

SOLID STATE STEREO RECEIVER

SERVICE DATA



MODEL TX-666

SPECIFICATIONS

Type: All Silicon Transistor Integrated Stereo Receiver
 Circuit: Direct-Coupling and Differential Amplifier, Quasi-Couplementary SEPP System
 Semiconductors: FET . . . 1 Transistor . . . 74 Diode . . . 52

Tuner Section

	FM	AM
Tuning Range:	88 - 108MHz	530 - 1605KHz
Sensitivity (IHF):	1.8 μ V	40 μ V
Intermediate Frequency:	10.7MHz	455KHz
Image Rejection Ratio:	70dB	40dB
IF Rejection Ratio:	100dB	40dB
Signal to Noise Ratio:	60dB	40dB
Alternate Channel Attenuation:	65dB	
AM Suppression Ratio:	50dB	
Caputure Ratio:	1.5dB	
Harmonic Distortion:	MONO 0.2%	0.8%
	ST 0.5%	
Frequency Response:	FM 30Hz - 15KHz (\pm 0.5dB)	
Stereo Separation:	FM 40dB (400Hz)	
Power Requirement:	AC 120V 60Hz	
AC Outlets:	Switched 1, Unswitched 1	
*Dimensions (overall)	18 $\frac{3}{8}$ " (W) x 15 $\frac{1}{8}$ " (D) x 15 $\frac{1}{2}$ " (H)	
Weight:	27.5 lbs.	

Other for Attachment Circuits

- FM MONO/STEREO Automatically Changed ● Stereo Indicator
- Tuning Meter ● SP Terminal (A/B Selector) ● Headphone Jack
- Tape Recording Terminal ● Tape Recording/Play back Connector
- Tape Monitor Switch ● Loudness Switch

Audio Section

Dynamic Power: 200W (IHF 4 ohms)
 140W (IHF 8 ohms)
 RMS Continuous Power: 60W x 2 (4 ohms)
 50W x 2 (8 ohms)
 Total Harmonic Distortion: 0.2% (at rated Power)
 Inter Modulation Distortion: 0.3% (ar rated Power)
 0.2% (at 1W output)
 Frequency Response: 10Hz - 40KHz (\pm 1dB 1W output)
 Power Bandwidth: 10Hz - 40KHz (IHF THD 0.3%)
 Input Sensitivity & Input Impedance PHONO: 2.5mV (50K ohms)
 AUX: 100mV (50k ohms)
 PHONO Overload: 200mV (1KHz)
 RIAA Characteristics: \pm 0.5dB (30Hz - 15KHz)
 BASS Control: \pm 10dB (100Hz)
 TREBLE Control: \pm 10dB (10KHz)

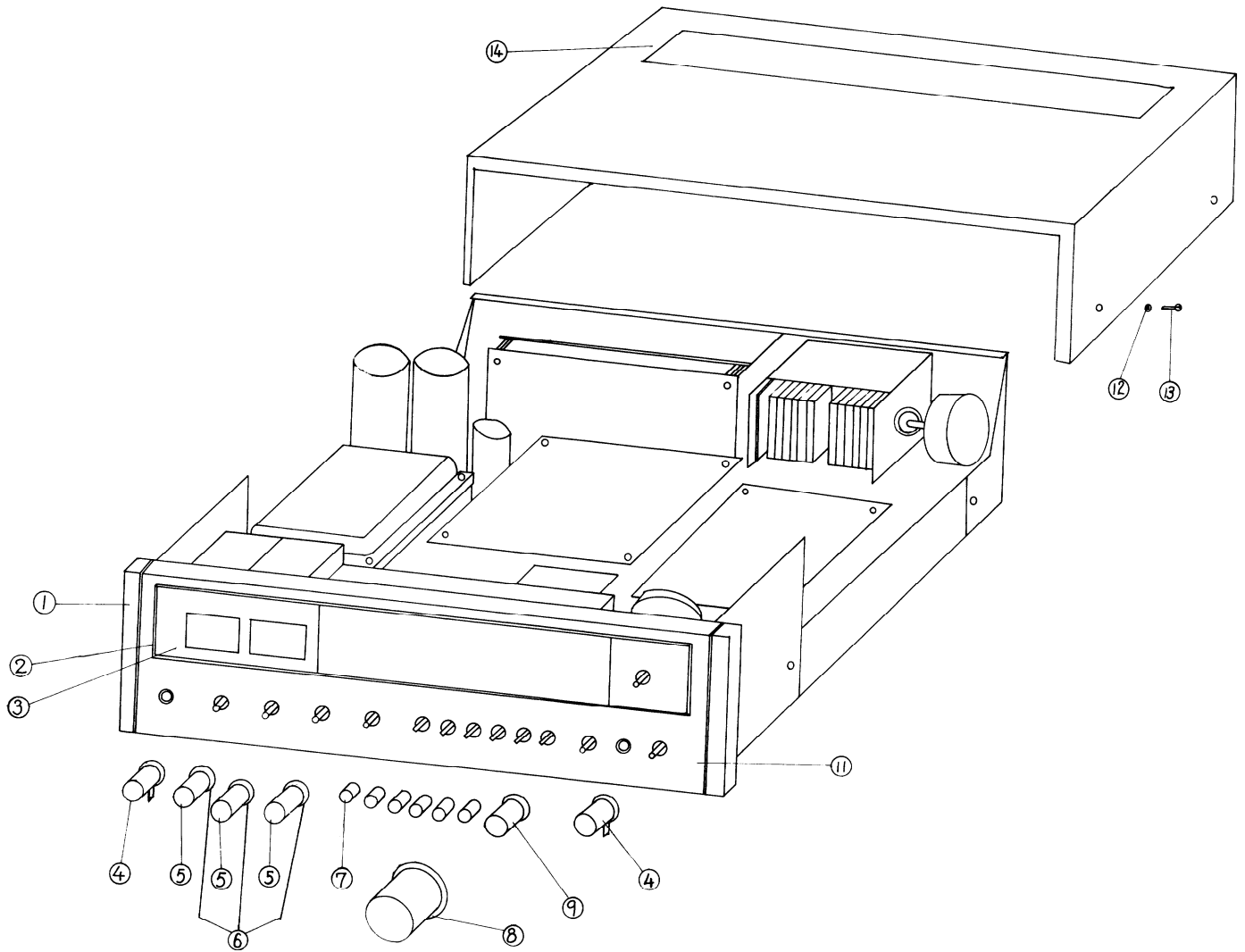
Furnished Parts

FM Dipole Antenna	1
Pin-Plug	4 (Red 2, White 2)
Fuse 5A	1 (ST-2 Type)
3A	2 (SS-2 Type)
Operating instruction	
Shorted pin-plug	2

Specifications are subject to change accoding to improvements without notice.

ONKYO[®]
AUDIO COMPONENT

COMPONENT LOCATIONS

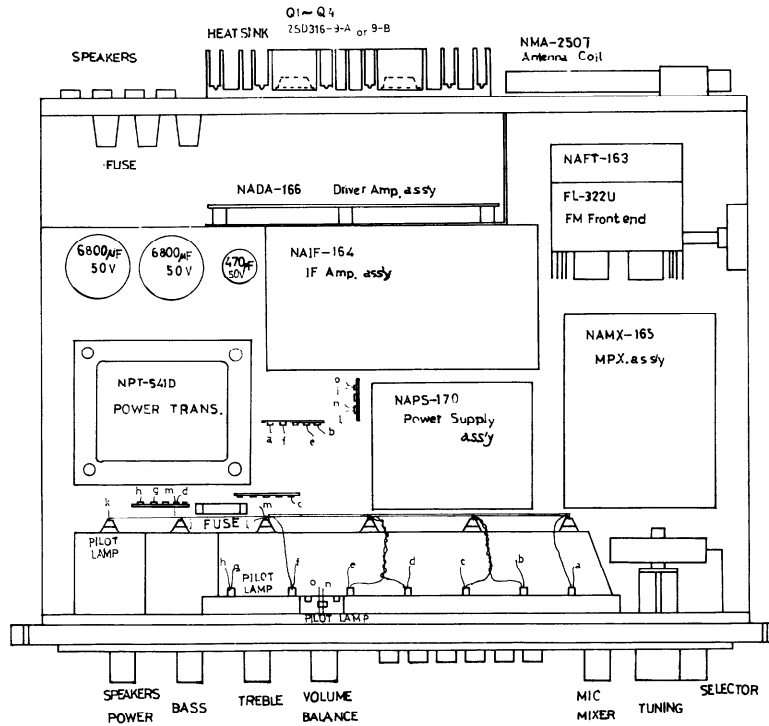


ILLUS. NO.	DESCRIPTION
1	End Cap
2	Decoration Frame
3	Grass Plate
4	Knob-SPK
5	Knob-Tone (S)
6	Knob-Tone (L)
7	Push Switch

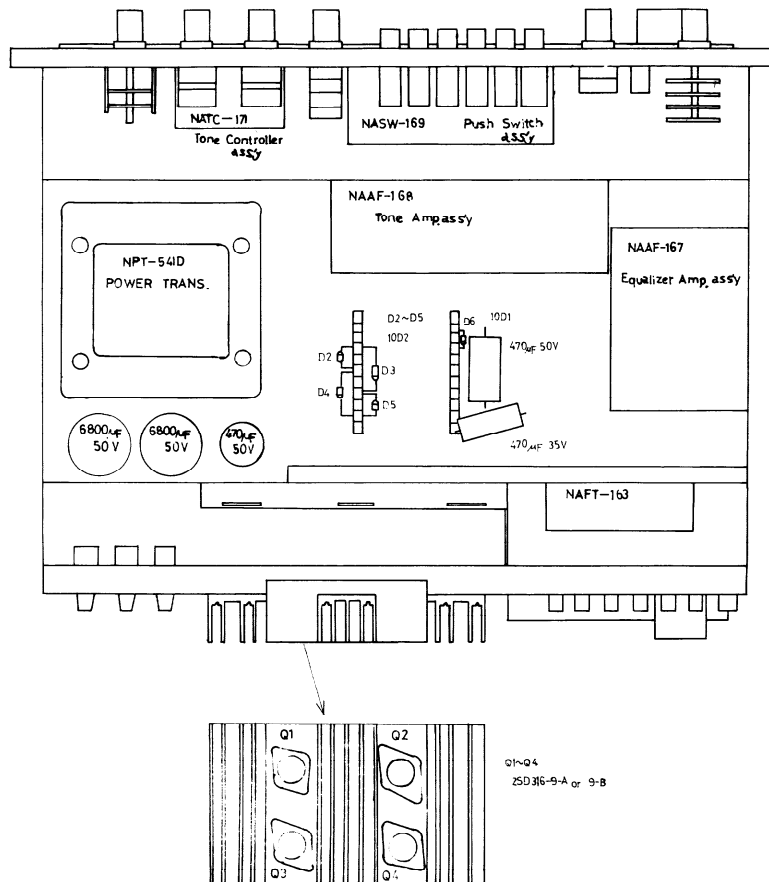
ILLUS. NO.	DESCRIPTION
8	Knob-Tuning
9	Knob-Volume
11	Front Panel
12	Washer
13	Screw-Wood Case
14	Upper Panel

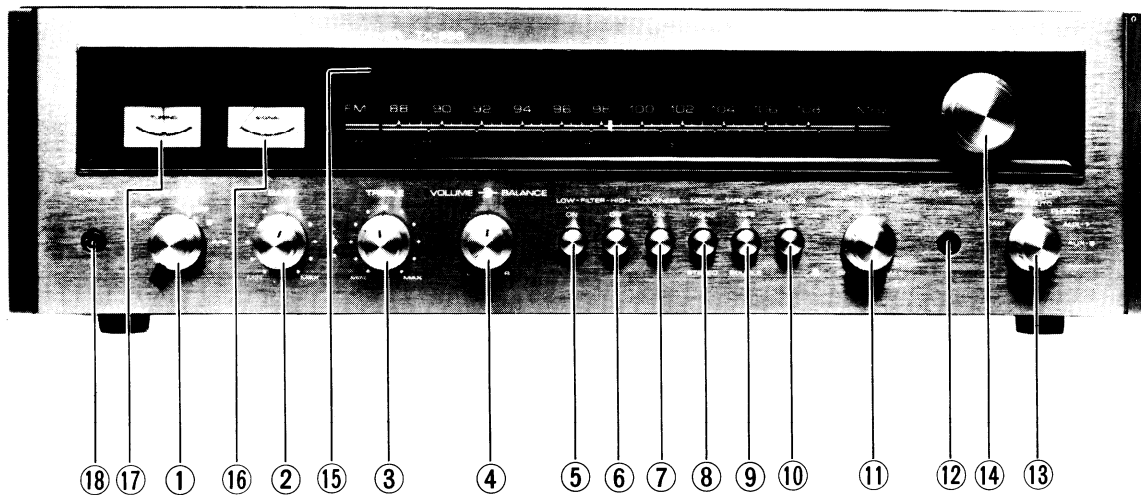
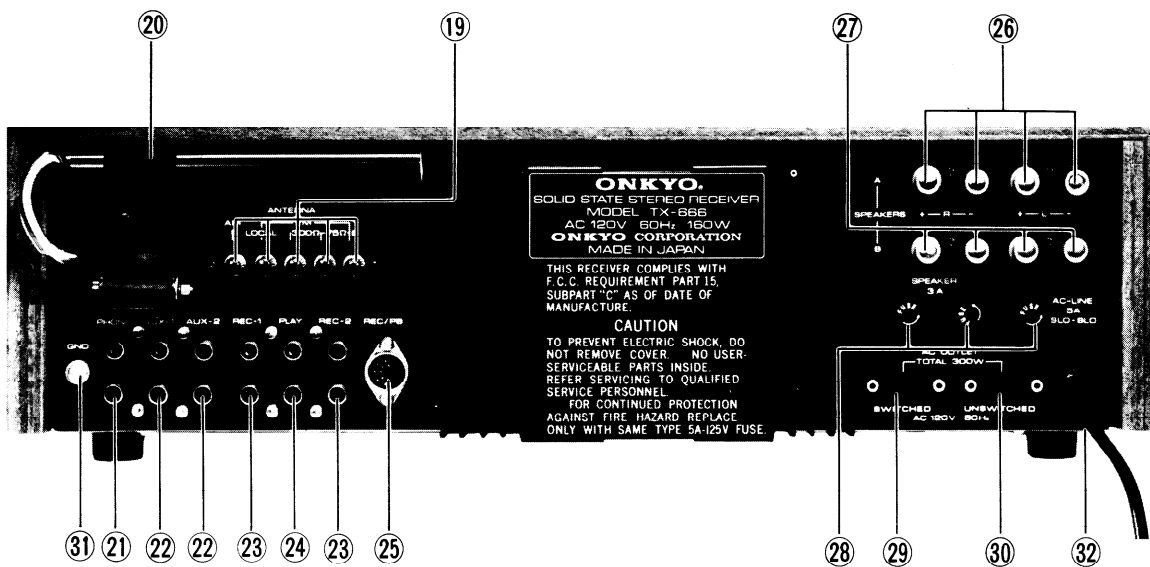
CHASSIS LAYOUT

TOP VIEW



BOTTOM VIEW

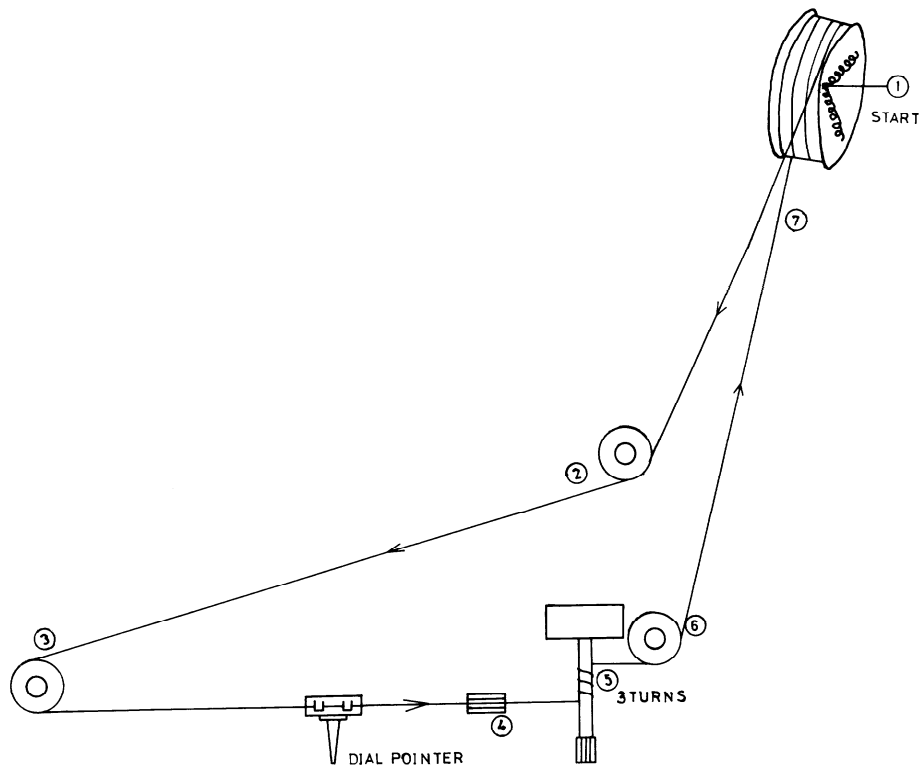




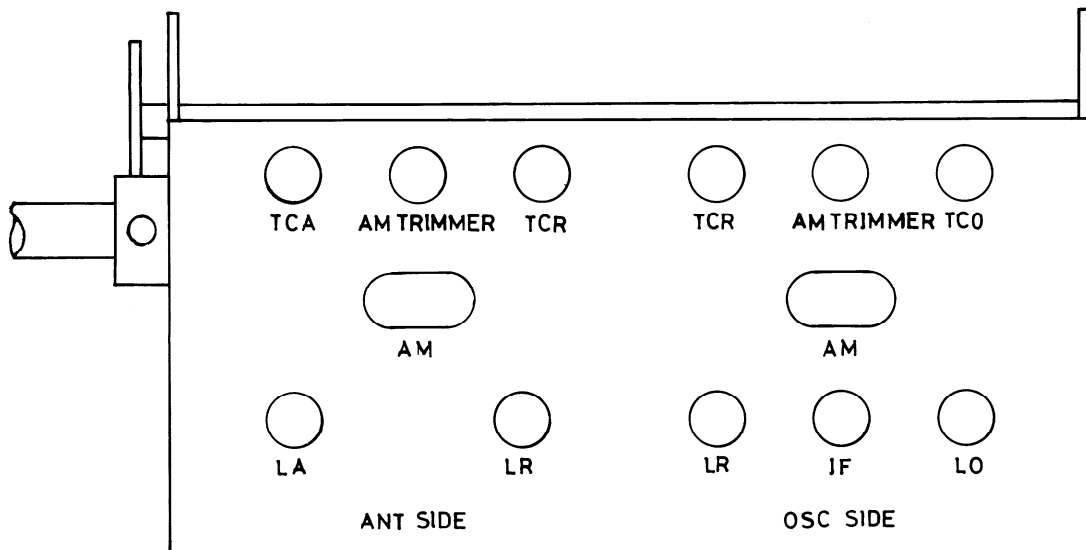
REF. NO.	DESCRIPTION
1	Speaker/Power Switch
2	Bass Control
3	Treble Control
4	Volume/Balance Control
5	Cut Filter (Low)
6	Cut Filter (High)
7	Loudness Switch
8	Mode Switch
9	Tape Monitor Switch
10	FM Muting Switch
11	Mic Mixer
12	Mic Jack
13	Selector Switch
14	Tuning Knob
15	Stereo Indicator
16	Signal Indicator

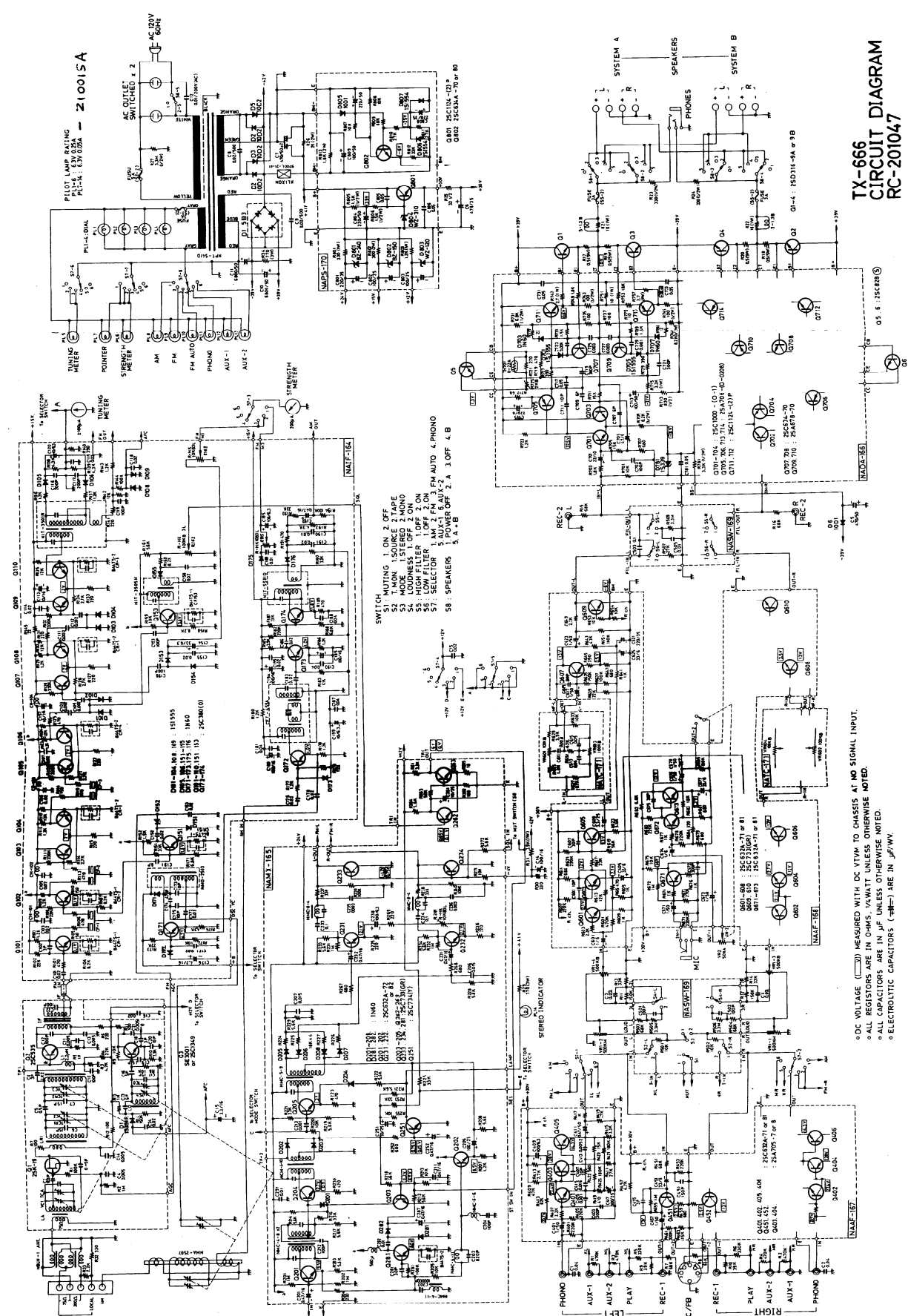
REF. NO.	DESCRIPTION
17	FM Tuning Indicator
18	Headphone Jack
19	AM, FM Antenna Terminal
20	AM Coil Antenna
21	PHONO Terminal
22	AUX Terminal
23	REC Terminal
24	PLAY Terminal
25	REC/PB Terminal
26	Speaker Terminal A
27	Speaker Terminal B
28	Fuse Holder
29	AC-OUTLET (Switched)
30	AC-OUTLET (Unswitched)
31	Ground Terminal
32	AC Cord

DIAL CORD ARRANGEMENT



FM FRONT END





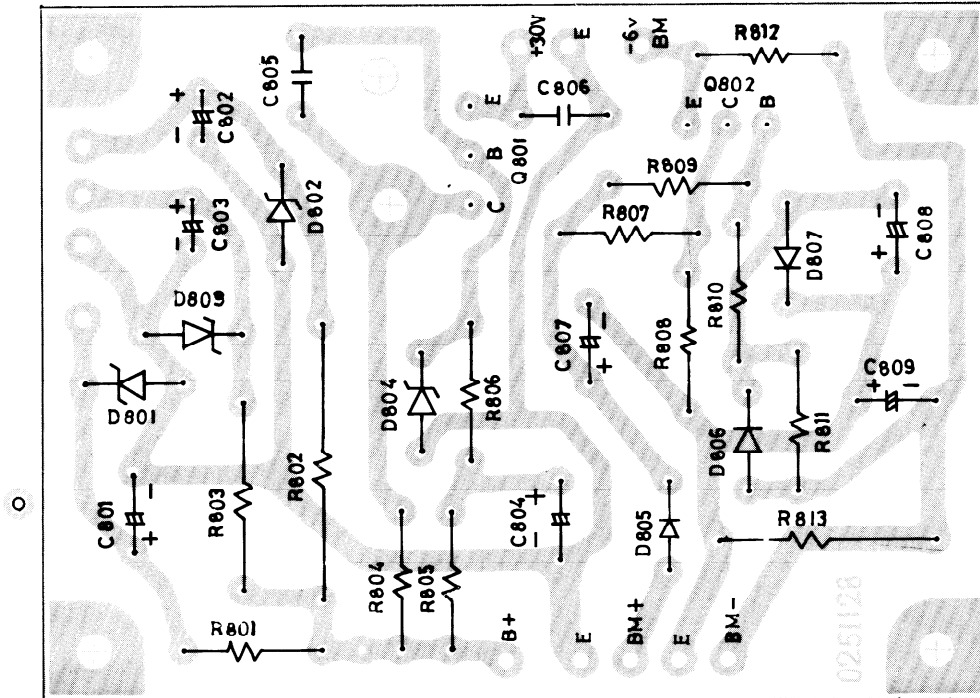
PILOT LAMP RATING
 P1-A: 1.5V 0.05A
 P1-B: 1.5V 0.05A — Z10015A

SWITCH MUTING 1 ON 2 OFF
 S1 T.MON. 1 SOURCE 2 TAPE
 S2 T.MON. 1 SOURCE 2 TAPE
 S3 T.MON. 1 SOURCE 2 TAPE
 S4 T.MON. 1 SOURCE 2 TAPE
 S5 HIGH FILTER 1 OFF 2 ON
 S6 SELECTOR 1 AM 2 FM 3 FM AUTO 4 PHONO
 S7 SELECTOR 1 AM 2 FM 3 FM AUTO 4 PHONO
 S8 SPEAKERS 1 A+B 2 A+B

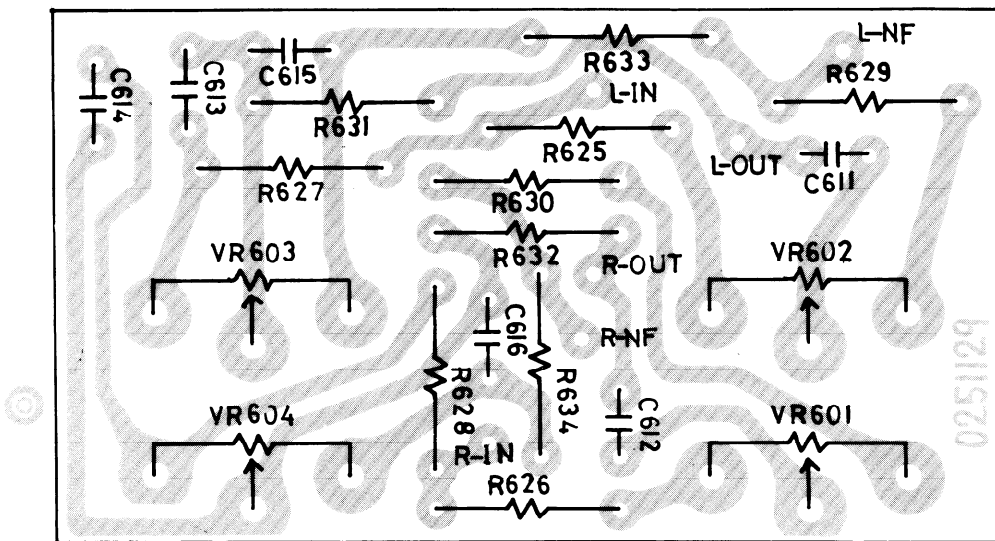
DC VOLTAGE () MEASURED WITH DC VTVM TO CHASSIS AT NO SIGNAL INPUT.
 ALL RESISTORS ARE IN OHMS, V.A.M.T. UNLESS OTHERWISE NOTED.
 ALL CAPACITORS ARE IN μ F UNLESS OTHERWISE NOTED.
 ELECTROLYTIC CAPACITORS (E) ARE IN μ F/W.

TX-666
 CIRCUIT DIAGRAM
 RC-201047

NAPS-170



NATC-171



KLIXON

This special temperature rise prevention circuit protects the receiver against abnormal temperature rises caused by internal and external heat.

If temperature of Heat Sink rises abnormal, the KLIXON switch operates and signal is cut off to protect the receiver against the trouble. In this case, wait for a while until the temperature of Heat Sink falls down and also check the below mention.

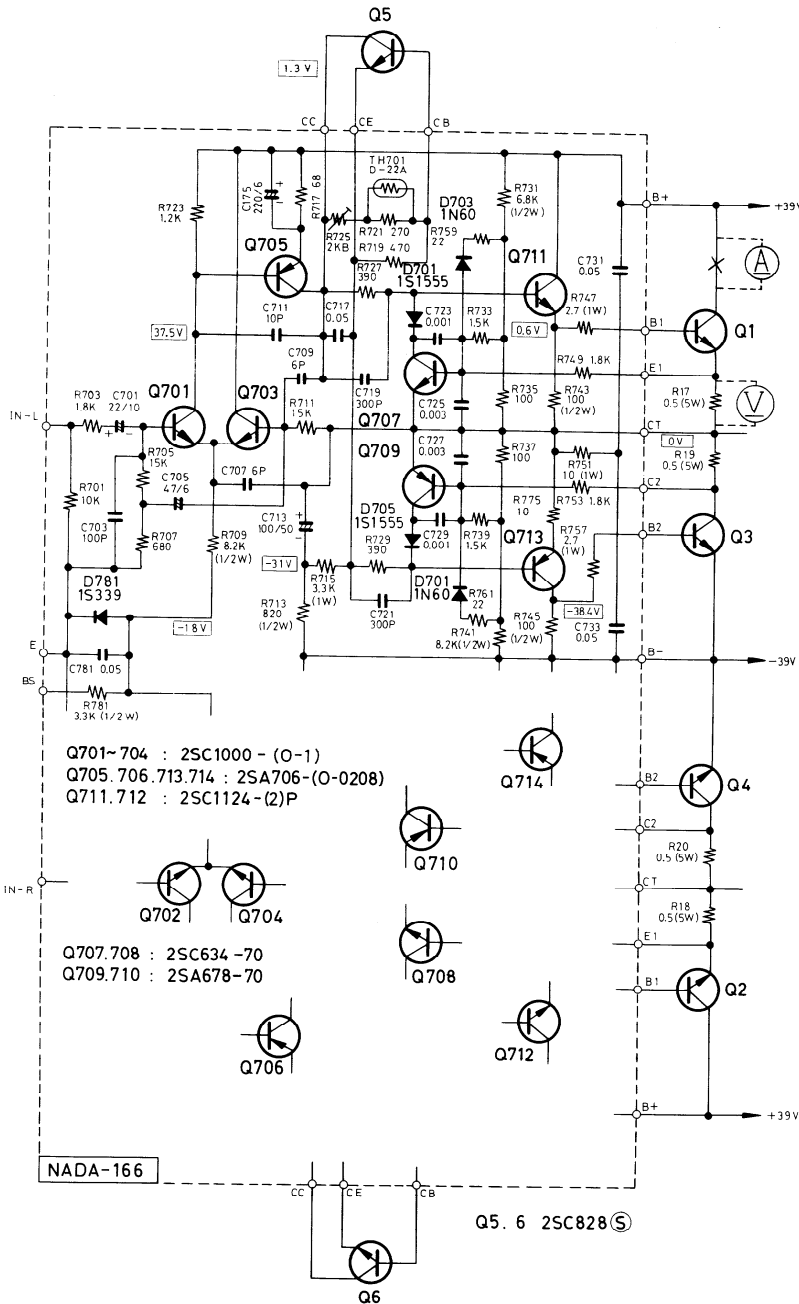
Cause for abnormal temperature rising

- (1) When the radiation from Heat Sink is unsatisfactory.
(Radiation from Heat Sink is disturbed when the receiver is used in a closed box or a small shelf, etc.)
- (2) When the receiver had driven with a large single tone (e.g. sine wave) into the low impedance load.

ADJUSTMENT OF IDLING CURRENT

Instrument required: DC Ammeter 50mA or 100mA when replacing POWER or DRIVER transistor, check the idling current of POWER transistor.

To adjust to normal value ($40 \pm 10\text{mA}$), follow as drawing.



(L ch)

- (1) Cut the connection between B+ and collector of Q1 on Main Amp. ass'y, and connect DC Ammeter.
- (2) Adjust the current to $40 \pm 10\text{mA}$ by R725.
- (3) After adjust, connect original wiring.

D.C. Voltmeter (50mV or 100mV) or V.T.V.M. is available too. In this case, connect the Voltmeter between E1 and CT. Adjust the voltage to $20 \pm 5\text{mV}$ ($0.5\Omega \times 40\text{mA} = 20\text{mV}$) by R725. This adjustment is easier because there are plugs for use if needed in NADA-166.

(R ch)

By R726, adjust the same steps as mentioned above.

* Note: Volume-Minimum. Open Load

ALIGNMENT PROCEDURE

INSTUMENT REQUIRED

1. AM and FM sweep generator
2. AM and FM signal generator
3. Vacuum tube voltmeter (V.T.V.M.)
AC. DC
4. Oscilloscope
5. Distortion meter
6. Stereo Modulator

GENERAL ALIGNMENT CONDITIONS

1. Signal input should be kept low as possible.
2. Standard modulation is 400Hz 30% (AM)
400Hz 100% (FM. MONO), pilot 10% Sub & Main 90% (FM. ST)
3. Standard output is 500mW (2.0V, 8Ω)

STEP	CONNECT SIGNAL SOURCE TO-	SET SIGNAL TO-	CONNECT OUTPUT INDICATOR TO-	SET RADIO DIAL TO-	ADJUST	ADJUST FOR	REMARKS	STEP
1	Set Radio Selector Switch to "AM"							1
2	AM Sweep Generator to- AM Ant.	455KHz	Oscilloscope to-across "AM OUT" terminal (NAIF-164)	Quiet Point on Band	CFT-455A	Maximum Symmetrical response	Usually not necessary to adjust	2
3	AM Signal generator to- AM Ant. through a standard radiating loop	515 KHz (modulated)	V.T.V.M. or osilloscope to-across "Speaker" terminal	Lower end	NMO-2503 (Red)	Maximum	Repeat steps 3 and 4 as necessary to obtain Maximum sensitivity on stations	3
4		1680KHz (modulated)		Upper end	AM Trimmer (OSC. side)	Maximum		4
5	..	600KHz (modulated)	..	600KHz (Tuned to Signal)	NMA-2507 (Coil Antenna)	Maximum	Repeat steps 5 and 6 as necessary	5
6		1400KHz (modulated)		1400KHz (Tuned to Signal)	AM Trimmer (Ant. side)	Maximum		6
7	Set Radio Selector Switch to "FM" Set Muting Switch to "OFF"							7
8	FM Sweep Generator to- TP-1 (NAFT-163)	± 0.3MHz Sweep Centered at 10.7MHz	Oscilloscope to-across "FM OUT" terminal (NAIF-164)	Quiet Point on Band	NIT-3503R Top Bottom	Maximum "S" curve Lineality	Not necessary to adjust for Symmetrical response or Zero Voltage	8
9	"	"	Oscilloscope to-across "SQL" terminal (NAIF-164)	"	NIT-3505M Top	Symmetrical response		9
10	FM Signal Generator to-across FM Ant. terminal through a matching network	92MHz (100% Mod.)	V.T.V.M. to-across "Speaker" terminal	92MHz	LO on FM Tuner	Maximum	Repeat Steps 10 and 11 as necessary	10
11		104MHz (100% Mod.)		104MHz	TCO on FM Tuner	Maximum		11
12		88MHz (100% Mod.)		Tuned to Signal	LA LR (2 points) on FM Tuner	Maximum	Repeat Steps 12 and 13 as necessary	12
13		108MHz (100% Mod.)		"	TCA TCR (2 points) on FM Tuner	Maximum		13
14	No Signal		Tuning Indicator may be used as the output indicator	Quiet Point Where FM Signals are not received	NIT-3503R Top	The needle of the tuning indicator comes to the center		14
15	FM Signal Generator to-across FM Ant. terminal through a matching network	104MHz (100% Mod.)	Distortion meter to-across "Speaker" terminal	Tuned to Signal	NIT-3503R Bottom	Minimum Distortion	Less than 0.2%	15
16					NIT-3505M	Minimum		16
17	Set Radio Selector Switch to "FM" Set Muting Switch to "ON"							17
18	"	"	Oscilloscope to-across "Speaker" terminal	Tuned and Detuned to Signal	Variable Resistor R162	No noise when detuned but less effective for Signal Output when tuned	Signals are not necessarily Squelching by turning R162 counterclockwise	18
19	Set Radio Selector Switch to "FM AUTO" Set Muting Switch to "OFF"							19
20	"	104MHz (Pilot Sig. 19KHz 10%) 1mV input	V.T.V.M. to-across TP-3 (NAMX-165)	Tuned to Signal	NMC-4-8 (2 points) NMC-4-10	Maximum		20
21	"	104MHz (Pilot Sig. 19KHz 10%) 10KHz R ch 90%	V.T.V.M. to-across "Speaker" terminal (R ch)	"	NMC-4-8 NMC-4-10	Maximum		21
22	"	104MHz (Pilot Sig. 19KHz 10%) 100Hz R ch 90%	"	"	NMC-5-9	Maximum		22
23	"	104MHz (Pilot Sig. 19KHz 10%) Main & Sub Sig. 1KHz L ch 90%	" (R ch)	"	Variable Resistor R269	Minimum	Retouch slightly Repeat Steps 23 and 24 as necessary	23
24	"	" R ch 90%	" (L ch)	"	"	"		24

The move of Signal Indicator may be adjusted by Variable Resistors R195 (AM) or R163 (FM)

PARTS LIST

DESCRIPTION	STOCK NO.	SPECIFICATION	Q'TY
FM Front end	0240005	FL-322U	1
IF Amp ass'y	01010028	NAIF-164	1
MPX ass'y	01010029	NAMX-165	1
Driver Amp ass'y	01010030	NADA-166	1
Equalizer Amp ass'y	01010031	NAAF-167	1
Tone Amp ass'y	01010032	NAAF-168	1
Push Switch ass'y	01010033	NASW-169	1
Power Supply ass'y	01010034	NAPS-170	1
Tone Controller ass'y	01010035	NATC-171	1
Transistor	02200022 or 02200023	2SD316-9-A or 2SD316-9-B	4
Transistor	02210033	2SC828(S)	2
Transistor	02200016	2SC1124P	3
Transistor	02210187 or 02210188	2SC634A(70) or 2SC634A(80)	1
Transistor	02210207 or 02210208	2SC632A(71) or 2SC632A(81)	17
Transistor	02210280 or 02210200	2SC1000-(0-1) or 2SC632A(0-0201)	4
Transistor	02210217 or 02210218	2SA705(7) or 2SA705(8)	2
Transistor	02210187	2SC634A(70)	2
Transistor	02200017	2SA706(0-0208)P	4
Transistor	02210197	2SA678(70)	2
Transistor	02210287 or 02210288	2SC632A(72) or 2SC632A(82)	4
Transistor	02210082	2SC733(GR)	10
Transistor	02210064	2SC734(Y)	1
Transistor	02210122	2SC380(O)	16
Silicon Diode	0223810	5B3	1
Silicon Diode	0223805	10D2	4
Silicon Diode	0223801 or 0223804	10D1 or SRIK-2	2
Silicon Diode	0223105	1S1555	10
Silicon Diode	0223106 or 0223107	1S1554 or 1S954	2
Germanium Diode	02231031	1N60	26
Zener Diode	0223907	BZ-240	1
Zener Diode	0223908	BZ-150	1
Zener Diode	0223909	WZ-310	1
Zener Diode	0223910	WZ-120	1
Zener Diode	0223906	1S339	1
Thermistor	04000003	D-22A	2
Pilot Lamp	0210012	6.3V 0.25A	6
Pilot Lamp	210015A	6.3V 50mA	8
Coil-Antenna	0232018	NMA-2507	1
Coil-Oscillator	0232013	NMO-2503	1

PARTS LIST

DESCRIPTION	STOCK NO.	SPECIFICATION	QTY
Coil-MPX	0233016	NMC-4-8	2
Coil-MPX	0233017	NMC-4-10	1
Coil-MPX	0233019	NMC-5-9	1
Coil-MPX	0233018	NMC-4-11	2
Coil-MPX	0233020	NMC-6-6	1
Coil-MPX	0233021	NMC-8-5	2
Transformer-Power	0230023	NPT-541D	1
Transformer-IF	0233022	NIT-3503R	1
Transformer-IF	0233023	NIT-3505M	1
Transformer-IF	0232012	NIT-5501D	1
Ceramic Filter	03010001	CFT-455A	1
Ceramic Filter	03010002	CF-10M-12	3
Coil-Choke	0233024	NCCH-1501	4
Coil-Choke	0233025	NCCH-1503	1
Capacitor-Electrolytic	03504001	EC 50V 6800 μ F	2
Resistor-Variable	05176008	N24RS50KA30	1
Resistor-Variable	051040002	N24RDG500KMN500KBT30	1
Resistor-Variable	051040001	N24RDP100KB30	2
Switch-Rotary	0250106	NRSM-486-30Y-A	1
Switch-Rotary WITH POWER SWITCH	0250074	NRSM-245-30Y-A	1
Switch-Push	0250072	NPS-622LN	1
Jack-Stereo Headphone	0750078 250078	XG-7716	1
Jack-Microphone	0750079	XG-7618	1
Tuning Indicator	0243011	NIND-0100S18	1
Tuning Indicator	0250086	NIND-0200S19	1
Klixon	0252011	9700L-21-11	1
Fuse	0252004	5A-T UL	2
Fuse	0252006	3A-T UL (SS-2)	4
Fuse	0252013	3A-T UL (ST-1)	1
Dial Plate	0270210-1		1
Dial Pointer	0270160		1
Dial Pointer Case	0270172-1	SHISHIN CASE	1
Front Panel	0280258		1
Glass Plate	0280259	TOOMEI ITA	1
End Cap	0280319	GAWA KAZARI	2
Knob-Volume (MIC)	0283050		1
Knob-Tuning	0283051		1
Knob-Tone (small)	0283053		3
Knob-Tone (large)	0283054		3
Knob-Selector	0283056	SPK TSUMAMI	2
Amp. Case ass'y	0283057-1		1