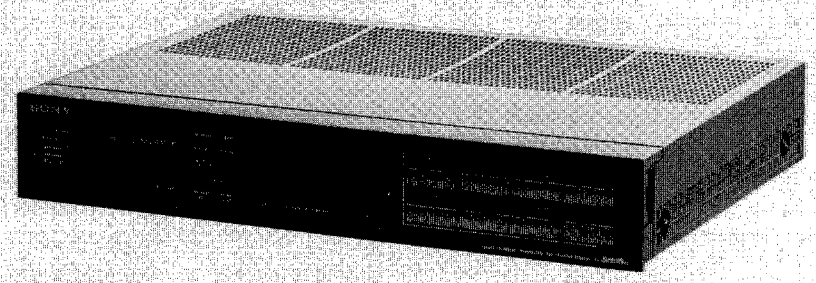
ST-S555ES

US Model
Canadian Model
AEP Model



FM STEREO TUNER

SPECIFICATIONS

General

System	PLL quartz-locked digital synthesizer system
Power requirements	AEP model: 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50/60 Hz US, Canadian model: 120 V ac, 60 Hz
Power consumption	AEP model: 25 watts US, Canadian model: 23 watts
Dimensions	Approx. 430 x 80 x 340 mm (w/h/d) (17 x 3¼ x 13½ inches) including projecting parts and controls
Weight	AEP model: Approx. 4.9 kg (10 lbs 13 oz) net Approx. 5.9 kg (13 lbs 1 oz) in shipping carton US, Canadian model: Approx. 4.8 kg (10 lbs 10 oz) net Approx. 5.8 kg (12 lbs 13 oz) in shipping carton

0 dB = 0.775 V

— Continued on page 2 —

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET 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.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND 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.

MICROFILM

SONY

SERVICE MANUAL

FM tuner section

Tuning range 87.5 MHz - 108 MHz
Antenna terminals two, 75 ohms, unbalanced
Intermediate frequency
10.7 MHz

	at 40 kHz deviation	at 75 kHz deviation
Sensitivity	at 46 dB quieting 2 μV (mono) 22.5 μV (stereo)	at 50 dB quieting 16.8 dBf, 1.8 μV (mono) 37.9 dBf, 22.5 μV (stereo)
Usable sensitivity	0.8 μV (S/N = 26 dB)	10.3 dBf, 0.9 μV (IHF)
Signal-to-noise ratio	86 dB (mono) 80 dB (stereo)	92 dB (mono) 86 dB (stereo)
Harmonic distortion	IF BAND : WIDE 0.03% (mono), 0.05% (stereo) at 100 Hz 0.03% (mono), 0.04% (stereo) at 1 kHz 0.03% (mono), 0.12% (stereo) at 10 kHz IF BAND : NARROW 0.05% (mono), 0.07% (stereo) at 100 Hz 0.05% (mono), 0.06% (stereo) at 1 kHz 0.05% (mono), 0.15% (stereo) at 10 kHz	
IM distortion	IF BAND : WIDE 0.03% (mono), 0.04% (stereo)	
Separation	IF BAND : WIDE 55 dB at 100 Hz 60 dB at 1 kHz 45 dB at 10 kHz	
Frequency response	40 Hz – 12.5 kHz ±0.2 dB 30 Hz – 15 kHz $^{+0.2}_{-0.5}$ dB	30 Hz – 15 kHz $^{+0.2}_{-0.5}$ dB

Selectivity	at 300 kHz 30 dB (IF BAND : WIDE 57 dB (IF BAND : NARROW)	at 400 kHz 60 dB (IF BAND : WIDE) 90 dB (IF BAND : NARROW)
Capture ratio	1.0 dB	
AM suppression ratio	65 dB	
Image response ratio	120 dB	
IF response ratio	100 dB	
Spurious response ratio	120 dB	
RF intermodulation	78 dB (IHF), 100 dB (2.4 MHz)	

Sub-carrier product ratio
78 dB
Muting threshold Approx. 25 dBf, 5 μV
Auto-tuning threshold
Approx. 25 dBf, 5 μV
Output level/impedance (75 kHz deviation)
750 mV, 620 ohms, transformed by the supplied A.C.T. cable
Calibrating tone level
50% modulation (37.5 kHz deviation), 400 Hz
Antenna B attenuator 20 dB

SAFETY CHECK-OUT (US Model)

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 microampers). 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)

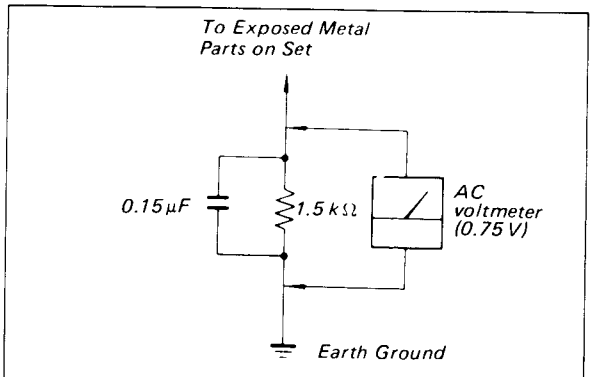
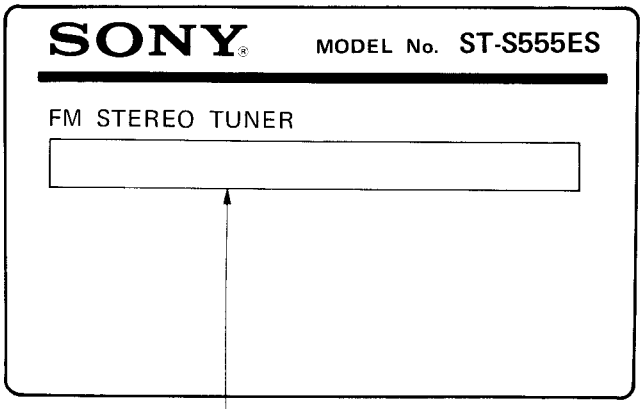


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION

— Specification Label on Jack Plate —



US model:	AC 120V	60Hz	23W
Canadian model:	AC 120V	60Hz	23W
AEP model:	AC 220V ~	50/60Hz	25W

FEATURE

PLL-CIRCUIT EMPLOYING DIRECT COMPARATOR TECHNOLOGY

The ST-S555ES with its refined Phase Locked Loop (PLL) circuit can tune to a frequency with extraordinary precision.

An IC developed by Sony allows the comparison frequency to be as high as the 50 kHz channel spacing frequency, thus eliminating the tendency of a low comparison frequency, which was formerly generally employed, to slip into the audio range and degrade the signal-to-noise ratio. The local oscillator output can therefore be directly supplied to the programmable divider section without an additional pre-scaler. We call this PLL-circuit technology the Direct Comparator method.

The result is almost rippleless local oscillation, greatly reduced spurious radiation, and an extremely high signal-to-noise ratio.

STATE OF THE ART

Every element of the ST-S555ES is chosen with an eye to optimum reception. Dual-gate MOS FETs in the RF amplifier, and five varactors in the front-end block insure high sensitivity and an excellent spurious response ratio. Four uni-phase filters in the IF amplifier provide high selectivity. The PLL multiplex decoder with a pilot canceler insures a flat frequency response, clear separation and very low distortion.

EFFORTLESS TUNING

Tuning is easy using the digital frequency readout in the frequency display window.

Three methods of tuning are available :

Automatic tuning, in which the entire FM band is scanned automatically until a signal is received.

Manual tuning, in which the FM band can be scanned either rapidly or step-by-step.

Memory preset tuning, in which the frequencies of up to eight stations can be stored in the non-volatile memory. In this mode, this information will be retained when the power is turned off so that you can tune in your favorite station with the push of a button. Various conditions can also be memorized for each individual station to permit one-touch reception. All the memorized settings are displayed in the FL display window.

The SCAN/READ button allows you to scan automatically the preset stations only, listening to each one for a few seconds to check if there is anything you would like to listen to.

TWO ANTENNA INPUTS

The tuner is provided with two antenna input terminals to permit two different antennas to be oriented in the best direction for the station to be received. Either antenna input can be easily chosen with the front panel antenna selector. The antenna attenuator switch can reduce the antenna B input by 20 dB to tune in the desired station more clearly, suppressing possible IM distortion caused by strong adjacent stations.

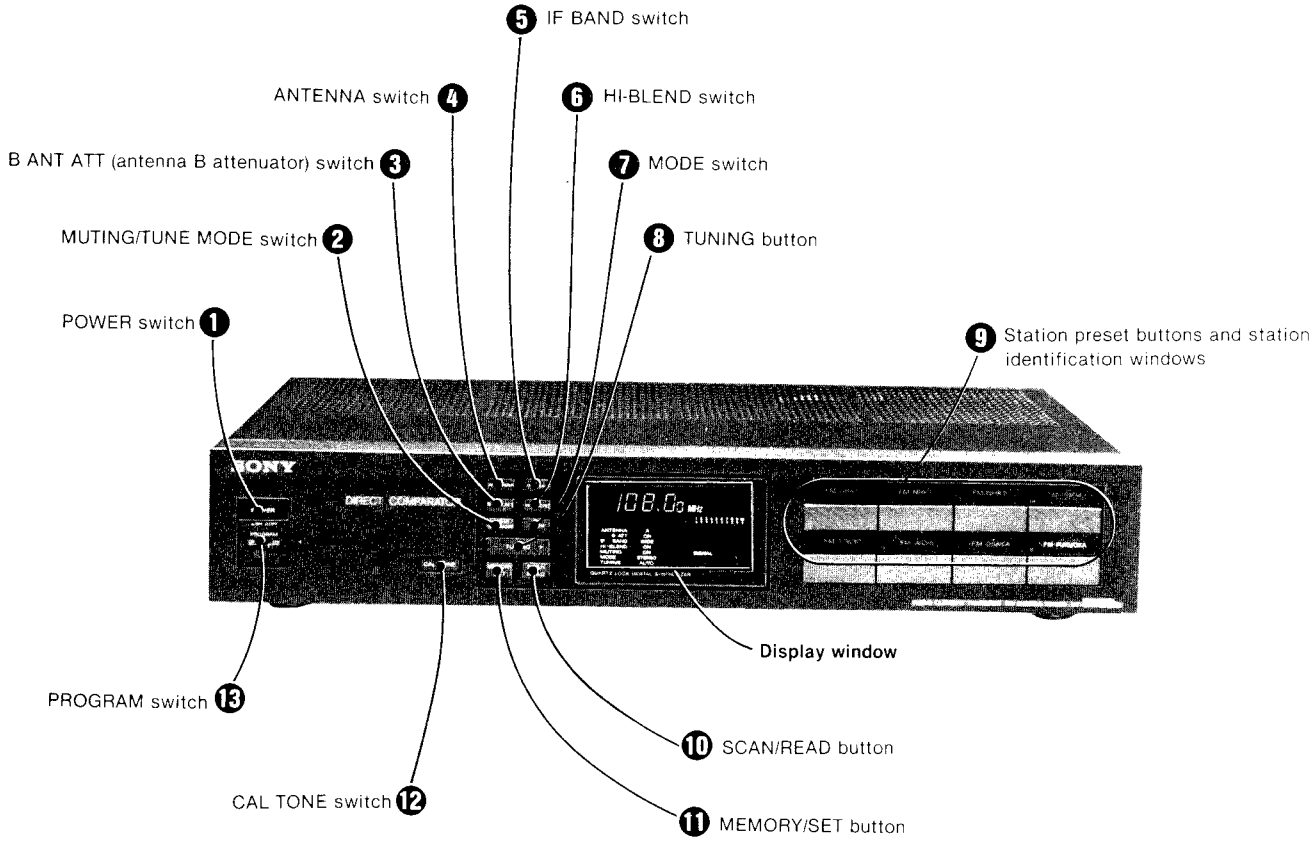
A.C.T. (AUDIO CURRENT TRANSFER) CIRCUIT

This tuner employs the A.C.T. technique developed for Sony integrated amplifiers. The A.C.T. circuit design virtually eliminates the problems which the conventional voltage transfer design had : electrical interference between the left and right channels, decreased sound quality, distortion, noise, etc. caused by the fact that both the signal source current and the power supply current flow through the same ground.

This technique insures the tuner's high-quality reception performance.

LOCATION OF CONTROLS

Each number in the photo is keyed to the descriptive text.



❶ POWER switch
Depress to turn on the power. To turn the power off, press the switch again.

❷ MUTING/TUNE MODE switch
This switch serves a dual purpose: it is a tuning system selector and a muting switch.
To tune in a station with the automatic tuning system, press this switch so that the TUNING AUTO indicator lights up. In this mode, the muting circuit will be activated to eliminate interstation noise while tuning and the MUTING ON indicator will light up.
When you want to tune in a very weak station with the manual tuning system, press the switch again so that the TUNING MANUAL indicator lights up. The muting circuit will be deactivated and the MUTING OFF indicator will light up. In this mode, keep the amplifier volume down to avoid speaker damage caused by interstation noise.

❸ B ANT ATT (antenna B attenuator) switch
When this switch is pressed and the B ATT ON indicator lights up, the input signals from the antenna B will be reduced by 20 dB. When the switch is pressed again and the B ATT OFF indicator lights up, the input signals will be received at their original strength.

❹ ANTENNA switch
When this switch is pressed and the ANTENNA A indicator lights up, the input signals from the antenna connected to the ANTENNA A terminal will be received by the tuner. When the switch is pressed again and the ANTENNA B indicator lights up, the input signals from the antenna connected to the ANTENNA B terminal will be received.

❺ IF BAND switch
Normally keep this switch in the WIDE position (the IF BAND WIDE indicator lights up). Low-distortion, hi-fi sound can be obtained.
When there is interference by adjacent stations, press the switch so that the IF BAND NARROW indicator lights up. The higher selectivity will improve the reception.

❻ HI-BLEND switch
When FM stereo signals are weak and noisy, press this switch so that the HI-BLEND ON indicator lights up.
This will provide better reception, although the stereo effect at high frequencies is slightly reduced.
To disengage the switch, press it again. The HI-BLEND OFF indicator will light up.

❼ MODE switch
Normally keep this switch in the STEREO position (the MODE STEREO indicator lights up). The tuner operates in the stereo mode for stereo sound sources and will be automatically switched to the mono mode for monaural sound sources.
When an FM program is too noisy, press the switch so that the MODE MONO indicator lights up. This will enable the tuner to receive weak stations, although the stereo feature is sacrificed.

❽ TUNING button
Press either side of this button to change the received frequency: press the left side [–] to go to a lower frequency and the right side [+] to go to a higher.
During automatic tuning: Press to start automatic frequency scanning. The frequencies below or above that shown on the display window will be scanned automatically until a signal is received. To resume scanning, press the button again.
During manual tuning: Press and keep the TUNING button depressed to change the frequency continuously until the figures in the frequency display window approach the desired frequency. The frequency figures will change rapidly. To change the frequency slowly (in 0.05 MHz steps) to tune in a station accurately, press the button and release immediately.
When the frequency figures reach the end of the tuning range, the frequency will then be scanned from the opposite end of the tuning range.

❾ Station preset buttons and station identification windows
To call up a memorized station, press the appropriate button.
Station labels (supplied) identifying memorized stations can be placed in the station identification windows above the buttons.

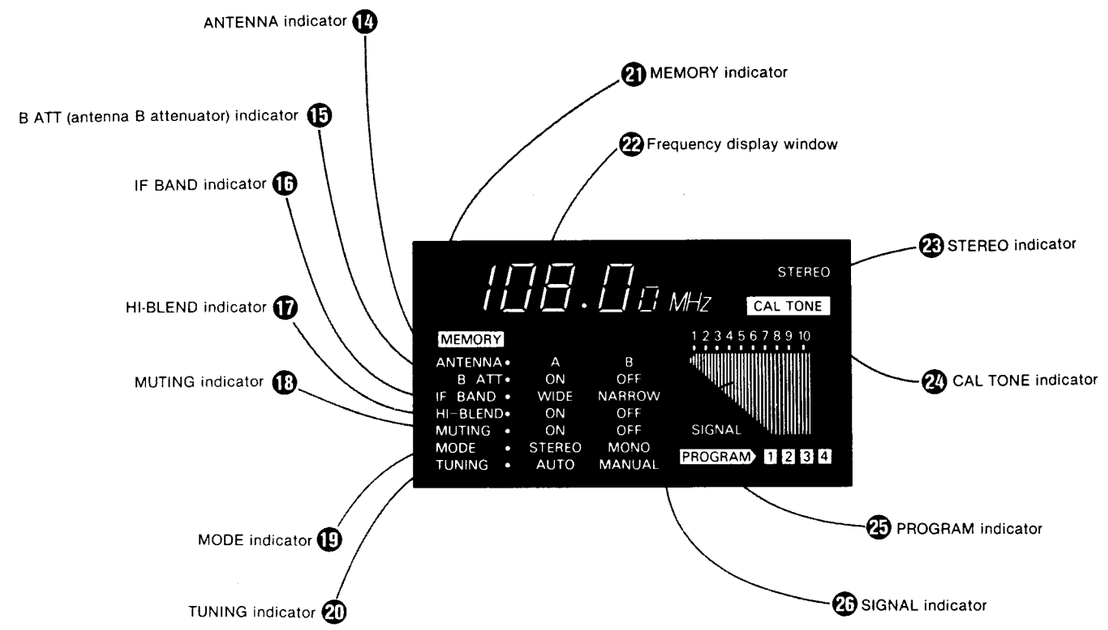
❿ SCAN/READ button
This button has a dual purpose. With the PROGRAM switch set to OFF, it works as a memory SCAN button and with the PROGRAM switch set to ON, as a program READ button.
SCAN button: Press to automatically scan the stations memorized on the station preset buttons.
READ button: By pushing this button, the programmed station order can be checked.

⓫ MEMORY/SET button
This button has a dual purpose. With the PROGRAM switch set to OFF, it works as a MEMORY button and with the PROGRAM switch set to ON, as a program SET button.
MEMORY button: Press to memorize the tuned station to a station preset button. The MEMORY indicator will appear in the frequency display window for about 3 seconds indicating that the preset memory circuit is standing by.
SET button: Press to program the preset stations in the desired order. The MEMORY indicator will appear indicating that the program circuit is standing by.

⓬ CAL TONE switch
Normally keep this switch disengaged so that the CAL TONE indicator is not lit.
To obtain a 400 Hz, 50% modulated signal for adjusting the recording level on a tape recorder, press the switch. The CAL TONE indicator will light up.
Generally, on cassette decks, adjust the recording level so that the VU meters deflect as close as possible to –3 dB, or the peak meters to –4 dB, and on reel-to-reel tape decks the VU meters deflect as close as possible to 0 dB. However, depending on the broadcast programs or the tapes you use, some further adjustments may be necessary. You can determine the most appropriate recording level for your tape deck after several trials, using the suggested levels as a starting point.
To disengage the CAL TONE switch, press the CAL TONE switch again or press any of the tuner switches.

⓭ PROGRAM switch
To use the program function, set this switch to ON. For ordinary use, be sure to keep the switch in the OFF position.

DISPLAY WINDOW



⓮ ANTENNA indicator
Indicates the setting of the ANTENNA switch.

⓯ B ATT (antenna B attenuator) indicator
Indicates the setting of the B ANT ATT switch.

⓰ IF BAND indicator
Indicates the setting of the IF BAND switch.

⓱ HI-BLEND indicator
Indicates the setting of the HI-BLEND switch.

⓲ MUTING indicator
Indicates the setting of the MUTING switch.

⓳ MODE indicator
Indicates the setting of the MODE switch.

⓴ TUNING indicator
The AUTO indicator shows the automatic tuning mode, and the MANUAL indicator, the manual tuning mode.

㉑ MEMORY indicator
When the MEMORY/SET button is pressed, "MEMORY" will appear for about 3 seconds indicating that the memory circuit is standing by.

㉒ Frequency display window
The frequency being received is displayed here in digits.

㉓ STEREO indicator
This indicator will light when an FM stereo program of sufficient signal strength is tuned in with the MODE switch set to STEREO.

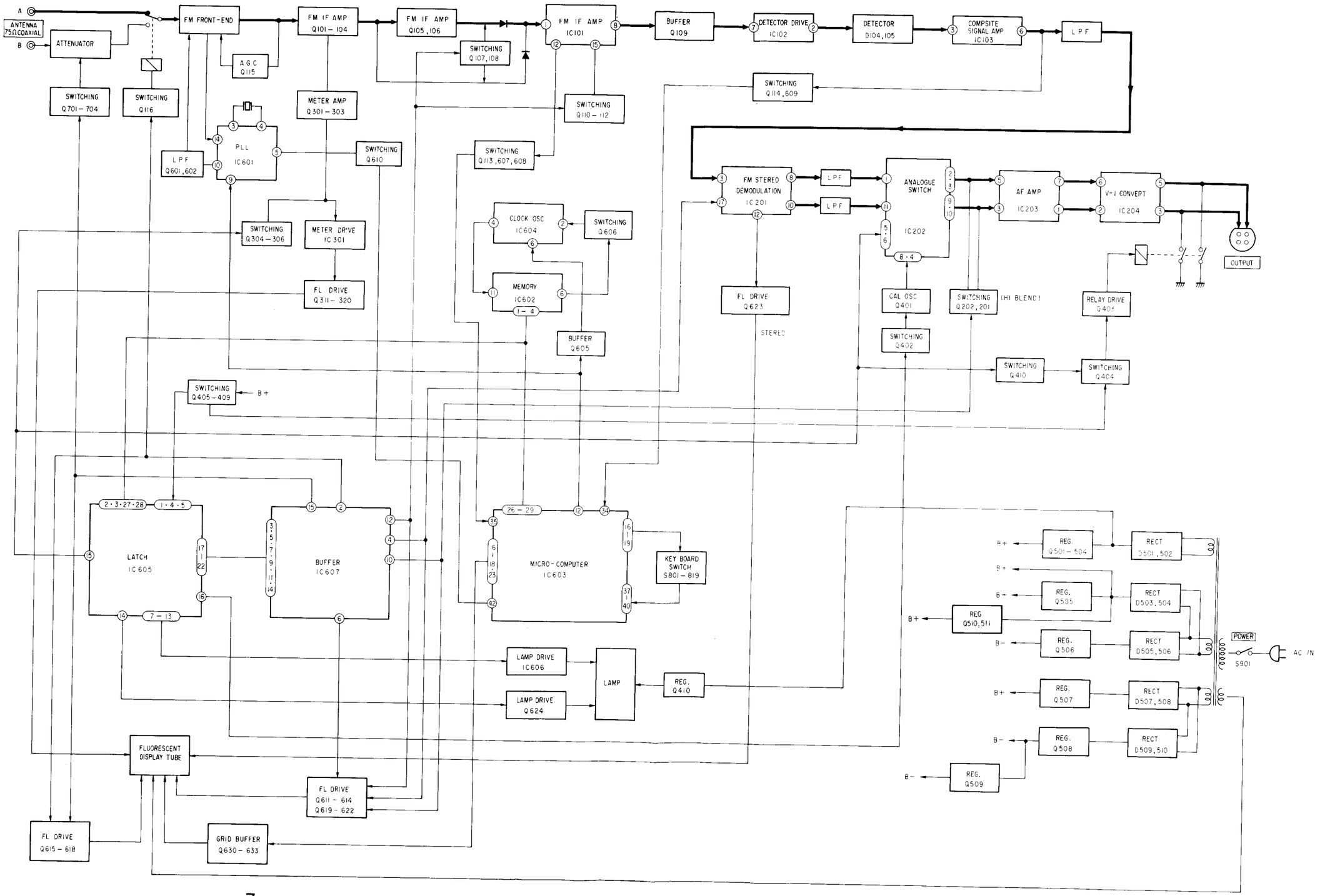
㉔ CAL TONE indicator
Lights up to show that a 400 Hz calibrating tone signal is provided by the CAL TONE switch.

㉕ PROGRAM indicator
With the PROGRAM switch set to ON, the order in the programmed sequence of the station being received is displayed here.

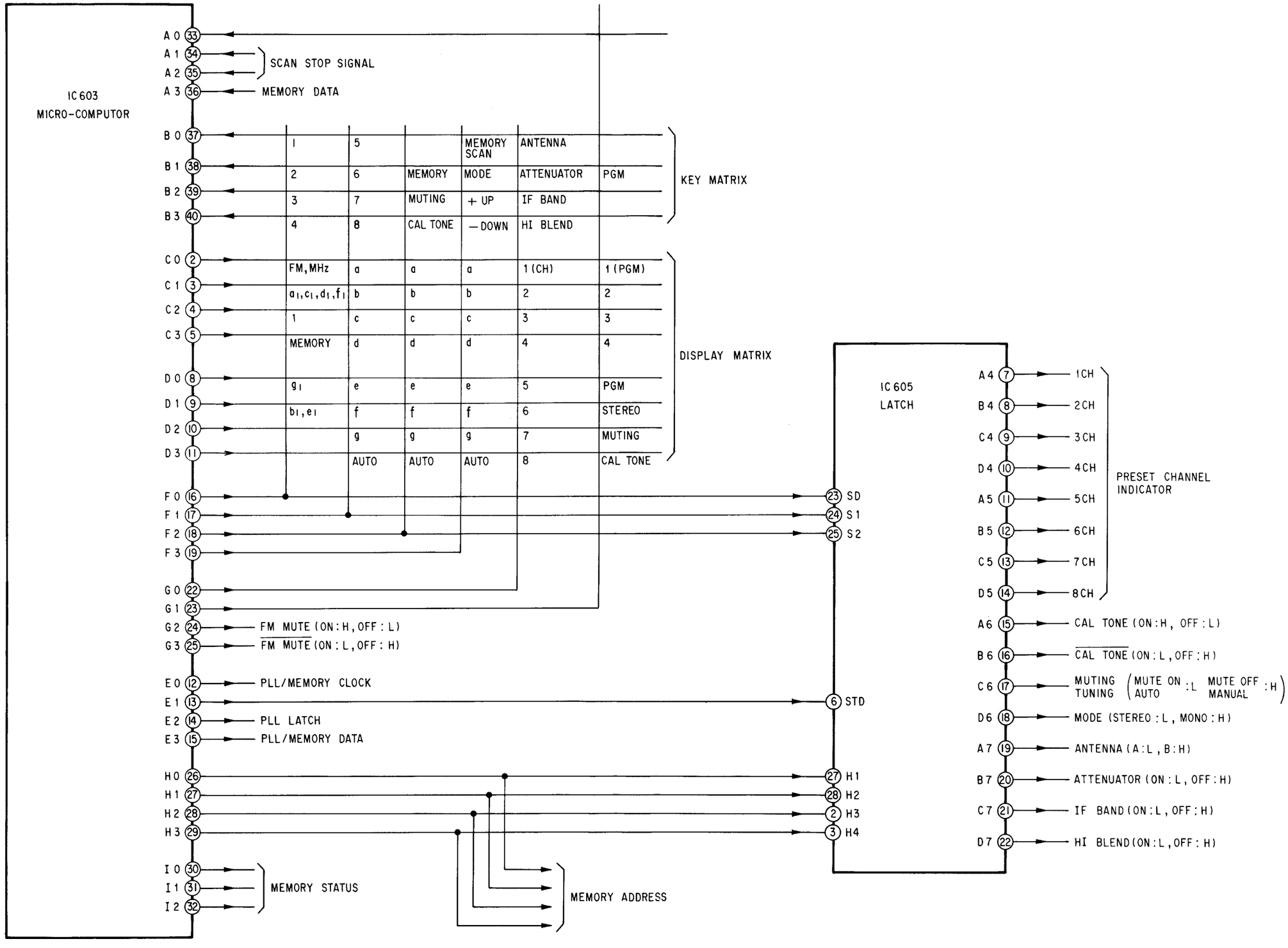
㉖ SIGNAL indicator
Indicates the strength of the tuned signal by the amount of indicator illumination. The fullest illumination means the antenna input signal is strong. When the indicator illuminates only at the low end, it means the antenna input signal is weak.
The lines tracing the upper and lower ends of the vertical bars indicate the signal-to-noise ratio curves.

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



IC603's (SYSTEM CONTROLLER IC μPD553C225) TERMINAL FUNCTIONS



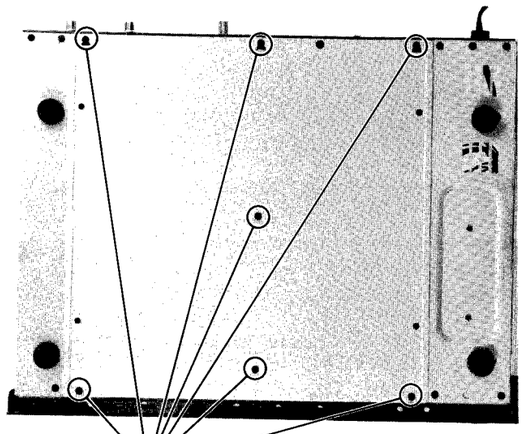
	1	5		MEMORY SCAN	ANTENNA	
	2	6	MEMORY	MODE	ATTENUATOR	PGM
	3	7	MUTING	+ UP	IF BAND	
	4	8	CAL TONE	— DOWN	HI BLEND	
	FM, MHz	a	a	a	1 (CH)	1 (PGM)
	a_1, c_1, d_1, f_1	b	b	b	2	2
	1	c	c	c	3	3
	MEMORY	d	d	d	4	4
	g_1	e	e	e	5	PGM
	b_1, e_1	f	f	f	6	STEREO
		g	g	g	7	MUTING
		AUTO	AUTO	AUTO	8	CAL TONE

SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

CASE REMOVAL
Remove 4 case screws.

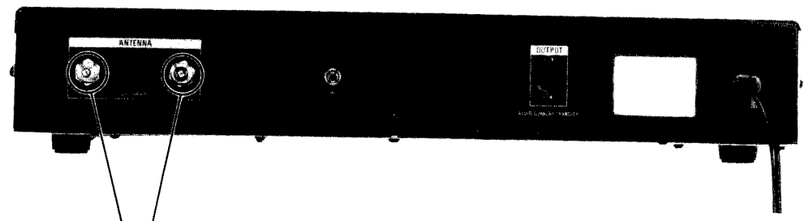
BOTTOM PLATE REMOVAL



Remove +BVTT3 x 6 (7 pieces).

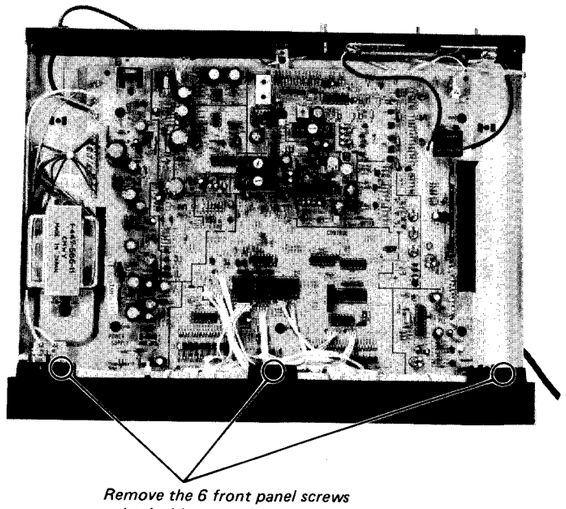
Tuner board can be checked by removing the bottom plate.

ANTENNA BOARD REMOVAL



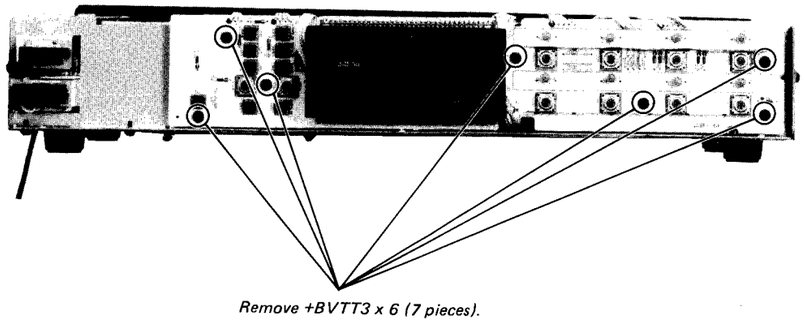
Remove 2 nuts.

FRONT PANEL REMOVAL



Remove the 6 front panel screws at both sides.

DISPLAY BOARD REMOVAL

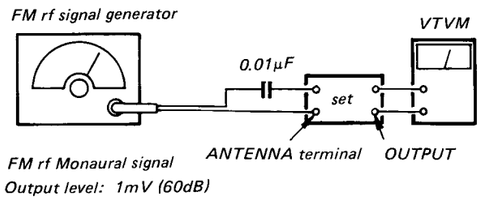


Remove +BVTT3 x 6 (7 pieces).

SECTION 3
ADJUSTMENTS

Output Level Adjustment

Setting:

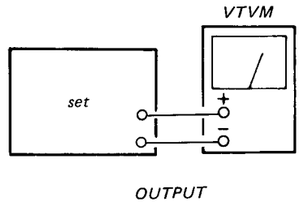


Procedure:

Adjust RT204 (L-CH) and RT254 (R-CH) for 0dB (0.775V) reading on VTVM.

CAL TONE Level Adjustment

Setting:



Procedure:

1. Press CAL TONE switch.
2. Adjust RT401 for –6dB (0.39V) reading on VTVM.

US, Canadian Model

FM rf Stereo Signal	FM rf Monaural Signal
Carrier frequency: 98MHz Modulation: Audio 400Hz, 33.75kHz deviation (45%) Subchannel 33.75kHz deviation (45%) Pilot 19kHz 7.5kHz deviation (10%)	Carrier frequency: 98MHz Modulation: 400Hz, 75kHz deviation (100%)

AEP Model

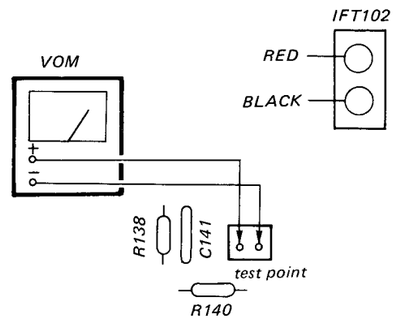
FM rf Stereo Signal	FM rf Monaural Signal
Carrier frequency: 98MHz Modulation: Audio 400Hz 16.25kHz deviation (40%) Subchannel 16.25kHz deviation (40%) Pilot 19kHz 7.5kHz deviation (19%)	Carrier frequency: 98MHz Modulation: 400Hz, 40kHz deviation (100%)

Discriminator Adjustment

A) Primary Side

- **Procedure**

1.

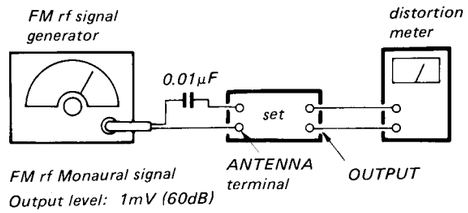


2. Detune the set by pushing the TUNING (+, –) button.
3. Turn the core (primary side: Black) of IFT102 for 0V reading on VOM.

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

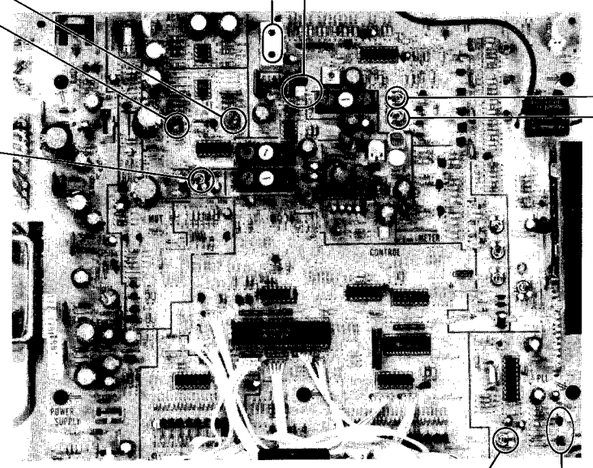
B) Secondary Side

- **Procedure**



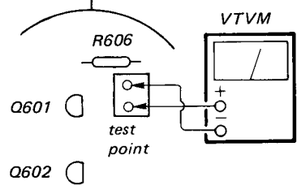
Turn the core (secondary side: Red) of IFT102 for minimum distortion reading on the distortion meter.

Note: Repeat both secondary and primary sides adjustments several times.



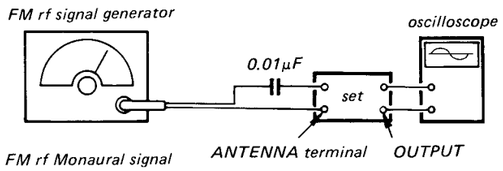
Gate Voltage Adjustment

Adjust RT601 so that gate voltage of Q601 is 1.8V (±0.1V) with 87.5MHz signal tuned.



FM Muting Level Adjustment

Setting:

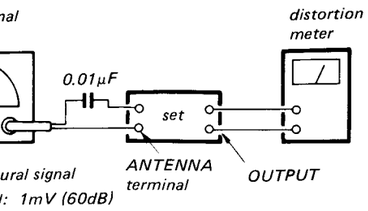


Procedure:

1. Indication: MUTING LOW
2. Tune the set to 98MHz by pressing the TUNING button (+, –) and adjust the output level of signal generator at 22dB (12.6μV).
3. Turn RT102 (WIDE) at the position where the waveform suddenly appears on the oscilloscope. Turn RT101 (NARROW) at the position where the waveform suddenly appears on the oscilloscope.

dary Side

ure

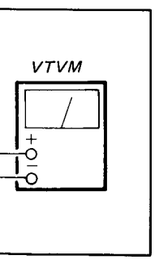


ore (secondary side: Red) of IFT102 for distortion reading on the distortion

at both secondary and primary sides adjustments al times.

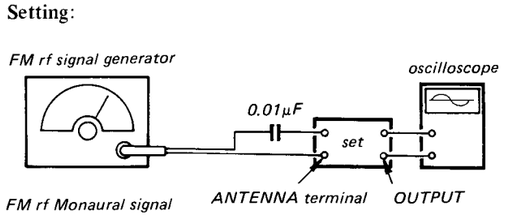
RT101

RT102



FM Muting Level Adjustment

Setting:



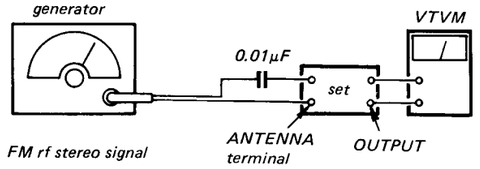
Output level: 12.6μV (22dB)

Procedure:

1. Indication: MUTING LOW
2. Tune the set to 98MHz by pressing the TUNING button (+, –) and adjust the output level of signal generator at 22dB (12.6μV).
3. Turn RT102 (WIDE) at the position where the waveform suddenly appears on the oscilloscope. Turn RT101 (NARROW) at the position where the waveform suddenly appears on the oscilloscope.

Stereo Separation Adjustment

Procedure:



Carrier frequency: 98MHz
Output level: 1mV (60dB)
Mode: Stereo

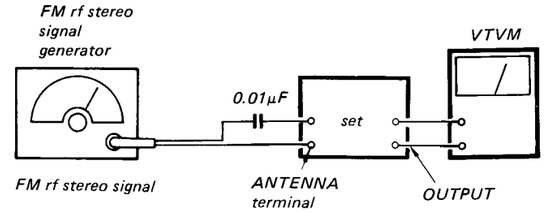
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT201 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT251 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.

Pilot Cancel Adjustment

Procedure:

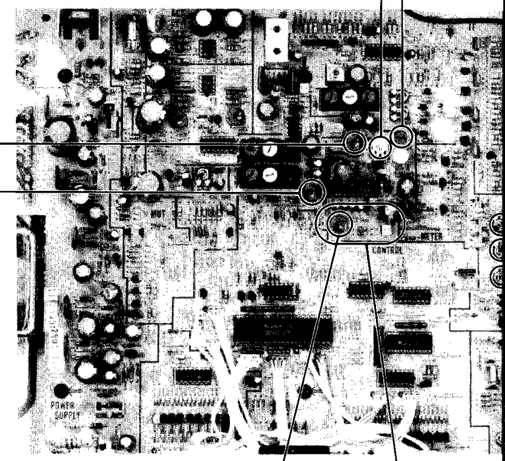


1. Repe MUT
2. Turn (+, – of th
3. Adju on t shou

RT202 L201

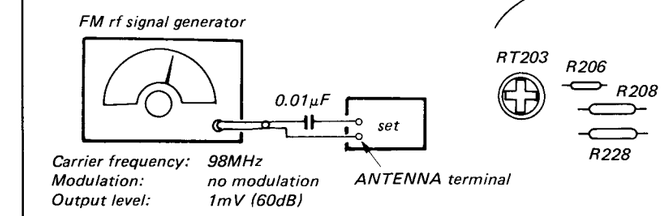
RT201

RT251



VCO Adjustment

Setting:



Carrier frequency: 98MHz
Modulation: no modulation
Output level: 1mV (60dB)

Procedure:

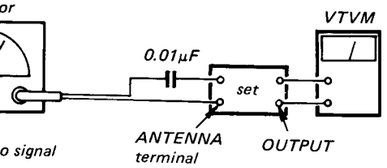
Adjust RT203 for 76kHz ±1000Hz on the counter.

paration Adjustment

:

tereo

or



o signal

uency: 98MHz
l: 1mV (60dB)
Stereo

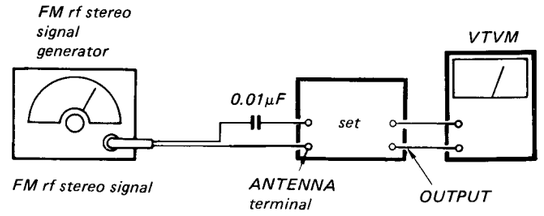
M stereo al generator put channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT201 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT251 for minimum reading.

Stereo separation: Ⓐ – Ⓑ
Stereo separation: Ⓒ – Ⓓ

separations of both channels should be .

Pilot Cancel Adjustment

Procedure:

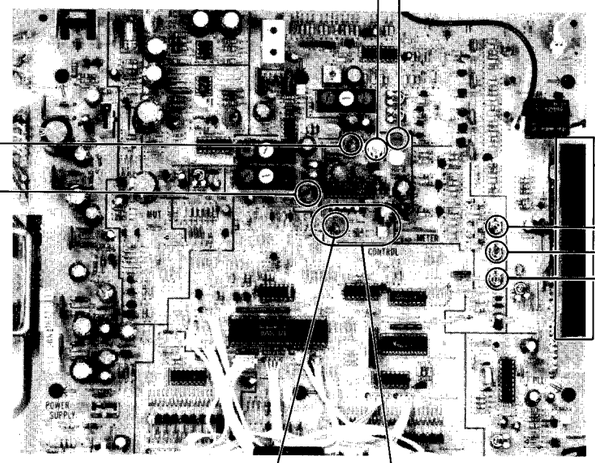


1. Repeat pressing the MUTING button until MUTING LOW indicator lights up.
2. Turn the set to 83MHz by pressing the TUNING (+, –) button and turn OFF the audio modulation of the FM stereo signal generator.
3. Adjust RT202 and L201 for minimum reading on the VTVM. Output level of both channels should be equal.

RT202 L201

RT201

RT251

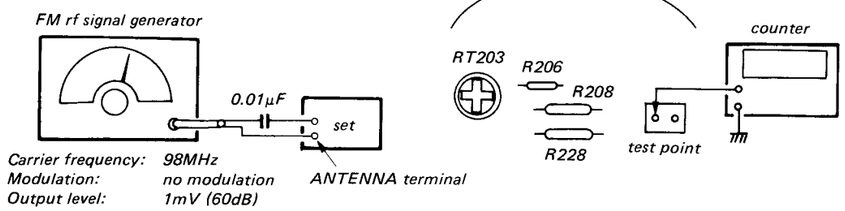


RT301
RT302
RT303

RT203 test point

VCO Adjustment

Setting:



Procedure:

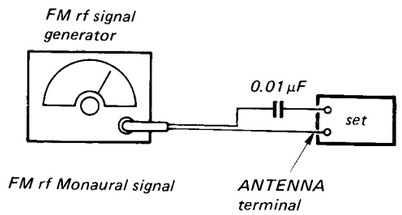
Adjust RT203 for 76kHz ±1000Hz on the counter.

Servicing Precaution

The front-end section has been carefully adjusted at the factory. When it is worn out, be sure to exchange it all with new section, because it is difficult to repair.

Signal Meter Level Adjustment

Setting:



1. Turn RT301 – 303 fully counterclockwise.
2. Set the output of FM signal generator to 55dB (562μV). Adjust RT303 so that the 1 – 5 LEDs conduct on the signal meter.
3. Set the output of FM signal generator to 55dB (562μV). Adjust RT302 so that the 1 – 6 LEDs conduct on the signal meter.
4. Set the output of FM signal generator to 80dB (10mV). Adjust RT301 so that the 1 – 10 LEDs conduct on the signal meter.

SECTION 4 DIAGRAMS

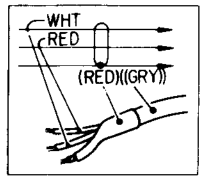
• Refer to page 29 for semiconductor lead layouts.

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P

4-1. MOUNTING DIAGRAM

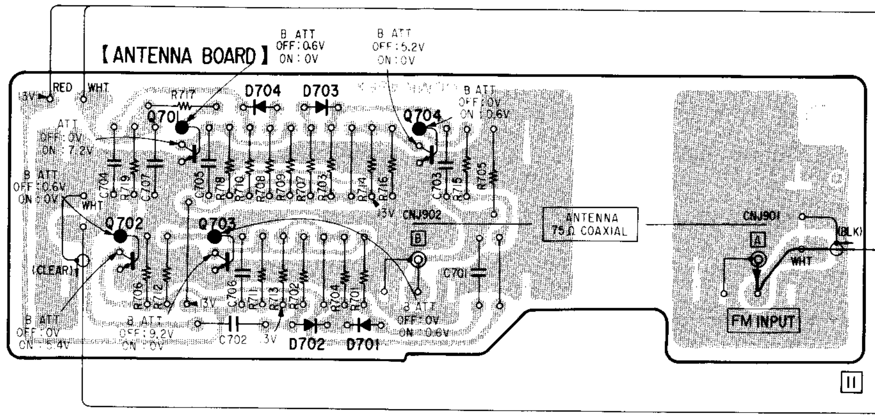
Note:

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



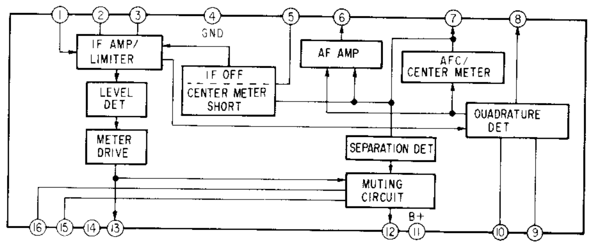
- ○— : parts extracted from the component side.
- [ ]← : indicates side identified with part number.
- ░ : B+ pattern
- ━━▶━━ : signal path
- ━━━▶ : L-CH signal path
- ━━━▶ : R-CH signal path

Q	702 701 703 704
D	704 702 703 701

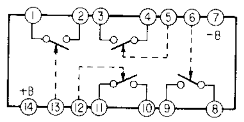


Row	Q · IC	D
1	108, 501	203
2	IC102, 109, IC204, 502, IC101, 106, 503,504, 105	102
3	IC203, 116, 104, 107, 112, 405, 103, 111, 202,505, IC103, 102,110	103, 404, 105,104, 511, 101, 501, 502
4	101, IC202, 406, 115, 301, 402,201	512, 503
5	302, 403, IC201, 114, 303, 113,607	504, 106, 301, 302, 401
6	401,411,404, 606, 506	303, 304, 201, 505, 305, 406, 306, 506, 403, 402, 607, 513
7	407, 605, IC604, IC602, 408, 304, 609,608,610, IC607, 306, 409, 305, 507	606, 202, 507, 307, 508, 514, 611
8	IC603, IC605, 509	516,509, 510, 608, 609
9	IC601, IC606, IC301, 624, 508, 601, 311–320	610, 515, 518
10	630–633, 611–623, 510, 602, 410,511	517, 601, 602, 405

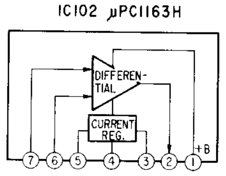
IC101 LA1235



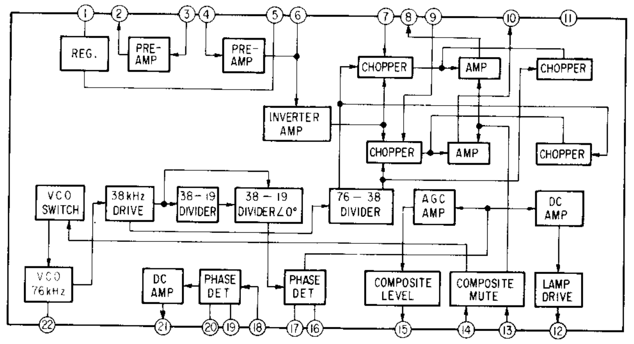
IC202 TC4066BP



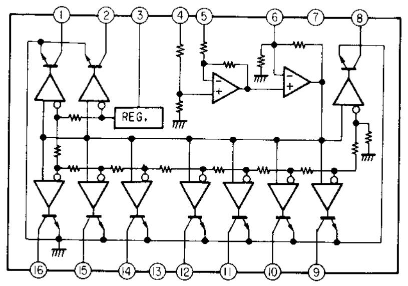
IC102 μPC1163H



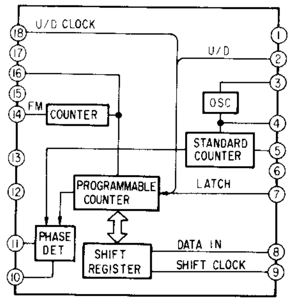
IC201 μPC1223C



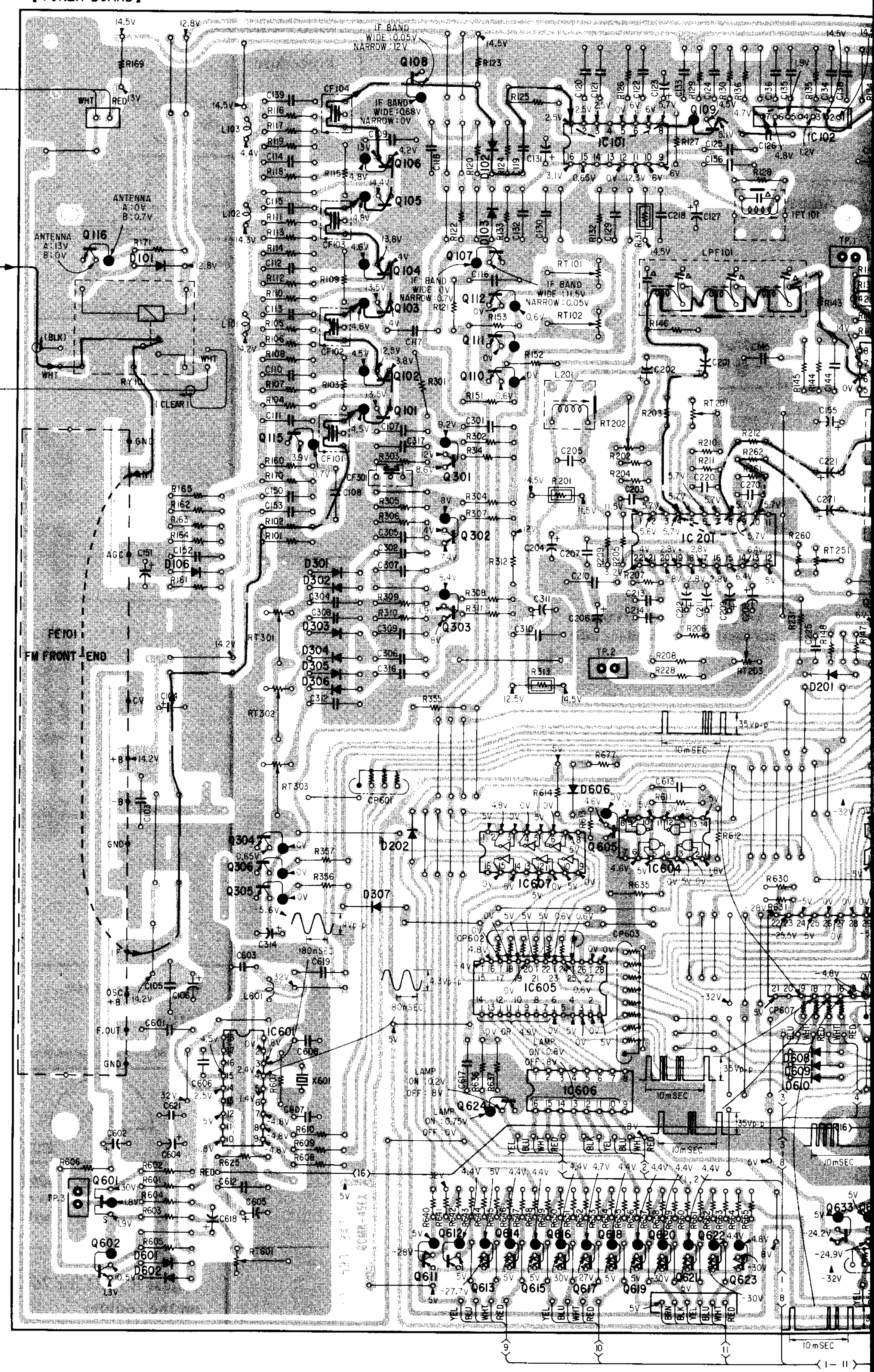
IC301 TL490C



IC601 CX778



【TUNER BOARD】



L-CH OUTPUT

R-CH OUTPUT

OUTPUT (AUDIO CURRENT) TRANSFER

AC INPUT 120V, 50/60Hz

IC605 TMS1024N2L

LATCH (PORT 6)

LATCH (PORT 7)

PORT SELECTOR

LATCH (PORT 5)

LATCH (PORT 4)

I/O

STD

MS

FORMER

【AC SWITCH BOARD】

S901 POWER

ON ← → OFF

T901 POWER TRANSFORMER

US, CANADIAN MODEL

IC606 M54517P

FLUORESCENT DISPLAY TUBE

8 MHz

STEREO

CAL TONE

MEMORY

ANTENNA

B ATT

IF BAND

HI-BLEND

MUTING

MODE

TUNING

A ON WIDE ON ON STEREO AUTO

B OFF NARROW OFF OFF MONO MANUAL

SIGNAL

PROGRAM 1 2 3 4

【PROGRAM BOARD】

S902 PROGRAM ON ← OFF

NEW

【DISPLAY BOARD】

S811 CAL TONE

S809 MEMORY SET

S812 SCAN READ

S815 TUNING −

S814 TUNING +

S810 MUTING TUNE MODE

S813 MODE

S817 B ANT ATT

S816 IF BAND

S819 HI-BLEND

S818 ANTENNA

IC101 IC102 IC103 IC201 IC202 IC203 IC204 IC301 IC601 IC602 IC603 IC604 IC605 IC606 IC607

Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112 Q113 Q114 Q115 Q201 Q202 Q301 Q302 Q303 Q401 Q402 Q403 Q404 Q405 Q406 Q407 Q408 Q409 Q410 Q501 Q502 Q503 Q504 Q505 Q506 Q507 Q508 Q509 Q510 Q511 Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622 Q623 Q624 Q625 Q626 Q627 Q628 Q629 Q630 Q631 Q632 Q633

D201 D202 D203 D301 D302 D303 D304 D305 D306 D307 D401 D402 D403 D404 D405 D406 D501 D502 D503 D504 D505 D506 D507 D508 D509 D510 D511 D512 D513 D514 D515 D516 D517 D601 D602 D603 D604 D605 D606 D607 D608 D609 D610 D611 D612 D613 D614 D615 D616 D617 D618 D619 D620 D621 D622 D623 D624 D625 D626 D627 D628 D629 D630 D631 D632 D633 D634 D635 D636 D637 D638 D639 D640 D641 D642 D643 D644 D645 D646 D647 D648 D649 D650 D651 D652 D653 D654 D655 D656 D657 D658 D659 D660 D661 D662 D663 D664 D665 D666 D667 D668 D669 D670 D671 D672 D673 D674 D675 D676 D677 D678 D679 D680 D681 D682 D683 D684 D685 D686 D687 D688 D689 D690 D691 D692 D693 D694 D695 D696 D697 D698 D699 D700 D701 D702 D703 D704 D705 D706 D707 D708 D709 D710 D711 D712 D713 D714 D715 D716 D717 D718 D719 D720 D721 D722 D723 D724 D725 D726 D727 D728 D729 D730 D731 D732 D733 D734 D735 D736 D737 D738 D739 D740 D741 D742 D743 D744 D745 D746 D747 D748 D749 D750 D751 D752 D753 D754 D755 D756 D757 D758 D759 D760 D761 D762 D763 D764 D765 D766 D767 D768 D769 D770 D771 D772 D773 D774 D775 D776 D777 D778 D779 D780 D781 D782 D783 D784 D785 D786 D787 D788 D789 D790 D791 D792 D793 D794 D795 D796 D797 D798 D799 D800 D801 D802 D803 D804 D805 D806 D807 D808 D809 D810 D811 D812 D813 D814 D815 D816 D817 D818 D819 D820 D821 D822 D823 D824 D825 D826 D827 D828 D829 D830 D831 D832 D833 D834 D835 D836 D837 D838 D839 D840 D841 D842 D843 D844 D845 D846 D847 D848 D849 D850 D851 D852 D853 D854 D855 D856 D857 D858 D859 D860 D861 D862 D863 D864 D865 D866 D867 D868 D869 D870 D871 D872 D873 D874 D875 D876 D877 D878 D879 D880 D881 D882 D883 D884 D885 D886 D887 D888 D889 D890 D891 D892 D893 D894 D895 D896 D897 D898 D899 D900 D901 D902 D903 D904 D905 D906 D907 D908 D909 D910 D911 D912 D913 D914 D915 D916 D917 D918 D919 D920 D921 D922 D923 D924 D925 D926 D927 D928 D929 D930 D931 D932 D933 D934 D935 D936 D937 D938 D939 D940 D941 D942 D943 D944 D945 D946 D947 D948 D949 D950 D951 D952 D953 D954 D955 D956 D957 D958 D959 D960 D961 D962 D963 D964 D965 D966 D967 D968 D969 D970 D971 D972 D973 D974 D975 D976 D977 D978 D979 D980 D981 D982 D983 D984 D985 D986 D987 D988 D989 D990 D991 D992 D993 D994 D995 D996 D997 D998 D999 D1000

RT101 RT102 RT201 RT202 RT203 RT204 RT251 RT254 RT301 RT302 RT303 RT401 RT402

LPF101 LPF201 LPF251 LPF301 LPF401

CF101 CF201

L201 L202 L203 L204 L205 L206 L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226 L227 L228 L229 L230 L231 L232 L233 L234 L235 L236 L237 L238 L239 L240 L241 L242 L243 L244 L245 L246 L247 L248 L249 L250 L251 L252 L253 L254 L255 L256 L257 L258 L259 L260 L261 L262 L263 L264 L265 L266 L267 L268 L269 L270 L271 L272 L273 L274 L275 L276 L277 L278 L279 L280 L281 L282 L283 L284 L285 L286 L287 L288 L289 L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L306 L307 L308 L309 L310 L311 L312 L313 L314 L315 L316 L317 L318 L319 L320 L321 L322 L323 L324 L325 L326 L327 L328 L329 L330 L331 L332 L333 L334 L335 L336 L337 L338 L339 L340 L341 L342 L343 L344 L345 L346 L347 L348 L349 L350 L351 L352 L353 L354 L355 L356 L357 L358 L359 L360 L361 L362 L363 L364 L365 L366 L367 L368 L369 L370 L371 L372 L373 L374 L375 L376 L377 L378 L379 L380 L381 L382 L383 L384 L385 L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L400 L401 L402 L403 L404 L405 L406 L407 L408 L409 L410 L411 L412 L413 L414 L415 L416 L417 L418 L419 L420 L421 L422 L423 L424 L425 L426 L427 L428 L429 L430 L431 L432 L433 L434 L435 L436 L437 L438 L439 L440 L441 L442 L443 L444 L445 L446 L447 L448 L449 L450 L451 L452 L453 L454 L455 L456 L457 L458 L459 L460 L461 L462 L463 L464 L465 L466 L467 L468 L469 L470 L471 L472 L473 L474 L475 L476 L477 L478 L479 L480 L481 L482 L483 L484 L485 L486 L487 L488 L489 L490 L491 L492 L493 L494 L495 L496 L497 L498 L499 L500 L501 L502 L503 L504 L505 L506 L507 L508 L509 L510 L511 L512 L513 L514 L515 L516 L517 L518 L519 L520 L521 L522 L523 L524 L525 L526 L527 L528 L529 L530 L531 L532 L533 L534 L535 L536 L537 L538 L539 L540 L541 L542 L543 L544 L545 L546 L547 L548 L549 L550 L551 L552 L553 L554 L555 L556 L557 L558 L559 L560 L561 L562 L563 L564 L565 L566 L567 L568 L569 L570 L571 L572 L573 L574 L575 L576 L577 L578 L579 L580 L581 L582 L583 L584 L585 L586 L587 L588 L589 L590 L591 L592 L593 L594 L595 L596 L597 L598 L599 L600 L601 L602 L603 L604 L605 L606 L607 L608 L609 L610 L611 L612 L613 L614 L615 L616 L617 L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647 L648 L649 L650 L651 L652 L653 L654 L655 L656 L657 L658 L659 L660 L661 L662 L663 L664 L665 L666 L667 L668 L669 L670 L671 L672 L673 L674 L675 L676 L677 L678 L679 L680 L681 L682 L683 L684 L685 L686 L687 L688 L689 L690 L691 L692 L693 L694 L695 L696 L697 L698 L699 L700 L701 L702 L703 L704 L705 L706 L707 L708 L709 L710 L711 L712 L713 L714 L715 L716 L717 L718 L719 L720 L721 L722 L723 L724 L725 L726 L727 L728 L729 L730 L731 L732 L733 L734 L735 L736 L737 L738 L739 L740 L741 L742 L743 L744 L745 L746 L747 L748 L749 L750 L751 L752 L753 L754 L755 L756 L757 L758 L759 L760 L761 L762 L763 L764 L765 L766 L767 L768 L769 L770 L771 L772 L773 L774 L775 L776 L777 L778 L779 L780 L781 L782 L783 L784 L785 L786 L787 L788 L789 L790 L791 L792 L793 L794 L795 L796 L797 L798 L799 L800 L801 L802 L803 L804 L805 L806 L807 L808 L809 L810 L811 L812 L813 L814 L815 L816 L817 L818 L819 L820 L821 L822 L823 L824 L825 L826 L827 L828 L829 L830 L831 L832 L833 L834 L835 L836 L837 L838 L839 L840 L841 L842 L843 L844 L845 L846 L847 L848 L849 L850 L851 L852 L853 L854 L855 L856 L857 L858 L859 L860 L861 L862 L863 L864 L865 L866 L867 L868 L869 L870 L871 L872 L873 L874 L875 L876 L877 L878 L879 L880 L881 L882 L883 L884 L885 L886 L887 L888 L889 L890 L891 L892 L893 L894 L895 L896 L897 L898 L899 L900 L901 L902 L903 L904 L905 L906 L907 L908 L909 L910 L911 L912 L913 L914 L915 L916 L917 L918 L919 L920 L921 L922 L923 L924 L925 L926 L927 L928 L929 L930 L931 L932 L933 L934 L935 L936 L937 L938 L939 L940 L941 L942 L943 L944 L945 L946 L947 L948 L949 L950 L951 L952 L953 L954 L955 L956 L957 L958 L959 L960 L961 L962 L963 L964 L965 L966 L967 L968 L969 L970 L971 L972 L973 L974 L975 L976 L977 L978 L979 L980 L981 L982 L983 L984 L985 L986 L987 L988 L989 L990 L991 L992 L993 L994 L995 L996 L997 L998 L999 L1000

CP501 CP502 CP503 CP504 CP505 CP506 CP507 CP508 CP509 CP510 CP511 CP512 CP513 CP514 CP515 CP516 CP517 CP518 CP519 CP520 CP521 CP522 CP523 CP524 CP525 CP526 CP527 CP528 CP529 CP530 CP531 CP532 CP533 CP534 CP535 CP536 CP537 CP538 CP539 CP540 CP541 CP542 CP543 CP544 CP545 CP546 CP547 CP548 CP549 CP550 CP551 CP552 CP553 CP554 CP555 CP556 CP557 CP558 CP559 CP560 CP561 CP562 CP563 CP564 CP565 CP566 CP567 CP568 CP569 CP570 CP571 CP572 CP573 CP574 CP575 CP576 CP577 CP578 CP579 CP580 CP581 CP582 CP583 CP584 CP585 CP586 CP587 CP588 CP589 CP590 CP591 CP592 CP593 CP594 CP595 CP596 CP597 CP598 CP599 CP600 CP601 CP602 CP603 CP604 CP605 CP606 CP607 CP608 CP609 CP610 CP611 CP612 CP613 CP614 CP615 CP616 CP617 CP618 CP619 CP620 CP621 CP622 CP623 CP624 CP625 CP626 CP627 CP628 CP629 CP630 CP631 CP632 CP633 CP634 CP635 CP636 CP637 CP638 CP639 CP640 CP641 CP642 CP643 CP644 CP645 CP646 CP647 CP648 CP649 CP650 CP651 CP652 CP653 CP654 CP655 CP656 CP657 CP658 CP659 CP660 CP661 CP662 CP663 CP664 CP665 CP666 CP667 CP668 CP669 CP670 CP671 CP672 CP673 CP674 CP675 CP676 CP677 CP678 CP679 CP680 CP681 CP682 CP683 CP684 CP685 CP686 CP687 CP688 CP689 CP690 CP691 CP692 CP693 CP694 CP695 CP696 CP697 CP698 CP699 CP700 CP701 CP702 CP703 CP704 CP705 CP706 CP707 CP708 CP709 CP710 CP711 CP712 CP713 CP714 CP715 CP716 CP717 CP718 CP719 CP720 CP721 CP722 CP723 CP724 CP725 CP726 CP727 CP728 CP729 CP730 CP731 CP732 CP733 CP734 CP735 CP736 CP737 CP738 CP739 CP740 CP741 CP742 CP743 CP744 CP745 CP746 CP747 CP748 CP749 CP750 CP751 CP752 CP753 CP754 CP755 CP756 CP757 CP758 CP759 CP760 CP761 CP762 CP763 CP764 CP765 CP766 CP767 CP768 CP769 CP770 CP771 CP772 CP773 CP774 CP775 CP776 CP777 CP778 CP779 CP780 CP781 CP782 CP783 CP784 CP785 CP786 CP787 CP788 CP789 CP790 CP791 CP792 CP793 CP794 CP795 CP796 CP797 CP798 CP799 CP800 CP801 CP802 CP803 CP804 CP805 CP806 CP807 CP808 CP809 CP810 CP811 CP812 CP813 CP814 CP815 CP816 CP817 CP818 CP819 CP820 CP821 CP822 CP823 CP824 CP825 CP826 CP827 CP828 CP829 CP830 CP831 CP832 CP833 CP834 CP835 CP836 CP837 CP838 CP839 CP840 CP841 CP842 CP843 CP844 CP845 CP846 CP847 CP848 CP849 CP850 CP851 CP852 CP853 CP854 CP855 CP856 CP857 CP858 CP859 CP860 CP861 CP862 CP863 CP864 CP865 CP866 CP867 CP868 CP869 CP870 CP871 CP872 CP873 CP874 CP875 CP876 CP877 CP878 CP879 CP880 CP881 CP882 CP883 CP884 CP885 CP886 CP887 CP888 CP889 CP890 CP891 CP892 CP893 CP894 CP895 CP896 CP897 CP898 CP899 CP900 CP901 CP902 CP903 CP904 CP905 CP906 CP907 CP908 CP909 CP910 CP911 CP912 CP913 CP914 CP915 CP916 CP917 CP918 CP919 CP920 CP921 CP922 CP923 CP924 CP925 CP926 CP927 CP928 CP929 CP930 CP931 CP932 CP933 CP934 CP935 CP936 CP937 CP938 CP939 CP940 CP941 CP942 CP943 CP944 CP945 CP946 CP947 CP948 CP949 CP950 CP951 CP952 CP953 CP954 CP955 CP956 CP957 CP958 CP959 CP960 CP961 CP962 CP963 CP964 CP965 CP966 CP967 CP968 CP969 CP970 CP971 CP972 CP973 CP974 CP975 CP976 CP977 CP978 CP979 CP980 CP981 CP982 CP983 CP984 CP985 CP986 CP987 CP988 CP989 CP990 CP991 CP992 CP993 CP994 CP995 CP996 CP997 CP998 CP999 CP1000

R101 R102 R103 R104 R105 R106 R107 R108 R109 R110 R111 R112 R113 R114 R115 R116 R117 R118 R119 R120 R121 R122 R123 R124 R125 R126 R127 R128 R129 R130 R131 R132 R133 R134 R135 R136 R137 R138 R139 R140 R141 R142 R143 R144 R145 R146 R147 R148 R149 R150 R151 R152 R153 R154 R155 R156 R157 R158 R159 R160 R161 R162 R163 R164 R165 R166 R167 R168 R169 R170 R171 R172 R173 R174 R175 R176 R177 R178 R179 R180 R181 R182 R183 R184 R185 R186 R187 R188 R189 R190 R191 R192 R193 R194 R195 R196 R197 R198 R199 R200 R201 R202 R203 R204 R205 R206 R207 R208 R209 R210 R211 R212 R213 R214 R215 R216 R217 R218 R219 R220 R221 R222 R223 R224 R225 R226 R227 R228 R229 R230 R231 R232 R233 R234 R235 R236 R237 R238 R239 R240 R241 R242 R243 R244 R245 R246 R247 R248 R249 R250 R251 R252 R253 R254 R255 R256 R257 R258 R259 R260 R261 R262 R263 R264 R265 R266 R267 R268 R269 R270 R271 R272 R273 R274 R275 R276 R277 R278 R279 R280 R281 R282 R283 R284 R285 R286 R287 R288 R289 R290 R291 R292 R293 R294 R295 R296 R297 R298 R299 R300 R301 R302 R303 R304 R305 R306 R307 R308 R309 R310 R311 R312 R313 R314 R315 R316 R317 R318 R319 R320 R321 R322 R323 R324 R325 R326 R327 R328 R329 R330 R331 R332 R333 R334 R335 R336 R337 R338 R339 R340 R341 R342 R343 R344 R345 R346 R347 R348 R349 R350 R351 R352 R353 R354 R355 R356 R357 R358 R359 R360 R361 R362 R363 R364 R365 R366 R367 R368 R369 R370 R371 R372 R373 R374 R375 R376 R377 R378 R379 R380 R381 R382 R383 R384 R385 R386 R387 R388 R389 R390 R391 R392 R393 R394 R395 R396 R397 R398 R399 R400 R401 R402 R403 R404 R405 R406 R407 R408 R409 R410 R411 R412 R413 R414 R415 R416 R417 R418 R419 R420 R421 R422 R423 R424 R425 R426 R427 R428 R429 R430 R431 R432 R433 R434 R435 R436 R437 R438 R439 R440 R441 R442 R443 R444 R445 R446 R447 R448 R449 R450 R451 R452 R453 R454 R455 R456 R457 R458 R459 R460 R461 R462 R463 R464 R465 R466 R467 R468 R469 R470 R471 R472 R473 R474 R475 R476 R477 R478 R479 R480 R481 R482 R483 R484 R485 R486 R487 R488 R489 R490 R491 R492 R493 R494 R495 R496 R497 R498 R499 R500 R501 R502 R503 R504 R505 R506 R507 R508 R509 R510 R511 R512 R513 R514 R515 R516 R517 R518 R519 R520 R521 R522 R523 R524 R525 R526 R527 R528 R529 R530 R531 R532 R533 R534 R535 R536 R537 R538 R539 R540 R541 R542 R543 R544 R545 R546 R547 R548 R549 R550 R551 R552 R553 R554 R555 R556 R557 R558 R559 R560 R561 R562 R563 R564 R565 R566 R567 R568 R569 R570 R571 R572 R573 R574 R575 R576 R577 R578 R579 R580 R581 R582 R583 R584 R585 R586 R587 R588 R589 R590 R591 R592 R593 R594 R595 R596 R597 R598 R599 R600 R601 R602 R603 R604 R605 R606 R607 R608 R609 R610 R611 R612 R613 R614 R615 R616 R617 R618 R619 R620 R621 R622 R623 R624 R625 R626 R627 R628 R629 R630 R631 R632 R633 R634 R635 R636 R637 R638 R639 R640 R641 R642 R643 R644 R645 R646 R647 R648 R649 R650 R651 R652 R653 R654 R655 R656 R657 R658 R659 R660 R661 R662 R663 R664 R665 R666 R667 R668 R669 R670 R671 R672 R673 R674 R675 R676 R677 R678 R679 R680 R681 R682 R683 R684 R685 R686 R687 R688 R689 R690 R691 R692 R693 R694 R695 R696 R697 R698 R699 R700 R701 R702 R703 R704 R705 R706 R707 R708 R709 R710 R711 R712 R713 R714 R715 R716 R717 R718 R719 R720 R721 R722 R723 R724 R725 R726 R727 R728 R729 R730 R731 R732 R733 R734 R735 R736 R737 R738 R739 R740 R741 R742 R743 R744 R745 R746 R747 R748 R749 R750 R751 R752 R753 R754 R755 R756 R757 R758 R759 R760 R761 R762 R763 R764 R765 R766 R767 R768 R769 R770 R771 R772 R773 R774 R775 R776 R777 R778 R779 R780 R781 R782 R783 R784 R785 R786 R787 R788 R789 R790 R791 R792 R793 R794 R795 R796 R797 R798 R799 R800 R801 R802 R803 R804 R805 R806 R807 R808 R809 R810 R811 R812 R813 R814 R815 R816 R817 R818 R819 R820 R821 R822 R823 R824 R825 R826 R827 R828 R829 R830 R831 R832 R833 R834 R835 R836 R837 R838 R839 R840 R841 R842 R843 R844 R845 R846 R847 R848 R849 R850 R851 R852 R853 R854 R855 R856 R857 R858 R859 R860 R861 R862 R863 R864 R865 R866 R867 R868 R869 R870 R871 R872 R873 R874 R875 R876 R877 R878 R879 R880 R881 R882 R883 R884 R885 R886 R887 R888 R889 R890 R891 R892 R893 R894 R895 R896 R897 R898 R899 R900 R901 R902 R903 R904 R905 R906 R907 R908 R909 R910 R911 R912 R913 R914 R915 R916 R917 R918 R919 R920 R921 R922 R923 R924 R925 R926 R927 R928 R929 R930 R931 R932 R933 R934 R935 R936 R937 R938 R939 R940 R941 R942 R943 R944 R945 R946 R947 R948 R949 R950 R951 R952 R953 R954 R955 R956 R957 R958 R959 R960 R961 R962 R963 R964 R965 R966 R967 R968 R969 R970 R971 R972 R973 R974 R975 R976 R977 R978 R979 R980 R981 R982 R983 R984 R985 R986 R987 R988 R989 R990 R991 R992 R993 R994 R995 R996 R997 R998 R999 R1000

C101 C102 C103 C104 C105 C106 C107 C108 C109 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121 C122 C123 C124 C125 C126 C127 C128 C129 C130 C131 C132 C133 C134 C135 C136 C137 C138 C139 C140 C141 C142 C143 C144 C145 C146 C147 C148 C149 C150 C151 C152 C153 C154 C155 C156 C157 C158 C159 C160 C161 C162 C163 C164 C165 C166 C167 C168 C169 C170 C171 C172 C173 C174 C175 C176 C177 C178 C179 C180 C181 C182 C183 C184 C185 C186 C187 C188 C189 C190 C191 C192 C193 C194 C195 C196 C197 C198 C199 C200 C201 C202 C203 C204 C205 C206 C207 C208 C209 C210 C211 C212 C213 C214 C215 C216 C217 C218 C219 C220 C221 C222 C223 C224 C225 C226 C227 C228 C229 C230 C231 C232 C233 C234 C235 C236 C237 C238 C239 C240 C241 C242 C243 C244 C245 C246 C247 C248 C249 C250 C251 C252 C253 C254 C255 C256 C257 C258 C259 C260 C261 C262 C263 C264 C265 C266 C267 C268 C269 C270 C271 C272 C273 C274 C275 C276 C277 C278 C279 C280 C281 C282 C283 C284 C285 C286 C287 C288 C289 C290 C291 C292 C293 C294 C295 C296 C297 C298 C299 C300 C301 C302 C303 C304 C305 C306 C307 C308 C309 C310 C311 C312 C313 C314 C315 C316 C317 C318 C319 C320 C321 C322 C323 C324 C325 C326 C327 C328 C329 C330 C331 C332 C333 C334 C335 C336 C337 C338 C339 C340 C341 C342 C343 C344 C345 C346 C347 C348 C349 C350 C351 C352 C353 C354 C355 C356 C357 C358 C359 C360 C361 C362 C363 C364 C365 C366 C367 C368 C369 C370 C371 C372 C373 C374 C375 C376 C377 C378 C379 C380 C381 C382 C383 C384 C385 C386 C387 C388 C389 C390 C391 C392 C393 C394 C395 C396 C397 C398 C399 C400 C401 C402 C403 C404 C405 C406 C407 C408 C409 C410 C411 C412 C413 C414 C415 C416 C417 C418 C419 C420 C421 C422 C423 C424 C425 C426 C427 C428 C429 C430 C431 C432 C433 C434 C435 C436 C437 C438 C439 C440 C441 C442 C443 C444 C445 C446 C447 C448 C449 C450 C451 C452 C453 C454 C455 C456 C457 C458 C459 C460 C461 C462 C463 C464 C465 C466 C467 C468 C469 C470 C471 C472 C473 C474 C475 C476 C477 C478 C479 C480 C481 C482 C483 C484 C485 C486 C487 C488 C489 C490 C491 C492 C493 C494 C495 C496 C497 C498 C499 C500 C501 C502 C503 C504 C505 C506 C507 C508 C509 C510 C511 C512 C513 C514 C515 C516 C517 C518 C519 C520 C521 C522 C523 C524 C525 C526 C527 C528 C529 C530 C531 C532 C533 C534 C535 C536 C537 C538 C539 C540 C541 C542 C543 C544 C545 C546 C547 C548 C549 C550 C551 C552 C553 C554 C555 C556 C557 C558 C559 C560 C561 C562 C563 C564 C565 C566 C567 C568 C569 C570 C571 C572 C573 C574 C575 C576 C577 C578 C579 C580 C581 C582 C583 C584 C585 C586 C587 C588 C589 C590 C591 C592 C593 C594 C595 C596 C597 C598 C599 C600 C601 C602 C603 C604 C605 C606 C607 C608 C609 C610 C611 C612 C613 C614 C615 C616 C617 C618 C619 C620 C621 C622 C623 C624 C625 C626 C627 C628 C629 C630 C631 C632 C633 C634 C635 C636 C637 C638 C639 C640 C641 C642 C643 C644 C645 C646 C647 C648 C649 C650 C651 C652 C653 C654 C655 C656 C657 C658 C659 C660 C661 C662 C663 C664 C665 C666 C667 C668 C669 C670 C671 C672 C673 C674 C675 C676 C677 C678 C679 C680 C681 C682 C683 C684 C685 C686 C687 C688 C689 C690 C691 C692 C693 C694 C695 C696 C697 C698 C699 C700 C701 C702 C703 C704 C705 C706 C707 C708 C709 C710 C711 C712 C713 C714 C715 C716 C717 C718 C719 C720 C721 C722 C723 C724 C725 C726 C727 C728 C729 C730 C731 C732 C733 C734 C735 C736 C737 C738 C739 C740 C741 C742 C743 C744 C745 C746 C747 C748 C749 C750 C751 C752 C753 C754 C755 C756 C757 C758 C759 C760 C761 C762 C763 C764 C765 C766 C767 C768 C769 C770 C771 C772 C773 C774 C775 C776 C777 C778 C779 C780 C781 C782 C783 C784 C785 C786 C787 C788 C789 C790 C791 C792 C793 C794 C795 C796 C797 C798 C799 C800 C801 C802 C803 C804 C805 C806 C807 C808 C809 C810 C811 C812 C813 C814 C815 C816 C817 C818 C819 C820 C821 C822 C823 C824 C825 C826 C827 C828 C829 C830 C831 C832 C833 C834 C835 C836 C837 C838 C839 C840 C841 C842 C843 C844 C845 C846 C847 C848 C849 C850 C851 C852 C853 C854 C855 C856 C857 C858 C859 C860 C861 C862 C863 C864 C865 C866 C867 C868 C869 C870 C871 C872 C873 C874 C875 C876 C877 C878 C879 C880 C881 C882 C883 C884 C885 C886 C887 C888 C889 C890 C891 C892 C893 C894 C895 C896 C897 C898 C899 C900 C901 C902 C903 C904 C905 C906 C907 C908 C909 C910 C911 C912 C913 C914 C915 C916 C917 C918 C919 C920 C921 C922 C923 C924 C925 C926 C927 C928 C929 C930 C931 C932 C933 C934 C935 C936 C937 C938 C939 C940 C941 C942 C943 C944 C945 C946 C947 C948 C949 C950 C951 C952 C953 C954 C955 C956 C957 C958 C959 C960 C961 C962 C963 C964 C965 C966 C967 C968 C969 C970 C971 C972 C973 C974 C975 C976 C977 C978 C979 C980 C981 C982 C983 C984 C985 C986 C987 C988 C989 C990 C991 C992 C993 C994 C995 C996 C997 C998 C999 C1000

TP1 TP2

IF BAND WIDE 0.05V NARROW 1.2V

IF BAND WIDE 0.68V NARROW 0V

IF BAND WIDE 0V NARROW 0.7V

IF BAND WIDE 11.5V NARROW 0.05V

AMP ON 0.12V OFF 8V

AMP ON 0.8V OFF 8V

AMP ON 0.75V OFF 10V

HI-BLEND ON 0.8V OFF 5V

HI-BLEND ON 0.24V OFF 13.6V

CAL TONE

10mSEC

35Vp-p

180mSEC

2.7mSEC

1.0mSEC

(1 - 11)

(1 - 14)

(1, 2, 4 6, 8, 11, 13, 14)

S T U V W X Y Z A1 B1 C1 D1 E1 F1 G1 H1 I1

1 2 3 4 5 6 7 8 9 10

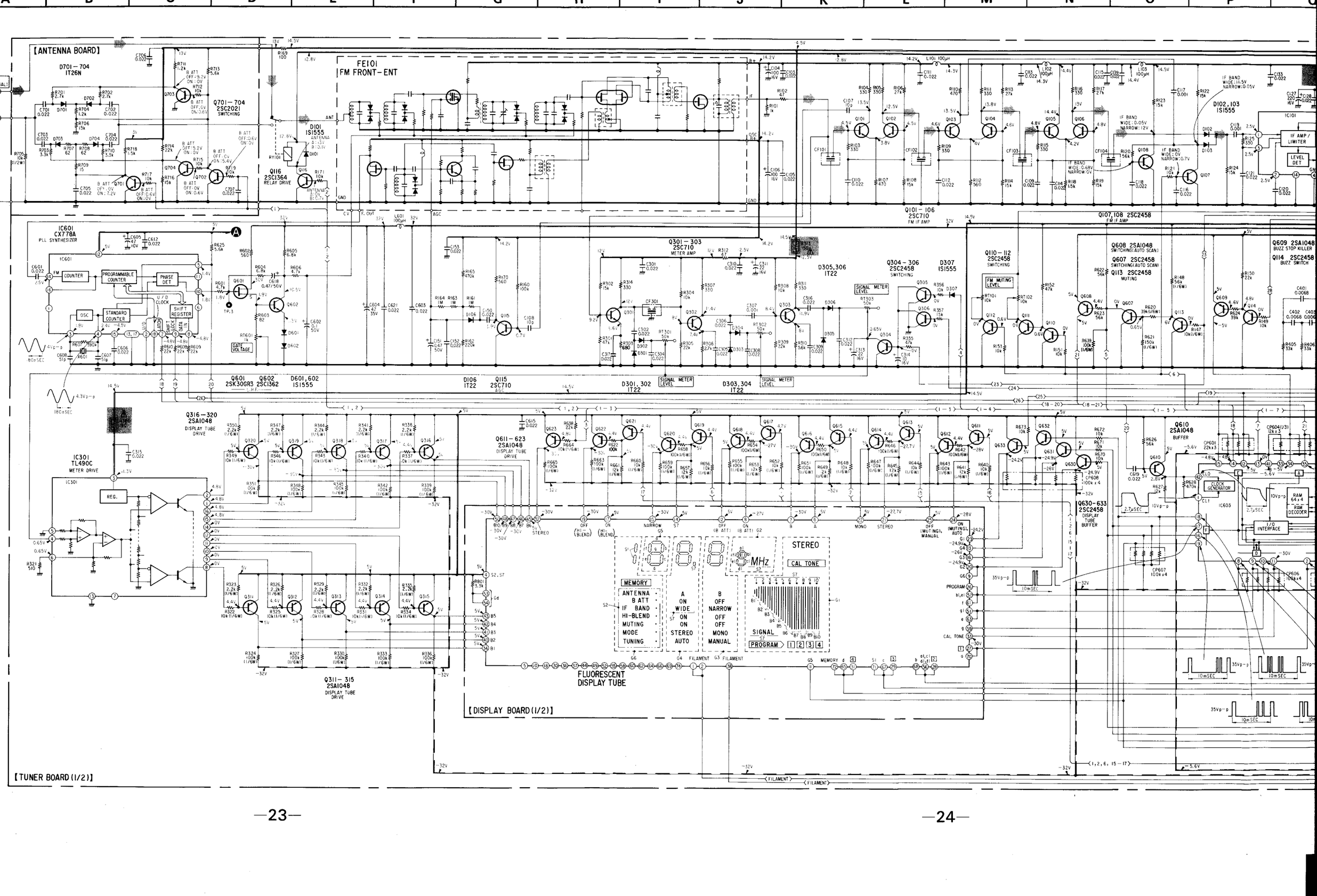
L-CH OUTPUT
R-CH OUTPUT
OUTPUT (AUDIO CURRENT TRANSFER)
AC INPUT 120V,50/60Hz
(CHASSIS)
T901 POWER TRANSFORMER
US, CANADIAN MODEL
【AC SWITCH BOARD】
S901 POWER ON ← OFF
FORMER
IC605 TMS1024N2L
LATCH (PORT 6)
LATCH (PORT 7)
PORT SELECTOR
LATCH (PORT 5)
LATCH (PORT 4)
I/O
STD
MS
IC606 M54517P
IC603 μPD553C-225
UP/DOWN COUNTER
DATA POINT (L)
ARITHMETIC LOGIC UNIT
ROM 1000×8
CLOCK GENERATOR
RAM DECODER
RAM 64×4
DATA POINT (H)
CARRY F/F
PROGRAM COUNTER
CONTROL & DECODE
RAM BUFFER
ACCUMULATOR
STACK
I/F INTERFACE
IFT F/F
RES INT
IC602 CX761A
ADDRES DECODER
STATION LAST CHANNEL
LAST CHANNEL MEMORY (14BITS)
STATION MEMORY (14WORDS×16BITS)
CONTROL LOGIC
DATA REGISTER(16BITS)
MODE DECODER
CLOCK GENERATOR
I/O CONTROL
FLUORESCENT DISPLAY TUBE
MEMORY
ANTENNA
B ATT
IF BAND
HI-BLEND
MUTING
MODE
TUNING
A ON WIDE ON ON STEREO AUTO
B OFF NARROW OFF OFF MONO MANUAL
STEREO
CAL TONE
SIGNAL
PROGRAM 1 2 3 4
8 MHz
【PROGRAM BOARD】
S902 PROGRAM ON ← OFF
NEW
AEP, UK MODEL
【DISPLAY BOARD】
S811 CAL TONE
S809 MEMORY SET
S812 SCAN READ
S815 TUNING −
S814 TUNING +
S810 MUTING TUNE MODE
S813 MODE
S817 B ANT ATT
S819 HI-BLEND
S816 IF BAND
S818 ANTENNA
D801 D802 D803 D804 D805 D806 D807 D808 D809 D810 D811 D812 D813
PL801 PL802 PL803 PL804 PL805 PL806 PL807 PL808
S801 S802 S803 S804 S805 S806 S807 S808

804 805 801 810 811 812,813 806,807 808,809 803 802

(1-14) (1-14) (1,2,4 6,8,11,13,14) (1,2,4,8)

4-2. SCHEMATIC DIAGRAM

• Refer to page 28 for note.



4-2. SCHEMATIC DIAGRAM

• Refer to page 28 for note.

【ANTENNA BOARD】

【TUNER BOARD (1/2)】

【DISPLAY BOARD (1/2)】

FE101 FM FRONT-END

IC601 CX778A PLL SYNTHESIZER

IC301 TL490C METER DRIVE

D102, 103 1S1555 IF AMP / LIMITER / LEVEL DET

Q101 – 106 2SC710 FM IF AMP

Q107, 108 2SC2458 FM IF AMP

Q301 – 303 2SC710 METER AMP

D305, 306 1T22

Q304 – 306 2SC2458 SWITCHING

D307 1S1555

Q110 – 112 2SC2458 SWITCHING

Q608 2SA1048 SWITCHING (AUTO SCAN)

Q607 2SC2458 SWITCHING (AUTO SCAN) Q113 2SC2458 MUTING

Q609 2SA1048 BUZZ STOP KILLER

Q114 2SC2458 BUZZ SWITCH

Q610 2SA1048 BUFFER

Q630 – 633 2SC2458 DISPLAY TUBE BUFFER

Q316 – 320 2SA1048 DISPLAY TUBE DRIVE

Q611 – 623 2SA1048 DISPLAY TUBE DRIVE

Q311 – 315 2SA1048 DISPLAY TUBE DRIVE

Q601 2SK30GR3 Q602 2SC1362 D601, 602 1S1555 D106 1T22 Q115 2SC710 D301, 302 1T22 D303, 304 1T22

FLUORESCENT DISPLAY TUBE

MEMORY
ANTENNA
B ATT
IF BAND
HI-BLEND
MUTING
MODE
TUNING

A ON WIDE ON ON STEREO AUTO

B OFF NARROW OFF OFF MONO MANUAL

MHz

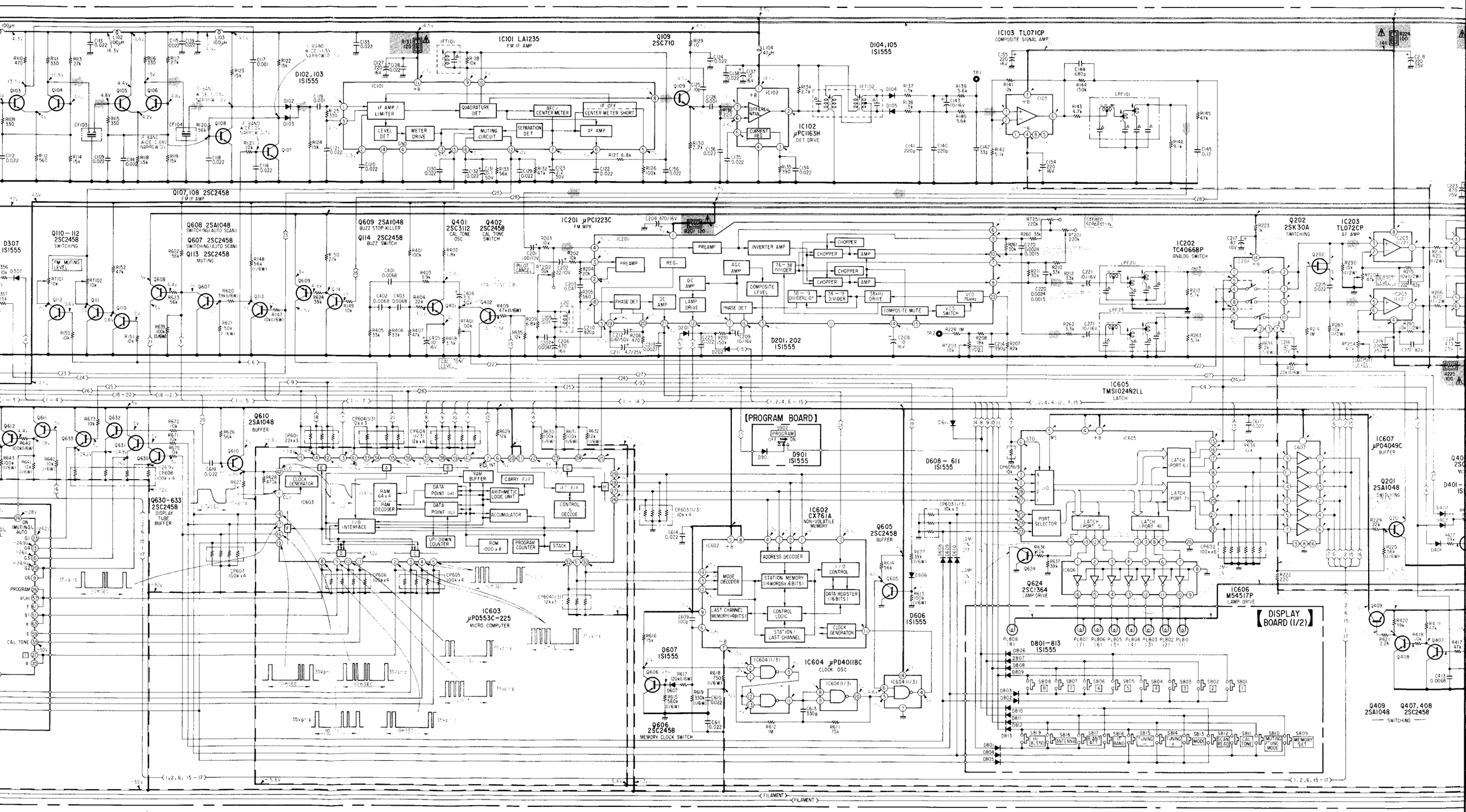
STEREO

CAL TONE

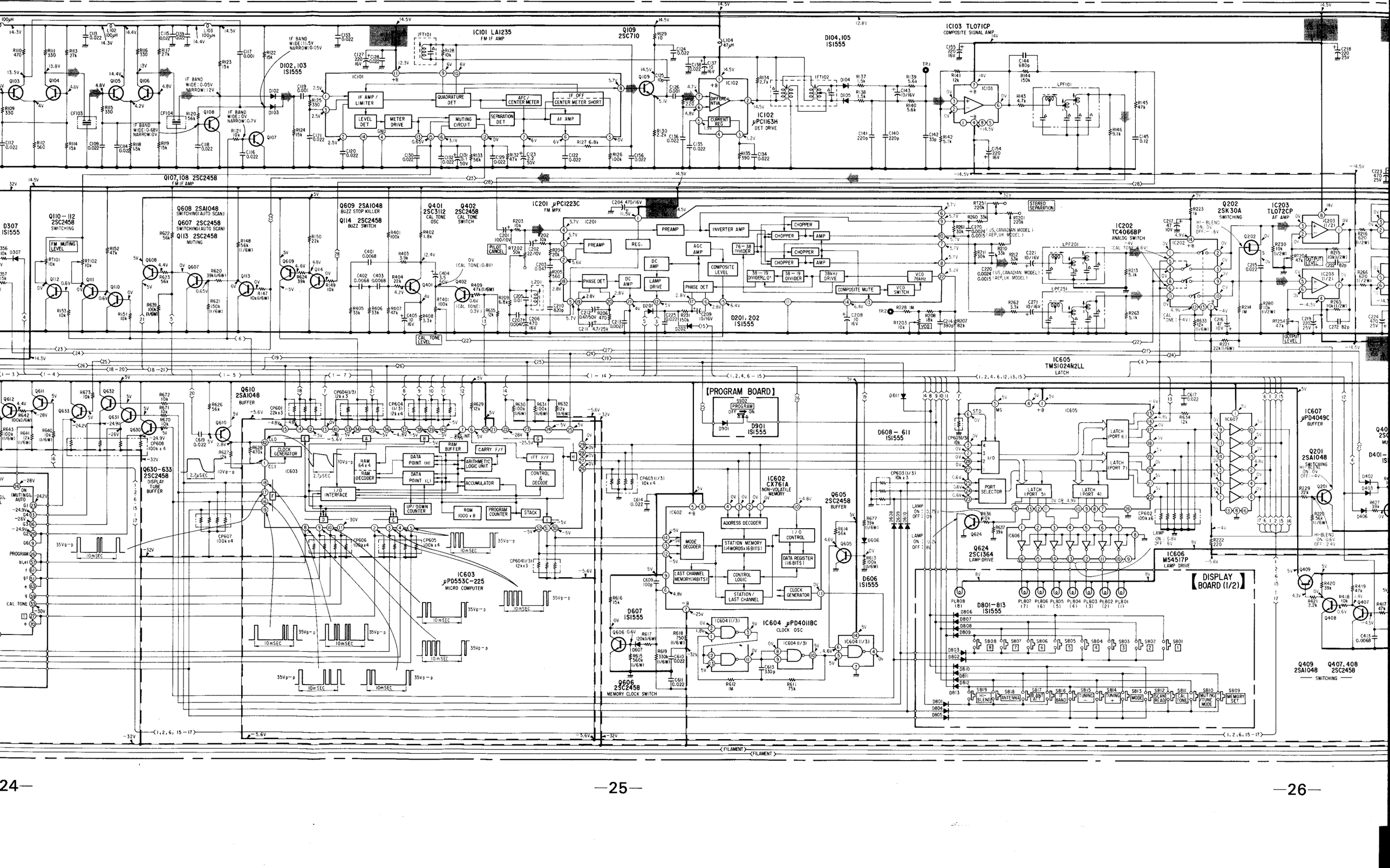
SIGNAL

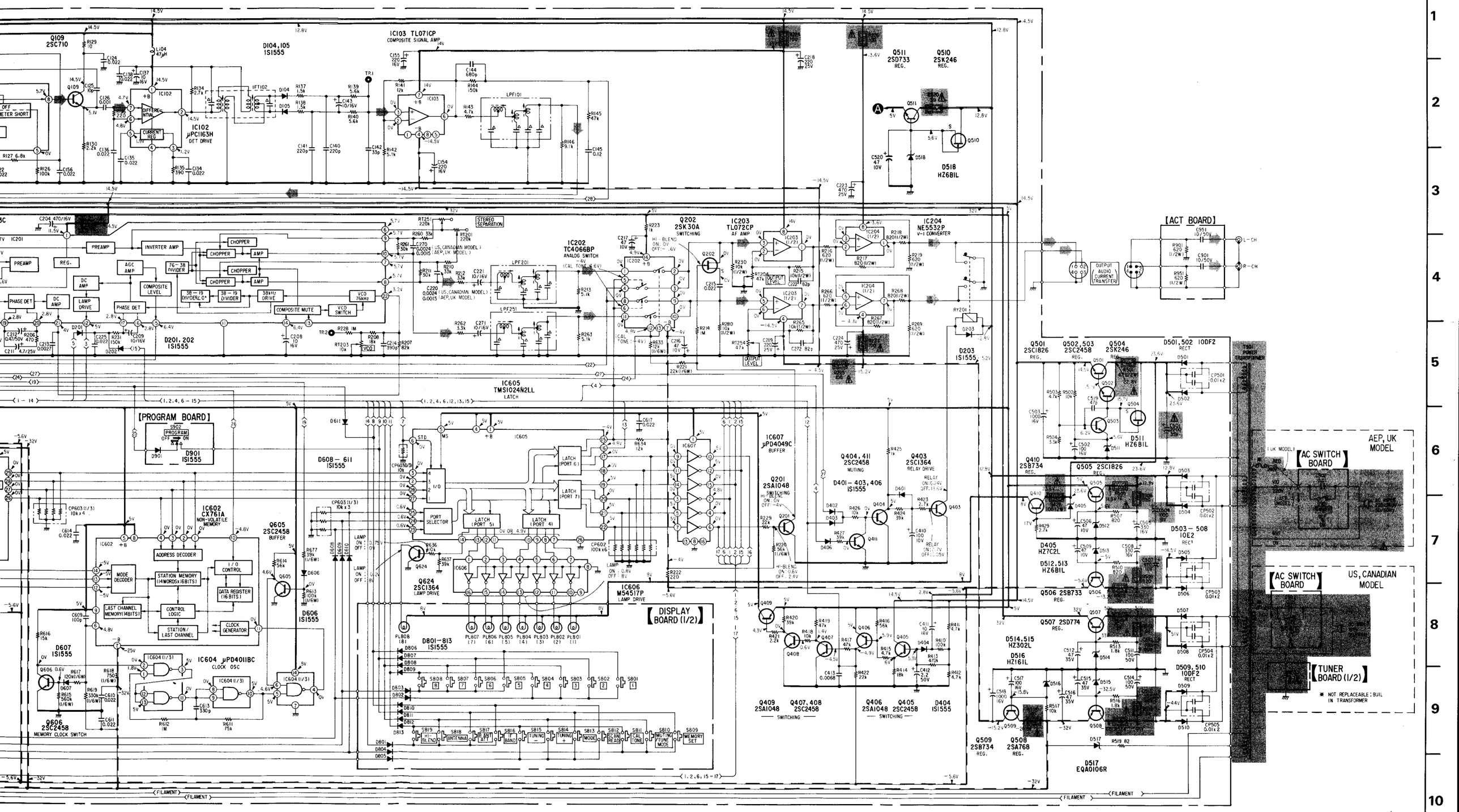
PROGRAM 1 2 3 4

M N O P Q R S T U V W X Y Z A1 B1 C1



M N O P Q R S T U V W X Y Z A1 B1 C1




T
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A1
B1
C1
D1
E1
F1
G1
H1
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J1
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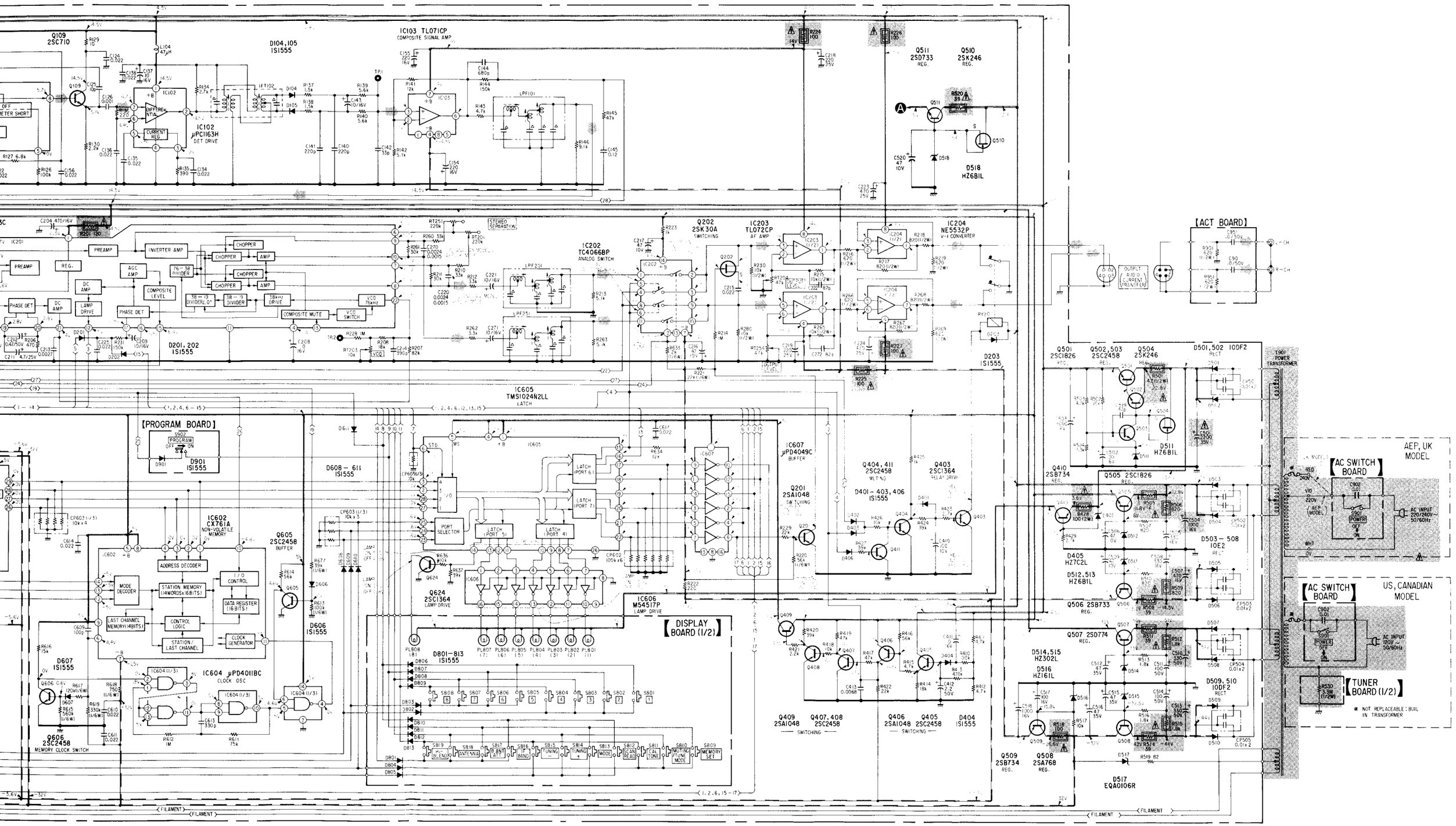
10
Q109 2SC710
IC102 µPC1163H DET DRIVE
IC103 TL071CP COMPOSITE SIGNAL AMP.
D104,105 1S1555
LPF101
Q511 2SD733 REG.
Q510 2SK246 REG.
D518 HZ6BIL
PREAMP
REG.
INVERTER AMP
CHOPPER
AGC AMP
DC AMP
LAMP DRIVE
COMPOSITE LEVEL
76–38 DIVIDER
38–19 DIVIDER/L.O.
38–19 DIVIDER
38kHz DRIVE
PHASE DET
COMPOSITE MUTE
VCO SWITCH
VCO 76kHz
D201, 202 1S1555
LPF201
LPF251
IC202 TC4066BP ANALOG SWITCH
Q202 2SK30A SWITCHING
IC203 TL072CP AF AMP
IC204 NE5532P V-I CONVERTER
STEREO SEPARATION
D203 1S1555
[ACT BOARD]
OUTPUT AUDIO CURRENT TRANSFER
L-CH
R-CH
[PROGRAM BOARD]
D901 1S1555
D608–611 1S1555
IC605 TMS1024N2LL LATCH
IC607 µPD4049C BUFFER
Q201 2SA1048 SWITCHING
Q404,411 2SC2458 MUTING
Q403 2SC1364 RELAY DRIVE
D401–403,406 1S1555
IC602 CX761A NON-VOLATILE MEMORY
Q605 2SC2458 BUFFER
D606 1S1555
D607 1S1555
IC604 µPD4011BC CLOCK OSC
Q606 2SC2458 MEMORY CLOCK SWITCH
ADDRESS DECODER
MODE DECODER
STATION MEMORY (14WORDS×16BITS)
I/O CONTROL
DATA REGISTER (16BITS)
LAST CHANNEL MEMORY(4BITS)
CONTROL LOGIC
STATION / LAST CHANNEL
CLOCK GENERATOR
PORT SELECTOR
LATCH (PORT 5)
LATCH (PORT 6)
LATCH (PORT 7)
LATCH (PORT 4)
Q624 2SC1364 LAMP DRIVE
IC606 M54517P LAMP DRIVE
[DISPLAY BOARD (1/2)]
D801–813 1S1555
S801 1
S802 2
S803 3
S804 4
S805 5
S806 6
S807 7
S808 8
S809 MEMORY SET
S810 MUTING/TUNE MODE
S811 CAL TONE
S812 SCAN/READ
S813 MODE
S814 TUNING +
S815 TUNING –
S816 FM BAND
S817 B.BAND ATT
S818 ANTENNA
S819 HI-BLEND
Q409 2SA1048 — SWITCHING
Q407,408 2SC2458 — SWITCHING
Q406 2SA1048 — SWITCHING
Q405 2SC2458 — SWITCHING
D404 1S1555
Q501 2SC1826 REG.
Q502,503 2SC2458 REG.
Q504 2SK246 REG.
D501,502 10DF2 RECT
D511 HZ6BIL
Q505 2SC1826 REG.
Q410 2SB734 REG.
D405 HZ7C2L
D512,513 HZ6BIL
D503–508 10E2 RECT
Q506 2SB733 REG.
Q507 2SD774 REG.
D514,515 HZ30ZL
D516 HZ16IL
D509,510 10DF2 RECT
Q509 2SB734 REG.
Q508 2SA768 REG.
D517 EQA0106R
D501 POWER TRANSFORMER
AEP, UK MODEL
[AC SWITCH BOARD]
US, CANADIAN MODEL
[AC SWITCH BOARD]
[TUNER BOARD (1/2)]
* NOT REPLACEABLE ; BUILT IN TRANSFORMER
FILAMENT


T
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X
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A1
B1
C1
D1
E1
F1
G1
H1
I1
J1
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10
Q109 2SC710
IC103 TL071CP COMPOSITE SIGNAL AMP.
D104,105 1S1555
IC102 μPC1163H DET DRIVE
Q511 2SD733 REG.
Q510 2SK246 REG.
D518 HZ6BIL
【ACT BOARD】
OUTPUT AUDIO (CURRENT TRANSFER)
IC202 TC4066BP ANALOG SWITCH
Q202 2SK30A SWITCHING
IC203 TL072CP AF AMP
IC204 NE5532P V-I CONVERTER
PREAMP
REG.
INVERTER AMP
CHOPPER
AMP
AGC AMP
DC AMP
LAMP DRIVE
PHASE DET
COMPOSITE LEVEL
76—38 DIVIDER
38—19 DIVIDER/2
38—19 DIVIDER
38kHz DRIVE
VCO 76kHz
COMPOSITE MUTE
VCO SWITCH
STEREO SEPARATION
LPF201
LPF251
D201, 202 1S1555
D203 1S1555
Q501 2SC1826
Q502,503 2SC2458
Q504 2SK246
D501,502 10DF2 RECT
T901 POWER TRANSFORMER
D511 HZ6BIL
Q505 2SC1826 REG.
Q410 2SB734 REG.
D503—508 10E2 RECT
D405 HZ7C2L
D512,513 HZ6B1L
Q506 2SB733 REG.
Q507 2SD774 REG.
D514,515 HZ302L
D516 HZ16L
D509,510 10DF2 RECT
Q509 2SB734 REG.
Q508 2SA768 REG.
D517 EQA0106R
AEP, UK MODEL
【AC SWITCH BOARD】
US, CANADIAN MODEL
【TUNER BOARD (1/2)】
* NOT REPLACEABLE : BUILT IN TRANSFORMER
【PROGRAM BOARD】
D901 1S1555
IC605 TMS1024N2LL LATCH
IC607 μPD4049C BUFFER
Q201 2SA1048 SWITCHING
Q404,411 2SC2458 MUTING
Q403 2SC1364 RELAY DRIVE
D401—403,406 1S1555
D608—611 1S1555
IC602 CX761A NON-VOLATILE MEMORY
Q605 2SC2458 BUFFER
D606 1S1555
D607 1S1555
IC604 μPD4011BC CLOCK OSC
Q606 2SC2458 MEMORY CLOCK SWITCH
Q624 2SC1364 LAMP DRIVE
IC606 M54517P LAMP DRIVE
【DISPLAY BOARD (1/2)】
D801—813 1S1555
Q409 2SA1048 SWITCHING
Q407,408 2SC2458 SWITCHING
Q406 2SA1048 SWITCHING
Q405 2SC2458
D404 1S1555
ADDRESS DECODER
MODE DECODER
STATION MEMORY (14WORDS×16BITS)
I/O CONTROL
DATA REGISTER (16BITS)
LAST CHANNEL MEMORY (4BITS)
CONTROL LOGIC
STATION / LAST CHANNEL
CLOCK GENERATOR
PORT SELECTOR
LATCH (PORT 6)
LATCH (PORT 7)
LATCH (PORT 5)
LATCH (PORT 4)
FILAMENT
—25—
—26—
—27—

NOTE FOR SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : nonflammable resistor.
- △ : internal component.
- : panel designation.
- : adjustment for repair.
- ——: B+ bus.
- — — —: B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under detuned conditions with a VOM
- Voltage variations may be noted due to normal production tolerances.
- Switch

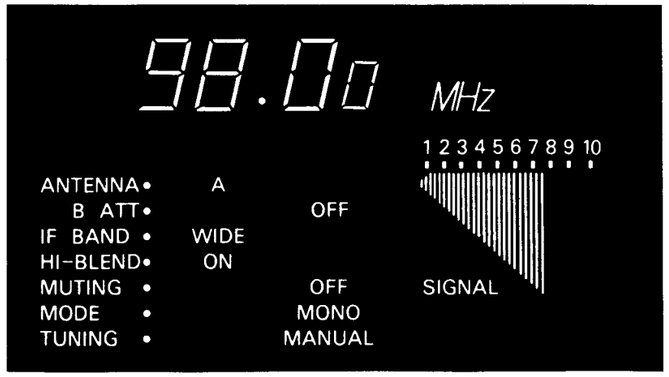
Ref. No.	Switch	Position
S801	PRESET 1	OFF
S802	PRESET 2	OFF
S803	PRESET 3	OFF
S804	PRESET 4	OFF
S805	PRESET 5	OFF
S806	PRESET 6	OFF
S807	PRESET 7	OFF
S808	PRESET 8	OFF
S809	MEMORY SET	OFF
S810	MUTING/TUNE MODE	OFF
S811	CAL TONE	OFF
S812	SCAN READ	OFF
S813	MODE	OFF
S814	TUNING (+)	OFF
S815	TUNING (–)	OFF
S816	IF BAND	OFF
S817	B ANT ATT	OFF
S818	ANTENNA	OFF
S819	HI-BLEND	OFF
S901	POWER	OFF
S902	PROGRAM	OFF

- : signal path

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Voltages are measured with a VOM (50kΩ/V).

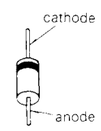
- **Fluorescent tube indication**



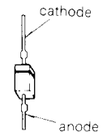
- Voltage and waveform have been measured under condition shown above.

SEMICONDUCTOR LEAD LAYOUTS

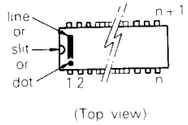
10DF2
1S1555
1T22AM
1T261
10E-2
HZ6B1L
HZ16-2L
HZ30-2L
EQB01-06
HZ7C2L



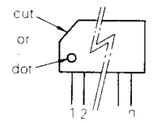
1S2222



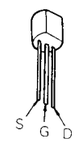
LA1235
TL071CP
TL072CP
NE5532P
CX778A
CX761A
TC4066BP
TL490C
TMS1024N2L
M5417P
μPC1163C
μPD4011BC
μPD4049C
μPD553C225



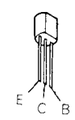
μPC1163H



2SK30A
2SK30A-GR3
2SK246



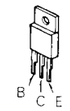
2SC1362-48
2SC1364
2SC3112



2SC710-14

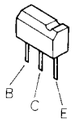
2SA1048
2SC2458

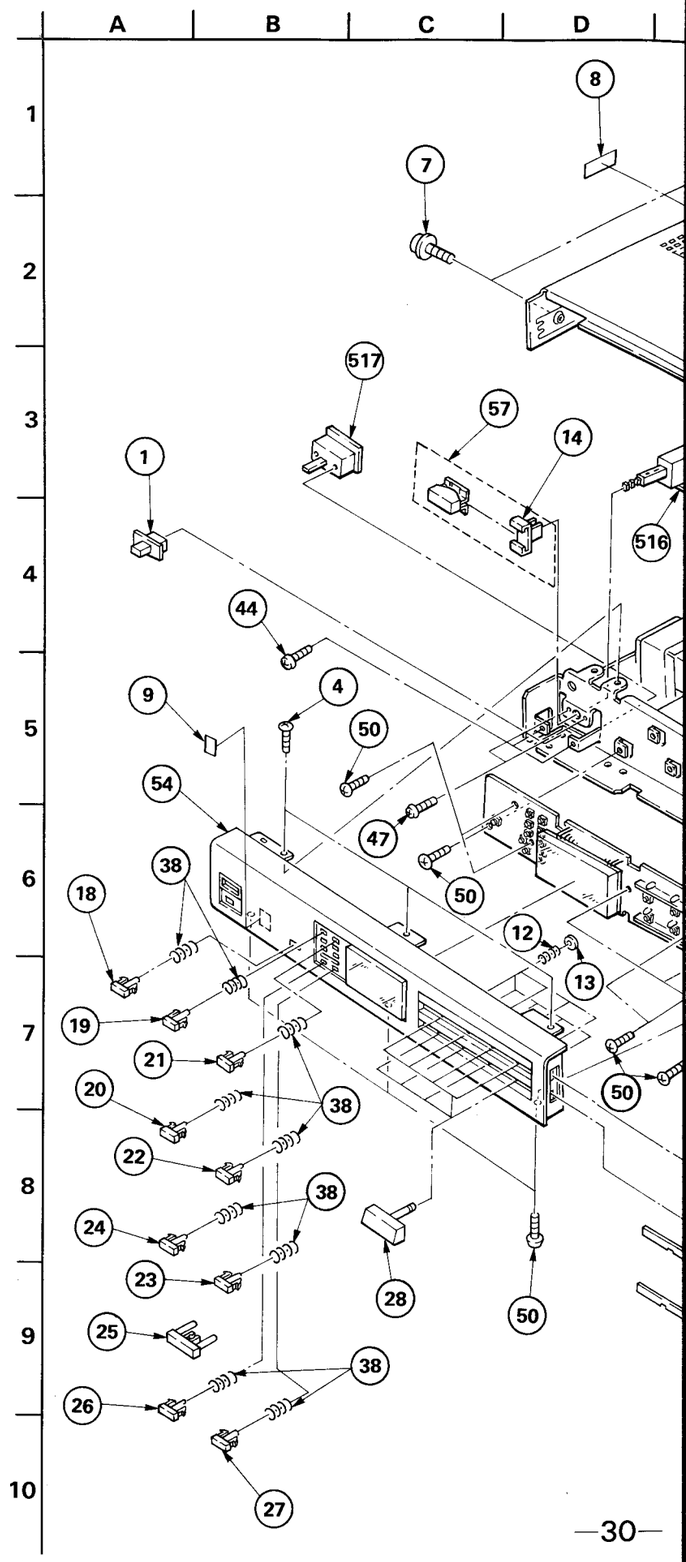
2SA768
2SA771
2SC1826
2SC1983
2SC1986
2SC2315



2SB733
2SB734
2SD744
2SD774

2SC2021



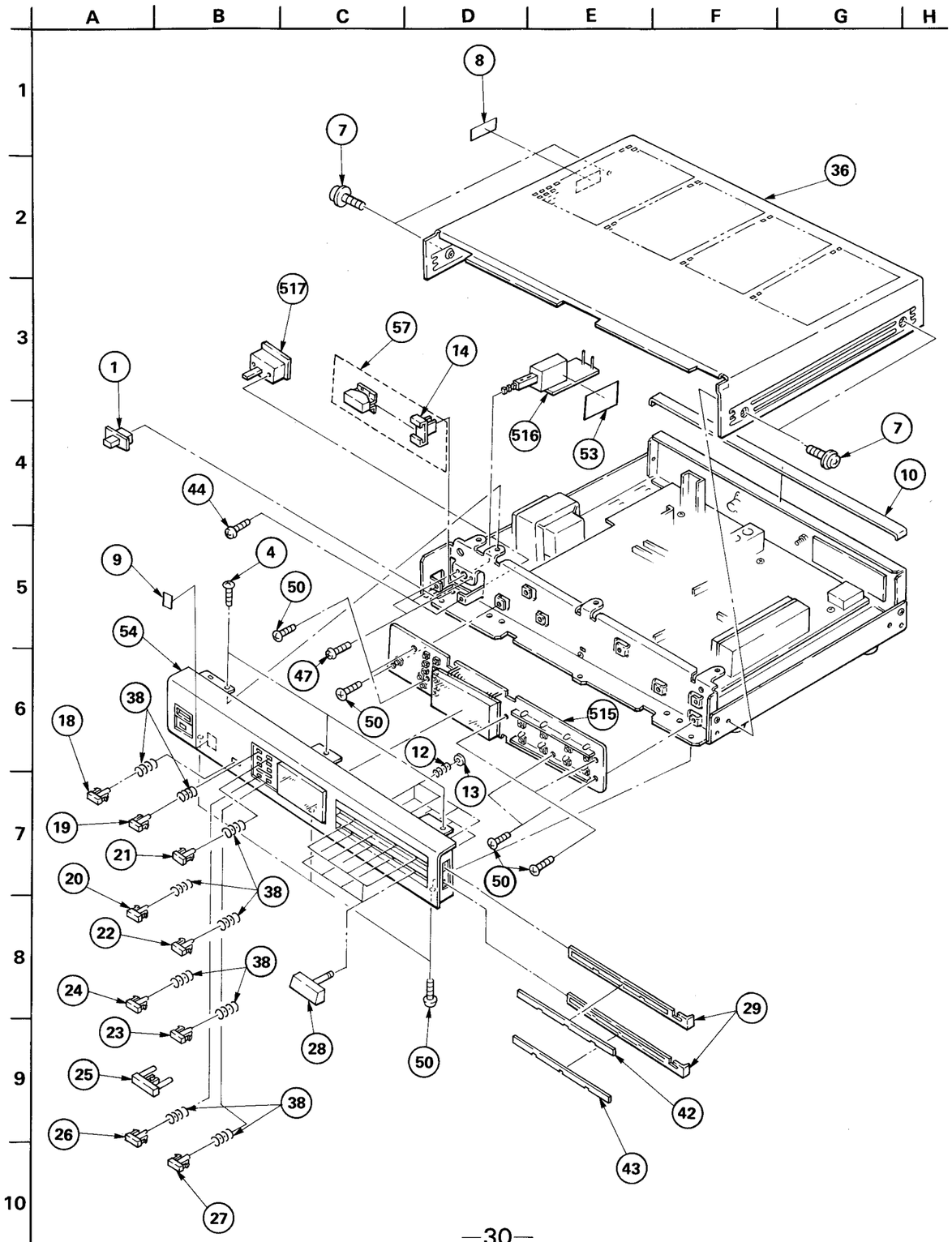


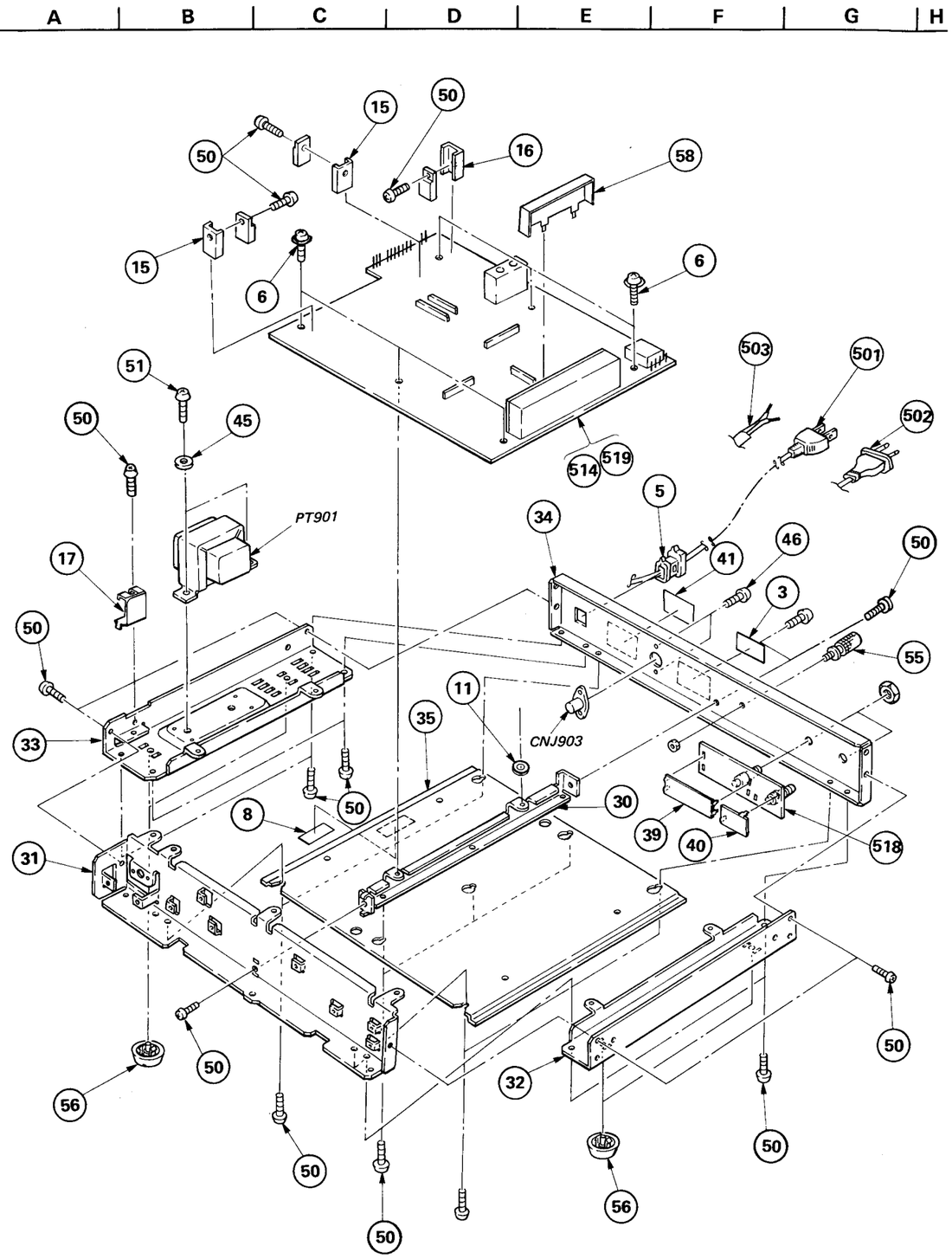
SECTION 5
EXPLODED VIEWS AND ELECTRICAL PARTS LIST

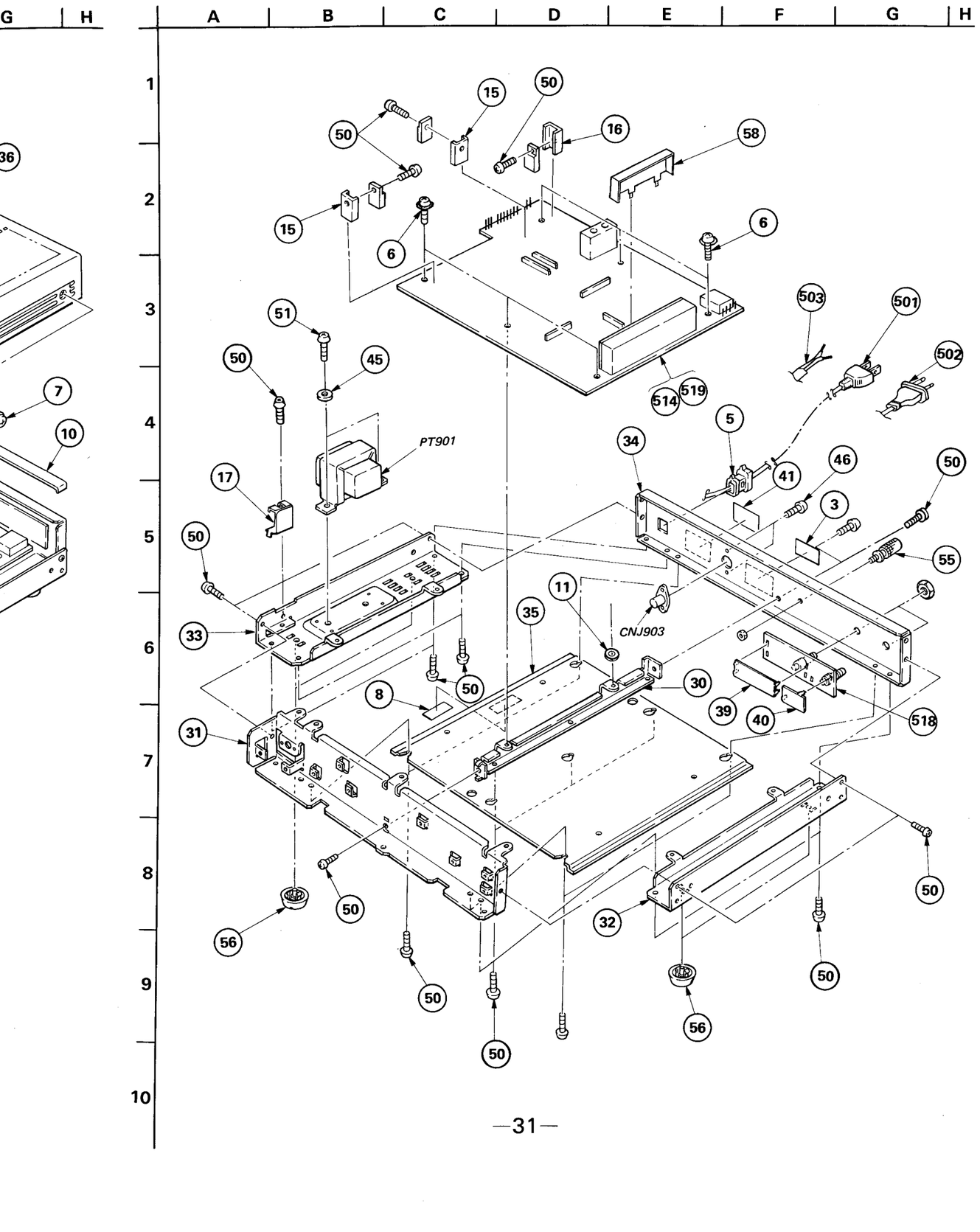
768
771
1826
1983
1986
2315

733
734
744
774

2021







GENERAL SECTION

No.	Part No.	Description
1	3-575-515-21	KNOB, SLIDE SWITCH
2	3-701-690-11	(UK).....LABEL, MADE IN JAPAN
3 ♦	3-703-043-21	(Canadian)...LABEL, CAUTION, MAIN, NEW UL
3 ♦	3-703-677-00	(US).....LABEL, CAUTION, MAIN, NEW UL
4	3-703-108-21	SCREW +BV 3X6, S TIGHT
5	3-703-244-00	BUSHING, CORD
6	3-703-249-11	SCREW, S TIGHT, +PTTWH 3X6
7	3-703-354-01	SCREW (OS), CASE, CLAW
8 ♦	3-703-680-00	(US)...LABEL, CAUTION, SUB, NEW UL
9	3-703-710-41	STICKER, SONY SYMBOL (12)
10	3-831-441-XX	CUSHION, SPEAKER
11 ♦	4-830-092-11	WASHER, FIVER
12	4-854-743-00	SPRING, COMPRESSION
13	4-862-338-01	WASHER
14	4-866-342-00	JOINT (B), KNOB
15 ♦	4-866-647-00	HEAT SINK
16 ♦	4-880-403-00	HEAT SINK
17 ♦	4-884-808-00	(AEP,UK).....PROTECTOR
18	4-886-001-00	KNOB (A), SQUARE (CAL TONE)
19	4-886-002-02	KNOB (B), SQUARE (ANTENNA)
20	4-886-002-12	KNOB (B), SQUARE (B ANT ATT)
21	4-886-002-22	KNOB (B), SQUARE (IF BAND)
22	4-886-002-32	KNOB (B), SQUARE (HI-BLEND)
23	4-886-002-42	KNOB (B), SQUARE (MODE)
24	4-886-002-52	KNOB (B), SQUARE (MUTING/TUNE MODE)
25	4-886-003-00	KNOB, TUNING
26	4-886-004-02	KNOB (C), SQUARE (MEMORY SET)
27	4-886-004-12	KNOB (C), SQUARE (SCAN READ)
28	4-886-005-00	KNOB, PRESET
29	4-886-014-00	HOLDER, INDICATOR
30 ♦	4-886-015-00	REINFORCEMENT
31 ♦	4-886-021-00	PANEL, SUB
32 ♦	4-886-022-00	CHASSIS (LEFT)
33 ♦	4-886-023-00	CHASSIS (RIGHT)
34	4-886-024-00	PLATE, JACK
35 ♦	4-886-025-00	PLATE, BOTTOM
36	4-886-026-00	CASE
37	4-886-031-00	CHIP, ADHESIVE
38	4-886-032-00	SPRING, COMPRESSION
39 ♦	4-886-033-00	PLATE (A), SHIELD
40 ♦	4-886-034-00	PLATE, SHIELD (B)
41	4-886-038-00	(US).....LABEL, MODEL NUMBER (U)
41	4-886-039-00	(Canadian)...LABEL, MODEL NUMBER
41	4-886-040-00	(AEP).....LABEL, MODEL NUMBER
41	4-886-041-00	(UK).....LABEL, MODEL NUMBER

GENERAL SECTION

No.	Part No.	Description
42	4-886-042-00	(AEP,UK).....LABEL (A), INDICATOR
42	4-886-044-00	(US,Canadian)...LABEL (U1), INDICATOR
43	4-886-043-00	(AEP,UK).....LABEL (B), INDICATOR
43	4-886-045-00	(US,Canadian)...LABEL (U2), INDICATOR
44	7-621-775-10	SCREW +B 2.6X4
45	7-623-112-15	W 5, MIDDLE
46	7-682-547-09	SCREW +B 3X6
47	7-682-647-09	SCREW +PS 3X6
48	7-684-023-04	N 3, TYPE 2
49	7-685-871-01	SCREW +BVTT 3X6 (S)
50	7-685-871-09	SCREW +BVTT 3X6 (S)
51	7-685-880-09	SCREW +BVTT 4X6 (S)
52	7-688-003-11	W 3, MIDDLE
53	9-911-863-XX	(AEP,UK).....INSULATOR
54	A-4322-478-A	PANEL ASSY, FRONT
55	X-4854-207-0	TERMINAL ASSY, GROUND
56	X-4864-303-0	FOOT ASSY
57	X-4885-901-0	KNOB ASSY, POWER
58 ♦	4-886-050-00	CASE, SHIELD

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-417-090-00	(AEP,UK)....TRANSFORMER, ANTENNA MATCHING
102	1-501-161-00	ANTENNA,FEEDER
103	1-506-305-00	(US,Canadian)...PLUG, F (FP-33)
104	1-513-379-00	(US,Canadian)...CONVERTER (EAC-25)
105	3-701-630-00	BAG, POLYETHYLENE
106	3-703-390-01	(US).....INSTRUCTION
107	3-773-215-11	(Canadian,AEP,UK)...MANUAL, INSTRUCTION
107	3-773-215-21	(US).....MANUAL, INSTRUCTION
107	3-773-215-41	(AEP).....MANUAL, INSTRUCTION
108	4-871-333-00	SHEET, PROTECTION
109	4-875-448-00	CUSHION, UPPER
110	4-875-449-00	CUSHION, LOWER
111	4-886-048-00	INDIVIDUAL CARTON
112	4-886-037-00	SPACER
113	4-886-044-00	(US,Canadian)...LABEL (U1), INDICATOR
114	4-886-045-00	(US,Canadian)...LABEL (U2), INDICATOR
115	4-886-046-00	(AEP,UK).....LABEL (E1), INDICATOR
116	4-886-047-00	(AEP,UK).....LABEL (E2), INDICATOR
117	A-4490-145-A	ACT ASSY (CORD, CONNECTION)

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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 numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : µH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

SEMICONDUCTORS
In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC, UPD···: µPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	⚠1-556-874-00	(US,Canadian)...CORD, POWER
502	⚠1-555-795-00	(AEP).....CORD, POWER
503	⚠1-556-035-00	(UK).....CORD, POWER
504	♦;1-508-811-00	BASE POST (14MM) 4P
505	♦;1-535-116-00	TERMINAL
506	♦;1-535-120-00	TERMINAL
507	♦;1-535-135-00	BASE POST 14MM (10MM PITCH)
508	♦;1-535-416-00	TERMINAL
509	♦;1-560-060-00	PIN, CONNECTOR 2P
510	♦;1-560-062-00	PIN, CONNECTOR 4P
511	♦;1-560-064-00	PIN, CONNECTOR 6P
512	♦;1-560-242-11	BUS BAR 3P
513	♦;1-560-242-61	BUS BAR 2P
514	♦;1-608-954-00	PC BOARD, TUNER
515	♦;1-608-955-00	PC BOARD, DISPLAY
516	♦;1-608-956-00	PC BOARD, AC SW
517	♦;1-608-957-00	PC BOARD, PROGRAM
518	♦;1-608-958-00	PC BOARD, ANTENNA
519	♦;A-4351-350-A	(US,Canadian)...MOUNTED PCB, TUNER
519	♦;A-4351-351-A	(AEP,UK).....MOUNTED PCB, TUNER

C101	1-161-494-00	CERAMIC	0.022MF	30%	25V
C102	1-123-356-00	ELECT	10MF	20%	16V
C103	1-161-494-00	CERAMIC	0.022MF	30%	25V
C104	1-123-320-00	ELECT	100MF	20%	16V
C105	1-161-494-00	CERAMIC	0.022MF	30%	25V
C106	1-123-320-00	ELECT	100MF	20%	16V
C107	1-161-279-00	CERAMIC	10PF	5%	50V
C108	1-161-279-00	CERAMIC	10PF	5%	50V
C109	1-161-494-00	CERAMIC	0.022MF	30%	25V
C110	1-161-494-00	CERAMIC	0.022MF	30%	25V
C111	1-161-494-00	CERAMIC	0.022MF	30%	25V
C112	1-161-494-00	CERAMIC	0.022MF	30%	25V
C113	1-161-494-00	CERAMIC	0.022MF	30%	25V
C114	1-161-494-00	CERAMIC	0.022MF	30%	25V
C115	1-161-494-00	CERAMIC	0.022MF	30%	25V
C116	1-161-494-00	CERAMIC	0.022MF	30%	25V
C117	1-161-323-00	CERAMIC	0.001MF	10%	50V
C118	1-161-494-00	CERAMIC	0.022MF	30%	25V
C119	1-161-323-00	CERAMIC	0.001MF	10%	50V
C120	1-161-494-00	CERAMIC	0.022MF	30%	25V
C121	1-161-494-00	CERAMIC	0.022MF	30%	25V
C122	1-161-494-00	CERAMIC	0.022MF	30%	25V
C123	1-123-353-00	ELECT	2.2MF	20%	50V
C124	1-161-494-00	CERAMIC	0.022MF	30%	25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C125	1-161-279-00	CERAMIC	10PF	5%	50V
C126	1-161-323-00	CERAMIC	0.001MF	10%	50V
C127	1-123-321-00	ELECT	220MF	20%	16V
C128	1-161-494-00	CERAMIC	0.022MF	30%	25V
C129	1-161-494-00	CERAMIC	0.022MF	30%	25V
C130	1-161-494-00	CERAMIC	0.022MF	30%	25V
C131	1-123-607-00	ELECT	0.1MF	20%	50V
C132	1-161-494-00	CERAMIC	0.022MF	30%	25V
C133	1-161-494-00	CERAMIC	0.022MF	30%	25V
C134	1-161-494-00	CERAMIC	0.022MF	30%	25V
C135	1-161-494-00	CERAMIC	0.022MF	30%	25V
C136	1-161-494-00	CERAMIC	0.022MF	30%	25V
C137	1-123-356-00	ELECT	10MF	20%	16V
C138	1-161-494-00	CERAMIC	0.022MF	30%	25V
C139	1-161-494-00	CERAMIC	0.022MF	30%	25V
C140	1-107-310-00	MICA	220PF	5%	500V
C141	1-107-310-00	MICA	220PF	5%	500V
C142	1-107-317-00	MICA	33PF	5%	500V
C143	1-123-356-00	ELECT	10MF	20%	16V
C144	1-161-321-00	CERAMIC	680PF	10%	50V
C145	1-108-363-00	MYLAR	0.12MF	10%	50V
C150	1-161-494-00	CERAMIC	0.022MF	30%	25V
C151	1-123-610-00	ELECT	0.47MF	20%	50V
C152	1-161-494-00	CERAMIC	0.022MF	30%	25V
C153	1-161-494-00	CERAMIC	0.022MF	30%	25V
C154	1-123-321-00	ELECT	220MF	20%	16V
C155	1-123-321-00	ELECT	220MF	20%	16V
C156	1-161-494-00	CERAMIC	0.022MF	30%	25V
C201	1-123-671-00	ELECT	100MF	20%	10V
C202	1-123-668-00	ELECT	22MF	20%	10V
C203	1-108-595-00	MYLAR	0.047MF	5%	50V
C204	1-123-487-00	ELECT	470MF	20%	16V
C205	1-103-749-00	POLYSTYRENE	0.01MF	5%	50V
C206	1-123-487-00	ELECT	470MF	20%	16V
C207	1-108-571-00	MYLAR	0.0047MF	5%	50V
C208	1-123-617-00	ELECT	10MF	20%	16V
C209	1-123-617-00	ELECT	10MF	20%	16V
C210	1-161-322-00	CERAMIC	820PF	10%	50V
C211	1-123-616-00	ELECT	4.7MF	20%	25V
C212	1-123-610-00	ELECT	0.47MF	20%	50V
C213	1-108-565-00	MYLAR	0.0027MF	5%	50V
C214	1-104-067-00	POLYSTYRENE	390PF	5%	50V
C215	1-108-587-00	MYLAR	0.022MF	5%	50V
C216	1-123-306-00	ELECT	47MF	20%	10V
C217	1-123-306-00	ELECT	47MF	20%	10V

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C218	1-123-694-00	ELECT	220MF	20%	25V
C219	1-123-694-00	ELECT	220MF	20%	25V
C220	1-104-230-00	(AEP,UK).....POLYSTYRENE	0.0024MF	5%	125V
C220	1-104-237-00	(US,Canadian)...POLYSTYRENE	0.0024MF	5%	125V
C221	1-123-678-00	ELECT	10MF	20%	16V
C222	1-107-037-00	MICA	82PF	5%	500V
C223	1-123-497-00	ELECT	470MF	20%	25V
C224	1-123-497-00	ELECT	470MF	20%	25V
C225	1-101-005-00	CERAMIC	0.022MF		50V
C270	1-104-230-00	(AEP,UK).....POLYSTYRENE	0.0024MF	5%	125V
C270	1-104-237-00	(US,Canadian)...POLYSTYRENE	0.0024MF	5%	125V
C271	1-123-678-00	ELECT	10MF	20%	16V
C272	1-107-037-00	MICA	82PF	5%	500V
C301	1-161-494-00	CERAMIC	0.022MF	30%	25V
C302	1-161-494-00	CERAMIC	0.022MF	30%	25V
C303	1-161-323-00	CERAMIC	0.001MF	10%	50V
C304	1-161-494-00	CERAMIC	0.022MF	30%	25V
C305	1-161-494-00	CERAMIC	0.022MF	30%	25V
C306	1-161-494-00	CERAMIC	0.022MF	30%	25V
C307	1-161-323-00	CERAMIC	0.001MF	10%	50V
C308	1-161-494-00	CERAMIC	0.022MF	30%	25V
C309	1-161-494-00	CERAMIC	0.022MF	30%	25V
C310	1-161-494-00	CERAMIC	0.022MF	30%	25V
C311	1-123-317-00	ELECT	22MF	20%	16V
C312	1-161-494-00	CERAMIC	0.022MF	30%	25V
C313	1-123-317-00	ELECT	22MF	20%	16V
C314	1-123-356-00	ELECT	10MF	20%	16V
C315	1-161-494-00	CERAMIC	0.022MF	30%	25V
C316	1-161-494-00	CERAMIC	0.022MF	30%	25V
C317	1-161-494-00	CERAMIC	0.022MF	30%	25V
C401	1-102-127-00	CERAMIC	0.0068MF	10%	50V
C402	1-102-127-00	CERAMIC	0.0068MF	10%	50V
C403	1-102-127-00	CERAMIC	0.0068MF	10%	50V
C404	1-123-354-00	ELECT	3.3MF	20%	50V
C405	1-123-356-00	ELECT	10MF	20%	16V
C410	1-123-474-00	ELECT	100MF	20%	10V
C411	1-123-356-00	ELECT	10MF	20%	16V
C412	1-123-353-00	ELECT	2.2MF	20%	50V
C413	1-161-329-00	CERAMIC	0.0068MF	30%	25V
C501 ⚠	1-123-509-00	ELECT	2200MF	20%	35V
C502	1-123-682-00	ELECT	100MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C503	1-123-324-00	ELECT	1000MF	20%	16V
C504 ⚠	1-123-488-00	ELECT	1000MF	20%	16V
C505	1-123-486-00	ELECT	330MF	20%	16V
C506	1-123-306-00	ELECT	47MF	20%	10V
C507 ⚠	1-123-487-00	ELECT	470MF	20%	16V
C508	1-123-486-00	ELECT	330MF	20%	16V
C509	1-123-306-00	ELECT	47MF	20%	10V
C510 ⚠	1-123-515-00	ELECT	330MF	20%	50V
C511	1-123-513-00	ELECT	100MF	20%	50V
C512	1-123-359-00	ELECT	47MF	20%	35V
C513 ⚠	1-123-515-00	ELECT	330MF	20%	50V
C514	1-123-513-00	ELECT	100MF	20%	50V
C515	1-123-359-00	ELECT	47MF	20%	35V
C516	1-123-359-00	ELECT	47MF	20%	35V
C517	1-123-682-00	ELECT	100MF	20%	16V
C518	1-123-324-00	ELECT	1000MF	20%	16V
C519	1-101-880-00	CERAMIC	47PF	5%	50V
C520	1-121-352-00	ELECT	47MF	20%	10V
C601	1-161-494-00	CERAMIC	0.022MF	30%	25V
C602	1-123-607-00	ELECT	0.1MF	20%	50V
C603	1-101-005-00	CERAMIC	0.022MF		50V
C604	1-123-359-00	ELECT	47MF	20%	35V
C606	1-101-005-00	CERAMIC	0.022MF		50V
C607	1-102-522-00	CERAMIC	51PF	5%	50V
C608	1-102-522-00	CERAMIC	51PF	5%	50V
C609	1-102-106-00	CERAMIC	100PF	10%	50V
C610	1-101-005-00	CERAMIC	0.022MF		50V
C611	1-101-005-00	CERAMIC	0.022MF		50V
C612	1-161-494-00	CERAMIC	0.022MF	30%	25V
C613	1-161-317-00	CERAMIC	330PF	10%	50V
C614	1-161-494-00	CERAMIC	0.022MF	30%	25V
C615	1-161-494-00	CERAMIC	0.022MF	30%	25V
C617	1-161-494-00	CERAMIC	0.022MF	30%	25V
C618	1-123-610-00	ELECT	0.47MF	20%	50V
C619	1-161-494-00	CERAMIC	0.022MF	30%	25V
C621	1-101-005-00	CERAMIC	0.022MF		50V
C701	1-161-494-00	CERAMIC	0.022MF	30%	25V
C702	1-161-494-00	CERAMIC	0.022MF	30%	25V
C703	1-161-494-00	CERAMIC	0.022MF	30%	25V
C704	1-161-494-00	CERAMIC	0.022MF	30%	25V
C705	1-161-494-00	CERAMIC	0.022MF	30%	25V
C706	1-161-494-00	CERAMIC	0.022MF	30%	25V
C707	1-161-494-00	CERAMIC	0.022MF	30%	25V
C901 ⚠	1-161-744-00	(AEP,UK).....CERAMIC	0.01MF		400V
C901 ⚠	1-161-749-00	(US,Canadian)...CERAMIC	0.01MF		125V
CF101	1-527-796-00	FILTER, CERAMIC			
CF102	1-527-796-00	FILTER, CERAMIC			

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- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

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- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
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- MMH : mH, UH : μH

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SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CF103	1-527-796-00	FILTER, CERAMIC
CF104	1-527-796-00	FILTER, CERAMIC
CF301	1-567-092-00	FILTER, CERAMIC
CNJ701	1-507-829-00	(US,Canadian)...JACK, EIAJ (F TYPE)
CNJ701	1-507-829-00	(AEP,UK).....PLUG, CONNECTOR (PAL)
CNJ702	1-507-829-00	(US,Canadian)...JACK, EIAJ (F TYPE)
CNJ702	1-564-235-00	(AEP,UK).....PLUG, CONNECTOR (PAL)
CNJ903	1-561-598-21	SOCKET 4P
CP501	1-102-394-00	CERAMIC 250V
CP502	1-102-394-00	CERAMIC 250V
CP503	1-102-394-00	CERAMIC 250V
CP504	1-102-394-00	CERAMIC 250V
CP505	1-102-394-00	CERAMIC 250V
CP602	1-231-849-00	COMPOSITION CIRCUIT BLOCK
CP605	1-231-619-00	COMPOSITION CIRCUIT BLOCK
CP606	1-231-619-00	COMPOSITION CIRCUIT BLOCK
CP608	1-231-620-00	COMPOSITION CIRCUIT BLOCK
D101	8-719-815-55	DIODE 1S1555
D102	8-719-815-55	DIODE 1S1555
D103	8-719-815-55	DIODE 1S1555
D104	8-719-815-55	DIODE 1S1555
D201	8-719-815-55	DIODE 1S1555
D202	8-719-815-55	DIODE 1S1555
D203	8-719-815-55	DIODE 1S1555
D204	8-719-815-55	DIODE 1S1555
D301	8-719-422-21	DIODE 1T22AM
D302	8-719-422-21	DIODE 1T22AM
D303	8-719-422-21	DIODE 1T22AM
D304	8-719-422-21	DIODE 1T22AM
D305	8-719-026-11	DIODE 1T261
D306	8-719-026-11	DIODE 1T261
D307	8-719-815-55	DIODE 1S1555
D401	8-719-815-55	DIODE 1S1555
D402	8-719-815-55	DIODE 1S1555
D403	8-719-815-55	DIODE 1S1555
D404	8-719-815-55	DIODE 1S1555
D405	8-719-910-78	DIODE HZ7C2L
D501	8-719-210-12	DIODE 10DF2
D502	8-719-210-12	DIODE 10DF2
D503	8-719-200-02	DIODE 10E-2
D504	8-719-200-02	DIODE 10E-2
D505	8-719-200-02	DIODE 10E-2
D506	8-719-200-02	DIODE 10E-2
D507	8-719-200-02	DIODE 10E-2

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D508	8-719-200-02	DIODE 10E-2
D509	8-719-210-12	DIODE 10DF2
D510	8-719-210-12	DIODE 10DF2
D511	8-719-910-64	DIODE HZ6B1L
D512	8-719-910-64	DIODE HZ6B1L
D513	8-719-910-64	DIODE HZ6B1L
D514	8-719-913-02	DIODE HZ30-2L
D515	8-719-913-02	DIODE HZ30-2L
D516	8-719-901-62	DIODE HZ16-2L
D517	8-719-931-06	DIODE EQB01-06
D518	8-719-910-64	DIODE HZ6B1L
D601	8-719-815-55	DIODE 1S1555
D602	8-719-815-55	DIODE 1S1555
D603	8-719-815-55	DIODE 1S1555
D604	8-719-815-55	DIODE 1S1555
D605	8-719-815-55	DIODE 1S1555
D606	8-719-815-55	DIODE 1S1555
D607	8-719-815-55	DIODE 1S1555
D608	8-719-815-55	DIODE 1S1555
D609	8-719-815-55	DIODE 1S1555
D610	8-719-815-55	DIODE 1S1555
D701	8-719-100-02	DIODE 1S2222
D702	8-719-100-02	DIODE 1S2222
D703	8-719-100-02	DIODE 1S2222
D704	8-719-100-02	DIODE 1S2222
D801	8-719-815-55	DIODE 1S1555
D802	8-719-815-55	DIODE 1S1555
D803	8-719-815-55	DIODE 1S1555
D804	8-719-815-55	DIODE 1S1555
D805	8-719-815-55	DIODE 1S1555
D806	8-719-815-55	DIODE 1S1555
D807	8-719-815-55	DIODE 1S1555
D808	8-719-815-55	DIODE 1S1555
D809	8-719-815-55	DIODE 1S1555
D810	8-719-815-55	DIODE 1S1555
D811	8-719-815-55	DIODE 1S1555
D812	8-719-815-55	DIODE 1S1555
D813	8-719-815-55	DIODE 1S1555
D901	8-719-815-55	DIODE 1S1555
FE101	A-4344-032-A	FRONT END (FEE-005W)
FLT801	1-519-278-00	INDICATOR TUBE, FLUORESCENT
IC101	8-759-812-35	IC LA1235
IC102	8-759-111-63	IC UPC1163H
IC103	8-759-907-01	IC TL07CP

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SEMICONDUCTORS
In each case, U : μ, for example:
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ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC201	8-759-100-14	IC UPC1223C
IC202	8-759-240-66	IC TC4066BP
IC203	8-759-990-72	IC TL072CP
IC204	8-759-900-72	IC NE5532P
IC301	8-759-906-38	IC TL490C
IC601	8-759-617-78	IC CX778A
IC602	8-759-611-00	IC CX761A
IC603	8-759-101-08	IC UPD553C225
IC604	8-759-140-11	IC UPD4011BC
IC605	8-759-990-23	IC TMS1024N2L
IC606	8-759-645-17	IC M54517P
IC607	8-759-140-49	IC UPD4049C
IFT101	1-404-312-00	TRANSFORMER, IF
IFT102	1-404-250-00	TRANSFORMER, DISCRIMINATOR
JW50 ♦	1-564-188-00	BAR, BUS
JW51 ♦	1-564-188-00	BAR, BUS
JW52 ♦	1-564-188-00	BAR, BUS
JW53 ♦	1-564-188-00	BAR, BUS
L101	1-407-169-XX	MICRO INDUCTOR 100UH
L102	1-407-169-XX	MICRO INDUCTOR 100UH
L103	1-407-169-XX	MICRO INDUCTOR 100UH
L104	1-407-165-XX	MICRO INDUCTOR 47UH
L201	1-426-092-00	COIL, (ALIGNMENT)
L601	1-407-169-XX	MICRO INDUCTOR 100UH
LPF101	1-231-422-00	FILTER, LOWPASS
LPF201	1-231-421-00	FILTER, LOWPASS
LPF251	1-231-421-00	FILTER, LOWPASS
PL801	1-518-518-00	LAMP, PILOT
PL802	1-518-518-00	LAMP, PILOT
PL803	1-518-518-00	LAMP, PILOT
PL804	1-518-518-00	LAMP, PILOT
PL805	1-518-518-00	LAMP, PILOT
PL806	1-518-518-00	LAMP, PILOT
PL807	1-518-518-00	LAMP, PILOT
PL808	1-518-518-00	LAMP, PILOT
PT901⚠	1-447-565-00	(US,Canadian)...TRANSFORMER, POWER
PT901⚠	1-447-566-00	(AEP,UK).....TRANSFORMER, POWER
Q101	8-729-671-14	TRANSISTOR 2SC710-14
Q102	8-729-671-14	TRANSISTOR 2SC710-14
Q103	8-729-671-14	TRANSISTOR 2SC710-14
Q104	8-729-671-14	TRANSISTOR 2SC710-14
Q105	8-729-671-14	TRANSISTOR 2SC710-14
Q106	8-729-671-14	TRANSISTOR 2SC710-14
Q107	8-729-245-83	TRANSISTOR 2SC2458
Q108	8-729-245-83	TRANSISTOR 2SC2458
Q109	8-729-671-14	TRANSISTOR 2SC710-14

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q110	8-729-245-83	TRANSISTOR 2SC2458
Q111	8-729-245-83	TRANSISTOR 2SC2458
Q112	8-729-245-83	TRANSISTOR 2SC2458
Q113	8-729-245-83	TRANSISTOR 2SC2458
Q114	8-729-245-83	TRANSISTOR 2SC2458
Q115	8-729-671-14	TRANSISTOR 2SC710-14
Q116	8-729-663-47	TRANSISTOR 2SC1364
Q201	8-729-204-82	TRANSISTOR 2SA1048
Q202	8-729-203-04	TRANSISTOR 2SK30A
Q301	8-729-671-14	TRANSISTOR 2SC710-14
Q302	8-729-671-14	TRANSISTOR 2SC710-14
Q303	8-729-671-14	TRANSISTOR 2SC710-14
Q304	8-729-245-83	TRANSISTOR 2SC2458
Q305	8-729-245-83	TRANSISTOR 2SC2458
Q306	8-729-245-83	TRANSISTOR 2SC2458
Q311	8-729-204-82	TRANSISTOR 2SA1048
Q312	8-729-204-82	TRANSISTOR 2SA1048
Q313	8-729-204-82	TRANSISTOR 2SA1048
Q314	8-729-204-82	TRANSISTOR 2SA1048
Q315	8-729-204-82	TRANSISTOR 2SA1048
Q316	8-729-204-82	TRANSISTOR 2SA1048
Q317	8-729-204-82	TRANSISTOR 2SA1048
Q318	8-729-204-82	TRANSISTOR 2SA1048
Q319	8-729-204-82	TRANSISTOR 2SA1048
Q320	8-729-204-82	TRANSISTOR 2SA1048
Q401	8-729-201-83	TRANSISTOR 2SC3112
Q402	8-729-245-83	TRANSISTOR 2SC2458
Q403	8-729-663-47	TRANSISTOR 2SC1364
Q404	8-729-245-83	TRANSISTOR 2SC2458
Q405	8-729-245-83	TRANSISTOR 2SC2458
Q406	8-729-204-82	TRANSISTOR 2SA1048
Q407	8-729-245-83	TRANSISTOR 2SC2458
Q408	8-729-245-83	TRANSISTOR 2SC2458
Q409	8-729-204-82	TRANSISTOR 2SA1048
Q410	8-729-113-32	TRANSISTOR 2SB733
Q411	8-729-245-83	TRANSISTOR 2SC2458
Q501	8-729-331-53	TRANSISTOR 2SC1983
Q502	8-729-245-83	TRANSISTOR 2SC2458
Q503	8-729-245-83	TRANSISTOR 2SC2458
Q504	8-729-224-61	TRANSISTOR 2SK246
Q505	8-729-398-62	TRANSISTOR 2SC1826
Q506	8-729-113-32	TRANSISTOR 2SB733
Q507	8-729-117-43	TRANSISTOR 2SD774
Q508	8-729-377-12	TRANSISTOR 2SA768
Q509	8-729-103-43	TRANSISTOR 2SB734
Q510	8-729-244-61	TRANSISTOR 2SK246
Q511	8-729-177-43	TRANSISTOR 2SD774

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q601	8-729-203-05	TRANSISTOR 2SK30A-GR3
Q602	8-729-664-48	TRANSISTOR 2SC1362-48
Q605	8-729-245-83	TRANSISTOR 2SC2458
Q606	8-729-245-83	TRANSISTOR 2SC2458
Q607	8-729-245-83	TRANSISTOR 2SC2458
Q608	8-729-204-82	TRANSISTOR 2SA1048
Q609	8-729-204-82	TRANSISTOR 2SA1048
Q610	8-729-204-82	TRANSISTOR 2SA1048
Q611	8-729-204-82	TRANSISTOR 2SA1048
Q612	8-729-204-82	TRANSISTOR 2SA1048
Q613	8-729-204-82	TRANSISTOR 2SA1048
Q614	8-729-204-82	TRANSISTOR 2SA1048
Q615	8-729-204-82	TRANSISTOR 2SA1048
Q616	8-729-204-82	TRANSISTOR 2SA1048
Q617	8-729-204-82	TRANSISTOR 2SA1048
Q618	8-729-204-82	TRANSISTOR 2SA1048
Q619	8-729-204-82	TRANSISTOR 2SA1048
Q620	8-729-204-82	TRANSISTOR 2SA1048
Q621	8-729-204-82	TRANSISTOR 2SA1048
Q622	8-729-204-82	TRANSISTOR 2SA1048
Q623	8-729-204-82	TRANSISTOR 2SA1048
Q624	8-729-663-47	TRANSISTOR 2SC1364
Q630	8-729-245-83	TRANSISTOR 2SC2458
Q631	8-729-245-83	TRANSISTOR 2SC2458
Q632	8-729-245-83	TRANSISTOR 2SC2458
Q633	8-729-245-83	TRANSISTOR 2SC2458
Q701	8-729-902-11	TRANSISTOR 2SC2021
Q702	8-729-902-11	TRANSISTOR 2SC2021
Q703	8-729-902-11	TRANSISTOR 2SC2021
Q704	8-729-902-11	TRANSISTOR 2SC2021
R101	1-246-473-00	CARBON 1K 5% 1/4W
R102	1-246-441-00	CARBON 47 5% 1/4W
R103	1-246-461-00	CARBON 330 5% 1/4W
R104	1-246-461-00	CARBON 330 5% 1/4W
R105	1-246-461-00	CARBON 330 5% 1/4W
R106	1-246-507-00	CARBON 27K 5% 1/4W
R107	1-246-465-00	CARBON 470 5% 1/4W
R108	1-246-501-00	CARBON 15K 5% 1/4W
R109	1-246-461-00	CARBON 330 5% 1/4W
R110	1-246-465-00	CARBON 470 5% 1/4W
R111	1-246-461-00	CARBON 330 5% 1/4W
R112	1-246-467-00	CARBON 560 5% 1/4W
R113	1-246-507-00	CARBON 27K 5% 1/4W
R114	1-246-501-00	CARBON 15K 5% 1/4W
R115	1-246-461-00	CARBON 330 5% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R116	1-246-461-00	CARBON 330 5% 1/4W
R117	1-246-507-00	CARBON 27K 5% 1/4W
R118	1-246-477-00	CARBON 1.5K 5% 1/4W
R119	1-246-501-00	CARBON 15K 5% 1/4W
R120	1-246-515-00	CARBON 56K 5% 1/4W
R121	1-246-497-00	CARBON 10K 5% 1/4W
R122	1-246-485-00	CARBON 3.3K 5% 1/4W
R123	1-246-485-00	CARBON 3.3K 5% 1/4W
R124	1-246-501-00	CARBON 15K 5% 1/4W
R125	1-246-461-00	CARBON 330 5% 1/4W
R126	1-246-521-00	CARBON 100K 5% 1/4W
R127	1-246-493-00	CARBON 6.8K 5% 1/4W
R128	1-246-497-00	CARBON 10K 5% 1/4W
R129	1-246-425-00	CARBON 10 5% 1/4W
R130	1-246-481-00	CARBON 2.2K 5% 1/4W
R131 ⚠	1-247-109-00	CARBON 120 5% 1/4W F
R132	1-246-513-00	CARBON 47K 5% 1/4W
R133	1-246-515-00	CARBON 56K 5% 1/4W
R134	1-246-483-00	CARBON 2.7K 5% 1/4W
R135	1-246-463-00	CARBON 390 5% 1/4W
R136	1-246-457-00	CARBON 220 5% 1/4W
R137	1-246-477-00	CARBON 1.5K 5% 1/4W
R138	1-246-477-00	CARBON 1.5K 5% 1/4W
R139	1-246-491-00	CARBON 5.6K 5% 1/4W
R140	1-246-491-00	CARBON 5.6K 5% 1/4W
R141	1-214-755-00	METAL 12K 1% 1/4W
R142	1-214-746-00	METAL 5.1K 1% 1/4W
R143	1-214-745-00	METAL 4.7K 1% 1/4W
R144	1-246-525-00	CARBON 150K 5% 1/4W
R145	1-246-513-00	CARBON 47K 5% 1/4W
R146	1-214-752-00	METAL 9.1K 1% 1/4W
R147	1-247-855-00	CARBON 10K 5% 1/6W
R148	1-247-873-00	CARBON 56K 5% 1/6W
R149	1-246-497-00	CARBON 10K 5% 1/4W
R150	1-246-505-00	CARBON 22K 5% 1/4W
R151	1-246-497-00	CARBON 10K 5% 1/4W
R152	1-246-513-00	CARBON 47K 5% 1/4W
R153	1-246-497-00	CARBON 10K 5% 1/4W
R160	1-246-521-00	CARBON 100K 5% 1/4W
R161	1-246-545-00	CARBON 1M 5% 1/4W
R162	1-246-529-00	CARBON 220K 5% 1/4W
R163	1-246-545-00	CARBON 1M 5% 1/4W
R164	1-246-545-00	CARBON 1M 5% 1/4W
R165	1-246-537-00	CARBON 470K 5% 1/4W
R167	1-246-521-00	CARBON 100K 5% 1/4W

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R169	1-246-449-00	CARBON	100	5%	1/4W	
R170	1-246-467-00	CARBON	560	5%	1/4W	
R171	1-246-497-00	CARBON	10K	5%	1/4W	
R201 ⚠	1-247-109-00	CARBON	120	5%	1/4W	F
R202	1-214-156-00	METAL	10K	1%	1/4W	
R203	1-214-156-00	METAL	10K	1%	1/4W	
R204	1-214-163-00	METAL	20K	1%	1/4W	
R205	1-246-467-00	CARBON	560	5%	1/4W	
R206	1-247-823-00	CARBON	470	5%	1/6W	
R207	1-214-178-00	METAL	82K	1%	1/4W	
R208	1-214-759-00	METAL	18K	1%	1/4W	
R209	1-246-493-00	CARBON	6.8K	5%	1/4W	
R210	1-214-168-00	METAL	33K	1%	1/4W	
R211	1-214-167-00	METAL	30K	1%	1/4W	
R212	1-214-144-00	METAL	3.3K	1%	1/4W	
R213	1-214-746-00	METAL	5.1K	1%	1/4W	
R214	1-246-545-00	CARBON	1M	5%	1/4W	
R215	1-214-888-00	METAL	10K	1%	1/2W	
R216	1-214-859-00	METAL	620	1%	1/2W	
R217	1-214-862-00	METAL	820	1%	1/2W	
R218	1-214-862-00	METAL	820	1%	1/2W	
R219	1-214-859-00	METAL	620	1%	1/2W	
R220	1-247-873-00	CARBON	56K	5%	1/6W	
R221	1-247-863-00	CARBON	22K	5%	1/6W	
R222	1-246-457-00	CARBON	220	5%	1/4W	
R223	1-246-473-00	CARBON	1K	5%	1/4W	
R224 ⚠	1-247-107-00	CARBON	100	5%	1/4W	F
R225 ⚠	1-247-107-00	CARBON	100	5%	1/4W	F
R226 ⚠	1-247-107-00	CARBON	100	5%	1/4W	F
R227 ⚠	1-247-107-00	CARBON	100	5%	1/4W	F
R228	1-246-545-00	CARBON	1M	5%	1/4W	
R229	1-246-505-00	CARBON	22K	5%	1/4W	
R230	1-214-888-00	METAL	10K	1%	1/2W	
R231	1-246-525-00	CARBON	150K	5%	1/4W	
R260	1-214-168-00	METAL	33K	1%	1/4W	
R261	1-214-167-00	METAL	30K	1%	1/4W	
R262	1-214-144-00	METAL	3.3K	1%	1/4W	
R263	1-214-746-00	METAL	5.1K	1%	1/4W	
R265	1-214-888-00	METAL	10K	1%	1/2W	
R266	1-214-859-00	METAL	620	1%	1/2W	
R267	1-214-862-00	METAL	820	1%	1/2W	
R268	1-214-862-00	METAL	820	1%	1/2W	
R269	1-214-859-00	METAL	620	1%	1/2W	
R280	1-214-888-00	METAL	10K	1%	1/2W	
R301	1-246-513-00	CARBON	47K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R302	1-246-501-00	CARBON	15K	5%	1/4W	
R303	1-246-469-00	CARBON	680	5%	1/4W	
R304	1-246-497-00	CARBON	10K	5%	1/4W	
R305	1-246-505-00	CARBON	22K	5%	1/4W	
R306	1-246-483-00	CARBON	2.7K	5%	1/4W	
R307	1-246-461-00	CARBON	330	5%	1/4W	
R308	1-246-497-00	CARBON	10K	5%	1/4W	
R309	1-246-505-00	CARBON	22K	5%	1/4W	
R310	1-246-491-00	CARBON	5.6K	5%	1/4W	
R311	1-246-461-00	CARBON	330	5%	1/4W	
R312	1-246-441-00	CARBON	47	5%	1/4W	
R313 ⚠	1-247-111-00	CARBON	150	5%	1/4W	F
R314	1-246-461-00	CARBON	330	5%	1/4W	
R320 ⚠	1-247-113-00	CARBON	180	5%	1/4W	F
R321	1-246-466-00	CARBON	510	5%	1/4W	
R322	1-247-855-00	CARBON	10K	5%	1/6W	
R323	1-247-839-00	CARBON	2.2K	5%	1/6W	
R324	1-247-879-00	CARBON	100K	5%	1/6W	
R325	1-247-855-00	CARBON	10K	5%	1/6W	
R326	1-247-839-00	CARBON	2.2K	5%	1/6W	
R327	1-247-879-00	CARBON	100K	5%	1/6W	
R328	1-247-855-00	CARBON	10K	5%	1/6W	
R329	1-247-839-00	CARBON	2.2K	5%	1/6W	
R330	1-247-879-00	CARBON	100K	5%	1/6W	
R331	1-247-855-00	CARBON	10K	5%	1/6W	
R332	1-247-839-00	CARBON	2.2K	5%	1/6W	
R333	1-247-879-00	CARBON	100K	5%	1/6W	
R334	1-247-855-00	CARBON	10K	5%	1/6W	
R335	1-247-839-00	CARBON	2.2K	5%	1/6W	
R336	1-247-879-00	CARBON	100K	5%	1/6W	
R337	1-247-855-00	CARBON	10K	5%	1/6W	
R338	1-247-839-00	CARBON	2.2K	5%	1/6W	
R339	1-247-879-00	CARBON	100K	5%	1/6W	
R340	1-247-855-00	CARBON	10K	5%	1/6W	
R341	1-247-839-00	CARBON	2.2K	5%	1/6W	
R342	1-247-879-00	CARBON	100K	5%	1/6W	
R343	1-247-855-00	CARBON	10K	5%	1/6W	
R344	1-247-839-00	CARBON	2.2K	5%	1/6W	
R345	1-247-879-00	CARBON	100K	5%	1/6W	
R346	1-247-855-00	CARBON	10K	5%	1/6W	
R347	1-247-839-00	CARBON	2.2K	5%	1/6W	
R348	1-247-879-00	CARBON	100K	5%	1/6W	
R349	1-247-855-00	CARBON	10K	5%	1/6W	
R350	1-247-839-00	CARBON	2.2K	5%	1/6W	
R351	1-247-879-00	CARBON	100K	5%	1/6W	

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R355	1-246-513-00	CARBON	47K	5%	1/4W	
R356	1-246-497-00	CARBON	10K	5%	1/4W	
R357	1-246-501-00	CARBON	15K	5%	1/4W	
R401	1-246-521-00	CARBON	100K	5%	1/4W	
R402	1-246-479-00	CARBON	1.8K	5%	1/4W	
R403	1-246-487-00	CARBON	3.9K	5%	1/4W	
R404	1-246-505-00	CARBON	22K	5%	1/4W	
R405	1-246-509-00	CARBON	33K	5%	1/4W	
R406	1-246-509-00	CARBON	33K	5%	1/4W	
R407	1-246-513-00	CARBON	47K	5%	1/4W	
R408	1-246-485-00	CARBON	3.3K	5%	1/4W	
R409	1-247-871-00	CARBON	47K	5%	1/6W	
R410	1-246-521-00	CARBON	100K	5%	1/4W	
R411	1-246-489-00	CARBON	4.7K	5%	1/4W	
R412	1-246-489-00	CARBON	4.7K	5%	1/4W	
R413	1-246-537-00	CARBON	470K	5%	1/4W	
R414	1-246-503-00	CARBON	18K	5%	1/4W	
R415	1-246-489-00	CARBON	4.7K	5%	1/4W	
R416	1-246-515-00	CARBON	56K	5%	1/4W	
R417	1-246-513-00	CARBON	47K	5%	1/4W	
R418	1-246-497-00	CARBON	10K	5%	1/4W	
R419	1-246-513-00	CARBON	47K	5%	1/4W	
R420	1-246-511-00	CARBON	39K	5%	1/4W	
R421	1-246-481-00	CARBON	2.2K	5%	1/4W	
R422	1-246-505-00	CARBON	22K	5%	1/4W	
R423	1-246-483-00	CARBON	2.7K	5%	1/4W	
R424	1-246-511-00	CARBON	39K	5%	1/4W	
R425	1-246-473-00	CARBON	1K	5%	1/4W	
R426	1-246-497-00	CARBON	10K	5%	1/4W	
R427	1-246-511-00	CARBON	39K	5%	1/4W	
R428 ⚠	1-206-640-00	METAL OXIDE	100	5%	2W	F
R429	1-246-483-00	CARBON	2.7K	5%	1/4W	
R501 ⚠	1-247-188-00	CARBON	4.7	5%	1/2W	F
R502	1-246-497-00	CARBON	10K	5%	1/4W	
R503	1-246-489-00	CARBON	4.7K	5%	1/4W	
R504	1-246-485-00	CARBON	3.3K	5%	1/4W	
R505 ⚠	1-247-085-00	CARBON	12	5%	1/4W	F
R506 ⚠	1-247-129-00	CARBON	820	5%	1/4W	F
R507	1-246-471-00	CARBON	820	5%	1/4W	
R508 ⚠	1-247-097-00	CARBON	39	5%	1/4W	F
R509 ⚠	1-247-129-00	CARBON	820	5%	1/4W	F
R510	1-246-471-00	CARBON	820	5%	1/4W	
R511 ⚠	1-247-097-00	CARBON	39	5%	1/4W	F
R512 ⚠	1-247-137-00	CARBON	1.8K	5%	1/4W	F
R513	1-246-479-00	CARBON	1.8K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R514 ⚠	1-247-097-00	CARBON	39	5%	1/4W	F
R515 ⚠	1-247-137-00	CARBON	1.8K	5%	1/4W	F
R516	1-246-479-00	CARBON	1.8K	5%	1/4W	
R517	1-246-497-00	CARBON	10K	5%	1/4W	
R518 ⚠	1-247-107-00	CARBON	100	5%	1/4W	F
R519	1-246-447-00	CARBON	82	5%	1/4W	
R520 ⚠	1-247-097-00	CARBON	39	5%	1/4W	F
R530 ⚠	1-202-725-00	(US,Canadian)...SOLID	3.3M	10%	1/2W	
R601	1-246-489-00	CARBON	4.7K	5%	1/4W	
R602	1-246-467-00	CARBON	560	5%	1/4W	
R603	1-246-447-00	CARBON	82	5%	1/4W	
R604	1-246-493-00	CARBON	6.8K	5%	1/4W	
R605	1-246-493-00	CARBON	6.8K	5%	1/4W	
R606	1-246-489-00	CARBON	4.7K	5%	1/4W	
R607	1-246-535-00	CARBON	390K	5%	1/4W	
R608	1-246-505-00	CARBON	22K	5%	1/4W	
R609	1-246-505-00	CARBON	22K	5%	1/4W	
R610	1-246-505-00	CARBON	22K	5%	1/4W	
R611	1-246-518-00	CARBON	75K	5%	1/4W	
R612	1-246-545-00	CARBON	1M	5%	1/4W	
R613	1-247-879-00	CARBON	100K	5%	1/6W	
R614	1-246-515-00	CARBON	56K	5%	1/4W	
R615	1-247-873-00	CARBON	56K	5%	1/6W	
R616	1-246-501-00	CARBON	15K	5%	1/4W	
R617	1-247-881-00	CARBON	120K	5%	1/6W	
R618	1-247-828-00	CARBON	750	5%	1/6W	
R619	1-247-891-00	CARBON	330K	5%	1/6W	
R620	1-247-869-00	CARBON	39K	5%	1/6W	
R621	1-247-883-00	CARBON	150K	5%	1/6W	
R622	1-247-871-00	CARBON	47K	5%	1/6W	
R623	1-246-515-00	CARBON	56K	5%	1/4W	
R624	1-246-511-00	CARBON	39K	5%	1/4W	
R625	1-246-491-00	CARBON	5.6K	5%	1/4W	
R626	1-246-515-00	CARBON	56K	5%	1/4W	
R627	1-246-499-00	CARBON	12K	5%	1/4W	
R628	1-246-537-00	CARBON	470K	5%	1/4W	
R629	1-246-499-00	CARBON	12K	5%	1/4W	
R630	1-247-879-00	CARBON	100K	5%	1/6W	
R631	1-247-879-00	CARBON	100K	5%	1/6W	
R632	1-246-499-00	CARBON	12K	5%	1/4W	
R633	1-247-857-00	CARBON	12K	5%	1/6W	
R634	1-246-499-00	CARBON	12K	5%	1/4W	
R635	1-246-499-00	CARBON	12K	5%	1/4W	
R636	1-246-497-00	CARBON	10K	5%	1/4W	
R637	1-246-511-00	CARBON	39K	5%	1/4W	
R638	1-246-505-00	CARBON	22K	5%	1/4W	

NOTE:
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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R639	1-247-879-00	CARBON	100K	5%	1/6W
R640	1-247-855-00	CARBON	10K	5%	1/6W
R641	1-247-857-00	CARBON	12K	5%	1/6W
R642	1-247-879-00	CARBON	100K	5%	1/6W
R643	1-247-879-00	CARBON	100K	5%	1/6W
R644	1-247-855-00	CARBON	10K	5%	1/6W
R645	1-247-857-00	CARBON	12K	5%	1/6W
R646	1-247-879-00	CARBON	100K	5%	1/6W
R647	1-247-879-00	CARBON	100K	5%	1/6W
R648	1-247-855-00	CARBON	10K	5%	1/6W
R649	1-247-857-00	CARBON	12K	5%	1/6W
R650	1-247-879-00	CARBON	100K	5%	1/6W
R651	1-247-879-00	CARBON	100K	5%	1/6W
R652	1-247-855-00	CARBON	10K	5%	1/6W
R653	1-247-857-00	CARBON	12K	5%	1/6W
R654	1-247-879-00	CARBON	100K	5%	1/6W
R655	1-247-879-00	CARBON	100K	5%	1/6W
R656	1-247-855-00	CARBON	10K	5%	1/6W
R657	1-247-857-00	CARBON	12K	5%	1/6W
R658	1-247-879-00	CARBON	100K	5%	1/6W
R659	1-247-879-00	CARBON	100K	5%	1/6W
R660	1-247-855-00	CARBON	10K	5%	1/6W
R661	1-247-857-00	CARBON	12K	5%	1/6W
R662	1-247-879-00	CARBON	100K	5%	1/6W
R663	1-247-879-00	CARBON	100K	5%	1/6W
R664	1-247-855-00	CARBON	10K	5%	1/6W
R665	1-247-879-00	CARBON	100K	5%	1/6W
R670	1-246-497-00	CARBON	10K	5%	1/4W
R671	1-246-497-00	CARBON	10K	5%	1/4W
R672	1-246-497-00	CARBON	10K	5%	1/4W
R673	1-246-497-00	CARBON	10K	5%	1/4W
R677	1-247-869-00	CARBON	39K	5%	1/6W
R701	1-246-483-00	CARBON	2.7K	5%	1/4W
R702	1-246-483-00	CARBON	2.7K	5%	1/4W
R703	1-246-485-00	CARBON	3.3K	5%	1/4W
R704	1-246-475-00	CARBON	1.2K	5%	1/4W
R705	1-244-897-00	CARBON	10K	5%	1/2W
R706	1-246-501-00	CARBON	15K	5%	1/4W
R707	1-246-444-00	CARBON	62	5%	1/4W
R708	1-246-444-00	CARBON	62	5%	1/4W
R709	1-246-429-00	CARBON	15	5%	1/4W
R710	1-246-485-00	CARBON	3.3K	5%	1/4W
R711	1-246-475-00	CARBON	1.2K	5%	1/4W
R712	1-246-497-00	CARBON	10K	5%	1/4W
R713	1-246-491-00	CARBON	5.6K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R714	1-246-505-00	CARBON	22K	5%	1/4W
R715	1-246-497-00	CARBON	10K	5%	1/4W
R716	1-246-501-00	CARBON	15K	5%	1/4W
R717	1-246-497-00	CARBON	10K	5%	1/4W
R718	1-246-477-00	CARBON	1.5K	5%	1/4W
R719	1-246-497-00	CARBON	10K	5%	1/4W
R801	1-246-485-00	CARBON	3.3K	5%	1/4W
R901	1-214-859-00	METAL	620	1%	1/2W
R951	1-214-859-00	METAL	620	1%	1/2W
RT101	1-226-236-00	RES, ADJ, CARBON 10K			
RT102	1-226-236-00	RES, ADJ, CARBON 10K			
RT103	1-226-239-00	RES, ADJ, CARBON 100K			
RT201	1-224-256-XX	RES, ADJ, METAL GLAZE 220K			
RT203	1-224-252-31	RES, ADJ, METAL GLAZE 10K			
RT204	1-224-254-XX	RES, ADJ, METAL GLAZE 47K			
RT251	1-224-256-XX	RES, ADJ, METAL GLAZE 220K			
RT254	1-224-254-XX	RES, ADJ, METAL GLAZE 47K			
RT301	1-226-238-00	RES, ADJ, CARBON 50K			
RT302	1-226-238-00	RES, ADJ, CARBON 50K			
RT303	1-226-238-00	RES, ADJ, CARBON 50K			
RT401	1-226-239-00	RES, ADJ, CARBON 100K			
RT601	1-226-233-00	RES, ADJ, CARBON 1K			
RY101	1-515-498-00	RELAY			
RY201	1-515-457-00	RELAY			
S801	1-553-739-21	SWITCH, KEY BOARD			
S802	1-553-739-21	SWITCH, KEY BOARD			
S803	1-553-739-21	SWITCH, KEY BOARD			
S804	1-553-739-21	SWITCH, KEY BOARD			
S805	1-553-739-21	SWITCH, KEY BOARD			
S806	1-553-739-21	SWITCH, KEY BOARD			
S807	1-553-739-21	SWITCH, KEY BOARD			
S808	1-553-739-21	SWITCH, KEY BOARD			
S809	1-554-303-00	SWITCH, KEY BOARD			
S810	1-554-303-00	SWITCH, KEY BOARD			
S811	1-554-303-00	SWITCH, KEY BOARD			
S812	1-554-303-00	SWITCH, KEY BOARD			
S813	1-554-303-00	SWITCH, KEY BOARD			
S814	1-553-739-21	SWITCH, KEY BOARD			
S815	1-553-739-21	SWITCH, KEY BOARD			
S816	1-554-303-00	SWITCH, KEY BOARD			
S817	1-554-303-00	SWITCH, KEY BOARD			
S818	1-554-303-00	SWITCH, KEY BOARD			
S819	1-554-303-00	SWITCH, KEY BOARD			
S901 ⚠	1-553-318-00	(AEP,UK).....SWITCH, PUSH (AC POWER)			
S901 ⚠	1-553-319-00	(US,Canadian)...SWITCH, PUSH (AC POWER)			
S902	1-552-625-21	SWITCH, SLIDE			
X601	1-527-731-00	OSCILLATOR, CRYSTAL			

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Technical Support Dept.

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