

# DENON

Hi-Fi FM Stereo/Tuner

## SERVICE MANUAL

### MODEL TU-355

### SOLID STATE FM STEREO TUNER



## NIPPON COLUMBIA CO., LTD

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## SPECIFICATIONS

<b>CIRCUIT SYSTEM:</b>	Super heterodyne
<b>Tuning Range:</b>	87.4 – 108MHz
<b>Intermediate Frequency:</b>	10.7MHz
<b>Usable Sensitivity:</b>	1.8 $\mu$ V (IHF)
<b>Signal to Noise Ratio:</b>	80dB
<b>AM Suppression:</b>	60dB
<b>Capture Ratio:</b>	1.0dB
<b>Effective Selectivity:</b>	85dB
<b>Image Rejection:</b>	120dB
<b>IF Rejection:</b>	110dB
<b>Spurious Response:</b>	110dB
<b>Frequency Response:</b>	20Hz–15kHz +0.2dB –1.5dB
<b>Total Harmonic Distortion:</b>	(MONO) 1kHz 0.15%, 50Hz–10kHz 0.3% (STEREO) 1kHz 0.2%, 50Hz–5kHz 0.4%
<b>FM Stereo Separation:</b>	1kHz 45dB 100Hz–10kHz 40dB
<b>Carrier Leak (19kHz &amp; 38kHz):</b>	75dB
<b>OUTPUT VOLTAGE</b>	
<b>Fixed Output (FIXED):</b>	1.1V (100% modulation)
<b>Output impedance:</b>	4.7 kohm
<b>Variable Output (VARIABLE):</b>	0–1.7V
<b>Output Impedance:</b>	1 kohm
<b>LEVEL METERS</b>	
<b>Indication Error:</b>	$\pm$ 0.2dB (EXT. INPUT –20–+30dB) 1kHz
<b>Frequency Response:</b>	20Hz–15kHz $\pm$ 0.5dB

<b>CONNECTOR TERMINALS:</b>	Antenna (300 ohms, 75 ohms terminals & 750 ohms coaxial connector)
	Multi-path Detection
	Fixed Output (fixed)
	Variable Output (VARIABLE)
	Level Meter Inputs

<b>OPERATION KNOBS:</b>	Power Switch
	Function (STEREO ONLY, AUTO, MONO)
	Level Meter External Input Attenuator
	Tuning knob
	Muting
	Hi. Blend
	Meter Selector (EXTERNAL, LEVEL, SIGNAL)

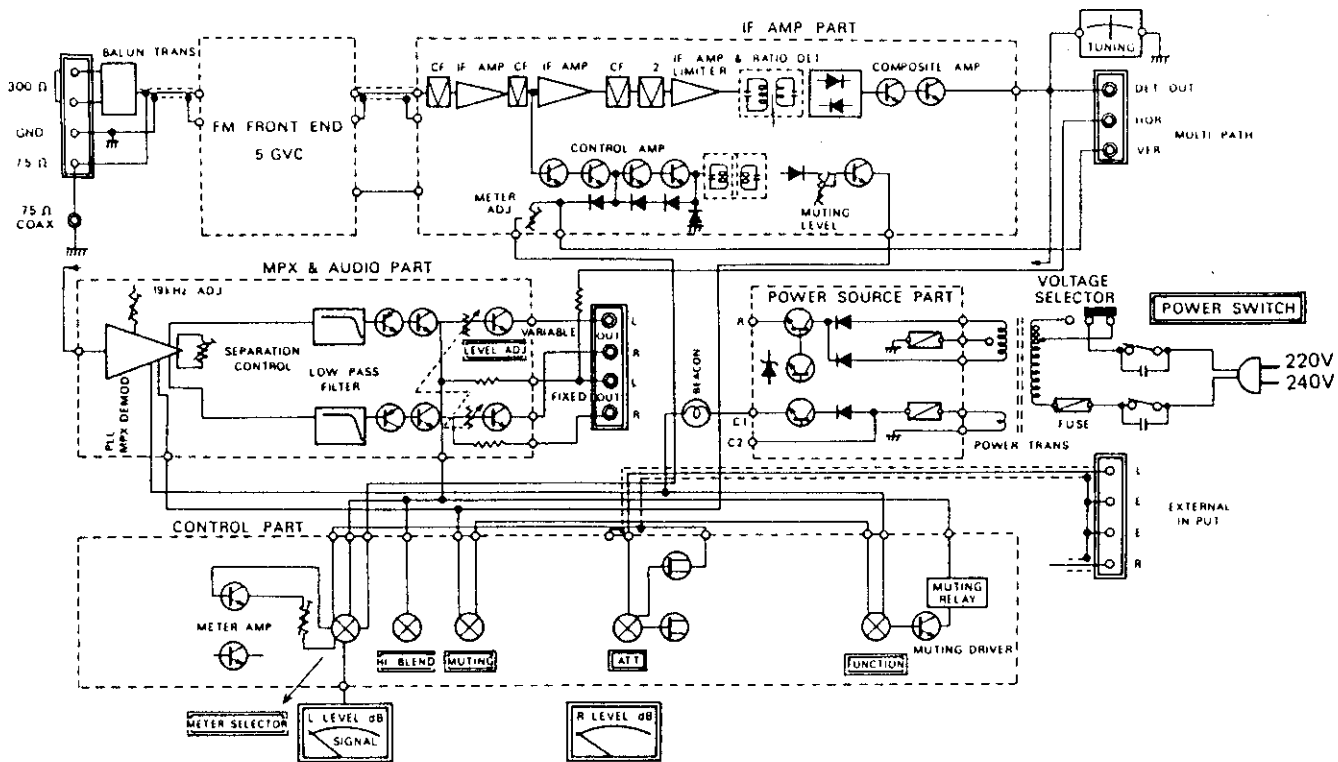
**POWER REQUIREMENT:** 220V/240V, 50Hz/60Hz (Internal switching)

**POWER CONSUMPTION:** 16W

**DIMENSIONS:** 396W x 147H x 281D (mm)

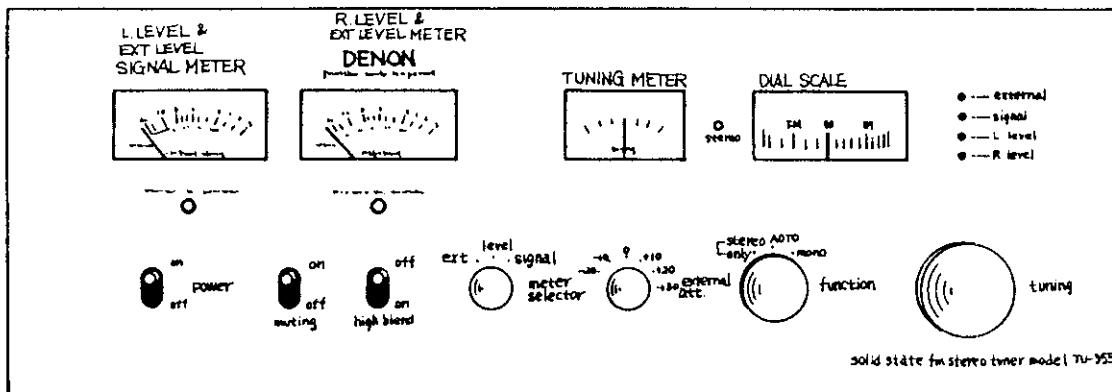
**WEIGHT:** 6.8kg.

BLOCK DIAGRAM

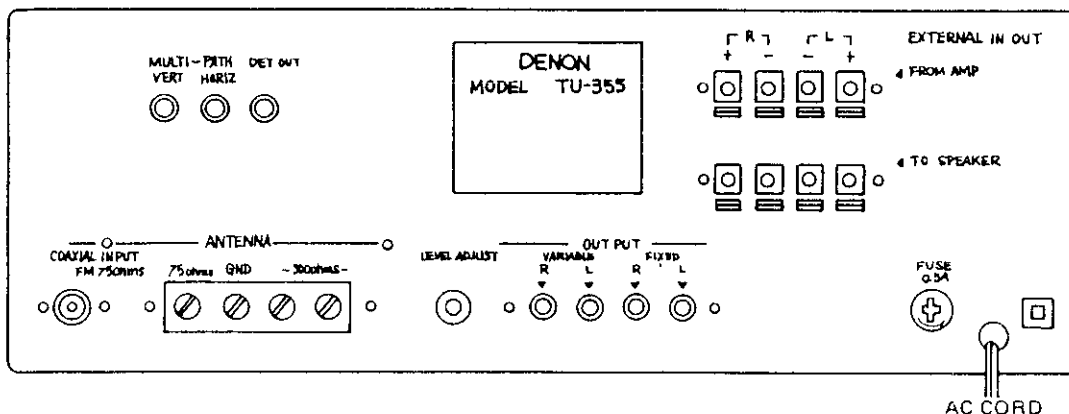


THE VIEW OF FRONT, BACK PANEL AND TOP, BOTTOM VIEW

FRONT PANEL



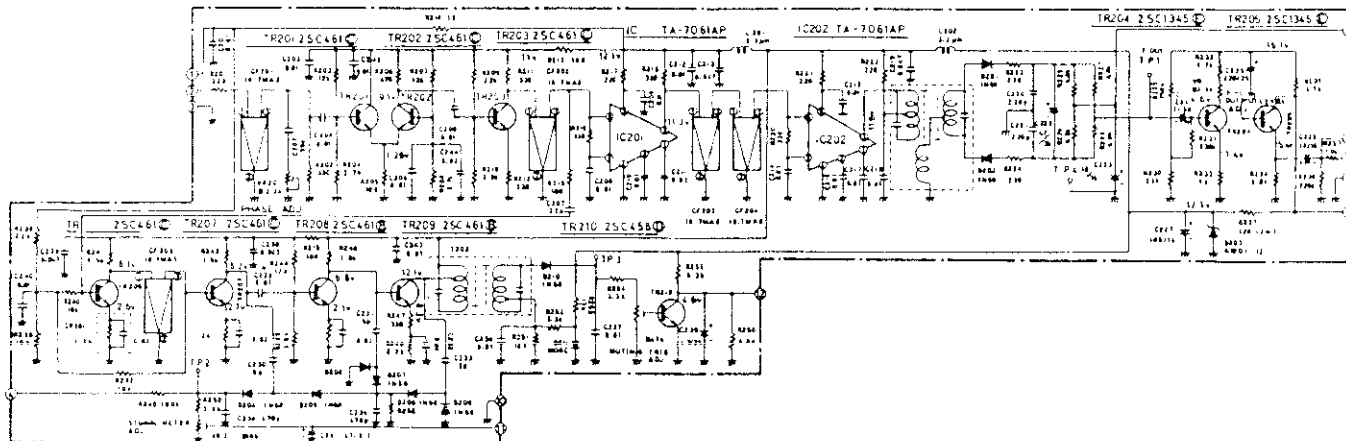
BACK PANEL



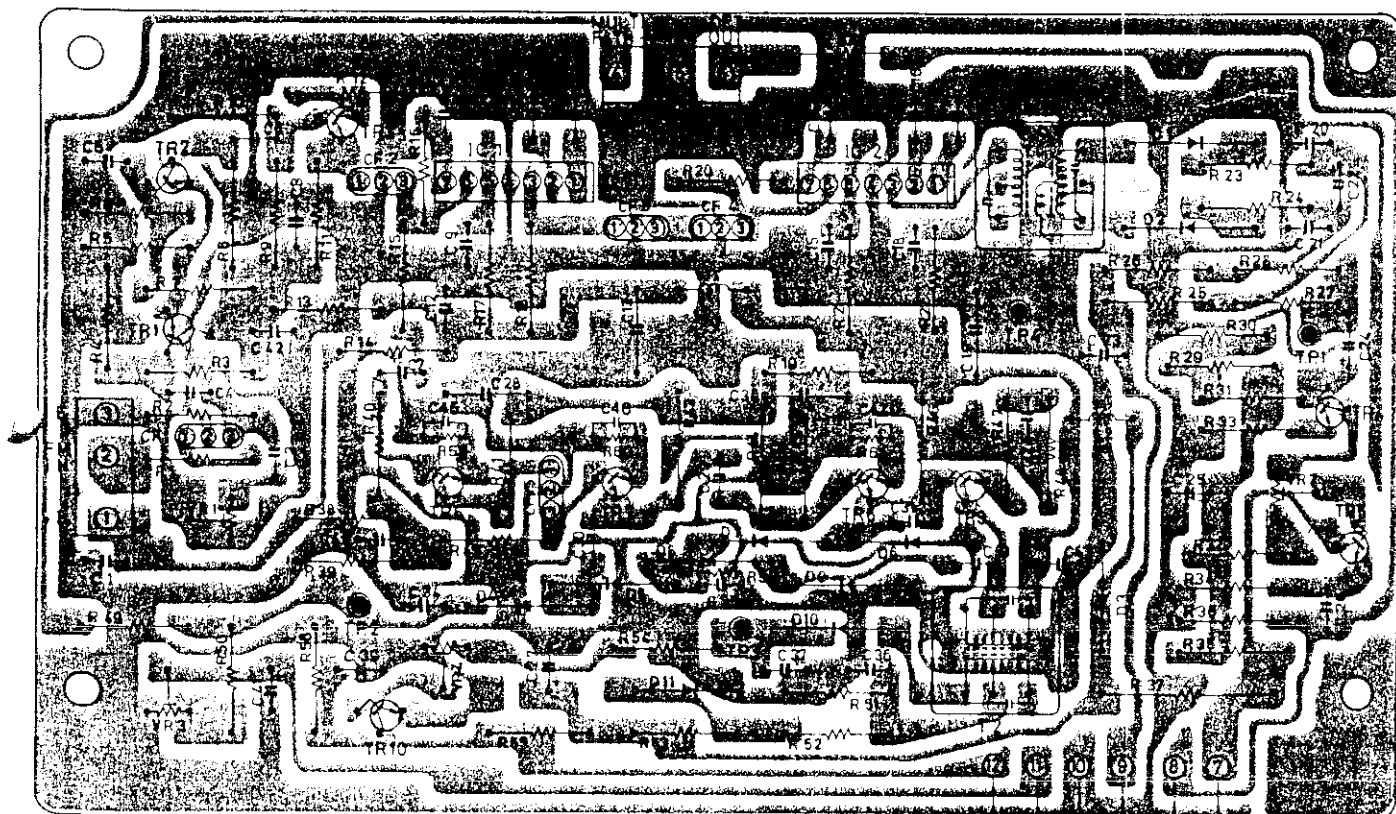


CIRCUIT DIAGRAM, PRINTED CIRCUIT BOARD PATTERN AND PARTS LIST  
 (THE BOARD DIAGRAM REPRESENTS THE VIEW FROM THE COPPER FOIL SIDE)

HUX-003A WIRING DIAGRAM



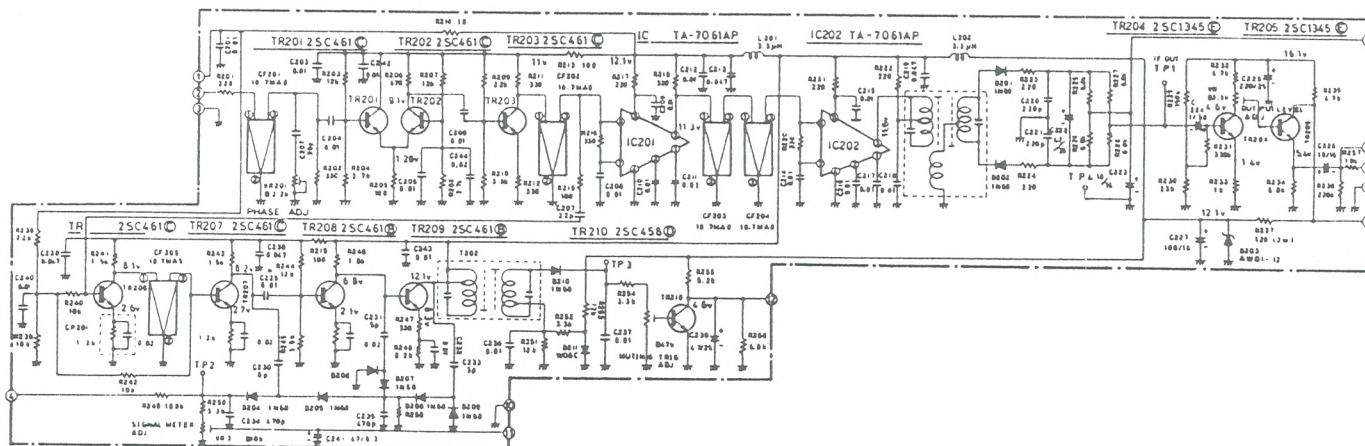
HUX-003A IF UNIT



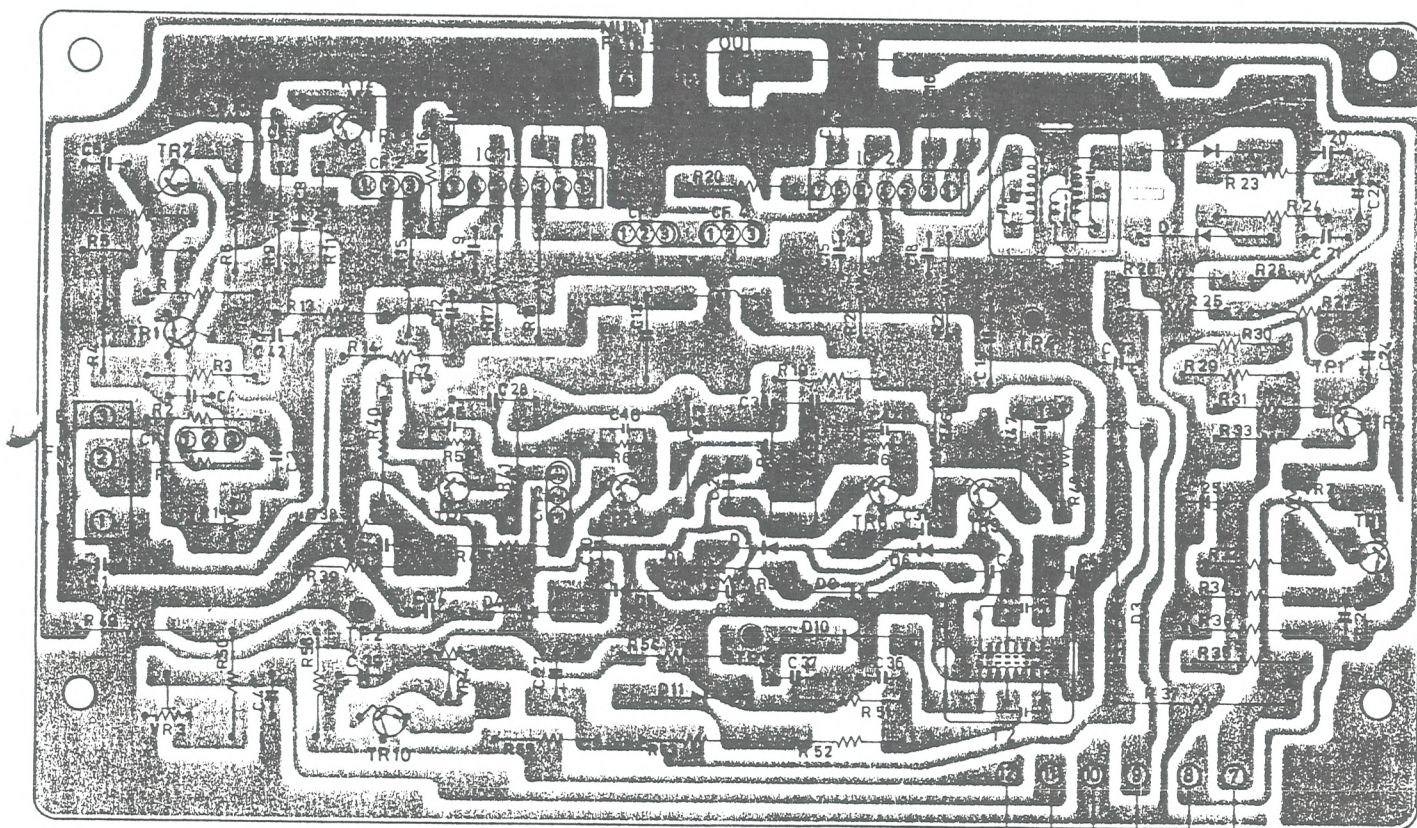
- (BN) MUTING OUT
- (WT) METER SELECTOR
- (BK) EARTH
- (BU) TUNING METER OUT
- (YW) DETECTOR OUT
- (RD) DC +23 V

CIRCUIT DIAGRAM, PRINTED CIRCUIT BOARD PATTERN AND PARTS LIST  
 (THE BOARD DIAGRAM REPRESENTS THE VIEW FROM THE COPPER FOIL SIDE)

HUX-003A WIRING DIAGRAM



HUX-003A IF UNIT

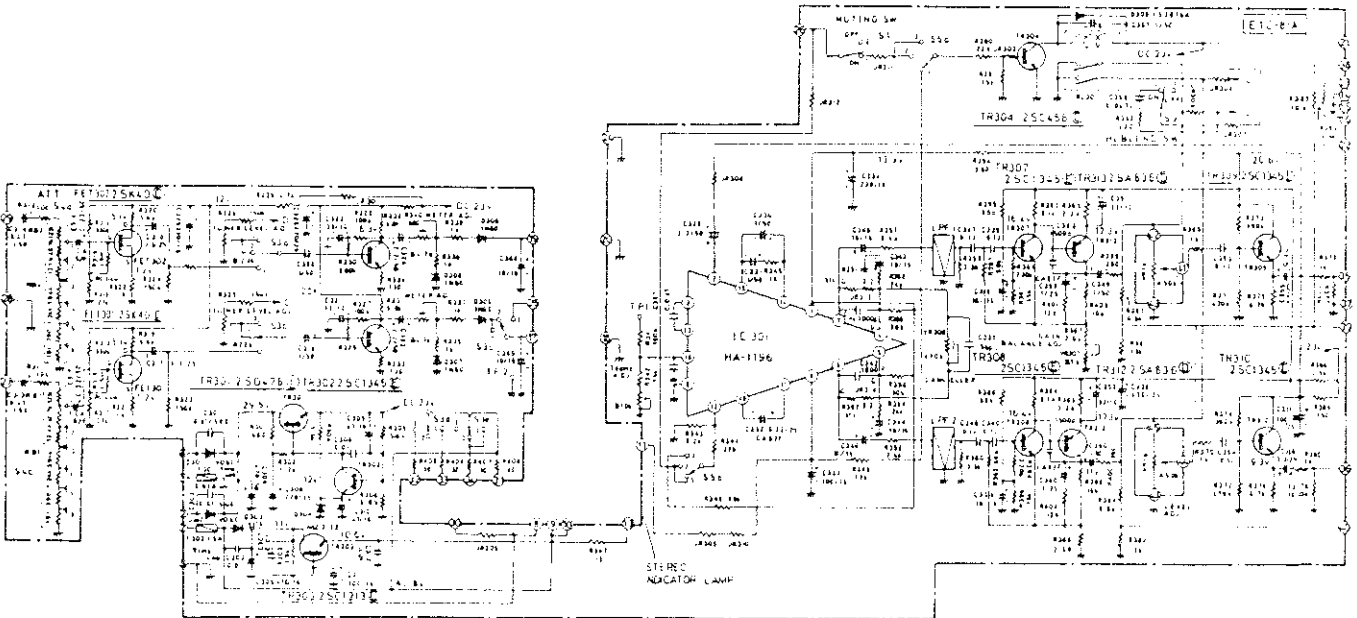


- (BN) MUTING OUT
- (WT) METER SELECTOR
- (BK) EARTH
- (BU) TUNING METER
- OUT
- (YW) DETECTOR OUT
- (RD) DC +23 V

HUX-003A IF UNIT PARTS LIST

Ref No	Part No.	Part Name	Remarks	Ref No.	Part No.	Part Name	Remarks
C1 3 4 5 6 B 0 10 11 12 14 15 16 17 18 29 32 36 37 40 42 43 45 46 47	7531074016	CK45F1H1032F	0.01µF 50V Ceramic Capacitor	R29	2410369015	RD1482E154JF	150 Kohm 1/4W Carbon Film Resistor
C2	7533652017	CC45SL1H390KF	39PF ±10% 50V Ceramic Capacitor	R30	2410360018	RD1482E333JF	33 Kohm 1/4W Carbon Film Resistor
C7	7533649017	CC45SL1H120KF	22PF ±10% 50V Ceramic Capacitor	R31	2410374010	RD1482E334JF	330 Kohm 1/4W Carbon Film Resistor
C13 19 28 38	7531026014	CK45F1H4732F	0.047µF 50V Ceramic Capacitor	R32 35	2410330012	RD1482E472JF	4.7 Kohm 1/4W Carbon Film Resistor
C20 21	7533661011	CC45SL1H271KF	270PF ±10% 50V Ceramic Capacitor	R33	2410314012	RD1482E102JF	1.0 Kohm 1/4W Carbon Film Resistor
C22 39	7544024016	CE04W1E4R1-F	4.7µF 25V Electrolytic Capacitor	R36	2410370014	RD1482E224JF	220 Kohm 1/4W Carbon Film Resistor
C23 26	7544015012	CE04W1C100-F	10µF 16V Electrolytic Capacitor	R37	2440087018	RS1483D121JNBF	120 Ohm ±5% 2W Metal Oxide Film Resistor
C24	7544044012	CE04W1H010-F	1µF 50V Electrolytic Capacitor	R39 40 42	2410338014	RD1482E103JF	10 Kohm ±5% 1/4W Carbon Film Resistor
C25	7544029011	CE04W1E271-F	270µF 25V Electrolytic Capacitor	57	2410318018	RD1482E152JF	1.5 Kohm 1/4W Carbon Film Resistor
C27	7544018019	CE04W1C101-F	100µF 16V Electrolytic Capacitor	R41 43	2410328011	RD1482E392JF	3.9 Kohm 1/4W Carbon Film Resistor
C30	7533599015	CC45SL1M060DF	6PF ±0.5PF 50V Ceramic Capacitor	R45	2410320019	RD1482E182JF	1.8 Kohm 1/4W Carbon Film Resistor
C31	7533598016	CC45SL1H050DF	5PF ±0.5PF 50V Ceramic Capacitor	R46 55	2410330016	RD1482E822JF	8.2 Kohm 1/4W Carbon Film Resistor
C32	7533596018	CC45SL1H030CF	3PF ±0.25PF 50V Ceramic Capacitor	R49	2410362019	RD1482E104JF	100 Kohm 1/4W Carbon Film Resistor
C34 35	7533655017	CC45SL1M471KF	470PF ±10% 50V Ceramic Capacitor	R58	2410339001	RD1482E103J	10 Kohm 1/4W Carbon Film Resistor
C41	2544007013	CE04W0J470-F	47µF 6.3V Electrolytic Capacitor	R59 60 61	2410316007	RD1482E122J	1.2 Kohm 1/4W Carbon Film Resistor
R1 17 21 22 23 24 16 18 20 47	7410298015	RD1482E221JF	220 Ohm ±5% 1/4W Carbon Film Resistor	VR1	EP 5462H9	Solid Volume	0.22 Kohm Variable Resistor
R2 11 12 16 18 20 47	7410307011	RD1482E331JF	330 Ohm ±5% 1/4W Carbon Film Resistor	VR2	EP 5462H10	Solid Volume	0.33 Kohm Variable Resistor
R3 44 51 53	7410340015	RD1482E123JF	12 Kohm ±5% 1/4W Carbon Film Resistor	VR3	EP 5462H13	Solid Volume	0.12 Kohm Variable Resistor
R4 8	741024015	RD1482E272JF	2.7 Kohm 1/4W Carbon Film Resistor	VR4	EP 5462H17	Solid Volume	0.17 Kohm Variable Resistor
R5	7410296017	RD1482E181JF	180 Ohm 1/4W Carbon Film Resistor				
R6	7410306017	RD1482E471JF	470 Ohm 1/4W Carbon Film Resistor	T1	2312001009	Ratio Trans Ass	
R9 36	7410346015	RD1482E223JF	22 Kohm 1/4W Carbon Film Resistor	T2	2312002105	FM IF1 Ass	
R10 50 52 54	7410326013	RD1482E332JF	3.3 Kohm 1/4W Carbon Film Resistor	CF 1 2 3 4 5	2E10006007	Ceramic Filter	10.7 Mhz Ceramic Filter
R13 15 19	7410290013	RD1482E101JF	100 Ohm 1/4W Carbon Film Resistor	L1 2	1HT 09556	Inductor	3.3µH Inductor
R14	7410295013	RD1482E100JF	10 Ohm 1/4W Carbon Film Resistor	IC1 2	2730019029	1A 7061AP	Integrated Circuit
R25 26 27 28 34 50	7410334018	RD1482E682JF	6.8 Kohm 1/4W Carbon Film Resistor	TR1 2 3 6 7	2730025023	2SC461 (C)	Transistor
				TR4 5	2730116013	2SC1345 (E)	Transistor
				TR8 9	2730025010	2SC461 (B)	Transistor
				TR10	2730021043	2SC458 (D)	Transistor
				D1 2 4 5 6 7 8 9 10	2760002029	1R60	Diode
				D3	2760005008	AW0117	Diode
				D11	2760158025	W06C	Diode

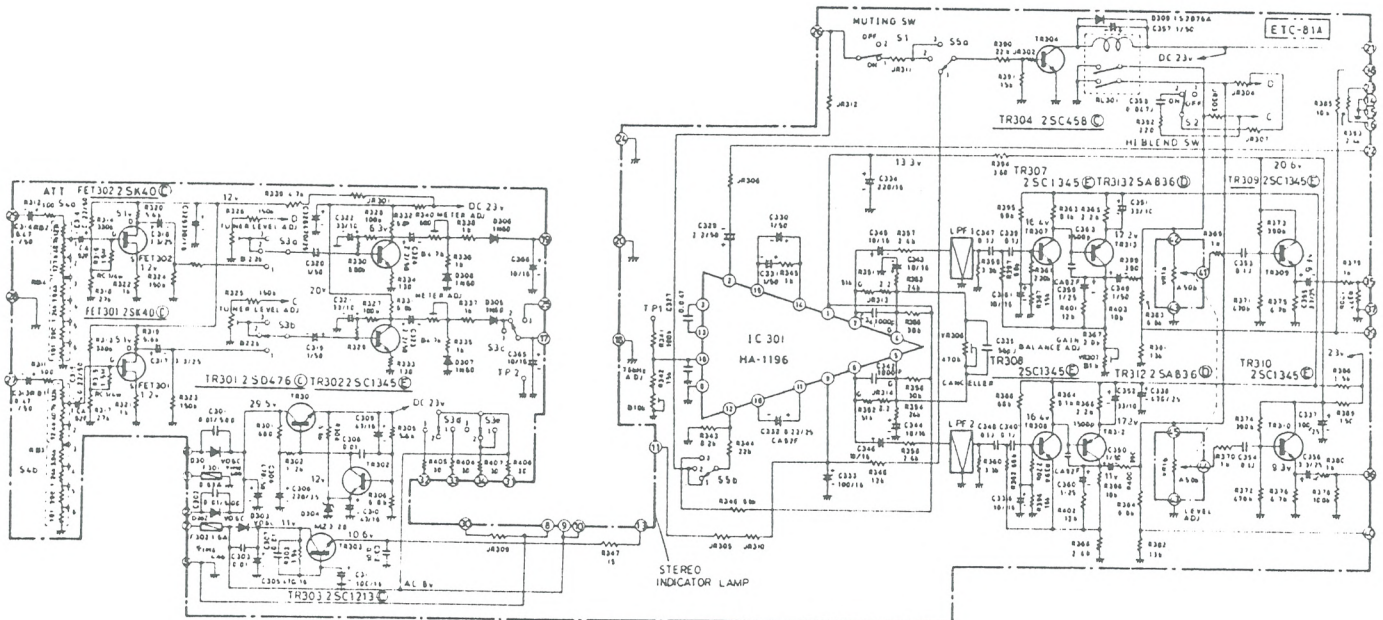
ETC-81 WIRING DIAGRAM



HUX-003A IF UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 29, 32, 36, 37, 40, 42, 43, 45, 46, 47	2531074016	CK45F1H103ZF	0.01µF 50V Ceramic Capacitor	R29	2410366015	RD14B2E154JF	150 Kohm 1/4W Carbon Film Resistor
C2	25336652017	CC45SL1H 390KF	39PF ±10% 50V Ceramic Capacitor	R30	2410350018	RD14B2E333JF	33 Kohm 1/4W Carbon Film Resistor
C7	2533649017	CC45SL1H220KF	22PF ±10% 50V Ceramic Capacitor	R31	2410374010	RD14B2E334JF	330 Kohm 1/4W Carbon Film Resistor
C13, 19, 28, 38	2531026014	CK45F1H473ZF	0.047µF 50V Ceramic Capacitor	R32, 35	2410330012	RD14B2E472JF	4.7 Kohm 1/4W Carbon Film Resistor
C20, 21	2533661011	CC45SL1H221KF	220PF ±10% 50V Ceramic Capacitor	R33	2410314012	RD14B2E102JF	1.0 Kohm 1/4W Carbon Film Resistor
C22, 39	2544024016	CE04W1E4R7-F	4.7µF 25V Electrolytic Capacitor	R36	2410370014	RD14B2E224JF	220 Kohm 1/4W Carbon Film Resistor
C23, 26	2544015012	CE04W1C100-F	10µF 16V Electrolytic Capacitor	R37	2440087018	RS14B3D121JNBF	120 Ohm:5% 2W Metal Oxide Film Resistor
C24	2544044012	CE04W1H010-F	1µF 50V Electrolytic Capacitor	R39, 40, 42	2410338014	RD14B2E103JF	10 Kohm:5% 1/4W Carbon Film Resistor
C25	2544029011	CE04W1E221-F	220µF 25V Electrolytic Capacitor	R41, 43	2410318018	RD14B2E152JF	1.5 Kohm 1/4W Carbon Film Resistor
C27	2544018019	CE04W1C101-F	100µF 16V Electrolytic Capacitor	R45	2410328011	RD14B2E392JF	3.9 Kohm 1/4W Carbon Film Resistor
C30	2533599015	CC45SL1H060DF	6PF ±0.5PF 50V Ceramic Capacitor	R46	2410320019	RD14B2E182JF	1.8 Kohm 1/4W Carbon Film Resistor
C31	2533598016	CC45SL1H050DF	5PF ±0.5PF 50V Ceramic Capacitor	R48, 55	2410336016	RD14B2E822JF	8.2 Kohm 1/4W Carbon Film Resistor
C33	2533596018	CC45SL1H030CF	3PF ±0.25PF 50V Ceramic Capacitor	R49	2410362019	RD14B2E104JF	100 Kohm 1/4W Carbon Film Resistor
C34, 35	2533665017	CC45SL1H471KF	470PF ±10% 50V Ceramic Capacitor	R58	2410338001	RD14B2E103J	10 Kohm 1/4W Carbon Film Resistor
C41	2544002012	CE04W0J470-F	47µF 6.3V Electrolytic Capacitor	R59, 60, 61	2410316007	RD14B2E122J	1.2 Kohm 1/4W Carbon Film Resistor
R1, 17, 21, 22, 23, 24	2410298015	RD14B2E221JF	220 Ohm:5% 1/4W Carbon Film Resistor	VR1	EP 5462H9	Solid Volume	B-2.2 Kohm Variable Resistor
R2, 11, 12, 16, 18, 20, 47	2410302011	RD14B2E331JF	330 Ohm:5% 1/4W Carbon Film Resistor	VR2	EP 5462H10	Solid Volume	B-3.3 Kohm Variable Resistor
R3, 7, 44, 51, 53	2410340015	RD14B2E123JF	12 Kohm:5% 1/4W Carbon Film Resistor	VR3	EP 5462H13	Solid Volume	B-10 Kohm Variable Resistor
R4, 8	2410324015	RD14B2E272JF	2.7 Kohm 1/4W Carbon Film Resistor	VR4	EP 5462H17	Solid Volume	B-47 Kohm Variable Resistor
R5	2410296017	RD14B2E181JF	180 Ohm 1/4W Carbon Film Resistor		2220211101	P.C Board	Printed Circuit Board
R6	2410306017	RD14B2E471JF	470 Ohm 1/4W Carbon Film Resistor		2040031011	6P Connector Ass	
R9, 38	2410346019	RD14B2E223JF	22 Kohm 1/4W Carbon Film Resistor		2034013003	3P Connector Pin Ass	
R10, 50, 52, 54	2410326013	RD14B2E332JF	3.3 Kohm 1/4W Carbon Film Resistor		2312001009	Ratio Trans Ass	
R13, 15, 19	2410290013	RD14B2E101JF	100 Ohm 1/4W Carbon Film Resistor		2312002105	FM IFT Ass	
R14	2410266018	RD14B2E100JF	10 Ohm 1/4W Carbon Film Resistor	T1	2312001009	Ratio Trans Ass	
R25, 26, 27, 28, 34, 56	2410334018	RD14B2E682JF	6.8 Kohm 1/4W Carbon Film Resistor	T2	2312002105	FM IFT Ass	
				CF 1, 2, 3, 4, 5	2610066007	Ceramic Filter	10.7 MHz Ceramic Filter
				L1, 2	TRT 09956	Inductor	3.3µH Inductor
				IC1, 2	2630019029	TA 7061AP	Integrated Circuit
				TR1, 2, 3, 6, 7	2730025023	2SC461 (C)	Transistor
				TR4, 5	2730116013	2SC1345 (E)	Transistor
				TR8, 9	2730025010	2SC461 (B)	Transistor
				TR10	2730021043	2SC458 (D)	Transistor
				D1, 2, 4, 5, 6, 7, 8, 9, 10	2760002029	1N60	Diode
				D3	2760065008	AW01 12	Diode
				D11	2760158025	W06C	Diode

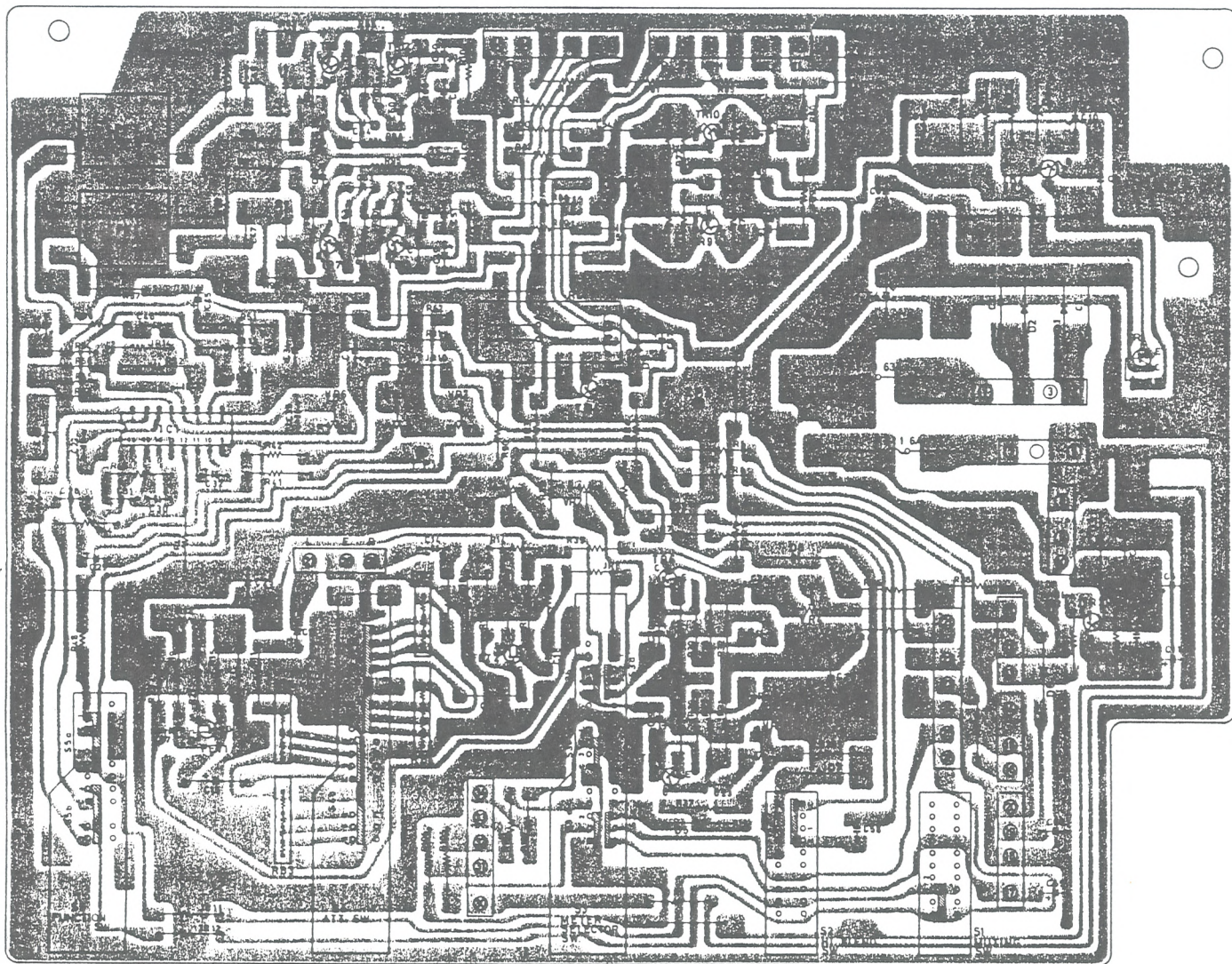
ETC-81 WIRING DIAGRAM







ETC-81 AUDIO AMP UNIT



ETC-81 AUDIO UNIT PARTS LIST

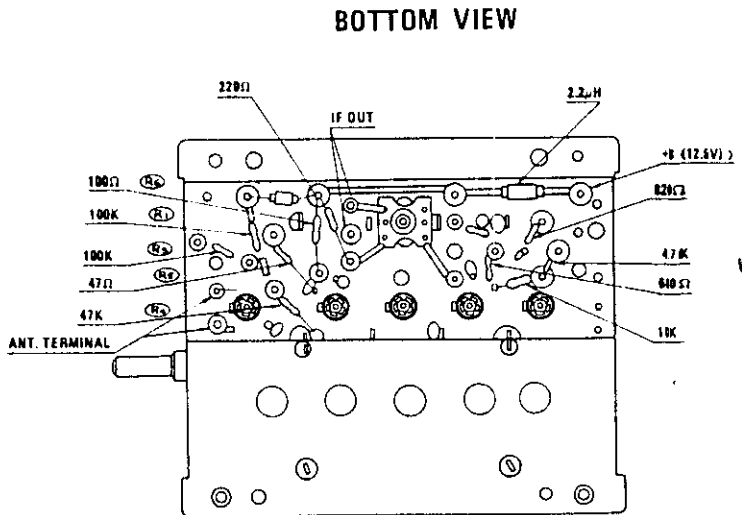
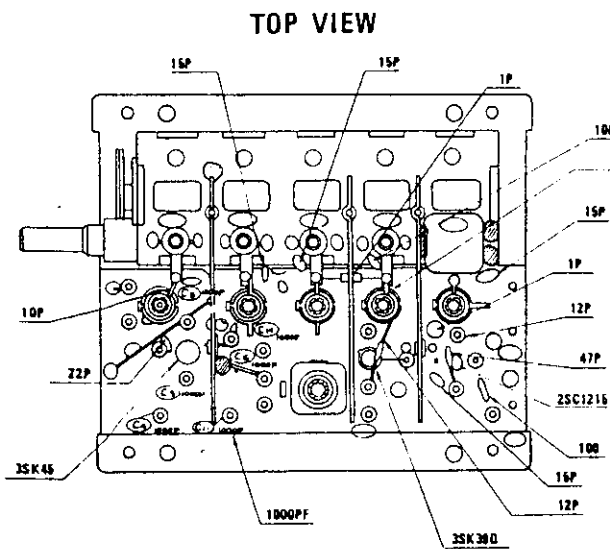
Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C1, 2	2531053016	CK45E2H103PF	0.01µF 500V Ceramic Capacitor	R23, 24, 25, 26	2410366015	RD1482E154JF	150 Kohm:5% 1/4W Carbon Resistor
C3, 7, 8, 12	2531072016	CK45F1H103ZF	0.01µF 50V Ceramic Capacitor	R27, 28, 41, 77, 78	2410362019	RD1482E104JF	100 Kohm:5% 1/4W Carbon Resistor
C4	2544053016	CE04W1H471F	470µF 50V Electrolytic Capacitor	R29, 30	2410253018	RD1482H684JF	680 Kohm:5% 1/2W Carbon Resistor
C5	2544021019	CE04W1C471-F	470µF 16V Electrolytic Capacitor	R33, 34	2410293010	RD1482E131JF	130 Kohm:5% 1/4W Carbon Resistor
C6	2544039014	CE04W1V221-F	220µF 35V Electrolytic Capacitor	R39, 75, 76	2410330012	RD1482E472JF	4.7 Kohm:5% 1/4W Carbon Resistor
C9, 10	2544017010	CE04W1C470-F	47µF 16V Electrolytic Capacitor	R42, 87, 91	2410342013	RD1482E153JF	15 Kohm:5% 1/4W Carbon Resistor
C11, 33	2544018019	CE04W1C101-F	100µF 16V Electrolytic Capacitor	R43	2410336016	RD1482E822JF	8.2 Kohm:5% 1/4W Carbon Resistor
C13, 14	2544043013	CE04W1HR47-F	0.47µF 50V Electrolytic Capacitor	R44, 90	2410346019	RD1482E223JF	22 Kohm:5% 1/4W Carbon Resistor
C15, 16	2551103014	CQ93M1H224MF	0.22µF:20% 50V Plastic Film Capacitor	R46, 62, 88, 95, 97	2410358010	RD1482E683JF	68 Kohm:5% 1/4W Carbon Resistor
C17, 18, 55, 56	2544023017	CE04W1E3R3-F	3.3µF 25V Electrolytic Capacitor	R47	2410270017	RD1482E150JF	15 Ohm:5% 1/4W Carbon Resistor
C19, 20, 30, 31, 49, 50, 57	2544044012	CE04W1H010-F	1µF 50V Electrolytic Capacitor	R48, 101, 102	2410340015	RD1482E123JF	12 Kohm:5% 1/4W Carbon Resistor
C21, 22, 51, 52	2544008016	CE04W1A330-F	33µF 10V Electrolytic Capacitor	R49	2410303010	RD1482E361JF	360 Ohm:5% 1/4W Carbon Resistor
C23, 24, 29	2544055001	CE04W1H2R2-F	2.2µF 50V Electrolytic Capacitor	R51, 52	2412012079	RD1482E513G	51 Kohm:2% 1/4W Carbon Resistor
C25	2544020010	CE04W1C331-F	330µF 16V Electrolytic Capacitor	R53, 54	2410347018	RD1482E243JF	24 Kohm:5% 1/4W Carbon Resistor
C26, 38	2544031012	CE04W1E471-F	470µF 25V Electrolytic Capacitor	R55, 56	2410349016	RD1482E303JF	30 Kohm:5% 1/4W Carbon Resistor
C27	2551090014	CQ93M1H473KF	0.047µF:20% 50V Plastic Film Capacitor	R57, 58, 68, 93	2410332016	RD1482E242JF	2.4 Kohm:5% 1/4W Carbon Resistor
C28	2555091008	CQ09S1H471J	470PF:5% 50V Plastic Film Capacitor	R59, 60	2410326013	RD1482E322JF	3.3 Kohm:5% 1/4W Carbon Resistor
C32	2545016010	CA92F1ER22MF	0.22µF:20% 25V Aluminum Solid Electrolytic Capacitor	R61, 94	2410370014	RD1482E212JF	220 Kohm:5% 1/4W Carbon Resistor
C34	2544019018	CE04W1C221-F	220µF 16V Electrolytic Capacitor	R63, 64	2410337015	RD1482E912JF	9.1 Kohm:5% 1/4W Carbon Resistor
C35	2533621019	CC45S1H560JF	56PF:10% 50V Ceramic Capacitor	R65, 66	2410322017	RD1482E222JF	2.2 Kohm:5% 1/4W Carbon Resistor
C36, 43, 44, 45, 46, 61	2544015012	CE04W1C100-F	10µF 16V Electrolytic Capacitor	R67	2410321018	RD1482E202JF	2.0 Kohm:5% 1/4W Carbon Resistor
C37	2544028012	CE04W1E101-F	100µF 25V Electrolytic Capacitor	R71, 72	2410378016	RD1482E474JF	470 Kohm:5% 1/4W Carbon Resistor
C38, 40, 47, 48, 53, 54	2551130045	CQ93M1H104JF	0.1µF:5% 50V Plastic Film Capacitor	R73, 74	2410376018	RD1482E394JF	390 Kohm:5% 1/4W Carbon Resistor
C41, 42	2554076009	CQ92P2A102G	0.001µF:2% 100V Plastic Film Capacitor	R81, 82	2410341014	RD1482E133JF	13 Kohm:5% 1/4W Carbon Resistor
C58	2551130003	CQ93M1H473JF	0.047µF:5% 50V Plastic Film Capacitor	R85, 98, 103	2410338014	RD1482E103JF	10 Kohm:5% 1/4W Carbon Resistor
C59, 60	2545020019	CA92F1E010MF	1µF:20% 25V Aluminum Solid Electrolytic Capacitor	R86	2410319018	RD1482E152JF	1.5 Kohm:5% 1/4W Carbon Resistor
C63, 64	2551120026	CQ93M1H152J	0.0015µF:5% 50V Plastic Film Capacitor	R89	2410294019	RD1482E151JF	150 Ohm:5% 1/4W Carbon Resistor
C65, 66	2544015009	CE04W1C100-F	10µF 16V Electrolytic Capacitor	R92	2410298015	RD1482E221JF	220 Ohm:5% 1/4W Carbon Resistor
R1, 40	2410310016	RD1482E681JF	680 Ohm:5% 1/4W Carbon Resistor	R96	2410343012	RD1482E163JF	16 Kohm:5% 1/4W Carbon Resistor
R2	2410316010	RD1482E122JF	1.2 Kohm:5% 1/4W Carbon Resistor	R99, 100	2410304019	RD1482E391JF	390 Ohm:5% 1/4W Carbon Resistor
R3	2410329011	RD1482E382JF	3.8 Kohm:5% 1/4W Carbon Resistor	R104, 105, 106, 107	2410277010	RD1482E300JF	30 Ohm:5% 1/4W Carbon Resistor
R4, 5, 19, 20	2410332010	RD1482E562JF	5.6 Kohm:5% 1/4W Carbon Resistor	2220202107		P.C Board	Printed Circuit Board
R6, 31, 32, 83, 84	2410334018	RD1482E682JF	6.8 Kohm:5% 1/4W Carbon Resistor	4120222104		Control Bracket	
R11, 12	2410290013	RD1482E101JF	100 Ohm:5% 1/4W Carbon Resistor	2034013003		3P Connector Pin Ass	
R13, 14	2410374010	RD1482E334JF	330Kohm:5% 1/4W Carbon Resistor	2030029004		4P Connector Base	
R15, 16	2410219016	RC05GF2E155KF	1.5 Mohm:10% 1/4W Carbon Resistor	2038004005		5P Connector Base	
R17, 18	2410348017	RD1482E273JF	27 Kohm:5% 1/4W Carbon Resistor	2030028005		6P Connector Base	
R21, 22, 35, 36, 37, 38, 45, 69, 70, 79, 80	2410314012	RD1482E102JF	1 Kohm:5% 1/4W Carbon Resistor	2120058008		Rotary Switch	For Meter Selector
				2120057009		Rotary Switch Fo	For Function
				2120056000		Rotary Switch	For Ext Att
				2124029101		Lever Switch	For Muting, HI Blend
				2320013005		Low Pass Filter	
				EP-6371014		Fuse Holder	
				EP-71321		Fuse 0.63A	
				EP-71322		Fuse 1.6A	

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
(C)	2530052002	HA-1196	Integrated Circuit	D5,6,7,8	2760002029	1N60	Diode
FET1,2	7250007021	25K 40 (C)	Field Effect Transistor	D9	2760049011	1S 2075A	Diode
TR1	2740043008	25D 476 (C)	Transistor	RL1	2140015005	Reed Relay	Diode
TR2,7,8,9,10	2730116013	25C 1345 (E)	Transistor	VR1,2	EP-5462H15	Solid Volume	8-22 Kohm Variable Resistor
TR3	2730111021	25C 1213 (C)	Transistor	VR3,4	EP-5462H15	Solid Volume	8-4.7 Kohm Variable Resistor
TR4	2730021030	25C 458 (C)	Transistor	VR6	EP-5462H13	Solid Volume	8-10 Kohm Variable Resistor
TR5,6	2730021043	25C 458 (D)	Transistor	RB1,2	2462001001	RK923-2B	Resistor Block
TR12,13	2710063005	25A 836 (D)	Transistor	RB3,4	2462002000	RK924-2B	Resistor Block
D1,2,3	2760166017	RA-1Z	Diode		2062008006	AC Cord With Plug	For Australia
D4	2760178005	MZ 312B	Diode				

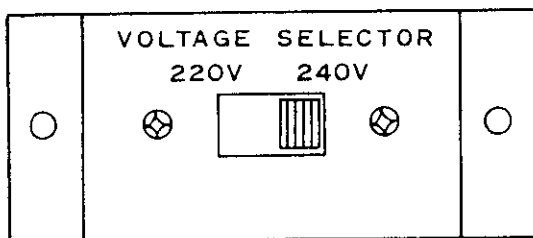
GE-0005-1 CHASSIS & CABINET GROUP

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
	1020022038	Top Cover	For Top Cover, Bottom Cover	2150016117	Level Meter (L) Ass	Meter Select Indicator Lamp	For Stereo Indicator Lamp
	4770064107	Fixing Screw		3939007201	Lamp Ass		
	1050089106	Bottom Cover Ass	External Att. Meter Selector	2220196006	P.C Board	Stereo Indicator Lamp	For Stereo Indicator Lamp
	1440152203	Front Panel Ass		2030024001	P.L. 6.3V 0.075A		
	1220078104	Tuning Knob Ass	For Power, Muting, High Blend Switch	2034080081	3P Connector Cord	For Level Meter (R), (L) Ass, Tuning Meter	For Level Meter (R), (L) Drum, Tuning Meter Illumination
	1120078102	Function Knob Ass		2220212100	P.C Board		
	1120080103	Knob Ass	For Guide Wheel	3930026008	P.L. 8V 0.2A		
	1130034000	Lever Knob		2150015105	Tuning Meter Ass	For Drum Lamp	For AC Line Fuse
	1190005011	Blind Sheet	2220213002	P.C board			
	4100051308	Dial Chassis Ass	For Guide Wheel	2020012005	Fuse Holder	For AC Cord	Antenna Terminal
	4210119004	Guide Wheel		2061015003	Fuse 0.5A (Time Lag)		
	SC-1161	Tapping Screw	For Drum Illumination	2062002002	AC Cord With Plug	For Speaker Terminal	
	MD-0131J	Guide Wheel		4450020005	Cord Bush		
	4200053108	Driving Shaft Ass	p0.55 Tension	2060019201	4P Terminal	For Front End	For Front End
	4100060205	G.W Bracket (A) Ass		4714304030	3 x 8 CTS		
	4100061107	G.W Bracket (C) Ass	p0.55 Tension	EP-71141	Push Terminal	For Front End	For Front End
	4220068103	Dial Shaft		2335026003	Power Trans Ass		
	WA-0733	Spacer	p0.55 Tension	2160009004	FM Front End Ass	For Front End	For Front End
	4210024209	Drum Wheel		4730356033	3 x 12 CRTS (2)		
	WA-0728	E-Ring	p0.55 Tension	4430113000	Stay	For Front End	For Front End
	4756013004	BN		2042009008	4P Connecting Base		
	S-2680	Tension Spring	p0.55 Tension	E-9843H	Fix Plate	For Front End	For Front End
	4230011001	String		2040052003	3P Connector base		
	4510022001	Dial Drum	p0.55 Tension	2110087005	V2420N10SA503	For Front End	For Front End
	4210023200	Dial Wheel		2032055005	Coaxial Connector		
	4110071404	Front Chassis Ass	p0.55 Tension	2310017008	Balun Trans	For Front End	For Front End
	4140063000	Blind		2034083004	3P Connector Cord		
	4110056306	IF Chassis	p0.55 Tension	2034084002	3P Connector Cord	For Front End	For Front End
	4732355032	3 x 10 CFTS (2)		2034084003	3P Connector Cord		
	4510010007	Lamp Bracket	p0.55 Tension	2034080052	3P Connector Cord	For Front End	For Front End
	4510011103	Reflector Bracket		2034080065	3P Connector Cord		
	1020031104	Back Cover	p0.55 Tension	2036041015	4P Connector Cord	For Front End	For Front End
	4530006004	Filter (A)		2038035016	6P Connector Cord		
	4530007003	Filter (B)	p0.55 Tension	2040031024	MD-4368	For Front End	For Front End
	4610066139	Rubber Sheet		2124047002	Slide Switch		
	4610066126	Rubber Sheet	p0.55 Tension	4120297003	Bracket	For Front End	For Front End
	1460027103	Dial Window (C) Ass		2518001007	CP05C=AC103MC		
	2140072006	Lever Switch	p0.55 Tension	R1	2440064002	For Front End	For Front End
	2150016104	Level Meter (R) Ass			RS1483D1R5JNB		

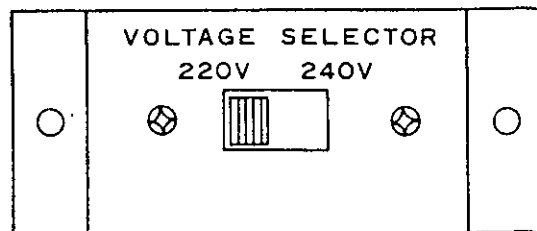
THE VIEW OF THE FRONT END (216000904)



VOLTAGE CHANGEROVER



FOR 240V OPERATION



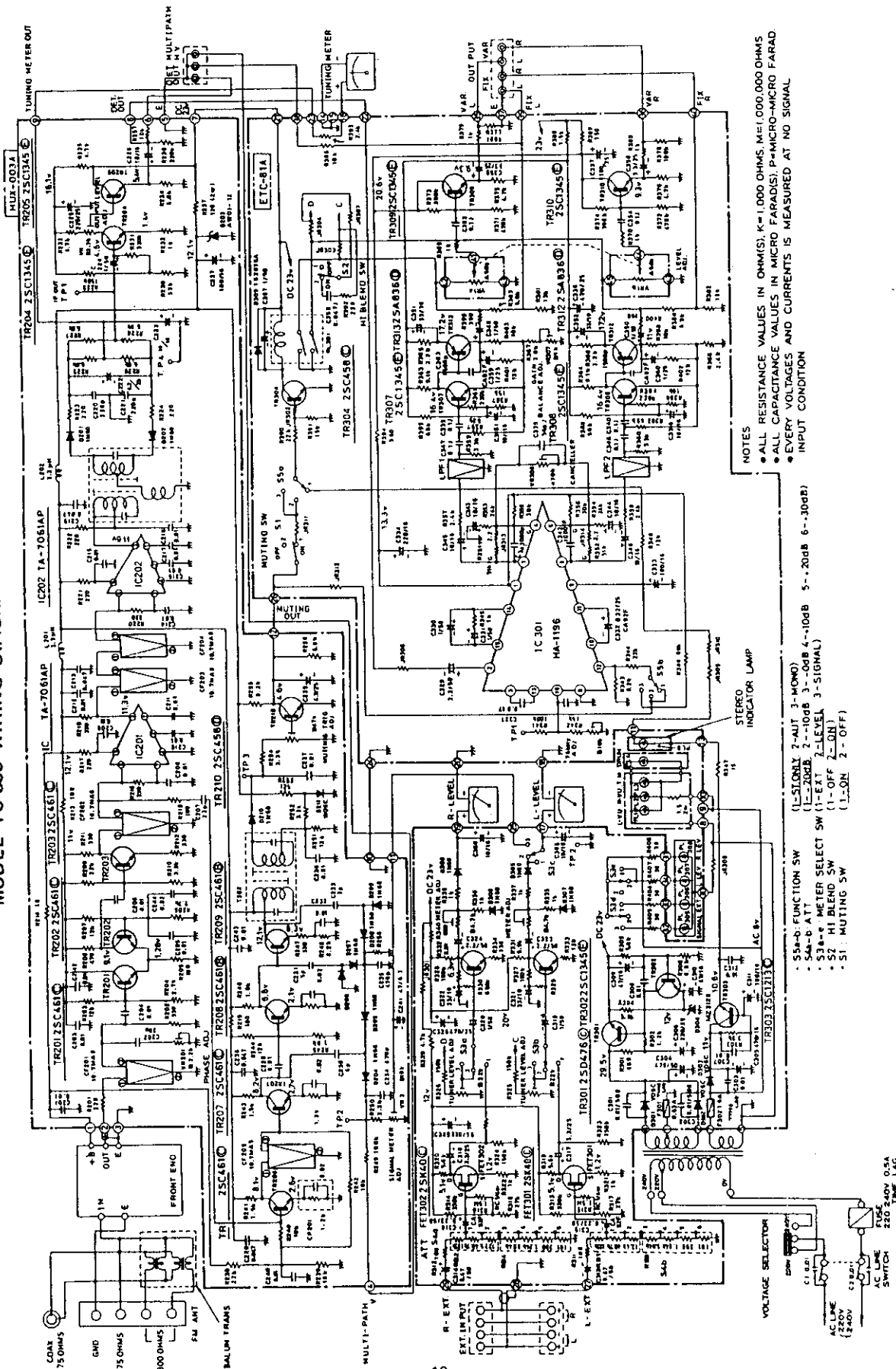
FOR 220V OPERATION

## METHOD OF ADJUSTMENTS

STEP	ITEM	TUNER DIAL SETTING	SIGNAL GENERATOR					INDICATOR		ADJUST	ADJUST LIMITS	REMARKS
			TYPE	FREQ	TUNER INPUT LEVEL	MODULATION	COUPLING	TYPE	CONNECTED TO			
1.	IF	98MHz	FM SG	98MHz	60dB/ $\mu$ V	CW	Through dummy ant. to 300 ohms ant. terminals	Signal strength meter		Top (sec.) and bottom (pri.) of T101 on front end unit. (2160009004)	Maximum signal strength meter	In following adjustments, specification of FM signal generator & stereo modulator have to warrant less than 0.1% distortion and more than 50dB stereo separation at 1 kHz.  Repeat step 3 and 4, until dial indicates within $\pm 50$ kHz at 88MHz and 108MHz. Also check accuracy of other frequency reading.
2.	Detector	Point of no interference & station	Same	Received FM noise		Same	Same	Tuning meter		Top (sec.) of T201 on IF unit (HUX-003A)	Center point of tuning meter	
3.	Dial calibration	108MHz	Same	108MHz	60dB/ $\mu$ V	400Hz $\pm$ 75kHz deviation	Same	Same		OSC. trimmer Tc105 on front end unit (2160009004)	Same	
4.	Same	88MHz	Same	88MHz	Same	Same	Same	Same		OSC. coil L105 on front end unit (2160009004)	Same	
5.	Tracking	108MHz	Same	108MHz	Same	Same	Same	Signal strength meter		Tc, 101, 102, 103, 104 on front end unit (2160009004)	Maximum signal strength meter	
6.	Same	88MHz	Same	88MHz	Same	Same	Same	Same		L101, 102, 103, 104 on front end unit (2160009004)	Same	
7.	Monaural distortion	Same	Same	98MHz	Same	1000Hz $\pm$ 75kHz deviation	Same	Distortion meter A.C. V.M. oscilloscope	Fixed output R-channel	Bottom (pri.) of T201 on IF unit (HUX-003A)	Minimum distortion	
8.	Audio output level	Same	Same	Same	Same	400Hz $\pm$ 75kHz deviation	Same	Same	Same	VR.202 on IF unit (HUX-003A)	1.13V.	
9.	Same	Same	Same	Same	Same	Same	Same	Same	Fixed output L-channel	VR.307 on Audio unit (ETC-81A)	1.13V.	

STEP	ITEM	TUNER DIAL SETTING	TYPE	SIGNAL GENERATOR				INDICATOR		ADJUST	ADJUST LIMITS	REMARKS
				FREQ	TUNER INPUT LEVEL	MODULATION	COUPLING	TYPE	CONNECTED TO			
10.	P.L.L.19kHz	Same	Same	Same	Same	Same	Same	Frequency counter	TP301	VR.305 on Audio unit (ETC-81A)	76kHz ±100Hz.  IF distortion is more than reading of 0.2%, turn top (sec.) and bottom (pri.) of T101 on front end unit (2160009004) to obtain reading of 0.15%.	
11.	Stereo distortion	Same	FM SG and stereo modulator	Same	Same	Stereo modulation L-channel ± 33.75 kHz deviation pilot ± 7.5 kHz deviation	Same	Distortion meter A.C. V.M. oscilloscope	Fixed output L-channel	VR.201 on IF unit (HUX-003A)	Minimum distortion	
12.	Stereo separation	98MHz	FM SG. and stereo modulator	98MHz	60dB/μV	Stereo modulation L or R-channel ± 33.75 kHz deviation Pilot ± 7.5 kHz deviation	Through dummy ant. to 300 ohms ant. terminals	Distortion meter A.C.V.M. oscilloscope	Fixed output L or R-channel	VR.306 on Audio unit (ETC-81A)	Maximum separation	Check to alternate both channels
13.	Muting coil	98MHz	Same	98MHz	20dB/μV	400Hz ±75kHz deviation	Same	Signal strength meter		Top (sec.) and bottom (pri.) of T202 on IF unit (HUX-003A)	Maximum signal strength meter	
14.	Muting Trigger level	Same	Same	Same	Same	Same	Same	L or R-channel level meter		VR.204 on IF unit (HUX-003A)	Trig. on audio output	Set muting switch to "ON" and VR.204 to minimum counter clockwise position and then turn VR.204 slowly in clockwise direction until audio output is obtained.
15.	Signal strength meter	Same	Same	Same	60dB/μV.	400Hz 22.5kHz deviation	Same	Signal strength meter		VR.203 on IF unit (HUX-003A)	0dB point	Turn to obtain reading of 0dB (100%) on the signal strength meter.
16.	Level meter		Audio 1,000Hz oscillator		0.775V		L and R-channel external input terminals	L and R-channel level meter		VR.303 and VR.304 on AUDIO unit (ETC-81A)	Adjust for 0dB both channels	Set meter selector switch to "External" and external att. to 0dB position.
17.	Tuner output level setting	98MHz	FM SG.	98MHz	60dB/μV	400Hz ±75kHz deviation	Through dummy ant. to 300 ohms ant. terminals	L and R-channel level meter		VR.301, and VR.302 on AUDIO unit (ETC-81A)	Adjust for +2.3dB both channels	Set meter selector switch to "Level"

MODEL TU-355 WIRING DIAGRAM

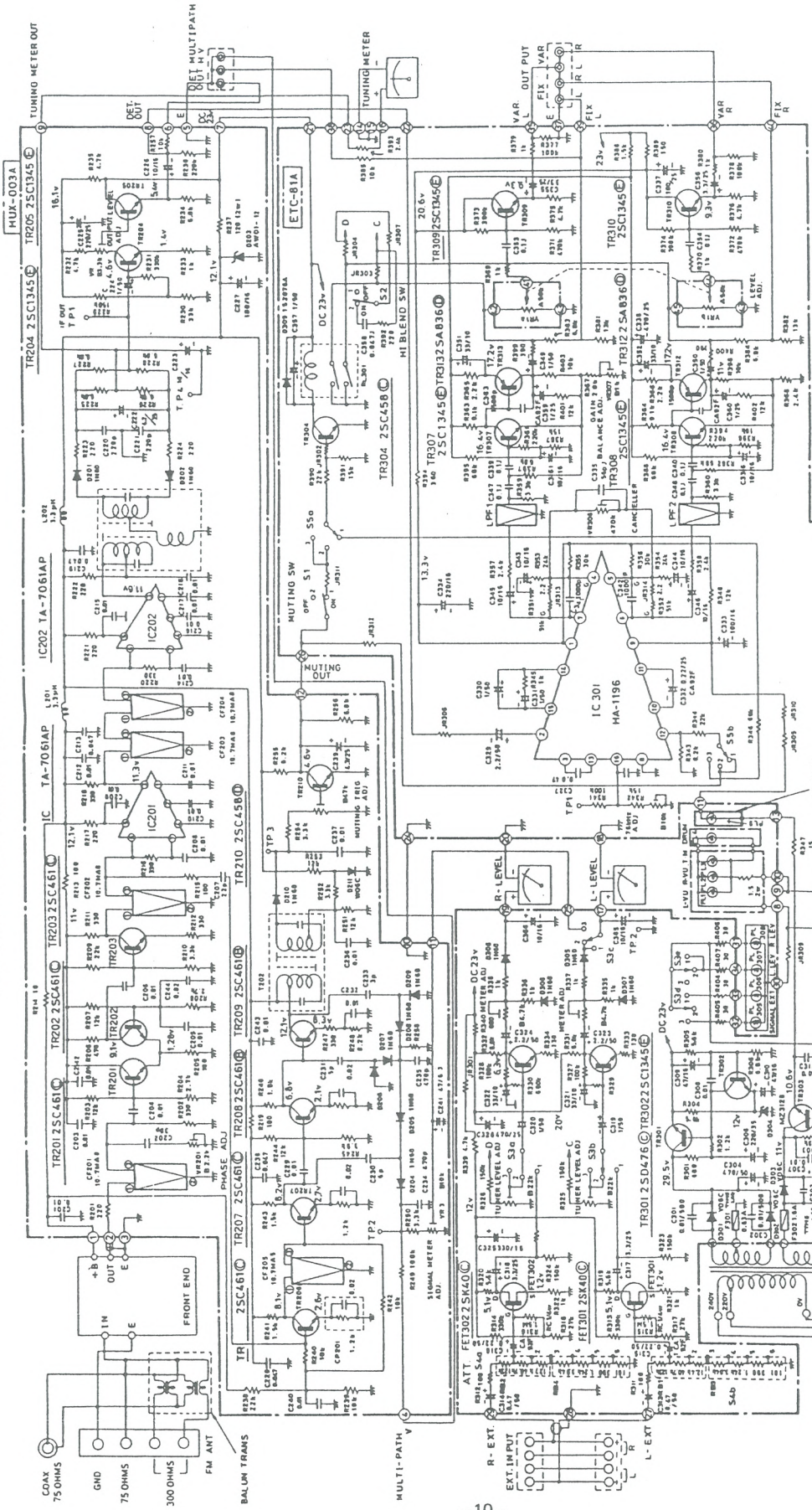


NOTES

- ALL RESISTANCE VALUES IN OHM(S), K=1,000 OHMS, M=1,000,000 OHMS
- ALL CAPACITANCE VALUES IN MICRO FARADS; P=PICTO-MICRO FARAD
- EVERY VOLTAGE AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION

- S5-a-b: FUNCTION SW (L-SIGNAL 2-AUT 3-NOISE) (1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100)
- S3-a-e: METER SELECT SW (1-EXT 2-LEVEL 3-SIGNAL)
- S2: HI BLEND SW (1-OFF 2-ON)
- S1: MUTING SW (1-ON 2-OFF)

MODEL TU-385 WIRING DIAGRAM



NOTES

- ALL RESISTANCE VALUES IN OHM(S). K=1,000 OHMS, M=1,000,000 OHMS.
- ALL CAPACITANCE VALUES IN MICRO FARADS(I). P=PICTO-MICRO FARAD.
- EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION

STEREO INDICATOR LAMP

- S5a-b: FUNCTION SW (1=STEREO 2=AUT 3=MONO)
- S4a-b: ATT (1=20dB 2=-10dB 3=-0dB 4=-10dB 5=-20dB 6=-30dB)
- S3a-e: METER SELECT SW (1=EXT 2=LEVEL 3= SIGNAL)
- S2: HI BLEND SW (1-OFF 2-ON)
- S1: MUTING SW (1-ON, 2-OFF)

VOLTAGE SELECTOR

AC LINE FUSE 220V (240V)

AC LINE SWITCH 220 240V 0.5A TIME LAG