# Operating Manual for the

# StagCom Windows
# &
# StagCom DOS
# Applications

## Contents

# 1   Introduction – StagCom Windows

The StagCom Windows Application is an application that runs under the Microsoft Windows environment, and is designed to aid the use of device programmers designed by Stag.

The application utilises the remote control feature of the programmer, which allows the programmer to take operational commands from its I/O ports instead of its keyboard to provide a fully featured Windows front-end.

## 1.1   System Requirements

An IBM compatible - 80386 or higher processor.
4 Mbytes of <u>free</u> memory (minimum).
MS-DOS 3.3 or later.
Microsoft Windows version 3.1 or later.
Hard disk with at least 1.5 Mb free.
An unused serial port.
A suitable hardware handshaking serial cable.

## 1.2   Interface Connections

### 1.2.1   Serial Cable Connections

For serial communications, the cable to be used depends on the type of connector that is used on the PC (either 9-pin or 25-pin).

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**!** **Cables that use XON/XOFF handshaking are not suitable for use with StagCom Windows Application, a hardware handshaking cable as described in the README.1ST file is required.**

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## 1.3   StagCom Windows Application Installation

Follow the instructions given in the file README.1ST on the distribution diskette to install the software in a group in the Windows Program Manager.

## 1.4   Programmer Configuration

The Windows package is shipped with default settings of COM2:38400,N,8,1. If these settings are acceptable to you then you will need to configure your programmer to the same settings as follows.

1.  Plug in the supplied power cord to the rear panel socket.

2.  Connect your programmer to the Personal Computer Interface using the appropriate cable (9-pin to 25-pin or 25-pin to 25-pin serial).

3.  Apply power to the programmer from the mains power source.

4.  Power up the programmer using the On/Off switch on the rear panel.

5.  Press I/O key, select PORT item.

6.  Enter the following serial interface parameters into your programmer:
    Port:                   Serial
    Baud rate:              38400
    Parity:                 None
    Stop Bits:              1

7.  Press **ENTER** key.

8.  Select **REMOTE CONTROL** item.

9.  Enter the 'Remote' operating mode by pressing **I/O** key again.

## 1.5 Starting Up StagCom Windows Application

When the 'StagComWin' icon is double-clicked in the Program Manager, the Application will initialise itself and then attempt to establish communications with the programmer. This is done in the background while the Copyright message is displayed.

If communications are not established, then a dialog box will pop-up inviting you to change current serial port settings, or to quit the application.

If communication with the programmer fails, then there are several possible reasons:

**The programmer is not switched on.**
Make sure the programmer is powered up.

**The programmer is not in remote control mode.**
Put the programmer in remote control mode.

**The connecting cable is loose.**
Check the connections.

**The cable is in the incorrect port.**
Check the cable is in the correct port both on the programmer & PC.

**The port is incorrectly selected.**
Ensure that the correct port is selected on the programmer.
Check that the correct port is selected on the PC by selecting the Options | programmer Comms option from the menu.

**Incompatible serial port parameters selected.**
Make sure the selected baud rate, parity, and stop bits are identical for the programmer and the PC.

**Incorrect cable connections.**
Make sure the cable used is wired in agreement with the README.1ST file

## 1.6 Leaving StagCom Windows Application

Leave the application by typing Alt+FX, Selecting File | Exit menu items, or by double clicking the mouse on the system button (located in the top left corner of the main window).

# 2   User Interface

This Chapter will familiarise you with the operation of the components of the StagCom Windows Application main screen. The main screen consists of the device status area, the menu bar, the toolbar, the response window and the status bar.

This Chapter also describes the use of the mouse and the operation of the keyboard keys that perform special functions within StagCom Windows Application. The general operation of the windows user interface is described in your windows documentation and will not be repeated here. Your Windows documentation describes the general conventions of the Windows Graphical User Interface (GUI) such as operation of the pull down menus, selection of file names, and operation of dialog boxes.
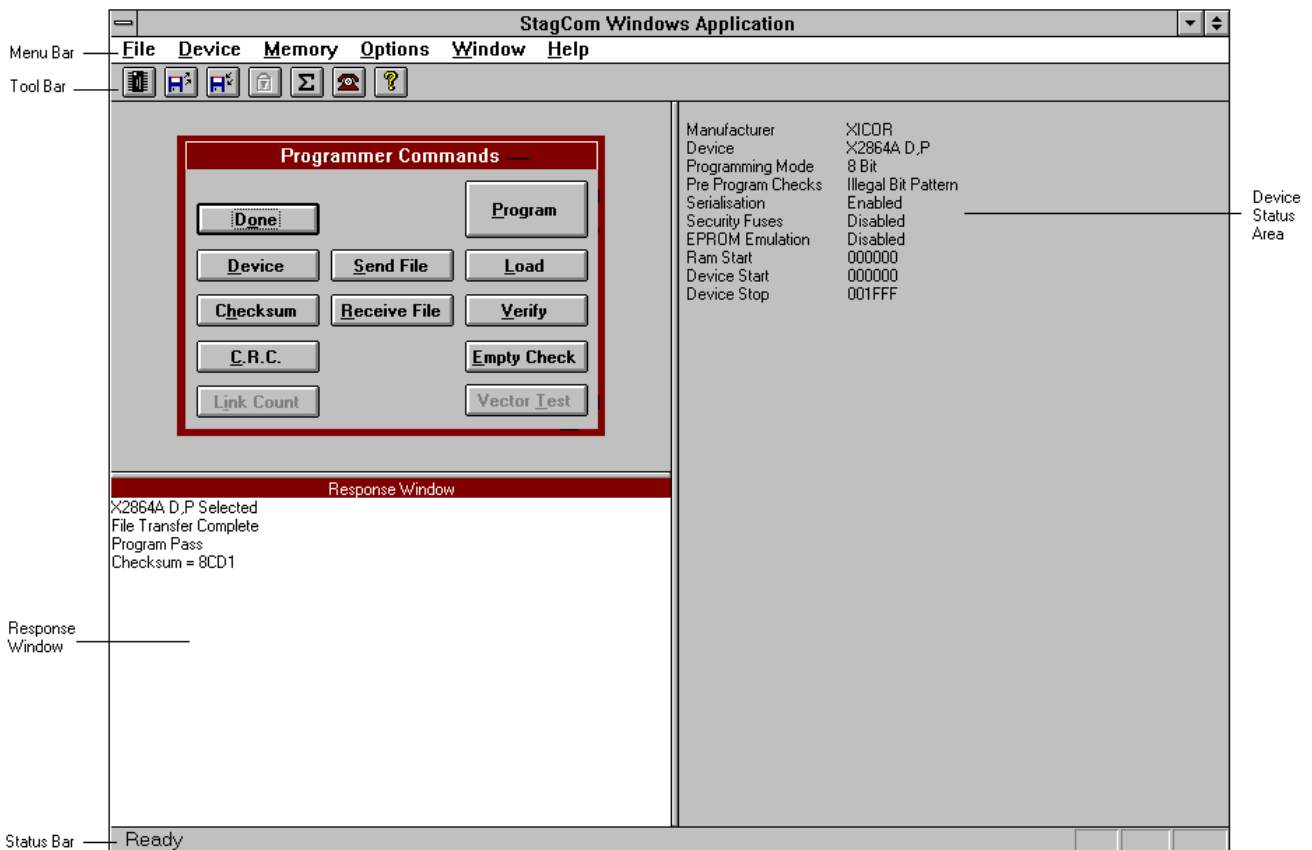
## 2.1   Main Screen

### 2.1.1   Menu Bar

The menu Chapters (Chapters 4, 5, 6, 7, 8, 9) describe the operation of each menu, and menu option. Each of these Chapters describe the options available in the menu. For each menu option described, the button for that option is also shown if one exists.

### 2.1.2   Toolbar

The Toolbar consists of a number of icons (pictures), each representing an operation or option which you can use on your programmable device.

To select an operation, move the cursor to the appropriate button in the Toolbar and press the mouse button once. The buttons that are not available for the currently selected device will appear greyed.

When the cursor is placed over a button in the toolbar and the mouse button is held down, a description of the selected button is displayed in the current selection indicator. If you do not want the button selected after viewing the button description, move the cursor away from the button before releasing the mouse button.

### 2.1.3   Status Bar

The status bar will display a description of the selected item. When the cursor is placed over a button in the button bar, or a menu item in the menu bar, and the mouse button held down, a description of the selected item is displayed in the status bar. If you do not want the item selected after viewing the item description, move the mouse away from the button bar / menu bar before releasing the mouse button.

### 2.1.4   Response Window

The programmer response window keeps a record of messages and responses received from the programmer. Scroll bars will appear once the list of responses has reached the bottom of the windows so that you can view previous responses once they have scrolled off the top of the window.

## 2.1.5 Device Status Area

The device status area is an area in the main application window that shows the status of various options which are valid for the currently selected device. Listed below are the options, followed by a short description

**Manufacturer**           Currently selected manufacturer.
**Device**                 Currently selected device.

**Programming Mode**       Shows the current bit mode that the programmer is set to. Current modes supported are 8 Bit, 16 Bit & 32 Bit for PROM type devices only. To change the current setting see Chapter 7.4 Prog. Bit Mode.

**Pre Program Checks**     Shows which pre-program check shall be applied to the device prior to programming. To change the status see Chapter 7.2 Pre Program Checks.

**Serialisation**          Shows Enabled if the serialisation feature has been enabled, otherwise shows Disabled. To change the status see Chapter 7.5 Serialisation.

**Security Fuses**         Shows Enabled only if a valid security fuse has been set and enabled, otherwise Disabled is shown. To change the status for devices that do support security fuses, see Chapter 7.3 Security.

**EPROM Emulation**        Shows Enabled only if the connected programmer is in emulation mode, otherwise Disabled is shown. Not all programmers support this feature - see your programmer operating manual for details.

**Ram Start**              Shows the start address (in bytes) of the programmer's memory, where the first location of the device will be assigned. This status is not applicable for PLD type devices. To change this address see Chapter 6.4 Limits.

**Device Start**           Shows the start address of the device (in device addresses), where the first location of the programmer's memory will be assigned. This status is not applicable for PLD type devices. To change this address see Chapter 6.4 Limits.

**Device Stop**            Shows the last address of the device (in device addresses), where the last location of the programmer's memory will be assigned. This status is not applicable for PLD type devices. To change this address see Chapter 6.4 Limits.

## 2.2   Keyboard Shortcuts

Various keys on the keyboard perform special functions:

**Arrow Keys**        Control the movement of the cursor.

**Backspace**         Deletes the character to the left of the cursor.

**Tab**               Within a dialog box, Tab key moves the cursor forward to the next entry field or, if the Shift key is pressed simultaneously, back to the previous field.

**Alt**               With an underlined letter in a menu or dialog box in order to select the item.

## 2.3   Dialog Box

Some of the options within StagCom Windows Application function as simple commands which are executed as soon as you select them.

Many options, however, contain features that require the user to specify additional information. Whenever an option of this type (indicated by three periods after the option name in a menu) is selected, a dialog box is displayed on the screen. Dialog boxes control most of StagCom Windows Application's features.

The operation of the controls within a dialog box follows standard Windows conventions and, therefore, is not documented further here.

# 3   The Basics

For those who are new to StagCom Windows Application, you've come to the right place. This Chapter will not tell you everything there is to know about the Application, it will however, describe the basics of StagCom Windows Application.

## 3.1   Programming Device From File

Suppose we have an Intel 27C512 EPROM in DIP package, and you have a file on a floppy disk in Drive A: called '512.INT' which is stored in INTEL Hex format.

First of all make sure that your programmer is in remote mode, and run up the StagCom Windows Application. Assuming that you have the Application configured to the right port settings that match the programmer, after a few seconds, the copyright messages should clear away, and the response window should show the device used in the previous StagCom session.

### 3.1.1 Selecting Master Device

1.  The first thing we need to do is select the device we want to program, in this case it is an Intel 27C512 in a DIP package

2.  Click on the **Device** menu (or press **Alt+D** keys simultaneously).

3.  Click on the **Select...** item. (or press **S** key).
    This will display the Select Device dialog box.
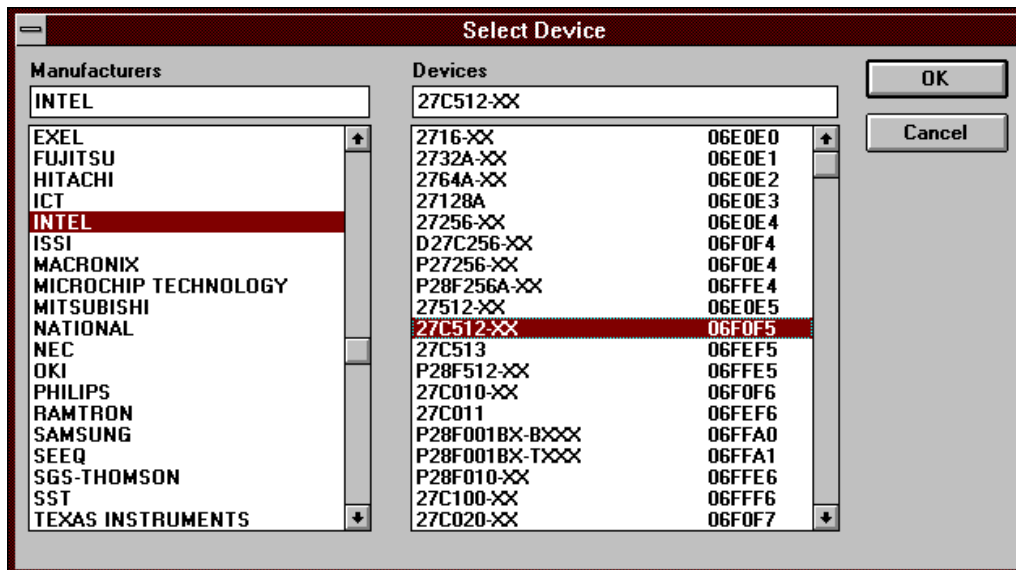


The dialog box is split up into two halves, The left half contains a scroll able list of manufacturers, and the right half contains a scroll able list of devices for the currently selected manufacturer of the left side.

4.  Click on **INTEL** in the manufacturer list, (or use the cursor keys).

5.  Click on **27C512-XX** in the device list. (or use the **Tab** key then cursor keys).

6.  Finally click on the OK button (or press **Enter**) to close the dialog box.

The device is now selected, and a message in the response window should notify you of this fact. If you do not have the correct programmer adaptor fitted for this device, you may receive another message warning you that you have the wrong adaptor fitted. If this happens, place a suitable adaptor on the programmer.

You will also have noticed that the device status area is now updated, displaying the status of various options which are valid for this device. If the Programming Mode status does not display '8 Bit' then see Chapter 7.4 Prog. Bit Mode to set it to 8 Bit Mode.

### 3.1.2   Download File To Programmer

Now that we have the correct device selected, the next thing to do is download the file which we have in Floppy Drive A: called 512.int.

1.   Click on the **File** menu (or press **Alt+F** keys simultaneously).

2.   Click on the **Send...** item. (or press **S** key). This will display the Download File To Programmer dialog box.
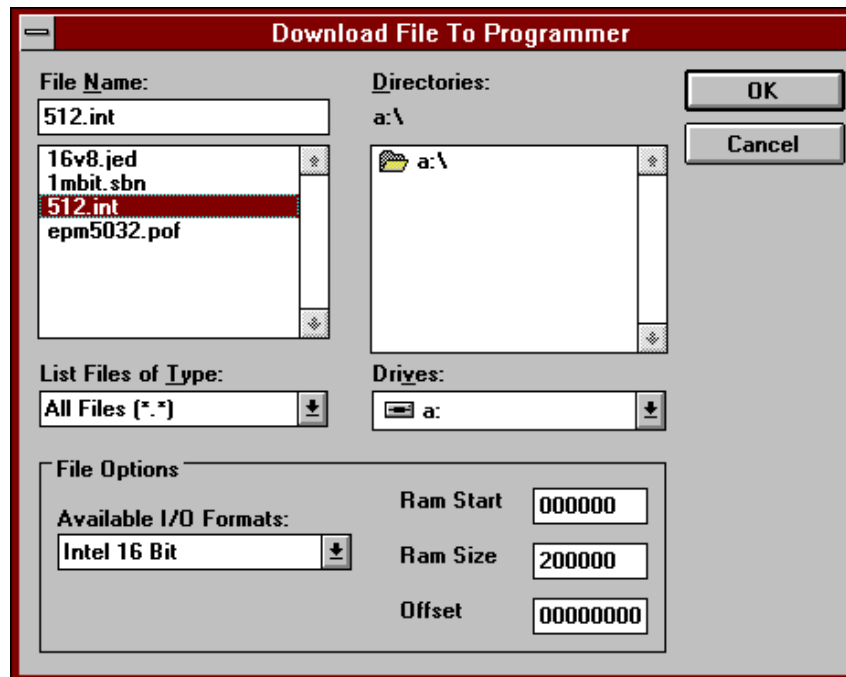


3.   Select Intel 16 Bit from the available I/O formats list, by using the mouse or by using the **Tab** key and cursor keys.
4.   Select Drive A: from drives list.
5.   Select 512.int from the file name list.
6.   select **OK** button, or press **Enter** key.

A message box will now appear during the file transfer to the programmer. Once the file is downloaded, a message in the response window will confirm that the file has been transferred successfully.

### 3.1.3   Program Device

Now that the data has been downloaded to the programmer, the 27C512 device can now be programmed. To program the device select Device | Program (or press **Alt D + P**). After completion, a message in the response window will confirm a successful program.
To program more devices just repeat 3.1.3.

# 4   File Menu
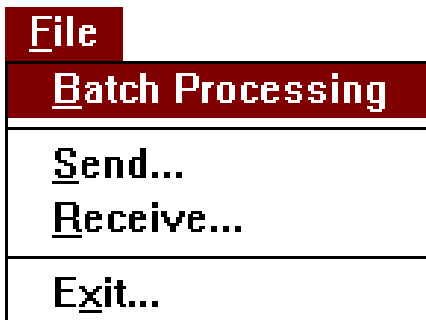


The File menu controls the flow of data into and out of programmer. The **File** menu provides three basic functions:

1.    You can execute a batch command file

2.    You can load data into the programmer from a file.

3.    You can save data in the programmer to a file.

4.    You can finish using (Exit) StagCom Windows Application.

## 4.1   Batch Processing

The Batch processing feature enables you to execute an ASCII file containing a sequential list of commands, so for example you could have a file that selects a particular device, downloads the program data file and then programs a thousand devices.

All commands that StagCom perform are duplicated by the batch process commands. Batch files can be created with any ASCII editor including DOS Edit and Windows Notepad.

If the programmer returns an error message during the execution of a batch file then you will be prompted to specify the action is to be taken (Abort, Retry, Ignore). Abort will stop the batch file. Retry will retry the command and Ignore will go on to the next command.

1.   Only one command per line is allowed.
2.   Any data after the command will be ignored and may therefore be used as comments.
3.   Commands sent and programmer responses to the commands are displayed in the response window so that you can monitor what is going on.
4.   The batch process can be stopped before execution of the next command by press the Escape key.
5.   Commands may be repeated 'n' times by placing the required count before the command e.g. 30DV will verify the device 30 times.
6.   A pause can be added before a command is executed by adding '!'.
     e.g. 50!DP will program 50 devices with a pause between each program cycle to allow the insertion of the next device into the programmer socket.
7.   Messages can be placed in the batch file to prompt the user.
8.   The command set is not case sensitive so 'dp' is the same as 'DP'.

The command set is based on the menu bar short cut key codes and are as follows:-

| | |
|---|---|
| DE | Device empty check. |
| DL | Device load. |
| DP | Device program. |
| DS xxxxxx | Device select. xxxxxx = 6 digit device code. |
| DT | Device vector test. |
| DV | Device verify. |

| | |
|---|---|
| FR "filepath\name" | Receive file from programmer. |
| FRF n | Set receive file i/o format n, |

|  |  |
|---|---|
| n = 0 = Jedec | 4 = Intel 16 |
| 5 = Motorola S Record | 6 = Tek Hex |
| 7 = Extended Tek Hex | 8 = Stag Hex |
| 9 = ASCII Hex Space | 10 = Stag Binary |
| 12 = Binary Rubout | 13 = Binary |
| 17 = POF | 18 = Intel 32 |
| 19 = LOF. | |

| | |
|---|---|
| FRR aaaaaa | Ram start address where data shall be read from during file receive. |
| FRS aaaaaa | byte count (size) of received file. |
| FRO aaaaaaaa | Offset used during file receive. |
| FS "filepath\name" | Send file to programmer. |
| FSF n | Send file io format (see FRF for details). |
| FSR aaaaaa | Ram start address where data shall be placed during send file. |
| FSS aaaaaa | Max. number of bytes of file to store in programmer during send. |
| FSO aaaaaaaa | Offset used during file send. |

| | |
|---|---|
| MC | Display programmer memory CRC. |
| ME aaaaaa hh hh … | Memory edit, place hex data bytes hh at location aaaaaa onwards. |
| MEF a b hh | Memory edit fill ram between address a & b with hex data byte hh. |
| MEU | File entire memory with unprogrammed state. |
| MH | Display programmer memory checksum. |
| ML a a a | Set memory/device limits (parameters = ramstart devstart devstop). |
| MO | Display open link count. |
| OD "filepath" | Set new data file path for connected programmer. |
| OL0 | Serialisation - disable. |
| OL1 | Serialisation - enable (other OL commands also enable serialisation). |
| OLAD | Serialisation - set ASCII Decimal. |
| OLAH | Serialisation - set ASCII Hex. |
| OLBD | Serialisation - set BCD. |
| OLBH | Serialisation - set Hex. |
| OLSS | Serialisation - set all Sockets Same. |

| | |
|---|---|
| OLSU | Serialisation - set all Sockets Unique. |
| OLSO n | Serialisation - set Socket n Only. |
| OLBU n | Serialisation - set bytes used for serial number. |
| OLNV | Serialisation - set next serial number. |
| OLC n aaaaaa | Serialisation - configure digit n with address aaaaaa. |
| OLCB | Serialisation - configure big Endian. |
| OLCL | Serialisation - configure Little Endian. |
| OM u s w | Set new bit mode, u=units per set, s=num of sets, w=width, please see RM & SM commands in the Remote Operation appendix of your programmer manual for valid modes |
| | |
| OP test | Pre program checks, Valid options are |
| |     'OP NONE' to disable pre program checks. |
| |     'OP BIT' to apply device illegal bit checks test |
| |     'OP EMPTY' to apply device empty check |
| OS hh | Set security fuse mask eg 01=SF0, 02=SF1, C3=SF7,6,1,0 etc. |
| | |
| ! | Display the pause dialog box, inviting the operator to insert a new device. |
| ; | Comment line (any text after other commands are also comments). |
| "user text" | Displays a message on the screen containing the entered user text. You can add 'format commands' to the string to change how the text is laid out. The commands are: |

        \a        Sound speaker horn.
        \n        Start a new line.
        \t        horizontal tab.
        \\        insert \ character in string.
        \"        insert " character in string.

The example
    "\aInsert device:\t\"110\\570\"\nInto programmer socket."

Will sound the horn then display
    *Insert device:       "110\570"*
    *Into programmer socket.*

## 4.2   Send
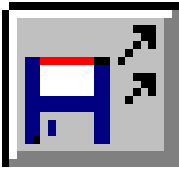


Click on the Send function button, The Download File To Programmer dialog box is displayed.
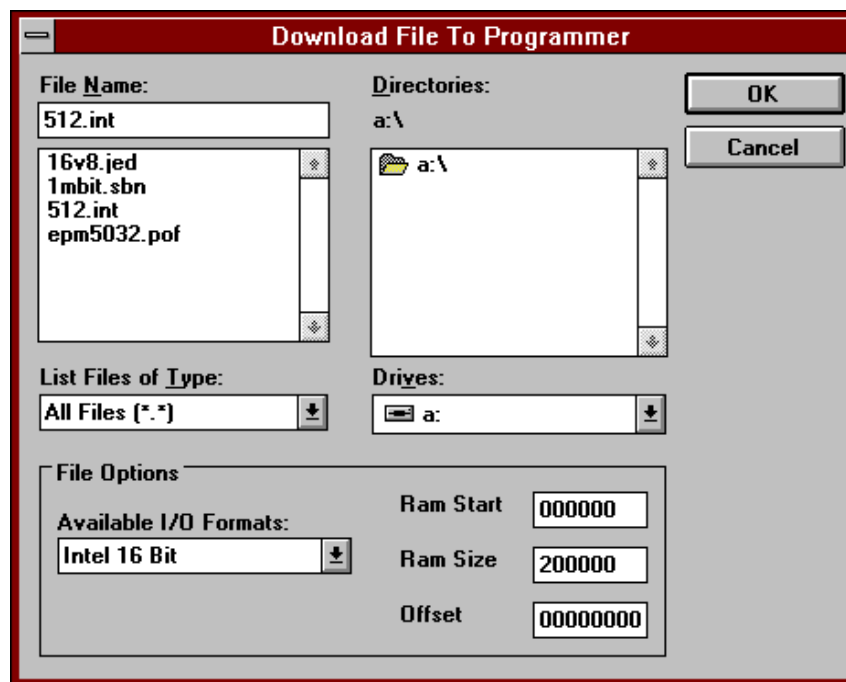


Use **Ram Start** to change the default programmer address to where the first byte of data will be sent. Note: this option is not available for PLD type devices.

Use **Ram Size** to limit the number of bytes in the data file downloaded to the programmer. The default size is set to the size of RAM fitted in the programmer so that all data in the file will be stored in the programmer's RAM. Note: this option is not available for PLD type devices.

Use **Offset** to change the run address of the data sent to the programmer. The default run address is the same as the RAM address. Note: this option is not available for PLD type devices.

Use the **Available I/O Formats** list box to select the format of the data file that you want to send to the programmer. Note: this option is not available for PLD type devices.

Use the **Drives** and **Directories** list boxes to locate the desired data file.

## 4.3   Receive
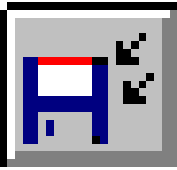


Click on the Receive function button, The Upload File From Programmer dialog box is displayed.
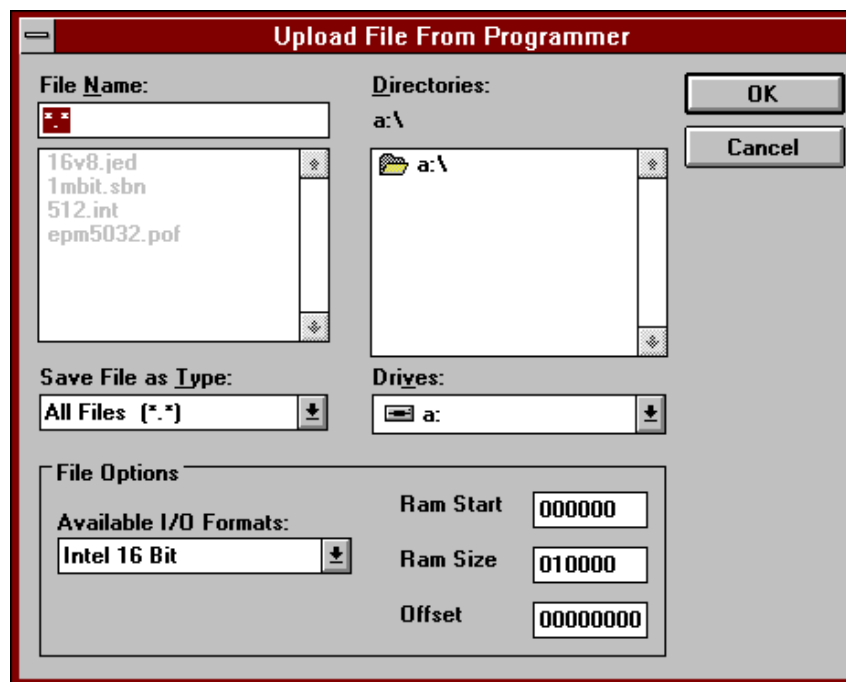


Use **Ram Start** to change the default programmer address from where the first byte of data will be received. Note: This option is not available for PLD type devices.

Use **Ram Size** to change the default number of bytes uploaded from the programmer. The default size = ((device size in device addresses+1) * (current bit mode/8)-1). This equation covers the complete range of the selected device in any bit mode. Note: this option is not available for PLD type devices.

Use **Offset** to change the run address of the data received from the programmer. The default run address is the same as the RAM address.

Use the **Available I/O Formats** list box to select the format of the data file that you want to receive from the programmer.

Use the **Drives** and **Directories** list boxes to locate the desired directory for the data file. When the name of the destination directory is shown in the **File Name** list box, enter a filename for the data in the **File Name** entry field, and click on the **OK** button.

## 4.4 Exit

Select this option to end the current StagCom Windows Application session and returns you to the Windows Program Manager. Use this option to exit StagCom Windows Application.

Select the **Exit** option in the **File** menu. The Application Exitdialog box is displayed.



Use the **Return Programmer To Local Mode** check-box option if you want the programmer to come out of remote mode and enter stand-alone mode after the StagCom Windows Application has closed down. Leave the option unchecked if you want the programmer to remain in remote mode.

Click on the **OK** button if you want to terminate Your StagCom Windows Application Session.

Click on the **Cancel** button if you wish to continue with your StagCom Windows Application session.

# 5  Device Menu

**Device**
**Select...**
Program
Load
Verify
Empty Check
Vector Test
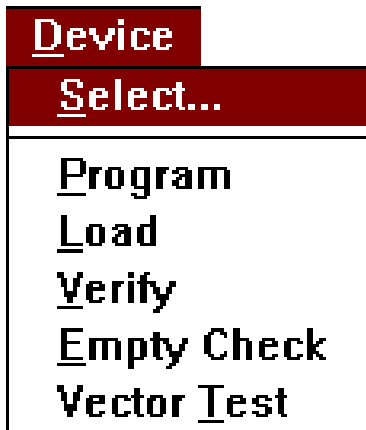
The **Device** menu controls the functions that can be applied to a device in the programmer socket. The **Device** menu provides six basic functions:

1.  You can select the device for the programmer socket.

2.  You can program the selected device from the programmer memory.

3.  You can load the selected device into the programmer memory.

4.  You can verify the selected device against the programmer memory.

5.  You can check for the erased state of the selected device.

6.  For PLD type devices only, you can apply downloaded test vectors to the device.

> **!**  **All the above functions are reproduced in the Programmer Commands dialog box. See Chapter 8.1 Prog. Commands. to activate this option.**

## 5.1   Select
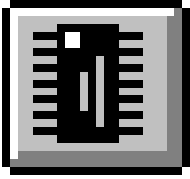


Click on the **Select** function button, The Select Device dialog box is displayed.
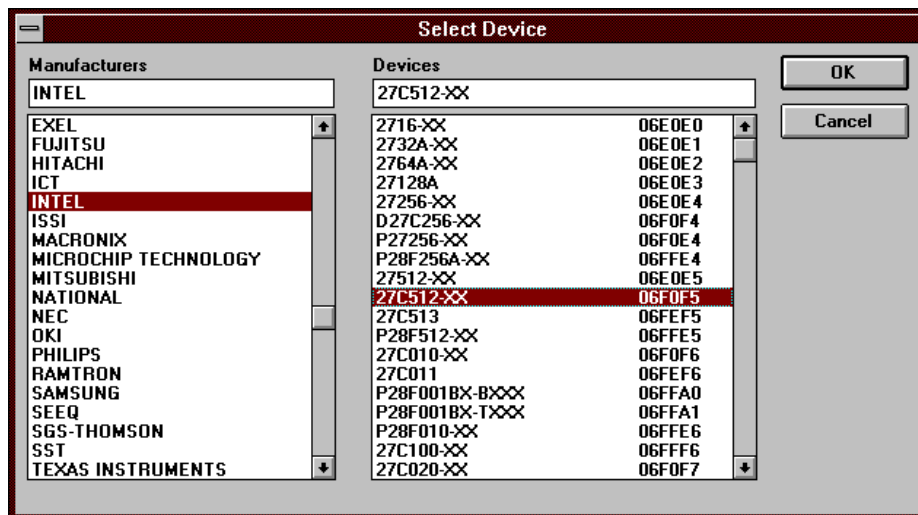


There are two methods for selecting a device,

Method One:
Use the **Manufacturers** list box to locate and select the desired manufacturer.
Use the **Devices** list box to locate and select the desired device.
Click on the **OK** button to inform the programmer that this is the part that you want selected

Method Two:
Use the **Manufacturers** edit box to type in the manufacturer name, the nearest match will be selected in the list box.
Use the **Devices** edit box to type in the device name, the nearest match will be selected in the list box.

Notes:
The current manufacturer / device will be hi-lighted when the dialog box is opened.

A similar device will be hi-lighted when switching to a different manufacturer if there is one available; otherwise the first device in the device list box will be hi-lighted.

The six digit number displayed after the device name is the device code, you may use this code to cross-reference with the Device Support List if you are not sure which device you want selected.

## 5.2   Program

Select this option if you wish to program the selected device. Selecting this option will:

1.   Apply pre-program checks (if they are enabled).

2.   Program device from memory.

3.   Apply verification checks.

4.   Program security fuses (if enabled).

5.   Apply test vectors (if enabled).

If the current programmer bit mode is wider than the selected device, then the Select Device Number dialog box will be displayed.
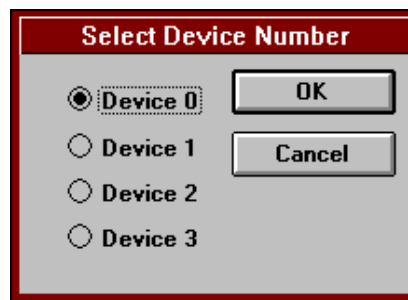


Select **Device 0,2** to program device with even address data.

Select **Device 1,3** to program device with odd address data.

If the serialisation option is enabled, the Select Device Number dialog will not be displayed, instead the Insert Device dialog box will be displayed prompting you to Insert **device 0**, then on the next programming cycle, you will be prompted to Insert **device 1** et cetera.

Once programming is completed, the Response Window will be updated, indicating the status of the programming attempt.

## 5.3   Load

Select this option if you wish to load the contents of the selected device into the programmer memory.

If a programmer bit mode is selected which is wider than the selected device, then the Select Device Number dialog box will be displayed.
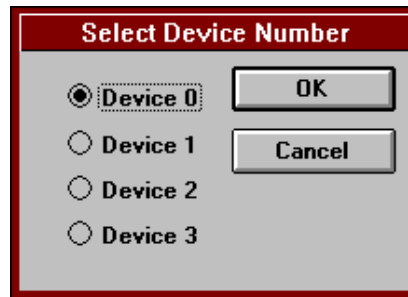


Select **Device 0,2** to load device into even addresses.

Select **Device 1,3** to load device into odd addresses.

Once the device has been loaded, the Response Window will be updated, indicating the status of the load attempt.

## 5.4   Verify

Select this option if you wish to verify the contents of the selected device against the programmer memory.

If a programmer bit mode is selected which is wider than the selected device, then the Select Device Number dialog box will be displayed.
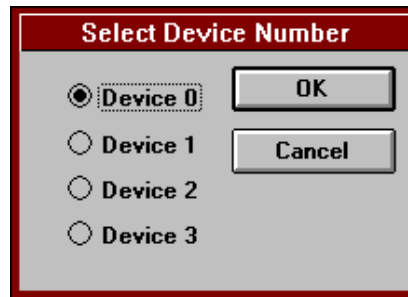
Select **Device 0,2** to verify device against even address data.

Select **Device 1,3** to verify device against odd address data.

Once the device has been verified, the Response Window will be updated, indicating the status of the verify attempt.

## 5.5   Empty Check

Select this option if you wish to check the selected device against the erased state.

Once the device has been checked, the Response Window will be updated, indicating the status of the empty check attempt.

## 5.6   Vector Test

Select this option if you wish to apply test vectors to the selected device.

This option is only available for PLD type devices. Test vectors must also be downloaded to the programmer first, using a file containing test vectors.

Once the vectors have been applied to the device, the Response Window will be updated, indicating the status of the vector test attempt.

# 6   Memory Menu

Memory
**Checksum**
C.R.C
Open Link Count
Limits...
Edit
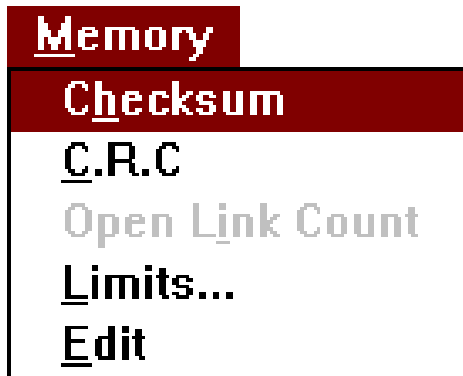
The Memory menu controls the functions that can be applied to programmer's memory. The Memory menu provides five basic functions:

1.   You can display the checksum of the data in the programmer's memory, within the currently set device limits.

2.   You can display the C.R.C. (Cyclic Redundancy Check) of the data in the programmer's memory, within the currently set device limits.
This function is not available for PLD type devices.

3.   You can display the Open Link Count of the data in the programmer's memory.
This function is not available for non PLD type devices.

4.   You can change the device addressing limits from the default.
This function is not available to PLD type devices.

5.   You can edit the contents of the programmer's memory.
This function is not available for PLD type devices.

## 6.1 Checksum
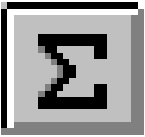
Click on the **Checksum** function. Select this option if you wish to display the checksum of the programmer's memory.

If a programmer bit mode is selected which is wider than the selected device, then the Select Device Number dialog box will be displayed.
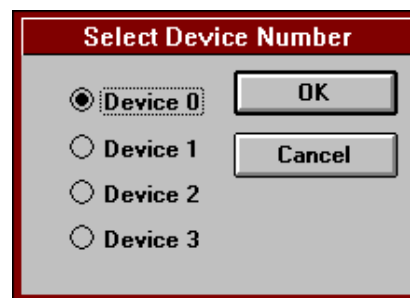
Select **Device 0,2** to display the checksum of data in even addresses.

Select **Device 1,3** to display the checksum of data in odd addresses.

Once the checksum has been calculated, the Response Window will be updated, indicating the new checksum.

For non PLD type devices, the range of the calculation is determined by the device limits, which are displayed in the Status Area. To change these limits, see Chapter 6.4 Limits.

For PLD type devices, the range of the calculation is the fixed to the entire range of the device.

## 6.2   Cyclic Redundancy Check (C.R.C.)

Select this option if you wish to display the C.R.C. of the programmer's memory.

If a programmer bit mode is selected which is wider than the selected device, then the Select Device Number dialog box will be displayed.
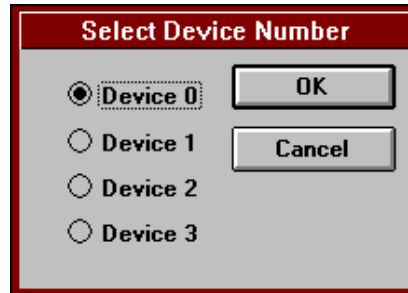
Select **Device 0,2** to display the C.R.C. of data in even addresses.

Select **Device 1,3** to display the C.R.C. of data in odd addresses.

Once the C.R.C. has been calculated, the Response Window will be updated, indicating the new value.

Note: This function is not available for PLD type devices.

## 6.3   Open Link Count

Select this option if you wish to display the open link count of the programmer's memory, for the currently selected device.

Once the open link count has been calculated, the Response Window will be updated, indicating the new value.

Note: this function is only available for PLD type devices.

## 6.4   Limits

Select this option to display the RAM And Device Limits dialog box.

The Limits option is not available for PLD type devices.
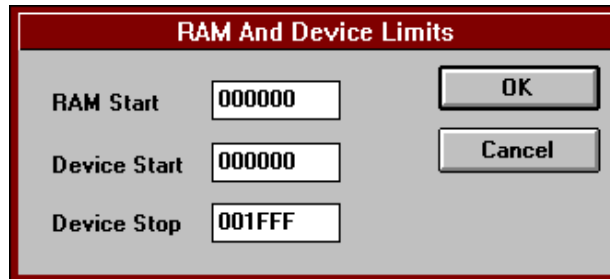


Use **Ram Start** to change the default programmer address from where the first byte of data will be accessed.

Use **Device Start** to change the default device start address from the device will be first be accessed.

Use **Device Stop** to change the last device address to be accessed. The default stop address is calculated as:
device start + ((device size in device addresses+1) * (current bit mode/8)-1). This equation covers the complete range of the selected device in any selected bit mode.

## 6.5  Edit

The **Edit** function allows you to modify the data stored in the Programmer. Note that this option is not available for PLD type devices.

Selecting the **Edit** function to display the Edit screen.

```
                         StagCom Windows Application              ▼ ↕

 Close    Block    Help


 Address    0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F   0123456789ABCDEF
 -----------------------------------------------------------------------------
 00000200  04 03 02 01 00 FE FF FE FD FC FB FA F9 F8 F7 F6   .....þ.þý....ø÷ö
 00000210  F5 F4 F3 F2 F1 F0 EF EE ED EC EB EA E9 E8 E7 E6   õôóòñðïîíìëêéèçæ
 00000220  E5 E4 E3 E2 E1 E0 DF DE DD DC DB DA D9 D8 D7 D6   .äãâáàßÞÝÜ..Ü0×.
 00000230  D5 D4 D3 D2 D1 D0 CF CE CD CC CB CA C9 C8 C7 C6   .ÔÓ..ÐÏ..ÌÊÉÈ...
 00000240  C5 C4 C3 C2 C1 C0 BF BE BD BC BB BA B9 B8 B7 B6   .....À¿¾½¼».....
 00000250  B5 B4 B3 B2 B1 B0 AF AE AD AC AB AA A9 A8 A7 A6   .........-...©.§¦
 00000260  A5 A4 A3 A2 A1 A0 9F 9E 9D 9C 9B 9A 99 98 97 96   ¥¤£¢..ￌￌￌￌￌￌ....
 00000270  95 94 93 92 91 90 8F 8E 8D 8C 8B 8A 89 88 87 86   ......ￌￌￌￌￌￌ..ￌￌ
 00000280  85 84 83 82 81 80 7F 7E 7D 7C 7B 7A 79 78 77 76   ￌￌ.....~}|{zyxwv
 00000290  75 74 73 72 71 70 6F 6E 6D 6C 6B 6A 69 68 67 66   utsrqponmlkjihgf
 000002A0  65 64 63 62 61 60 5F 5E 5D 5C 5B 5A 59 58 57 56   edcba`_^]\[ZYXWV
 000002B0  55 54 53 52 51 50 4F 4E 4D 4C 4B 4A 49 48 47 46   UTSRQPONMLKJIHGF
 000002C0  45 44 43 42 41 40 3F 3E 3D 3C 3B 3A 39 38 37 36   EDCBA@?>=<;:9876
 000002D0  35 34 33 32 31 30 2F 2E 2D 2C 2B 2A 29 28 27 26   543210/.-,+*)('&
 000002E0  25 24 23 22 21 20 1F 1E 1D 1C 1B 1A 19 18 17 16   %$#"! .........
 000002F0  15 14 13 12 11 10 0F 0E 0D 0C 0B 0A 09 08 07 06   ...............

 Current Address:  [ 00000296 ]

 Device Start:       00000000

 Device Stop:        00007FFF

 Programmer RAM:     0007FFFF



 Ready
```

The edit screen replaces the main screen view.

The left section of the window shows the first programmer address, in hex, of each row of data. These addresses can be changed by typing the new address into the **Current Address** edit box, the edit box also displays the address currently being edited, that is; the caret position.

The middle section displays the programmer data in hex bytes that can be edited. To change the value of any data, simply click on the data by using the mouse, or use the cursor keys to move about the data field. Once you have selected the byte you wish to change, simply type in the replacement value. To move on to the next page of data, simply use the **PgUp & PgDn** cursor keys.

The right section displays the same data as ASCII characters. Characters that are not printable, are displayed as a full stop '.'. To edit the value of any data, simply click on the data by using the mouse, or use the cursor / tab keys to move about the data field. Once you have selected the character byte you wish to change, simply type in the replacement character.

You cannot edit locations that are outside the range of the ram fitted inside the programmer, i.e. the last editable address is the address shown by the **Programmer RAM:** text.

**Device Start** shows the first programmer ram address that the device is mapped to.

**Device Stop** shows the last programmer ram address that the device is mapped to.

## 6.5.1   Edit | Exit
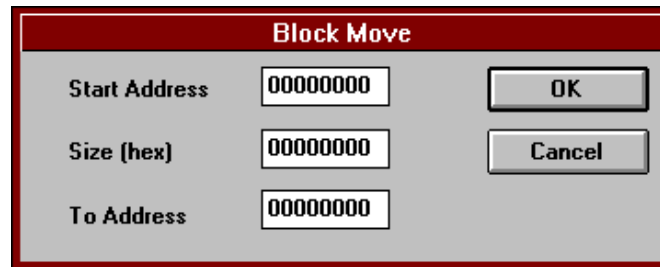
Selecting this function will close the editing session, and return to the main StagCom Windows Application main screen.

## 6.5.2   Edit | Block

### 6.5.2.1   Move

The **Move** function, allows you to copy a block of data from one location in the programmer's memory, to another location.

Selecting the **Move** option will display the Block Move dialog box.



Use **Start Address** to specify the first programmer address to copy from.

Use **Number Of Bytes** to specify the size of the data block to copy.

Use **To Address** to specify the first programmer address that will be over written.

## 6.5.2.2   Fill

The Fill function, allows you to fill a block of data with a known value.

Selecting the Fill option will display the Fill Memory dialog box.
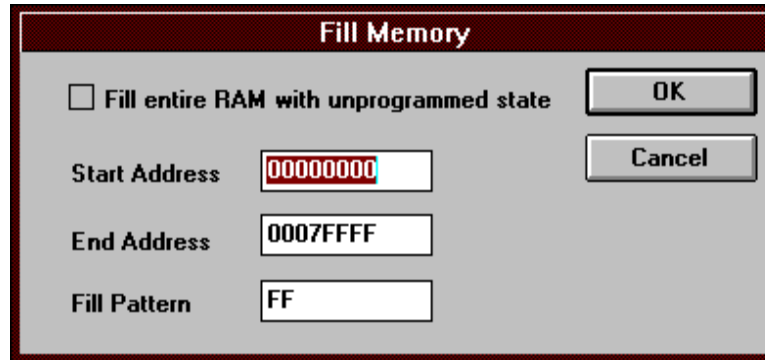


Use **Start Address** to specify the first programmer address that will be over written.

Use **End Address** to specify the last programmer address that will be over written.

Use **Fill Pattern** to specify the data (in hex) that will be written to the programmer's memory.

Alternately, select the **Fill entire RAM with unprogrammed state** checkbox to set the ram in the programmer to the unprogrammed state for the currently selected device, in most cases this will be FFh.

### 6.5.2.3   Goto

The Goto function, allows you to specify a new programmer address to edit.

Selecting the Goto option will display the Goto An Address dialog box.

**Goto An Address**

Enter The Address

00000000

OK

Cancel

Use Enter The Address field to enter (in hex) the new programmer memory address to edit. The maximum address allowed is the amount of RAM fitted to the programmer.

# 7   Options Menu

Options

**Programmer Comms...**

✓ Pre Program Checks

Security Fuse...

Programmer Bit Mode...

✓ Serialisation...

Statistics...

Update Programmer...

Programmer Data Files ...

EPROM Emulation
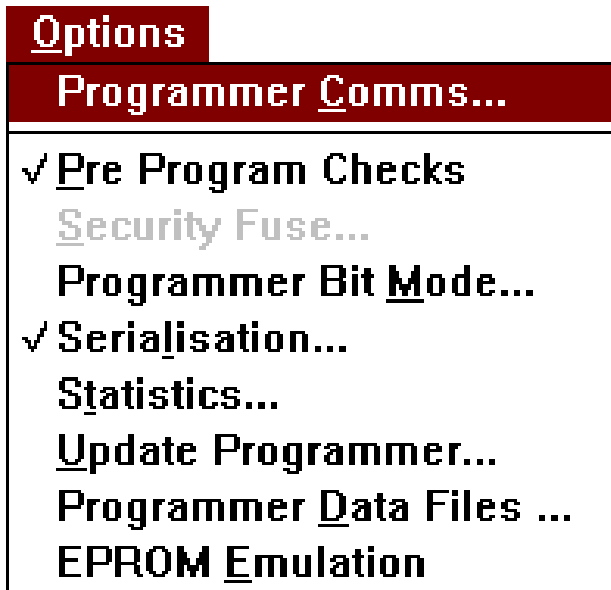
The Options menu controls the functions that define how other features and functions operate. The Options menu provides nine basic functions:

1.   You can select and configure the serial port to which the programmer is connected.

2.   You can enable and disable pre-program checks for the selected device.

3.   You can select and enable security fuses.

4.   You can define the programmer bit mode for the selected device.

5.   You can select and configure device serialisation.

6.   You can display programming statistics.

7.   You can update the software in your connected programmer.

8.   You can select a new device support data file.

9.   You can enable and disable EPROM emulation.

## 7.1   Programmer Comms.

Select the **Programmer Comms** option to select and configure the serial port to which the programmer is connected.

Selecting **Programmer Comms** will display the Communication Setup dialog box
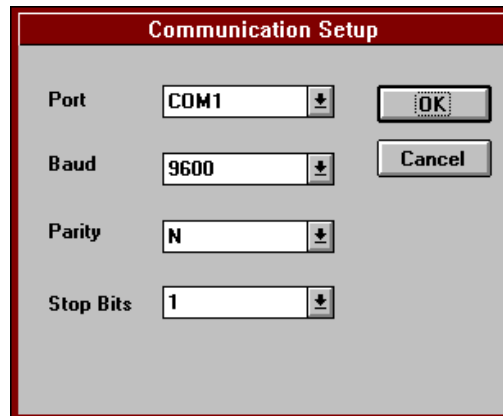


Use the **Port** drop-down box to select the serial port that the programmer is connected to. Valid ports are Com1 .. Com4.

Use the **Baud** drop-down box to select the same baud rate that the programmer is configured to.

Use the **Parity** drop-down box to select the same parity setting that the programmer is configured to. Note that if parity is enabled (i.e. set to even or odd) then only seven data bits are set. The consequence is that you will not be able to send or receive binary format files to or from the programmer. Configure this option to none (N) for complete functionality.

Use the **Stop Bits** drop-down box to select the same setting that the programmer is configured to.

## 7.2  Pre Program Checks

Select the **Pre-Program Checks** option to define which checks are applied to the device prior to programming. The current state is displayed in the Device Status Area as discussed in Chapter 2.1.5.

Selecting this option will display the **Pre-Program Checks** dialog box.
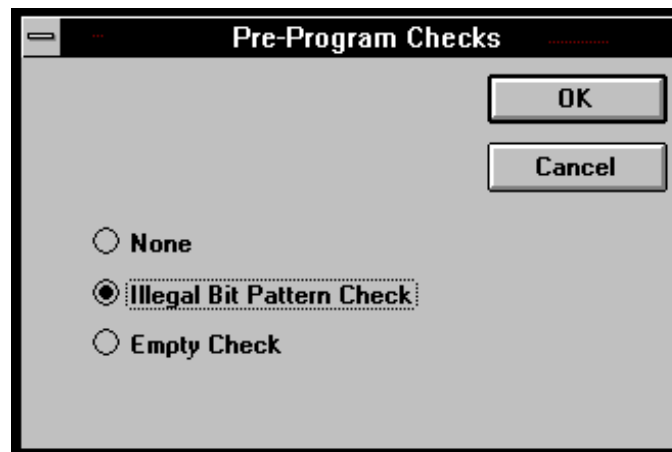


Select **None** to disable pre-program checks.

Select **Illegal Bit Pattern** if you wish to check the device for locations which are programmed but are required by the program data to be empty.

Select **Empty Check** if you wish to check that the device is empty before programming. Contact you Stag representative for a programmer software update if this option is not enabled (greyed out).

## 7.3   Security
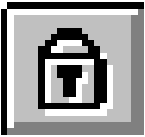
Select the **Security** option to enable or disable security fuse programming and to define which fuses (from the available list) to program.

Selecting this option will display the Security Fuse Selection dialog box.
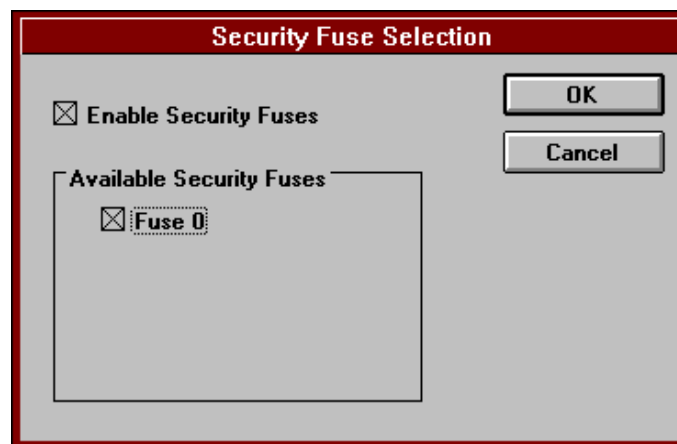
Check the **Enable Security** Fuses check-box to enable the Available Security Fuses check-boxes.

Use the check-boxes in the **Available Security Fuses** group to enable or disable a particular security fuse.

The number of available security fuses depends on the device selected, some devices have no security fuses at all, in which case the Security menu item will be greyed out.

Note: For any security fuses to be actually programmed during the program cycle, both the **Available Security Fuse** check-box has to be checked, and also the **Enable Security Fuses** check-box has to be checked. When this occurs the Device status area will show Security Fuses Enabled, otherwise it will show Security Fuses Disabled.

> **!   Some devices use the security fuse option to support non-standard, miscellaneous features. Please consult the 'Device specific information' section in your programmer device support list for further details.**

## 7.4   Prog. Bit Mode

Select the **Prog. Bit Mode** option to select a new programmer bit mode from the default setting for the device.

Selecting this option will either display the programmer Bit Modes dialog box for single socket programmers.
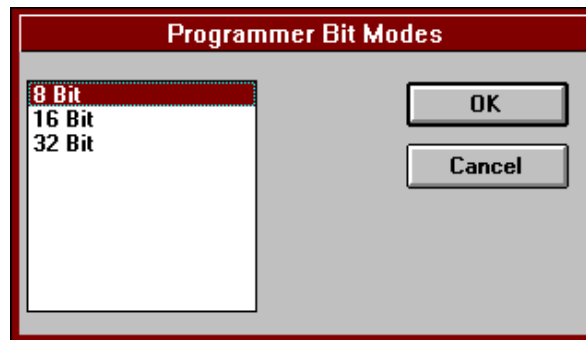


or for multi-socket programmers ..
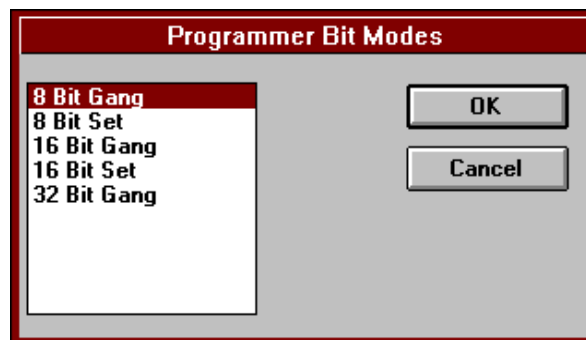


Use the list box to select the new mode required.
Note:
     Select **Gang** mode to program all device with the same data
     Select **Set** to program each device with consecutive memory blocks.

This option is not available for PLD type devices.

## 7.5   Serialisation

Select **Serialisation** option to enable and configure programming serialisation.

Selecting this option will display the Serialisation dialog box.
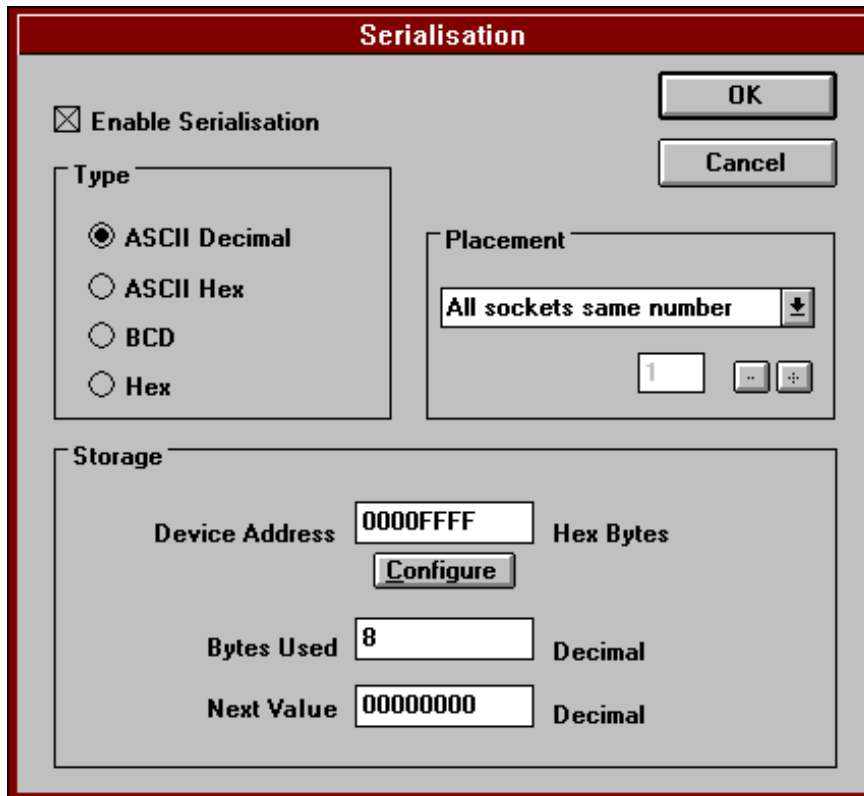


Use **Enable Serialisation** check-box to enable / disable serialisation function.

Use **Type** group radio buttons to define the type of the serial number.

> Select **ASCII Decimal** to store one decimal digit per byte of memory in ASCII format.

> Select **ASCII Hex** to store one hex digit per byte of memory in ASCII format.

> Select **BCD** to store two decimal digits per byte of memory in Binary Coded Decimal format.

> Select **Hex** to store two hex digits per byte of memory in hex format.

Use **Storage** group controls to specify the programmer addresses where the serial number digits will be stored.

Use **Device address** to view the programmer address where the least significant digit will be stored.

Use **Bytes Used** to specify the number of the bytes reserved in the device for   the serialisation data, bytes that are not in the current number range will be initialised to zero.

Use **Next Value** to define the next serial number to be programmed into the device. This value is automatically incremented after each successful programming cycle.

Use the **Configure** button to specify device addresses for the serial number digits.

Selecting the **Configure** button will display the Customize Serial Address dialog box.
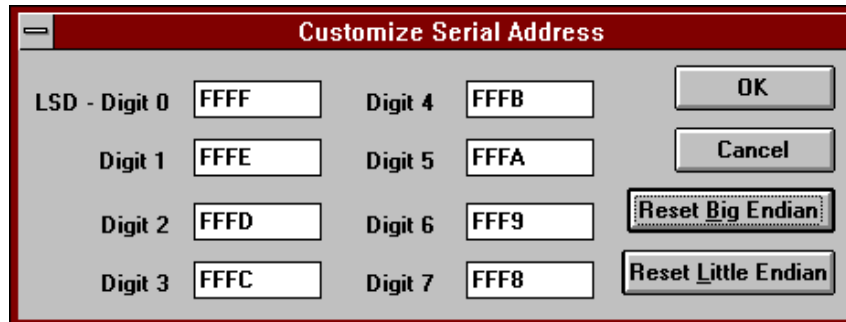


Use each of the **Digit** edit boxes to specify a device address where that digit will be stored.

Use **Reset Big Endian** to configure all the digits such that the most significant digit is in the lowest device address (Motorola addressing).

Use **Reset Little Endian** to configure all the digits such that the least significant digit is in the lowest device address (Intel addressing).

Use **Placement** group controls for multi-socketed programmers to specify how the serial numbers will be stored in each device / socket.

> Set **All socket same number** to specify that all devices/sockets have the same number programmed into them.

> Set **All sockets unique number** to specify that each device/socket has a unique umber, incremented from the previous socket/device.

> Set **One socket with number** to specify that only one device/socket will have a number programmed into it. Use the **Socket** edit box to specify the chosen socket.

Please note that all variables are saved to the SCOMWIN.INI file, and are reloaded in the next StagCom Windows Application session.

## 7.6 Statistic

Select **Statistics** option to display the programming and verification statistics for the currently selected device, that is the statistics are automatically reset to zero when a new device is selected.

Selecting this option will display the Statistics dialog box.
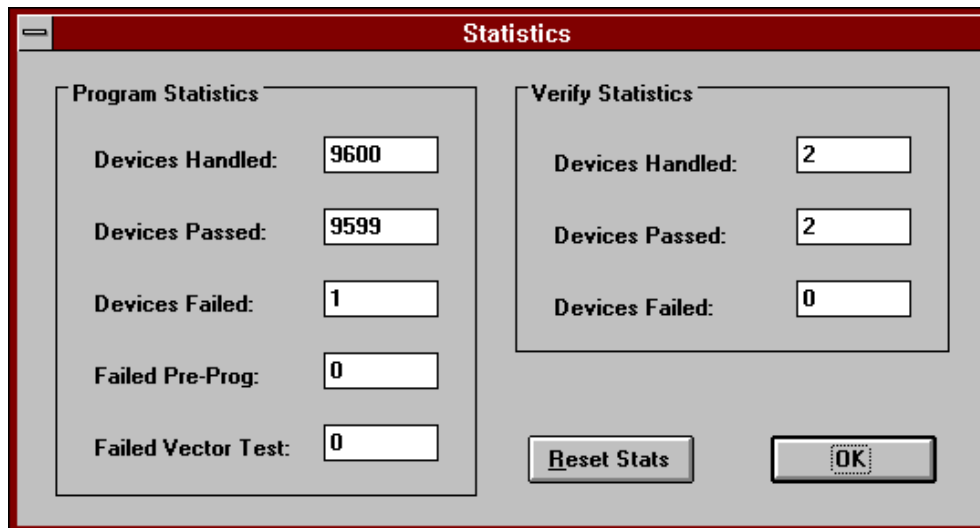


**Program Statistics** group displays statistics relating to the programming cycle.

> **Devices Handled:** displays the total number of programming attempts not including device connection failures or other non-device errors.
> **Devices Passed:** displays the number of devices that have successfully completed a   programming cycle with no errors occurring.
> **Devices Failed:** displays the number of devices that have not programmed correctly or have failed the post-program verify test.
> **Failed Pre-Prog:** displays the number of devices that have failed before the programming starts. This is usually due to a part that is not erased,or unprogrammed before the programming cycle starts.
> **Failed Vector Test:** This statistic is only relevant for PLD type devices, and shows the number of devices that have unsuccessfully passed the test vectors applied after the program cycle has finished.

**Verify Statistics** group displays statistics relating to the user selecting the verify function.

> **Devices Handled:** displays the total number of verification attempts not including device connection failures or other non-device errors.
> **Devices Passed:** displays the number of devices that have successfully verified against the programmer memory with no errors occurring.
> **Devices Failed:** displays the number of devices that have failed to verify with the programmer memory.

## 7.7   Update Programmer

Select **Update Programmer** option to update the programming algorithms in the connected programmer. New algorithms can be obtained from your Stag representative.

Selecting this option will display the following Update Programmer dialog box if your programmer does not have an internal serial number.



Otherwise, selecting this option will display the following Update Programmer dialog box if your programmer does have an internal serial number.
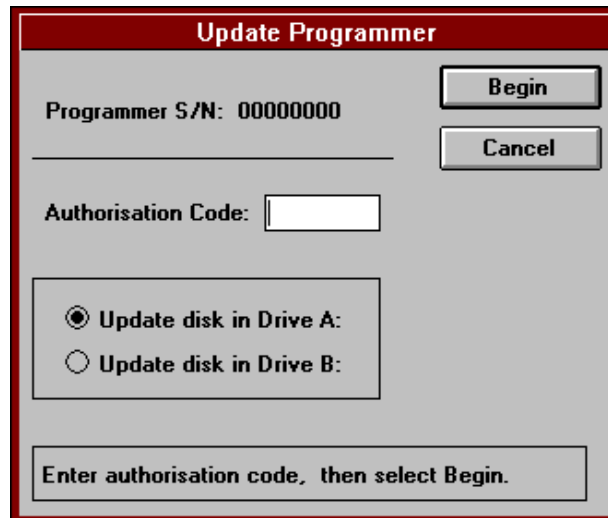


Use **Authorisation Code** edit box to enter the update authorisation code obtained from your Stag representative. When obtaining your authorisation code, you will need to quote the programmer serial number (Programmer S/N) for your programmer.

Use **Update disk** buttons to select the drive containing the programmer update disk.

Use **Begin** to begin the programmer update process, if your update disk contains a programmer .DAT file, then this will be used to replace your existing one.

## 7.8   Programmer Data Files

Select **Programmer Data Files** option to select the correct directory that contains the right .DAT for the connected programmer.

Selecting this option will display the Programmer Data Files Options dialog box.
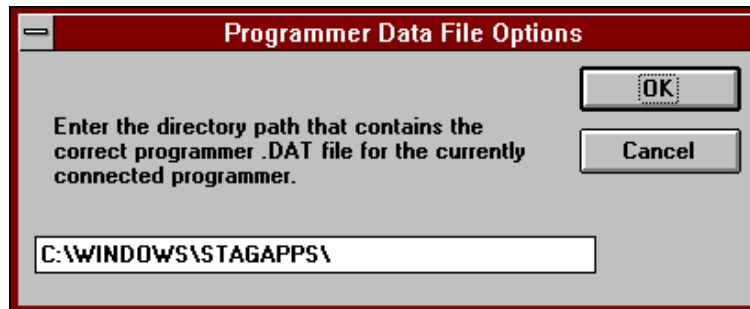


Note:  The .DAT file contains a list of devices that are supported by your programmer, and is used when you select a new device.

## 7.9   EPROM Emulation

Select the **EPROM Emulation** option to enable, or disable EPROM emulation in the connected programmer.

Selecting this option will toggle the state of EPROM emulation mode. The current state (enabled or disabled) is constantly shown in the Device Status Area as discussed in Chapter 2.1.5.

If the **EPROM Emulation** menu item has a tick mark placed next to it, then selecting the item will remove the tick and disable the function.

If the **EPROM Emulation** menu item does not have a tick mark placed next to it, then selecting the item will add the tick and enable the function.

Not all programmers support this function. If your programmer does not, then this option will not be available on the **Options** menu.

Please consult your Programmer Operating manual for further details regarding the functionality of this command.

# 8   Window Menu
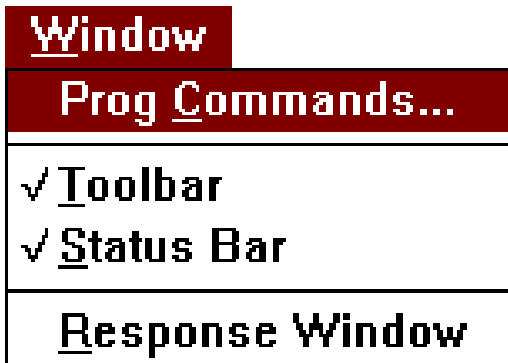


The Window menu controls the behaviour of the various user interface windows. The Window menu provides four basic functions:

1.   Hide / Show Programmer Commands window.

2.   Hide / Show Toolbar.

3.   Hide / Show Status Bar.

4.   Change characteristics of the Response Window.

# 8.1 Prog. Commands

Select **Prog. Commands** option to displays a window giving you access to commonly used programmer commands.

Selecting this function displays the Programmer Commands window.
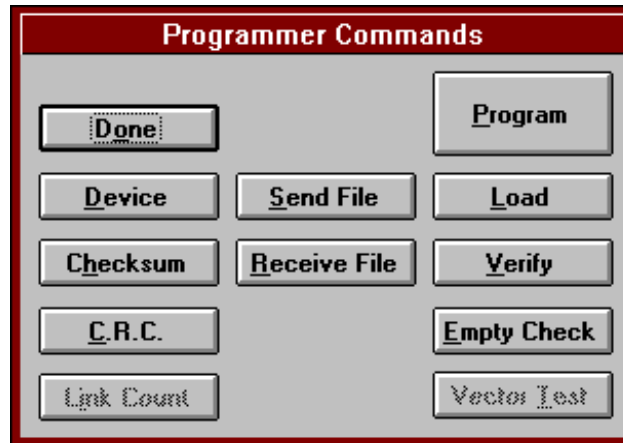


Use this window to give you quick and easy access to the most commonly used programmer functions.

While the Programmer Commands window is active (displayed), the other features accessible via the menu bar are locked out. This feature gives you a basic level of security from accidentally changing the characteristics of functions that you did not intend to change.

| | |
|---|---|
| **Done** | Disable (hide) Programmer Commands Window. |
| **Device** | Select a new device. |
| **Program** | Program a device from programmer memory. |
| **Load** | Load a device into programmer memory. |
| **Verify** | Verify a device against programmer memory. |
| **Blank Check** | Check device for erased state. |
| **Vector Test** | Apply vector test to PLD type device. |
| **Send File** | Download data file to the programmer's memory. |
| **Receive File** | Upload data file from programmer's memory. |
| **Checksum** | Calculate and display checksum of programmer's memory. |
| **C.R.C.** | Calculate and display C.R.C. of non PLD type device. |
| **Link Count** | Calculate and display Open Link Count of PLD type device. |

## 8.2   Toolbar

Select the **Toolbar** option to enable, or disable the Toolbar (see Chapter 2.1.2).

Selecting this option will toggle the state (hidden or shown) of the Toolbar.

If the **Toolbar** menu item has a tick mark placed next to it, then selecting the item will remove the Toolbar from the display.

If the **Toolbar** menu item does not have a tick mark placed next to it, then selecting the item will add the Toolbar to the display.

## 8.3   Status Bar

Select the **Status Bar** option to enable, or disable the status bar (see Chapter 2.1.3).

Selecting this option will toggle the state (hidden or shown) of the status bar.

If the **Status Bar** menu item has a tick mark placed next to it, then selecting the item will remove the status bar from the display.

If the **Status Bar** menu item does not have a tick mark placed next to it, then selecting the item will add the status bar to the display.

## 8.4  Response Window

Select the **Response Window** option to change the visual characteristics of the Response Window.

Selecting the **Response Window** will display the Response Window Options dialog box.

**Response Window Options**

No. Messages  `25`  [ OK ]

Highlight Last Message  ☐  [ Cancel ]
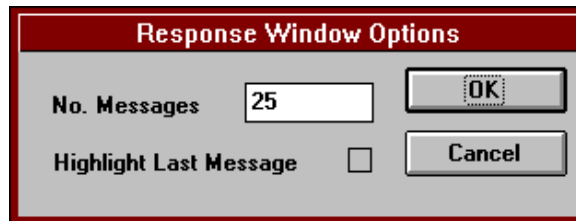
As the Response window fills up with programmer response messages, scroll bars appear in the window, and previous messages scroll of the top of the window. These older messages can still be reviewed by using the scroll bars to scroll up the display.

Use **No. Messages** field to indicate the maximum number of message to keep within the scroll range

Use **Highlight Last Message** check-box to keep the latest entry in the Response window highlighted. Use this feature to give you a visual aid in keeping track of the most recent message received from the programmer.

# 9   Help Menu



The **Help** menu gives you access to information about the StagCom windows Application and the Windows environment.

## 9.1   About StagCom

Select **About StagCom** option to display information about StagCom Windows Application.

Selecting the option displays the About StagCom Windows Application dialog box.
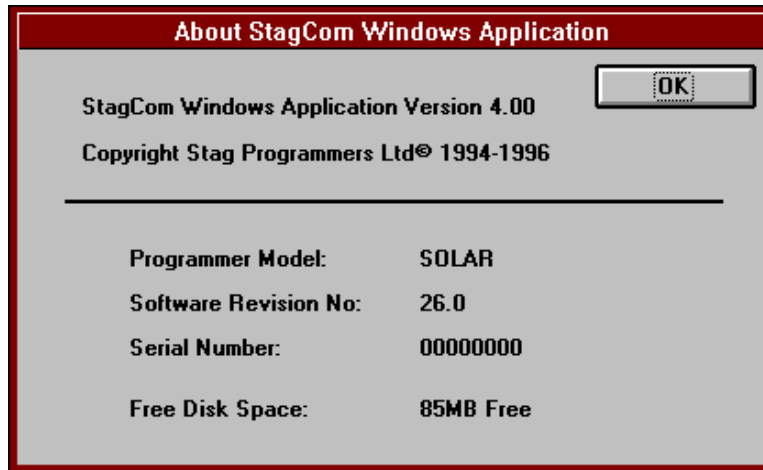


**Programmer Model:** displays the name of the currently connected programmer.

**Software Revision No:** displays the version of the programming software within the connected programmer.

**Serial Number:** displays the serial number of the connected programmer, use this number when contacting you stag representative for software updates.

**Free Disk Space:** displays the amount of free space on your primary hard disk.
If you have less that 10MB free, the value is displayed in kilobytes otherwise it is displayed in Megabytes.

# 10   Introduction – StagCom DOS

The StagCom DOS Application utilises the remote control feature of the programmer, allowing the programmer to take operational commands from the I/O ports instead of the keyboard to provide a fully featured DOS application.

## 10.1   System Requirements

An IBM compatible PC.
MS-DOS 3.2 or later.
A free serial port.
A suitable serial cable. (Stag Part No. Cable 1.)

## 10.2   Interface Connections

### 10.2.1   Serial Cable Connections

For serial communications, the cable to be used depends on the type of connector that is used on the PC (either 9-pin or 25-pin).

> **!** **Cables that use XON/XOFF handshaking are not suitable for use with StagCom DOS Application, a hardware handshaking cable as described in the README.1ST file is required.**

## 10.3   StagCom DOS Application Installation

> **!** **An appropriate .DAT file for the Programmer that you intend to use must be placed in the same directory as the StagCom DOS Application for the application to function. This file can be found on your PROGRAMMER UPDATE DISK. If you do not have this disk, then consult your Stag representative.**

> **!** **The ANSI.SYS driver is required to be installed from your CONFIG.SYS file for the application to display information on the screen correctly, please see your DOS documentation to install this driver correctly.**

No installation of the StagCom DOS Application is required; either run the application from the supplied floppy disk, or copy it onto your hard disk by using the DOS COPY or XCOPY commands

To execute StagCom DOS Application, type SCOMDOS from the DOS prompt.

## 10.4   Programmer Configuration

The DOS package is shipped with default settings of COM1:9600,N,8,1. If these settings are acceptable to you then you will need to configure the programmer to the same settings as follows.

1.   Plug in the supplied power cord to the rear panel socket.

2.   Connect your programmer to the Personal Computer Interface using the appropriate cable (9-pin to 25-pin or 25-pin to 25-pin serial).

3.   Apply power to the programmer from the mains power source.

4.   Power up the programmer using the On/Off switch on the rear panel.

5.   Press I/O key, select PORT item.

6.   Enter the following serial interface parameters into your programmer:
     Port:          Serial
     Baud rate:     9600
     Parity:        None
     Stop Bits:     1

7.   Press **ENTER** key.

8.   Select **REMOTE CONTROL** item, then press **I/O** key.

## 10.5   Starting StagCom DOS Application

When you execute StagCom.exe, the application will initialise itself and then attempt to establish communications with the programmer. If communications are not established within 10 seconds, the Application Options group will pop-up, inviting you to either change the port settings, or to exit the application.

If communication with the programmer fails, then there are several possible reasons:

**The programmer is not switched on.**
> Make sure the programmer is powered up.

**The programmer is not in remote control mode.**
> Put the programmer in remote control mode.

**The connecting cable is loose.**
> Check the connections.

**The cable is in the incorrect port.**
> Check the cable is in the correct port both on the programmer & PC.

**The port is incorrectly selected.**
> Ensure that the correct port is selected on the programmer.
> Check that the correct port is selected on the PC by pressing the **X** key.

**Incompatible serial port parameters selected.**
> Make sure the selected baud rate, parity,
> and stop bits are identical for the programmer and the PC.

**Incorrect cable connections.**
> Make sure the cable used is correctly wired.

## 10.6   Leaving StagCom DOS Application

You may leave the application by typing **Q**. You will then be asked if you wish to return the programmer to local mode, enter Y to do so, or any other key to leave the programmer in remote mode.

# 11   User Interface

This Chapter will familiarise you with the operation of the components of the StagCom DOS Application main screen. The main screen consists of the device options group, the application options group, the programmer commands group and the programmer responses area.

This Chapter also describes the use of the keyboard keys that perform special functions within the StagCom DOS Application. The general operation of the DOS command line interface is described in your DOS documentation and will not be repeated here.

```
─────────────── S t a g C o m   D O S   A p p l i c a t i o n ───────────────
┌──── Device Options ────┐  ┌── Application Options ──┐ ┌─ Programmer Commands ─┐
│                        │  │                         │ │                       │
│ 1. Manufacturer:       │  │ X. Communications.      │ │ P. Program            │
│    INTEL               │  │                         │ │                       │
│                        │  │ D. Device Statistics.   │ │ L. Load               │
│ 2. Name / Number:      │  │                         │ │                       │
│    D27C512-XX          │  │ M. Set Entire RAM To    │ │ V. Verify             │
│                        │  │    Unprogrammed State.  │ │                       │
│ 3. PreProg. Check: Bit │  │                         │ │ B. Empty Check        │
│                        │  │ E. Edit RAM.            │ │                       │
│ 4. Security:       N/A │  │                         │ │ H. Checksum           │
│                        │  │ N. Prog. Emulation: OFF │ │                       │
│ 5. Bit Mode:     8 Bit │  │                         │ │ C. C.R.C.             │
│                        │  │ U. Update Programmer.   │ │                       │
│ 6. Ram Start:    000000│  │                         │ │ S. Send File          │
│                        │  │ Q. Quit Application.    │ │                       │
│ 7. Device Start: 000000│  │                         │ │ R. Receive File       │
│                        │  │ A. Batch Processing     │ │                       │
│ 8. Device Stop:  00FFFF│  │                         │ │                       │
└────────────────────────┘  └─────────────────────────┘ └───────────────────────┘
                        ──── Programmer Responses ────
 ok.
```

## 11.1   Main Screen

### 11.1.1   Device Options Group

The Device Options menu, groups together all the application commands that allow you set-up options for the selected device. If a particular option is not applicable to the selected device then N/A will be shown and selecting the option will have no effect.
Select the required option by pressing the key on the keyboard shown to the left of the option.

### 11.1.2   Application Options Group

The Application Options menu, groups together all the application commands that allow you to set-up options that are not directly related to the selected device. If a particular option is not applicable to the mode that the programmer is in, or is not supported by the programmer at all, then the option will not be visible, and cannot be selected. Select the required option by pressing the key on the keyboard shown to the left of the option.

### 11.1.3   Programmer Commands Group

The Programmer Commands menu, groups together all the application commands that directly effect the selected device. If a particular command is not applicable to the selected device, then the command will not be visible, and can not be selected. Select the required command by pressing the key on the keyboard shown to the left of the command.

### 11.1.4   Programmer Responses Area

The Programmer Response area either displays the response to a programmer command received by the programmer, or will display a description of the option you are currently selecting.

## 11.2 Keyboard Shortcuts

Various keys on the keyboard perform special functions:

**Arrow Keys**       Control the movement of the cursor (when visible).

**Backspace**        Deletes the character to the left of the cursor.

**Page Up**          Move to the previous page of a list.

**Page Down**        Move to the next page of a list.

**Esc**              Cancel Current operation.

## 11.3 Group Menus

Some of the options within StagCom DOS Application function as simple commands which are executed as soon as you select them.

Many options, however, contain features that require the user to specify additional information. Whenever an option of this type is selected, a group menu is displayed in the centre of the screen. Group menus control most of StagCom DOS Application's features.

# 12   The Basics

For those who are new to StagCom DOS Application, you've come to the right place. This Chapter will not tell you everything there is to know about the Application, it will however, describe the basics of StagCom DOS Application. The topics included in this Chapter are:

**Programming a Master device from a file.** This section shows you how to select your device, download a file to the programmer's memory, and lastly program the device with the pattern in the memory.

## 12.1   Programming Device From File

Suppose we have an Intel 27C512 EPROM in DIP package, and you have a file on a floppy disk in Drive A: called `512.INT' which is stored in INTEL Hex format.

First of all make sure that your programmer is in remote mode, and run up the StagCom DOS Application. Assuming that you have the Application configured to the right port settings that match the programmer, after a few seconds, the display should look similar to that shown at the start of Chapter 11.

### 12.1.1   Selecting Master Device

The first thing we need to do is select the device we want to program, in this case it is an Intel 27C512 in a DIP package

   Under Device Options group you should see **1. Manufacturer**, press **1** on the keyboard to select the option.

   The Device Manufacturer group menu should now appear in the centre of the screen, (see fig. on next page) showing the list of valid manufactures.

   Locate the entry marked Intel (use the **Page Up** / **Page Down** keys if required) and press the key shown to the left of the entry (h in this example).

```
══ Device Manufacturer ══

  a. AMD
  b. ATMEL
  c. CATALYST
  d. CYPRESS
  e. FUJITSU
  f. HITACHI
  g. ICT
  h. INTEL
  i. ISSI
  j. MACRONIX
  k. MICROCHIP TECHNOLOGY
  l. MITSUBISHI
  m. NATIONAL
  n. NEC
  o. OKI
  p. PHILIPS
  q. SAMSUNG

                        ─PgDn─
```

The Device Name/Number group menu should now appear in the centre of the screen, showing the list of valid devices.

Locate the entry marked **27C512-XX** (use the **Page Up** / **Page Down** keys if required) and press the key shown to the left of the entry.

```
══ Device Name / Number ══

  a. 2716-XX
  b. 2732A-XX
  c. 2764A-XX
  d. 27128A
  e. 27256-XX
  f. D27C256-XX
  g. P27256-XX
  h. P28F256A-XX
  i. 27512-XX
  j. 27C512-XX
  k. P28F512-XX
  l. 27C010-XX
  m. P28F010-XX
  n. 27C020-XX
  o. P28F020-XX
  p. 27C040-XX
```
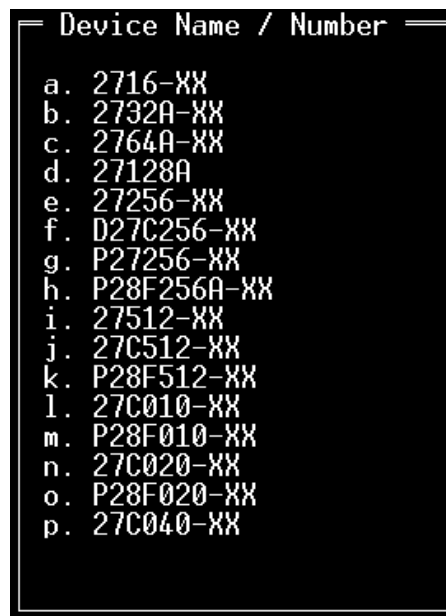
The Device is now selected, and a message in the response area should notify you of this fact. If you do not have the correct programmer adapter fitted for this device, you may receive another message warning you that you have the wrong adapter fitted. If this happens, place a suitable adapter on the programmer for the selected device.

You will also have noticed that the Device Options group has now updated, displaying the status of various options which are valid for this device. If the Programming Mode status does not display '8 Bit' then see Chapter 13.5 Bit Mode, to set it to '8 Bit'.

## 12.1.2   Download File To Programmer

Now that the correct device is selected, the next thing to do is download the file which we have in Floppy Drive A: called 512.int.

> Under Programmer Commands group you should see S. Send File, press S on the keyboard to select the option.

> The Send File To Programmer group menu should now appear in the centre of the screen.

```
┌ Send File to Programmer ┐

  a. I/O Format:
     Intel 16 bit.

  b. Ram Start: 000000
  c. Ram Size:  080000
  d. Offset:   00000000

  e. File Name.
     _

  ENTER. Ok.

```

Make sure that the **I/O Format** is set to Intel 16 bit. If it is not, then see chapter 15.8.

Press **e** to bring up the Open File menu.

```
═══════ Open File ═══════

  a. [..]
  b. [PROJECT]
  c. 512.INT
  d. 27128.INT
  e. 27128.SRC
  f. 2732.INT
  g. 29F010.SBN




  ENTER. Edit File Name.
        _

```

Notice that Programmer Responses has been replaced by Current File Path, this shows the complete path to the currently shown directory.

Move to the directory where you wish to store the file by pressing a. **[..]** to move up the directory path, or by pressing the letter preceding the required sub-directory (shown with **[ ]** around there names).To access a new disk drive, press **a** key from the top (root) directory.

To select the file you want to download, press the letter preceding its name.

The Send File To Programmer group menu will now re-appear.

Press <Enter> to send the file.

During the file transfer to the programmer, the Programmer Responses area will show the percentage of file transferred. Once the file has downloaded, a message in the response window will confirm that the file has been transferred successfully.

## 12.1.3   Program Device

Now that the data has been downloaded to the programmer, the 27C512 device can now be programmed. To program the device simply press the **P** key on the keyboard. After completion, a message in the Programmer Response area will confirm a successful program. To program more devices, just press the **P** key again.

# 13   Device Options Group Menu

```
╔══ Device Options ══╗
║                    ║
║  1. Manufacturer:  ║
║     INTEL          ║
║                    ║
║  2. Name / Number: ║
║     27C512-XX      ║
║                    ║
║  3. Pre Prog. Checks: ON ║
║                    ║
║  4. Security:      N/A   ║
║                    ║
║  5. Bit Mode:      8 Bit ║
║                    ║
║  6. Ram Start:    000000 ║
║                    ║
║  7. Device Start: 000000 ║
║                    ║
║  8. Device Stop:  00FFFF ║
║                    ║
╚════════════════════╝
```

The **Device Options** group menu controls all options relating to the selected device. The Device Options group menu has five basic options.

1.   Select a new device.

2.   Enabling / disabling pre program checks.

3.   Configuring security fuse options.

4.   Configuring programmer bit mode.

5.   Configuring memory and device limits.

## 13.1   Manufacturer

The Manufacturer entry displays the currently selected device manufacturer, select this option by pressing the **1** key to select a new manufacturer.

Press the **1** key to display the Device Manufacturer menu group

```
╔═══ Device Manufacturer ═══╗
║                           ║
║  a.  AMD                  ║
║  b.  ATMEL                ║
║  c.  CATALYST             ║
║  d.  CYPRESS              ║
║  e.  FUJITSU              ║
║  f.  HITACHI              ║
║  g.  ICT                  ║
║  h.  INTEL                ║
║  i.  ISSI                 ║
║  j.  MACRONIX             ║
║  k.  MICROCHIP TECHNOLOGY ║
║  l.  MITSUBISHI           ║
║  m.  NATIONAL             ║
║  n.  NEC                  ║
║  o.  OKI                  ║
║  p.  PHILIPS              ║
║  q.  SAMSUNG              ║
║                           ║
╚══════════════════PgDn═════╝
```

Use the **Page Up** and **Page Down** keys to locate the page with the manufacturer that you wish to select.

Press the key on the keyboard that precedes the manufacturer that you wish to select.

Press the **Esc** key to maintain the previous manufacturer selection.

Selecting a new manufacturer will display the Device Name / Number menu group.

## 13.2   Name / Number

The Name / Number entry displays the currently selected device name or number, select this option by pressing the **2** Manufacturer key to select a new device.

Press the **2** key to display the Device Name / Number menu group

```
═ Device Name / Number ═

a. 2716-XX
b. 2732A-XX
c. 2764A-XX
d. 27128A
e. 27256-XX
f. D27C256-XX
g. P27256-XX
h. P28F256A-XX
i. 27512-XX
j. 27C512-XX
k. P28F512-XX
l. 27C010-XX
m. P28F010-XX
n. 27C020-XX
o. P28F020-XX
p. 27C040-XX
```
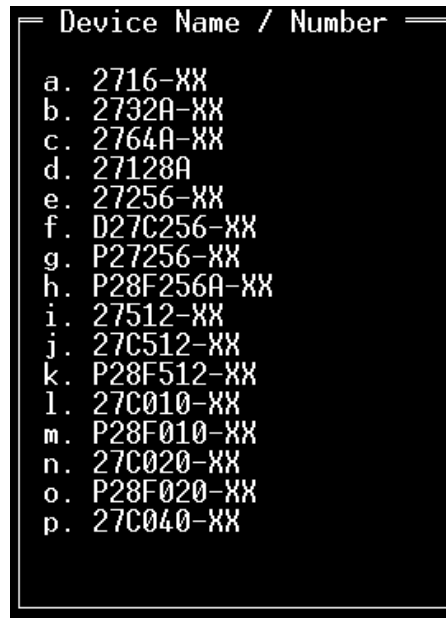
Use the **Page Up** and **Page Down** keys to locate the page with the device that you wish to select.

Press the key on the keyboard that precedes the device name that you wish to select.

Press the Esc key to maintain the previous device selection.

## 13.3   Pre Prog. Checks

The **Pre Prog. Checks** option informs you whether pre program checks are enabled or disabled. If checks are enabled then the option will display ON, otherwise the option will display OFF.

Press the **3** key to toggle the state of the pre program checks that are applied to the device prier to the program cycle.

> **!** **The actual checks applied depends on how the programmer is configured. These checks cannot be altered from within StagCom DOS application. To find out, and/or change the tests applied, consult Section 1 of this manual.**

## 13.4  Security

The **Security** option informs you whether security fuse programming is enabled or disabled. If any security fuses are enabled then the option will display ON. If no security fuses are enabled, then this option will display OFF.

If the selected device has no security fuses, then this option will display N/A.

Press the **4** key to display the Set Security Options group menu.

```
═══ Set Security Options ═══

 a. Security Fuse. 0 (*)
 b. Security Fuse. 1 ( )
 c. Security Fuse. 2 ( )
 d. Security Fuse. 3 (*)
 e. Security Fuse. 4 ( )
 f. Security Fuse. 5 ( )
 g. Security Fuse. 6 (*)
 h. Security Fuse. 7 (*)

 ENTER. Ok.
```

The menu will display the list of valid security fuses for the selected device. Security fuses that have been enabled will have an asterisk (*) following them, those that are disabled will not.

Use the letter preceding each security option to enable or disable that security fuse.

Press the <**Enter**> key to close the menu when you have finished making your changes.

Press the **Esc** key to cancel this menu.

> **!** **The number of available security fuses depends on the device selected.**

> **!** **Some devices use the security fuse option to support non-standard, miscellaneous features. Please consult the 'Device specific information' section in your programmer device support list for further details.**

## 13.5   Bit Mode

The **Bit Mode** option informs you which programming bit mode will be applied to the device. If the device is a 16 bit device (rather than 8 bit), then the order in which the bytes are mapped to the device is also shown. This option is only available for memory devices.

Press the **5** key to display the Device Bit Mode group menu.

Menu for 8 bit devices                     Menu for 16 bit devices

```
┌── Device Bit Mode ──┐          ┌── Device Bit Mode ──┐
│                     │          │                     │
│  a. 8 Bit.          │          │  a. 16 Bit. (Even)  │
│  b. 16 Bit.         │          │  b. 16 Bit. (Odd)   │
│  c. 32 Bit.         │          │  c. 32 Bit. (Even)  │
│                     │          │  d. 32 Bit. (Odd)   │
│                     │    or    │                     │
│                     │          │                     │
│                     │          │  NOTE:              │
│                     │          │      Odd forces     │
│                     │          │  odd addr onto D0-D7,│
│                     │          │  even addr onto D8-D15.│
│                     │          │                     │
│                     │          │      Even forces    │
│                     │          │  even addr onto D0-D7,│
│                     │          │  odd addr onto D8-D15.│
└─────────────────────┘          └─────────────────────┘
```

To change the bit mode, press the letter preceding the new mode that you wish to select.

For 16 bit devices, selecting **Odd** bit modes will place data from odd addresses onto d0 to d7, and data from even addresses onto d8 to d15 of the device. Selecting **Even** bit modes will place data from even addresses onto d0 to d7, and data from odd addresses onto d8 to d15 of the device.

Press the **Esc** key to cancel this menu.

## 13.6   Ram Limits

The **Ram Start** option displays the programmer address (in bytes) from where the first byte of data will be accessed. This option is not available for PLD type devices.

The **Device Start** option displays the address (in device addresses) from where the device will be first be accessed. This option is not available for PLD type devices

The **Device Stop** option displays the address (in device addresses) of the last device address to be accessed. This option is not available for PLD type devices

Press the **6**, **7** or **8** key to display the Address Limits group menu.

```
╔════ Address Limits ════╗
║                        ║
║  Ram Start:    000000   ║
║  Device Start: 000000   ║
║  Device Stop:  03FFFF   ║
║                        ║
║                        ║
║                        ║
║                        ║
║                        ║
║                        ║
║                        ║
║                        ║
║                        ║
╚════════════════════════╝
```

If key **6** was pressed, then the edit cursor will now appear over the Ram Start data field.
If key **7** was pressed, then the edit cursor will now appear over the Device Start data field.
If key **8** was pressed, then the edit cursor will now appear over the Device Stop data field.

Type in the new address and then press <**Enter**> to accept the new address.

Press **Esc** to cancel this menu.

# 14  Application Options Group Menu

```
┌─ Application Options ─┐
│                       │
│  X. Communications.   │
│                       │
│  D. Device Statistics.│
│                       │
│  M. Set Entire RAM To │
│     Unprogrammed State.│
│                       │
│  E. Edit RAM.         │
│                       │
│  N. Prog. Emulation: OFF│
│                       │
│  U. Update Programmer.│
│                       │
│  Q. Quit Application. │
│                       │
│  Z. Quit Application and│
│     Enter Local Mode. │
│                       │
└───────────────────────┘
```

The **Application Options** group menu controls all options not relating to the selected device. The Application Options group menu has five basic options.

1.  Set new programmer link options.

2.  Set programmer ram to unprogrammed state.

3.  Edit programmer ram.

4.  Update device algorithms in the connected programmer.

5.  Exit (quit) StagCom DOS Application.

## 14.1   Communications

The Communications option allows you change the port configuration that is used to link with the programmer.

Press the **X** key to display the Communications group menu.

```
┌─ Communication Options ─┐
│                         │
│ PORT                    │
│ a. LPT1 (378)           │
│ b. LPT2 (278)           │
│ c. LPT3 (3BC)           │
│ d. COM1 (3F8) PARITY    │
│ e. COM2 (2F8) n. NONE   │
│ f. COM3 (3E8) o. ODD    │
│ g. COM4 (2E8) p. EVEN   │
│                         │
│ BAUD RATE    STOP BITS  │
│ h.   2400    q. 1       │
│ i.   4800    r. 2       │
│ j.   9600               │
│ k.  19200               │
│ l.  38400               │
│ m. 115200    ENTER. ok  │
│                         │
│   COM2:38400,N,8,1      │
└─────────────────────────┘
```

Use the **Port** letters **a .. g** to select the communications port to which the programmer is connected. Valid ports are Com1 .. Com4, LPT1 .. LPT3.

Use the **Baud Rate** letters **h .. m** to select the same baud rate that the programmer is configured to. 115200 baud is highly recommended for the quickest programmer response times.

Use the **Stop Bits** letters **q .. r** to select the same setting that the programmer is configured to.

Use the **Parity** letters **n .. p** to select the same parity setting that the programmer is configured to.

> **!** **If parity is enabled (i.e. set to even or odd) then only seven data bits are set. The consequence is that you will not be able to send or receive binary format files to or from the programmer. Configure parity option to None for complete functionality.**

The current configuration is shown at the bottom of the group menu, and get updated each time you change a setting.
Press **Enter** key to close the Communications group when you have finished.

## 14.2 Device Statistics

The **Device Statistics** option displays the programming and verification statistics for the selected device, that is the statistics are reset to zero when a new device is selected.

Press the **D** key to display the Communications group menu.

```
┌─ Device Statistics ─┐
│                     │
│ Program Statistics  │
│ Handled:      00000 │
│ Passed:       00000 │
│ Failed Pre-Prog:  00000 │
│ Failed Post-Prog: 00000 │
│                     │
│ Verify Statistics   │
│ Handled:      00000 │
│ Passed:       00000 │
│ Failed:       00000 │
│                     │
│ R. Reset Counters.  │
│                     │
│ ENTER ok.           │
│                     │
│                     │
└─────────────────────┘
```

**Program Statistics** group displays statistics relating to the programming cycle.

> **Handled:** displays the total number of programming attempts <u>not including</u> device connection failures or other non-device errors.
> **Passed:** displays the number of devices that have successfully completed a programming cycle with no errors occurring.
> **Failed Pre-Prog:** displays the number of devices that have failed before the programming starts. This is usually due to a part that is not erased, or unprogrammed before the programming cycle starts.
> **Failed Post-Prog:** displays the number of devices that have not programmed correctly or have failed the post-program verify test.

**Verify Statistics** group displays statistics relating to the verify function.

> **Handled:** displays the total number of verification attempts <u>not including</u> device connection failures or other non-device errors.
> **Passed:** displays the number of devices that have successfully verified against the programmer memory with no errors occurring.
> **Failed:** displays the number of devices that have failed to verify with the programmer memory.

To Reset the statistics data to zero, select the **R** key.

## 14.3   Set Ram To Unprogrammed State

The **Set Entire Ram To Unprogrammed State** option will set the entire memory in the programmer to the unprogrammed state of the currently selected device.

Press the **M** key to set the programmer memory to the unprogrammed state.

There are several advantages in clearing the ram before downloading a file, or loading a device into the programmer.

1.   If you are creating a master device from a file that does not cover the full addressing range of the device that you wish to program, then there will be data programmed into the device of an unpredictable nature.

    If at a later date, you program another device from the same file, the checksums (and data content) of the second device will not match that of the master.

2.   Unused areas of the device that are set to the unprogrammed state will not be programmed during the program cycle, hence the time required to program the device will be reduced.

## 14.4   Edit Ram

The Edit option, invoked by pressing the **E** key, allows you to edit the programmer memory.

```
┌────────── S t a g C o m   D O S   A p p l i c a t i o n ──────────┐
│                                                                   │
│ ┌ Address ─────────────── HEX Format Data ───────┐┌ ASCII Format Data ─┐│
│ │ ------  0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F  0123456789ABCDEF │
│ │ 000200 04 03 02 01 00 FE FF FE FD FC FB FA F9 F8 F7 F6  ................ │
│ │ 000210 F5 F4 F3 F2 F1 F0 EF EE ED EC EB EA E9 E8 E7 E6  ................ │
│ │ 000220 E5 E4 E3 E2 E1 E0 DF DE DD DC DB DA D9 D8 D7 D6  ................ │
│ │ 000230 D5 D4 D3 D2 D1 D0 CF CE CD CC CB CA C9 C8 C7 C6  ................ │
│ │ 000240 C5 C4 C3 C2 C1 C0 BF BE BD BC BB BA B9 B8 B7 B6  ................ │
│ │ 000250 B5 B4 B3 B2 B1 B0 AF AE AD AC AB AA A9 A8 A7 A6  ................ │
│ │ 000260 A5 A4 A3 A2 A1 A0 9F 9E 9D 9C 9B 9A 99 98 97 96  ................ │
│ │ 000270 95 94 93 92 91 90 8F 8E 8D 8C 8B 8A 89 88 87 86  ................ │
│ │ 000280 85 84 83 82 81 80 7F 7E 7D 7C 7B 7A 79 78 77 76  ..........zyxwv │
│ │ 000290 75 74 73 72 71 70 6F 6E 6D 6C 6B 6A 69 68 67 66  utsrqponmlkjihgf │
│ │ 0002A0 65 64 63 62 61 60 5F 5E 5D 5C 5B 5A 59 58 57 56  edcba'_^]\[ZYXWV │
│ │ 0002B0 55 54 53 52 51 50 4F 4E 4D 4C 4B 4A 49 48 47 46  UTSRQPONMLKJIHGF │
│ │ 0002C0 45 44 43 42 41 40 3F 3E 3D 3C 3B 3A 39 38 37 36  EDCBA@?>=<;:9876 │
│ │ 0002D0 35 34 33 32 31 30 2F 2E 2D 2C 2B 2A 29 28 27 26  543210/.-,+*)('& │
│ │ 0002E0 25 24 23 22 21 20 1F 1E 1D 1C 1B 1A 19 18 17 16  %$#"! .......... │
│ │ 0002F0 15 14 13 12 11 10 0F 0E 0D 0C 0B 0A 09 08 07 06  ................ │
│ └────────────────────────────────────────────────┘└────────────────────┘│
│                                                                   │
│ TAB: Edit ASCII.    SPACE: Edit Address:000200.                   │
│ ESC: Finish Editing.                                              │
│                                                                   │
└───────────────────────────────────────────────────────────────────┘
```

The edit display is broken down into three main areas.

**Address**              This column shows the programmer address for the first byte of data of each row.

**Hex Format Data**      This area shows the data for the selected address in hexadecimal format.

**ASCII Format Data**    This area shows the data for the selected address as ASCII characters.

Use the **SPACE** bar to select the first address of the page to be shown. Use the cursor keys to move around the hex format data area to access the data you wish to edit, the currently accessed address is shown at the bottom of the display. Use the PgUp & PgDn keys to display the next and previous page of data.
Use the **TAB** key to toggle between editing the data in hex form or as ASCII form

Note. If Programmer emulation is ON, then the data for the selected address is updated from the programmer as you move the cursor over the data. This is to ensure that the editor keeps up to date with dynamically changing data in the programmer. Pages where no editable ram is fitted in the programmer will not be displayed.

## 14.5   Programmer Emulation

The Prog. Emulation option informs you whether programmer emulation is enabled or disabled. If programmer emulation is enabled then the option will display ON, otherwise the option will display OFF.

Press the **N** key to toggle the state of the programmer emulation mode. Please see your programmer user manual for more information about emulation.

Note, This option will not be shown unless a memory device is selected and the programmer connected supports emulation via remote control.

## 14.6   Update Programmer

The **Update Prog.** option allows you update the software inside your programmer.

Programmer update disks are released regularly by Stag, contact your Stag representative for more information.

Press the **U** key to display the Communications group menu.

```
╔══ Update Programmer ══╗
║                       ║
║  Programmer Serial No.║
║       00000014        ║
║                       ║
║  Authorisation Code?  ║
║       00000000        ║
║                       ║
║ a. Update Disk in A:  ║
║                       ║
║ b. Update Disk in B:  ║
║                       ║
╚═══════════════════════╝
```

Use **Authorisation Code?** to enter the update authorisation code obtained from your Stag representative. When obtaining your authorisation code, you will need to quote the programmer serial number (**Programmer Serial No.**) for your programmer.

> **!** **If the connected programmer does not have an internal serial number, then these items are not required and will not be displayed.**

Use **Update disk** options to select the drive in which the programmer update disk is located.

The programmer update process will now begin, if your update disk also contains a programmer .DAT file, then this file will automatically replace your existing one.

On completion of the update process the application will finish. Restart the application in the usual way.

## 14.7   Quit Application

To finish your StagCom DOS Application session and leave the programmer in remote mode, press the **Q** key.

To finish your StagCom DOS Application session and return the programmer in local mode, press the **Z** key.

The screen will clear, and the DOS prompt will re-appear.

## 14.8 Batch Processing

The Batch processing feature enables you to execute an ASCII file containing a sequential list of commands, so for example you could have a file that selects a particular device, downloads the program data file and then programs a thousand devices.

All commands that StagCom perform are duplicated by the batch process commands. Batch files can be created with any ASCII editor including DOS Edit and Windows Notepad.

If the programmer returns an error message during the execution of a batch file then you will be prompted to specify the action is to be taken (Abort, Retry, Ignore). Abort will stop the batch file. Retry will retry the command and Ignore will go on to the next command.

1. Only one command per line is allowed.
2. Any data after the command will be ignored and may therefore be used as comments.
3. Commands sent and programmer responses to the commands are displayed in the response window so that you can monitor what is going on.
4. The batch process can be stopped before execution of the next command by press the Escape key.
5. Commands may be repeated 'n' times by placing the required count before the command e.g. 30DV will verify the device 30 times.
6. A pause can be added before a command is executed by adding '!'.
   e.g. 50!DP will program 50 devices with a pause between each program cycle to allow the insertion of the next device into the programmer socket.
7. Messages can be placed in the batch file to prompt the user.
8. The command set is not case sensitive so 'dp' is the same as 'DP'.

The command set is based on the menu bar short cut key codes and are as follows:-

| | |
|---|---|
| DE | Device empty check. |
| DL | Device load. |
| DP | Device program. |
| DS xxxxxx | Device select. xxxxxx = 6 digit device code. |
| DT | Device vector test. |
| DV | Device verify. |

| | |
|---|---|
| FR  "filepath\name" | Receive file from programmer. |
| FRF n | Set receive file i/o format n, |

|  |  |
|---|---|
| n = 0 = Jedec | 4 = Intel 16 |
| 5 = Motorola S Record | 6 = Tek Hex |
| 7 = Extended Tek Hex | 8 = Stag Hex |
| 9 = ASCII Hex Space | 10 = Stag Binary |
| 12 = Binary Rubout | 13 = Binary |
| 17 = POF | 18 = Intel 32 |
| 19 = LOF. | |

| | |
|---|---|
| FRR aaaaaa | Ram start address where data shall be read from during file receive. |
| FRS aaaaaa | byte count (size) of received file. |
| FRO aaaaaaaa | Offset used during file receive. |
| FS "filepath\name" | Send file to programmer. |
| FSF n | Send file io format (see FRF for details). |
| FSR aaaaaa | Ram start address where data shall be placed during send file. |
| FSS aaaaaa | Max. number of bytes of file to store in programmer during send. |
| FSO aaaaaaaa | Offset used during file send. |

| | |
|---|---|
| MC | Display programmer memory CRC. |
| ME aaaaaa hh hh … | Memory edit, place hex data bytes hh at location aaaaaa onwards. |
| MEF a b hh | Memory edit fill ram between address a & b with hex data byte hh. |
| MEU | File entire memory with unprogrammed state. |
| MH | Display programmer memory checksum. |
| ML a a a | Set memory/device limits (parameters = ramstart devstart devstop). |
| MO | Display open link count. |
| OD "filepath" | Set new data file path for connected programmer. |
| OM u s w | Set new bit mode, u=units per set, s=num of sets, w=width, please see RM & SM commands in the Remote Operation appendix of your programmer manual for valid modes |
| OP test | Pre program checks, Valid options are |

> 'OP NONE' to disable pre program checks.
> 'OP BIT' to apply device illegal bit checks test
> 'OP EMPTY' to apply device empty check

| | |
|---|---|
| OS hh | Set security fuse mask eg 01=SF0, 02=SF1, C3=SF7,6,1,0 etc. |
| ! | Display the pause dialog box, inviting the operator to insert a new device. |
| ; | Comment line (any text after other commands are also comments). |
| "user text" | Displays a message on the screen containing the entered user text. You can add 'format commands' to the string to change how the text is laid out. The commands are: |

        \a        Sound speaker horn.
        \n        Start a new line.
        \t        horizontal tab.
        \\        insert \ character in string.
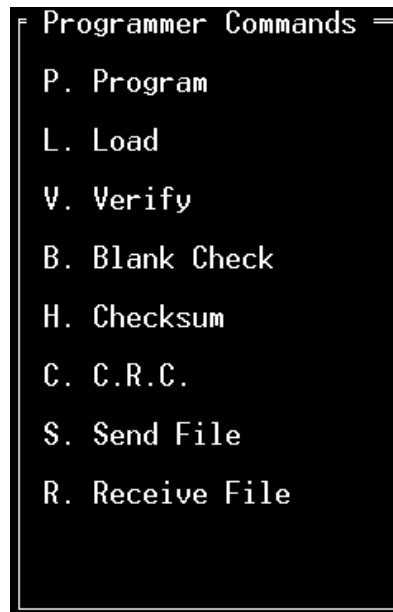        \"        insert " character in string.

The example
    "\aInsert device:\t\"110\\570\"\nInto programmer socket."

Will sound the horn then display
    *Insert device:        "110\570"*
    *Into programmer socket.*

# 15   Programmer Commands Group Menu

```
┌─ Programmer Commands ═┐
│                       │
│ P. Program            │
│                       │
│ L. Load               │
│                       │
│ V. Verify             │
│                       │
│ B. Blank Check        │
│                       │
│ H. Checksum           │
│                       │
│ C. C.R.C.             │
│                       │
│ S. Send File          │
│                       │
│ R. Receive File       │
│                       │
│                       │
└───────────────────────┘
```

The **Programmer Commands** group menu controls all commands relating to the selected device. The Programmer Commands group menu has ten basic options.

1.   Program a device from the programmer memory.

2.   Load a device into the programmer memory.

3.   Verify a device against the programmer memory.

4.   Check a device for the unprogrammed state.

5.   Display checksum of the programmer memory.

6.   Display the cyclic redundancy check of the programmer memory for memory devices.

7.   Display the open link count of the programmer memory for PLD type devices.

8.   Download a file to the programmer memory.

9.   Upload programmer memory to a file.

10.  Apply test vectors to PLD type devices.

## 15.1   Program

Press the **P** key if you wish to program the selected device with data from the programmer's memory.

Selecting this option will initiate the following:

1.     Apply pre-program checks (if they are enabled).

2.     Program device from memory.

3.     Apply verification checks.

4.     Program security fuses (if enabled).

5.     Apply test vectors (if applicable).

If a programmer bit mode is selected which is wider than the selected device, then you will be prompted to specify which device within the set you wish to program.

Select **Device 0** to program device with even address data.

Select **Device 1** to program device with odd address data.

Once programming is completed, the Response Window will be updated, indicating the status of the programming attempt.

## 15.2  Load

Press the **L** key if you wish to load the contents of the selected device into the programmer's memory.

If a programmer bit mode is selected which is wider than the selected device, then you will be prompted to specify which device within the set you wish to load.

Select **Device 0** to load device into even addresses.

Select **Device 1** to load device into odd addresses.

Once the device has been loaded, the Response Window will be updated, indicating the status of the load attempt.

## 15.3   Verify

Press the **V** key if you wish to verify the contents of the selected device against the programmer memory.

If a programmer bit mode is selected which is wider than the selected device, then you will be prompted to specify which device within the set you wish to verify.

Select **Device 0** to verify device against even address data.

Select **Device 1** to verify device against odd address data.

Once the device has been verified, the Response Window will be updated, indicating the status of the verify attempt.

## 15.4   Blank Check

Press the **B** key if you wish to check the selected device against the unprogrammed state.

Once the device has been checked, the Response Window will be updated, indicating the status of the blank check attempt.

## 15.5  Checksum

Select this option by pressing **H** if you wish to display the checksum of the programmer's memory.

If a programmer bit mode is selected which is wider than the selected device, then you will be prompted to specify which device within the set you wish to checksum.

Select **Device 0** to display the checksum of data in even addresses.

Select **Device 1** to display the checksum of data in odd addresses.

Once the checksum has been calculated, the Response Window will be updated, indicating the new checksum.

For non PLD type devices, the range of the calculation is determined by the device limits, which are displayed in the Device Options group menu. To change these limits, see Chapter 13.6 Limits.

For PLD type devices, the range of the calculation is the fixed to the entire range of the device.

## 15.6  Cyclic Redundancy Check (C.R.C.)

Select this option by pressing **C** if you wish to display the C.R.C. of the programmer's memory.

If a programmer bit mode is selected which is wider than the selected device, you will be prompted to specify of which device within the set you wish to obtain the C.R.C.

Select **Device 0** to display the C.R.C. of data in even addresses.

Select **Device 1** to display the C.R.C. of data in odd addresses.

Once the C.R.C. has been calculated, the Response Window will be updated, indicating the new value.

Note: This function is not available for PLD type devices.

## 15.7   Open Link Count

Select this option by pressing **C** if you wish to display the open link count of the programmer memory, for the currently selected device.

Once the open link count has been calculated, the Response Window will be updated, indicating the new value.

Note: this function is only available for PLD type devices.

## 15.8   Send

Select this option by pressing **S** if you wish to download a file to the programmer.

Pressing **S** will display the Send File To Programmer group menu.

```
┌ Send File to Programmer ┐
│                         │
│  a. I/O Format:         │
│     Intel 16 bit.       │
│                         │
│  b. Ram Start: 000000   │
│  c. Ram Size:  080000   │
│  d. Offset:   00000000  │
│                         │
│  e. File Name.          │
│     _                   │
│                         │
│  ENTER. Ok.             │
│                         │
│                         │
│                         │
└                         ┘
```

By pressing **a**, use the **I/O Formats** menu to select the format of the data file that you want to send to the programmer.

By pressing **b**, use **Ram Start** to change the default programmer address to where the first byte of data will be sent.
Note: this option is not available for PLD type devices.

By pressing **c**, use **Ram Size** to limit the number of bytes in the data file downloaded to the programmer. The default size is set to the size of RAM fitted in the programmer so that all data in the file will be stored in the programmer's RAM.
Note: this option is not available for PLD type devices.

By pressing **d**, use **Offset** to change the run address of the data sent to the programmer. The default run address is the same as the RAM address.
Note: this option is not available for PLD type devices.

By pressing **e**, use the **File Name** menu to locate the desired data file.

Press **Enter** key to start the download process, the Programmer Response area also shows the progress of file transfer.

## 15.9 Receive

Select this option by pressing **R** if you wish to upload a file from the programmer.

Pressing **R** will display the Receive File group menu.

```
╔══════ Receive File ══════╗
║                          ║
║ a. I/O Format:           ║
║    Intel 16 bit.         ║
║                          ║
║ b. Ram Start: 000000     ║
║ c. Ram Size:  010000     ║
║ d. Offset:   00000000    ║
║                          ║
║ e. File Name.            ║
║                          ║
║                          ║
║ ENTER. Ok.               ║
║                          ║
╚══════════════════════════╝
```

By pressing **a**, use the **I/O Formats** menu to select the format of the data file that you want to receive from the programmer.

By pressing **b**, use **Ram Start** to change the default programmer address from where the first byte of data will be retrieved.
Note: this option is not available for PLD type devices.

By pressing **c**, use **Ram Size** to change the default number of bytes uploaded from the programmer. The default size = ((device size in device addresses) * (current bit mode/8)). This equation covers the complete range of the selected device in any bit mode.
Note: this option is not available for PLD type devices.

By pressing **d**, use **Offset** to change the run address of the data received from the programmer. The default run address is the same as the RAM address.
Note: this option is not available for PLD type devices.

By pressing **e**, use the **File Name** menu to locate the desired data file.

Press **Enter** key to start the upload process, the Programmer Response area also shows the amount of data transferred.

## 15.10  Vector Test

Select this option by pressing **T** if you wish to apply test vectors to the selected device.

This option is only available for PLD type devices. Test vectors must also be downloaded to the programmer first, using a file containing test vectors.

Once the vectors have been applied to the device, the Response Window will be updated, indicating the status of the vector test attempt.