# 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 |

THOMSON CONSUMER ELECTRONICS



# Audio/Communication
# Basic Service Data

RCA PROSCAN

**Latin America After Sales**
Indianapolis, IN 46290 U.S.A.

## SERVICE DATA INDEX



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 (⚠) 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.

First Edition - First Printing

# 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.

### 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.)

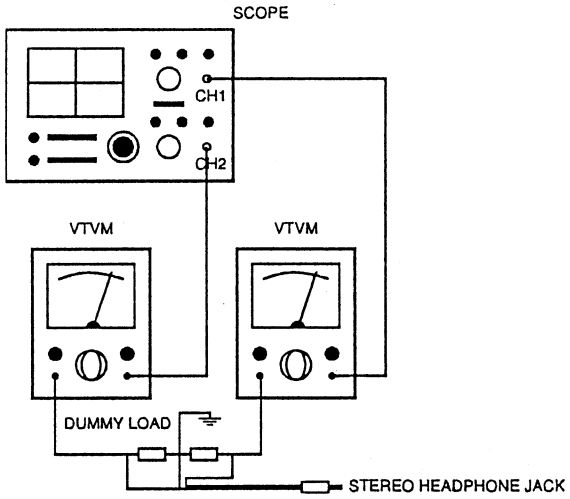



Figure 1. Azimuth Adjustment

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.

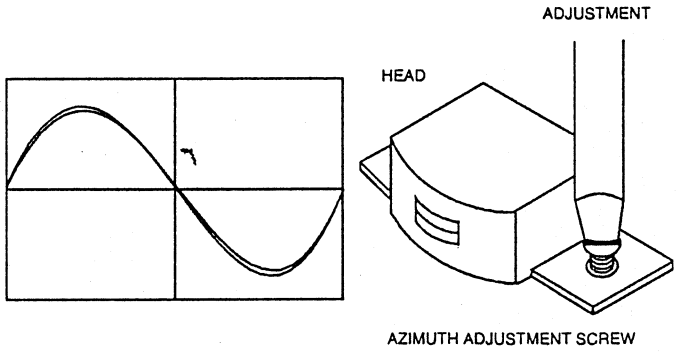



Figure 2. Head Output Signal

# 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.)

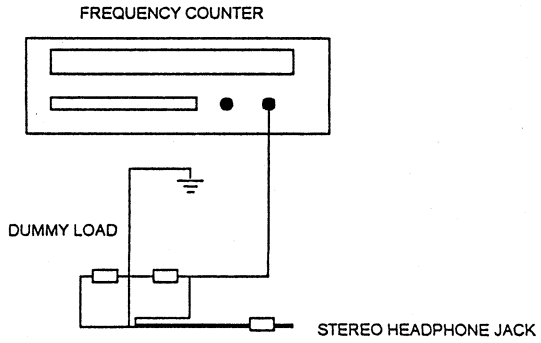



**Figure 3. Tape Speed Adjustment**

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 kHz±3 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 |

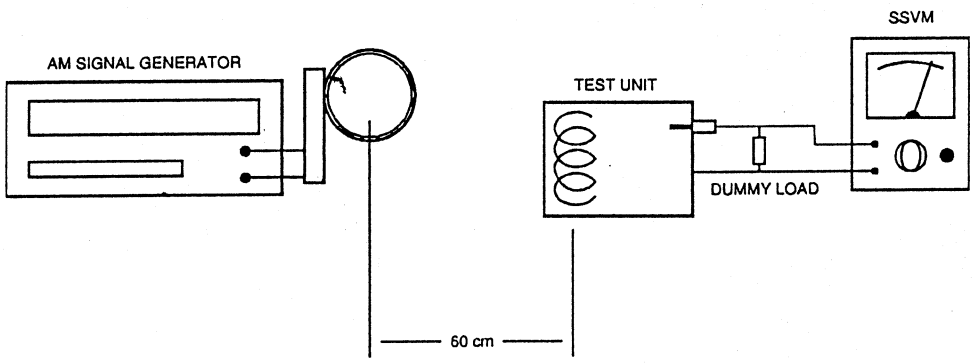



Figure 4. AM IF/RF Tracking

# RP-7930B ALIGNMENTS

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

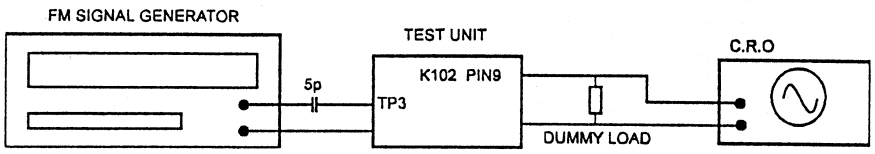



Figure 5. IF Alignment

| STEP | S/G FREQUENCY | DIAL SETTING | INDICATOR | ADJUST | REMARKS |
|---|---|---|---|---|---|
| 1 | 10.7 MHz<br>87.5 MHz<br>( 1kHz 30% mod. ) | Any point low end | Connect oscilloscope or VTVM to IC102 PIN9 ( TP3 ) | IFT101<br>IFT103 | Adjust for maximum and center output |
| 2 | 109 MHz<br>( 1kHz 30% mod. ) | High end | Connect oscilloscope or VTVM to IC102 speaker jack | L103<br>VC1 | Adjust for maximum and center output |
| 3 | 90 MHz<br>( 1kHz 30% mod. ) | 82 MHz | Same as step 2 | L102 | Same as step 2 |
| 4 | 106 MHz<br>( 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<br>( 1kHz 30% mod. ) | 92 MHz | Same as step 2 | | Same as step 2 |

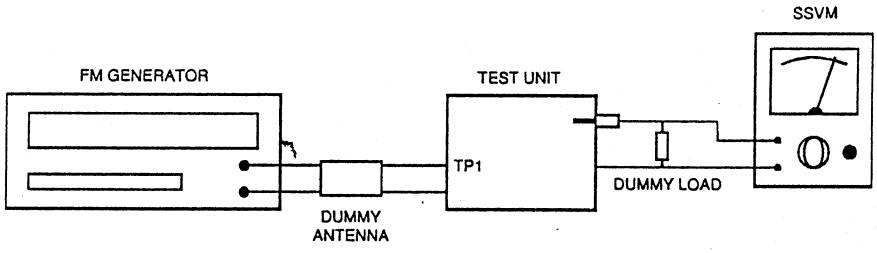



Figure 6. FM Band/Traking

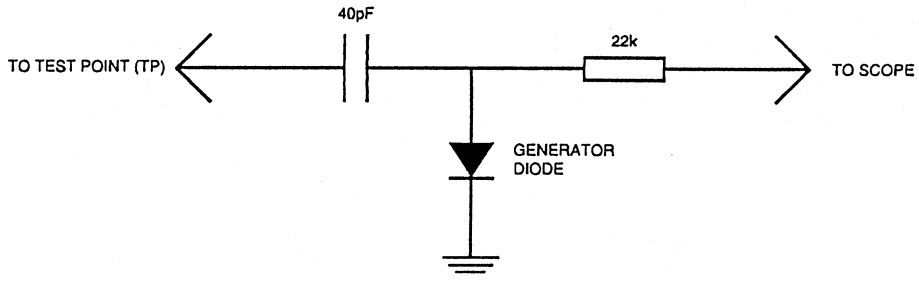



Figure 7. Alignment Pad #1

# RP-7930B ALIGNMENTS

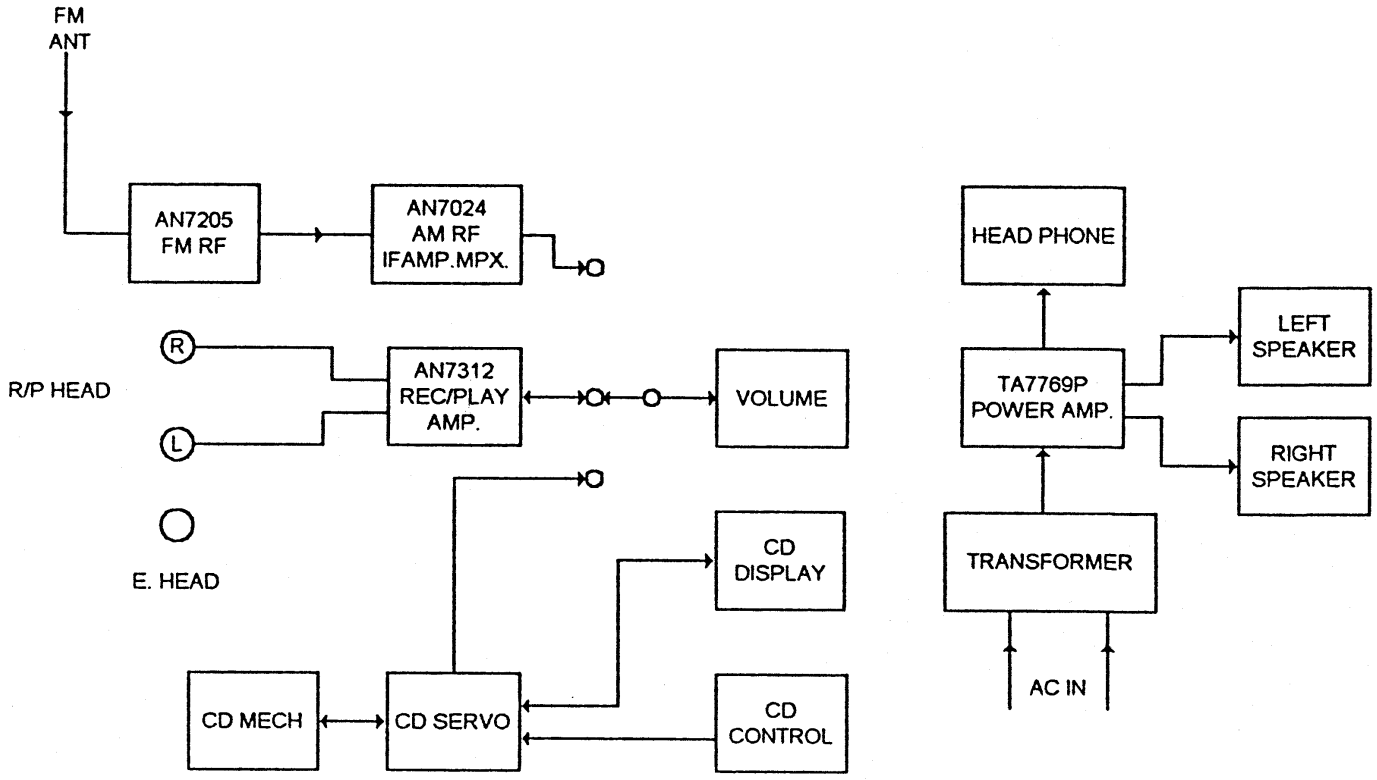
## CD PLAYER ADJUSTMENT PROCEDURES

### 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<br>High | kHz<br>kHz | 515<br>1740 | ± 5<br>± 20 |
| Intermediate Frequency | | kHz | 455 | ± 5 |
| Usable Sensitivity ( S/N 20dB ) | 600kHz<br>1000kHz<br>1600kHz | µV/m<br>µV/m<br>µV/m | 630<br>630<br>630 | 1000<br>1000<br>1000 |
| S/N at 5mV/m Input | 600kHz<br>1000kHz<br>1600kHz | dB<br>dB<br>dB | 28<br>28<br>28 | 23<br>23<br>23 |
| Selectivity ± 10kHz | | dB | 20 | 15 |

### BAND : FM, 400Hz 22.5kHz DEV.

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

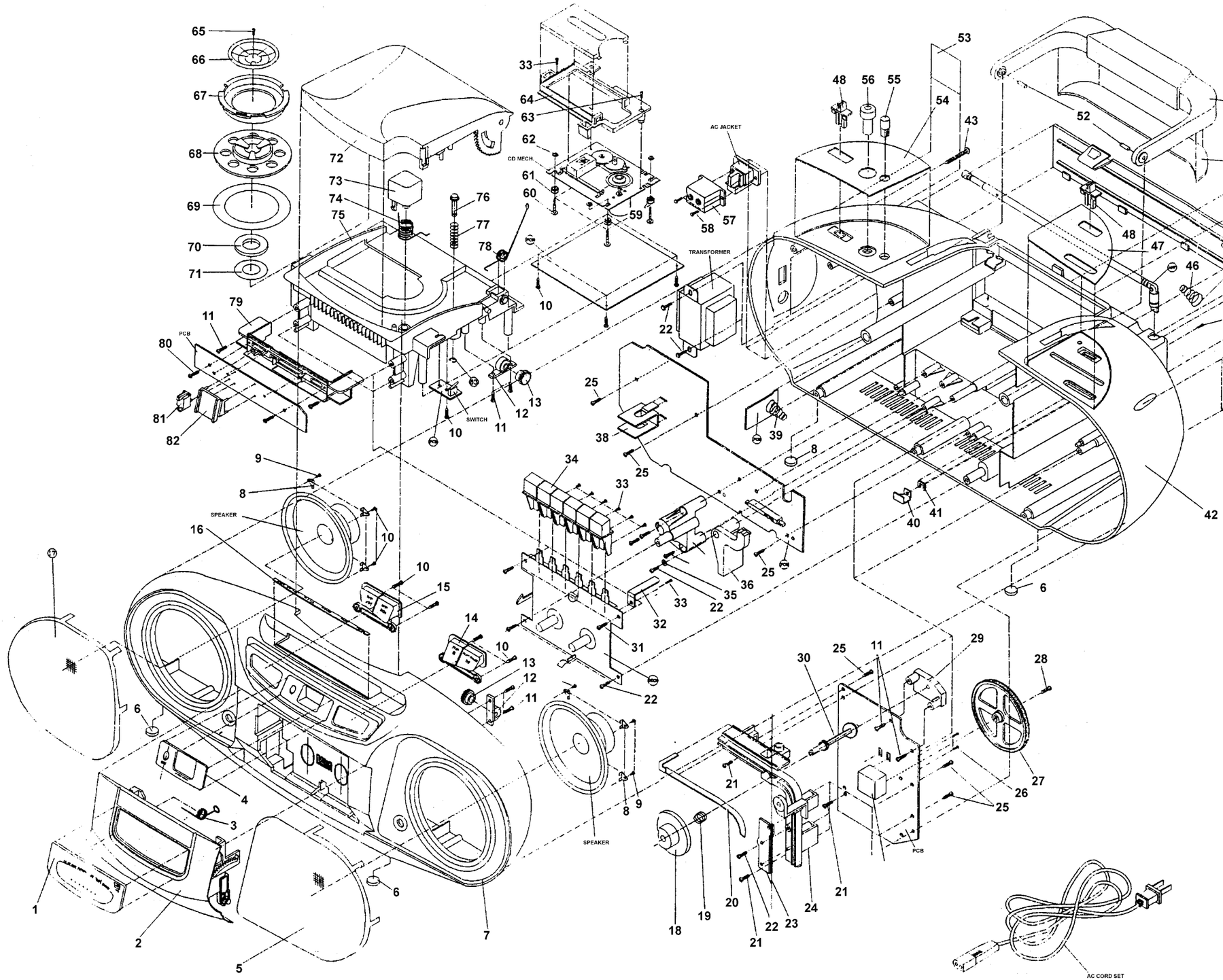
| | | |
|---|---|---|
| Test disc | : | PHILIPS test disc 5A |
| Bass boost | : | Off |
| Functions | : | Play/Pause, Stop, Skip (<</>>) |
| Display | : | LCD Multi-display |

### 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 | | ± 3 / ± 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 |

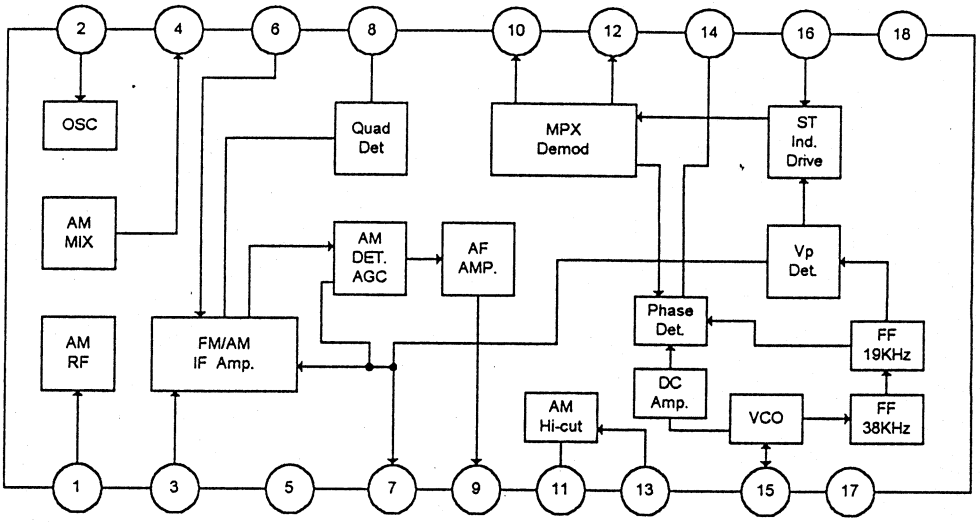
**Note:** Nominal specs represent the design specs. All units should be able to approximate these - some will exceed and some might drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit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


AC JACKET
CD MECH
TRANSFORMER
PCB
SWITCH
SPEAKER
SPEAKER
PCB
AC CORD SET

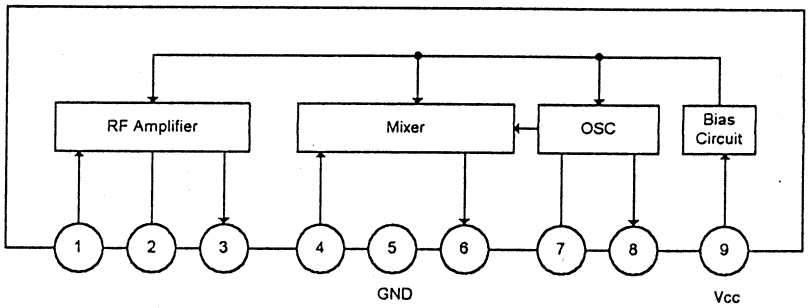
# RP-7930B IC LEAD IDENTIFICATION

## IC LEAD IDENTIFICATION AND INTERNAL DIAGRAM

AN7024

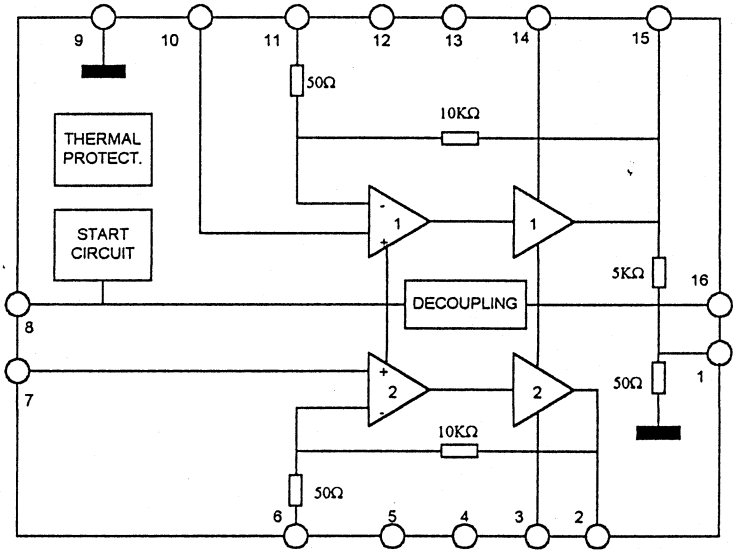



AN7205

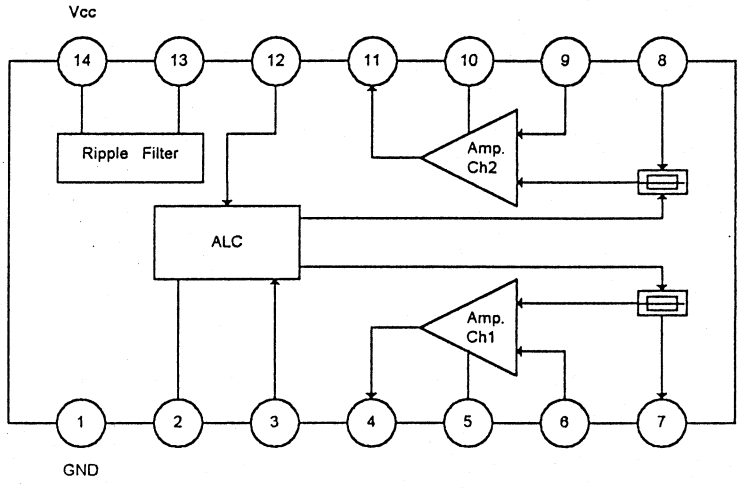


# RP-7930B IC LEAD IDENTIFICATIONS

TA7769P

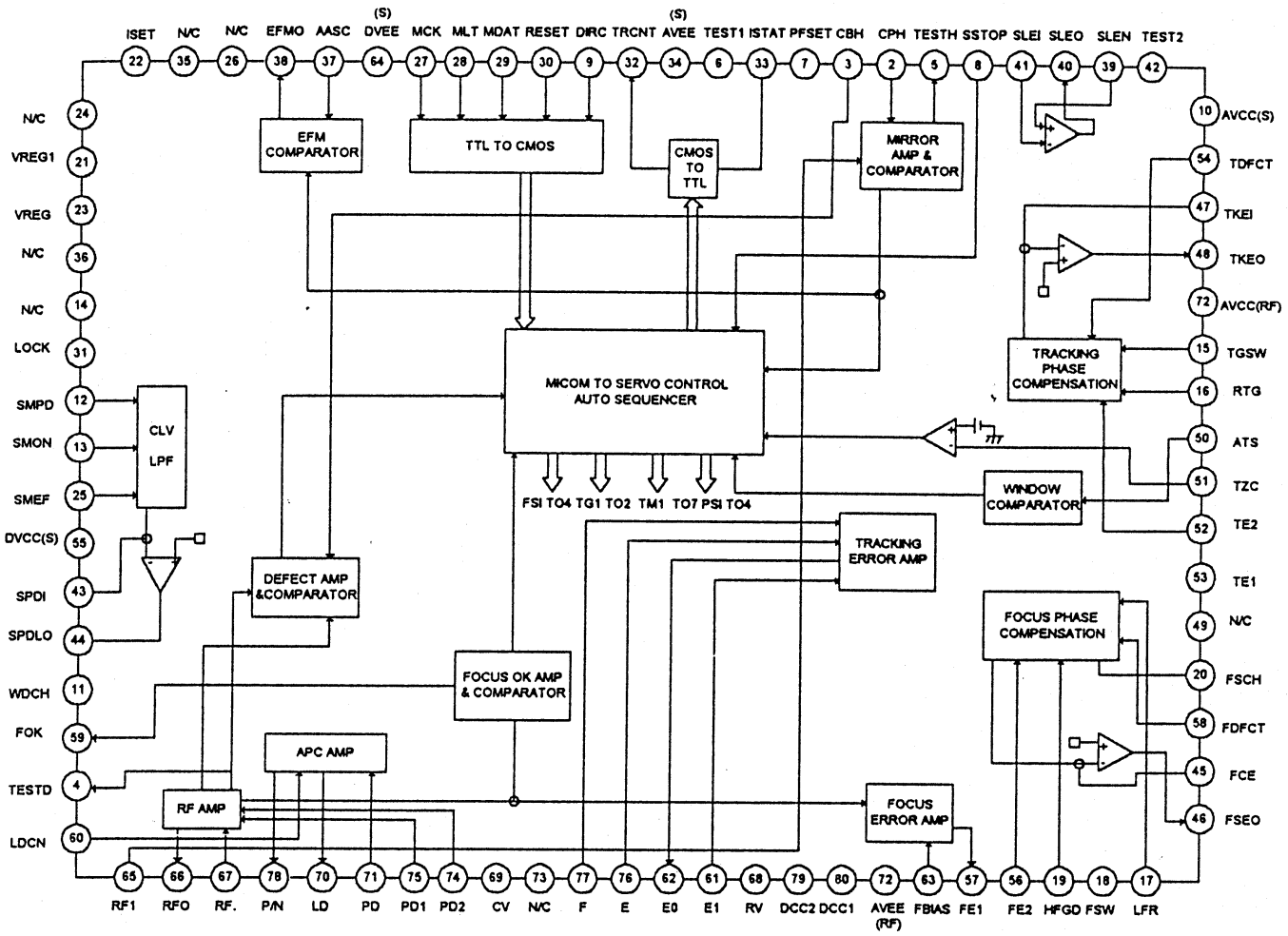



AN7312



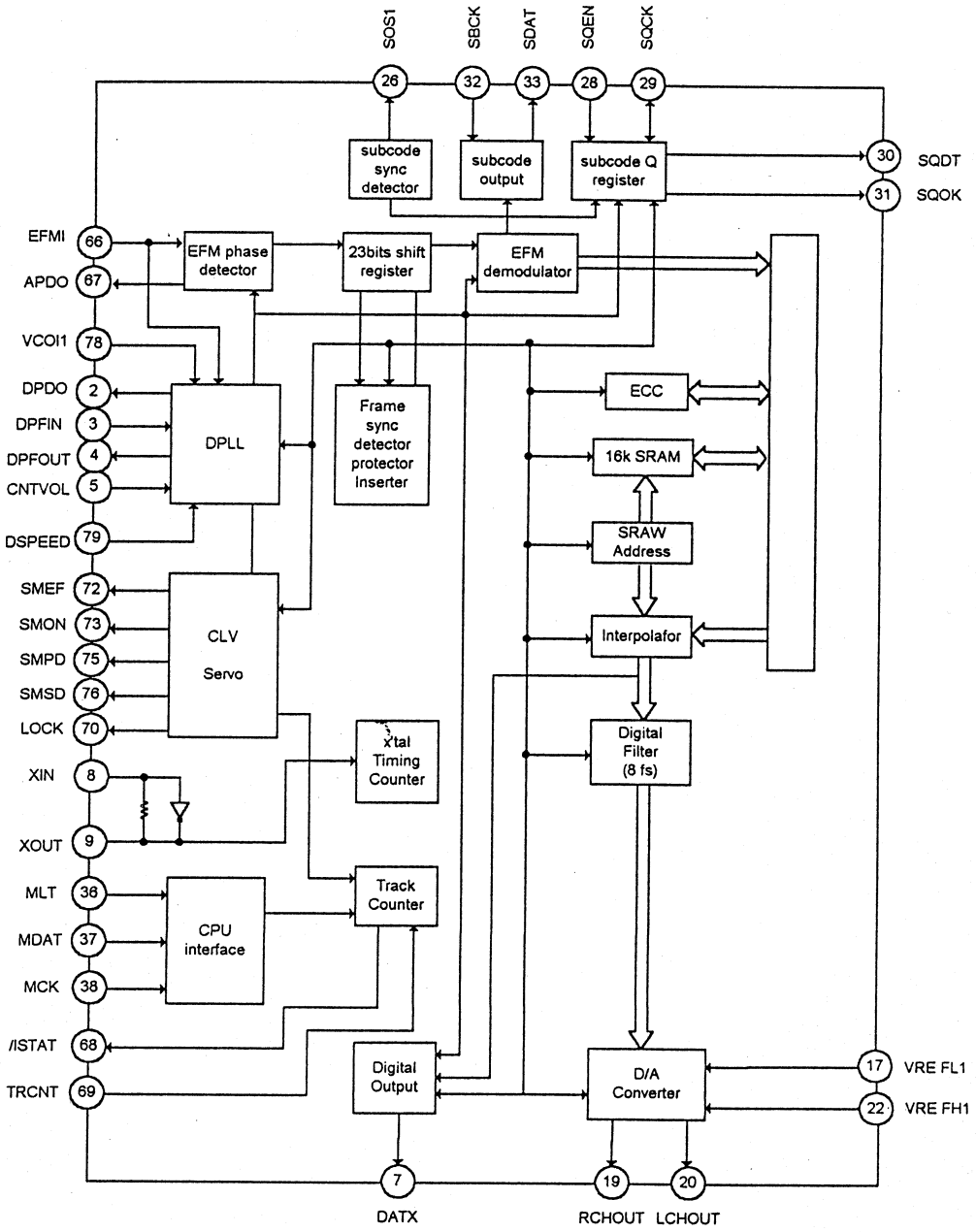
# RP-7930B IC LEAD IDENTIFICATIONS

## KA9220C



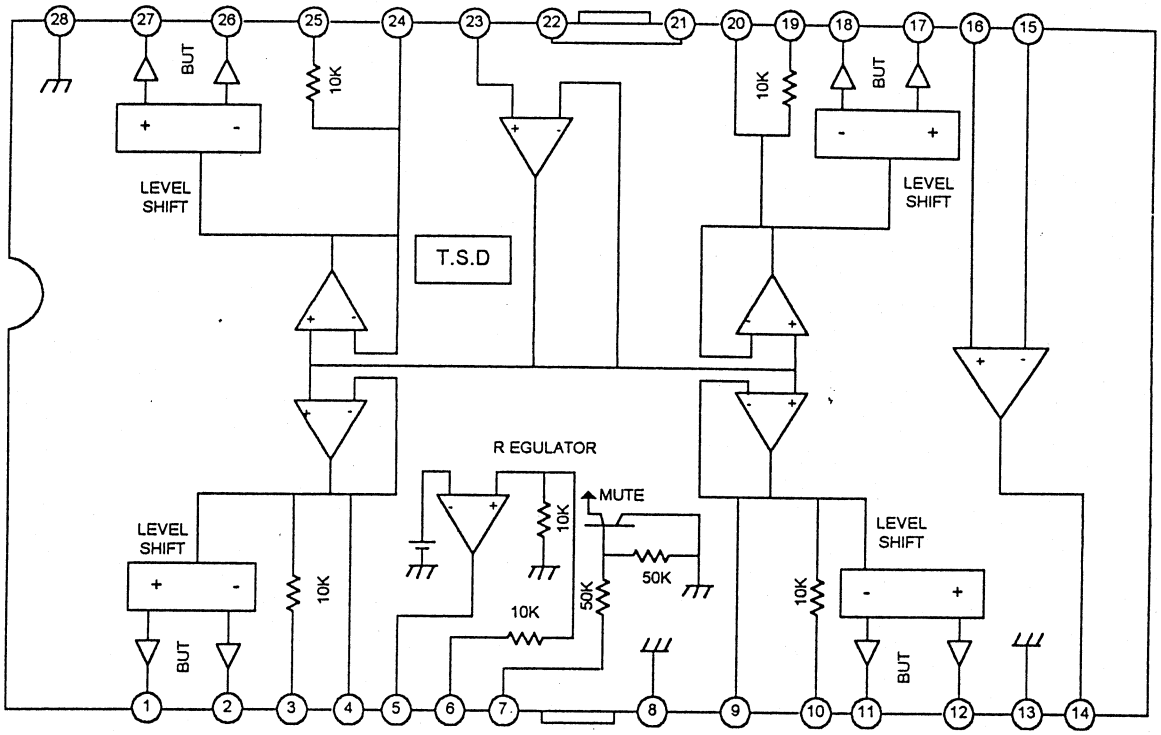
# RP-7930B IC LEAD IDENTIFICATIONS

KS9281

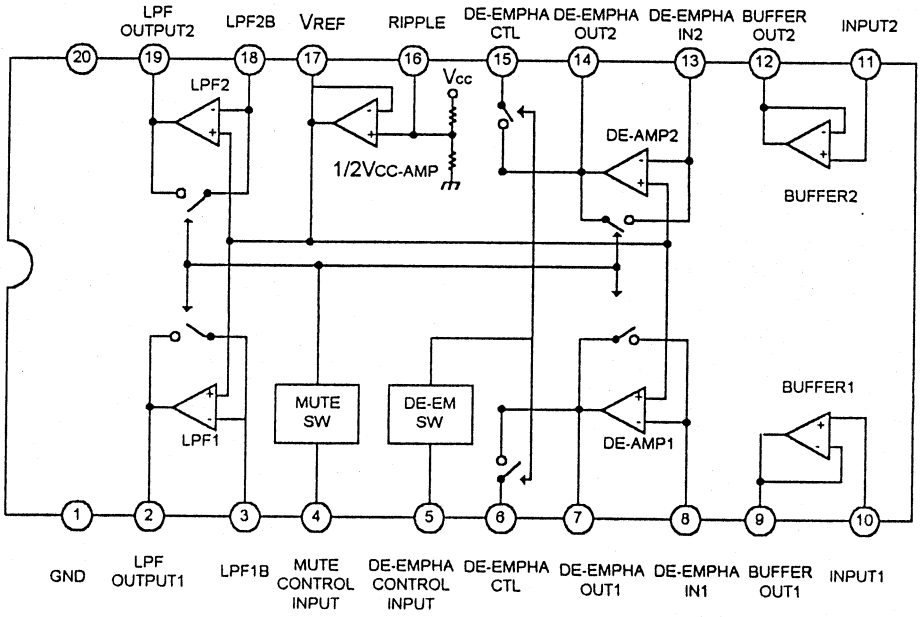


# RP-7930B IC LEAD IDENTIFICATIONS

**KA9258D**

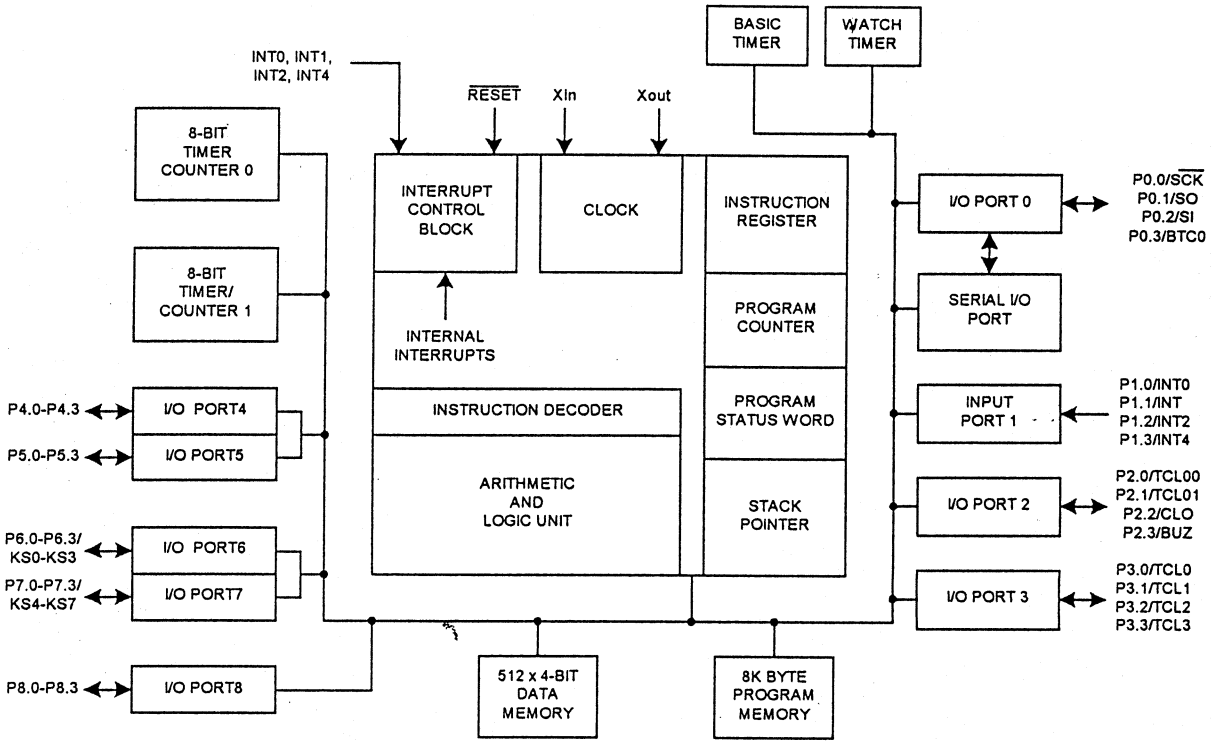



KA9270



# RP-7930B IC LEAD IDENTIFICATIONS

KS57C



# SAFETY PRECAUTIONS

1. **Before returning the instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

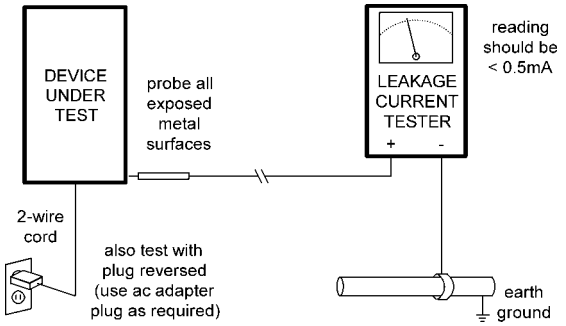
   a. Be sure that no built-in protective devices are defective and/ or have been defeated during servicing. (1) Protective shields are provided on this instrument to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reassembling the instrument, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage, and may expose themselves and others to possible injury.**

   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) improperly fitted and/or incorrectly secured cabinet covers.

   c. **Leakage Cold Check** - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the *on* position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each push button/customer control, exposed metal screws, metallized overlays and to each cable connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the AC switch in the *off* position.

   d. **Leakage Current Hot Check**

      On completely assembled instrument, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) *C101.1 Leakage Current for Appliances* and Underwriters Laboratories (UL) *1492 (Section 67)*. Measure for current from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal or conductive parts of the instrument (antenna connections, handle bracket, metal cabinet, screwheads, metallic overlays, push-buttons, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat the test.




   **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING TO ANTENNA OR ACCESSORIES.**

   e. **Interconnected Equipment AC Leakage Test**

      Avoid shock hazards. The instrument, accessory, or cable(s) to which this instrument is connected should have the applicable sections of the leakage resistance cold check and the leakage current hot check performed. Do not connect this instrument to an antenna, cable or accessory that exhibits excessive leakage currents.

2. Read and comply with all caution and safety-related notes on or inside the instrument cabinet, and on the chassis.

3. **Design Alteration Warning** - *Do not* alter or add to the mechanical or electrical design of this instrument. Design alterations and additions, including, but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, cables and accessories, etc., might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and will make you, the servicer responsible for personal injury or property damage resulting therefrom.

4. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: (a) near sharp edges, (b) near thermally hot parts - be sure that leads and components do not touch thermally hot parts, and (c) the AC supply. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components and the printed-circuit board. Check AC power cord for damage.

5. Components, parts and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6. **PRODUCT SAFETY NOTICE** - Many electrical and mechanical parts have special safety-related characteristics, some of which are often not evident from visual inspection, nor can the protection they give be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by a (⚠) on schematics and in the parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in this service data parts list might create shock, fire and/or other hazards. Product Safety is under review continuously and new instructions are issued whenever appropriate. For the latest information, always consult the appropriate current service literature.

# 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<br>High | kHz<br>kHz | 515<br>1740 | ± 5<br>± 20 |
| Intermediate Frequency | | kHz | 455 | ± 5 |
| Usable Sensitivity ( S/N 20dB ) | 600kHz<br>1000kHz<br>1600kHz | µV/m<br>µV/m<br>µV/m | 630<br>630<br>630 | 1000<br>1000<br>1000 |
| S/N at 5mV/m Input | 600kHz<br>1000kHz<br>1600kHz | dB<br>dB<br>dB | 28<br>28<br>28 | 23<br>23<br>23 |
| Selectivity ± 10kHz | | dB | 20 | 15 |

### BAND : FM, 400Hz 22.5kHz DEV.

| Characteristic | | Unit | Nominal | Limit |
|---|---|---|---|---|
| Frequency Range | LOW<br>HIGH | MHz<br>MHz | 87.5<br>109 | ±0.5<br>±0.5 |
| Intermediate Frequency | | MHz | 10.7 | ±0.1 |
| Usable Sensitivity ( S/N 20dB ) | 90MHz<br>98MHz<br>106MHz | µV<br>µV<br>µV | 10<br>10<br>10 | 18<br>18<br>18 |
| S/N at 1mW Input 22.5kHz Deviation | 90MHz<br>98MHz<br>106MHz | dB<br>dB<br>dB | DC (AC)<br>DC (AC) 50<br>DC (AC) | DC (AC)<br>DC (AC) 45<br>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 | | ± 3 / ± 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.

# RP-7930B TROUBLESHOOTING GUIDES

## TROUBLESHOOTING

| Circuit | Symptom | Cause and Remedy |
|---|---|---|
| General | No sound | • Speakers are not connected:<br>Check the speaker connection.<br>• Wrong function is selected:<br>Set switch to the proper position.<br>• Defective volume control:<br>Set the volume control to a proper sound level.<br>• Defective earphone jack:<br>Replace the earphone jack.<br>• Mute function is active:<br>Release it by remote control. |
| AM | No sound, weak sound (Low sensitivity) | • Improper location of unit:<br>Rotate or reposition the unit.<br>• Defect in IFT102:<br>Check resistance, voltage, and current. Replace as needed.<br>• Defect AM antenna coil or oscilloscope coil:<br>Replace if necessary.<br>• Intermediate Frequency tuning faulty:<br>Readjust (see "Alignment and Adjustment").<br>• RF tracking faulty:<br>Readjust (see "Alignment and Adjustment").<br>• Defective IC102:<br>Check voltages. Replace if necessary.<br>• Poor contact in antenna circuit:<br>Check resistance and resolder. |
| FM | No sound, weak sound (Low sensitivity) | • FM antenna not connected:<br>Connect the built-in or external antenna.<br>• Defective band selector switch:<br>Replace or repair the switch.<br>• Defective IC102:<br>Check voltages. Replace if necessary.<br>• Intermediate Frequency tuning faulty:<br>Readjust (see "Alignment and Adjustment").<br>• Poor contact in FM antenna circuit:<br>Resolder or repair as required. |
| Tape | No sound/recording, unsteady tape sound, weak sound | • Dirty capstan or head:<br>Clean the capstan or head with alcohol.<br>• Irregular cassette tape winding:<br>Replace tape.<br>• Defective IC201:<br>Check voltages. Replace if necessary.<br>• Cassette erasure prevention tabs broken out:<br>Replace tape or cover tab openings with adhesive tape. |

# RP-7930B TROUBLESHOOTING GUIDES

| Circuit | Symptom | Cause and Remedy |
|---|---|---|
| CD | Cannot read the TOC,<br>no display,<br>no sound | • Disc is inserted upside down:<br>Insert disc correctly.<br>• Disc is dirty:<br>Wipe clean with a soft cloth.<br>• Disc is scratched:<br>Use a new disc.<br>• Disc is seriously warped:<br>Use a new disc.<br>• A non-standard disc has been inserted:<br>Use only a brand name disc.<br>• Moisture has formed inside the CD deck:<br>Wait about 20 to 30 minutes.<br>• Defect in the servo control board:<br>Replace or repair as required.<br>• Defect in the CD pickup mechanism:<br>Replace as required. |

# REPLACEMENT PARTS

**BEFORE REPLACING PARTS, READ THE FOLLOWING:**

**Approved Substitute Stock Numbers - Before ordering stock numbers in the part list, look for an approved substitute stock number in the current Price Schedule. This will minimize your service time and avoid ordering parts you already have in stock.**

**PRODUCT SAFETY NOTE: Components marked with a critical safety symbol have special characteristics important to safety. Before replacing any of these components, carefully read the PRODUCT SAFETY NOTICE in the basic service data. Do not degrade the safety of the set through improper servicing. Although assemblies as a whole may not be marked with a critical safety symbol , replacement of assemblies with other assemblies not approved may result in a safety hazard.**

**⚠ Critical Safety Symbol**

**● Not Eligible For Warranty**

**Warranty Status of Assemblies and Parts - All assemblies and components shown in this part list are eligible for warranty exchange or replacement except those with a dot shown to the left of the Description. Assemblies and components with a dot to the left of the Description are NOT eligible for warranty exchange or replacement.**

**Warranty replacement of cabinet parts requires the approval of a Thomson Consumer Electronics Field Service Manager.**

**Warranty Status and Specifications of assemblies and components are subject to change without notice. Consult the TCE Parts Pricing Microfiche for the latest warranty status information.**

**@NOTE: When ordering components that are listed more than once in this part list, always adhere to the serial number application guidelines given in the description column. If a serial number application guideline is not given, always select the component with a value, rating, other specification or identification marking(s) that match those of the corresponding component in the instrument you are servicing.**

**RP-7930B**

### CABINET & CHASSIS

| Symbol | Stock | Drawing | Description |
|---|---|---|---|
| 1 | 6A26787 | 43-07930-02 | LENS, CASSETTE DOOR |
| 2 | 9A26788 | 66-07930-02 | DOOR, CASSETTE |
| 3 | 3A26789 | 36-07930-00 | SPRING, CASSETTE DOOR |
| 4 | 6A28734 | 43-07930-01 | LENS, DISPLAY CD |
| 5 | 89A26791 | 41-07930-01 | GRILLE, NET "R" |
| 6 | 45A26792 | 81-00088-00H | FOOT, RUBBER |
| 7 | 98A26793 | 60-07930-01 | PANEL, FRONT |
| 14 | 43A28737 | 53-07931-01 | BUTTON, "R" CD |
| 15 | 43A28736 | 53-07931-00 | BUTTON, "L" CD |
| 17 | 89A26799 | 41-07930-00 | GRILLE, NET "L" |
| 18 | 43A25141 | 51-00088-00 | KNOB, TUNING |
| 34 | 43A28735 | 53-07930-01 | KEY, CASSETTE COMMAND |
| 40 | 3A28739 | 74-13244-00B | SPRING, BATTERY TERMINAL |
| 42 | 98A26800 | 61-07930-01 | CABINET, REAR |
| 45 | 9A25146 | 58-00088-00 | DOOR, BATTERY |
| 46 | 38A25143 | 74-13244-01A | SPRING, BATTERY |
| 48 | 43A26802 | 52-00088-00 | KNOB, SLIDE |
| 50 | 9A30713 | 57-07930-02 | COVER, HANDLE |
| 51 | 78A26803 | 57-07930-01 | HANDLE |
| 55 | 43A25134 | 53-00088-02 | BUTTON, BASS BOOST |
| 56 | 43A25150 | 51-00088-02 | KNOB, ROTARY VOLUME |
| 66 | 2A28743 | 39-07930-06 | PLATE, CLAMPER |
| 67 | 2A25164 | 55-00141-01 | HOLDER, CLAMPER |
| 68 | 2A28744 | 55-09019-01A | CLAMPER |
| 69 | 60A26917 | 68-00023-00 | FELT |
| 70 | 2A28745 | 97-09019-00 | MAGNET |
| 72 | 9A26811 | 66-07930-01 | DOOR, CD |
| 73 | 43A25160 | 53-00088-03 | BUTTON, EJECT CD |
| 74 | 3A28738 | 36-00088-01D | SPRING, CD DOOR OPEN |
| 78 | 3A26814 | 36-07930-01 | SPRING, CD DOOR |
| COR | 66A21431 | 30-00030-00G | ⚠ CORD, AC/POWER |
| MEC | 73A28740 | 00-00231-01 | MECHANISM, CD ASY |

### CASSETTE MECHANISM

| | | | |
|---|---|---|---|
| 4 | 5A26780 | 003530301 | REEL, TAKEUP ASY |
| 5 | 5A26781 | 003530031 | REEL, SUPPLY ASY |
| 7 | 2A25203 | 000110070 | GEAR FF |
| 8 | 2A26782 | 000110069 | ARM, RS |
| 31 | 1A25204 | 002328301 | ROLLER ARM ASY |
| 34 | 2A26783 | 011120301 | ARM, RF ASY |
| 36 | 1A25205 | 011135015 | BELT, FLYWHEEL |
| 37 | 2A25206 | 009036301 | FLYWHEEL, ASY |
| 38 | 1A25207 | 009064085 | BELT, MAIN |
| 40 | 6A25208 | 005036003 | PULLEY |
| 48 | 2A25209 | 030014002 | SLIDER, E |
| 49 | 39A25210 | 020428100 | SWITCH, MAIN |
| 51 | 72A22523 | EG-530AD-9B | MOTOR |
| 52 | 62A25211 | YB-BS0951 | HEAD R/P |
| CAS | 62A25137 | 94-10200-02 | CASSETTE MECHANISM |

### ELECTRICAL COMPONENTS

| | | | |
|---|---|---|---|
| ANT | 82A26821 | 23-07930-00 | ANTENNA, ROD |
| CF101 | 36A25175 | 09-50107-20T | FILTER |
| CF102 | 36A25176 | 09-00455-01T | FILTER |
| D101 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D102 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D103 | 16A11218 | 02-01043-00 | DIODE FV-1043 |
| D104 | 17A25173 | 02-50000-02T | DIODE LED |

# REPLACEMENT PARTS (Continued)

| Symbol | Stock | Drawing | Description |
|---|---|---|---|
| D201 | 198597 | 02-04001-00 | DIODE 1N4001 |
| D202 | 198597 | 02-04001-00 | DIODE 1N4001 |
| D203 | 198597 | 02-04001-00 | DIODE 1N4001 |
| D204 | 16A14915 | 02-50068-00 | DIODE ZENER |
| D205 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D206 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D207 | 16A24329 | 02-50075-00 | DIODE ZENER |
| D208 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D801 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D802 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D807 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D808 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| D810 | EA16X0878 | 02-04148-00 | DIODE 1N4148 |
| IC101 | EA33X9422 | 03-07205-00 | IC AN7205 |
| IC102 | 33A25174 | 03-07024-00 | IC AN7024 |
| IC201 | EA33X9424 | 03-07312-00 | IC AN7312 |
| IC202 | 33A25179 | 03-07769-00 | IC TA7769P |
| IC801 | 33A26826 | 03-09220-01 | IC KA9220B |
| IC802 | 33A26828 | 03-09282-00 | IC KS9282B |
| IC803 | 33A26827 | 03-09270-00 | IC KA9270 |
| IC804 | 33A26829 | 03-57010-43 | IC KS57C0104-12 |
| IC805 | 33A26775 | 03-09258-00 | IC KA9258D |
| J201 | 41A25180 | 12-00035-31 | JACK |
| LCD1 | 63A26831 | 91-00088-03 | DISPLAY LCD |
| Q201 | 15A26816 | 01-09013-07 | TRANSISTOR 9013G |
| Q202 | 15A11215 | 01-09014-03 | TRANSISTOR 9014C |
| Q203 | 15A26816 | 01-09013-07 | TRANSISTOR 9013G |
| Q204 | 15A11215 | 01-09014-03 | TRANSISTOR 9014C |
| Q205 | 15A11215 | 01-09014-03 | TRANSISTOR 9014C |
| Q206 | 15A26815 | 01-02012-00 | TRANSISTOR 2SD2012 |
| Q207 | 15A15170 | 01-09015-03 | TRANSISTOR 9014C |
| Q208 | 15A11215 | 01-09014-03 | TRANSISTOR 9014C |
| Q209 | 15A11215 | 01-09014-03 | TRANSISTOR 9014C |
| Q801 | 15A10368 | 01-00928-00 | TRANSISTOR KSA928A-Y |
| Q802 | 15A12584 | 01-00124-05 | TRANSISTOR DTC124ES |
| Q803 | 15A25193 | 01-01317-00 | TRANSISTOR 2SA1317 |
| SOC | 8A25151 | 12-00004-09 | SOCKET AC |
| SPE | 95A28741 | 14-03508-340 | SPEAKER |
| SW1 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SW101 | 39A26770 | 16-10202-44L | SWITCH SLIDE |
| SW2 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SW201 | 39A25182 | 16-10902-02L | SWITCH PUSH |
| SW202 | 39A25187 | 16-10202-15L | SWITCH PUSH |
| SW203 | 39A25183 | 16-10603-09L | SWITCH SLIDE |
| SW204 | 39A25184 | 16-10203-58L | SWITCH SLIDE |
| SW3 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SW4 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SW5 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SW6 | 39A26820 | 16-10102-03S | SWITCH TACT |
| SWI | 39A25181 | 16-10101-07H | SWITCH MICRO CD DOOR |
| SWI | 39A26818 | 11-00088-15A | SWITCH LEAF BATTERY |
| SWI | 39A28742 | 31-60350-54 | SWITCH LEAF |
| TRA | 88A25152 | 15-00088-05 | ⚠ TRANSFORMER POWER |
| X801 | 41A26776 | 04-16934-41 | CRYSTAL |