

RP-7930B VOLTAGE CHART

IC VOLTAGE CHARTS

	IC101 AN 7205	IC 805 KA9258D	IC803 KA9270	IC201 AN 7312	IC202 TA 7769P	IC102	
						(FM) AN 7024	(AM)
PIN 1	1.1V	3.3V	2.5V	0V	0V	5.5V	6V
PIN 2	1.9V	2.8V	2.5V	0V	5V	5.6V	6V
PIN 3	3.5V	2.3V	3.2V	0V	10V	5.6V	6V
PIN 4	1.8V	2.5V	3.2V	2.8V	0V	5.6V	6V
PIN 5	0V	6V	3V	1.3V	0V	5.6V	6V
PIN 6	3.6V	5V	5.1V	1.2V	0.5V	5.5V	6V
PIN 7	2.9V	5V	3.2V	0V	0V	1.4V	1.7V
PIN 8	3.6V	0V	3.2V	0V	9.8V	5.7V	6V
PIN 9	3.6V	2.5V	3.2V	1.2V	0V	0.8V	0.6V
PIN 10		2.6V	6.5V	1.3V	0V	1.4V	1.4V
PIN 11		3.1V	0V	2.8V	0.5V	1V	1V
PIN 12		3V	3.2V	0V	0V	1.4V	1.4V
PIN 13		0V	3.2V	5.6V	0V	0.2V	0.6V
PIN 14		6.3V	0V	5.7V	11.3V	1.4V	4.4V
PIN 15		1.2V	0V		5V	0.6V	0V
PIN 16		1.5V	3V		11.5V	0.1V	0V
PIN 17		2.8V	3.2V			5.6V	6V
PIN18		3.5V	3.2V			0V	0V
PIN 19		2.8V	2.5V				
PIN 20		2.5V	2.5V				
PIN 21		6.8V					
PIN 22		6.8V					
PIN 23		2.5V					
PIN 24		2.5V					
PIN 25		2.5V					
PIN 26		3.1V					
PIN 27		3.1V					
PIN 28		0V					

IC 804 KS57C0104-06							
PIN 1	0V	PIN 12	2.5V	PIN 23	0V	PIN 34	0V
PIN 2	0V	PIN 13	2.5V	PIN 24	0V	PIN 35	0V
PIN 3	0V	PIN 14	2.5V	PIN 25	5V	PIN 36	2.5V
PIN 4	0V	PIN 15	2.5V	PIN 26	2.7V	PIN 37	2.5V
PIN 5	0V	PIN 16	0V	PIN 27	5V	PIN 38	2.5V
PIN 6	2.5V	PIN 17	5V	PIN 28	5V	PIN 39	5V
PIN 7	2.5V	PIN 18	0V	PIN 29	5V	PIN 40	0V
PIN 8	0V	PIN 19	0.4V	PIN 30	3.3V	PIN 41	5V
PIN 9	0V	PIN 20	5V	PIN 31	3.3V	PIN 42	5V
PIN 10	2.5V	PIN 21	5V	PIN 32	3.3V	PIN 43	5V
PIN 11	2.5V	PIN 22	5V	PIN 33	0V	PIN 44	5V

RP-7930B VOLTAGE CHART

	IC 802 KS9282B				IC 801 KA9220B		
PIN 1	5V	PIN 41	0V	PIN 1	0V	PIN 41	2.5V
PIN 2	2.3V	PIN 42	0V	PIN 2	3.4V	PIN 42	5V
PIN 3	2.3V	PIN 43	0V	PIN 3	1.3V	PIN 43	2.5V
PIN 4	2.8V	PIN 44	0V	PIN 4	0V	PIN 44	2.9V
PIN 5	2.8V	PIN 45	0V	PIN 5	0V	PIN 45	2.5V
PIN 6	0V	PIN 46	0V	PIN 6	5V	PIN 46	2.3V
PIN 7	2.5V	PIN 47	0V	PIN 7	0.8V	PIN 47	2.5V
PIN 8	2.2V	PIN 48	0V	PIN 8	0V	PIN 48	2.5V
PIN 9	2.1V	PIN 49	0V	PIN 9	5V	PIN 49	0.3V
PIN 10	2.5V	PIN 50	0V	PIN 10	5V	PIN 50	2.5V
PIN 11	0V	PIN 51	0V	PIN 11	2.5V	PIN 51	2.5V
PIN 12	2.5V	PIN 52	0V	PIN 12	2V	PIN 52	2.5V
PIN 13	0V	PIN 53	0V	PIN 13	5V	PIN 53	2.5V
PIN 14	2.4V	PIN 54	4.8V	PIN 14	0V	PIN 54	2.4V
PIN 15	5V	PIN 55	0V	PIN 15	2.5V	PIN 55	5V
PIN 16	0.6V	PIN 56	5V	PIN 16	2.5V	PIN 56	2.5V
PIN 17	0.3V	PIN 57	0V	PIN 17	2.5V	PIN 57	2.5V
PIN 18	5V	PIN 58	1.9V	PIN 18	2.4V	PIN 58	2.4V
PIN 19	2.5V	PIN 59	0V	PIN 19	2.5V	PIN 59	5V
PIN 20	0.5V	PIN 60	0V	PIN 20	2.7V	PIN 60	2.7V
PIN 21	0V	PIN 61	0V	PIN 21	3.5V	PIN 61	2.1V
PIN 22	4.5V	PIN 62	0V	PIN 22	2.1V	PIN 62	2V
PIN 23	4.5V	PIN 63	0V	PIN 23	3.5V	PIN 63	2.5V
PIN 24	0V	PIN 64	0V	PIN 24	0.8V	PIN 64	0V
PIN 25	5V	PIN 65	0V	PIN 25	2.6V	PIN 65	2.5V
PIN 26	0V	PIN 66	0V	PIN 26	0.4V	PIN 66	3.4V
PIN 27	0V	PIN 67	0V	PIN 27	5V	PIN 67	2.5V
PIN 28	0V	PIN 68	0V	PIN 28	5V	PIN 68	2.5V
PIN 29	0V	PIN 69	0V	PIN 29	0V	PIN 69	2.5V
PIN 30	0V	PIN 70	0V	PIN 30	0V	PIN 70	3.2V
PIN 31	5V	PIN 71	0V	PIN 31	5V	PIN 71	0V
PIN 32	0V	PIN 72	0V	PIN 32	0V	PIN 72	5V
PIN 33	0V	PIN 73	0V	PIN 33	2.6V	PIN 73	0V
PIN 34	5V	PIN 74	5V	PIN 34	0V	PIN 74	2.5V
PIN 35	0V	PIN 75	2V	PIN 35	1V	PIN 75	2.5V
PIN 36	5V	PIN 76	2.8V	PIN 36	2.4V	PIN 76	2.5V
PIN 37	0V	PIN 77	0V	PIN 37	2.5V	PIN 77	2.5V
PIN 38	5V	PIN 78	2.3V	PIN 38	2.5V	PIN 78	4.7V
PIN 39	0V	PIN 79	5V	PIN 39	2.5V	PIN 79	1.5V
PIN 40	0V	PIN 80	4.2V	PIN 40	0V	PIN 80	3.8V

	TRANSISTOR	PIN E	PIN B	PIN C
Q201	9013	6.4V	7V	11.5V
Q202	9014	0V	0.6V	0V
Q203	9014	0.2V	0.5V	3.1V
Q204	9014	0V	7.4V	0V
Q205	9014	0V	0.6V	0V
Q206	D2012	6.8V	0.6V	10.4V
Q207	9015	10.3V	9.6V	10.2V
Q208	9014	0V	0.6V	0V
Q209	9014	0V	0.6V	0V
Q801	A928	6.8V	6.1V	5V
Q802	3400	0V	5V	0V
Q803	1317	3.9V	3.2V	1.9V

Audio/Communication Basic Service Data



PROSCAN



Latin America After Sales

Indianapolis, IN 46290 U.S.A.

SERVICE DATA INDEX

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CAUTION: Modification or repair of this unit by unauthorized persons is a direct violation of FCC Rules Part 68.216 and could result in risk of electric shock. You are urged to contact a qualified factory authorized service facility for repairs.

SAFETY NOTICE USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a (Δ) on schematics and on the parts list in this Service Data and its bulletins. Before servicing this instrument, it is important that the service technician read and follow the "Safety Precautions" in the Basic Service Data.

RP-7930B ALIGNMENTS

ALIGNMENT AND ADJUSTMENT

SERVICE ADJUSTMENT

Lubrication

The mechanical parts are factory coated with a thin coat of light grease and should not require further lubrication. If a light grease is applied, be careful not to get any grease on the play/record head or erase head, hubs, pulleys, tapes reels, drive belts, or switches. Use a good lubricant such as Silicon Lube G322L or Lubricate (00).

Service Check

Before aligning the mechanism, wipe off any accumulated dirt with denatured alcohol. Wipe around parts where the tape contacts and around all rotating parts. Drive belts are specially processed. Do not clean them with alcohol.

Mechanical Torques

Use a cassette type torque gauge and check the tape mechanism.

Take-up torque	35 to 80 g-cm
Rewind torque	65 g-cm min.
Fast forward torque	65 g-cm min.

Pinchwheel Pressure

No adjustment to the pinch roller spring is necessary. It should be sufficient to give at least 40 g-cm pull force.

Tape Head Servicing

Each time the unit is serviced, the face of all heads should be thoroughly cleaned with denatured alcohol or commercial head cleaning solution. The playback head should be demagnetized with a commercial demagnetizer. Accumulation of tape oxide during normal operations can cause problems, including loss of high frequencies and wow and flutter.

Erase Head

The erase head is properly aligned when the tape rides directly between the tape guide on the head without crinkling the tape.

RP-7930B ALIGNMENTS

Play/Record and Playback Head Azimuth Adjustment

To adjust the play/record and playback head azimuth screw:

1. Connect two (2) VTVMs and a dual trace scope to the stereo headphone jack (as shown) with a 32 ohm dummy load. (See Figure 1.)

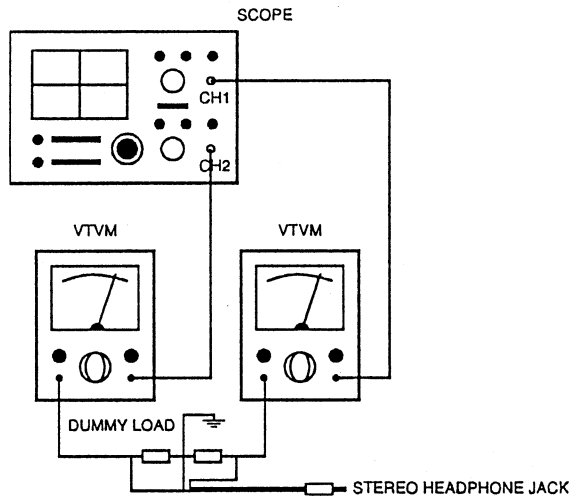


Figure 1. Azimuth Adjustment

2. Insert a 10 kHz test tape (such as TEAC MTT-113C) into the tape mechanism and play it back.
3. While playing back the test tape, slowly turn the azimuth adjusting screw until the amplitude of both channel output waveforms is maximum and inphase. (See Figure 2.)
4. Secure the azimuth screw in place with glue or paint after making the adjustment.

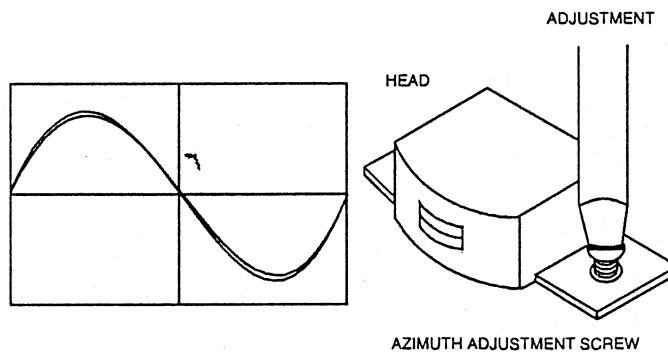


Figure 2. Head Output Signal

RP-7930B ALIGNMENTS

Tape Speed Adjustment

1. Set the function switch to TAPE.
2. Connect a frequency counter with a 32 ohm dummy load to the stereo headphone jack. (See Figure 3.)

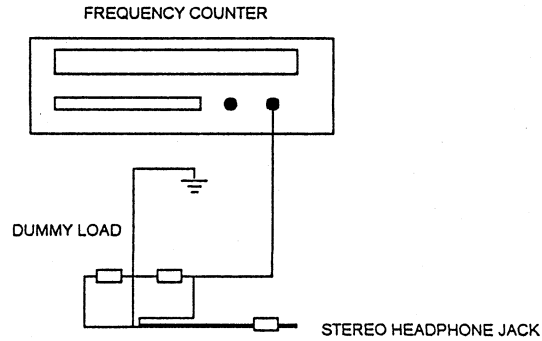


Figure 3. Tape Speed Adjustment

3. Insert and play back a 3 kHz test tape (TEAC MTT-114 or equivalent) into the tape mechanism.
4. Insert an insulated alignment tool and adjust the tape speed potentiometer (MOTOR) until the frequency counter indicates 2940 Hz to 3090 Hz.

Bias Oscillator Frequency and Level Adjustment

1. Set the function switch to TAPE and the record and play tape mechanism to RECORD.
2. Connect a VTVM and frequency counter to test point R/P HEAD.
3. Adjust bias oscillator coil L201 until the frequency counter indicates $75 \text{ kHz} \pm 3 \text{ kHz}$ (SW204 in osc2).

RP-7930B ALIGNMENTS

TUNER ALIGNMENT PROCEDURE

Equipment needed :

1. AM Signal generator
2. FM Signal generator
3. Intermediate Frequency Sweep generator
4. FM stereo signal generator
5. Marker generator
6. Oscilloscope
7. Output meter (VTVM)
8. Distortion meter
9. Frequency counter

AM Alignment : Use AM S/G and loop antenna

STEP	S/G FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	455 kHz (1kHz 30% mod.)	600 kHz	Connect oscilloscope or VTVM to speaker jack	IFT102	Adjust for maximum output
2	515 kHz (1kHz 30% mod.)	Low end	Same as step 1	L104	Same as step 1
3	1740 kHz (1kHz 30% mod.)	High end	Same as step 1	VC3	Same as step 1
4	600 kHz (1kHz 30% mod.)	600 kHz	Same as step 1	L105	Same as step 1
5	1600 kHz (1kHz 30% mod.)	1600 kHz	Same as step 1	C4	Same as step 1
6	Repeat steps 4 and 5 to minimize tracking error				
7	1000 kHz (1kHz 30% mod.)	1000 kHz	Same as step 1		Same as step 1

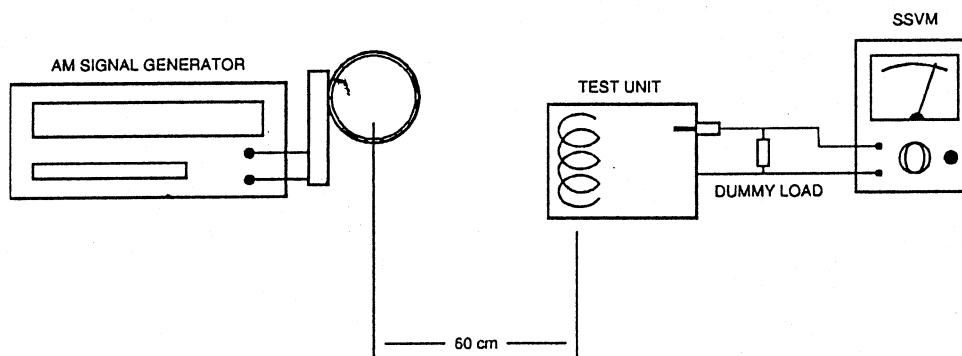


Figure 4. AM IF/RF Tracking

RP-7930B ALIGNMENTS

FM Alignment : Connect FM S/G to ANT inputs (mod 400Hz 22.5kHz dev.)

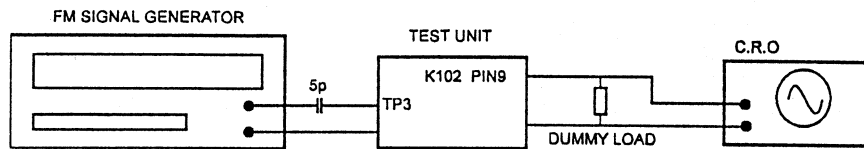


Figure 5. IF Alignment

STEP	S/G FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	10.7 MHz 87.5 MHz (1kHz 30% mod.)	Any point low end	Connect oscilloscope or VTVM to IC102 PIN9 (TP3)	IFT101 IFT103	Adjust for maximum and center output
2	109 MHz (1kHz 30% mod.)	High end	Connect oscilloscope or VTVM to IC102 speaker jack	L103 VC1	Adjust for maximum and center output
3	90 MHz (1kHz 30% mod.)	82 MHz	Same as step 2	L102	Same as step 2
4	106 MHz (1kHz 30% mod.)	102 MHz	Same as step 2	C2	Same as step 2
5	Repeat steps 3 and 4 to minimize tracking error				
6	98 MHz (1kHz 30% mod.)	92 MHz	Same as step 2		Same as step 2

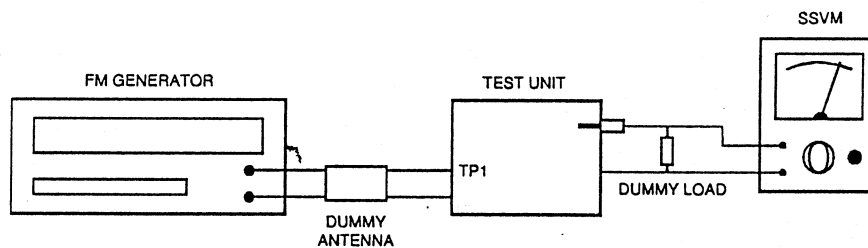


Figure 6. FM Band/Traking

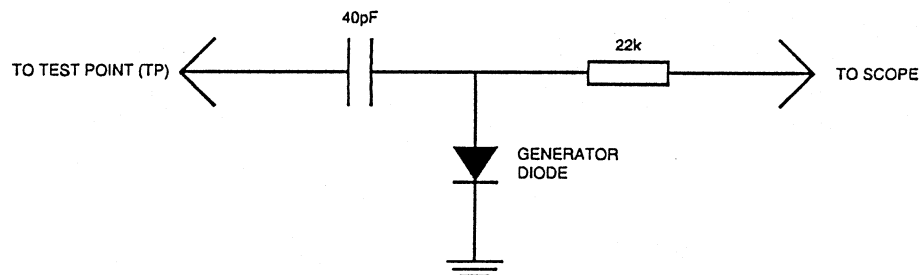


Figure 7. Alignment Pad #1

RP-7930B ALIGNMENTS

CD PLAYER ADJUSTMENT PROCEDURES

CDT10 ASSY

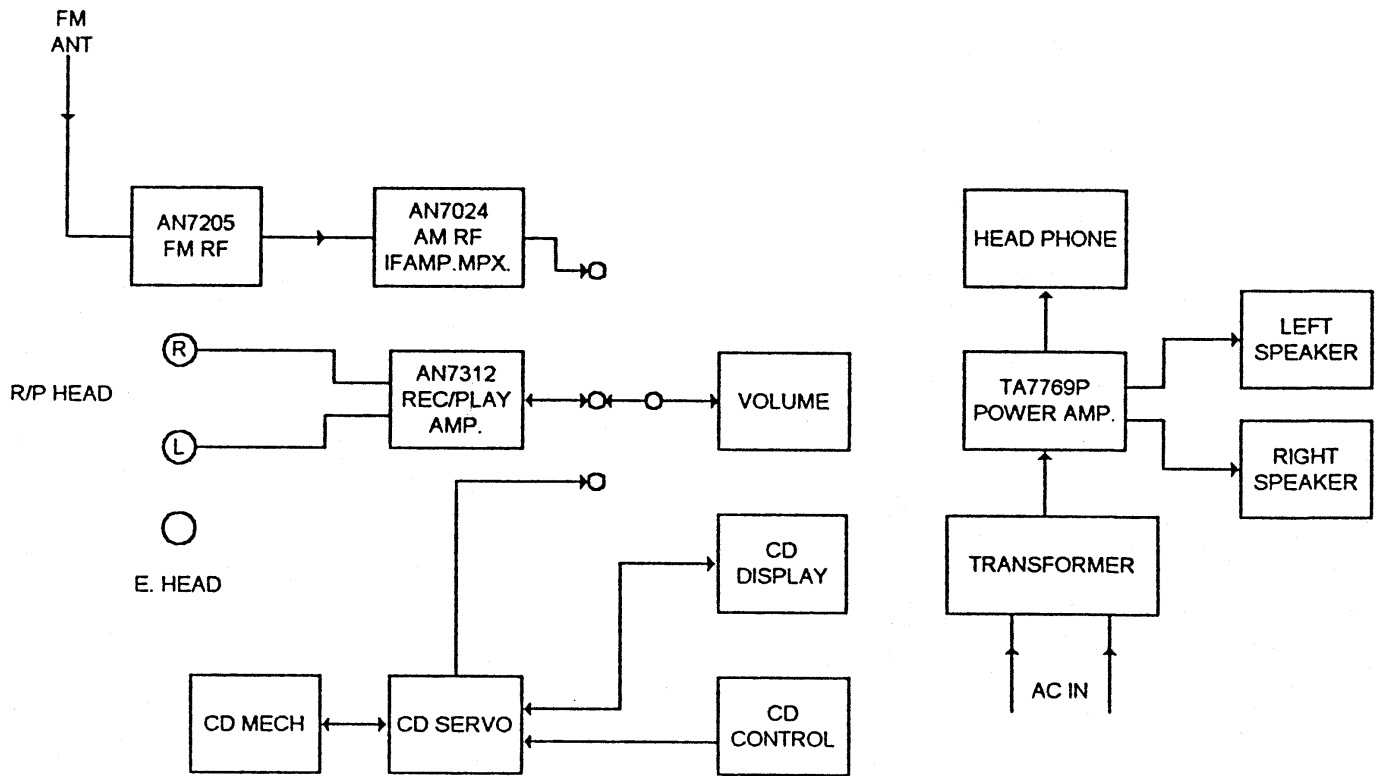
A) FOCUS BIAS ADJUSTMENT:

1. TURN POWER ON WITHOUT LOADING A DISC.
2. SET OSCILLOSCOPE VOLT/DIV TO DC 0.1 MV.
3. CONNECT "VREF" TO GND AND "FA" TO POSITIVE TERMINAL OF PROBE
CONNECTE TO OSCILLOSCOPE.
4. ADJUST VR801 SO THAT THE VOLTAGE IS 0MV DC ON THE OSCILLOSCOPE.

B) E/F BALANCE ADJUSTMENT:

1. TURN POWER ON WITH LOADING A DISC.
2. SET OSCILLOSCOPE VOL/DIV TO 0.5V.
3. CONNECT "VREF" TO GND AND "TB" TO POSITIVE TERMINAL OF PROBE.
4. PRESS "PLAY" KEY.
5. ADJUST VR802 SO THAT THE WAVEFORM IS EQUAILY SYMMETRICAL ABOVE
AND BELOW (A-B) THE CENTER.

BLOCK DIAGRAM RP-7930B



RP-7930B SPECIFICATIONS

SPECIFICATIONS

Power source	:	DC 9V "D" SIZE (1.5V X 6), AC 120V, 50Hz
Load impedance	:	8 ohm
Reference output	:	50mW
Maximum output	:	1W x 2
10% THD output	:	1W x 2
Speaker	:	3.5" , 8 ohm x 2
Recording system	:	AC Bias
Erase system	:	Magnet Erase

Band : AM, 400Hz 30% MOD.

Characteristic		Unit	Nominal	Limit
Frequency Range	Low	kHz	515	± 5
	High	kHz	1740	± 20
Intermediate Frequency		kHz	455	± 5
Usable Sensitivity (S/N 20dB)	600kHz	µV/m	630	1000
	1000kHz	µV/m	630	1000
	1600kHz	µV/m	630	1000
S/N at 5mV/m Input	600kHz	dB	28	23
	1000kHz	dB	28	23
	1600kHz	dB	28	23
Selectivity ± 10kHz		dB	20	15

BAND : FM, 400Hz 22.5kHz DEV.

Characteristic		Unit	Nominal	Limit
Frequency Range	LOW	MHz	87.5	±0.5
	HIGH	MHz	109	±0.5
Intermediate Frequency		MHz	10.7	±0.1
Usable Sensitivity (S/N 20dB)	90MHz	µV	10	18
	98MHz	µV	10	18
	106MHz	µV	10	18
S/N at 1mW Input 22.5kHz Deviation	90MHz	dB	DC (AC)	DC (AC)
	98MHz	dB	DC (AC) 50	DC (AC) 45
	106MHz	dB	DC (AC)	DC (AC)

TAPE RECORDER

Characteristic	Unit	Nominal	Limit
Play frequency response	Hz	125-10000	+ 3 / -8 dB
S/N ratio	dB	35	30
Track cross talk (w/Band Pass Filter)	dB	40	35
Tape speed	cm / sec	4.75	+ 3 / -2
Wow & Flutter (JIS R.M.S.)	%	0.3	0.4
Fast Forward time (C-60)	sec		170
Rewind time (C-60)	sec		170
Channel separation (w/Band Pass Filter)	dB	30	20

RP-7930B SPECIFICATIONS

CD

Test disc : PHILIPS test disc 5A
Bass boost : Off
Functions : Play/Pause, Stop, Skip (<</>>)
Display : LCD Multi-display

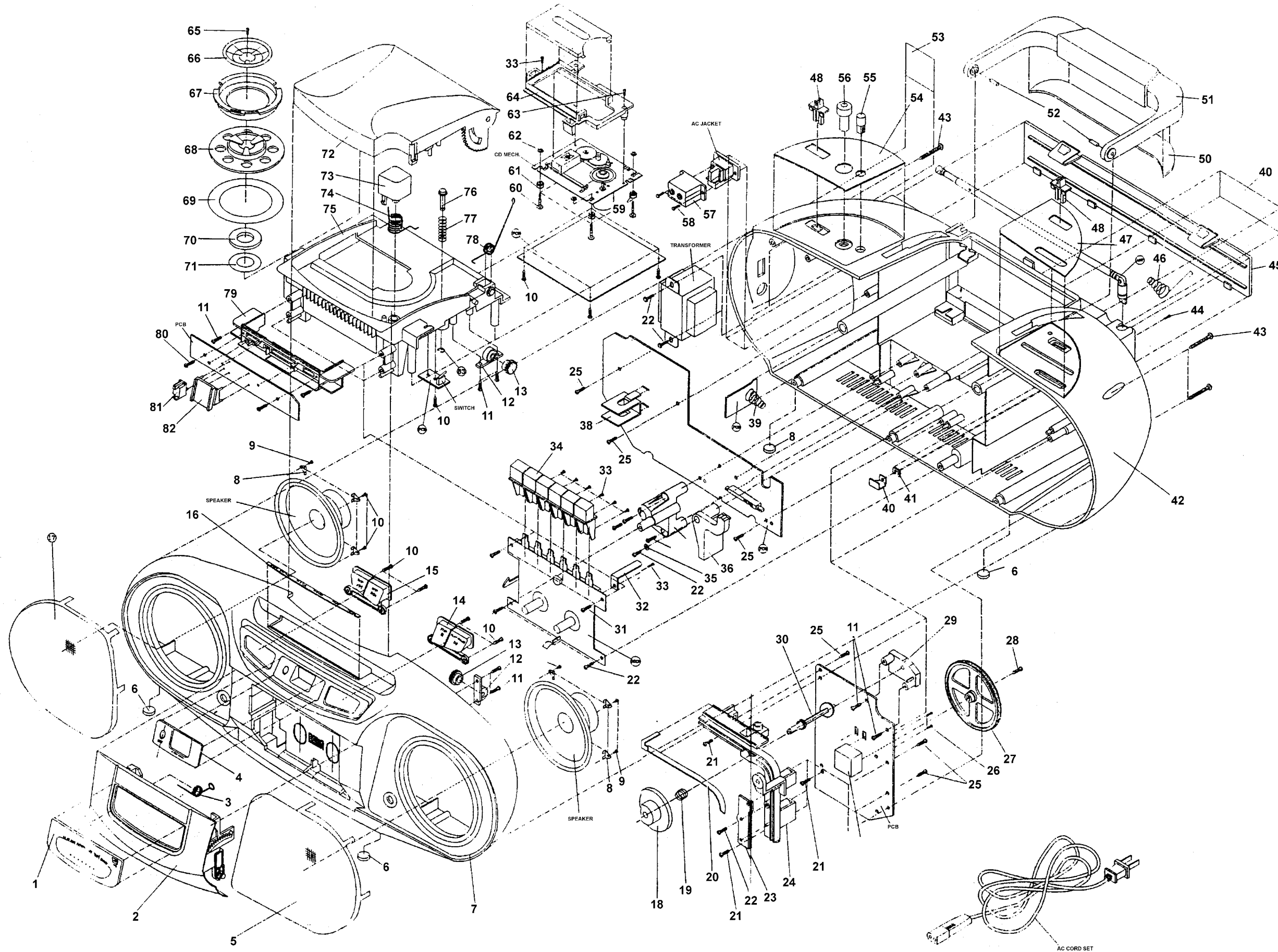
Digital signal processing

Optical pick up : 3-beam laser
Error correction : Cross Interleaved Reed-solomon Code
Digital filter : 16-bit linear
Sampling rate : 2 Times

Item	Unit	Nominal	Limit
Freq. response 61Hz / 16kHz	dB		$\pm 3 / \pm 6$
S/N ratio	dB	60	50
Interruption in information layer	μm		600
Black dot	μm		600
Eccentric disc	μm		70
Commencement time	sec		5
Maximum access time	sec		17
Dynamic range	dB		60
Channel separation (w/Band Pass Filter)	dB		35

Note: Nominal specs represent the design specs. All units should be able to approximate these - some will exceed and some might drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit specs.

CABINET AND CHASSIS ASSEMBLY



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