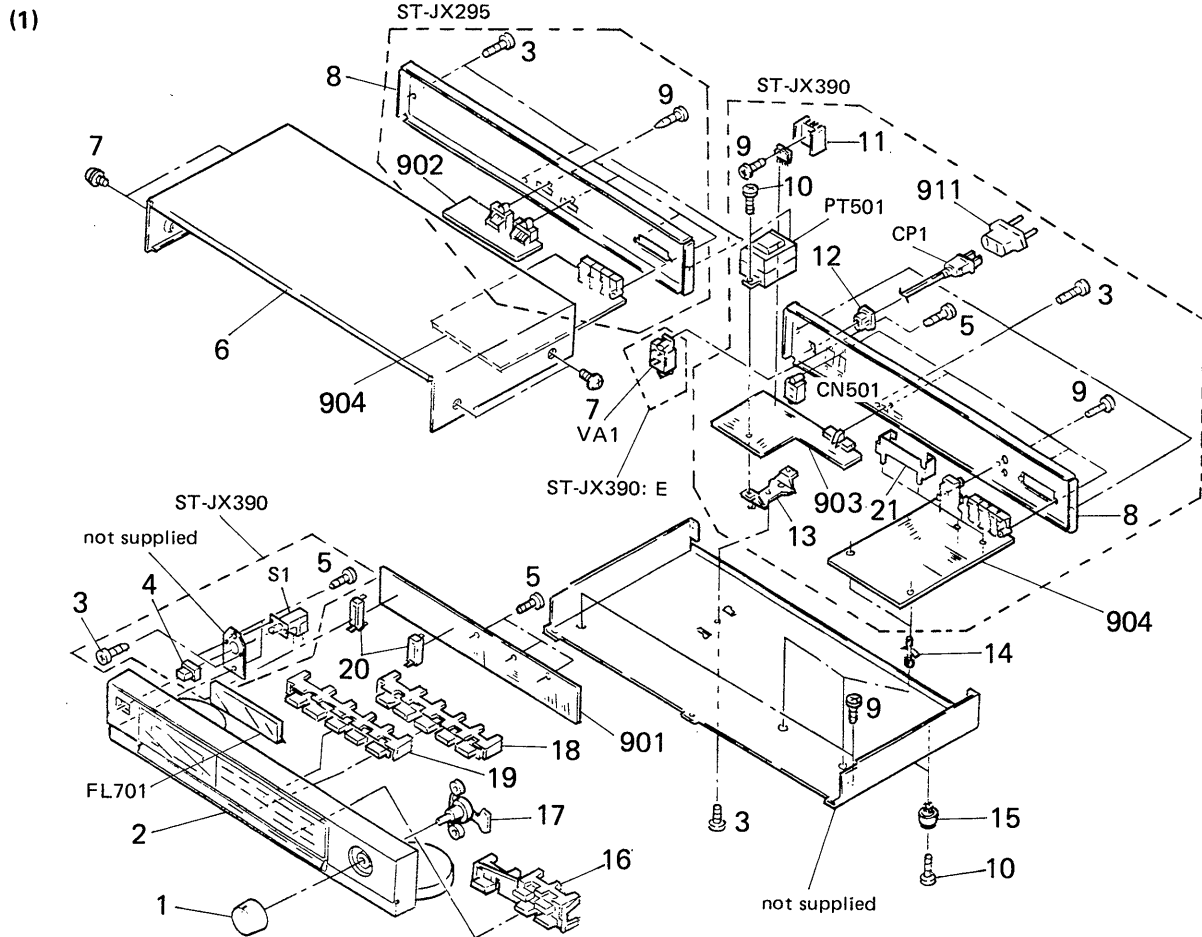
NOTE:

- 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.



| No. | Part No. | Description | Remarks | No. | Part No. | Description | Remarks |
|-----|---------------|-----------------------------------|---------|---------------------|--|--|---------|
| 1 | 4-922-790-11 | KNOB (TUNING) | | 21 | *4-924-988-11 | PLATE (ST), GROUND | |
| 2 | X-4905-263-1 | (JX295)...PANEL ASSY, FRONT | | 901 | *A-4333-249-A | (JX295:US,Canadian) ...MOUNTED PCB, CONTROL | |
| | X-4905-264-1 | (JX390)...PANEL ASSY, FRONT | | | *A-4333-250-A | (JX295:E)...MOUNTED PCB, CONTROL | |
| 3 | 7-682-548-04 | SCREW +BVT 3X8 (S) | | | *A-4333-480-A | (JX390:E)...MOUNTED PCB, CONTROL | |
| 4 | 4-917-460-01 | (JX390)...KNOB, POWER | | | *A-4333-481-A | (JX390:US)...MOUNTED PCB, CONTROL | |
| 5 | 7-685-534-19 | SCREW +BTP 2.6X8 TYPE2 N-S | | 902 | *1-630-299-11 | (JX295)...PC BOARD, CONNECTOR | |
| 6 | 4-917-050-41 | CASE | | 903 | *1-630-297-11 | (JX390)...PC BOARD, POWER | |
| 7 | 3-704-366-01 | SCREW (CASE) (M3X8) | | 904 | *A-4303-176-A | (JX295:US Canadian)...MOUNTED PCB TUNER | |
| 8 | *4-917-058-01 | (JX295).....PANEL, BACK | | | *A-4303-177-A | (JX295:E).....MOUNTED PCB TUNER | |
| | *4-917-065-01 | (JX390:US)...PANEL, BACK | | | *A-4303-174-A | (JX390:US).....MOUNTED PCB TUNER | |
| | *4-917-065-11 | (JX390:E)...PANEL, BACK | | | *A-4303-175-A | (JX390:E).....MOUNTED PCB TUNER | |
| 9 | 7-685-646-79 | SCREW +BVT 3X8 TYPE2 N-S | | 911 | ▲.1-526-565-12 | (JX390:E)...AC PLUG ADAPTOR | |
| 10 | 7-682-550-04 | SCREW +BVT 3X12 (S) | | CN501▲.1-540-038-11 | (JX390:E)...OUTLET, AC (NONPOLAR) | | |
| 11 | *4-363-146-31 | (JX390)...HEAT SINK, V.OUT | | CN501▲.1-540-057-11 | (JX390:US)...OUTLET, AC (POLAR) | | |
| 12 | *3-703-244-00 | (JX390:US)...BUSHING (2104), CORD | | CP1 ▲.1-551-188-XX | (JX390:E)...CORD, POWER | | |
| | *3-703-571-12 | (JX390:E)...BUSHING (4516), CORD | | CP1 ▲.1-557-577-11 | (JX390:US)...CORD, POWER | | |
| 13 | *4-917-044-11 | (JX390)...BRACKET (PT) | | FL701 1-519-512-11 | INDICATOR TUBE, FLUORESCENT | | |
| 14 | *3-346-265-11 | HOLDER, PC BOARD | | PJ1 1-565-352-21 | (JX390)...JACK, PIN 2P | | |
| 15 | X-4904-496-1 | FOOT ASSY | | PT501▲.1-449-526-11 | (JX390:E)...TRANSFORMER, POWER | | |
| 16 | 4-917-063-01 | BUTTON (T) | | PT501▲.1-449-527-11 | (JX390:US)...TRANSFORMER, POWER | | |
| 17 | *4-917-061-01 | SHAFT, TUN | | S1 ▲.1-554-920-11 | (JX390)...SWITCH, PUSH (AC POWER)(1 KEY) | | |
| 18 | 4-917-064-11 | BUTTON (10 KEY)(6-0) | | VSI ▲.1-570-046-21 | (JX390:E)...SWITCH, VOLTAGE CHANGE | | |
| 19 | 4-917-064-01 | BUTTON (10 KEY)(1-5) | | | | | |
| 20 | *4-924-989-01 | HOLDER (FL TUBE) | | | | | |

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 F.**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.

| Ref.No. | Part No. | Description | Ref.No. | Part No. | Description |
|---------|-----------------------|--|---------|-----------------------|------------------------------------|
| 901 | *A-4333-249-A | (JX295:US,Canadian) ...MOUNTED PCB, CONTROL | C49 | 1-162-524-11 | CERAMIC CHIP 0.0022MF 20% 25V |
| | *A-4333-250-A | (JX295:E)...MOUNTED PCB, CONTROL | C51 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| | *A-4333-480-A | (JX390:US)...MOUNTED PCB, CONTROL | C52 | 1-124-902-11 | (JX390)...CAP,ELECT 0.47MF 20% 50V |
| | *A-4333-481-A | (JX390:US)...MOUNTED PCB, CONTROL | C61 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| 902 | *1-630-299-11 | (JX295)...PC BOARD, CONNECTOR | C62 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| 903 | *1-630-297-11 | (JX390)...PC BOARD, POWER | C63 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| 904 | *A-4303-176-A | (JX295:US,Canadian)...MOUNTED PCB TUNER | C64 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| | *A-4303-177-A | (JX295:E)...MOUNTED PCB TUNER | C81 | 1-102-961-00 | CAP, CERAMIC 27PF 5% 50V |
| | *A-4303-174-A | (JX390:US)...MOUNTED PCB TUNER | C82 | 1-102-961-00 | CAP, CERAMIC 27PF 5% 50V |
| | *A-4303-175-A | (JX390:E)...MOUNTED PCB TUNER | C83 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| 911 | Δ 1-526-565-12 | (JX390:E)...AC PLUG ADAPTOR | C84 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C1 | 1-162-294-31 | CERAMIC CHIP 0.001MF 20% 25V | C85 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C2 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V | C86 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| C3 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C87 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C4 | 1-162-294-31 | CERAMIC CHIP 0.001MF 20% 25V | C88 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C5 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C101 | 1-124-925-11 | CAP, ELECT 2.2MF 20% 50V |
| C6 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C102 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V |
| C9 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C105 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| C21 | 1-161-021-11 | CAP, CERAMIC 0.047MF 10% 25V | C103 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C22 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C104 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C23 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V | C501 | Δ 1-161-744-00 | CERAMIC 0.01MF 400V |
| C24 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C502 | 1-101-004-00 | CERAMIC 0.01MF 50V |
| C25 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C503 | 1-101-004-00 | CERAMIC 0.01MF 50V |
| C26 | 1-162-527-11 | CERAMIC CHIP 0.0068MF 20% 12V | C504 | 1-124-910-11 | ELECT 47MF 20% 50V |
| C27 | 1-162-516-11 | CERAMIC CHIP 100PF 10% 50V | C506 | 1-101-005-00 | CERAMIC 0.022MF 50V |
| C28 | 1-124-499-11 | CAP, ELECT 1.0MF 20% 50V | C507 | 1-123-356-00 | ELECT 10MF 20% 25V |
| C30 | 1-124-499-11 | CAP, ELECT 1.0MF 20% 50V | C508 | 1-123-356-00 | ELECT 10MF 20% 25V |
| C31 | 1-124-902-00 | CAP, ELECT 0.47MF 20% 50V | C509 | 1-101-005-00 | CERAMIC 0.022MF 50V |
| C32 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V | C510 | 1-124-925-11 | ELECT 2.2MF 20% 50V |
| C33 | 1-130-481-91 | (JX390/JX295:E)...CAP,PE TEREPHTHALATE 00068MF 5% 50V | C511 | 1-101-005-00 | CERAMIC 0.022MF 50V |
| C33 | 1-130-482-00 | (JX390:US/JX295:US,Canadian)... CAP, PE TEREPHTHALATE 0.0082MF 5% 50V | C512 | 1-124-910-11 | ELECT 47MF 20% 50V |
| C34 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C513 | 1-124-911-11 | ELECT 220MF 20% 50V |
| C35 | 1-130-481-91 | (JX390/JX295:E)...CAP,PE TEREPHTHALATE 00068MF 5% 50V | C514 | 1-126-105-11 | ELECT 1000MF 20% 35V |
| C35 | 1-130-482-00 | (JX390:US/JX295:US,Canadian)... CAP, PE TEREPHTHALATE 0.0082MF 5% 50V | C601 | 1-123-332-00 | (JX295)...ELECT 47MF 20% 16V |
| C36 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C603 | 1-101-004-00 | (JX295)...CERAMIC 0.01MF 20% 50V |
| C37 | 1-123-875-11 | CAP, ELECT 10MF 20% 50V | C604 | 1-101-004-00 | (JX295)...CERAMIC 0.01MF 20% 50V |
| C38 | 1-123-875-11 | (JX390)...CAP,ELECT 10MF 20% 50V | C605 | 1-101-004-00 | (JX295)...CERAMIC 0.01MF 20% 50V |
| C39 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C606 | 1-101-004-00 | (JX295)...CERAMIC 0.01MF 20% 50V |
| C40 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V | C607 | 1-136-173-00 | (JX295)...FILM 0.47MF 5% 50V |
| C41 | 1-124-927-11 | CAP, ELECT 4.7MF 20% 50V | C608 | 1-124-122-11 | (JX295)...ELECT 100MF 20% 50V |
| C42 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C609 | 1-101-004-00 | (JX295)...CERAMIC 0.01MF 20% 50V |
| C43 | 1-126-176-11 | CAP, ELECT 220MF 20% 10V | C701 | 1-126-157-11 | ELECT 10MF 20% 16V |
| C44 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C702 | 1-161-379-00 | CERAMIC 0.01MF 30% 16V |
| C45 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C703 | 1-125-486-11 | CAP,DOUBLELAYEKS 0.22F 5.5V |
| C46 | 1-162-524-11 | CERAMIC CHIP 0.0022MF 20% 25V | C704 | 1-126-094-11 | ELECT 4.7MF 20% 25V |
| C48 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C705 | 1-161-379-00 | CERAMIC 0.01MF 30% 16V |

| Ref.No. | Part No. | Description |
|---------|----------------|-----------------------------------|
| C706 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C707 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C708 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C709 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C710 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C711 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C712 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C713 | 1-162-286-31 | CERAMIC 220PF 10% 50V |
| C714 | 1-136-173-00 | FILM 0.47MF 5% 50V |
| 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 |
| CF1 | 1-567-389-11 | FILTER, CERAMIC |
| CF2 | 1-567-389-11 | FILTER, CERAMIC |
| CF21 | 1-577-075-11 | OSCILLATOR, CERAMIC |
| CF701 | 1-577-359-21 | VIBRATOR, CERAMIC |
| CFT21 | 1-404-853-11 | TRANSFORMER, IF (CERAMIC FILTER) |
| CN1 | *1-568-284-11 | SOCKET, CONNECTOR 9P |
| CN2 | 1-564-980-11 | (JX390)...PIN, CONNECTOR 4P |
| CN3 | 1-564-980-11 | (JX390)...PIN, CONNECTOR 4P |
| CN501A | 1-540-038-11 | (JX390:E)...OUTLET, AC (NONPOLAR) |
| CN501A | 1-540-057-11 | (JX390:US)...OUTLET, AC (POLAR) |
| CN601 | 1-568-278-11 | (JX295)...SOCKET, CONNECTOR 3P |
| CN602 | 1-568-283-11 | (JX295)...SOCKET, CONNECTOR 8P |
| CN603 | 1-566-856-11 | (JX295)...SOCKET, CONNECTOR 5P |
| CN604 | 1-566-858-11 | (JX295)...SOCKET, CONNECTOR 11P |
| CN701 | 1-568-282-11 | SOCKET, CONNECTOR 7P |
| CN702 | *1-568-284-11 | SOCKET, CONNECTOR 9P |
| CNJ1 | *1-568-276-11 | SOCKET, CONNECTOR 10P |
| CNJ2 | *1-568-273-11 | SOCKET, CONNECTOR 7P |
| CNJ3 | *1-568-275-11 | SOCKET, CONNECTOR 9P |
| CNJ4 | 1-568-269-11 | (JX295)...SOCKET, CONNECTOR 3P |
| CP1 | A.1-551-188-XX | (JX390:E)...CORD, POWER |
| CP1 | A.1-557-577-11 | (JX390).....CORD, POWER |
| CP701 | 1-233-148-11 | COMPOSITION CIRCUIT BLOCK |
| D21 | 8-719-000-26 | (JX390)...DIODE US1060M |
| D22 | 8-719-000-26 | (JX390)...DIODE US1060M |
| D23 | 8-719-000-26 | (JX390)...DIODE US1060M |
| D24 | 8-719-000-26 | (JX390)...DIODE US1060M |
| D501 | 8-719-200-77 | DIODE 10E2N |
| D502 | 8-719-200-77 | DIODE 10E2N |
| D503 | 8-719-000-26 | DIODE US1060M |
| D504 | 8-719-000-26 | DIODE US1060M |
| D505 | 8-719-109-89 | DIODE RD5.6ES-B2 |
| D506 | 8-719-904-93 | DIODE EQA02-30B |
| D507 | 8-719-000-26 | DIODE US1060M |
| D601 | 8-719-000-26 | (JX295)...DIODE US1060M |
| D602 | 8-719-000-51 | (JX295)...DIODE UZL-6L2 |
| D603 | 8-719-109-89 | (JX295)...DIODE RD5.6ES-B2 |
| D701 | 8-719-000-26 | DIODE US1060M |
| D702 | 8-719-000-26 | DIODE US1060M |
| D703 | 8-719-000-26 | DIODE US1060M |
| D707 | 8-719-000-26 | (JX390/JX295:E)...DIODE US1060M |
| D708 | 8-719-000-26 | DIODE US1060M |
| D709 | 8-719-000-26 | DIODE US1060M |
| D710 | 8-719-000-26 | DIODE US1060M |
| D711 | 8-719-000-26 | DIODE US1060M |
| D712 | 8-719-000-26 | DIODE US1060M |

| Ref.No. | Part No. | Description |
|---------|----------------|---|
| D713 | 8-719-000-26 | DIODE US1060M |
| D714 | 8-719-000-26 | DIODE US1060M |
| D715 | 8-719-000-26 | DIODE US1060M |
| D716 | 8-719-000-26 | DIODE US1060M |
| D717 | 8-719-000-26 | DIODE US1060M |
| D718 | 8-719-000-26 | DIODE US1060M |
| FE1 | 1-463-862-21 | FRONT END, FM |
| FE61 | 1-236-461-11 | ENCAPSULATED COMPONENT |
| FL701 | 1-519-512-11 | INDICATOR TUBE, FLUORESCENT |
| IC21 | 8-759-821-45 | IC LA1851N |
| IC81 | 8-759-820-91 | IC LC7218 |
| IC501 | 8-759-820-09 | IC LA5667 |
| IC701 | 8-759-234-26 | IC TMP47C670N-1282 |
| L1 | 1-410-521-11 | MICRO INDUCTOR |
| L21 | 1-410-171-11 | MICRO INDUCTOR |
| L601 | 1-410-521-11 | (JX295)...INDUCTOR 100UH |
| L701 | 1-410-521-11 | INDUCTOR 100UH |
| LPF21 | 1-235-164-00 | FILTER, LOW PASS |
| LPF22 | 1-235-164-00 | FILTER, LOW PASS |
| PJ1 | 1-565-352-21 | (JX390)...JACK, PIN 2P |
| PT501A | 1-449-526-11 | (JX390:E)...TRANSFORMER, POWER |
| PT501A | 1-449-527-11 | (JX390:US)...TRANSFORMER, POWER |
| Q1 | 8-729-266-93 | TRANSISTOR 2SC2669 |
| Q2 | 8-729-266-93 | TRANSISTOR 2SC2669 |
| Q21 | 8-729-119-78 | TRANSISTOR 2SC2785 |
| Q22 | 8-729-119-78 | TRANSISTOR 2SC2785 |
| Q26 | 8-729-900-80 | TRANSISTOR DT C114ES |
| Q27 | 8-729-119-78 | (JX390)...TRANSISTOR 2SC2785 |
| Q28 | 8-729-119-78 | (JX390)...TRANSISTOR 2SC2785 |
| Q81 | 8-729-806-10 | TRANSISTOR 2SA1348 |
| Q82 | 8-729-900-80 | TRANSISTOR DT C114ES |
| Q83 | 8-729-202-67 | TRANSISTOR 2SK246GR3 |
| Q84 | 8-729-201-84 | TRANSISTOR 2SC3112-13 |
| Q601 | 8-729-115-77 | (JX295)...TRANSISTOR BAIL4M |
| Q602 | 8-729-115-77 | (JX295)...TRANSISTOR BAIL4M |
| R1 | A.1-249-401-11 | RES, 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 | A.1-249-404-00 | RES, CARBON (SMALL) 82 5% 1/4W F |
| R22 | 1-249-428-11 | (JX390:US/JX295:US,Canadian) ...RES, CARBON (SMALL) 8.2K 5% 1/4W |
| R22 | 1-249-433-00 | (JX390/JX295:E) ...RES, CARBON (SMALL) 22K 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 | 1-249-428-11 | RES, CARBON (SMALL) 8.2K 5% 1/4W |
| R27 | 1-249-350-11 | CARBON MELF 18K 5% 1/8W |
| 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 |

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| <p>Note: The components identified by mark A or dotted line with mark A are critical for safety. Replace only with part number specified.</p> | <p>Note: Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p> |
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| Ref.No. | Part No. | Description | Ref.No. | Part No. | Description |
|---------|----------------|---|---------|----------------|--|
| R34 | 1-249-425-11 | (JX390)...RES,CARBON(SMALL) 4.7K | R690 | △,1-212-942-00 | (JX295)...FUSIBLE 2.2 5% 1/2W |
| R34 | 1-249-437-11 | (JX295)...RES,CARBON(SMALL) 47K 5% 1/4W | R701 | 1-249-405-11 | CARBON 100 5% 1/4W |
| R35 | 1-249-355-11 | CARBON MELF 47K 5% 1/8W | R702 | 1-249-441-11 | CARBON 100K 5% 1/4W |
| R37 | 1-249-359-11 | CARBON MELF 100K 5% 1/8W | R703 | 1-249-441-11 | CARBON 100K 5% 1/4W |
| R38 | 1-249-363-11 | CARBON MELF 220K 5% 1/8W | R704 | 1-249-441-11 | CARBON 100K 5% 1/4W |
| R39 | 1-249-339-11 | CARBON MELF 2.2K 5% 1/8W | R709 | 1-249-417-11 | CARBON 1K 5% 1/4W |
| R40 | 1-249-338-11 | CARBON MELF 1.8K 5% 1/8W | R710 | 1-249-411-11 | CARBON 330 5% 1/4W |
| R41 | 1-249-344-11 | CARBON MELF 5.6K 5% 1/8W | R711 | 1-249-411-11 | CARBON 330 5% 1/4W |
| R42 | 1-249-359-11 | CARBON MELF 100K 5% 1/8W | R712 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R43 | 1-249-363-11 | CARBON MELF 220K 5% 1/8W | R713 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R44 | 1-249-339-11 | CARBON MELF 2.2K 5% 1/8W | R714 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R45 | 1-249-338-11 | CARBON MELF 1.8K 5% 1/8W | R715 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R46 | 1-249-344-11 | CARBON MELF 5.6K 5% 1/8W | R716 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R47 | △,1-249-409-11 | RES, CARBON (SMALL) 220 5% 1/4W F | R717 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R48 | 1-249-359-11 | (JX390)...CARBON MELF 100K 5% 1/8W | R718 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R49 | 1-249-359-11 | (JX390)...CARBON MELF 100K 5% 1/8W | R719 | 1-249-429-11 | CARBON 10K 5% 1/4W |
| R61 | 1-249-359-11 | CARBON MELF 100K 5% 1/8W | R720 | 1-249-441-11 | CARBON 100K 5% 1/4W |
| R62 | 1-249-355-11 | CARBON MELF 47K 5% 1/8W | R721 | 1-249-441-11 | CARBON 100K 5% 1/4W |
| R63 | 1-249-315-11 | CARBON MELF 22 5% 1/8W | RV21 | 1-238-013-11 | RES, ADJ, CARBON 2.2K |
| R81 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | RV22 | 1-238-017-11 | RES, ADJ, CARBON 22K |
| R82 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | RV24 | 1-238-017-11 | RES, ADJ, CARBON 22K |
| R83 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S1 | △,1-554-920-11 | (JX390)..SWITCH, PUSH (AC POWER)(1 KEY) |
| R84 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S701 | 1-554-303-21 | SWITCH, KEY BOARD (1) |
| R85 | 1-249-347-11 | CARBON MELF 10K 5% 1/8W | S702 | 1-554-303-21 | SWITCH, KEY BOARD (2) |
| R86 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S703 | 1-554-303-21 | SWITCH, KEY BOARD (3) |
| R87 | 1-249-347-11 | CARBON MELF 10K 5% 1/8W | S704 | 1-554-303-21 | SWITCH, KEY BOARD (4) |
| R88 | 1-249-343-11 | CARBON MELF 4.7K 5% 1/8W | S705 | 1-554-303-21 | SWITCH, KEY BOARD (5) |
| R89 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S706 | 1-554-303-21 | SWITCH, KEY BOARD (6) |
| R90 | 1-249-347-11 | CARBON MELF 10K 5% 1/8W | S707 | 1-554-303-21 | SWITCH, KEY BOARD (7) |
| R91 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S708 | 1-554-303-21 | SWITCH, KEY BOARD (8) |
| R92 | △,1-249-401-11 | RES, CARBON (SMALL) 47 5% 1/4W F | S709 | 1-554-303-21 | SWITCH, KEY BOARD (9) |
| R101 | 1-249-341-11 | CARBON MELF 3.3K 5% 1/8W | S710 | 1-554-303-21 | SWITCH, KEY BOARD (0) |
| R102 | 1-249-332-11 | CARBON MELF 560 5% 1/8W | S711 | 1-554-303-21 | SWITCH, KEY BOARD (AUTO TUNING) |
| R103 | 1-249-335-11 | CARBON MELF 1K 5% 1/8W | S712 | 1-554-303-21 | SWITCH, KEY BOARD (MEMORY SCAN) |
| R104 | 1-249-328-11 | CARBON MELF 270 5% 1/8W | S713 | 1-554-303-21 | SWITCH, KEY BOARD (MEMORY) |
| R105 | 1-249-343-11 | CARBON MELF 4.7K 5% 1/8W | S714 | 1-554-303-21 | SWITCH, KEY BOARD (SHIFT) |
| R106 | 1-249-339-11 | CARBON MELF 2.2K 5% 1/8W | S715 | 1-554-303-21 | SWITCH, KEY BOARD (BAND FM/AM) |
| R107 | 1-249-343-11 | CARBON MELF 4.7K 5% 1/8W | S716 | 1-554-088-00 | SWITCH, KEY BOARD (TUNING +) |
| R108 | 1-249-323-11 | CARBON MELF 100 5% 1/8W | S717 | 1-554-088-00 | SWITCH, KEY BOARD (TUNING -) |
| R109 | 1-249-343-11 | CARBON MELF 4.7K 5% 1/8W | T21 | 1-404-807-11 | TRANSFORMER, DISCRIMINATOR |
| R110 | △,1-249-405-11 | RES, CARBON (SMALL) 100 5% 1/4W F | TB501 | *1-535-141-00 | (JX390:US)..BASE POST 22MM(10MM PITCH)4P |
| R501 | 1-202-725-00 | SOLID 3.3M 10% 1/2W | TB501 | *1-535-142-21 | (JX390:E)...BASE POST 22MM(10MM PITCH)5P |
| R502 | 1-249-437-11 | CARBON 47K 5% 1/4W | TMI | 1-536-708-00 | TERMINAL BOARD, PUSH 4P |
| R503 | △,1-247-752-11 | CARBON 1K 5% 1/2W F | TP1 | *1-560-060-00 | PIN, CONNECTOR 2P |
| R504 | 1-249-393-11 | CARBON 10 5% 1/4W | VSI | △,1-570-046-21 | (JX390:E)...SWITCH, VOLTAGE CHANGE |
| R505 | 1-249-441-11 | CARBON 100K 5% 1/4W | XT81 | 1-577-126-11 | VIBRATOR, CRYSTAL |
| R601 | 1-249-393-11 | (JX295)...CARBON 10 5% 1/4W | | | |
| R602 | △,1-247-741-11 | (JX295)...CARBON 150 5% 1/2W | | | |
| R603 | 1-249-429-11 | (JX295)...CARBON 10K 5% 1/4W | | | |
| R604 | 1-249-429-11 | (JX295)...CARBON 10K 5% 1/4W | | | |
| R605 | 1-249-435-11 | (JX295)...CARBON 33K 5% 1/4W | | | |
| R606 | 1-249-438-11 | (JX295)...CARBON 56K 5% 1/4W | | | |
| R607 | 1-249-441-11 | (JX295)...CARBON 100K 5% 1/4W | | | |

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.

ACCESSORY & PACKING MATERIAL

1-501-374-11 (JX390)...ANTENNA, LOOP
1-558-232-11 (JX390)...CORD (WITH CONNECTOR)(SIRCS)4P
1-558-543-11 (JX390)...CORD, CONNECTION

3-750-169-11 (JX390:E)...MANUAL, INSTRUCTION
3-750-169-21 (JX390:US)...MANUAL, INSTRUCTION

*3-704-339-01 (JX390)...SHEET (STANDARD), PROTECTION
*4-917-057-01 (JX390)...CUSHION
*4-917-066-01 (JX390)...INDIVIDUAL CARTON .

ST-JX295/JX390

SONY SERVICE MANUAL

US Model
E Model
ST-JX295/JX390

Canadian Model
ST-JX295

SUPPLEMENT-1

File this supplement with the Service Manual.

Subject : Australian model has been added.

ST-JX390 Australian model has been added for E model.

This supplement only contains the difference between the models.

Therefore, refer to the service manual for the other information.

| ST-JX390 E model | | | | ST-JX390 Australian model | |
|------------------|-----|---------------|----------------------|---------------------------|-----------------------|
| Page | No. | Part No. | Description | Part No. | Description |
| | 12 | *3-703-571-12 | BUSHING (4516), CORD | *3-703-244-00 | BUSHING (2104), CORD |
| 21 | 911 | △1-526-565-12 | AC PLUG ADAPTOR | △1-506-401-00 | ADAPTOR, CONVERSION |
| | CP1 | △1-551-188-XX | CORD, POWER | △1-555-795-00 | CORD, POWER,EURO PLUG |

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

ST-JX295/JX390

SONY[®] SERVICE MANUAL

US Model

E Model

ST-JX295/JX390

Canadian Model

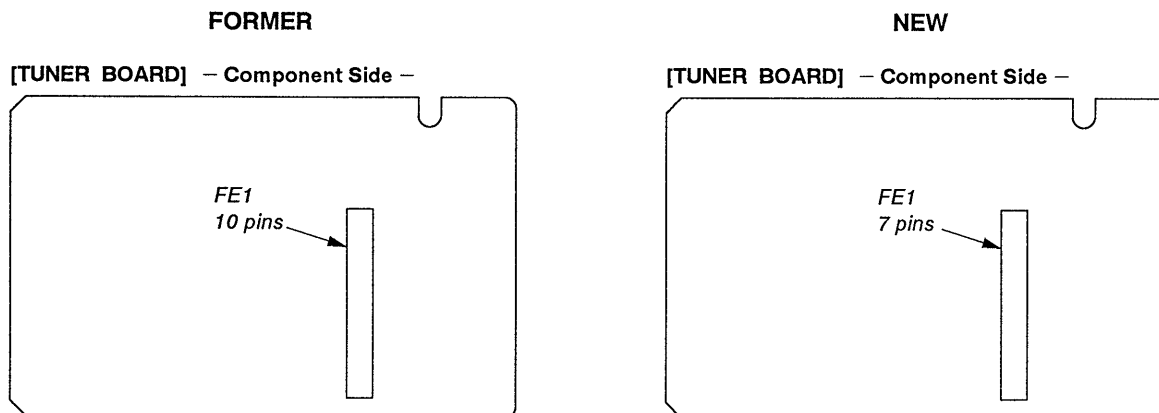
ST-JX295

SUPPLEMENT-2

Subject:
TUNER BOARD MODIFICATION

The tuner board has been modified.
File this supplement with the service manual.

• DIFFERENCE BETWEEN NEW TYPE AND FORMER TYPE



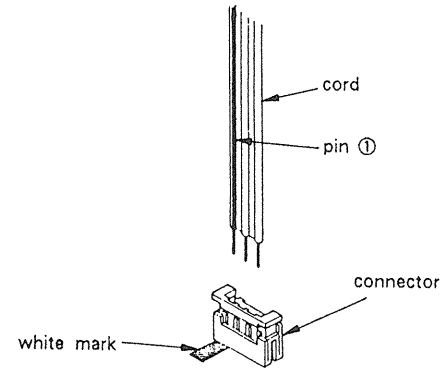
Note: The mounted tuner board can be replaced with the new type as a whole block.

Note on Printed Wiring Board:

- : parts extracted from the component side.
- : indicates side identified with part number.

[Note on Inserting the Cord to the Connector on Tuner Board]

- Insert the cord to the connector fitting Pin ① of the cord in accordance with the white mark on the board at the connector as shown in the figure.



Note on Schematic Diagram:

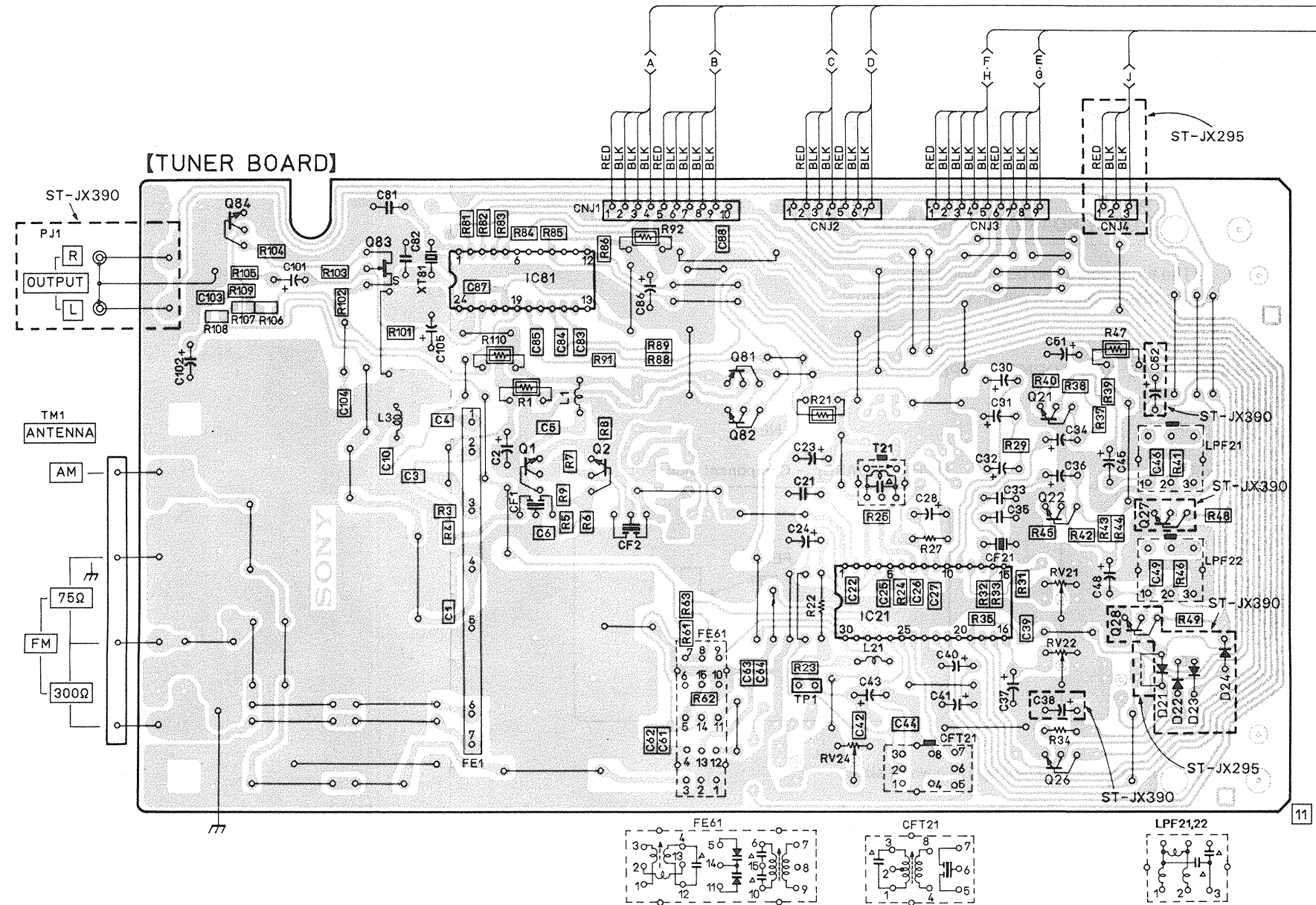
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.
- \square : nonflammable resistor.

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.

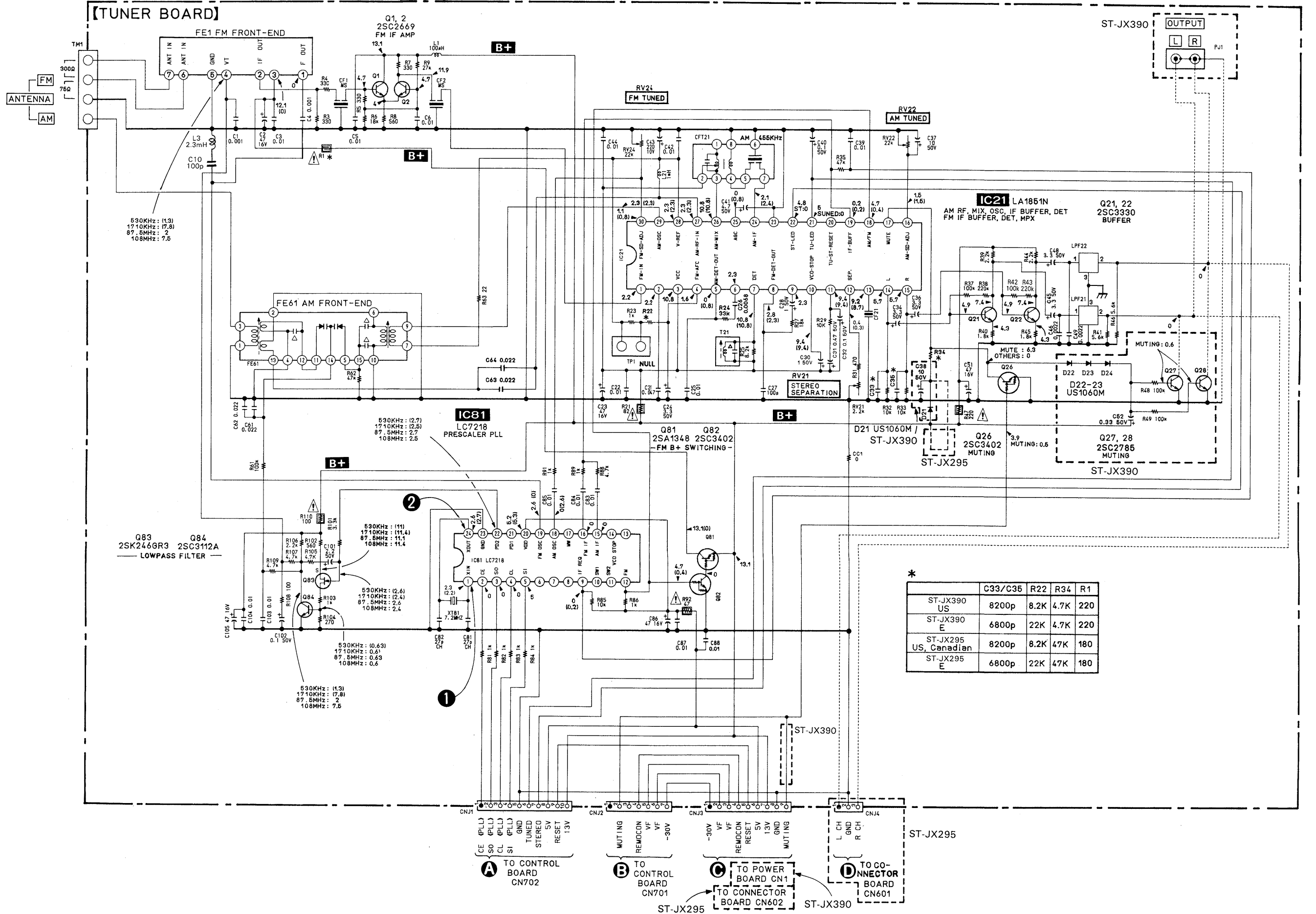
- **B+** : B + Line.
- **B-** : B - Line.
- \square : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
(): AM
- Voltages are taken with a VOM (10 M Ω/V).
Voltage variations may be noted due to normal production tolerances.
- 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

[PRINTED WIRING BOARD]



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A
B
C
D
E
F
G
H
I
J



[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 F.

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

COILS
• MMH: mH, UH: μ H

SEMICONDUCTORS
In 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.

| Ref.No. | Part No. | Description | Ref.No. | Part No. | Description |
|---------|----------------|---|---------|---------------|-------------------------------------|
| 904 | * A-4303-238-A | (JX295: US Canadian)...MOUNTED PCB TUNER | C49 | 1-162-524-11 | CERAMIC CHIP 0.0022MF 20% 25V |
| | * A-4303-239-A | (JX295: E).....MOUNTED PCB TUNER | C51 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| | * A-4303-236-A | (JX390: US).....MOUNTED PCB TUNER | C52 | 1-123-609-11 | (JX390)...CAP, ELECT 0.33MF 20% 50V |
| | * A-4303-237-A | (JX390: E).....MOUNTED PCB TUNER | C61 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| C1 | 1-162-294-31 | CERAMIC CHIP 0.001MF 20% 25V | C62 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| C2 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V | C63 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| C3 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C64 | 1-163-063-00 | CERAMIC MELF 0.022MF 25V |
| C4 | 1-162-294-31 | CERAMIC CHIP 0.001MF 20% 25V | C81 | 1-102-961-00 | CAP, CERAMIC 27PF 5% 50V |
| C5 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C82 | 1-102-961-00 | CAP, CERAMIC 27PF 5% 50V |
| C6 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C83 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C10 | 1-162-516-11 | CERAMIC CHIP 100PF 10% 50V | C84 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C9 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C85 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C21 | 1-161-021-11 | CAP, CERAMIC 0.047MF 10% 25V | C86 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| C22 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C87 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C23 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V | C88 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C24 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | C101 | 1-124-925-11 | CAP, ELECT 2.2MF 20% 50V |
| C25 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | C102 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V |
| C26 | 1-162-527-11 | CERAMIC CHIP 0.0068MF 20% 12V | C105 | 1-124-477-11 | CAP, ELECT 47MF 20% 16V |
| C27 | 1-162-516-11 | CERAMIC CHIP 100PF 10% 50V | C103 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C28 | 1-124-499-11 | CAP, ELECT 1.0MF 20% 50V | C104 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V |
| C30 | 1-124-499-11 | CAP, ELECT 1.0MF 20% 50V | CC11 | 1-249-366-11 | CARBON MELF 0 5% 1/5W |
| C31 | 1-124-902-00 | CAP, ELECT 0.47MF 20% 50V | CF1 | 1-567-389-11 | FILTER, CERAMIC |
| C32 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V | CF2 | 1-567-389-11 | FILTER, CERAMIC |
| C33 | 1-130-481-91 | (JX390/JX295: E)...CAP, PE TEREPHTHALATE 00068MF 5% 50V | CF21 | 1-577-075-11 | OSCILLATOR, CERAMIC |
| C33 | 1-130-482-00 | (JX390: US/JX295: US, Canadian)...CAP, PE TEREPHTHALATE 0.0082MF 5% 50V | CF701 | 1-577-359-21 | VIBRATOR, CERAMIC |
| C34 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | CFT21 | 1-404-853-11 | TRANSFORMER, IF (CERAMIC FILTER) |
| C35 | 1-130-481-91 | (JX390/JX295: E)...CAP, PE TEREPHTHALATE 00068MF 5% 50V | CNJ1 | *1-568-276-11 | SOCKET, CONNECTOR 10P |
| C35 | 1-130-482-00 | (JX390: US/JX295: US, Canadian)...CAP, PE TEREPHTHALATE 0.0082MF 5% 50V | CNJ2 | *1-568-273-11 | SOCKET, CONNECTOR 7P |
| C36 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | CNJ3 | *1-568-275-11 | SOCKET, CONNECTOR 9P |
| C37 | 1-123-875-11 | CAP, ELECT 10MF 20% 50V | CNJ4 | 1-568-269-11 | (JX295)...SOCKET, CONNECTOR 3P |
| C38 | 1-123-875-11 | (JX390)...CAP, ELECT 10MF 20% 50V | D21 | 8-719-000-26 | (JX390)...DIODE U1060M |
| C39 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | D22 | 8-719-000-26 | (JX390)...DIODE U1060M |
| C40 | 1-124-463-00 | CAP, ELECT 0.1MF 20% 50V | D23 | 8-719-000-26 | (JX390)...DIODE U1060M |
| C41 | 1-124-927-11 | CAP, ELECT 4.7MF 20% 50V | D24 | 8-719-000-26 | (JX390)...DIODE U1060M |
| C42 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | FE1 | 1-463-962-21 | FRONT END, FM |
| C43 | 1-126-176-11 | CAP, ELECT 220MF 20% 10V | FE61 | 1-236-461-11 | ENCAPSULATED COMPONENT |
| C44 | 1-163-059-00 | CERAMIC MELF 0.01MF 20% 16V | IC21 | 8-759-821-45 | IC LA1851N |
| C45 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | IC81 | 8-759-820-91 | IC LC7218 |
| C46 | 1-162-524-11 | CERAMIC CHIP 0.0022MF 20% 25V | L1 | 1-410-521-11 | MICRO INDUCTOR 100UH |
| C48 | 1-123-382-00 | CAP, ELECT 3.3MF 20% 50V | L21 | 1-410-171-11 | MICRO INDUCTOR 1MMH |
| | | | LPF21 | 1-235-164-00 | FILTER, LOW PASS |
| | | | LPF22 | 1-235-164-00 | FILTER, LOW PASS |
| | | | PJ1 | 1-565-352-21 | (JX390)...JACK, PIN 2P |

| Ref.No. | Part No. | Description |
|---------|----------------|---|
| Q1 | 8-729-266-93 | TRANSISTOR 2SC2669 |
| Q2 | 8-729-266-93 | TRANSISTOR 2SC2669 |
| Q21 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |
| Q22 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |
| Q26 | 8-729-900-80 | TRANSISTOR DT C114ES |
| Q27 | 8-729-620-05 | (JX390)...TRANSISTOR 2SC2603-EF |
| Q28 | 8-729-620-05 | (JX390)...TRANSISTOR 2SC2603-EF |
| Q81 | 8-729-806-10 | TRANSISTOR 2SA1348 |
| Q82 | 8-729-900-80 | TRANSISTOR DT C114ES |
| Q83 | 8-729-202-67 | TRANSISTOR 2SK246GR3 |
| Q84 | 8-729-201-84 | TRANSISTOR 2SC3112-13 |
| R1 | △ 1-249-409-11 | RES, CARBON (SMALL) 220 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 | RES, CARBON (SMALL) 82 5% 1/4W F |
| R22 | 1-249-428-11 | (JX390:US/JX295:US,Canadian) ...RES, CARBON (SMALL) 8.2K 5% 1/4W |
| R22 | 1-249-433-00 | (JX390/JX295:E) ...RES, CARBON (SMALL) 22K 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 | 1-249-350-11 | CARBON MELF 18K 5% 1/8W |
| 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 | (JX390)...RES,CARBON(SMALL) 4.7K |
| R34 | 1-249-437-11 | (JX295)...RES,CARBON(SMALL) 47K 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 | RES, CARBON (SMALL) 220 5% 1/4W F |
| R48 | 1-249-359-11 | (JX390)...CARBON MELF 100K 5% 1/8W |
| R49 | 1-249-359-11 | (JX390)...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 |

| Ref.No. | Part No. | Description |
|---------|----------------|-----------------------------------|
| 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 | RES, CARBON (SMALL) 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 | RES, CARBON (SMALL) 100 5% 1/4W F |
| RV21 | 1-238-013-11 | RES, ADJ, CARBON 2.2K |
| RV22 | 1-238-017-11 | RES, ADJ, CARBON 22K |
| RV24 | 1-238-017-11 | RES, ADJ, CARBON 22K |
| T21 | 1-404-807-11 | TRANSFORMER, DISCRIMINATOR |
| TMI | 1-536-708-00 | TERMINAL BOARD, PUSH 4P |
| TP1 | *1-560-060-00 | PIN, CONNECTOR 2P |
| XT81 | 1-577-126-11 | VIBRATOR, CRYSTAL |

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.