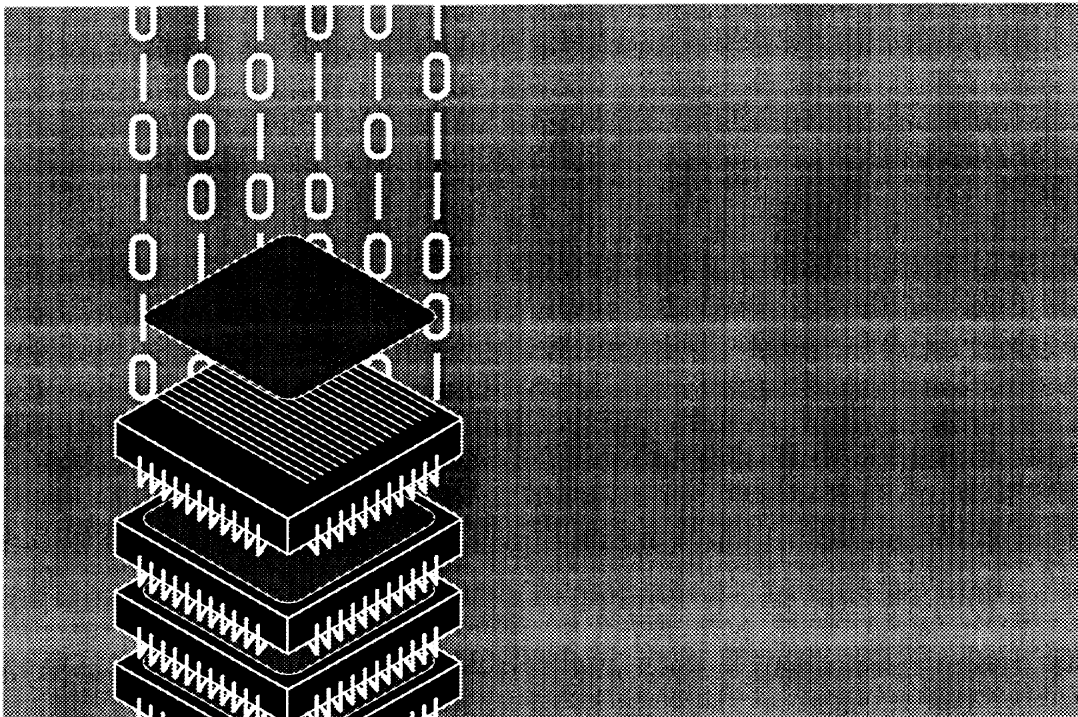


# TaskLink™ for DOS

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UNIVERSAL PRODUCTION AUTOMATED  
SOFTWARE



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USER MANUAL

**DATA I/O**

096-0129

# TaskLink<sup>™</sup> for DOS

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Universal Production Automation Software

User Manual

April 1997

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# 1 Introduction

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## *For Administrators*

TaskLink™ Universal Production Automation Software provides you with a single user interface to control your programmer/handler/PC system. With TaskLink, you can standardize handler-automated, gang EPROM, or single-site programming operations by creating job setups, called Tasks, for each device you want to program. To program a group of devices for a board, you can link several Tasks together as a Kit.

For best results, we suggest that a system administrator perform the following steps:

<b>Step</b>	<b>Chapter</b>
1. Set up and install TaskLink on your PC.	1. Introduction
2. Set up TaskLink to operate with your ProMaster® handler.	1. Introduction
3. Create Tasks and Kits for automated programming.	2. Task and Kit Creation

Chapters 3 and 4 describe how to use TaskLink to program devices with or without using Tasks and Kits.

When using TaskLink as part of a ProMaster system, set up and install TaskLink first before proceeding to the setup and installation of the AutoSite™ programmer and ProMaster handler (see the *ProMaster Administrator Guide*).



---

## Package Contents

Your TaskLink package includes the following items:

- Two 3.5-inch disks
- *TaskLink User Manual* with End User Registration Card
- Customer letter

Instructions for using the data cable and adapter are in the "Connecting the Programmer and the PC" section of this chapter.

---

## System Requirements

TaskLink has the following system requirements:

**AT, PS/2, 386 or 486 PC** with the following:

- DOS 3.3 or later (DOS 6.2 recommended)
- 640K RAM (2MB of extended RAM recommended)
- Extended memory manager such as **himem.sys** or QEMM (recommended)
- Disk caching software such as **smartdrv.sys** (recommended)
- One serial port (two required if used with a ProMaster handler)
- Microsoft-compatible mouse (recommended) (bus mouse required if used with a ProMaster handler)
- A hard disk with at least 4MB of free disk space
- Color monitor (recommended)
- 3.5-inch disk drive

**Data cable** (shipped with the programmer or handler)

---

*Note: If you plan to use the TaskLink Graphics Editor (TLGE) with your ProMaster handler (either a 2500 or 3000 with a thermal printer, or a 7000 or 7500), you also need a graphics adapter (EGA, VGA, or SVGA) and a color monitor.*

*TLGE enables you to create drawing files that TaskLink can send to the handler for printing on labels or marking on devices.*

**Supported Programmers**

Use TaskLink with the following Data I/O® programmers:

- AutoSite Automated Production Programmer
- UniSite™ Universal Programmer with SetSite™ or PinSite™
- 3900 and 2900 Programming Systems
- PSX Parallel Programmers

**Supported Handlers**

Use TaskLink with the following ProMaster handlers:

- ProMaster 7000
- ProMaster 3000
- ProMaster 2500
- ProMaster 2000
- ProMaster 1000

---

## Installing TaskLink

Install TaskLink on your PC as follows:

1. Put Disk 1 of 2 in the disk drive.
2. Enter

***drive:install***

where *drive* is the drive in which you placed the disk. Follow the instructions on the screen, answering any prompts.

---

*Note: At this point, be sure to read the **readme.txt** file, which contains the latest information about the current version.*

---

## Connecting the Programmer and the PC

Set up your PC and programmer as follows:

1. Power down the programmer.
2. Connect one end of the supplied data cable to a serial port on the back of your PC. COM1 is the default programmer port.

---

*Note: If your PC has a 9-pin connector, use the 9-pin adapter included with the product to connect the data cable to your PC.*

3. Connect the other end of the data cable to the RS-232C port on your programmer. (The RS-232C port on AutoSite is labeled Handler; on UniSite, 2900, and 3900, it's labeled Remote.)
4. Power up the programmer.

---

## Modes of Operation

You can run TaskLink in four modes: Administrator, Operator, Simulation, and Batch.

- **Administrator** mode starts TaskLink at the menu bar, with full access to all the commands and features available in TaskLink. Use this mode to set up TaskLink for your programmer and handler, to create Tasks or Kits, or to program a device without a Task or Kit. To enter Administrator mode, type **tl a**.
- **Operator** mode (the default) starts TaskLink in the Run Task/Kit list box for simple, error-free device processing using Tasks or Kits. In this mode, operation is limited to selecting an existing Task or Kit and processing devices according to the parameters of the selected Task or Kit. To enter Operator mode, type **tl**.

In either Administrator or Operator mode, TaskLink can perform all programming operations from the PC using a programmer and handler.

For information on Simulation and Batch modes, see the **General Help Index** in the **Help** menu.

---

## Documentation

### User Manual

The first three chapters in this manual are directed to the system administrator — the person responsible for the setup, installation, and trouble-free use of the programmer, handler, and TaskLink, or someone who wants to use TaskLink to program a device without creating a Task or Kit.

The final chapter of this manual is directed to the system operator — the person who uses the programmer, handler, and TaskLink system on a daily basis, and uses Tasks or Kits to program devices.

We suggest you photocopy Chapter 4, "Programming With Tasks and Kits," and distribute it to all the operators who will use TaskLink to program devices. A subhead of *Administrator* or *Operator* has been included after each chapter title to designate the intended audience.

Place this manual in your *AutoSite User Manual* behind the TaskLink tab or in your programmer User Manual behind the Options tab for future reference.

### Online Documentation

For more detailed information on any aspect of TaskLink, refer to the context-sensitive online documentation available by clicking the mouse cursor on the < F1 = Help > pushbutton at the bottom right of the screen, or by pressing **[F1]**. All topics covered in online documentation are also accessible from the **General Help Index** in the **Help** menu.

---

*Note: The menus are available only in Administrator mode.*

## Getting Started

To start TaskLink, perform the following steps.

### Start TaskLink

1. Make sure your programmer is in computer remote control (CRC). For information on how to put your programmer in CRC, refer to the following "Computer Remote Control" section.

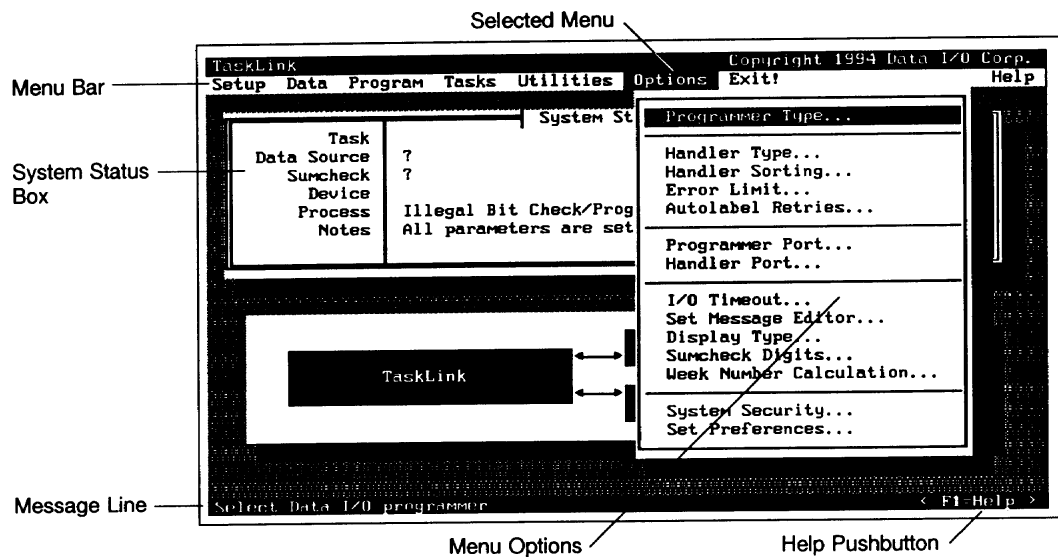
*Note: When the cable is connected to the Handler port (AutoSite) or the Remote port (UniSite, 2900, or 3900) and nothing is connected to the Auxiliary (AutoSite) or Terminal port (UniSite, 2900, or 3900), the programmer automatically boots up in CRC unless parameters were set to override this (see your programmer User Manual for details).*

2. At the DOS prompt, enter

```
tl a
```

Figure 1-1 shows the TaskLink main screen with the Options menu selected.

**Figure 1-1**  
TaskLink  
Main Screen



### Select Programmer

3. Access the Options menu.
4. Select Programmer Type, highlight the programmer you are using, and press  , or click on the < OK > pushbutton.

When you select a programmer from the list, TaskLink is reconfigured to work with that programmer and load the programmer messages. This setting also determines the programmer that TaskLink uses as the default programmer.

TaskLink and your programmer should now be communicating and ready to operate.

**Confirm Communication** To confirm that communication between your programmer and PC is established, press **Ctrl** + **F1** .

If TaskLink is communicating with your programmer, a green box displays `Contact with programmer established`.

If TaskLink is not communicating with your programmer, a red box displays `Attempting to contact programmer . . .`

For help, see the "Establishing Communication" section later in this chapter.

---

## Setting Up the Programmer

---

*Note: If you are using a handler, also read the "Setting Up the Handler Setup" section.*

System parameters are set from the **Options** menu (see Figure 1-1). To access the **Options** menu, press **Alt** + **O** or click on **Options** in the menu bar.

### Programmer Port

To set the programmer port parameters, select **Programmer Port**.

TaskLink's programmer port settings must match the settings of the programmer's serial port (labeled **Handler** on **AutoSite** and **Remote** on **UniSite**, 2900, and 3900). For optimum performance, set the programmer port to the fastest baud rate supported by both the programmer and TaskLink (19200).

The recommended programmer port settings are

Port:	COM1 or COM2
Baud Rate:	19200 (See your programmer User Manual for instructions on how to change the default baud rate (9600) on your programmer to 19200.)
Parity:	None
Data Bits:	8
Stop Bits:	1

Press **F1** or click on the **< F1 = Help >** pushbutton for further information on the port parameters.

## Message Editor

Use the message editor to create messages for TaskLink to display between running the Tasks in a Kit. You can set up TaskLink to run any ASCII editor you want. For more information, see the "Message Editor" section in Chapter 2, "Task and Kit Creation."

To set the message editor, select **Set Message Editor**. The file selection dialog box appears. Select the .exe file of the ASCII editor of your choice. Press  or click on the < OK > pushbutton.

---

*Note: Make sure to enter a complete path and filename. TaskLink does not search the path described by the DOS PATH environment variable.*

## Other System Parameters

At this time you may want to set other system parameters available in the **Options** menu such as

- I/O Timeout . . .
- Display Type . . .
- Sumcheck Digits . . .
- Set Preferences . . .

---

## Establishing Communication

If TaskLink cannot contact the programmer, check the following:

- Is the RS-232C cable connected properly?
- Do the TaskLink programmer port settings match the programmer's?
- Is the programmer in computer remote control?

## RS-232C Cable

The RS-232C cable supplied with the product works with any PC serial port and any supported Data I/O programmer. Make sure the cable is connected to the correct port on the PC (the port selected in **Programmer Port** from the **Options** menu).

For AutoSite, make sure the cable is connected to the port labeled **Handler**. If a connection is established on the **Handler** port of AutoSite, the **Handler LED** on the front of the control unit is lit.

For UniSite, 2900, and 3900 programmers, make sure the cable is connected to the port labeled **Remote**. For UniSite, ensure that the button next to the **Remote** port is in the correct position by ensuring that the light labeled **REMOTE** on UniSite's front panel is lit.

## Port Settings

The TaskLink programmer port settings must match the programmer's serial port settings (see your programmer User Manual for instructions on how to change the port defaults). For optimum performance, set the baud rate of the programmer and TaskLink's programmer port settings to the fastest baud rate supported by the programmer and TaskLink (19200). To change the TaskLink programmer port settings, select **Programmer Port** from the **Options** menu. Press  or click on the < F1 = Help > pushbutton for more information.

## Computer Remote Control

To establish communication between TaskLink and the programmer, the programmer must be in CRC. The procedure for entering CRC depends on the type of programmer you are using.

### AutoSite, UniSite, 2900, 3900

To operate the AutoSite, UniSite, 2900, and 3900 programmers with TaskLink, set the following programmer parameters as directed below. Once these parameters have been set, these programmers automatically power up in CRC.

- Set **User Menu Port** to **Remote**.
- Set **Power-up CRC Mode** to **Yes**.
- Set **Power-up Default Terminal Type** to **DEC VT100 (ANSI 3.64)**.

Power down the programmer, then set the parameters as follows:

1. Connect the RS-232C cable from the PC programmer port to the programmer's Auxiliary (AutoSite) or Terminal (UniSite, 2900, 3900) port. **Make sure nothing is connected to the programmer's Handler port (AutoSite) or Remote port (UniSite, 2900, 3900).**
2. In TaskLink, select **VT100 on Programmer Port** from the **Utilities** menu.
3. Power up the programmer and wait for the banner screen to appear.
4. If the programmer terminal type is DEC VT100 (ANSI 3.64) press **[Enter]**.

If the programmer terminal type is not DEC VT100 (ANSI 3.64) press **[Y][Enter]**, at the terminal type selection prompt, press **[1][Enter]**, and then at the Save As default prompt, press **[Y][Enter]**.

5. Set the **User Menu Port** parameter (under More Commands/Configure System/Edit/Communication) to **R** and press **[Enter]**.
6. Move the RS-232C cable to the programmer Remote port.
7. Set the **Power-up CRC Mode** parameter (under More Commands/Configure System/Edit/Interface) to **Y**.
8. Save the configuration as the powerup default from More Commands/Configure System/Save.
9. Press **[Esc][Ctrl] + [W]** to reboot the programmer.
10. Press **[Alt] + [F1]** to exit the TaskLink terminal emulator.

The programmer should be ready to communicate with TaskLink.

### PSX Programmer

Make sure the RS-232C port is the active port on the PSX programmer. Then, from the top-level menu, select **Remote Control** from the programmer front panel. Press **[Enter]**.

## Setting Up the Handler

To establish communication between TaskLink and the handler, set the handler parameters in the TaskLink **Options** menu. You need to do this only for the initial setup of your handler (and whenever you switch handlers).

1. Power up the PC and enter **tl a** from the DOS prompt.
2. Access the **Options** menu.

*Note:* All of the following handler parameters are set in the **Options** menu.

### Handler Type

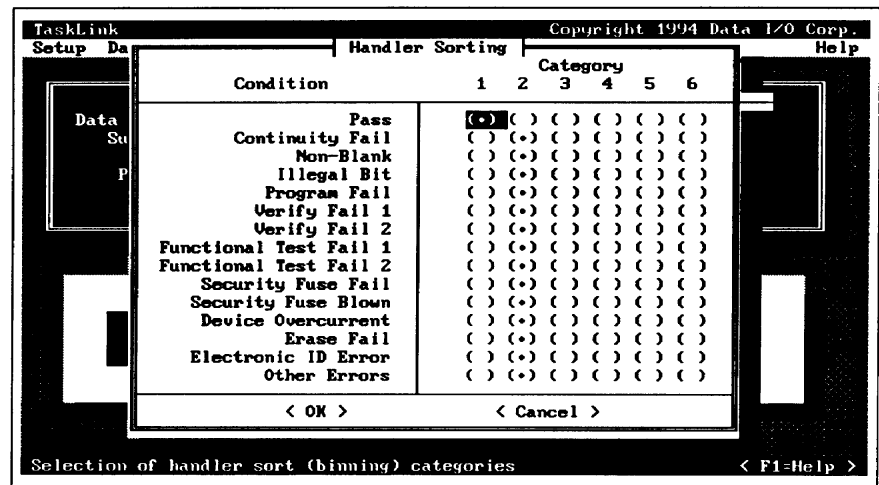
1. Select **Handler Type**.
2. Select the appropriate handler or handler setting.

*Note:* This setting determines the handler that TaskLink uses as the default handler.

### Handler Sorting

1. Select **Handler Sorting**. The Handler Sorting dialog box appears (see Figure 1-2).

*Figure 1-2*  
Handler Sorting Dialog Box



2. Assign a category number (1 through 6) to 15 different conditions. Press **F1** for more information.

*Note:* For information on setting the binning parameters on your handler, see your handler *User Manual*. When setting up the binning parameters on your handler, use the TaskLink category numbers to specify device distribution into the bins.



## Error Limit

1. Select **Error Limit**. The Consecutive Error Limit dialog box appears.
2. Enter a number to specify how many consecutive errors (of the same kind) the handler should allow before stopping. Zero (0) equals a no-limit setting.

---

## Retries

*Note: If the selected Handler Type is an Autolabel 1000, 2000, or 3000, the Retries menu option is **Autolabel Retries**.*

*If the selected Handler Type is an Autolaser 7000, the Retries menu option is **Autolaser Retries**.*

*If the selected Handler Type is a ProMaster 2500, the Retries menu option is **ProMaster Retries**.*

*If the selected Handler Type is No handler used, LPT1, LPT2, or LPT3, the retries menu option is not supported and does not appear.*

Select the Retries menu option. The Retries dialog box appears. You can select from the following conditions.

<b>Never retry</b>	The handler does not try to reprogram a device that has not been successfully programmed.
<b>Retry continuity test failures only</b>	The handler tries to reprogram devices that have a continuity test failure only.
<b>Retry all failures</b>	The handler tries to reprogram devices that have not been successfully programmed.

---

## Port Settings

*Note: If the selected Handler Type is an Autolabel 1000, 2000, or 3000, the port menu option is **Autolabel Port**.*

*If the selected Handler Type is an Autolaser 7000, the port menu option is **Autolaser Port**.*

*If the selected Handler Type is No handler used, LPT1, LPT2, or LPT3, the port menu option is **Host Port**.*

Select the port menu option. The port dialog box appears.

The TaskLink handler port settings must match the handler's Remote port settings. For optimum performance, set the baud rate on the handler and in TaskLink to the fastest baud rate supported by the handler and TaskLink (19200).

## RS-232C Cable

1. Connect an RS-232C cable to a serial port (default COM2) on the PC.
2. Connect the other end of the RS-232C cable to the Remote port on the handler.

---

*Note: Cable connection from the PC to the programmer is covered in the "Hardware Setup" section.*

## Establish Communication

To establish communication between TaskLink and the handler, check the following:

- Is the RS-232C cable connected properly?
- Do the TaskLink port settings match the handler's?

For optimum performance, set the baud rate on the handler and in TaskLink to the fastest baud rate supported by the handler and TaskLink (19200). See your handler User Manual for instructions on how to change the default settings on the Remote port.

The Autolabel 3000 and Autolaser 7000 Remote port default settings are listed below.

- 9600 baud
  - 8 data bits
  - No parity
  - 1 stop bit
- Is the handler in computer remote control (CRC)?

To enter CRC on the handler, press **[LOW CASE]** + **[R]** from the handler Main Menu.

If the cable is connected, the TaskLink and handler port settings match, and your handler is in CRC, TaskLink and your handler should be communicating and ready to operate.

To confirm that communication between your handler and TaskLink is established, press **[Ctrl]** + **[F2]**.

If TaskLink is communicating with your handler, a green box displays Contact with Autolabel (Or Autolaser) established.

If TaskLink is not communicating with your handler, a red box displays Attempting to contact Autolabel (OR Autolaser or ProMaster)...

## Keys and Key Combinations

Use the keyboard and mouse to operate TaskLink. Table 1-1 describes the keys you can use to run TaskLink in Administrator mode.

**Table 1-1**  
*Keys Used in  
Administrator  
Mode*

Keys	Functions
<b>General Navigation Keys</b>	
<b>Tab</b> and <b>Shift</b> + <b>Tab</b>	Moves the highlight between fields in a dialog box. <b>Tab</b> moves to the next field, and <b>Shift</b> + <b>Tab</b> moves to the previous field.
<b>↵</b>	Accepts the current selections in a dialog box. In a multiple-line text entry field, <b>↵</b> moves the cursor to the beginning of the next line or to the next selection field.
<b>Esc</b>	Cancel a dialog box without saving changes and cancels an operation in process.
<b>Space</b>	Toggles the state of a check box.
<b>↑</b> and <b>↓</b>	Moves the radio button or highlight in a dialog box.
<b>Home</b> , <b>End</b> , <b>PgUp</b> and <b>PgDn</b>	Moves the cursor to the beginning of the list, end of the list, up one screen or down one screen, respectively.
<b>Information Keys</b>	
<b>F1</b>	Accesses context-sensitive help.
<b>F2</b>	Displays a list of parameters set to non-default values when pressed from the main screen and the Process Devices screen. From some dialog box entry fields, <b>F2</b> accesses list boxes or the file selection dialog box.
<b>Ctrl</b> + <b>F1</b>	Checks communication between the PC and the programmer when pressed from the main screen (Administrator mode) or the Run Task/Kit dialog box (Operator mode).
<b>Ctrl</b> + <b>F2</b>	Checks communication between the PC and the handler when pressed from the main screen (Administrator mode) or the Run Task/Kit dialog box (Operator mode).

**Hot Keys**

**Alt** + **highlighted letter key** Selects a pull-down menu from the main menu.

**Ctrl** + **letter key** Select menu options without going to the menu.

Select Device ... **Ctrl** + **D**

Load RAM from Master **Ctrl** + **L**

Load RAM from File ... **Ctrl** + **F**

Create File from RAM ... **Ctrl** + **C**

Process Devices ... **Ctrl** + **P**

Run Task/Kit ... **Ctrl** + **T**

---

## Using the Menus

Menu selections followed by ellipses ( . . . ) call up dialog boxes for further information. Selections without ellipses perform an action.

**Dialog Boxes**

A dialog box is a screen that allows you to select or set different parameters. They can contain pushbuttons, check boxes, radio buttons and entry fields.

**Pushbuttons**

Dialog boxes contain one or more pushbuttons, which can be selected by highlighting the pushbutton and pressing **↵**, or by clicking on the pushbutton.

**Check Boxes**  
[ X ]

Check boxes toggle an option on and off. Press **Space**, or click on the check box to toggle a selection on or off.

**Radio Buttons**  
( • )

Radio buttons select a particular option from a list of mutually exclusive options. Use the arrow keys or click on the option to select a radio button option.

**Entry Fields**  
*field\_label: l*    

Entry fields allow you to input information that TaskLink needs. When highlighted, text entered at the keyboard goes into the entry field.



# 2 *Task and Kit Creation*

---

## *For Administrators*

Tasks and Kits allow you to run TaskLink in **Operator** mode (see Chapter 4, "Programming With Tasks and Kits"), starting TaskLink directly from the Run Task/Kit dialog box, selecting the Task or Kit, and processing devices.

---

### What Is a Task?

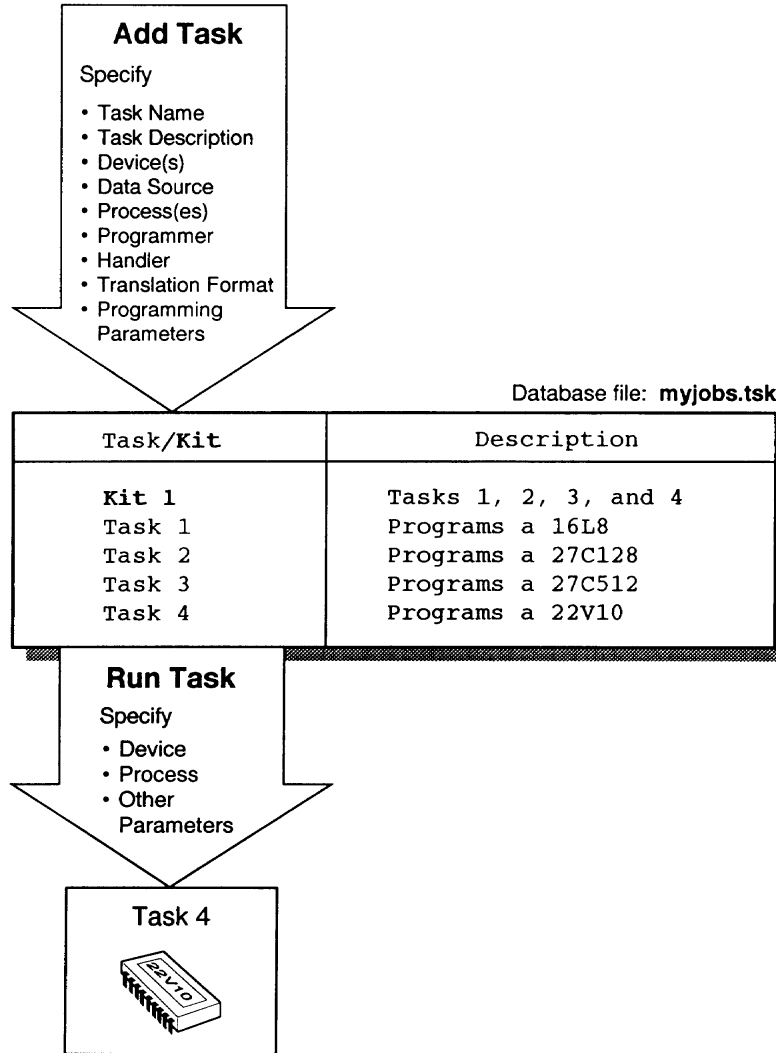
A Task is a job setup containing all the information necessary for programming and/or testing a particular part. A Task records all the parameters of the job setup from the device type and data file to be entered, to the label text to print and place on the part. Once a Task is set up, no further setup is required. When an operator selects the Task from the Run Task/Kit dialog box, only a few final selections need to be made. Figure 2-1 shows the concept of a Task from creation to use.

---

### What Is a Kit?

A Kit is a group of Tasks you set up to program the various parts you need to build a particular product board. A Kit can contain up to 20 Tasks. All the Tasks in a Kit must be from the same database file (called a Source Database in the Kit dialog box), but the Kit can be stored in the Source Database or a different database file. When you create a Kit, you can specify the number of devices you want to program with each Task. Then, when you run the Kit, you can specify the number of Kits you want to build.

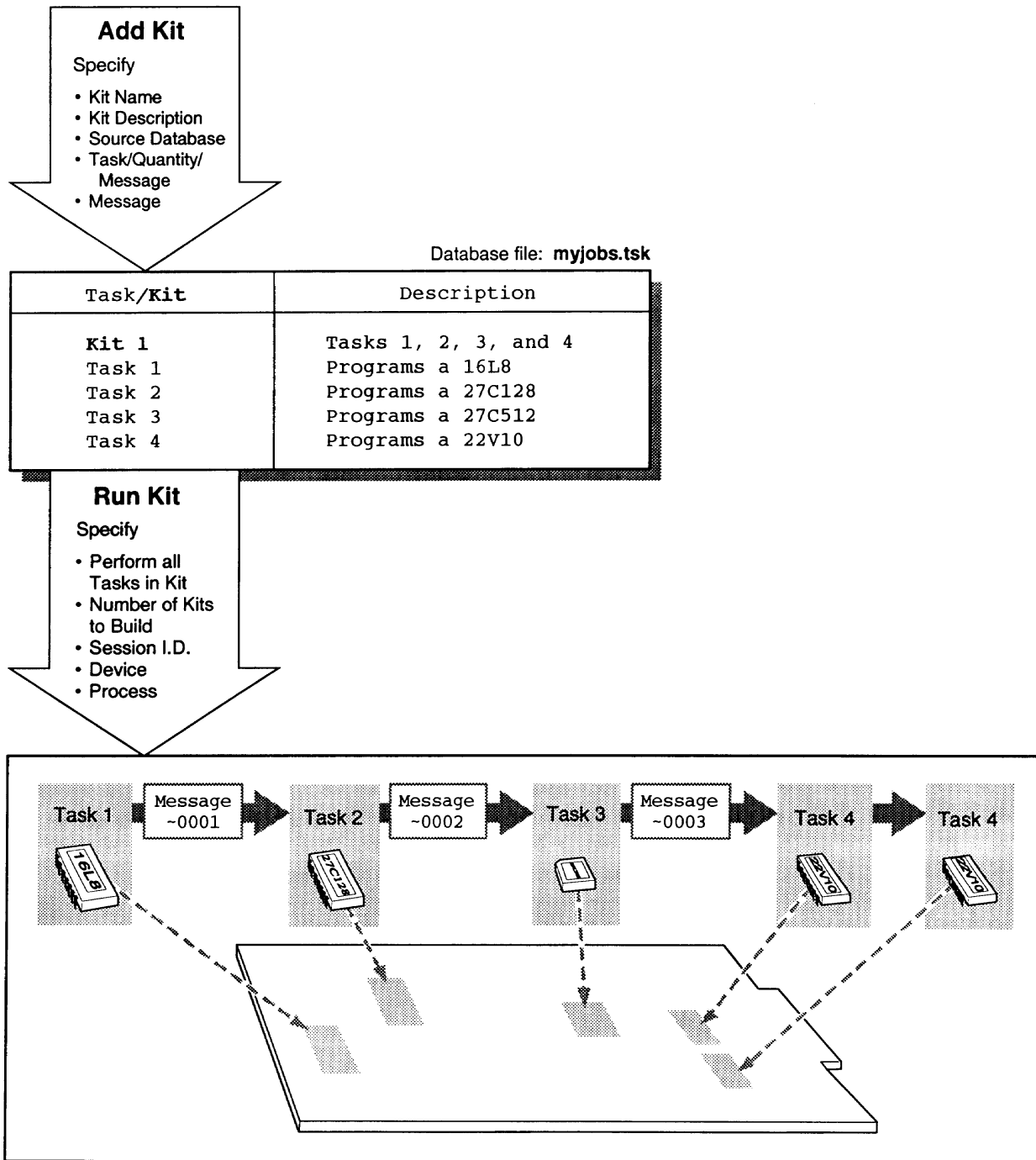
**Figure 2-1**  
Task Flow Chart



1376-1

For example, say your board requires four different parts: one each of parts 1, 2, and 3; and two of part 4. After creating a Task for each part (Task 1, 2, 3, and 4), you create a Kit that calls out Tasks 1, 2, and 3 at a quantity of one, and Task 4 at a quantity of two. When you run the Kit, TaskLink prompts for the number of Kits to build. If you enter 10, TaskLink directs the programmer and handler to program ten Task 1 devices (1 x 10), then ten Task 2 devices (1 x 10), then ten Task 3 devices (1 x 10), and then 20 Task 4 devices (2 x 10). The relationship between Tasks and Kits is shown in Figure 2-2.

Figure 2-2  
Kit Flow Chart



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## The Database File

Tasks and Kits are stored in a file with a .tsk extension. This file can be named any valid DOS filename. Throughout this manual, the .tsk file is referred to as the database file.

You can create as many .tsk files as you want; however, all the Tasks in a Kit must be from the same database file. You can have up to 2500 Tasks and Kits in any database file.

## User-defined Messages

When creating a Kit, you can create messages to be displayed before each Task is run. In the above example, you might want to display a message that tells the operator to load a certain device type or adjust the handler in some way before programming each device. The user-defined messages feature is described in more detail in the "Message Editor" section on page 2-17.

## Getting Started

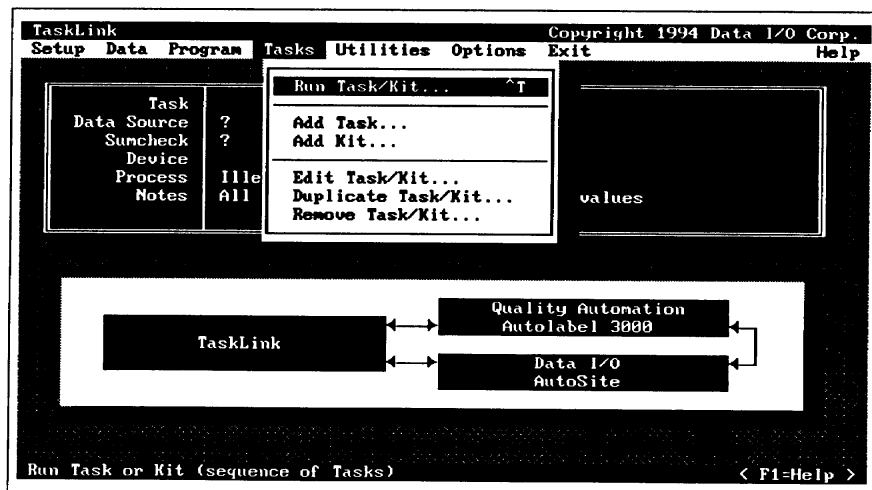
To create a Task or Kit, enter `tl a` at the DOS prompt to start TaskLink in Administrator mode.

*Note:* Press **Esc** at any time to exit any menu or dialog box without saving.  
 Press **Alt** + **X** **X** from the menu bar to exit TaskLink.

## The Tasks Menu

To access the Tasks menu, press **Alt** + **T** or click on the Tasks menu. The Tasks menu is shown in Figure 2-3. You can run, add, edit, duplicate, and remove Tasks or Kits from the Tasks menu.

Figure 2-3  
Tasks Menu

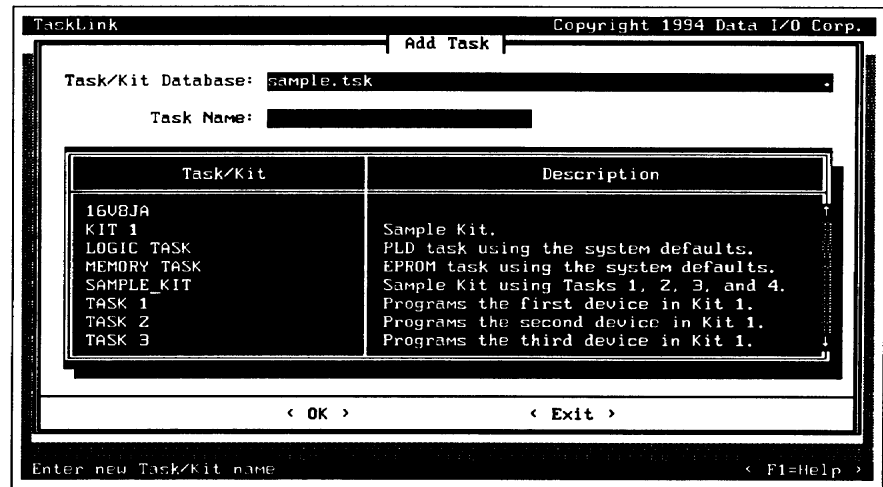


## Add Task/Kit

Select the Add Task or Add Kit option. The Add dialog box appears (see Figure 2-4) and the cursor is in the Name entry field.

The Tasks and Kits available in the current Task/Kit database file (shown in the Task/Kit Database entry field at the top of the dialog box) are listed in the Task/Kit list box.

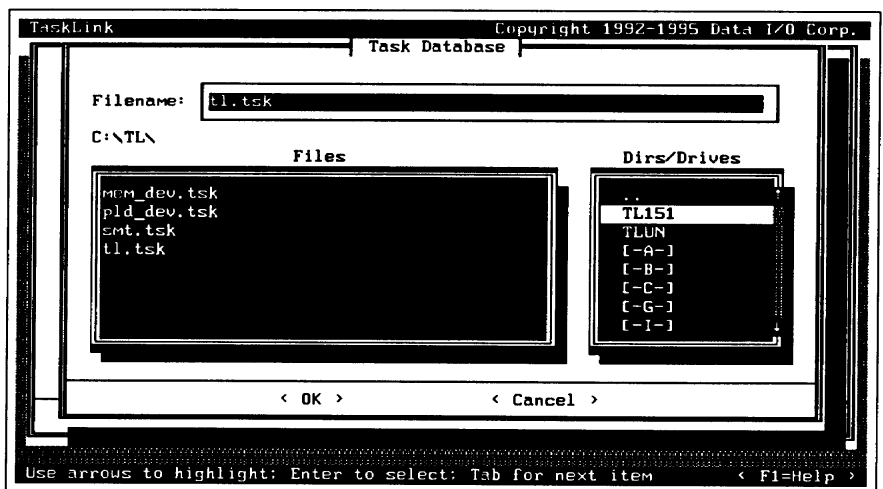
**Figure 2-4**  
Add Task/Kit Dialog Box



## Select Database File

To change to a different Task/Kit database file (.tsk), press **Shift** + **Tab** or click on the Task/Kit Database entry field to select it. Enter the path and filename of a different database file or access the file selection dialog box (see Figure 2-5) by pressing **F2** or double-clicking on the Task/Kit Database entry field. Press **Enter** or click on the **< OK >** pushbutton to accept the new database filename.

**Figure 2-5**  
File Selection Dialog Box

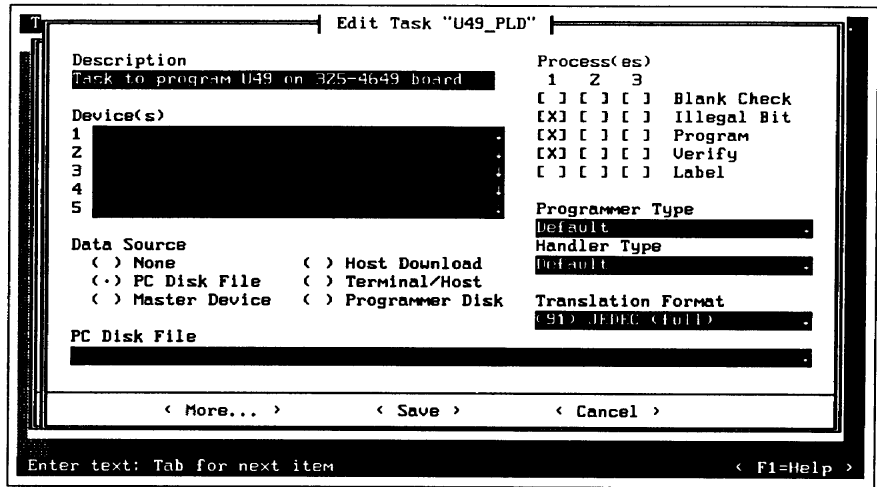


## Name Task/Kit

Select the Name entry field and enter a name for the Task or Kit you are defining. A name can be up to 25 printable characters long. You may want to name the Task or Kit a particular part number. Press  or click on the < OK > pushbutton to accept the Add dialog box inputs.

- If you are adding a Task, the Edit Task dialog box appears (see Figure 2-6). Go to the following "Select Task Parameters" section to continue.
- If you are adding a Kit, the Edit Kit dialog box appears. Go to the "Select Kit Parameters" section on page 2-15 to continue.

Figure 2-6  
Edit Task Dialog Box



## Select Task Parameters

The following Task parameters are set in the Edit Task dialog box shown in Figure 2-6. When TaskLink enters this dialog box, the cursor is in the Description entry field.

## Describe Task

Enter a description for the Task you are defining. This description appears in the Task/Kit list box for your reference. It is typically an expanded description of the Task setup. For example, a Task name of 701-2657-009 could have a description of Part A of Board C for *product\_name*. The Task description can contain up to 40 printable characters.

## Specify Task-specific Device List

1. Select the Devices entry field.
2. Press **[F2]**, double-click on the Devices entry field, or click on the arrow at the right side of the Devices entry field. The Select Device dialog box appears.  
You can use the following three kinds of device selection methods to create a Task-specific device list.
  - Device names as they appear on the device list (including Keep Current and Extended Algorithms).
  - Custom devices (see the Custom Device File topic in the **General Help Index** in the Help menu).
  - Wildcard device selection (see the Task Device Type(s) topic in the **General Help Index** in the Help menu).
3. Select the desired device manufacturer. A list of devices appears.
4. Select the desired device. TaskLink returns to the Devices entry field in the Edit Task dialog box.

You can continue selecting up to five specific devices or enter device wildcards from which a Task-specific device list is created. For more information, press **[F1]**.

## Select Data Source

Select the desired data source. When you select PC Disk File, Host Download, or Terminal/Host, a Translation Format entry field appears to the right, and another entry field appears below the Data Source radio button field. This additional entry field is either of the following:

- Data File
- Host Command

### Translation Format Entry Field

After data is created, it is stored in a particular data translation format. When downloading from a host or PC disk file, you need to set up TaskLink to use the same translation format.

To select a different translation format, select the Translation Format entry field, access the Translation Format list box, and use the arrow keys or the scroll bar to scroll through the list and select the translation format you want. TaskLink returns to the Edit Task dialog box and displays the current translation format setting.

---

*Note: For information on Translation Formats see your programmer User Manual.*

### Data File Entry Field

Type the data file you want or access the file selection dialog box and select it. When you select a file, TaskLink returns to the Edit Task dialog box and displays the path and filename.

### Host Command Entry Field

Type a host command to be sent to the host when you select **Run Task/Kit** from the Tasks menu.

### Select Process(es)

The Process(es) check box area of the Edit Task dialog box lists the operations that can be performed on a device. The three columns of check boxes represent three different combinations of operations, or process(es), you can set up.

When at least one operation is selected in more than one column, a list box appears when you select **Run Task/Kit** from the **Tasks** menu. You can then select the process you want to perform on your devices.

Highlight the desired operation(s) in each column. Press **[Space]** to enable (check) and disable (uncheck) the operations, or click on the check boxes to toggle their state.

### Select Programmer

To select a different programmer, select the Programmer Type entry field, access the Programmer Type list box, and select the programmer you want. TaskLink returns to the Programmer Type entry field and displays the currently selected programmer.

*Note: When Default is selected, TaskLink uses whatever programmer is selected (in the **Options** menu) at the time you select **Run Task/Kit** from the **Tasks** menu. Chapter 1, "Introduction," describes how to set the **Programmer Type** in the **Options** menu.*

### Select Handler

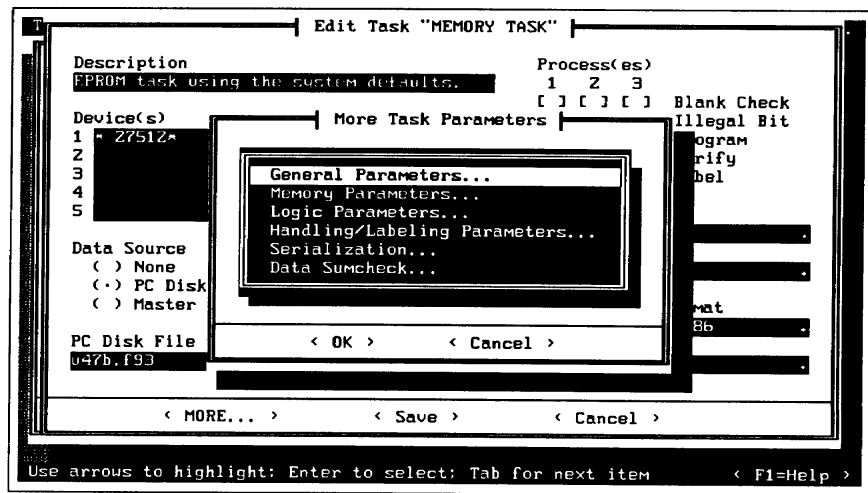
To select a different handler, select the Handler Type entry field, access the Handler Type list box, and select the handler or handler setting you want. TaskLink returns to the Handler Type entry field and displays the currently selected handler or handler setting.

*Note: When Default is selected, TaskLink uses whatever handler is selected (in the **Options** menu) at the time you select **Run Task/Kit** from the **Tasks** menu. Chapter 1, "Introduction," describes how to set the **Handler Type** in the **Options** menu.*

### More Task Parameters

To set any of the following additional Task-specific device parameters (see Figure 2-7), select the **< More ... >** pushbutton.

Figure 2-7  
 < More ... > List Box



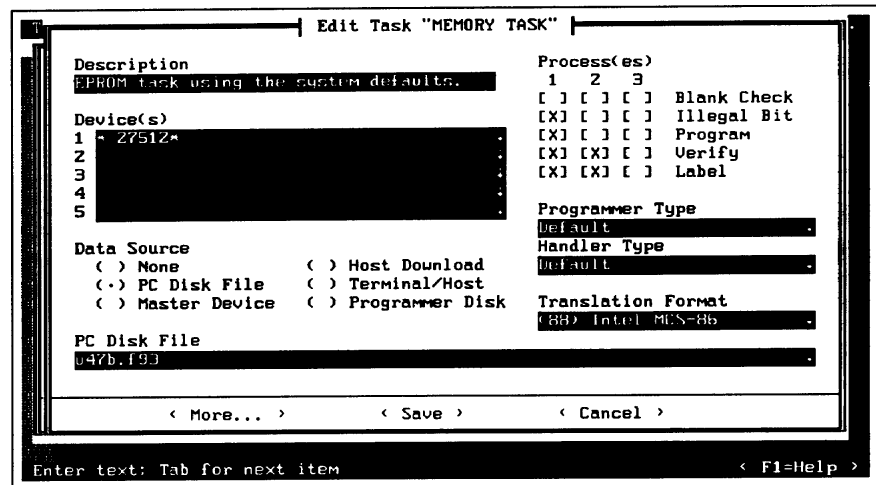
<b>Device Parameters</b>	General parameters, for all devices; Memory parameters, for memory devices; and Logic parameters, for logic devices. Most of the time, you will not need to change any of the device parameters.
<b>Handler Parameters</b>	Handler parameters such as package, pin 1 orientation, label text, and graphics (see the "Graphics Parameters" section for more information).
<b>Serialization Parameters</b>	Serialization method, RAM serialization, keep next number, edit starting number, and next serial number settings (see the "Serialization" section on page 2-10 for more information).
<b>Data Sumcheck</b>	TaskLink displays a message if the sumcheck is different from the one entered.

## Save Task

To accept the selections displayed in the Edit Task dialog box, select the < Save > pushbutton (see Figure 2-8). TaskLink returns to the Add Task dialog box. Your Task name and description appear in the Task list and the cursor is in the Task Name entry field.

The creation of your Task is now complete. To create more Tasks, start again at the "Name Task/Kit" section on page 2-6. To try out your Task, select **Run Task/Kit** from the **Tasks** menu.

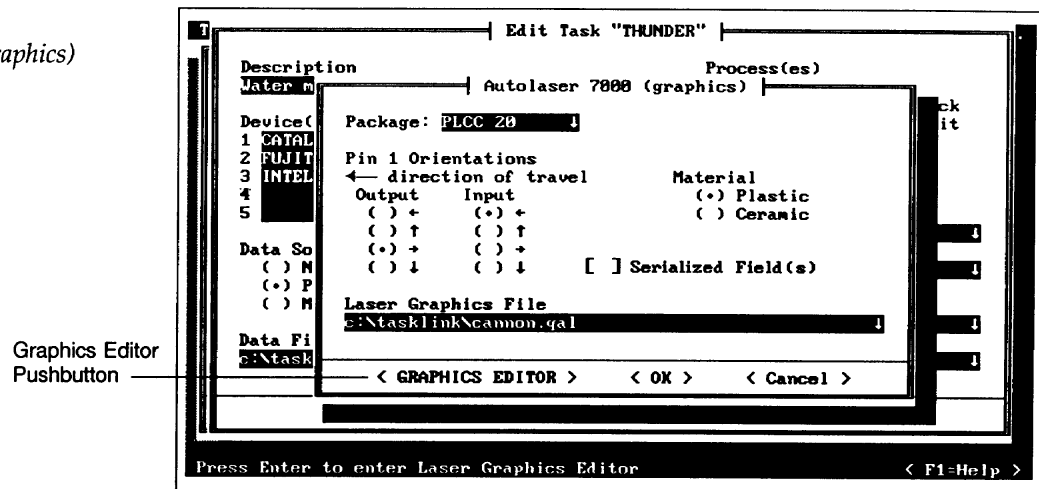
**Figure 2-8**  
Completed Edit Task  
Dialog Box



## Graphics Parameters

The TaskLink Graphics Editor (TLGE) is a drawing program for ProMaster handlers with laser printers and for the ProMaster 3000 and ProMaster 2500 with thermal printers for creating graphics files to use for marking devices or printing labels. Figure 2-9 shows the Autolaser 7000 (graphics) dialog box.

*Figure 2-9*  
Autolaser 7000 (graphics)  
Dialog Box



To start the TLGE, select the < Graphics Editor > pushbutton. See your *TaskLink Laser Graphics Editor User Manual* for details on how to use this drawing software.

After creating and generating a drawing file, enter the filename in the Graphics File entry field. You don't need to enter the file extension. TaskLink sends a .qal file to the handler with a laser printer for marking the devices and a .qat file to the handler with a thermal printer for printing on labels.

## Serialization

When programming devices, you may want to number them consecutively. TaskLink includes a serialization program, called **serializ.exe**, that generates a serial number for each device that is successfully programmed. This serial number can be programmed into the device and printed on a label to be placed on the device.

To enable printing a serial number on a label, enter two or more consecutive percent signs (%) in the Autolabel or Autolaser text field. You must enter one percent sign for each digit specified with the **serializ.exe** length (-l) command line parameter.

The following "serializ.exe" section describes the features of **serializ.exe**, and is followed by "Serialization Parameters," a section that describes how to use **serializ.exe** in TaskLink.

---

*Note: You can write your own external serialization program (see the **General Help Index** in the **Help** menu for more information).*

## **serializ.exe**

With the TaskLink serialization program (**serializ.exe**), you can specify a serial number's device address, format, length, byte order, increment value, and format of the serial number printed on the device label.

For gang or set programming, you can specify the number of devices in the set, and **serializ.exe** divides programmer RAM by the number and size of the devices and places serial numbers at the same address in each device.

The following table lists and describes the command line parameters supported by **serializ.exe**.

For example, to specify a 10-character ASCII hexadecimal serial number at address 12345 (hexadecimal), increase the serial number by an increment of 2 for each device programmed, and print each serial number on the device label (in hexadecimal), the Program entry field in the **Setup/Serialization** dialog box might look like this:

**serializ.exe -l10 -fh -a12345 -i2 -th**

<b>Parameter</b>	<b>Description</b>
<b>-a</b>	<p><b>Address of serial number.</b> Hexadecimal value indicating the device address of the serial number. For example, <b>-a12345</b> places the serial number at hexadecimal address 12345. <i>Default: Zero (-a0)</i></p>
<b>-c</b>	<p><b>Compensation Address.</b> Hexadecimal value indicating the offset in the device at which the compensation value is to be located. For example, the command <b>-c12345</b> would place the compensation value at hex address 12345.</p> <p>This command causes the serialize program to generate a sumcheck compensation value for each serial number.</p> <p>For gang programmers only, this command must be used with the <b>-m</b> flag. If the <b>-m</b> flag is not supplied, the compensation address defaults to Disabled.</p>
<b>-d</b>	<p><b>Delete Serial.dat file.</b> Including the <b>-d</b> flag in the serialization parameters causes the serial.dat file to be deleted from the current directory. As of TaskLink version 1.60A, TaskLink does not automatically delete the serial.dat file. serializ.exe/serializ.c file version 1.42 or later is needed. <i>Default: Omitted</i></p>



Parameter	Description				
-e	<p><b>Ethernet Mask</b> Hexadecimal value that indicates a fixed prefix value is to be placed in front of each generated serial number.</p> <p>For example, <b>-e0xABCD</b> and a generated serial number of <b>1</b> would create the value <b>ABCD1</b> to be programmed into the device.</p> <p>This command must be used with the <b>-z</b> flag, which specifies the length of the mask value. Also the <b>-l</b> flag, which specifies the length of the serial number, must be set to the size of the total length. The length of the generated serial number is calculated by subtracting the total length from the mask length (<math>gLen = tLen - eLen</math>).</p> <p>For example, <b>serializ -l8 -z4 -e0xaa</b> and a generated serial of <b>1</b> would create the value <b>00AA0001</b> to be programmed into the device.</p>				
-f	<p><b>Format of serial number.</b> Format of the serial number. The following three formats are supported.</p> <ul style="list-style-type: none"><li>-fb = Binary</li><li>-fd = ASCII decimal</li><li>-fh = ASCII hexadecimal</li></ul> <p><i>Default: Binary (-fb)</i></p>				
-i	<p><b>Increment to increase serial number by.</b> Increment value (in decimal) for increasing the serial number. For example, <b>-i2</b> increases the serial number by 2 for each device programmed.</p> <p><i>Default: 1 (-i1)</i></p>				
-l	<p><b>Length of serial number.</b> Number of bytes the serial number occupies in the device. The following settings are supported.</p> <table><tbody><tr><td>1 through 4</td><td>Binary</td></tr><tr><td>1 through 10</td><td>ASCII</td></tr></tbody></table> <p><i>Default: 2 (-l2)</i></p>	1 through 4	Binary	1 through 10	ASCII
1 through 4	Binary				
1 through 10	ASCII				
-m	<p><b>Pure Set gang serialization mode.</b> Serial numbers are generated one device size apart in programmer RAM instead of in a single block just beyond the fixed data in RAM. TaskLink then programs devices in a single-pass operation with a set size equal to the number of installed sockets.</p>				
-o	<p><b>Byte order of serial number.</b> Serial numbers are placed in RAM with the most significant bit (MSB) or the least significant bit (LSB) at the first (lower) RAM address. This setting applies to binary and ASCII formats. The settings are</p> <ul style="list-style-type: none"><li>-om = MSB at first RAM address (Motorola-style)</li><li>-oi = LSB at first RAM address (Intel-style)</li></ul> <p><i>Default: MSB at first RAM address (-om)</i></p>				

Parameter	Description
-s	<p><b>Sumcheck calculation flag.</b> Calculates a new RAM sumcheck based on the sum of the serial number bytes and the initial sumcheck value provided by TaskLink. Only meaningful if the initial RAM data (before serializing begins) contains zeroes in the serial number position(s).</p>
-t	<p><b>Label text format.</b> Serial number printed on label can either be decimal or hexadecimal. <i>Note: To enable printing a serial number on a label, enter two or more consecutive percent signs (%) in the Autolabel or Autolaser text field. You must enter one percent sign for each digit specified with the <b>serializ.exe</b> length (-l) command line parameter.</i></p>
-w	<p><b>Warning limit.</b> Sets a warning level before the serial number limit is reached when an ending serial number is specified. If the current serial number is within the ending serial number minus the warning limit, TaskLink displays a warning message. <i>Default: Zero</i></p>
-z	<p><b>Ethernet Mask Length</b> Used to specify the length of the Ethernet Mask Value. See the -e flag for details.</p> <p>For example, to specify a 10-character ASCII hexadecimal serial number at address 10 (hexadecimal), increase the serial number by an increment of 2 for each device programmed, and print each serial number on the device label (in hexadecimal), the Program entry in the Setup/Serialization dialog box would look like this:</p> <pre>c:\tasklink\serializ.exe -110 -fh -a10 -i2 -th</pre> <p>When a processing session using SERIALIZ.EXE is begun, TaskLink prompts the operator for a starting serial number and an optional ending serial number. The starting number can be specified in either decimal or hex. To specify a hexadecimal number, begin the number with "0x," the standard C-language method of denoting hexadecimal. For example, the decimal number 16 could be entered as "0x10." SERIALIZ.EXE detects the presence of "0x" in the starting number and causes TaskLink to display any serial numbers on the screen in hexadecimal (with the "0x" prefix).</p>

## Serialization Parameters

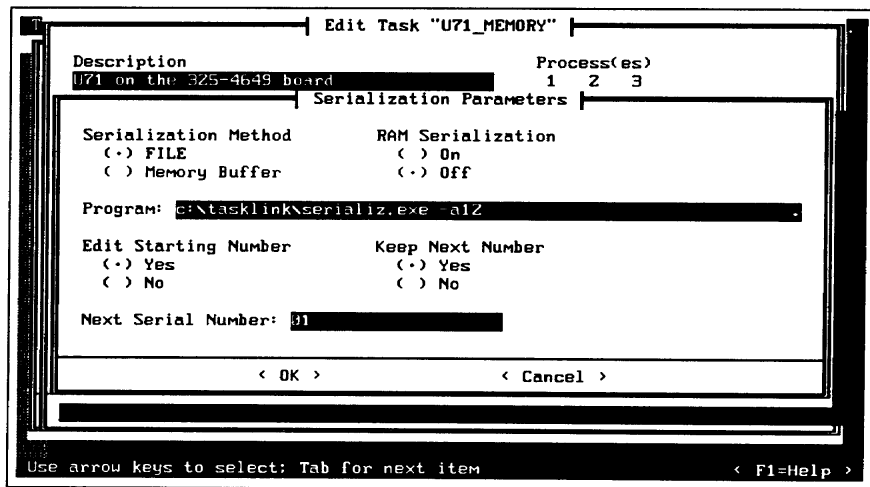
Figure 2-10 shows the Serialization Parameters dialog box. To use `serializ.exe` to place a serial number in programmer RAM, set the parameters as follows:

Parameter	Setting
Serialization Method	File
RAM Serialization	On
Program	<code>serializ.exe</code> *
Edit Starting Number	No
Keep Next Number	Yes
Next Serial Number	<code>starting_serial_number</code>

\* Include any command line parameters you want, as described in the previous section.

*Note:* For compatibility with external serialization programs you may have written for HandlerLink™, select Memory Buffer for the Serialization Method.

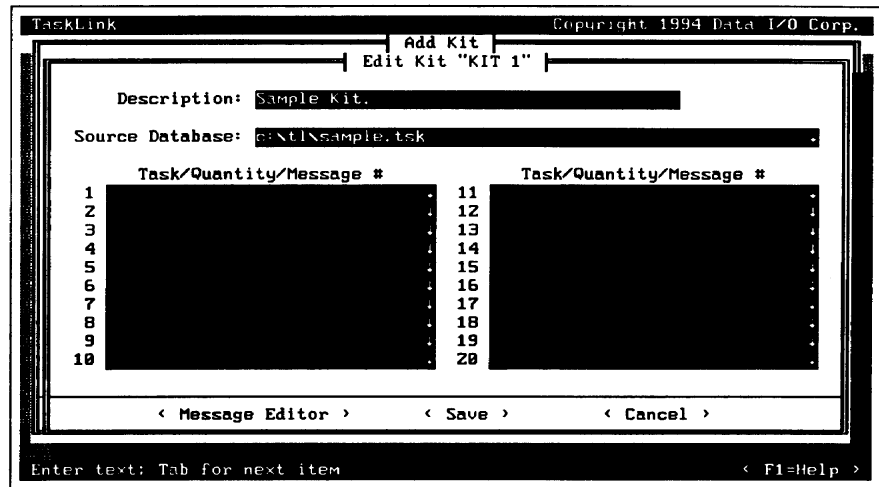
**Figure 2-10**  
Serialization Parameters  
Dialog Box



## Select Kit Parameters

The following Kit parameters are set in the Edit Kit dialog box (see Figure 2-11). When TaskLink enters this dialog box the cursor is in the Description entry field.

Figure 2-11  
Edit Kit Dialog Box



### Describe Kit

Enter a description for the Kit you are defining. The description can be up to 40 printable characters. This description appears in the Task/Kit list box and is for your reference. It is typically a further explanation of the Kit. For example, a Kit name of "*product\_name* Logic," could have a description of "Logic devices for Main Board."

### Specify Source Database

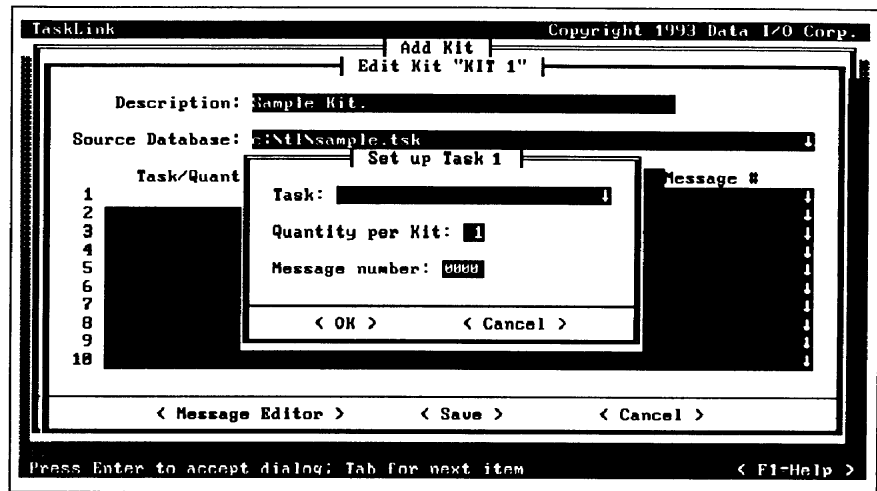
The Source Database is the .tsk file containing all the Tasks you want to use in the Kit you are creating. A Kit can only access one Source Database. The Source Database can be different from the Kit database (shown in the Task/Kit Database entry field of the Add Kit dialog box).

To change to a different Source Database, enter the path and filename in the Source Database entry field, or press **F2**, double-click on the Source Database entry field, or click on the **↓** to the right of the entry field, to access the file selection dialog box. Press **↵** or click on the **< OK >** pushbutton to accept the new database filename.

## Set Up Task in Kit

Select a line of the Task/Quantity/Message # entry box and access the Set up Task dialog box (see Figure 2-12).

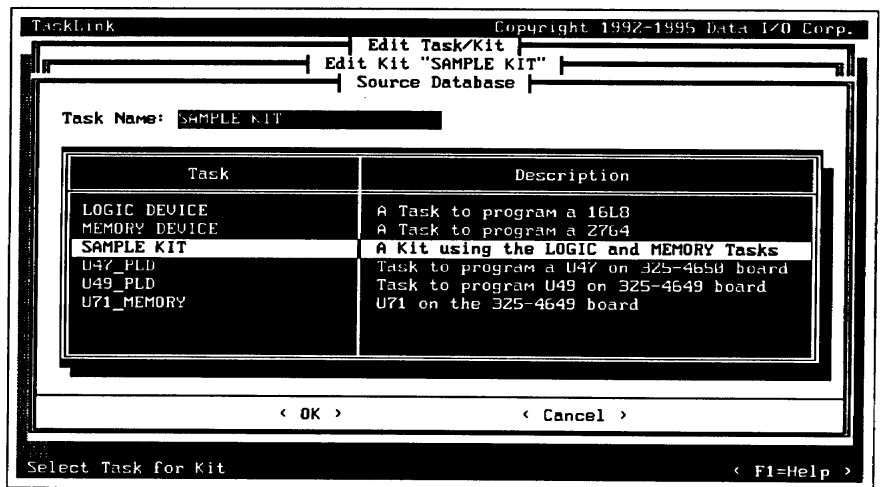
*Figure 2-12*  
Set up Task Dialog Box



### Select Task

Enter the name of the Task you want the Kit to run first, or select the Task you want from the Source Database list box (see Figure 2-13). The name of the Task you select is displayed in the Task entry field.

*Figure 2-13*  
Source Database List Box



### Set Quantity

Select the Quantity per Kit entry field, and enter the number of devices per Kit (normally one) you want to program with the selected Task before proceeding to Task 2.

For example, if you add Task 4 to your Kit and you need two of the parts programmed with Task 4 (see Figure 2-2 on page 2-3), you would enter 2 in the Quantity per Kit entry field.

### Set Message Number

Select the Message number entry field and enter a four-digit number corresponding to a user-created message you want TaskLink to display **before** running Task 1 (see the following "Message Editor" section). If you don't want TaskLink to display a message before running a Task, enter zeros (0000).

To add a Task to this Kit, select another line of the Task/Quantity/Message # entry box, and return to the "Set Up Task in Kit" section.

---

## Message Editor

After specifying an ASCII editor in the **Set Message Editor** option of the **Options** menu (see page 1-7), you can access the editor by selecting the < Message Editor > pushbutton in the Edit Kit dialog box.

TaskLink runs the selected ASCII editor and looks for the tl.msg file. When the editor has created or accessed the tl.msg file, type in the tilde (~) followed by the four digits you entered in the Message number entry field. Press  and write the message you want TaskLink to display before running that Task, for example:

```
~0023
\bTask 1\b
Before you start Task 1
    \b=>\b   Adjust handler
    \b=>\b   Clear receiving tubes
    \b=>\b   Load input tubes
```

---

*Note: The \b code toggles text bolding. If the bolded text wraps to the next line, you must enter the \b at the beginning of the next line.*

User-created message specifications are described below.

- Message file must be an unformatted ASCII text file named **tl.msg**.
- Each message must begin with a tilde (~), followed by four digits; for example, ~0023. The tilde and four-digit number must be on a line by themselves. The message includes all the text after the tilde and four digits, to the next tilde in the file.
- The maximum line length in the tl.msg file is 66 characters.
- Spacing and formatting is maintained (WYSIWYG) unless you use \b (for bold). The \b does not appear on the screen and all characters move to the left two spaces for every \b in the line.

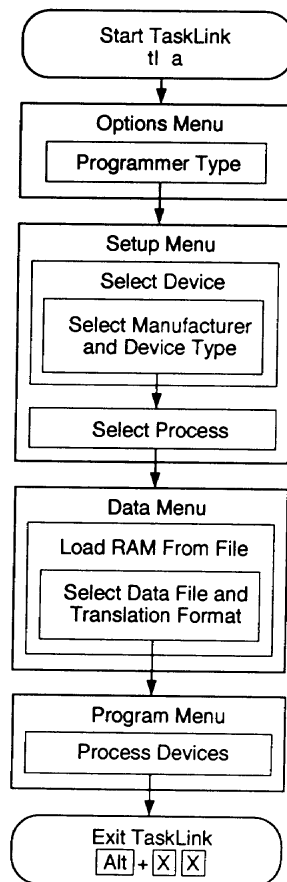


# 3 Programming without Tasks or Kits

## For Administration

You can use TaskLink to process devices without creating a Task. Figure 3-1 shows a flowchart of a typical non-Task programming operation.

**Figure 3-1**  
*Flow Chart of Programming without Tasks or Kits*



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---

## Select Programmer Type

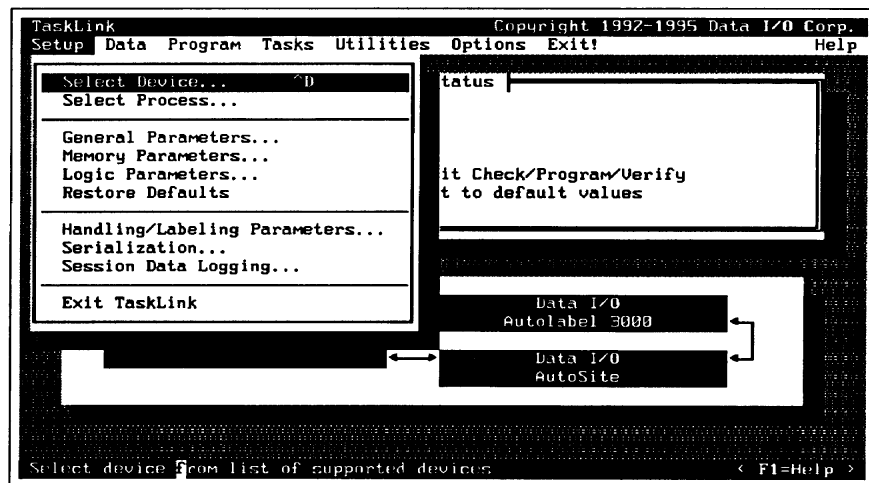
1. Access the **Options** menu.
2. Choose **Programmer Type**. The Programmer Type list box appears.
3. Select the programmer you are using.

---

## Select Device

1. Access the **Setup** menu (see Figure 3-2).

*Figure 3-2*  
*Setup Menu*



2. Choose **Select Device**. The Select Device dialog box appears.
3. Select the Device Type entry field. Enter the device manufacturer and name or select the desired manufacturer from the Manufacturers list box. A list of devices appears.
4. Select the desired device. TaskLink returns to the **Setup** menu.

---

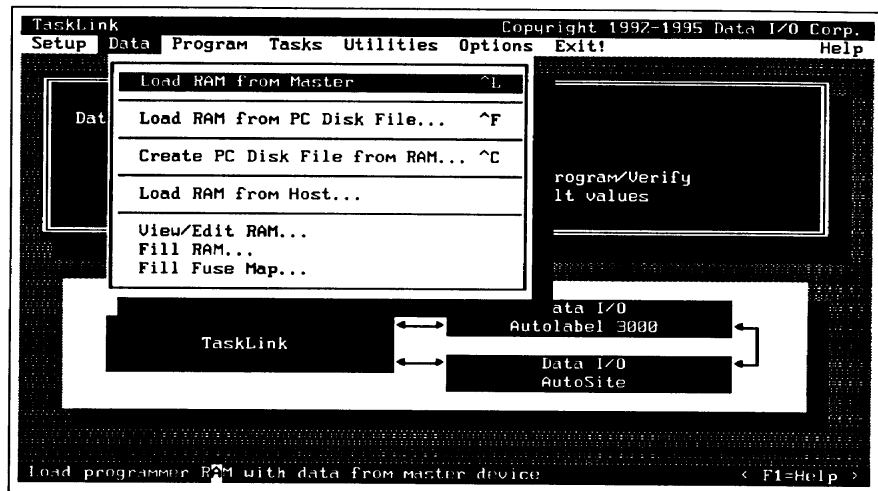
## Select Process

1. Choose **Select Process**. The Select Process dialog box appears.
2. Select the desired operation(s) (on = checked; off = unchecked). Enable all the operations you want to perform on the selected device. Select the < OK > pushbutton. TaskLink returns to the **Setup** menu.

## Select Data File

*Figure 3-3*  
Data Menu

1. Access the Data menu (see Figure 3-3).



2. Select **Load RAM from File**. The Load RAM from File dialog box is displayed.
3. Select the Data File entry field. Press **F2**, or double-click on the entry field, or click on the **↓** to the right of the entry field to access the file selection dialog box. Enter the path and filename of the data file you want in the Filename entry field, or select it from the Dirs/Drives and Files list boxes. Press **↓** or select the < OK > pushbutton to accept the data filename.

TaskLink returns to the Load RAM from File dialog box and displays the path and filename you just selected.

---

## Select Translation Format

Data is stored in a particular data translation format. When downloading from a Host or PC disk file, you will need to set up TaskLink to use the same translation format.

---

*Note: For detailed information on supported Translation Formats, see your programmer User Manual.*

1. TaskLink displays the currently selected translation format in the Translation Format entry field.

To select a different translation format, select the Translation Format entry field and access the **Translation Format** list. Highlight the desired translation format. Press  or select the < OK > pushbutton to accept the highlighted translation format.

TaskLink returns to the Load RAM from File dialog box and displays the selected translation format.

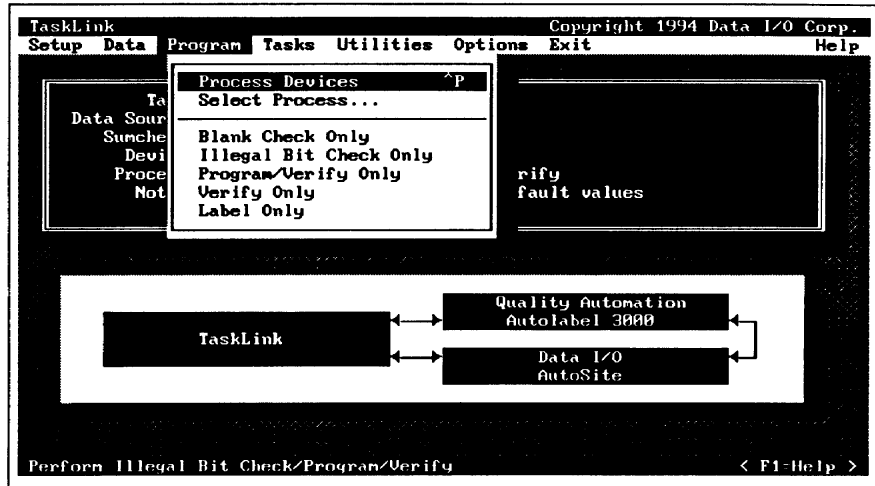
2. Press  or select the < OK > pushbutton to accept the selections in the Load RAM from File dialog box. The Load RAM from File action status box appears showing what percentage of the operation is completed.

To discontinue the operation, press  **Esc** .

# Process Devices

1. Access the **Program** menu (see Figure 3-4).

*Figure 3-4*  
Program Menu

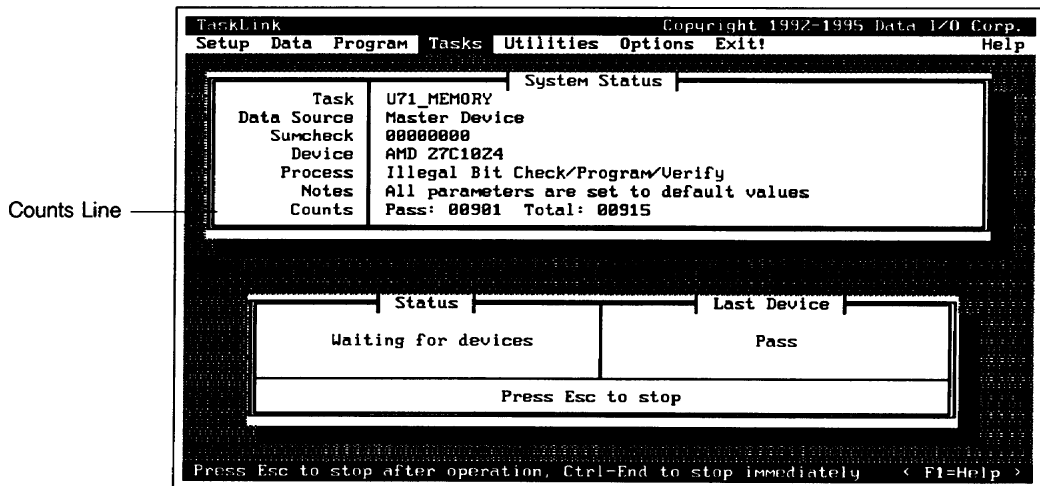


2. Select **Process Devices**. A Process Devices dialog box may appear depending on the settings in **Set Preferences** option of the **Options** menu. Enter the parameters and press **[Enter]**.

TaskLink updates the System Status box and adds a Counts line at the bottom of it with two categories of number fields: Pass and Total. TaskLink updates these fields as devices are processed (see Figure 3-5).

A box appears at the bottom of the screen. This box is divided into two parts: Status and Last Device. The Status portion displays Waiting for devices.

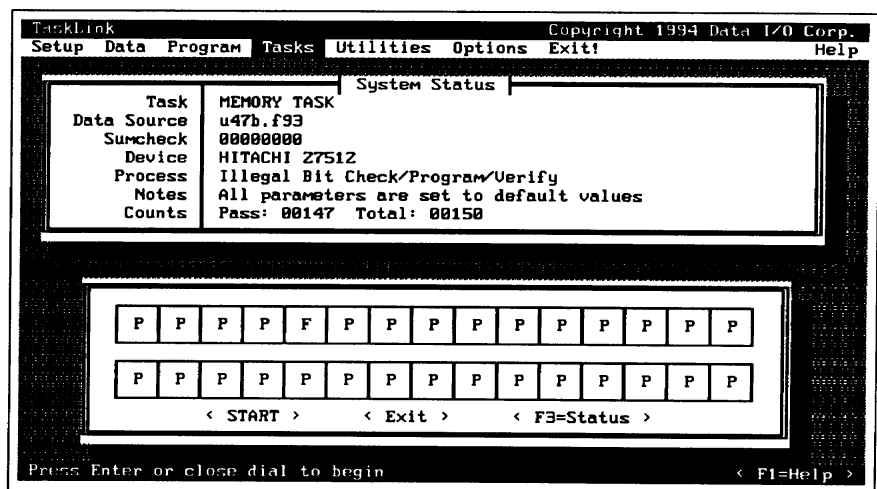
*Figure 3-5*  
System Status Box



- Put your device(s) in the programmer socket(s) or handler. TaskLink displays an action symbol (rotating pipe) and the words IN PROGRESS in the Status portion of the box (see Figure 3-5). When the operation is complete, the Last Device portion of the box displays PASS (or an error message if programming failures are encountered), and the Status portion displays Waiting for devices .

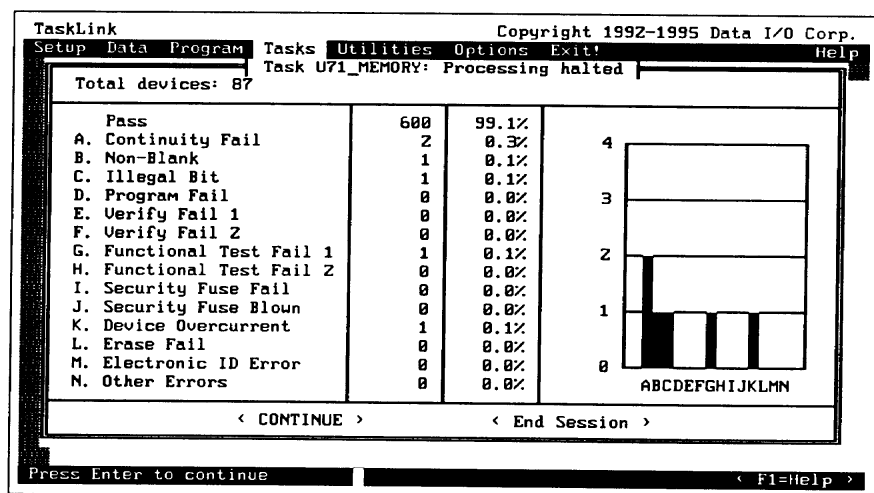
*Note: When using a multi-socket programmer, a diagram showing the available sockets appears. The devices in those sockets are represented by a field in each socket. After processing devices, a "P" or Pass in the device field means the device was successfully programmed; an "F" or Fail in the device field means the device was not successfully programmed (see Figure 3-6). When using some multi-socket programmers, the applicable message appears in the device field.*

**Figure 3-6**  
Multi-socket System Status Box



When processing is completed or interrupted (by pressing **Esc**), TaskLink displays a bar graph of processing results (see Figure 3-7).

**Figure 3-7**  
Process Results Bar Graph



# 4 Programming with Tasks and Kits

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## *For Operators*

This chapter provides a brief explanation of Tasks and Kits, TaskLink's online documentation, and the keys used to operate TaskLink in **Operator** mode (the default mode). Then, it outlines the **Operator** mode programming process starting from the Run Task/Kit dialog box, selecting the Task or Kit, and processing devices.

---

### What Is a Task?

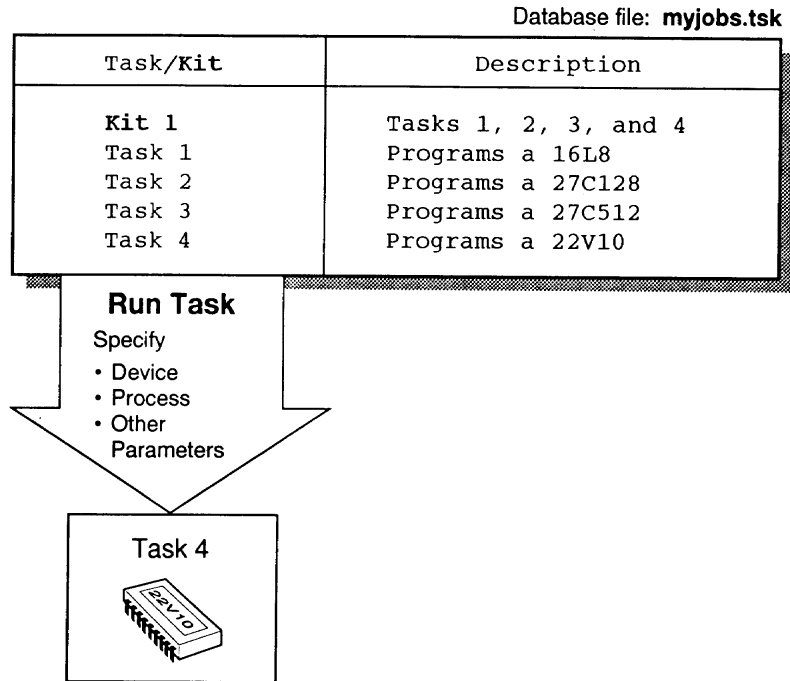
A Task is a job setup containing all the information necessary for programming and/or testing a particular part. A Task records all the parameters of the job setup from the device type and data file to be entered, to the label text to print and place on the part. When you select a Task from the Run Task/Kit dialog box, you need to make only a few final selections. Figure 4-1 shows the Task programming process.

---

### What Is a Kit?

A Kit is a group of Tasks set up to program the various devices needed to build a particular product board. A Kit can contain up to 20 Tasks. When you run the Kit, you can specify the number of Kits you want to build.

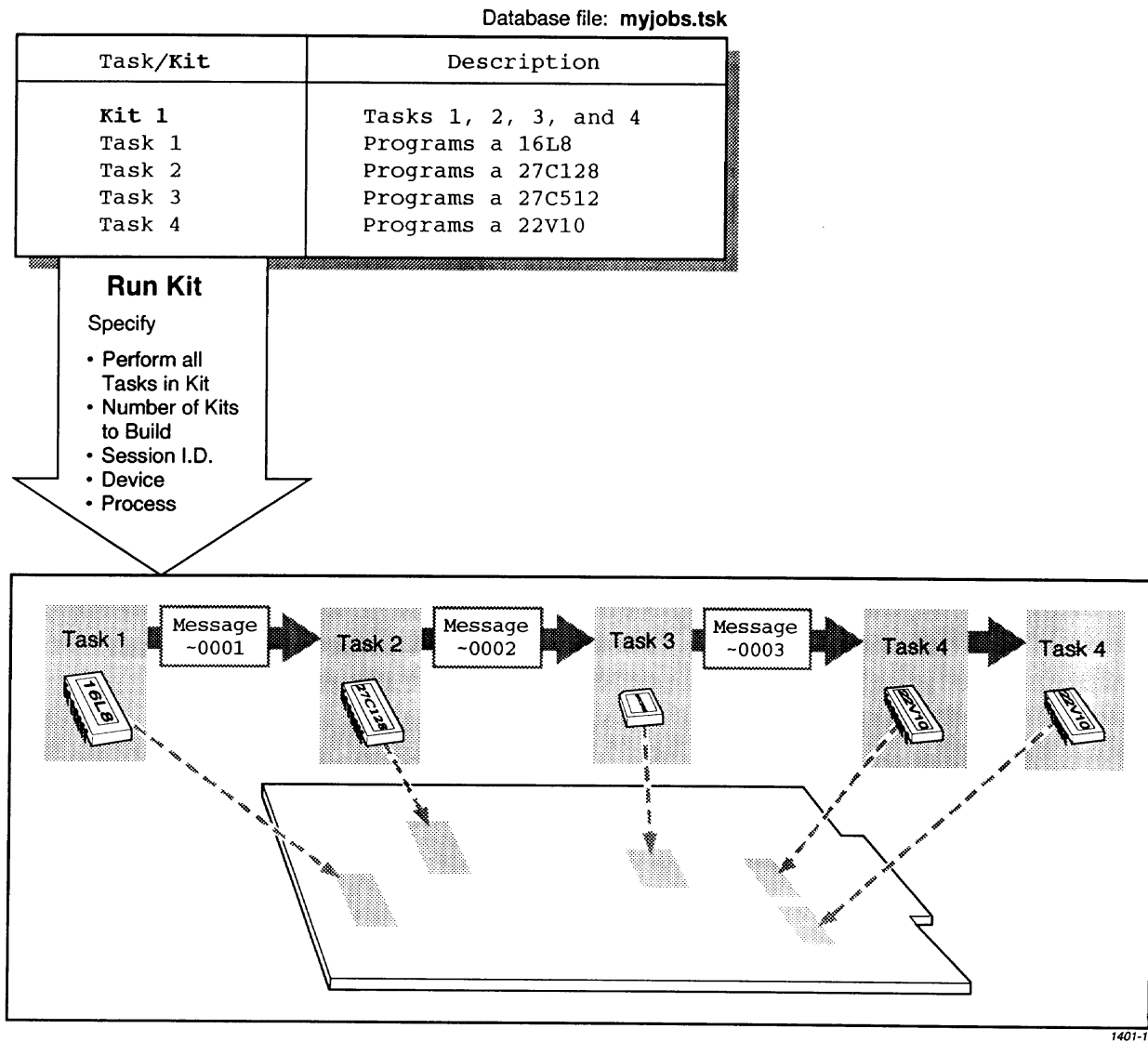
Figure 4-1  
Task Flow Chart



1400-1

For example, say your board requires four different parts: one each of parts 1, 2, and 3; and two of part 4. The Kit calls out Tasks 1, 2, and 3 at a quantity of one, and Task 4 at a quantity of two. When you run the Kit, TaskLink prompts for the number of Kits to build. If you enter 10, TaskLink directs the programmer and handler to program ten Task 1 devices (1 x 10), then ten Task 2 devices (1 x 10), then ten Task 3 devices (1 x 10), and then 20 Task 4 devices (2 x 10). The relationship between Tasks and Kits is shown in Figure 4-2.

Figure 4-2  
Kit Flow Chart



## The Database File

Tasks and Kits are stored in a file with a .tsk extension. This file can be named any valid DOS filename. Throughout this manual, the .tsk file is referred to as the database file.



## About the Online Documentation

For more detailed information on any aspect of TaskLink, refer to the context-sensitive online documentation available by clicking the mouse cursor on the < F1 = Help > pushbutton at the bottom right of the screen, or by pressing **F1**.

## Keys and Key Combinations

Use the keyboard and mouse to operate TaskLink. Table 4-1 describes the keys you can use to run TaskLink in **Operator** mode.

**Table 4-1**  
Keys Used in  
Operator Mode

Key	Functions
<b>General Navigation Keys</b>	
<b>Tab</b> and <b>Shift + Tab</b>	Move the highlight between fields in a dialog box. <b>Tab</b> moves to the next field, and <b>Shift + Tab</b> moves to the previous field.
<b>↵</b>	Accepts the current selections in a dialog box. In a multiple-line text entry field, <b>↵</b> moves the cursor to the beginning of the next line or to the next selection field.
<b>Esc</b>	Cancel a dialog box without saving changes and cancels an operation in process.
<b>↑</b> and <b>↓</b>	Move the selection cursor in a dialog box.
<b>Home</b> , <b>End</b> , <b>PgUp</b> and <b>PgDn</b>	Move the cursor to the beginning of the list, end of the list, up one screen or down one screen, respectively.
<b>Information Keys</b>	
<b>F1</b>	Accesses context-sensitive help.
<b>F2</b>	When pressed from the process devices screen (when the System Status box appears), presents a list of all parameters currently set to non-default values. <b>F2</b> also accesses lists from some dialog box entry fields.
<b>Ctrl + F1</b>	Checks communication between the PC and your programmer.
<b>Ctrl + F2</b>	When pressed from the Run Task/Kit dialog box, checks communication between the PC and the handler.

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*Note: Press **Esc** at any time to exit any menu or dialog box without saving, and to display an Exit TaskLink confirmation window.*

## Getting Started

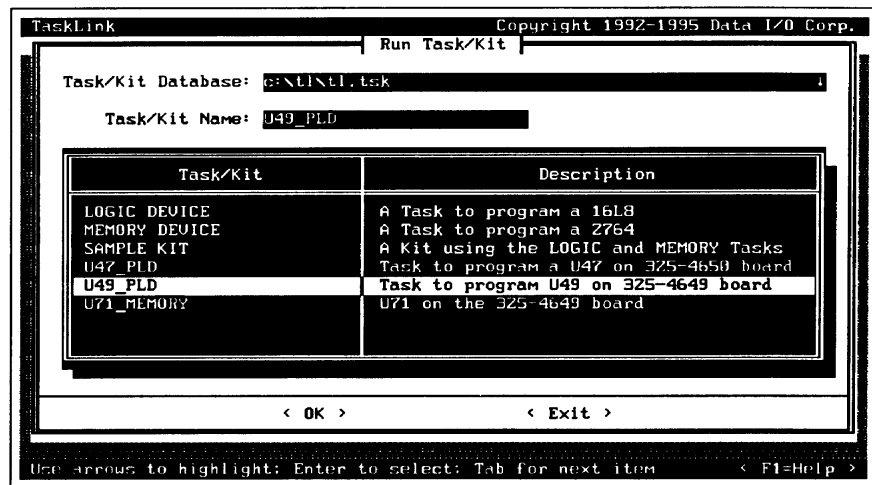
To start TaskLink enter

```
tl
```

at the DOS prompt. After a few seconds, the Run Task/Kit list box appears (see Figure 4-3).

The Tasks and Kits available in the current Task/Kit database file (shown in the Task/Kit Database entry field at the top of the dialog box) are listed in the Task/Kit list box.

Figure 4-3  
Run Task/Kit List Box



## Select Database File

To select a different Task/Kit database file, select the Task/Kit Database entry field. Press **F2**, or double-click on the entry field, or click on the **↓** to the right of the entry field to access the file selection dialog box. Enter the path and filename of the Task/Kit database file you want in the Filename entry field, or select it from the Dirs/Drives and Files list boxes. Press **↵**, or select the **< OK >** pushbutton to accept the new database filename.

---

## Select Task or Kit

Select a Task or Kit to run from the Task/Kit list box. Kits appear in highlighted text; Tasks appear in unhighlighted text.

### Run Kit

When you run a Kit, TaskLink prompts for selections that affect the job setup as a whole and then prompts for Task-related selections. The Kit dialog boxes appear first, followed by the Task dialog boxes (see the following "Run Task" section).

#### Perform all Tasks in Kit

When you run a Kit, a list of the Tasks in the Kit appears. Select Perform all Tasks in Kit or select one of the Tasks to run (see the following "Run Task" section).

#### Process Devices Dialog Box

After selecting Perform all Tasks in Kit, a Process Devices dialog box appears prompting for the number of Kits to Build, and a Session I.D.

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*Note: The Session I.D. is an arbitrary string of printable characters that will appear in the log file for your referencing purposes.*

### Run Task

#### Select Device

A Task-specific device list appears. Select the desired manufacturer and device.

#### Select Process

A list of processes appears. A process is the combination of operations to be performed on the device(s). Operations include one or more of the following: Blank Check, Illegal Bit Check, Program, Verify, and Label. Select the process(es) you wish to run.

#### Other Prompts

Other prompts may appear depending on the data source selections in the Task(s). Then the action status box appears showing what percentage of the data has been loaded.

#### Process Devices Dialog Box

After TaskLink has configured the programmer and handler to program devices (the data file is loaded) according to the Task, a Process Devices dialog box may appear. Enter the parameters and press  , or select the < OK > pushbutton.

### Process Devices Screen

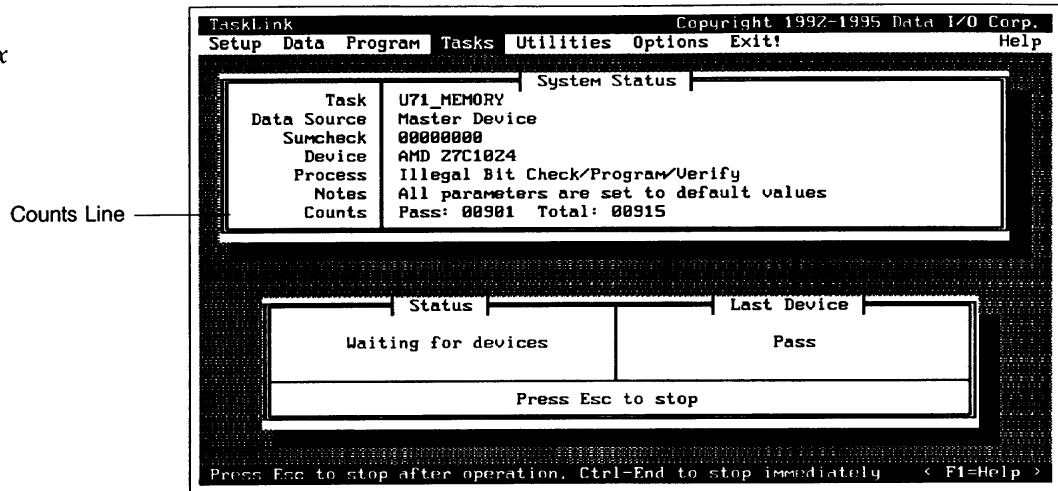
#### System Status Box

TaskLink updates the System Status box, and adds a Counts line at the bottom of it with two categories of number fields: pass and total. TaskLink updates these fields as devices are processed.

#### Process Devices Action Field

The process devices action field appears at the bottom of the screen. This field is divided into two parts: Status and Last Device. The Status portion displays Waiting for devices (see Figure 4-4).

Figure 4-4  
System Status Box

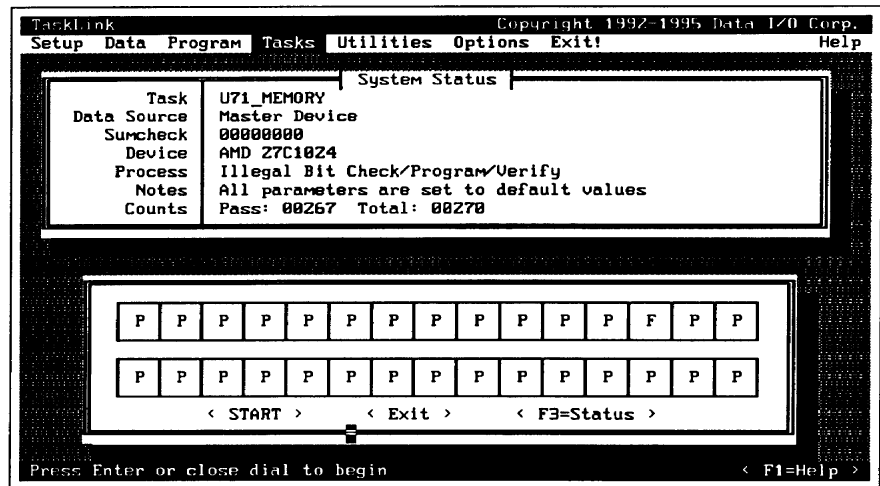


Process Devices

Put your device(s) in the programmer socket(s) or handler. TaskLink displays an action symbol (rotating pipe) and the words IN PROGRESS in the Status portion of the box. When the operation is complete, the Last Device portion of the box displays PASS (or an error message if programming failures are encountered), and the Status portion displays Waiting for devices.

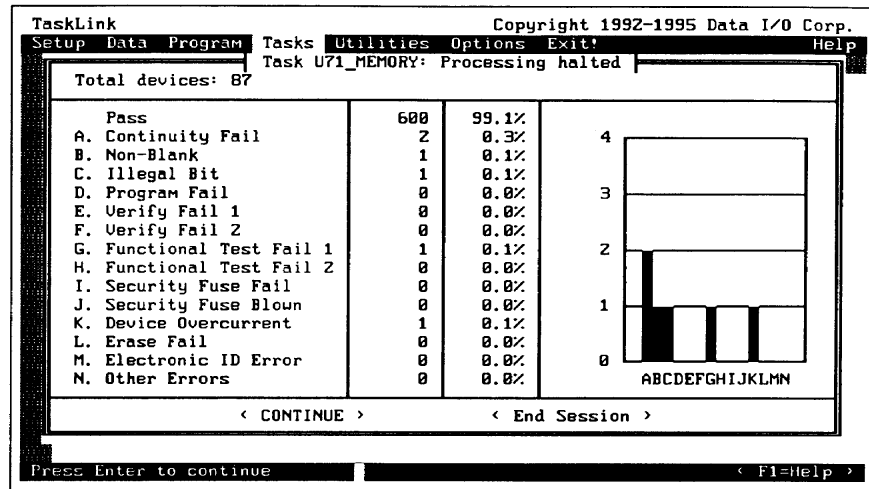
*Note: When you use a multi-socket programmer, a diagram showing the available sockets appears (see Figure 4-5). The devices in those sockets are represented by a field in each socket. After processing devices, a "P" or Pass in the device field means the device was successfully programmed, an "F" or Fail in the device field means the device was not successfully programmed. When using some multi-socket programmers, the applicable message appears in the device field.*

Figure 4-5  
Multi-socket System  
Status Box



When processing is completed (or is interrupted when **[Esc]** is pressed), TaskLink displays a bar graph of processing results (see Figure 4-6).

*Figure 4-6  
Process Results Bar Graph*



## Kit Processing Results

When TaskLink has processed the Kit, or if you interrupt Kit processing by pressing **[Esc]**, a Kit Processing Results screen appears (see Figure 4-7) listing the Tasks in the Kit, the devices required by each Task, and the devices that were successfully programmed.

*Figure 4-7  
Kit Processing Results*

