JVC

SERVICE MANUAL

MODEL JR-S100

STEREO RECEIVER

No. 2370
MAR. 1976

1. Specifications

Dimensions	:	6-5/16"(H) x 19-11/16"(W) x 13-3/16"(D) (16cm x 50cm x 33.5cm)
Weight	:	16.5 lbs. (7.5kg)
Amplifier Section		
RMS Power Both channels driven	:	20W per channel, min. RMS at 8 ohms, from 20Hz to 20kHz with under 0.5% total harmonic distortion.
RMS Power Both channels driven at 1kHz	:	22W per channel at 8 ohms 25W per channel at 4 ohms
Total Harmonic Distortion	:	0.5% at rated output power
Damping Factor	:	40 at 8 ohms
Input Sensitivity, and Impedance and Signal to Noise Ratio	:	Phono: 2.5mV/50kΩ & 70dB AUX: 150mV/70kΩ & 95dB Tape Mon: 150mV/70kΩ & 95dB
Recording Output Level	:	150mV (pin) 30mV/80kΩ (DIN)
Frequency Response	:	20Hz to 20kHz
Loudness Control	:	+12dB at 50Hz +6dB at 10kHz
Bass Control	:	±10dB at 100Hz
Treble Control	:	±10dB at 10kHz
FM Tuner Section		
Usable Sensitivity	:	2.2μV IHF
Total Harmonic Distortion at 1kHz, 100% Modulation	:	0.4% (Mono) 0.6% (Stereo)
Signal to Noise Ratio	:	65dB at 1000μV input (Mono) 60dB at 1000μV input (Stereo)
Selectivity	:	50dB IHF Alternated
Capture Ratio	:	2.5dB
Image Rejection	:	50dB at 98MHz
IF Rejection	:	80dB at 98MHz
Stereo Separation	:	35dB at 1kHz
AM Tuner Section		
Usable Sensitivity	:	30μV, 300μV/m
Selectivity	:	25dB
Image Rejection	:	45dB
IF Rejection	:	50dB

2. Removal of Top Cover, Bottom Plate and Front Panel

Procedure and Part Numbers

1. Remove 4 screws (Item No. 3) through the both sides of the cover and one screw (Item No. 2) from the back of top cover.
2. Remove the top cover.
3. Remove 4 screws (Item No. 6) from bottom plate (Item No. 5) and remove the bottom plate from the chassis.

Removal of Top Cover and Bottom Plate

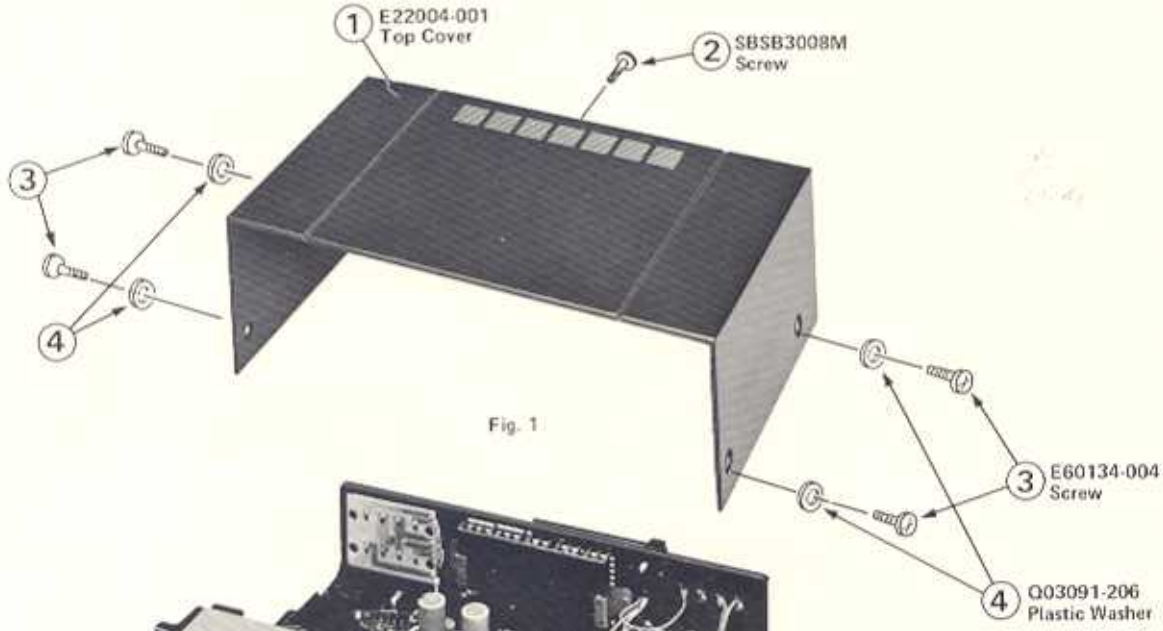


Fig. 1

Fig. 2

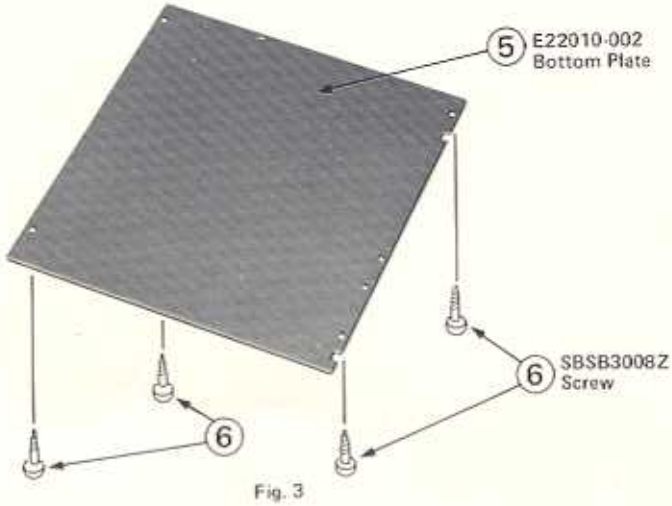


Fig. 3

Procedure and Part Numbers

1. Remove the top cover. Refer to the removal of top cover on page 3.
2. Remove the dial pointer carefully according to the steps below:
   a. Slide the dial pointer to the center position of the dial rail.
   b. Remove the dial cord from the dial pointer. Do not pull the dial cord hard.
   c. Remove the dial pointer from the dial rail carefully.
   Note: Refer to Fig. 10 of the dial stringing procedure on page 8 when replace the dial pointer onto dial rail.
3. Remove 4 screws, item No. 2 located on the side fittings (Item No. 1 , right and left sides).
4. Remove the both sides of side fitting from the front panel.
5. Remove one screw, item No. 4 located on the bottom of the front panel.
6. Remove 4 screws, item No. 3 located on the both sides of front panel.
7. Pull the front panel out carefully.

In Case of Removing the Window Screen From the Front Panel:

Remove 4 hexagonal screws, item No. 3 located on the window screen. Refer to Fig. 8 on page 6.

Warning: Use hexagonal wrench (size 3/32") and do not screw in excessively when replacing the window screen.

Removal of Front Panel

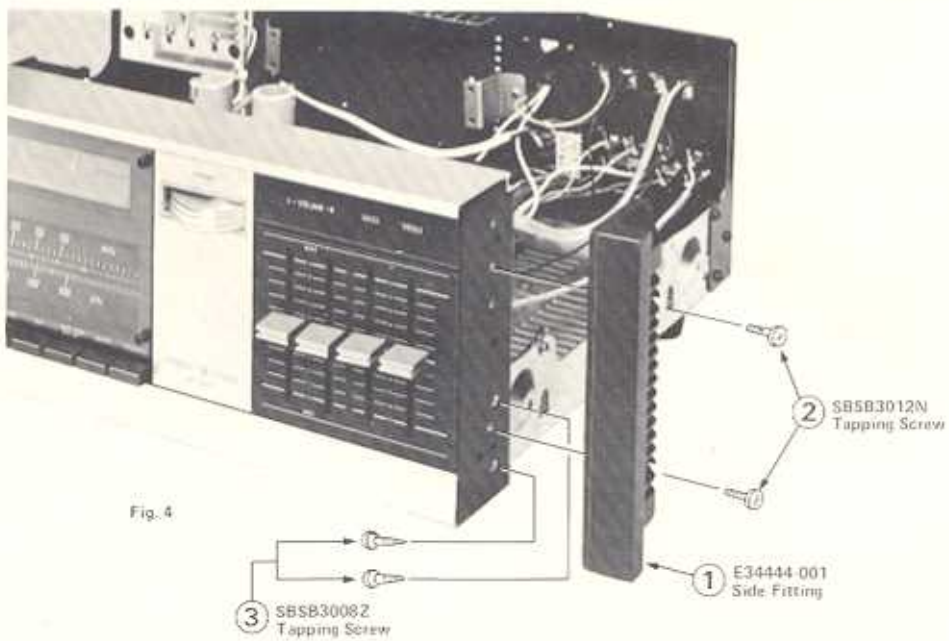


Fig. 4

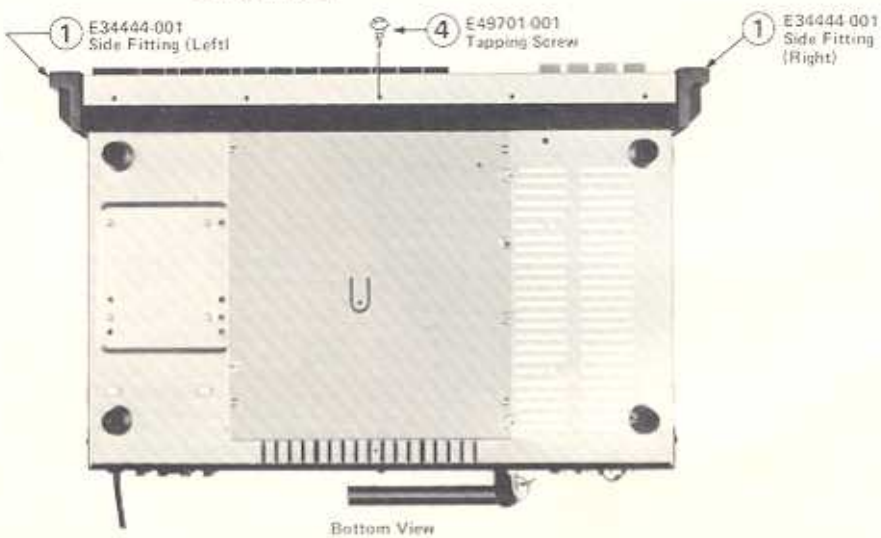


Fig. 5

3. Main Parts Location and Part Numbers

Top View

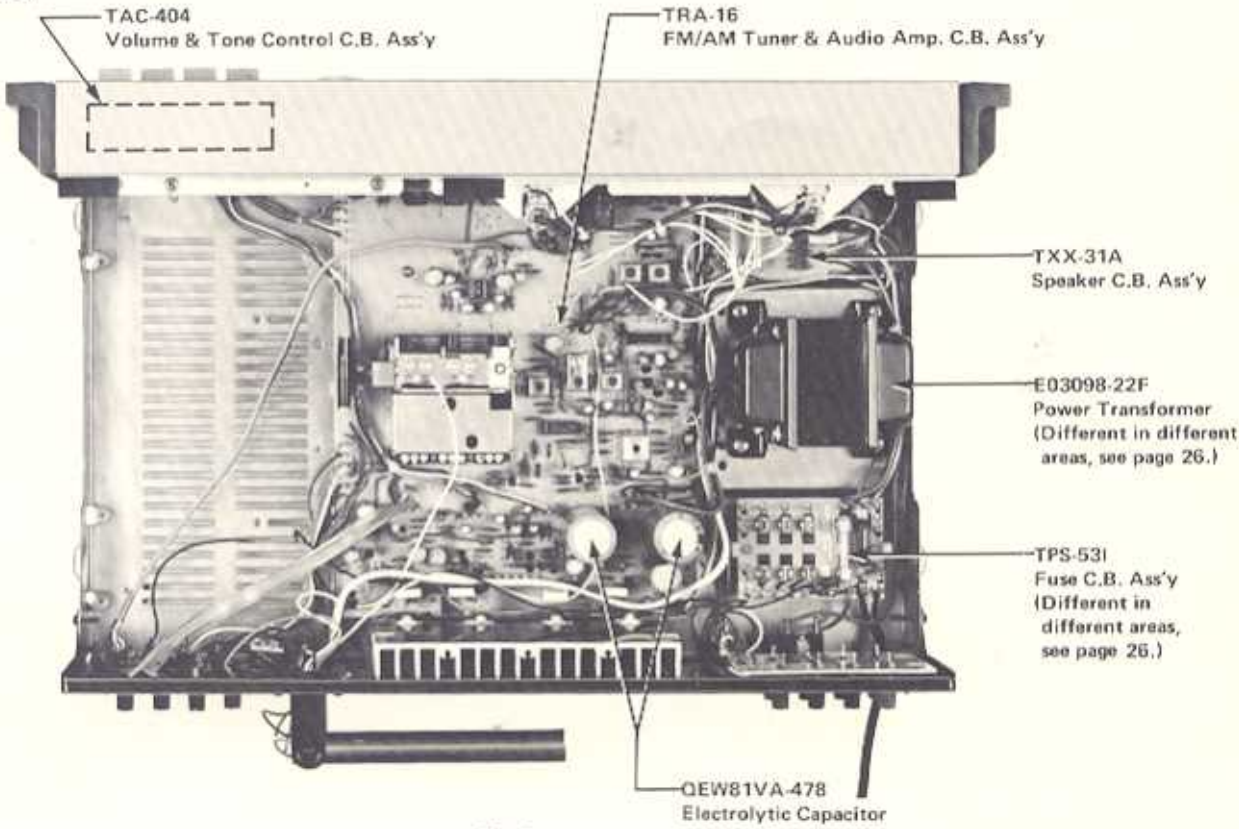


Fig. 6

Bottom View

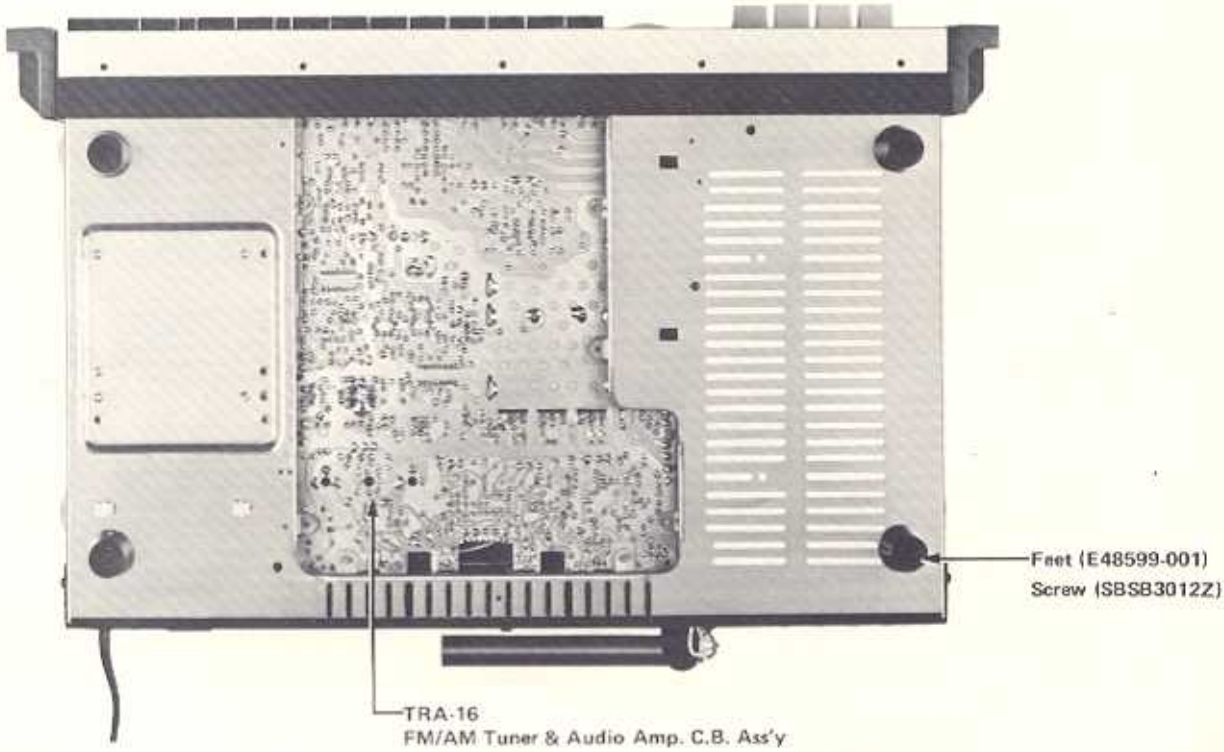


Fig. 7

4. Exploded View and Parts List

4-(1) Front Panel

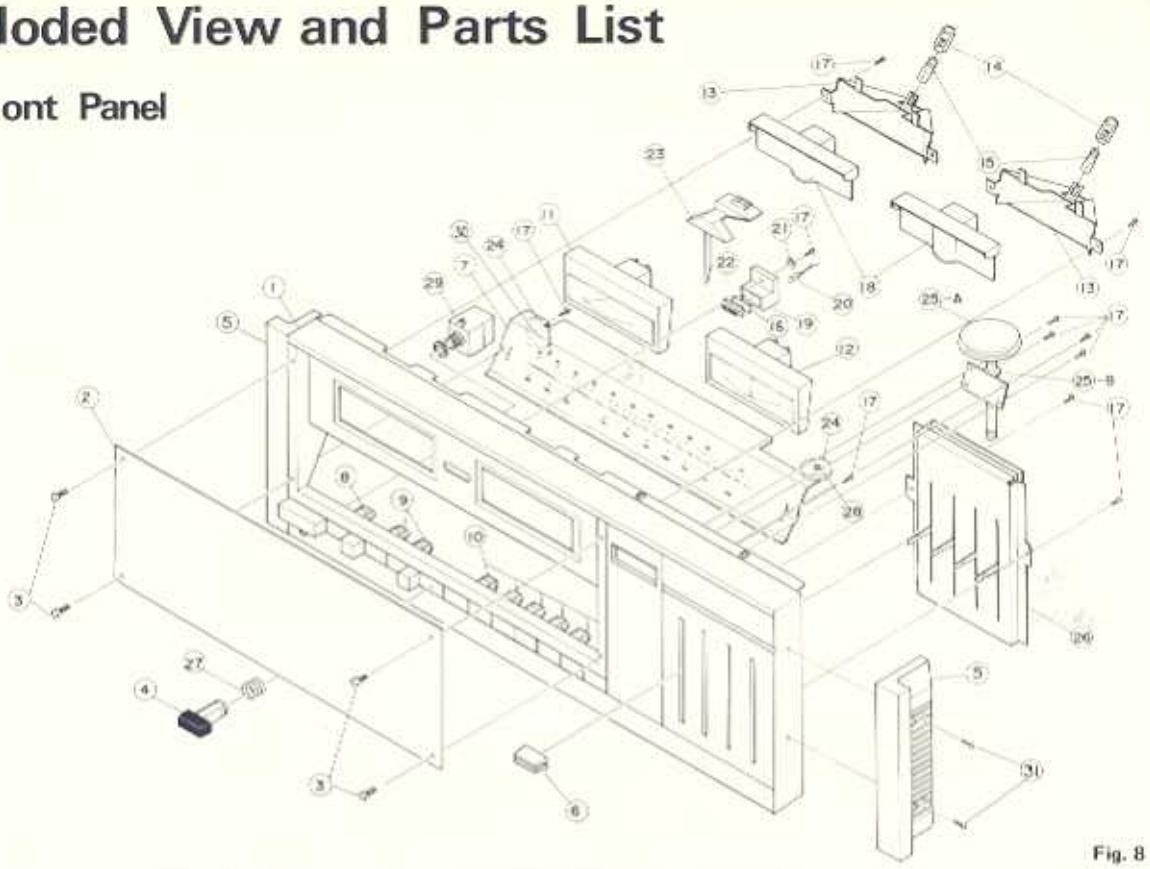


Fig. 8

Parts List

Item No.	Part Number	Description
1	E10099-001	Front Panel Ass'y
2	E22007-002	Window Screen
3	E60919-001	Hexagonal Bolt
4	E60875-001	Pushbutton
5	E34444-001	Side Fitting
6	E60884-001	Slide Knob
7	E22006-002	Dial Scale
* 8	QSU1130-001	Power Switch
9	QSP0229-004	Push Switch
10	QSP0289-103	Push Switch
11	E03680-202	Signal Meter
12	E03680-201	Tuning Meter
13	E34443-001	Meter Holder
14	QLS1000-003	Pilot Lamp Socket
15	QLP1001-010	Pilot Lamp
16	E46855-043	Color Screen
17	SBSB3010Z	Tapping Screw
18	E34555-001	Meter Cover
19	E60874-001	Reflector
20	QLP3105-001	Indicator Lamp
21	Q03091-105	Washer
22	E60873-001	Stereo Indicator
23	E34422-001	Dial Pointer Ass'y (E32757-017: Dial Cord)
24	E45017-001	Roller
25-A	E60869-001	Tuning Knob
25-B	E34490-001	Tuning Shaft Ass'y (with Tuning Knob)
26	TAC-404	Volume & Tone Control C.B. Ass'y
27	E60876-001	Coil Spring
28	E45018-001	Shaft Screw
29	QMS6301-001	Headphone Jack Ass'y
30	E49447-001	Shaft Screw
31	SBSB3012N	Tapping Screw

* Different in different area, see page 26.

4-(2) Rear Panel

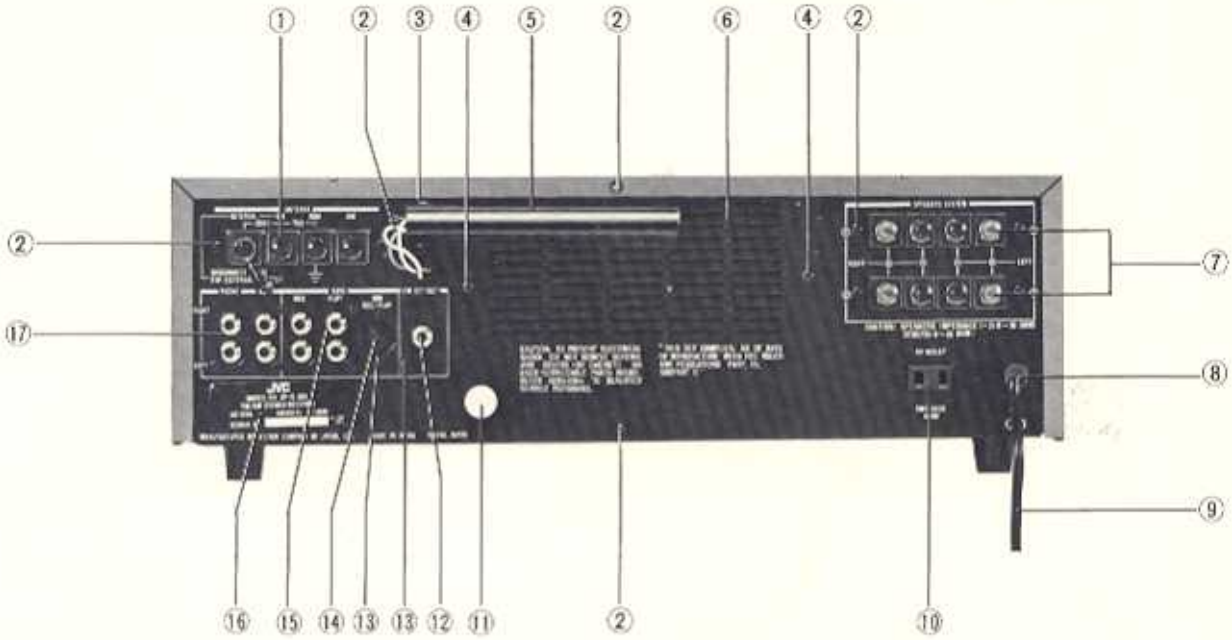


Fig. 9

Parts List

Item No.	Part Number	Description
1	E03572-004D	Bar Antenna Terminals Board
2	SBSB3008M	Tapping Screw
3	E49695-002	Bar Antenna Bracket
4	SPSP4006MS	Screw
5	E03037-36UD	Bar Antenna Coil
6	E10089-001	Rear Panel
7	E03572-004C	Speaker Terminals Board
* 8	QHS3876-162	Power Cord Stopper
* 9	QMP1200-244	Power Cord
10	QMC0235-002	AC Socket
11	E42803-004	Passed Mark
12	E03591-10	Pin Jack Ass'y
13	SPSD3008MS	Tapping Screw
14	E03623-002	DIN Socket
15	E03591-41D	4 Pins Jack Ass'y (Rec & Play)
16	E47330-222	Rating Label
17	E03591-40C	4 Pins Jack Ass'y (PHONO & AUX)

* Different in different area, see page 26.

5. Dial Stringing Procedure

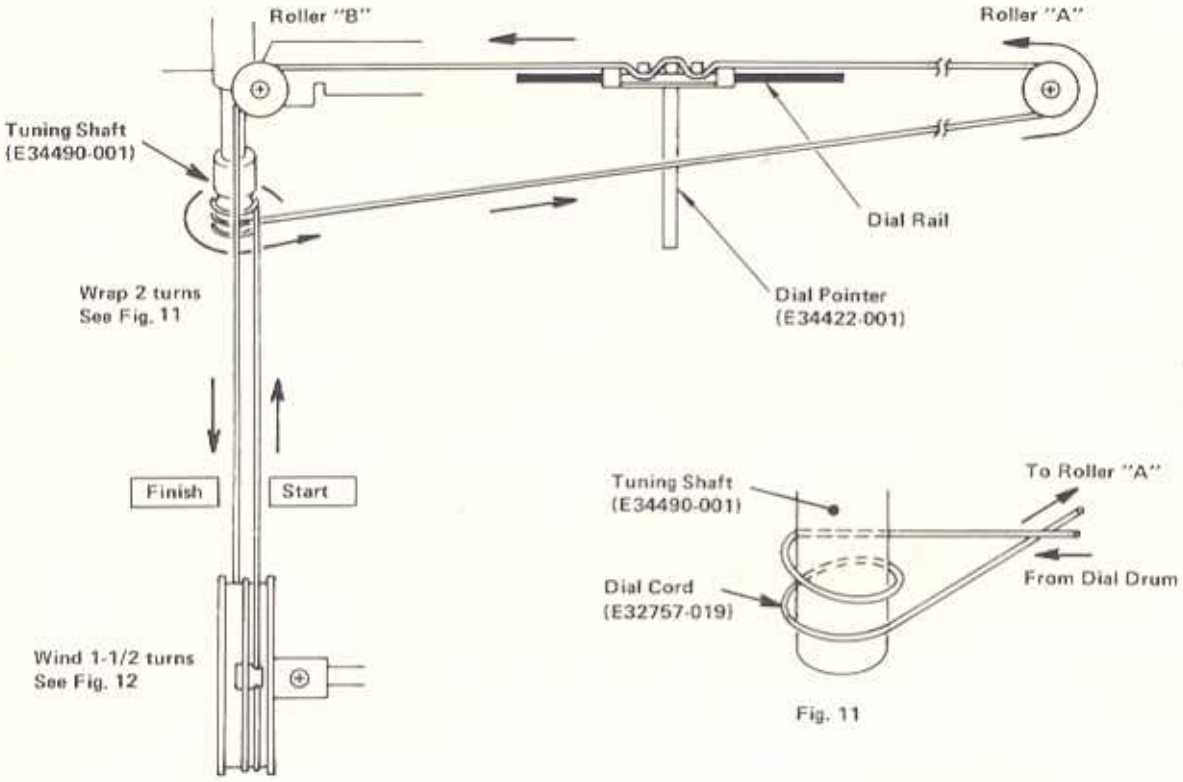


Fig. 10

Fig. 11

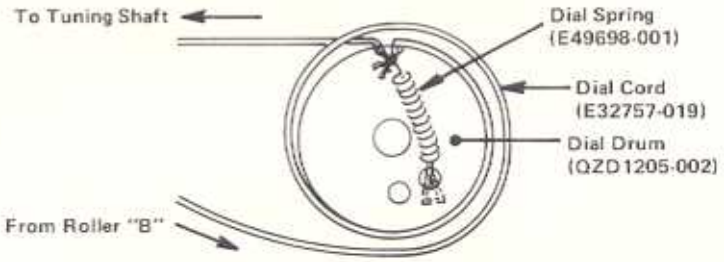
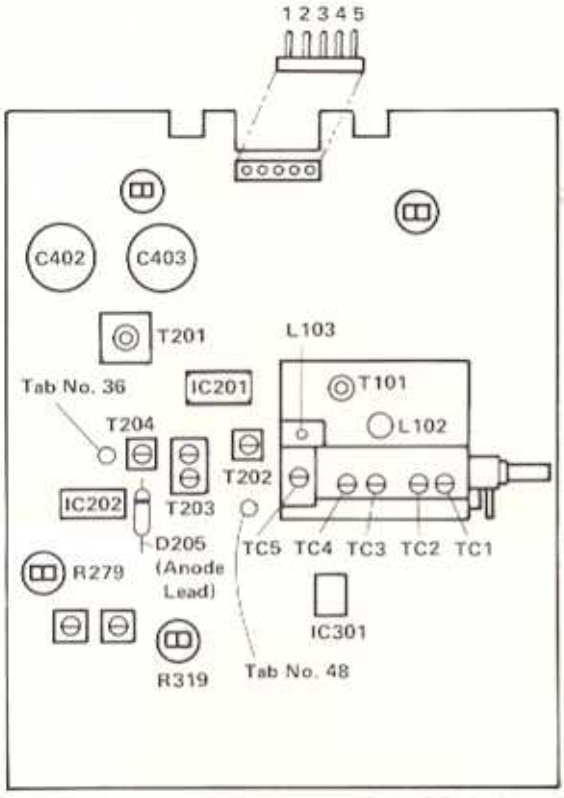


Fig. 12

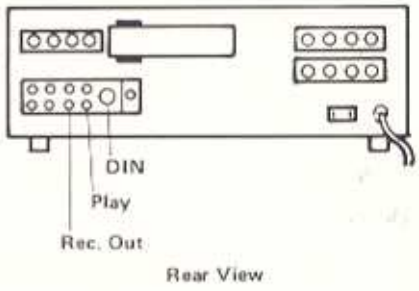
(1) Remove dial pointer and old dial cord.
(2) Tie end of new dial cord to one end of dial spring, connect other end of dial spring of bottom right eye inside dial drum. See Fig. 12.
(3) Rotate the tuning capacitor dial drum to its maximum counterclockwise.
(4) Run the dial cord through the slot in the rim of the dial drum.
(5) Pull dial cord taut and wrap 2 turns counterclockwise around tuning shaft. Refer to Fig. 11.
(6) Guide the dial cord under and around rollers "A" and "B". Keep the dial cord taut during this procedure.
(7) Guide the dial cord over the dial drum and wind 1-1/2 turns counterclockwise. See Fig. 12.
(8) Turn the tuning shaft to rotate the dial drum fully counterclockwise and fully clockwise to distribute the tensioning along the dial cord.
(9) Place the dial cord over and under the tabs on the rear of the dial pointer and place the dial pointer on the top of the dial panel rail. Refer to Fig. 10.
(10) Turn the tuning shaft clockwise. Slide the dial pointer to zero (0) calibration marker on the logging scale while holding tuning shaft fully clockwise. Cement the dial pointer to the dial cord to prevent slippage. Allow cement to dry thoroughly.
(11) Check the dial calibration. Refer to FM/AM Alignment on pages 9 and 10.
(12) Replace the top cover.

6. FM/AM Tuner Alignment Procedures



TRA-16 FM/AM Tuner & Audio Amp. C.B. Ass'y

Fig. 13



Rear View

Fig. 14

6-(1) FM Section

Discriminator, Center Meter and Distortion

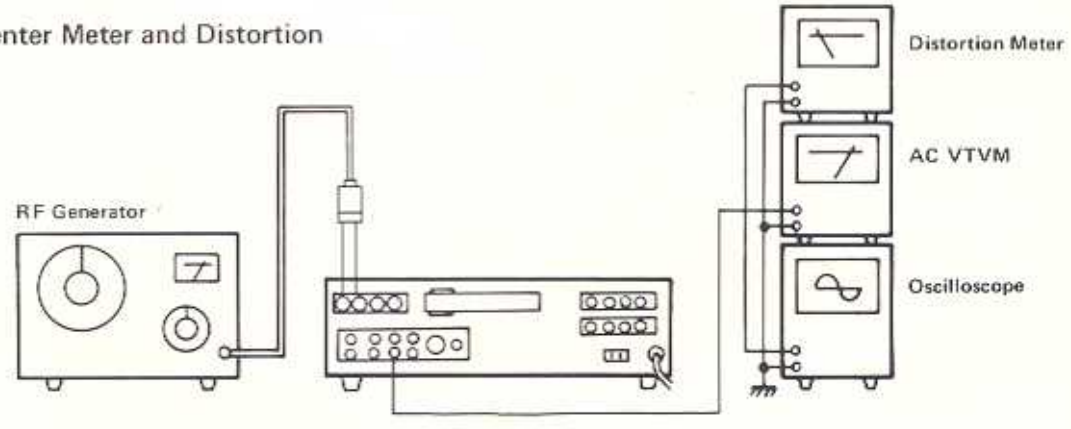


Fig. 15

1. Connect an RF generator, 1kHz modulation and 75kHz deviation to the antenna terminals on the rear panel through a dummy antenna.
2. Connect an oscilloscope, distortion meter and VTVM to the Rec. Out Jacks on the rear panel.
3. Tune to a frequency where there is no broadcasting.
4. Adjust the bottom core of T201 so that the center meter indicates "0" (zero).
5. Set the RF generator to 98MHz.
6. Set the dial pointer to 98MHz.
7. Adjust the top core of T201 so that the distortion is minimized at a value less than 0.4%.

Tracking and Sensitivity

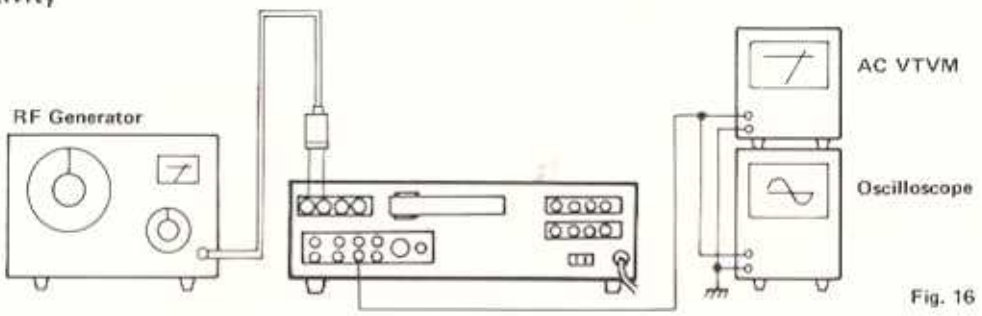


Fig. 16

Precaution: No adjustment is required. The tracking and sensitivity have been adjusted properly and completely at the factory. If any special reason occasioned, take the following procedures very carefully.

Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel through the dummy antenna.
2. Set the RF generator to 88MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of 2μV.
3. Connect a VTVM and an oscilloscope to the Rec. Out Jacks on the rear panel.
4. Set the dial pointer to 88MHz.
5. Adjust two coils L103 and L102 in the tuning gang to maximize the output.

High Frequency

6. Set the RF generator to 108MHz, a modulation of 1kHz and a deviation of 75kHz, to provide an input of 2μV.
7. Set the dial pointer to 108MHz.
8. Adjust the FM trimmers TC5, TC3 and TC1 in the tuning gang to maximize the output.
9. Adjust the IF transformer T101 until maximum sensitivity is obtained.

Note: Repeat these high and low frequency adjustments alternately until maximum sensitivity is obtained.

Multiplex and Stereo Separation

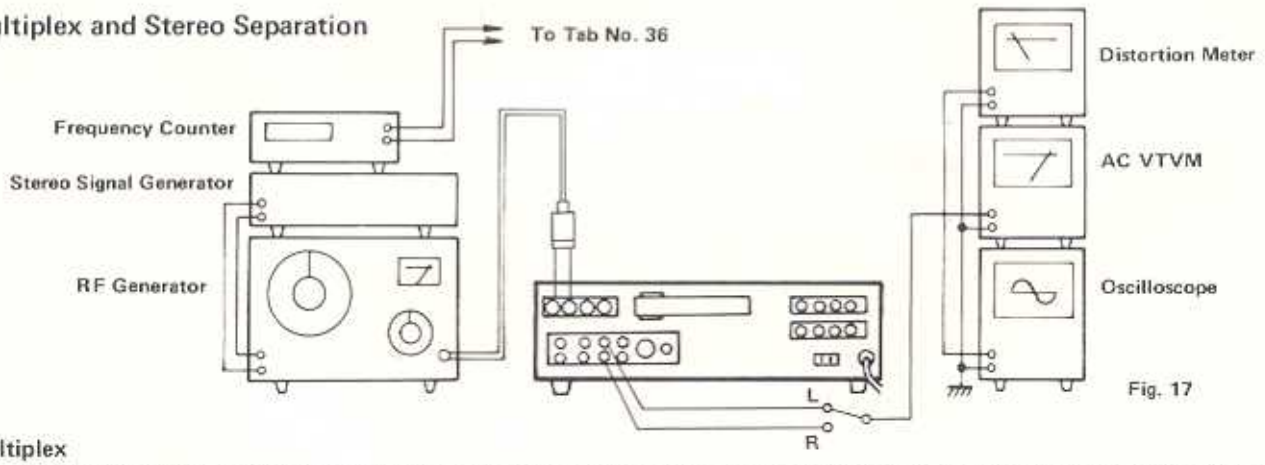


Fig. 17

Multiplex

1. Set a stereo signal generator as follows: Modulation frequency 1kHz, Deviation pilot signal 7.5kHz, Main and Sub. 67.5kHz. Connect its output to an RF generator.
2. Connect the RF generator to the antenna terminals through a dummy antenna.
3. Connect a VTVM, an oscilloscope and a distortion meter to the Rec. Out Jacks on the rear panel.
4. Set the RF generator to 98MHz and an output of 1mV.
5. Set the dial pointer to 98MHz.
6. Connect a frequency counter to Tab No. 36.
7. Switch off the pilot signal of the stereo modulator.
8. Adjust R279 so that the frequency counter indicates 19kHz (±0.01kHz).

Stereo Separation

9. Switch the selector of stereo modulator to left channel modulation.
10. Adjust R319 so that the output of right channel is minimized.
11. Switch the selector of the stereo modulator to right channel modulation.
12. Adjust R319 so that the output of left channel is minimized.
13. Set R319 to average, if the separation of right and left are different.

Note: Keep the "MONO" pushbutton out during this adjustment procedure of stereo separation.

6-(2) AM Section

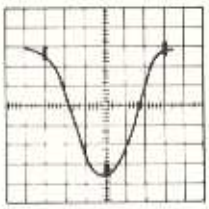


Fig. 18

IF Stage

1. Connect an output of sweep generator to the AM input Tab No. 48.
2. Set the sweep generator to 455kHz.
3. Connect an input of sweep generator to the anode lead of diode D205 (AM output).
4. Adjust the cores of I.F. Transformer T203 and T204 so that the output is maximized. Refer to Fig. 18.

Tracking and Sensitivity

Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel, set this to 600kHz with 30% modulation at 400Hz.
2. Connect an AC VTVM and an oscilloscope to the Rec. Out Jacks on the rear panel.
3. Set the dial pointer to 600kHz.
4. Adjust the Osc. transformer T202 and the ferrite bar antenna to maximize the output signal.

High Frequency

5. Set the RF generator to 1,400kHz with 30% modulation at 400Hz.
6. Set the dial pointer to 1,400kHz.
7. Adjust the trimmers TC4 and TC2 in the AM tuning gang so that the output signal is maximized.
8. Repeat these high and low frequency adjustments until maximum sensitivity is obtained.

7. Power Amplifier Adjustment Procedures

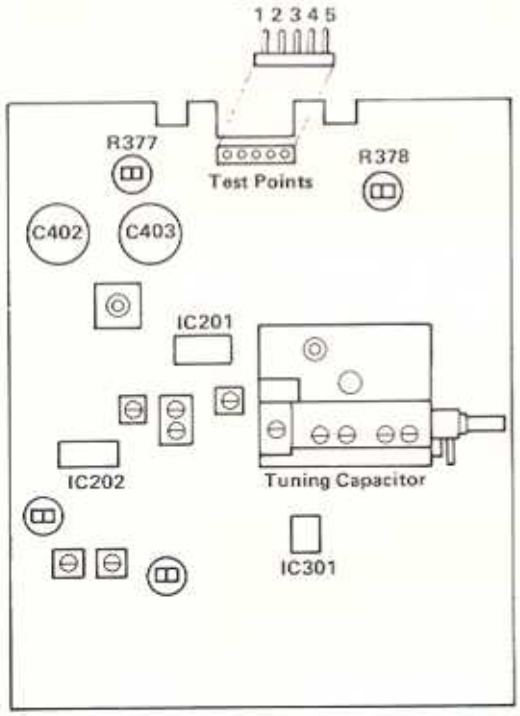


Fig. 19

TRA-16 FM/AM Tuner & Audio Amp. C.B. Ass'y

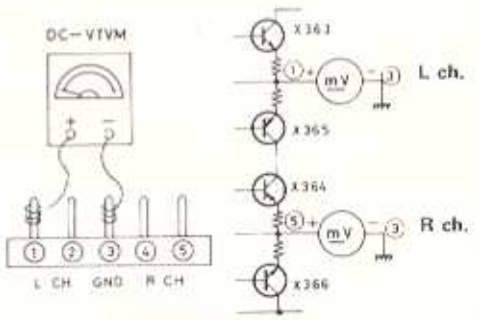


Fig. 20A

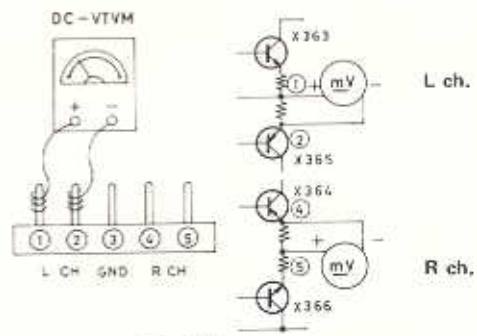


Fig. 20B

7-(1) Center Voltage

( ): For right channel adjustment

Precaution: Allow set to warm up at least 5 minutes before connecting DC VTVM.

1. Tune volume control to minimum.
2. Connect ground lead of DC VTVM to pin 3 (pin 3) and connect probe of DC VTVM to pin 1 (pin 5). Refer to Fig. 20A.
3. So that meter should read 0 volt (±0.05). If not, replace a pair of power transistors, then, back to step 1. to repeat this procedure.

7-(2) Idling Current

4. Connect ground lead of DC VTVM to pin 1 (pin 5) and connect probe of DC VTVM to pin 2 (pin 4). Refer to Fig. 20B.
5. Adjust pot R377 (R378) for DC VTVM reading of 10mV. Refer to Fig. 19.

8. Circuit Board Ass'y Part Locations and Parts List

8-(1) TRA-16 FM/AM Tuner & Audio Amp. C.B. Ass'y

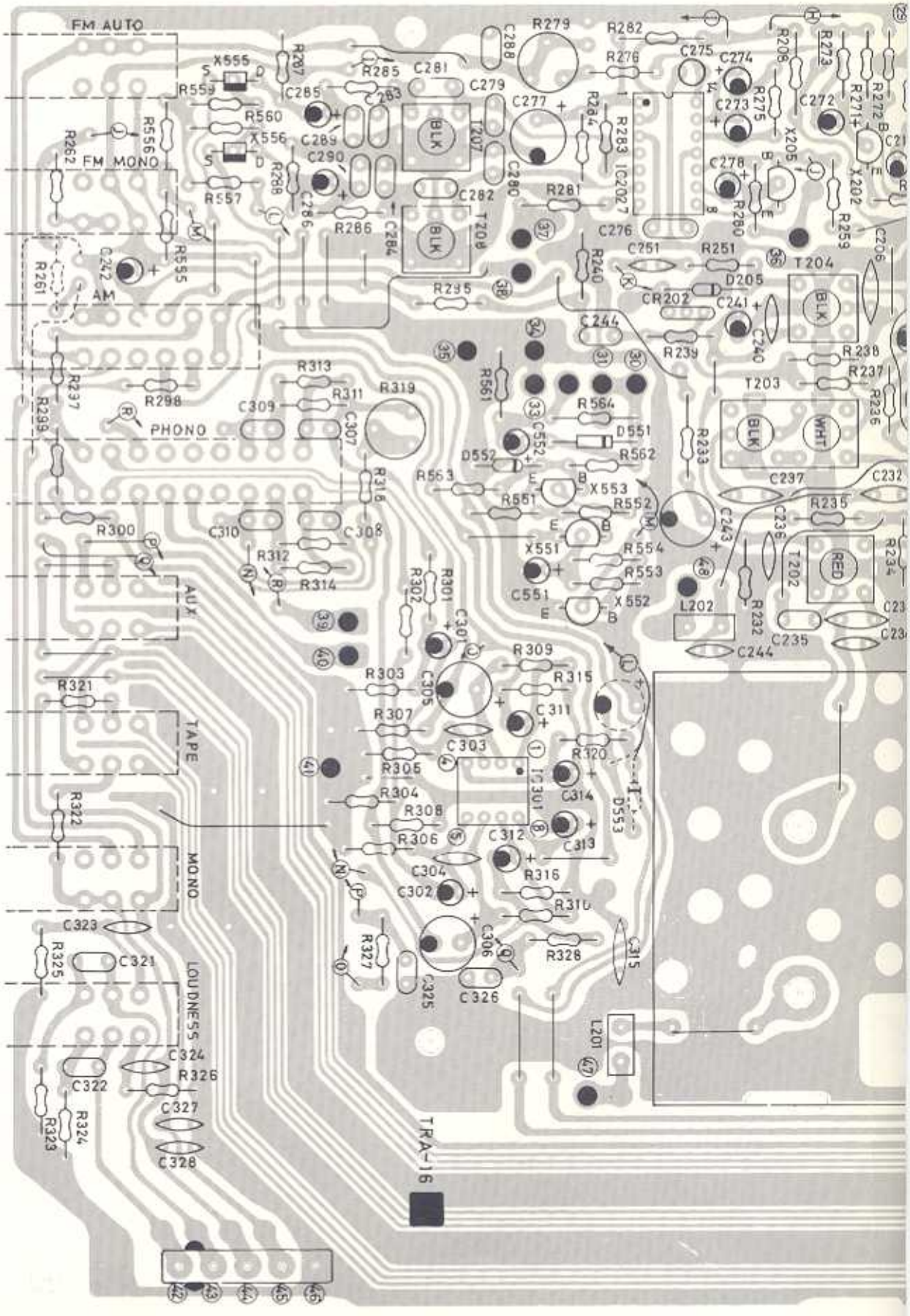
Transistors

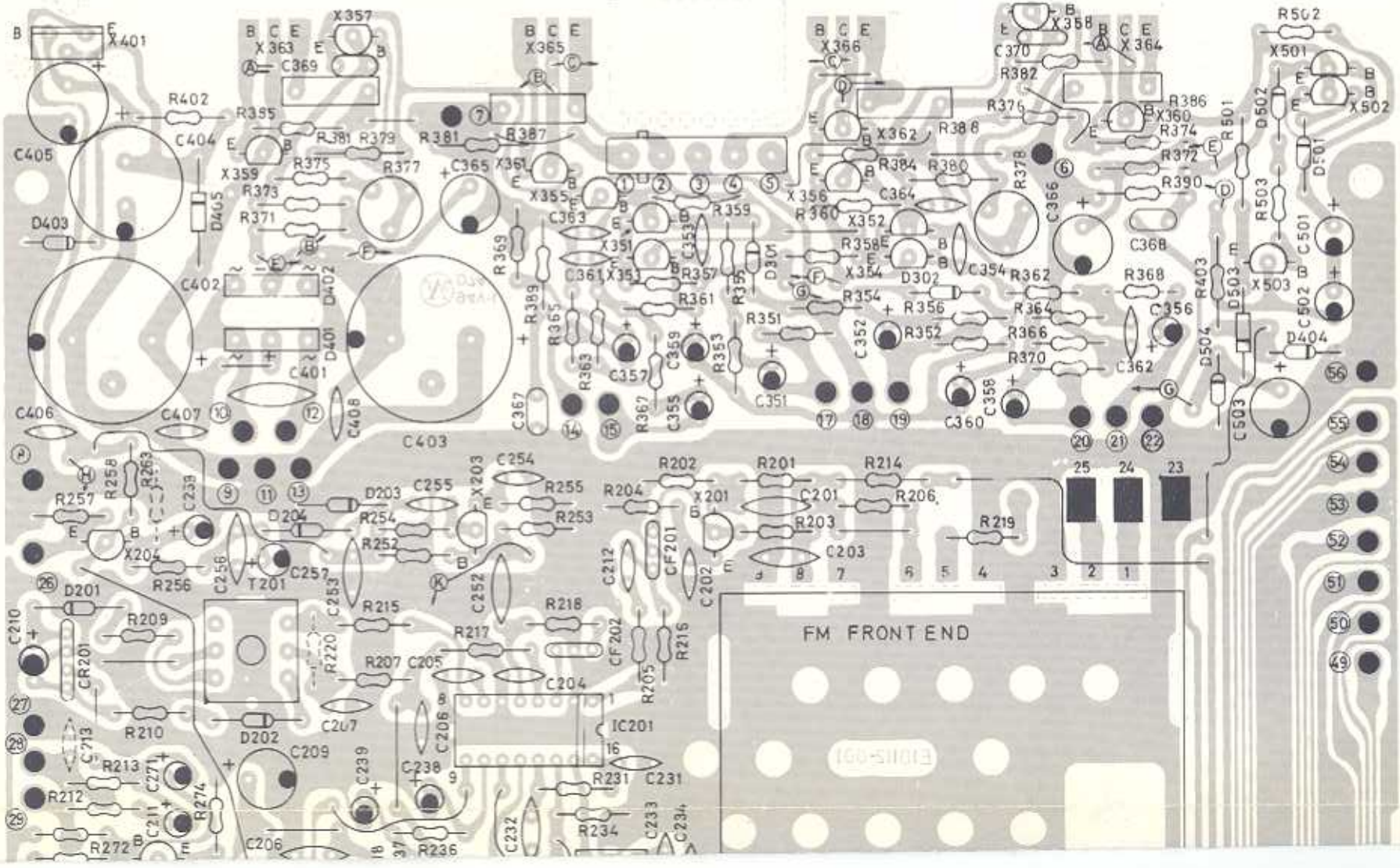
Item No.	Part Number	Rating		Description	Maker
		Pc	fT		
X201	2SC710 (B)	200mW	150MHz	Silicon	Mitsubishi
X202	2SC711 (F)	"	"	"	"
X203	2SC710 (B)	"	"	"	"
X204	2SC711 (F)	"	"	"	"
X205	2SC711 (F)	"	"	"	"
X351	2SA872AV (E)	300mW	200MHz	"	Hitachi
X352	2SA872AV (E)	"	"	"	"
X353	2SA872AV (E)	"	"	"	"
X354	2SA872AV (E)	"	"	"	"
X355	2SD438 (E)	750mW	100MHz	"	Sanyo
X356	2SD438 (E)	"	"	"	"
X357	2SC711 (F)	200mW	150MHz	"	Mitsubishi
X358	2SC711 (F)	"	"	"	"
X359	2SD438 (E)	750mW	100MHz	"	Sanyo
X360	2SD438 (E)	"	"	"	"
X361	2SB560 (E)	"	"	"	"
X362	2SB560 (E)	"	"	"	"
X363	2SD313V (E)	30W	8MHz	"	"
X364	2SD313V (E)	"	"	"	"
X365	2SB507V (E)	"	"	"	"
X366	2SB507V (E)	"	"	"	"
X401	2SD325 (E)	10W	"	"	"
X501	2SD438 (E)	750mW	100MHz	"	"
X502	2SC1775AV (F)	300mW	200MHz	"	Hitachi
X503	2SA872AV (E)	"	"	"	"
	PT-054			A Pair of Power Transistors	Sanyo
X551	2SA872AV (E)	300mW	200MHz	Silicon	Hitachi
X552	2SC711 (F)	200mW	150MHz	"	Mitsubishi
X553	2SC711 (F)	"	"	"	"
X555	2SK40	IDSS: 3mA, NF: 5dB (f=120Hz)		F.E.T.	Hitachi
X556	2SK40	"		"	"

Integrated Circuits

Item No.	Part Number	Rating	Description	Maker
		Pc		
IC201	AN217BB	200mW	I.C.	Matsushita
IC202	HA1156W	400mW	"	Hitachi
IC301	NJM4558D-D	500mW	"	J.R.C.

TRA-16 FM/AM Tuner & Audio Amp. C.B. Ass'y




FM FRONT END

Diodes

Item No.	Part Number	Rating	Description	Maker
D201	1S188FM		Germanium	Sanyo
D202	1S188FM		"	"
D203	1S188FM		"	"
D204	1S188FM		"	"
D205	1S188FM		"	"
D301	1S2473		Silicon	Toyo Dengu
D302	1S2473		"	"
D401	ESAB02-02C		Zener	Kyodo Denki
D402	ESAB02-02N		"	"
D403	E0771-12		"	Fuji
D404	E0771-12		"	"
D405	SIB01-02		Silicon	Fujitsu
D501	1S2473F		"	Toyo Dengu
D502	1S2473F		"	"
D503	SIB01-02		"	Fujitsu
D551	SIB01-02		"	"
D552	1S2473		"	Toyo Dengu

Coils & Transformers

Item No.	Part Number	Rating	Description
T201	E03134-018		FM Detector Transformer
T202	E03079-27		OSC. Coil
T204	E03062-35		I.F. Transformer
T205	E03062-6		AM I.F. Transformer
T207	E03407-005		MPX Coil
T208	E03407-005		"
L201	E03522-2R2KY		Choke Coil
L202	E03522-2R2KY		"

Capacitors

Item No.	Part Number	Rating		Description
C201	QCF11HP-223A	0.022μF	50V	Ceramic
C202	QCF11HP-223A	"	"	"
C203	QCF11HP-223A	"	"	"
C204	QCF11HP-223A	"	"	"
C205	QCF11HP-223A	"	"	"
C206	QCF11HP-223A	"	"	"
C207	QCF11HP-473A	0.047μF	"	"
C209	QEW41CA-107	100μF	16V	Electrolytic
C210	QEW41CA-106	10μF	"	"
C211	QEW41EA-475	4.7μF	25V	"

Capacitors

Item No.	Part Number	Rating		Description
C212	QCF11HP-223A	0.022μF	50V	Ceramic
C213	QCF11HP-223A	"	"	"
C231	QCF11HP-223A	"	"	"
C232	QCF11HP-223A	"	"	"
C233	QCS11HJ-331	330pF	"	"
C234	QCS11HJ-150	15pF	"	"
C235	QFM41HK-103	0.01μF	"	Mylar
C236	QCF11HP-223A	0.022μF	"	Ceramic
C237	QCF11HP-223A	"	"	"
C238	QEW41HA-105	1μF	"	Electrolytic
C239	QEW41HA-105	"	"	"
C240	QCF11HP-223A	0.022μF	"	Ceramic
C241	QEW41CA-106	10μF	16V	Electrolytic
C242	QEW41CA-106	"	"	"
C243	QEW41CA-107	100μF	"	"
C244	QCS11HJ-470	47pF	50V	Ceramic
C251	QCS11HJ-150	15pF	"	"
C252	QCS11HJ-180	18pF	"	"
C253	QCF11HP-223A	0.022μF	"	"
C254	QCF11HP-223A	"	"	"
C255	QCS11HJ-151	150pF	"	"
C256	QCF11HP-223A	0.022μF	"	"
C257	QEW41HA-105	1μF	"	Electrolytic
C258	QEW41AA-107	100μF	10V	"
C259	QEW41HA-105	1μF	50V	"
C271	QEW41CA-106	10μF	16V	"
C272	QEW41CA-106	"	"	"
C273	QEB41HM-224	0.22μF	50V	L.L.C. Electrolytic
C274	QEB41EM-106	10μF	25V	"
C275	QFS42BJ-471			Polystyrene
C276	QFM41HK-473	0.047μF	50V	Mylar
C277	QEW41CA-227	220μF	16V	Electrolytic
C278	QEB41HM-474	0.47μF	50V	L.L.C. Electrolytic
C279	QFM41HK-153	0.015μF	"	Mylar
C280	QFM41HK-153	"	"	"
C281	QFM41HK-182	1800pF	"	"
C282	QFM41HK-182	"	"	"
C283	QFM41HK-102	1000pF	"	"
C284	QFM41HK-102	"	"	"
C285	QEW41HA-474	0.47μF	"	Electrolytic
C286	QEW41HA-474	"	"	"
C288	QFM41HK-223	0.022μF	"	Mylar
C289	QFM41HK-562	5600pF	"	"
C290	QFM41HK-562	"	"	"
C291	QEW41CA-106	10μF	16V	Electrolytic
C301	QEB41HM-475	4.7μF	50V	"
C302	QEB41HM-475	"	"	"

Capacitors

Item No.	Part Number	Rating		Description
C303	QCS11HJ-331	330pF	50V	Ceramic
C304	QCS11HJ-331	"	"	"
C305	QEW41AA-107	100μF	10V	Electrolytic
C306	QEW41AA-107	"	"	"
C307	QFM41HK-102	1000pF	50V	Mylar
C308	QFM41HK-102	"	"	"
C309	QFM41HK-332	3300pF	"	"
C310	QFM41HK-332	"	"	"
C311	QEW41HA-475	4.7μF	"	Electrolytic
C312	QEW41HA-475	"	"	"
C313	QEW41CA-475	4.7μF	16V	"
C314	QEW41HA-476	47μF	50V	"
C315	QCF11HP-103	0.01μF	"	Ceramic
C321	QFM41HK-273	0.027μF	"	Mylar
C322	QFM41HK-273	"	"	"
C323	QCS11HJ-331	330pF	"	Ceramic
C324	QCS11HJ-331	"	"	"
C325	QFM41HK-102	1000pF	"	Mylar
C326	QFM41HK-102	"	"	"
C327	QCS11HJ-331	330pF	"	Ceramic
C328	QCS11HJ-331	"	"	"
C351	QEW41HA-105	1μF	"	Electrolytic
C352	QEW41HA-105	"	"	"
C353	QCS11HJ-391	390pF	"	Ceramic
C354	QCS11HJ-391	"	"	"
C355	QEW41CA-106	10μF	16V	Electrolytic
C356	QEW41CA-106	"	"	"
C357	QEW41CA-106	"	"	"
C358	QEW41CA-106	"	"	"
C359	QEW41CA-226	22μF	"	"
C360	QEW41CA-226	"	"	"
C361	QCS11HJ-100	10pF	50V	Ceramic
C362	QCS11HJ-100	"	"	"
C363	QCS11HJ-180	18pF	"	"
C364	QCS11HJ-180	"	"	"
C365	QEW41HA-226	22μF	"	Electrolytic
C366	QEW41HA-226	"	"	"
C367	QFM41HK-473	0.047μF	"	Mylar
C368	QFM41HK-473	"	"	"
C369	QFM41HK-122	1200pF	"	"
C370	QFM41HK-122	"	"	"
C401	QCF12HP-103	0.01μF	"	Ceramic
C402	QEW81VA-478	4700μF	35V	Electrolytic
C403	QEW81VA-478	"	"	"
C404	QEW41VA-477	470μF	"	"
C405	QEW41EA-107	100μF	25V	"
C406	QCF11HP-103	0.01μF	50V	Ceramic
C407	QCF11HP-103	"	"	"
C408	QCF11HP-103	"	"	"
C501	QEW41HA-106	10μF	"	Electrolytic
C502	QEW41HA-106	"	"	"
C503	QEW41VA-107	100μF	35V	"
C551	QEW41HA-106	10μF	50V	"
C552	QEW41HA-106	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R201	QRD181J-822	8.2kΩ	1/8W	Carbon
R202	QRD181J-822	"	"	"
R203	QRD181J-561	560Ω	"	"
R204	QRD181J-182	1.8kΩ	"	"
R205	QRD181J-681	680Ω	"	"
R206	QRD181J-471	470Ω	"	"
R207	QRD181J-100	10Ω	"	"
R208	QRD126J-331	330Ω	1/2W	Uninflammable Carbon
R209	QRD181J-471	470Ω	1/8W	Carbon
R210	QRD181J-471	"	"	"
R211	QRD181J-680	68Ω	"	"
R212	QRD181J-103	10kΩ	"	"
R213	QRD181J-472	4.7kΩ	"	"
R214	QRX129J-100	10Ω	1/2W	Uninflammable Metalized Film
R215	QRD181J-100	"	1/8W	Carbon
R216	QRD181J-102	1kΩ	"	"
R217	QRD181J-100	10Ω	"	"
R218	QRD181J-471	470Ω	"	"
R231	QRD181J-472	4.7kΩ	"	"
R232	QRD181J-821	820Ω	"	"
R233	QRD126J-561	560Ω	1/2W	Uninflammable
R234	QRD181J-152	1.5kΩ	1/8W	Carbon
R235	QRD181J-332	3.3kΩ	"	"
R236	QRD181J-223	22kΩ	"	"
R237	QRD181J-223	"	"	"
R238	QRD181J-224	220kΩ	"	"
R239	QRD181J-103	10kΩ	"	"
R240	QRD181J-823	82kΩ	"	"
R251	QRD181J-102	1kΩ	"	"
R252	QRD181J-183	18kΩ	"	"
R253	QRD181J-332	3.3kΩ	"	"
R254	QRD181J-472	4.7kΩ	"	"
R255	QRD181J-821	820Ω	"	"
R256	QRD181J-104	100kΩ	"	"
R257	QRD181J-102	1kΩ	"	"
R258	QRD181J-473	47kΩ	"	"
R259	QRD181J-224	220kΩ	"	"
R262	QRD181J-224	"	"	"
R271	QRD181J-154	150kΩ	"	"
R272	QRD181J-273	27kΩ	"	"
R273	QRD181J-472	4.7kΩ	"	"
R274	QRD181J-681	680Ω	"	"
R275	QRD181J-102	1kΩ	"	"
R276	QRD181J-163	16kΩ	"	"
R279	QVP4A0B-472	4.7kΩ		Variable
R280	QRD181J-105	1MΩ	1/8W	Carbon
R281	QRD126J-181	180Ω	1/2W	Uninflammable Carbon
R282	QRG129J-101	100Ω	"	Uninflammable O.M.
R283	QRD181J-392	3.9kΩ	1/8W	Carbon
R284	QRD181J-392	"	"	"
R285	QRD181J-472	4.7kΩ	"	"
R286	QRD181J-472	"	"	"
R287	QRD181J-104	100kΩ	"	"
R288	QRD181J-104	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R295	QRD181J-472	4.7kΩ	1/8W	Carbon
R297	QRD181J-223	22kΩ	"	"
R298	QRD181J-223	"	"	"
R299	QRD181J-222	2.2kΩ	"	"
R300	QRD181J-222	"	"	"
R301	QRD181J-222	"	"	"
R302	QRD181J-222	"	"	"
R303	QRD181J-104	100kΩ	"	"
R304	QRD181J-104	"	"	"
R305	QRD181J-104	"	"	"
R306	QRD181J-104	"	"	"
R307	QRD181J-102	1kΩ	"	"
R308	QRD181J-102	"	"	"
R309	QRD181J-824	820kΩ	"	"
R310	QRD181J-824	"	"	"
R311	QRD181J-753	75kΩ	"	"
R312	QRD181J-753	"	"	"
R313	QRD181J-105	1MΩ	"	"
R314	QRD181J-105	"	"	"
R315	QRD181J-473	47kΩ	"	"
R316	QRD181J-473	"	"	"
R318	QRD181J-223	22kΩ	"	"
R319	QVP4A0B-223	"		Variable
R320	QRD181J-391	390Ω	1/8W	Carbon
R321	QRD181J-472	4.7kΩ	"	"
R322	QRD181J-472	"	"	"
R323	QRD181J-153	15kΩ	"	"
R324	QRD181J-153	"	"	"
R325	QRD181J-105	1MΩ	"	"
R326	QRD181J-105	"	"	"
R327	QRD181J-102	1kΩ	"	"
R328	QRD181J-102	"	"	"
R351	QRD181J-224	220kΩ	"	"
R352	QRD181J-224	"	"	"
R353	QRD181J-184	180kΩ	"	"
R354	QRD181J-184	"	"	"
R355	QRD181J-102	1kΩ	"	"
R356	QRD181J-102	"	"	"
R357	QRD181J-103	10kΩ	"	"
R358	QRD181J-103	"	"	"
R359	QRG129J-152	1.5kΩ	1/2W	Uninflammable O.M.
R360	QRG129J-152	"	"	"
R361	QRD181J-102	1kΩ	1/8W	Carbon
R362	QRD181J-102	"	"	"
R363	QRD181J-122	1.2kΩ	"	"
R364	QRD181J-122	"	"	"
R365	QRD181J-184	180kΩ	"	"
R366	QRD181J-184	"	"	"
R367	QRD181J-562	5.6kΩ	"	"
R368	QRD181J-562	"	"	"
R369	QRD181J-472	4.7kΩ	"	"
R370	QRD181J-472	"	"	"
R371	QRG129J-272	2.7kΩ	1/2W	Uninflammable O.M.
R372	QRG129J-272	"	"	"
R373	QRG129J-392	3.9kΩ	"	O.M.

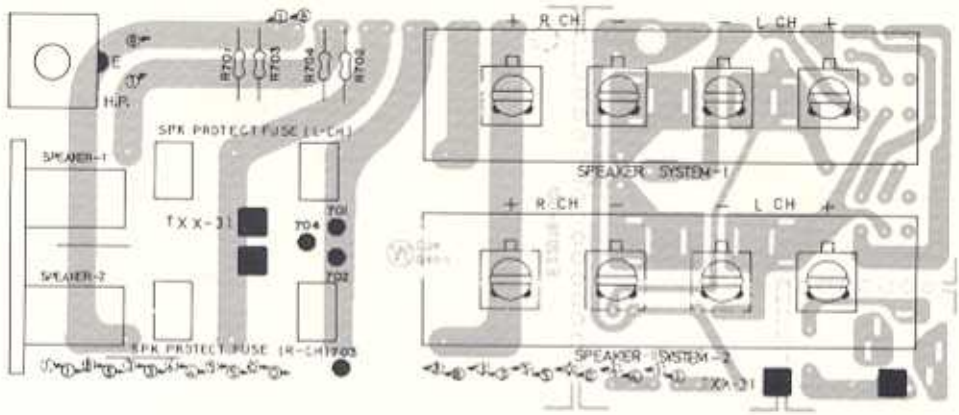
Resistors

Item No.	Part Number	Rating		Description
R374	QRG129J-392	3.9kΩ	1/2W	O.M.
R375	QRD181J-222	2.2kΩ	1/8W	Carbon
R376	QRD181J-222	"	"	"
R377	QVP4A0B-102	1kΩ		Variable
R378	QVP4A0B-102	"		"
R379	QRG129J-102	"	1/2W	Uninflammable O.M.
R380	QRG129J-102	"	"	"
R381	QRG129J-391	390Ω	"	Uninflammable Carbon
R382	QRG129J-391	"	"	"
R383	QRG129J-391	"	"	"
R384	QRG129J-391	"	"	"
R385	QRM024K-R47	0.47Ω	2W	Metal Plate
R386	QRM024K-R47	"	"	"
R387	QRM024K-R47	"	"	"
R388	QRM024K-R47	"	"	"
R389	QRX129J-100	10Ω	1/2W	Uninflammable M.F.
R390	QRX129J-100	"	"	"
R402	QRG129J-392	3.9kΩ	"	O.M.
R403	QRG129J-102	1kΩ	"	Uninflammable O.M.
R501	QRG129J-272	2.7kΩ	"	"
R502	QRD181J-105	1MΩ	1/8W	Carbon
R503	QRD181J-104	100kΩ	"	"
R551	QRD181J-103	10kΩ	"	"
R552	QRD181J-123	12kΩ	"	"
R553	QRD181J-393	39kΩ	"	"
R554	QRD181J-153	15kΩ	"	"
R555	QRD181J-273	27kΩ	"	"
R556	QRD181J-683	68kΩ	"	"
R557	QRD181J-104	100kΩ	"	"
R559	QRD181J-564	560kΩ	"	"
R560	QRD181J-564	"	"	"
R561	QRD181J-682	6.8kΩ	"	"
R562	QRD181J-154	150kΩ	"	"
R563	QRD181J-334	330kΩ	"	"
R564	QRG129J-180	18Ω	1/2W	O.M.F.

Others

Item No.	Part Number	Rating	Description
	E03546-009		FM Front End
	E03628-5		5 Pins Plug
	E34083-002		Heat Sink
	E46449-004		Bracket
	E46934-001		"
	E46934-002		Bracket (B)
	E49003-002		Shield Cover
	QSP0289-103		Push Switch
	SBSB3008Z		Tapping Screw
	E60171-001		Heat Sink (X401 2SD325)

8-(2) TXX-31A Speaker C.B. Ass'y



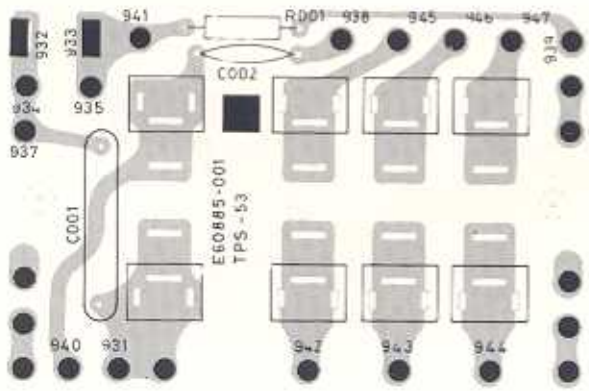
Resistors

Item No.	Part Number	Rating		Description
R701	QRD126J-221	220Ω	1/2W	Uninflammable Carbon
R702	QRD126J-221	"	"	"
R703	QRD126J-102	1kΩ	"	"
R704	QRD126J-102	"	"	"

Others

Item No.	Part Number	Rating	Description
	QSP0229-004		Push Switch
	QMS6301-001		Jack Ass'y
	E03572-004C		Speaker Terminals Board
	E45524-001		Contact Clip

8-(3) TPS-531 Fuse C.B. Ass'y



Different assemblies are used in units intended for different areas. Make sure of where the unit was sold. Refer to page 26.

Capacitor

Item No.	Part Number	Rating		Description
C003	QCZ9008-101	100pF	500V	Ceramic

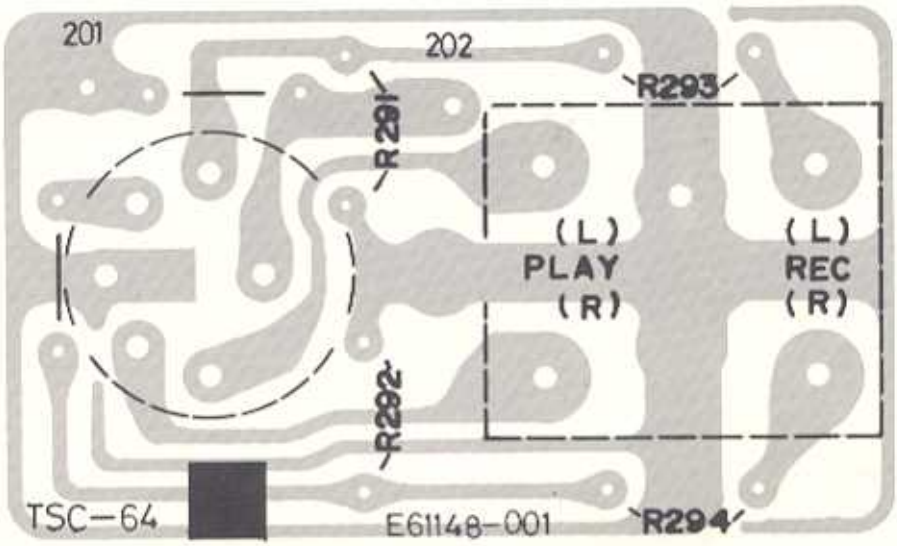
Resistor

Item No.	Part Number	Rating		Description
R001	QRC121K-275E	2.7kΩ	1/2W	Composition

Other

Item No.	Part Number	Rating	Description
	E60885-002		Contact Clip (Fuse)

8-(4) TSC-64 Tape C.B. Ass'y



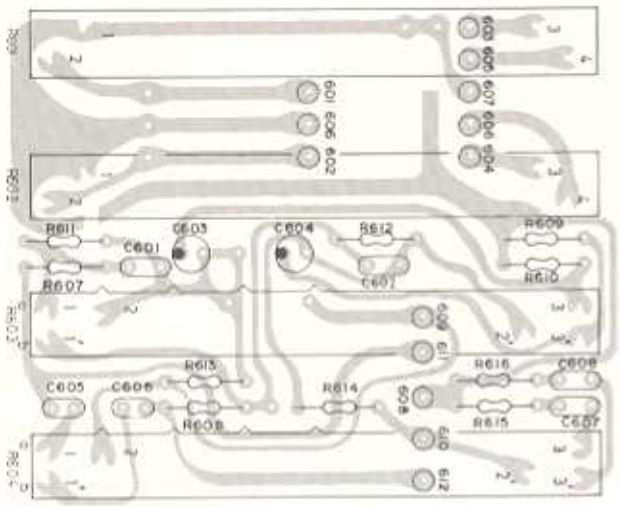
Resistors

Item No.	Part Number	Rating		Description
R291	QRD181J-124	120kΩ	1/8W	Carbon
R292	QRD181J-124	"	"	"
R293	QRD181J-334	330kΩ	"	"
R294	QRD181J-334	"	"	"

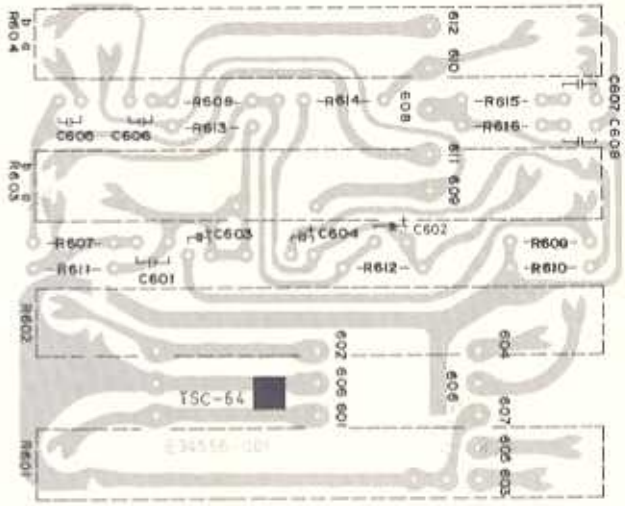
Others

Item No.	Part Number	Rating	Description
	E03591-41D		4 Pins Jack Ass'y (Rec. & Play)
	E03623-002		DIN Socket

8-(5) TAC-404 Volume & Tone Control C.B. Ass'y



Front View



Rear View

Capacitors

Item No.	Part Number	Rating		Description
C601	QFM41HK-273	0.027μF	50V	Mylar
C602	QFM41HK-273	"	"	"
C603	QEB41HM-224	0.22μF	"	Low Leakage Current Electrolytic
C604	QEB41HM-224	"	"	"
C605	QFM41HK-332	3300pF	"	Mylar
C606	QFM41HK-332	"	"	"
C607	QFM41HK-333	0.033μF	"	"
C608	QFM41HK-333	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R601	QVT6C2B-5G5E	150kΩ		Variable
R602	QVT6C2B-5G5E	"		"
R603	QVR4C2C-215	100kΩ		"
R604	QVR4C2C-215	"		"
R607	QRD141J-123	12kΩ	1/4W	Carbon
R608	QRD141J-123	"	"	"
R609	QRD141J-152	1.5kΩ	"	"
R610	QRD141J-152	"	"	"
R611	QRD141J-104	100kΩ	"	"
R612	QRD141J-104	"	"	"
R613	QRD141J-182	1.8kΩ	"	"
R614	QRD141J-182	"	"	"
R615	QRD141J-561	560Ω	"	"
R616	QRD141J-561	"	"	"

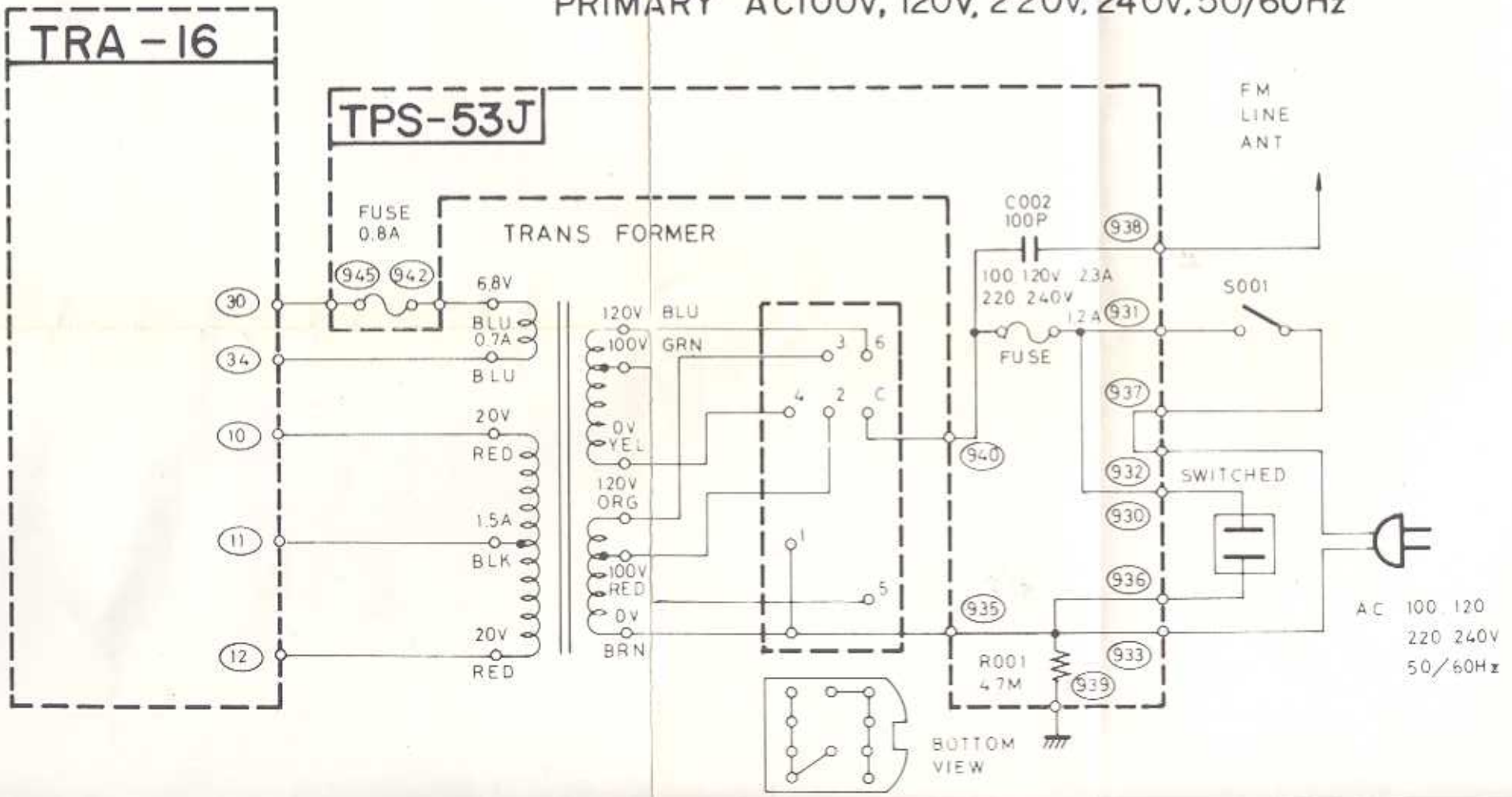
Others

Item No.	Part Number	Rating	Description
	E34428-001		Control Bracket
	E60882-001		Felt Spacer
	SSSP3006NS		Screw

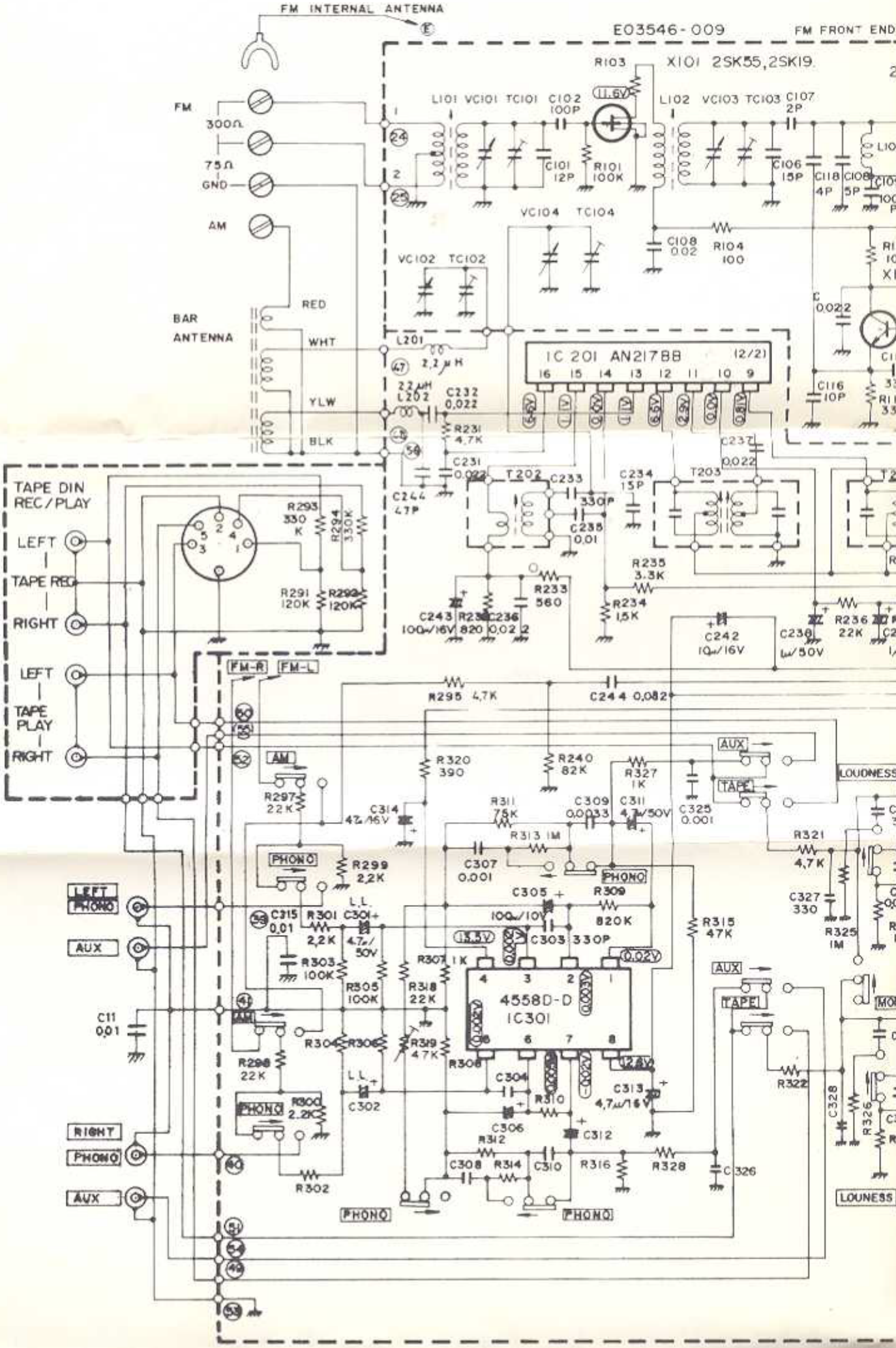
(P) FOR PACEX

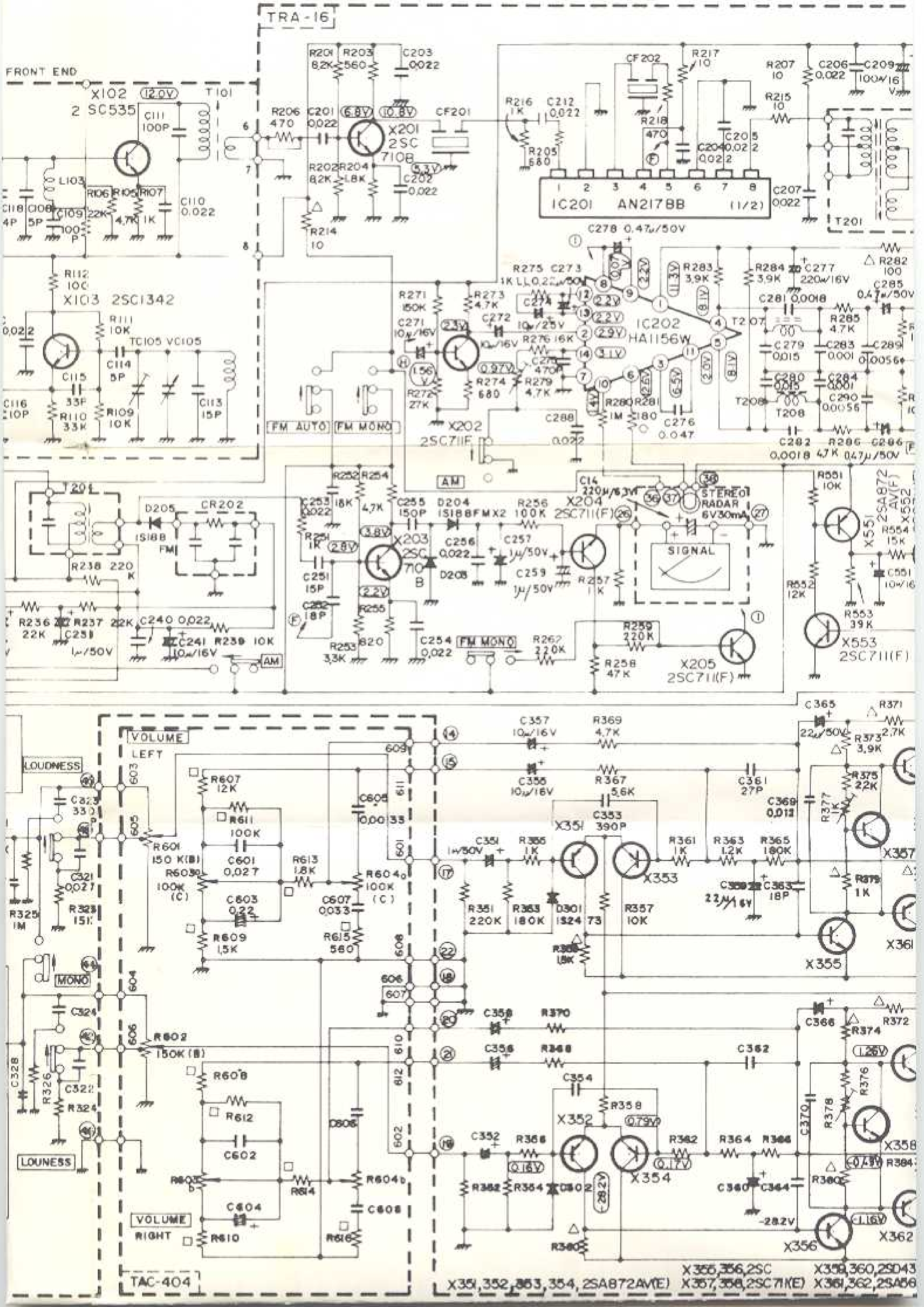
(U) FOR OTHER COUNTRIES

PRIMARY AC100v, 120v, 220v, 240v, 50/60Hz

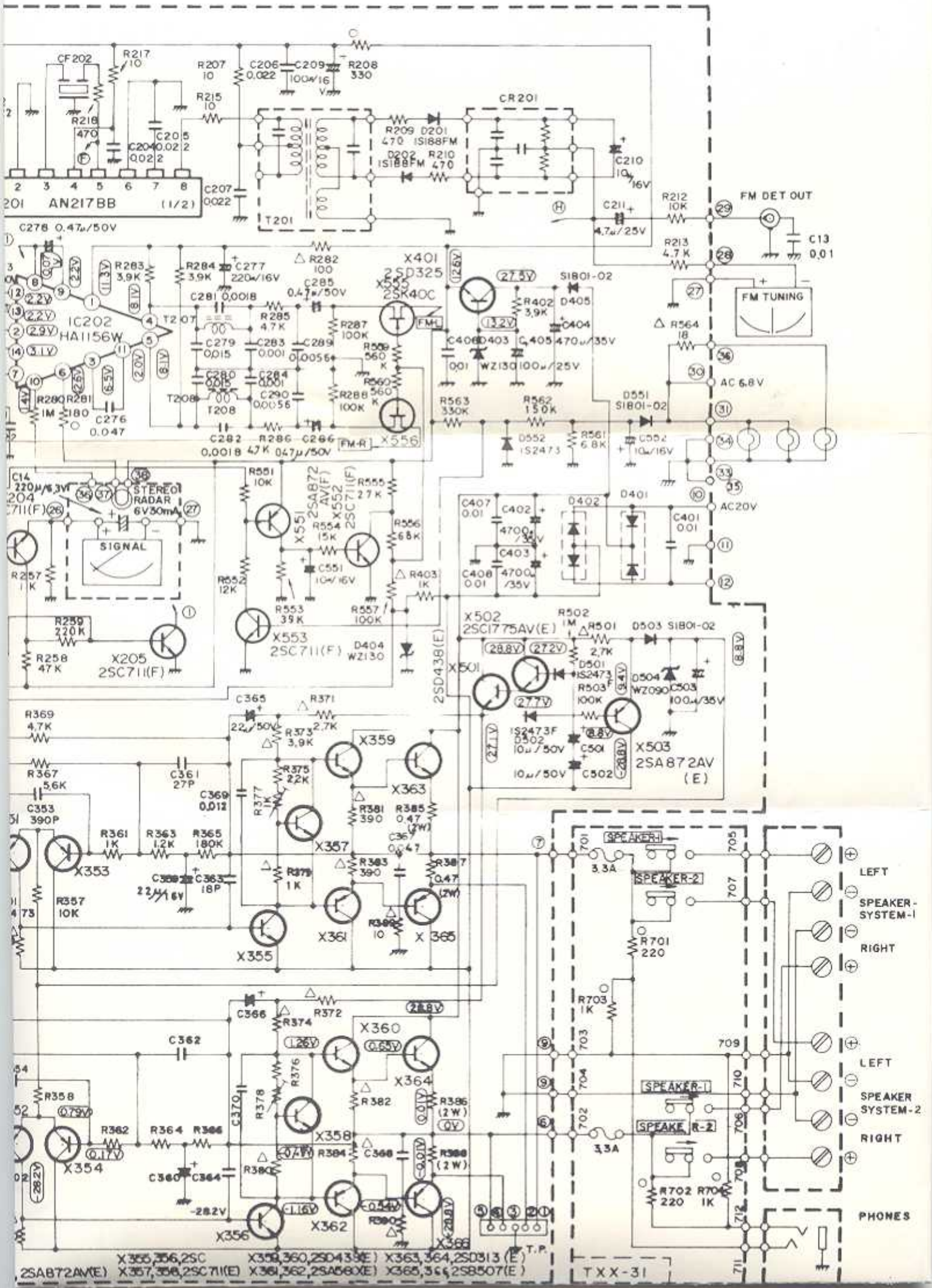


13. Schematic Diagram





TRA-16
FRONT END
X102 2SC535
12.0V
T101
C111 100P
L103
R106
R105
R107
C110 0.022
C118
C108 5P
C109
R112 100
X103 2SC1342
R111 10K
TC105 VC105
C114 5P
C115 33P
C116 10P
R110 33K
R109 10K
C113 15P
R201 8.2K
R203 560
C203 0.022
R206 470
C201 0.022
6.8V
10.8V
X201 2SC 710B
CF201
R202 8.2K
R204 1.8K
C202 0.022
5.3V
R214 10
R216 1K
C212 0.022
R205 680
CF202
R217 10
R218 470
C204 0.022
C205 0.022
R207 10
C206 0.022
C209 100μ/16V
R215 10
IC201 AN217BB (1/2)
C207 0.022
T201
C278 0.47μ/50V
R275 1K
C273 0.22μ/50V
R283 3.9K
R284 3.9K
C277 220μ/16V
R282 100
C285 0.47μ/50V
R271 150K
R273 4.7K
C271 10μ/16V
C272 10μ/16V
C274 10μ/25V
R276 16K
IC202 HA1156W
T207
C281 0.0018
R285 4.7K
C279 0.015
C283 0.001
C289 0.0056
C280 0.015
C284 0.001
C290 0.0056
T208
R272 27K
R274 680
R279 4.7K
R280 1M
R281 180
C276 0.047
C288 0.022
C282 0.0018
R286 4.7K
C286 0.47μ/50V
FM AUTO
FM MONO
X202 2SC711F
AM
T204
D205 1S188
CR202
FM
R238 220K
R252
R254
C253 0.022
18K
4.7K
C255 150P
D204 1S188FMX2
R256 100K
C14 220μ/6.3V
X204 2SC711(F)
STEREO RADAR 6V30mA
SIGNAL
R551 10K
X551 2SA872
R554 15K
C551 10μ/16V
R552 12K
R553 39K
X553 2SC711(F)
R251 1K
2.8V
3.8V
X203 2SC 710 B
C256 0.022
C257 1μ/50V
C259 1μ/50V
R257 1K
D203
C251 15P
C252 18P
2.2V
R255
R253 3.3K
820
C254 0.022
FM MONO
R262 220K
R259 220K
R258 47K
X205 2SC711(F)
R236 22K
R237 22K
C231 1μ/50V
C240 0.022
C241 10μ/16V
R239 10K
AM
VOLUME
LEFT
LOUDNESS
C323 330P
C321 0.027
R325 1M
R323 15K
R607 12K
R611 100K
C601 0.027
R601 150K(B)
R603a 100K (C)
R613 1.8K
C603 0.22
R609 1.5K
C605 0.0033
R604a 100K (C)
C607 0.033
R615 560
C357 10μ/16V
R369 4.7K
C355 10μ/16V
R367 5.6K
C361 27P
C353 390P
X351
X353
C351 1μ/50V
R355 1K
R361 1K
R363 1.2K
R365 180K
C369 0.012
C359 22μ/16V
C363 18P
R351 220K
R353 180K
D301 1S24 73
R357 10K
R359 1.5K
C365 22μ/50V
R371 2.7K
R373 3.9K
R375 22K
R377 1K
R379 1K
X357
X361
X355
MONO
C324
R602 150K(B)
C328
R326
C322
R324
LOUNESS
R608
R612
C602
R603b
R614
C604
VOLUME RIGHT
R610
C606
R604b
C608
R616
TAC-404
C358
R370
C356
R368
C362
C354
R358
X352
0.79V
C352
R356
0.16V
X354
0.17V
R362
R364
R366
R352
R354
D302
-28.2V
R360
C360
C364
C366
R374
R372
1.26V
R376
R378
C370
X358
0.47V
R380
R384
1.16V
X356
X362
X351,352,353,354, 2SA872AV(E)
X355,356,2SC
X357,358,2SC711K(E)
X359,360,2SD43
X361,362,2SA68


CF202
R217 10
R218 470
C205 0.022
C204 0.022
R207 10
C206 0.022
C209 100u/16V
R208 330
R215 10
CR201
R209 D201 470 1S188FM
D202 1S188FM R210 470
C210 10u/16V
C207 0.022
T201
AN217BB (1/2)
C278 0.47u/50V
R212 10K
FM DET OUT
C13 0.01
R213 4.7K
FM TUNING
R564 18
AC 6.8V
AC20V
R282 100
X401 2SD325
X555 2SK40C
R402 3.9K
D405 S1801-02
C404 470u/35V
C405 100u/25V
C406 0.01
D403 WZ130
C407 0.01
C402 4700u/35V
C403 4700u/35V
C408 0.01
D402
D401
C401 0.01
R283 3.9K
R284 3.9K
C277 220u/16V
C285 0.47u/50V
C281 0.0018
R285 4.7K
R287 100K
R288 100K
C279 0.015
C283 0.001
C289 0.0056
C280 0.015
C284 0.001
C290 0.0056
R289 560K
R560 560K
T207
T208
IC202 HA1156W
R280 1M
R281 180
C276 0.047
C282 0.0018
R286 47K
C286 0.047u/50V
FM-R
X556
R563 330K
R562 150K
D551 S1801-02
D552 1S2473
R561 6.8K
C552 10u/16V
C14 220u/6.3V
STEREO RADAR 6V30mA
SIGNAL
R257 1K
R259 220K
R258 47K
X205 2SC711(F)
R551 10K
X551 2SA872 AV(F)
X552 2SC711(F)
R555 2.7K
R554 15K
R556 68K
C551 10u/16V
R403 1K
R552 12K
R553 39K
R557 100K
X553 2SC711(F)
D404 WZ130
X502 2SC1775AV(E)
R502 1M
R501 2.7K
D503 S1801-02
D501 1S2473
R503 100K
D504 WZ090
C503 100u/35V
C501 10u/50V
C502 10u/50V
X501 2SD438(E)
X503 2SA872AV (E)
R369 4.7K
C365 22u/50V
R371 2.7K
R373 3.9K
X359
X363
R367 5.6K
C361 27P
C369 0.012
R375 2.2K
R377 1K
R381 390
R385 0.47 (2W)
C367 0.047
X357
C353 390P
R361 1K
R363 1.2K
R365 180K
X353
R357 10K
C368 22u/16V
C363 18P
R379 1K
R383 390
R387 0.47 (2W)
R388 10
X361
X365
X355
C366
R374
R372
X360
X364
C362
R376
R378
C370
R382
R386 (2W)
R358
R362
R364
R366
X358
X354
C360
C364
R384
C368
R380
R390
X362
X356
X366
T.P.
SPEAKER-1
SPEAKER-2
3.3A
R701 220
R703 1K
R702 220
R704 1K
LEFT
SPEAKER-SYSTEM-1
RIGHT
LEFT
SPEAKER SYSTEM-2
RIGHT
PHONES
TXX-31
X355,356,2SC2SA872AV(E)
X357,358,2SC711(E)
X359,360,2SD438(E)
X361,362,2SA568(E)
X363,364,2SD313(E)
X365,366,2SB507(E)