ASD-4
(Automatic Sharing Device)
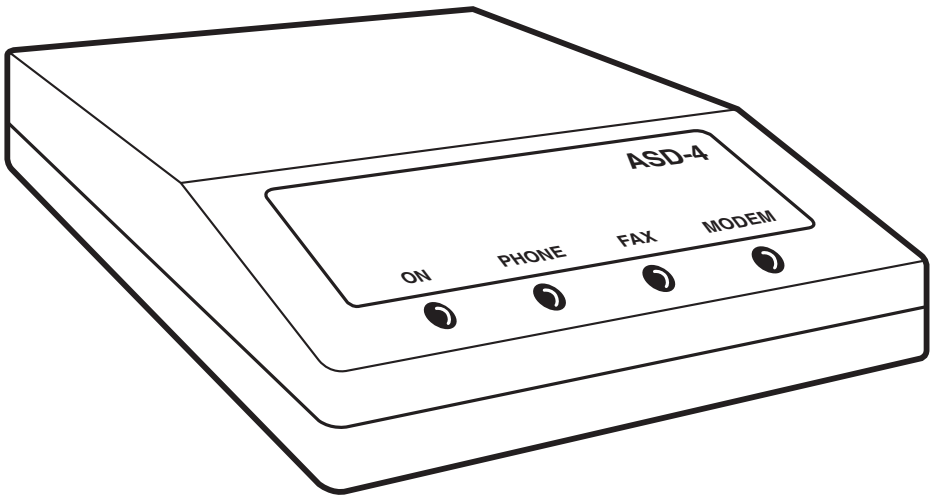
FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

TRADEMARKS USED IN THIS MANUAL

UL is a registered trademark of Underwriters Laboratories Incorporated.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

Registration Information

The ASD-4 has been registered with the Federal Communications Commission (FCC). It meets FCC requirements and may be connected directly to your telephone line.

Your telephone company may ask for the ASD-4's FCC registration number (BZQ8RT-17855-MA-N) and/or its Ringer Equivalence Number, or REN (0.0 Bells). You can confirm these numbers by comparing them to the information that appears on the registration label on the bottom of your ASD-4. You must, upon request, provide this information to your telephone company.

Use the REN to help determine the maximum number of devices you can connect to your telephone line without eliminating the devices' ability to ring when your number is called. In many areas, the sum of the RENs of all devices connected to one line should not exceed 5.0 Bells. To determine how many devices you can connect to your line, contact your local telephone company to find out the maximum REN for your area.

The FCC requires that connection to the telephone network be made through Universal Service Order Code (USOC) jacks supplied by the telephone company. (If you need to order a modular jack for the ASD-4 from the telephone company, request a USOCRJ11C.) The FCC also requires that all registered telephone products that are not provided by the telephone company be repaired only by the manufacturer or a factory-authorized service agent.

The ASD-4 may not be connected to a party-line or coin-line telephone network.

If your ASD-4 does not function properly, disconnect it. Follow the instructions provided in **Chapter 6: Troubleshooting** concerning repair service.

If the ASD-4 causes harm to the network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, the telephone company will notify you as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in the telephone network. Should these changes affect the ASD-4, the telephone company must notify you, in writing, to enable you to maintain uninterrupted service.

Contents

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Contents (cont'd)

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Appendix and Section **Page**

1. Specifications

FCC Registration —   BZQ8RT-17855-MA-N

DOC Approval —   1081-56-06A

DOC Load —   20

**Ringer
Equivalency —**   Zero (0.0 Bells)

User Controls —   DTMF-tone commands from attached telephone

Indicators —   (4) LEDs: ON (power), PHONE, FAX, and MODEM

Connectors —   (5) RJ-11 female:

Power —   For 120-VAC operation:
  From wallmount power supply PS418 (UL® listing
    50J5-E87297 or 81J1-E81356, CSA listing
    LR57562 or LR84186):
    Input: 120 VAC, 60 Hz, 17 watts;
    Output: 9 VAC at 1.5 amps;
  For 220-VAC operation:
    From wallmount power supply PS418E:
      Input: 220 VAC, 50 Hz, 17 watts;
      Output: 9 VAC at 1.5 amps;
  Consumption: 69 watts when line rings, 20 watts at all
    other times

Temperature —   -40 to 150˚ F (-40 to 65˚ C)

Humidity —   Up to 90% noncondensing

Size —   5.75"H x 1.75"W x 6"D (14.6 x 4.4 x 15.2 cm)

Weight —   2 lb. (0.9 kg)

2. Introduction

2.1 General Information

Thank you for purchasing an ASD-4. The ASD-4 is a state-of-the-art telephone-line-sharing device that lets you operate multiple telecommuni-cations peripherals without installing extra dedicated telephone lines. The ASD-4 quickly directs incoming telephone calls to one of four destinations: a phone, an answering machine, a fax machine, or a modem or other device.

Here are some of the telephone-activated devices that can be connected to the ASD-4:

- Modem

- Facsimile (fax) machine

- Fax/modem

- Laser-fax cartridge

- Telephone Answering Device (TAD, answering machine)

- Telephone

- Bulletin Board System (BBS)

- Call diverter

- Credit-card-authorization terminal (CAT)

- Order-process system

- Point-of-sale (POS) terminal

- Money-order-dispensing system

- Fluid-storage system

- Flow monitor

- Energy-management system

- Security alarm and/or monitoring system

- Remote diagnostic system

- Time- and attendance-recording system

2.2 The ASD-4's Ports

There are five modular ports and a power input port on the rear panel of the ASD-4, as shown in Figure 2-1:
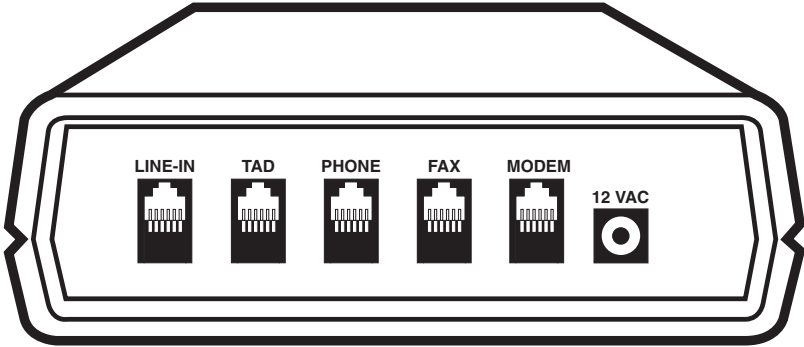
Figure 2-1. The rear panel of the ASD-4.

You connect telephone equipment to the modular ports on the ASD-4 as follows:

Plug the incoming line from the telephone company into the LINE-IN port.

Plug your Telephone Answering Device (TAD, answering machine or integrated phone/answering machine) into the TAD port. The ASD-4 will route a call to the TAD and PHONE ports if it answers the call and does not detect routing tones. (The TAD and PHONE ports are internally connected and ring simultaneously.)

Connect a single phone line to the PHONE port, regardless of whether you're using one phone, multiple phones, or a KSU/PBX system. The ASD-4 will route a call to the TAD and PHONE ports if it answers the call and does not detect routing tones.

Plug your fax machine into the FAX port. For the ASD-4 to automatically transfer any fax call with a CalliNG (CNG) tone to your fax machine, the fax machine must be plugged into this port. You can connect a modem or fax/modem to this port in lieu of a fax machine.

You can plug any type of telephone device to the MODEM port. If you are connecting a modem to the ASD-4, we recommend that you plug the modem into this port.

3. Installation

NOTE

If your application involves only a single phone on the ASD-4's line, you might be able to use the basic installation procedure described in the Quick Start Guide (Appendix A).

3.1 Installation Overview

The ASD-4 can be installed on any type of modular or non-modular system that consists of one or more lines with one or more phones. A modular system consists of phone cables that you can plug into and unplug from the telephone equipment. A non-modular system consists of cables that are "hard-wired" into the telephone equipment—that is, you can't plug or unplug the equipment. The installation process depends on the type of phone system you have; you might have to get a telephone installer to install the ASD-4 on a non-modular system.

Many offices have a KSU or a PBX phone system. The ASD-4 works with either of these systems—or no system at all. Simply follow the appropriate installation instructions in this chapter.

This chapter explains how to install the ASD-4 in most phone configurations that appear in a home or office. You can install the ASD-4 into any one of the following phone configurations:

1. A single line with a single phone.

2. A single line with multiple single-line phones (with the ASD-4 connected as one extension), maintaining or not maintaining exclusion.

3. Two lines with or without a two-line phone on the same line as the ASD-4, with or without the ASD-4 connected to the two-line phone, maintaining or not maintaining exclusion on the ASD-4's line.

4. A KSU/PBX system.

5. Any of the above with Caller ID equipment.

Installation procedures for each of these configurations are provided in the following sections.

3.2 Before You Install

3.2.1 WHAT YOU'LL NEED

Regardless of your site's phone configuration, you'll need the following equipment to install the ASD-4:

- One 7-ft. (2.1-m) telephone-line cable with male RJ-11 connectors at both ends—This is provided with your ASD-4.

- Additional telephone-line cables with RJ-11C or RJ-13C connectors—You will need additional telephone cables for as many pieces of equipment as you intend to attach to the ASD-4. These cables are usually supplied by the equipment manufacturer, or you can purchase them through Black Box.

- Extension cables (optional)—If the equipment you want to attach to the ASD-4 is not located near the unit, you might need extension cables.

3.2.2 WHAT ELSE WE RECOMMEND

We recommend that you use surge protection for all telecommunications devices. The ASD-4's power supply should be connected to a surge suppressor and/or a line conditioner. Also attach in-line surge protectors to the telephone line conected to the ASD-4. If you need surge-protection equipment, contact Black Box.

3.2.3 WHEN YOU SHOULD MAINTAIN EXCLUSION

You must configure the ASD-4 to maintain exclusion if any of the following conditions apply:

- You would like the ASD-4 to ring any extension phones more than once.

- You want to do anything more sophisticated than place or receive calls with rotary or pulse-dial extension phones.

- You want to use the ASD-4's Open Line Notification feature with extension phones.

For more about maintaining exclusion, see **Section 3.5**.

3.3 Installing the ASD-4 on a Single Line with a Single Phone

Figure 3-1, below, shows a single line/single phone arrangement before installation of the ASD-4. If you have this type of arrangement, you can install the ASD-4 yourself using the instructions provided in this section.
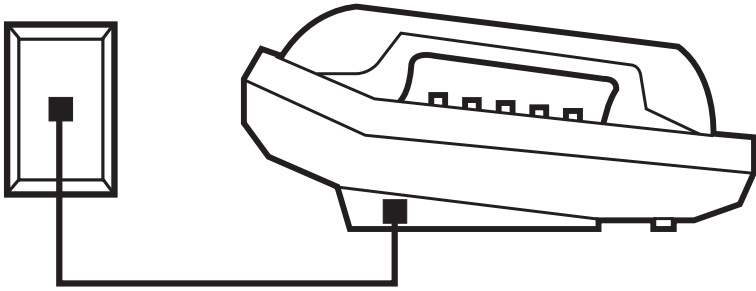
Figure 3-1. Single-line/single-phone arrangement before ASD-4.

Figure 3-2, on the next page, shows the ASD-4 installed for a single-line/single-phone arrangement. To perform this installation, follow these steps:

1. Unplug the telephone cable from the wall jack.

2. Plug one end of the telephone cable provided with the ASD-4 into the LINE-IN port on the back of the ASD-4. Plug the other end of the cable into the wall jack where the phone was connected.

3. Plug the small end of the AC power cord provided with the ASD-4 into the power input jack labeled "12VAC" on the back of the ASD-4. Plug the AC adapter into a standard outlet.

The ASD-4 begins a self-check as soon as you plug it in. The green LED labeled ON flashes during this test. When the ASD-4 completes its self-check, the ON LED should stop flashing and remain steadily illuminated. (If the LED continues to flash, and any peripheral equipment you have already connected to it is on hook, call for technical support.)
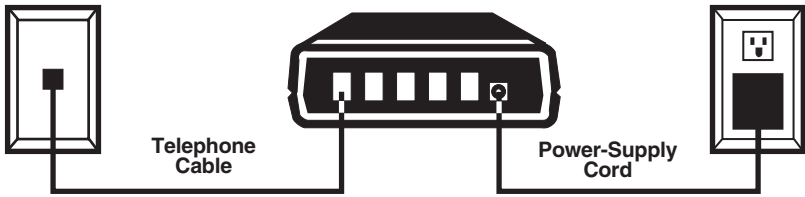
Figure 3-2. ASD-4 installed for a single-line/single-phone arrangement.

3.4 Connecting Telephone Equipment to the ASD-4

Figure 3-3, below, shows telephone equipment connected to the ASD-4. This figure shows a complete installation for a single line/single phone arrangement. While connections to wall jacks might be different for other types of phone configurations, the connections to the ASD-4 remain the same for all configurations.
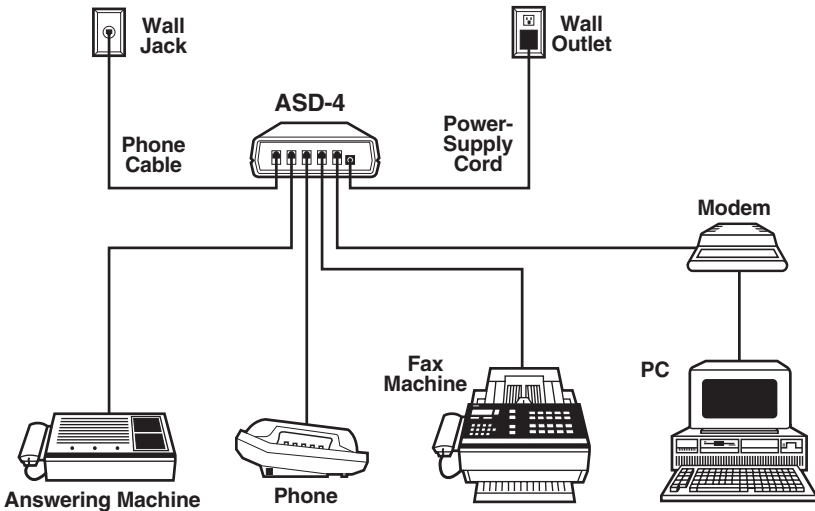
Figure 3-3. Equipment connected to the ASD-4 for a single-line/single-phone arrangement.

NOTE

Do not place the ASD-4 on, or in close proximity to, peripheral equipment.

NOTE

To make full use of the ASD-4's automatic switching abilities, you must connect your equipment to the proper ports, as explained below, and you must set your equipment to answer on one or two rings.

To connect your telephone equipment to the ASD-4, follow these steps:

1. If you haven't done so already, connect the phone by plugging its phone cable into the ASD-4's PHONE port.

2. To connect a TAD, first plugging a phone cable into the TAD's phone-line jack. (This jack will probably be labeled "Line," "Telephone Line," or something similar.) Then plug the other end of the cable into the ASD-4's TAD port.

NOTE

The ASD-4 has an Automatic TAD Transfer feature associated with the TAD port (see Section 5.3.4**). The ASD-4 has this feature factory-preset OFF.**

3. To connect a fax machine or a fax/modem card, first plug one end of a phone cable into the appropriate jack on the fax or fax/modem. (Like the TAD's, this jack will probably be labeled "Line," "Telephone Line," or something similar.) Then plug the other end of the cable into the ASD-4's FAX port.

4. To connect a telephone device such as a regular modem, plug one end of a phone cable into the the "incoming phone line" jack on the telephone device. (Check the device's manual to make sure you use the right jack and that you connect the cable properly.) Then plug the other end of this cable into the ASD-4's MODEM port.

3.5 Installing the ASD-4 as an Extension [on a Single Line with Multiple Single-Line Phones]

If you install the ASD-4 as an extension, first determine whether you'll require that exclusion be maintained on your system. "Exclusion" means that if one of the telephone devices on your ASD-4 is using the line (during a phone conversation, fax transmission, or modem session, for example), and another device on a different port goes off-hook, it will be excluded from the existing connection. The ASD-4 will send it a busy tone rather than give it access to the line.

Exclusion is always present among devices attached to the ASD-4. For example, if a device on the MODEM port is transmitting or receiving data and somebody picks up a phone attached to the TAD or PHONE port, the phone will always get a busy tone and the data exchange will not be disrupted.

NOTE
The TAD and PHONE ports are connected inside the ASD-4, so devices on these ports never exclude each other.

Exclusion is not automatically "maintained" (extended to extension phones on the same line) when the ASD-4 is installed as an extension. It is necessary to work with the phone wiring so that the phone line essentially runs through the ASD-4 (into its LINE-IN port and out of its PHONE port): This ties all extension phones on that line into the ASD-4's PHONE port. This might seem like a lot of trouble to go to, but when you have a fax or modem attached to the ASD-4, maintaining exclusion ensures that fax or modem communications won't be interrupted if an extension phone is picked up, and that the fax or modem won't suddenly drown out a vital conversation.

There are also other effects of exclusion to be mindful of. When exclusion is not maintained:

- Telephones on the same line as the ASD-4 (except any directly connected to the ASD-4's TAD or PHONE ports) ring only one time on an inbound telephone call.

- The ASD-4 can't fully support rotary/pulse-dialing extension phones: You can place and answer calls with them, but you can't control or program the ASD-4's features and functions with them.

- The ASD-4's Open Line Notification feature (see **Section 5.3.2**) is not available to extension phones.

If your application requires support for rotary/pulse-dialing extension phones or Open Line Notification, or if it requires that all extension phones ring continuously on an inbound call, or if you want to keep extension phones and your fax or modem from interfering with each other, see **Section 3.5.2** for how to install the ASD-4 to maintain exclusion. Otherwise, go on to **Section 3.5.1**.

3.5.1 EXCLUSION NOT MAINTAINED

If maintaining exclusion isn't necessary for your application, just choose the extension line to which you're going to connect the ASD-4 and use the procedure explained in **Section 3.3**. Figure 3-4, below, shows how your system should appear after you install the ASD-4 as an extension. Refer to **Section 3.4** for how to connect your telephone equipment to the ASD-4.
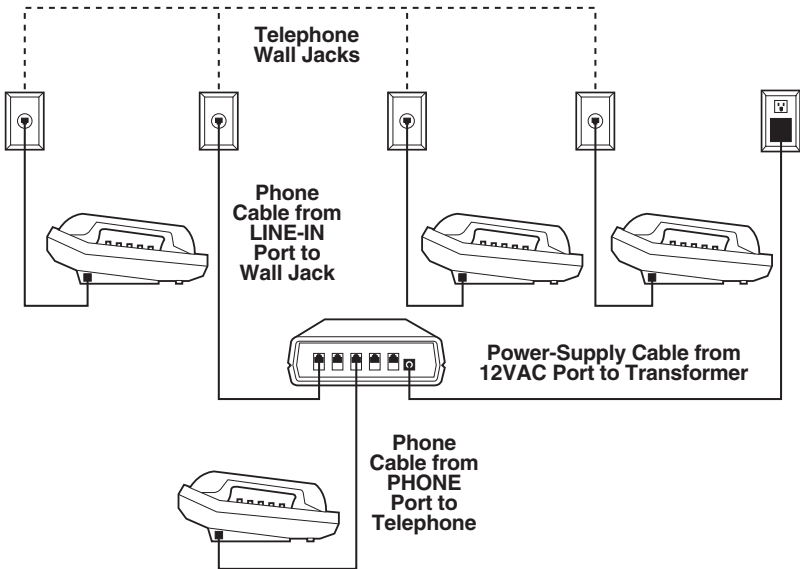
Figure 3-4. The ASD-4 installed as an extension (exclusion not maintained).

3.5.2 MAINTAINING EXCLUSION

To maintain exclusion, the phone line must terminate at the ASD-4, and all telephone equipment on other extensions must connect to the line through the ASD-4's PHONE port as shown in Figure 3-5 on page 14.

CAUTION!

You should be a telephone installer, or be familiar with telephone wiring, to complete this installation. If you have any questions or are not confident that you can complete this installation procedure, call technical support or a professional installer for further instructions. (Look in your phone book's Yellow Pages under "Telephone" to locate a professional installer.)

CAUTION!

Installing the ASD-4 on a given line will briefly interrupt phone service on that line for all telephone equipment using that line.

For this procedure, you need the following equipment:

- a pair of wire snippers with stripping abilities

- a regular screwdriver and a Phillips screwdriver

- two (2) RJ-11 wallmount-type jacks (available from Black Box)

- two (2) phone cables (also available from Black Box)

- a utility knife

To install the ASD-4 as shown in Figure 3-5, follow these steps:

1. Label one of the RJ-11 jacks "Number 1" and the other "Number 2." (Note that the RJ-11 jacks have four posts: the red post is marked [R], the green post is marked [G], the yellow post is marked [Y], and the black post is marked [B]. You will be attaching wires to these posts later.)

2. Pick a portion of the telephone line from the phone company to work on. This portion should be located (A) after the point where the line enters the premises, (B) before the point that the line routes to any phone jack, and (C) as close as possible to a place where you can put the ASD-4.

3. With the utility knife, strip that portion of the cable to expose the red, green, yellow, and black wires that compose it. (If the color codes of the wires are not red, green, yellow, and black, call for technical support.)

4. Cut the red and green wires and strip their insulation back from the cut ends to expose not more than an inch (2.5 cm) of their copper cores. Leave the yellow and black wires intact. At this point, no telephone equipment at your site should have a dial tone on this line.

NOTE

If possible, mount the RJ-11 jacks in the wall or on some stable, solid surface before continuing this installation. This might require additional equipment. Please read the remaining installation instructions before you mount the jacks, to make sure you understand how the jacks should be placed.

5. Connect the parts of the cut wires that run to the phone company to jack "Number 1" by attaching the free end of the red wire to the red post and the free end of the green wire to the green post.

6. Connect the parts of the cut wires that run to your site's telephone equipment to jack "Number 2" by attaching the free end of the red wire to the red post and the free end of the green wire to the green post.

7. Plug one end of a phone cable into jack "Number 1." Plug the other end of this cable into the LINE-IN port on the rear panel of the ASD-4.

8. Plug one end of a second phone cable into the PHONE port on the rear panel of the ASD-4. Plug the other end of this cable into jack "Number 2."

9. Connect the other telephone equipment as directed in **Section 3.4**. If the ASD-4 is not near the other equipment, you may need to run additional telephone wiring to the equipment to complete this installation.
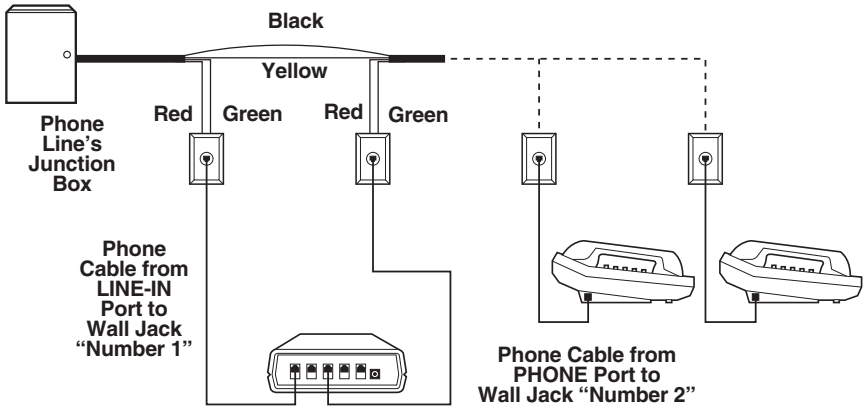
Figure 3-5. The ASD-4 installed as an extension (maintaining exclusion).

3.6 Installing the ASD-4 on a Two-Line System

This arrangement typically occurs in homes with a primary line (residence number) and a private business line (home-business number). Three sub-configurations are dealt with in the next three sections:

1. There will be one single-line phone on the same line as the ASD-4.

2. There will be one two-line phone on the same line as the ASD-4.

3. There will be two or more phones on the same line as the ASD-4.

3.6.1 ONE SINGLE-LINE PHONE ON THE ASD-4'S LINE

Use the single-line installation procedure described in **Section 3.3**.

3.6.2 ONE TWO-LINE PHONE ON THE ASD-4'S LINE

For this procedure, you will need two three-way adapters, and maybe an extra phone cable or two. The adapters can be purchased from any telephone or electronic-equipment dealer. See Figure 3-6 on the next page for a close-up of a three-way adapter.
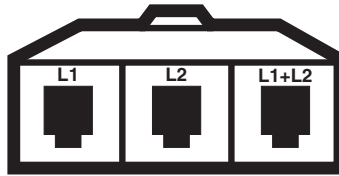
Figure 3-6. A three-way phone adapter.

To install the ASD-4 with a two-line phone and (optionally) a two-line TAD on one line of a two-line system, as shown in Figure 3-7 on the next page, follow these steps:

NOTE

This section assumes that the ASD-4 will be installed on the secondary line (L2). To Install the ASD-4 on the primary line, reverse "L1" and "L2" in these directions: Where the directions specify attaching a cable to "L1," attach it to "L2," and vice versa.

1. Plug one three-way adapter into the wall jack.

2. Plug the other three-way adapter into the two-line telephone. The jack on the two-line telephone might be labeled "L1+L2."

3. Plug one end of a phone cable into the "L1" port on one of the adapters. Plug the other end of the cable into the "L1" port on the other adapter.

4. Plug one end of a second phone cable into the "L2" port on the wallmounted adapter. Plug the other end of the phone cable into the LINE-IN port on the rear panel of the ASD-4.

5. Plug one end of a third phone cable into the PHONE port on the rear panel of the ASD-4. Plug the other end of the phone cable into the "L2" port on the adapter connected to the telephone.

6. If you're using a two-line TAD: Run the phone cable supplied with your TAD from the TAD's "L1+L2" port to the "L1+L2" port of the three-way adapter connected to the telephone.

7. Connect other telephone equipment to the ASD-4 as described in **Section 3.3**.
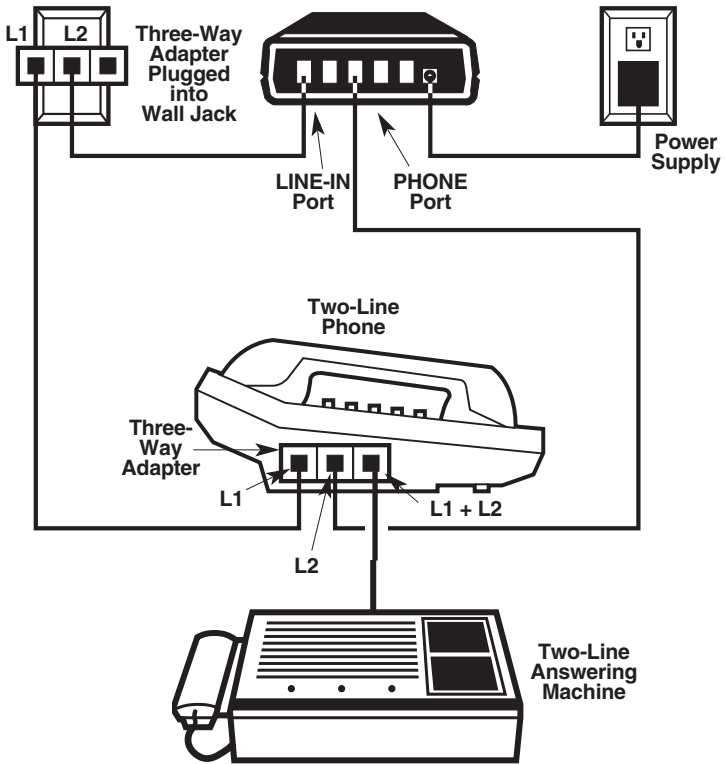
Figure 3-5. The ASD-4 installed in a two-line system with a two-line phone and a two-line TAD.

3.6.3 TWO OR MORE PHONES ON THE ASD-4'S LINE

If exclusion doesn't have to be maintained in your application (see the discussion in **Section 3.5**), the ASD-4 can be just another extension on the line. You can install it with a *single-line* phone attached to its PHONE port by following the single-line installation procedure described in **Section 3.3**. You can install it with a *two-line* phone attached to its PHONE port by following the installation procedure described in **Section 3.6.2**.

If your application requires that exclusion be maintained, the whole line must be attached to its PHONE port. Use the installation procedure described in **Section 3.5.2**, but be careful: Depending on which line you're attaching the ASD-4 to, you might need to cut and divert the yellow and black wires (L2—line 2) to the yellow and black posts, rather than the red and green wires (L1—line 1) to the red and green posts. Normally the line that was installed first for any given site will be on the red and green wires, and the line installed later will be on the yellow and black wires. If you can't determine which line is on which pair, call for technical support.

When exclusion is maintained this way, putting a two-line phone on the ASD-4's line is very simple, as opposed to the procedure detailed in the previous section. No three-way adapters are required. Look at Figure 3-5 on page 14: Since both lines go to each wall jack beyond jack "Number 2," plug it in just like any other extension—run a single phone cable from the two-line phone's "L1 + L2" jack to one of these jacks. If you want to use a two-line TAD, you can plug it into another of these jacks; or, if you want it to be at the same location as the two-line phone, plug a two-to-one adapter (an adapter that turns one jack into two, but sends *both* lines to *both* jacks) into the wall jack the two-line phone is on.

3.7 Installing the ASD-4 on a KSU/PBX System

A KSU/PBX phone system is common in a medium or large office arrangement in which calls are coming in on two or more lines and can be routed to any number of extensions. A KSU (key service unit) typically has features like call holding, music on hold, conference calling, and intercom paging.

Figure 3-6 on the next page shows telephone devices connected to the ASD-4 for a KSU phone system. For the ASD-4 to operate properly, it must be "in front" of the KSU or PBX. In other words, the ASD-4 must connect directly to the incoming telephone line (the last line in rollover).

CAUTION!

Do not plug the ASD-4 into a KSU/PBX phone jack. You may damage your phone system.

All equipment on that line (KSU/PBX, fax, modem, and so on) must be connected to the ASD-4's PHONE port.

CAUTION!

You should be a telephone installer or be familiar with telephone wiring to complete this installation. If you have any questions or are not confident that you can complete this installation procedure, contact technical support or a professional installer for further instructions. (Look in the Yellow Pages of the phone book under "Telephone" to locate a professional installer.)

Refer to Figure 3-6 to see how to install the ASD-4 on a KSU/PBX phone system. Connect other telephone equipment as directed in **Section 3.3**.
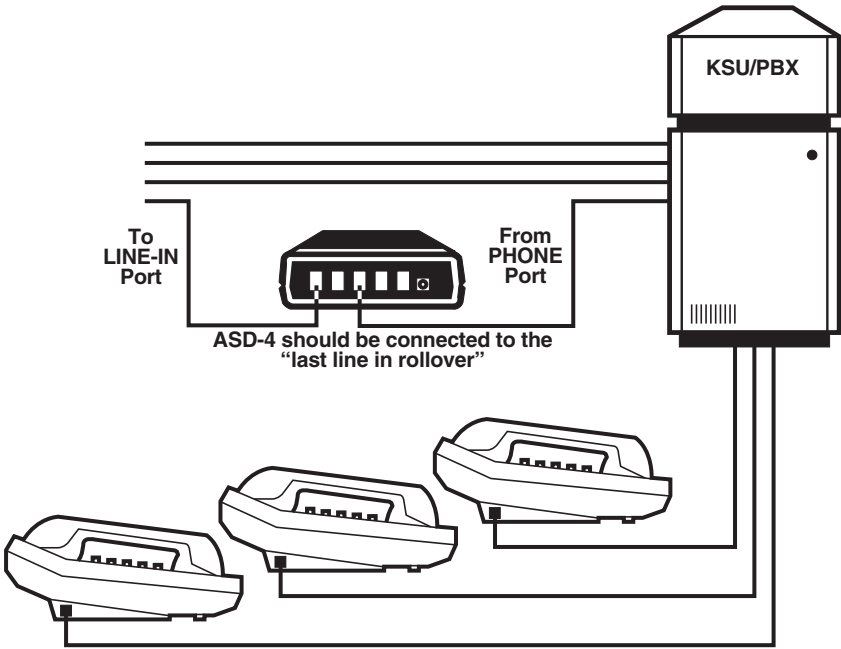
Figure 3-6. The ASD-4 installed on a KSU/PBX system.

3.8 Connecting Caller ID Equipment to the ASD-4

You can use Caller ID equipment with your ASD-4 to pre-screen your calls. For Caller ID equipment to work, it must receive two complete rings from the phone copmpany. However, the ASD-4 is factory-preset to answer all calls on one ring. To accommodate the Caller ID service, you must program the ASD-4 to answer calls on two rings (see **Section 5.4.7**).

To connect Caller ID equipment directly to the ASD-4, as shown in Figure 3-7 on the next page, first install the ASD-4 using the procedure that's right for your site (refer to **Sections 3.3** through **3.7**). Then follow these steps:

1. Take the telephone cable that runs from from the wall jack to the ASD-4's LINE-IN port, and unplug it from the wall jack. Plug the free end into the phone jack of the Caller ID equipment. This jack may be labeled "Phone."

2. Plug one end of another telephone cable (which you'll have to provide if one isn't provided with your Caller ID equipment) into the telephone-line jack on the Caller ID equipment. This jack may be labeled "Line," "Line In," or "Telephone Line."

3. Plug the other end of the second cable into the wall jack where the ASD-4 was connected.

NOTE

Don't connect Caller ID equipment to the ASD-4's TAD, PHONE, FAX, or MODEM ports. Caller ID equipment requires data that is carried by the phone company's ring signals; it will not operate from the ring signal generated by the ASD-4.
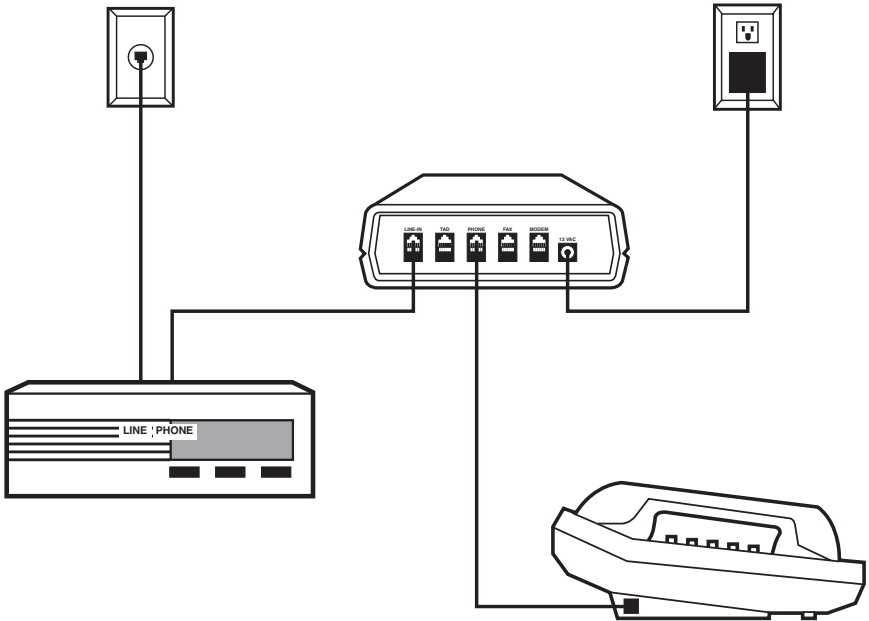
Figure 3-7. Caller ID equipment connected to the ASD-4.

If you can't put the Caller ID equipment near the ASD-4, you can install it as

an extension on the ASD-4's line (perhaps as shown in Figure 3-8, below). In this case, follow the installation procedure in the Caller ID equipment's manual.

NOTE

In multiple-phone systems where exclusion is maintained (see Section 3.5**), you must install the Caller ID equipment "in front of" the ASD-4.**
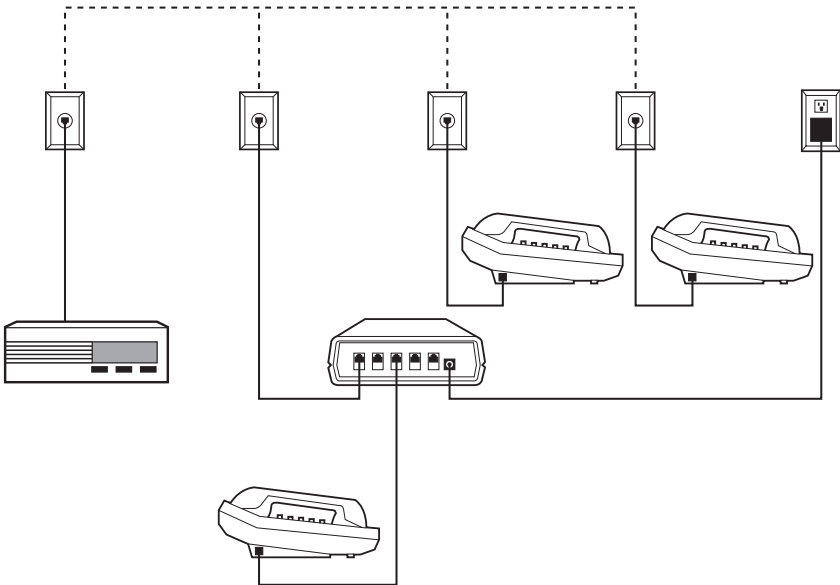
Figure 3-8. Caller ID equipment connected as an extension.

4. Operation

4.1 Before You Operate

4.1.1 SERVICES THAT WON'T WORK

Before you operate the ASD-4, please be aware that certain services offered by
the phone company do not work well with, or aren't compatible at all with,
the ASD-4:

- **Call Waiting:** Transmissions involving an older fax machine or modem
  could be disrupted by Call Waiting's "beep" tone. The only effect this
  tone has on newer fax machines is to make them insert a thin line into
  faxes. The tone will probably have no noticeable effect on newer modems.

- **Call Forwarding:** If Call Forwarding is enabled for a line, the ASD-4
  cannot process calls on that line.

- **Phone-Company Voice Mail:** The phone company's voice-mail service is
  not compatible with the ASD-4. Standalone (on-site) voice-mail systems,
  however, usually work well with the the ASD-4.

We recommend that you stop subscribing to Call Forwarding and the phone
company's voice mail. Call Waiting might not give you trouble, but test it with
your fax and modem to make sure.

4.1.2 UNDERSTANDING FAX CNG TONES

Your ASD-4 depends on audible "beeps" called CNG (CalliNG) tones, sent by
most fax machines, to route calls. Once a sending fax machine has dialed the
receiving fax machine's number, it generates these tones while waiting for the
receiving fax to answer. (Note that CNG signals are distinct tones transmitted
at three-second intervals, not the steady tone you hear at your end during a
fax transmission.) When the ASD-4 answers an incoming call, it "listens" for a
CNG signal to determine whether a fax machine is calling. If it detects a CNG
tone, the ASD-4 automatically transfers the call to its FAX port without ringing
the phone on your TAD or PHONE port. If it doesn't detect a CNG tone, it
transfers the call to its TAD and PHONE ports.

Not all fax machines transmit this signal when they place a call. When the ASD-4 receives a call from a machine that doesn't transmit CNG signals, it can't tell whether the call is a fax transmission or a voice call. *Don't assume that your ASD-4 isn't working properly if it transfers a fax call to your telephone.* This only means that the sending fax machine has not sent a CNG signal. If you answer your phone and find that the call is a fax transmission, just transfer the call to the FAX port (see **Section 4.2.2**).

Most fax machines that produce CNG tones do so when they auto-dial or speed-dial or when the operator presses the fax machine's START button after the number is dialed. Usually they do *not* produce CNG tones immediately after an operator manually dials a fax number from their handset; the operator must tell them, perhaps by pressing a START button, that the call is a fax rather than a voice call. Some fax machines only produce CNG tones after speed-dialing. For best results, callers should have your fax number programmed into their fax machine's "speed-dial" memory.

4.2 Standard Operating Procedures

4.2.1 HOW THE ASD-4 HANDLES INCOMING CALLS

Unless you program the ASD-4 differently, it answers incoming calls on the first ring. (When exclusion isn't maintained, all the phones on the ASD-4's line, except those connected to the ASD-4's TAD or PHONE port, ring this one time. *Do not answer an extension phone on this ring.* See **Section 4.2.2.B**.) From the time the ASD-4 picks up a call until the call is answered "for real" at one of the devices on the same line, the ASD-4 keeps the switching process transparent to the caller by sending the caller a ring-back tone.

After the ASD-4 answers the call, it listens for:

- a CNG tone,

- an access code for the FAX or MODEM port, or

- a reverse modem tone.

If the ASD-4 detects any of these signals, it automatically routes the call to the appropriate port. If the ASD-4 does not detect a signal, it routes the call to the TAD and PHONE ports. When a phone connected to the TAD or PHONE port rings, it means that the call is coming from one of the following sources:

- a person wanting to talk to you,

- a person sending a fax manually,

- a fax machine that does not produce CNG signals, or

- a person or computer trying to access the MODEM port.

If, after six (or however many you set—see **Section 5.4.8**) rings to the TAD and PHONE ports, neither you nor your TAD have answered the call, the ASD-4's Automatic No-Answer Transfer feature routes the call to the FAX or MODEM port. Once this feature has been triggered, the Automatic Ring Reduction feature kicks in and the ASD-4 routes subsequent calls to the FAX or MODEM port after the second ring.

NOTE

For unattended operation, set equipment connected to the ASD-4's FAX or MODEM port to answer on the first or second ring. For attended operation, set the TAD to answer on five or fewer rings, or on fewer rings than the Rings Available to the TAD and PHONE Ports (function [4][1]) if you've set this to a number other than six.

There are two things to keep in mind when you set your TAD. First, fax machines that don't produce CNG tones might not be able to stay on the line long enough to reach your fax if your TAD doesn't answer the line fairly quickly. Second, a certain problem is more likely to occur if your TAD doesn't answer quickly. If a caller hangs up just as the TAD picks up the line, a second call comes in immediately, and the Automatic No Answer Transfer feature is ON, the second caller might be transferred to the FAX or MODEM port before your TAD can reset itself. Then, if the Automatic Ring Reduction feature is also ON, future calls will be routed to the FAX or MODEM port after only two rings. (For best results, turn OFF Automatic No Answer Transfer and Automatic Ring Reduction during attended operation.)

Any time after Automatic Ring Reduction has taken effect, you can reset the TAD and PHONE ports' ring count to six by doing any of these things:

- Lifting the receiver of the phone device connected to the TAD or PHONE port and hanging it up.

- Answering a call at any phone on the ASD-4's line before the call is routed to the FAX or MODEM port.

- Placing an outbound call from any phone on the ASD-4's line.

(See **Sections 5.3.1** and **5.3.4** for more information about Automatic Ring Reduction and Automatic TAD Transfer.)

4.2.2 ANSWERING INCOMING CALLS

You can answer incoming calls at either an extension phone or a phone device connected to the TAD or PHONE port. You can then conduct the call normally, for as long as you like.

NOTE

You can't answer a call that is actively ringing the TAD and PHONE ports at a device on the FAX or MODEM port, even if that device has a phone attachment.

4.2.2.A Answering Calls at a Phone on the TAD or PHONE Port (Including Extensions When Exclusion Is Maintained)
If, after answering a call, you hear silence on the line, the call is probably coming from a fax that does not produce a CNG signal. Simply transfer the call to the FAX port by entering the FAX Access Code at your phone (factory-preset to [1] [1] if it's a touch-tone phone or always just [3] if it's a rotary/pulse-dialing phone). You can also use this procedure to route a call when the caller verbally requests the fax machine.

If a caller verbally requests a device connected to the MODEM port, you can route the call by entering the numbers of the MODEM Access Code at your phone (factory-preset to [2] [2] if it's a tone phone or always just [4] if it's a rotary/pulse phone).

See **Sections 5.4.1** through **5.4.3** for more information on using and changing the ASD-4's access codes.

4.2.2.B Answering Calls at an Extension Phone (Exclusion Not Maintained)
When exclusion is not maintained,all extension phones will ring once before the ASD-4 answers the line. Don't answer the phone on this ring. Instead, wait until four seconds after the ring stops (so the ASD-4 can try to route the call), then pick up the receiver. (The ASD-4 will detect the extension and, if it's been ringing the TAD and PHONE ports, will stop doing so.) If you hear fax or modem tones, the call should have already been answered by the device on the FAX or MODEM port; hang up quietly and the transmission shouldn't be disrupted. If you hear silence on the line, the caller is probably a fax machine that can't produce CNG tones; you will have to transfer the call to the FAX port as described below.

During the entire call, the ASD-4 will listen for the touch-tone access codes that tell it to transfer the call to its TAD and PHONE ports (always just [0]), to its FAX port (factory-preset to [1] [1]), or its MODEM port (factory-preset

to [2] [2]). (See **Sections 5.4.1** through **5.4.3** for more information on using and changing the ASD-4's access codes.) If the caller wants to reach one of these ports, whether and how the caller can do so depends on the types of phones you and the caller are using. If *you* answered the call at a *tone-dialing* extension phone, *you* can transfer the call. If *the caller* is calling from a *tone-dialing* phone, *he* or *she* can transfer the call. However, if *both you and the caller* are on *rotary/pulse-dialing* phones, *neither of you* can transfer the call. You will have to tell the caller to hang up and try again, because the ASD-4 can't detect rotary/pulse commands from any phone that isn't on its TAD or PHONE port.

4.2.2.C Answering Calls with a TAD
If a telephone answering device (TAD) on an extension or on your ASD-4's TAD port answers a call, the caller can either record a voice message on the TAD or transfer their call to the FAX or MODEM port. We recommend that you record a greeting announcement on the TAD to provide callers with instructions for transferring their calls. Maybe something like this:

> "Hello, this is the _____ company. If you wish to send a fax only, press [1] [1] on your tone phone and begin your transmission now. If you want to leave a voice message, leave your message at the tone. You may also leave a message at the tone and *then* press [1] [1] to reach the fax."

You can also announce the tone access code for the MODEM port (factory-preset to [2] [2]) if you want to allow open access to this port. You might also want to inform callers that they cannot transfer a call to the FAX or MODEM port from a rotary/pulse-dialing phone.

To accommodate rotary/pulse-dialing faxes, or faxes that do not produce CNG tones, turn the Automatic TAD Transfer feature on (see **Section 5.3.4**).

NOTE

Automatic TAD Transfer and its timing may not be compatible with single-cassette answering machines. Contact technical support for more information about using the ASD-4 with single-cassette answering machines.

The destination of the Automatic TAD Transfer can be set to either the FAX or MODEM port. The ASD-4 is factory preset to transfer calls to the FAX port once the TAD disconnects from them. To change the default setting to the MODEM port, see Section 5.3.13**.**

4.2.3 RETRIEVING MESSAGES FROM A REMOTE LOCATION

To call in and retrieve messages or data from a TAD or a KSU/PBX's voice-mail system, follow these steps:

1. From the remote location, dial your phone number to reach the TAD or dial the voice-mail system's number and wait for the ASD-4 to answer the call.

2. If you don't have to use touch-tones to retrieve your messages or data, skip to **Step 3**. If you do have to use tone commands to retrieve your messages or data, and these commands might include tone sequences identical to the FAX or MODEM Access Code (factory-preset to [1] [1] and [2] [2] respectively), then do this: After the ASD-4 has answered the call, but before your TAD or voice-mail system answers, press the [*] key on your tone phone between ring signals. The [*] key disables all tone-initiated transferring to the FAX or MODEM port *during that call only*.

3. When your TAD or voice-mail system answers, follow its remote-retrieval procedures (see its manual for more information).

4. After retrieving your messages, hang up. (If you've issued the [*] command, the ASD-4 will reset itself for the next call.)

4.2.4 PLACING AN OUTBOUND CALL

Unless another port or extension is in use, you can place an outbound call normally from any port or extension at any time. You can tell if another port or extension is in use by listening when you pick up your phone or when your calling device goes off-hook: If you hear a dial tone, the line is clear; if you hear a busy tone, it isn't.

NOTE

Some exceptions to this rule occur because the PHONE and TAD ports do not exclude each other. For example, if you pick up a phone on the PHONE port, and a call is in progress on a TAD or phone on the TAD port, you will hear that call. Also, remember that when exclusion is maintained in a multiple-phone system, all extension phones are tied into the PHONE port together. This means that if you pick up one of the extension phones and a call is in progress on another extension or on a phone or TAD on the ASD-4's TAD port, you will, again, hear that call.

NOTE

If you're using the ASD-4 with a multiple-phone system and exclusion is *not* maintained, you will never get a busy tone when you pick up an extension phone that isn't connected to the ASD-4's PHONE port. You will hear either a dial tone or a voice, fax, or modem call in progress. Conversely, if you go off-hook with any device on any of the ASD-4's ports when a call is in progress on an extension phone, you will hear that call rather than a busy tone.

If exclusion is maintained, you can transfer an outbound call from an extension phone to your ASD-4's FAX or MODEM port to receive a transmission from someone that is ready to transmit. To route such a transmission to the FAX port, press the [#] key followed by the FAX Access Code (factory-preset to [1] [1]) on your tone phone or just dial [3] on your rotary/pulse phone. To route such a transmission to the MODEM port, press the [#] key followed by the MODEM Access Code (factory-preset to [2] [2]) on your tone phone or just dial [4] on your rotary/pulse phone. If your phone is a rotary/pulse type, you must wait at least 20 seconds after dialing the last digit of the phone number before transferring the call to the FAX or MODEM port.

If exclusion isn't maintained, you can transfer a call to the ASD-4's TAD and PHONE ports, FAX port, or MODEM port from a tone-dialing extension phone not on the ASD-4's TAD or PHONE port by pressing the extension phone's [#] key followed by the access code for either the TAD and PHONE ports (always [0]), the FAX port (factory-preset to [1] [1]), or the MODEM port (factory-preset to [2] [2]). You cannot transfer a call from a rotary/pulse-dialing extension phone if exclusion is not maintained on your system.

4.2.5 SENDING A FAX TRANSMISSION

To send a fax transmission, either use the fax machine's autodial feature or dial the destination number with your fax machine's phone attachment. Refer to your fax machine's manual for instructions.

4.2.6 SENDING A COMPUTER (MODEM) TRANSMISSION

To send a computer (modem) transmission with a modem on the MODEM or FAX port, dial out as you would if the ASD-4 weren't there. Refer to your modem's manual for instructions.

4.2.7 RECEIVING A COMPUTER (MODEM) CALL AT THE **MODEM** OR **FAX** PORT

Unlike a fax call, inbound computer (modem) calls are usually not accompanied by any tones; except when they use reverse modem protocol (see below), calling computers and modems remain silent until a modem answers the call. The MODEM port of the ASD-4 is secured, which means that there are normally only two ways callers can access this port from a remote location. One way is to enter a tone access code from a touch-tone phone or other device that produces tones (a modem, for example). The second way is to use reverse modem protocol. If they want to direct a computer call to your ASD-4's MODEM or FAX port, instruct callers to use one of these methods (both of them are explained below).

NOTE

Most (though not all) computer telecommunications are handled through modems, so a modem is used in the examples below. Procedures will be roughly similar for other devices, but callers should see their devices' manuals for more information.

NOTE

The MODEM port becomes *unsecured* when either the Automatic TAD Transfer feature or the Automatic No Answer Transfer feature is set to transfer calls to the MODEM port. In other words, be careful when you use these ASD-4 features, because they make it possible for anyone to gain access to the MODEM port.

NOTE

We recommend that you turn the ASD-4's CNG Detection feature OFF if you connect a modem that isn't capable of receiving faxes to the FAX port. See Section 5.3.7 **for how to do this.**

4.2.7.A Using an Auxiliary Phone to Dial Your MODEM or FAX Port's Access Code
Instruct callers to attach a "T" or "Y" (2-to-1) adapter to the wall jack where their modem's phone line connects. Have the caller plug their modem into one side of the adapter, and plug a standard tone phone into the other side of the adapter. When callers tell their modem to call your modem, they must either lift the phone's receiver off the hook after the modem dials the number or use the phone to dial your modem manually.

Next, callers should listen for the ASD-4 to answer, then press keys on the phone to enter the MODEM or FAX port's access code between ring signals. (The MODEM port's access code is factory-preset to [2] [2]. The FAX port's access code is factory-preset to [1] [1].) When the modem answers, callers should hang up the phone and begin their transmission.

4.2.7.B Using a Modem to Dial the MODEM or FAX Port's Access Code
Calling modems can automatically "over-dial" the MODEM or FAX port's access code to access the modem connected to the ASD-4, but callers must take into consideration whether the call is local or long distance.

NOTE

In each of the dial-string examples below, callers should include the "ATDT" prefix only if they control their modem through line commands rather than through software.

For *local-call* remote access to the ASD-4's MODEM port, instruct callers to tell their modem to tone-dial this string:

```
ATDT (phone number),22,22,22,22
```

For *local-call* remote access to the ASD-4's FAX port (when there is a modem or fax/modem on it), instruct callers to tell their modem to tone-dial this string:

```
ATDT (phone number),11,11,11,11
```

For *long-distance* remote access to the ASD-4's MODEM port, instruct callers to tell their modem to tone-dial this string:

```
ATDT 1(phone number),,,22,22,22,22
```

For *long-distance* remote access to the ASD-4's FAX port (when there is a modem or fax/modem on it), instruct callers to tell their modem to tone-dial this string:

```
ATDT 1(phone number),,,11,11,11,11
```

In each case, the calling modem picks up its phone line and dials the ASD-4's phone number. The commas in all of these dial strings tell the caller's modem to wait about two seconds between attempts to over-dial the access code ([2] [2] or [1] [1]). The extra commas that follow the phone number in the long-distance examples ensure that extra time is allowed for the long-distance carrier to complete the call. When the ASD-4 answers, it detects the code tones and routes the call automatically to the MODEM or FAX port.

NOTE

The comma (",") dial-string modifier causes most standard modems to delay dialing for about two seconds, but some modems don't recognize the comma and some respond to it differently. If callers aren't sure, they should check their modem's manual. (The ASD-4 needs a short delay for processing between over-dialing attempts.)

NOTE

If you change the MODEM or FAX port's access code to a number that uses varying rather than repeating digits ([4][5][9][8] rather than [7][7], for example), callers should use a similar dial string with pound signs ("#") as well as commas between retries of the access code. A local-call example:

```
ATDT (phone number),4598,#4598,#4598
```

NOTE

If it turns out that your callers' modems can't handle dial strings as long as the one in the previous note, there are several ways to keep the string short. First, you might want to keep your MODEM or FAX port's access code down to two or three repeating digits. Second, callers might be able to reduce over-dialing repetitions of the access code to three or even fewer (several trial calls should establish how many repetitions are necessary). Third, for long-distance calls, callers' modems might support a dial-string modifier that causes the modem to delay dialing for a longer period, or to delay until a ring is detected. This character could replace the first few commas after the phone number. Callers should check their modem's manual.

4.2.7.C Using Reverse Modem Detection

Before you read further: Not all modems are capable of operation in the "reverse" mode. Consult your modem's manual if you aren't sure (or contact the modem's manufacturer if you can't determine) whether or not your modem has this capability.

To use the reverse modem protocol, both the sending modem (the calling modem) and the receiving modem (the modem on the ASD-4's MODEM or FAX port) must be in the "reverse" mode. The ASD-4 must be programmed so that its Reverse Modem Detection feature is turned ON, and the Reverse Modem Port Selection is set to either the MODEM or FAX port (whichever one your modem is on); see **Sections 5.3.8** and **5.3.12**.

The modem connected to the ASD-4's MODEM or FAX port should be set this way (refer to your modem's manual for how to do this):

- answer on one ring

- ignore dial tone

- originate

- return to "command state" or "command mode" upon disconnect

The dial string whose two variants are shown below will allow most modems to use reverse modem protocol to send a call to your ASD-4's MODEM or FAX port. Callers should tell their modem to tone-dial one of these variants (they should consult their modem's manual as to which one, and they should include the "ATDT" prefix only if they control their modem through line commands rather than through software):

```
ATDT (phone number)R      or      ATDT (phone number)/R
```

When a calling modem receives this command, it goes off-hook, dials the phone number, and then immediately begins transmitting a steady high-pitched carrier signal. When the ASD-4 answers the call, it detects this carrier signal from the calling modem and automatically routes the call to the MODEM or FAX port without ringing the TAD and PHONE ports.

4.3 Using the Phone Company's Distinctive Ring Service (DRS) with the ASD-4

The phone company's Distinctive Ring Service uses a single phone line for multiple phone numbers and assigns a unique ring to each phone number. Working in conjunction with this service, the ASD-4 identifies three distinct ring types and individually directs calls to the corresponding ports: Depending on what type of ring the ASD-4 detects, calls are routed to either the TAD and PHONE ports, the FAX port, or the MODEM port. This means that callers can dial different phone numbers to reach each of three types of devices on your ASD-4 rather than using access codes or requiring you to listen for specific ring patterns.

The ASD-4 recognizes ring types as different patterns of ring bursts. The number (not the duration) of the bursts determines how the ASD-4 handles call routing. The ASD-4 is factory-preset to recognize and automatically route calls with these ring patterns:

1-burst ring, transfers to the TAD and PHONE ports:

STANDARD RING

2-burst ring, transfers to the FAX port:

RING   RING

3-burst ring, transfers to the MODEM port:

SHORT, SHORT, LONG

OR

SHORT, LONG, SHORT

The ASD-4 allows you to select the port assignment for each of these ring patterns (see **Section 5.4.4** through **5.4.6**). Once you connect your telephone equipment to the ASD-4, you can get different phone numbers for the individual devices to allow automatic access to each device.

NOTE

The name of this "Distinctive Ring Service," as well as the ring patterns available, may vary with each telephone company. This service might not be available in some locations, but it is required in order for the ASD-4 to route calls by ring pattern. Contact your local telephone company to verify the availability of this service in your area.

NOTE

If Distinctive Ring calls are being misdirected by the ASD-4, set function [4][0] (Rings to Answer Call) to answer on two rings (see Section 5.4.7**).**

4.4 Using Remote Message Notification (RMN)

When you enable Remote Message Notification, the ASD-4 can automatically notify a user that he or she has received a voice message, fax, or data transmission by dialing a telephone number when it receives a call to the TAD port, FAX port, MODEM port, or any combination of these ports.

After an incoming call is complete, the ASD-4 dials the user-programmed RMN phone number and begins producing a series of beeps (see below). These beeps tell whoever answers the phone at the other end which port or ports received the incoming call. You can turn RMN ON or OFF, enter or change the RMN phone number, and set the RMN-triggering conditions, and you can do all these things "on location" or remotely:

- Turn RMN ON or OFF by setting feature [8], Remote Message Notification, to [1] or [0] respectively (see **Section 5.3.9**).

- Enter an RMN phone number up to sixteen digits long by using function [7], RMN Phone Number (see **Section 5.3.13**).

- Set function [8], RMN Conditions, to tell the ASD-4 when to perform RMN (see **Section 5.3.14**):
  Enter any combination of
  - [1] Perform RMN if message is left at device on TAD port
  - [2] Perform RMN if message is left at device on FAX port
  - [3] Perform RMN if MODEM port is accessed

NOTE

When you program the ASD-4, press the keys for your desired RMN Conditions in numerical order (that is, [1] first, then [2], then [3]).

After the ASD-4 dials the RMN phone number, it begins transmitting a series of beeps indicating which port or ports received the call:

- TAD or PHONE message only = 1 beep
  (function [8] must be set to [1], [1] [2], [1] [3], or [1] [2] [3])

- FAX message only = 2 beeps
  (function [8] must be set to [2], [1] [2], [2] [3], or [1] [2] [3])

- TAD or PHONE message plus FAX message = 3 beeps
  (function [8] must be set to [1] [2] or [1] [2] [3])

- MODEM access only = 4 beeps
  (function [8] must be set to [3], [1] [3], [2] [3], or [1] [2] [3])

- TAD or PHONE message plus MODEM access = 5 beeps
  (function [8] must be set to [1] [3] or [1] [2] [3])

NOTE

A call that reaches the FAX port cannot subsequently be routed to the MODEM port and vice versa, so there are no "beep sequences" for "FAX message plus MODEM access" or for "TAD or PHONE message plus FAX message plus MODEM access."

For the ASD-4 to perform RMN after a TAD message is received, the TAD port must be on line longer than the value of function [6], Automatic TAD Transfer Timer, which is factory-preset to 30 seconds. If the TAD port is not on line longer than the value of function [6], the ASD-4 will not perform RMN, or will not count the TAD when it sends its beep sequence. For example, if function [8], RMN Conditions, is set to [8] [1] [2] [*] ("perform RMN for TAD and/or fax messages") and a caller reaches the TAD but transfers to the fax before the timer expires, RMN will be triggered but the ASD-4 will sound 2 beeps ("received fax message") only.

If the ASD-4 is set to perform RMN when the FAX port receives a call, and a caller reaches the FAX port, it doesn't matter how long the port is on line: The ASD-4 will perform RMN regardless. The same goes for the MODEM port.

Once the ASD-4 dials the RMN phone number, it holds the line open for sixty seconds. During this time, you (or whoever answers the phone) can do any of these things, provided the phone is a tone-dialing type:

- Enter the programming mode to turn OFF the RMN feature, change the RMN Phone Number, or change the RMN conditions

- Enter the programming mode to program any other feature or function

- Transfer to the TAD port to retrieve your TAD messages

As the first step in any of these actions, you must press the buttons on your tone phone that correspond to your ASD-4's security access code ([1] [2] [3] [4] is the factory default). The ASD-4 will not respond to any other tone commands until you enter the security access code. If you make a mistake entering the code, press your phone's [#] key to clear the ASD-4's buffer and keep trying (press [#] after each unsuccessful attempt) until the ASD-4's sixty-second hold-the-line timer expires. Once you successfully enter the code, the ASD-4 switches off its timer—it will now hold the line until you hang up—and automatically goes into programming mode (see the next chapter).

If you want to program the ASD-4: Use standard programming procedures. When you're finished making your changes, press the [*] key on your tone phone to save the changes and exit the programming mode. If instead you decide at any time during programming that you don't want to save your changes, press the [#] key. The changes will be discarded, and you can either start over (enter changes, then press [*] to save and exit programming mode) or reset the ASD-4 to the previously saved settings (press [*] to exit programming mode immediately). When you exit the programming mode, whether you've saved changes or not, the ASD-4 will automatically transfer you to the TAD port.

If you don't want to program the ASD-4: Press the [*] key to exit the programming mode. You will automatically and immediately be transferred to the TAD port.

5. Programming the ASD-4

The ASD-4's features and functions are factory-preset to the values that are used in most applications, so it is unlikely that you will need to make many changes to them. However, if you desire, you can reprogram (enter a new value for) any feature or function with a touch-tone phone. The ASD-4 cannot be programmed with a rotary/pulse-dialing phone.

CAUTION!

Before attempting to program any feature or function, we recommend that you first thoroughly read the programming procedures. Then read Sections 5.2 **through** 5.4 **and decide if you want to make changes. Follow these steps to make any changes:**
**   1. WRITE DOWN THE SEQUENCE OF CHANGES. You can use a copy of the worksheet in Appendix B for that purpose.**
**   2. Enter the programming mode.**
**   3. Change the features and functions.**
You only have six seconds between each tone entry to enter another command. If you do not enter a command within six seconds, the ASD-4 exits the programming mode without saving the changes.

CAUTION!

During the programming procedure, the ASD-4 will not be able to process any phone calls, whether they are incoming or outgoing. Most callers will get a busy signal instead. However, when exclusion is maintained, callers on extension phones will hear the programming in progress; also, if they pick their phones up and dial without listening for the dial tone, they will disrupt at least the current command entry.

5.1 The Programming Procedure

5.1.1 ACCESSING THE PROGRAMMING MODE

5.1.1.A From a Phone on the ASD-4
To program the ASD-4 with a touch-tone phone connected to the ASD-4's TAD or PHONE port, first make sure the telephone line from the phone company is plugged into the ASD-4's LINE-IN port. Then pick up the phone's receiver: You should hear a dial tone. Within five seconds of picking up the receiver, press and release the [#] key and then the [*] key on the phone's keypad. The ASD-4 then enters its programming mode and internally disables the phone-line connection. The dial tone will stop and you will hear a slight buzzing sound instead.

If you have done the procedure correctly and the ASD-4 really is in programming mode, both the green LED indicator labeled "ON" and the red LED indicator labeled "PHONE" should light and remain lit.

5.1.1.B From a Remote Phone

To program the ASD-4 with a touch-tone phone at a remote location, place a call to the ASD-4 from that phone. After the ASD-4 answers the call, press the phone keys that correspond to the ASD-4's Security Access Code (see **Section 5.4.1**—[1] [2] [3] [4] is the factory default) between the "phantom ring" signals the ASD-4 sends (see **Section 5.4.11**). The "phantom rings" will stop and you will hear silence instead.

NOTE

We recommend that you change your ASD-4's Security Access Code right away (and keep changing it regularly) to ensure the security of your ASD-4. See Section 5.4.1 **for more information.**

CAUTION!

If you think you might have to program the ASD-4 from a remote location, write down your Security Access Code and keep it with you in a safe place. If you should happen to forget or lose the code, and you can't return to your site (or call someone at your site) to program the ASD-4 locally (which doesn't require the code), you won't be able to access the programming mode.

5.1.2 PROGRAM ENTRIES

Once you've accessed the programming mode, each change to one of the ASD-4's features or functions requires one "entry." Making an entry works like this:

"Features" can only have either of two values (usually ON or OFF). To change the value (setting) of a feature, press [0] or [1] on the phone's keypad, followed by the number of the feature, followed by the [*] key. This constitutes an entry for a feature. (See **Sections 5.2** and **5.3**.)

"Functions" can have any one of several values. To change the value (setting) of a function, press the number of the function, followed by the keys corresponding to the new value, followed by the [*] key. This constitutes an entry for a function. (See **Sections 5.2** and **5.4**.)

The ASD-4 notifies you of correct or incorrect entries with these signals:

- THREE SHORT BEEPS indicates that the entry is valid and the ASD-4 *has accepted* the change.

- A SINGLE LOW BEEP indicates that the entry is invalid, or out of normal operating range, and the ASD-4 *did not accept* the change. Re-enter a valid command string.

You can make as many entries in a row as you like; you don't have to exit programming mode until you're finished with your changes. However, you must enter each tone in your whole programming session within six seconds of entering the tone before it, or the ASD-4 will exit the programming mode automatically without saving any of the changes you have made up to that point. We strongly recommend that you write down any sequence of changes you want to make beforehand, so that you can enter them promptly during actual programming. You might want to use a copy of the Programming Worksheet in Appendix B for this purpose.

5.1.3 CLEARING PROGRAMMING MISTAKES

If at any point during programming you make a mistake, or you realize that you've entered an ill-advised change, or you just change your mind, you don't have to be stuck with the bad settings. You don't even have to wait six seconds for the ASD-4 to abort the current session. By pressing the [#] key, even during an entry, you can clear the ASD-4's buffer. This causes the ASD-4 to discard all the programming you've done up to that point during the current session, including the current entry.

After you press [#], you will still be in the programming mode. You can either start your programming over again or quit the programming mode by pressing [*] (the ASD-4 resets to the most recently saved settings).

5.1.4 EXITING THE PROGRAMMING MODE

When you've made all your entries and are finished with your changes, press the [*] key again to save the changes and exit the programming mode. If you're programming locally, the buzzing sound will stop and you will hear dial tone; you can place an outbound call if you like. If you're programming remotely, the line will stay silent; hang up the phone to make the ASD-4 available to other callers.

5.2 The ASD-4's Features and Functions

Tables 5-1 and 5-2 list the ASD-4's capabilities, their factory settings, and the available options. Text sections that follow Tables 5-1 and 5-2 explain the features and functions in detail and provide guidelines for changing feature and function settings.

Table 5-1: The ASD-4's Custom Features (ON/OFF Options)

1. Access the programming mode by pressing [#] [*] at a local local phone or the Security Access Code at a remote phone.
2. Press [0] in front of a feature number to turn the feature OFF or Press [1] in front of a feature number to turn the feature ON:

FEATURE	FACTORY SETTING	OPTIONS AVAILABLE	
		OFF	ON
[0] Automatic Ring Reduction	ON	[0] [0]	[1] [0]
[1] Open Line Notification	OFF	[0] [1]	[1] [1]
[2] Extension Detection	ON	[0] [2]	[1] [2]
[3] Automatic TAD Transfer	OFF	[0] [3]	[1] [3]
[4] Pulse Transfer	ON	[0] [4]	[1] [4]
[5] Automatic No Answer Transfer	ON	[0] [5]	[1] [5]
[6] CNG Detection	ON	[0] [6]	[1] [6]
[7] Reverse Modem Detection	ON	[0] [7]	[1] [7]
[8] Remote Message Notification	OFF	[0] [8]	[1] [8]
[9] Distinctive Ring Detection	ON	[0] [9]	[1] [9]
[1][0] Outbound Voice Exclusion [1][0]	ON	[0] [1][0]	[1]
[1][1] Reverse Modem Port Selection	MODEM port	[0] [1][1] [1] [1][1]	FAX port MODEM port
[1][2] Automatic Transfer Port Selection	FAX port	[0] [1][2] [1] [1][2]	FAX Port MODEM port

3. End your entry by pressing [*]. Make as many entries as you need.
4. Exit the programming mode by pressing [*] again.

Table 5-2: The ASD-4's Custom Functions (Multi-Value Options)

1. Access the programming mode by pressing [#] [*] at a local phone or the Security Access Code at a remote phone.
2. Change function settings by entering the function number, followed by a valid entry from the settings available:

FUNCTION		FACTORY SETTING	OPTIONS AVAILABLE
[2][1]	Security Access Code	[1] [2] [3] [4]	any 1 to 4 digits
[2][2]	FAX Access Code	[1] [1]	any 1 to 4 digits
[2][3]	MODEM Access Code	[2] [2]	any 1 to 4 digits
[3][1]	TAD and PHONE Ports' Distinctive Ring	[1]	[0] OFF [1] 1-burst ring [2] 2-burst ring [3] 3-burst ring
[3][2]	FAX Port's Distinctive Ring	[2]	[0] OFF [1] 1-burst ring [2] 2-burst ring [3] 3-burst ring
[3][3]	MODEM Port's Distinctive Ring	[3]	[0] OFF [1] 1-burst ring [2] 2-burst ring [3] 3-burst ring
[4][0]	Rings to Answer Call	[1]	[1] to [9][9]
[4][1]	Rings Available to TAD and PHONE Ports	[6]	[0] to [9][9]
[4][2]	Rings Available to FAX Port	[3]	[1] to [9][9]
[4][3]	Rings Available to MODEM Port	[3]	[1] to [9][9]
[5]	Phantom Ring Style	[1]	[1] to [7] (see **Section 5.4.11**)
[6]	Automatic TAD-Transfer Timer	[3][0] seconds	[0] to [9][9] seconds
[7]	RMN Phone Number	none	any phone number up to 16 digits long
[8]	RMN Conditions	[1]	[1] TAD [2] FAX [3] MODEM
[9][9][9]	Reset to Factory Settings	the values in Tables 5-1 & 5-2	

3. End your entry by pressing [*]. Make as many entries as you need.
4. Exit the programming mode by pressing [*] again.

5.3 The Features (ON/OFF Options) in Detail

In the previous section, Table 5-1 lists the features: the capabilities of the ASD-4 that can be switched between two values. These features are numbered [0] through [1][2]. In this section you find a description of each feature and instructions for switching each feature.

   To turn a feature ON (or, for features [1][1] and [1][2], to switch to the MODEM port): Access the programming mode, then press [1], followed by the desired feature number, followed by [*] to end the program entry. To turn a feature OFF (or, for features [1][1] and [1][2], to switch to the FAX port): Access the programming mode, then press [0], followed by the desired feature number, followed by [*] to end the program entry.

   When you are finished with your changes: If you've made a mistake or changed your mind and don't want to save the changes, press [#] [*] to exit the programming mode without saving. (The ASD-4 will continue using the most recently saved settings.) If you do want to save the changes, press the [*] key to save and exit.

   Example: To turn Pulse Transfer ON, enter the programming mode and press [1] [4] [*]. Press [*] again to save the changes and exit the programming mode. To turn Pulse Transfer OFF, enter the programming mode and press [0] [4] [*]. Press [*] again to save the changes and exit the programming mode.

5.3.1 FEATURE [0]: AUTOMATIC RING REDUCTION

This feature ensures that the ASD-4 receives all fax and modem transmissions when it is unattended (if an answering machine is not connected to the ASD-4). The feature is designed mainly to accommodate auto-dial faxes that do not produce CNG tones.

   During unattended hours, if your phones aren't answered by the sixth ring (or the number of Rings Available to the TAD and PHONE Ports—see **Section 5.4.8**), the ASD-4 automatically reduces the number of rings available to the TAD and PHONE ports to two. The next time a call is answered and routed to the TAD and PHONE ports, the ASD-4 will only ring the TAD and PHONE ports two times and then route the call to the FAX or MODEM port (depending on the setting of feature number [1][2], Automatic Transfer Port Selection).

   If you don't want the Automatic Ring Reduction feature to reduce the ring count on the TAD and PHONE ports, you can turn the feature OFF. The feature is factory-preset ON, [1] [0] [*].

Example: To turn the Automatic Ring Reduction feature OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[0] Automatic Ring Reduction

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.2 FEATURE [1]: OPEN LINE NOTIFICATION (OLN)

If you pick up a phone connected to the TAD or PHONE port and hear a busy tone, a device on either the FAX or MODEM port is on the line, so hang up the phone. If OLN is ON, the ASD-4 will send a short ring to all the phone devices directly or indirectly attached to the TAD and PHONE ports when the device on the FAX or MODEM port releases the line. This tells you that you now have an open telephone line to make a call.

NOTE

The ASD-4 will not ring extension phones for OLN unless exclusion is maintained (see Section 3.5**).**

The OLN feature is factory-preset OFF, [0] [1] [*].

Example: To turn the OLN feature ON, enter the programming mode and press the following on your tone phone:

[1] Turn ON

[1] Open Line Notification

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.3 FEATURE [2]: EXTENSION DETECTION

This feature allows the ASD-4 to detect when an extension phone not attached to the ASD-4's TAD or PHONE port answers a call that is actively ringing the TAD and PHONE ports. When the ASD-4 detects the extension phone going off-hook, it releases the call to the extension phone and stops ringing the TAD and PHONE ports. The Extension Detection feature is factory-preset ON, [1] [2] [*].

Example: To turn the Extension Detection feature OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[2] Extension Detection

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.4 FEATURE [3]: AUTOMATIC TAD TRANSFER

This feature is designed for use with a TAD to ensure that faxes that do not produce CNG tones, or that rotary/pulse-dial, can access the FAX or MODEM port.

When the ASD-4 routes a call to the TAD port and the TAD answers it, the ASD-4 scans function [6], the Automatic TAD Transfer Timer. If the amount of time that the TAD remains on line is less than the value of the Automatic TAD Transfer Timer, the ASD-4 will automatically transfer the call to the FAX or MODEM port, depending on the setting of feature [1][2], Automatic Transfer Port Selection.

The Automatic TAD Transfer feature is factory-preset OFF, [0] [3] [*].

Example: To turn the Automatic TAD Transfer feature ON, enter the programming mode and press the following on your tone phone:

[1] Turn ON

[3] Automatic TAD Transfer

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.
[*] Save changes and exit programming

5.3.5 FEATURE [4]: PULSE TRANSFER

The Pulse Transfer feature allows rotary/pulse dialing extension phones that are directly or indirectly connected to the ASD-4's TAD and PHONE ports (see **Section 3.5**) to transfer calls to the FAX or MODEM ports. The Pulse Transfer feature is factory-preset ON, [1] [4] [*].

Example: To turn the Pulse Transfer feature OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[4] Pulse Transfer

[*] End programming sequence (3 beeps indicate correct entry)

.
:   (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.6 FEATURE [5]: AUTOMATIC NO ANSWER TRANSFER

The Automatic No Answer Transfer feature enables the ASD-4 to route a call that is actively ringing the TAD and PHONE ports to either the FAX or MODEM port. The setting of feature [1][2], Automatic Transfer Port Selection, determines where the call goes after the TAD and PHONE ports' ring count expires.

The Automatic No Answer Transfer feature is factory-preset ON, [1] [5] [*]. Turn this feature OFF if you want the ASD-4 to hang up without defaulting to the FAX or MODEM port.

Example: To turn the Automatic No Answer Transfer feature OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[5] Automatic No Answer Transfer

[*] End programming sequence (3 beeps indicate correct entry)

.
:   (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.7 FEATURE [6]: CNG DETECTION

This feature determines whether or not the ASD-4 routes a call with a CNG tone to the FAX port. For best results, the calling fax should dial your number from its "Speed Dial" memory.

To secure your fax machine from unwanted fax calls, perform the following tasks:

- Turn this feature (CNG Detection) OFF.

- Change access codes to the FAX and MODEM ports (functions [2][2] and [2][3]).

- Turn Automatic No Answer Transfer (feature [5]) OFF.

- Turn Ring Reduction (feature [7]) OFF.

- Turn the FAX port's Distinctive Ring assignment (function [3][2]) OFF.

Publish the new access codes to the select individuals from whom you want to receive faxes. Instruct these callers to manually call from their fax machines. Callers should wait for the ASD-4's ring signal, then enter the access code on their fax machine's touch-tone phone receiver, then press the fax's START button. The CNG Detection feature is factory-preset ON, [1] [6] [*].

Example: To turn CNG Detection OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[6] CNG Detection

[*] End programming sequence (3 beeps indicate correct entry)

　．
　：　(Optional entries for additional changes)
　．

[*] Save changes and exit programming

5.3.8 FEATURE [7]: REVERSE MODEM DETECTION

This feature determines whether or not the ASD-4 automatically routes a call to either the MODEM or FAX port (depending on the setting of feature [1][1], Reverse Modem Port Selection) when it detects the reverse modem signal. For more details about reverse modem signals, see **Section 4.2.7.C**. The Reverse Modem Detection feature is factory-preset ON, [1] [7] [*].

Example: To turn Reverse Modem Detection OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[7] Reverse Modem Detection

[*] End programming sequence (3 beeps indicate correct entry)

.
.
. (Optional entries for additional changes)

[*] Save changes and exit programming

5.3.9 FEATURE [8]: REMOTE MESSAGE NOTIFICATION (RMN)

This feature determines whether or not the ASD-4 dials a pre-programmed telephone number (programmed with function number [7], RMN Phone Number) after any port or combination of ports have received a call. The ASD-4 must be pre-programmed with the RMN Phone Number and the type of conditions that trigger RMN (see **Sections 4.4** and **5.4.14**). The RMN feature is factory-preset OFF, [0] [8] [*].

Example: To turn the RMN feature ON, enter the programming mode and press the following on your tone phone:

[1] Turn ON

[8] Remote Message Notification

[*] End programming sequence (3 beeps indicate correct entry)

.
.
. (Optional entries for additional changes)

[*] Save changes and exit programming

5.3.10 FEATURE [9]: DISTINCTIVE RING DETECTION

This feature determines whether or not the ASD-4 automatically routes calls using the phone company's Distinctive Ring Service. This feature depends on the Distinctive Ring Assignment functions in **Sections 5.4.4** through **5.4.6**. For more details about operating the ASD-4 in this mode, see **Section 4.3**. Distinctive Ring Detection is factory-preset ON, [1] [9] [*].

Example: To turn OFF Distinctive Ring Detection, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[9] Distinctive Ring Detection

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.11 FEATURE [1][0]: OUTBOUND VOICE EXCLUSION

This feature prevents a device connected to the TAD, PHONE, FAX, or MODEM ports from interrupting a telephone device that is in use on an extension not directly connected to the ASD-4. If a device connected to the ASD-4 goes off hook while an outbound extension call is active, the device receives a busy tone, indicating that the line is in use.

To disable the ASD-4 from ringing or allowing any port device on-line, press the [*] key any time during the call from the extension.

The Outbound Voice Exclusion feature is factory-preset ON, [1] [1][0] [*].

Example: To turn the Outbound Voice Exclusion feature OFF, enter the programming mode and press the following on your tone phone:

[0] Turn OFF

[1][0] Outbound Voice Exclusion

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.3.12 FEATURE [1][1]: REVERSE MODEM PORT SELECTION

This feature defines where the ASD-4 will route a call with a reverse modem signal. (See **Sections 4.2.7.C** and **5.3.8** for more information.) The ASD-4 can automatically route these calls to either the FAX or MODEM port. The Reverse Modem Port Selection is factory-preset for the MODEM port, [1] [1][1] [*].

Example: To set the Reverse Modem Port Selection to transfer calls to the FAX port, enter the programming mode and press the following on your tone phone:

[0] Set to FAX port

[1][1] Reverse Modem Port Selection

[*] End programming sequence (3 beeps indicate correct entry)

   .
   . (Optional entries for additional changes)
   .

[*] Save changes and exit programming

5.3.13 FEATURE [1][2]: AUTOMATIC TRANSFER PORT SELECTION

This feature determines where the Automatic TAD Transfer feature (feature number [3]) and the Automatic No Answer Transfer feature (feature number [5]) route an incoming call.

If the Automatic Transfer Port Selection is set to [1] (MODEM), the Automatic TAD Transfer feature and the Automatic No Answer Transfer feature will route calls to the ASD-4's MODEM port. If the Automatic Transfer Port Selection is set to [0] (FAX), the Automatic TAD Transfer feature and the Automatic No Answer Transfer feature will route calls to the FAX port. The Automatic Transfer Port Selection is factory preset to the FAX port, [0] [1][2] [*].

Example: To set the Automatic Transfer Port Selection feature to route calls to the MODEM port, enter the programming mode and press the following on your tone phone:

[1] Set to MODEM port

[1][2] Automatic Transfer Port Selection

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4 The Functions (Multi-Value Options) in Detail

Earlier in this chapter, Table 5-2 showed the functions that can be programmed to customize the operation of the ASD-4. This section describes each function and describes how to customize each function.

5.4.1 FUNCTION [2][1]: SECURITY ACCESS CODE

This function allows you to remotely access the programming mode of the ASD-4 and alter any feature or function. It also allows you to access the TAD and PHONE ports on the ASD-4 to retrieve information when the ASD-4 invokes the RMN feature. The Security Access Code is factory-preset to [1] [2] [3] [4] (the program entry would be [2][1] [1] [2] [3] [4] [*]). This code can be one to four digits long.

   Example: To change the Security Access Code to [9] [8] [7] [6], enter the programming mode and press the following on your tone phone:

   [2][1] Change Security Access Code to

   [9] [8] [7] [6]   The desired access code

   [*] End programming sequence (3 beeps indicate correct entry)

   .
   .   (Optional entries for additional changes)
   .

   [*] Save changes and exit programming

NOTE

Do not program similar access codes into the Security Access Code, FAX Access Code, and MODEM Access Code. Also, do not use [0] as the first digit in any access code, because this will confuse the ASD-4 and will interfere with other operations.

5.4.2 FUNCTION [2][2]: FAX ACCESS CODE

This function allows you to define the FAX port's access code. When you or a caller enter this code on the keypad of a tone phone, the ASD-4 transfers the call to the FAX port. The FAX Access Code is factory-preset to [1] [1] (the program entry would be [2][2] [1] [1] [*]). This code can be from one to four digits long.

Example: To change the FAX Access Code to [4] [3] [2] [1], enter the programming mode and press the following on your tone phone:

[2][2] Change FAX Access Code to

[4] [3] [2] [1]   The desired access code

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

NOTE

Do not program similar access codes into the Security Access Code, FAX Access Code, and MODEM Access Code. Also, do not use [0] as the first digit in any access code, because this will confuse the ASD-4 and will interfere with other operations.

5.4.3 FUNCTION [2][3]: MODEM ACCESS CODE

This function allows you to define the MODEM port's access code. When you or a caller enter this code on the keypad of a tone phone, the ASD-4 transfers the call to the MODEM port. The MODEM Access Code is factory-preset to [2] [2] [*] (the program entry would be [2][3] [2] [2] [*]). This code can be from one to four digits long.

Example: To change the MODEM Access Code to [6] [7] [8] [9], enter the programming mode and press the following on your tone phone:

[2][3] Change MODEM Access Code to

[6] [7] [8] [9]   The desired access code

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

NOTE

Do not program similar access codes into the Security Access Code, FAX Access Code, and MODEM Access Code. Also, do not use [0] as the first digit in any access code, because this will confuse the ASD-4 and will interfere with other operations.

5.4.4 FUNCTION [3][1]: TAD AND PHONE PORTS' DISTINCTIVE RING ASSIGNMENT

This function defines the type of Distinctive Ring Service (DRS) ring pattern to be routed to the TAD and PHONE ports. (See **Section 4.3**.)

You can't assign more than one distinctive ring pattern to each port. If you leave a particular ring pattern unassigned, the ASD-4 routes calls with that pattern to the TAD and PHONE ports. The TAD and PHONE Ports' Distinctive Ring Assignment is factory-preset to a one-burst ring pattern, [3][1] [1] [*].

Example: To change the TAD and PHONE Ports' Distinctive Ring Assignment to a two-burst ring, enter the programming mode and press the following on your tone phone:

[3][1] Change TAD and PHONE Ports' Distinctive Ring Assignment to

[2] The desired ring assignment

[*] End programming sequence (3 beeps indicate correct entry)

.
.   (Optional entries for additional changes)
.

[*] Save changes and exit programming

NOTE

Do not assign the same ring pattern to more than one port. If a ring pattern is assigned to more than one port, the ASD-4 routes the call to only one of the assigned ports.

5.4.5 FUNCTION [3][2]: FAX PORT'S DISTINCTIVE RING ASSIGNMENT

This function defines the type of Distinctive Ring Service (DRS) ring pattern to be routed to the FAX port. (See **Section 4.3**.)

You can't assign more than one distinctive ring pattern to each port. If you leave a particular ring pattern unassigned, the ASD-4 routes calls with that pattern to the TAD and PHONE ports. The FAX Port's Distinctive Ring Assignment is factory-preset to a two-burst ring pattern, [3][2] [2] [*].

Example: To change the FAX Port's Distinctive Ring Assignment to a three-burst ring, enter the programming mode and press the following on your tone phone:

[3][2] Change FAX Port's Distinctive Ring Assignment to

[3] The desired ring assignment

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

NOTE

Do not assign the same ring pattern to more than one port. If a ring pattern is assigned to more than one port, the ASD-4 routes the call to only one of the assigned ports.

5.4.6 FUNCTION [3][3]: MODEM PORT'S DISTINCTIVE RING ASSIGNMENT

This function defines the type of Distinctive Ring Service (DRS) ring pattern (ring bursts) to be routed to the FAX port. (See **Section 4.3**.)

You can't assign more than one distinctive ring pattern to each port. If you leave a particular ring pattern unassigned, the ASD-4 routes calls with that pattern to the TAD and PHONE ports. The MODEM Port's Distinctive Ring Assignment is factory-preset to a three-burst ring pattern, [3][3] [3] [*].

Example: To turn OFF the MODEM Port's Distinctive Ring Assignment, enter the programming mode and press the following on your tone phone:

[3][3] Change MODEM Port's Distinctive Ring Assignment to

[0] OFF (none)

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

NOTE

Do not assign the same ring pattern to more than one port. If a ring pattern is assigned to more than one port, the ASD-4 routes the call to only one of the assigned ports.

5.4.7 FUNCTION [4][0]: RINGS TO ANSWER CALL

This function determines the number of rings received for a incoming phone call before the ASD-4 answers. The factory setting is one ring, to permit the ASD-4 to answer and transfer calls as quickly as possible. Under normal circumstances, it is not necessary to change this setting. However, if you have the phone company's "Caller ID" service, you must set Rings to Answer Call to two rings.

Rings to Answer Call can range from one to 99 rings but is factory-preset to one ring, [4][0] [1] [*].

Example: To change the Rings to Answer Call to two rings, enter the programming mode and press the following on your tone phone:

[4][0] Change Rings to Answer Call to

[2] The desired number of rings

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.8 FUNCTION [4][1]: RINGS AVAILABLE TO THE TAD AND PHONE PORTS

The TAD port and the PHONE port are connected internally. When the ASD-4 answers a telephone call and does not detect a tone access code, a fax CNG signal, a reverse modem signal, or a distinctive ring pattern, it begins to ring the TAD and PHONE ports simultaneously. This function determines the number of times that the ASD-4 will ring the TAD and PHONE ports before hanging up or transferring the call to another port. If you're using a TAD, be sure to set your answering machine to answer before this ring count expires.

Rings Available to the TAD and PHONE Ports can range from zero to 99 but is factory-preset to six rings, [4][1] [6] [*].

Example: To change Rings Available to the TAD and PHONE Ports to nine rings, enter the programming mode and press the following on your tone phone:

[4][1] Change Rings Available to TAD and PHONE Ports to

[9] The desired number of rings

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.9 FUNCTION [4][2]: RINGS AVAILABLE TO THE FAX PORT

This function allows you to define the number of rings available to the FAX port. Set your fax machine to answer on one or two rings to ensure the fastest response to a call. (See your fax machine's manual.) Rings Available to the FAX Port can range from one to 99 but is factory-preset to three rings, [4][2] [3] [*].

Example: To change Rings Available to the FAX Port to twenty rings, enter the programming mode and press the following on your tone phone:

[4][2] Change Rings Available to FAX Port to

[2][0] The desired number of rings

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.10 FUNCTION [4][3]: RINGS AVAILABLE TO THE MODEM PORT

This function allows you to define the number of rings available to the MODEM port. Set your modem to answer on one or two rings to ensure the fastest response to a call. (See your modem's manual.) Rings Available to the MODEM Port can range from one to 99 but is factory-preset to three rings, [4][3] [3] [*].

Example: To change the Rings Available to the MODEM Port to sixteen rings, enter the programming mode and press the following on your tone phone:

[4][3] Change Rings Available to MODEM Port to

[1][6] The desired number of rings

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.11 FUNCTION [5]: PHANTOM RING STYLE

When the ASD-4 answers a call, it produces a "phantom" ring signal, the intent of which is to make the switching process transparent to the caller. The ASD-4 has seven (7) different phantom ring types to choose from, allowing you to select a ring style similar to your local phone company's ring signal.
The following ring types are available:
[1]   U.S. style #1: 2-second ring, 4-second silence, dual tones
[2]   Belgium style: 1-second ring, 3-second silence
[3]   European style: 0.4-second ring, 0.2-second silence
[4]   Special style: 1-second ring, 5-second silence
[5]   U.K. style: 1.5-second ring, 1.5-second silence
[6]   U.S. style #2: 2-second ring, 4-second silence, single-frequency
       low tone
[7]   U.S. style #3: 2-second ring, 4-second silence, single-frequency
       high tone

The factory-preset Phantom Ring Style is U.S. style #1 (the program entry would be [5] [1] [*]).

Example: To change the Phantom Ring Style to type number [6], U.S. style #2, enter the programming mode and press the following on your tone phone:

[5] Change Phantom Ring Style to

[6] U.S. style #2

[*] End programming sequence (3 beeps indicate correct entry)

   .
   .   (Optional entries for additional changes)
   .

[*] Save changes and exit programming

5.4.12 FUNCTION [6]: AUTOMATIC TAD TRANSFER TIMER

The Automatic TAD Transfer Timer function is a two-fold function that works with feature number [3], Automatic TAD Transfer, and function number [8], RMN (Remote Message Notification) Conditions.

When Automatic TAD Transfer (feature [3]) is turned ON, the ASD-4 uses the Automatic TAD Transfer Timer to determine if a transfer should occur when the TAD disconnects from the line. When a call is answered by the TAD port, the Automatic TAD Transfer Timer starts counting down. When the TAD port disconnects from a call, and the time on line was less than the value of this timer, the ASD-4 automatically transfers the call to either the FAX or MODEM port, depending on the setting of feature [1][2], Automatic Transfer Port Selection. If the TAD port is on the telephone line longer than the value of this timer, the ASD-4 hangs up instead of transferring the call when the TAD port disconnects.

When you've activated all RMN features and functions, and "TAD" is one of the RMN Conditions, the ASD-4 uses the Automatic TAD Transfer Timer to determine whether a message was left on the TAD, and therefore whether RMN should be triggered or the TAD included in the RMN "beep signal." If the TAD disconnects from the telephone line, and the time on line was less than the value of this timer, the ASD-4 either will not trigger RMN or will not include the TAD in its RMN "beep signal." If the TAD is on line longer than the timer value, the ASD-4 will trigger RMN and include the TAD in its RMN "beep signal."

The Automatic TAD Transfer Timer can range from zero to 99 seconds but is factory-preset to 30 seconds, [6] [3][0] [*]. If the timer is set to [0] or [0][0], the ASD-4 will always TAD transfer and will not trigger RMN when a message is received on the TAD port.

Example: To change the setting of the Automatic TAD Transfer Timer to 20 seconds, enter the programming mode and press the following on your tone phone:

[6] Change the setting of the Automatic TAD Transfer Timer to

[2][0] The desired number of seconds

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.13 FUNCTION [7]: RMN PHONE NUMBER

The RMN Phone Number function allows you to program the telephone number that the ASD-4 dials after one or more of the RMN conditions have been met. (See **Sections 4.4** and **5.4.14** for more information.)

The RMN Phone Number function is capable of storing a telephone number up to 16 digits long. It has no factory-preset value.

Example: To enter a number to be dialed—for the purposes of this example, 1 (303) 555-6789—when an RMN condition is triggered, enter the programming mode and press the following on your tone phone:

[7] Set the RMN Phone Number to

[1] [3][0][3] [5][5][5] [6][7][8][9]   The desired phone number

[*] End programming sequence (3 beeps indicate correct entry)

.
. (Optional entries for additional changes)
.

[*] Save changes and exit programming

5.4.14 FUNCTION [8]: RMN CONDITIONS

The RMN Conditions function allows you to define which port's or ports' being accessed will trigger RMN (see **Section 4.4**): Condition [1] = TAD access, [2] = FAX access, and [3] = MODEM access. The function is factory-preset to trigger RMN only when a TAD message is received, [8] [1] [*].

   Example: To change the RMN Conditions to trigger RMN under all conditions (when a TAD or FAX message is received or MODEM access occurs), enter the programming mode and press the following on your tone phone:

   [8] Change RMN Conditions to

   [1] [2] [3]   Trigger RMN when any of the three ports is accessed

   [*] End programming sequence (3 beeps indicate correct entry)

      .
      .   (Optional entries for additional changes)
      .

   [*] Save changes and exit programming

NOTE

Press the keys for your desired RMN Conditions in numerical order (that is, [1] first, then [2], then [3]).

5.4.15 FUNCTION [9][9][9]: RESET TO FACTORY SETTINGS

To reset all features and functions to their original factory settings, enter the programming mode and press the following on your tone phone:

   [9][9][9] Reset to Factory Settings

   [*] End programming sequence (3 beeps indicate correct entry)

      .
      .   (Optional entries for additional changes)
      .

   [*] Save changes and exit programming

5.5 Sample Programming Sessions

This section includes four examples of complete programming sessions.

5.5.1 SINGLE CHANGE, PROGRAMMED LOCALLY

Abby changes her ASD-4's Security Access Code every three months, and now it's time to change it again. She writes down the keys she must press to get into the programming mode ([#] [*]), the number of the function she wants to change ([2][1]), the new value she wants the function to have ([3] [9] [2] [7]), and the keys she must press to end the entry ([*]) and then save the change and exit the session ([*]). Then she picks up the receiver of the phone connected to her ASD-4's PHONE port and carefully but quickly presses this key sequence:

[#] [*] [2] [1] [3] [9] [2] [7] [*]

If she has done this correctly, she will hear three short beeps, after which she *must* press

[*]

one more time to save her changes. Once she does so, dial tone will return.

5.5.2 SINGLE CHANGE, PROGRAMMED REMOTELY

Bob is on vacation but has been waiting for a very important message, so he's had Remote Message Notification turned ON. Now that he's received that message, he wants to turn RMN OFF. He writes down the Security Access Code he must enter to get into the programming mode ([7] [3] [4]), the feature-OFF key ([0]), the number of the feature he wants to turn OFF ([8]), and the keys he must press to end the entry ([*]) and then save the change and exit the session ([*]). He picks up the receiver of his hosts' phone, dials the ASD-4's number, and waits until it answers. Then, between "phantom rings," he enters the Security Access Code:

[7] [3] [4]

He waits one or two seconds to make sure that the "phantom rings" stop. If they *don't*, he enters the code again after the next ring. If they *do*, he carefully but quickly presses this key sequence:

[0] [8] [*]

If he has done this correctly, he will hear three short beeps, after which he *must* press

[*]

one more time to save his changes. Once he does so, his call will be transferred to the TAD port, so he can either hang up immediately or check for any additional messages first.

5.5.3 MULTIPLE CHANGES, PROGRAMMED LOCALLY

A friend who didn't need it any more has given Carl an ASD-4. However, the friend neglected to give Carl any information about the ASD-4's current settings. So Carl has read the ASD-4's manual and decided he's satisfied with most of the factory settings, except that he wants Open Line Notification ON and he wants automatic transfers to go to the MODEM port. He writes down the keys he must press to get into the programming mode ([#] [*]), the number of the Reset to Factory Settings function ([9][9][9]), and the entry-ending key ([*]); the feature-ON key ([1]), the number of the OLN feature ([1]), and another entry-ending key ([*]); the MODEM-port key ([1]), the number of the Automatic Transfer Port Selection feature ([1][2]), and a third entry-ending key ([*]); and finally the save-and-exit key ([*]). Then he picks up the receiver of the phone connected to his ASD-4's PHONE port and carefully but quickly presses this key sequence:

[#] [*] [9] [9] [9] [*]   (should hear three beeps)

[1] [1] [*]   (three more beeps)

[1] [1] [2] [*]   (three more beeps)

[*]   (dial tone)

5.5.4 MULTIPLE CHANGES, PROGRAMMED REMOTELY

Dana is on a business trip and has RMN Conditions set to notify her when she gets either a fax or a TAD message. But she's found that she's receiving almost exclusively nuisance faxes like price lists and advertisements, so she wants to change the RMN Conditions to notify her only of TAD messages. Also, she's arrived at a new city, so she wants to change the RMN Phone Number. She writes down the Security Access Code she must enter to get into the programming mode ([6] [0] [0] [5]), the number of the RMN Conditions function ([8]), the TAD-only setting ([1]), and the entry-ending key ([*]); the number of the RMN Phone Number function ([7]), the new phone number (1 212 555 1192), and another entry-ending key ([*]); and finally the save-and-exit key ([*]). She picks up the receiver of her hotel phone, dials the ASD-4's number, and waits until it answers. Then, between "phantom rings," she enters the Security Access Code:

> [6] [0] [0] [5]

She waits one or two seconds to make sure that the "phantom rings" stop. If they *don't*, she enters the code again after the next ring. If they *do*, she carefully but quickly presses this key sequence:

> [8] [1] [*]   (should hear three beeps)
>
> [7] [1] [2] [1] [2] [5] [5] [5] [1] [1] [9] [2] [*]
>   (three more beeps)
>
> [*]   (call is transferred to TAD port;
>   can hang up right away or check
>   for messages)

6. Troubleshooting

6.1 Common Concerns

1. The green LED is flashing on and off, and no device on the line is off-hook (no other LED is on).

The incoming telephone line is probably not properly connected to the ASD-4. Check the connections to make sure that the incoming line is connected to the LINE-IN port.

2. My phones only ring one time.

When the ASD-4 receives a call, it answers the call on the first ring. This is the ring you hear on an extension phone. After the ASD-4 answers the call, it listens for fax or modem tones. If it doesn't hear any of these, it provides a continuous ring to the TAD and PHONE ports.

If you want all of your telephones to ring continuously on a voice call, you must install the ASD-4 to maintain exclusion (see **Section 3.5**).

3. Sometimes when I answer a call that's ringing the TAD and PHONE ports, I don't hear anything.

A fax machine that doesn't produce CNG tones might be trying to reach your fax machine: The ASD-4 doesn't hear CNG tones and routes the call to the TAD and PHONE ports. You must transfer these calls to your fax manually. See **Section 4.2.2.A**.

4. Sometimes my phones ring six times before the fax comes on line.

Again, these calls are probably from fax machines that doesn't produce CNG tones. When the ASD-4 doesn't hear CNG tones, it rings the TAD and PHONE ports six times before routing the call to the FAX port. You must transfer these calls to your fax manually. See **Section 4.2.2.A**.

5. My phones only get a chance to ring twice before the fax comes on line.

This is caused by the ASD-4's Automatic Ring Reduction feature: If a call goes unanswered at the TAD and PHONE ports, the ASD-4 reduces the ring count at those ports to two. (This is intended to allow non-CNG fax calls to reach your fax when the ASD-4 is unattended.) You can reset the TAD and PHONE ports' ring count by doing any of these things:

- Lifting the receiver of the phone device connected to the TAD or PHONE port and hanging it up.

- Answering a call at any phone on the ASD-4's line before the call is routed to the FAX or MODEM port.

- Placing an outbound call from any phone on the ASD-4's line.

You can also turn the Automatic Ring Reduction feature OFF. See **Section 5.3.1**.

6. My fax just came on line when I was right in the middle of a conversation.
    On very rare occasions, two people, just by talking, can match the two tones that are generated when you press a single key on a tone-dialing phone. It is possible for this phenomenon to fool the ASD-4 into thinking it has heard the FAX or MODEM Access Code, so that the ASD-4 transfers the call to the FAX or MODEM port. To virtually assure that this will never happen again, change these access codes from numbers with repeating digits (and tones), like the factory-preset [1] [1] and [2] [2], to numbers with two or more digits whose tones are completely different. Both of a digit's tones will be different from those of another digit if the two digits' keys are in different rows *and* different columns on a phone's keypad (for example, [1] and [5], or [4] and [9], or [3] and [7]).

7. The ASD-4 isn't saving my programming changes.
    You must press the [*] key *twice* after your final program entry: *once* to mark the end of that entry, then *again* to tell the ASD-4 to save your changes. See **Section 5.1**.

6.2 Calling Black Box

If your ASD-4 seems to be malfunctioning, *do not attempt to alter or repair it*; contact Black Box for technical support.
    Before you do so, make a record of the history of the problem. Black Box will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem,

- when the problem occurs,

- the components involved in the problem, and

- any particular application that, when used, appears to create the problem or make it worse.

6.3 Shipping and Packaging Information

If you need to transport or ship your ASD-4:

- Package it carefully. We recommend that you use the original container.

- If you are shipping it for return or repair, contact Black Box to get a Return Authorization (RA) number. If you are returning it, please include this manual.

Appendix A: Quick Start Guide

This Guide shows you the basics of how to install and operate the ASD-4 in a *single-line, single-phone* system. Please refer to **Chapters 3** through **5** of this manual for more information on this and other system configurations.
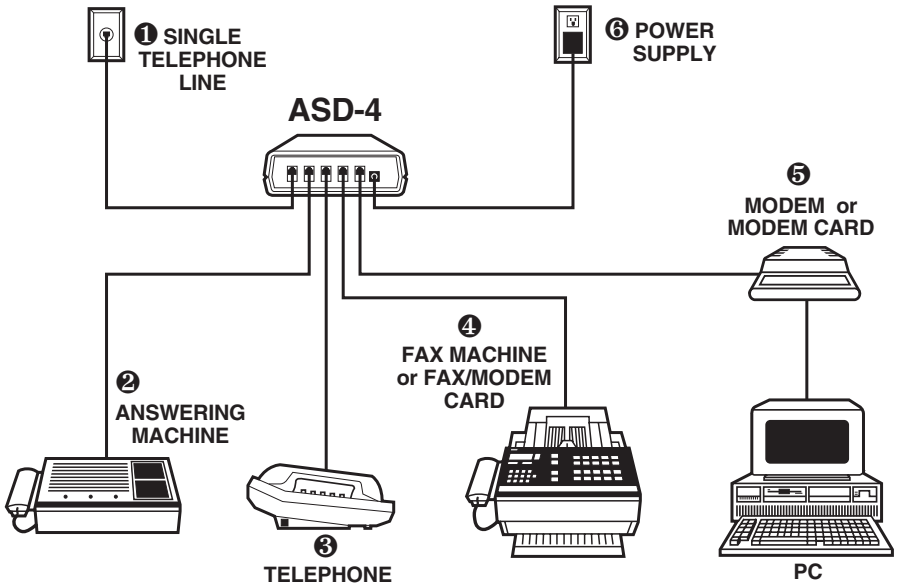
A.1 Installing the ASD-4

❶ Connect the incoming telephone line to the leftmost RJ-11 port (labeled "LINE-IN") on the ASD-4's rear panel.

❷ Connect your answering machine to the second-from-left ("TAD") port.

❸ Connect your phone to the middle ("PHONE") port.

❹ Connect your fax or fax/modem to the second-from-right ("FAX") port.

❺ Connect your modem to the rightmost ("MODEM") RJ-11 port, and set the modem to auto-answer on the first ring.

❻ Plug the cord of the ASD-4's power supply into the jack labeled "12 VAC." Plug the power supply's transformer into a wall outlet.

A.2 Operating the ASD-4

A.2.1 ANSWERING INCOMING CALLS

When a call comes in and the ASD-4 is connected to a single extension, all of the phones on the same line (except those connected to the TAD or PHONE port) ring one time. *The ASD-4 answers the call on the first ring.* After the ASD-4 answers the call, it listens for any of these signals:

- a fax <u>C</u>alli<u>NG</u> (CNG) tone (see **Section 4.1.2** for more information)

- the FAX Access Code or MODEM Access Code (see **Sections 4.2.2**, **5.4.2**, and **5.4.3** for more information about these)

- a reverse modem carrier

If the ASD-4 detects any of these signals, it automatically routes the call to the selected port. If it *does not* detect a signal, it routes the call to its TAD and PHONE ports. When the phone devices on the TAD and PHONE ports ring, it means that the call is coming from one of these:

- a person wanting to talk to you

- a person sending a fax manually

- a fax machine that can't produce CNG tones

If, after answering the call, you hear silence on the line, the call is probably coming from a fax machine that doesn't produce CNG tones. Transfer the call to the FAX port by entering the appropriate access code ([1] [1] from a tone phone or [3] from a rotary/pulse-dialing phone). You can use the same procedure to transfer a call fwhen the caller vebally requests the fax machine.

For more information on answering incoming calls, see **Section 4.2.2**.

A.2.2 USING THE ASD-4 WITH A TAD (ANSWERING MACHINE)

When an answering machine on the ASD-4's TAD port answers a call, the caller can not only leave a voice message, he or she can also transfer the call to the FAX or MODEM port. We recommend that you use your answering machine's greeting announcement to provide callers with instructions for transferring their calls. Here's a sample announcement that you might want to use:

"Hello, this is the _____ company. If you wish to send a fax only, press [1] [1] on your tone phone and begin your transmission now. If you want to leave a voice message, leave your message at the tone. You may also leave a message at the tone and *then* press [1] [1] to reach the fax."

You can also announce the tone access code for the MODEM port ([2] [2]) if you want to allow open access to this port. You might also want to inform callers that they can't transfer a call to the FAX or MODEM port from a rotary/pulse-dialing phone.

To accommodate rotary/pulse-dialing faxes, or faxes that do not produce CNG tones, turn the Automatic TAD Transfer feature on (see **Section 5.3.4**).

A.3 Important Notes

A.3.1 SURGE PROTECTION

We recommend that you use surge protection for all telecommunications devices. The ASD-4's power supply should be connected to a surge suppressor and/or a line conditioner. Also attach in-line surge protectors to the telephone line conected to the ASD-4. If you need surge-protection equipment, contact Black Box.

A.3.2 SERVICES THAT DON'T WORK

Certain services offered by the phone company do not work well with, or aren't compatible at all with, the ASD-4:

- **Call Waiting:** Transmissions involving an older fax machine or modem could be disrupted by Call Waiting's "beep" tone. The only effect this tone has on newer fax machines is to make them insert a thin line into faxes. The tone will probably have no noticeable effect on newer modems.

- **Call Forwarding:** If Call Forwarding is enabled for a line, the ASD-4 cannot process calls on that line.

- **Phone-Company Voice Mail:** The phone company's voice-mail service is not compatible with the ASD-4. Standalone (on-site) voice-mail systems, however, usually work well with the the the ASD-4.

We recommend that you stop subscribing to Call Forwarding and the phone company's voice mail. Call Waiting might not give you trouble, but test it with your fax and modem to make sure.

A.4 If You Have Questions

If you have difficulties when you install or operate the ASD-4, or if the ASD-4 does something you don't understand, refer to the appropriate sections in the rest of this manual or to **Chapter 6: Troubleshooting**. If this doesn't help, call 724-746-5500 for technical support.

Appendix B: Programming Worksheet

When you program the ASD-4, each time you press a key on your phone to enter a programming tone, you have only six seconds to enter the next tone: If you don't enter the next tone within six seconds, the ASD-4 will exit the programming mode without saving your changes. For this reason, we recommend that you write down your programming changes so that you can read them off when you enter them rather than trying to work from memory. Refer to **Section 5.2** for each feature or function's possible values.

Make copies of this appendix and compose your changes on them. Check off, circle, or write in (as directed) each key sequence you will use. Then go through and copy all of them onto the lines at the bottom of page 74.

<div align="center">

ACCESS PROGRAMMING MODE
(circle one)

</div>

Locally: or   Remotely:
[#] [*]   [ ] [ ] [ ] [ ] [ ]
                              (write in your Security Access Code)

<div align="center">

PROGRAM ENTRIES
(put a check mark on the line at left if you're going
to program the given feature or function)

</div>

_____	[9] [9] [9] [*]	Reset to Factory Settings (must precede any other change)
_____	[0] or [1] (circle one) [0] [*]	Automatic Ring Reduction
_____	[0] or [1] (circle one) [1] [*]	Open Line Notification
_____	[0] or [1] (circle one) [2] [*]	Extension Detection

PROGRAM ENTRIES (continued)
(put a check mark on the line at left if you're going
to program the given feature or function)

_____ [0] or [1]   [3] [*]   Automatic TAD Transfer
             (circle one)

_____ [0] or [1]   [4] [*]   Pulse Transfer
             (circle one)

_____ [0] or [1]   [5] [*]   Automatic No Answer Transfer
             (circle one)

_____ [0] or [1]   [6] [*]   CNG Detection
             (circle one)

_____ [0] or [1]   [7] [*]   Reverse Modem Detection
             (circle one)

_____ [0] or [1]   [8] [*]   Remote Message Notification
             (circle one)   (RMN)

_____ [0] or [1]   [9] [*]   Distinctive Ring Detection
             (circle one)

_____ [0] or [1]   [1] [0] [*]   Outbound Voice Exclusion
             (circle one)

_____ [0] or [1]   [1] [1] [*]   Reverse Modem Port Selection
             (circle one)

_____ [0] or [1]   [1] [2] [*]   Automatic Transfer Port Selection
             (circle one)

_____ [2] [1] [ ] [ ] [ ] [ ] [*]   Security Access Code
             (write in new value from
             1 to 4 digits)

PROGRAM ENTRIES (continued)
(put a check mark on the line at left if you're going
to program the given feature or function)

_____ [2] [2] [ ] [ ] [ ] [ ] [*]   FAX Access Code
(write in new value from
1 to 4 digits)

_____ [2] [3] [ ] [ ] [ ] [ ] [*]   MODEM Access Code
(write in new value from
1 to 4 digits)

_____ [3] [1] [ ] [*]   TAD and PHONE Ports'
(write in new value)   Distinctive Ring

_____ [3] [2] [ ] [*]   FAX Port's Distinctive Ring
(write in new value)

_____ [3] [3] [ ] [*]   MODEM Port's Distinctive Ring
(write in new value)

_____ [4] [0] [ ] [ ] [*]   Rings to Answer Call
(write in new value from
1 to 99)

_____ [4] [1] [ ] [ ] [*]   Rings Available to TAD and
(write in new value from   PHONE Ports
0 to 99)

_____ [4] [2] [ ] [ ] [*]   Rings Available to FAX Port
(write in new value from
1 to 99)

_____ [4] [3] [ ] [ ] [*]   Rings Available to MODEM Port
(write in new value from
1 to 99)

PROGRAM ENTRIES (continued)
(put a check mark on the line at left if you're going
to program the given feature or function)

_____ [5] [ ] [*]   Phantom Ring Style
            (write in new value)

_____ [6] [ ] [ ] [*]   Automatic TAD Transfer Timer
            (write in new value from
            0 to 99)

_____ [7] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
[*]
            (write in new number   RMN Phone Number
            up to 16 digits long)

_____ [8] [ ] [ ] [ ] [*]   RMN Conditions
            (write in new value)

SAVING CHANGES AND EXITING PROGRAMMING MODE
(circle this key; you *must* end your session with it to save your changes)

[*]

Once you've marked all your changes in this appendix, go through it, starting
from the beginning, and write down each key you must press, in order, on the
lines below. Skip any write-in keys you have left blank. When you finish, you'll
have a key string you can enter quickly and efficiently.

_____

_____

_____

_____

Appendix C:
Remote Programming Card

If you think you might need to program the ASD-4 or retrieve TAD messages remotely, make a copy of this page and cut out the card below (don't separate its two sides). Fold and tape or glue the two sides together.

If you leave the card unlaminated, you can write directly on it, then make a new card later if you change your Security Access Code. If you laminate the card, however, you can write on the lamination with marker and cover the writing with transparent tape to keep it from smearing; this way, when you need to change your Security Access Code, you can just remove the tape, wipe off the marker, and start over.

Remote Progranming Card for the ASD-4

When you want to program the ASD-4, call its phone number from a touch-tone phone. After the ASD-4 answers, enter your Security Access Code between ring signals.

Your Security Access Code is:

___ ___ ___ ___

After you enter the code, you can make programming changes. You must press the [*] key after each program entry. Press the [#] key to discard changes you've made up to that point. After your final program entry, press the [*] key twice to save and exit.

Most Common Remote-Programming Changes

Remote Message Notification (RMN): [1] [8] [*] = ON, [0] [8] [*] = OFF

RMN Phone number: [8] + a phone number to up 16 digits long + [*]

Automatic Ring Reduction: [1] [0] [*] = ON, [0] [0] [*] = OFF

Retrieving TAD Messages

❶ Call the ASD-4 from a tone phone.

❷ After it answers, press the [*] key.

❸ When your answering machine answers, follow its normal remote-retrieval procedures.

❹ After listening to your messages, hang up.

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