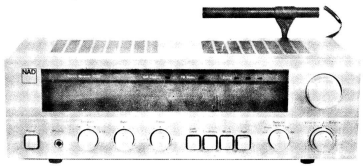
SERVICE MANUAL

NAD MODEL 7020

AM/FM STEREO RECEIVER



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SPECIFICATION

FM Tuner Section

Input Sensitivity IHF, 30 dB quieting	1.8μV
IHF, 50 dB S/N Mono/Stereo	3.5μV/45μV
Signal to Noise Ratio(A weighted, at 65 dBf)Mono/Stereo	75dB/70dB
Frequency Response, 30—15K Hz	±0.5dB
De-emphasis Accuracy 75/Sec	±0.5dB
Channel Separation 1K Hz	42dB
30—15K Hz	32dB
Selectivity, Alternate Channel(400KHz)	62dB
Capture Ratio at 45 dBf and 65 dBf	1.5dB
AM Suppression at 45 dBf and 65 dBf	60dB
Image Rejection	50dB
I.F Rejection	75dB
SCA Rejection	70dB
Pilot Signal Suppression	55dB
THD at 100% Modulation 1.KHz Mono/Stereo	0.2%/0.3%
100 Hz Mono/Stereo	0.2%/0.3%
6KHz Mono/Stereo	0.3%/0.4%
THD Stereo 1KHz 50%/150%	0.3%/0.4%

AM Tuner Section

Usable Sensitivity	350μV
Sensitivity	30dB
Image Rejection	45dB
IF Rejection	40dB

Audio Section

✱ measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

Power Amplifier Section

✱ Continuous average power output at 8 ohm 20-20K Hz both channel driven	>20W
Rated distortion.	<0.02%
✱ Clipping headroom at 8 ohm	+1.5dB
Clipping power at 8 ohm/4 ohm/2 ohm	28W/37W/42W
Dynamic headroom at 8 ohm	+3dB
Dynamic power at 8 ohm /4ohm/2ohm	40W/58W/72W
✱ Reactive load rating	+1.7dB
✱ Transient Overload Recovery Time	<1μSec
✱ Slew Factor	>50
Slew Rate	18V/μsec
Damping factor at 50 Hz (Ref. 8 ohm)	>55
T.I.D 20-20K Hz From 250m V to 20W	<0.02%
S.M.P.T.E I.M.D(60Hz-7KHz, 4:1)From 250mWto 20W	<0.02%
I.H.F I.M.D(19K Hz+20K Hz) at 20W	<0.02%
T.I.M (15K Hz Sine+3.18KHz Square Wave) at 20W	<0.02%
Frequency Response. 20—20K Hz(From Lab. IN)	±0.5dB
Frequency Response Range±3dB	10—70K Hz

Preamplifier Section

✱ Input Impedance Resistance/Capacitance	47KΩ/100pF
Input Sensitivity(1K Hz) ✱ For 1 Watt out/20 Watt out	0.5mV/2.5mV
Input Overload at 20Hz/1K Hz/20K Hz	27mV/270mV/2V
T.H.D (20—20K Hz)and 1MD at+30dB input level	<0.02%
RIAA Response Accuracy	±0.5dB
Signal to Noise Ratio A Weighted	
(a)With phono cartridge connected Ref 10mV/✱Ref 5mV	80dB/75dB
(b)With short-circuit input Ref 10mV	84dB

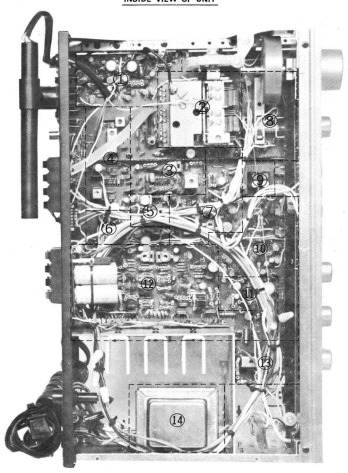
High Level Input

✱ Input impedance Resistance/Capacitance	20KΩ/100pF
Input Sensitivity ✱ For 1 Watt out/For 20 Watt out	30mV/150mV
Signal to Noise Ratio, A—Weighted ✱ Ref 1Watt out	>80dB
Ref 20 Watt out	>110dB
✱ Maximum input signal	Infinite
Frequency Response. 20—20K Hz	±0.5dB

Controls

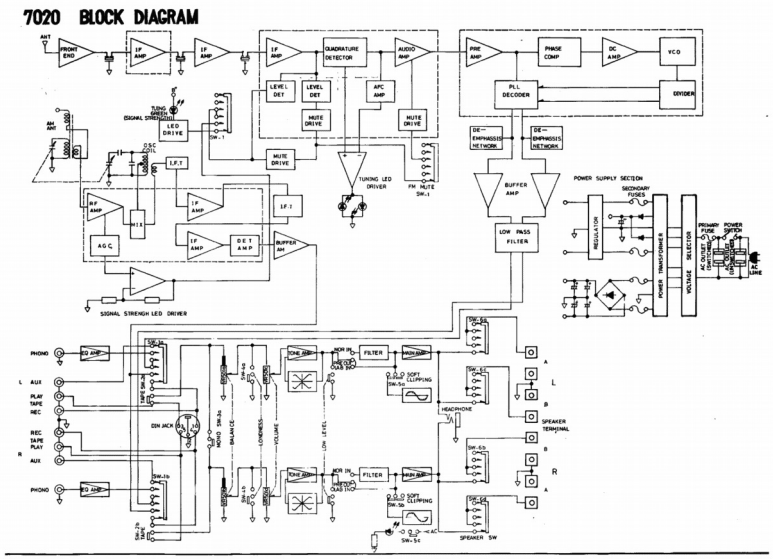
Bass control range at 50 Hz	±10dB
Treble control range at 10K Hz	±7dB
Infrasonic filter Turn Over frequency(From Normal IN)	13Hz
Slope (dB/octave)	12
Power Consumption	150VA
Weight	7.5Kg
Dimension Height ×Width×Depth(mm)	120×420×240

INSIDE VIEW OF UNIT



①Phono Amp
②FM RF Amp
③FM IF Amp
④AM System
⑤LED Driver
⑥Tuner Regulator
⑦MPX & Buffer
⑧Function Sw
⑨Low Pass Filter
⑩Tone Amp
⑪Amp Regulator
⑫Power Amp
⑬Speakers Sw
⑭Power Transformer

7020 BLOCK DIAGRAM



ALIGNMENT (TUNER)

1.AM ALIGNMENT: 1. Selector switch in AM position
2. AC line voltage at rated voltage
3. Monitor output at REC OUT

Section		AM SG			Dial Setting	Indicator	Adjustment Point	Adjust for
		Connetion	Carrier Freq.	Modulation				
AMIF		Hot side of SG Output through200 PF to AM antenna trimmer terminal (TP1)	455KHz	30% Mod 400Hz	Point of non-interference	VTVM or Oscilloscope	T302 and T303	Maximum output
AM RF	1	Hot side of SG output through 200 PF to EXT AM antenna Terminal on rear panel	600KHz	30% Mod. 400Hz	600KHz	VTVM or Oscilloscope	T301 and Antenna Bar	Maximum output
	2		1400KHz	30% Mod. 400Hz	1400KHz		TC-2 and TC-4	
	3		Repeat Step 1 and Step 2					

2.FM ALIGNMENT: 1. Selector Switch in FM position
2. AC line voltage at rated voltage
3. Monitor output at REC OUT

Section		FM SG			Dial Setting	Indicator	Adjustment	Adjust for
		Connetion	Carrier Freq.	Modulation				
AM IF		——	——	——	Point of non—inteference	Tuning Meter of Set	T101 (Discri. IF1 primary A)	Center Indication
FM RM	1	Connect to FM 300 ohm antenna Terminal on the rear panel through FM dumy antenna.	90MHz	100%Mod. 400Hz	90MHz	VTVM or Oscilloscope	L—1	Maximum output
	2		106MHz		106MHz		TC-1 TC-3	
	3		Repeat Step 1 and Step 2					
FM Mono Distor -tion	1		98MHz	100%Mod. 400Hz	98MHz	Distortion Meter*	T101 upper side	Minimum Distortion
	2		Reppeat FM IF and FM MONO DISTORTION STEP1					
FM Mute	1		Selector Switch in FM Muting Position Adjust attanuator of FM SG for antenna input 15dB					
	2		98MHz	100%Mod 400Hz	98MHz	VTVM or Oscilloscope	VR101	Output just disappear
	3		Increase FM SG output 4dB more to get full audio output					
	4		If full audio output cannot be got repeat step 1. 2. 3.					

3. FM MPX ALIGNMENT 1. Same as FM ALIGNMENT 1. 2. 3.
2. FM SG is external modulated by stereo SG and connected to FM 300 Ω antenna terminal on the rear panel through FM dumy antenna.

Section	Step	FM SG	Stereo SG	Dial Setting	Indicator	Adjustment	Adjust for
MPX pilot	1	———	———	Point of no signal received	Connect frequency counter through 100KΩ to TP10	VR201	19KHz± 30Hz
	2	98MHz	10% 19KHz Pilot 90% L+R, L−R	98MHz	———	VR201	Stereo LED light
Separation	1	98MHz	10% 19KHz pilot L only	98MHz	Connect VTVM or Oscilloscope to R REC OUT	VR202	Minimum output
	2		10% 19KHz pilot R only	98MHz	Connect VTVM or Oscilloscope to L REC OUT	VR202	Minimum output
	3		Repeat Step 1 and Step 2				
	4		If there is an excessive difference between leak-free effect of both channels slightly adjust VR202 so that the level of signal leakage of both channels are equal				

ALIGNMENT (AUDIO)

IDLE CURRENT ALIGNMENT

1. 5 Minutes minimum pre-heating is necessary.
2. Set the volume control at minimum position.
3. Connect DC milli-voltmeter across R660 for right channel and across R659 for left channel. The meter sensitivity should be set for 30—100mV full scale deflection.
4. Insert 1 kohm carbon resistor to connect in parallel with R648(right channel) and R647(left channel).
5. After insert 1Kohm, if the reading of meter were between 30mV and 60mV then the alignment is completed.
6. If the reading were less than 30mV then the value of RX1 or RX2 should be reduced till the reading is between 30mV and 60mV.
7. If the reading were more than 60mV. then the value of RX1 or RX2 should be increase till the reading is between 30mV and 60mV.

DC OFF-SET ALIGNMENT

1. 5 minutes minimum pre-heating is necessary for DC offset adjustment.
2. Set the volume control at minmum position.
3. Speaker switch should be set to "A" position.
4. Connect a DC milli-voltmeter to the "A speaker" terminals of each channel. The meter sensitivity should be set for 100-300mV full scale deflection. The positive input of the meter should be connected to the red (+) speaker terminal.
5. If the readings are within ±50mV, then no adjustment is necessary.
6. If the reading is more than ±50mV then adjust VR601 (for left channel) and VR602 (for right channel) till the meter reading is zero.

SYMBOL NO	PARTS NO	DESCRIPTION		REF
C306	17-5D473M	CER CAPA	0.047 μF 50V ± 20%	5.00
C307	17-5D103M	CER CAPA	0.01 μF 50V ± 20%	3.40
C308	17-5D103M	CER CAPA	0.01 μF 50V ± 20%	3.40
C309	17-5D473M	CER CAPA	0.047 μF 50V ± 20%	5.00
C310	17-1.6E107Y	ELEC CAPA	100 μF 16V + 50 − 10%	14.00
C311	17-5D102M	CER CAPA	1000PF 50V ± 20%	4.00
C312	17-2.5E475Y	ELEC CAPA	4.7 μF 25V + 50 − 10%	8.00
C313	17-5D103M	CER CAPA	0.01 μF 50V ± 20%	3.40
C314	17-1.6E227Y	ELEC CAPA	220 μF 16V + 50 − 10%	33.50
C315	17-2.5E475Y	ELEC CAPA	4.7 μF 25V + 50 − 10%	8.00
C316	17-5F103J	MYLAR CAPA	0.010 μF 50V ± 5%	8.90
C317	17-5F152J	MYLAR CAPA	0.0015 μF 50V ± 5%	6.50
C318	17-5F183J	MYLAR CAPA	0.018 μF 50V ± 5%	8.90
C319	17-2.5E475Y	ELEC CAPA	4.7 μF 25V + 50 − 10%	8.00
C320	17-2.5E225Y	ELEC CAPA	2.2 μF 25V + 50 − 10%	9.00
C321	17-5D102M	CER CAPA	1000PF 50V ± 20%	4.00
C401 C402	17-2.5E475Y	ELEC CAPA	4.7 μF/25V + 75 − 10%	8.00
C403 C404	17-5D101M	CER CAPA	100P + − 20%	3.50
C405 C406	17-5F 102J	MYLAR CAPA	0.001 μF/50V ± 5%	6.50
C407 C408	17-0.63E 108Y	ELEC C CAPA	1000 μF/6.3V + 50 − 10%	32.50
C409 C410	17-5D100D	CER CAPA	10P + − 0.5P	3.50
C411 C412	17-5D221M	CER CAPA	220P ± − 20%	4.00
C413 C414	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C415 C416	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C417 C418	17-5F273J	MYLAR CAPA	0.027 μF/50V ± 5%	8.90
C419 C420	17-5F104J	MYLAR CAPA	0.1 μF/50V ± 5%	13.00
C421 C422	17-3.5E476Y	ELEC CAPA	47 μF/35V + 50 − 10%	13.00
C423	17-5D104M	CER CAPA	0.1 μF/50V + − 20%	10.00
C425 C426	17-2.5E106Y	ELEC CAPA	10 μF/25V + 50 − 10%	12.00
C427 C428	17-5D104M	CER CAPA	0.1 μF/50V + − 20%	10.00
C501 C502	17-5F122J	MYLAR CAPA	0. 0012 μF/50V ± − 5%	6.50
C503 C504	17-5F224J	MYLAR CAPA	0. 22 μF/50V ± − 5 %	20.00
C505 C506	17-5F104J	MYLAR CAPA	0.1 μF/50V ± − 5%	13.00
C507 C508	17-5F104J	MYLAR CAPA	0.1 μF/50V ± − 5%	13.00
C509 C510	17-5D101M	CER CAPA	100P ± 20%	3.50
C511 C512	17-5D100D	CER CAPA	10P + − 0.5P	3.50
C513 C514	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C515 C516	17-5D221M	CER CAPA	220P ± − 20%	4.00
C517 C518	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C519 C520	17-5F183J	MYLAR CAPA	0.018 μF/50V ± − 5%	8.90
C521 C522	17-5F104J	MYLAR CAPA	0.1 μF/50V + − 5%	13.00
C523 C524	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C525 C526	17-5D124J	MYLAR CAPA	0.12 μF/50V + − 5%	13.00
C527 C528	17-1.6R684K	A1 CAPA	0.68 μF/16V + − 10%	38.00
C529 C530	17-5F102J	MYLAR CAPA	0.001 μF/50V + − 5%	6.50
C531 C532	17-2.5E476Y	ELEC CAPA	47 μF/25V ± 50 − 10%	14.00
C533	17-5E107Y	ELEC CAPA	100 μF/50V + 50 − 10%	30.00
C534	17-3.5E107Y	ELEC CAPA	100 μF/35V + 50 − 10%	24.20
C602 C603	17-1.6R105K	A1 CAPA	1 μF/16V + − 10%	25.00
C604 C605	17-1.6R105K	A1 CAPA	1 μF/16V + − 10%	25.00
C606 C609	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C610 C611	17-5F273J	MYLAR CAPA	0.027 μF/50V + − 5%	6.50
C612 C613	17-5F102J	MYLAR CAPA	0.001 μF/50V + − 5%	6.50
C614 C615	17-5F102J	MYLAR CAPA	0.001 μF/50V + − 5%	6.50
C616 C617	17-0.63E108Y	ELEC CAPA	1000 μF/6.3V + 50 − 10%	32.50
C618 C619	17-5D470M	CER CAPA	47P + − 20%	3.50
C620 C621	17-5D220M	CER CAPA	22P + − 20%	3.50
C622 C625	17-5D220M	CER CAPA	22P + − 20%	3.50
C626 C626	17-2.5E476Y	ELEC CAPA	47 μF/25V + 50 − 10%	14.00
C627 C628	17-5F104J	MYLAR CAPA	0.1 μF/50V + − 5%	13.00
C629 C630	17-5D101M	CER CAPA	100P + − 20%	3.50
C631 C632	17-5F102J	MYLAR CAPA	0.001 μF/50V + − 5%	6.50
C633 C634	17-5F104J	MYLAR CAPA	0.1 μF/50V ± − 5%	13.00
C635 C636	17-5D104M	CER CAPA	0.1 μF/50V + − 20%	10.00
C637 C638	17-5D104M	CER CAPA	0.1 μF/50V ± − 20%	10.00
C641 C642	17-5D104M	CER CAPA	0.1 μF/50V + − 20%	10.00
C643 C644	17-5D104M	CER CAPA	0.1 μF/50V + − 20%	10.00
C645 C646	17-5E220M	CER CAPA	22P ± − 20%	3.50
C647	17-5F102J	MYLAR CAPA	0.001 μF/50V ± − 5%	6.50
C701 C702	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C703 C704	17-0.63E476Y	ELEC CAPA	47 μF/6.3V + 50 − 10%	9.00
C801 C802	17-3ME228Y	ELEC CAPA	2200 μF/35V + 50 − 10%	106.00
C803 C804	17-3.5E228Y	ELEC CAPA	2200 μF/35V + 50 − 10%	106.00
C805 C806	17-3.5E337Y	ELEC CAPA	330 μF/35V + 50 − 10%	46.80
C808	17-5D220M	CER CAPA	22P ± − 20%	3.50
C809	17-1.0E476Y	ELEC CAPA	47 μF/10V + 50 − 10%	10.00
C810	17-2.5E106Y	ELEC CAPA	10 μF/25V + 50 − 10%	12.00
C811	17-1.6E106Y	ELEC CAPA	10 μF/16V + 50 − 10%	8.40
C901	17-3.5E108Y	ELEC CAPA	47 μF/35V + 50 − 10%	14.00
		ELEC CAPA	1000 μ/35V + 50 − 10%	93.00

SYMBOL NO	PARTS NO	DESCRIPTION			REF
R701,R702	16-¼ CN224J	CARBON RES	220K OHM	¼W±5%	1.70
R703,R704	16-¼ CN682J	CARBON RES	6K8 OHM	¼W±5%	1.70
R705,R706	16-¼ CN561J	CARBON RES	560 OHM	¼W±5%	1.70
R707,R708	16-¼ CN561J	CARBON RES	560 OHM	¼W±5%	1.70
R709,R710	16-¼ CN561J	CARBON RES	560 OHM	¼W±5%	1.70
R711,R712	16-¼ CN331J	CARBON RES	330 OHM	¼W±5%	1.70
R713,R714	16-¼ CN682J	CARBON RES	6K8 OHM	¼W±5%	1.70
R715	16-¼ CN152J	CARBON RES	1K5 OHM	¼W±5%	1.70
R801	16-¼ CN222J	CARBON RES	2K2 OHM	¼W±5%	1.70
R802	16-¼ CN102J	CARBON RES	1K OHM	¼W±5%	1.70
R803	16-¼ CN152J	CARBON RES	1K5 OHM	¼W±5%	1.70
R804	16-¼ CN152J	CARBON RES	1K5 OHM	¼W±5%	1.70
R805	16-¼ CN102J	CARBON RES	1K OHM	¼W±5%	1.70
R806	16-¼ CN102J	CARBON RES	1K OHM	¼W±5%	1.70
R807	16-¼ CN273J	CARBON RES	27K OHM	¼W±5%	1.70
R808	16-¼ CN822J	CARBON RES	8K2 OHM	¼W±5%	1.70
R809	16-¼ CN393J	CARBON RES	39K OHM	¼W±5%	1.70
R810	16-¼ CN333J	CARBON RES	33K OHM	¼W±5%	1.70
R811	16-½ CN275J	CARBON RES	2M7 OHM	½W±5%	2.40
R901	16-¼ CN1002	CARBON RES	10 OHM	¼W±5%	2.40
R902	16-¼ CN122J	CARBON RES	1K2 OHM	¼W±5%	1.70
R903	16-¼ CN122J	CARBON RES	1K2 OHM	¼W±5%	1.70
C101	17-SD473M	CER CAPA	0.047 μF	50V± 20%	5.00
C102	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C103	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C104	17-SD103M	CER CAPA	0.01 μF	50V ± 20%	3.40
C105	17-SD103M	CER CAPA	0.01 μF	50V ± 20%	3.40
C106	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C107	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C108	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C109	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C110	17-SD331M	CER CAPA	330PF	50V ± 20%	4.00
C111	17-20SE105Y	ELEC CAPA	1 μF	25V + 50% −40%	8.00
C112	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C113	17-2.5E105Y	ELEC CAPA	1 μF	25V + 75% − 10%	8.00
C114	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C115	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C116	17-1.6E227Y	ELEC CAPA	220 μF	16V ± 50% − 10%	33.50
C117	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C118	17-2.5E105Y	ELEC CAPA	1 μF	25V + 50% − 10%	8.00
C119	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C120	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C121	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C122	17-2.5E475Y	ELEC CAPA	4.7 μF	25V + 75% − 10%	8.00
C123	17-SD102M	CER CAPA	1000PF	50V ± 20%	4.00
C124	17-1.6E105Y	ELEC CAPA	100 μF	16V + 50% − 10%	14.00
C125	17-SD473Y	CER CAPA	0.047 μF	50V ± 20%	5.00
C126	17-SD473M	CER CAPA	0.047 μF	50V ± 20%	5.00
C201	17-1.6G224M	TA CAPA	0.22 μF	16V ± 20%	16.40
C202	17-SF473J	MYLAR CAPA	0.047 μF	50V ± 5%	8.90
C203	17-2.5E473Y	ELEC CAPA	4.7 μF	25V + 50 − 10%	8.00
C204	17-5U471J	STYROLENE CAPA	470PF	50V ± 5%	9.60
C205	17-1.6G224M	TA CAPA	0.22 μF	16V ± 20%	16.40
C206	17-1.6G474M	TA CAPA	0.47 μF	16V ± 20%	16.40
C207	17-1.6E107Y	ELEC CAPA	100 μF	16V + 50 -10%	14.00
C208	17-5U471J	STYROLENE CAPA	470PF	50V ± 5%	9.60
C209	17-5U821J	STYROLENE CAPA	820PF	50V ± 5%	9.60
C210	17-SF562J	MYLAR CAPA	0.0056 μF	50V ± 5%	6.50
C211	17-SF562J	MYLAR CAPA	0.0056 μF	50V ± 5%	6.50
C212	17-SF123J	MYLAR CAPA	0.012 μF	50V ± 5%	8.90
C213	17-SF123J	MYLAR CAPA	0.012 μF	50V ± 5%	8.90
C214	17-5U821J	STYROLENE CAPA	820PF	50V ± 5%	9.60
C215	17-5U821J	STYROLENE CAPA	820PF	50V ± 5%	9.60
C216	17-SF682J	MYLAR CAPA	0.0068 μF	50V ± 5%	6.50
C217	17-SF682J	MYLAR CAPA	0.0068 μF	50V ± 5%	6.50
C218	17-2.5E475Y	ELEC CAPA	4.7 μF	25V + 50 − 10%	8.00
C219	17-2.5E475Y	ELEC CAPA	4.7 μF	25V + 50 − 10%	8.00
C220	17-1.6E107Y	ELEC CAPA	100 μF	16V + 50 − 10%	14.00
C221	17-1.6E106Y	ELEC CAPA	10 μF	16V + 50 − 10%	9.00
C222	17-1.6E106Y	ELEC CAPA	10 μF	16V + 50 − 10%	9.00
C223	17-1.6E106Y	ELEC CAPA	10 nF	16V + 50 − 10%	9.00
C224	17-1.0H107Y	NON-POLAR CAPA	100 μF	10V + 50 − 10%	14.00
C225	17-2.5E105Y	ELEC CAPA	1 μF	25V + 50 − 10%	8.00
C226	17-2.5E475Y	ELEC CAPA	4.7 μF	25V + 50 − 10%	8.00
C227	17-2.5E475Y	ELEC CAPA	4.7 μF	25V + 50 − 10%	8.00
C301	17-5D150K	CER CAPA	15PF	50V ± 10%	3.50
C302	17-5U360J	STYROLENE CAPA	360PF	50V ± 5%	9.40
C303	17-5D103M	CER CAPA	0.01 μF	50V ± 20%	3.40
C304	17-5D103M	CER CAPA	0.01 μF	50V ± 20%	3.40
C305	17-5D102M	CER CAPA	1000PF	50V ± 20%	4.00

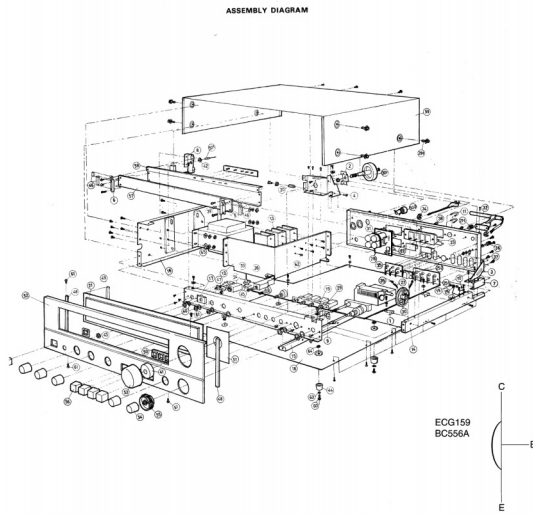
SYMBOL NO	PARTS NO	DESCRIPTION	REF
C902	17-3.5E337Y	ELEC CAPA 330 μ/35V+-30--10%	46.80
C903	17-1.6E107Y	ELEC CAPA 100 μ/16V+-30--10%	14.60
L101	29-1033	INDUCTOR 1MH ±10%	16.00
L102	29-1034	INDUCTOR 22 μH± 10%	15.00
L103	29-1034	INDUCTOR 22 μH± 10%	15.00
L104	29-1039T	INDUCTOR 18 μH± 10%	11.00
L105	29-1038	INDUCTOR 40 μH± 10%	15.00
L106	29-1051	INDUCTOR 2.2 μH± 10%	10.00
L601.L602	29-1040	INDUCTOR 1 μH ±10%	3.50
T101	29-3008T	FM DETECTOR COIL 10.7MHZ	96.00
T301	29-3018	AM OSC COIL	25.00
T302	29-3032	AM IFT WITH CERAMIC FILTER	12.00
T303	29-3029	AM IFT	25.00
CF101	29-3027	CER FILTER SFE 10.7MA8	61.50
CF102	29-3027	CER FILTER SFE 10.7MA8	61.50
CF103	29-3027	CER FILTER SFE 10.7MA8	61.50
LPF201	29-3049	LOW PASS FILTER 19.38K HZ	180.00
LPF202	29-3049	LOW PASS FILTER 19.38K HZ	180.00
VR101	29-4023	SEMIFIXED RES 20KB	18.00
VR201	29-4077	SEMIFIXED RES 10KB	18.00
VR202	29-4022	SEMIFIXED RES 5KB	18.00
VR601.VR602	29-4023	SEMIFIXED RES 20KB	18.00
VR501	29-4103A	VOLUME & BALANCE CONTROL	400.00
VR502.VR503	29-4075F	TONE CONTROL 10KC×2	180.00
	29-3068	AM ANT BAR	290.00
D101	30-1044	ZENER DIODE 15V 500MW±5%	14.80
D102	30-1019	DIODE BAW62	11.00
D103	30-1019	DIODE BAW62	11.00
D104	30-1019	DIODE BAW62	11.00
D105	30-1019	DIODE BAW62	11.00
D106	30-1019	DIODE BAW62	11.00
D107	30-1019	DIODE BAW62	11.00
D501.D502	30-1019	DIODE BAW62	11.00
D503.D504	30-1019	DIODE BAW62	11.00
D601.D602	30-1019	DIODE BAW62	11.00
D603.D604	30-1019	DIODE BAW62	11.00
D701 D702	30-1019	DIODE BAW62	11.00
D703 D704	30-1019	DIODE BAW62	11.00
D801 D802	30-1002	DIODE 1N4002	14.00
D803 D804	30-1002	DIODE 1N4002	14.00
D806	30-1078	DIODE BAV19	12.80
BD901	30-1049	BRIDGE DIODE KBL02	76.00
ZD801	30-1041N	ZENER DIODE 22V 500MW	20.00
D901.D902	30-1078	DIODE BAV19	12.80
D903	30-1044	ZENER DIODE 15V	20.00
LD101	30-1071	LED ORANGE	15.00
LD102	30-1071	LED ORANGE	15.00
LD103	30-1073	LED GREEN	15.00
LD201	30-1073	LED GREEN	15.00
LD701	30-1073	LED GREEN	15.00
Q101	30-2010	TRANSISTOR 2SC930C	23.00
Q102	30-2156	TRANSISTOR 2SC1815GR	14.00
Q103	30-2156	TRANSISTOR 2SC1815GR	14.00
Q201	30-2084-3	TRANSISTOR BC549C	22.80
Q202	30-2084-3	TRANSISTOR BC549C	22.80
Q203	30-2156	TRANSISTOR 2SC1815GR	14.00
Q204	30-2156	TRANSISTOR 2SC1815GR	14.00
Q301	30-2084-3	TRANSISTOR BC549C	22.80
Q401.Q402	30-2084-3	TRANSISTOR BC549C	22.80
Q403.Q404	30-2085-2	TRANSISTOR BC559B	22.80
Q405.Q406	30-2085-2	TRANSISTOR BC559B	22.80
Q407.Q408	30-2096	TRANSISTOR BC556A	24.70
Q409.Q410	30-2156	TRANSISTOR 2SC1815GR	14.00
Q411.Q412	30-2096	TRANSISTOR BC556A	24.70
Q501.Q502	30-2085-2	TRANSISTOR BC559B	22.80
Q503.Q504	30-2084-3	TRANSISTOR BC549C	22.80
Q505.Q506	30-2156	TRANSISTOR 2SC1815GR	14.00
Q507.Q508	30-2096	TRANSISTOR BC556A	24.70
Q509.Q510	30-2232	FET E111	104.00
Q601.Q602	30-2084-3	TRANSISTOR BC549C	22.80
Q603.Q604	30-2096	TRANSISTOR BC556A	24.70
Q605.Q606	30-2096	TRANSISTOR BC556A	24.70
Q607.Q608	30-2083	TRANSISTOR BD139	53.20
Q609.Q610	30-2083	TRANSISTOR BD139	53.20
Q611.Q612	30-2169	TRANSISTOR 2N6513	80.00
Q613.Q614	30-2070	TRANSISTOR 2N6356	80.00
Q615.Q616	30-2114M	TRANSISTOR 2N3055	185.00
Q617.Q618	30-2114M	TRANSISTOR 2N3055	159.60
Q801	30-2082	TRANSISTOR BD140	58.90
Q802	30-2156	TRANSISTOR 2SC1815GR	14.00

SYMBOL NO	PARTS NO	DESCRIPTION	REF
R101	16-¼CU3303	CARBON RES 33 OHM ¼W ±5%	1.70
R102	16-¼CU3912	CARBON RES 390 OHM ¼W ±5%	1.70
R103	16-¼CU3312	CARBON RES 330 OHM ¼W ±5%	1.70
R104	16-¼CU3912	CARBON RES 390 OHM ¼W ±5%	1.70
R105	16-¼CU1532	CARBON RES 15K OHM ¼W ±5%	1.70
R106	16-¼CU1032	CARBON RES 10K OHM ¼W ±5%	1.70
R107	16-¼CU2222	CARBON RES 2K2 OHM ¼W ±5%	1.70
R108	16-¼CU3302	CARBON RES 33 OHM ¼W ±5%	1.70
R109	16-¼CN3312	CARBON RES 330 OHM ¼W ±5%	1.70
R110	16-¼CU1032	CARBON RES 10K OHM ¼W ±5%	1.70
R111	16-¼CU3312	CARBON RES 330 OHM ¼W ±5%	1.70
R112	16-¼CU563J	CARBON RES 56K OH ¼W ±5%	1.70
R113	16-¼CU123J	CARBON RES 12K OHM ¼W ±5%	1.70
R114	16-¼CU222J	CARBON RES 2K2 OHM ¼W ±5%	1.70
R115	16-¼CN2722	CARBON RES 2K7 OHM ¼W ±5%	1.70
R116	16-¼CN562J	CARBON RES 5K6 OHM ¼W ±5%	1.70
R117	16-¼CN2232	CARBON RES 22K OHM ¼W ±5%	1.70
R118	16-¼CU2232	CARBON RES 22K OHM ¼W ±5%	1.70
R119	16-¼CU101J	CARBON RES 100 OHM ¼W ±5%	1.70
R120	16-¼CU2242	CARBON RES 220K OHM ¼W ±5%	1.70
R121	16-¼CN560J	CARBON RES 56 OHM ¼W ±5%	1.70
R122	16-¼CU1042	CARBON RES 100K OHM ¼W ±5%	1.70
R123	16-¼CN104J	CARBON RES 100K OHM ¼W ±5%	1.70
R124	16-¼CU6842	CARBON RES 680K OHM ¼W ±5%	1.70
R125	16-¼CU684J	CARBON RES 680K OHM ¼W ±5%	1.70
R126	16-¼CN102J	CARBON RES 1K OHM ¼W ±5%	1.70
R127	16-¼CN681J	CARBON RES 680 OHM ¼W ±5%	2.40
R128	16-¼CN103J	CARBON RES 10K OHM ¼W ±5%	1.70
R129	16-¼CU122J	CARBON RES 1K2 OHM ¼W ±5%	1.70
R130	16-¼CU563J	CARBON RES 56K OHM ¼W ±5%	1.70
R131	16-¼CU123J	CARBON RES 12K OHM ¼W ±5%	1.70
R132	16-¼CU331J	CARBON RES 330 OHM ¼W ±5%	1.70
R133	16-¼CU473J	CARBON RES 47K OHM ¼W ±5%	1.70
R134	16-¼CU473J	CARBON RES 47K OHM ¼W ±5%	1.70
R135	16-¼CU473J	CARBON RES 47K OHM ¼W ±5%	1.70
R201	16-¼CU181J	CARBON RES 180 OHM ¼W ±5%	1.70
R202	16-¼CU153J	CARBON RES 15K OHM ¼W ±5%	1.70
R203	16-¼CU223J	CARBON RES 22K OHM ¼W ±5%	1.70
R204	16-¼CU102J	CARBON RES 1K OHM ¼W ±5%	1.70
R205	16-¼CN102J	CARBON RES 1K OHM ¼W ±5%	1.70
R206	16-¼CU392J	CARBON RES 3K9 OHM ¼W ±5%	1.70
R207	16-¼CU392J	CARBON RES 3K9 OHM ¼W ±5%	1.70
R208	16-¼CU564J	CARBON RES 560K OHM ¼W ±5%	1.70
R209	16-¼CU564J	CARBON RES 560K OHM ¼W ±5%	1.70
R210	16-¼CN332J	CARBON RES 3K3 OHM ¼W ±5%	1.70
R211	16-¼CN332J	CARBON RES 3K3 OHM ¼W ±5%	1.70
R212	16-¼CU331J	CARBON RES 330 OHM ¼W ±5%	1.70
R213	16-¼CU331J	CARBON RES 330 OHM ¼W ±5%	1.70
R214	16-¼CN102J	CARBON RES 1K OHM ¼W ±5%	1.70
R215	16-¼CU102J	CARBON RES 1K OHM ¼W ±5%	1.70
R216	16-¼CU392J	CARBON RES 3K9 OHM ¼W ±5%	1.70
R217	16-¼CU392J	CARBON RES 3K9 OHM ¼W ±5%	1.70
R218	16-¼CN102J	CARBON RES 1K OHM ¼W ±5%	1.70
R219	16-¼CU102J	CARBON RES 1K OHM ¼W ±5%	1.70
R220	16-¼CU103J	CARBON RES 10K OHM ¼W ±5%	1.70
R221	16-¼CU223J	CARBON RES 22K OHM ¼W ±5%	1.70
R222	16-¼CU223J	CARBON RES 22K OHM ¼W ±5%	1.70
R223	16-¼CU473J	CARBON RES 47K OHM ¼W ±5%	1.70
R224	16-¼CU332J	CARBON RES 3K3 OHM ¼W ±5%	1.70
R225	16-¼CU332J	CARBON RES 3K3 OHM ¼W ±5%	1.70
R226	16-¼CU104J	CARBON RES 100K OHM ¼W ±5%	1.70
R227	16-¼CU104J	CARBON RES 100K OHM ¼W ±5%	1.70
R301	16-¼CU470J	CARBON RES 47 OHM ¼W ±5%	1.70
R302	16-¼CU151J	CARBON RES 150 OHM ¼W ±5%	1.70
R303	16-¼CU152J	CARBON RES 1K5 OHM ¼W ±5%	1.70
R304	16-¼CN331J	CARBON RES 330 OHM ¼W ±5%	1.70
R305	16-¼CU562J	CARBON RES 5K6 OHM ¼W ±5%	1.70
R306	16-¼CN151J	CARBON RES 150 OHM ¼W ±5%	1.70
R307	16-¼CU103J	CARBON RES 10K OHM ¼W ±5%	1.70
R308	16-¼CU103J	CARBON RES 10K OHM ¼W ±5%	1.70
R309	16-¼CU272J	CARBON RES 2K7 OHM ¼W ±5%	1.70
R310	16-¼CU181J	CARBON RES 180 OHM ¼W ±5%	1.70
R311	16-¼CU273J	CARBON RES 27K OHM ¼W ±5%	1.70
R312	16-¼CU154J	CARBON RES 150K OHM ¼W ±5%	1.70
R313	16-¼CU154J	CARBON RES 150K OHM ¼W ±5%	1.70
R314	16-¼CU331J	CARBON RES 330 OHM ¼W ±5%	1.70
R315	16-¼CN122J	CARBON RES 1K2 OHM ¼W ±5%	1.70
R316	16-¼CU104J	CARBON RES 100K OHM ¼W ±5%	1.70
R317	16-¼CU103J	CARBON RES 10K OHM ¼W ±5%	1.70
R318	16-¼CU103J	CARBON RES 10K OHM ¼W ±5%	1.70

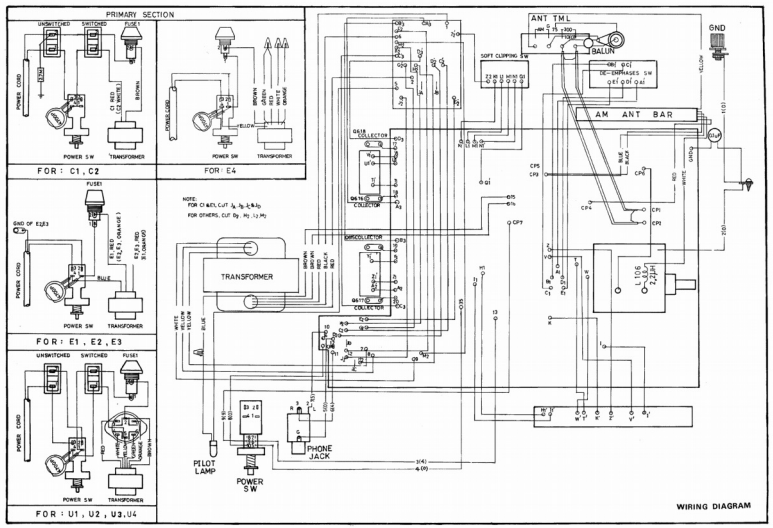
SYMBOL NO	PARTS NO	DESCRIPTION	REF
R319	16-¼ CU104J	CARBON RES 100K OHM ¼W±5%	1.70
R320	16-¼ CU104J	CARBON RES 100K OHM ¼W±5%	1.70
R401,R402	16-¼ CN334J	CARBON RES 330K OHM ¼W±5%	1.70
R403,R404	16-¼ CN563J	CARBON RES 56K OHM ¼W±5%	1.70
R405,R406	16-¼ CN222J	CARBON RES 2K2 OHM ¼W±5%	1.70
R407,R408	16-¼ CN222J	CARBON RES 2K2 OHM ¼W±5%	1.70
R409,R410	16-¼ CN392J	CARBON RES 3K9 OHM ¼W±5%	1.70
R411,R412	16-¼ CU56OJ	CARBON RES 56 OHM ¼W±5%	1.70
R413,R414	16-¼ CU684J	CARBON RES 680K OHM ¼W±5%	1.70
R415,R416	16-¼ CN331J	CARBON RES 330 OHM ¼W±5%	1.70
R417,R418	16-¼ CN151J	CARBON RES 150 OHM ¼W±5%	1.70
R419,R420	16-¼ CU221J	CARBON RES 220 OHM ¼W±5%	1.70
R421,R422	16-¼ CN681J	CARBON RES 680 OHM ¼W±5%	1.70
R423,R424	16-¼ CU562J	CARBON RES 5K6 OHM ¼W±5%	1.70
R425,R426	16-¼ CU472J	CARBON RES 4K7 OHM ¼W±5%	1.70
R427,R428	16-¼ CU272J	CARBON RES 2K7 OHM ¼W±5%	1.70
R429,R430	16-¼ CN333J	CARBON RES 33K OHM ¼W±5%	1.70
R431,R432	16-¼ CN153J	CARBON RES 15K OHM ¼W±5%	1.70
R433,R434	16-¼ CN821J	CARBON RES 820 OHM ¼W±5%	1.70
R435,R436	16-¼ CN680J	CARBON RES 68 OHM ¼W±5%	1.70
R437,R438	16-¼ CN680J	CARBON RES 68 OHM ¼W±5%	1.70
R439,R440	16-¼ CU681J	CARBON RES 680 OHM ¼W±5%	1.70
R441,R442	16-¼ CU224J	CARBON RES 220K OHM ¼W±5%	1.70
R501,R502	16-¼ CU181J	CARBON RES 180 OHM ¼W±5%	1.70
R503,R504	16-¼ CN562J	CARBON RES 5K6 OHM ¼W±5%	1.70
R505,R506	16-¼ CN224J	CARBON RES 220K OHM ¼W±5%	1.70
R507,R508	16-¼ CN104J	CARBON RES 100K OHM ¼W±5%	1.70
R509,R510	16-¼ CU272J	CARBON RES 2K7 OHM ¼W±5%	1.70
R511,R512	16-¼ CN224J	CARBON RES 220K OHM ¼W±5%	1.70
R513,R514	16-¼ CU104J	CARBON RES 100K OHM ¼W±5%	1.70
R515,R516	16-¼ CN201J	CARBON RES 200 OHM ¼W±5%	1.70
R517,R518	16-¼ CN222J	CARBON RES 2K2 OHM ¼W±5%	1.70
R519,R520	16-¼ CN392J	CARBON RES 3K9 OHM ¼W±5%	1.70
R521,R522	16-¼ CN682J	CARBON RES 6K8 OHM ¼W±5%	1.70
R525,R524	16-¼ CN682J	CARBON RES 6K8 OHM ¼W±5%	1.70
R525,R526	16-¼ CU562J	CARBON RES 5K6 OHM ¼W±5%	1.70
R527,R528	16-¼ CN680J	CARBON RES 68 OHM ¼W±5%	1.70
R529,R530	16-¼ CN680J	CARBON RES 68 OHM ¼W±5%	1.70
R531,R532,	16-¼ CN102J	CARBON RES 1K OHM ¼W±5%	1.70
R533,R534	16-¼ CN181J	CARBON RES 180 OHM ¼W±5%	1.70
R535,R536	16-¼ CN473J	CARBON RES 47K OHM ¼W±5%	1.70
R537,R538	16-¼ CN332J	CARBON RES 3K3 OHM ¼W±5%	1.70
R539,R540	16-¼ CN561J	CARBON RES 560 OHM ¼W±5%	1.70
R541	16-¼ CN561J	CARBON RES 560 OHM ¼W±5%	1.70
R546	16-¼ CN273J	CARBON RES 27K OHM ¼W±5%	1.70
R547	16-¼ CN184J	CARBON RES 180K OHM ¼W±5%	1.70
R548	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R549,R550	16-¼ CU682J	CARBON RES 6K8 OHM ¼W±5%	1.70
R551,R552	16-¼ CU680J	CARBON RES 680 OHM ¼W±5%	1.70
R553,R554	16-¼ CN106J	CARBON RES 10M OHM ¼W±5%	1.70
R601,R602	16-¼ CN681J	CARBON RES 680 OHM ¼W±5%	1.70
R603,R604	16-¼ CN562J	CARBON RES 5K6 OHM ¼W±5%	1.70
R605,R606	16-¼ CN223J	CARBON RES 22K OHM ¼W±5%	1.70
R607,R608	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R609,R610	16-¼ CN223J	CARBON RES 22K OHM ¼W±5%	1.70
R611,R612	16-¼ CN122J	CARBON RES 1K2 OHM ¼W±5%	1.70
R615,R614	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R617,R618	16-¼ CN222J	CARBON RES 2K2 OHM ¼W±5%	1.70
R619,R620	16-¼ CN222J	CARBON RES 2K2 OHM ¼W±5%	1.70
R621,R622	16-¼ CN183J	CARBON RES 18K OHM ¼W±5%	1.70
R623,R624	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R625,R626	16-¼ CN471J	CARBON RES 470 OHM ¼W±5%	2.40
R627,R628	16-¼ MN330J	METAL FILM RES 33 OHM ¼W±5%	1.70
R629,R630	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R631,R632	16-¼ CN270J	CARBON RES 27 OHM ¼W±5%	1.70
R633,R634	16-¼ CN470J	CARBON RES 47 OHM ¼W±5%	1.70
R635,R636	16-¼ CN152J	CARBON RES 1K5 OHM ¼W±5%	2.40
R637,R638	16-¼ CN122J	CARBON RES 1K2 OHM ¼W±5%	2.40
R639,R640	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R641,R642		CARBON RES 8X OHM ¼W±5%	1.70
R643,R644	16-¼ CN680J	CARBON RES 68 OHM ¼W±5%	1.70
R645,R646	16-¼ CN391J	CARBON RES 390 OHM ¼W±5%	1.70
R647,R648	16-¼ CN181J	CARBON RES 180 OHM ¼W±5%	1.70
R649,R650	16-¼ CN122J	CARBON RES 1K2 OHM ¼W±5%	2.40
R651,R652	16-¼ CN181J	CARBON RES 180 OHM ¼W±5%	1.70
R653,R654	16- 1A100J	METAL OXIDE RES 10 OHM 1 W±5%	7.50
R655,R656	16- 1A221J	METAL OXIDE RES 220 OHM 1 W±5%	7.50
R657,R658	16- 1A101J	METAL OXIDE RES 100 OHM 1 W±5%	7.50
R659,R660	16-¼ CN181J	CARBON RES 180 OHM ¼W±5%	1.70
R661,R662	16- 1A100J	METAL OXIDE RES 10 OHM 1 W±5%	7.50

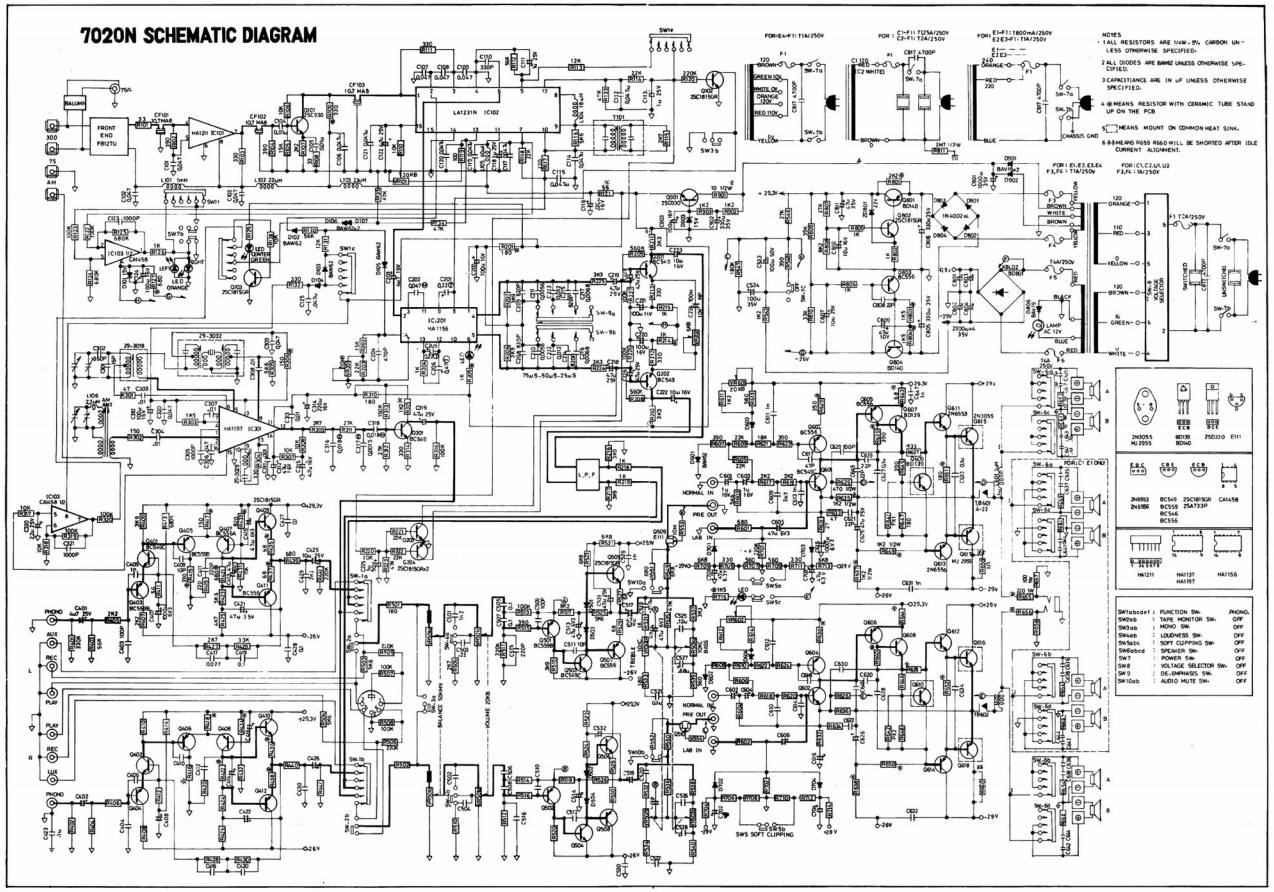
SYMBOL NO	PARTS NO	DESCRIPTION	REF
Q803	30-2096	TRANSISTOR BC556A	24.7
Q804	30-2082	TRANSISTOR BD140	58.90
Q901	30-2178	TRANSISTOR 2SD330	76.00
IC101	30-3035	IC HA1211	115.00
IC102	30-3070	IC LA1231N	280.00
IC103	30-3032	IC CA1458	108.00
IC201	30-3015	IC HA1156	180.00
IC301	30-3036	IC HA1197	236.00
SW1	31-1135	FUNCTION SW SRZ-L5	265.00
SW2-SW4	31-1094F	PUSH SW 4KEY-2U	220.00
SW5	31-1139	SLIDE SW SSB42	75.00
SW6	31-1024	SPEAKER SW SRZ-44	220.00
TB1 TB2	35-3011	BREAKER A-22	88.00
SW7	31-1129A	POWER SW	300.00
SW8	31-1121	VOLTAGE SELECTOR SW	169.20
SW9	31-1079*F	DE-EMPHASIS SW	53.00

ASSEMBLY DIAGRAM



ITEM	PARTS NO	DESCRIPTION	Q'ty
1	11—2047	BRACKET FOR PCB	2
2	11—2086	BRACKET FOR TUNING SHAFT	1
3	11—2104	BRACKET	1
4	11—2141	BRACKET RIGHT	1
5	11—2142	RIGHT BRACKET FOR DIAL SCALE	1
6	11—2143	LEFT BRACKET FOR DIAL SCALE	1
7	11—2173	BRACKET FOR BACK PANEL	1
8	11—2182	BRACKET LEFT	1
9	11—2186	BRACKET FOR SELECTOR SWITCH	1
9—1	11—2225	BRACKET FOR PULLEY	1
10	11—3005	LUG	6
11	11—4007	I/C JUMPER	2
12	11—5029	HEAT SINK A	1
13	11—5048	HEAT SINK B	3
14	11—6039	AUX. CHASSIS RIGHT	1
15	11—6044	CENTER CHASSIS	1
16	11—6052	AUX. CHASSIS LEFT	1
17	11—6053	FRONT CHASSIS	1
18	11—6072	BOTTOM CHASSIS	1
19	11—7004	PULLEY SHAFT	5
20	11—7027	EXTENSIVE PULLEY SHAFT	1
21	11—8119	DIAL PERSPEX COVER	1
21—1	12—1029	CONNECTOR AND NUT	1
22	12—2007	SPEAK TERMINAL SOCKET	2
23	12—2012	ANTENNA TERMINAL SOCKET	1
24	12—2041	PHON JACK	1
25	12—3052	SOCKET ASS'Y(6P)	1
25-1	12—3053	SOCKET ASS'Y (6P)	1
25-2	12—2076	DIN JACK	1
26	12—4010	POINTER	1
27	12—5007	SPRING FOR TUNING THREAD	2
28	13—4041	INSULATION PLATE	1
29	13—5004	PULLEY	5
30	13—5006	DIAL DRUM	1
30-1	13—5020	TUNING WHEEL	1
31	13—7002	STOPPER FOR WIRE	10
32	29—5008	AM ANTENNA BAR	1
33	14—3001	TUNING THREAD	1
34	14—5003	CORD BUSH 4N—4	2
35	15—1008	EYELET	2
36	15—2037	GROUND SCREW	1
37	15—2047	PLASTIC RIVET 3x4.5	4
38	15—2048	PLASTIC RIVET 3x1.5	8
39	15—2049	PLASTIC RIVET 3x4.5	2
39-1	15—2051	SPECIAL SCREW	6
40	15—4010	FIBER WASHER	1
41	23—5004	DICAST FOR TUNING KNOB	1
42	28—1016	RUBBER BUSHING FOR LAMP	1
43	28—1017	PHONES INSULATION BUSH	1
44	28—1029	RUBBER FOOT	4
45	28—2015	MYLAR FOR POINTER	1
46	28—2019	LAMP RETAINER	2
47	28—2020	COMSION FOR MIC	1
48	28—2023	CABINET RETAINER	2
49	28—2024	DIAL PERSPEX COVER RETAINER	1
50	28—2042	CUSHION	5
50-1	31—2021	LAMP	1
50-2	32—2005	FUSE HOLDER	1
51	28—2059	MASKER FOR PANEL(A)	1
52	11—8099	FRONT PANEL	1
53	12—3030	KNOB FOR TUNING	1
54	12—3031	KNOB FOR CONTROL	5
55	12—3071	KNOB FOR BALANCE	1
56	12—3039	KNOB FOR PUSH	5
57	11—8098	DIAL SCACE	1
58	11—8100	DIAL PLATE	1
59	50—1024	CABINET	1
60	SIB04-1 105L-2	MACHINE SCREW	8
61	SIB03+1 08SL-2	TRIANGLE SCREW	34
62	S2B03+1 08SL-2	TAPPING SCREW	17
63	A04A0751.01	WASHER	8
64	N04B0751.2SZ	NUT	8
65	A04G0751.01	SPRING WASHER	4


PRIMARY SECTION
UNSWITCHED
SWITCHED
FUSE1
POWER CORD
POWER S/W
TRANSFORMER
FOR : C1 , C2
FOR : E4
FUSE1
POWER CORD
POWER S/W
TRANSFORMER
FOR : E1 , E2 , E3
UNSWITCHED
SWITCHED
FUSE1
POWER CORD
POWER S/W
TRANSFORMER
FOR : U1 , U2 , U3.U4
TRANSFORMER
PILOT LAMP
POWER S/W
PHONE JACK
ANT TML
BALUN
GND
SOFT CLIPPING
AM ANT BAR
WIRING DIAGRAM


7020N SCHEMATIC DIAGRAM
NOTES
1 ALL RESISTORS ARE 1/4W ± 5% CARBON UNLESS OTHERWISE SPECIFIED.
2 ALL DIODES ARE 1N4002 UNLESS OTHERWISE SPECIFIED.
3 CAPACITANCE ARE IN uF UNLESS OTHERWISE SPECIFIED.
4 ⊕ MEANS RESISTOR WITH CERAMIC TUBE STAND UP ON THE PCB
5 ⊓ MEANS MOUNT ON COMMON HEAT SINK.
6 ⊕ MEANS R650 R660 WILL BE SHORTED AFTER IDLE CURRENT ALIGNMENT.
FOR:E4-F1: T1A/250V
FOR : E1-F1: T1.25A/250V E2-F1: T2A/250V
FOR: E1-F1: T800mA/250V E2,E3-F1: T1A/250V
FOR: E1,E2,E3,E4 F3,F4 : T1A/250V
FOR:C1,C2,U1,U2 F3,F4 : 1A/250V
FOR:C1 E1 ONLY
SW1abcdef : FUNCTION SW- PHONO
SW2ab : TAPE MONITOR SW- OFF
SW3ab : MONO SW- OFF
SW4ab : LOUDNESS SW- OFF
SW5abc : SOFT CLIPPING SW- OFF
SW6abcd : SPEAKER SW- OFF
SW7 : POWER SW- OFF
SW8 : VOLTAGE SELECTOR SW- OFF
SW9 : DE-EMPHASIS SW- OFF
SW10ab : AUDIO MUTE SW- OFF
2N3055 MJ2955
BD135 BD136
2SD330 E111
2N6553 2N6556
BC549 BC559 BC546 BC556
2SC1815GR 2SA733P
CA14SB
HA1211 HA1137 HA1197 HA1156