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Radio Shack's nationwide network of service facilities provides quick, convenient, and reliable repair services for all of its computer products, in most instances. Warranty service will be performed in accordance with Radio Shack's Limited Warranty. Non-warranty service will be provided at reasonable parts and labor costs.

Because of the sensitivity of computer equipment, and the problems which can result from improper servicing, the following limitations also apply to the services offered by Radio Shack:

1. If any of the warranty seals on any Radio Shack computer products are broken, Radio Shack reserves the right to refuse to service the equipment or to void any remaining warranty on the equipment.

2. If any Radio Shack computer equipment has been modified so that it is not within manufacturer's specifications, including, but not limited to, the installation of any non-Radio Shack parts, components, or replacement boards, then Radio Shack reserves the right to refuse to service the equipment, void any remaining warranty, remove and replace any non-Radio Shack part found in the equipment, and perform whatever modifications are necessary to return the equipment to original factory manufacturer's specifications.

3. The cost for the labor and parts required to return the Radio Shack computer equipment to original manufacturer's specifications will be charged to the customer in addition to the normal repair charge.
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B. CUSTOMER assumes full responsibility for the condition and effectiveness of the operating environment in which the Equipment and Software are to function, and for its installation.

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C. No action arising out of any claimed breach of this Warranty or transactions under this Warranty may be brought more than two (2) years after the date of the action has accrued or more than four (4) years after the date of the Radio Shack sales document for the Equipment or Software, whichever first occurs.
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E. CUSTOMER is permitted to make additional copies of the Software only for backup or archival purposes or if additional copies are required in the operation of one computer with the Software, but only to the extent that the Software allows a backup copy to be made. However, for TRS-80 Software, CUSTOMER is permitted to make a limited number of additional copies for CUSTOMER'S personal use.
F. CUSTOMER may resell or distribute unaltered copies of the Software provided CUSTOMER has purchased one copy of the Software for each one sold or distributed. The provisions of this Software License shall also be applicable to third parties receiving copies of the Software from CUSTOMER.
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V. APPLICABILITY OF WARRANTY
A. The terms and conditions of this Warranty are applicable between RADIO SHACK and CUSTOMER to either a sale of the Equipment and/or Software to CUSTOMER or to a transaction whereby RADIO SHACK sells or conveys such Equipment to a third party for lease to CUSTOMER.
B. The limitations of liability and Warranty provisions herein shall be to the benefit of RADIO SHACK, the author, owner and/or licensee of the Software and any manufacturer of the Equipment sold by RADIO SHACK.

VI. STATE LAW RIGHTS
The warranties granted herein give the original CUSTOMER specific legal rights, and the original CUSTOMER may have other rights which vary from state to state.
TRS-80® Modem IB
Operation Manual
Important Note

Before connecting your Modem IB to the phone lines, you must notify your local telephone company of the:

Manufacturer: Radio Shack
Model: Modem IB, #26-1175
ISOC Number: RJ11C
FCC Number: AA088U-68645-DI-E
Ringer Equivalence Number (REN): 0.0B

This information also appears on the bottom of the modem.

The Modem IB must not be connected to:

- Coin-operated phones
- Party-line phones
- Multiple-line phones
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Introduction

Congratulations for selecting the TRS-80® Modem IB. This purchase will give you the opportunity to enter the world of computer telecommunications. The Modem IB is designed to let you originate and answer calls at 300 baud. The Modem IB lets you use your computer, communications software, your telephone, and the telephone lines to send or receive programs or contact information services.

The Modem IB is designed to be used with any TRS-80 computer or data terminal that has RS232-C interface capabilities.

This manual will:

- Describe the Modem IB.
- Show you how to connect the modem to a power source and your TRS-80.
- Show you how to use the modem.
1/ Description of the Modem IB

The Modem IB is a self-contained, FSK (Frequency Shift Keying) telephone interface. With the Modem connected, your phones are available for conversational use only when the MODE switch is OFF. So be sure that the MODE switch is set to OFF when you are not using the Modem.

The following illustrates the details of the Modem IB:

![Modem IB Diagram](image)

Figure 1. Modem IB (Top View)

1. **Power/Mode Switch.** Selects either ORIGinate or ANSwer mode.
2. **Power On Indicator.** This indicator illuminates when the Modem is ON.
3. **CARRIER Signal Indicator.** This indicator lights up when a carrier tone is detected.
Figure 2. Modem IB (Rear View)


2. **Color Computer RS-232C Connector.** Connect a 4-Pin DIN plug to this connector. Connect the other end of the cable to the RS-232C interface of the TRS-80 Color Computer.

3. **Power Jack.** Connect the appropriate end of the AC Adapter Cable to this Jack.

4. **Phone Jack.** Connect the telephone’s modular plug to this connector.

5. **Modem-to-Telephone Line Connector.** Connect the modem’s modular plug into the telephone wall jack.
2/ Setting Up the Modem IB

Be sure the Modem IB is properly connected to the power supply source and your TRS-80 before you try to use it. This section will describe how to make these connections.

Connecting the Modem IB to a Power Source

The Modem IB comes with an AC Adapter. Connect the appropriate end of the AC Adapter to the modem. Connect the two-prong plug to a 120V wall-outlet or approved power strip, such as Radio Shack's Automatic Control Power Strip (26-1429).

Connecting the Modem IB to a TRS-80

When connecting the Modem IB to a TRS-80 computer or data terminal, be sure to use the correct cable. The cable you use will depend on the TRS-80 you have. Table 1 will describe the appropriate cables; Table 2 will provide quick instructions on the TRS-80 connection locations. See your TRS-80 owner's manual for more details.

<table>
<thead>
<tr>
<th>Modem to TRS-80 RS-232C Cables</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-1408</td>
</tr>
<tr>
<td>26-3014</td>
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</tbody>
</table>

Table 1

<table>
<thead>
<tr>
<th>TRS-80 RS-232C Connection Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRS-80</td>
</tr>
<tr>
<td>Model I</td>
</tr>
<tr>
<td>Model II/12/16</td>
</tr>
<tr>
<td>Model III/4</td>
</tr>
<tr>
<td>Color Computer/MC-10</td>
</tr>
</tbody>
</table>

Table 2

To connect the Modem IB and your TRS-80 . . .

1. Connect one end of the appropriate cable to the Modem IB's RS-232C Connector.
2. Connect the other end of the cable to the TRS-80's RS-232C Interface Connector.
Connecting the Modem IB to a Telephone . . .

The way you connect the Modem IB to a telephone depends on how your telephone is connected to the wall. The following three figures illustrate these conditions.

Figure 3. The Modem IB/Telephone Connection

If your telephone has this type of connection, attach the Modem IB as shown.

If you're using your Modem IB outside the USA, you may need a Modular-to-Modular Cable (279-374) and a Duplex Modular Jack.

Figure 4. Connection to Four-Prong Jacks

If your telephone has the older style, four-prong connection, use an adapter (279-360) to connect it to your Modem IB as shown.

Figure 5. Wall Connector

If your telephone is wired directly to the wall, contact your telephone company.
3/ Using the Modem IB

Once the Modem IB is properly connected to a power source and a TRS-80, you’ll find the modem extremely easy to use.

You can use the Modem IB in two ways:

- To call a Host computer or information service (i.e., you originate the call).
- To have a Host computer call you (i.e., you answer the call).

**Originating Mode**

When you want to place a call to a Host computer or information service, you will “originate” the call.

1. Dial the number on the phone to contact the remote computer and listen for a high-pitched tone. Set the Power/Mode Switch to ORIG. When the tone changes, hang up the phone.

2. When the Carrier LED illuminates (CD), the Modem is ready to handle data communications.

3. To terminate the call, set the Power/Mode Switch to OFF. This will automatically hang up the phone.

**Answer Mode**

When you are contacted by a Host computer, use the following steps to “answer” a call and establish communications.

1. Make sure the Host’s baud rate is 300.

2. Answer the telephone (call from remote terminal). Make sure that the phone connection is a clear, noise-free one.

3. Set the Power/Mode Switch to ANS. When the tone changes, hang up the phone.

4. When the Carrier LED illuminates, proceed with data exchange.

5. To terminate a call, set the Power/Mode Switch to OFF.
4/ Using the Modem IB with Videotex Software

A modem that is connected to a TRS-80 running a videotex software package constitutes one of the most common (and exciting!) ways to use your Modem. This section will describe how to use the Modem IB with VIDTEX (the videotex program) on most TRS-80 Computers.

Follow this procedure:

1. Connect the system as described earlier in this manual.
2. Load and run your version of VIDTEX.
3. Dial an information service's telephone number and listen for a high-pitched tone. Set the Power/Mode Switch to ORIG. When the tone changes, hang up the phone.
4. When the Carrier LED illuminates (CD), you are ready for communication.
5. Complete the log-on sequence for your information service and follow the procedure described in your videotex package and information service user's guide.
5/ Care and Maintenance

The most common cause of problems is a bad telephone connection. Noise on the line or a weak signal can result in lost or invalid data. Try to re-dial the call to insure that the connection is free of noise and interference.

The only maintenance your Modem IB should require is a periodic checking of cables and connections. If you are experiencing problems during data transfer, always check the cable connections. If you still experience problems, check with your Radio Shack Computer Center.
6/ Specifications

Receive Frequencies

**Answer**
- Mark 1270 Hz;
- Space 1070 Hz

**Originate**
- Mark 2225 Hz;
- Space 2025 Hz

Transmit Frequencies

**Answer**
- Mark 2225 Hz;
- Space 2025 Hz

**Originate**
- Mark 1270 Hz;
- Space 1070 Hz

Transmit Power
- $-13 \text{ dBm}, +/ - 1\text{ dB}$

Receive Sensitivity
- $-40 \text{ dBm}$

Baud Rate
- 300

Operating Temperature
- $55^\circ F - 85^\circ F (12.8^\circ C - 29.4^\circ C)$

Electrical Requirements
- 15 VAC at 300 mA supplied by UL listed AC adapter

Dimensions
- $6.5'' \times 7.5'' \times 2'' (16.5 \times 19.1 \times 5.1 \text{ cm})$

Weight
- 3.304 lbs (1.49 kg)

Humidity

**Operating environment:**
- 90% relative humidity
  (no condensation)

**Storage:**
- 90% (no condensation)