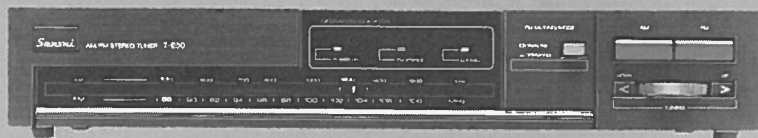


SERVICE MANUAL

AM/FM STEREO TUNER SANSUI T-E50/E50L



CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX (EXPORT) on the parts list and the schematic diagram mean followings respectively.
 - UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)
 - CSA Manufactured for Canadian market.
 - SA..... Manufactured for South African market.
 - BS, UK Manufactured for United Kingdom market.
 - EU Manufactured for European market.
 - AS..... Manufactured for Australian market.
 - XX (EXPORT) Standard Version.
 - NON MARK Common Parts.

2. Some printed circuit boards are not supplied assembled.
To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

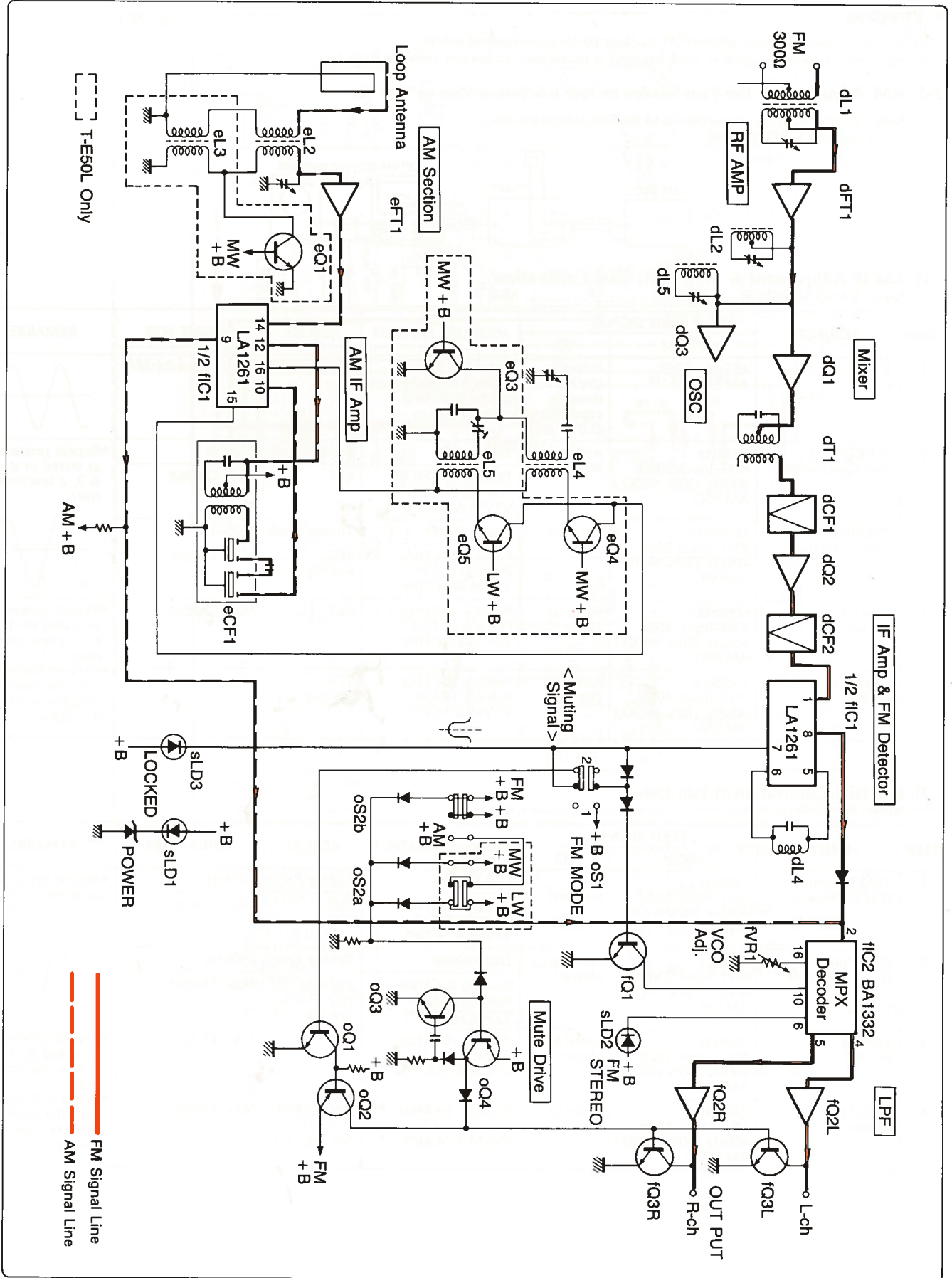
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

4. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R. : Carbon Resistor	E.B. : Bi-Polar Electrolytic Capacitor
S.R. : Solid Resistor	E.B.L. : Low Leakage Bi-Polar Electrolytic Capacitor
W.R. : Wire Wound Resistor	Ta.C. : Tantalum Capacitor
M.R. : Metal Film Resistor	F.C. : Film Capacitor
F.R. : Fusing Resistor	M.P. : Metallized Paper Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
R.A. : Resistor Array	C.A. : Capacitor Array
C.C. : Ceramic Capacitor	V.R. : Variable Resistor
C.T. : Ceramic Capacitor, Temperature Compensation	SW. : Switch
E.C. : Electrolytic Capacitor	Chip R. : Chip Resistor
E.L. : Low Leakage Electrolytic Capacitor	Chip C. : Chip Capacitor

1. BLOCK DIAGRAM



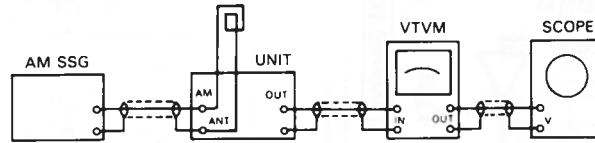
2. ADJUSTMENTS

• Presetting

If DA-E50 is used, connect between ST Sockets by long connection cable.
 If regulated DC power supply is used, connect it to the unit as Bottom view on Page 10.

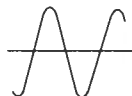
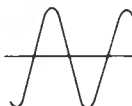
2-1. AM Adjustment (See Parts location on Page 6 & Bottom View on Page 10)

Note: Connet the AM Loop antenna to the AM antenna terminal and GND terminal.



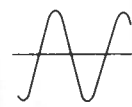
1) AM IF Adjustment & MW (AM) Dial Calibration

Note: BAND SELECTOR..... MW

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	455kHz 60dB, AM SSG	PointⒸ (JW21) through capacitor (0.01μF C.C.)	PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	eCF1	Max. Wave form	
2.	START Point Dial Calibration	525kHz ANT Input 20dB 400Hz (30% MOD.) AM SSG	ANT terminal	Dial Pointer PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	Tuning Knob eL4	525kHz Max. Output	<ul style="list-style-type: none"> Repeat procedures as stated in step 2 & 3, a few times over. 
3.	END Point Dial Calibration	1625kHz ANT Input 20dB 400Hz (30% MOD.) AM SSG	Same as above	Dial Pointer PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	Tuning Knob TC2 See Fig. 2-2	1625kHz Max. Output	
4.	600kHz RF Adj.	600kHz ANT Input 10dB 400Hz (30% MOD.) AM SSG	Same as above	PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	eL2	Max. Output	<ul style="list-style-type: none"> Repeat procedures as stated in step 4 & 5, a few times over. Perform these steps with the lowest possible level of it's signal.
5.	1400kHz RF Adj.	1400kHz ANT Input 10dB 400Hz (30% MOD.) AM SSG	Same as above	PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	TC4 See Fig. 2-2	Max. Output	

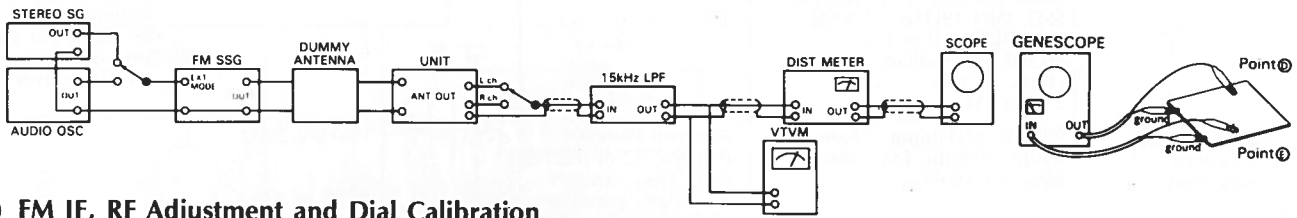
2) LW Dial Calibration (T-E50L Only)

Note: BAND SELECTOR..... LW

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	START Point Dial Calibration	140kHz ANT Input 20dB 400Hz (30% MOD.) AM SSG	ANT terminal	Dial Pointer PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	Tuning Knob eL5	140kHz Max. Output	<ul style="list-style-type: none"> Repeat procedures as stated in step 1 & 2, a few times over. 
2.	END Point Dial Calibration	290kHz ANT Input 20dB 400Hz (30% MOD.) AM SSG	Same as above	Dial Pointer PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	Tuning Knob LW OSC TC (1/2 eTC1) See Fig. 2-2	290kHz Max. Output	
3.	160kHz RF Adj.	160kHz ANT Input 15dB 400Hz (30% MOD.) AM SSG	Same as above	PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	eL3	Max. Output	<ul style="list-style-type: none"> Repeat procedures as stated in step 3 & 4, a few times over. Perform these steps with the lowest possible level of it's signal.
4.	270kHz RF Adj.	270kHz ANT Input 15dB 400Hz (30% MOD.) AM SSG	Same as above	PointⒶ (L-CH) or PointⒷ (R-CH), VTVM & SCOPE	LW ANT TC (1/2 eTC1) See Fig. 2-2	Max. Output	

2-2. FM Adjustment (See Parts location on Page 6 & Bottom View on Page 10)

Note: BAND SELECTOR..... FM



1) FM IF, RF Adjustment and Dial Calibration

Note: FM MUTING/MODE Switch..... OFF/MONO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	Output 60dB, Genescope	Point C (JW5) through capacitor (0.01μF C.C.)	Between Point E Cathode of dD1) & Earth •See Parts Location F-5515 on Page 6	dT1	Steep linearity of S curve. Make symmetrical S curve.	
2.	Discriminator Coil Adj. In case of using Genescope	Same as above	Point D (dR12) through capacitor (0.01μF C.C.)	Same as above	dL4	Same as above	•Repeat procedures as stated in step 1 & 2, a few times over.
	Discriminator Coil Adj. In case of using Dist meter	98MHz ANT Input 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT terminal 300Ω	Point A (L-CH) or Point B (R-CH), VTVM, SCOPE & DIST. METER	dL4	Min. THD	
3.	START Point Dial Calibration	87.35MHz ANT Input 25dBf (19.8dB), 1kHz (100% MOD.), FM SSG	Same as above	Dial Pointer	Tuning Knob	START Point	•Refer to Fig. 2-2 & 2-3. •Repeat procedures as stated in step 3 & 4, a few times over.
				Point A (L-CH) or Point B (R-CH), VTVM & SCOPE	dL5	Max. Output	
4.	END Point (108.25MHz) Dial Calibration	108.25MHz ANT Input 25dBf (19.8dB), 1kHz (100% MOD.), FM SSG	Same as above	Dial Pointer	Tuning Knob	106MHz	
				Point A (L-CH) or Point B (R-CH), VTVM & SCOPE	TC1 See Fig. 2-2	Max. Output	
5.	90MHz RF Adj.	90MHz ANT Input 16dBf (19.8dB) 1000Hz (100% MOD.), FM SSG	Same as above	Point A (L-CH) or Point B (R-CH), VTVM & SCOPE	dL1, dL2	Max. Output	•Repeat procedures as stated in step 5 & 6. •Rerform these steps with the lowest possible level of it's signal.
6.	106MHz RF Adj.	106MHz ANT Input 16dBf (19.8dB) 1000Hz (100% MOD.), FM SSG	Same as above	Same as above	TC3, TC5 See Fig. 2-2	Max. Output	

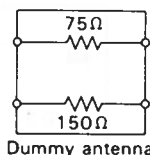
◆ ADJUSTMENT FOR FM

- There are two kind in indication of FM SSG output attenuator
 - Attenuator with marking of 75Ω open..... open indication type.
 - Attenuator with marking of 75Ω load or close..... load or close indication type.
- FM SSG output level in this FM adjustment are described as open indication type.
- To feed FM signal, a dummy antenna circuit as Fig. 2-1 must be connected between FM SSG output and ANT terminal (300Ω) of the unit.

- The following table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltage (dB/μV) in each indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 66 dB	-0.8 dBf 65.2 dBf	-6 dB/μV 60 dB/μV
Load or close indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	0 dB/μV 60 dB/μV

Fig. 2-1



Dummy antenna

2) FM STEREO Adjustment

Note: FM Mode..... AUTO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	PLL VCO Adj.	98MHz ANT Input 30dBf (24.8dB), FM SSG, Pilot 19kHz (9% MOD.), R or L MODE 1kHz + Pilot (100% MOD.), STEREO SG	ANT terminal 300Ω	Stereo indicator	dVR1	Light up indicator	<ul style="list-style-type: none"> Adjust the VR within center of lighting level. Re-adjust this step after detuning, a few times over.
	PLL VCO Adj. In case of using Freq.	98MHz ANT Input 65dBf (59.8dB), FM SSG, No MOD.	Same as above	Between PointⓈ (Pin No. 12 of fIC2) & Earth Freq. counter •See Parts Location F-5515 on Page 6	dVR1	19kHz ± 20Hz	

Fig. 2-2

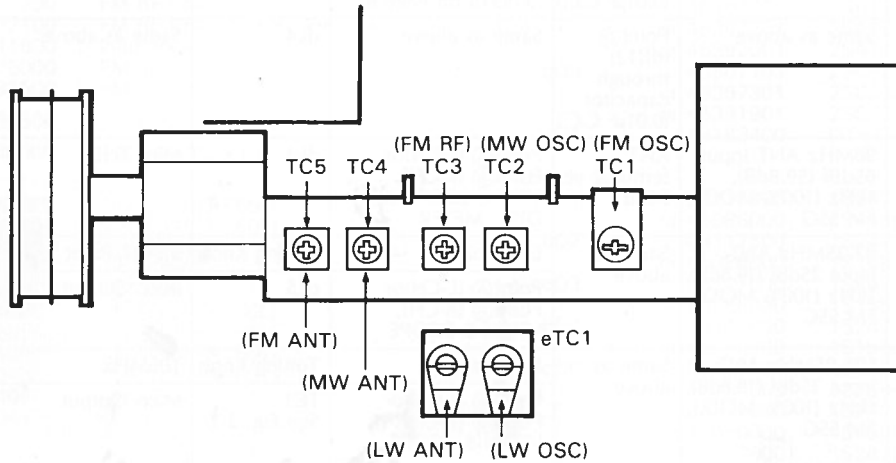
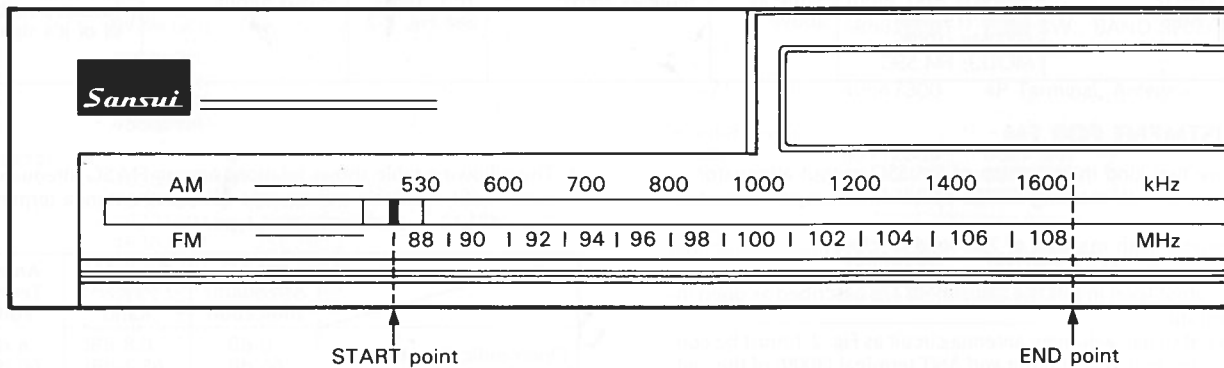
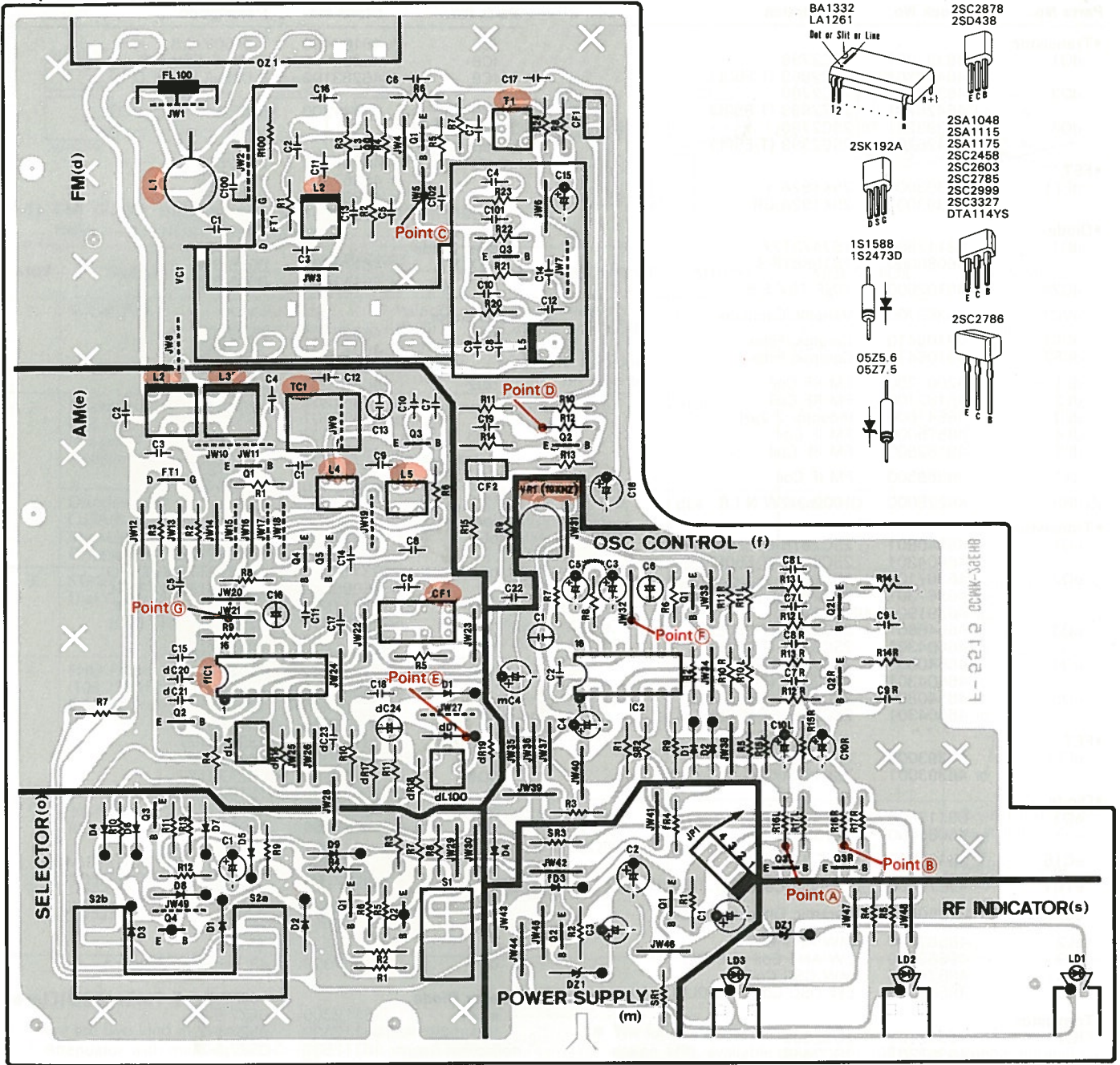


Fig. 2-3

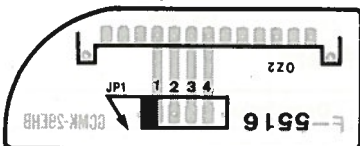


3. PARTS LOCATION OF BOARDS

3-1. F-5515 Main Board
Component Side



3-2. F-5516 ST Socket Board
Component Side



4. ELECTRIC PARTS LIST

4-1. F-5515 Main Board (Stock No. 01003201 = T-E50/01003505 = T-E50L)

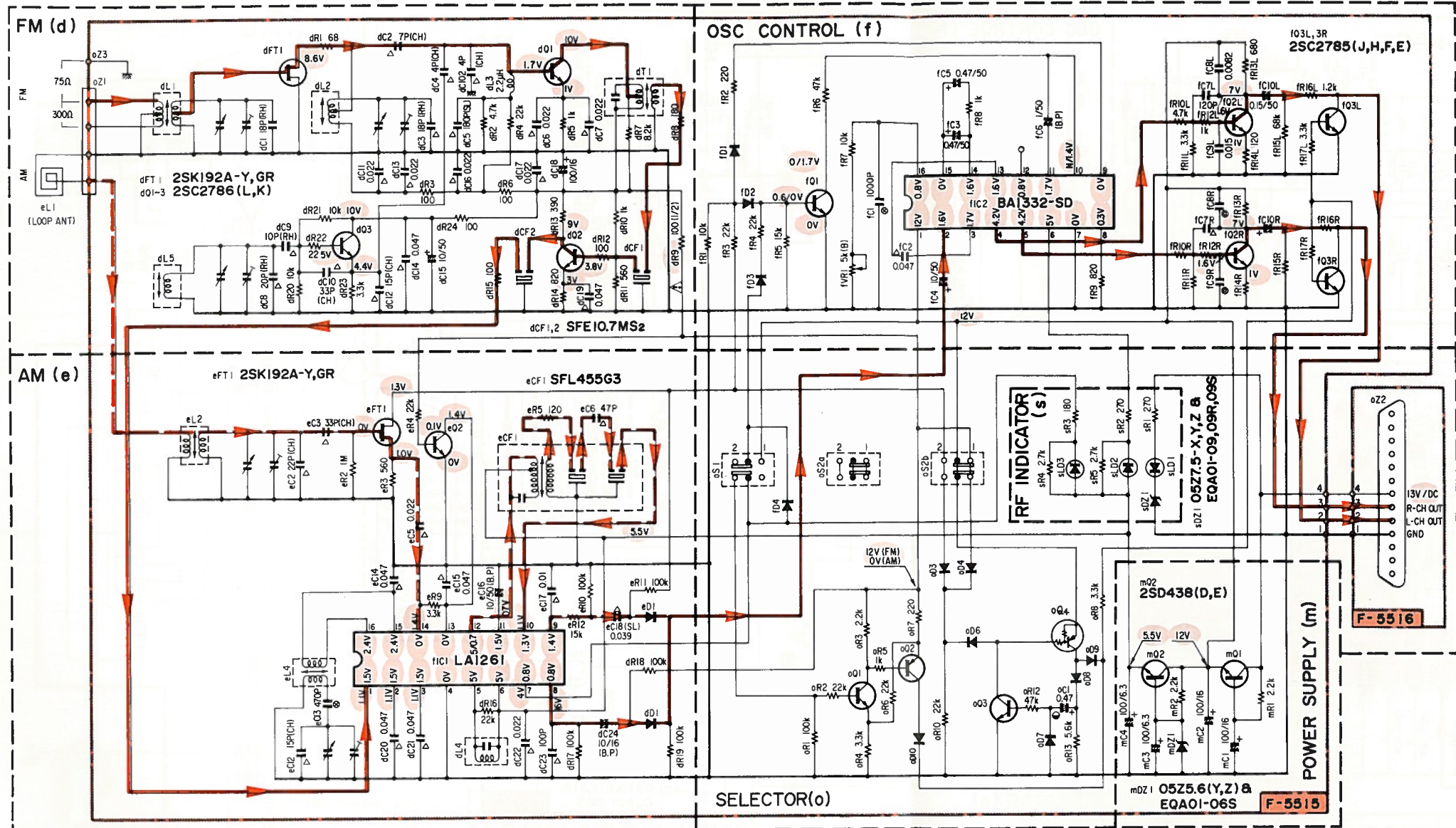
Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
•Transistor			fc6	48103400	1 μ F 50V E.B.
dQ1	46393201	2SC2786	fc8	46282800	8200pF 50V F.C.
	or 46426701	2SC2999 (T-E50L)	fc9	46283100	0.015 μ F 50V F.C.
dQ2	46393201	2SC2786			
	or 46426701	2SC2999 (T-E50L)	fVR1	07241200	5k Ω (B) S.V.R., VCO
dQ3	46393201	2SC2786	•Transistor		
	or 46426701	2SC2999 (T-E50L)	mQ1	46367101	2SC2603
•FET				or 46367301	2SC2458
dFT1	46393000	2SK192A-Y		or 46391901	2SC2785
	or 46393001	2SK192A-GR	mQ2	48581701	2SD438
•Diode			•Zener Diode		
dD1	03117600	1S2473T77	mDZ1	46111500	05Z5.6-Y
	or 46086000	1S1588TP-3		or 46111600	05Z5.6-Z
dC24	48102000	10 μ F 16V E.B.	•Transistor		
dVC1	46369700	Variable Capacitor	oQ1	46367101	2SC2603
dCF1	09106410	Ceramic Filter		or 46367301	2SC2458
dCF2	09106410	Ceramic Filter		or 46391901	2SC2785
dL1	42007200	FM RF Coil	oQ2	46367001	2SA1115
dL2	48182100	FM RF Coil		or 46367201	2SA1048
dL3	46541600	Inductor 2.2 μ H		or 46392001	2SA1175
dL4	48575000	FM IF Coil	oQ3	46367101	2SC2603
dL5	48182500	FM RF Coil		or 46367301	2SC2458
dT1	46369500	FM IF Coil	oQ4	48183400	2SC2785 DTA114YS
Δ dR9	46229000	100 Ω 1/2W N.I.R.	•Diode		
•Transistor			oD1	03117600	1S2473T77 (T-E50L)
eQ1	46540801	2SC2878 (T-E50L)		or 46086000	1S1588TP-3 (T-E50L)
	or 46604301	2SC3327 (T-E50L)	oD2	03117600	1S2473T77 (T-E50L)
eQ2	46367101	2SC2603		or 46086000	1S1588TP-3 (T-E50L)
	or 46367301	2SC2458	oD3	03117600	1S2473T77 (T-E50)
	or 46391901	2SC2785		or 46086000	1S1588TP-3 (T-E50)
eQ3	46540801	2SC2878 (T-E50L)	oD4	03117600	1S2473T77
	or 46604301	2SC3327 (T-E50L)		or 46086000	1S1588TP-3
eQ4	46540801	2SC2878 (T-E50L)	oD6	03117600	1S2473T77
	or 46604301	2SC3327 (T-E50L)		or 46086000	1S1588TP-3
eQ5	46540801	2SC2878 (T-E50L)	oD7	03117600	1S2473T77
	or 46604301	2SC3327 (T-E50L)		or 46086000	1S1588TP-3
•FET			oD8	03117600	1S2473T77
eFT1	46393000	2SK192A-Y		or 46086000	1S1588TP-3
	or 46393001	2SK192A-GR	oD9	03117600	1S2473T77
•Diode				or 46086000	1S1588TP-3
eD1	03117600	1S2473T77	oD10	03117600	1S2473T77
	or 46086000	1S1588TP-3		or 46086000	1S1588TP-3
eC16	48102000	10 μ F 16V E.B.	oS1	46603000	Push SW., FM MUTING/MODE
eTC1	46370700	Trimmer Capacitor 16PF (T-E50L)	oS2	48582700	Push SW., BAND SELECTOR (T-E50)
eCF1	07250500	Ceramic Filter, SFL455G3		48582800	Push SW., BAND SELECTOR (T-E50L)
eL2	48582300	MW ANT Coil	oZ1	46547300	4P Terminal, Antenna
eL3	48582400	LW ANT Coil (T-E50L)	•Zener Diode		
eL4	48574900	MW OSC Coil	sDZ1	46112300	05Z7.5-X
eL5	48582500	LW OSC Coil (T-E50L)		or 46112400	05Z7.5-Y
•Transistor				or 46112500	05Z7.5-Z
fQ1	46367101	2SC2603	•LED		
	or 46367301	2SC2458	sLD1	46095200	TLR123, POWER
	or 46391901	2SC2785	sLD2	46095200	TLR123, FM STEREO
fQ2	46367101	2SC2603	sLD3	48185200	GL-3NG87, LOCKED
	or 46367301	2SC2458			
	or 46391901	2SC2785			
fQ3	46540801	2SC2878			
	or 46604301	2SC3327			
•IC					
fiC1	48571800	LA1261			
fiC2	48169300	BA1332-SD			
•Diode					
fd1	03117600	1S2473T77			
	or 46086000	1S1588TP-3			
fd2	03117600	1S2473T77			
	or 46086000	1S1588TP-3			
fd3	03117600	1S2473T77			
	or 46086000	1S1588TP-3			
fd4	03117600	1S2473T77			
	or 46086000	1S1588TP-3			

4-2. F-5516 ST Socket Board

Parts No.	Stock No.	Description
oZ2	48582200	13P ST Socket

5. SCHEMATIC DIAGRAM 5-1. T-E50

• Design and specifications subject to change without notice for improvement.
 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



- BA1332
LA1261
Dot or SHI or LIM
- 2SK192A
- 1S1588
1S2473D
- 05Z5.6
05Z7.5
- 2SC2878
2SD438
- 2SA1048
2SA1115
2SA1175
2SC2458
2SC2603
2SC2785
2SC2999
2SC3327
DTA114YS
- 2SC2786

OPTIONAL USE OF SEMICONDUCTOR AND DIODE

e02, f01, 2	2SC2458 (Y, GR)
o01, 3, m01	2SC2603 (E, F)
	2SC2785 (J, H, F, E)
o02	2SA1048 (Y, GR)
	2SA1115 (E, F)
	2SA1175 (J, H, F, E)
e01, d01, f01-4	IS2473D
o01, 2, 4, 6, 7	IS1588
o04	DTA114YS

SWITCHES

- oS1: FM MODE SW
1. MONO & MUTING OFF
2. STEREO & MUTING ON
- oS2: MODE SELECTOR
1. FM
2. AM

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer

SYMBOL OF FUNCTION

- (d) FM
- (e) AM
- (f) OSC CONTROL
- (o) SELECTOR
- (m) POWER SUPPLY
- (s) RF INDICATOR

SYMBOL

- △ Ceramic
- ◊ Low-Leak Electrolytic
- BP Bi-Polar Electrolytic
- ⊙ Mylar
- ⊙ Polystyrene
- ⊙ Non-Inflammable Resistor

RESISTORS

Are in ohms, 1/4 Watts, ±5% Tolerance
 Unless Otherwise Noted. k: kΩ, M: MΩ

CAPACITORS
 Are in μF, Unless Otherwise Noted. P: pF

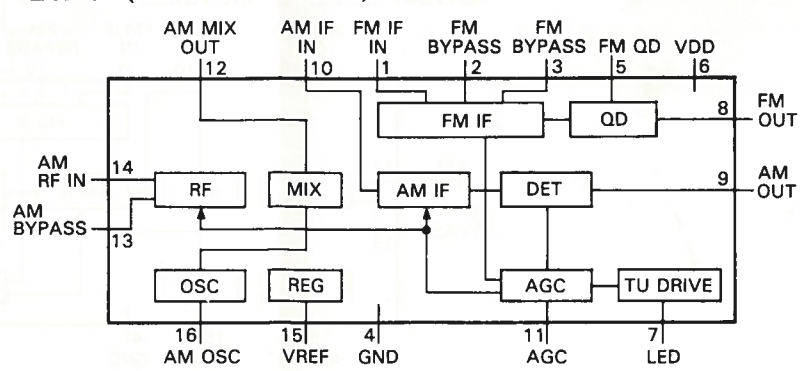
Electrolytic Capacitor
 Capacitance (μF) / Volt (V)

TOLERANCE

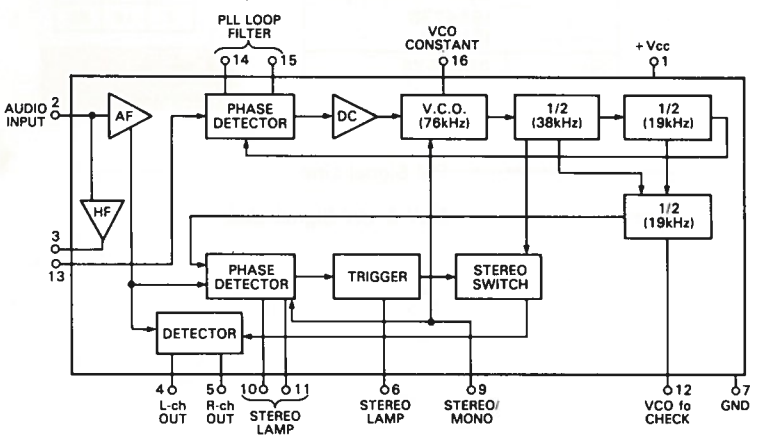
J: ±5%, G: ±2%, F: ±1%
 Each D.C. Voltage shows the nominal value in volts at out of tune



•LA1261 (FM IF & AM Tuner)

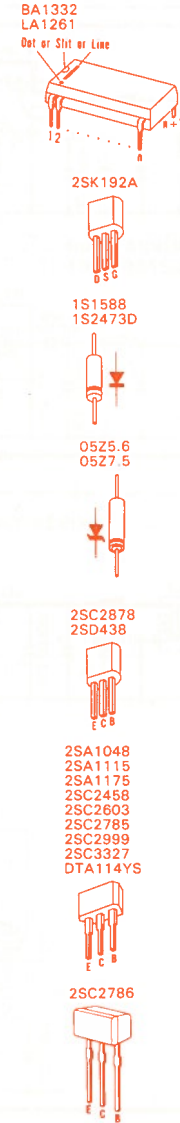
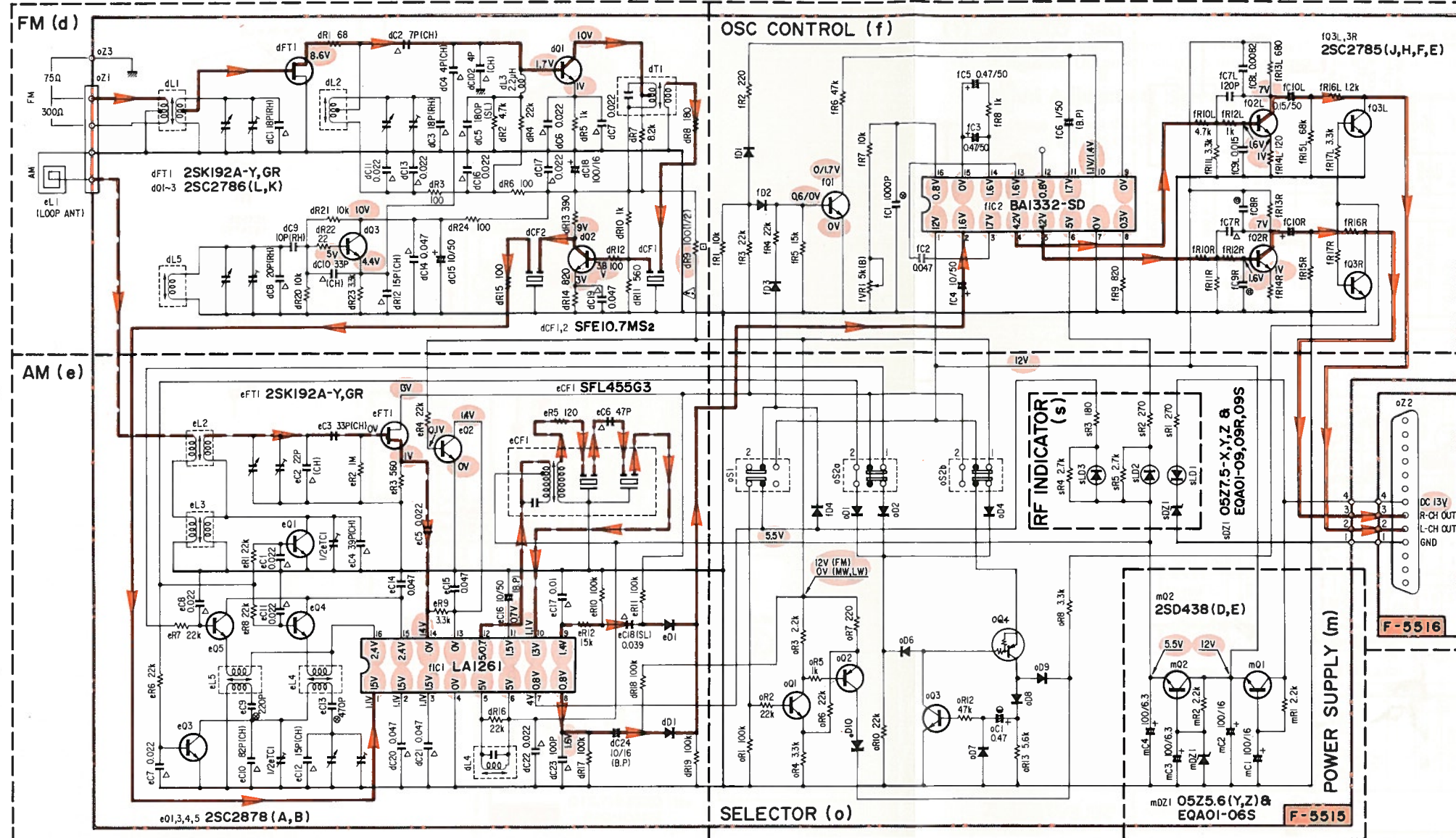


•BA1332 (FM MPX)



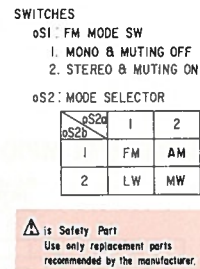
5-2. T-E50L

Design and specifications subject to change without notice for improvement.
 La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



OPTIONAL USE OF SEMICONDUCTOR AND DIODE

e02, f01, 2 o01, 3, m01	2SC2458 (Y,GR) 2SC2603 (E,F) 2SC2785 (J,H,F,E)
e02	2SA1048 (Y,GR) 2SA1115 (E,F) 2SA1175 (J,H,F,E)
e01, d01 f01-4, o01-7	1S2473D 1S1588
o04	DTA114YS



SYMBOL OF FUNCTION

(d) FM
 (e) AM
 (f) OSC CONTROL
 (o) SELECTOR
 (m) POWER SUPPLY
 (s) RF INDICATOR

SYMBOL

△ Ceramic
 ⊖ Low-Leak Electrolytic
 B/P Bi-Polar Electrolytic
 ⊗ Mylar
 ⊙ Polystyrene
 □ Non-Inflammable Resistor

RESISTORS

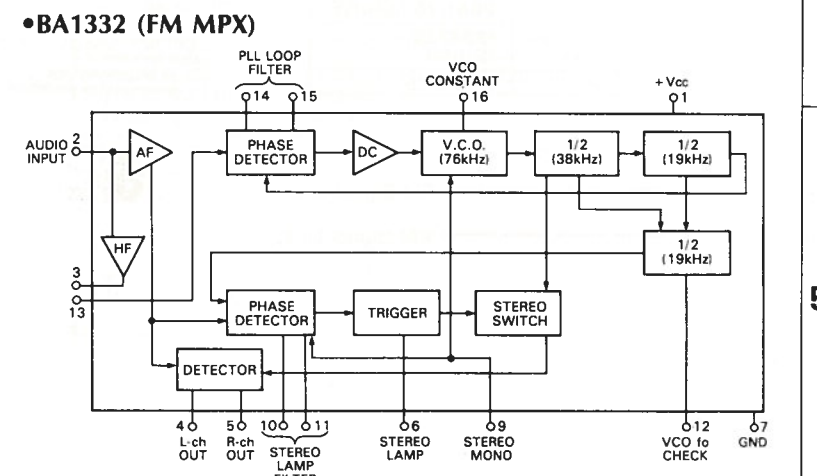
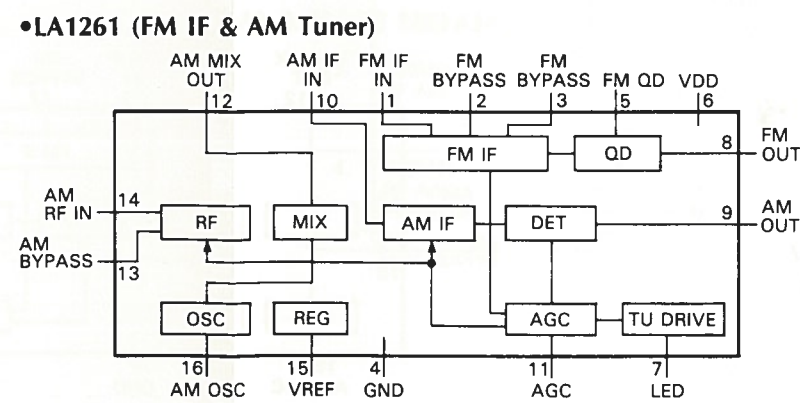
Are in ohms, 1/4 Watts, ±5% Tolerance
 Unless Otherwise Noted, k: kΩ, M: MΩ

CAPACITORS

Are in μF, Unless Otherwise Noted, P: pF
 Electrolytic Capacitor
 Capacitance (μF)/Volt (V)

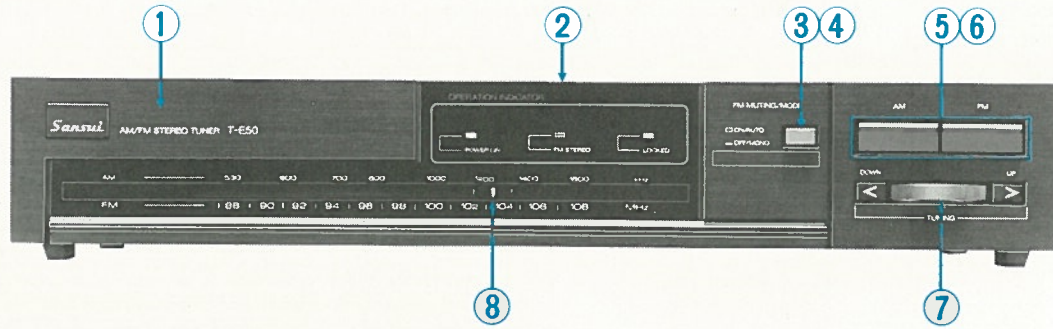
TOLERANCE

J: ±5%, G: ±2%, F: ±1%
 Each DC Voltage shows the nominal value in volts at out of tune



6. OTHER PARTS

6-1. Front View

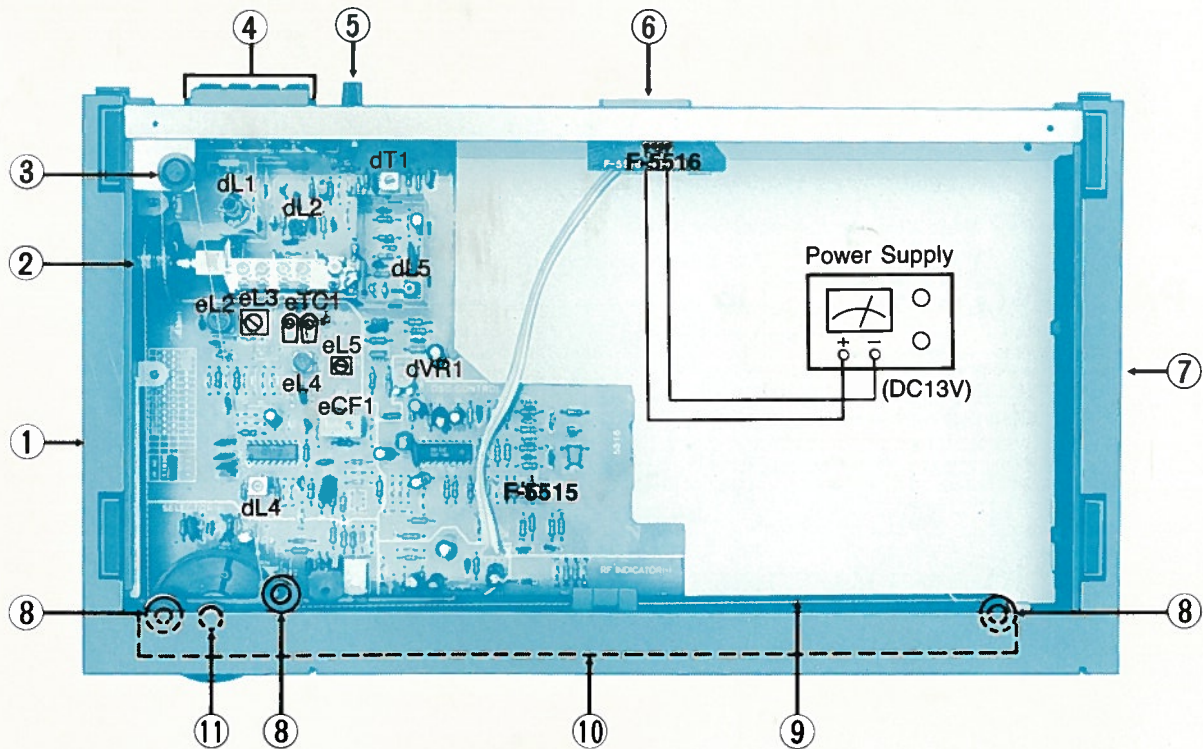


Parts List

Parts No.	Stock No.	Description
1	27238400	Front Panel Ass'y (T-E50)
	27238600	Front Panel Ass'y (T-E50L)
2	27049000	Bonnet
3	27232500	Knob, FM MUTING/MODE
4	46603000	Push SW., FM MUTING/MODE
5	27237700	Knob, MODE SELECTOR

Parts No.	Stock No.	Description
6	48582700	Push SW., MODE SELECTOR (T-E50)
	48582800	Push SW., MODE SELECTOR (T-E50L)
7	27083510	Knob, TUNING
8	27237600	Dial Pointer

6-2. Bottom View



Parts List

Parts No.	Stock No.	Description
1	27106110	Right Side Panel Ass'y
2	07779700	Pulley Ass'y
3	61467600	Pulley Ass'y
4	46547300	4P Terminal, ANTENNA
5	22301510	Ground Terminal
6	48582200	13P Socket, System Control

Parts No.	Stock No.	Description
7	27106200	Left Side Panel Ass'y
8	48574200	Pulley
9	60360530	0.5mmø Dial Cord
10	27240200	Rail, pointer
11	27237500	Tuning Shaft

7. THREADING OF DIAL CORD

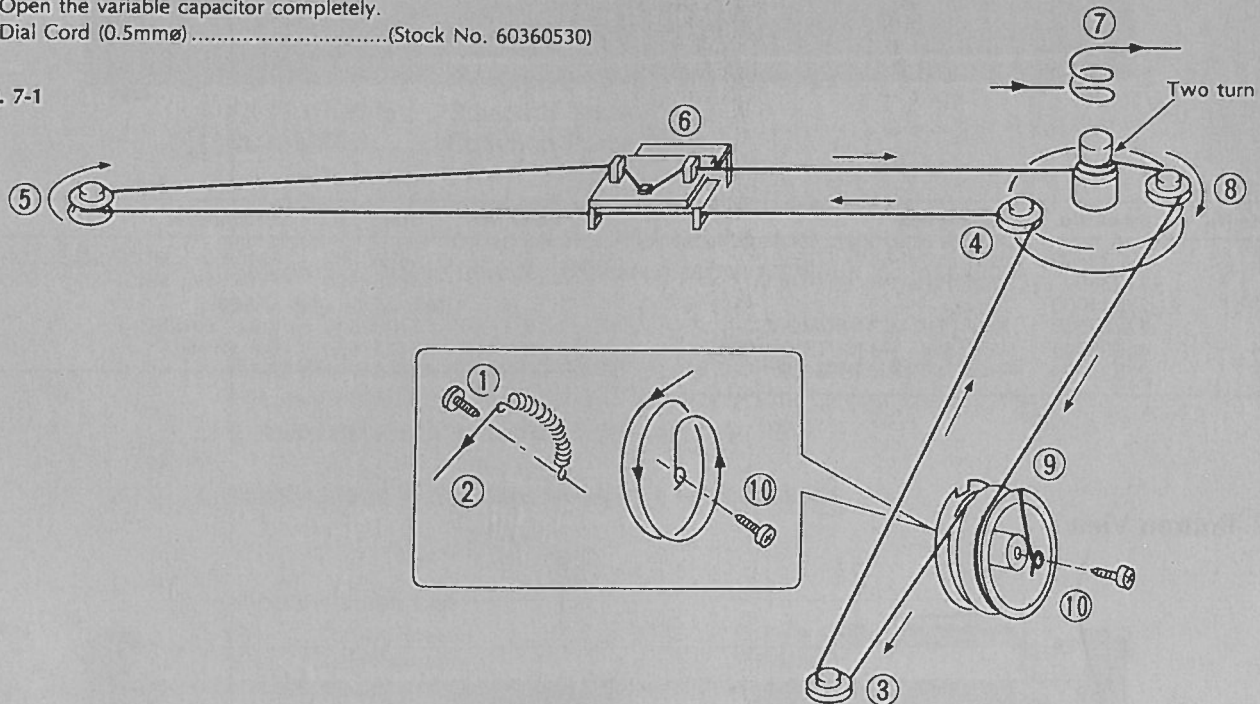
- If a dial cord is cut off or slip; replace it by following procedures.
As this unit uses 0.5 mm ϕ cord, please replace it with the same type certainly.
- The length of dial cord is approximately 130 cm.

7-1. Threading of Dial Cord

Thread the dial cord in numerical order from ① to ⑩ as Fig. 7-1.

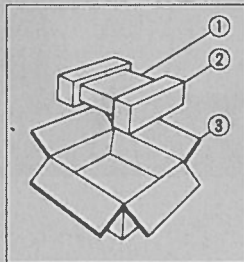
- Open the variable capacitor completely.
- Dial Cord (0.5mm ϕ)(Stock No. 60360530)

Fig. 7-1



8. PACKING LIST

Parts No.	Stock No.	Description
1	27139800	Vinyl Bag
2	27238000	Styrofoam Packing
3	27239500	Carton Case (T-E50)
	27239600	Carton Case (T-E50L)



9. ACCESSORY LIST

Stock No.	Description
46051700	FM Antenna
46186100	AM Loop Antenna
07563000	Holder, AM Loop Antenna
49014800	T-E50/T-E50L Operating Instruction (*E·F·S)
49014900	T-E50/T-E50L Operating Instruction (*G·I·Sw)

***Note:**

E·F·S: English·French and Spanish Version
G·I·Sw: German·Italian and Swedish Version

Sansui

SANSUI ELECTRIC CO., LTD.:
 SANSUI ELECTRONICS CORPORATION:
 SANSUI ELECTRONICS (U.K.) LTD.:
 SANSUI ELECTRONICS G.M.B.H.:

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
 PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
 17150 South Margay Ave. Carson, California 90746 U.S.A.
 3036 Koapaka Street, Honolulu, Hawaii 96819 U.S.A.
 Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
 Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany