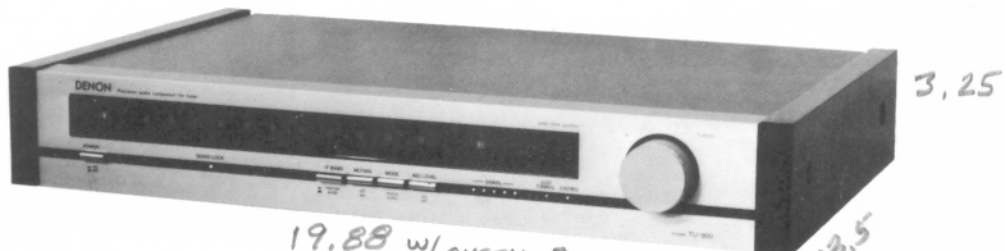


DENON

Hi-Fi Component FM Tuner

SERVICE MANUAL MODEL TU-900

*RF TUNE CAPS = 5 PL'S
L.O. CAP = 3 PL'S*



*19.88 w/CHEEK PL's.
18.44 w/OUT CHEEK PL'S.*

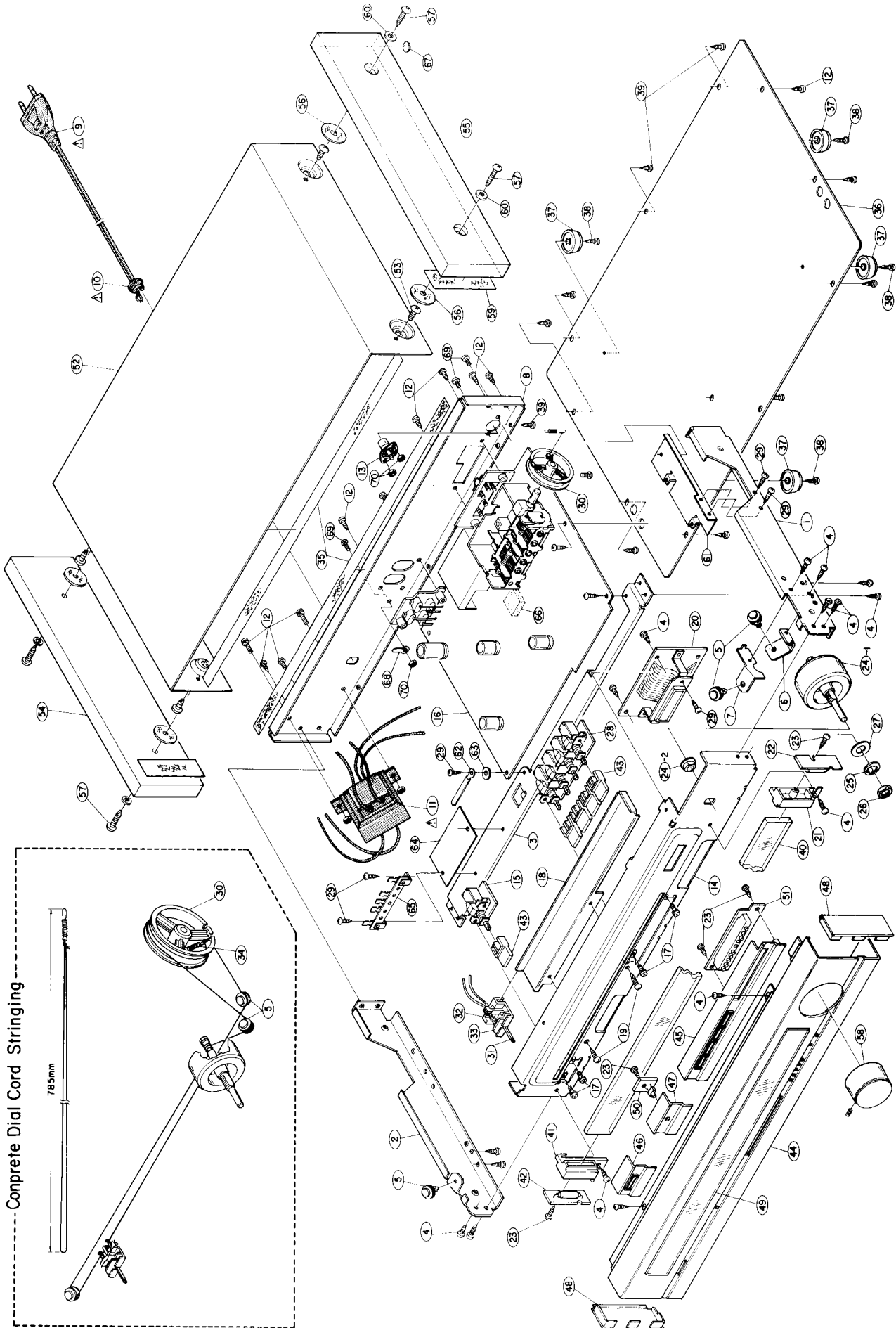
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NIPPON COLUMBIA CO., LTD.

EXPLODED VIEW OF CHASSIS AND CABINET

△ □ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



EXPLODED VIEW OF PARTS LIST

Note: See addendum list below for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list.

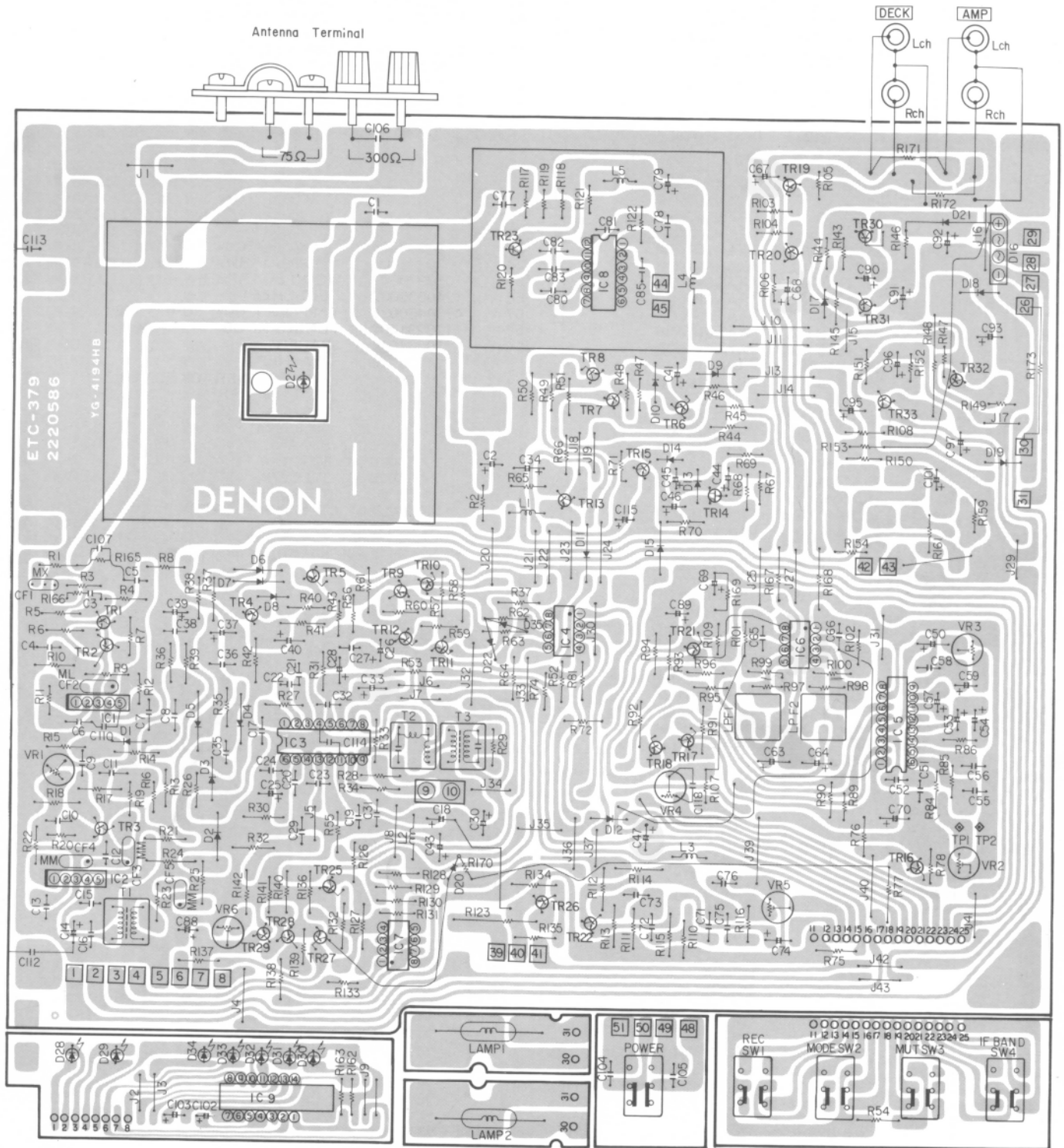
Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions
1	4110266002	SIDE FRAME (R)	*40	1410201003	DIAL SCALE
2	4110235208	SIDE FRAME (L)	41	4510056100	LAMP HOLDER (L)
3	4110236100	CHASSIS FRAME	42	ETC-379-4	TUNER UNIT (FOR LAMP (L) UNIT)
4	4730354019	TAPPING SCREW 3x8	43	1130195004	PUSH KNOB
5	4210164004	GUIDE WHEEL	*44	1440739008	FRONT PANEL
6	4410338009	G. W. BRACKET	45	1140052108	KNOB GUIDE (S)
7	4410342008	G. W. BRACKET (B)	46	1140053107	KNOB GUIDE (P)
*8	1050354200	BACK PANEL	47	4510057002	LED HOLDER
* 9	2062002031	AC CORD	48	1460255106	SIDE PANEL
* 10	4450020005	CORD BUSH	49	1430157108	WINDOW
* 11	2335261004	POWER TRANS	50	ETC-379-7	TUNER UNIT (FOR SERVO UNIT)
12	4770064107	FIXING SCREW	51	ETC-379-2	TUNER UNIT (FOR LED ASS. UNIT)
13	2032055005	COAXIAL CONNECTOR	52	1020096006	TOP COVER
14	4110237206	FRONT CHASSIS	53	4734801005	TAPPING TRANS SCREW 4x8
15	ETC-379-6	TUNER UNIT (FOR POWER UNIT)	54	1010978008	WOOD BOARD (L)
16	ETC-379-1	TUNER UNIT (FOR TUNER UNIT)	55	1010979007	WOOD BOARD (R)
17	4700009006	CROSS PAN SCREW WITH WASHER 3x6	56	1240032002	FELT SHEET
18	4110238108	GUIDE RAIL	57	4734460035	TAPPING TRANS SCREW 4x20
19	4730354035	TAPPING SCREW 3x8	58	1120291002	TUNING KNOB
20	ETC-380	DISPLAY UNIT	59	1220064074	SPACER
21	4510053103	LAMP HOLDER (R)	60	4751006016	5 WASHER
22	ETC-379-3	TUNER UNIT (FOR LAMP UNIT)	61	4120813005	FRONT END BRACKET
23	4730304014	TAPPING SCREW (1) 3x8	62	EP-6214	CORD HOLDER
24-1	4220166005	DRIVING SHAFT ASS.	63	WA-0107H4	WASHER
24-2	-	COLLAR (BELONGINGS OF D. SHAFT ASS.)	64	4150088017	INSULATING SHEET
25	4753800003	9 TOOTH WASHER	65	2050089008	7P. W/TERMINAL
26	4756802008	9 NUT	66	4610136069	CUSHION
27	4150170006	WASHER	67	1040034006	STOPPER
28	ETC-379-5	TUNER UNIT (FOR SWITCH UNIT)	68	2050003107	3T LUG
29	4730353010	TAPPING SCREW 3x6	69	4711304033	CROSS PAN SCREW 3x8
30	4210159006	DIAL WHEEL	70	4756006008	3 NUT
31	3939080004	DIODE SLD-901	PACKING & ACCESSORIES (Packings and accessories are not shown in the exploded view.)		
32	4510054102	POINTER HOLDER		5010701006	CARTON CASE
33	ETC-379-8	TUNER UNIT (FOR POINTER UNIT)		5040055023	STYLEN PAPER
34	S-2680	TENSION SPRING		5030233101	CUSHION
35	1220064029	SPACER		5050061007	ENVELOPE
36	1050316109	BOTTOM COVER		5110832008	INST. MANUAL
37	1040043000	FOOT		2032024418	CONNECTOR CORD
38	4730454016	TAPPING SCREW (2) 4x8		2032056004	COAXIAL PLUG
39	4730353036	TAPPING SCREW 3x6			

ADDENDUM LIST

Ref. No.	Part Name & Descriptions	E2 For Europe	EF For France	E1 For Hong Kong	E3 For U.S.A.
9	AC CORD				
10	CORD BUSH				
11	POWER TRANS				
40	DIAL SCALE				
44	FRONT PANEL				

PRINTED CIRCUIT BOARD PATTERNS AND PARTS LIST

TUNER UNIT ETC-379



ETC-379 TUNER UNIT OF PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions		Ref. No.	Part No.	Part Name & Descriptions	
SEMICONDUCTORS				RESISTORS			
IC01	2630099007	TA-7060AP	INTEGRATED CIRCUIT	R01	2412066009	82 ohm ±5% ¼W	FIXED CARBON FILM
IC02	2630099007	TA-7060AP	INTEGRATED CIRCUIT	R02	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
IC03	2630124008	HA-12412	INTEGRATED CIRCUIT	R03	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
IC04	2630081002	NJM4558D	INTEGRATED CIRCUIT	R04	2412118009	12 k ohm ±5% ¼W	FIXED CARBON FILM
IC05	2630067013	HA11223W	INTEGRATED CIRCUIT	R05	2412102002	2.7 k ohm ±5% ¼W	FIXED CARBON FILM
IC06	2630081002	NJM4558D	INTEGRATED CIRCUIT	R06	2412074004	180 ohm ±5% ¼W	FIXED CARBON FILM
IC07	2630081002	NJM4558D	INTEGRATED CIRCUIT	R07	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
IC08	2620288006	MSL2312	INTEGRATED CIRCUIT	R08	2412056006	330 ohm ±5% ¼W	FIXED CARBON FILM
IC09	2630095001	LB1426	INTEGRATED CIRCUIT	R09	2412118009	12 k ohm ±5% ¼W	FIXED CARBON FILM
TR01	2730025023	2SC461C	TRANSISTOR	R10	2412102002	2.7 k ohm ±5% ¼W	FIXED CARBON FILM
TR02	2730025023	2SC461C	TRANSISTOR	R11	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
TR03	2730025023	2SC461C	TRANSISTOR	R13	2412110007	5.6 k ohm ±5% ¼W	FIXED CARBON FILM
TR04	2710102005	2SA1015 (Y)	TRANSISTOR	R14	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
TR05	2730198015	2SC1815 (BL)	TRANSISTOR	R15	2412110007	5.6 k ohm ±5% ¼W	FIXED CARBON FILM
TR06	2730198015	2SC1815 (BL)	TRANSISTOR	R16	2412056006	33 ohm ±5% ¼W	FIXED CARBON FILM
TR07	2710102005	2SA1015 (Y)	TRANSISTOR	R17	2412136007	68 k ohm ±5% ¼W	FIXED CARBON FILM
TR08	2730198015	2SC1815 (BL)	TRANSISTOR	R18	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
TR09	2710102005	2SA1015 (Y)	TRANSISTOR	R19	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
TR10	2710102005	2SA1015 (Y)	TRANSISTOR	R20	2412092002	1 k ohm ±5% ¼W	FIXED CARBON FILM
TR11	2730198015	2SC1815 (BL)	TRANSISTOR	R21	2412056006	33 ohm ±5% ¼W	FIXED CARBON FILM
TR12	2730198015	2SC1815 (BL)	TRANSISTOR	R22	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
TR13	2730198015	2SC1815 (BL)	TRANSISTOR	R23	2412074004	180 ohm ±5% ¼W	FIXED CARBON FILM
TR14	2750028000	2SK156 (C)	FIELD EFFECT TRANSISTOR	R24	2412078000	270 ohm ±5% ¼W	FIXED CARBON FILM
TR15	2730198015	2SC1815 (BL)	TRANSISTOR	R25	2412076002	220 ohm ±5% ¼W	FIXED CARBON FILM
TR16	2730198015	2SC1815 (BL)	TRANSISTOR	R26	2412110007	5.6 k ohm ±5% ¼W	FIXED CARBON FILM
TR17	2730198015	2SC1815 (BL)	TRANSISTOR	R27	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
TR18	2730198015	2SC1815 (BL)	TRANSISTOR	R28	2412120000	15 k ohm ±5% ¼W	FIXED CARBON FILM
TR19	2710102005	2SA1015 (Y)	TRANSISTOR	R29	2412098006	1.8 k ohm ±5% ¼W	FIXED CARBON FILM
TR20	2710102005	2SA1015 (Y)	TRANSISTOR	R30	2412114003	8.2 k ohm ±5% ¼W	FIXED CARBON FILM
TR21	2730198015	2SC1815 (BL)	TRANSISTOR	R31	2412132001	47 k ohm ±5% ¼W	FIXED CARBON FILM
TR22	2730198015	2SC1815 (BL)	TRANSISTOR	R32	2412128002	33 k ohm ±5% ¼W	FIXED CARBON FILM
TR23	2730043021	2SC535 (C)	TRANSISTOR	R33	2412117000	11 k ohm ±5% ¼W	FIXED CARBON FILM
TR25	2730198015	2SC1615 (BL)	TRANSISTOR	R34	2412080001	330 ohm ±5% ¼W	FIXED CARBON FILM
TR26	2740065002	2SD468A (C)	TRANSISTOR	R35	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
TR27	2730198015	2SC1815 (BL)	TRANSISTOR	R36	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
TR28	2730198015	2SC1815 (BL)	TRANSISTOR	R37	2412068007	100 ohm ±5% ¼W	FIXED CARBON FILM
TR29	2730198015	2SC1815 (BL)	TRANSISTOR	R38	2412068007	100 ohm ±5% ¼W	FIXED CARBON FILM
TR30	2740065002	2SD880 (Y)	TRANSISTOR	R39	2412110007	5.6 k ohm ±5% ¼W	FIXED CARBON FILM
TR31	2730198015	2SC1815 (BL)	TRANSISTOR	R40	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
TR32	2740046005	2SD468A (C)	TRANSISTOR	R41	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
TR33	2740046005	2SD468A (C)	TRANSISTOR	R42	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
TR37	2740046005	2SD468A (C)	TRANSISTOR	R43	2412128002	33 k ohm ±5% ¼W	FIXED CARBON FILM
D01	2760002016	1N60 (P)	DIODE	R44	2412106008	3.9 k ohm ±5% ¼W	FIXED CARBON FILM
D02	2760002016	1N60 (P)	DIODE	R45	2412117000	11 k ohm ±5% ¼W	FIXED CARBON FILM
D03	2760002016	1N60 (P)	DIODE	R46	2412160002	680 k ohm ±5% ¼W	FIXED CARBON FILM
D04	2760002016	1N60 (P)	DIODE	R47	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
D05	2760002016	1N60 (P)	DIODE	R48	2412124006	22 k ohm ±5% ¼W	FIXED CARBON FILM
D06	2760237001	RV06	DIODE	R49	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
D07	2760237001	RV06	DIODE	R50	2412104000	3.3 k ohm ±5% ¼W	FIXED CARBON FILM
D08	2760237001	RV06	DIODE	R51	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
D09	2760049008	1S2076	DIODE	R52	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D10	2760049008	1S2076	DIODE	R53	2412124006	22 k ohm ±5% ¼W	FIXED CARBON FILM
D11	2760049008	1S2076	DIODE	R54	2412135008	62 k ohm ±5% ¼W	FIXED CARBON FILM
D12	2760049008	1S2076	DIODE	R55	2412124006	22 k ohm ±5% ¼W	FIXED CARBON FILM
D13	2760049008	1S2076	DIODE	R56	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D14	2760049008	1S2076	DIODE	R57	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D15	2760049008	1S2076	DIODE	R58	2412116001	10 k ohm ±5% ¼W	FIXED CARBON FILM
D16	2760234004	S1VB20	DIODE	R59	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D17	2760179004	MZ307B	DIODE	R60	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D18	2760191008	W03C	DIODE	R61	2412156003	470 k ohm ±5% ¼W	FIXED CARBON FILM
D19	2760049008	1S2076	DIODE	R62	2412156003	470 k ohm ±5% ¼W	FIXED CARBON FILM
D20	2760049008	1S2076	DIODE	R63	2412128002	33 k ohm ±5% ¼W	FIXED CARBON FILM
D27	3939078003	LED (RED)	LIGHT EMITTING DIODE	R64	2412128002	33 k ohm ±5% ¼W	FIXED CARBON FILM
D28	3939078003	LED (RED)	LIGHT EMITTING DIODE	R65	2412114003	8.2 k ohm ±5% ¼W	FIXED CARBON FILM
D29	3939078003	LED (RED)	LIGHT EMITTING DIODE	R66	2412094000	1.2 k ohm ±5% ¼W	FIXED CARBON FILM
D30	3939079002	LED (GREEN)	LIGHT EMITTING DIODE	R67	2412092002	1 k ohm ±5% ¼W	FIXED CARBON FILM
D31	3939079002	LED (GREEN)	LIGHT EMITTING DIODE	R68	2412164008	1 M ohm ±5% ¼W	FIXED CARBON FILM
D32	3939079002	LED (GREEN)	LIGHT EMITTING DIODE	R69	2412118009	12 k ohm ±5% ¼W	FIXED CARBON FILM
D33	3939079002	LED (GREEN)	LIGHT EMITTING DIODE	R70	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
D34	3939079002	LED (GREEN)	LIGHT EMITTING DIODE	R71	2412100004	2.2 k ohm ±5% ¼W	FIXED CARBON FILM
TRANS & COILS				R72	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
T01	2312006004	FM IFT		R73	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
T02	2312026000	FM IF DET (A)		R74	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
T03	2312027009	FM IF DET (B)		R75	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
L01	TRT09956	INDUCTOR	3.3 mH	R76	2412100004	2.2 k ohm ±5% ¼W	FIXED CARBON FILM
L02	TRT0565H1	INDUCTOR	2.2 mH	R77	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
L03	TRT0565H1	INDUCTOR	2.2 mH	R78	2412140006	100 k ohm ±5% ¼W	FIXED CARBON FILM
L04	TRT088924	INDUCTOR	820 mH	R79	2412156003	470 k ohm ±5% ¼W	FIXED CARBON FILM
L05	TRT0565H1	INDUCTOR	2.2 mH	R80	2412126004	27 k ohm ±5% ¼W	FIXED CARBON FILM

(Con.)

Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions
R81	2412156003	470 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	CAPACITORS		
R82	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C01	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R83	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C03	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R84	2412112005	6.8 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C04	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R85	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C05	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R86	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C06	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R87	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C07	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R88	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C08	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R89	2412107007	4.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C09	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R90	2412107007	4.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C10	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R91	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C11	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R92	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C12	2533615009	33pF 5% 50V FIXED CERAMIC
R93	2412101003	2.4 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C13	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R94	2412101003	2.4 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C14	2544044009	1 μ F +80,-20% 50V FIXED ELECTROLYTIC
R95	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C15	2533623004	68pF +5% 50V FIXED CERAMIC
R96	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C16	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R97	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C17	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R98	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C18	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R99	2412108006	4.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C19	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R100	2412108006	4.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C20	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R101	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C21	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R102	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C22	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R103	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C23	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R104	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C24	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R105	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C25	2544044009	1 μ F 50V FIXED ELECTROLYTIC
R106	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C26	2544044009	1 μ F 50V FIXED ELECTROLYTIC
R107	2412137006	75 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C27	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R108	2412124006	22 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C28	2544023004	3.3 μ F +80,-20% 25V FIXED ELECTROLYTIC
R109	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C29	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R110	2412108006	4.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C30	2544020007	330 μ F 16V FIXED ELECTROLYTIC
R111	2412108006	4.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C31	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R112	2412154005	390 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C32	2533629008	120pF $\pm 5\%$ 50V FIXED CERAMIC
R113	2412146000	180 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C33	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R114	2412108006	4.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C34	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R115	2412100004	2.2 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C35	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R116	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C36	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R117	2412076002	220 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C37	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R118	2412114003	8.2 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C38	2531024003	0.01 μ F +80,-20% 50V FIXED CERAMIC
R119	2412118009	12 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C39	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R120	2412084007	470 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C40	2544044009	1 μ F 50V FIXED ELECTROLYTIC
R121	2412044005	10 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C41	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R122	2412099005	2 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C43	2544044009	1 μ F 25V FIXED ELECTROLYTIC
R126	2412156003	470 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C44	2544044009	1 μ F 25V FIXED ELECTROLYTIC
R127	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C45	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R128	2412128002	33 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C46	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R129	2412093001	1.1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C47	2544015009	10 μ F 16V FIXED ELECTROLYTIC
R130	2412088003	680 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C48	2544018006	100 μ F 16V FIXED ELECTROLYTIC
R131	2412122008	18 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C49	2544023004	3.3 μ F 25V FIXED ELECTROLYTIC
R132	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C50	2544043000	0.47 μ F 50V FIXED ELECTROLYTIC
R133	2412102002	2.7 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C51	2551062003	0.0015 μ F $\pm 10\%$ 50V FIXED PLASTIC FILM
R134	2412120000	15 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C52	2551080001	0.047 μ F $\pm 10\%$ 50V FIXED PLASTIC FILM
R135	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C53	2544043000	0.47 μ F 50V FIXED ELECTROLYTIC
R136	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C54	2544023004	3.3 μ F 25V FIXED ELECTROLYTIC
R137	2412140006	100 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C55	2556099000	0.001 μ F $\pm 5\%$ 50V FIXED PLASTIC FILM
R138	2412144002	150 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM	C56	2551064001	0.0022 μ F $\pm 10\%$ 50V FIXED PLASTIC FILM
R139	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R140	2412144002	150 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R141	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R142	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R143	2412112005	6.8 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R144	2412086005	560 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R145	2412113004	7.5 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R146	2412072006	150 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R147	2412096008	1.5 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R148	2440129028	10 ohm $\pm 5\%$ 3.15W FIXED METAL OXIDE FILM			
R149	2412094000	1.2 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R150	2412086005	560 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R151	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R152	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R153	2412092002	1 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R154	2412103001	3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R159	2412156003	470 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R160	2412098006	1.8 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R162	2412120000	15 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R163	2412139004	91 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R164	2412116001	10 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R165	2412097007	1.6 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R166	2412068007	100 ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R167	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			
R168	2412104000	3.3 k ohm $\pm 5\%$ $\frac{1}{4}W$ FIXED CARBON FILM			

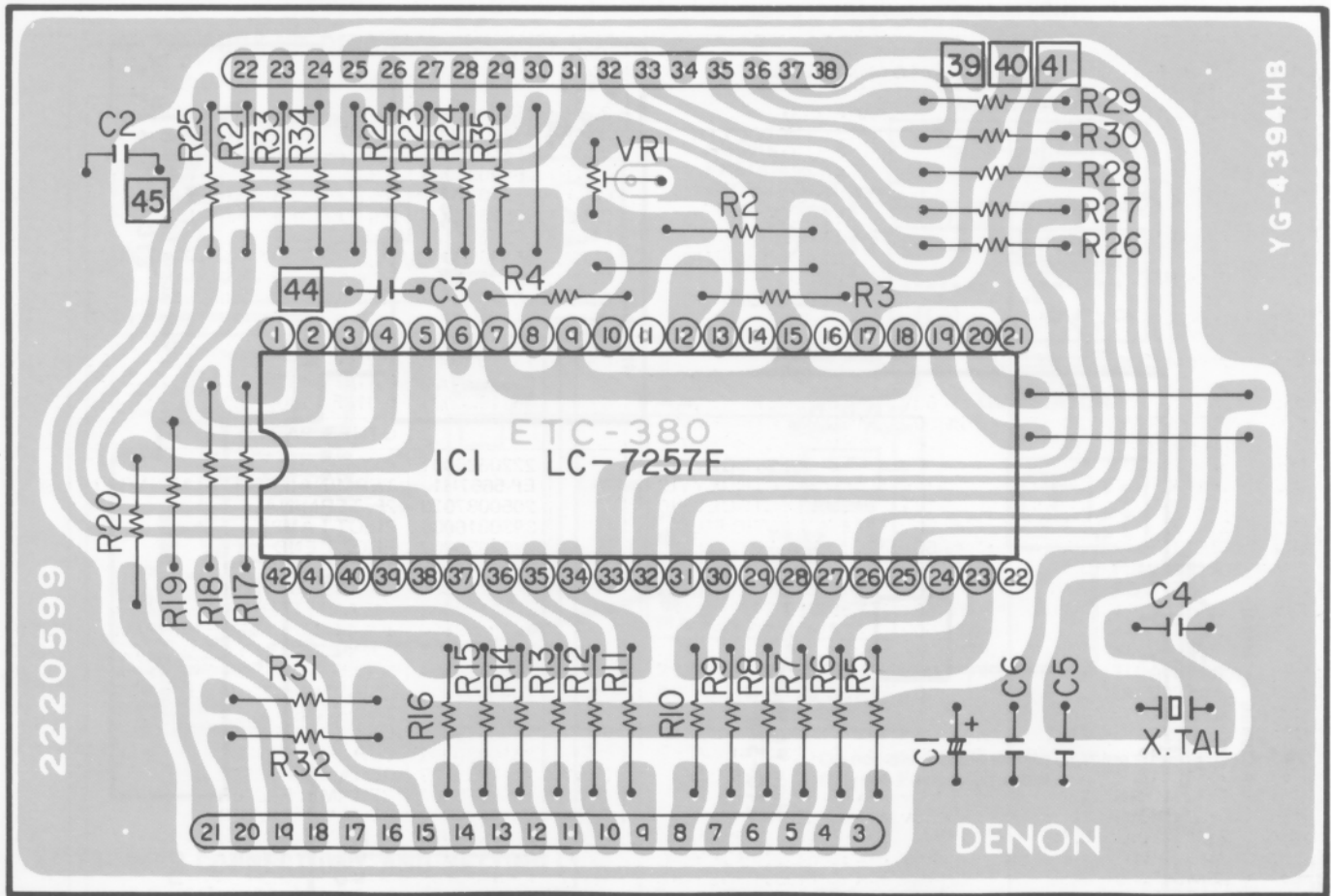
(Con.)

Ref. No.	Part No.	Part Name & Descriptions	
C57	2544023004	3.3 μ F	25V FIXED ELECTROLYTIC
C58	2551072006	0.01 μ F \pm 10%	50V FIXED PLASTIC FILM
C59	2544043000	0.47 μ F	50V FIXED ELECTROLYTIC
C61	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C62	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C63	2544018006	100 μ F	16V FIXED ELECTROLYTIC
C64	2544018006	100 μ F	16V FIXED ELECTROLYTIC
C65	2551120026	0.0015 μ F \pm 5%	50V FIXED PLASTIC FILM
C66	2551120026	0.0015 μ F \pm 5%	50V FIXED PLASTIC FILM
C67	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C68	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C69	2544021006	470 μ F	16V FIXED ELECTROLYTIC
C70	2544021006	470 μ F	16V FIXED ELECTROLYTIC
C71	2551076002	0.022 μ F \pm 10%	50V FIXED PLASTIC FILM
C72	2551076002	0.022 μ F \pm 10%	50V FIXED PLASTIC FILM
C73	2551076002	0.022 μ F \pm 10%	50V FIXED PLASTIC FILM
C74	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C75	2550172006	0.01 μ F \pm 10%	50V FIXED PLASTIC FILM
C76	2551080001	0.047 μ F \pm 10%	50V FIXED PLASTIC FILM
C77	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C78	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C79	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C80	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C81	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C82	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C83	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C84	2533619005	47pF \pm 5%	50V FIXED CERAMIC
C85	2533627000	100pF \pm 5%	50V FIXED CERAMIC
C86	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C88	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C89	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C90	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C91	2544025002	10 μ F	25V FIXED ELECTROLYTIC
C92	2544032008	1000 μ F	25V FIXED ELECTROLYTIC
C93	2544025005	1000 μ F	16V FIXED ELECTROLYTIC
C95	2544024003	4.7 μ F	25V FIXED ELECTROLYTIC

Ref. No.	Part No.	Part Name & Descriptions	
C96	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C97	2544018006	100 μ F	16V FIXED ELECTROLYTIC
C98	2544022005	1000 μ F	16V FIXED ELECTROLYTIC
C103	2544023004	3.3 μ F	25V FIXED ELECTROLYTIC
C104	2551072006	0.01 μ F \pm 10%	50V FIXED PLASTIC FILM
C105	2551072006	0.01 μ F \pm 10%	50V FIXED PLASTIC FILM
C106	2533599002	6pF \pm 0.5pF	50V FIXED CERAMIC
C107	2533621006	56pF \pm 5%	50V FIXED CERAMIC
C108	2533621006	56pF \pm 5%	50V FIXED CERAMIC
C109	2544015009	10 μ F	16V FIXED ELECTROLYTIC
C110	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C111	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C112	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C113	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC
C114	2531024003	0.01 μ F +80,-20%	50V FIXED CERAMIC

OTHER PARTS			
	2220586001	P.W. BOARD	
	EP-5667H1	TERMINAL FOR WRAPPING PIN USED 33	
	2050087026	2P. TERMINAL	
	3930016006	PILOT LAMP	
	2160035007	FRONT END	
	2124215009	1P. PUSH SWITCH	
	2124214000	4P. PUSH SWITCH	
	2050107003	FM ANT. TERMINAL	
	2090008120	JUMPER SHORT LEAD P=100mm USED 21	
	2090008117	JUMPER SHORT LEAD P=12.5mm USED 9	
	2090008104	JUMPER SHORT LEAD P=15mm USED 12	
	2048021007	4P. CONNECTOR BASE	
F01	2320049008	LOW PASS FILTER	
F02	2320049008	LOW PASS FILTER	
CF01	2610030002	CERAMIC FILTER	
CF02	2610033009	CERAMIC FILTER	
CF03	2610029000	CERAMIC FILTER	
CF04	2610029000	CERAMIC FILTER	
CF05	2610029000	CERAMIC FILTER	
VR01	EP-5462H1	SOLID VR 100 ohm	
VR02	EP-5462H9	SOLID VR 2.2 k ohm	
VR03	EP-5462H19	SOLID VR 100 k ohm	
VR04	EP-5462H23	SOLID VR 470 k ohm	
VR05	EP-5462H15	SOLID VR 22 k ohm	
VR06	EP-5462H15	SOLID VR 22 k ohm	
	4140181005	SHIELD COVER	

DISPLAY UNIT ETC-380

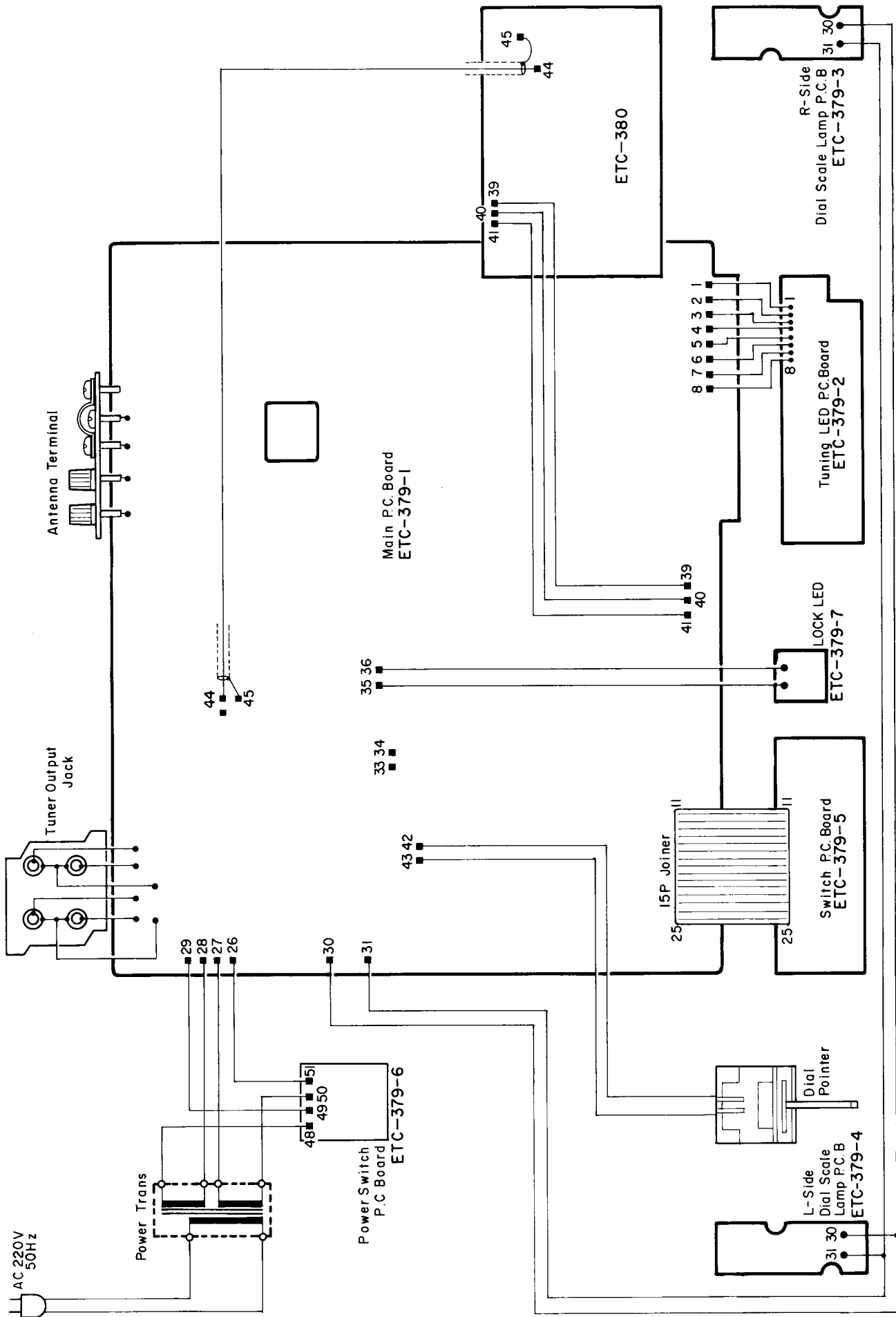


ETC-380 DISPLAY UNIT OF PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
IC01	2620279002	LC-7257F INTEGRATED CIRCUIT
IC02	3939103004	SC-2512-04 INTEGRATED CIRCUIT
RESISTORS		
R02	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
R03	2412116001	10 k ohm ±5% ¼W FIXED CARBON FILM
R04	2412102002	2.7 k ohm ±5% ¼W FIXED CARBON FILM
R05	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R06	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R07	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R08	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R09	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R10	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R11	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R12	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R13	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R14	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R15	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R16	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R17	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R18	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R19	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R20	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R21	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R22	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R23	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R24	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM

Ref. No.	Part No.	Part Name & Descriptions
R25	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R26	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R27	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R28	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R29	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R30	2412074004	180 ohm ±5% ¼W FIXED CARBON FILM
R31	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
R32	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
R33	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
R34	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
R35	2412080001	330 ohm ±5% ¼W FIXED CARBON FILM
CAPACITORS		
C01	2544043000	0.47µF 50V FIXED ELECTROLYTIC
C02	2531024003	0.01µF +80,-20% 50V FIXED CERAMIC
C03	2531024003	0.01µF +80,-20% 50V FIXED CERAMIC
C04	2533613001	27pF ±5% 50V FIXED CERAMIC
C05	2533613001	27pF ±5% 50V FIXED CERAMIC
C06	2531024003	0.01µF +80,-20% 50V FIXED CERAMIC
OTHER PARTS		
VR01	2220599001	P.W. BOARD
	2090008120	JUMPER SHORT LEAD P=10mm USED 2
	2090008704	JUMPER SHORT LEAD P=15mm USED 3
	EP-5462H13	SOLID VR 10 k ohm
	3990008012	X-TAL
	4410337000	BRACKET
4730353010	TAPPING SCREW 3x6	

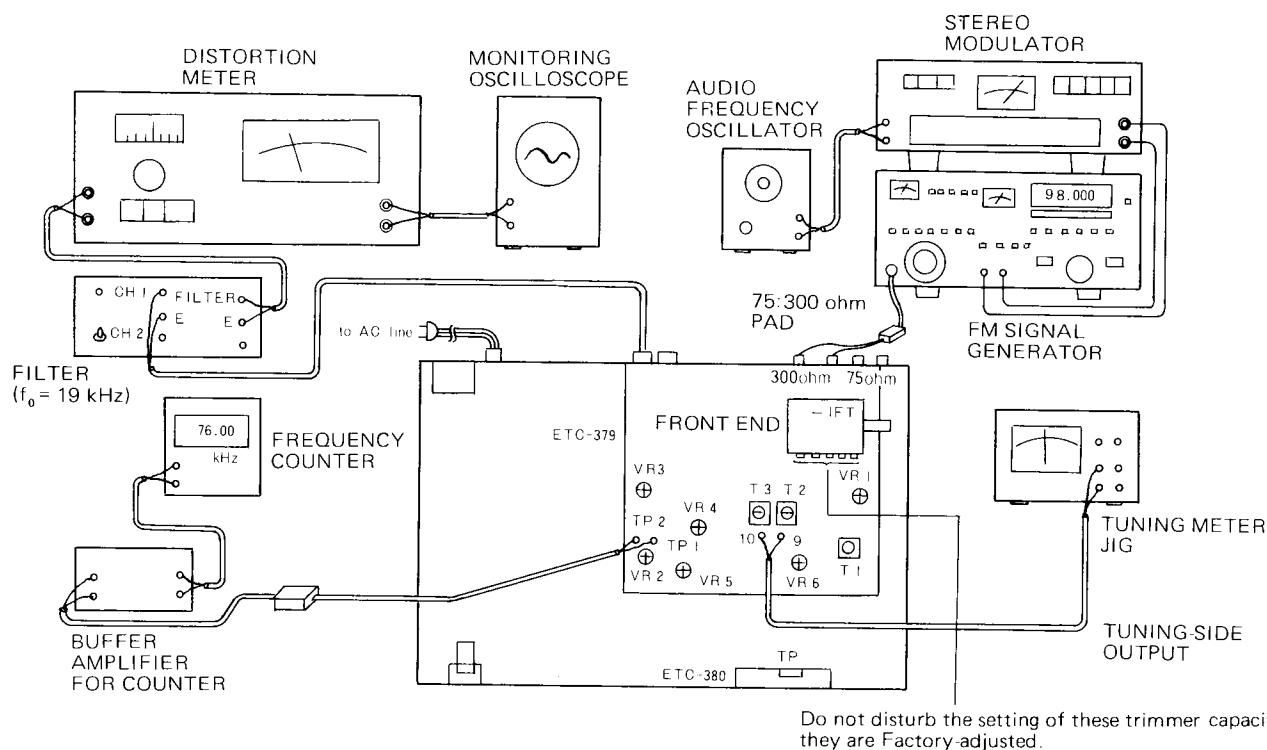
CONNECTION DIAGRAM



METHOD OF ADJUSTMENTS

When making adjustments, be sure the power supply is at the rated voltage and the room air is in normal condition with respect to temperature and humidity.

INSTRUMENT HOOK-UP DIAGRAM



INSTRUMENT CONNECTIONS AND SETTING

- Connect the (+) and (-) terminals of counter buffer amplifier to TP1 and TP2, respectively in that order, of ETC-379.
- Set the audio frequency oscillator for 1 kHz oscillation and apply this frequency to the stereo modulator. To produce the FM signal modulated with 1 kHz, connect the output of modulator to the input of FM signal generator. Apply the output of this generator to the 300 ohm antenna terminals of ETC-379.
- Have the stereo modulator set to provide an antenna input level of 60 dB/ μ V with 90% modulation with 1 kHz for L+R and 10% modulation for pilot.
- Connect the 19 kHz filter to the output of ETC-379, and the filter to the distortion meter. Connect the monitoring oscilloscope to the output of distortion meter.
- Connect the input lead wires of tuning meter to terminals (9) and (10) of ETC-379.

INITIAL SETTING OF ETC-379 TUNER

- a. Have the tuner placed steady on the bench in its normal position.
- b. Plug in power supply cord and turn on POWER switch.
- c. Leave the switches set in these positions:
 - IF BAND "WIDE" (near side)
 - MUTING "OFF" (far side)
 - MODE "AUTO" (near side)
 - REC LEVEL "OFF" (near side)
- d. Connect a dummy antenna to the 300 ohm terminals.
- e. Connect the tuning-meter lead wires to terminals (9) and (10) of ETC-379.
- f. Connect the 19 kHz filter to the output terminals of ETC-379. These terminals are located at the left-hand part (in frontal view).
- g. Connect the counter buffer amplifier to ETC-379, tying the amplifier lead wires to TP1 and TP2 of ETC-379.

SW POSITION (FRONT VIEW)



CO

1. ADJUSTMENT OF 76 kHz

- Tune to 98 MHz by turning the dial.
- Be sure that the frequency counter is indicating 76 kHz \pm 50 Hz. If the indication is off this value, adjust (VR2) of ETC-379. (Leave the stereo modulator in "MONO" or the FM signal generator in MOD "off")
- Disconnect the counter buffer amplifier.

2. ADJUSTMENT OF "WIDE-DISTORTION"

- De-tune by turning the dial (to reject the input signal).
- Slowly turn the core (black) of quadrature coil (T2) until the indicating hand comes to center position in the tuning meter.
- Tune to exact 98 MHz by making a fine adjustment at the signal generator or at ETC-379: be sure that "JUST TUNING" LED lamp lights up.
- Turn the function switch of stereo modulator to "MONO" position, and slowly rotate the core (white) of quadrature coil (T3) until the distortion becomes minimized.
- Turn the same function switch to "STEREO" position, and rotate the IFT core (at the front end) to the position for minimum distortion: be sure that "ST BEACON" LED lamp comes on.
- Repeat steps d and e to minimize the distortion for both "MONO" and "STEREO".

3. ADJUSTMENT OF "NARROW-DISTORTION"

- Move the IF BAND switch to "NARROW" (far side) position.
- Leave the function switch of stereo modulator in "MONO", and rotate the core of IFT (T1) to the position for minimum distortion.
- Move the same function switch to "STEREO" and see if the distortion is not greater than 0.3%.
- Repeat steps b and c to minimize the distortion for both "MONO" and "STEREO".

4. MUTING LEVEL CHECK

- With the stereo-modulator function switch kept in "MONO" position, turn the IF BAND switch to "WIDE" and MUTING switch to "ON" (near side) position.
- Lower the level of input signal slowly until the output becomes attenuated at least 60 dB, causing the ST indicator lamp to go out by muting. Be sure that this muting level is 26 ± 7 dB/ μ V.

5. ADJUSTMENT OF SIGNAL INDICATOR DISPLAY LAMP

- Hold the FM signal generator output (to ETC-379) at a level equivalent to the muting level. Under this condition, adjust (VR6) (of ETC-379) to light up the left lamp in the indicator.
- With IF BAND switch set in "NARROW" position, adjust (VR1) to light up an indicator lamp.
- Slowly raise the level of FM signal generator output toward 60 dB until the 5th LED lamp lights up.
- Move the IF BAND switch to "WIDE" position to be sure that this switching will not change the number of LED lamps lit for "NARROW" or, if it will, all but one lamp will remain on.
NOTE: If, however, lamps light up additionally when the switch is moved to "WIDE", adjust (VR1) again to equalize the number of lighted lamps to that for "NARROW".
- Set the FM signal generator for 60 dB and check to be sure that this does not deteriorate the distortion in "NARROW".

6. SENSITIVITY CHECK

- Turn off MUTING switch, and leave IF BAND switch in "WIDE" position.
- With antenna input held at 9 dB/ μ V, be sure that the distortion meter is indicating 3% or less.

7. ADJUSTMENT OF SEPARATION

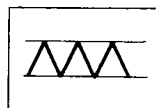
- Leave the stereo-modulator function switch in "STEREO" position.
- Slowly turn (VR4) of ETC-379 until the best possible separation occurs. The separation should be at least -55 dB.
- Move IF BAND switch to "NARROW" position to be sure that the separation is at least -40 dB.
- Move MODE switch to "MONO" (far side) position to be sure that ST indicator lamp goes out; and then move the switch to "AUTO".

8. 19 kHz CANCEL ADJUSTMENT

- Set the stereo modulator for "19 kHz" only.
- Display the 19 kHz signal on the screen of the monitoring scope and, while observing the displayed waveform, adjust (VR3) of ETC-379 to minimize the amplitude of displayed waveform, that is, the channel output level. Carry out this minimization for both channels, L and R.

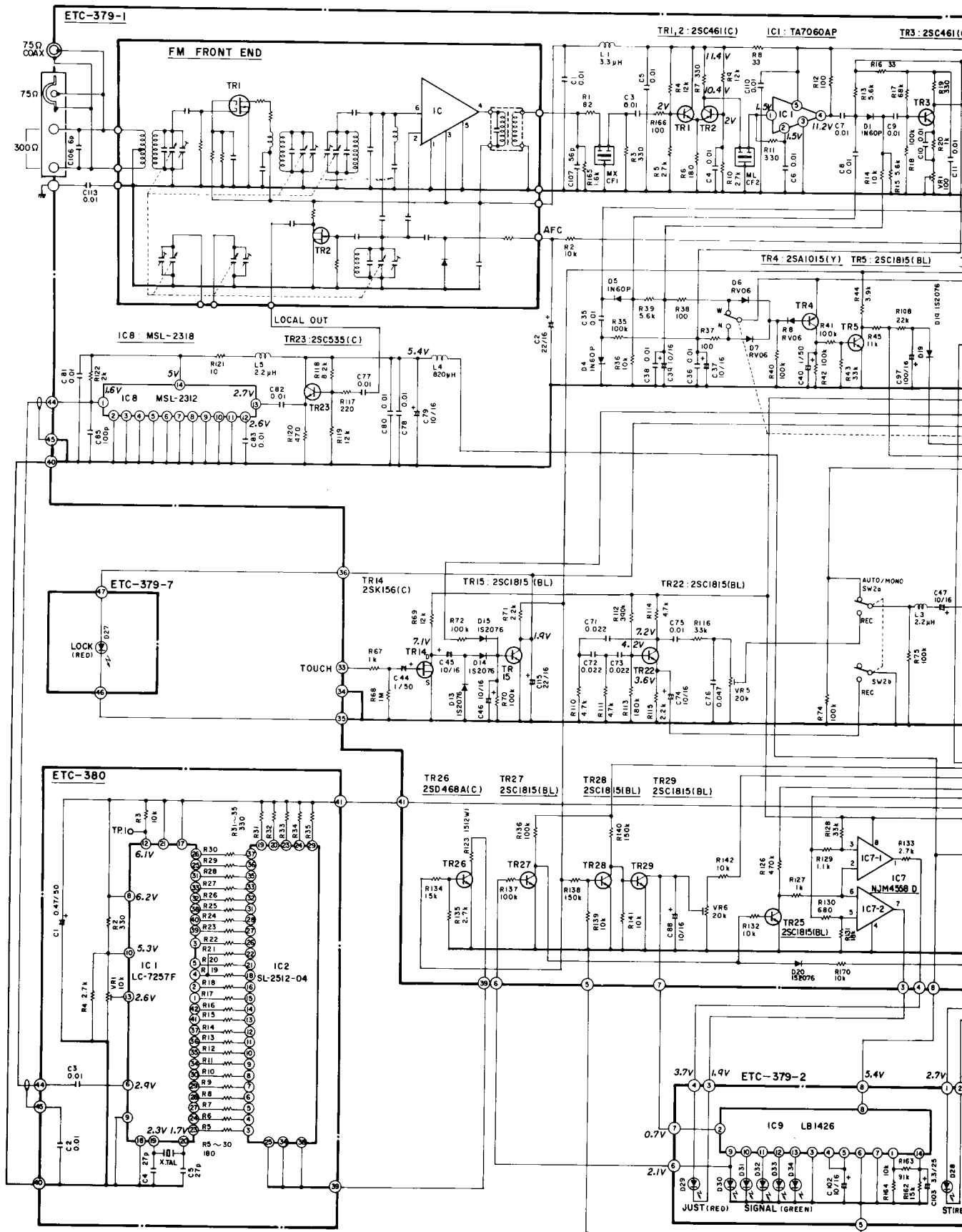


DISPLAY PRIOR TO
ADJUSTMENT OF VR

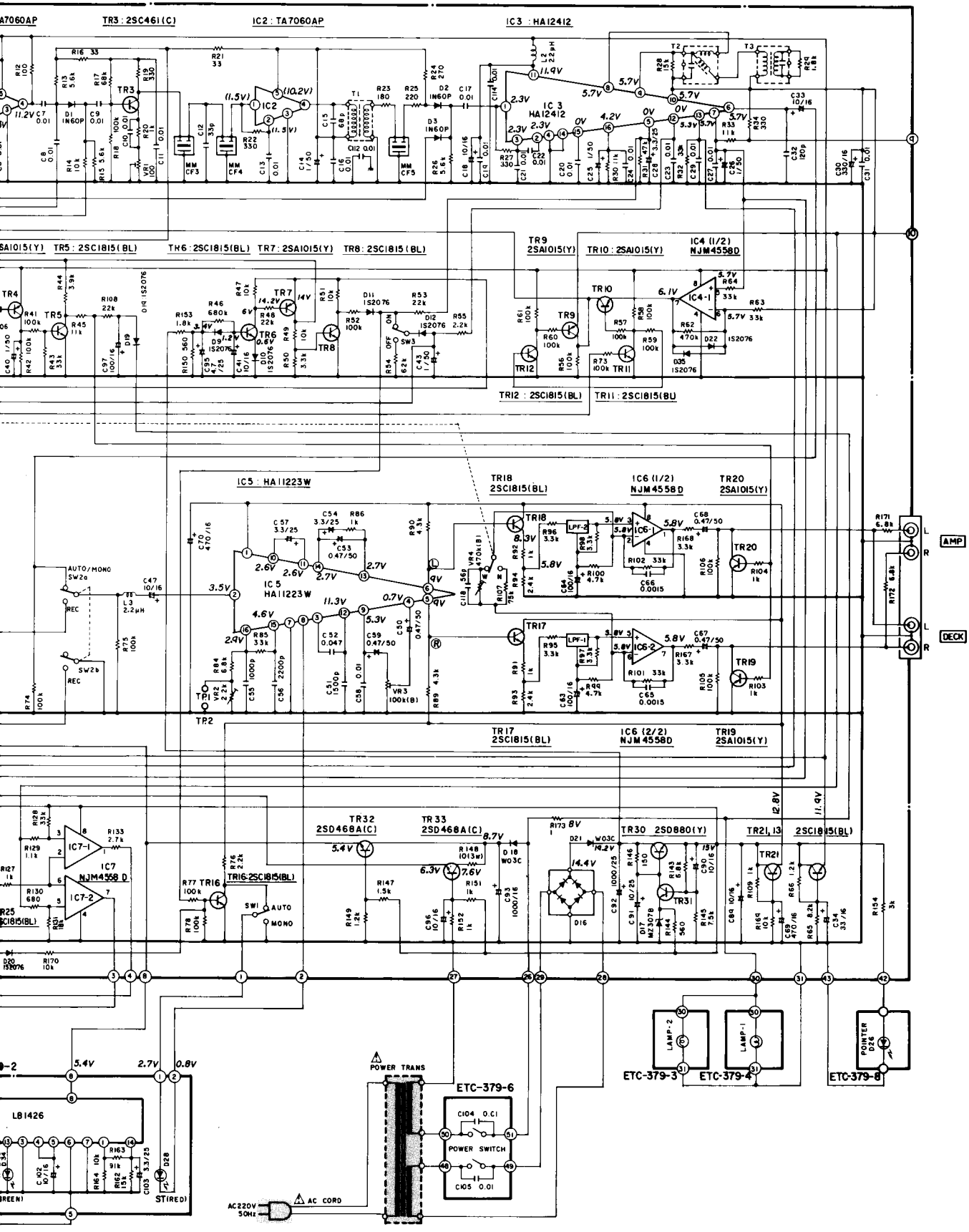


DISPLAY AFTER
ADJUSTMENT OF VR
(PEAKS ARE ON
STRAIGHT LINES.)

WIRING DIAGRAM (For EG)



⚠ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



NOTE: RESISTANCE VALUES IN OHM, K=1,000 OHM, M=1,000 K OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD.
 EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

9. RECORDING LEVEL ADJUSTMENT

- a. With the stereo-modulator function switch set in "MONO" position, read the output level.
- b. Move REC LEVEL switch to "ON" (far side) position, and turn (VR5) of ETC-379 to bring the output level to a point corresponding to -6 dB (-11.5 dB Germany only) relative to the value of output level stated in a.

10. ADJUSTMENT OF DIGITAL FREQUENCY DISPLAY

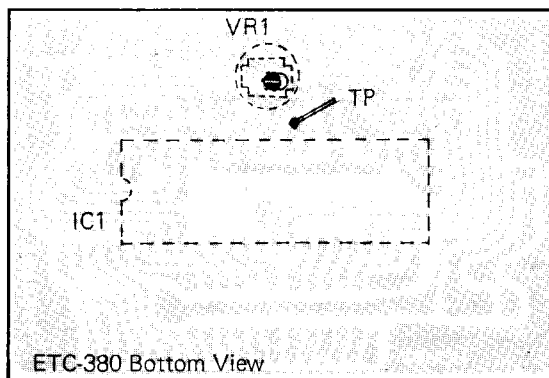
- a. Tune to exact 98 MHz \pm 5 kHz.
- b. Connect the test point of ETC-380 to the grounding terminal (No. 40 terminal) of ETC-379 through a 10 k ohm resistor.
- c. Slowly turn (VR1) of ETC-380 with a screwdriver inserted into the PCB from back side, until the digit for 100 kHz ceases from flickering in the digital display.
- d. Disconnect the 10 k ohm lead wire.

11. ADJUSTMENT OF DIAL CALIBRATION

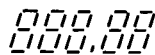
- a. Locate the indicating hand at 98 MHz mark.
- b. Turn the dial to "90 MHz" first and to "108 MHz" next to see if, for each dial position, the indicating hand responds correctly, without deviating more than \pm 200 kHz; if not, re-adjust to obtain a match at 98 MHz.

12. SERVO LOCK CHECK

- a. Tune to 98 MHz to be sure that JUST TUNING lamp comes on and that, as the tuning knob is released, LOCK lamp lights up.
- b. Check to be sure that putting the fingers to the tuning knob will cause LOCK lamp to go out.
- c. Turn the tuning knob slowly toward 98.05 MHz to de-tune. Be sure that, when 98.05 MHz position is reached, JUST TUNING lamp will go out and that when the knob is released, this lamp will light up and the frequency will return automatically to 98.00 MHz.
- d. Repeat the checking process of above step c at 97.95 MHz.



DIGITAL FREQUENCY DISPLAY



FOR 100 kHz CEASES FROM FLICKERING

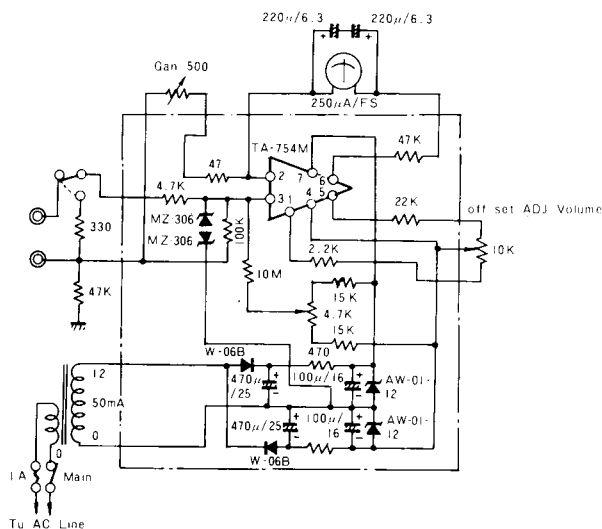


Fig. 1 Tuning Meter JIG

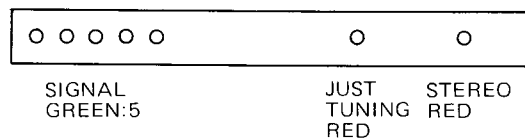
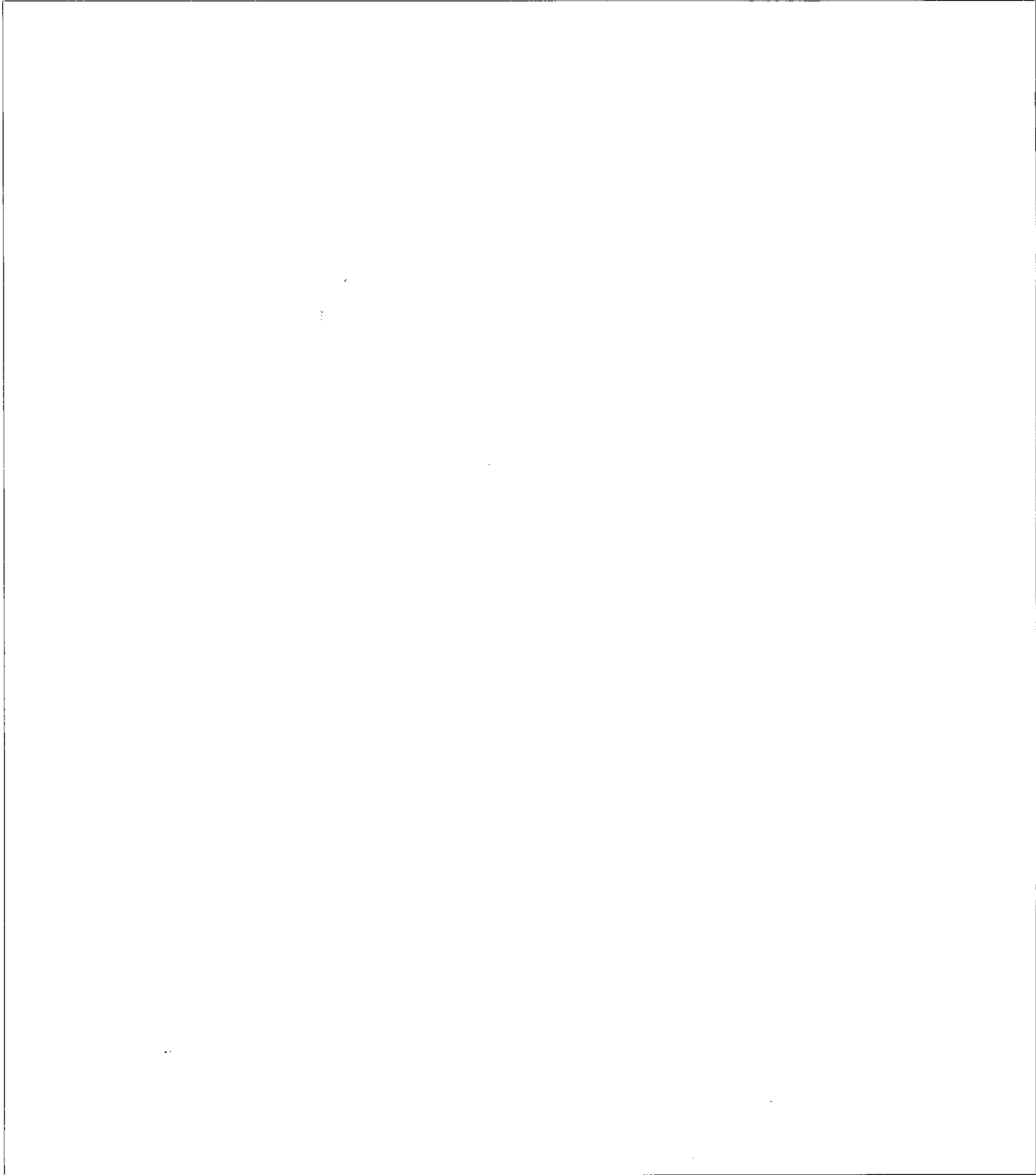


Fig. 2 Indicator Frontside View

DENON



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