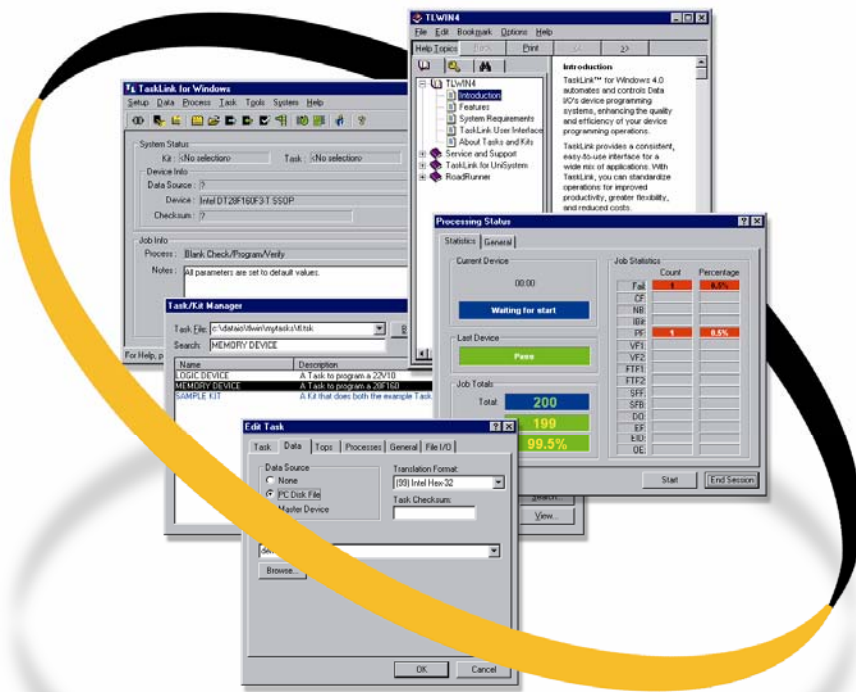


TaskLink™ for Windows® (v4.0) User Manual

UniSite Family Programming Systems



March 2000

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TASKLINK FOR WINDOWS 4.0: OVERVIEW

Note: The information in this document applies to TaskLink for Windows 4.0.

Note: The “TaskLink for Windows: Overview” section contains general information about TaskLink for Windows 4.0 and is not specific to the UniSite Family Programming Systems.

Introduction

TaskLink for Windows 4.0 automates and controls Data I/O's device programming systems, enhancing the quality and efficiency of your device programming operations. TaskLink provides a consistent, simple to use interface for a wide mix of applications. With TaskLink, you can standardize operations for improved productivity, greater flexibility, and reduced costs.

TaskLink simplifies setup and execution of device programming to ensure every batch is error-free. For example, you can easily capture the system configuration and processing steps needed to program each part number in your inventory by creating tasks. Tasks specify the device type, data file, processing, and other settings. Because a user-defined name and description reference them, tasks are easily selected by the operator for fast, automated setup and control. In fact, TaskLink task features, combined with high-speed download capabilities, can reduce errors and make setup nearly ten times faster.

Sophisticated tracking features also help to maximize quality. TaskLink automatically tracks the number of devices programmed, so every batch contains the right quantity. In addition, it logs and displays detailed statistics about each programming session, so you can analyze trends and zero in on how to improve quality in your production process.

For added safety and efficiency, TaskLink features two user modes.

Administrator Mode provides full access to the complete range of TaskLink features, including task creation and editing.

Operator Mode only allows execution of predefined, automated processes, ensuring maximum efficiency while safeguarding against errors.

TaskLink also streamlines operation by storing all programming data files on a hard disk, a network file server, or a host system, eliminating the need for cumbersome master devices.

System Control

Simple to use interface provides integrated control of all system components, including the device programming system and data source.

Supports a wide variety of Data I/O device programming systems.

Flexible programming control lets you choose any combination of blank, continuity, and illegal-bit checks, array and security fuse programming, and fuse and functional verification operations.

Flexible memory programming control options for fill, set-size, word-width, and address offset.

Tasks

Forms-based editor prompts you for task parameters by listing options.

A broad range of parameters is available, including device type, data file, I/O, processing, verify passes, reject count, and memory-device/logic-device parameters.

Task names and descriptions can be customized.

Multiple task databases can be created, limited only by available disk space.

Enhanced automation means that tasks can be linked together to automatically reconfigure the system between batches of parts in the same kit.

Extensive task-management facilities, such as edit, delete, copy and search, maximize power and flexibility.

Detailed programming session logs—including error conditions like continuity fail, non-blank fail, program fail, fuse-verify fail, and functional-test fail—help you analyze programming trends and better manage quality.

Automatic tracking of the number of devices successfully programmed helps ensure accurate and consistent job completion.

Data Transfer

Programming data can come from a disk file, network file server, remote host file, or master device.

High-speed data transfers via serial 115K baud allow fast downloading and uploading of large files.

Support for all popular I/O protocols, including binary, Motorola®, and Intel®.

Built-in terminal emulator provides instant access to a host or device programming system.

Displays and Controls

Windows® interface features simple pull-down menus, dialog boxes, and your choice of mouse and/or keyboard control.

Context-sensitive, on-line help provides immediate assistance at the touch of a button.

Two user modes, Administrator and Operator, tailor the interface and control options to the user's access level, ensuring flexible, fast, and safe operation.

Device selection by manufacturer name and part number, or by a wild card search (? or *), streamlines the operation; device names can also be customized with your own part numbers.

Additional Features

External program interface lets you generate Ethernet addresses and other unique device data for automated production of devices with serial numbers.

TaskLink device selection menus are updated from the programmer's device list whenever the programmer is updated, so TaskLink always stays current with your device programming systems.

System Requirements

Computer System

Microsoft® Windows 95/98/NT

Mouse (Bus or Serial)

VGA Monitor, 640x480 minimum resolution

CD-ROM Drive

Data Cable (shipped with programmer)

Programmers

UniSite™ Universal Programmer with PinSite™ Programming Module

AutoSite™ Production Programmer (stand alone mode)

2900 Programming System

3900/3980 Programming System

ProLINE-RoadRunner System

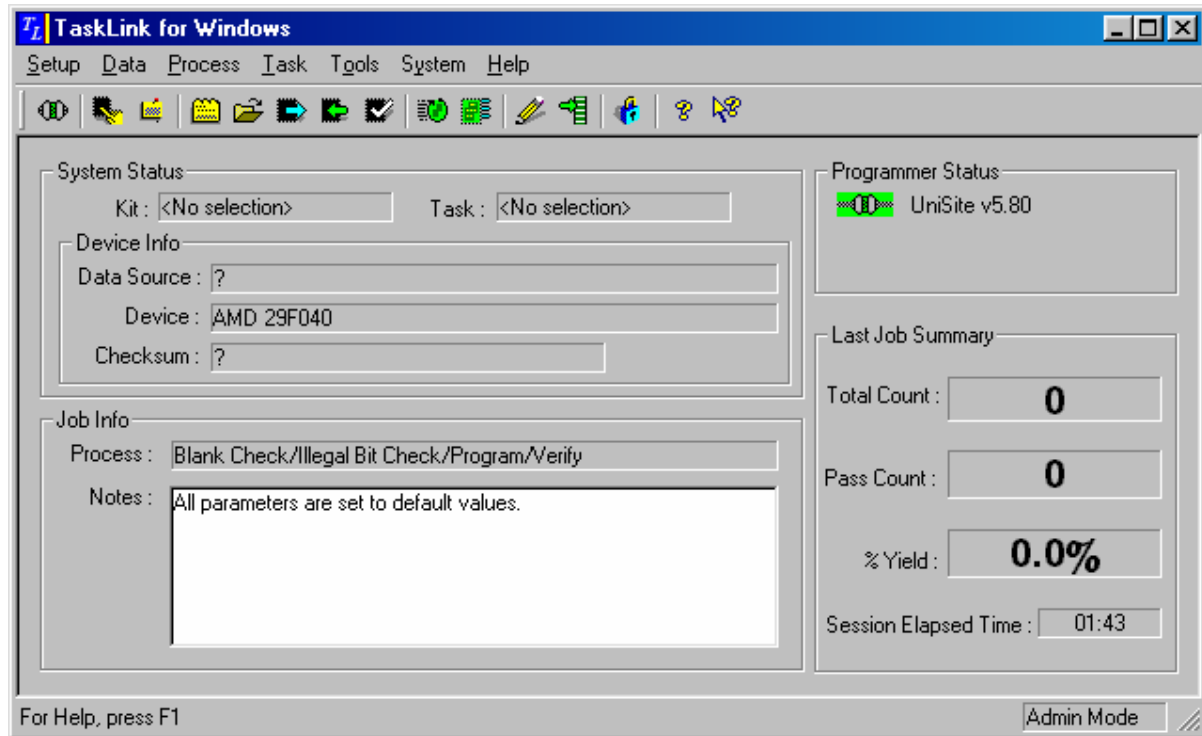
Sprint Family Programming System

TaskLink User Interface

The TaskLink User Interface refers to the systematic organization of screens and menus that you see when using the TaskLink application. TaskLink uses many menus and many different screens. Depending on the programmers and handlers that are configured, many variations exist in the TaskLink screens.

TaskLink Main Screen

One screen that remains fairly constant is the TaskLink main screen. The main screen is the first screen you see when starting TaskLink. An example of the TaskLink main screen is shown below.



The Main Screen displays the following groups of information:

SYSTEM STATUS

Displays the name of the current Task or Kit as well as device information including the file name and location of the Data Source, make and model of the device, and any checksum value.

JOB INFO

Displays the current process and any Notes associated with the process.

LAST JOB SUMMARY

Displays statistics from the last job including Counts, % Yield, and Times.

PROGRAMMER STATUS

Displays the connection status to the programmer and which programmer is used.



- This symbol indicates that contact has been established with the programmer.


















- This symbol indicates that there is no contact with the programmer.

TASKLINK TOOLBAR

The TaskLink Toolbar contains shortcuts to many of the most often-used menu items. The toolbar can change depending on which programmer you have configured. An example of the toolbar is shown below.



Each icon in the toolbar corresponds to a TaskLink menu item. To quickly select the menu item, left-click the toolbar icon. The menu items that match the toolbar icons are listed below:

-  - Click this button to establish contact with your programmer.
-  - Click this button to select a device from the list of supported devices.
-  - Click this button to view the footnotes for the selected device.
-  - Click this button to set programmer properties.
-  - Click this button to load the programmer RAM with data from a PC file.
-  - Click this button to load the programmer RAM with data from a master device.
-  - Click this button to perform selected processes on a device.
-  - Click this button to verify a device.
-  - Click this button to run a Task or Kit.
-  - Click this button to manage Tasks and Kits.
-  - Click this button to view or edit programmer RAM data.
-  - Click this button to fill a programmer RAM block with specific data.
-  - Click this button to set the TaskLink security level and add users.
-  - Click this button view online Help.
-  - Click this button to get context-sensitive Help.

About Tasks and Kits

TaskLink uses Tasks and Kits to automate complicated programming jobs. “Task” is the TaskLink term that describes a single programming job. “Kit” is the TaskLink term that describes a sequence of programming jobs. Tasks and Kits are the two types of data records found in a Task/Kit Database file (*.TSK).

A Task/Kit database (*.TSK) contains records which can be only Tasks, only Kits, or a combination of both. Options to add, remove, and edit Tasks and Kits are found in the Task/Kit Manager screen.

Tasks

A Task record contains all the information necessary for programming and testing one or more devices with a particular data pattern. Examples of the information contained in a Task are:

Device type: Specific device types or a list for operator selection.

Data source: PC disk file, master device, or download from a remote host.

Process: Sequence of operations you want to perform on the device, such as illegal bit check, blank check, program, and verify.

Programming: Programming/testing options and available parameters on Data I/O programmers.

Serialization: Used to program each device with unique information.

Kits

A Kit record consists, for the most part, of a list of Tasks. When listed in a Kit, a group of Tasks can be referred to by a 18-character name, and a 40-character description.

Tasks can be organized into Kits to automate the production of a series of programmable devices, such as all of the programmable devices found on a printed circuit board assembly. All of the Tasks in a Kit must come from the same Task/Kit Database file.

When you run a Kit, you can either run all the Tasks in sequence or run only one of the Tasks. Kits can thus be used for two purposes:

- Minimize the chance of operator error by automatically running the correct Tasks to produce a set of programmed devices.

- Provide a method of organizing a group of Tasks.

Another feature of Kits is the ability to specify a numbered message with each Task. When the Kit is run, the messages are displayed for the operator.

TASKLINK 4.0 AND UNISITE FAMILY PROGRAMMERS

The Data I/O UniSite Family Programming Systems include the 2900 family, the 3900/3980 family, the AutoSite, and the UniSite.

TaskLink™ for Windows® 4.0 automates and controls the UniSite family of programmers, enhancing the quality and efficiency of your device programming operations. With TaskLink's simple to use interface to control your UniSite family programmer, you can standardize operations for improved productivity, greater flexibility, and reduced costs.

TaskLink for Windows User Manual: UniSite Family Programming Systems is organized to assist you in understanding how to make the best use of TaskLink software.

“TaskLink for Windows: Overview” (on page 1) contains general information about TaskLink for Windows.

“TaskLink: UniSite Family Menus” describes the features of each of the seven main menus:

- ❑ [Setup Menu](#) (on page 7)
- ❑ [Data Menu](#) (on page 24)
- ❑ [Process Menu](#) (on page 31)
- ❑ [Task Menu](#) (on page 35)
- ❑ [Tools Menu](#) (on page 39)
- ❑ [System Menu](#) (on page 40)
- ❑ [Help Menu](#) (on page 48)

“TaskLink: UniSite Family Operations” (on page 49) describes the most frequently used programming and testing operations, including selecting devices, setting programming system options, editing Tasks, running Tasks, exiting TaskLink, and many others.

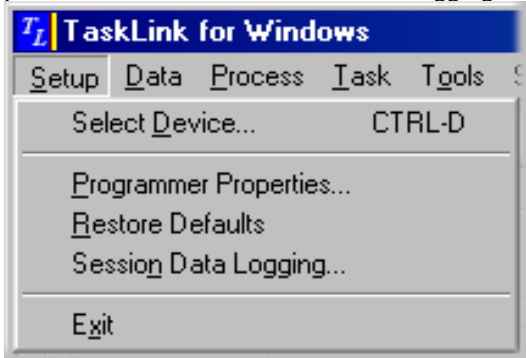
“Data I/O: Service and Support” (on page 78) contains information about service for your Data I/O programming system.

Congratulations on your choice of TaskLink for Windows and Data I/O's UniSite family of programmers.

TASKLINK 4.0: UNISITE FAMILY MENUS

Setup Menu

The TaskLink 4.0 [Setup Menu](#) is shown below. This menu is used to select device and programmer parameters, to enable TaskLink's data logging features, and to exit from the TaskLink program.

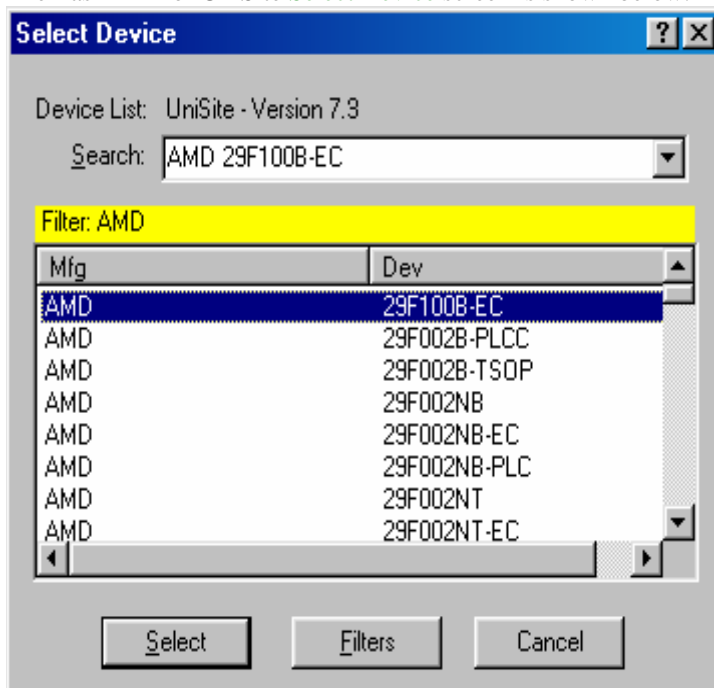


The options on the [Setup Menu](#) include:

- Select Device
- Programmer Properties
- Restore Defaults
- Session Data Logging
- Exit

Select Device

The TaskLink for UniSite [Select Device](#) screen is shown below.



Use the [Select Device](#) screen to specify a target device. You can enter the manufacturer and device name or select the manufacturer and device name from lists. You can also use the filter feature to limit the device display to a small subset of the supported devices. Then use the clear filter button to see all devices again.

Filters

To use filters, enter a standard wildcard value into the Manufacturer and/or Device fields and press the filter button. For example:

Entering: Manufacturer: * and Device: 29?040

Returns a list of all manufacturers and all devices beginning with "29, followed by any character, followed by "040.

CUSTOM DEVICE FILE

Use the Custom Device File feature to create a cross-reference between your own names for programmable devices and the names used by a particular Data I/O programmer.

TaskLink stores device information for each programmer in a separate disk file. The file has a name unique to the programmer and a .dev extension. To use the Custom Device File feature, you must create a file of the same name in the same directory, but with a .cus extension. This file contains the cross-referencing information. A different file is required for each programmer type used.

Once you have created a file, you must run the Device Database Update option from the [Tools Menu](#). After running the update, your new device names will appear in the device selection list on the [Select Device](#) screen.

Custom Device Filenames

AutoSite: AUTOSITE.CUS

UniSite or UniSite/SetSite: UNISITE.CUS

2900 Programming System: 2900.CUS

3900/3980 Programming System:3900.CUS

Custom Device File Format

A typical custom device file line looks like this:

```
YourName :
OurName1
OurName2
OurName3
```

where "YourName :" is your name for the device and "OurName" is the name of the device as it appears in the Select Device menu. You can assign one device or a list of devices to YourName. If you assign several devices to YourName, TaskLink prompts you to choose one when processing devices. If just one OurName is to be assigned to YourName, you can enter a line like this:

```
YourName : OurName
```

If the first non-blank line in the file does not have a colon in it, the line contents are used as the "manufacturer" name for the custom devices. If no such line is included in the file, the devices will appear under the manufacturer CUSTOM.

A custom device file for AutoSite (AUTOSITE.CUS) with a manufacturer name of ACME might look like this:

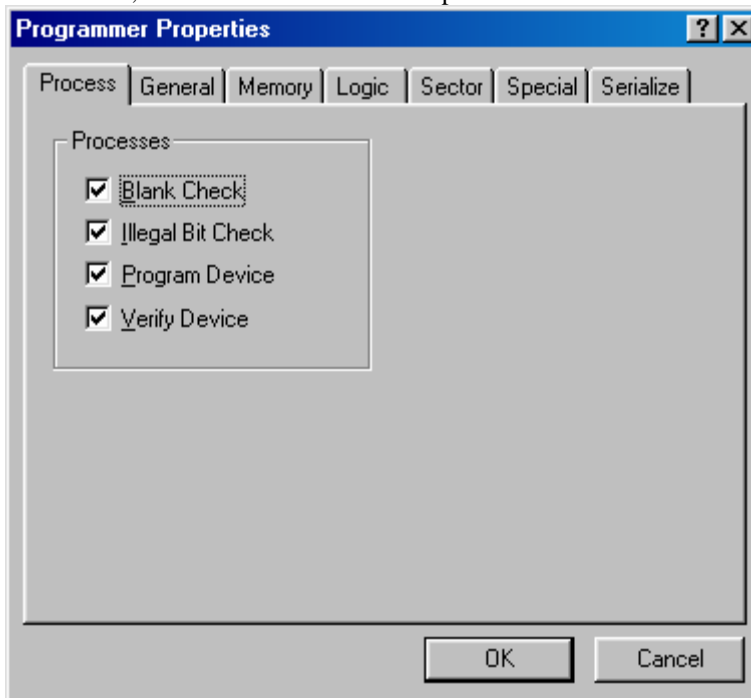
```
< beginning of file >
ACME
DEVICEA :
AMD 16L8-7
TI 16L8-7
NATIONAL 16L8D/7
DEVICEB : INTEL 27128
< end of file >
```

The spaces on either side of the colon are not required.

After running Device List Update, the first manufacturer in the Select Device list will be ACME, and the two devices, DEVICEA and DEVICEB, will be available. When ACME DEVICEA is selected, a list containing the three possible devices is presented for the operator to choose from. When ACME DEVICEB is selected, the INTEL 27128 is automatically selected.

Programmer Properties

The TaskLink for UniSite **Programmer Properties** screen is shown below. This screen is divided into several tabs, the first one of which is for process selection.

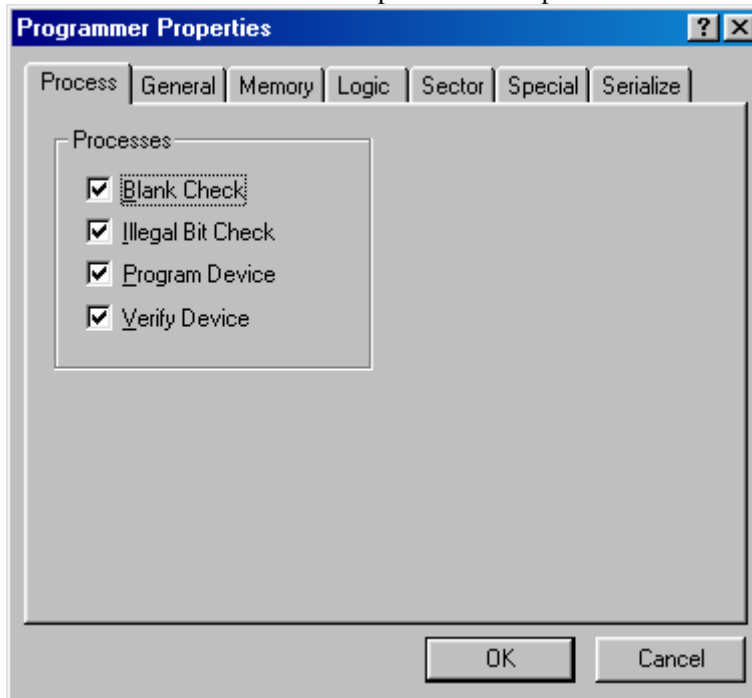


The tabs available from **Programmer Properties** include:

- Process
- General
- Memory
- Logic
- Sector
- Special
- Serialize

PROCESS

The **Process Tab** is shown below. This tab is the first tab available from the **Programmer Properties** screen. Use the **Process Tab** to select the operations to be performed on the target device.



The **Process Tab** options include:

- Blank Check
- Illegal Bit Check
- Program Device
- Verify Device

*Note: The Select Process screen, available from the **Process Menu**, contains a check box for each of these operations. A check in the check box on the **Select Process** screen indicates that the operation is selected.*

*Note: TaskLink automatically performs a Verify operation whenever a program operation is performed. To disable the Verify operation, set the verify passes to "No Verify" on the **General Tab** of the **Programmer Properties** screen.*

Blank Check

Use the Blank Check option to search the device(s) installed in the programmer socket(s) for programmed locations. A failure is indicated if any are found.

Enabling Blank Check here on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Selecting the Blank Check Only option from the **Process Menu** performs only a blank check operation on the selected device.

Illegal Bit Check

An Illegal Bit Check compares device data against programmer RAM to determine if the device has programmed locations of incorrect polarity. If programmer RAM indicates that a specific bit should be in an unprogrammed state and the corresponding bit in the device is in a programmed state, a failure is indicated.

Enabling Illegal Bit Check here on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Selecting the Illegal Bit Check Only option from the **Process Menu** performs only an illegal bit check operation on the selected device.

Program Device

Use the Program Device option to program the device(s) installed in the programmer socket(s) with the data in programmer RAM and then verify that the programmed device data matches programmer RAM. A failure is indicated if any discrepancies are found.

When the target device is a logic device, the entire fuse array is programmed. When the target device is a memory device, the following Memory Parameters affect the amount and location of data programmed:

- Begin RAM
- Begin Device
- Device Block

Enabling Program (Verify is automatically enabled also) on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Selecting the Program/Verify Only option from the **Process Menu** performs only a program/verify operation on the selected device.

Verify Device

Use the Verify Device option to ensure that the data in the device(s) installed in the programmer socket(s) matches programmer RAM. A failure is indicated if any discrepancies are found.

When the target device is a logic device, the entire fuse array is verified. When the target device is a memory device, the following Memory Parameters affect the amount and location of data verified:

- Begin RAM
- Begin Device
- Device Block

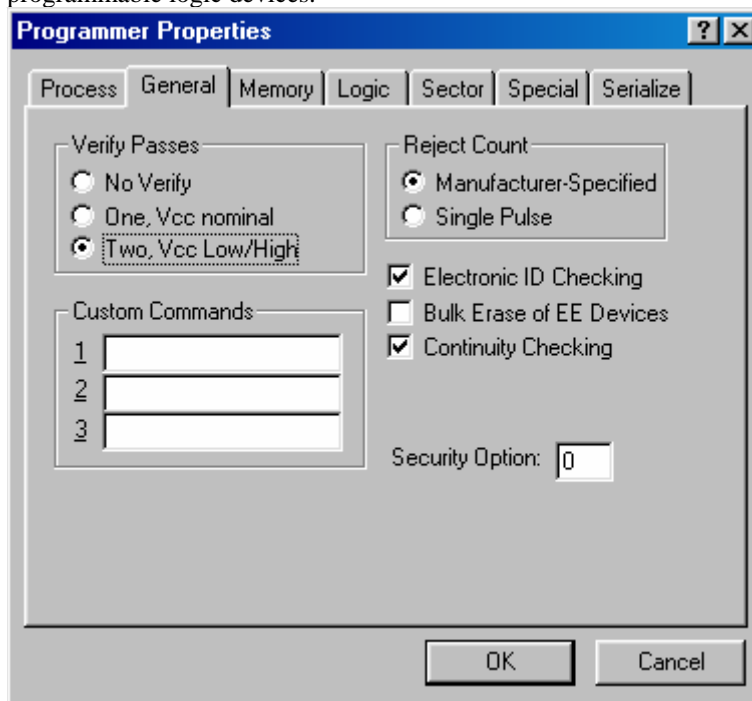
Enabling Verify Device on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Selecting the Verify Only option from the **Process Menu** performs a verify operation on the selected device.

***Note:** The Verify Only function requires the "Verify Passes" parameter be set to either 1 or 2 pass. If "No Verify" is selected, the message "Illegal Parameter Value" will appear when processing the device.*

GENERAL

The **General Tab** is shown below. This tab is available from the **Programmer Properties** screen. Use the **General Tab** to set general programming parameters. These options apply to memory, microprocessor, and programmable logic devices.



The **General Tab** options include:

- Verify Passes
- Custom Commands
- Reject Count
- Electronic ID Checking
- Bulk Erase of EE Devices
- Continuity Checking
- Security Option

*Note: The **General Tab** settings are always in effect, regardless of the device type selected.*

Verify Passes

No Verify specifies zero verification passes.

One, Vcc nominal specifies one verify pass at the nominal Vcc voltage.

Two, Vcc Low/High specifies two verify passes, one at the device's minimum Vcc voltage, and one at the device's maximum Vcc voltage.

Custom Commands

A Custom Command is a sequence of characters that TaskLink sends to the programmer before any device or data transfer operations. The Custom Command must be a valid Computer Remote Control (CRC) command for the programmer. (See your programmer's User Manual for additional information about CRC commands.) You can define up to three custom commands.

TaskLink sends a carriage return (hex 13) after the Custom Command and expects a "<" character to be returned by the programmer.

Each Custom Command may be followed by one or more flags that indicate when the command should be sent to the programmer. The flags are as follows:

- P** Send command prior to device processing (program, verify, etc.)
- M** Send command prior to loading master device
- D** Send command prior to data download ("load RAM from file")
- U** Send command prior to data upload ("create file from RAM")
- E** Send command prior to RAM operations

(Fill RAM programmer command “^”)

If no flags are supplied, the command is sent before any operation. The flag(s) should be placed on the Custom Command line following the command and at least one space. For example:

```
1 ^ D
2
3
```

Custom Command #1 would clear all of programmer RAM before performing a data download. RAM would not be cleared again before a programming operation.

Reject Count

Manufacturer-Specified specifies that the programming algorithm supplies the specified manufacturer's specified number of programming pulses.

Single Pulse specifies that the programming algorithm supplies a single programming pulse or a military reject count.

Electronic ID Checking

Enable the Electronic ID Checking option to verify that the Electronic ID in the device is appropriate for the selected device type. If the appropriate ID is not found, the operation is unsuccessful and a message is issued.

Bulk Erase of EE Devices

Enable the Bulk Erase of EE Devices option to cause electrically-erasable devices to be erased before being programmed with new data.

Continuity Checking

Enable the Continuity Checking option to verify that all testable device pins are making contact in the socket. If contact is not verified on all testable pins, the operation is unsuccessful and a message is issued.

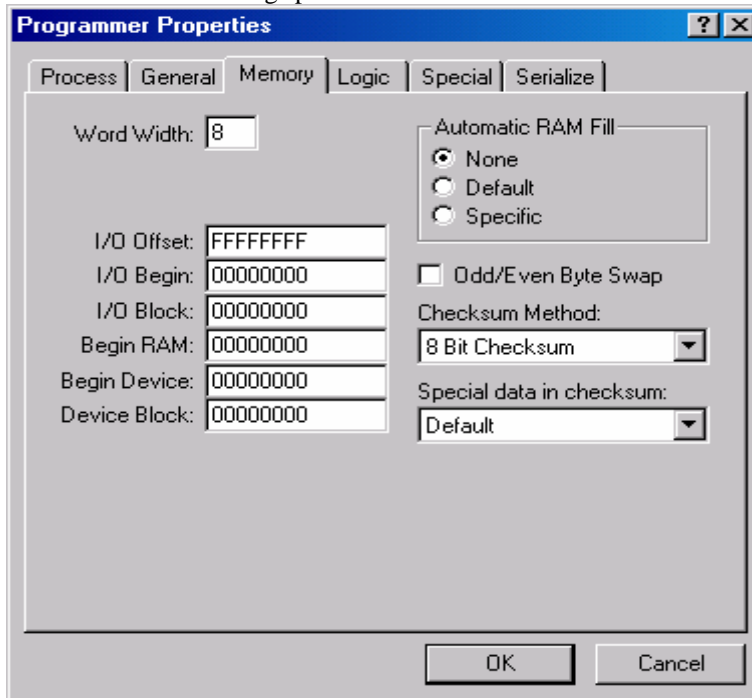
Security Option

The Security Option value determines the programming of the security bit(s) in the device. The allowable range for and definition of the Security Option values differs depending on the device selected.

Option Value	Security Fuse Programming	Fuse(s)	Data
0	Disabled	All	0
1	Disabled	All	1
2	Enabled	All	0
3	Enabled	All	1
4	Enabled	First	1
5	Enabled	Second	1
6	Enabled	Third	1

MEMORY

The **Memory Tab** is shown below. This tab is available from the **Programmer Properties** screen. Use this tab to define data loading specifications.



The **Memory Tab** options include:

- Word Width
- I/O Offset
- I/O Begin
- I/O Block
- Begin RAM
- Begin Device
- Device Block
- Automatic RAM Fill
- Odd/Even Byte Swap
- Checksum Method

Word Width

The Word Width parameter sets the number of bits in the "virtual device" being programmed. The term "virtual device" is used here because setting the word width larger than the word size of the selected device actually implies the use of more than one device.

The Word Width parameter must be at least as large as the word width of the selected device and, if it is larger, it must be an integer multiple of the word width of the selected device.

I/O Offset

For Input Operations The address where data is placed in programmer RAM is calculated by taking the incoming address, subtracting the I/O Offset and adding the Begin RAM address. An I/O Offset of FFFFFFFF causes the I/O offset to default to the first incoming address.

For Output Operations The outgoing address is calculated by taking the address where the data is located, subtracting the Begin RAM address, and adding the I/O Offset. An I/O Offset of FFFFFFFF causes the I/O Offset to default to zero.

I/O Begin

The I/O Begin RAM parameter sets the first programmer RAM address from which or to which data is to be transferred in a data transfer operation. The default value of I/O Begin RAM is 000000.

I/O Block

The I/O Block parameter sets the number of bytes to be used in data transfer operations. The default value of 000000 causes the I/O block size to be set to the size of the selected device.

Begin RAM

The Begin RAM parameter sets the first programmer RAM address from which or to which data is to be transferred in a programmer operation. The default value of Begin RAM is 000000.

Begin Device

The Begin Device parameter sets the first device address from which or to which data is to be transferred. The default value of Begin Device is 000000.

Device Block

The Device Block parameter sets the number of bytes to be used in device operations. The default value of 000000 causes the device block size to be set to the size of the selected device.

Automatic RAM Fill

The Automatic RAM Fill parameter selects the data (if any) that programmer RAM will be filled with prior to initiation of an I/O transfer to the programmer.

None Memory is not changed.

Default Unused locations are initialized to the unprogrammed state for the device.

Specific Unused locations are filled with the specified two-digit hex number.

Odd/Even Byte Swap

Defines the order in which data is transferred to or from devices with a word width greater than eight bits.

When Odd/Even Byte Swap is disabled (not checked), the low byte of RAM data corresponds to the low byte (D0-D7) of the device, and the high byte of RAM data corresponds to the high byte (D8-D15) of the device.

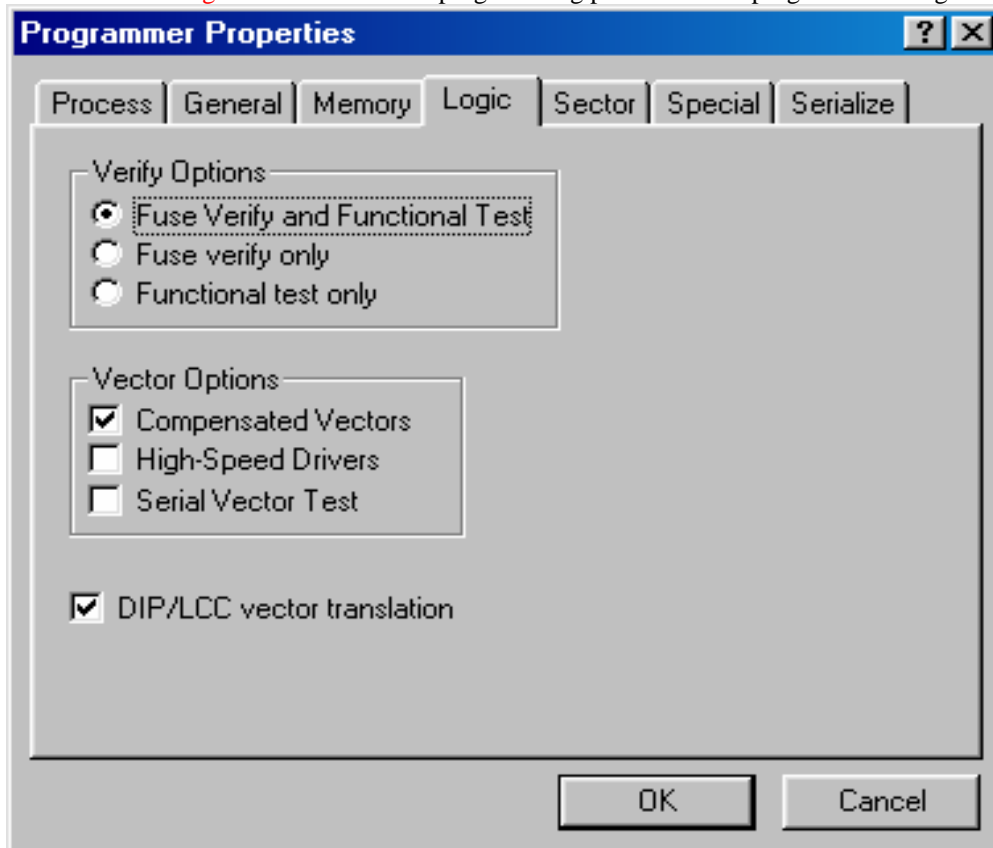
When Odd/Even Byte Swap is enabled (checked), the low byte of RAM data corresponds to the high byte (D8-D15) of the device, and the high byte of RAM data corresponds to the low byte (D0-D7) of the device.

Checksum Method

Select a checksum method from the drop-down list. The checksum methods are 4 bit, 8 bit, and Device Word Width.

LOGIC

The **Logic Tab** is available from the **Programmer Properties** screen. A picture of the **Logic Tab** is shown below. Use the **Logic Tab** to set various programming parameters for programmable logic devices.



The **Logic Tab** options include:

- Verify Options
- Vector Options
- DIP/LCC Vector Translation

*Note: The **Logic Tab** settings have no effect when the target device is a memory or microprocessor device.*

Verify Options

- Fuse verify and functional test
- Fuse verify only
- Functional test only

Vector Options

Compensated Vectors provides special load compensation to the device output pins during structured vector testing. Enabling **Compensated Vectors** improves some vector testing problems, especially with high-speed devices.

High-speed Drivers specifies a lower-impedance, faster pin driver to apply structured vector levels to device inputs. Enabling **High-speed Drivers** improves some vector testing problems, especially with high-speed devices.

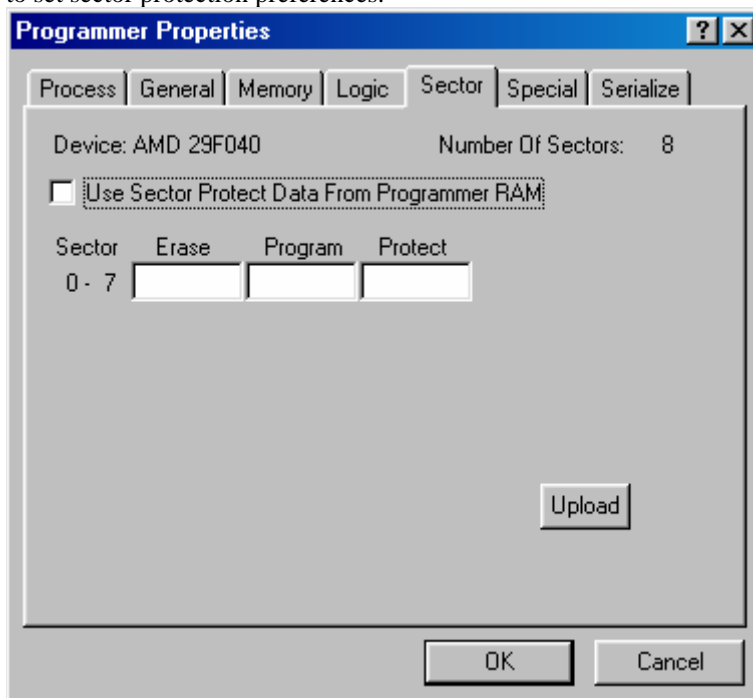
Serial Vector Test applies the structured test vector levels serially (pin-by-pin) instead of the normal parallel method. This option provides compatibility with programmers that apply vector levels serially.

DIP/LCC Vector Translation

The DIP/LCC Vector Translation option automatically translates structured test vectors loaded from a DIP JEDEC data file to vectors appropriate for testing the PLCC version of the device.

SECTOR

The **Sector Tab** is shown below. This tab is available from the **Programmer Properties** screen. Use this tab to set sector protection preferences.



The **Sector Tab** options include:

- Device
- Number of Sectors
- Use Sector Protect Data From Programmer RAM
- Sector
- Erase
- Program
- Protect
- Upload

Device

This field displays the device selected.

Number of Sectors

This field displays the number of device sectors.

Use Sector Protect Data From Programmer RAM

When this feature is enabled, TaskLink does not send the sector parameters defined in this dialog; rather, it is assumed that the sector data comes from a source such as a data file. Sector operations are not disabled, and any sector data or sector configuration settings enabled/disabled on the programmer are in effect.

When enabled, this feature causes TaskLink to pre-fill the dialog fields with the sector configuration from the programmer. You can view the sector data within the data file or easily convert to the new method. This feature is provided to give backward compatibility with older data files that may contain sector information.

When this feature is disabled, TaskLink sends all sector information defined in this dialog to the programmer, overwriting data that may have been previously sent via a data file or other means.

Sector

In this example array, 8 sectors (1 row by 8 columns) are displayed. Each sector is represented by one digit. The address range for each sector depends on the size and type of the selected device.

TaskLink contacts the programmer, if it is connected, to determine the correct number of sectors for the selected device. TaskLink then displays that number (rounded to the next highest multiple of 8).

Erase

The Erase Sector Data field is used to enable or disable sector erase operations for devices that support sector operations. Enter a 0 to disable sector erase and a 1 to enable sector erase operations.

Program

The Program Sector Data field is used to enable or disable sector programming operations for devices that support sector operations. Enter a 0 to disable sector programming and a 1 to enable sector programming operations.

Protect

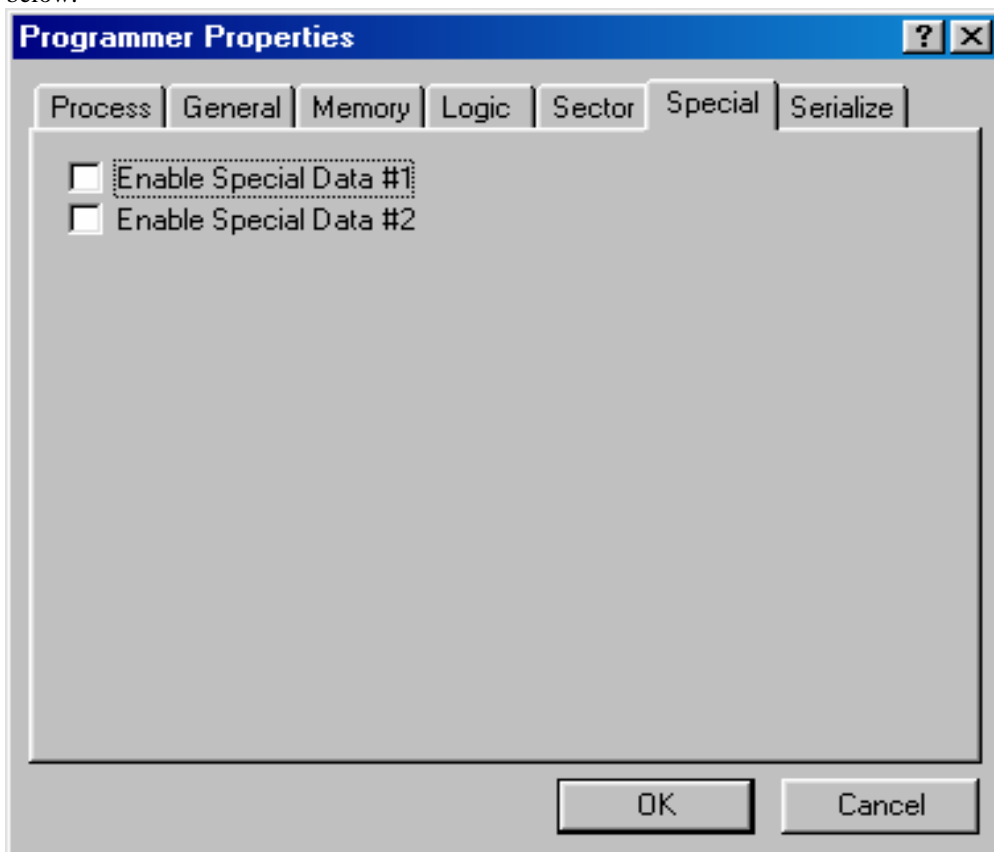
The Protect Sector Data field is used to enable or disable sector protect operations for devices which support sector operations. Enter a 0 to disable sector protect and a 1 to enable sector protect operations.

Upload

Click this button to upload data from programmer RAM.

SPECIAL

The **Special Tab** is available from the **Programmer Properties** screen. A picture of the **Special Tab** is shown below.



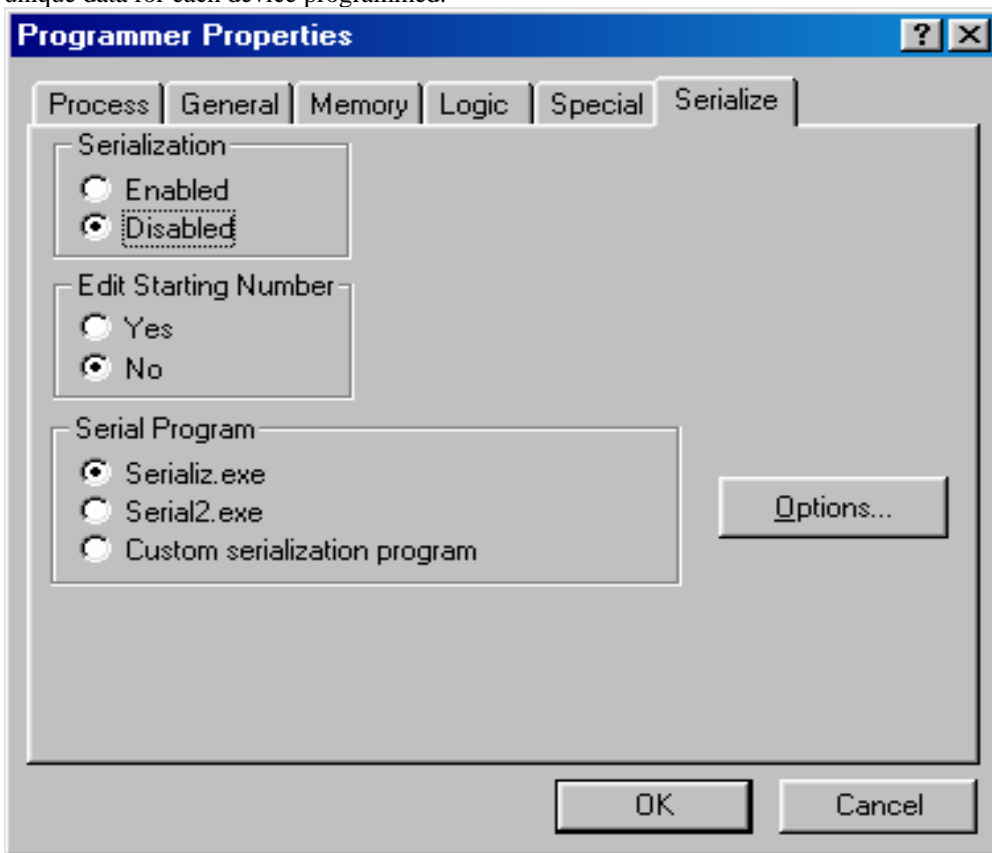
The **Special Tab** options include:

- Enable Special Data #1
- Enable Special Data #2

***Note:** The Enable Special Data option is device-dependent. Refer to the Device List to determine if Enable Special Data applies to a specific device.*

SERIALIZE

The **Serialize Tab** is available from the **Programmer Properties** screen. A picture of the **Serialize Tab** is shown below. You can use this tab to set parameters associated with serialization—the generation of unique data for each device programmed.



The **Serialize Tab** options include:

- RAM Serialization ON or OFF
- Edit Starting Number YES or NO
- (Serialization) Program

RAM Serialization ON or OFF

The RAM Serialization radio buttons determine whether serial number data is placed in programmer RAM (and thus programmed into the device). Select "On" to enable RAM serialization.

Edit Starting Number YES or NO

The Edit Starting Number radio buttons determine whether or not the operator will be prompted to enter a starting serial number at the beginning of a processing session in which serialization is used. Select "Yes" to allow the operator to enter or edit the starting serial number.

Situations in which the operator might not be required to enter a starting serial number would be:

- TaskLink is storing the next number to be used in the Task record. This feature is selectable with the Keep Next Number parameter found in the Serialization dialog box when editing a Task.

- The external serialization program is responsible for keeping track of the next serial number to be used (using its own data storage).

(Serialization) Program

TaskLink accomplishes serialization by running an external serialization program to generate the serial number for each device. The Program entry field in the Serialization dialog box is used to specify the name of the program to be used and any command-line arguments the program requires.

Enter the name of the program along with its full path, or press the browse button for a file selection box. For example, to use the program SERIALIZ.EXE, you might enter the following:

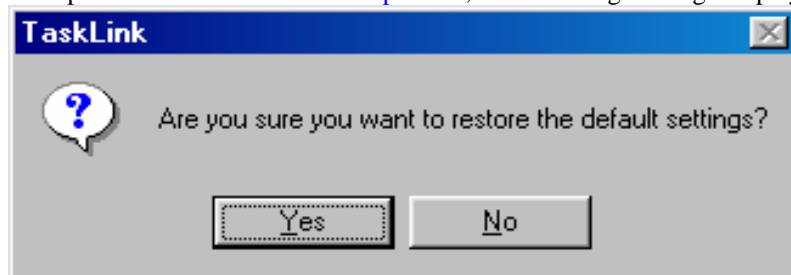
```
c:\dataio\flwin\serializ.exe -l10 -fh -a10
```

The flags following the program name tell SERIALIZ.EXE the address and format of the serial number to be generated. The flags must be in lower case. Upper case flags are reserved for fixed TaskLink information that is sent to the serialization program.

For more information on serializing, see SERIAL2.EXE in the System directory.

Restore Defaults

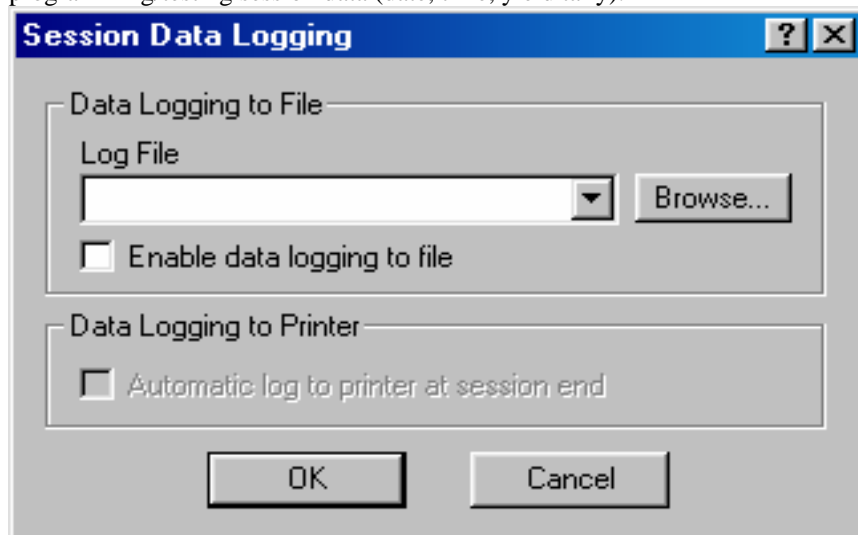
Use the Restore Defaults option to set all programming parameters to their default values. When you click this option from the TaskLink [Setup Menu](#), the following message displays:



Click Yes to confirm your choice, or click No to keep your current programmer parameters.

Session Data Logging

The TaskLink [Session Data Logging](#) screen is shown below. This screen is available from the TaskLink [Setup Menu](#). Use the [Session Data Logging](#) screen to enable or disable the logging of the programming/testing session data (date, time, yield tally).



The available fields include:

- Data Logging to File
- Data Logging to Printer

Data Logging to File

Log File specifies the file to write session data (date, time, yield tally) to at the end of a programming or testing session. To access a file selection dialog box, use the Browse button next to the entry field. You can select an existing log file or enter the name of a new log file. Log files must have a .LOG extension.

After each programming or testing session, a ten-line record is appended to the file. An example of a TaskLink log file record is shown below, followed by an explanation of each line.

```

1 -
2 03-31-1992 09:47
3 Session I.D.
4 324-5678-001
5 c:\\data\\p5678001.jed
6 00007D49
7 AMD 16L8-7
8 CONT/IBC/BC/PROG/TEST/LABEL
9 357,2,0,1,0,3,5,7,0,0,1,3,0,1,3
10 XXX,XXX

```

Line 1: A Dash

Example: -

The first line of each record is a dash (-). This line visually separates each log file record.

Line 2: Date and Time

Example: 03-31-1992 09:47

The second line of each record contains the date and time that the record was added to the log file. The 2-digit month, 2-digit day, and 4-digit year are separated by hyphens (-).

After the date is a single space followed by the time in 24-hour format. Hours and minutes are represented by two digits, separated by a colon (:).

Line 3: Session I.D.

Example: Session I.D.

The third line of each record contains the session I.D. entered at the beginning of the programming session.

Line 4: Task Name

Example: 324-5678-001

The fourth line of each record contains the Task name that was loaded for the programming/testing session. In the example, the line contains a 10-digit part number, which is a possible Task name. If no Task is loaded during the session, this line contains a question mark (?).

Line 5: Data Source

Example: c:\\data\\p5678001.jed

The fifth line of each record contains the name of the data source used for the programming/testing session. If the data came from a PC disk file, the line contains the name of the file. Other data sources can be: Master Device, Host Download or Host: "command," where "command" is the host (remote computer) command (in quotes) used to initiate the host download. If the data source used in the session is unknown, the line will contain a question mark (?).

Line 6: Checksum of Master Data

Example: 00007D49

The sixth line of each record is the checksum of master data.

Line 7: Device Type

Example: AMD 16L8-7

The seventh line of each record contains the name of the device used for the programming/testing session. The device name appears exactly as it does in TaskLink.

Line 8: Process Selected

Example: CONT/IBC/BC/PROG/TEST/LABEL

The eighth line of each record specifies the device operations (processes) performed on the devices programmed in this session. The following abbreviations denote these operations:

Abbr.	Explanation
CONT	Continuity test
IBC	Illegal bit check
BC	Blank check
PROG	Program
TEST	Verify

Line 9: Device Category Counts

Example: 357,2,0,1,0,3,5,7,0,0,1,3,0,1,3

The ninth line of each record contains fifteen numbers separated by commas. Each number represents the number of devices in a particular category. The position of the number (1 through 15) corresponds to the categories listed in the table below. In the above example, there are 357 devices that passed, 2 devices with continuity fail, 0 with non-blank and so on.

Category	#	Explanation
Pass	357	Successfully programmed devices
Continuity Fail	2	Devices that have a continuity test fail.
Non-Blank	0	Devices that are non-blank prior to programming
Illegal Bit	1	Devices that contain an illegal bit
Program Fail	0	Devices that fail during programming operation
Verify Fail 1 (1 pass)	3	Devices that fail during the first verify pass
Verify Fail 2 (2 pass)	5	Devices that fail during the second verify pass
Functional Test Fail	17	Devices that fail during the first functional test pass
Functional Test Fail	20	Devices that fail during the second functional test pass
Security Fuse Fail	0	Devices with a security bit that failed to program
Security Fuse Blown	1	Devices with a programmed security bit
Device Overcurrent	3	Devices with an overcurrent error
Erase Fail	0	Electrically erasable devices that failed to erase
Electronic ID Error	1	Devices with an electronic ID not matching the selected device type
Other Errors	3	Devices that fail due to errors other than those listed above

Line 10: Starting and Ending Serial Numbers

Example: XXX,XXX

The tenth line of each record contains the first and last serialization numbers of the session. If serialization is not used, only a comma (,) appears in this line.

Enable Data Logging to File this box must be checked in order for data logging to occur, and a log file must be specified.

Data Logging to Printer

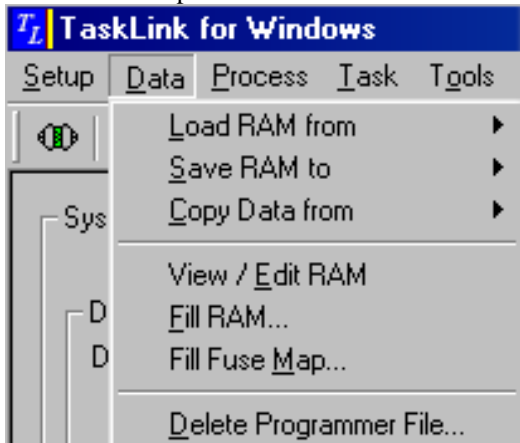
Automatic log to printer at session end causes TaskLink to automatically send session statistics to your current Windows printer at the end of a programming/testing session. To choose a different printer, select Printer Setup in the [System Menu](#).

Exit

This option is available from the TaskLink [Setup Menu](#). Choosing Exit closes TaskLink.

Data Menu

The TaskLink [Data Menu](#) contains options for downloading data to and modifying data in programmer RAM. An example of the [Data Menu](#) is shown below.



The [Data Menu](#) includes the following options (and sub-options):

- Load RAM from PC Network File
- Load RAM from Programmer File
- Load RAM from Master
- Load RAM from Host

- Save RAM To PC/Network File
- Save RAM to Programmer File

- Copy Data from PC File to Programmer File
- Copy Data from Programmer File to PC File
- Copy Data from Master Device to Programmer File

- View/Edit RAM
- Fill RAM
- Fill Fuse Map

- Delete Programmer File

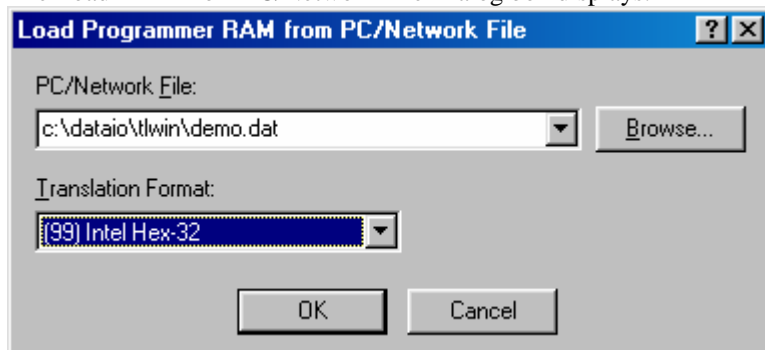
Note: You can disable some of the choices that involve the Mass Storage Module (MSM) and programmer files by going to the [System Menu](#), selecting the [Options Programmer Tab](#) and clearing the check box for “Enable Programmer Disk Options in [Data Menu](#).”

Load RAM from PC/Network File

Use the Load RAM from PC/Network File option to load programmer RAM from a file either on a network or on a PC.

To load RAM from a PC or network file:

1. From the **Data Menu**, point to **Load RAM from** then click **PC/Network File**.
2. The Load RAM from PC/Network File Dialog box displays.



3. At the Load RAM from PC Disk File dialog box, enter the filename and translation format.

Note: When the target device is a logic device, all data in the file is loaded. When the target device is a memory device, the following Memory parameters affect the amount and location of file data loaded:

*I/O Offset
I/O Block
I/O Begin*

TRANSLATION FORMAT

Use the Translation Format option to set the translation format for transferring data to and from the programmer.

With the AutoSite, UniSite, 2900, 3900, and 3980 programmers, high-speed (115.2K baud) transfer is automatically used when Translation Format is set to one of the following.

- | | |
|-----------------------|-------------------------|
| (10) Binary | (82) Motorola EXORciser |
| (16) Absolute Binary | (87) Motorola EXORMAX |
| (95) Motorola 32-bit | |
| (30 - 37) ASCII Octal | (83) Intel INTELLEC |
| (50 - 58) ASCII Hex | (88) Intel MCS-86 |
| (99) Intel Hex-32 | |

Note: A complete list of supported translation formats is available in the UniSite, 2900, 3900/3980, and AutoSite Translation Formats Application Note.

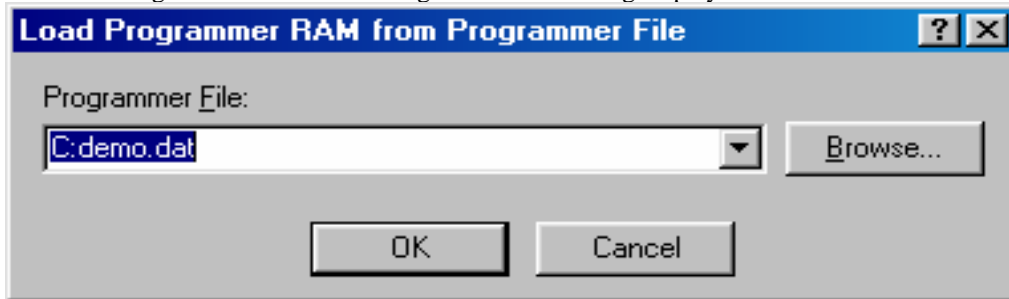
Load RAM from Programmer File

Use the Load RAM from Programmer File option to load RAM from a file in the programmer.

To load RAM from a programmer file:

1. From the **Data Menu**, point to **Load RAM from** then click **Programmer File**.

The Load Programmer RAM from Programmer File dialog displays.



2. Enter the programmer filename in the field provided and click **OK**.

Note: When the master device is a logic device, all data in the device is loaded. When the master device is a memory device, the following Memory parameters affect the loading of master device data:

Begin RAM
Begin Device
Device Block

Load RAM from Master

Use the Load RAM from Master option to load programmer RAM from a master device.

To load RAM from a master device:

1. From the **Data Menu**, point to **Load RAM from** then click on **Master**
2. Insert the master device to be loaded and click **OK**.

Note: When the master device is a logic device, all data in the device is loaded. When the master device is a memory device, the following Memory parameters affect the loading of master device data:

Begin RAM
Begin Device
Device Block

Load RAM from Host

Use the Load RAM from Host option to transfer data from a host (remote computer) and load it to programmer RAM.

To load RAM from a host:

1. Connect your host to a serial port (Host Port) on your PC. The Host Port baud rate does not have to match the baud rate of the Programmer Port.
2. From the **Data Menu**, point to **Load RAM from** then click **Host**.
3. At the Load RAM from Host dialog box, enter an optional host command and translation format.

You may need to run a terminal emulation program on the Host Port to set up the host for sending data. You can select VT100 on Host Port from the **System Menu** to invoke the internal VT100 emulator on the Host Port, or you can run an external program from DOS (your own terminal emulator). You can define a Task to automatically start the Host Terminal Emulator before beginning the host download.

Note: For the host download feature to work, the host must respond to the XON/XOFF handshaking protocol. The host must suspend transmission upon receipt of the XOFF character (hex 13) and resume transmission upon receipt of the XON character (hex 11).

When the target device is a logic device, all host data is loaded to programmer RAM. When the target device is a memory device, the following Memory parameters affect the amount and location of host data loaded to programmer RAM:

I/O Offset
I/O Block
Begin RAM

HOST COMMAND

When you select the Load RAM from Host option, you are prompted for an optional Host Command: a string of characters that will be sent to the host (remote computer) to start the transmission of data. The Host Command is sent to the host when Load RAM from Host is selected. TaskLink adds a carriage return (hex 13) to the end of the Host Command.

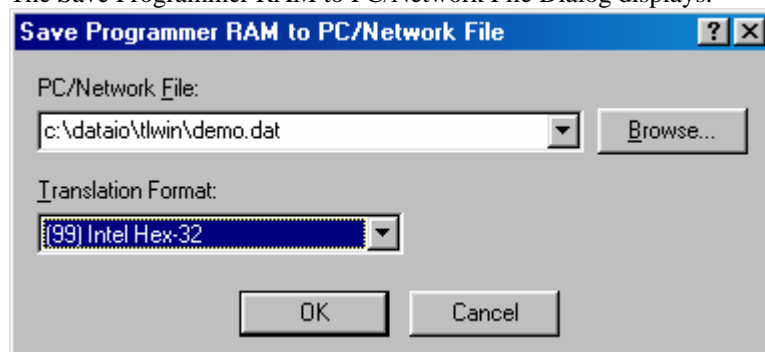
Save RAM to PC/Network File

Use this option to save programmer RAM to a file in the selected translation format.

To save RAM to a PC or network file:

1. From the **Data Menu**, point to **Save RAM to...** then click **PC/Network File**.

The Save Programmer RAM to PC/Network File Dialog displays.



2. In the dialog box, enter the filename and the Translation Format.

Note: When the target device is a logic device, all programmer RAM data is copied to the file. When the target device is a memory device, the following Memory parameters affect the amount and location of programmer RAM data copied to the file:

I/O Offset
I/O Block
Begin RAM

TRANSLATION FORMAT

Use the Translation Format option to set the translation format for transferring data to and from the programmer.

With the AutoSite, UniSite, 2900, 3900, and 3980 programmers, high-speed (115.2K baud) transfer is automatically used when Translation Format is set to one of the following.

- | | |
|-----------------------|-------------------------|
| (10) Binary | (82) Motorola EXORciser |
| (16) Absolute Binary | (87) Motorola EXORMAX |
| (95) Motorola 32-bit | |
| (30 - 37) ASCII Octal | (83) Intel INTELLEC |
| (50 - 58) ASCII Hex | (88) Intel MCS-86 |
| (99) Intel Hex-32 | |

Note: A complete list of supported translation formats is available in the UniSite, 2900, 3900/3980, and AutoSite Translation Formats Application Note.

Save RAM to Programmer File

Use the Save RAM to Programmer Disk File option to save the data for the selected device from programmer RAM to a programmer's Mass Storage Module (MSM).

When you select this option, you will be prompted for the name of the programmer disk file to which the data will be written. To view a list of programmer disk files, press the browse button next to the filename entry field.

If you enter a programmer disk file without a drive letter, the programmer will assume drive A (a floppy disk drive). You must enter a valid drive letter to store files on the MSM.

The data stored in programmer disk files is unformatted binary and does not have an associated translation format.

Copy Data from PC File to Programmer File

Use the Copy Data from PC Disk File to Programmer File to copy the data from a PC disk file to the programmer MSM or a floppy disk.

When you select this option, you will be prompted for the name of the PC disk file to be read and the name of the programmer disk file to which the data will be written. To view a list of files, press the browse button next to the filename entry field. Since the data on the PC disk file is assumed to be formatted and the data in a programmer disk file is always unformatted binary, you must also specify a translation format.

If you enter a programmer disk file without a drive letter, the programmer will assume drive A (a floppy disk drive). You must enter a valid drive letter to store files on the MSM.

Copy Data from Programmer File to PC File

Use the Copy Data from Programmer Disk File to PC Disk File option to copy data from the programmer's MSM to the PC.

Upon selecting the option, you will be prompted for the name of the programmer disk file to be read and the name of the PC disk file to which the data will be written. Press the browse button next to the filename entry field to view a list of existing files. Since the data on the PC disk file is assumed to be formatted and the data in a programmer disk file is always unformatted binary, you must also specify a translation format.

If you enter a programmer disk file without a drive letter, the programmer will assume drive A (a floppy disk drive). You must enter a valid drive letter to store files on the MSM.

Copy Data from Master Device to Programmer File

Use the Copy Data from Master Device to Programmer File option to read the data from a master device and store it in a file on the programmer's MSM.

When you select this option, you will be prompted for the name of the programmer disk file in which the data will be stored. To view a list of programmer disk files, use the browse button next to the filename entry field. After specifying the filename, you will be prompted to insert the master device.

If you enter a programmer disk file without a drive letter, the programmer will assume drive A (a floppy disk drive). You must enter a valid drive letter to store files on the MSM.

The data stored in programmer disk files is unformatted binary and does not have an associated translation format.

View/Edit RAM

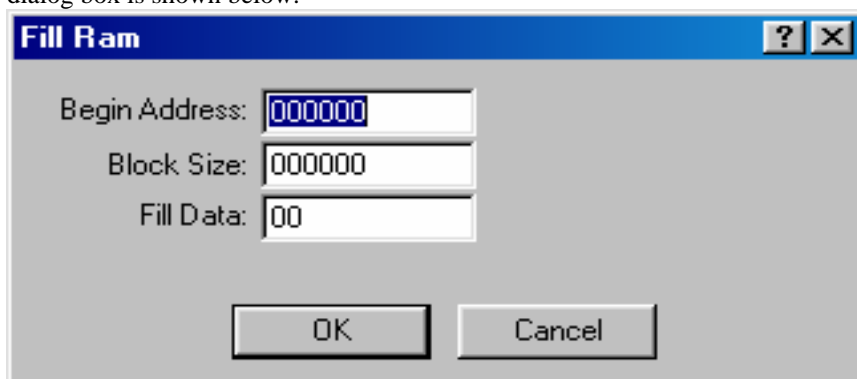
Use the View/Edit RAM option to view and edit programmer RAM.

For these programmers, TaskLink uses its terminal emulator to run the programmer's internal menu system. This provides the fastest, most powerful editing capability. TaskLink for Windows uses the standard Windows application Hyper Terminal as its VT100 terminal emulator.

If Hyper Terminal is not installed on your PC, TaskLink will display the appropriate error message. Hyper Terminal is not installed as part of the TaskLink installation. Go to Control Panel, then Add/Remove Programs, then Windows Setup tab. Highlight Communications and click on Details. Verify that Hyper Terminal is checked, and then click on OK. Be ready to have your Windows CD handy depending on your installation.

Fill RAM

Use the Fill RAM option to fill an area of programmer RAM with a data byte. An example of the Fill RAM dialog box is shown below.



The Fill RAM dialog box has three hexadecimal entry fields:

Begin Address specifies the first location in RAM to be filled.

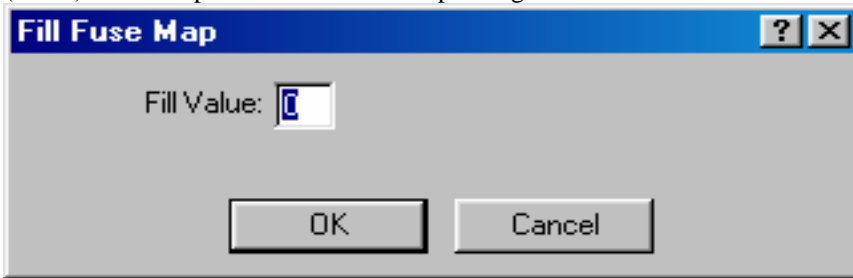
Block Size specifies how many bytes will be filled.

Fill Data specifies the value of the data byte to be written to RAM.

Use the Tab key to move between the fields, enter the desired values, then press Enter (or click OK) to begin the fill operation.

Fill Fuse Map

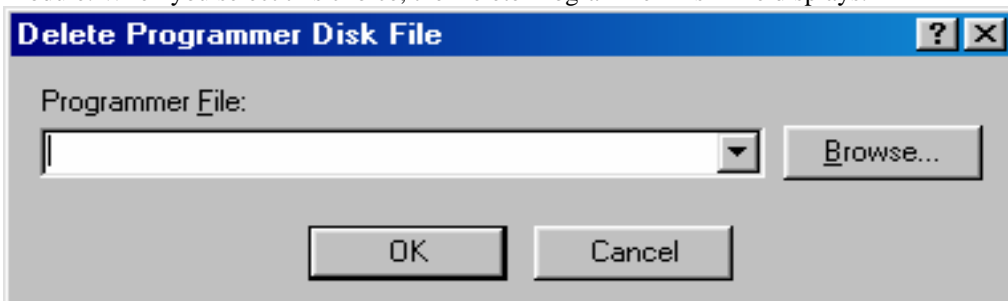
Use the Fill Fuse Map option to fill the entire array of the selected logic device with a specified fuse state (0 or 1). An example of the Fill Fuse Map dialog box is shown below.



When filling in the fuse map, "0" represents an unprogrammed state and "1" represents a programmed state.

Delete Programmer File

Use the Delete Programmer Disk File option to delete (remove) a file from the programmer's Mass Storage Module. When you select this choice, the Delete Programmer Disk File displays.

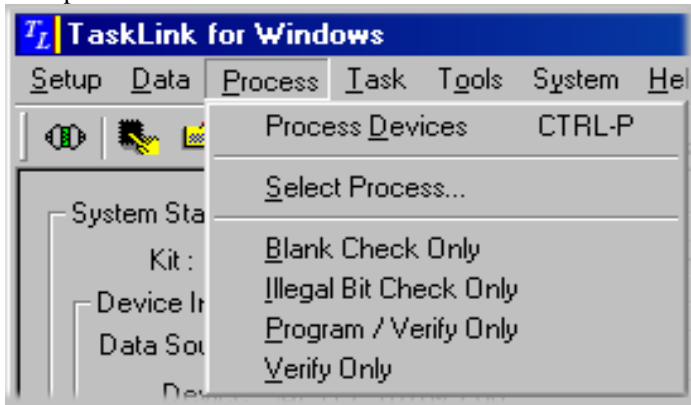


Pressing the browse button next to the filename entry field will present a list of programmer disk files.

If you enter a programmer disk file without a drive letter, the programmer will assume drive A: (a floppy disk drive). You must enter a valid drive letter to delete files on the Mass Storage Module.

Process Menu

The TaskLink [Process Menu](#) contains options for performing device operations together or individually. An example of this menu is shown below.



[Process Menu](#) options include:

- Process Devices
- Select Process
- Blank Check Only
- Illegal Bit Check Only
- Program/Verify Only
- Verify Only

Note: Some options do not apply to all programming systems.

Process Devices

Use the Process Devices option to program devices with the programming operations defined in the Select Process option of the [Process Menu](#).

To process devices:

1. Choose Process Devices from the [Process Menu](#).

The [Processing Status](#) screen displays. The [Statistics Tab](#) gives you pass/fail statistics on your last job. The [General Tab](#) shows you other processing parameters.

The screenshot shows the 'Processing Status' dialog box with the 'Statistics' tab selected. The 'General' tab is also visible. The 'Current Device' field shows '00:00' and a blue button labeled 'Waiting for start'. The 'Last Device' field is empty. The 'Job Totals' section shows 'Total: 0', 'Pass Count: 0', and 'Yield: 0.0%'. The 'Job Statistics' table is as follows:

	Count	Percentage
Fail:	0	0.0%
CF:		
NB:		
IBit:		
PF:		
VF1:		
VF2:		
FTF1:		
FTF2:		
SFF:		
SFB:		
DO:		
EF:		
EID:		
OE:		

Buttons for 'Start' and 'End Session' are located at the bottom right of the dialog.

2. Click OK.

The [Process Devices](#) dialog displays.

The screenshot shows the 'Process Devices' dialog box. It contains a 'Pass Limit' field with the value '0' and the text '(0 = no limit)' to its right. Below it is a 'Session ID' field which is empty. At the bottom are 'OK' and 'Cancel' buttons.

3. Enter a Pass Limit and an optional Session ID.
If any device footnotes apply to the devices you are processing, they will display.
4. Click Start on the [Processing Status](#) screen.
TaskLink will process devices until the pass limit you specified has been reached.

Select Process

Use the Select Process option to select the operations to be performed on the target device.

The process options include:

- Blank Check
- Illegal Bit Check
- Program Device
- Verify Device

The **Select Process** screen contains a check box for each of these operations. A check in the check box indicates that the operation is selected.

***Note:** TaskLink automatically performs a Verify operation whenever a program operation is performed. To disable the Verify operation, set the verify passes to “No Verify” on the **General Tab** of the **Programmer Properties** dialog.*

Blank Check Only

Use the Blank Check option to search the device(s) installed in the programmer socket(s) for programmed locations. A failure is indicated if any are found.

Selecting the Blank Check Only option here on the **Process Menu** performs only a blank check operation on the selected device. Enabling Blank Check on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Illegal Bit Check Only

An Illegal Bit Check compares device data against programmer RAM to determine if the device has programmed locations of incorrect polarity. If programmer RAM indicates that a specific bit should be in an unprogrammed state and the corresponding bit in the device is in a programmed state, a failure is indicated.

Selecting the Illegal Bit Check option here on the **Process Menu** performs only an illegal bit check operation on the selected device. Enabling Illegal Bit Check on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Program/Verify Only

Use the Program/Verify option to program the device(s) installed in the programmer socket(s) with the data in programmer RAM and then verify that the programmed device data matches programmer RAM. A failure is indicated if any discrepancies are found.

When the target device is a logic device, the entire fuse array is programmed. When the target device is a memory device, the following Memory parameters affect the amount and location of data programmed:

- Begin RAM
- Begin Device
- Device Block

Selecting the Program/Verify Only option here on the **Process Menu** performs only a program/verify operation on the selected device. Enabling Program (Verify is automatically enabled also) on the **Process Tab** of the **Programmer Properties** screen adds the operation to those performed when Process Devices is selected from the **Process Menu**.

Verify Only

Use the Verify Only option to ensure that the data in the device(s) installed in the programmer socket(s) matches programmer RAM. A failure is indicated if any discrepancies are found.

When the target device is a logic device, the entire fuse array is verified. When the target device is a memory device, the following Memory parameters affect the amount and location of data verified:

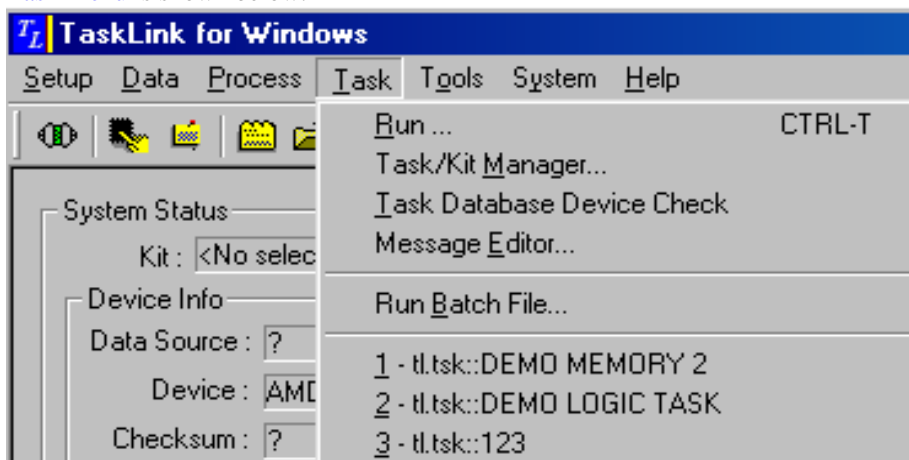
- Begin RAM
- Begin Device
- Device Block

Selecting the Verify Only option here on the [Process Menu](#) performs only a verify operation on the selected device. Enabling Verify on the [Process Tab](#) of the [Programmer Properties](#) screen adds the operation to those performed when Process Devices is selected from the [Process Menu](#).

***Note:** The Verify Only function requires the "Verify Passes" parameter be set to either 1 or 2 pass. If "No Verify" is selected, the message "Illegal Parameter Value" will appear when processing the device.*

Task Menu

The TaskLink [Task Menu](#) contains options to add, remove, run and edit Tasks and Kits. An example of the [Task Menu](#) is shown below.



Tasks and Kits allow you to define all of the information needed to perform a single programming job (a Task) or a sequence of programming jobs (a Kit). Tasks and Kits are the two types of data records found in a Task/Kit Database file. A Task/Kit database can contain up to 5000 records, which can be only Tasks, only Kits, or a combination of both.

[Task Menu](#) options include:

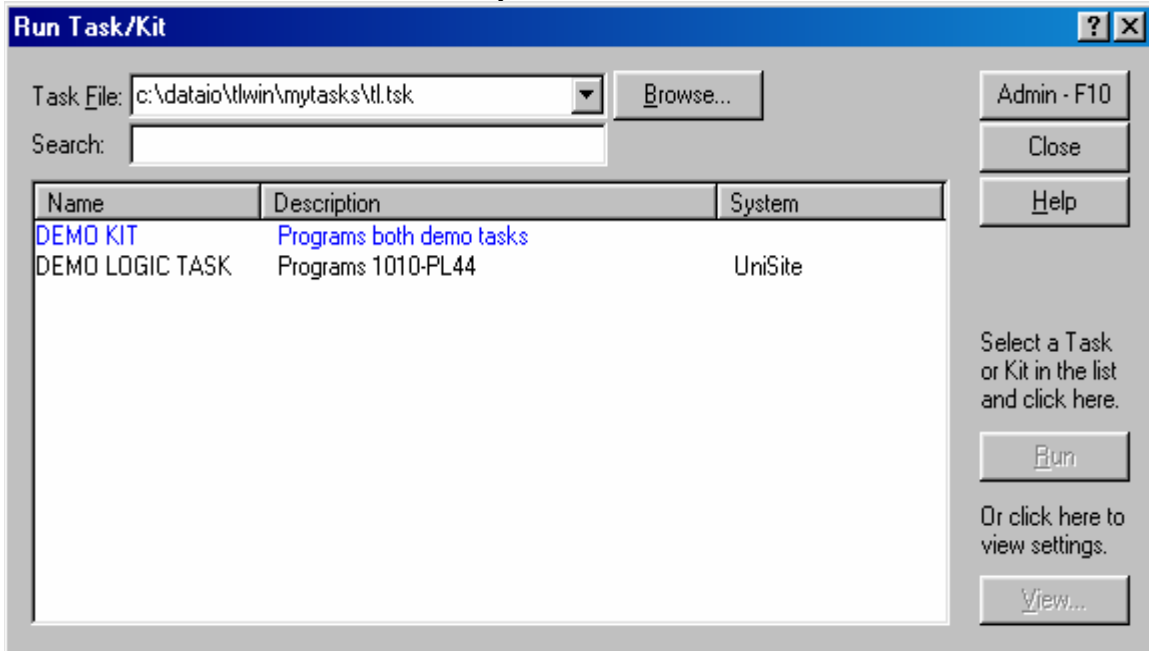
- Run
- Task/Kit Manager
- Task Database Device Check
- Run Batch File
- Run Last Task/Kit (listed by filename)

See Also:

About Tasks and Kits

Run (a Kit or Task)

For use by operators, the Run Task/Kit dialog is available by selecting **Run** from the [Task Menu](#) or as the default dialog when TaskLink security features are enabled. The Tasks and Kits available in the current Task file are listed in the list box. You can only run and view Tasks or Kits from the [Run Task/Kit](#) screen.



The [Run Task/Kit](#) fields include:

- Task File
- Search
- Browse
- Admin-F10
- Close
- Help
- Run
- View

Task File At the Task File box, enter the filename of a different Task.

Browse Click Browse to search other directories for Task files.

Search If you enter the name of a Task or Kit in the entry field, the highlight moves to the Task or Kit. If you enter the name of a non-existent Task or Kit in the entry field, the highlight moves to the position the Task or Kit would be if it existed. Use this feature to find a Task or Kit when you do not remember its name.

Run Runs selected Tasks and Kits in TaskLink.

View Opens a complete list of parameters for the highlighted Task/Kit.

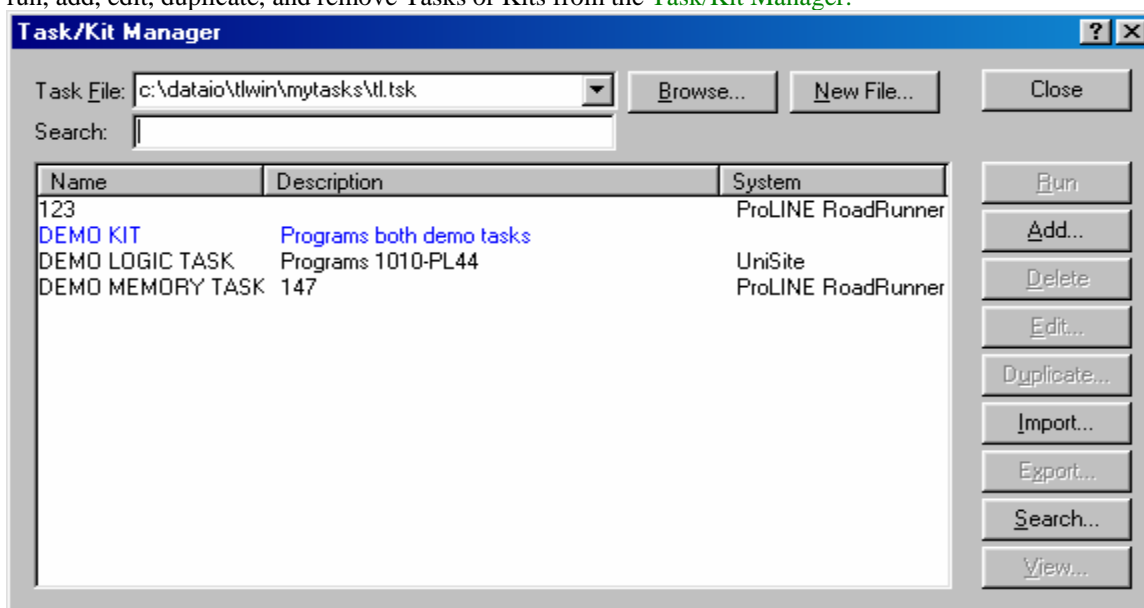
Admin-F10 Uses your name and password to enter Administrator Mode. Only applied to Operator Mode when TaskLink security is enabled.

See Also:

- About Tasks and Kits
- Operator Mode Operations

Task/Kit Manager

For use only by administrators, the **Task/Kit Manager** screen is available by selecting **Task/Kit Manager** from the **Task Menu**. The Tasks and Kits available in the current Task file are listed in the list box. You can run, add, edit, duplicate, and remove Tasks or Kits from the **Task/Kit Manager**.



The **Task/Kit Manager** fields include:

- Task File
- Run
- Add
- Delete
- Edit
- Duplicate
- Import
- Export
- Search
- View

Task File At the Task Name box, enter the filename of a different Task file, click **Browse** to search other directories, or click **Import** to access other Task files in .tsk file format or ASCII text.

Run Runs selected Tasks and Kits in TaskLink.

Add Adds new Tasks and Kits to the Task/Kit Manager.

Delete Deletes Tasks and Kits from Task/Kit Manager list box.

Edit Opens either Edit Task or Edit Kit for changes to Tasks and Kits.

Duplicate Copies highlighted task or kit data.

Import Loads new Task files or ASCII text files from the network or PC.

Export Saves Task files as ASCII text to other directories.

Search Searches and Replaces PC Disk File, Device, and Programmer Type data in the Task file.

View Opens a complete list of parameters for the highlighted Task/Kit.

See Also:

- About Tasks and Kits
- Administrator Mode Operations

Task Database Device Check

Use the Task/Kit Database Device Check option to verify that the device names stored in the selected Task Database file are supported in the current device support files. When an unrecognized device name is found in a Task, the **Select Device** screen appears, prompting you to select a replacement device. TaskLink then searches the rest of the Tasks in the Task Database file, replacing each occurrence of the device.

Occasionally, a programmer update includes a device name change (for example, an ACME 16L8A might become an ACME 16L8A/B). If a Task contains the name of a specific device whose name was changed in the programmer's device support list, TaskLink displays a "Device not Found" message when the Task is loaded.

*Note: Using wildcards (such as *16L8*) when creating Tasks can reduce device support update conflicts.*

Run Batch File

Use the Run Task/Kit Batch File option to execute a group of Tasks and/or Kits as defined in an ASCII batch file.

The batch file can be created with any DOS text editor. Each line of the batch file should contain the name of a Task or Kit to be executed. The Task or Kit name can optionally be preceded by the Task/Kit Database filename and a double colon (::). If the Task/Kit Database filename is not included, TaskLink will attempt to find the Task in the last Task Database used.

For example, to run task_name in a specific Task database file, enter:

```
task_database_filename::task_name
```

To run task_name in the default Task database file, enter:

```
task_name
```

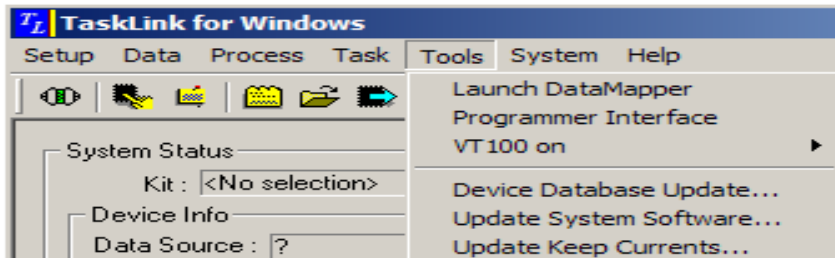
Note: Do not use two consecutive colons in Task or Kit names if you plan to use batch files.

Run Last Task/Kit (listed by filename)

To shortcut the Run dialog, click the filename of the last Task or Kit run from the **Task Menu** and TaskLink will rerun the process as previously programmed without any additional prompting.

Tools Menu

The TaskLink [Tools Menu](#) options allow you to use programmer menu commands via terminal emulation, set up terminal emulation, and update your device database. These options rely completely on the communication link you have established with the programmer. An example of the [Tools Menu](#) is shown below.



The options on the [Tools Menu](#) are listed below:

- Programmer Interface
- VT100 on Programmer Port
- VT100 on Host Port
- Device Database Update

Programmer Interface

Use the Programmer Interface option to enter the programmer's menu system and access programmer functions not available with TaskLink. TaskLink for Windows uses the standard Windows application Hyper Terminal as its VT100 terminal emulator.

If Hyper Terminal is not installed on your PC, TaskLink will display the appropriate error message. Hyper Terminal is not installed as part of the TaskLink installation.

To install Hyper Terminal:

1. From the Windows Control Panel, click Add/Remove Programs, then choose the Windows Setup tab.
2. Highlight **Communications** and click **Details**.
3. Verify Hyper Terminal is checked, then click on **OK**, then **OK**.
4. Be ready to have your Windows CD handy depending on your installation.
5. To return to TaskLink, select **EXIT** from the File Menu.

VT100 on Programmer Port/Host Port

TaskLink for Windows uses the standard Windows application Hyper Terminal as its VT100 terminal emulator. The VT100 emulator is accessible via the VT100 on Programmer Port and VT100 on Host Port options in the [Tools Menu](#).

The VT100 emulator uses the port settings set in the Options [Programmer Port Tab](#) and Options [Host Port Tab](#).

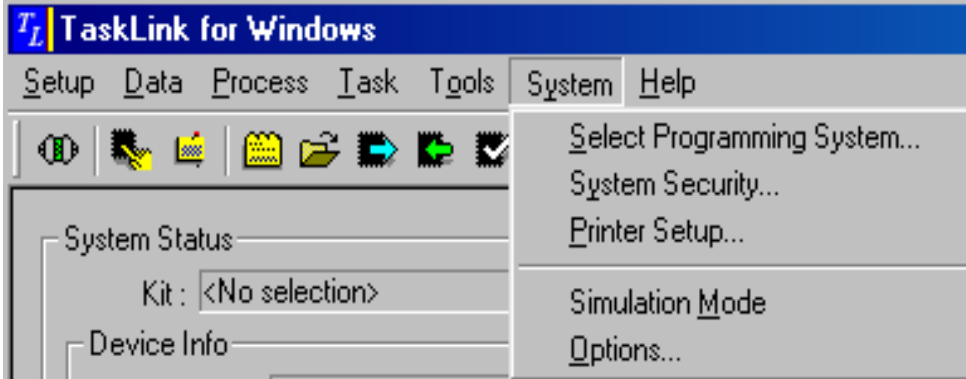
Device Database Update

Use the Device Database Update option to update the TaskLink programmer device support files after a programmer update is installed. TaskLink uploads the device list from the programmer and saves it to a PC disk file.

When Device Database Update is selected, a window appears showing the number of devices uploaded so far and the name of the manufacturer whose devices are currently coming in. This process may take several minutes, depending on the number of devices supported by the programmer.

System Menu

The TaskLink [System Menu](#) contains options for TaskLink system configuration that allow you to configure your individual programming system. An example of the TaskLink [System Menu](#) is shown below.

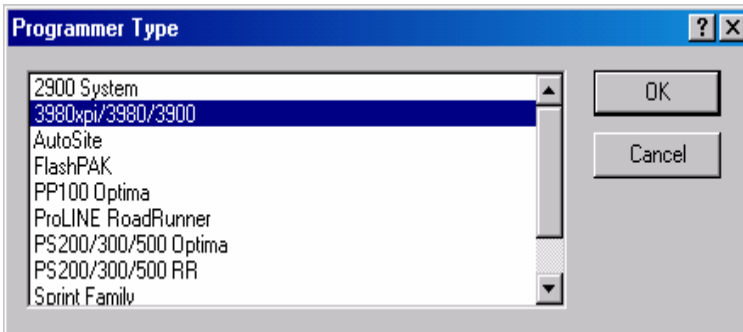


The [System Menu](#) options are:

- Select Programming System
- System Security
- Printer Setup
- Set Message Editor
- Simulation Mode
- Options

Select Programming System

Choosing [Select Programming System](#) displays the [Programmer Type](#) screen. Use the [Programmer Type](#) screen to specify the Data I/O programmer controlled by TaskLink. An example of the [Programmer Type](#) screen is shown below.



The [Programmer Type](#) screen contains a list of supported programmers. When you select a programmer from the list, TaskLink is configured based on the features available on the selected programmer and loads the programmer messages from disk.

System Security

Use the Security Setup option to define the level of security (user restriction) that TaskLink provides and the information (usernames, passwords, and authorization levels) necessary for the implementation of security features.

TaskLink has two modes of operation--Operator Mode, in which users can only run pre-defined Tasks, and Administrator Mode, in which users can create, edit and delete Tasks as well as use any of the features available in the main menu of TaskLink.

TaskLink provides three selectable levels of security:

No security Administrator Mode is entered by starting TaskLink with No Security selected.

Single Administrator Mode password Operator Mode is entered when starting TaskLink with Single Administrator Mode password enabled. Administrator Mode may be entered by pressing F10 while in the Operator Mode dialog box. TaskLink then prompts the user to enter a password (the same password is used for all users) in order to enter Administrator Mode.

Defined users with individual passwords and authorization levels Any user can be defined as an operator or administrator. When starting TaskLink, users must enter their name and personal password (which they can change at any time) in order to start TaskLink. TaskLink will automatically start up in the mode defined for that user. From Operator Mode, Administrator Mode may be entered pressing F10 while in the Operator Mode dialog box.

When the security level is set to anything except "No Security," a password is required to enter the Security Setup dialog box. This password can be changed from within the Security Setup dialog box.

USERNAME

Use this field to enter the name of a new TaskLink user.

PASSWORD

Use this field to enter the password for a new TaskLink user.

Printer Setup

The Printer Setup dialog allows you to view the current printer driver settings, and to change printer types. All TaskLink features that print are printed to the currently selected Windows printer. At this time, TaskLink does not allow the user to specify and store local printer settings. TaskLink only uses the default printer driver settings. In order to change the print setting, you will need to change the printer driver default settings.

TaskLink prints in a generic text format and does not use any special formatting. TaskLink should be able to print to any printer supported by your Windows operating system.

Set Message Editor

Use the Set Message Editor option to establish the text editor program that TaskLink will use for editing the file TL.MSG.

TL.MSG contains the (optional) informative messages that are displayed for the operator at the beginning of each Task when running a Kit. The specified message editor is run (with the filename TL.MSG as a command-line argument) when the Message Editor is activated from the Edit Kit dialog box. TaskLink does not search the path defined in the DOS PATH variable, so make sure to enter the full path description for your editor. For example, to use the text editor that comes with Windows, you might enter

```
C:\windows\notepad.exe
```

The purpose of the Message Editor is to provide quick access to a text editor to compose or view the messages associated with the Kit you are editing. Use of this feature is entirely optional-- the file TL.MSG can be edited at any time outside of the TaskLink program.

CREATE MESSAGES

When in the **Edit Kit** dialog, selecting **Msg Editor** allows you to create (optional) informative messages that are displayed for the operator at the beginning of each Task when running a Kit.

The Msg Editor button invokes the text editor specified in the Set Message Editor option in the **System Menu**. The editor is passed the name of the file TL.MSG (and any path specified in the TLFILES environment variable).

Once in the text editor, each message must be assigned a number that follows this format:
~ followed by four digits

Examples of text message numbers:

~0001 ~0012 ~0254 ~3578

After assigning a number, add a carriage return before typing the text of the optional message.

A sample message might look like this:

~0024
Verify quantity after running this Task.

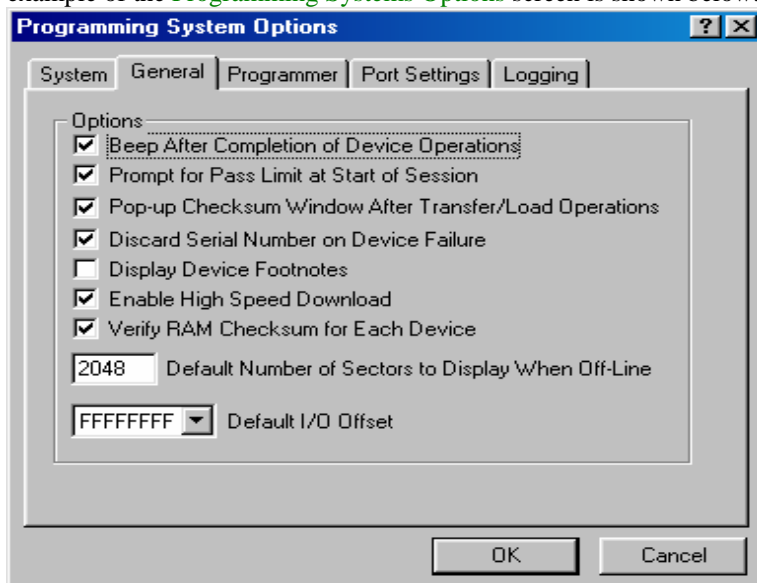
Simulation Mode

Simulation mode is the TaskLink demonstration mode accessed from the **System Menu**. Simulation mode allows you to run most TaskLink functions without actually having a Data I/O programmer connected. Some functions cannot be performed in simulation mode and will cause the message "Operation not allowed in Simulation Mode" to appear.

Note: When processing devices in Simulation mode, TaskLink generates device failure conditions randomly. These failures may not be appropriate for the operation(s) being simulated. This is normal and is characteristic of Simulation mode only.

Options

When you select Options from the [System Menu](#), the [Programming System Options](#) screen displays. An example of the [Programming Systems Options](#) screen is shown below:

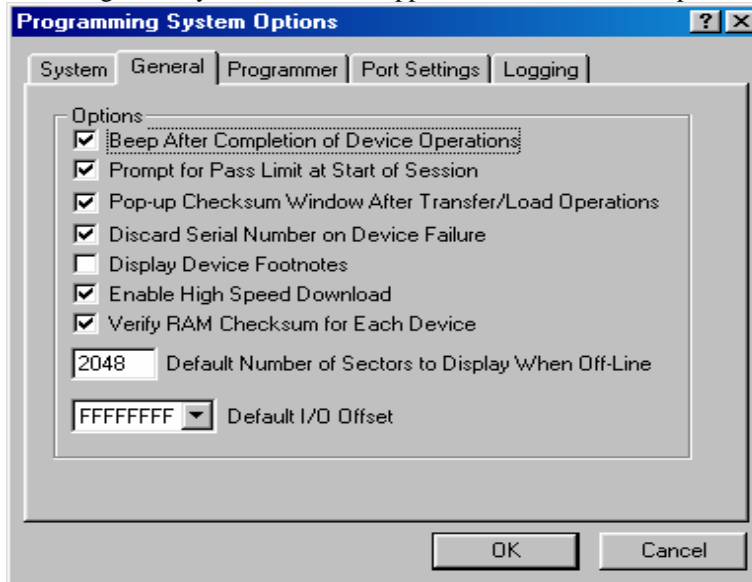


The Programming System Options tabs include:

- General
- Programmer
- Port Settings
- Logging

GENERAL

Use the Options **General Tab** to select your program behavior preferences. Only preferences applicable to the configuration you selected will appear on the tab. An example of the **General Tab** is shown below.

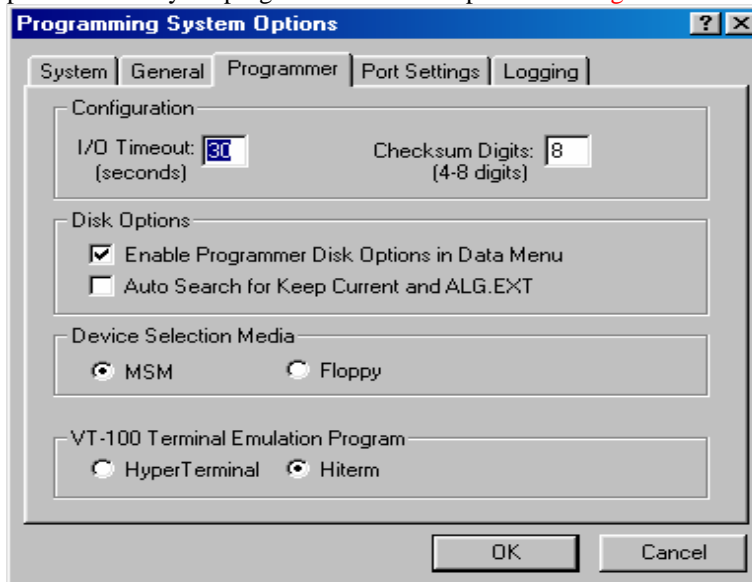


The available options are:

- Beep After Completion of Device Operations
- Prompt for Pass Limit at Start of Session
- Pop-up Checksum Window After Transfer/Load Operations
- Discard Serial Number on Device Failure
- Display Device Footnotes
- Enable High-Speed Download
- Verify RAM Checksum for Each Device

PROGRAMMER

The Options **Programmer Tab** contains options that allow you to configure the storage and set the parameters for your programmer. An example of the **Programmer Tab** is shown below.



The options available on the Options **Programmer Tab** include:

Configuration

I/O Timeout - Sets the amount of time you want the programmer to wait for incoming data to arrive during a data input operation before flagging an error. I/O Timeout may be useful when downloading data from a host (remote computer) manually or from a host that takes a long time to respond to the data request. Setting the I/O Timeout to zero causes the programmer to wait indefinitely.

Checksum Digits - Sets the maximum number of digits TaskLink will use to display programmer RAM checksums on the screen. The Checksum Digits dialog box contains one entry field. Enter the desired maximum number of checksum digits (4 to 8).

Disk Options

Enable Programmer Disk Options in Data Menu - Causes TaskLink to present options (in the Data pull-down menu) relating to data storage in programmer disk files (floppy drive or Mass Storage Module).

Since the addition of the programmer disk options to the **Data Menu** significantly increases the number of choices in the menu, you may wish to disable these options if you do not plan to store data in programmer disk files.

Auto Search for Keep Current and ALG.EXT - Allows TaskLink to automatically search for Keep Current Algorithms and Extended Algorithms. TaskLink will ignore the Device Selection Media setting and search the floppy drive first, then the MSM. With this feature disabled TaskLink will use the Device Selection Media setting for selecting Keep Current and Extended Algorithms.

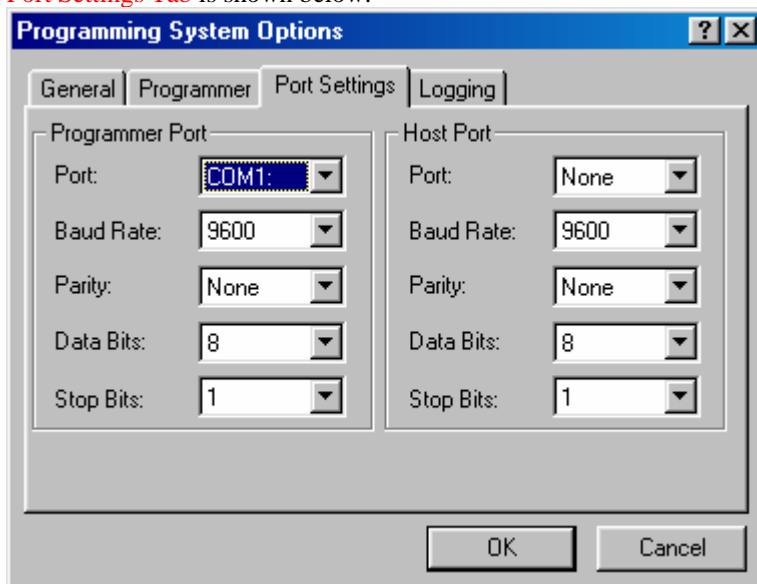
Device Selection Media

MSM When you enable MSM as the Device Selection Media, TaskLink always selects standard device algorithms from the specified media.

Floppy When you enable Floppy as the Device Selection Media, TaskLink always selects standard device algorithms from the floppy diskette in the programmer.

PORT SETTINGS

Use the **Port Settings Tab** to set up the parameters for the Programmer or Host ports. An example of the **Port Settings Tab** is shown below.



The **Port Settings Tab** has a group of combo-boxes for each parameter. The Programmer Port settings must match the settings of the programmer's serial port. For optimum performance, the ports should be set to the fastest baud rate supported by the programmer.

Recommended Port settings are:

Port	COM1 or COM2
Baud Rate	9600 (19200 if supported)
Parity	None
Data Bits	8
Stop Bits	1

Following is a brief explanation of each parameter:

Port

Selects which PC serial port is being used to connect to the programmer. COM1 and COM2 are available on most PCs.

Baud Rate

Selects the baud rate. Baud rate is the rate (bits per second) at which data bits are transmitted and received across the serial connection. For 8-bit data with one start and one stop bit and no parity bit, the rate at which characters are sent is equal to the baud rate divided by 10. For example, 9600 baud represents a character transmission rate of 960 characters per second.

Parity

Selects the kind of parity. Parity is an error detection method in which the sending port adds an extra bit to each character to force the number of 1s in the character and parity bit combination to be even (even parity) or odd (odd parity). If the receiving port detects an incorrect parity in the received character, an error is flagged. Select None to disable parity checking.

Data Bits

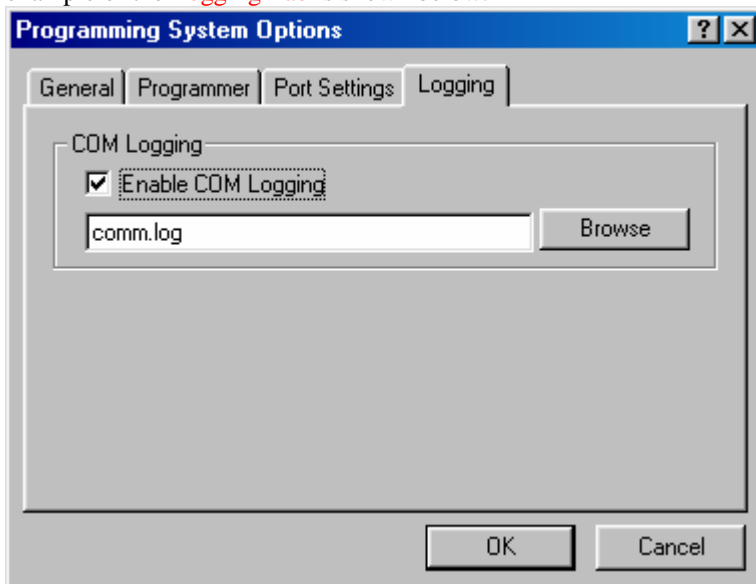
Selects the number of data bits. Data bits are the bits representing the actual data (character) being transmitted. All binary data translation formats and the built-in RAM data editor in TaskLink use 8 data bits.

Stop Bits

Selects the number of stop bits. Stop bits are the bits used to signal the end of a serial data character.

LOGGING

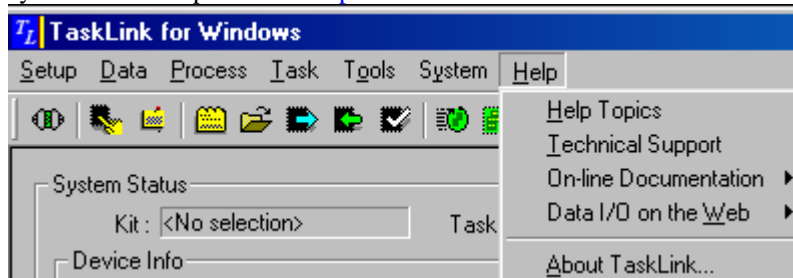
The Options **Logging Tab** is used to enable and set parameters for the TaskLink COM Logging feature. An example of the **Logging Tab** is shown below.



The COM log is used as a troubleshooting tool by users and by Data I/O technical support and engineers. When the COM log is enabled all commands sent back and forth between the programming system and TaskLink are logged into the specified file. The log file is typically e-mailed to Data I/O technical support engineers for review. This allows Data I/O engineers to determine if problems are related to communications between systems without having to travel to the customer site or hooking up expensive analyzers.

Help Menu

The TaskLink [Help Menu](#) provides access to topics that describe the operation of TaskLink and the Help system. An example of the [Help Menu](#) is shown below.



The [Help Menu](#) options include:

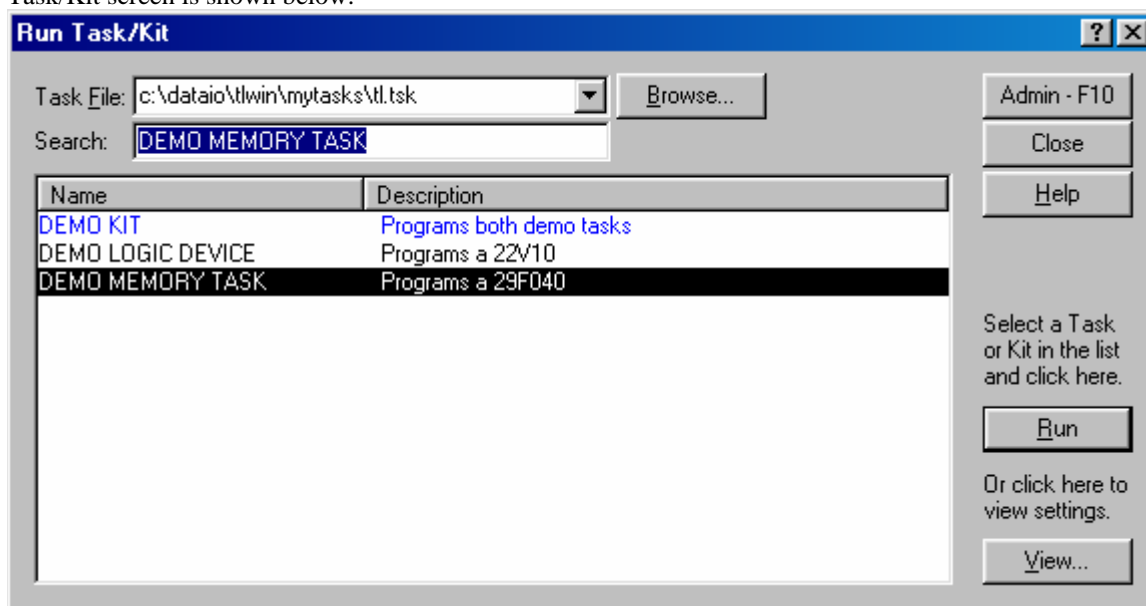
- Help Topics** - Used for accessing TaskLink Help
- Technical Support** - TaskLink technical support numbers
- On-line Documentation** – Used for accessing TaskLink documentation
- Data I/O on the Web** - Direct access to Data I/O web sites
- About TaskLink** - TaskLink version information

TASKLINK 4.0: UNISITE FAMILY OPERATIONS

TaskLink offers users the option of creating Tasks and Kits to streamline device programming. Here is some important information about creating and changing Tasks and Kits using TaskLink.

Operator Mode Operations

When TaskLink is entered in Operator Mode, the Run Task/Kit screen is displayed. An example of the Run Task/Kit screen is shown below.



The operations available in Operator Mode include:

- Run (a Task or Kit)
- View (parameters of a Task or Kit)
- Get Help
- Enter Administrator Mode
- Exit TaskLink

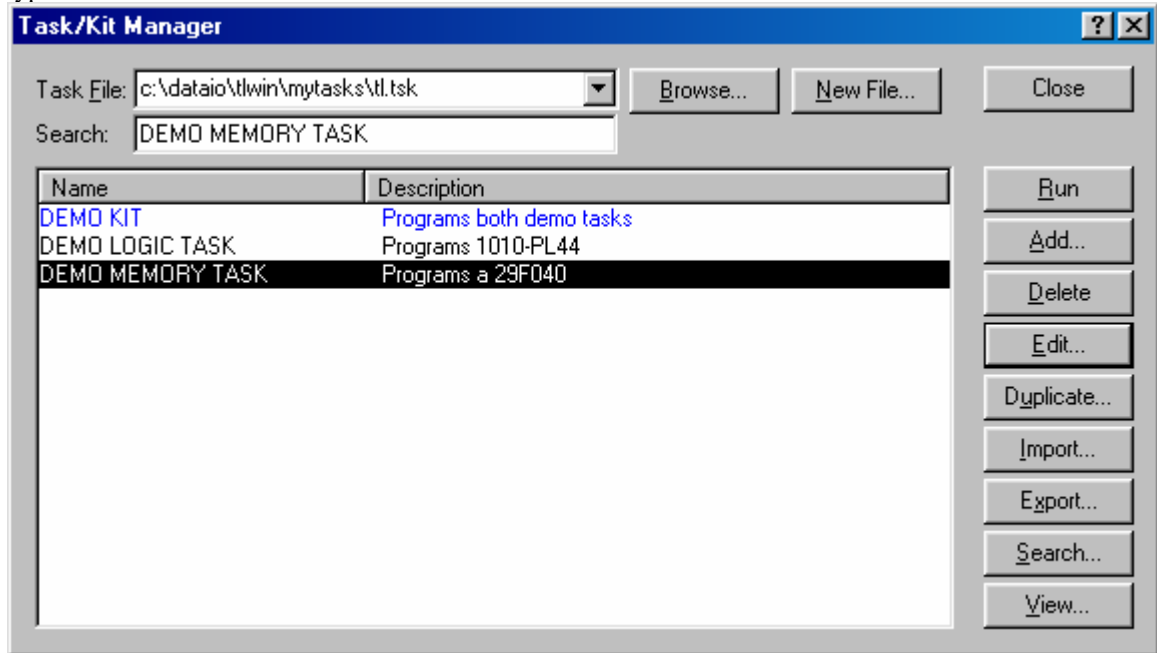
Run (a Task or Kit)

The Run Task/Kit screen is the default dialog when TaskLink security features are enabled and TaskLink is entered in Operator Mode. The Tasks and Kits available in the current Task file are listed in the list box. You can only run and view Tasks or Kits from the [Run Task/Kit](#) screen.

Note: You may also enter the [Run Task/Kit](#) screen by selecting **Run** from the [Task Menu](#) while in Administrator Mode.

To run a Task or Kit:

1. At the **Task File** box, enter the filename of a Task file if none is displayed, or click **Browse** to search other directories for the desired Task file.
2. Select a Task or Kit from the list box. Tasks are displayed in black type and Kits are displayed in blue type.



3. Click **Run**

When you run a Task,

The device type specified in the Task is selected in the programmer.

Various programming/testing parameters are set as defined in the Task.

The data file (if required) is sent to the programmer.

TaskLink is configured to perform the set of operations specified in the Task.

TaskLink then enters the Process Devices screen, ready to perform the set of operations specified in the Task. The top line of the system status box shows the name of the currently loaded Task.

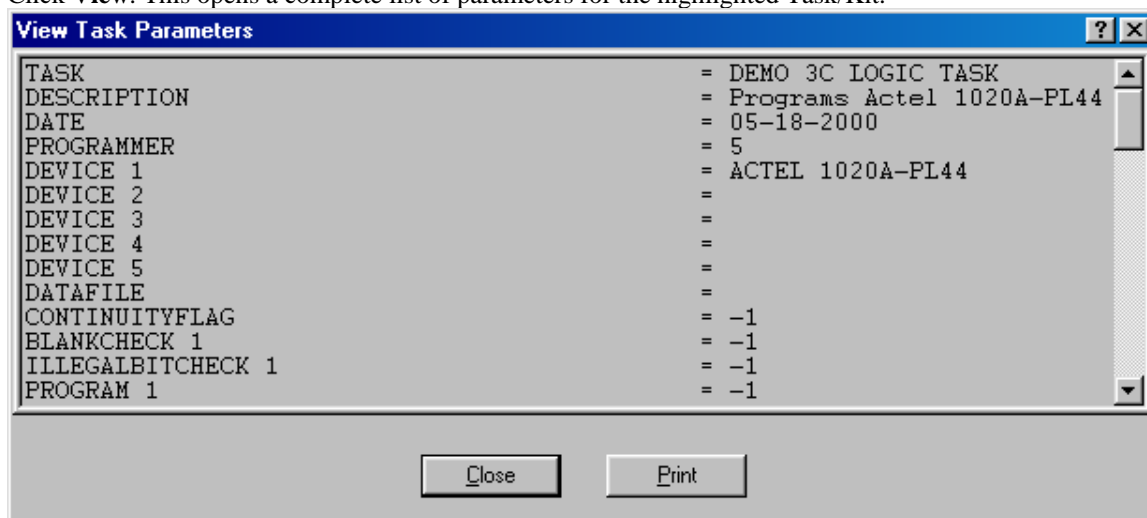
When you run a Kit, the above process is repeated for each Task in the Kit.

View (parameters of a Task or Kit)

A second operation available from Operator Mode is viewing parameters of a Task or Kit. This may be helpful, for example, when checking that the correct device is installed on the programmer.

To view a Task or Kit's parameters:

1. Highlight a Task or Kit from the Task/Kit list box.
2. Click **View**. This opens a complete list of parameters for the highlighted Task/Kit.



Get Help

When in the **Run Task/Kit** screen, if you encounter difficulties you can access the online Help program.

To get help:

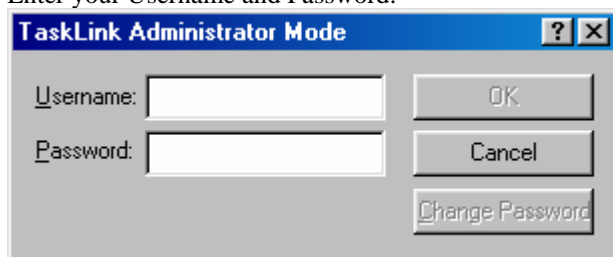
1. Click the **Help** button. This takes you to the online Help topic about running Tasks or Kits. From there, you can navigate through other Help topics as needed.

Enter Administrator Mode

While in Operator Mode, it is possible to switch to Administrator Mode from the **Run Kit/Task** screen.

To enter Administrator Mode:

1. Click the **Admin F-10** button.
2. Enter your Username and Password.



Exit TaskLink

From Operator Mode, it is possible to exit the TaskLink program.

To exit TaskLink:

1. Click **Close**. This exits TaskLink.

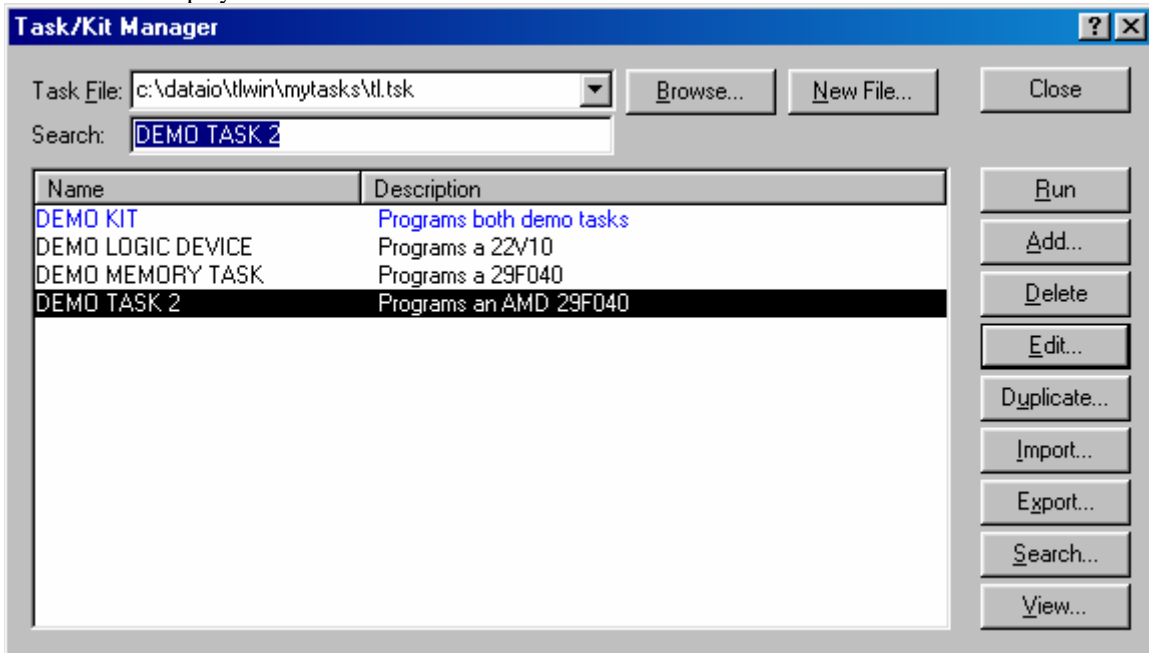
See Also:

About Tasks and Kits

Administrator Mode Operations

You must be in Administrator Mode to create or change Tasks or Kits. If you entered TaskLink in Operator Mode, you are only allowed to run Tasks or Kits, not create or change them. To enter Administrator Mode from Operator Mode, click on **Admin-F10** while in the **Run Task/Kit** screen, and enter your Password.

Once you're in Administrator Mode, select Task/Kit Manager from the **Task Menu**. The **Task/Kit Manager** screen is then displayed:



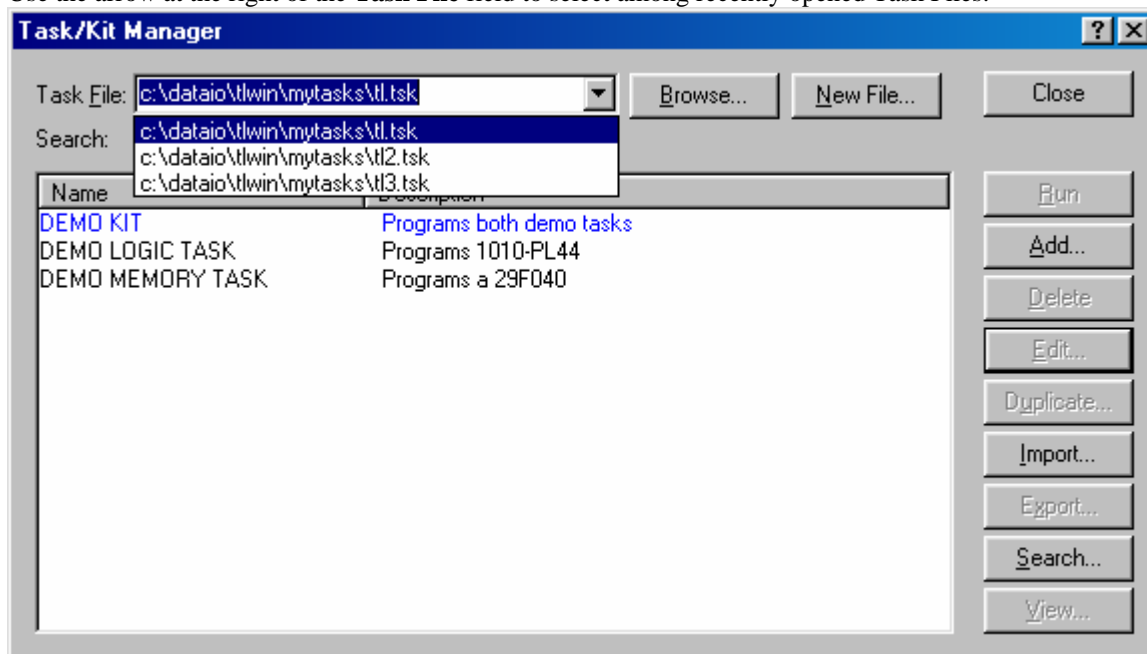
Administrator Mode operations available from the **Task/Kit Manager** screen include:

- Select a Task File
- Browse for a Task File
- Create a New Task File
- Run a Task or Kit
- Add a Task or Kit to a Task File
- Add a Task to a Kit
- Delete a Task or Kit from the Task File
- Edit a Task
- Edit a Kit
- Duplicate a Task or Kit
- Search and Replace
- View parameters for a Task or Kit

Select a Task File

To select a Task File:

1. Use the arrow at the right of the **Task File** field to select among recently opened Task Files.

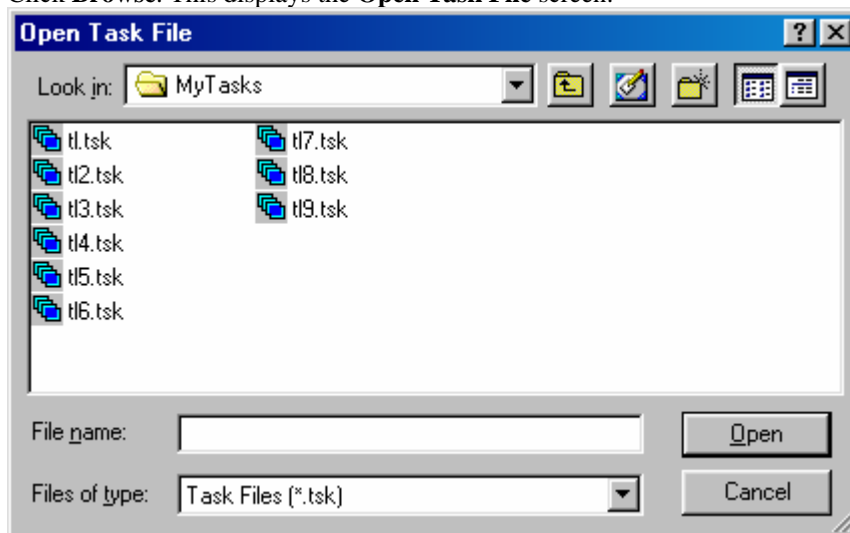


Browse for a Task File

If the Task File you want is not in the recently opened list, you can search for a Task File by using the Browse feature.

To browse for a Task File:

1. Click **Browse**. This displays the **Open Task File** screen.

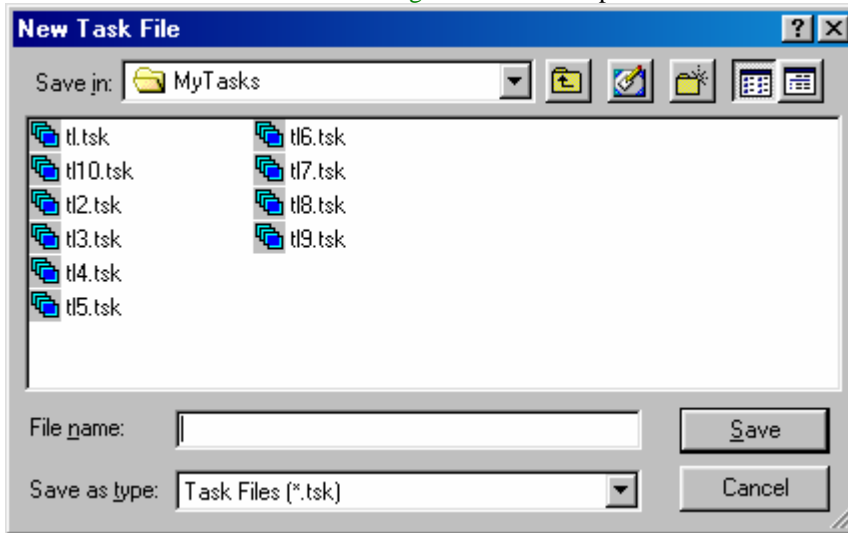


2. Select from the listed Task Files by highlighting a Task File and clicking **Open**.

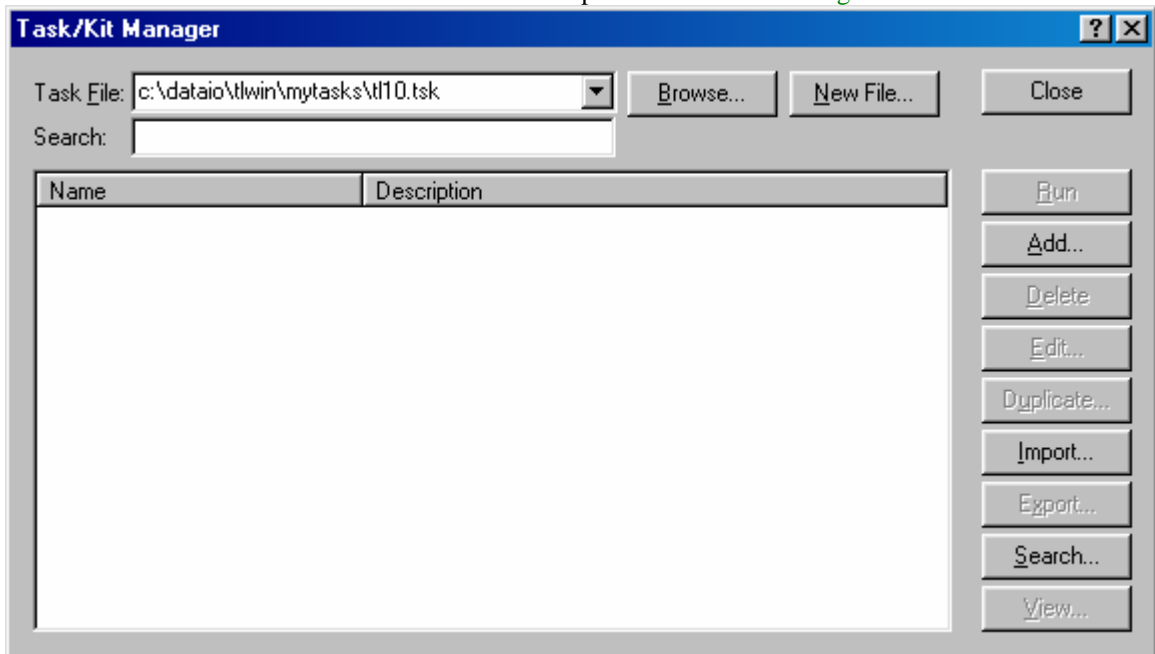
Create a New Task File

To create a new Task File:

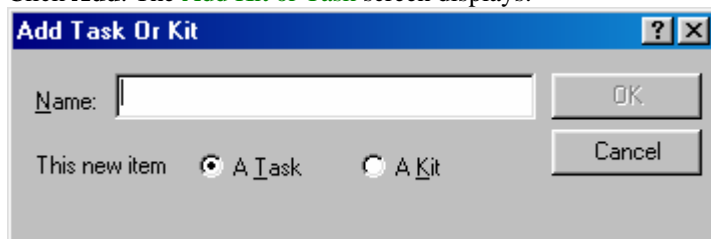
1. Click **New File** on the **Task/Kit Manager** screen. This opens the **New Task File** screen.



2. Give the new Task File a name and click **Save**. This opens the **Task/Kit Manager** screen.



- Click **Add**. The **Add Kit or Task** screen displays.



- Select the radio button for Task or Kit, type a name, and click **OK** to add the Task or Kit to the currently open Task File.

The **Edit Task** or **Edit Kit** screen then displays.

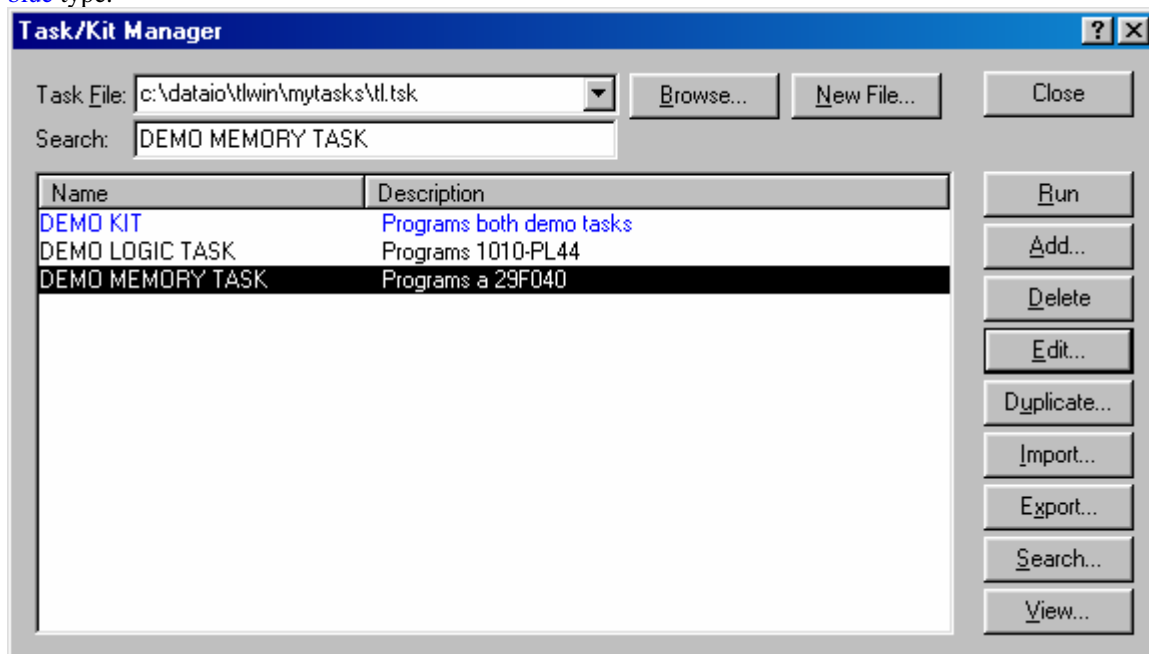
See Also:

Edit a Task or Edit a Kit

Run a Task or Kit

To run a Task or Kit:

- At the **Task File** box, enter the filename of a Task File if none is displayed, or use the arrow at the right side to search through recently opened Task Files. Or click **Browse** to search other directories for the desired Task file.
- Highlight a Task or Kit from the list box. Tasks are displayed in black type and Kits are displayed in blue type.



- Click **Run**

When you run a Task,

The device type specified in the Task is selected in the programmer.

Various programming/testing parameters are set as defined in the Task.

The data file (if required) is sent to the programmer.

TaskLink is configured to perform the set of operations specified in the Task.

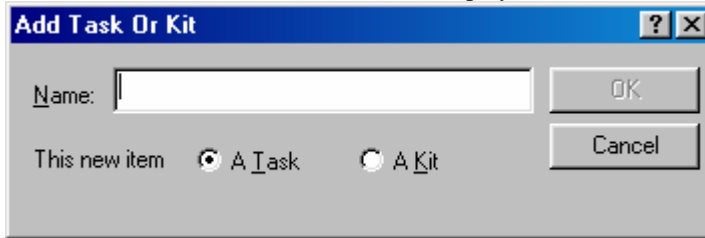
TaskLink then enters the **Process Devices** screen, ready to perform the set of operations specified in the Task. The top line of the system status box shows the name of the currently loaded Task.

When you run a Kit, the above process is repeated for each Task in the Kit.

Add a Task or Kit to a Task File

To add a Task or Kit to a Task File:

1. Select the Task File (see Select a Task File)
2. Click **Add**. The **Add Task or Kit** screen displays

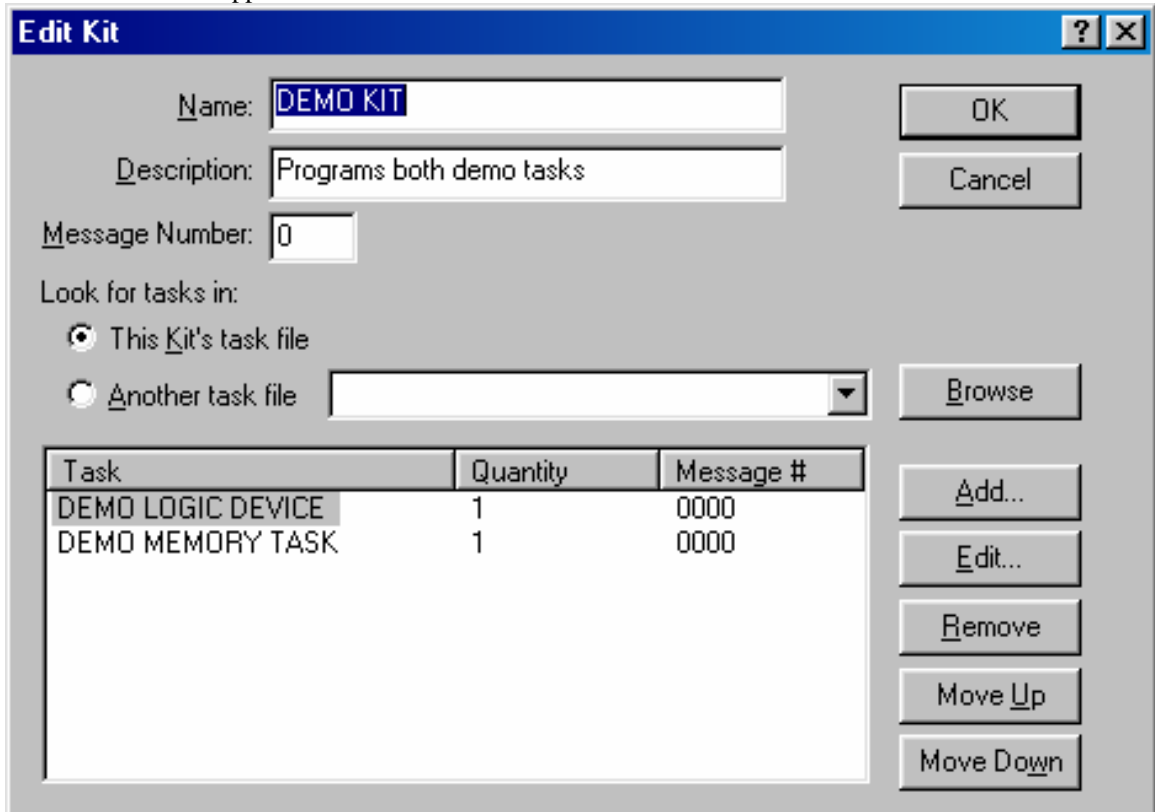


3. Select the Task or Kit radio button, give the Task or Kit a name, and click **OK**. The **Edit Kit** or **Edit Task** screen displays.

Add a Task to a Kit

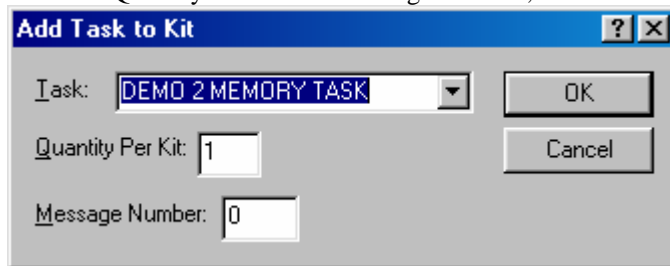
To add a Task to a Kit:

1. From the **Task/Kit Manager** screen, highlight a Kit in the Task/Kit list box and click **Edit**. The **Edit Kit** screen will appear.



2. Click **Add** and use the Task Name drop down box to highlight the Task from the Task list box.

3. Enter the Quantity Per Kit and Message Number, then click **OK**.



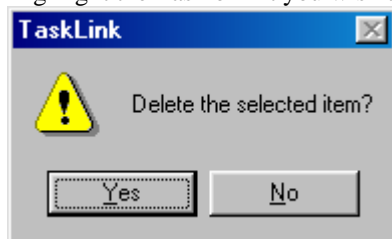
4. The Task you added is now part of the selected Kit.

*Note: New Tasks cannot be created from **Edit Kit**. To create a new task, click Add at the **Task/Kit Manager** screen.*

Delete a Task or Kit from the Task File

To delete a Task or Kit from the Task File:

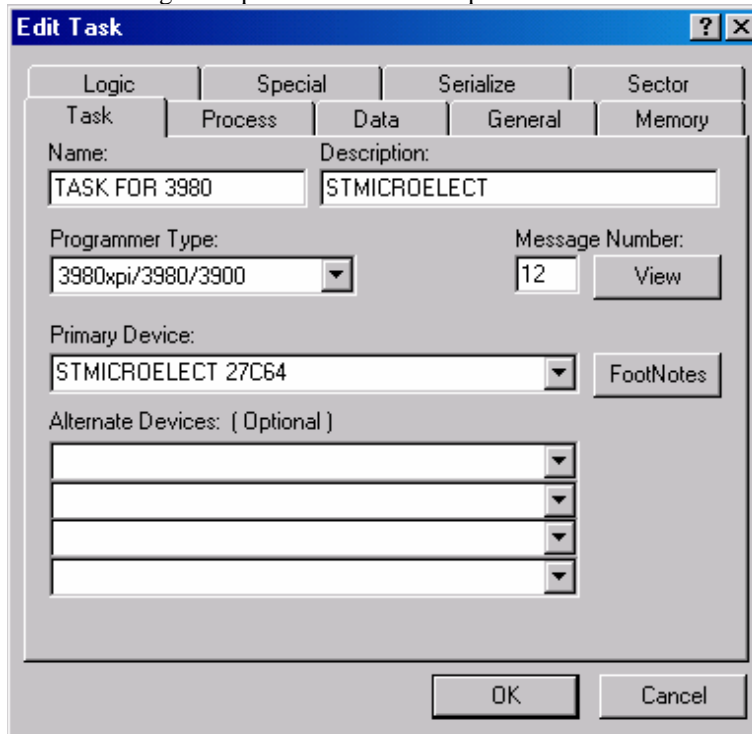
1. Highlight the Task or Kit you wish to delete and click **Delete**



2. To delete, click **Yes**. To cancel, click **No**.

Edit a Task

One of the most frequently used operations in Administrator Mode is editing a Task. From the [Task/Kit Manager](#), highlight a Task and click **Edit**. This displays the [Edit Task](#) screen. Use the [Edit Task](#) screen to change task parameters. An example of the [Edit Task](#) screen is shown below.



The [Edit Task](#) screen includes tabs for the following parameters:

- Task - details Task name and description, programmer type, processes and devices to be programmed.
- Data - contains information on data sources.
- General - contains selections on number of Verify Passes, Reject Count type, Custom Commands, Electronic ID Checking, Bulk Erase of EE Devices and Continuity Checking.
- Memory - contains size and input options for memory.
- Logic - contains verify and vector options.
- Sector - for use in only some devices, these parameters allow for erasing, programming and protecting individual sectors.
- Special - permits special data to be entered.
- Serialize - enables the serialization process.

Note: *Following are descriptions of each tab's contents. To edit a Task, set your selections on each of the available tabs in the [Edit Task](#) dialog.*

TASK TAB PARAMETERS

To set Task Tab parameters:

The **Task Tab**, available from the **Edit Task** screen, includes fields for selecting tasks and devices. An example of the **Task Tab** is shown below.

The **Task Tab** options include:

Name and Description - the name and description for the programmed task.

Programmer Type - displayed as a dropdown list, choose from AutoSite, UniSite, Sprint Family, RoadRunner, 2900 or 3900/3980

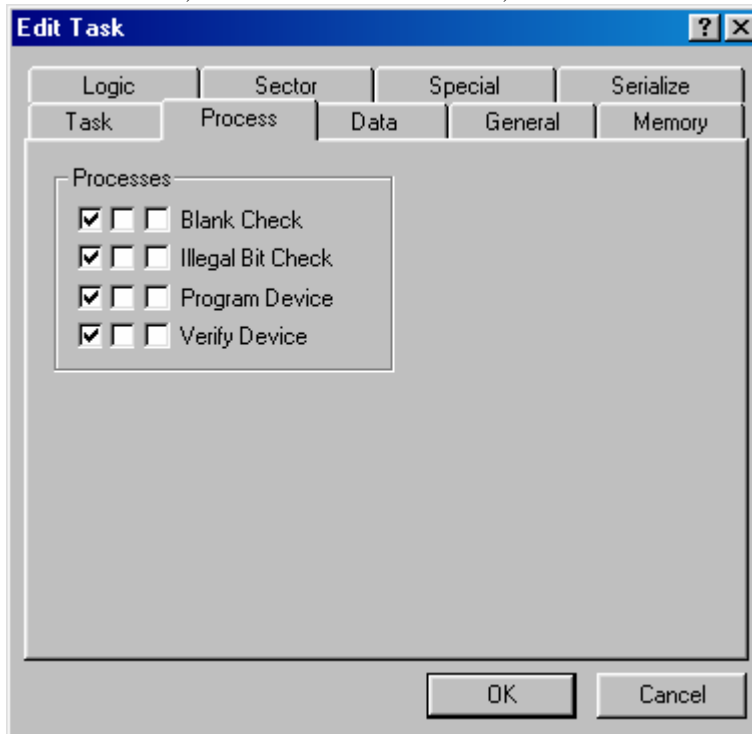
Devices - Choose device model and manufacturer for up to five different devices.

Note: The device you select for the #1 Primary field serves to set the available options for programming operations. You may not enter a wildcard for the #1 Primary device. For devices #2-5, you may enter wildcards. If you specify more than one device or at least one wildcard, TaskLink displays a list of devices to choose from when the Task is loaded.

PROCESS TAB PARAMETERS

To set Process Tab parameters:

The Process Tab, available from the Edit Task, screen is shown below.



The Process Tab options include:

- Blank Check
- Illegal Bit Check
- Program Device
- Verify Device

Blank Check Use the Blank Check option to search the device(s) installed in the programmer socket(s) for programmed locations. A failure is indicated if any are found.

Illegal Bit Check An illegal Bit Check compares device data against programmer RAM to determine if the device has programmed locations of incorrect polarity. If programmer RAM indicates that a specific bit should be in an unprogrammed state and the corresponding bit in the device is in a programmed state, a failure is indicated.

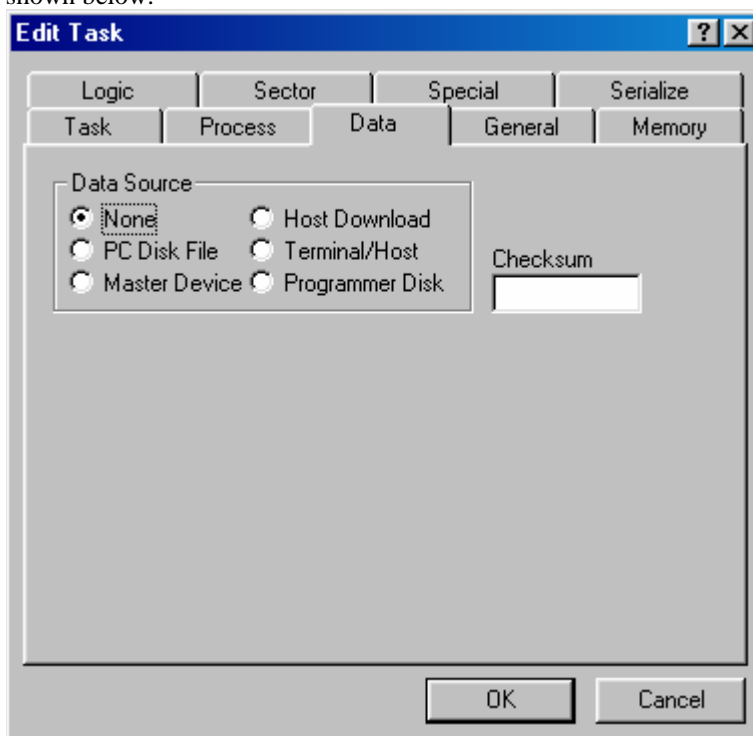
Program Device Use the Program Device option to program the device(s) installed in the programmer socket(s) with the data in programmer RAM and then verify that the programmed device data matches programmer RAM. A failure is indicated if any discrepancies are found.

Verify Device Use the Verify Device option to ensure that the data in the device(s) installed in the programmer socket(s) matches programmer RAM. A failure is indicated if any discrepancies are found.

DATA TAB PARAMETERS

To set Data Tab parameters:

The **Data Tab** contains fields for determining the data source for a Task/Kit. An example of the **Data Tab** is shown below.



The **Data Tab** options include:

Data Source

PC Disk File – Select the PC Disk File option to download data from a PC or disk file.

Master Device – Select the Master Device option to download data from a master device.

Host Download – Select the Host Download option to download data from a host computer.

Terminal/Host – Select the Terminal/Host option to download data from a terminal or host computer.

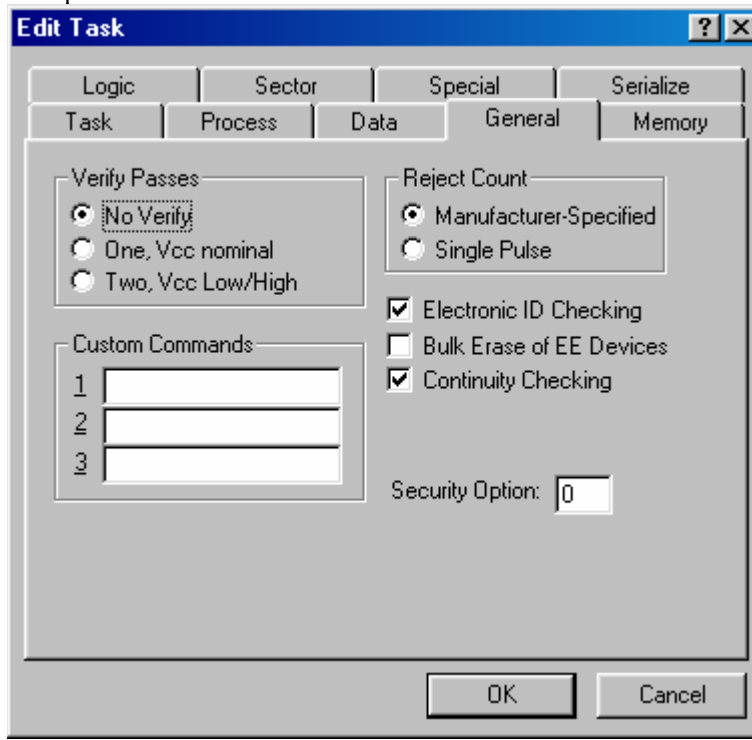
Programmer Disk – Select the Programmer Disk option to download data from a programmer disk.

Checksum – Enter a checksum value that TaskLink will compare to the checksum value in Programmer RAM. If the two values don't match, an error message will be displayed.

GENERAL TAB PARAMETERS

To set General Tab parameters:

The **General Tab**, available from the **Edit Task** screen, is used to set general programming parameters. An example of the **General Tab** is shown below:



The **General Tab** options include:

- Number of verify passes
- Custom Commands
- Reject Count
- Electronic I.D. Checking
- Bulk Erase of EE Devices
- Continuity Checking
- Security Option

***Note:** The **General Tab** settings are always in effect, regardless of the device type selected.*

MEMORY TAB PARAMETERS

To set Memory Tab parameters:

The **Memory Tab**, available from the **Edit Task** screen, can be used to define data loading specifications. An example of the **Memory Tab** is shown below.

The screenshot shows the 'Edit Task' dialog box with the 'Memory' tab selected. The 'Memory' tab contains the following controls:

- Word Width: 8
- I/O Offset: FFFFFFFF
- I/O Begin: 00000000
- I/O Block: 00000000
- Begin RAM: 00000000
- Begin Device: 00000000
- Device Block: 00000000
- Automatic RAM Fill:
 - None
 - Default
 - Specific
- Odd/Even Byte Swap
- Checksum Method: 8 Bit Checksum
- Special data in checksum: Default

Buttons for 'OK' and 'Cancel' are located at the bottom right of the dialog.

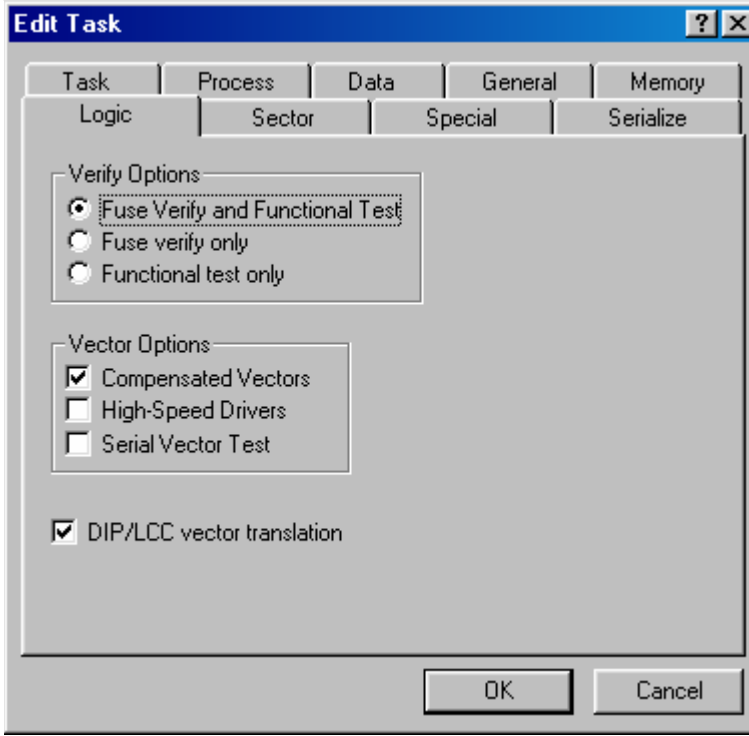
The **Memory Tab** options include:

- Word Width
- I/O Offset
- I/O Begin
- I/O Block
- Begin RAM
- Begin Device
- Device Block
- Automatic RAM Fill
- Odd/Even Byte Swap
- Checksum Method

LOGIC TAB PARAMETERS

To set Logic Tab parameters:

The **Logic Tab**, available from the **Edit Task** screen, can be used to set various programming parameters for programmable logic devices. An example of the **Logic Tab** is shown below.



The **Logic Tab** options include:

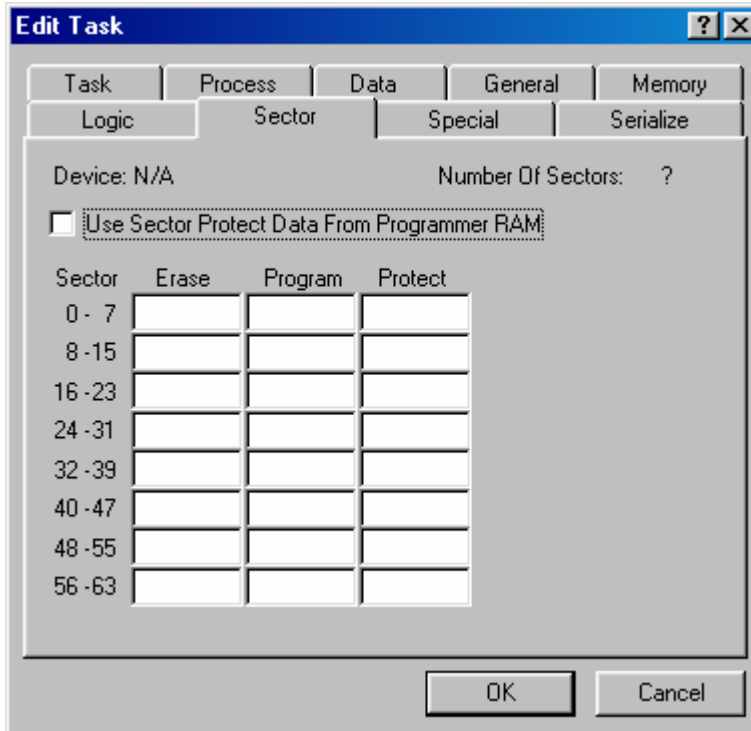
- Verify Options - including Fuse Verify and Functional Test, Fuse verify only, and Functional test only
- Vector Options - Including compensated vectors, high speed drivers and serial vector test.
- DIP/LCC Vector Translation

***Note:** The **Logic Tab** settings have no effect when the target device is a memory or microprocessor device.*

SECTOR TAB PARAMETERS

To set Sector Tab parameters:

The **Sector Tab**, available from the **Edit Task** screen, allows you to enable/disable the Erase, Program, and Secure capability of each device sector. It also allows you to specify the sector data, allowing backwards compatibility with older data files that may contain sector protect data. An example of the **Sector Tab** is shown below.



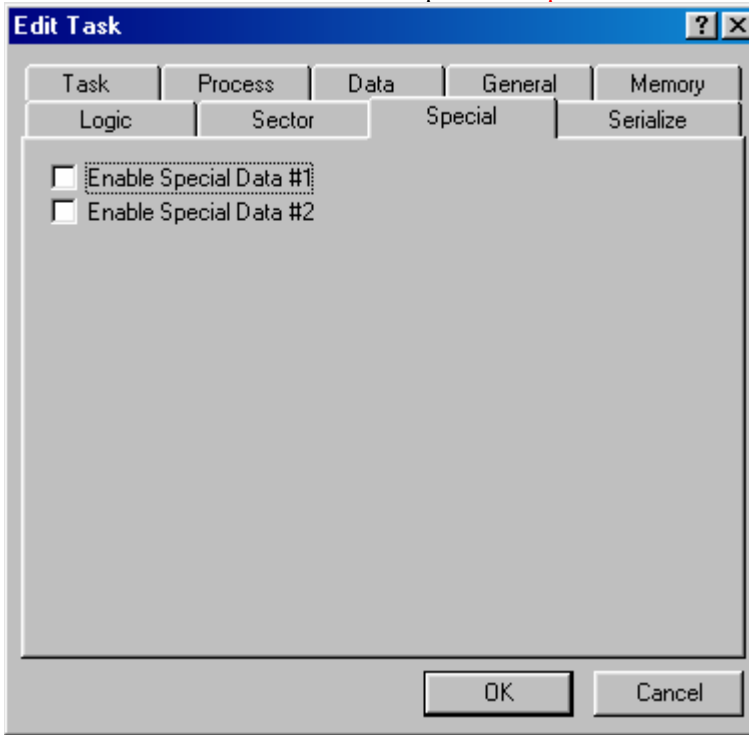
The **Sector Tab** options include.

- Use Sector Data From Programmer RAM
- Erase Sector Data
- Program Sector Data
- Protect Sector Data

SPECIAL TAB PARAMETERS

To set Special Tab parameters:

The **Special Tab**, available from the **Edit Task** screen, allows you to enable special data options to program selected locations in a device. An example of the **Special Tab** is shown below.

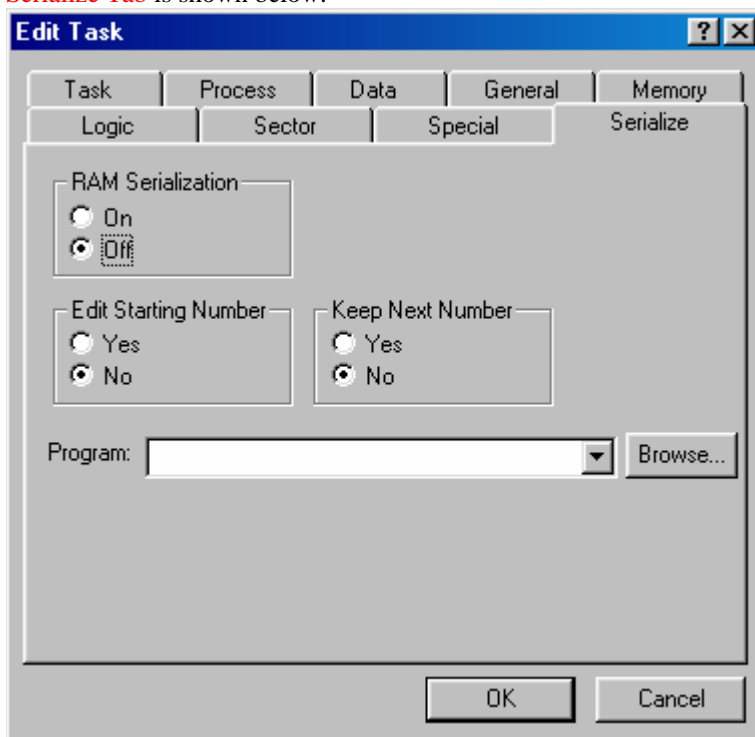


The Enable Special Data option is device-dependent. Refer to the Device List disk to determine if Enable Special Data applies to a specific device.

SERIALIZE TAB PARAMETERS

To set **Serialize Tab** parameters:

The **Serialize Tab**, available from the **Edit Task** screen, allows you to set serialization parameters for the task. Serialization is the generation of unique data for each device programmed. An example of the **Serialize Tab** is shown below.



TaskLink accomplishes serialization by running an external serialization program (ESP) to generate the serial number for each device. The external serialization program is run once at the beginning of the programming session and is run again each time a device is successfully programmed. The job of the ESP is to increment the serial number and to create the actual data that represents the serial number inside the part. This information is written to a disk file that TaskLink reads when the ESP is finished.

To do simple serialization of 8-bit devices involving a single binary (2- or 4-byte), ASCII decimal or ASCII hex number in each device, you can use the program SERIALIZ.EXE, which is supplied (with C source) with TaskLink.

For more complex serialization requirements, you can write your own external serialization program. All you need to know is:

- How to write a program that runs on a PC. Any language will do, provided the resultant program can accept command line arguments and output an ASCII file.

- The description of the command line arguments that TaskLink supplies to the ESP and the format of the disk file that the ESP creates for TaskLink.

See Also:

Help using SERIALIZ.EXE

Writing a Serialization Program

Edit a Kit

The **Edit Kit** screen is available when you highlight a Kit and click Edit from the **Task/Kit Manager**. Use the **Edit Kit** screen to change Kit parameters. An example of the **Edit Kit** screen is shown below.

Edit Kit

Name:

Description:

Message Number:

Look for tasks in:

This Kit's task file

Another task file

Task	Quantity	Message #
DEMO LOGIC DEVICE	1	0000
DEMO MEMORY TASK	1	0000

Buttons: OK, Cancel, Browse, Add..., Edit..., Remove, Move Up, Move Down

The **Edit Kit** screen options include:

- Kit Name
- Kit Description
- Task file
- Task/Quantity/Message # list box

Kit parameters can be altered using the following options:

Browse - Searches other directories for .tsk Task Files.

Add - Adds new Tasks to the Kit

Edit - Changes existing Tasks.

Remove - Deletes Tasks from the Task/Quantity/Message # list.

Move Up - Reorders the Task sequence in a Kit so that the highlighted Task moves up in the sequence.

Move Down - Reorders the Task sequence in a Kit so that the highlighted Task moves down in the sequence.

Msg Editor - Creates notices to be delivered to operators prior to highlighted Tasks in the Task list.

When you exit the **Edit Kit** dialog box by clicking **OK**, your new selections are written to the specified Task/Kit Database file.

Duplicate a Task or Kit

To duplicate a Task or Kit:

1. From the **Task/Kit Manager**, highlight a Task or Kit and click **Duplicate**. The **Duplicate Task** screen displays.

2. Enter a new name for the Task or Kit, and click **OK**. The **Edit Task** or **Edit Kit** screen displays. You may make any changes to the Task or Kit in the **Edit Task** or **Edit Kit** dialog. Or to keep the same settings, simply click **OK**.

Search and Replace

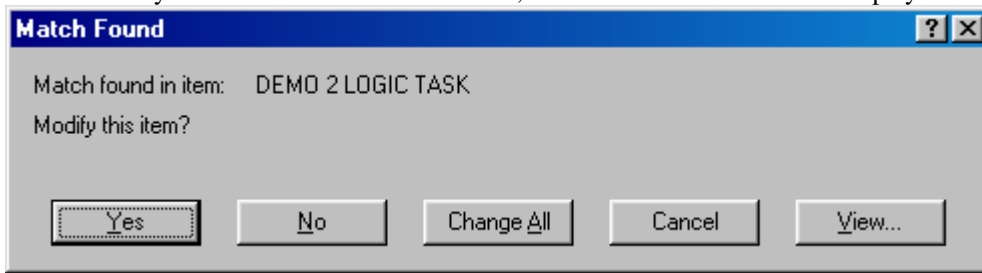
To use the Search and Replace feature:

1. From the **Task/Kit Manager**, highlight a Task or Kit and click **Search**. The **Search and Replace Task Fields** screen displays.

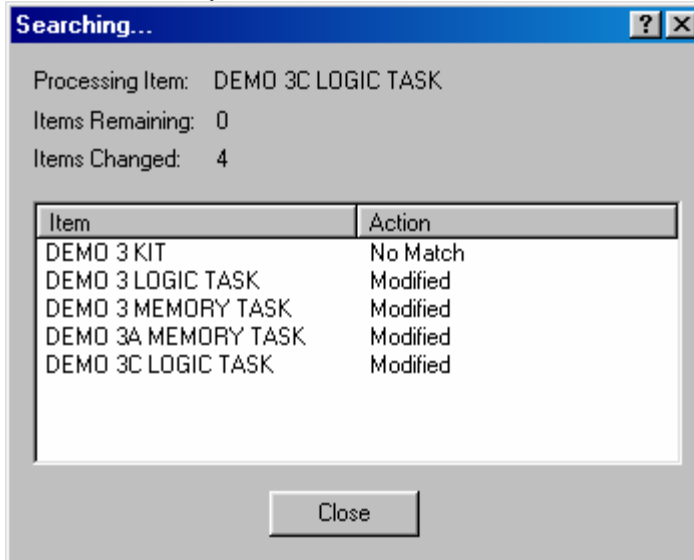
2. Using the arrows at the right of each field, select among the options in the Task/Kit field, the Search field and the Replace field. Click **OK**.

An example is shown below.

- If there are any matches with the Search criteria, the **Match Found** screen will display:



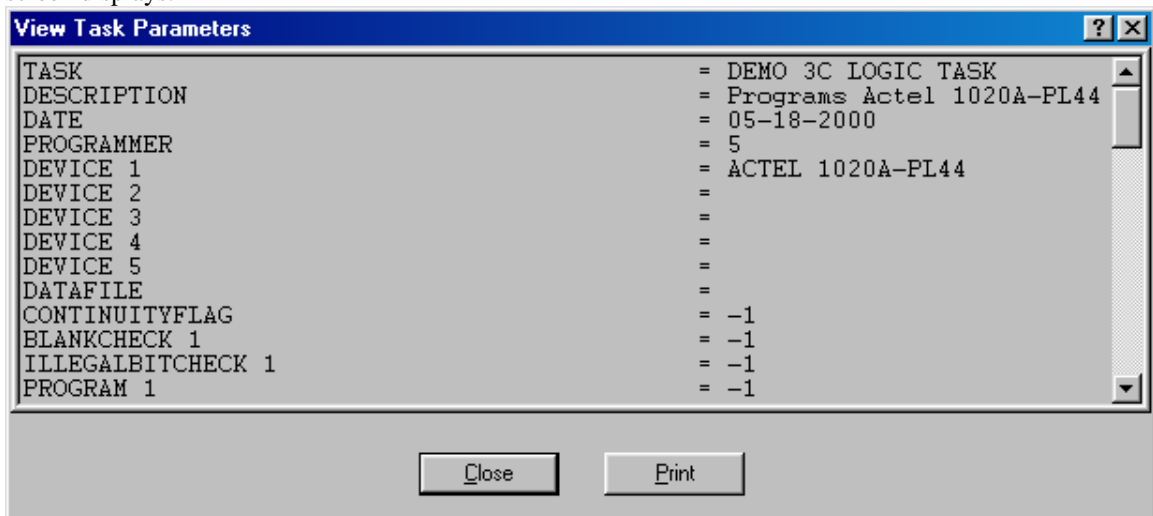
- Click **Yes** to modify. Once all matches have been found, this screen displays the results:



View Parameters for a Task or Kit

To view parameters for a Task or Kit:

- From the **Task/Kit Manager**, highlight a Task or Kit and click View. The **View Task/Kit Parameters** screen displays.



- Scroll down to view parameters for the selected Task or Kit.

Use SERIALIZ.EXE

TaskLink accomplishes serialization by running an external serialization program (ESP) to generate the serial number for each device. The external serialization program is run once at the beginning of the programming session and again each time a device is successfully programmed.

The job of the ESP is to increment the serial number and to create the actual data that represents the serial number inside the part. This information is written to a disk file that TaskLink reads when the ESP is finished.

SERIALIZ.EXE is an external serialization program that is supplied with TaskLink. SERIALIZ.EXE can be used for two purposes:

To generate simple serial numbers for programming into 8-bit memory devices (supported serial number formats are described below).

As a template for generating your own custom external serialization program to create serial numbers in formats not supported by SERIALIZ.EXE. The source code SERIALIZ.C is included on the TaskLink distribution disk.

SERIALIZ.EXE can generate serial numbers with the following characteristics:

- Binary (1 to 4 bytes in length)
- ASCII decimal (1 to 10 bytes)
- ASCII hexadecimal (1 to 10 bytes)

Since SERIALIZ.EXE maintains the serial number internally as a 32-bit unsigned value, the maximum possible range of a serial number is 0 to 4,964,297,965 (0 to FFFFFFFF in hex). Choosing a field length of less than four in binary, ten in ASCII decimal, or eight in ASCII hex further limits the maximum possible serial number.

The amount added to the serial number each time can be any value from -32,768 to 32,767. For a typical application the value would be 1.

The bytes of the serial number (in any format) can be placed into the device in either forward or reverse order.

To use SERIALIZ.EXE, you must specify several items in TaskLink's Setup/Serialization dialog box.

- 1 Set the Serialization Method to File, set RAM Serialization to ON, and set the Edit Starting Number to Yes.
- 2 When creating a Task, you can set Keep Next Number to Yes to cause TaskLink to remember the next serial number to be used from one programming session to another.
- 3 Enter SERIALIZ.EXE in the Program entry field.
- 4 To select the serial number format and other options, enter command line arguments after the SERIALIZ.EXE program name.

The following is a complete list of command line parameters supported by SERIALIZ.EXE. As of version 1.70 TaskLink forces the serialization program command line to be lower case.

-a Address of serial number

Hexadecimal value indicating the device address of the serial number. For example, -a10 places the serial number at hexadecimal address 10 in the device. Default: Zero (-a0)

-c Compensation Address

Hexadecimal value indicating the offset in the device at which the compensation value is to be located. For example, the command -c12345 would place the compensation value at hex address 12345.

This command causes the serialize program to generate a checksum compensation value for each serial number. In order for the compensation value to work correctly, the user data file or the master device must

have the data at the two serial number addresses (serial number and compensation value) properly configured.

Set the data at one address to FF and the data at the other address to 00 so the sum of the two addresses is FF. When SERIALIZ.EXE creates a serial number, it also creates a value that when added to the serial number will add up to FF. Using this method causes the checksum of each device programmed to match the user data file.

For gang programmers only, this command must be used with the -m flag. If the -m flag is not supplied, the compensation address defaults to Disabled.

-d Delete Serial.dat file

Including the -d 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. Default: Omitted

-e Ethernet Mask

Hexadecimal value that indicates a fixed prefix value is to be placed in front of each generated serial number.

For example, -e0xABCD and a generated serial number of 1 would create the value ABCD1 to be programmed into the device.

This command must be used with the -z flag, which specifies the length of the mask value. Also the -l 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 ($gLen = tLen - eLen$).

For example, serializ -l8 -z4 -e0xaa and a generated serial of 1 would create the value 00AA0001 to be programmed into the device.

-f Format of serial number

The following formats are supported.

-fb = Binary

-fd = ASCII Decimal

-fh = ASCII Hexadecimal

-fc = Binary Coded Decimal

Default: Binary (-fb)

-i Serial number increment value

Decimal value by which the serial number is incremented each time. The value may be negative. For example, -i2 increases the serial number by 2 for each device programmed. Default: 1 (-i1)

-l Length of serial number

Number of bytes the serial number occupies in the device. The following field lengths are supported.

1 through 4 Binary

1 through 10ASCII

Default: 2 (-l2)

-m "Pure-Set" gang serialization mode flag

When you use a gang/set programmer, including this flag causes the serial numbers to be generated one device-size apart in programmer RAM instead of in a single block just beyond the fixed data in RAM. TaskLink then programs the devices in a single-pass operation with a set size equal to the number of sockets installed in the programmer. Without this flag, the programming would be done in two passes: the fixed data would be programmed in the initial gang programming pass (set size = 1) and the serial numbers

would be programmed in a second pass (set size = number of sockets) with the block size set to the size of the serial information.

The two-pass method is considerably faster and does not require you to supply a duplicate image of the fixed data for each programmer socket. Omit this flag unless the device being programmed cannot be block programmed.

-o Byte order of serial number

Serial numbers are placed in RAM with the most significant byte (MSB) or the least significant byte (LSB) at the first (lower) RAM address. This option applies to both binary and ASCII formats. The options are:

-om = MSB at first RAM address (Motorola-style)

-oi = LSB at first RAM address (Intel-style)

Default: MSB at first RAM address (-om)

-s Checksum calculation flag

Causes calculation of a new RAM checksum based on the sum of the serial number bytes and the initial checksum value (provided by TaskLink). Only meaningful if the initial RAM data (before serializing begins) contains zeroes in the serial number position(s). Used to provide a new checksum for display on the TaskLink screen as new serial numbers are generated. DOES NOT AFFECT DEVICE DATA.

-w Warning Limit

Can be used to set a warning level before the serial number limit is reached. The warning limit is used only when an ending serial number is specified. If the current serial number is within the ending serial number minus the warning limit, a warning message will be displayed on the TaskLink screen.

Default: Zero (-w0)

-z Ethernet Mask Length

Used to specify the length of the Ethernet Mask value.

See the -e flag for details.

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).

Example #1: 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, the Program entry field in the Setup/Serialization dialog box would look like this:

```
c:\tasklink\serializ.exe -110 -fh -a10 -i2 -th
```

Example #2: To specify a 4-byte binary serial number at address 100 (hexadecimal) and a 4-byte compensation value at address 200 (hexadecimal) the Program entry field in the Setup/Serialization dialog box would look like this:

```
c:\tasklink\serializ.exe -14 -fb -a100 -c200 -i1
```

Example #3: To specify a 4-byte binary serial number in hexadecimal display format that has a 2-byte prefix, for a total length of 6 bytes, the Program entry field in the Setup/Serialization dialog box would look like this:

```
c:\tasklink\serializ.exe -16 -z2 -e0xAA -fb -a100 -i1
```

Write a Serialization Program

TaskLink accomplishes serialization by running an external serialization program to generate the serial number for each device. The external serialization program (ESP) is run once at the beginning of the programming session and again each time a device is successfully programmed. The job of the ESP is to increment the serial number and to create the actual data that represents the serial number inside the part. This information is written to a disk file that TaskLink reads when the ESP is finished.

An ESP called SERIALIZ.EXE is supplied with TaskLink and can be used to generate simple serial numbers in several different formats. To create serial number data in different formats than those provided by SERIALIZ.EXE, you can write your own ESP (perhaps by modifying the SERIALIZ.EXE source code). For example, you may want to generate network addresses to program into PROMs on Ethernet and other LAN cards.

To write an ESP, you need to know the following:

- How to write a program that runs on a PC. Any language will do provided the resulting program can accept command line arguments and output an ASCII file.

- Description of the command line arguments that TaskLink supplies to the ESP and the format of the disk file that the ESP creates for TaskLink.

The following is a detailed description of the information needed for the second item

Communication with an ESP

TaskLink communicates with the ESP in two ways:

- The ESP receives data via arguments on the DOS command line used to invoke the ESP.

- The ESP returns data to TaskLink in the file SERIAL.DAT that the ESP creates in the current directory. This file is a line-oriented ASCII file containing the information needed to change the data in programmer RAM.

Command Line Arguments

TaskLink uses the following arguments on the command line to pass information to the ESP. These are always passed and do not need to be specified in the Program entry field in TaskLink's Setup/Serialization dialog box. Other command line arguments defined by the writer of the ESP may be entered in the Program entry field following the name of the ESP executable file.

-N serial_number

The ASCII representation of the current serial number (the number that the ESP is expected to format for programmer RAM). The format of serial_number is determined by the requirements of the ESP. In fact, if the ESP is given the responsibility of keeping track of the next serial number to use, serial_number may not be present at all.

-E ending_serial_number

The ASCII representation of the last serial number that should be used during the programming session. This argument will not be present unless the operator has entered an ending serial number at the beginning of the session. The format of ending_serial_number is determined by the requirements of the ESP.

-D device_size

Hexadecimal size (in bytes) of the currently selected device. The ESP can use this information to generate a block of serial numbers for serializing devices in a gang/set programmer. The serial numbers must be placed in programmer RAM after the device data, so the ESP must know the size of the device.

-Q quantity of serial numbers needed

The number of serial numbers requested. When serialization is done on a gang/set programmer with multiple sockets, TaskLink will pass the ESP the number of sockets currently available on the programmer. The ESP can then generate multiple serial numbers, which are placed in a block of programmer RAM immediately following the device data (the size of the device is passed in via the -D parameter).

-S checksum

The checksum of programmer RAM at the beginning of the programming session (before any serial number information has been placed in programmer RAM). This is a hexadecimal value with as many digits as the programmer supports (up to eight). The ESP can use this checksum value to calculate a new RAM checksum when new serial number information is generated. Note that the checksum calculation can be accurate only if the RAM locations are set to zeros (or some value known to the ESP) before serialization begins. The ESP can return the new checksum to TaskLink, which will display it on the screen

as devices are programmed. Use of this feature is optional and does not affect the serialization of the device.

-F

Flag that indicates this is the first call to the ESP at the beginning of the programming session. Use of this flag is determined by the ESP. An ESP might, upon seeing this flag, "check out" a beginning serial number from an external database.

-L

Flag that indicates this is the last call to the ESP after the programming session has been terminated. The last serial number that was produced by the ESP has NOT BEEN USED YET and is once again the value supplied to the ESP in serial_number. If the ESP is responsible for keeping the next serial number to be used, it can store the value in serial_number for use as the starting serial number in the next session.

For example, assuming a starting serial number of 12345, a 256-byte device and initial RAM that happens to have a zero checksum, the first call to SERIALIZ.EXE looks like this:

```
serializ.exe -F -D100 -S00000000 -N12345
```

The next call looks like this:

```
serializ.exe -D100 -S00000000 -N12346
```

Assuming the last serial number successfully programmed into a device is 12500, the last call looks like this:

```
serializ.exe -L -D100 -S00000000 -N12501
```

The Output File SERIAL.DAT

The file SERIAL.DAT must be generated each time the ESP is called (except for the last time, indicated to the ESP by a -L on the command line). The file is a standard line-oriented ASCII file, each line being terminated by a carriage-return/line-feed sequence. Each line begins with a tag of the form Tnn, where nn is a decimal number. The tag identifies the type of data, if any, that the line contains. If the line contains additional data, the tag is followed by a colon (:) and then the data. The lines may appear in the file in any order, except for the T04 line, which marks the beginning of the serial number data and is by definition the last "T-record" in the file. A description of each type of T-record follows.

Mandatory records These T-records must always appear in the SERIAL.DAT file.

T01: CURRENT SERIAL NUMBER(S)

This line contains one or more ASCII representations of serial numbers that have been generated. If more than one serial number is generated, the numbers should be separated by commas.

Example:

```
T01:12345,12346,12347,12348,12349,1234A,1234B,1234C
```

T02: NEXT SERIAL NUMBER

This line contains the ASCII representation of the NEXT serial number to be used (after the number(s) that have just been formatted). This number will be the number that is passed to the ESP by TaskLink in the -N field of the command line the next time the ESP is called (unless you did not fill all the sockets on a multi-socket programmer, in which case TaskLink will pass back the next number that was not used). If the serialization is being done as part of a Task, TaskLink can store this number for you when the session is terminated for use as the starting serial number the next time the Task is run.

Example:

```
T02:1234D
```

T03: TRANSLATION FORMAT NUMBER

This line contains an ASCII representation of the Data I/O translation format number (1-99) for the serial number data in the file (which follows the T04 record). An ASCII translation format must be used, the records being terminated with a carriage-return/line-feed sequence. See your programmer manual for a description of supported formats.

Example:

```
T03:95
```

Note: The C-language source for SERIALIZ.EXE, included with TaskLink, contains a routine for formatting a buffer of binary data into lines of Motorola format 95. This routine can be used for development of your own ESP.

T04: "BEGINNING OF SERIAL NUMBER DATA" MARKER

A line containing just the tag T04 marks the beginning of the serial number data. The contents of the SERIAL.DAT file from the line following the T04 record up to the end-of-file will be sent to the programmer verbatim. The data must be in one of the ASCII formats supported by the programmer being used. The format being used is specified in the T03 record. Use a Translation Format with address fields if you want the data to start anywhere except address 0 in the device.

Example SERIAL.DAT file

Here is an example file produced by an ESP. The ESP was called with the current serial number of 12345. The program formats the number as a long integer (four bytes) at address 0 in the device. The beginning- and end-of-file markers and comments are not part of the file.

```
<beginning-of-file>
T01:12345 ' Current serial number
T02:12346 ' Next serial number
T03:87' Format number for Motorola format 87
T04 ' Beginning of data marker
S208000000803E98281 ' The formatted data in an S2 record
S9030000FC ' The format 87 end record
<end-of-file>
```

For more information on single-socket vs. gang serialization, see the topic "Single-socket vs. Gang Serialization."

Optional records

These T-records may be included in the file if needed.

T00: "PURE-SET" GANG SERIALIZATION FLAG (TASKLINK 1.1A)

Inclusion of this record tells TaskLink that the serial numbers generated are not "piled together" in a block just beyond the fixed data for the device in programmer RAM, but are placed in programmer RAM at the intended offset in the device and duplicated for each device to be programmed (up to a number of times equal to the number of sockets installed in the programmer) one device-size apart. TaskLink will then treat the programming operation as a one-pass operation with a set size equal to the number of installed sockets. Using the pure-set method causes slower programming and the need to duplicate the fixed data many times in programmer RAM (and thus the need for a large amount of RAM). The default two-pass method (one gang-programming pass for the fixed data and a second set-programming pass with the block size set to the size of the serial number data) is considerably faster and only requires one copy of the fixed data to be loaded into programmer RAM. The two-pass method should be used unless the selected device cannot be block-programmed.

T05: FATAL-ERROR MESSAGE

If this record is included, TaskLink stops processing and displays the text string preceded by the message "Error message from external serialization program."

Example:

T05: Unable to generate serial number

T06: Limit-reached flag This record is included when the ESP has detected that the current serial number is greater than some limit (the last device programmed had the last allowable serial number). When this record is detected, TaskLink stops processing and displays "Ending serial number reached."

Example:

T06

T07: HEXADECIMAL ADDRESS OF SERIAL NUMBER IN DEVICE

This field is required only if you are serializing devices on a multi-socket gang programmer. It is a hexadecimal representation of the address in the device at which the serial number data is to be placed.

Example:

T07:00010

Be sure to read the Help topic "Single-socket vs. Gang Serialization."

T08: DECIMAL FIELD LENGTH OF SERIAL NUMBER IN DEVICE

This field is required only if you are serializing devices on a multi-socket gang programmer. It is a decimal representation of the number of bytes the serial number occupies in the device.

Example: T08:4

Be sure to read the Help topic "Single-socket vs. Gang Serialization."

T09: RAM CHECKSUM

This record contains the current RAM checksum. TaskLink displays this checksum in the System Status box while processing devices. This allows the external program to calculate the RAM checksum from the initial checksum value passed to the program on the command line. If this record is not included, TaskLink displays the initial checksum and does not change it during the programming session.

T11: WARNING MESSAGE

If this record is included, TaskLink stops processing and displays the text string. The operator will be given the choice to end the programming session or to continue.

Example: T11: Serial Number Warning Limit Reached

Example SERIAL.DAT file

Here is an example file produced by an ESP. The ESP was called with the current serial number of 12345. The program formats the number as a long integer (four bytes) at address 0 in the device. The beginning- and end-of-file markers and comments are not part of the file.

<beginning-of-file>

T01:12345 ' Current serial number

T02:12346 ' Next serial number

T03:87' Format number for Motorola format 87

T04 ' Beginning of data marker

S2080000000803E98281 ' The formatted data in an S2 record S9030000FC ' The format 87 end record

<end-of-file>

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- Error messages (if any)
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Command Line Parameters

The following command line parameters can be used with TaskLink:

Parameter	Description
tlwin	Runs TaskLink.
tlwin Qn	Program a fixed quantity of devices. Disables the prompt for pass quantity at run-time. Useful for batch mode operation.
tlwin "taskname"	TaskLink runs the specified Task and exits. The task must be in the current task file.
tlwin "task_database::task_name"	TaskLink runs the specified Task from the specified task database and exits.

Key Terms

Administrator Mode

Administrator Mode is the TaskLink full-feature mode. Administrator Mode allows access to all features of TaskLink, including those used for system setup and maintenance of Task/Kit databases.

Operator Mode

Operator Mode is the default mode when security is enabled. TaskLink starts within the Run Task/Kit dialog box. The operator selects a Task or Kit, and TaskLink sets up the system to process devices. After the required number of devices is processed, TaskLink returns to the Run Task/Kit dialog box.

Data Source

The source of the data currently in programmer RAM. The source may be the name of a disk file, "Master Device" or "Host Download." If the source of RAM data is unknown, the line contains a question mark (?).

Checksum

The checksum of the data in programmer RAM. The checksum is normally the checksum of RAM from the beginning of RAM to the end of the data that will fit into the selected device. If the Set Size is greater than one, the checksum is the sum of the checksums of each device in the set. If TaskLink has not yet calculated the RAM checksum this field contains a question mark (?).

Process

Combination of operations to be performed on the device.

Notes

Miscellaneous information about TaskLink status. The first line always shows whether or not all programming parameters are set to default values. If any programming parameters are set to non-default values, TaskLink will display each parameter in the list. Use the scrollbars to view the complete list of non-default parameters.

Counts

The count information is displayed only during device processing. The number of passed devices, the number of total devices, next starting serial number and the overall device yield are displayed. The number of failed parts is displayed in the job statistics section.

Times

The process time measurement runs from the moment the start button is pressed, until the process is complete and the "Waiting for Start" dialog is displayed.

%Yield

%Yield is the running percentage of devices that were programmed with no errors

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