

STR-333S

E Model



FM-AM PROGRAM RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements:	120, 220 or 240 V ac adjustable, 50/60 Hz
Power Consumption:	180W
AC Outlets:	Two unswitched, total 200W
Dimensions:	Approx. 430 (w) x 135 (h) x 300 (d) mm 17 (w) x 5 ¹ / ₄ (h) x 11 ⁷ / ₈ (d) inches including projecting parts and controls
Weight:	Approx. 6.9 kg, 15 lb 4 oz (net) Approx. 8.0 kg, 17 lb 11 oz (in shipping carton)


FM SECTION

Tuning Range:	87.5–108 MHz
Antenna Terminals:	300 Ω balanced 75 Ω unbalanced
Intermediate Frequency:	10.7 MHz
Sensitivity at 50 dB Quieting:	3.5 μ V, 16.1 dBf (mono) 45 μ V, 38.3 dBf (stereo)
Usable Sensitivity:	IHF 1.9 μ V, 10.8 dBf
S/N Ratio:	75 dB (mono) 70 dB (stereo)
Harmonic Distortion:	0.15% (mono) 0.3% (stereo) At 1 kHz

IM Distortion:	0.15% (mono) 0.3% (stereo)
Separation:	45 dB at 1 kHz
Frequency Response:	30 Hz–15 kHz \pm 0.5 dB
Alternate Channel Selectivity:	60 dB (400 kHz)
Capture Ratio:	1.0 dB
AM Suppression Ratio:	54 dB
Image Response Ratio:	45 dB
Spurious Response Ratio:	75 dB
Muting Threshold:	Approx. 5 μ V

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.

SONY[®]

SERVICE MANUAL

4139

STR-333S

SW/MW SECTION

	SW1	SW2	MW
Tuning Range	2.3–6.2 MHz	7–17.9 MHz	522–1,602 kHz
Antenna	External antenna terminal		Built-in ferrite rod antenna, External antenna terminal
Intermediate Frequency	450 kHz		
Usable Sensitivity	30 μ V, external antenna (4 MHz)	30 μ V, external antenna (12 MHz)	250 μ V/m, built-in antenna (1,000 kHz) 100 μ V, external antenna (1,000 kHz)
S/N Ratio	52 dB (5 mV)		52 dB (50 mV/m)
Harmonic Distortion	0.3% (5 mV, 400 Hz)		0.3% (50 mV/m, 400 Hz)
Selectivity	50 dB (9 kHz)		

AMPLIFIER SECTION

Continuous RMS Power Output:

Less than 0.1% THD, both channels driven simultaneously
 At 20 Hz–20 kHz
 25W+25W (8 Ω)
 25W+25W (4 Ω)
 At 1kHz
 28W+28W (8 Ω)
 28W+28W (4 Ω)

Dynamic Power Output: 90W (8 Ω)
 (IHF constant power supply method) 90W (4 Ω)

Power Bandwidth: 10 Hz–40 kHz, IHF

Damping Factor: 20 at 1 kHz, 8 Ω

Harmonic Distortion: Less than 0.1% at rated output
 Less than 0.1% at 1W output

Intermodulation (IM) Distortion: Less than 0.1% at rated output
 (60 Hz: 7 kHz = 4:1) Less than 0.1% at 1W output

Residual Noise: Less than 0.08 μ W at 8 Ω

Inputs:

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV (-50 dB)	50 k Ω	70 dB	A
TAPE	150 mV (-14.5 dB)	100 k Ω	90 dB	A

Measured with rated output power into 8 Ω loads (both channels driven simultaneously) at 1 kHz.

Outputs: (with rated input)

REC OUT	Voltage 150 mV (-14.5 dB)	Impedance 10 k Ω
HEADPHONES	Accepts all low or high impedance headphones.	
SPEAKER	4–16 Ω speakers are suitable.	

Frequency Response: PHONO RIAA equalization curve \pm 1 dB
 TAPE 10 Hz–50 kHz \pm 1 dB

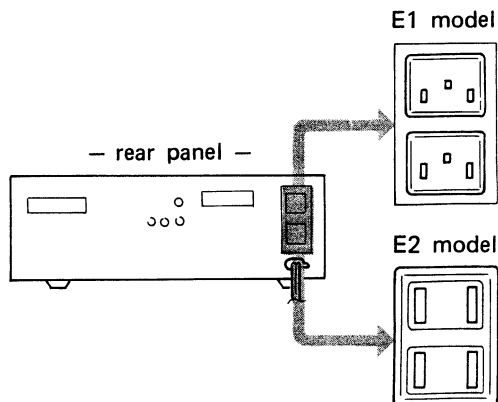
Tone Controls: BASS \pm 8 dB at 100 Hz
 TREBLE \pm 8 dB at 10 kHz

Loudness Control: +6 dB at 100 Hz (att. 30 dB)
 +3 dB at 10 kHz

0 dB = 0.775 V

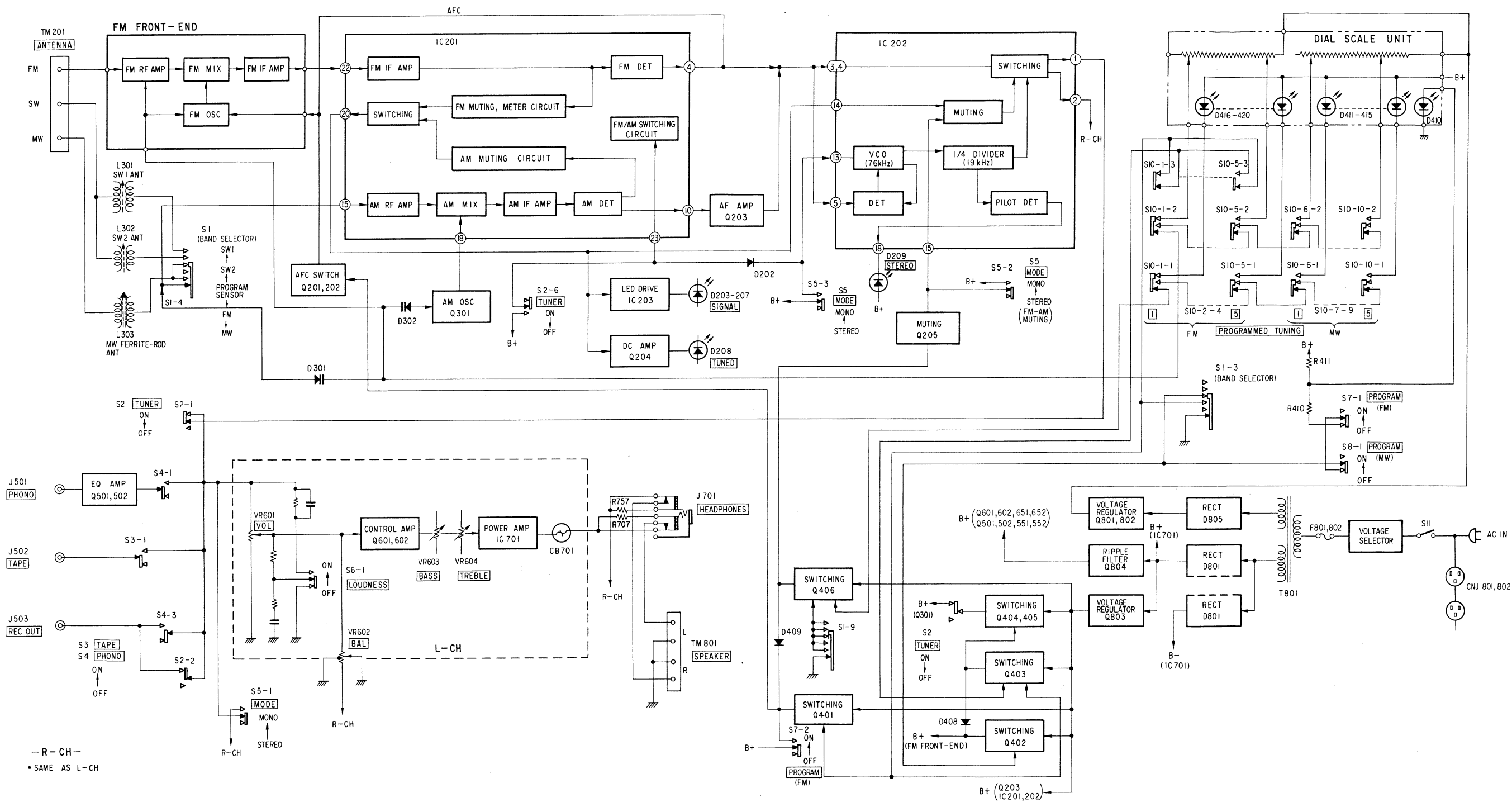
MODEL IDENTIFICATIONS

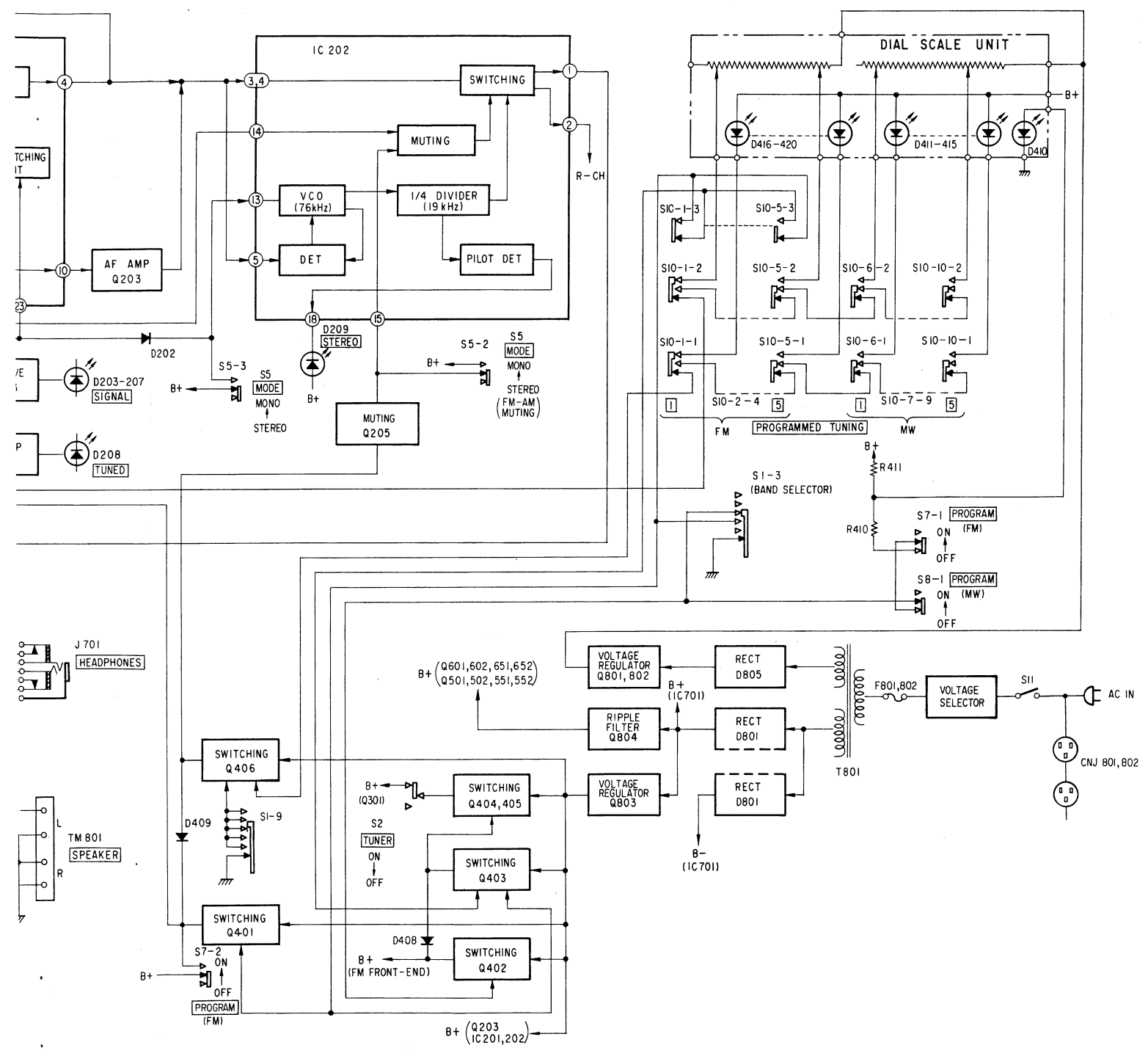
– AC Outlet –



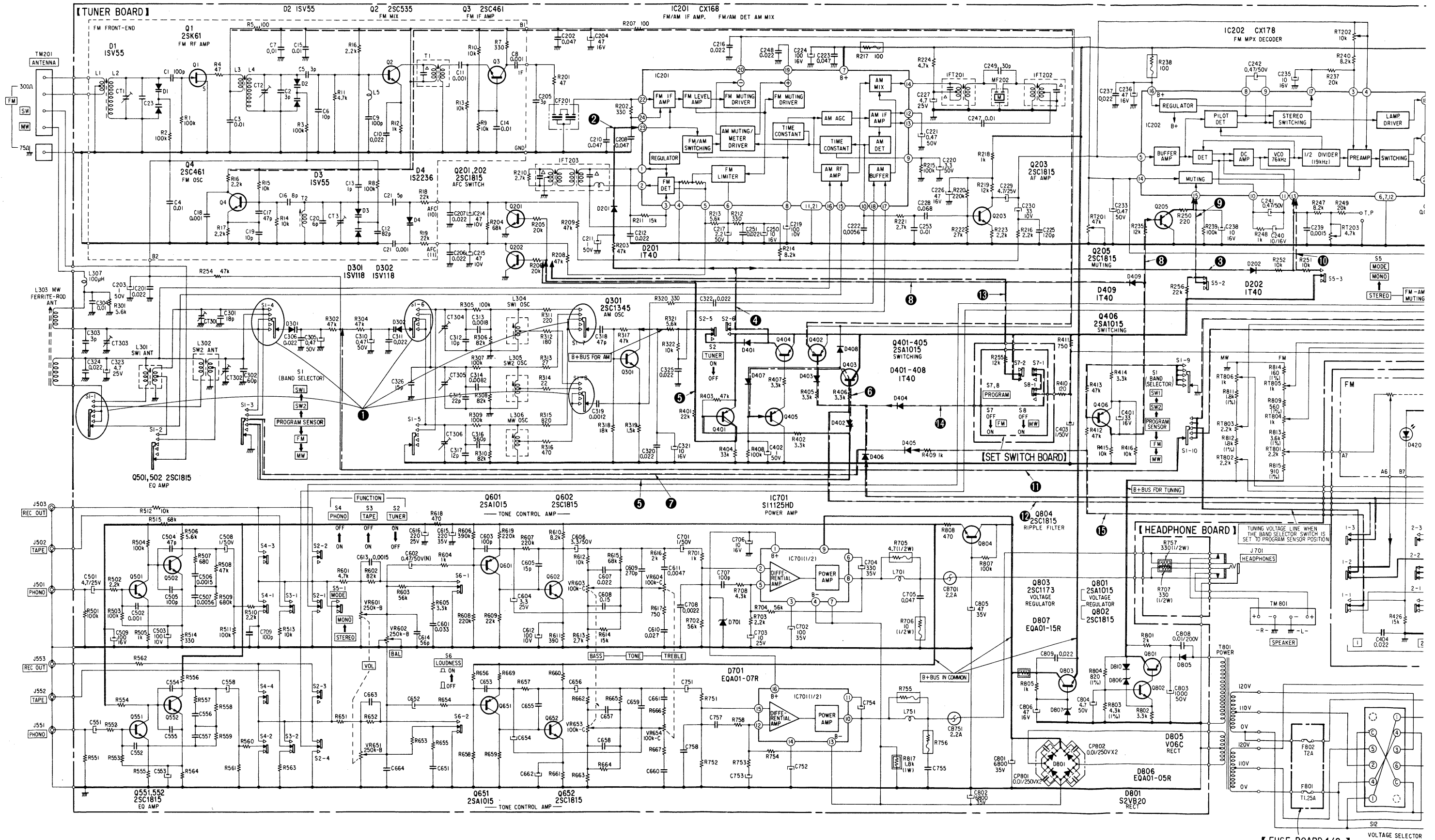
SECTION 1
OUTLINE

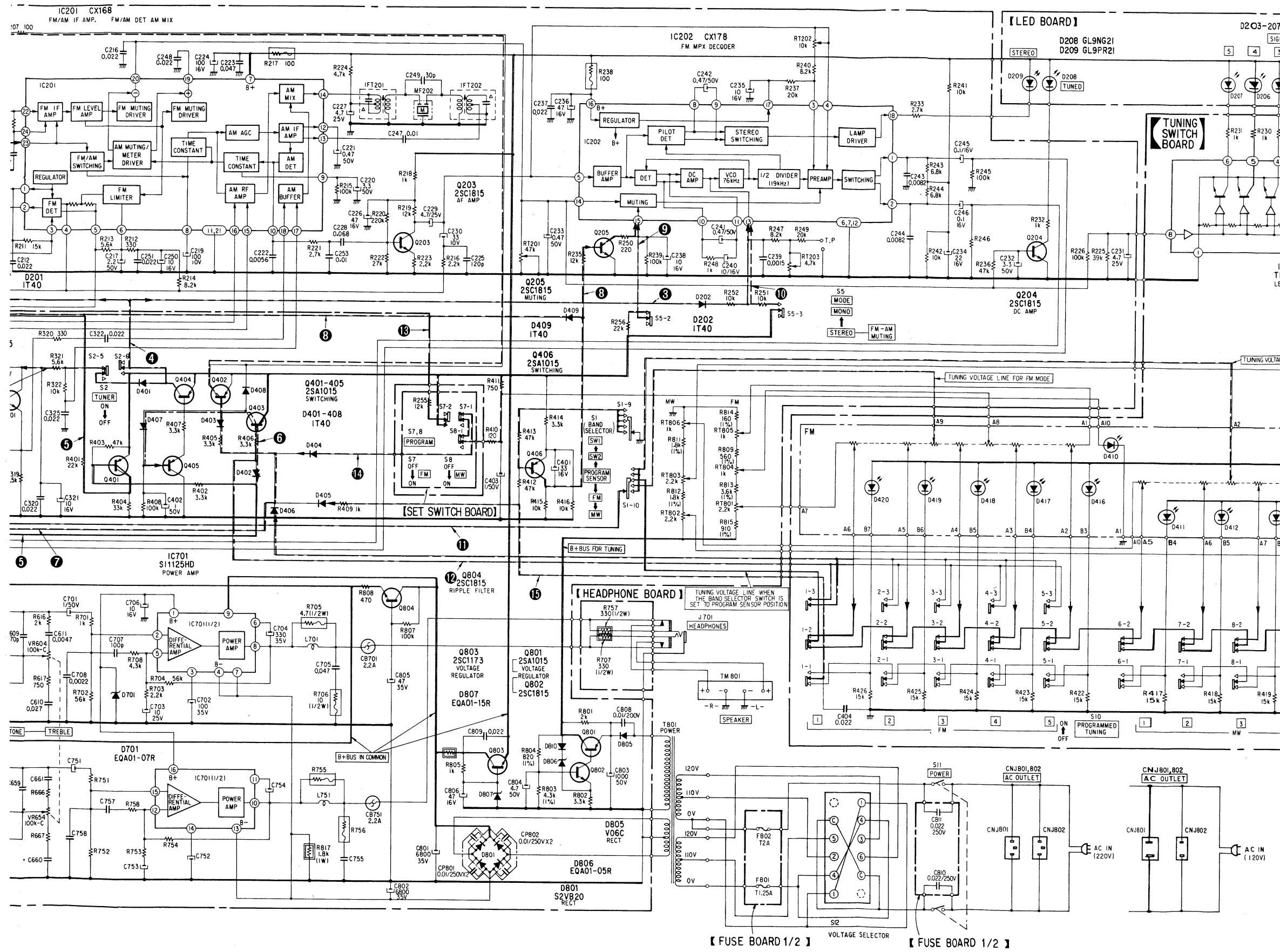
1-1. BLOCK DIAGRAM

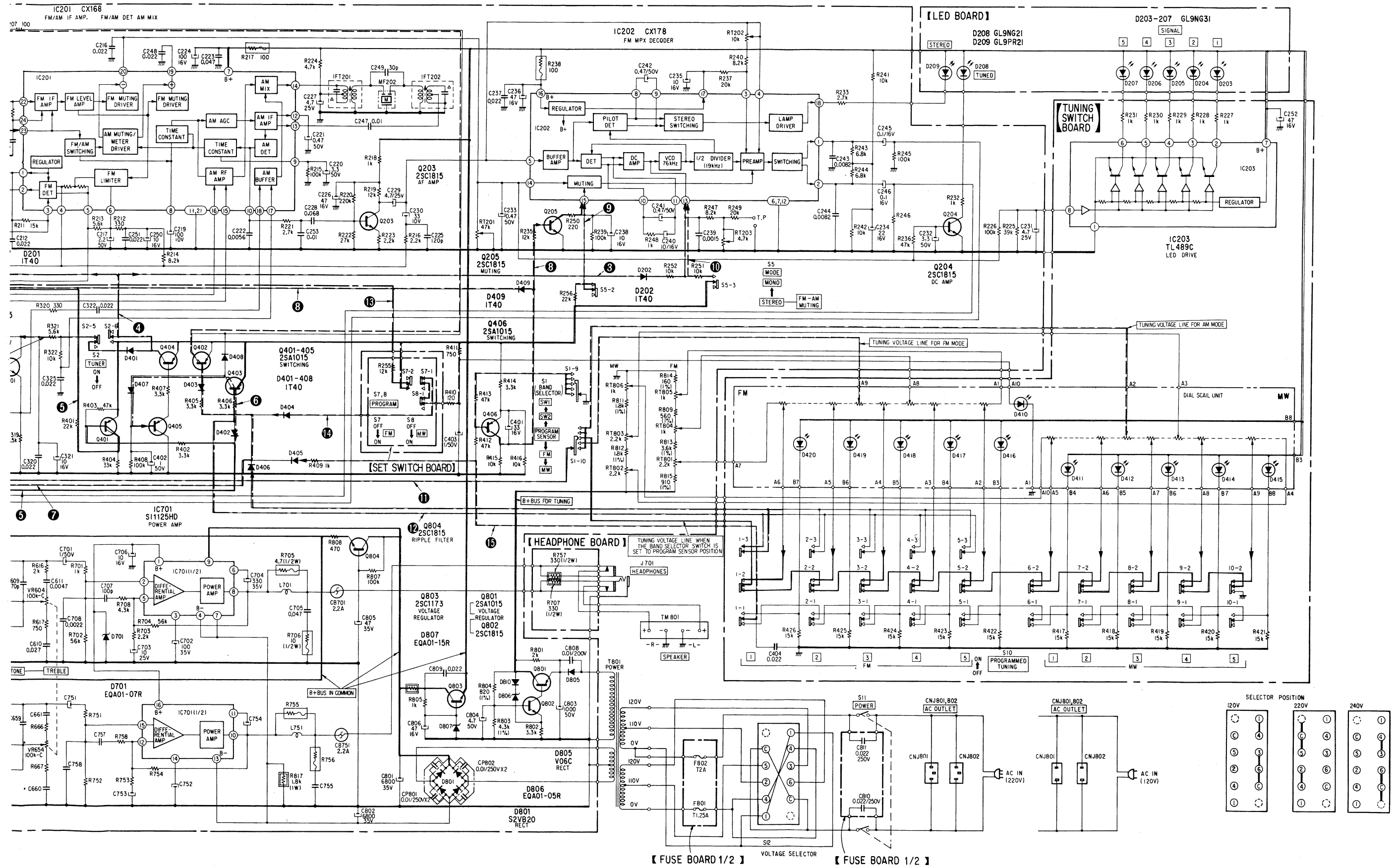




1-2. CIRCUIT DESCRIPTION



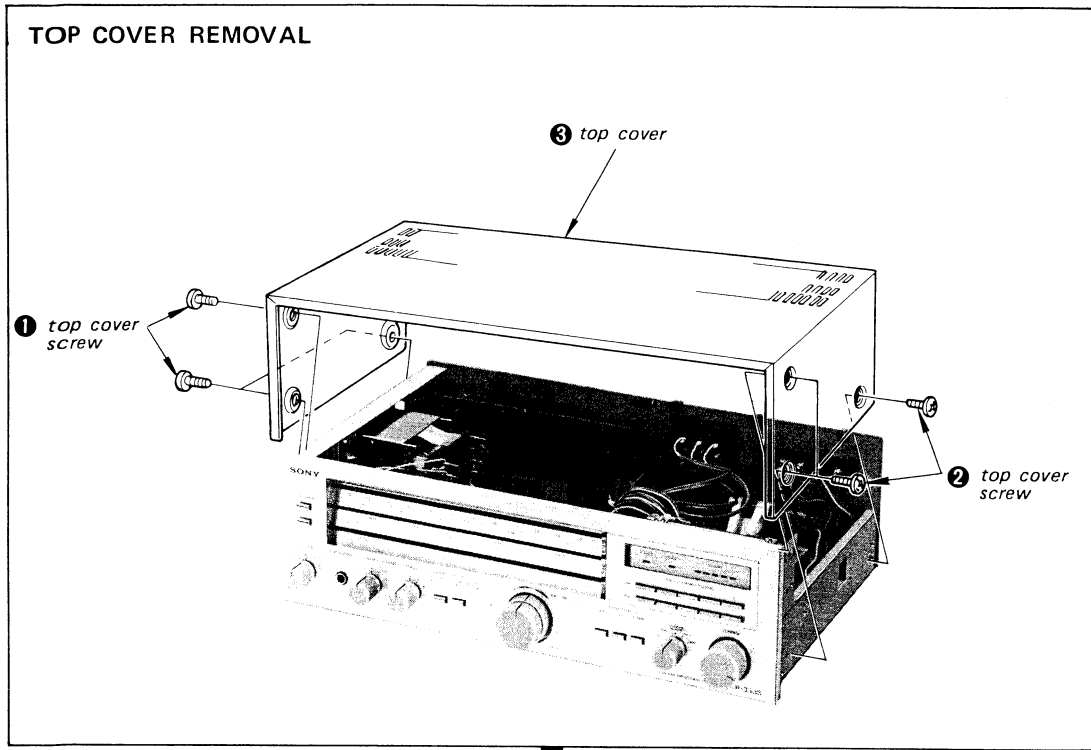




- ❶ Band Selector (S1): PROGRAM SENSOR position
A selection of MW or FM mode is done by connecting the B+ bus to the respective circuit.
- ❷ In SW1, SW2 or MW reception, the IC201 (CX168) function is switched to AM mode.
- ❸ In SW1, SW2 or MW reception, the VCO function is stopped.
- ❹ When the TUNER switch (S2-6) is turned off, B+ voltage is applied to this line.
- ❺ Band Selector: FM position
This line is grounded. Therefore, Q401, Q201 and Q202 turn on and AFC circuit does not operate.
- ❻ Band Selector: FM position
This line is grounded and Q403 turns on. Therefore, Q405 and Q404 turn off.
- ❼ Band Selector: PROGRAM SENSOR position
This line is grounded and Q402 turns on. Therefore, B+ voltage is applied to the FM front-end circuit even in MW reception, and the selection of MW or FM mode is done by applying B+ voltage to terminal ②3 of IC201.
- ❽ When the Band Selector switch is changed, Q406 turns on momentarily by S1-9. Then, AFC circuit is released and the signal is muted within IC202.
- ❾ In mono mode, the muting function is stopped.
- ❿ In mono mode, the VCO function is stopped.
- ⓫ The tuning is done by applying the voltage to the varactor diode (D1-3, D301 and D302), since the capacitance of the diodes varies with the applied voltage which is controlled by the sliders of the dial scale unit.
- ⓬ Band Selector: PROGRAM SENSOR position
When one of the FM PROGRAMMED TUNING button (S10) is depressed, this line is grounded and Q403 turns on.
- ⓭ When the FM PROGRAM switch (S7) switches on, B+ voltage is applied to this line, Q201 and Q202 turn on, and AFC circuit is released by Q201 and Q202.
- ⓮ Band Selector: PROGRAM SENSOR position
This line is grounded. Therefore, the dial pointer is not brighter than manual tuning. But when the PROGRAM switch (S7 and S8) is depressed, the current flowing through D410 increases and the dial pointer brightens.
- ⓯ Band Selector: PROGRAM SENSOR position
This line is grounded via D405 and S1-3, but the voltage is applied to the base of Q406 by R409, and Q406 turns off. But when switching S10 over, a voltage is momentarily not applied and Q406 turns on.

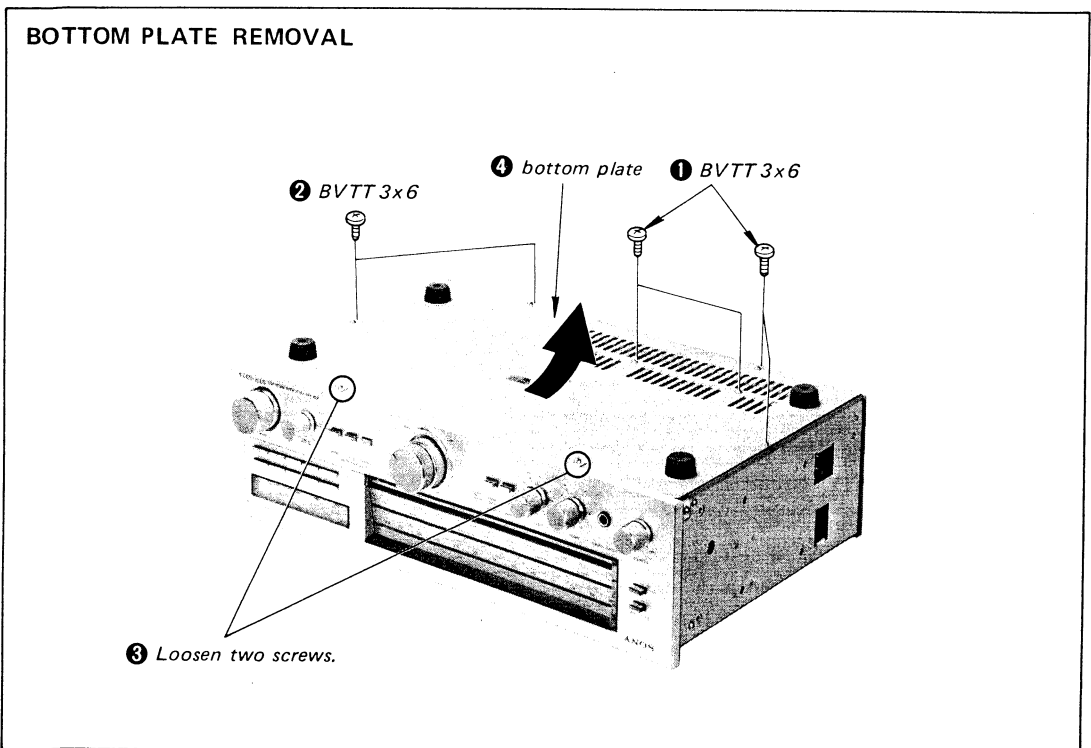
**SECTION 2
DISASSEMBLY**

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

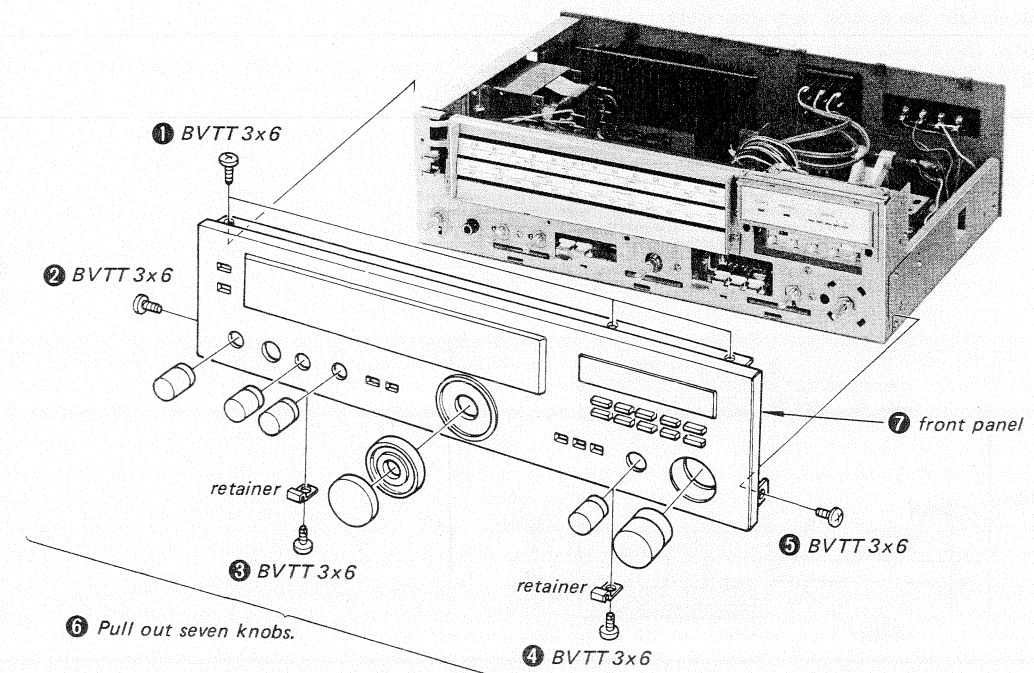


DIAL CORD STRINGING

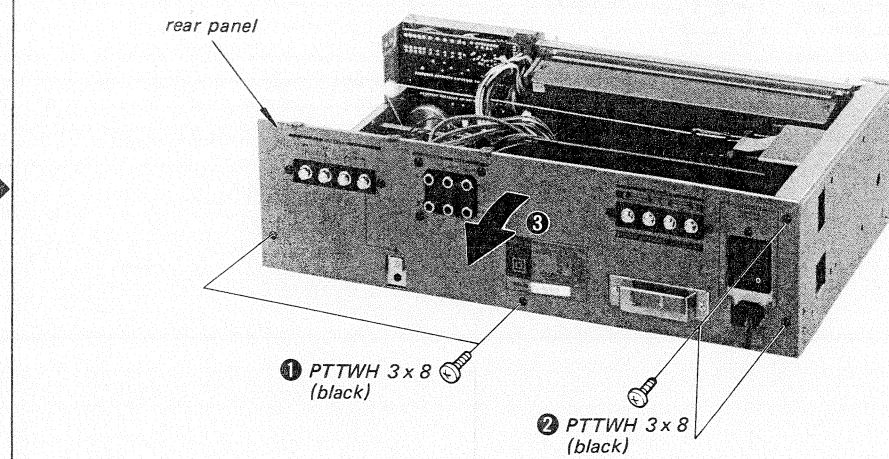
See page 17.



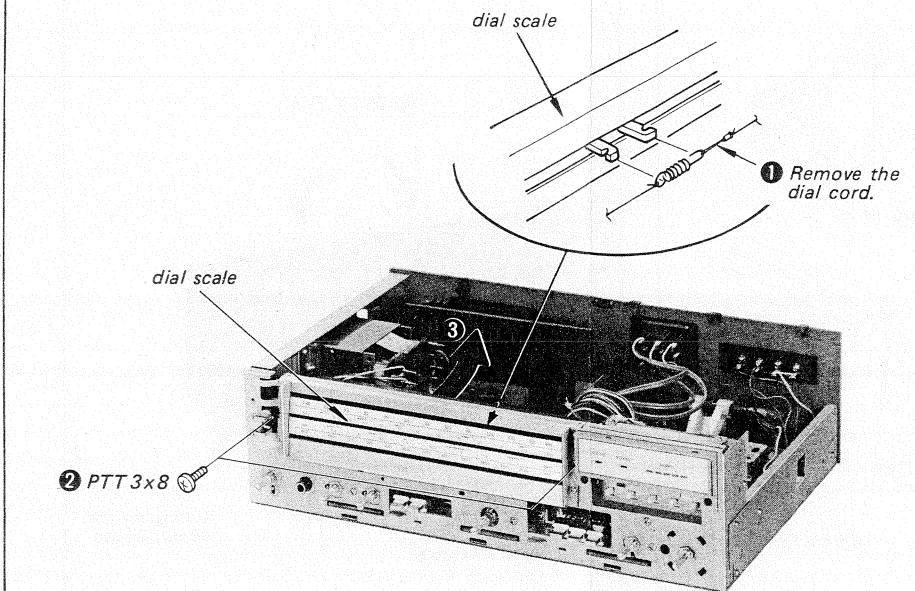
FRONT PANEL REMOVAL



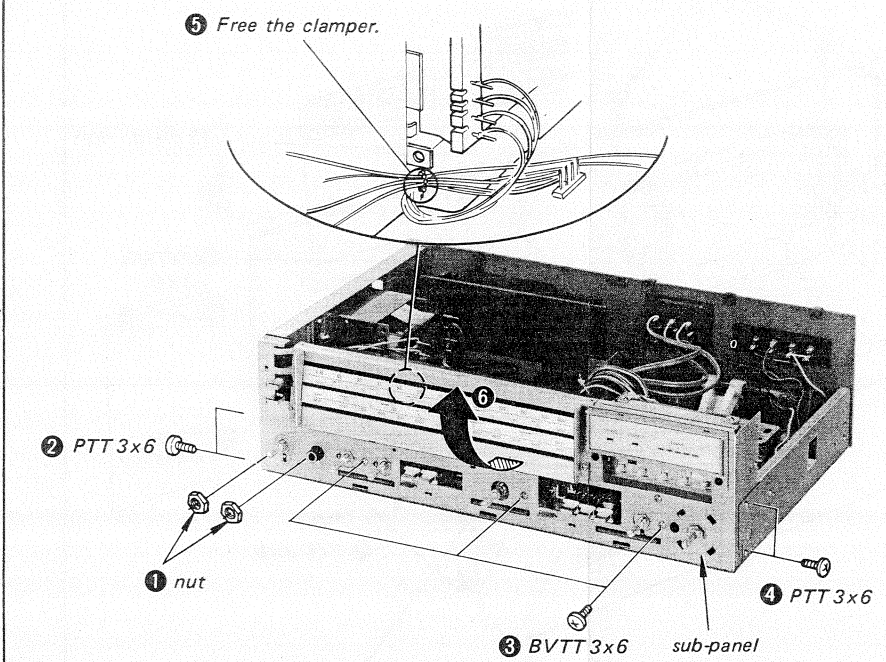
REAR PANEL REMOVAL



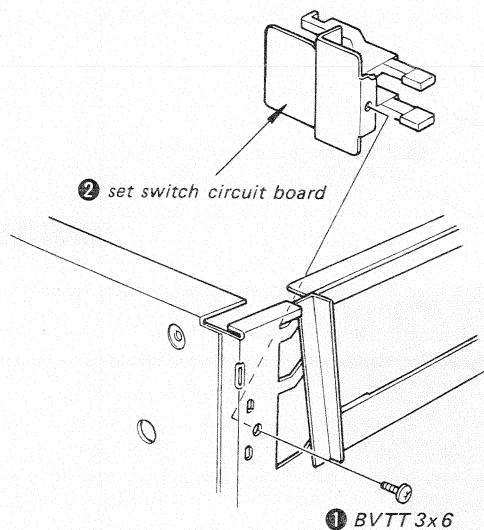
DIAL SCALE REMOVAL



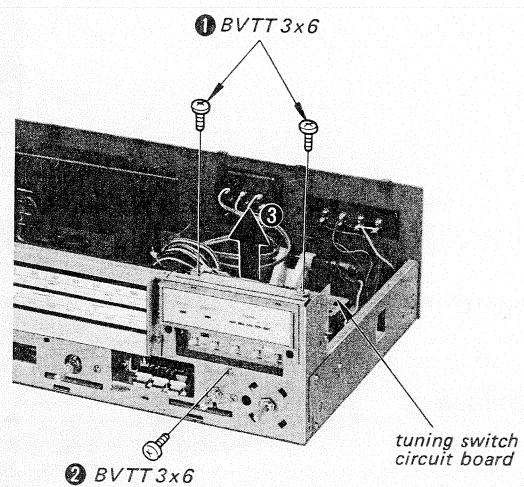
SUB-PANEL REMOVAL



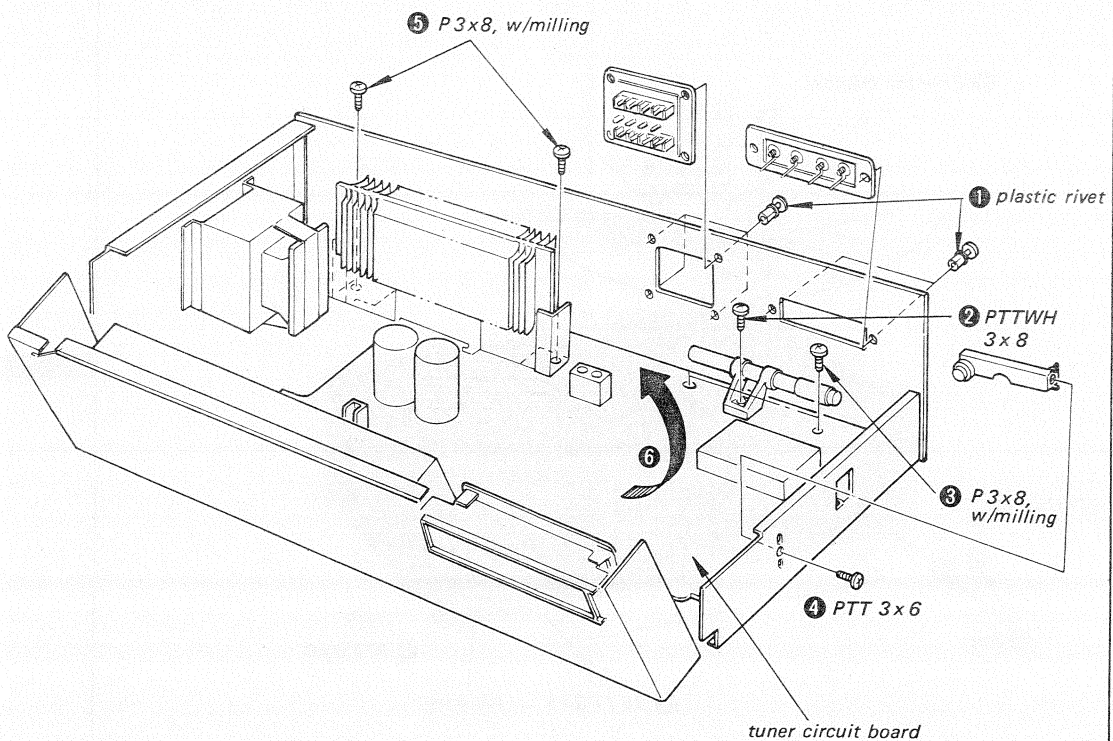
SET SWITCH CIRCUIT BOARD REMOVAL



TUNING SWITCH CIRCUIT BOARD REMOVAL



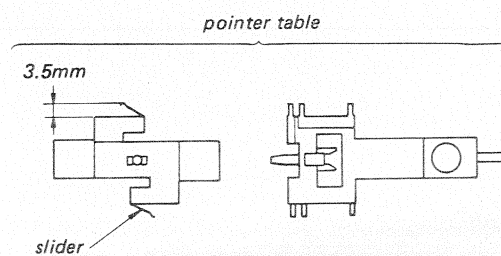
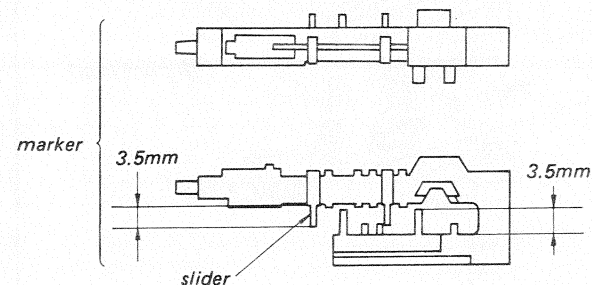
TUNER CIRCUIT BOARD REMOVAL



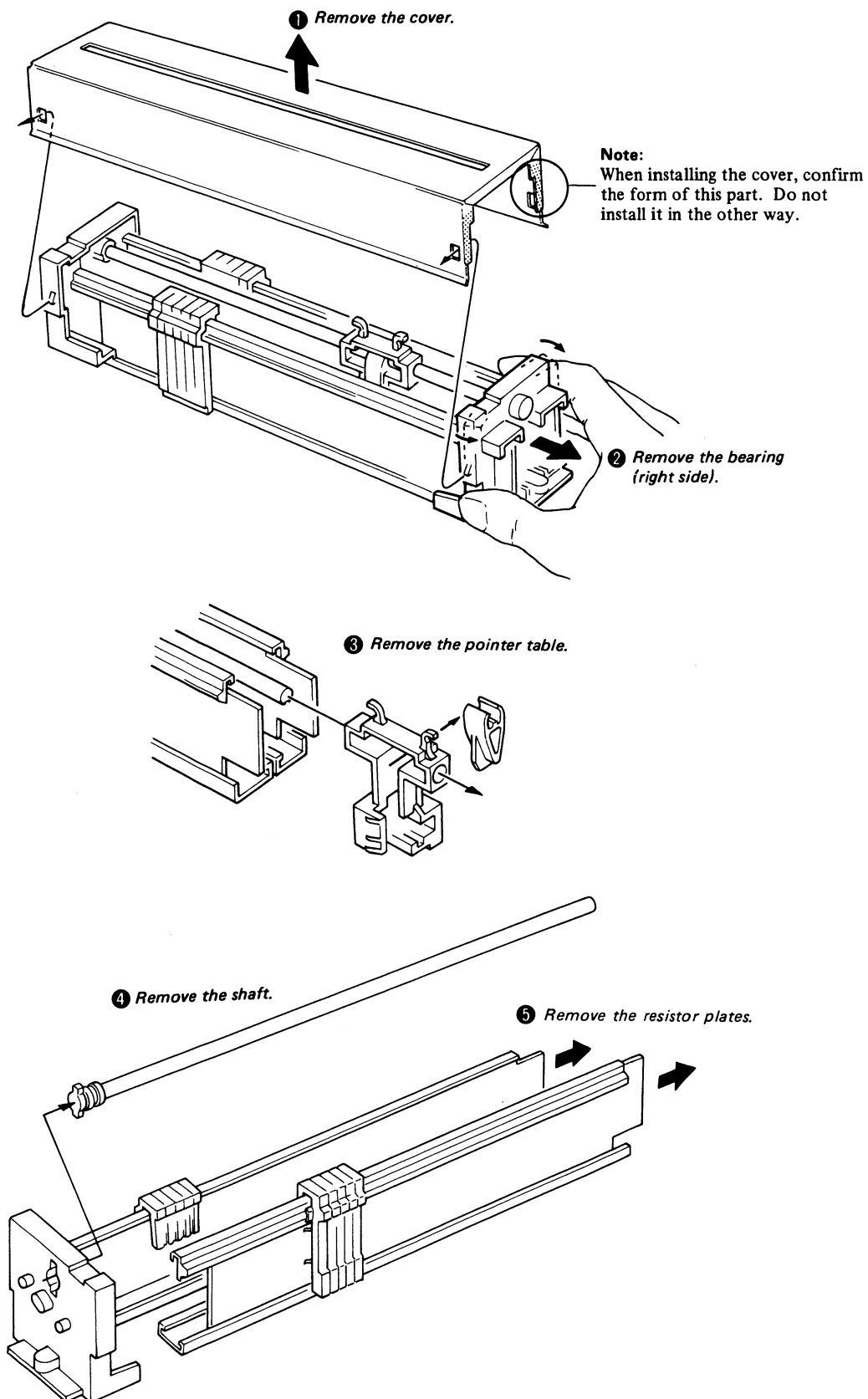
DIAL SCALE UNIT

This unit is tuned by moving the sliders of the dial scale unit along the carbon-coated lines of the resistor plates. The sliders should be moved very precisely. So, carefully perform the disassembly and the installation of the dial scale unit as follows. Only the marker and the pointer table are replaceable.

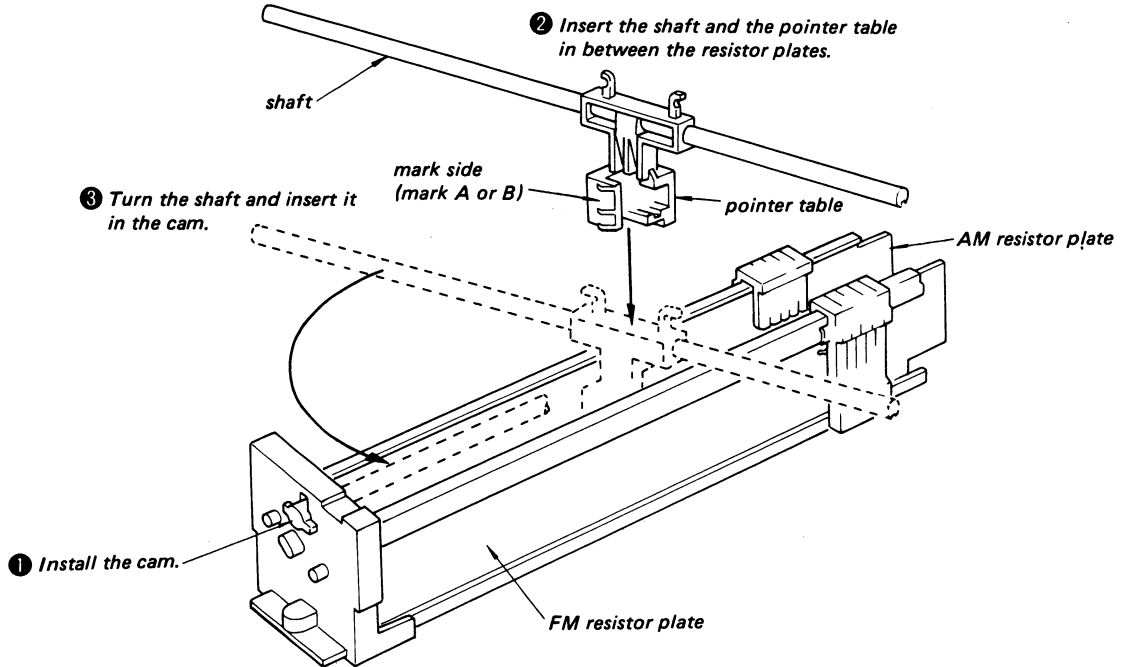
Take care not to damage the sliders shown below.



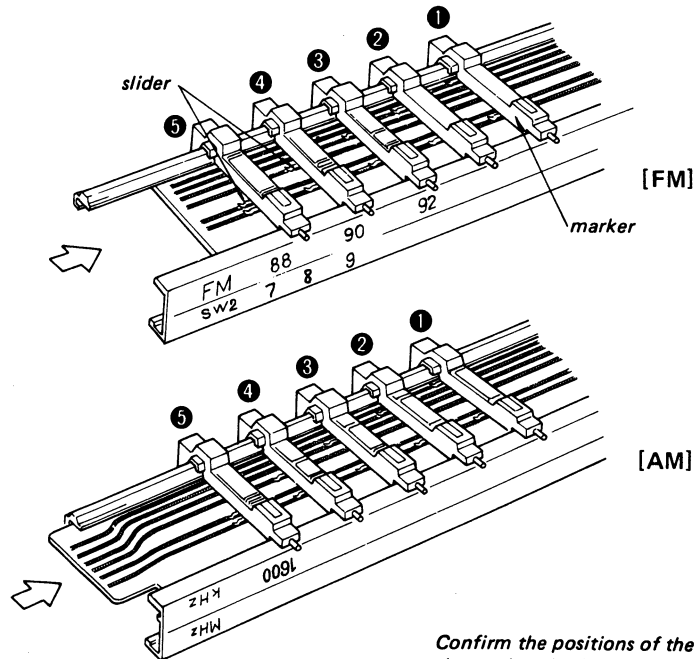
● Dial Scale Unit Disassembly



● Dial Scale Unit Installation

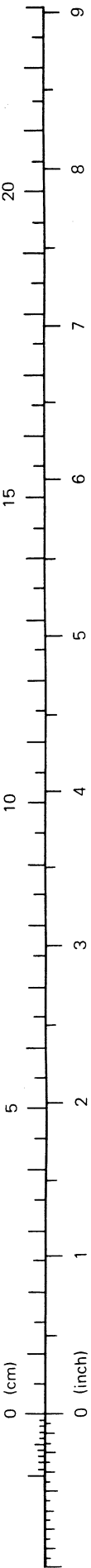
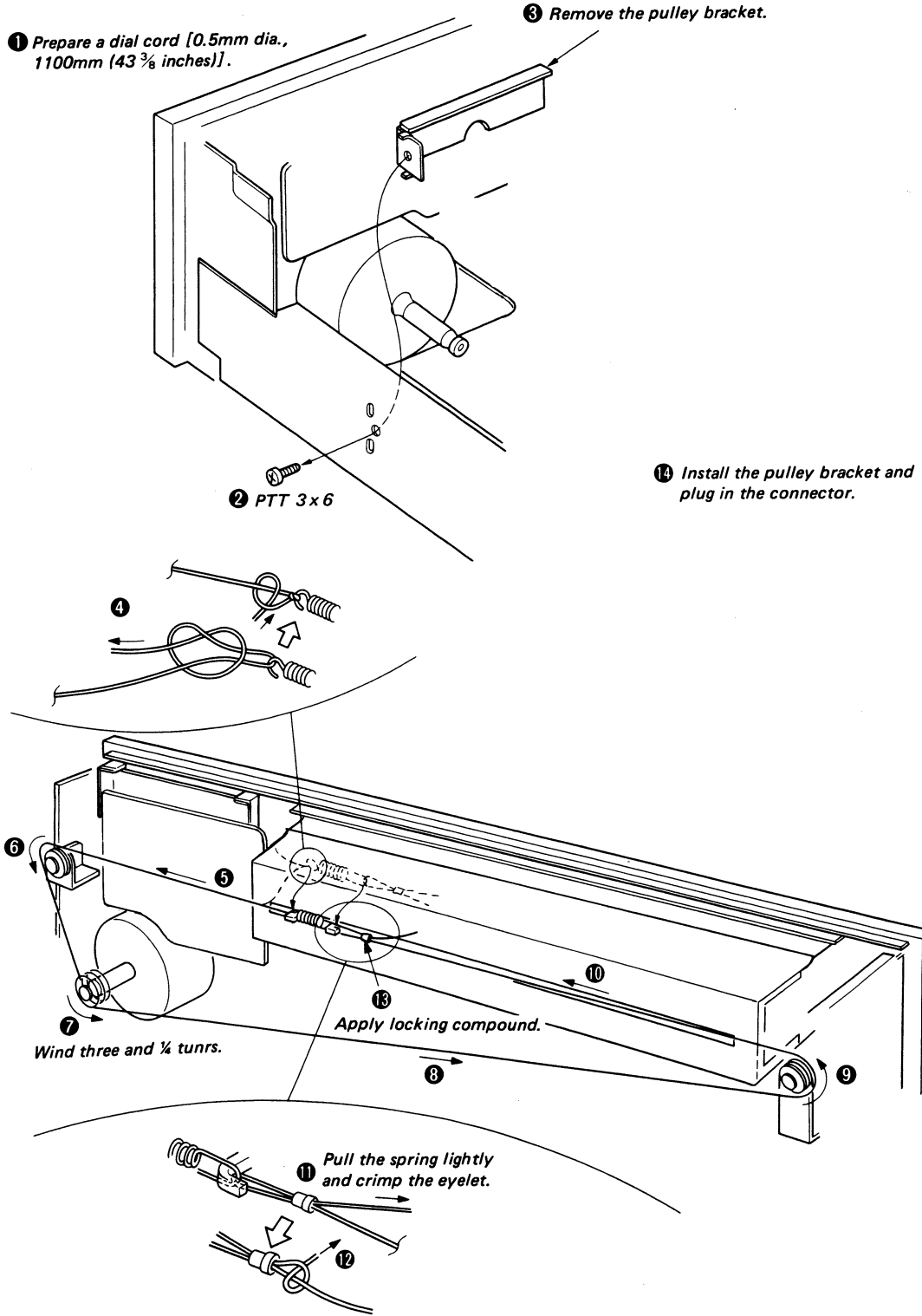


Note:
The installation is performed in this way not to damage the sliders of the pointer table.



Confirm the positions of the sliders and install the markers in the numerical order given. If one of the markers is damaged, replace the five markers together to obtain the same brightness of them.

DIAL CORD STRINGING



MEMO

A series of horizontal dotted lines for writing.

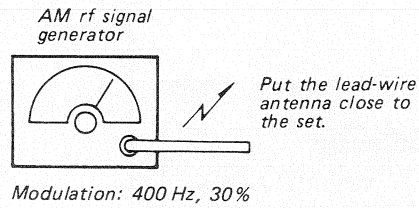
SECTION 3
ADJUSTMENTS

AM SECTION

• MW Section

Setting:

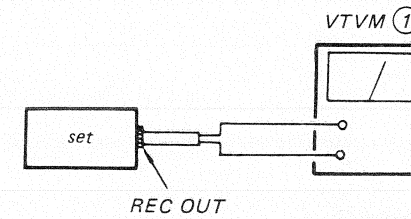
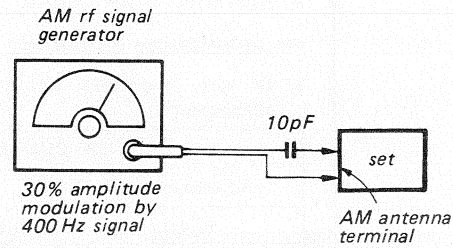
FUNCTION Switch: TUNER
Band Selector: MW



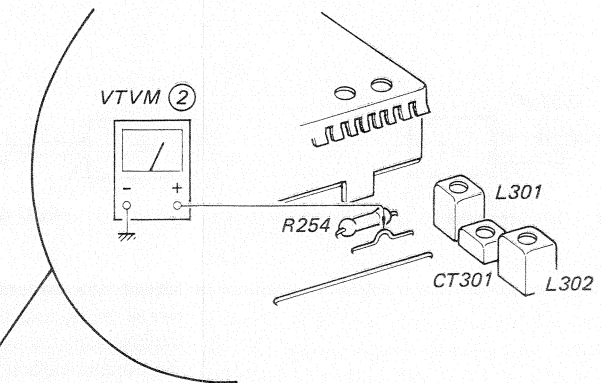
• SW Section

Setting:

FUNCTION Switch: TUNER
Band Selector: SW1 or SW2



• Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

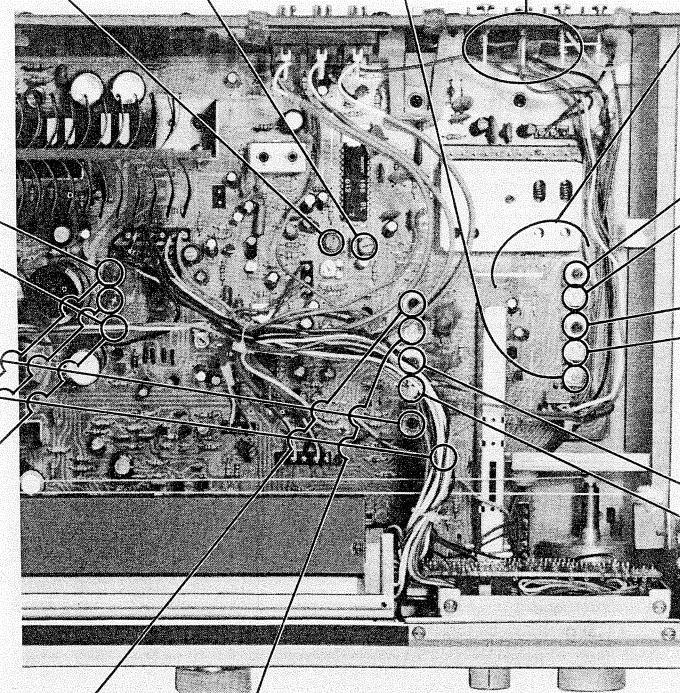


AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM (1).	
450 kHz	
IFT202	IFT201

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
1,400 kHz	600 kHz
CT303	L303

MW FREQUENCY COVERAGE ADJUSTMENT			
Tuning Control Voltage Adjustment	Dial Indication	VTVM (2) Reading	Adjustment Part
	maximum frequency	25 V	RT806
	minimum frequency	2 V	RT802
Adjust for a specified reading on VTVM (2).			
Local Oscillator Frequency Adjustment	Dial Indication	AM Rf Signal Generator Frequency	Adjustment Part
	minimum frequency	515 kHz	L306
	maximum frequency	1,660 kHz	CT306
Adjust for a maximum reading on VTVM (1).			
Dial Pointer Setting	Dial Indication	AM Rf Signal Generator Frequency	Adjustment Part
	600 kHz	600 kHz	RT806
	1,000 kHz	1,000 kHz	RT803
	1,400 kHz	1,400 kHz	RT802
Adjust for a maximum reading on VTVM (1).			

Note: Be sure to perform the SW1 and the SW2 frequency coverage adjustments after the tuning control voltage adjustment.



SW1 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
L301	3 MHz
CT301	6 MHz

SW2 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
L302	8 MHz
CT302	15 MHz

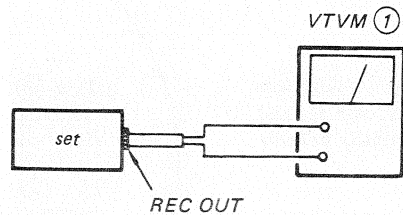
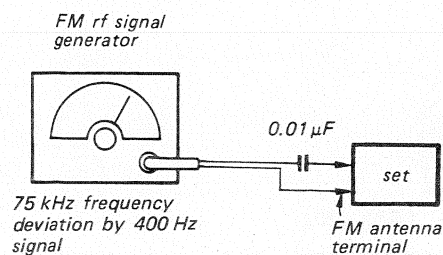
SW2 FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM (1).	
L305	6.8 MHz
CT305	18.4 MHz

L304	CT304
2.1 MHz	6.5 MHz
Adjust for a maximum reading on VTVM (1).	
SW1 FREQUENCY COVERAGE ADJUSTMENT	

FM SECTION

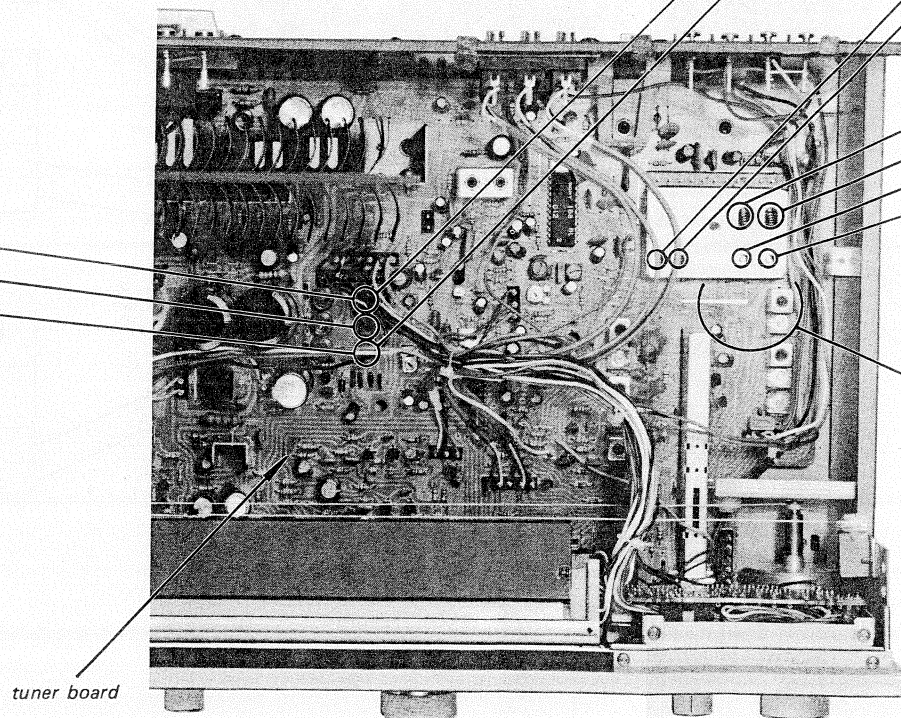
Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: MONO



• Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT 2		
Dial Indication	FM Rf Signal Generator Frequency	Adjustment Part
88 MHz	88 MHz	RT805
98 MHz	98 MHz	RT804
108 MHz	108 MHz	RT801
Adjust for a maximum reading on VTVM ①.		



FM FRONT-END BLOCK

Adjustment is not necessary. But if it has been meddled with in some way, and if the adjustment is necessary by all means, adjust the FM front-end block as follows.

FM FREQUENCY COVERAGE ADJUSTMENT 1

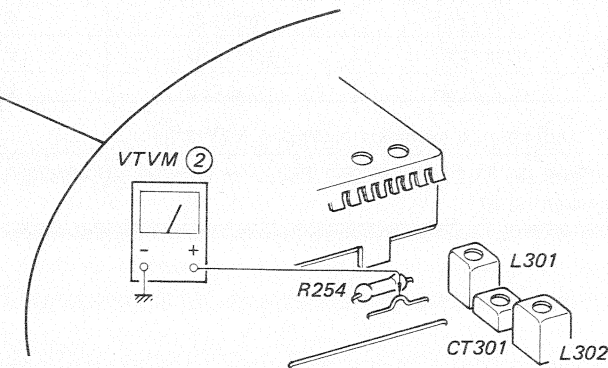
1) Be sure to perform this adjustment before the FM frequency coverage adjustment 2.

TUNING CONTROL VOLTAGE ADJUSTMENT		
Adjustment Part	Dial Indication	VTVM ② Reading
RT805	minimum frequency	2.73 V
RT801	maximum frequency	22.08 V
Adjust for a specified reading on VTVM ②.		

LOCAL OSCILLATOR FREQUENCY ADJUSTMENT		
Adjustment Part	Dial Indication	FM Rf Signal Generator Frequency
T2	minimum frequency	88 MHz
CT3	maximum frequency	108 MHz
Adjust for a maximum reading on VTVM ①.		

2) Be sure to perform this adjustment after the FM frequency coverage adjustment 2.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
L4	88 MHz
L2	
CT2	108 MHz
CT1	



FM DISCRIMINATOR ALIGNMENT 1

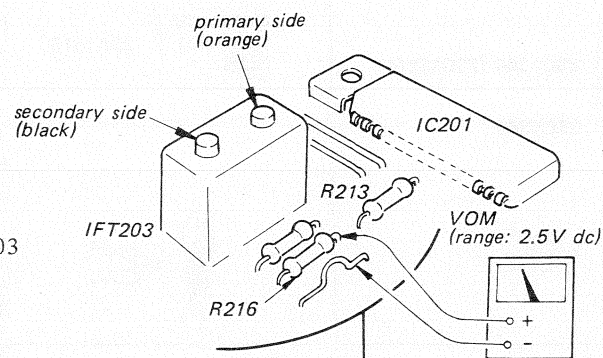
Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: MONO
 TUNING: Detuned position

Procedure:

Adjust the orange core (primary-side) of IFT203 for 0V reading on VOM.

Note: When replacing the ceramic filter (CF201), perform this alignment.



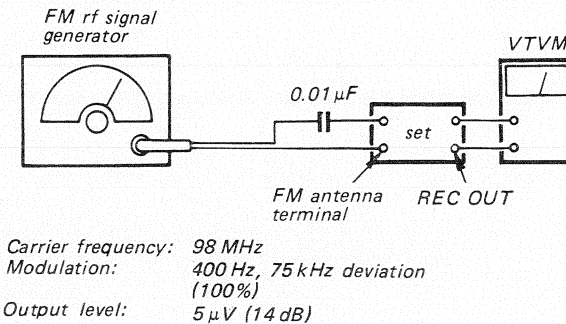
MUTING LEVEL ADJUSTMENT

Setting:

FUNCTION Switch: TUNER
 MODE Switch: STEREO/FM-AM MUTE

Procedure:

1. Turn RT201 and stop it just when the VTVM indication suddenly increases.
2. If necessary, turn RT201 fully clockwise and make sure that the VTVM indication increases when the output level of the FM rf signal generator is set to 16 μV (24 dB).



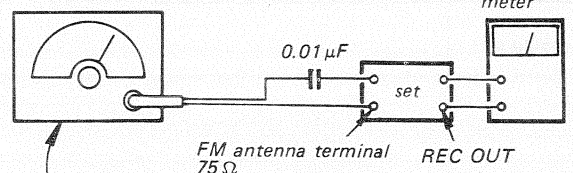
Carrier frequency: 98 MHz
 Modulation: 400 Hz, 75 kHz deviation (100%)
 Output level: 5 μV (14 dB)

FM DISCRIMINATOR ALIGNMENT 2

Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: MONO

FM stereo signal generator

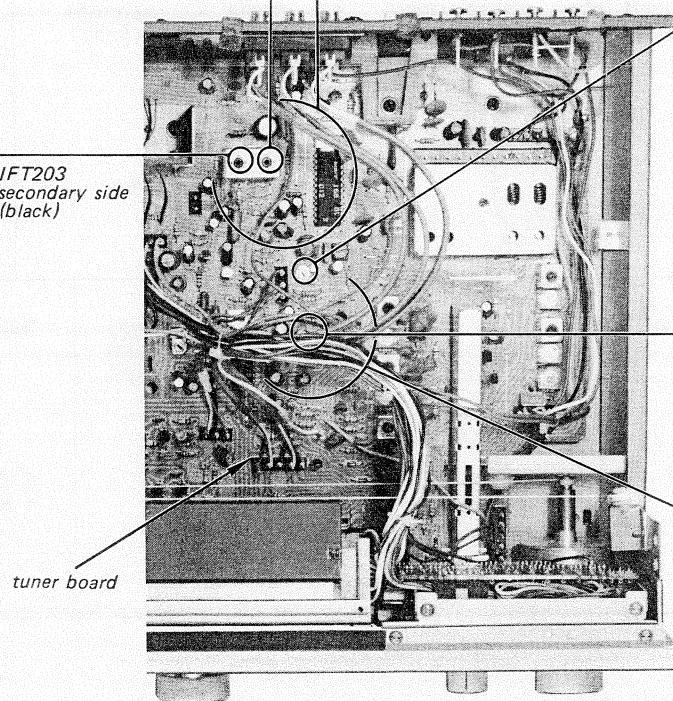


Carrier frequency: 98 MHz
 Output level: 1 mV (60 dB)
 Modulation: 400 Hz, 75 kHz deviation (100%)

Procedure:

Adjust the black core (secondary side) of IFT203 for minimum distortion.

IFT203 secondary side (black)



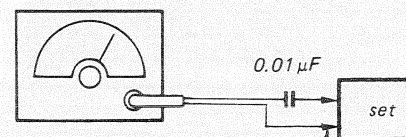
VCO ADJUSTMENT

Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: STEREO/FM-AM MUTE

A) Regular Method

FM stereo signal generator

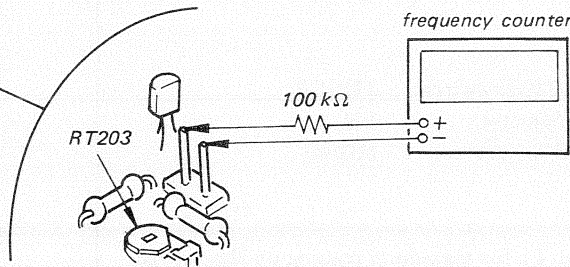
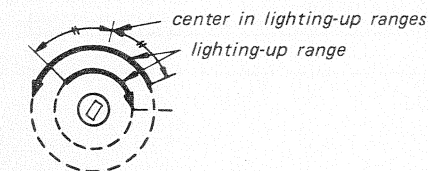


Carrier frequency: 98 MHz
 Output level: 1 mV (60 dB)
 Modulation: no modulation

B) Simple Method

Procedure:

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RT203 clockwise or counterclockwise and memorize the lighting-up range of STEREO lamp.
3. Secure RT203 at the center in lighting-up range of both turns as shown below.



Procedure:

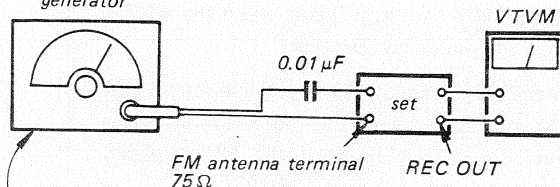
Adjust RT203 for 76 kHz ± 100 Hz on the frequency counter.

FM STEREO SEPARATION ADJUSTMENT

Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: STEREO/FM-AM MUTE

FM stereo signal generator



Carrier frequency: 98 MHz
 Output level: 1 mV (60 dB)
 Modulation:
 Audio (400 Hz): 33.75 kHz deviation (50%)
 Pilot (19 kHz): 7.5 kHz deviation (16%)
 Sub channel (38 kHz): 33.75 kHz deviation (50%)

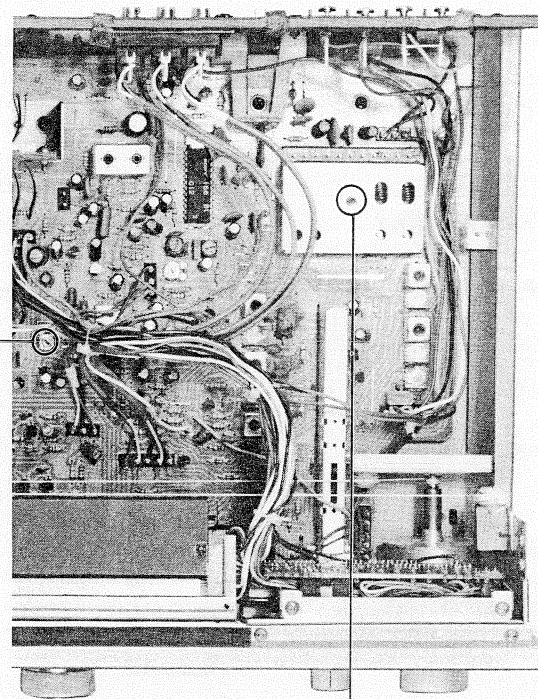
Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RT202 resistor for minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RT202 resistor for minimum reading.

L-CH Stereo separation: (A) - (B)

R-CH Stereo separation: (C) - (D)

The difference between separations (A) → (B) and (C) → (D) are to be equal.

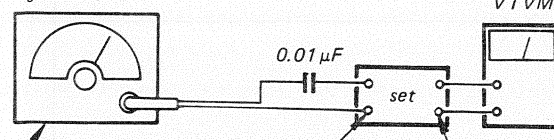


RT202

T1

FM IF ALIGNMENT

FM rf signal generator



Carrier frequency: 98 MHz
 Output level: 12.5 μV (22 dB)
 Modulation: 400 Hz, 75 kHz deviation (100%)

Setting:

FUNCTION Switch: TUNER
 Band Selector: FM
 MODE Switch: MONO

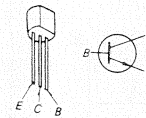
Procedure:

Adjust T1 for maximum reading on the VTVM.

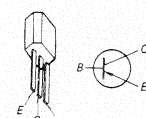
Replacement Semiconductors

For replacement, use semiconductors except in ().

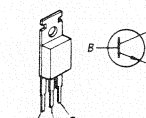
Q201-205
 Q501, 502
 Q551, 552
 Q602, 652
 Q802, 804
 Q301: 2SC1345



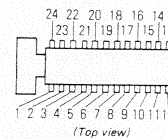
Q401-406
 Q601, 651
 Q801 : 2SA1015



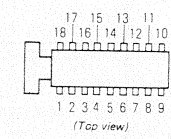
Q803: 2SC1173



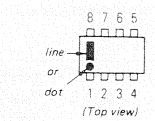
IC201: CX168



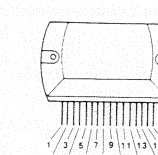
IC202: CX178



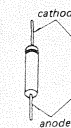
IC203: TL489CP (TL489C)



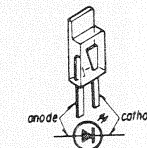
IC701: SI1125HD



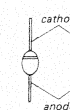
D201, 202
 D401-409 : 1S1555 (1T40)
 D810



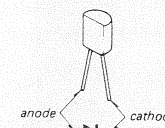
D203-207: GL9NG31
 D208: GL9NG21
 D209: GL9PR21



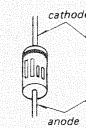
D805: V09C (V06C)



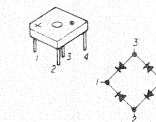
D301, 302: ISV118



D701: EQB01-07 (EQA01-07R)
 D806: EQB01-05 (EQA01-05R)
 D807: EQB01-15 (EQA01-15R)



D801: S2VB20



SECTION 4.
DIAGRAMS

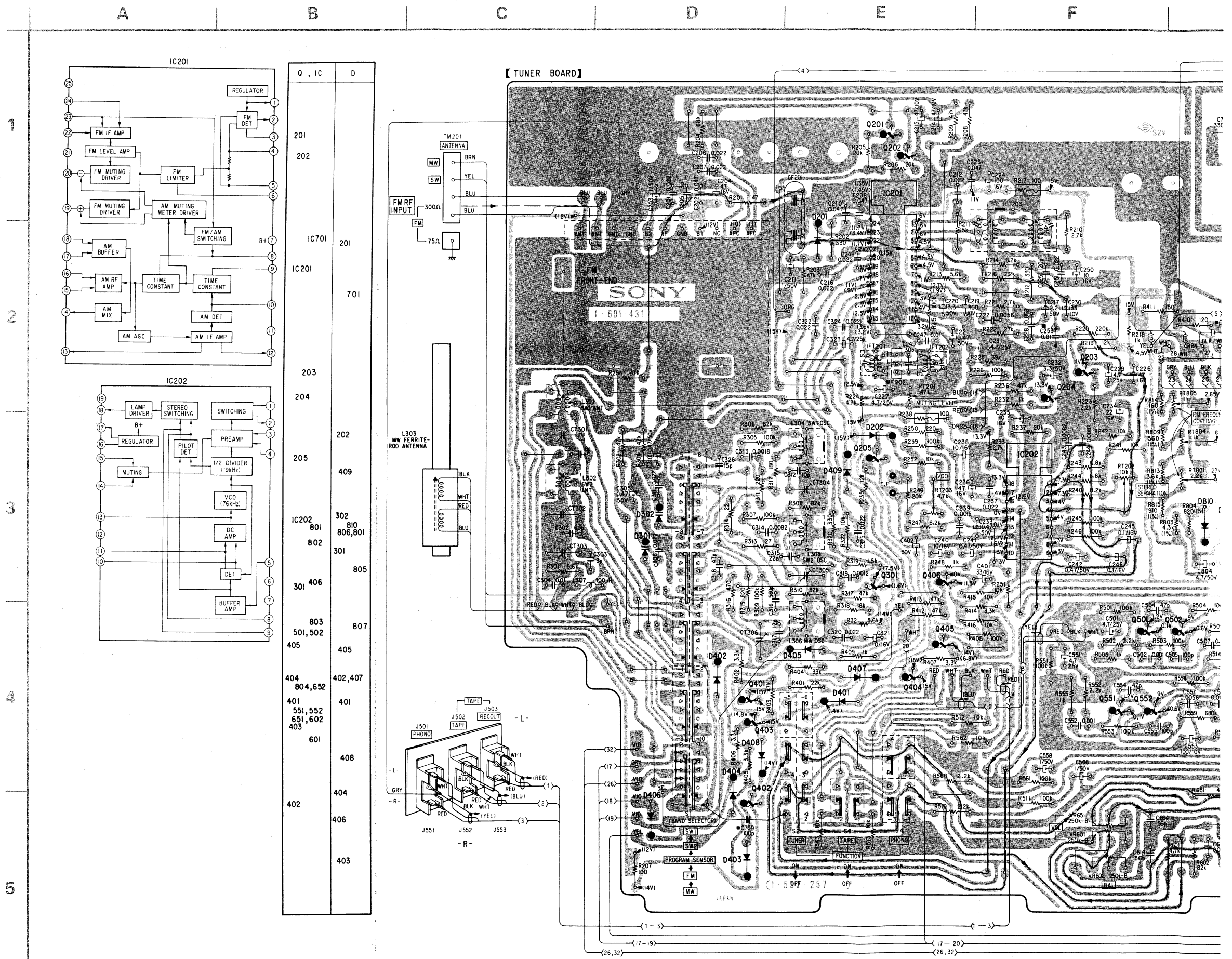
STR-333S STR-333S

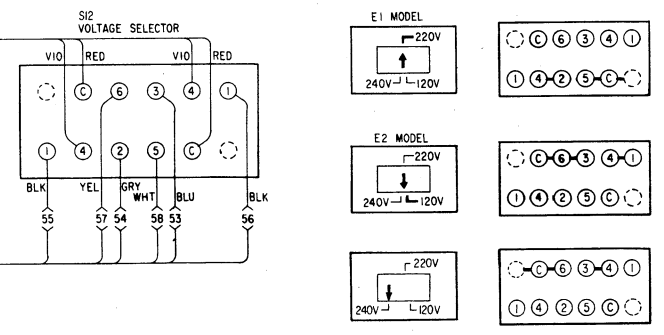
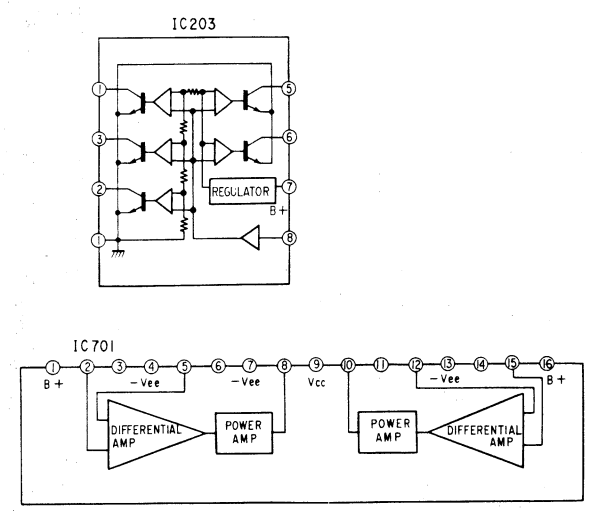
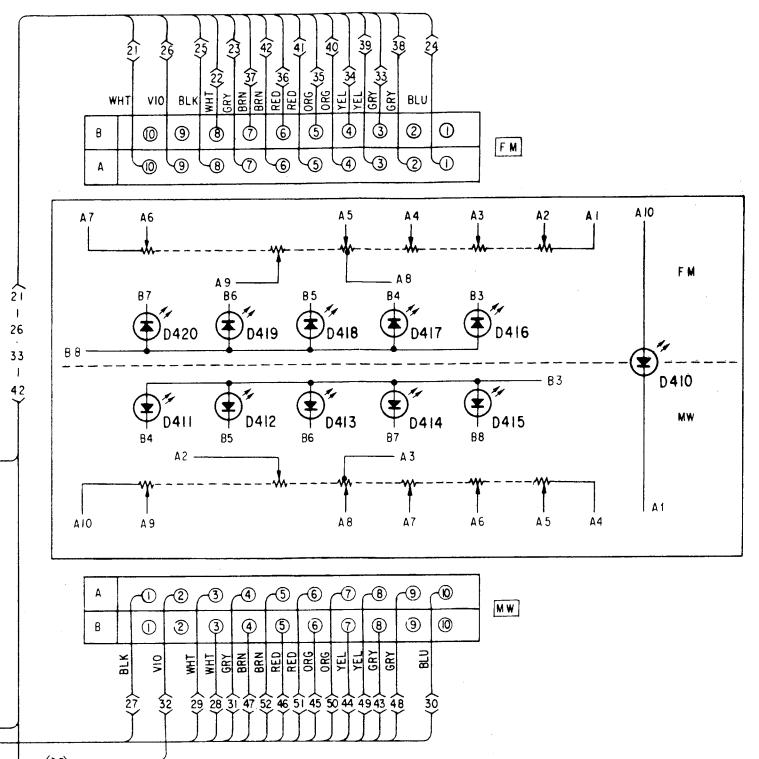
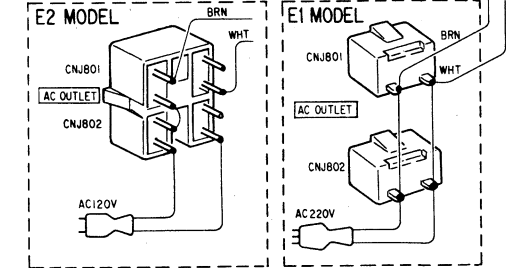
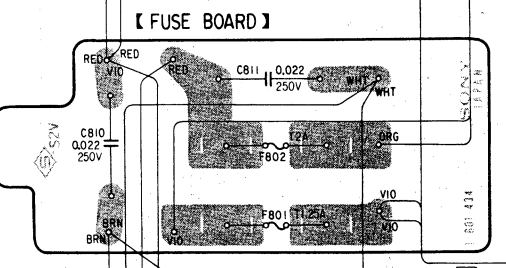
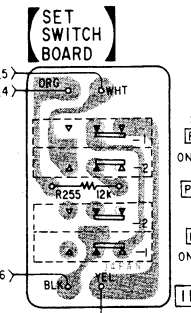
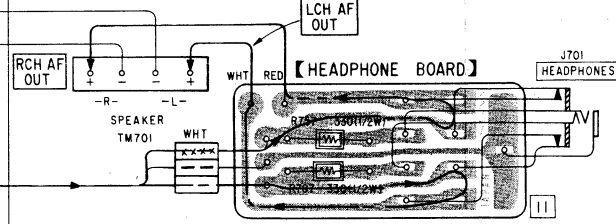
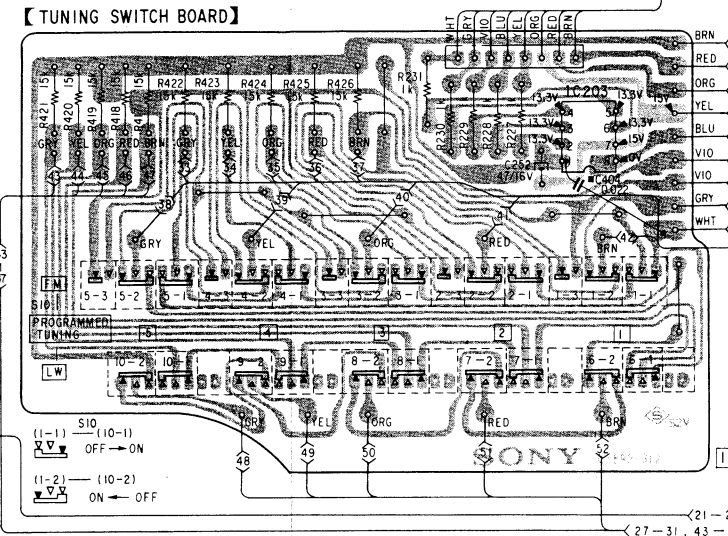
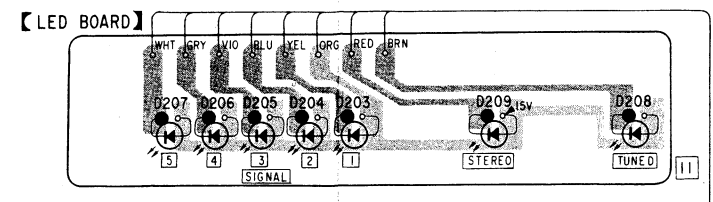
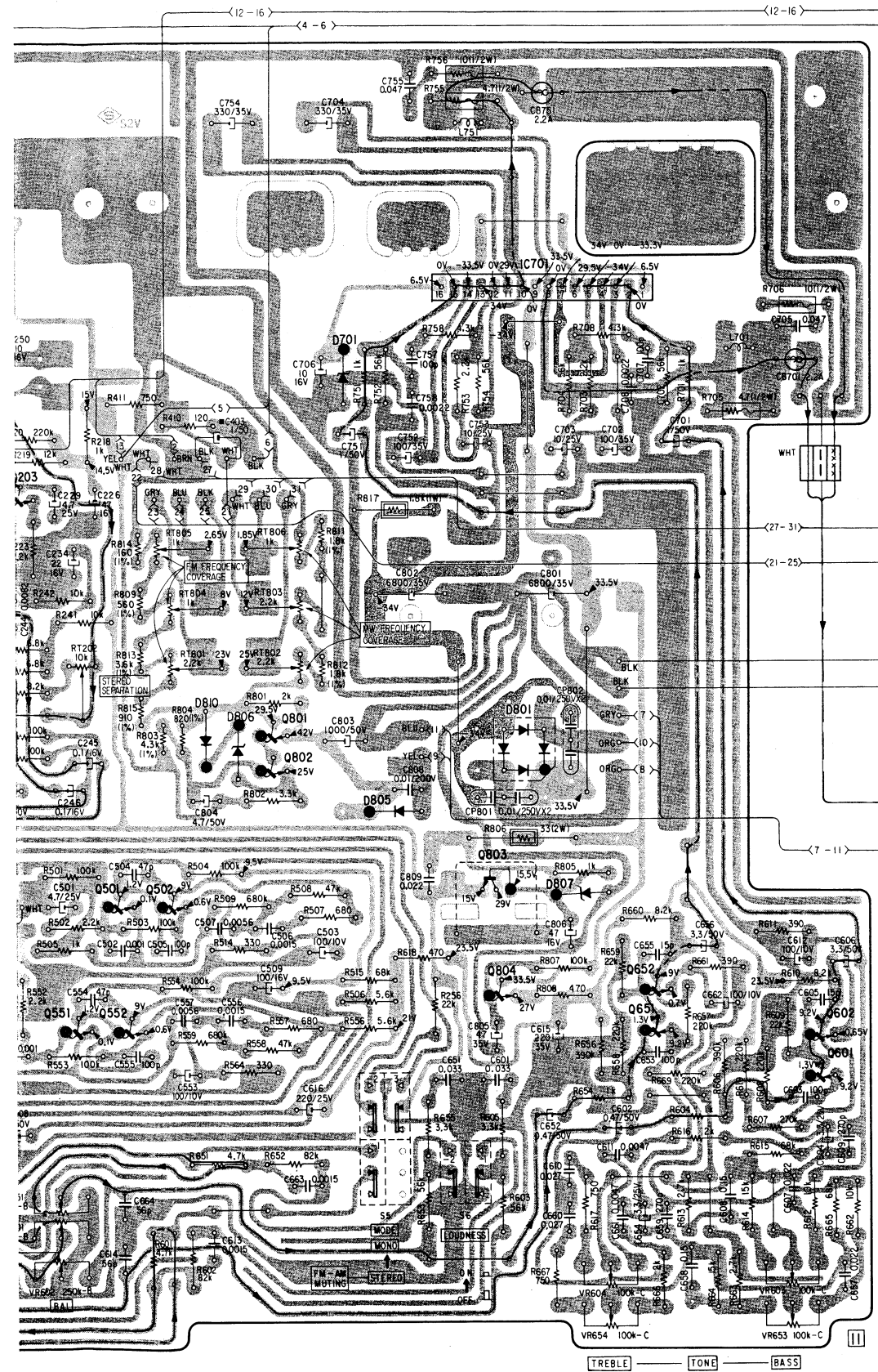
4-1. MOUNTING DIAGRAM

- Conductor Side -

Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- ⊣ : indicates side identified with part number.
- ▨ : B+ pattern
- ▩ : B- pattern
- : signal path
- : L-CH signal path
- : R-CH signal path
- : Voltages are dc with respect to ground unless otherwise noted.
- : Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).
- : no mark and (): FM, (): AM
- : Voltage variations may be noted due to normal production tolerances.

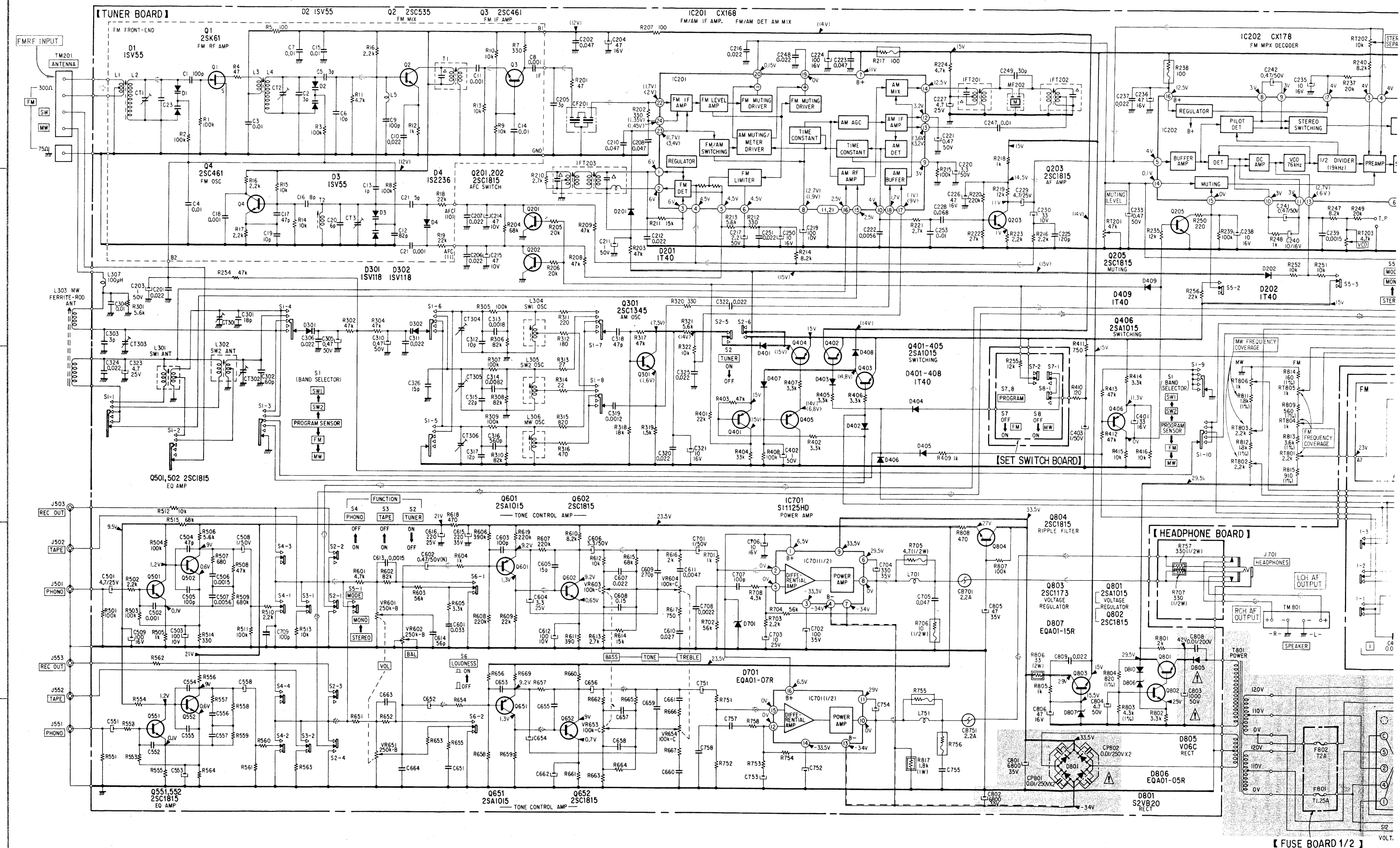




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<26, 32>

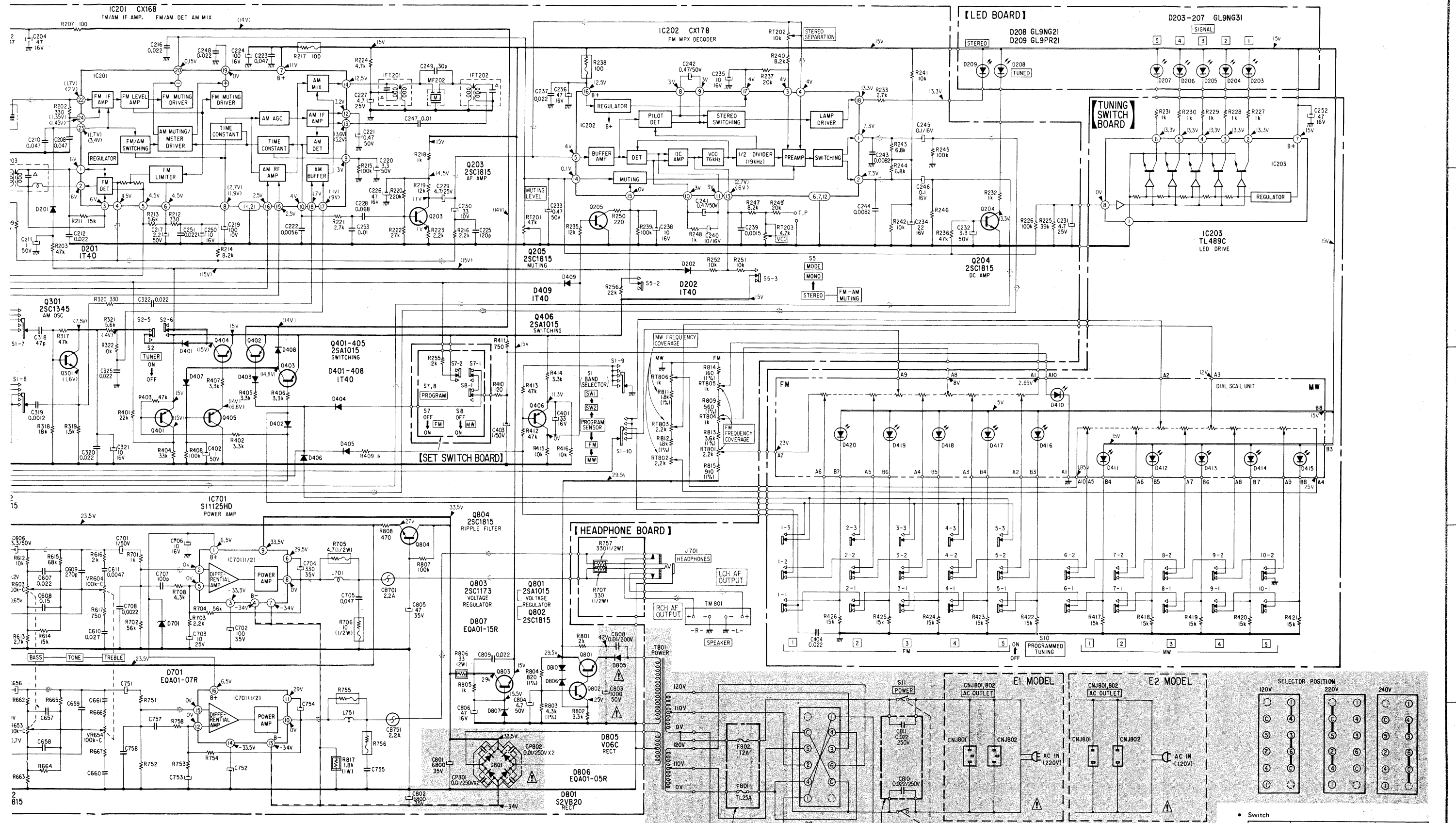
<17-20>
<26, 32>

4.2. SCHEMATIC DIAGRAM



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

Note:
 • All capacitors are in μF unless otherwise noted. pF : μF
 50WV or less are not indicated except for electrolytics and tantalum.
 • All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.
 k Ω : 1000 Ω ; M Ω : 1000 k Ω
 • : fusible r.
 • : internal comp
 • : panel des
 • : adjustmer
 • : B+ bus.
 • : B- bus.



1

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Note:
 • All capacitors are in μF unless otherwise noted. μF : μF
 50WV or less are not indicated except for electrolytics and tantalum.
 • All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted.
 k Ω : 1000 Ω ; M Ω : 1000 k Ω .

- : fusible 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 no-signal (detuned) conditions with a VOM (20 k Ω /V).
- no mark and () : FM, () : AM
- Voltage variations may be noted due to normal production tolerances.

- : L-CH signal path
- : R-CH signal path

• Switch

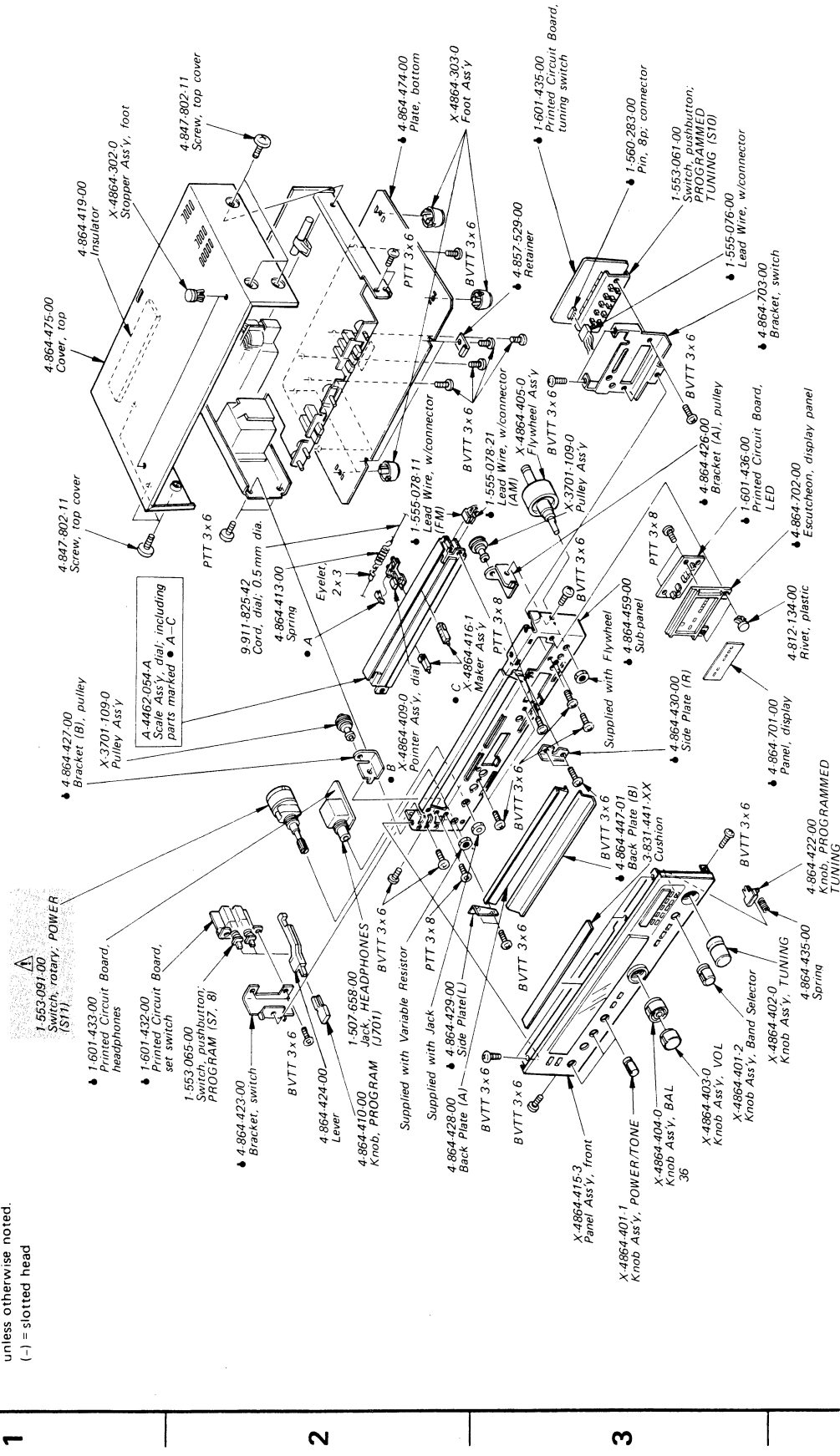
Ref. No.	Switch	Position
S1	Band Selector	PROGRAM SENSOR
S2-4	FUNCTION MODE	TUNER STEREO
S5	MODE	OFF
S6	LOUDNESS	OFF
S7	PROGRAM FM	OFF
S8	PROGRAM MW	OFF
S10	PROGRAMMED TUNING	OFF
S11	POWER	OFF
S12	VOLTAGE SELECTOR	---

SECTION 5
EXPLODED VIEWS

5-1.

A B C D E

- Note:
- Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head

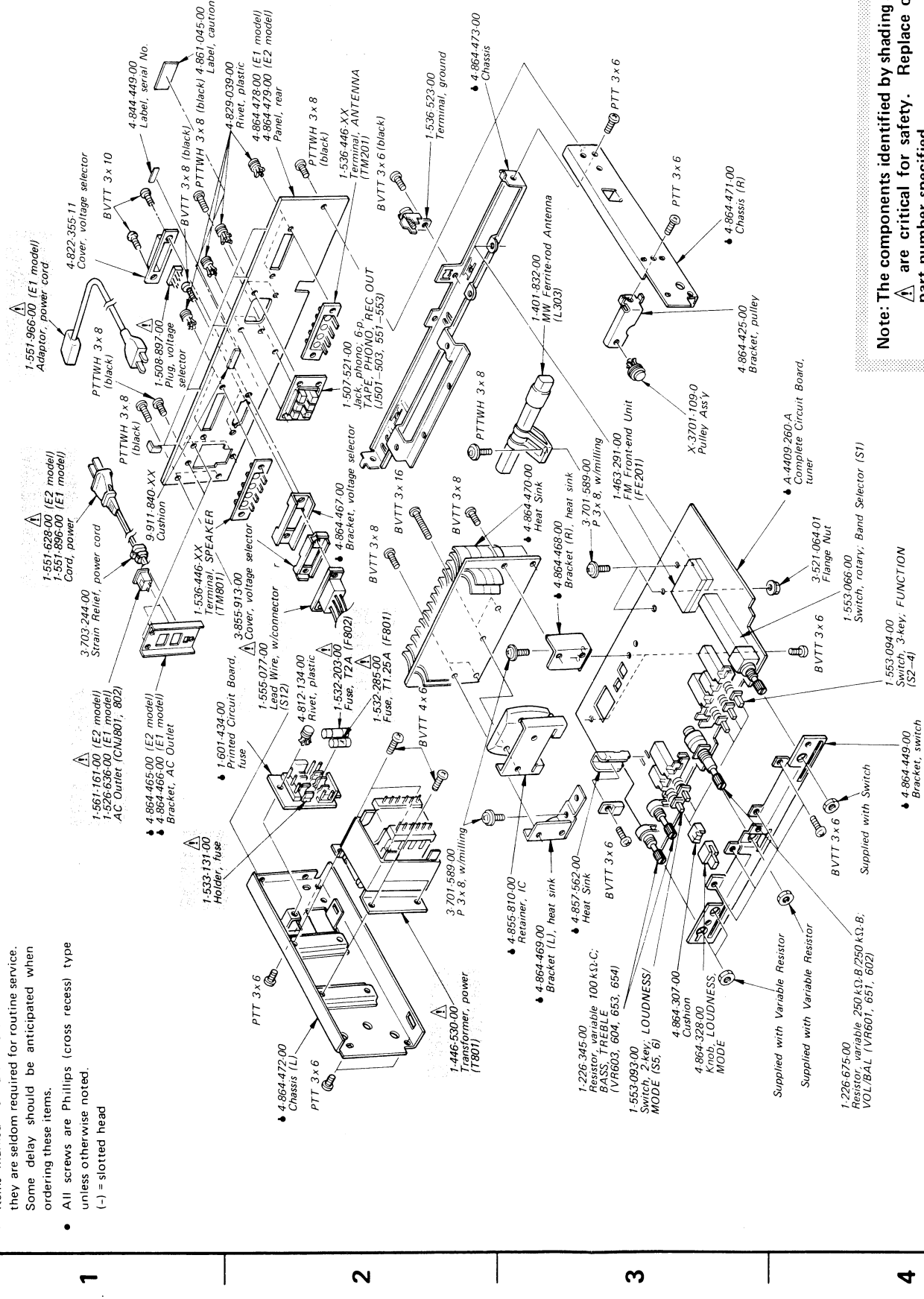


Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

5-2.

A B C D E

- Note:
- Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head



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

Ref ↓ Q21 ↓ Q31 ↓ Q41 ↓ Q51 ↓ Q51 ↓ Q61 ↓ Q61 ↓ Q81 ↓ Q81 ↓ Q81 ↓ IC2 ↓ IC2 ↓ IC7 ↓ D21 ↓ D21 ↓ D21 ↓ D31 ↓

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
PRINTED CIRCUIT BOARDS		
1-601-432-00		Set Switch
1-601-433-00		Headphone
1-601-434-00		Fuse
1-601-435-00		Tuning Switch
1-601-436-00		LED

SEMICONDUCTORS

Transistors		
⇒ Q201-205	8-729-663-47	2SC1364
Q301	8-729-334-58	2SC1345
Q401-406	8-729-201-52	2SA1015
⇒ Q501,551	8-729-663-47	2SC1364
⇒ Q502,552		
Q601,651	8-729-201-52	2SA1015
⇒ Q602,652	8-729-663-47	2SC1364
Q801	8-729-201-52	2SA1015
⇒ Q802	8-729-663-47	2SC1364
Q803	8-729-217-33	2SC1173
⇒ Q804	8-729-663-47	2SC1364

ICs

IC201	8-751-680-01	CX168
IC202	8-751-780-00	CX178
⇒ IC203	8-759-904-89	TL489CP
IC701	8-759-301-25	SI1125HD

Diodes

⇒ D201,202	8-719-815-55	1S1555
D203-207	8-719-909-31	GL9NG31
D208	8-719-909-22	GL9NG21
D209	8-719-909-21	GL9PR21
D301,302	8-719-100-81	ISV118

Ref. No.	Part No.	Description
⇒ D401-409	8-719-815-55	1S1555
⇒ D701	8-719-931-07	EQB01-07
D801	⚠ 8-719-502-20	S2VB20
⇒ D805	⚠ 8-719-900-93	V09C
⇒ D806	8-719-931-05	EQB01-05
⇒ D807	8-719-931-15	EQB01-15
⇒ D810	8-719-815-55	1S1555

COILS

L301	1-401-820-00	SW1 Ant
L302	1-401-821-00	SW2 Ant
L303	1-401-832-00	MW Ferrite-rod Ant
L304	1-405-883-00	SW1 Osc
L305	1-405-884-00	SW2 Osc
L306	1-405-881-00	MW Osc
L307	1-407-169-XX	100μH, microinductor
● L701, 751	1-420-872-00	Coil

TRANSFORMERS

IFT201	1-409-323-00	AM IFT
IFT202	1-409-324-00	AM IFT
IFT203	1-404-167-00	FM Discriminator
T801	⚠ 1-446-530-00	Power

CAPACITORS

All capacitors are in μF. Common capacitors are omitted. Refer to the list on page 39 and 40 for their part numbers. p: μμF, elect: electrolytic

C245,246	1-131-451-00	0.1	16V	tantalum
C252	1-123-319-00	47	16V	elect
C305,310	1-121-911-00	0.47	50V	elect
C312	1-102-253-00	10p		ceramic
C315	1-102-959-00	22p		ceramic
C317	1-102-287-00	12p		ceramic
C326	1-102-259-00	15p		ceramic

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

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

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

5-2.

E

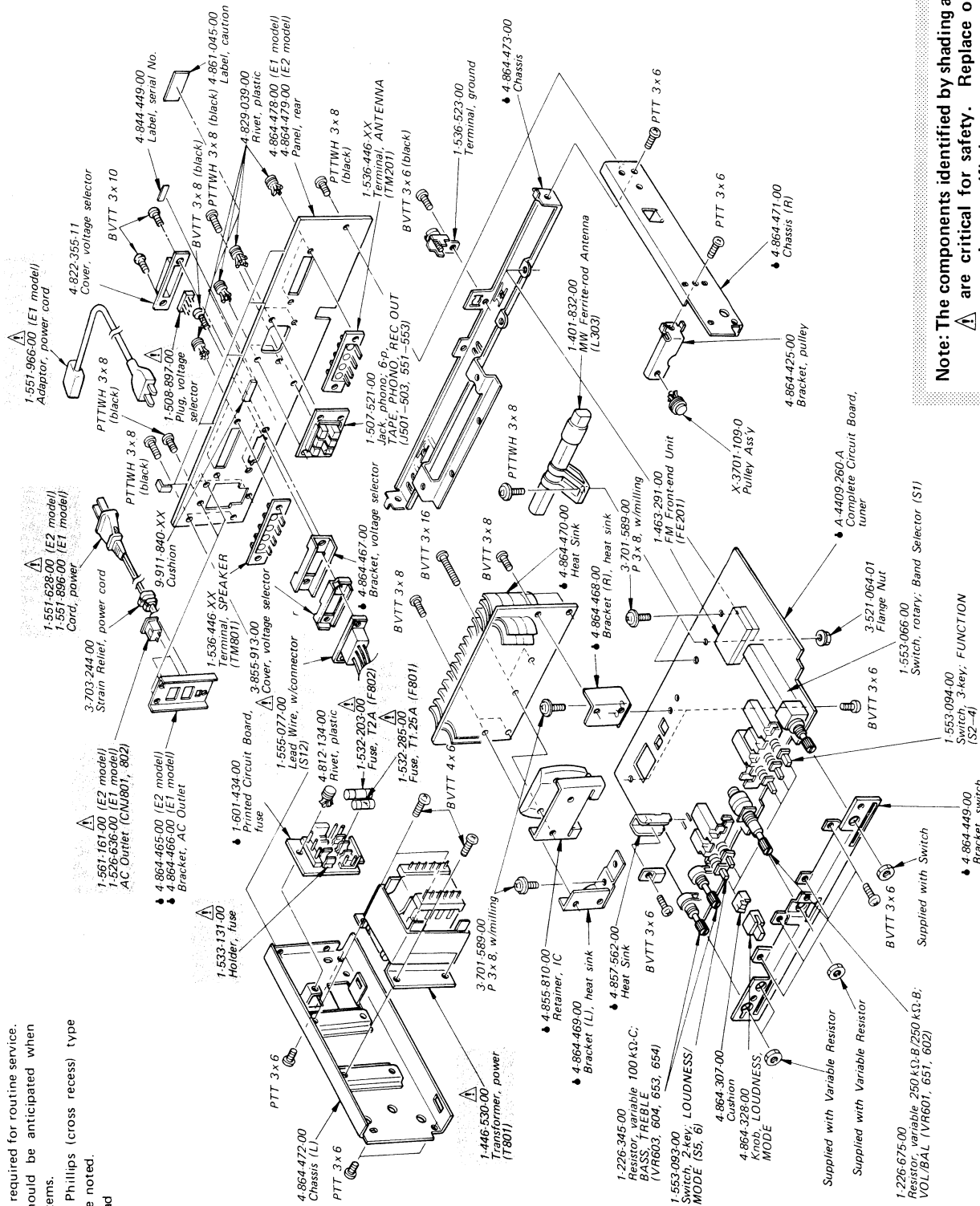
D

C

B

A

- Note:
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - All screws are Phillips (cross recess) type unless otherwise noted.
 - (-) = slotted head



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

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Ref. No.	Part No.	Description
C801,802	△ 1-125-155-00	6800 35V elect
C803	△ 1-123-061-00	1000 50V elect
C808	△ 1-108-421-00	0.01 200V mylar
C810,811	△ 1-130-267-00	0.022 250V film
CP801,802	△ 1-102-394-00	0.01 250V×2 ceramic
CT301-306	1-141-171-00	Trimmer

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 38 for their part numbers.

R217, 238	1-217-399-00	100 ¼W fusible
R705,755	1-212-950-00	4.7 ½W fusible
R706,756	1-212-958-00	10 ½W fusible
R707,757	1-247-228-00	330 ½W carbon (nonflammable)
R803	1-214-147-00	4.3 k ¼W metal oxide (1%)
R804	1-214-130-00	820 ¼W metal oxide (1%)
R806	1-206-475-00	33 2W metal oxide (nonflammable)
R809	1-214-126-00	560 ¼W metal oxide (1%)
R811, 812	1-214-138-00	1.8 k ¼W metal oxide (1%)
R813	1-214-145-00	3.6 k ¼W metal oxide (1%)
R814	1-214-113-00	160 ¼W metal oxide (1%)
R815	1-214-131-00	910 ¼W metal oxide (1%)
R817	1-213-146-00	1.8 k 1W metal oxide (nonflammable)
⇒ RT201	1-226-238-00	50 k-B, adjustable; muting level
RT202	1-226-236-00	10 k-B, adjustable; FM stereo separation
⇒ RT203	1-226-235-00	5 k-B, adjustable; VCO
RT801-803	1-226-664-00	2.2 k-B, adjustable; FM frequency coverage, MW frequency coverage
RT804-806	1-226-663-00	1 k-B, adjustable; FM frequency coverage, MW frequency coverage

⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

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

Ref. No.	Part No.	Description
VR601,651) 1-226-675-00	250 k-B/250 k-B, variable; VOL, BAL
VR602		
VR603,653) 1-226-345-00	100 k-C, variable; BASS, TREBLE
VR604,654		

SWITCHES

S1	1-553-066-00	Rotary, Band Selector
S2-4	1-553-094-00	3-key, FUNCTION
S5,6	1-553-093-00	2-key, LOUDNESS, MODE
S7,8	1-553-065-00	Pushbutton, PROGRAM
S10	1-553-061-00	Pushbutton, PROGRAMMED TUNING

S11	△ 1-553-091-00	Rotary, POWER
S12	△ 1-555-077-00	Lead Wire, w/connector

MISCELLANEOUS

CB701,751	1-532-380-81	Circuit Breaker, 2.2A
CF201	1-527-346-00	Filter, solid state
CNJ801	1-526-636-00	AC Outlet (E1 model)
CNJ802	△ 1-561-161-00	AC Outlet (E2 model)
F801	△ 1-532-285-00	Fuse, T1.25A
F802	△ 1-532-203-00	Fuse, T2A
FE201	1-463-291-00	FM Front-end Unit
J501-503) 1-507-521-00	Jack, phono; 6-p; PHONO, TAPE, REC OUT
J551-553		
J701	1-507-658-00	Jack, HEADPHONES
MF202	1-527-403-00	Filter, mechanical
TM201, 801	1-536-446-XX	Terminal, ANTENNA, SPEAKER
	△ 1-508-897-00	Plug, voltage selector
	△ 1-533-131-00	Holder, fuse
	1-536-523-00	Terminal, ground
	△ 1-551-628-00	Cord, power; 2-p (E2 model)
	△ 1-551-896-00	Cord, power; 3-p (E1 model)
	△ 1-551-966-00	Adaptor, power cord (E1 model)
	♣ A-4409-260-A	Complete Circuit Board, tuner

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

STR-333S

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	● 1-535-115-00	Terminal, 2p
	● 1-535-116-00	Terminal, 3p
	● 1-535-118-00	Terminal, 5p
	● 1-535-119-00	Terminal, 6p
	● 1-555-076-00	Lead Wire, w/connector
	● 1-555-078-11	Lead Wire, w/connector (FM)
	● 1-555-078-21	Lead Wire, w/connector (AM)
	● 1-560-283-00	Pin 8-p, connector

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

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
1-501-184-00	Antenna, ribbon
1-501-193-00	Antenna
3-701-630-00	Bag, plastic
3-770-984-51	Manual, instruction
3-794-576-11	Card, manual
4-864-402-00	Cushion, bottom
4-864-403-00	Cushion (L), upper
4-864-404-00	Cushion (R), upper
4-864-485-00	Carton
4-891-037-00	Bag, plastic

1/4 WATT CARBON RESISTORS [Ⓐ]

Ω	<u>Part No.</u>	Ω	<u>Part No.</u>	Ω	<u>Part No.</u>	Ω	<u>Part No.</u>	Ω	<u>Part No.</u>	Ω	<u>Part No.</u>	Ω	<u>Part No.</u>
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00 (A)
1.0					→	1-121-391-00 (A)
2.2					→	1-121-450-00 (A)
3.3	→	→	→	1-121-392-00 (A)	→	1-121-393-00 (A)
4.7	→	→	→	1-121-395-00 (A)	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	-	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (F)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	-
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (E)	-	-	-

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	-	-	-	-
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	-	1-123-028-00 (B)
3.3	1-121-995-00 (A)	-	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	-	-
47	1-123-251-00 (C)	1-121-919-00 (C)	-	-
100	1-123-084-00 (E)	-	-	-

CERAMIC CAPACITORS

CAP. (pF)	RATING						
	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.				
	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS

RATING											
CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	-	-
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	-	-
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	-	-
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	-	-
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

RATING							
→ Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00 (D)
0.015					→	→	1-131-397-00 (B)
0.022					→	→	1-131-398-00 (B)
0.033					→	→	1-131-399-00 (B)
0.047					→	→	1-131-400-00 (D)
0.068					→	→	1-131-401-00 (B)
0.1					→	→	1-131-402-00 (B)
0.15					→	→	1-131-403-00 (B)
0.22					→	→	1-131-404-00 (B)
0.33					→	1-131-409-00 (B)	1-131-405-00 (B)
0.47	-	-	-	-	1-131-412-00 (B)	→	1-131-406-00 (B)
0.68	-	-	-	1-131-415-00 (B)	→	1-131-410-00 (B)	1-131-407-00 (B)
1.0	-	-	1-131-418-00 (B)	-	1-131-413-00 (B)	→	1-131-408-00 (B)
1.5	-	1-131-421-00 (B)	-	1-131-416-00 (B)	→	1-131-411-00 (B)	1-131-348-00 (B)
2.2	1-131-424-00 (B)	-	1-131-419-00 (B)	-	1-131-414-00 (B)	1-131-355-00 (B)	1-131-349-00 (B)
3.3	-	1-131-422-00 (B)	-	1-131-417-00 (B)	1-131-362-00 (B)	1-131-356-00 (B)	1-131-350-00 (B)
4.7	1-131-425-00 (B)	-	1-131-420-00 (B)	1-131-369-00 (B)	1-131-363-00 (B)	1-131-357-00 (B)	1-131-351-00 (C)
6.8	-	1-131-423-00 (B)	1-131-376-00 (B)	1-131-370-00 (B)	1-131-364-00 (B)	1-131-358-00 (C)	1-131-352-00 (C)
10	1-131-426-00 (B)	1-131-383-00 (B)	1-131-377-00 (B)	1-131-371-00 (B)	1-131-365-00 (C)	1-131-359-00 (C)	1-131-353-00 (D)
15	1-131-390-00 (B)	1-131-384-00 (B)	1-131-378-00 (B)	1-131-372-00 (B)	1-131-366-00 (C)	1-131-360-00 (D)	-
22	1-131-391-00 (B)	1-131-385-00 (B)	1-131-379-00 (C)	1-131-373-00 (C)	1-131-367-00 (D)		
33	1-131-392-00 (B)	1-131-386-00 (C)	1-131-380-00 (C)	1-131-374-00 (D)			
47	1-131-393-00 (C)	1-131-387-00 (C)	1-131-381-00 (D)				
68	1-131-394-00 (B)	1-131-388-00 (C)					
100	1-131-395-00 (D)						



TANTALUM CAPACITORS

RATING						
CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00 (E)
0.047						1-131-274-00 (E)
0.068						1-131-275-00 (E)
0.1						1-131-276-00 (D)
0.15						1-131-277-00 (D)
0.22			-	-	1-131-262-00 (D)	1-131-278-00 (D)
0.33			-	-	1-131-263-00 (D)	1-131-279-00 (D)
0.47			1-131-169-00 (D)	-	1-131-264-00 (D)	1-131-280-00 (D)
0.68			-	1-131-258-00 (D)	1-131-265-00 (D)	1-131-281-00 (D)
1.0			1-131-254-00 (D)	-	1-131-266-00 (D)	1-131-282-00 (D)
1.5		1-131-250-00 (D)	-	-	1-131-267-00 (D)	1-131-283-00 (E)
2.2		-	-	1-131-259-00 (D)	1-131-268-00 (D)	1-131-284-00 (E)
3.3		-	1-131-255-00 (D)	-	1-131-269-00 (D)	-
4.7		1-131-251-00 (E)	1-131-171-00 (D)	-	1-131-270-00 (D)	-
6.8		-	-	1-131-260-00 (D)	1-131-271-00 (E)	-
10		-	1-131-256-00 (D)	-	1-131-272-00 (E)	-
15		1-131-252-00 (D)	-	1-131-261-00 (E)		
22		-	1-131-257-00 (E)	-		
33	1-131-176-00 (D)	1-131-253-00 (E)	1-131-173-00 (C)	-		
47	1-131-288-00 (F)	1-131-174-00 (D)	-	-		
100	1-131-177-00 (D)					

Sony Corporation

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