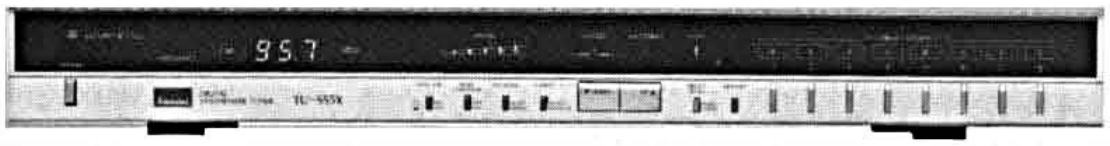
SERVICE MANUAL

DIGITAL SYNTHESIZER TUNER

SANSUI TU-S55X (Silver & Black Model)
TU-S55XL (Black Model)



Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

TU-S55X

FM Section

Tuning range ..... 88 to 108 MHz
Usable sensitivity
Mono IHF ..... 10.8 dBf (1.9μV: T100)
DIN ..... 0.95 μV
50 dB quieting sensitivity
Mono ..... 16.0 dBf
Stereo ..... 36.0 dBf
Signal to noise ratio at 65 dBF
Mono ..... 85 dB
Stereo ..... 79 dB
Distortion at 65 dBf
Mono ..... less than 0.05% at 1,000 Hz
Stereo ..... less than 0.08% at 1,000 Hz
Alternate channel selectivity (at 400 kHz)
..... 60 dB
Capture ratio ..... 1.0 dB
Image response ratio ..... 75 dB
Spurious response ratio ..... 90 dB
Stereo separation ..... 40 dB at 100 Hz
50 dB at 1,000 Hz
40 dB at 10,000 Hz
Frequency response
Stereo ..... 30 to 15,000 Hz
+0.3 dB, −0.8 dB
Antenna input impedance ..... 300 ohms balanced
75 ohms unbalanced

AM Section

Tuning range ..... 530 to 1,600 kHz
Usable sensitivity ..... 50 dB/m (316 μV/m)
Signal to noise ratio ..... 50 dB
Image response ratio ..... 45 dB at 1,000 kHz

Others

Output voltage and impedance ... 775 mV/2.2 kilohms
Power requirements 120/220/240V
50/60 Hz
For U.S.A. and Canada ..... 120V (60 Hz)
Power consumption 12W
Dimensions ..... 430 mm (16-15/16″)W
51 mm (2-1/16″)H
261 mm (10-5/16″)D
Weight ..... 2.8 kg (6.2 lbs) net
3.6 kg (7.9 lbs) packed

TU-S55XL

FM Section

Tuning range ..... 88 to 108 MHz
Usable sensitivity
Mono IHF ..... 10.8 dBf (1.9μV: T100)
DIN ..... 0.95 μV
50 dB quieting sensitivity
Mono ..... 16.0 dBf
Stereo ..... 36.0 dBf
Signal to noise ratio at 65 dBF
Mono ..... 85 dB
Stereo ..... 79 dB
Distortion at 65 dBf
Mono ..... less than 0.05% at 1,000 Hz
Stereo ..... less than 0.08% at 1,000 Hz
Alternate channel selectivity (at 400 kHz)
..... 60 dB
Capture ratio ..... 1.0 dB
Image response ratio ..... 75 dB
Spurious response ratio ..... 90 dB
Stereo separation ..... 40 dB at 100 Hz
50 dB at 1,000 Hz
40 dB at 10,000 Hz
Frequency response
Stereo ..... 30 to 15,000 Hz
+0.3 dB, −0.8 dB
Antenna input impedance ..... 300 ohms balanced
75 ohms unbalanced

AM (MW, LW) Section

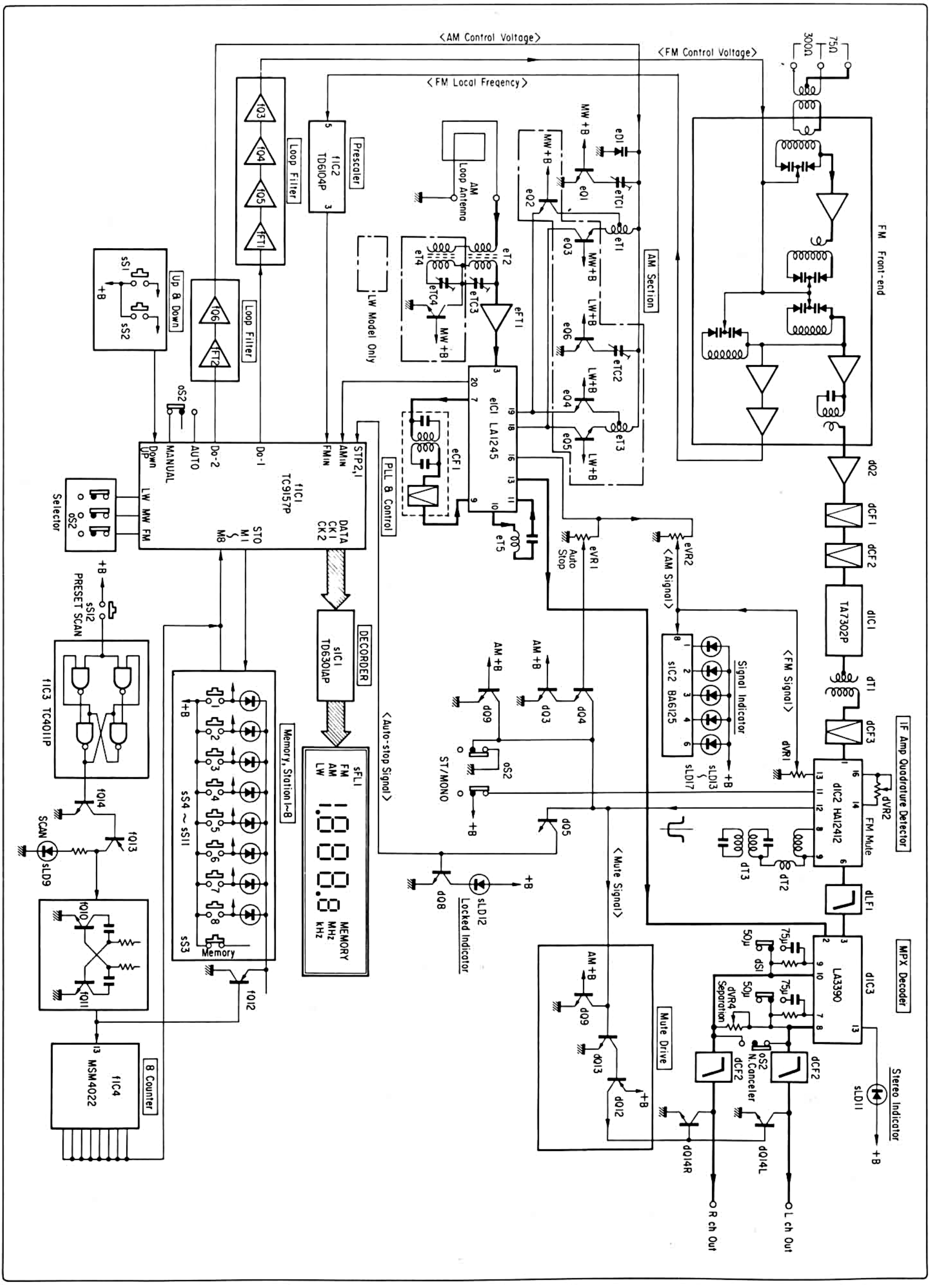
Tuning range ..... MW: 530 to 1,600 kHz
LW: 153 to 360 kHz
Usable sensitivity ..... MW: 50 dB/m (316 μV/m)
LW: 60 dB/m at 250 kHz
Signal to noise ratio (MW) ..... 50 dB
Image response ratio (MW) ..... 45 dB at 1,000 kHz

Others

Output voltage and impedance ... 775 mV/2.2 kilohms
Power requirements 220/240V
50/60 Hz
Power consumption 12W
Dimensions ..... 430 mm (16-15/16″)W
51 mm (2-1/16″)H
261 mm (10-5/16″)D
Weight ..... 2.8 kg (6.2 lbs) net
3.6 kg (7.9 lbs) packed

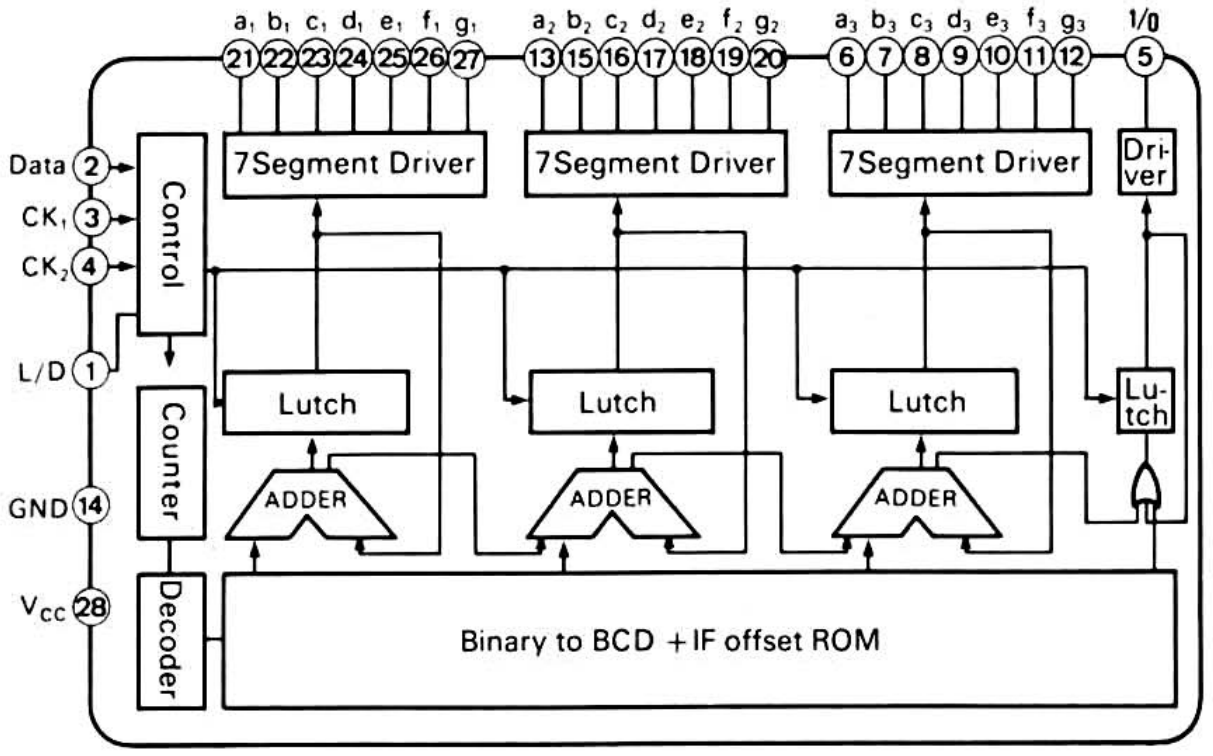
* **Disign and specifications subject to change without notice for improvements.**

1. BLOCK DIAGRAM



2. INTERIOR BLOCK DIAGRAM OF IC

•TD6301 (7-Segment Decoder IC)



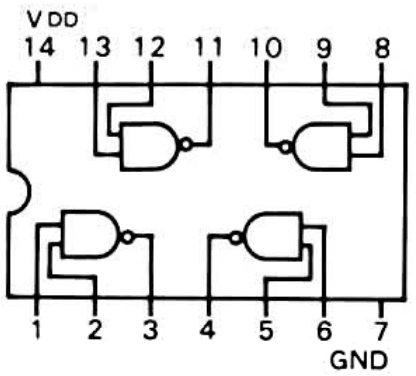
•Terminal Function of LSI-TD6301P

Pin No.	Pin Name	Description of Function and Operation
1	L/D	Terminal to input a signal for switching the output conditions. The output conditions are switched in accordance with the indicator display (LED, FL, LCD).
2	Data	Terminal to input the received frequency data. The data are inputted in series from the system controller TC9140.
3, 4	CK_1, CK_2	Terminals to input a timing signal for controlling the input of the received frequency data. The timing signal is transferred together with the data from the system controller TC9140.
5	1/0	Terminal to output a signals for driving the 7-segment display. A digit representing 100MHz in FM receiving and 1000 kHz in AM receiving is displayed. Only one pin is provided because the output is 1 or 0 in FM and AM, respectively.
6 ~ 12	a3 ~ g3	Terminal to output a signal for driving the 7-segment display. A digit representing 10 MHz in FM receiving and 100 kHz in AM receiving is displayed.
13, 15 ~ 20	a2 ~ g2	Terminals to output a signal for driving the 7-segment display. A digit representing 1 MHz in FM receiving and 10 kHz in AM receiving is displayed.
21 ~ 27	a1 ~ g1	Terminal to output a signal for driving the 7-segment display. A digit representing 100 kHz in FM receiving and 1 kHz in AM receiving is displayed.
14, 28	Vcc. GND	Power supply terminal

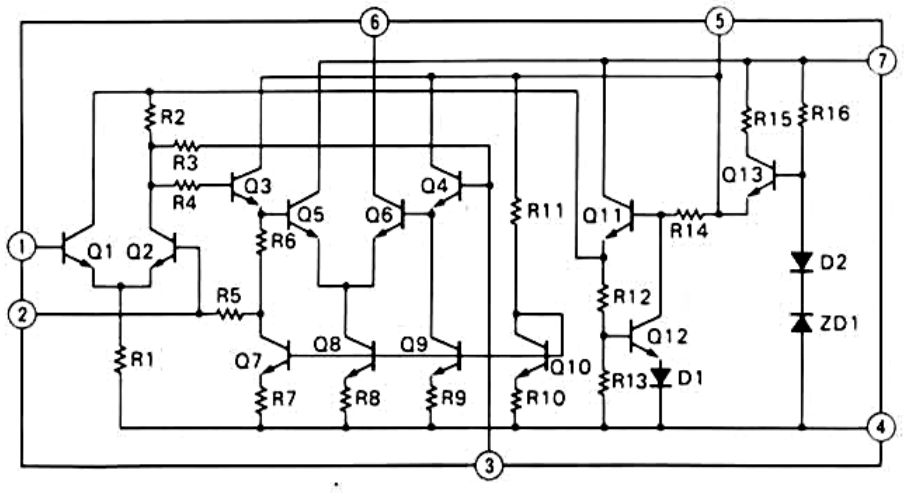
•Terminal Function of LSI-TD6104

Pin No.	Pin Name	Description of Function and Operation
2	OUT-2	Terminal to output an inversed signal of terminal OUT-1. An additional resistor is necessary because of an open-emitter circuit. This terminal is kept open in the ordinary state.
3	OUT-1	Terminal to output a signal obtained by dividing the input signal from the division frequency output terminal fin into 1/30 or 1/32. * Output level: 0.5(V) minimum.
5	fin	Terminal to input a signal from the FM local oscillator. * Frequency range: 60 ~ 140 MHz * Input level: 75 ~ 300 mVrms
6	C	Terminal to connect a pass-condenser for the bias circuit. A condenser of 2200 pF is connected between this terminal and ground.
7	PSC	Terminal to switch the frequency division ratio. Vpsc ≧ 2(V): 1/32 Vpsc ≦ 1(V): 1/30
1	Vcc	Power supply terminal Vcc = 5V Icc = TYP 5mA, MAX 10mA
4	GND	Ground

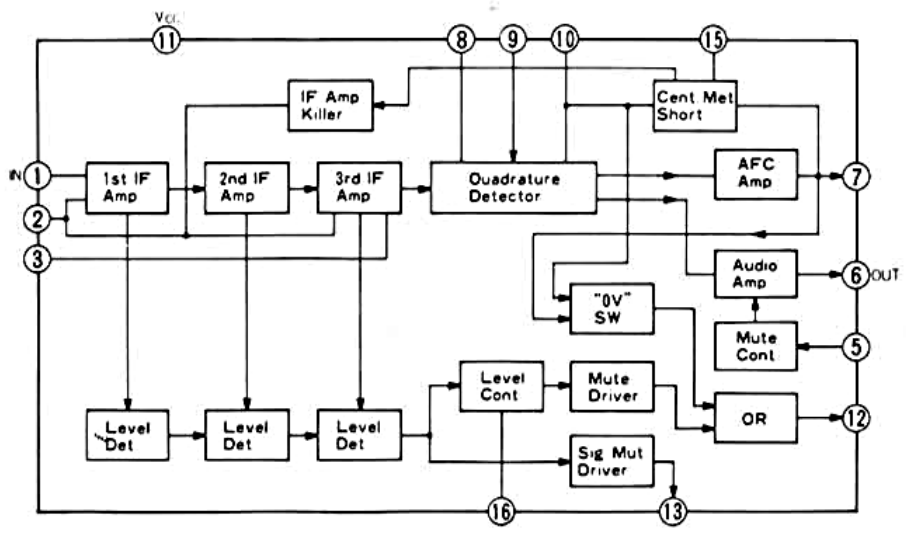
•TC4011RS (NAND1 ~ 4)



•TA7302P (FM IF Amp. IC)



•HA12412 (FM Detector IC)



•LA1245 (AM Tuner IC)

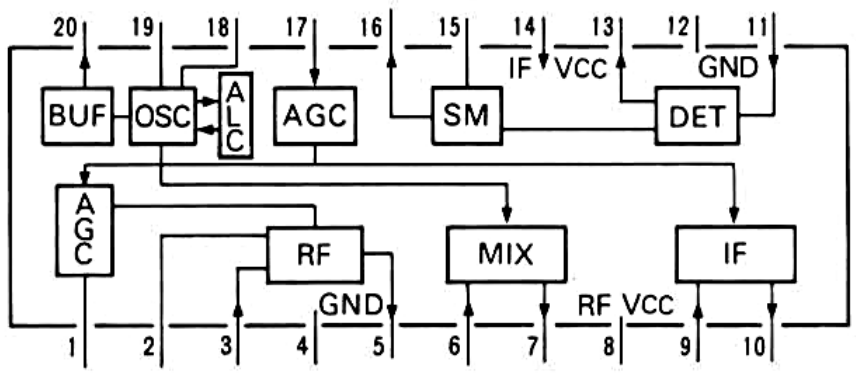
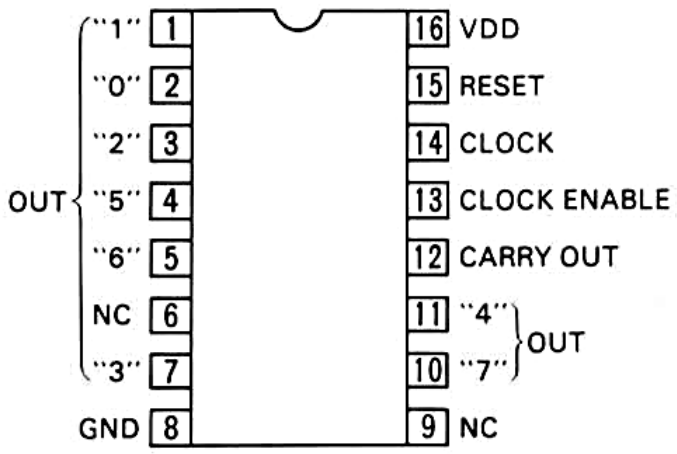
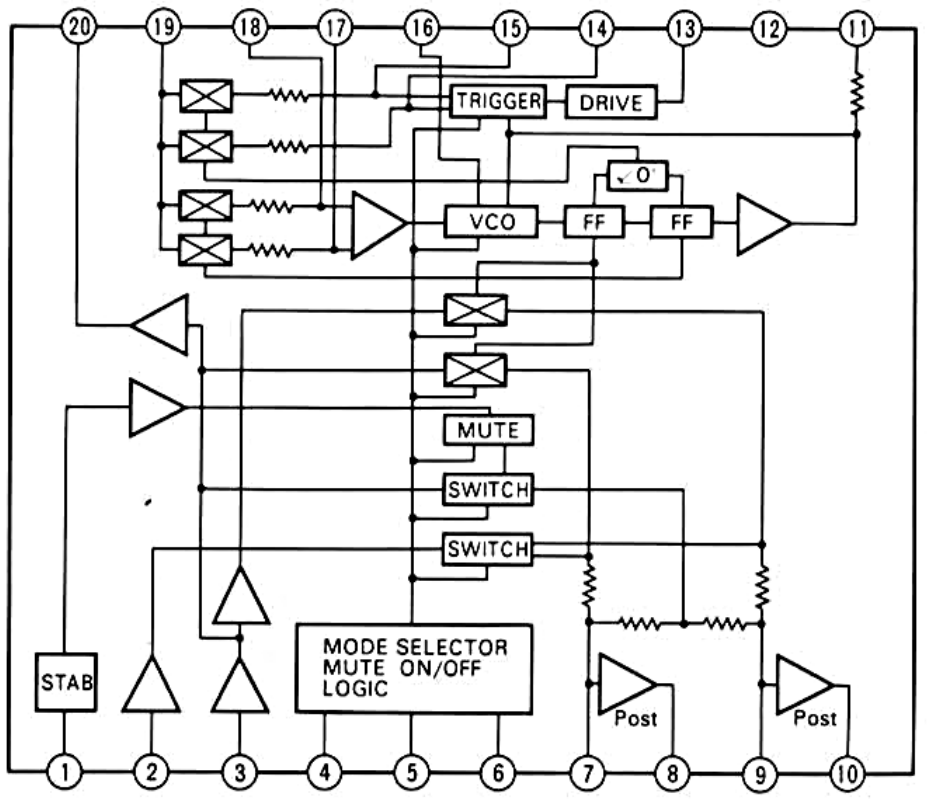


Fig. 3



•LA3390 (MPX Decoder IC)



•MSM4022RS (Divide-by-8 Counter)

Fig. 1

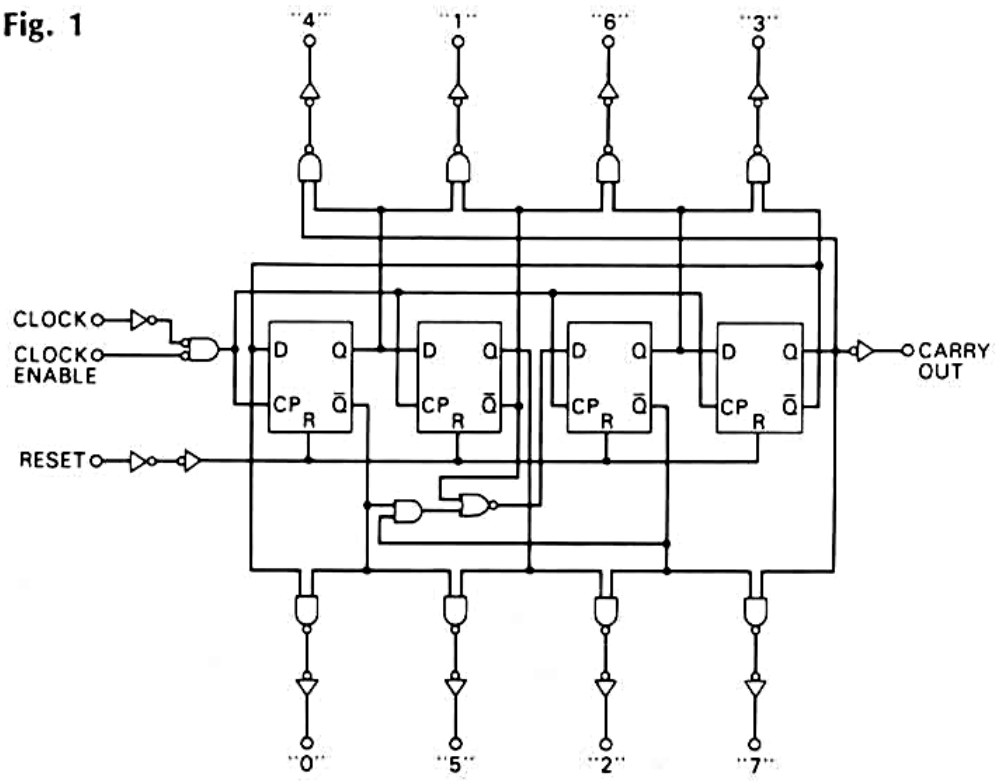
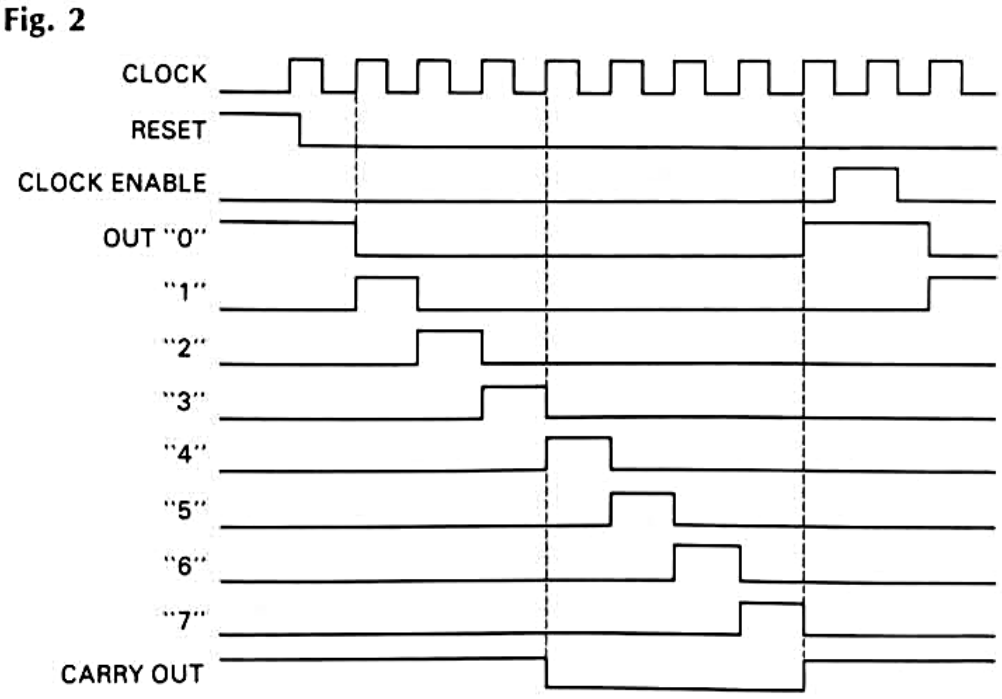
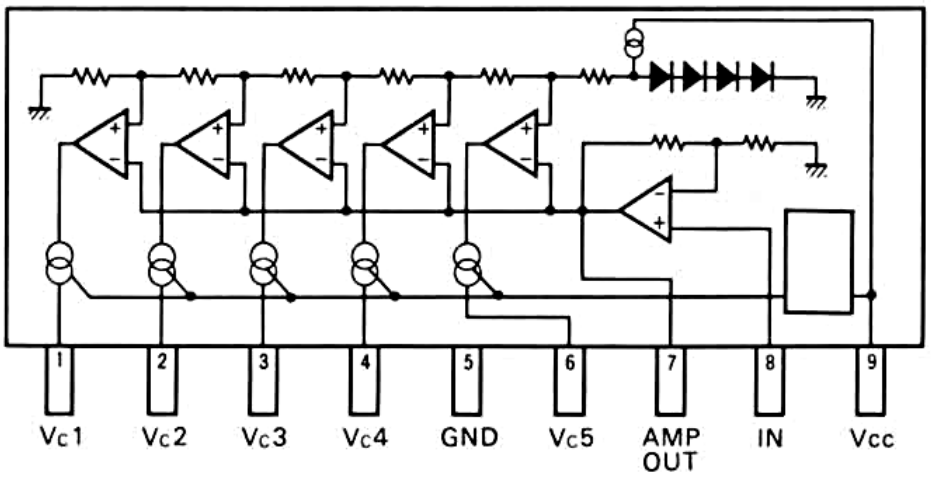


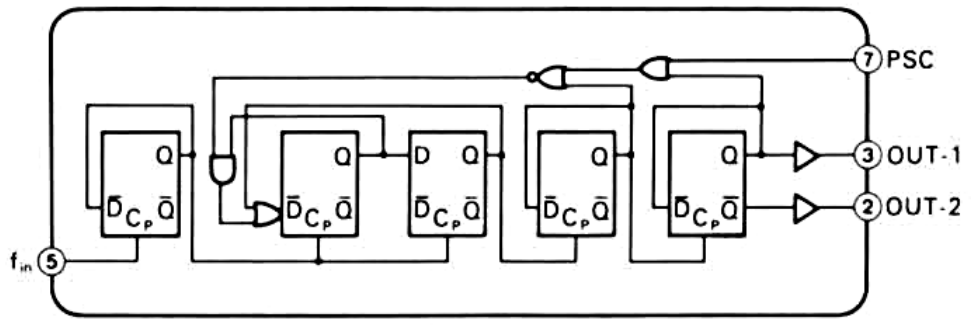
Fig. 2



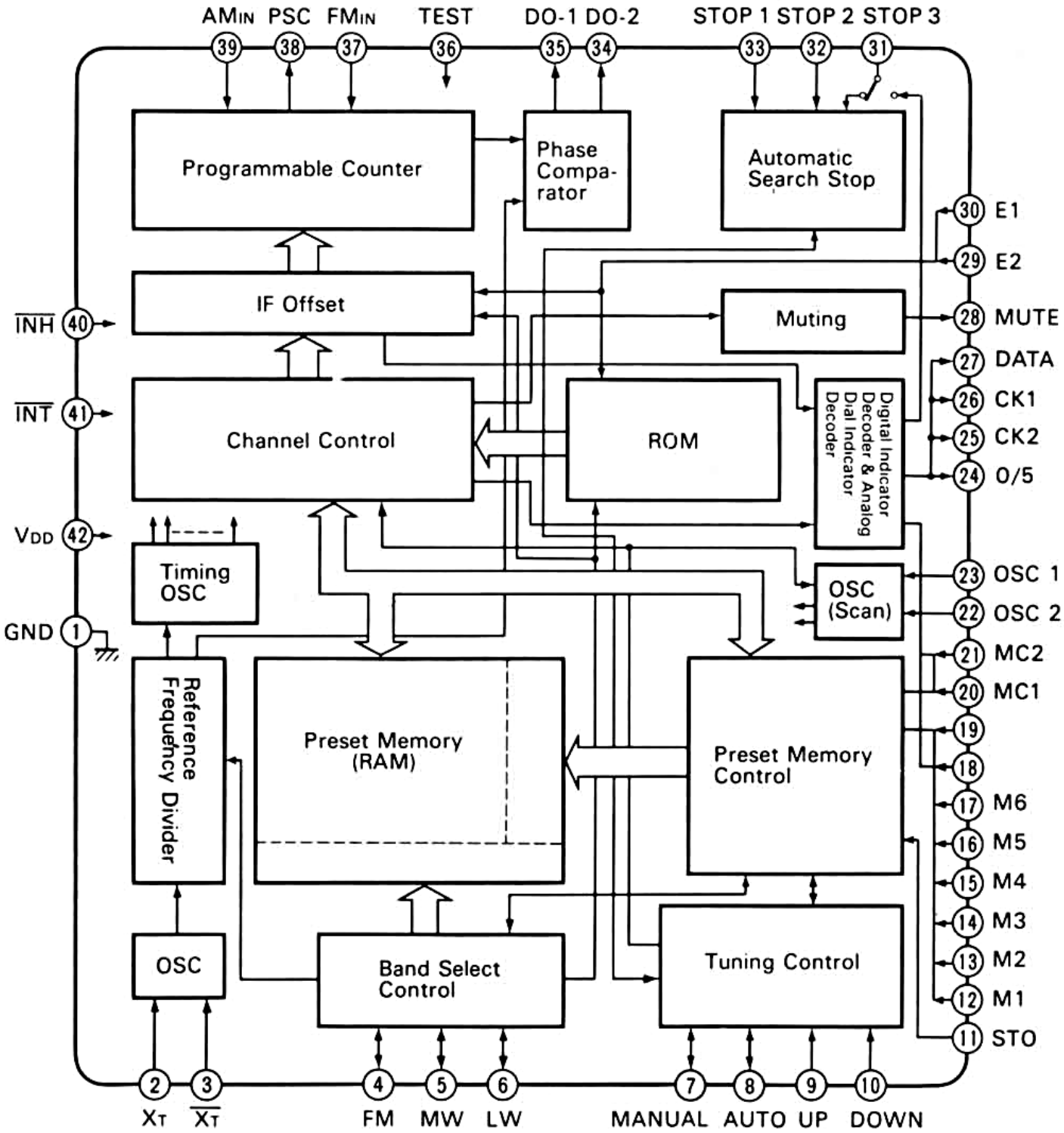
•BA6125 (L.E.D. Drive IC)



•TD6104P (Prescaler IC)



•TC9157P (PLL & Control IC)



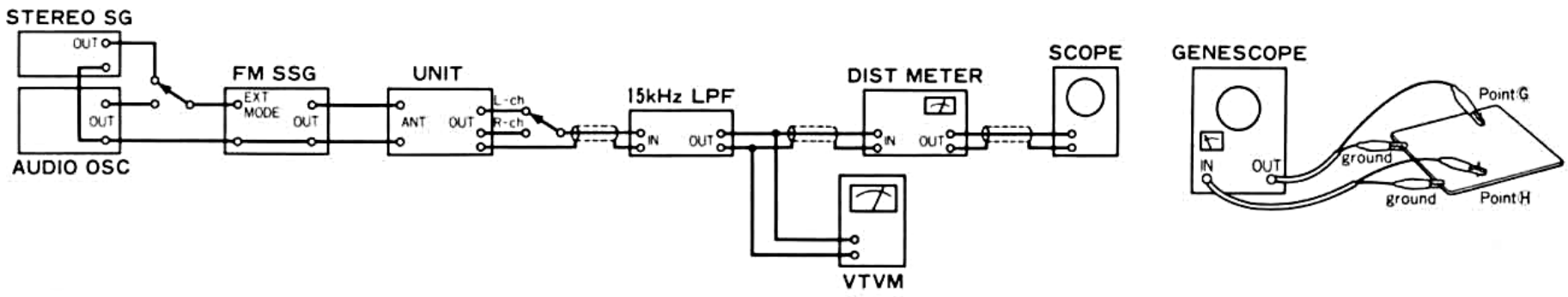
•Terminal Function of LSI-TC9157P

Pin No.	Pin Name	Functions
2,3	X_T X_T	Terminals to connect a quartz oscillator for generating a reference frequency.
4 5 6	FM MW LW	Terminals to input a signal for switching FM/ MW/LW band.
7 8	MANUAL AUTO	Terminal to input a signal for switching the manual operation to automatic search operation or vice versa in the UP/DOWN tuning mode. "H": Automatic, "L": Manual
9 10	UP DOWN	Terminals to input a signal from the tuning key. * In manual operation: When the key is kept depressed for 0.3 sec or more in one-step/one-push step feeding, the operation changes to fast forwarding; when the key is released, the operation stops at the next stop. In this case, even if there is a station on the way, the station is neglected. * In automatic search operation: When the key is depressed once, the automatic search operation starts and stops automatically after having selected the desired station.
11	STO	Terminal to input a signal for storing data in the preset memory unit. Input/output terminal in which a LED driver is provided. * When depressing the STO key, the STO lamp comes on. Next, when any desired memory No. key is depressed, the data on receiving frequency is written into the memory unit and the STO lamp goes off. * When the STO key is depressed and the memory No. key is not depressed, the frequency data is released automatically.
12 17	M1 M6	Terminals to input a signal for designating memory address. Input/output terminals in which a LED driver is provided. * Terminals M_1 to M_6 designate the addresses of FM memory unit in FM receiving and the addresses of AM memory unit in AM receiving. * When depressing the STO key and any desired station key of M_1 to M_6, the data is written into the memory unit. * When depressing any desired station key of M_1 to M_6, the data is read out.
22 23	OSC 2 OSC 1	Terminal to connect a condenser and resistor for the oscillator for determinating the speed of AM automatic search operation. Terminal to connect a condenser and resistor for the oscillator for determinating the speed of FM automatic search operation.
24 25 26 27	0/5 CK2 CK1 DATA	Terminals to output the data for displaying the received frequency digitally and a timing signal. The data fed to the driver TD6301P for displaying a static frequency and the timing signal are outputted once only when the frequency is updated in such case as when the power supply is tuned on, the UP/DOWN key is depressed, the automatic scanning operation is made, the data are read out of the memory unit, or FM/AM is switched. In the ordinary receiving state, this terminal is fixed to a "L" level. * 0/5: For displaying 50 kHz during FM receiving in Europe. * Data: Binary coded frequency data and receiving band. * CK-1, CK-2: Initialize and transfer clock signals.

Pin No.	Pin Name	Functions
28	MUTE	Terminal to output the muting signal. The terminal is kept in "L" level in ordinary state, and in "H" level in muting.
29 30	E2 E1	Terminals to input a signal for selecting destinations of Japan, USA, and Europe. E_1 E_2 Mode 0 0 Japan 1 0 Europe 0 1 USA (MW 9kHz) 1 1 USA (MW 10kHz) * Inputs of terminals E_1 and E_2 are read and latched in INH=L state and in FM/AM switching.
31	STOP 3	When a IF450 kHz signal is applied to this terminal during automatic search operation, the scanning operation stops.
32	STOP 2	Terminal to input a signal for performing the automatic search stop. When a "H" level signal is applied to STOP 1 and this terminal during automatic search operation, the scanning operation stops.
33	STOP 1	Terminal to input a signal for slowing the speed of scanning operation. When a "H" level signal is applied to this terminal during automatic search operation, the speed of scanning operation halves.
34 35	DO-2 DO-1	Terminals to output a signal from a phase comparator. These terminals can be used for FM and AM, separately, since the same signal is outputted from the terminals D_0-1 and D_0-2 at the same time.
36	TEST	Terminal to input a signal of test mode. Test mode in "H" level.
37	FM_{IN}	Terminal to input a signal from the FM programmable counter. An amplifier is provided in the input.
38	PSC	Terminal to output a signal for controlling the Prescaler IC of TD6104P.
39	AM_{IN}	Terminal to input a signal from the AM programmable counter. An amplifier is provided in the input.
40	INH	Terminal to input a signal of inhibit. Ordinary operation in "H" level; inhibit operation in "L" level.
41	INT	Terminal to input an initialize signal. This terminal changes to H level in the ordinary operation and to L level in the initialize operation.
42 1	V_{DD} GND	Power supply terminals. 5V ± 0.5V.

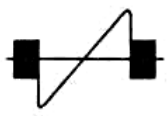
3. ADJUSTMENTS

3-1. FM Adjustment (See Top View on Page 12)



1) FM IF & Reference Frequency Adjustment

Note: 1. SELECTOR ..... FM
2. FM MUTING/MODE .... OFF/MONO

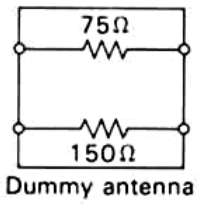
STEP	SUBJECT		FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Reference Frequency Adj.		No Input	—	Between Point Ⓐ (Pin 24 of fIC1) & Earth Freq. Counter	fTC1 (F-4204)	25 kHz	• Short between Point Ⓑ & Point Ⓒ (Pin 36 & 42 of fIC1)
2.	IF Coil Adj.		98MHz ANT Input 20dBf (14.8dB), 1kHz (100% MOD.), FM SSG	ANT terminal 300Ω	Between Point Ⓓ (Pin 13 of dIC2) & Earth DC Volt Meter	IFT Coil (Front-end) & dT1 (F-4204)	Max. DC Volt	
3.	Discriminator Coil Adj. In case of using Genescope	1	No Input	—	Between TP_1 & TP_2 DC Volt Meter	dT2 (F4204)	DC 0V ± 30mV	• Repeat procedures as stated in subject 1 & 2. • Confirm that lock Indicator turns ON
		2	Output 80dB, Genescope	Point Ⓖ	Between Point Ⓗ (dC12) & Earth	dT3 (F-4204)	Steep linearity of S curve. Make symmetrical S curve.	
	Discriminator Coil Adj. In case of using Dist meter	1	No Input	—	Between TP_1 & TP_2 DC Volt Meter	dT2 (F-4204)	DC 0V ± 30mV	• Repeat procedures as stated in subject 1 & 2. • Since the dT1 has already adjusted, perform only a fine adjustment in this procedure. • Confirm that lock indicator turns ON
		2	98MHz ANT Input 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT terminal 300Ω	• REC OUT L-CH or R-CH VTVM & SCOPE	dT3 (F-4204)	Min. THD	
4.	Signal Level Adj.		98MHz ANT Input 16dBf (15.2dB), 1kHz (100% MOD.), FM SSG	Same as above	• Signal LED	dVR1 (F-4204)	Turns ON first LED	

• ADJUSTMENT FOR FM

There are two kind in indication of FM SSG output attenuator
1. Attenuator with marking of 75Ω open ..... open indication type.
2. Attenuator with marking of 75Ω load or close ..... load or close indication type.

FM SG output level in this FM adjustment are described as open indication type.
To feed FM signal, a dummy antenna circuit as Fig. 3-1 must be connected between FM SG output and ANT terminal (300Ω) of the unit.

Fig. 3-1



Dummy antenna

- 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

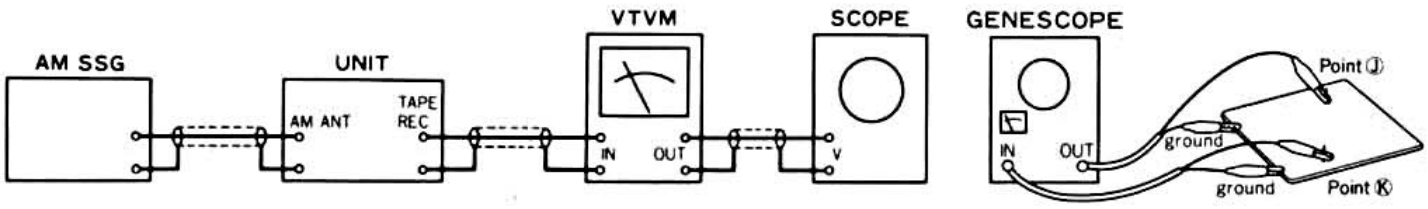
2) FM STEREO Adjustment

1. FM Mode ..... AUTO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	PLL VCO Adj.	98MHz ANT Input 65dBf (59.8dB), FM SSG, Pilot 19kHz (9% MOD.), R or L MODE 1kHz+Pilot (100% MOD.), STEREO SG	ANT terminal 300Ω	Stereo Indicator	dVR3 (F-4206)	Light indicator	Adjust the dVR3 within center of light level
	PLL VCO Adj. In case of using Freq.	98MHz ANT Input 65dBf (59.8dB), FM SSG, No MOD.	Same as above	Between Point Ⓘ (Pin 11 of dIC3) & Earth Freq. Counter	dVR3 (F-4206)	19kHz ± 50Hz	
2.	Separation Adj.	98MHz ANT Input 65dBf (59.8dB), FM SSG, Pilot 19kHz (9% MOD.), L MODE 1kHz+Pilot (100% MOD.), STEREO SG.	Same as above	OUTPUT L-CH VTVM & SCOPE	—	Read the indication on VTVM	Confirm R→L-CH
				OUTPUT R-CH VTVM & SCOPE	dVR4 (F-4206)	—37dB from the indication above.	
3.	Muting level Adj.	98MHz ANT Input 30dBf (24.8dB), FM SSG, Pilot 19kHz (9% MOD.), L or R MODE 1kHz+Pilot (100% MOD.), STEREO SG.	Same as above	Stereo indicator OUTPUT L-CH or R-CH, VTVM & SCOPE	dVR2 (F-4204)	Stereo indicator turns ON or Output Signal comes out	

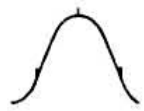
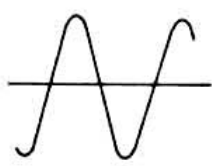
3-2. AM Adjustment (See Top View on Page 12)

Note: SELECTOR ..... AM



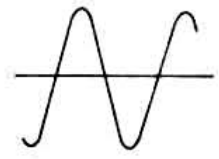
1) AM IF Adjustment & MW (AM) Tuning Adjustment

Note: 1. SELECTOR ..... AM (TU-S55X)/MW (TU-S55XL)
2. Connect AM loop antenna AM to antenna terminal

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	Genescope Output 60dB	Point Ⓙ (eC8) (F-4204)	Between Point Ⓚ (eR19) & Earth	eCF1, eT5 (F-4204)	Max, Waveform	
2.	522kHz (or 520kHz) Tuning Adj.	No Input	—	Between Point Ⓛ (eR1, F-4204) & Earth DC Volt Meter	eT1 (F-4204)	1V ± 0.2V	• Repeat procedures as stated in subject 2 & 3.
3.	1610kHz (or 1611kHz) Tuning Adj.	No Input	—	Same as above	eTC1 (F-4204)	8V ± 0.2V	
4.	603kHz (or 600kHz) RF Adj.	603kHz (or 600kHz) ANT Input 30dB 400Hz (30% MOD.), AM SSG	ANT terminal	REC OUT L-CH or R-CH VTVM & Scope	eT2 (F-4204)	Max. Output	
5.	1404kHz (or 1400kHz) RF Adj.	1400kHz (or 1400kHz) ANT Input 30dB 400Hz (30% MOD.), AM SSG	Same as above	REC OUT L-CH or R-CH VTVM & Scope	eTC3 (F-4204)	Max. Output	
6.	Signal Level Adj.	999kHz (or 1000kHz) ANT Input ± 80dB 400Hz (30% MOD.), AM SSG	Same as above	Signal LED	eVR2 (F-4204)	Turns ON Fifth LED	
7.	Auto Stop Level Adj.	999kHz (or 1000kHz) ANT Input 70dB 400Hz (30% MOD.), AM SSG	Same as above	Between Point Ⓜ (JW14 F-4204) & Earth DC Volt Meter	eVR1 (F-4204)	0.9V ± 1V	

2) LW Tuning Adjustment (TU-S55XL only) (See Parts Location on page 9)

Note: SELECTOR ..... LW

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	153kHz Tuning Adj.	No Input	—	Between Point Ⓛ (eR1, F-4204) & Earth DC Volt Meter	eT3 (F-4204)	1V ± 0.2V	• Repeat procedures as stated in subject 1 & 2.
2.	360kHz Tuning Adj.	No Input	—	Same as above	eTC2 (F-4204)	8V ± 0.2V	
3.	170kHz RF Adj.	170kHz ANT Input 30dB 400Hz (30% MOD.), AM SSG	ANT terminal	REC OUT L-CH or R-CH VTVM & Scope	eT4 (F-4204)	Max. Output	
4.	300kHz RF Adj.	300kHz ANT Input 30dB 400Hz (30% MOD.), AM SSG	Same as above	REC OUT L-CH or R-CH VTVM & Scope	eTC4 (F-4204)	Max. Output	
5.	Auto Stop Level Adj.	250kHz ANT Input 70dB 400Hz (30% MOD.), AM SSG	Same as above	Between Point Ⓜ (jW14 F-4204) & Earth DC Volt Meter	eVR1 (F-4204)	0.8V ± 0V	

4. NOTES

When the user moves to different channel step area on FM or AM, the following arrangements must be performed.

	Sets Applicable to	Channel Step Frequency		fIC2 Input Port Level		Jumper Wire (F-4204)				9k/10k Switch oS3
		AM kHz	FM kHz	E_1	E_2	14	15	16	17	
I	South Africa	9k	50k	L	L	○	○	—	—	None
	Europe	9k	50k	H	L	—	○	○	—	None
	America	9k	100k	L	H	○	—	—	○	None
	America	10k	100k	H	H	—	—	○	○	None
II	Sets which 9k/10k Switch is installed	9k	100k	L	H	—	—	—	○	9 kHz
		10k	100k	H	H					10 kHz

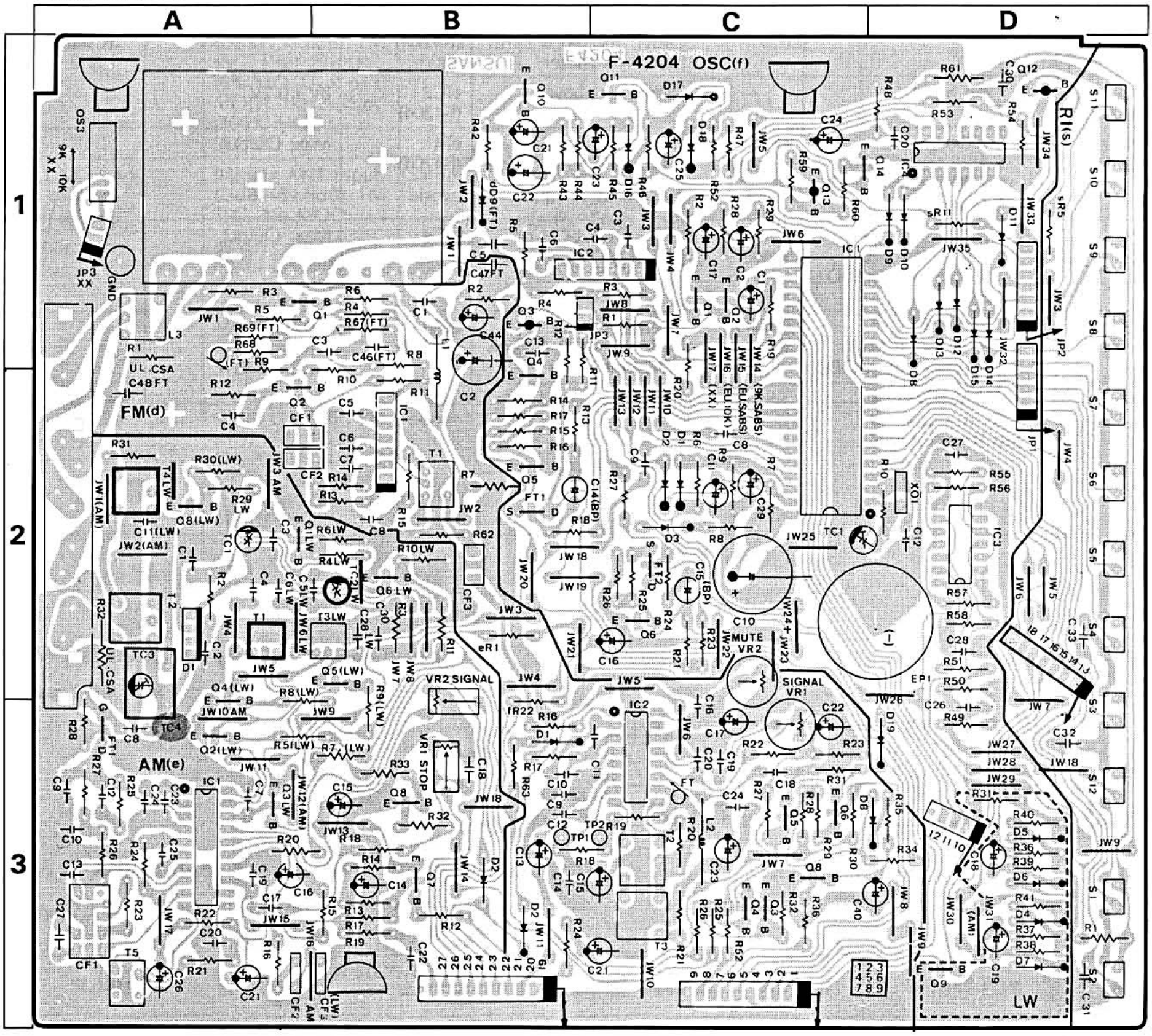
•**Note:** 1) L = Low Level, H = High Level, ○ = Connect, — = Remove
2) oS3 = AM 9k/10k Switch on F-4204
3) Remove the 9k/10 kHz switch only when a user operates the set (II) in 50 kHz channel step (I)

5. PARTS LOCATION & PARTS LIST

•Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors, which was appended previously to Sansui Manual.

5-1. F-4204 Synthesizer Control Circuit Board (Stock No. 00735201 = TU-S55X/00736105 = TU-S55XL)

Component Side



Parts List

Parts No.	Stock No.	Description
	46547700	FD296E12X FM Frontend Pack
•Transistor		
dQ1	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ2	46393201	2SC2786
dQ3	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ5	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ6	46367101	2SC2603
	or 46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ8	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
•IC		
dIC1	03605900	TA7302P
dIC2	07196000	HA12412

Parts No.	Stock No.	Description
•Diode		
dD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
dD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
dD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
dR7	46228600	47Ω 1/2W N.I.R.
dCF1	07248800	Ceramic Filter 10.7M
dCF2	07248800	Ceramic Filter 10.7M
dCF3	07248800	Ceramic Filter 10.7M
dL1	07250300	Peaking Coil 2.2μH
dL2	07250300	Peaking Coil 2.2μH
dL3	46548900	FM Balun (TU-S55X Only)
dT1	46369500	FM IFT
dT2	46422500	FM RF Coil
dT3	46422600	FM RF Coil
dVR1	10351300	10kΩ(B) S.V.R., FM Signal
dVR2	10351300	10kΩ(B) S.V.R., FM Mute
•Transistor		
eQ1	46118801	2SC2878 (TU-S55XL Only)
eQ2	46118801	2SC2878 (TU-S55XL Only)
eQ3	46118801	2SC2878 (TU-S55XL Only)
eQ4	46118801	2SC2878 (TU-S55XL Only)

Parts List <F-4204>

Parts No.	Stock No.	Description
eQ5	46118801	2SC2878 (TU-S55XL Only)
eQ6	46118801	2SC2878 (TU-S55XL Only)
eQ7	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ8	46118801	2SC2878 (TU-S55XL Only)
•FET		
eFT1	46393000	2SK192A-Y
	or 46393001	2SK192A-GR
•IC		
eIC1	07237200	LA1245
•Diode		
eD1	46146300	KV1236Z2
eD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
eR20	46228200	22Ω 1/2W N.I.R.
eTC1	46095600	Trimmer Capacitor 20pF
	or 46162800	Trimmer Capacitor 20pF
eTC2	46095600	Trimmer Capacitor 20pF (TU-S55XL Only)
	or 46162800	Trimmer Capacitor 20pF (TU-S55XL Only)
eTC3	46095600	Trimmer Capacitor 20pF (TU-S55X only)
eTC4	46370700	Trimmer Capacitor 16pF (TU-S55XL Only)
eCF1	07254000	Ceramic Filter SFL450G3
eCF2	46578100	Ceramic Filter BFU-450C10N
eCF3	46578100	Ceramic Filter BFU-450C10N (TU-S55XL Only)
eL1	46548700	AM Loop Antenna
eT1	46394700	AM OSC Coil
eT2	46394600	AM Antenna Coil
eT3	46548800	AM RF Coil (TU-S55XL Only)
eT4	46397900	AM RF Coil (TU-S55XL Only)
eT5	46369600	AM IFT Coil
eVR1	07241500	50kΩ(B) S.V.R. Auto Stop
eVR2	07241200	5kΩ(B) S.V.R. AM Signal
•Transistor		
fQ1	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ2	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ3	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
fQ4	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ5	or 46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ6	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ9	46367301	2SC2458 (TU-S55XL Only)
fQ10	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ11	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
fQ12	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
fQ13	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
fQ14	46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
•FET		
fFT1	03703001	2SK117-Y
	or 03703002	2SK117-GR
	or 03703401	2SK163-K2
	or 03703402	2SK163-L1

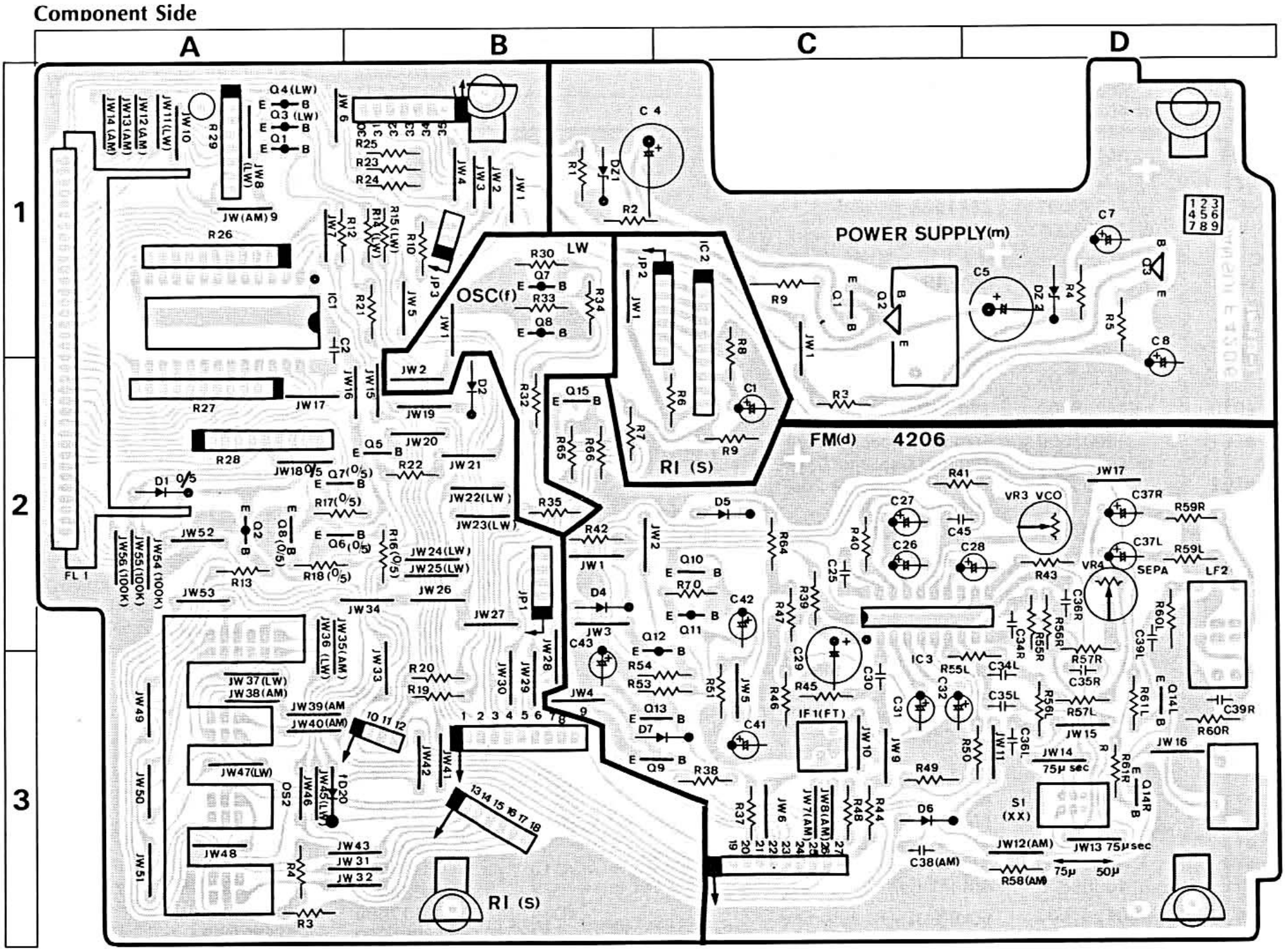
Parts No.	Stock No.	Description
fFT2	03703001	2SK117-Y
	or 03703002	2SK117-GR
	or 03703401	2SK163-K2
	or 03703402	2SK163-L1
•IC		
fIC1	46397400	TC9157P
fIC2	07225000	TD6104P
fIC3	03604100	TC4011P
fIC4	46530000	TC4022BP
	or 07246400	MSM4022RS
fXO1	07237700	Quartz Element NC-18C
•Diode		
fD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD4	03117600	1S2473T77 (TU-S55XL Only)
	or 46086000	1S1588TP-3 (TU-S55XL Only)
fD5	03117600	1S2473T77 (TU-S55XL Only)
	or 46086000	1S1588TP-3 (TU-S55XL Only)
fD6	03117600	1S2473T77 (TU-S55XL Only)
	or 40086000	1S1588TP-3 (TU-S55XL Only)
fD7	03117600	1S2473T77 (TU-S55XL Only)
	or 46086000	1S1588TP-3 (TU-S55XL Only)
fD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD9	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD10	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD11	03117600	1S2473T77
	46086000	1S1588TP-3
fD12	or 03117600	1S2473T77
	or 46086000	1S1588TP-3
fD13	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD14	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD15	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD16	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD17	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD18	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD19	03117600	1S2473T77
	or 46086000	1S1588TP-3
fC10	46151500	2200μF 6.3V E.C.
fC14	08451700	1μF 50V E.B
fC15	08451900	3.3μF 50V E.B
fTC1	46095800	Trimmer Capacitor 45pF
	or 46163000	Trimmer Capacitor 50pF
oS3	46177200	Slide SW, AM 9k/10k
sS1	46547000	Push SW., UP
sS2	46547000	Push SW., DOWN
sS3	46547000	Push SW., MEMORY
sS4	46547000	Push SW., PRESET STATION 1
sS5	46547000	Push SW., PRESET STATION 2
sS6	46547000	Push SW., PRESET STAITON 3
sS7	46547000	Push SW., PRESET STATION 4
sS8	46547000	Push SW., PRESET STATION 5
sS9	46547000	PUsh SW., PRESET STATION 6
sS10	46547000	Push SW., PRESET STATION 7
sS11	46547000	Push SW., PRESET STATION 8
sS12	46547000	Push SW., PRESET SCAN

•Abbreviations

C.R.	: Carbon Resistor	E.B.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	E.BL.	: Low Leak Bi-Polar Electrolytic Capacitor
Ce.R.	: Cement Resistor		
M.R.	: Metal Film Resistor	Ta.C.	: Tantalum Capacitor
F.R.	: Fusing Resistor	F.C.	: Film Capacitor
N.I.R.	: Non-Inflammable Resistor	M.P.	: Metalized Paper Capacitor
C.C.	: Ceramic Capacitor	P.C.	: Polystyrene Capacitor
C.T.	: Ceramic Capacitor, Temperature Compensation	G.C.	: Gimmic Capacitor
		V.R.	: Variable Resistor
E.C.	: Electrolytic Capacitor	S.V.R.	: Semi Variable Resistor
E.L.	: Low Leak Electrolytic Capacitor	SW.	: Switch

5-2. F-4206 AM, FM, LW Tuner Circuit Board (Stock No. 00735401 = TU-S55X/00736305 = TU-S55XL)

Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
dQ9	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ10	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ11	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
dQ12	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
dQ13	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ14	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ15	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
•IC		
dIC3	46267100	LA3390
•Diode		
dD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
dD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
dD6	03117600	1S2473T77
	or 46086000	1S1588TP-3
dD7	03117600	1S2473T77
	or 46086000	1S1588TP-3
dR39	46228200	22Ω 1/2W N.I.R.
dC26	46034800	2.2μF 50V E.L.
dC27	46034900	3.3μF 50V E.L.
dC28	46034600	1μF 50V E.L.

Parts No.	Stock No.	Description
dLF1	46202400	Filter (TU-S55X Only)
dLF2	46579200	Lowpass Filter
dL3	46548900	FM Balum
dVR3	07241300	10kΩ(B) S.V.R., PLL VCO
dVR4	07241400	20kΩ(B) S.V.R., FM Separation
dS1	07251100	Slide SW, (TU-S55X Only) De-emphasis
•Transistor		
fQ7	46367201	2SA1048 (TU-S55XL Only)
	or 46367001	2SA1115 (TU-S55XL Only)
	or 46392001	2SA1175 (TU-S55XL Only)
fQ8	46367201	2SA1048 (TU-S55XL Only)
	or 46367001	2SA1115 (TU-S55XL Only)
	or 46392001	2SA1175 (TU-S55XL Only)
mQ1	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
mQ2	03083901	2SD313AL
mQ3	03083901	2SD313AL
•Diode		
mDZ1	07180700	RD15E-B
mDZ2	46111800	05Z 6.2-Y
mR9	00179000	10Ω 1W N.I.R.
oS2	46548500	Push SW, ST/MONO (TU-S55X Only)
oS2	46548600	Push SW, ST/MONO (TU-S55XL Only)
•Transistor		
sQ1	46367201	2SA1048
	or 46367001	2SA1115
	or 46392001	2SA1175
sQ2	46367201	2SA1048
	or 46367001	2SA1115

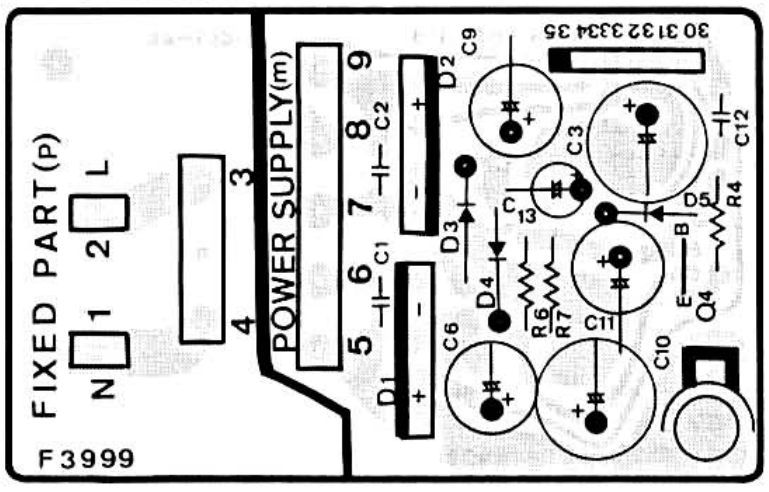
Parts List <F-4206>

Parts No.	Stock No.	Description
sQ3	46367201	2SA1048 (TU-S55XL Only)
	or 46367001	2SA1115 (TU-S55XL Only)
	or 46392001	2SA1175 (TU-S55XL Only)
sQ4	46367201	2SA1048 (TU-S55XL Only)
	or 46367001	2SA1115 (TU-S55XL Only)
	or 46392001	2SA1175 (TU-S55XL Only)
sQ5	46367301	2SC2458
	or 46367301	2SC2458
	or 46367101	2SC2603
	or 46391901	2SC2785
sQ6	46367301	2SC2458 (TU-S55XL Only)
	or 46367101	2SC2603 (TU-S55XL Only)
	or 46391901	2SC2785 (TU-S55XL Only)
sQ7	46367301	2SC2458 (TU-S55XL Only)
	or 46367101	2SC2603 (TU-S55XL Only)
	or 46391901	2SC2785 (TU-S55XL Only)
sQ8	46367301	2SC2458 (TU-S55XL Only)
	or 46367101	2SC2603 (TU-S55XL Only)
	or 46391901	2SC2785 (TU-S55XL Only)
•IC		
sIC1	46410100	TD6301AP
sIC2	46392500	BA6125
•Diode		
sD1	03117600	1S2473T77 (TU-S55XL Only)
	or 46086000	1S1588TP-3 (TU-S55XL Only)
sD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
sFL1	46526400	Display Tube FG79F8GR
sR6	46228800	68Ω 1/2W N.I.R.
sR26	46049600	Resistor Array 10kΩ
sR27	46049600	Resistor Array 10kΩ
sR28	46045900	Resistor Array 10kΩ
sR29	46042200	Resistor Array 10kΩ

•Note: The circuit boards, F-3999, F-4205, F-4207, F-4208 & F-4209 are not supplied as the assembled. However, the individual parts on the circuit boards are provided by orders.

5-3. F-3999 Power Supply Circuit Board

Component Side

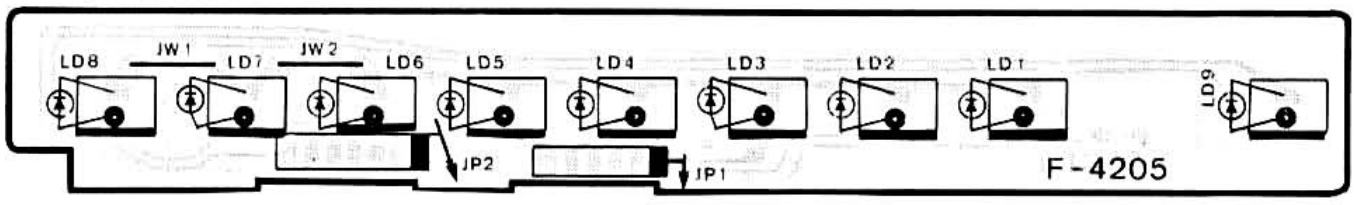


Parts List

Parts No.	Stock No.	Description
•Transistor		
mQ4	07299701	2SC2603
	or 46078801	2SC2458
	or 46392101	2SC2785
•Diode		
mD1	03117000	RB-152
mD2	03117000	RB-152
mD3	03117700	10E-2
mD4	03117700	10E-2
mD5	03111600	1S2473
	or 03111800	1S1588
mR8	46236900	1kΩ 1/2W N.I.R.

5-4. F-4205 Preset Memory Indicator Circuit Board

Component Side

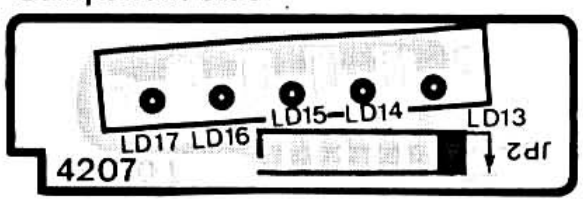


Parts List

Parts No.	Stock No.	Description
•LED		
sLD1	46169300	SEL-1210S
sLD2	46169300	SEL-1210S
sLD3	46169300	SEL-1210S
sLD4	46169300	SEL-1210S
sLD5	46169300	SEL-1210S
sLD6	46169300	SEL-1210S
sLD7	46169300	SEL-1210S
sLD8	46169300	SEL-1210S
sLD9	46173900	SLP-270C

5-5. F-4207 Signal Indicator Circuit Board

Component Side



Parts List

Parts No.	Stock No.	Description
•LED		
sLD13	07250900	TLG123A
	or 46470300	SEL2410E
sLD14	07250900	TLG123A
	or 46470300	SEL2410E
sLD15	07250900	TLG123A
	or 46470300	SEL2410E
sLD16	07250900	TLG123A
	or 46470300	SEL2410E
sLD17	07250900	TLG123A
	or 46470300	SEL2410E

5-6. F-4208 Stereo Indicator Circuit Board

Parts List

Parts No.	Stock No.	Description
•LED		
sLD10	46173900	SLP-270C

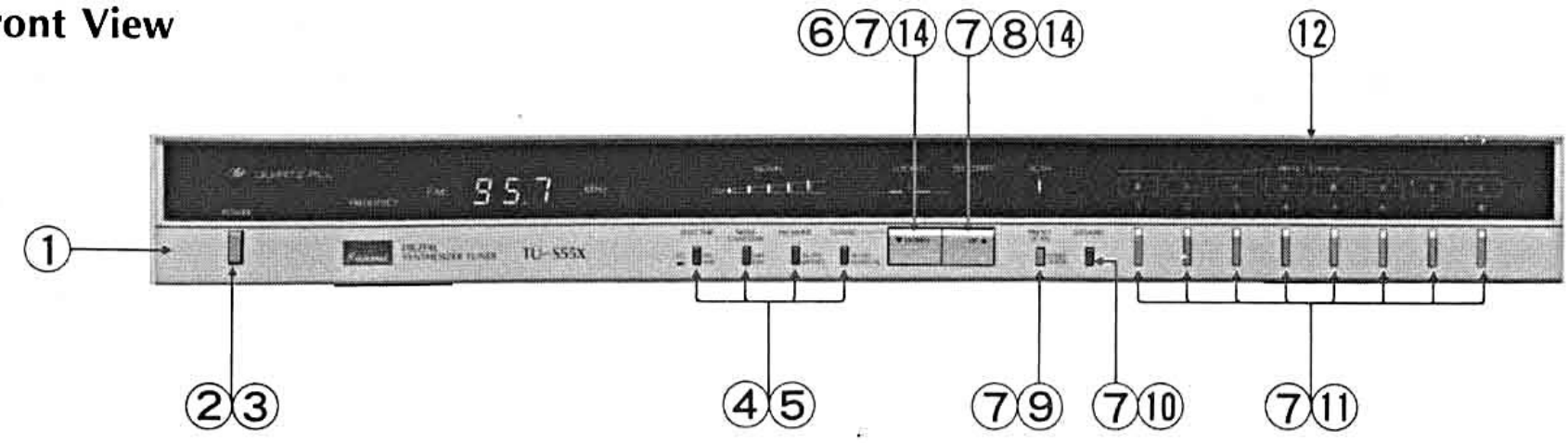
5-7. F-4209 Power Indicator Circuit Board

Parts List

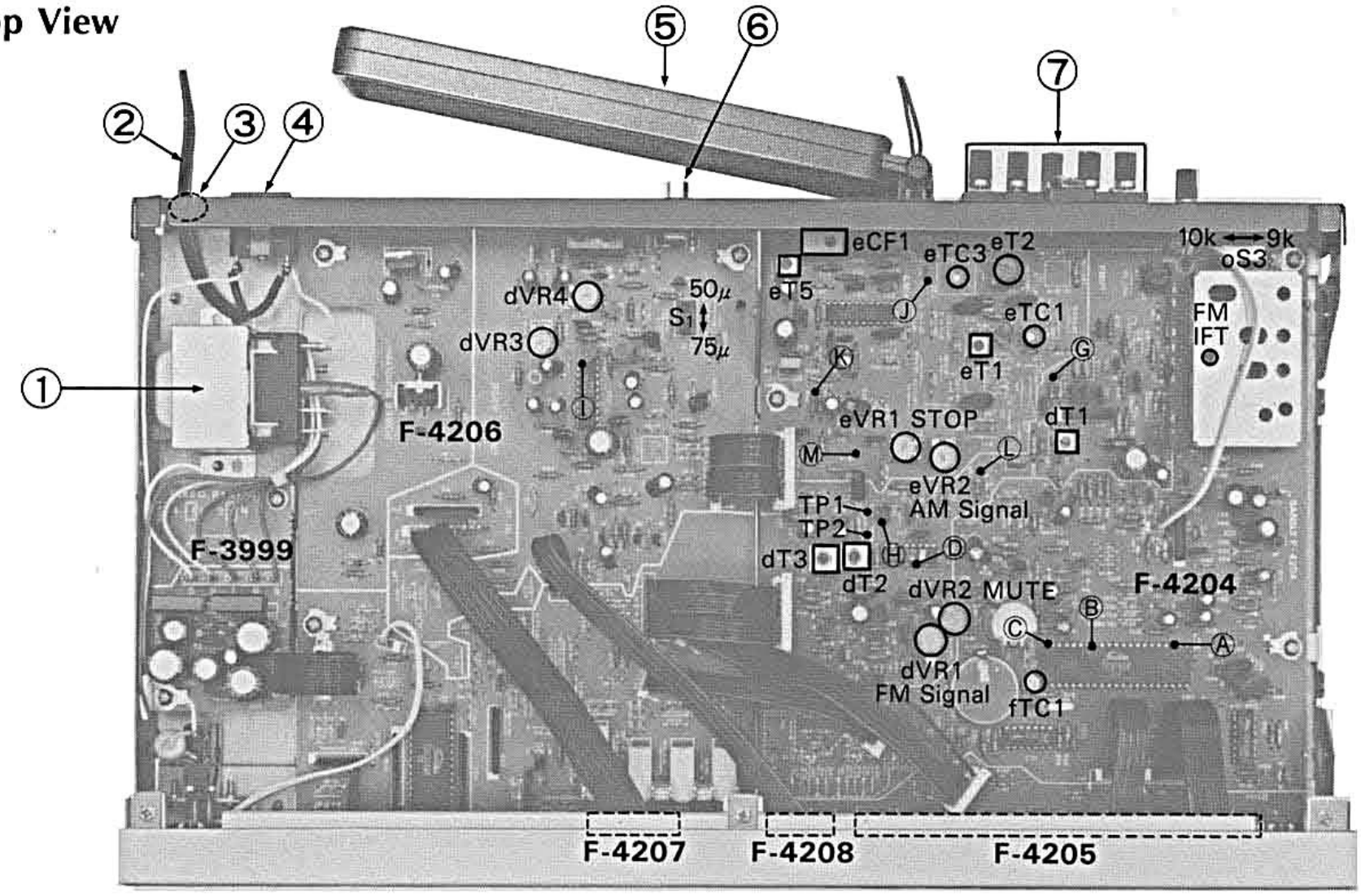
Parts No.	Stock No.	Description
•LED		
sLD11	46169300	SEL-1210S
sLD12	46174000	SLP-470C

6. OTHER PARTS

6-1. Front View



6-2. Top View



Parts List <Front View>

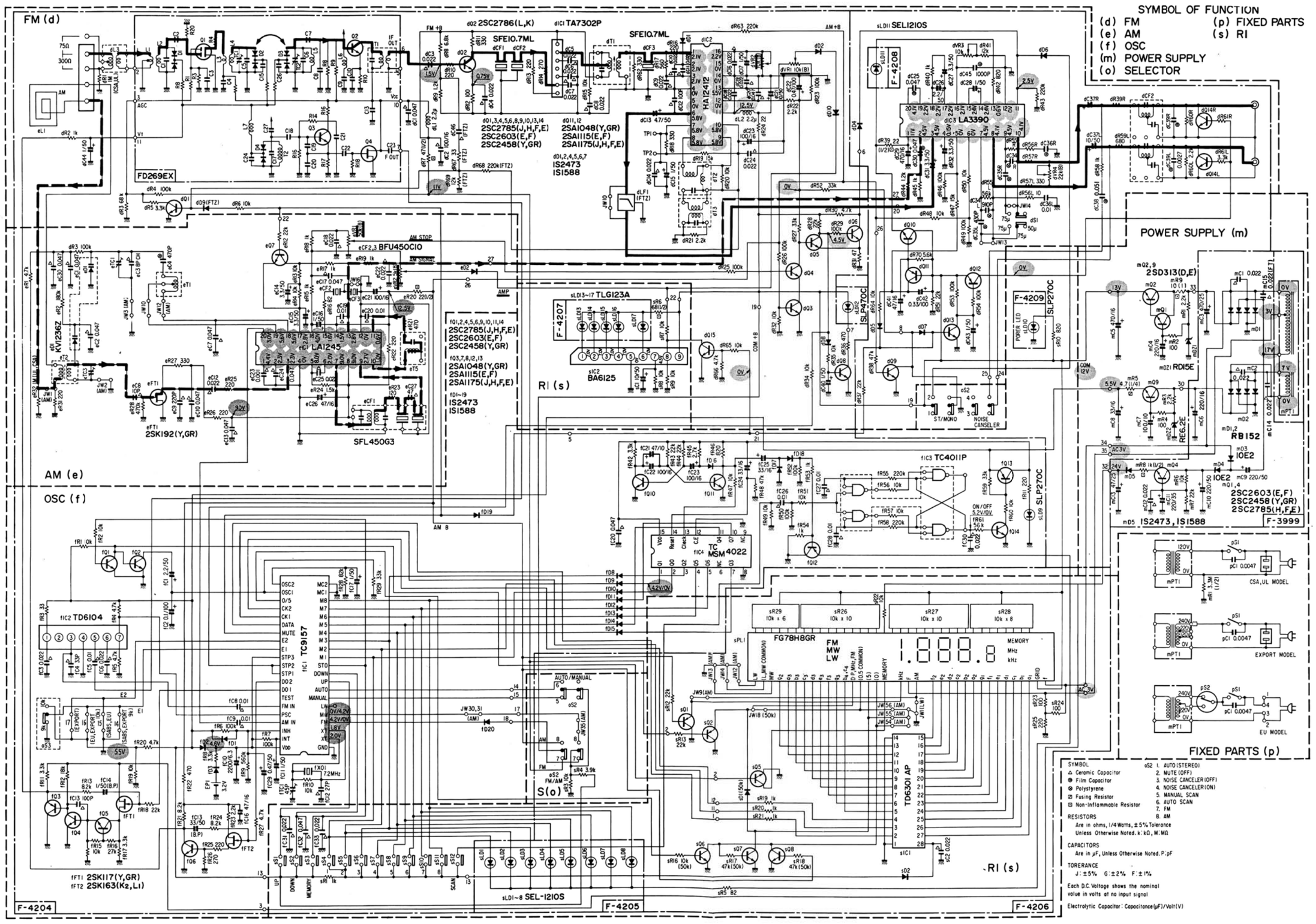
Parts No.	Stock No.	Description
•Silver Model (TU-S55X Only)		
1	47174700	Front Panel Ass'y
3	07809510	Push Knob, POWER
6	47147200	Push Knob, DOWN
8	47147000	Push Knob, UP
11	47147600	Push Knob, PRESET STATION
12	47148000	Metal Bonnet
•Black Model (TU-S55X and TU-S55XL)		
1	47174600	Front Panel Ass'y (TU-S55X)
1	47171000	Front Panel Ass'y (TU-S55XL)
3	07809610	Push Knob, POWER
6	47147300	Push Knob, DOWN
8	47147100	Push Knob, UP
11	47147700	Push Knob, PRESET STATION
12	47148100	Metal Bonnet
•Common Parts of Silver & Black Model		
2	46360300	Push SW, POWER
4	46548500	Push SW (TU-S55X)
4	46548600	Push SW (TU-S55XL)
5	47147400	Push Knob, SELECTOR, NOISE CANCERER, FM MODE, TUNING
7	46547000	Push SW
9	47147900	Push Knob, PRESET SCAN
10	47147800	Push Knob, MEMORY
13	47187300	Leg
14	07907300	Spring, UP/DOWN SW

Parts List <Top View>

Parts No.	Stock No.	Description
1	15012801	Power Transformer (TU-S55X)
1	15012805	Power Transformer (TU-S55XL)
2	38005400	Power Supply Cord (TU-S55X)
2	38004500	Power Supply Cord (TU-S55XL)
3	39106000	Strain Relief (TU-S55X)
3	39104900	Strain Relief (TU-S55XL)
4	07189600	AC Outlet (TU-S55X Only)
5	46548700	AM Loop Antenna
6	07249000	Output Terminal
7	46549100	Antenna Terminal Board
	07204700	Slide SW (TU-S55XL Only)

7. SCHEMATIC DIAGRAM 7-1. TU-S55X

*Design and specifications subject to change without notice for improvement.
*La presention et les spécifications sont susceptibles d'être modifiees sans préavis par suites d'ameliorations éventuelles.
*Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOL
△ Ceramic Capacitor
● Film Capacitor
⊗ Polystyrene
▨ Fusing Resistor
▩ 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

TORERANCE
J: ±5% G: ±2% F: ±1%

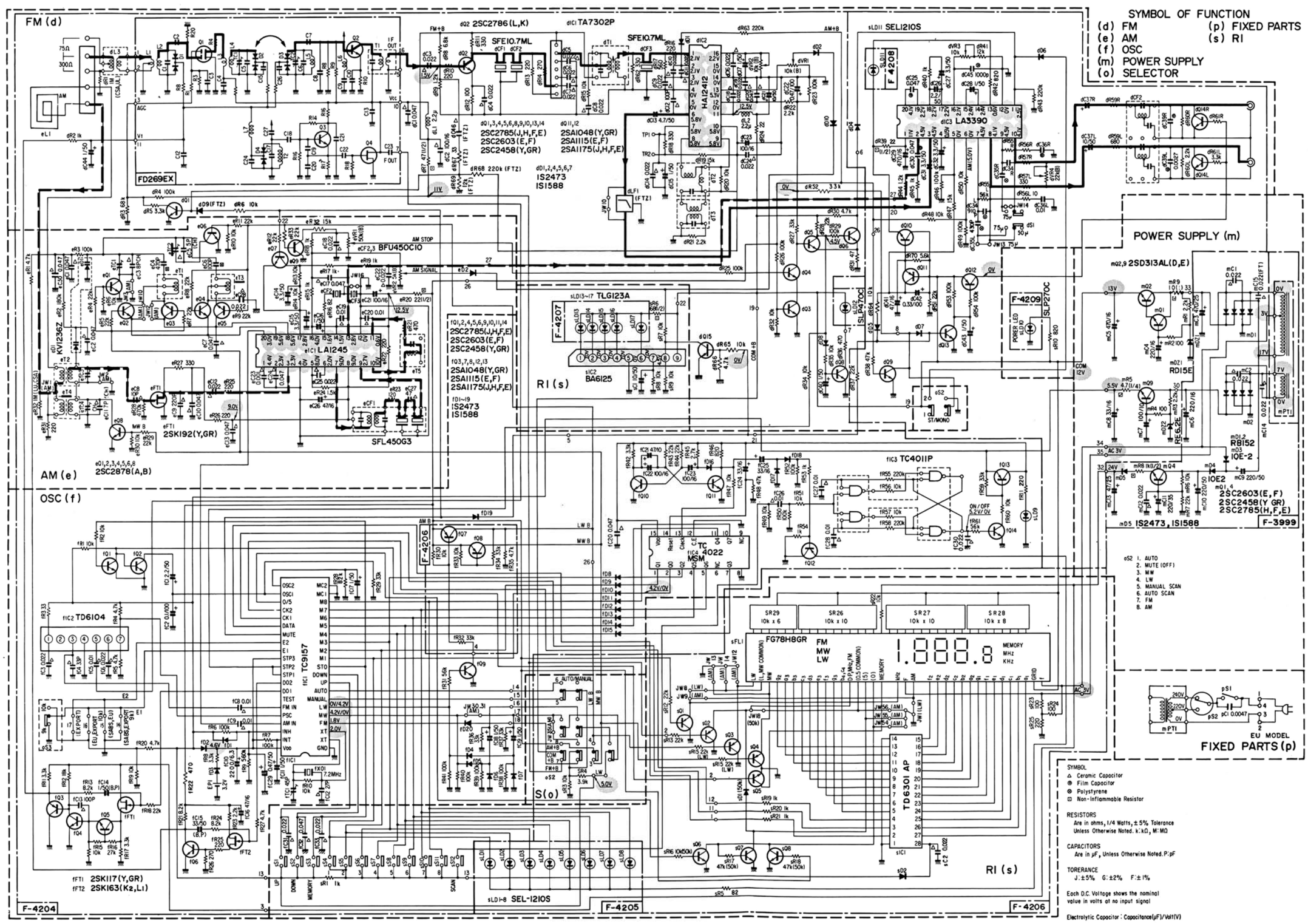
Each D.C. Voltage shows the nominal value in volts at no input signal

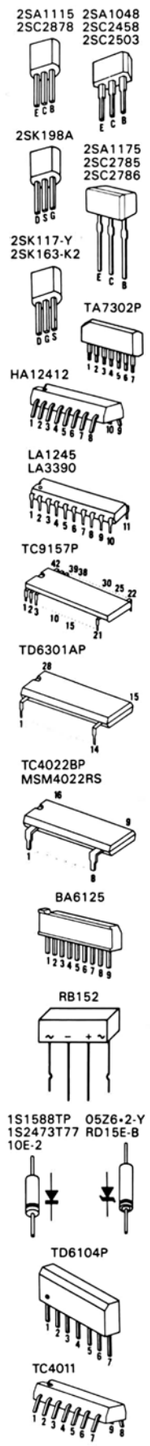
Electrolytic Capacitor: Capacitance(μF)/Volt(V)

oS2 1. AUTO(STEREO)
2. MUTE (OFF)
3. NOISE CANCELER (OFF)
4. NOISE CANCELER (ON)
5. MANUAL SCAN
6. AUTO SCAN
7. FM
8. AM

7-2. TU-S55XL

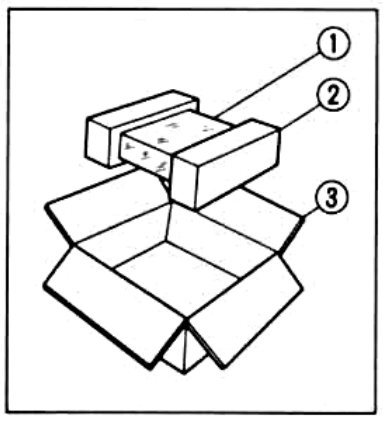
*Design and specifications subject to change without notice for improvement.
*La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
*Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.





8. PACKING LIST

Parts No.	Stock No.	Description
1	07599500	Vinyl Bag
2	47173400	Styrofoam Packing
3	47173200	Carton Case (TU-S55X/silver)
	47173300	Carton Case (TU-S55X/black)
	47173100	Carton Case (TU-S55XL/black)



9. ACCESSORY LIST

Stock No.	Description
46051700	FM Antenna
38103200	Pin Plug Cord
46526000	Operating Instruction (TU-S55X)
46526100	Operating Instruction (TU-S55XL)
46548700	AM Loop Antenna

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