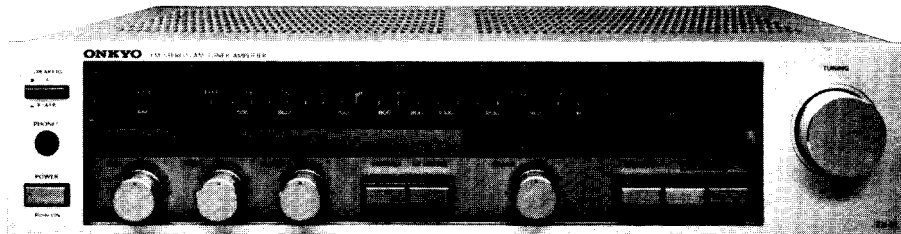


ONKYO® SERVICE MANUAL

FM/AM STEREO RECEIVER MODEL TX11, TX11L

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ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION:

Output Power:	20 watts per channel, min, RMS at 8 ohms, both channels driven, from 40 Hz to 20,000 Hz with no more than 0.08% THD.
Total Harmonic Distortion:	0.08% at rated power 0.08% at 1 watt output
IM Distortion:	0.1% at rated power 0.08% at 1 watt output
Damping Factor:	30 at 8 ohms
Frequency Response:	30 – 25,000 Hz (± 1 dB)
RIAA Deviation:	20 – 20,000 Hz (± 1.5 dB)
Sensitivity & Impedance:	Phono: 2.5 mV, 50 kohms Tape Play: 150 mV, 50 kohms Tape Rec: 150 mV, 3.5 kohms (PH)
Phono Overload:	100 mV RMS at 1kHz, 0.08% THD
Signal-to-Noise Ratio:	Phono: 83 dB (at 10 mV input, A weighted) 73 dB (IHF A-202) Tape: 95 dB (A weighted) 80 dB (IHF A-202)
Tone Controls:	Bass: ± 12 dB at 100 Hz Treble: ± 10 dB at 10 kHz
Loudness (-30 dB):	+9 dB at 40 Hz +5 dB at 20 kHz

TUNER SECTION:

FM

Tuning Range:	87.5 – 108 MHz
Usable Sensitivity:	Mono: 13.2 dBf, 2.5 μ V Stereo: 19.2 dBf, 5 μ V
50 dB Quieting Sensitivity:	Mono: 19.2 dBf, 5 μ V Stereo: 41.0 dBf, 60 μ V
Capture Ratio:	1.8 dB
Image Rejection Ratio:	45 dB
IF Rejection Ratio:	75 dB
Spurious Rejection Ratio:	70 dB
Signal-to-Noise Ratio:	Mono: 70 dB Stereo: 65 dB
Selectivity:	50 dB (± 300 kHz, 40 kHz Devi.) (G model)
Alternate Channel Att:	50 dB (D/W models)
AM Suppression Ratio:	45 dB
Harmonic Distortion:	Mono: 0.3% Stereo: 0.5%
Frequency Response:	30 – 15,000 Hz (± 2.0 dB)
Stereo Separation:	35 dB at 1kHz
Muting Level:	17.2 dBf, 4 μ V
Stereo Threshold:	17.2 dBf, 4 μ V

AM

Tuning Range:	525 – 1620 kHz
Usable Sensitivity:	30 μ V
Image Rejection Ratio:	40 dB
IF Rejection Ratio:	30 dB
Signal-to-Noise Ratio:	40 dB
Harmonic Distortion:	1.0%

AM (MW/LW: Model TX-11L only):

Tuning Range:	MW: 525 – 1620 kHz LW: 150 – 370 kHz
Usable Sensitivity:	MW: 30 μ V LW: 60 μ V
Image Rejection Ratio:	MW/LW: 40 dB
IF Rejection Ratio:	MW: 30 dB LW: 25 dB
Signal-to-Noise Ratio:	MW: 40 dB LW: 36 dB
Harmonic Distortion:	MW: 1.0% LW: 0.8%

GENERAL:

Power Supply:	AC 120 V, 60 Hz (Dmodel) AC 220 V, 50 Hz (G model) AC 120/220 V, 50/60 Hz (W model) AC 240 V, 50 Hz (Q model)
Outputs:	Speaker A & B, Phones, Tape Rec Out, AC outlet (D model)
Inputs:	Phono, Tape Play, FM and AM antennas
Antennas:	FM: 300 ohms balanced and 75 ohms unbalanced. MW/LW: Built-in loop antenna and external terminal
Semiconductors:	2 FETs, 9 transistors, 7 ICs, 13 diodes (G model) 1 FETs, 9 transistor, 7 ICs, 13 diodes (D/W models)
Dimensions (WxHxD)	418 x 100 x 326 mm 16-1/2" x 4" x 12-7/8"
Weight:	5.8 kg. 12.8 lbs.

Specifications and features are subject to change without notice.

PRECAUTIONS

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

1 AC fuse

Remove the top cover.

F901	3A-(ST-6)	(Parts No. : 252048) (Only D model)
F901	1.6A-SE-EAK	(Parts No. : 252073) (Only G/W model)
F902	3A-T	(Parts No. : 252003) (Only W model)

TX-11L

F901	1.6-SE-EAK	(Parts No. : 252073)
F911, F912	4A-SE-EAK	(Parts No. : 252077)
F914	250mA-SE-EAK	(Parts No. : 252088)
F913	0.5A-SE-EAK	(Parts No. : 252063)

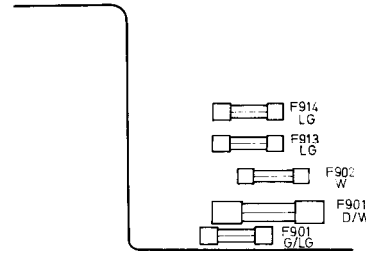
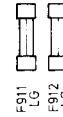
2 Speaker fuse

Remove the top cover.

F501, F601	3A (SS-2)	(Parts No. : 252006) (Only D model)
	3.15A-SE-EAK	(Parts No. : 252076) (Only G model)
	3A-T	(Parts No. : 252003) (Only W model)
	3.15A-SE-EAK	(Parts No. : 252076) (TX-11L)

2. De-emphasis switch (Only W model)

The 50 μ sec/75 μ sec selector switch employed in the W (120/220 V) model is located on the bottom board. When shipped from the factory, this switch is set to the 50 μ sec position. For use in 75 μ sec regions, switch over to the 75 μ sec position.



3. Voltage Selector (Rear Panel)

Some models are equipped with a voltage selector to conform with local power supplies.

Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

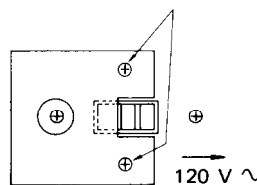
When changing the voltage setting, remove the lock plate covering the switch, then set the voltage to the correct value.

Voltage is changed by sliding the groove in the switch with a screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.

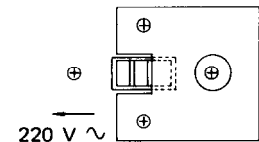
If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.

Voltage Selector Lock Plate

Remove these two screws to take off the voltage selector lock plate.

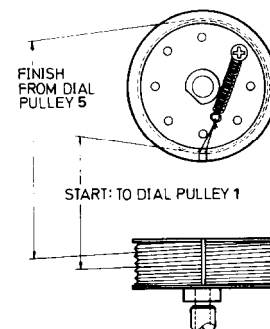
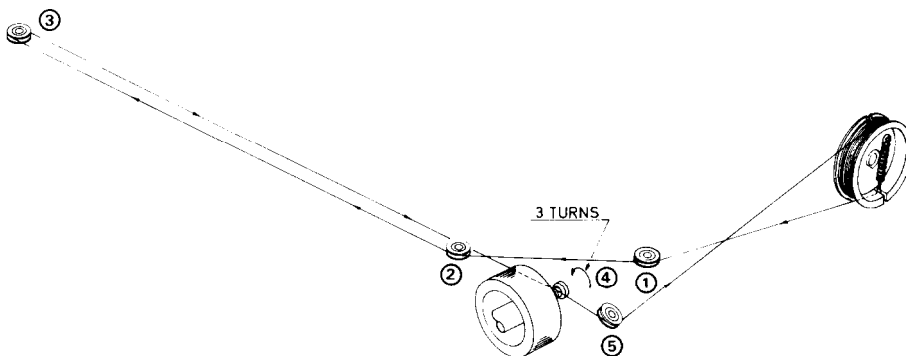


at AC 120 V



at AC 220 V

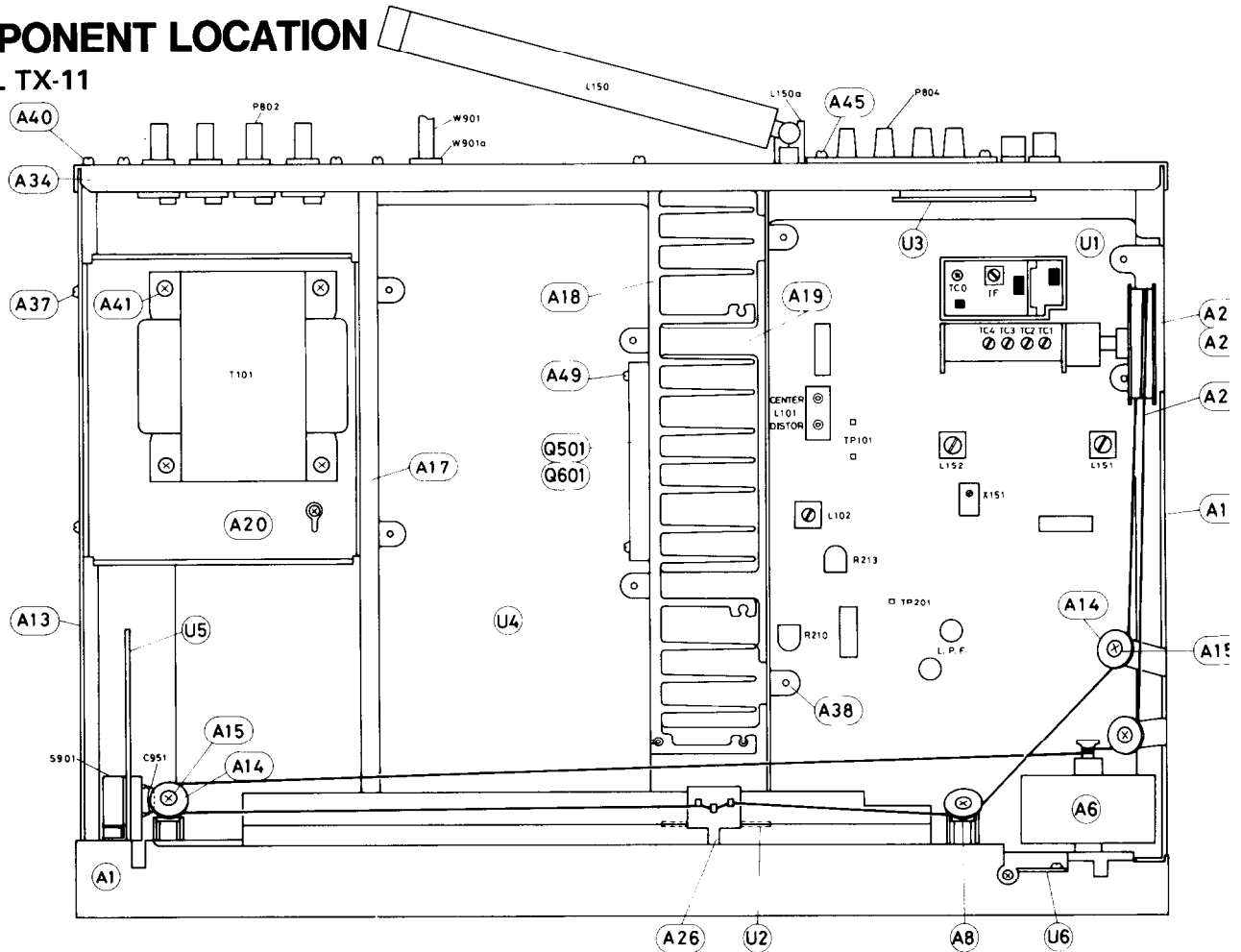
STRINGING DIAGRAM



1. Close the variable capacitor complete and tie the dial cord to the spring of the drum.
2. Thread the stringing in the direction of arrow from 1 to 3 and wind the stringing three turns around the tuning shaft counter clockwise.
3. Thread the stringing to 5.
4. Wind the 1½ turns around the dial drum.

COMPONENT LOCATION

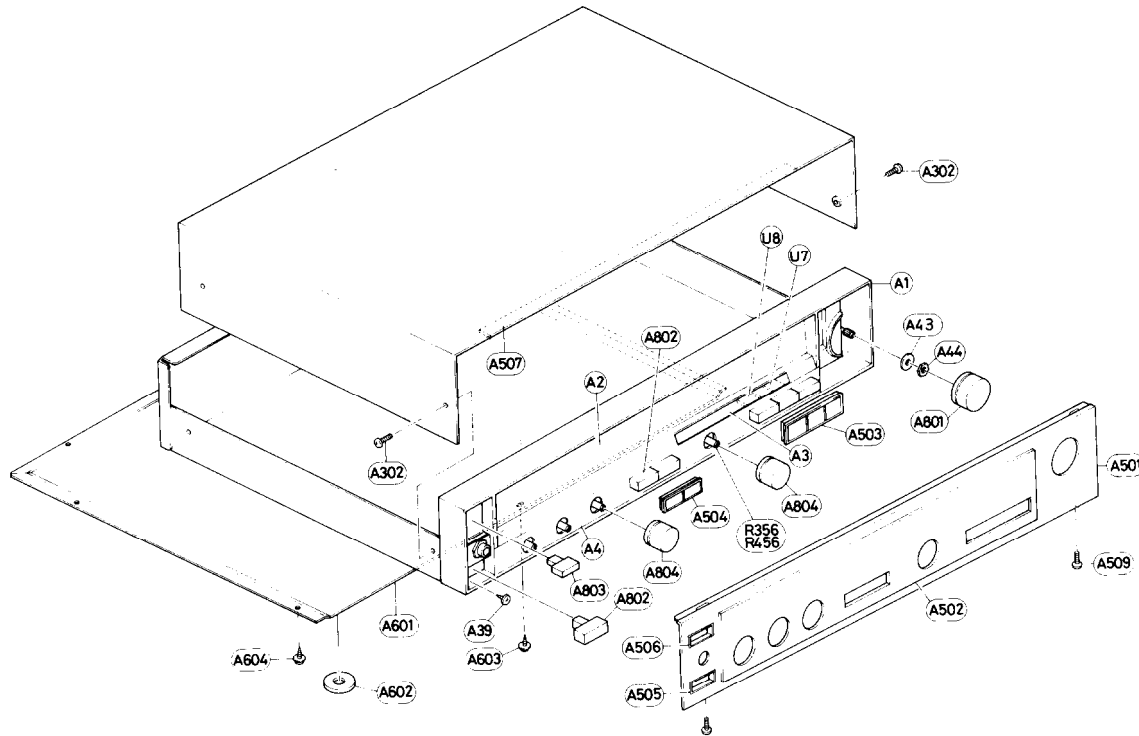
MODEL TX-11



REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	13318901	Front bracket ass'y (A3, A4)	A49	834130168	3TTS+16B, Tap screw
A2	28130142A	Dial plate	A50	838130068	3TTB+6B, Tap screw
A3	28130143	Plate, signal indicator	A301	28184144	Top cover
A4	27262169A	Plate	A302	834430068	3TTS+6B (BC), Tap screw
A6	27205018	Drive shaft	A501	13318121	Front panel ass'y
A7	27150143	Shielded plate	A502	28191127	Clear plate
A8	27140501	Bracket, dial pulley	A503	27267183	Guide
A12	27115109	Side bracket, right side	A504	27267184	Guide
A13	27115110A	Side bracket, left side	A505	27267179	Guide, power
A14	27185002A	DP-16, Dial pulley	A506	27267180	Guide, speaker
A15	801147A	Screw for dial pulley	A507	28140024	Cushion
A17	27115108	Bracket, center	A509	833130080	3TTS+8P, Tap screw
A18	27160102A	Radiator	A601	27170128A	Bottom board
A19	27130301	Bracket	A602	27175011C	Leg
A20	27130300	Bracket, power transformer	A603	831130080	3TTW+8P, Tap screw
A22	27200027	Dial drum	A604	831130068	3TTW+6B, Tap screw
A23	273803	SP-14A, Spring, dial drum	A801	28320763	Knob, tuning
A24	273903	Stringing	A802	28320760	Knob, power
A26	28165061	Pointer ass'y	A803	28320761	Knob
A34	27120371A	Back panel [D]	A804	28320790	Knob, volume
	27120372A	Back panel [G]	C552, C662	335341025	1,000pF, 50V, Ceramic capacitor
	27120373A	Back panel [W]	C801	379124737	0.047 μ F \pm 20%, 50V, Capacitor, DEW
A37	834130068	3TTS+6B, Tap screw	C803	330924730	0.047 μ F, 50V, Capacitor, ceramic
A38	831130088	3TTW+8B, Tap screw	C951	3500060	0.01 μ F, 125V, Capacitor, CS [D]
A39	834130088	3TTS+8B, Tap screw	C951	3500065A	0.01 μ F, 400V, Capacitor, IS [G/W]
A40	834130108	3TTS+10B, Tap screw	C951a	27300080	Cover, capacitor
A41	834140108	4TTS+10B, Tap screw	F501, F601	252006	3A (SS-2), Speaker protection fuse [D]
A42	82113006	3P+6FN, Pan head screw		252076	3.15A-SE-EAK, Speaker protection fuse [G]
A43	87619014	W9 \times 14F, Washer	F901	252048	3A (ST-6), AC fuse [D]
A44	8631901	N-9F, Nut			
A45	834230108	3TTS+10B (Ni), Tap screw			
A48	833130080	3TTP+8P, Tap screw			

EXPLODED VIEW

TX-11

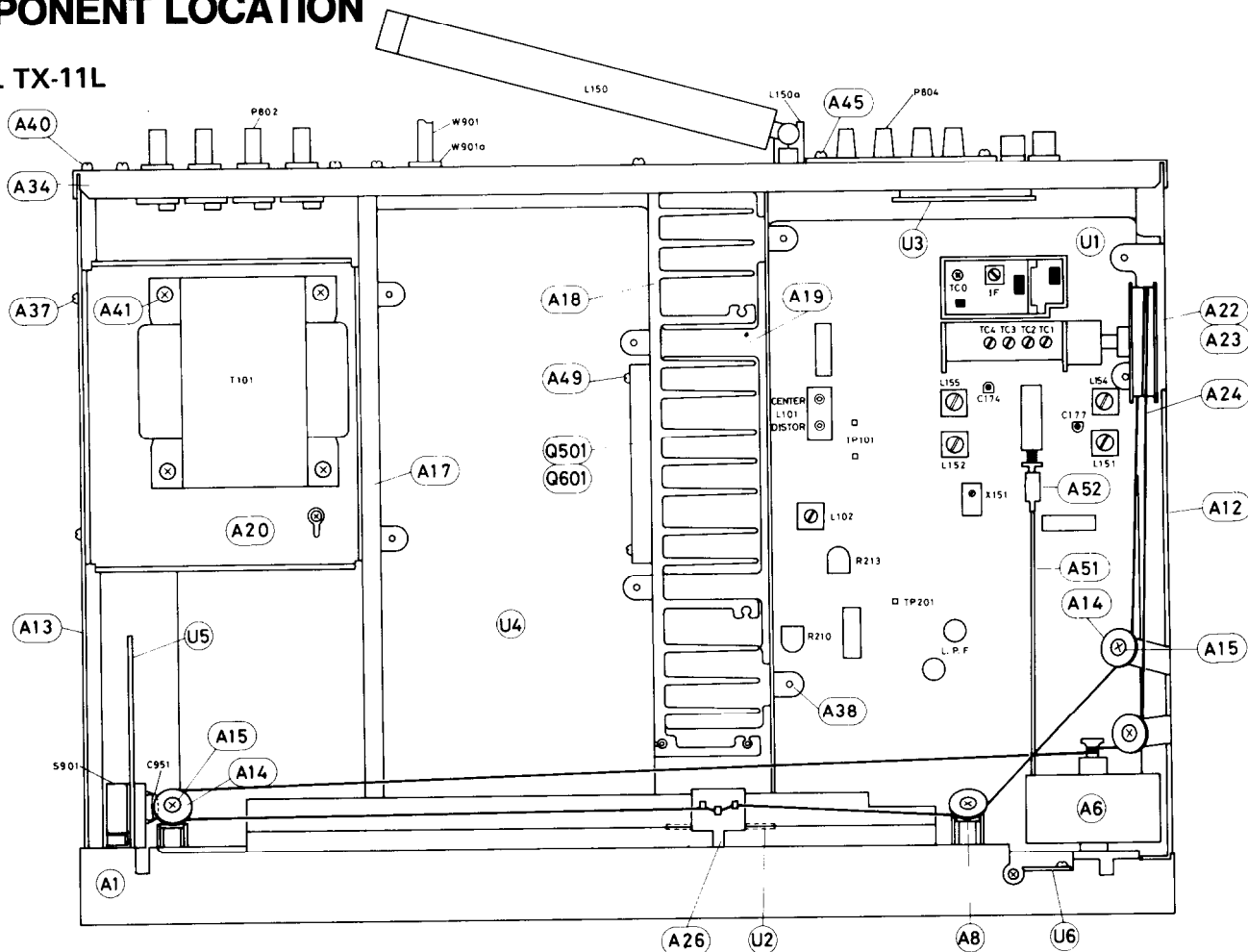


REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
F901	252073	1.6A-SE-EAK, AC fuse [G]	13320525E		NARF-1325e, FM/AM tuner and equalizer amplifier pc board ass'y [W]
F501, F601	252003	3A-T, Speaker protection fuse [W]			
F901	252073	1.6A-SE-EAK, AC fuse [W]	U2	13318526	NADIS-1326, Signal indicator pc board ass'y
F902	252003	3A-T, AC fuse [W]	U3	13318527	NAPJ-1327, Input/output terminal pc board ass'y [D]
L150	232098	NMA-3040, AM loop antenna		13324527A	NAPJ-1327a, Input/output terminal pc board ass'y [G/W]
L150a	27190129	Holder, antenna	U4	13318530	NAAF-1330, Pre., and power amplifier pc board ass'y [D]
P802, P803	25060049	NTM-4PRMN18, Speaker terminal		13324530A	NAAF-1330a, Pre., and power amplifier pc board ass'y [G]
P804	25060035	NTM-4PRMC06, Antenna terminal		13320530D	NAAF-1330d, Pre., and power amplifier pc board ass'y [W]
P805	25045088	Conector, FM antenna [G]	U5	13318531	NASW-1331, Switch pc board ass'y
P805a	870057	Toothed washer	U6	13318532	NAPL-1332, Lamp pc board ass'y
P901	25050046A	NSCT-2P15, AC outlet [D]	U7	13318536	NADIS-1336, Stereo indicator pc board ass'y
Q501, Q601	222016	STK-459, Power amplifier IC	U8	13318537	NADIS-1337, Tuned indicator pc board ass'y
R801	431523355	3.3M Ω , 1/2W, Solid resistor [D]	W901	253099A	AS-U-3, Power supply cable [D]
R356, R456	5147016	N16RG100KBT30, Volume control variable resistor		253083	AS-CEE, Power supply cable [G/W]
S901	25035135 or 25035321	NPS-111-L100P or NPS-111-L285P, Power switch [D]	W901a	270025	SR-3P-4, Strainrelief [D]
S901	25035176 or 25035322	NPS-111-L140 or NPS-111-L286P, Power switch [G/W]		270280	SR-4K-4, Strainrelief [G/W]
T901	25065123	NPS-1258P, Voltage selector [W]			
	230590	NPT-772D, Power transformer [D]			
	230591	NPT-772G, Power transformer [G]			
	230592	NPT-772DG, Power transformer [W]			
U1	13318525	NARF-1325, FM/AM tuner and equalizer amplifier pc board ass'y [D]			
	13324525A	NARF-1325a, FM/AM tuner and equalizer amplifier pc board ass'y [G]			

Note: D: Only 120 V model
 G: Only 220 V model
 W: Only 120/220 V model

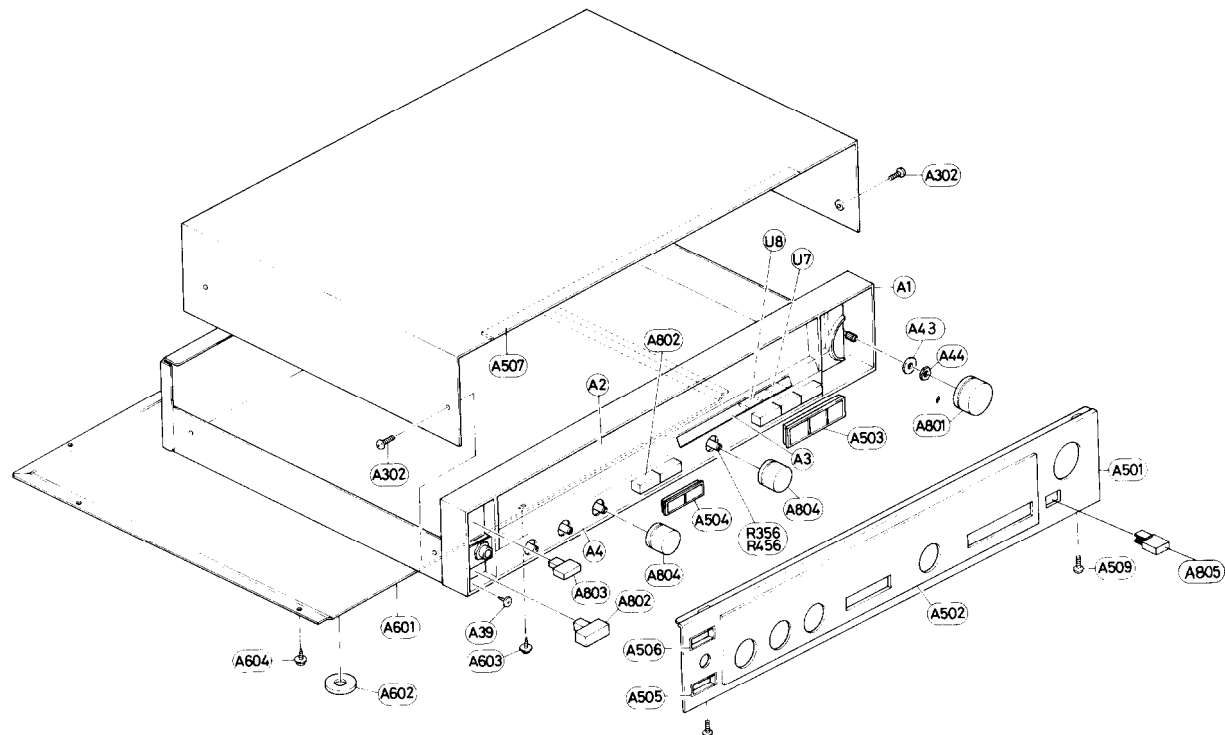
COMPONENT LOCATION

MODEL TX-11L



REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	13318901	Front bracket	A40	834130108	3TTS+10B, Tap screw
A2	28130144	Dial plate	A41	834140108	4TTS+10B, Tap screw
A3	28130143A	Plate S	A42	82113006	3P+6FN, Pan head screw
A4	27262169A	Plate	A43	87619014	W9x14F, Washer
A6	27205018	Drive shaft	A44	8631901	N-9F, Nut
A7	27150143	Shielded plate	A45	834230108	3TTS+10B (Ni), Tap screw
A8	27140501	Bracket, dial pulley	A48	833130080	3TTP+8P, Tap screw
A12	27115109	Side bracket, right side	A49	834130168	3TTS+16B, Tap screw
A13	27115110A	Side bracket, left side	A50	838130068	3TTB+6B, Tap screw
A14	27185002A	DP-16, Dial pulley	A51	27260084	Shaft
A15	801147A	Screw for dial pulley	A52	27273017	Joint
A17	27115108	Bracket, center	A301	28184144	Top cover
A18	27160102A	Radiator	A302	834430068	3TTS+6B (BC), Tap screw
A19	27130301	Bracket	A501	13690121	Front panel ass'y
A20	27130300	Bracket, power transformer	A502	28191127	Clear plate
A22	27200027	Dial drum	A503	27267183	Guide
A23	273803	SP-14A, Spring, dial drum	A504	27267184	Guide
A24	273903	Stringing	A505	27267179	Guide, power
A26	28165061	Pointer	A506	27267180	Guide, speaker
A34	27120374A	Back panel	A507	28140024	Cushion
A37	834130068	3TTS+6B, Tap screw	A509	833130080	3TTP+8P, Tap screw
A38	831130088	3TTW+8B, Tap screw	A510	27267186	Guide push
A39	834130088	3TTS+8B, Tap screw	A511	27270087	Specer

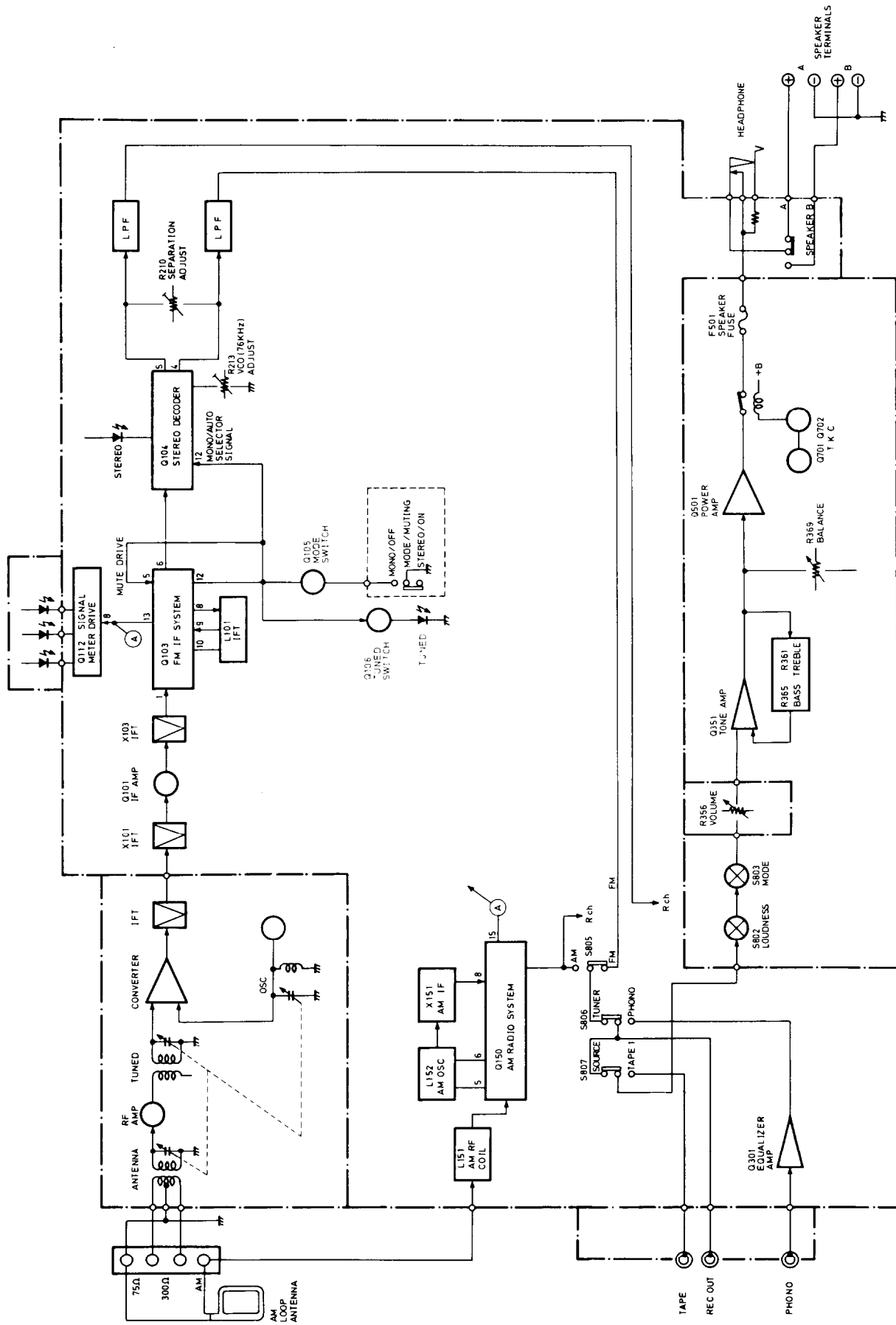
EXPLODED VIEW



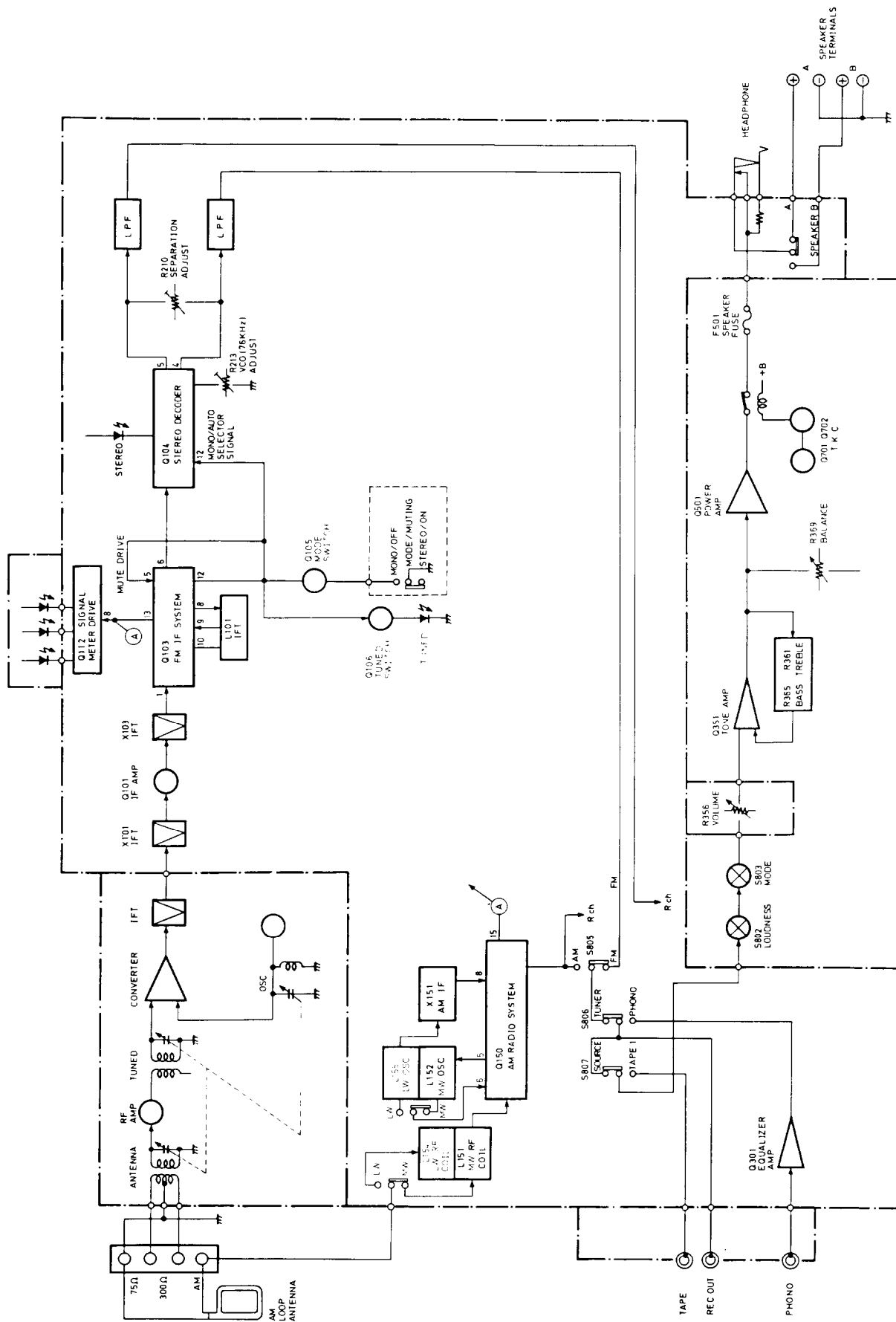
REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A601	27170128A	Bottom board	Q501, Q601	222016	STK-459, Power amplifier IC
A602	27175011C	Leg	R356, R456	5147016	N16RG100KBT30, Volume control variable resistor
A603	831130080	3TTW+8P, Tap screw	S901	25035322 or 25035176	NPS-111-L286P or NPS-111-L140P, Power switch
A604	831130068	3TTW+6B, Tap screw	T901	230591	NPT-772G, Power transformer
A801	28320763	Knob, tuning	U1	13690525B	NARF-1325b, FM tuner and equalizer amplifier pc board ass'y
A802	28320760	Knob, power	U2	13318526	NADIS-1326, Signal indicator pc board ass'y
A803	28320761	Knob	U3	13324527A	NAPJ-1327a, Input/output terminal pc board ass'y
A804	28320790	Knob, volume	U4	13690530B	NAAF-1330b, Pre., and power amplifier pc board ass'y
A805	28320581	Knob, push	U5	13318531	NASW-1331, Switch pc board ass'y
C801	379124737	0.047 μ F \pm 20%, 50V, Capacitor, DEW	U6	13318532	NAPL-1332, Lamp pc board ass'y
C951	3500065A	0.01 μ F, 400V, Capacitor, IS	U7	13318536	NADIS-1336, Stereo indicator pc board ass'y
C951a	27300080	Cover, capacitor	U8	13318537	NADIS-1337, Tuned indicator pc board ass'y
F501, F601	252076	3.15A-SE-EAK, Speaker protection fuse	W901	253083	AS-CEE, Power supply cable
F901	252073	1.6A-SE-EAK, AC fuse	W901a	270280	SR-4K-4, Strainrelief
F911, F912	252077	4A-SE-EAK			
F914	252088	250mA-SE-EAWK			
F913	252063	0.5A-SE-EAK			
L150	232098	NMA-3040, AM loop antenna			
L150a	27190129	Holder, antenna			
P802, P803	25060049	NTM-4PRMN18, Speaker terminal			
P804	25060035	NTM-4PRMC06, Antenna terminal			

BLOCK DIAGRAM

MODEL TX-11



BLOCK DIAGRAM
MODEL TX-11L
EUROPEAN



ALIGNMENT PROCEDURES

TX-11

INSTRUMENTS REQUIRED

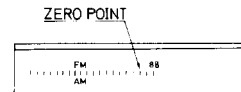
1. DC Voltmeter
2. AM Sweep Generator
3. AM/FM Signal Generator
4. AC VTVM
5. Oscilloscope
6. Monitorscope
7. Distortion Analyzer
8. Stereo Modulator
9. Frequency Counter

GENERAL ALIGNMENT CONDITIONS

1. Signal input should be kept as low as possible.
2. Standard modulation is 400 Hz 30% (AM), 1 kHz 100% (FM MONO), pilot 9% sub and main 91% (FM STEREO).
3. Standard knob position
 SPEAKERS A
 BASS, TREBLE & BALANCE Center
 MODE STEREO
 LOUDNESS OFF
 TAPE 1 OFF (SOURCE)

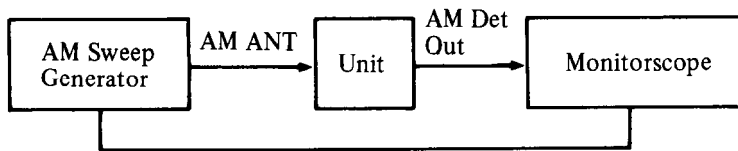
(1) Attachment of dial pointer

1. Close the variable capacitor completely.
2. Set the radio dial pointer to zero point on dial scale and secure the stringing and pointer with the bond.



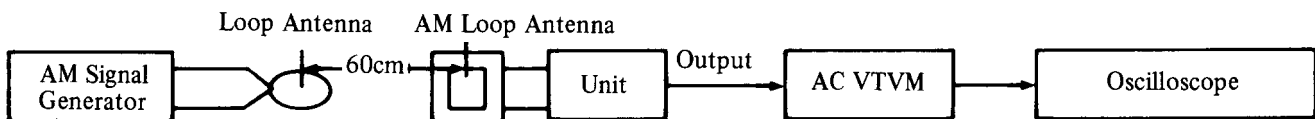
(2) MW IF ALIGNMENT

1. Set selector switch to MW.
2. Set radio dial to quiet point.



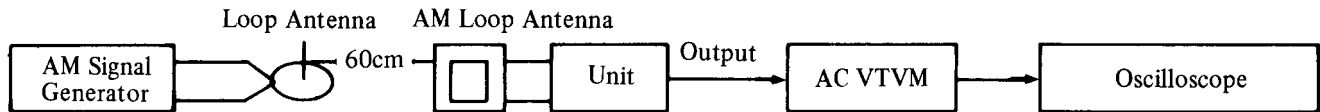
Set signal	Adjust	Monitor scope	Remarks
455 kHz	X151	Maximum Symmetrical Response	Usually not necessary to adjust

(3) MW RF ALIGNMENT



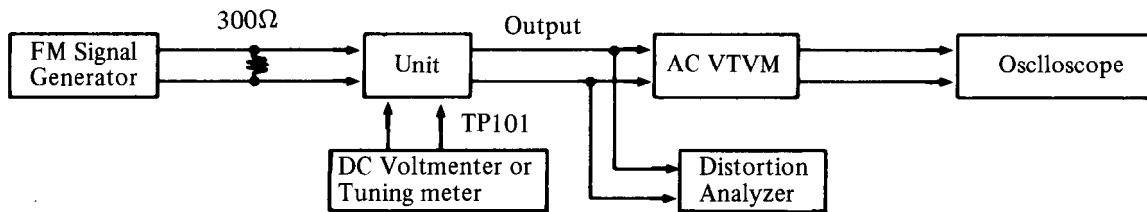
Step	Set Signal	Set Radio Dial	Adjust	VTVM reading	Remarks
1	515 kHz 400 Hz 30%	Lower end (515 kHz)	L152	Maximum	Repeat steps 1 and 2 as necessary
2	1680 kHz 400 Hz 30%	Upper end (1680 kHz)	TC4	Maximum	
3	600 kHz 400 Hz 30%	600 kHz	L151	Maximum	Repeat steps 3 and 4 as necessary
4	1400 kHz 400 Hz 30%	1400 kHz	TC2	Maximum	

(4) LW RF ALIGNMENT



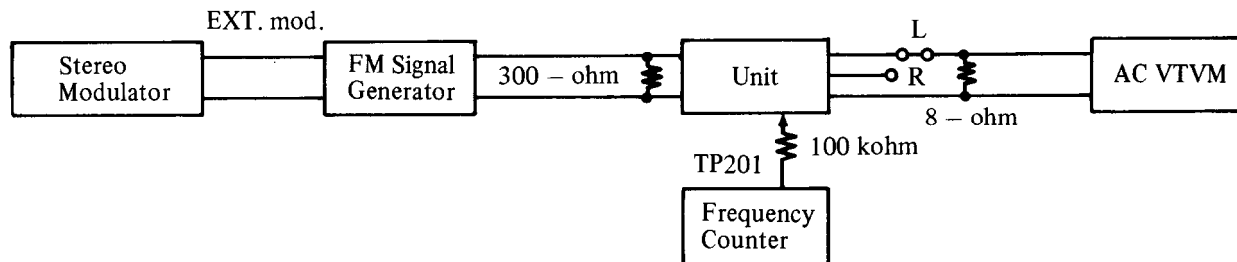
Step	Set Signal	Set Radio Dial	Adjust	VTVM reading	Remarks
1	160 kHz 400 Hz 30%	160 kHz	L155	Maximum	Repeat steps 1 and 2 as necessary
2	360 kHz 400 Hz 30%	360 kHz	C174	Maximum	
3	160 kHz 400 Hz 30%	160 kHz	L154	Maximum	Repeat steps 3 and 4 as necessary
4	360 kHz 400 Hz 30%	360 kHz	C177	Maximum	

(5) FM ALIGNMENT

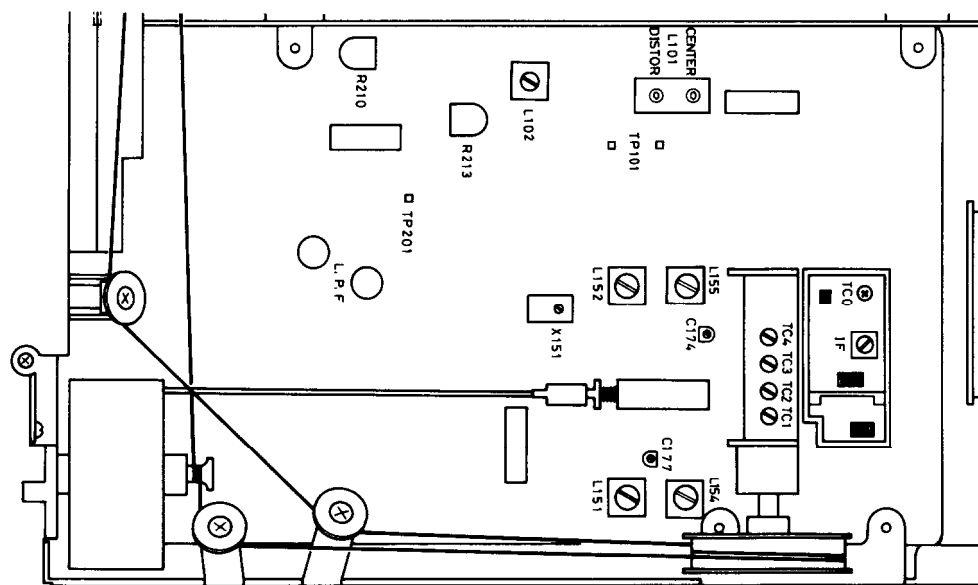


Step	FM Signal Generator	Dial to set	Adjust	Output Indicator	Adjust for	Remarks
1	No signal	Quiet Point	L101 Back side	DC Voltage or Tuning Indicator	Center	Repeat Steps 1 and 2 as necessary
2	98 MHz 65 dBf 1 kHz 75 kHz devi.	98 MHz	L101 Front side	Distortion Analyzer	Minimum	
3	104 MHz 1 kHz 75 kHz devi.	104 MHz	TC0 TC1 TC3	AC VTVM	Maximum	
4	98 MHz, 65 dBf 1 kHz 75 kHz devi.	98 MHz	IF	Distortion Analyzer	Minimum	

(6) MULTIPLEX ALIGNMENT



Step	FM Signal Generator	Stereo Modulator	Dial to set	Adjust	Output Indicator	Adjust for	Remarks
1	98 MHz no mod. 65 dBf	—	98 MHz	R213	Frequency Counter	76,000±76Hz	
2	STEREO INDICATOR should light up when stereo program is being received.						
3	98 MHz EXT. Mod. 65 dBf	Pilot Sig. 9% Main & sub Sig. 1 kHz Lch 91%	98 MHz	R210	AC VTVM Right ch.	Minimum	Repeat Steps 3 & 4 as necessary same separation
4	Same as above	Pilot Sig. 9% Main & Sub Sig. 1 kHz Rch 91%	98 MHz		AC VTVM Left ch.	Minimum	



Adjustment points

TUNER PC BOARD-PARTS LIST

TX-11

FM/AM TUNER AND EQUALIZER AMPLIFIER PC BOARD (NARF-1325b)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs			Resistors	
Q103	222608	μ PC1167C2, FM IF	R210	5215048	N08HR200KBC, Separation
Q104	222453	HA1196, Stereo decoder			adjustment semi-fixed
Q112	222670	BA6124, Signal indicator driver	R213	5215045	N08HR10KBC, V CO adjustment
Q150	222626	HA1197, AM radio system			semi-fixed
Q301, Q401	222534	NJM4559DX, Equalizer amplifier		Switches	
	Front end		S805-S807	25035304	NPS-342-L268, Selector
	240050	FF711E	S808	25035307	NPS-162-L271, MW/LW
	Transistors				
Q101	2210823	2SC1675 (L-1)			
Q105, Q106	2211255	2SC1815 (GR)			
Q151	2211255	2SC1815 (GR)			
	Diodes				
D103	223145	1S2076TD			
D152	4000068	VD1222			
D153-D155	223145	1S2076TD			
	Coils				
L103, L104	233107	NMC-5002			
L151	232099	NMA-3041			
L152	232073	NMO-2008			
L154	232091	NLMA-3038			
L155	232094	NLO-2021			
	Transformers				
L101	233270	NFIF-6040			
L153	232041	NIT-0509			
	Ceramic filters				
X101, X103	3010003	SFE-10.7MA8			
X151	3010053	SFL-455B			
	Capacitors				
C114	352784799	0.47 μ F, 50V, Elect.			
C115	352780109	1 μ F, 50V, Elect.			
C116	352741009	10 μ F, 16V, Elect.			
C118	352780109	1 μ F, 50V, Elect.			
C119	352750479	4.7 μ F, 25V, Elect.			
C120	352741009	10 μ F, 16V, Elect.			
C154	352750479	4.7 μ F, 25V, Elect.			
C155	352780339	3.3 μ F, 50V, Elect.			
C158, C163	352741009	10 μ F, 16V, Elect.			
C165	370133614	360pF \pm 10%, 100V, APS			
C172	372521514	150pF \pm 5%, 50V, St			
C174, C177	3060011	NTC-45P10, Trimmer			
C178, C179	352741009	10 μ F, 16V, Elect.			
C202-C205	352780229	2.2 μ F, 50V, Elect.			
C206	372524714	470pF \pm 5%, 50V, St			
C207	352780339	3.3 μ F, 50V, Elect.			
C208	352780229	2.2 μ F, 50V, Elect.			
C216	352744719	470 μ F, 16V, Elect.			
C251, C253	352741009	10 μ F, 16V, Elect.			
C302, C402	352780229	2.2 μ F, 50V, Elect.			
C305, C405	352721019	100 μ F, 6.3V, Elect.			
C308, C408	352780229	2.2 μ F, 50V, Elect.			
C311, C312	352780339	3.3 μ F, 50V, Elect.			
C209	352782299	0.22 μ F, 50V, Elect.			

TUNER PC BOARD PARTS LIST

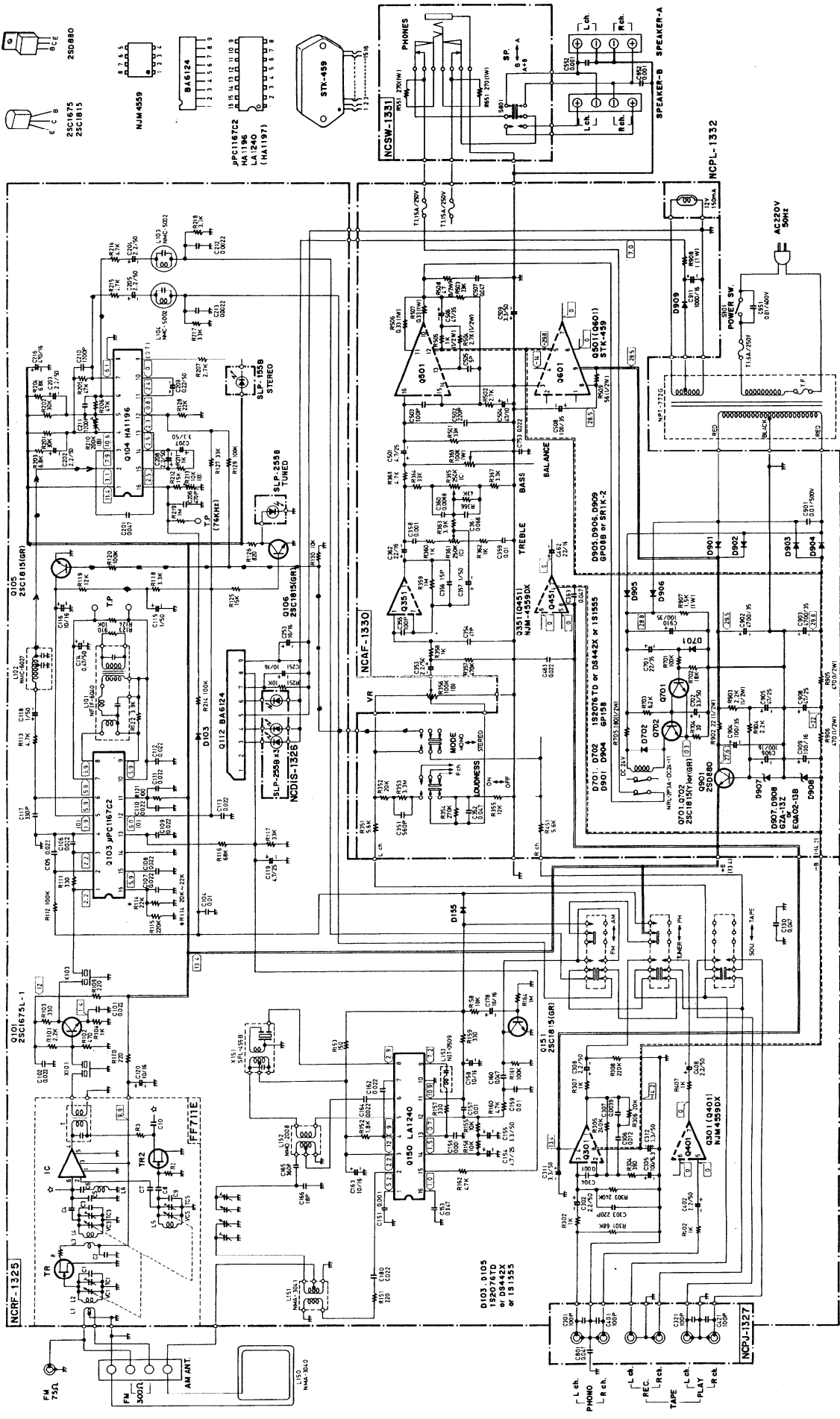
TX-11

FM/AM TUNER AND EQUALIZER AMPLIFIER PC BOARD (NARF-1325/e)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
ICs			Resistors		
Q103	222608	μ PC1167C2, FM IF	R210	5215048	N08HR200KBC, Separation adjustment semi-fixed
Q104	222453	HA1196, Stereo decoder	R213	5215045	N08HR10KBC, Vco adjustment semi-fixed
Q112	222670	BA6124, Signal indicator driver	Switches		
Q150	222497	LA1240, AM radio system	S805-S807	25035304	NPS-342-L268, Selector
Q310, Q401	222534	NJM4559DX, Equalizer amplifier	S809	25065126	NSS-2259, De-emphasis (Only W model)
Fron end					
	240049	FF711U			
Transistors					
Q101	2210823	2SC1675 (L-1)			
Q105, Q106	2211255	2SC1815 (GR)			
Q151	2211255	2SC1815 (GR)			
Diodes					
D103, D155	223145	1S2076TD			
Coils					
L103, L104	233107	NMC-5002			
L151	232099	NMA-3041			
L152	232073	NMO-2008			
Transformers					
L101	233270	NFIF-6040			
L153	232041	NIT-0509			
Ceramic filters					
X101, X103	3010003	SFE-10.7MA8			
X151	3010053	SFL-455B			
Capacitors					
C114	352784799	0.47 μ F, 50V, Elect.			
C115	352780109	1 μ F, 50V, Elect.			
C116	352741009	10 μ F, 16V, Elect.			
C118	352780109	1 μ F, 50V, Elect.			
C119	352750479	4.7 μ F, 25V, Elect.			
C120	352741009	10 μ F, 16V, Elect.			
C154	352750479	4.7 μ F, 25V, Elect.			
C155	352780339	3.3 μ F, 50V, Elect.			
C158, C163	352741009	10 μ F, 16V, Elect.			
C165	370133614	360pF \pm 10%, 100V, APS			
C178	352741009	10 μ F, 16V, Elect.			
C202-C205	352780229	2.2 μ F, 50V, Elect.			
C206	372524714	470pF \pm 5%, 50V, St			
C207	352780339	3.3 μ F, 50V, Elect.			
C208	352780229	2.2 μ F, 50V, Elect.			
C209	352782299	0.22 μ F, 50V, Elect.			
C216	352744719	470 μ F, 16V, Elect.			
C251, C253	352741009	10 μ F, 16V, Elect.			
C302, C402	352780229	2.2 μ F, 50V, Elect.			
C305, C405	352721090	100 μ F, 6.3V, Elect.			
C308, C408	352780229	2.2 μ F, 50V, Elect.			
C311, C312	352780339	3.3 μ F, 50V, Elect.			

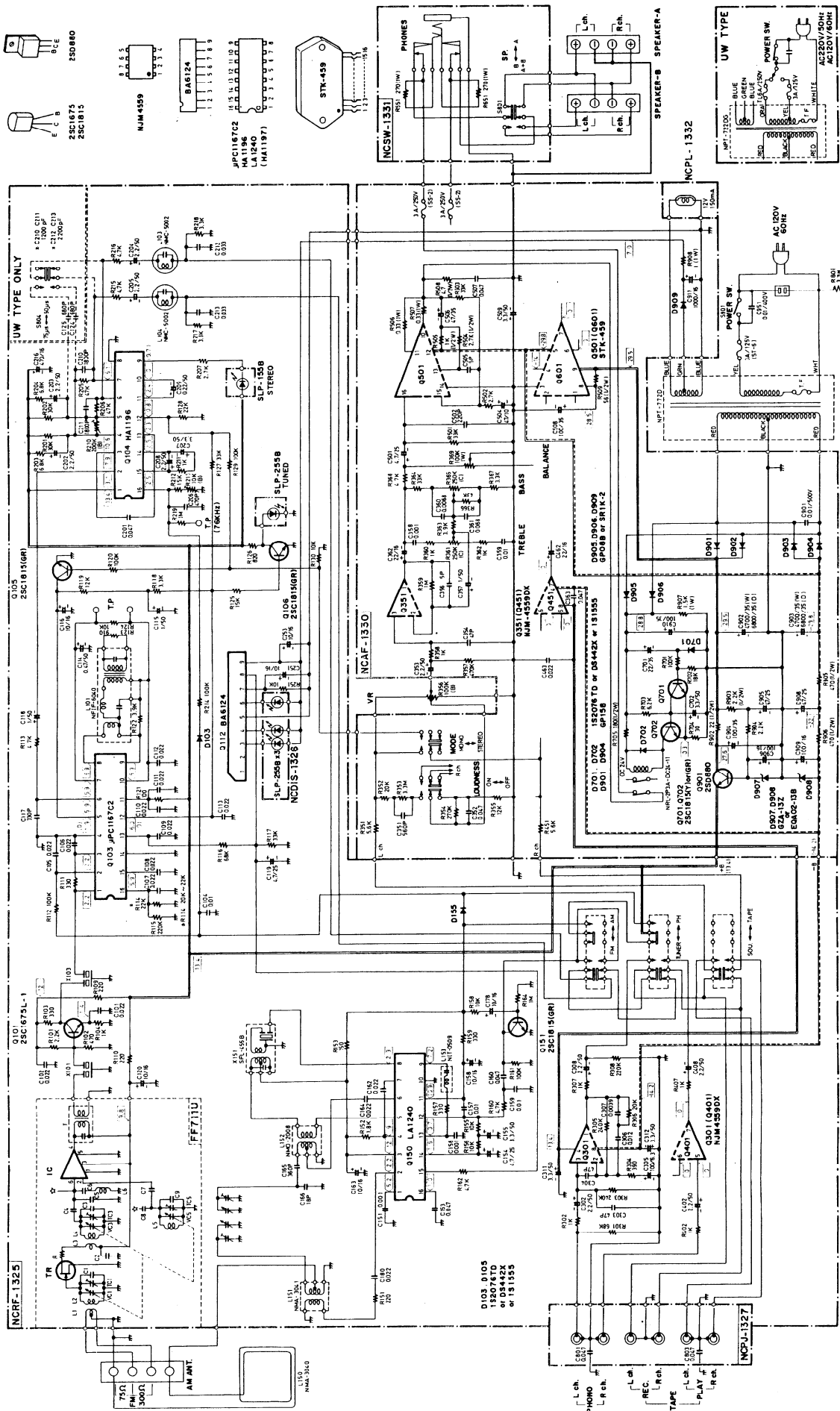
SCHEMATIC DIAGRAM

MODEL TX-11G



SCHEMATIC DIAGRAM

MODEL TX-11 D/W

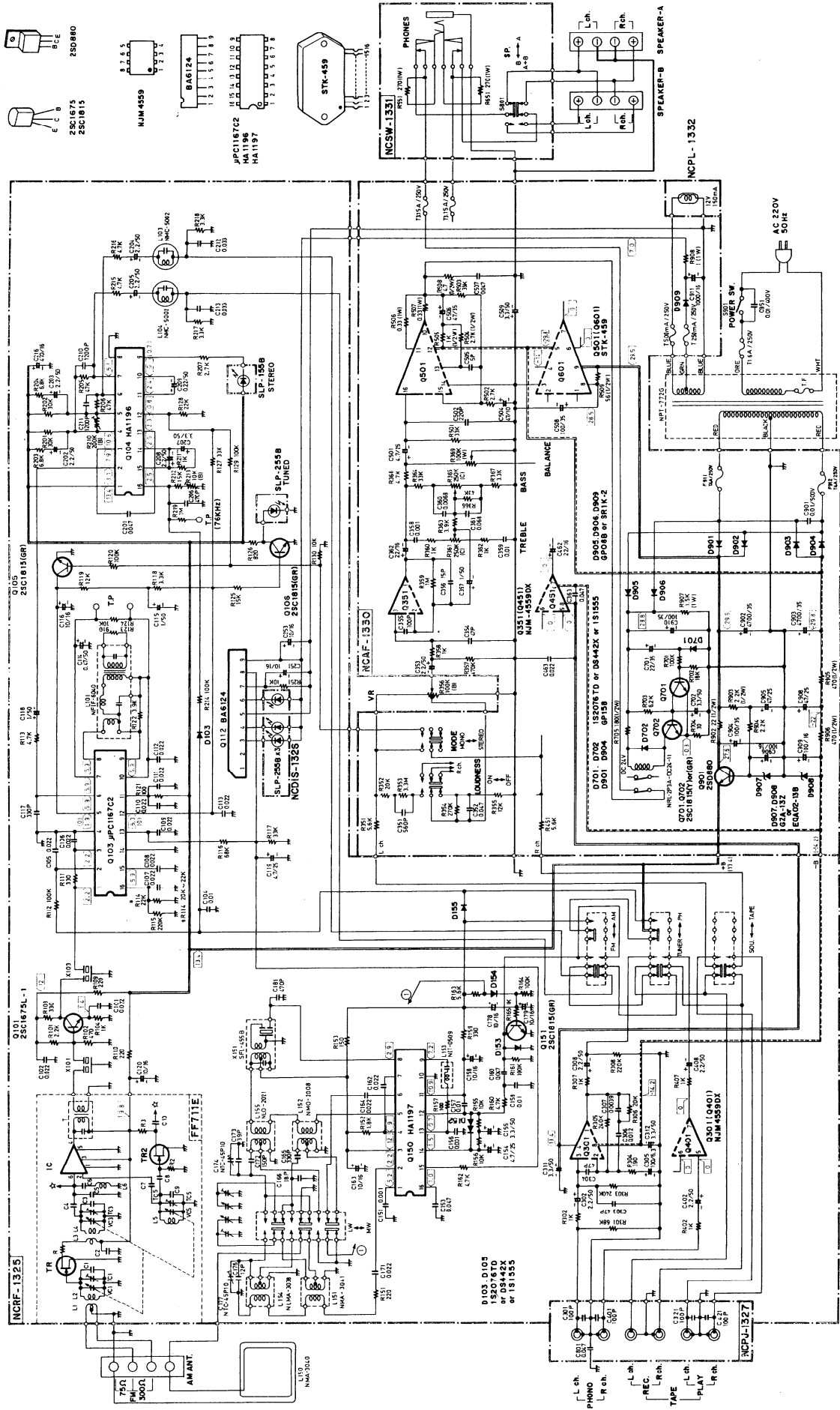


NOTES

- * ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
- * ALL CAPACITORS ARE IN μ F, 50MV UNLESS OTHERWISE NOTED.
- * ELECTROLYTIC CAPACITORS (ELECT. CAP.) ARE IN μ F/M.
- * VOLTAGE MEASURED WITH METER.
- * VOLTAGE DC VOLTAGE (NO INPUT SIGNAL).
- * VOLTAGE AC VOLTAGE (FM STEREO).

SCHEMATIC DIAGRAM

MODEL TX-11L



NOTES:
 * RESISTORS ARE IN OHMS 1/4 WATT UNLESS OTHERWISE NOTED.
 * ALL CAPACITORS IN JUF/50V UNLESS OTHERWISE NOTED.
 * ELECTROLYTIC CAPACITORS (—) ARE IN JUF/WV.
 * VOLTAGE (MEASURED WITH V.T.V.M.)
 * V DC VOLTAGE (NO INPUT SIGNAL).
 * V DC VOLTAGE (FM STEREO).

TUNER PC BOARD PARTS LIST

FM/AM TUNER AND EQUALIZER AMPLIFIER PC BOARD

(NARF-1325a)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs			Resistors	
Q103	222608	μ PC1167C2, FM IF	R210	5215048	N08HR200KBC, Separation
Q104	222453	HA1196, Stereo decoder			adjust, semi-fixed
Q112	222670	BA6124, Signal indicator driver	R213	5215045	N08HR10KBC, VCO adjustment
Q150	222497	LA1240, AM radio system			semi-fixed
Q301, Q401	222534	NJM4559DX, Equalizer amplifier		Switches	
	Front end		S805--S807	25035304	NPS-342-L268, Selector
	240050	FF711E			
	Transistors				
Q101	2210823	2SC1675 (L-1)			
Q105, Q106	2211255	2SC1815 (GR)			
Q151	2211255	2SC1815 (GR)			
	Diodes				
D103, D155	223145	1S2067TD			
	Coils				
L102	233236	NMC-6027			
L103, L104	233107	NMC-5002			
L151	232099	NMA-3041			
L152	232073	NMO-2008			
	Transformers				
L101	233270	NFIF-6040			
L153	232041	NIT-0509			
	Ceramic filters				
X101	3010070	SFE-10.7MS3G-A			
X103	3010006	SFE-10.7MA-8			
X151	3010053	SFL-455B			
	Capacitors				
C114	352784799	0.47 μ F, 50V, Elect.			
C115	352780109	1 μ F, 50V, Elect.			
C116	352741009	10 μ F, 16V, Elect.			
C118	352780109	1 μ F, 50V, Elect.			
C119	352750479	4.7 μ F, 25V, Elect.			
C120	352741009	10 μ F, 16V, Elect.			
C154	352750479	4.7 μ F, 25V, Elect.			
C155	352780339	3.3 μ F, 50V, Elect.			
C158, C163	352741009	10 μ F, 16V, Elect.			
C165	370133614	360 μ F \pm 10%, 100V, APS			
C178	352741009	10 μ F, 16V, Elect.			
C202--C205	352780229	2.2 μ F, 50V, Elect.			
C206	372524714	470 μ F \pm 5%, 50V, St			
C207	352780339	3.3 μ F, 50V, Elect.			
C208	352780229	2.2 μ F, 50V, Elect.			
C209	352782299	0.22 μ F, 50V, Elect.			
C251, C253	352741009	10 μ F, 16V, Elect.			
C302, C402	352780229	2.2 μ F, 50V, Elect.			
C305, C405	352721019	100 μ F, 6.3V, Elect.			
C308, C408	352780229	2.2 μ F, 50V, Elect.			
C311, C312	352780339	3.3 μ F, 50V, Elect.			

PRE., AND POWER AMPLIFIER PC BOARD-PARTS LIST

SIGNAL INDICATOR PC BOARD (NADIS-1326)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D111-D113	225110 27190121	SLP-255B, L.E.D Holder. L.E.D.

**INPUT/OUTPUT TERMINAL PC BOARD (NAPJ-1327)
D model**

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045072	NPJ-6PDBL36, Tuner/tape terminal

**INPUT/OUTPUT TERMINAL PC BOARD (NAPJ-1327a)
G/W model**

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C301, C401 C321, C421	345021014	100 _p F±5%, 50V, Capacitor, ceramic
	25045072	NPJ-6PDBL36, Tuner/tape terminal

PRE., AND POWER AMPLIFIER PC BOARD (NAAF-1330)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs	
Q351, Q451	222534	NJM-4559DX
Q501, Q601	222016	STK-459, Power amplifier
	Transistors	
Q701	2211255 or 2211256	2SC1815 (GR) or 2SC1815 (BL)
Q702	2211254	2SC1815 (Y)
Q901	2201074 or 2201075	2SD880 (Y) or 2SD880 (GR)
	Diodes	
D701, D702	223145	1S2076TD
D901-D904	223842	GP-15B
D905, D906	223848 or	GP-08B or
D909	223804	SR-1K2
D907, D908	2241133 or 2242912	GZA13Z or EQA02-13B

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Capacitors	
C353, C453	352780229	2.2 μ F, 50V, Elect.
C357, C457	352780109	1 μ F, 50V, Elect.
C362, C462	352742209	22 μ F, 16V, Elect.
C501, C601	352750479	4.7 μ F, 25V, Elect.
C504, C604	352744709	47 μ F, 10V, Elect.
C506, C606	352764709	47 μ F, 35V, Elect.
C508	352761019	100 μ F, 35V, Elect.
C509	352780339	3.3 μ F, 50V, Elect.
C701	352762209	22 μ F, 35V, Elect.
C702	352780339	3.3 μ F, 50V, Elect.
C902, C903	3504143	4,700 μ F, 35V, Elect. (G/W/GL)
C902, C903	3504166	6,800 μ F, 35V, Elect. (D)
C904	352761019	100 μ F, 35V, Elect.
C905	352754709	47 μ F, 25V, Elect.
C906	352741019	100 μ F, 16V, Elect.
C908	352754709	47 μ F, 25V, Elect.
C909	352741019	100 μ F, 16V, Elect.
C910	352761019	100 μ F, 35V, Elect.
C911	352731029	1,000 μ F, 10V, Elect.

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Resistors	
R361, R461	5148076	N16RGM250KC30, Treble control variable
R365, R465	5148076	N16RGM250KC30, Bass control variable
R369	5146038	N16RLC100KWTP30, Balance control variable
R504, R604	441522724	2.7k Ω , 1/2W, Metal, oxide film
R505, R605	441521024	1k Ω , 1/2W, Metal oxide film
R506, R606	441623394	0.33 Ω , 1W, Metal oxide film
R507, R607		
R508, R608	441520474	4.7 Ω , 1/2W, Metal oxide film
R509	441525604	56 Ω , 1/2W, Metal oxide film
R705	441521814	180 Ω , 1/2W, Metal oxide film
R902	441522204	22 Ω , 1/2W, Metal oxide film
R903	441522224	2.2k Ω , 1/2W, Metal oxide film
R905, R906	441524714	470 Ω , 1/2W, Metal oxide film
R907	441621524	1.5k Ω , 1W, Metal oxide film
R908	441520104	1 Ω , 1/2W, Metal oxide film
	Switch	
	25035303	NPS-222-L267, Loudness/Mode
	Fuseholder	
	250113	SN5051 (D/GL)
	25050065	YSH403T (G/W/GL)
	25065096	NPF-073 (G/W)
	Fuse	
F501, F601	252006	3A (SS-2), Speaker protection (D)
	252076	3.15 A-SE-EAK, Speaker protection (G/GL)
	252003	3A-T, Speaker fuse (W)
F901	252048	3A (ST-6), AC (D)
	252073	1.6A-SE-EAK, AC (G/W/GL)
	252003	3A-T, AC (W)
	252077	4A-SE-EAK, AC (GL)
	2502088	250mA-SE-EAK, AC (GL)
	252063	0.5A-SE-EAK, AC (GL)
	Relay	
	25065108 or	NRL-2P3A-DC-24-05 or
	25065205	NRL-2P3A-DC24-11
	25065134	NPL-2P-3A-DC 24V-07
	Radiator	
	27160029	RAD-07
	Insulation plate	
	28175055	
	Shielded plate	
	27150152	

From TX31

SWITCH PC BOARD (NASW-1331)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R551, R651	441622714	270 Ω , 1W, Metal oxide film resistor
S801	25035306	NPS-122-L270, Push switch
P801	25045109	HLJ-4308-01-040, Stereo headphone jack

LAMP PC BOARD (NAPL-1332)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL802	210091	PL12V150mA, Lamp

STEREO INDICATOR PC BOARD (NADIS-1336)

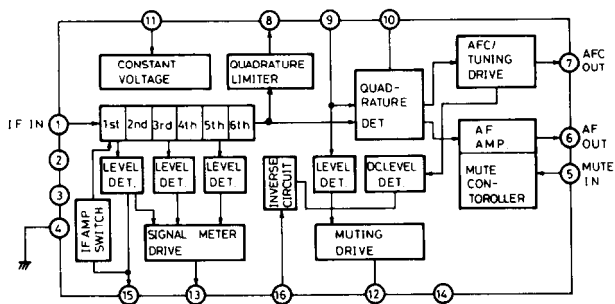
CIRCUIT NO.	PARTS NO.	DESCRIPTION
D114	225082	SLP-155B-01, L.E.D

TUNED INDICATOR PC BOARD (NAPL-1337)

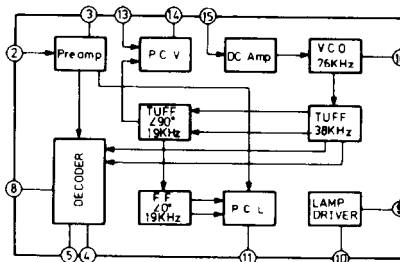
CIRCUIT NO.	PARTS NO.	DESCRIPTION
D115	225110	SLP-255B, L.E.D

BLOCK DIAGRAM OF IC

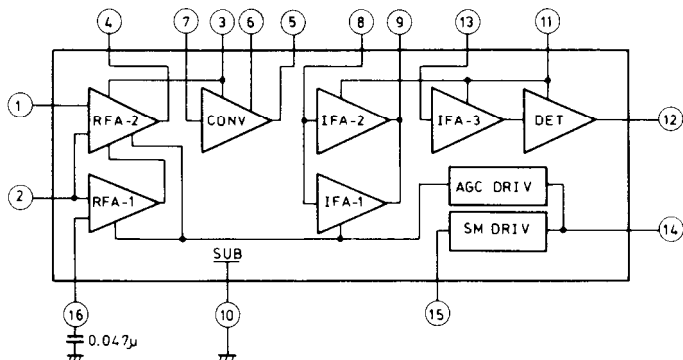
μ PC1167C2 (FM IF system)



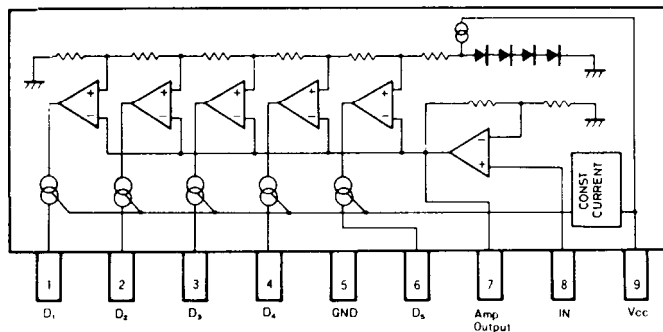
HA1196 (Stereo decoder)



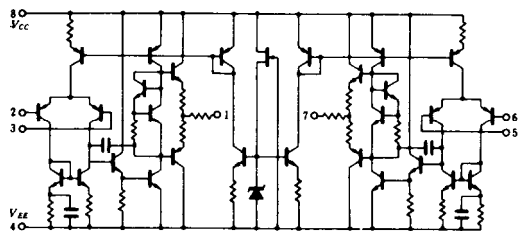
LA1240 (AM radio system)



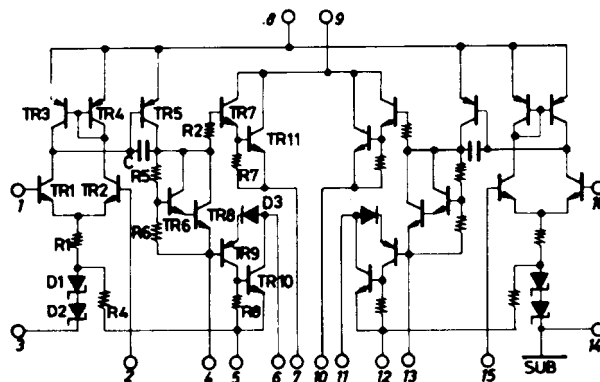
BA6124 (Signal meter driver)



NJM4559DX (Operation amplifier)

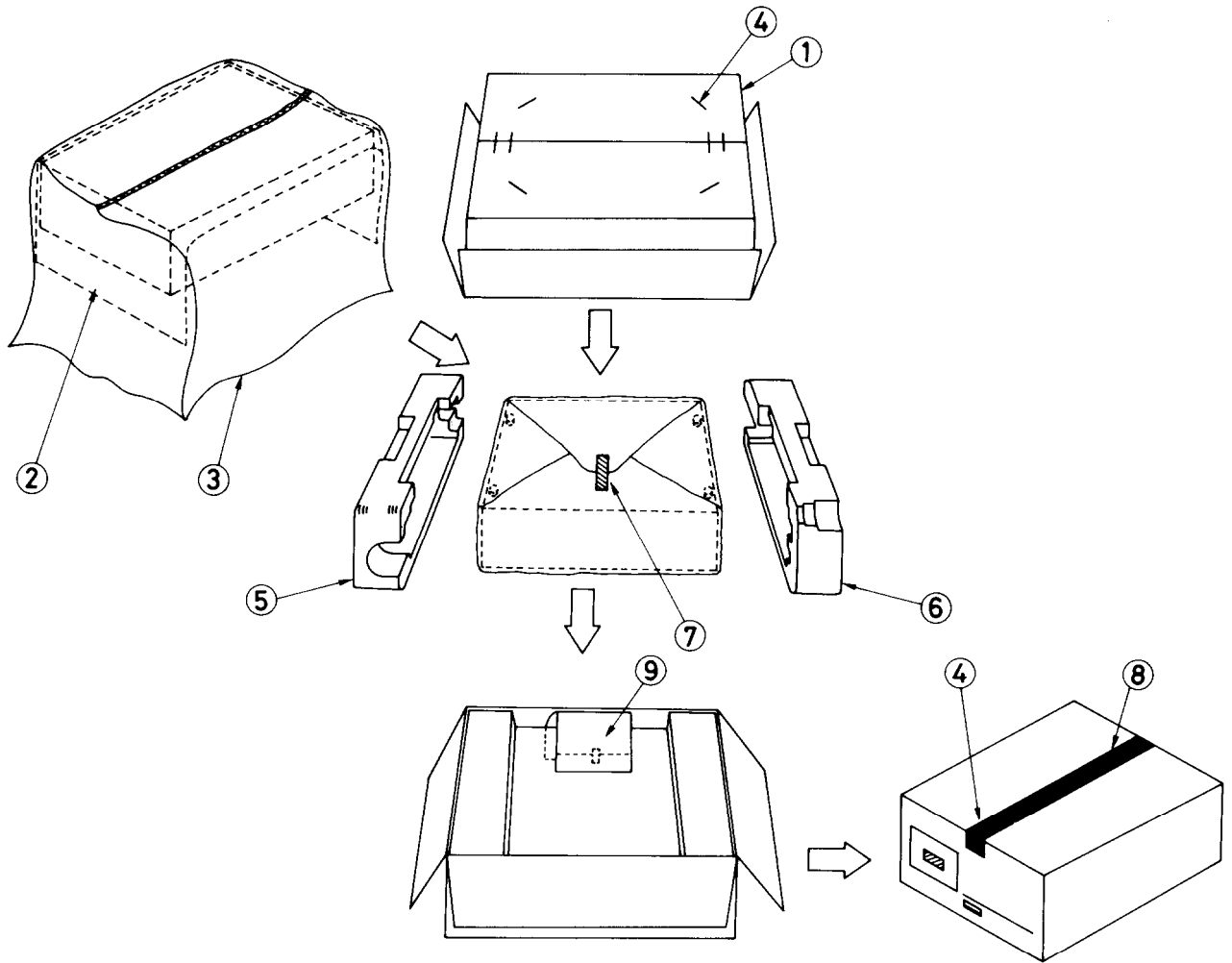


STK-459 (Power amplifier)



PACKING VIEW

TX-11



REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
1	29050545	Master carton box			
2	29095012-1	500x800mm, Protection sheet			
3	29100063	750x500mm, Poly-vinyl bag			
4	282301	Sealing hook			
5	29090690	Pad, right side			
6	29090691	Pad, left side			
7	261504	30x50mm, Adhesive tape			
8	260012	Dampion tape			
9		Accessory bag ass'y			
	(U.S.A. model)				
	29340595	Instruction manual			
	292064A	FM antenna			
	29365006-3	Warranty card			
	29358002	Service station list			
	29100006	250x350mm, Poly-vinyl bag			
	(120V model)				
	29340595	Instruction manual			
	292064A	FM antenna			
	29100006	250x350mm, Poly-vinyl bag			
	(West Germany model)				
	29340596	Instruction manual			
	292064A	FM antenna			
	29365005-3	Warranty card			
	29100006	250x350mm, Poly-vinyl bag			
	(220V model)				
	29340596	Instruction manual			
	292064A	FM antenna			
	29100006	250x350mm, Poly-vinyl bag			
	(120/220V model)				
	29340596	Instruction manual			
	292064A	FM antenna			
	25055040	CV-K-2, Conversion plug			
	29100006	250x350mm, Poly-vinyl bag			