

ST Visual Programmer (STVP)

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Introduction to ST Visual Programmer (STVP)

STVP is a Windows interface that lets you:

- View, edit and save executable files in the Hex (Intel) and .S19 (Motorola) formats, generated by the Assembler, Linker or C Compiler for ST microcontrollers.
- Blank Check EPROM or FLASH contents of ST microcontrollers.
- Program EPROM/EEPROM/FLASH/Option Byte of ST microcontrollers.
- Erase FLASH ST microcontrollers.
- View and verify a ST microcontroller's memory contents.

STVP is the user interface for ST EPROM Programming Boards (EPBs) and ST Development Kits (DVPs) . It is installed on a PC running Windows® 98, Millennium®, 2000®, NT®, XP® or Vista®, connected to the EPB or DVP.

Two methods can be used to program ST microcontrollers with STVP: you can either create a [project](#) that defines the programming environment and procedure to follow, or load data from the master device and then program it.

We recommend that you use projects, since they provide you with greater control over the programming procedure.

NOTES:

1: STVP configures itself in order to display only the existing memory area for each device.

2: Under Windows® NT®4, 2000®, XP® and Vista®, during installation of STVP, PARSTM driver version is checked and compared to the one installed on the PC: if PARSTM driver is not installed or PARSTM driver version is less than 1.5, it will be installed.



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- **Toolbar**: The toolbar contains a number of buttons which provide another means of access to the principal STVP functions. Place the mouse pointer over a button to display a popup which describes the function of that button.
- **Device status area**: The device status area displays the current hardware configuration and settings.
- **Display area**: The display area displays the details that are stored in the STVP buffer for the currently selected tab (see tab menu below).
- **Flash sector area**: The flash sector area allows you to select particular sectors of program memory on which to perform actions.
- **Tab menu**: The tab menu allows you to display a particular memory area in the display area.
- **Output window**: The output window displays the tasks that are performed by STVP as it performs them.
- **Status bar**: The status bar displays the current attributes associated with the Edit window.

The menu bar, toolbar or information area can be transformed into independent always-on-top windows with their own headers, as shown below, by left clicking on their respective **move tabs** and dragging them over (or part over) the display area or on to the desktop outside the frame of the STVP main application window. In this floating form they may be relocated by mouse dragging on the window title bar or any unoccupied area in the window. These areas may be resized in the standard manner by dragging on the edge of the frame (double arrow cursor indicates resize dimension).

In the same manner these areas may be picked up and repositioned anywhere in the STVP main application window.

Use the **resize cursor** to resize the display area, device status window, flash sector area and output window relative to each other.

Menu bar

File Edit Project Configure Read Program Verify Erase Blank-Check View Help

The screenshot displays the STVP software interface. At the top is a menu bar with options: File, Edit, Project, Configure, Read, Program, Verify, Erase, Blank-Check, View, Help. The main window title is "no project - STVP".

The main display area shows a memory dump with addresses from 00E000 to 00E230. The data consists of hexadecimal values, mostly FF FF FF FF. A "Device Status Window" is overlaid on the memory dump, showing the following information:

- PROJECT:** no project
- CONFIGURATION:** Hardware: ST7MDTU2-EPB, Programming mode: Socket, Device name: ST72F62x2, Port: LPT1
- PROGRAM MEMORY status:** [0x00E000 - 0x00EFFF], [0x00F000 - 0x00FFFF], No File, Not programmed, Memory checksum: 0x1FE000
- OPTION BYTE status:** No File, Not programmed, Option byte 0: FF

An "Output Window" is also open, displaying a list of operations such as "Blank check before programming", "Verify after programming", "Clear memory before load", "Erase device memory before programming", "Display a popup window when an error occurs is ON", and "Log activity is OFF".

On the right side, there is a "Select active sectors:" panel with checkboxes for Sector 1 and Sector 0, both of which are checked.

The bottom status bar includes a toolbar with icons for file operations and a dropdown menu showing "ST72F62x2". The status bar also displays "Ready", "@ <0x00E1CE>", "ST7MDTU2-EPB", "ST72F62x2", and "Socket".

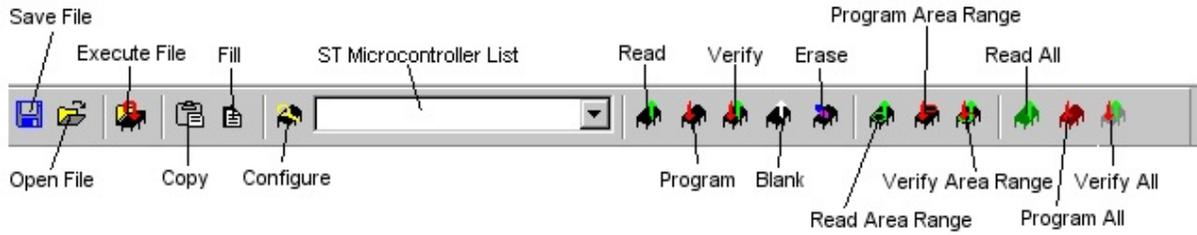




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Toolbar

The diagram below shows the icons of the toolbar:



NOTE: The Erase icon and the Erase All icon are grayed out if the ST microcontroller being used doesn't have FLASH memory.

Description of toolbar icons:

- **Save File icon:** Saves the current file.
- **Open File icon:** Opens a file.
- **Execute File icon:** Executes a file in RAM.
- **Copy icon:** Copies the contents of the whole buffer to the clipboard.
- **Fill icon:** Fills a specified area with a specified value.
- **Configure icon:** Configures Hardware, Port, Programming mode and Device.
- **ST microcontroller type list:** Lists the ST microcontrollers that can be programmed with the hardware device that is currently connected, allowing you to choose one. This is a shortcut for choosing the ST microcontroller device that is currently plugged into the socket without opening the Configuration dialog box.
- **Read icon:** Reads and displays the contents of the ST microcontroller relating to the currently selected tab (Program Memory, Data Memory or Option Byte) in the Display area.
- **Program icon:** Programs the information displayed in the currently selected tab (PROGRAM MEMORY, DATA MEMORY or OPTION BYTE) in the Display area to the ST microcontroller.
- **Verify icon:** Checks that the information displayed in the selected tab (PROGRAM MEMORY, DATA MEMORY or OPTION BYTE) in the Display area is the same as that in the ST microcontroller that is plugged into the hardware device.
- **Blank Check icon:** Checks that the memory area of the ST microcontroller plugged into the hardware device has not been written to.
- **Erase icon:** Erases selected FLASH memory sectors.
- **Read Area Range icon:** Reads the selected area of memory from the ST microcontroller and displays it in the Display area.
- **Program Area Range icon:** Programs the contents of the selected memory area to the EPROM, FLASH or EEPROM of the ST microcontroller.
- **Verify Area Range icon:** Checks that the information of the selected area of memory (EPROM, FLASH or EEPROM) held in

the STVP buffer is the same as that programmed in the same area of memory in the ST microcontroller.

- **Read All icon:** Reads the EPROM, FLASH, EEPROM and Options information from the ST microcontroller and displays it in the Display area.
- **Program All icon:** Programs the current EPROM, FLASH, EEPROM and Options data from STVP to the ST microcontroller.
- **Verify All icon:** Checks that the EPROM, FLASH, EEPROM and Options information in the STVP buffer is the same as that programmed in the ST microcontroller.





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Display area

Displays the details that are stored in the STVP buffer for the currently selected tab (Program Memory, Data Memory or Option Byte). Right-clicking on this area opens a contextual menu of frequently-used commands, such as read, program, verify and so on.

Address	Hexadecimal view	ASCII view
00DE70	FF
00DE80	FF
00DE90	FF
00DEA0	FF
00DEB0	FF
00DEC0	FF
00DED0	FF
00DFE0	FF
00DFF0	FF
00E000	A6 40 B7 42 A6 08 B7 41 4F B7 80 B7 81 B7 82 B7	.&.B...AO.....
00E010	83 9A 81 3C 83 B6 83 A1 0A 26 18 3F 83 3C 82 B6	...<.....&.?<.
00E020	82 A1 3C 26 0E 3F 82 3C 81 B6 81 A1 3C 26 04 3F	..<&.?.<.....<&.?
00E030	81 3C 80 81 0D 43 13 B6 47 AB 50 90 97 B6 46 A9	.<...C..G.P...F.
00E040	C3 B7 46 90 9F B7 47 CD E0 13 B6 4F 80 3F 02 3F	..F...G....O.?.?
00E050	16 A6 FF B7 01 B7 15 CD E0 00 B6 82 B7 14 B6 81
00E060	B7 00 20 F6 80 FF
00E070	FF
00E080	FF
00E090	FF
00E0A0	FF
00E0B0	FF
00E0C0	FF
00E0D0	FF
00E0E0	FF





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Device status area

Displays the current project name (if any), the current [hardware configuration](#), including hardware programming tool, programming mode, ST microcontroller device name and PC communication port. It also shows the program memory, data memory and option byte status of the selected device. Right-clicking in this area opens a contextual menu with the refresh and copy commands. The * character at the end of each memory status name indicate that the area has been modified. If a file is loaded, this character is removed.



```
PROJECT:
FileName: my_project.stp

CONFIGURATION: *
Hardware: ST7MDT20M-EPB
Programming mode: ICP
Device name: ST72F521x4/321x
Port: LPT1

PROGRAM MEMORY status:
[0x00C000 - 0x00DFFF]
[0x00E000 - 0x00EFFF]
[0x00F000 - 0x00FFFF]
No File
Not programmed
Memory checksum: 0x3FC000

OPTION BYTE status:
No File
Not programmed
Option byte 0: FF
Option byte 1: EF
```

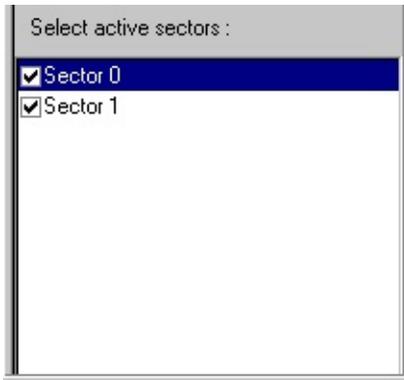
NOTE: To display/hide the device status area select **Device Status** from the **View** menu.



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Flash sector area

When the selected ST microcontroller has FLASH memory then this area is displayed. To select a sector of FLASH memory, click on its check box. When **Active Sector(s)** is chosen from the **Read, Program, Verify, Erase** or **Blank-Check** menus, the corresponding action is only performed on the selected sectors.



NOTE: To display/hide the flash sector area select **Flash Sector** from the **View** menu.





Tab menu

With these tabs, you can display a memory area. Only tabs of existing memory areas of a device are displayed.

There are different combinations of tab menus, here are two examples:

- Device with Program and Data memory:



- Device with Program memory and Option Byte:



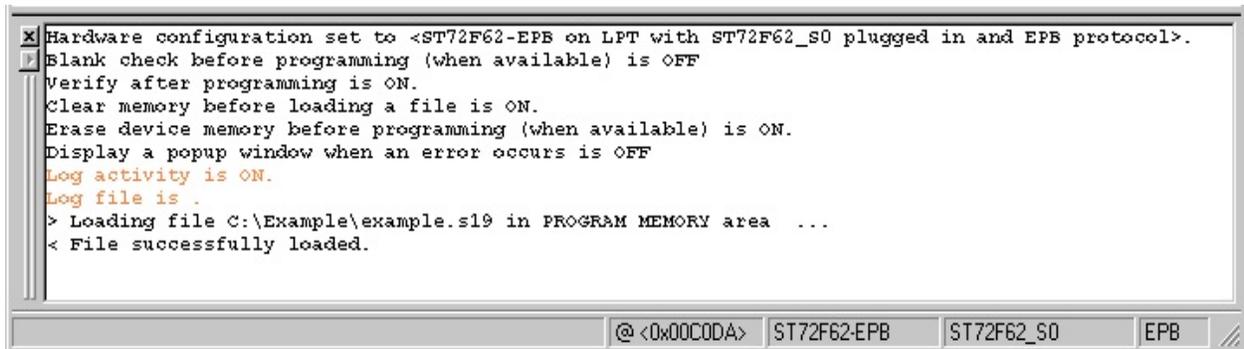


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Output window

Displays the tasks that are performed by STVP as it performs them. Right-clicking on this area opens a frequently-used commands menu, enabling you to clear or copy the contents of the output area to the clipboard.

An example of the output window after loading a file is shown below:



```
x Hardware configuration set to <ST72F62-EPB on LPT with ST72F62_S0 plugged in and EPB protocol>.
Blank check before programming (when available) is OFF
Verify after programming is ON.
Clear memory before loading a file is ON.
Erase device memory before programming (when available) is ON.
Display a popup window when an error occurs is OFF
Log activity is ON.
Log file is .
> Loading file C:\Example\example.s19 in PROGRAM MEMORY area ...
< File successfully loaded.
```

@ <0x00C0DA> ST72F62-EPB ST72F62_S0 EPB

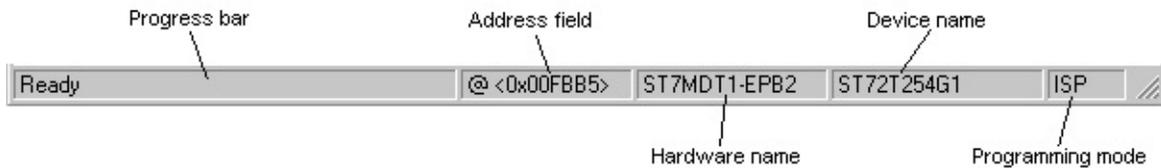




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Status bar

The diagram below shows the status bar:



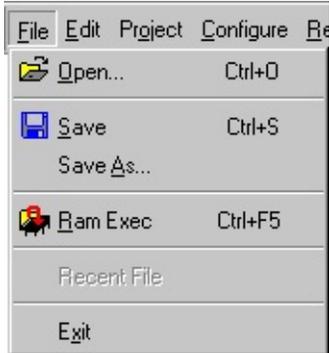
Description of status bar:

- **Progress bar**: Indicates the progress of the current task being executed by STVP during lengthy operations. A red indicator indicates that the ST microcontroller is being programmed and should not be removed. Doing so may damage the programming device or the ST microcontroller. The progress indicator is green for other operations.
The progress bar also indicates what the command that is currently pointed to does.
- **Address field**: Indicates the address of the character on which the cursor is currently placed in the display area.
- **Hardware name**: Indicates the name of the programming board currently selected in the Configure ST Visual Programmer window.
- **Device name**: Indicates the name of the microcontroller currently selected in the Configure ST Visual Programmer window.
- **Programming mode**: Indicates the name of the [programming mode](#) selected in the Configure ST Visual Programmer window.



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File menu



This command:

[Open...](#)

[Save](#)

[Save As...](#)

[RAM Exec](#)

Exit

Does this:

Opens a file.

Saves the currently open file.

Saves the currently open file under a new name.

Executes a file in RAM.

Exits STVP.

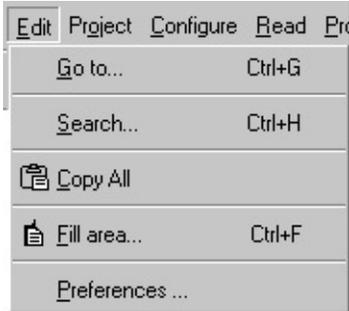
Note: In the Recent File area of the menu will appear a list of the last files that you used. Clicking on a name in the list opens that file.





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Edit menu



This command:

Does this:

[Go to...](#)

Moves the cursor to a specified address.

[Search...](#)

Searches for bytes in the current area.

Copy All

Copies the contents of the selected area (selected from the [tab menu](#)) to the clipboard.

[Fill area](#)

Fills a specified area with a specified value.

Preferences...

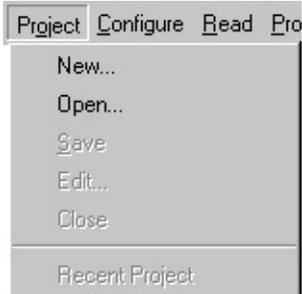
Displays the [properties](#) window.





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Project menu



This command:

[New...](#)

[Open...](#)

Save

[Edit](#)

Close

Does this:

Creates a new project.

Opens a project file.

Saves a project file.

Edits a project.

Saves and Closes the current project into a project file.

The list of file names at the bottom of the menu lists the last project files that you used. Clicking on a name in the list opens that file.



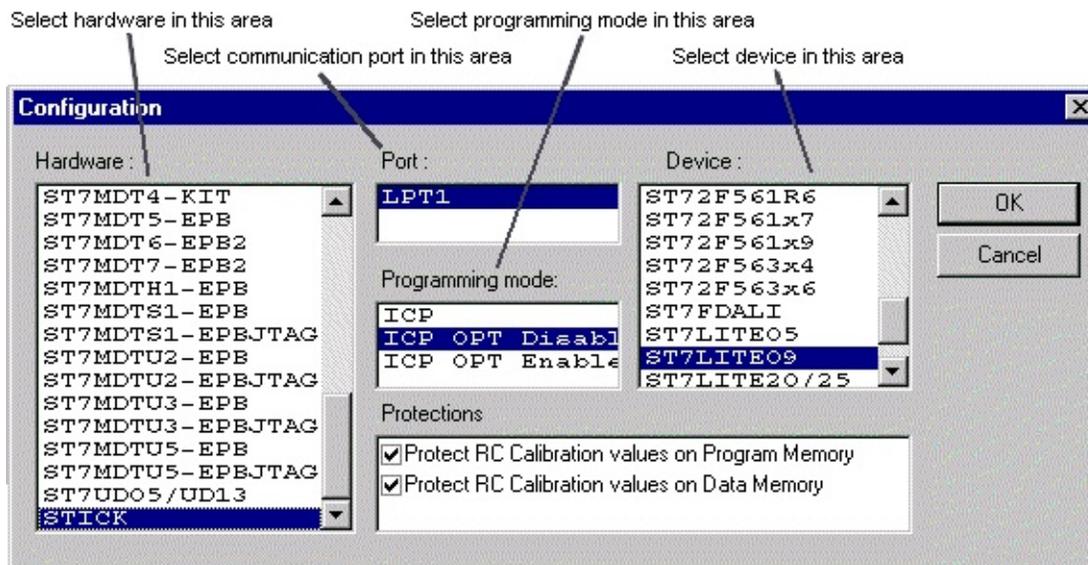


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Configure menu

When you select **Configure ST Visual Programmer** from the **Configure menu** (or press the  button), the Configuration dialog box opens.

This dialog box allows you to choose a hardware programming tool, a PC communication port, a programming mode and a ST microcontroller device.



1. From the *Hardware* list, select the programming board hardware that you are using (the specific EPB or DVP, or STICK).
2. From the *Port* list, select the parallel port on the host PC to which the EPB or DVP is connected. Only the ports that are compatible with the selected hardware are listed.
3. From the *Programming mode* list, select the [programming mode](#) you want to use. Programming modes available depend upon the hardware you have, and can include:
 - Socket - This option means that you wish to program your target ST MCU using one of the sockets provided on the EPB or DVP.
 - ISP -This option is only available with certain EPBs and DVPs. Choose this option if you wish to use In Situ Programming to program a device already mounted on your application board via a flex cable connection

between the EPB/DVP and your application board.

- ICP - Only available for FLASH devices. Choose this option if you wish to use In Circuit Programming to program a device already mounted on your application board via a flex cable connection between the EPB/DVP and your application board. For certain devices, two ICP modes exists: "ICP OPT Enable" or "ICP OPT Disable", see the details in [programming mode](#).
4. From the *Device* list, select the ST microcontroller you want to program.
 5. When some devices in the *Device* list are selected (such as the ST7LITE09), an additional *Protections* list will appear in which you can choose to protect certain values when programming. However, most devices do not have this option. Information on RC Calibration values are given in [How to restore default RC Calibration values](#) topic.
 6. Click **OK** to save your changes and close the dialog box.
 7. To view your configuration settings, select **Device Status** from the View menu. The *Device Status* area displays the current configuration settings.

TIP: You can also select a ST microcontroller from the drop-down list in the main window toolbar.

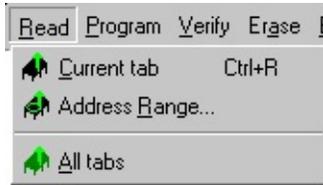
NOTE: There are two ways of programming a FLASH or EEPROM ST microcontroller device. You can program it by plugging it onto the hardware programming tool socket and selecting the device name (STxxx) or, you can program it by using the EPB or DVP and an ISP or ICP connector to your application board and selecting ISP or ICP programming mode and the device name.





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Read menu



Can include the following commands:

This command:

Does this:

Current tab

Reads from the ST microcontroller and displays the contents of the selected memory tab.

[Active Sector\(s\)](#)

Reads from the ST microcontroller and displays the contents of the selected sectors.

[Address Range...](#)

Reads from the ST microcontroller and displays the contents of the selected memory area from the selected memory tab.

All tabs

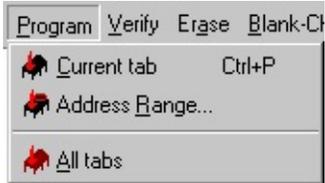
Reads from the ST microcontroller the contents of all existing memory and Option byte information.





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Program menu



Can include the following commands:

This command:

Does this:

Current tab

Writes to the ST microcontroller the contents of the selected memory tab.

[Active Sector\(s\)](#)

Writes to the ST microcontroller the contents of the selected sector(s).

[Address Range...](#)

Writes to the ST microcontroller the contents of the selected memory area from the selected memory tab.

All tabs

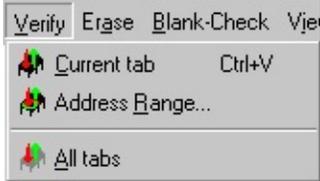
Writes to the ST microcontroller the contents of all existing memory and Option byte information.





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Verify menu



Can include the following commands:

This command:

Does this:

Current tab

Checks that data displayed in selected memory tab is identical to the corresponding ST microcontroller memory.

[Active Sector\(s\)](#)

Checks that data displayed in selected sector(s) is identical to the corresponding ST microcontroller memory.

[Address Range...](#)

Checks that data displayed in the selected memory area from the current memory tab is identical to the corresponding ST microcontroller memory.

All tabs

Checks that all memory data and Option byte are identical to ST microcontroller contents.





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Erase menu



These commands are valid only for FLASH memory of the ST microcontroller.

Can include the following commands

This command:

[Active Sector\(s\)](#)

Does this:

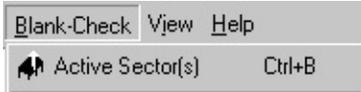
Erase selected sector(s).





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Blank-Check menu



Can include the following commands:

This command:

Does this:

Current tab

Checks that memory data in current tab is not programmed.

[Active Sector\(s\)](#)

Checks that memory data in selected sector(s) is not programmed.





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View menu

Includes the following commands:

This command:

Does this:

[Toolbar](#)

Displays/hides the toolbar. When **Toolbar** is checked, the toolbar is displayed.

[Status Bar](#)

Displays/hides the status bar. When **Status Bar** is checked the status bar is displayed.

[Device Status](#)

Displays/hides the device status window. When **Device Status** is checked the device status window is displayed.

[Output](#)

Displays/Hides the output window. When **Output** is checked the output window is displayed.

[Flash Sector](#)

Displays/Hides the flash sector window. When **Flash Sector** is checked the flash sector window is displayed.

NOTE: The Flash Sector command is grayed out if the ST microcontroller device in use doesn't have FLASH memory.





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Help menu

Includes the following commands:

This command:	Does this:
Index	Presents this STVP online help.
Using Help	Explains how to use Help.
About...	Gives information about the programming tool (hardware & software).





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A typical programming session

The following instructions describe how you should program a ST microcontroller using STVP.

Make sure that the ST microcontroller is plugged into the hardware programming tool socket.

1. [Configure STVP](#).
2. [Open the files holding the data to program](#).
3. Check that the ST microcontroller memory has not already been programmed: in the STVP main window, click on **Blank-Check>Current tab** or **Blank-Check>Active Sectors**. Or you can also set the "Blank check before programming" option in the Edit/Preferences dialog box.
4. Execute the programming session: in the STVP main window, click on **All tabs** in the **Program** menu (or press the  button).
5. Check that the programming session was successfully completed: in the STVP main window, click on **All tabs** in the **Verify** menu (or press the  button). Or set the "Verify after programming" option in the Edit/Preferences dialog box.

NOTE: For additional information refer to [Using Projects/What is a project ?](#).

TIP: Press the ESC key to abort the programming device process.





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Checking memory is blank

To blank check memory:

1. Make sure that the ST microcontroller is plugged into the hardware programming tool socket.
2. Make sure that the hardware is correctly configured, follow the instructions given in [Configuring STVP](#).
3. To blank check EPROM memory area, click on **Current tab** in the **Blank-Check** menu.

To blank check one or more FLASH sector(s):

- a. Select the sector(s) to be blank-checked in the [Flash sector area](#).
 - b. Click on **Active sector(s)** in the **Blank-Check** menu.
4. The blank check result is displayed in the [Output window](#).





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Programming program memory

To program Program memory:

1. Make sure that the ST microcontroller is plugged into the hardware programming tool socket.
2. Make sure that the hardware is correctly configured by following the instructions given in [Configuring ST Visual Programmer](#).
3. In the STVP main window, click on the **PROGRAM MEMORY** tab.
4. [Open a file](#) that contains data for a program. You can [modify program memory](#) before writing it to a device.
5. To program all program memory in a **FLASH device**:
 - a. Select all sectors in the [FLASH sector area](#).
 - b. Click on **Active Sector(s)** in the Program menu (or press the  button).
6. To program all program memory in an **EEPROM or EPROM device**, select **Program>Current tab** from the main menu.
7. Or to program a selected area of program memory:
 - a. Click on **Address Range...** in the Program menu (or press the  button). The Address range dialog box opens.
 - b. In the *Valid address ranges are* list, choose the predefined range address you want to program or, enter addresses in the *Start @* and *End @* fields.
 - c. Click on **OK**.
8. After data has been written into program memory, a verify operation is done. Any discrepancies are reported in the Output window.

TIP: Program memory is also written by clicking on **All tabs** in the Program menu (or pressing the  button).

NOTE 1: If any area of the program memory is already programmed, an appropriate message is displayed in the Output window.

NOTE 2: To find out if an area is programmed, follow the instructions given in [Checking memory is blank](#).





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Programming data memory

To program Data memory:

1. Make sure that the ST microcontroller is plugged into the hardware programming tool socket.
2. Make sure that the hardware is correctly configured by following the instructions given in [Configuring ST Visual Programmer](#).
3. In the STVP main window, click on the **DATA MEMORY** tab.
4. [Open a file](#) that contains data for a program. You can [modify data memory](#) before writing it to a device.
5. To program *all* data memory, select **Program>Current tab** from the main menu.
6. To program a *selected* data memory area:
 - a. Select **Program>Address Range...** from the main menu (or press the  button). The Address range dialog box opens.
 - b. In the *Valid address ranges are* list, choose the predefined range address you want to program or, enter addresses in the *Start @* and *End @* fields.
 - c. Click on **OK**.
7. After data has been written into data memory, a verify operation is done. Any discrepancies are reported in the Output window.

TIP: Data memory is also written by clicking on **All tabs** in the **Program** menu (or pressing the  button).



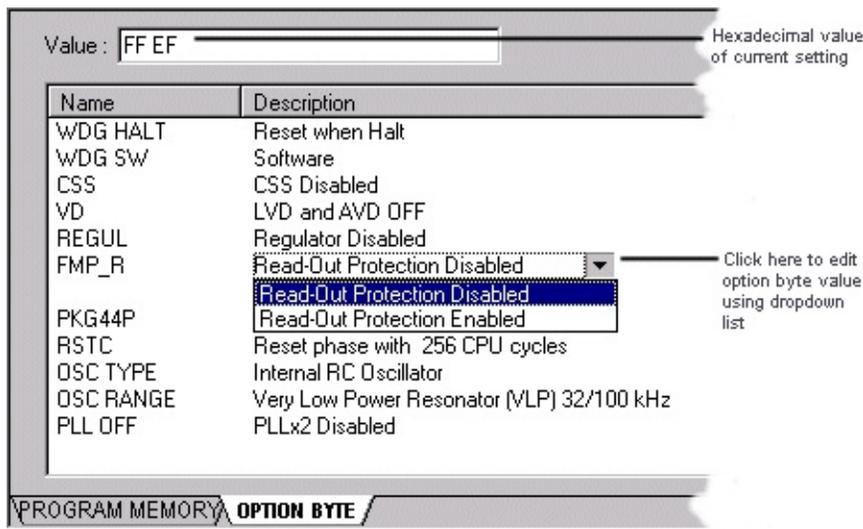


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Programming the option byte

To program the Option byte:

1. Make sure that the ST microcontroller is plugged into the hardware programming tool socket.
2. Make sure that the hardware is correctly configured by following the instructions given in [Configuring ST Visual Programmer](#).
3. In the STVP main window, click on the **OPTION BYTE** tab. The available options are listed. ST Mcu option bits have only two states: 0, 1. Unprogrammed states could be 0 or 1 depending on the device.
4. To change the status of an option, click on the option name or its current setting. Click on the button (▾) which appears beside the option to display a drop down menu from which you can select a new setting.



5. Click on **Current tab** in the Program menu (or press the button).
6. After the Option byte has been written, a verify operation is done. Any discrepancies are reported in the Output window.

TIP: The Option byte is also written by clicking on **All tabs** instead of **Current tab** in the Program menu (or pressing the button).

NOTE: You can [modify option byte](#) settings before writing them to the device.





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Erase FLASH memory sectors

To erase FLASH memory sectors:

1. Make sure that the ST microcontroller is plugged into the programming socket.
 2. Make sure that STVP is correctly configured for the ST microcontroller by following the instructions given in [Configuring ST Visual Programmer](#).
 3. In the STVP main window, click on the **PROGRAM MEMORY** tab.
 4. For **Program memory only**: to erase one (or more) FLASH memory sector(s):
 - a. In the [Flash sector area](#) click the check box(es) corresponding to the sector(s) you want to erase.
 - b. Click on **Active Sector(s)** in the **Erase** menu (or press the  button).
 - c. Click on **OK**.
-





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Viewing a microcontroller's memory contents and option settings

To view a ST microcontroller's memory contents and option settings:

1. Make sure that the ST microcontroller is plugged into the programming socket
2. Make sure that STVP is correctly configured for the connected ST microcontroller by following the instructions given in [Configuring ST Visual Programmer](#).
3. To view the ST microcontroller's Program memory, Data memory and Option byte contents, click **All tabs** in the **Read** menu (or press the  button). You can now view the read information by clicking on the appropriate tab at the bottom of the main window.
4. To view the ST microcontroller's Program memory, Data memory or Option byte contents individually:
 - a. Click the appropriate tab at the bottom of the main window.
 - b. Click on **Current** in the Read menu (or press the  button).
5. To view a selected area of the ST microcontroller's EPROM, FLASH or EEPROM:
 - a. Click the appropriate tab at the bottom of the main window.
 - b. Click on **Address Range...** in the Read menu (or press the  button). The Address Range dialog box opens.
 - c. Select the area you want to view either by selecting it from the *Valid address ranges are* list, or entering its start and end addresses in the *Start @* and *End @* fields.
 - d. Click on **OK**.
6. To view [selected sectors](#) of FLASH memory click the **Program Memory** tab, then click on **Active sector(s)** in the Read menu (or press the  button).

The memory contents are now read and displayed in the Display area.

TIP: Press the ESC key to abort the reading device process.





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Verifying a microcontroller's memory contents and option settings

Verifying a ST microcontroller's memory and option settings means checking that its Program memory, Data memory and Option byte settings are the same as those displayed in the STVP Display area.

To verify a ST microcontroller's memory and option settings:

1. Make sure that the ST microcontroller is plugged into the programming socket.
2. Make sure that STVP is correctly configured for the ST microcontroller by following the instructions given in [Configuring ST Visual Programmer](#).
3. Make sure the file you want to verify is loaded in the STVP main window.
4. To verify all memory contents, click on **All tabs** in the **Verify** menu (or press the  button).
5. To verify an individual memory area click the appropriate tab at the bottom of the main window, then click on **Current tab** in the **Verify** menu (or press the  button).
 - To [verify a selected area](#) of the ST microcontroller's memory click the appropriate tab at the bottom of the main window, then click on **Address Range...** in the **Verify** menu (or press the  button).
 - To verify [selected sectors](#) of FLASH memory click the appropriate tab at the bottom of the main window, then click on **Active sector(s)** in the **Verify** menu (or press the  button).

Any discrepancies are reported in the Output window.

TIP: Press the ESC key to abort verifying device process.



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How to restore default RC Calibration values

This feature is present on certain ST devices having an Internal RC oscillator as clock selection.

RC Calibration values are used to get a good frequency accuracy on internal RC oscillator.

Some ST devices have the default RC Calibration values factory programmed in the ST Mcu's Program and Data memory.

Restoring the default RC Calibration values in the ST Mcu's Program and Data memory can be done by enabling and then disabling Read-Out Protection.

If Read-Out Protection is already disabled, set it to ON in the option byte settings and program the option byte.

Then set Read-Out Protection back to OFF and reprogram the option byte.

The default RC Calibration values are then automatically written to the appropriate addresses in Program and Data memory.

Note: This feature is working only in specific programming modes: "Socket" or "ICP OPT Disable".

Refer to your STxxxx Datasheet for the default values and addresses.

CAUTION: Any Program or Data in the ST Mcu memory are lost when Read-Out Protection is disabled.

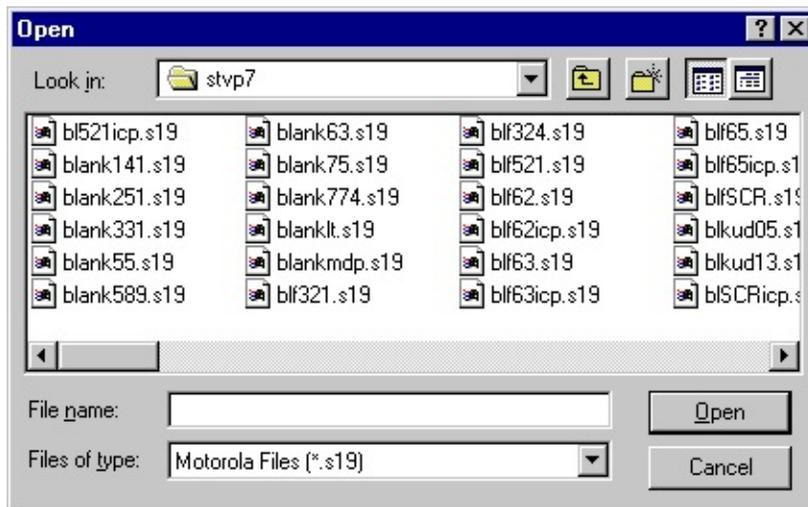


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Opening an executable file

Before opening a file, you need to select the corresponding memory area to be loaded with data file content. For instance, to open a program memory area:

1. In the STVP main window, click on the **PROGRAM MEMORY** tab.
2. Click on **Open** in the **File** menu (or press the  button). The Open dialog box appears.



3. Browse to where you have saved the file holding the data you want to program, and then select it.
4. Click on **Open**. When the file is loaded, the Output area displays the file checksum. The [file checksum](#) for each file loaded and the [memory checksum](#) for each area are displayed in the Device Status window.
5. To open other memory area data files, repeat steps 1 to 4, selecting the appropriate memory area tab for each data file (**DATA MEMORY** or **OPTION BYTE**) in step 1.

TIP: The names of the last opened files are displayed at the bottom of the **File** menu. To open one of these files, click on its name.





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Editing an executable file

Open the file you want to edit by following the instructions given in [Open a file](#).

You can now modify the program memory contents, data memory contents or the Option byte settings.

To modify the program memory contents or data memory contents:

1. Click on the appropriate tab at the bottom of the display area.
2. Over type either any hexadecimal values you want to change or any visible ASCII characters you want to change in the display area. ASCII characters are automatically updated when you change hexadecimal characters, and the same vice-versa.

To modify the Option byte settings:

1. Click on the **Options** tab at the bottom of the main window.
2. The available options are listed in the left hand column with their value descriptions in the right hand column.
3. ST option bits have only two states: 0, 1. Unprogrammed state could be 0 or 1 depending on the device. To change the status of an option, click on the option name or its current setting. Click on the () button which appears beside the option to display a drop down menu from which you can select a new setting.

NOTE: Make sure you save your changes before exiting STVP by clicking on **Save** in the **File** menu (or pressing the  button).



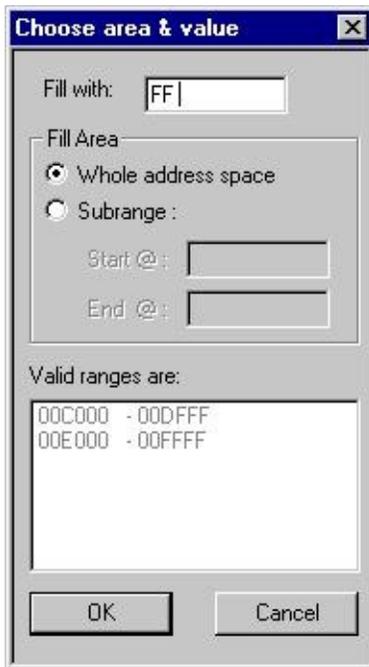


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Writing a pattern to a selected memory area

To write a pattern in a selected memory area proceed as follows:

1. Click on **Fill area...** in the **Edit** menu (or press the  button). The Choose area & value dialog box is displayed.



2. In the *Fill with* field, enter the data you want to fill the area with.
3. Under the *Fill Area* section, proceed as follows:
 - To fill the entire program space, select **Whole address space**.
 - To fill a selected area, select **Subrange:**. Either enter the start and end addresses of the area to fill in the *Start @* and *End @* fields respectively, or select an address range from the *Valid ranges are* field.
4. Click on **OK**. If the address range is valid, STVP fills the specified address space with the specified fill value.

NOTE: Make sure you save your changes before exiting STVP by clicking on **Save** in the **File** menu (or pressing the  button).





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Saving an executable file

Click on **Save** in the **File** menu (or press the  button).

With this command, you can create a file in the Motorola or the Intel format for a project.

TIP: You can also save a file under a new name by clicking on **Save As...** on the **File** menu.





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Executing a file in RAM

To execute a file in RAM:

1. Click on **RAM Exec** in the **File** menu (or press the  button). The Open dialog box appears.
 2. In the drive list, click the drive that contains the file holding the data you want to execute.
 3. In the box beneath the drive list, double-click the name of the folder that contains the file you want to execute. Continue double-clicking subfolders until you open the subfolder that contains the file.
 4. In the list of files, click the file you want to execute.
 5. Click on **Open**. When the file is executed, the Output area displays a message.
-





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What is a project?

A project is a way to automatically configure STVP each time you run it. A project exists only in a file format that contains STVP commands. This allows you to set up a programming environment and to define programming procedures by opening the project file.

A programming environment must or could include:

- The programming hardware used to program the ST microcontroller (EPB, DVP, STICK, etc.). This information is a mandatory part of the project definition.
- The PC port that the programming hardware is connected to (mandatory).
- The Programming mode used (mandatory).
- The ST microcontroller to be programmed (mandatory).
- The program file that contains the program to be programmed.
- The data file that contains the data to be programmed.
- The Option Byte file that contains the Option Byte settings to be programmed.

Programming procedures could include the following actions:

- Erase all before programming (FLASH memory device only).
- Blank check before programming.
- Verify after programming.
- Unlock protection before a programming cycle.
- Prompt for new programming cycle.
- Generate and write serial numbering.

Once the project file is open: to program a device, click on ***All tabs*** in the **Program** menu.





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Create a project

Before creating a project, you must read [What is a project ?](#)

To create a project:

1. Click on **New** in the **Project** menu. The Create New Project dialog box opens.
2. In the drive list, click the drive on which you want to create the new project file.
3. In the box beneath the drive list, double-click the name of the folder in which you want to create the new project file. Continue double-clicking subfolders until you open the subfolder in which you want to create the file.
4. Type the project file name in the **File name** box.
5. Click on **Save**.
6. The project is now created (the project file name extension is .stp). The name of the project appears in the window title bar:



NOTE: When you create a project, it inherits the current configuration. This configuration can be modified before closing the project. Closing a project saves it automatically.





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Open a project

STVP project files have the file extension `.stp`.

To open a project:

1. Click on **Open** in the **Project** menu. The Open Existing Project dialog box opens.
2. In the drive list, click the drive that contains the file.
3. In the box beneath the drive list, double-click the name of the folder that contains the file. Continue double-clicking subfolders until you open the subfolder that contains the file.
4. In the list of files, click the project file name to open (only files with `.stp` extension are displayed).
5. Click on **Open**. The project name appears in the window title bar:



At this stage, the programming environment is set up and all data files are opened.

NOTE: Once the project file is open: to program a device, click on **All** in the **Program** menu (or press the  button).

TIPS:

- The names of the last opened projects are displayed at the bottom of the **Project** menu. To open one of these projects, click on its name.
 - You can also set up a shortcut to STVP where a specific project is opened automatically. Just create a shortcut on your Windows desktop to STVP, right-click the shortcut icon and select Properties. In the Shortcut tab of the Properties window, edit the Target line by adding `-project=project_name.stp` to the end of the command line. For example, to open **my_project.stp** automatically, the Target field might look like:
`C:\Program Files\stvp\stvp.exe -project=my_project.stp`
-



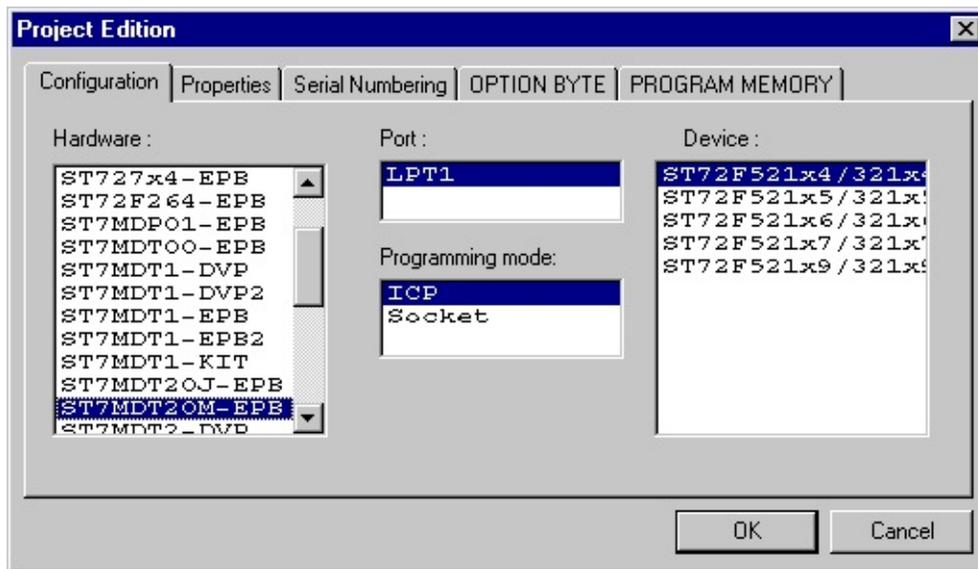


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Editing a project

First, [open a project](#).

1. Click on **Edit** in the **Project** menu.
2. The Project Edition window opens. Below is an example of a Project Edition window with two types of memory area (PROGRAM MEMORY and Option BYTE) for the chip:



3. Make any necessary modifications to the different tabs of the Project Edition window: [Configuration](#), [Properties](#), [Serial Numbering](#) and applicable memory area tabs ([Program Memory](#), [Data Memory](#) or [Option Byte](#)).
 4. Click on **OK** to exit the Project Edition window and to save your changes.
-



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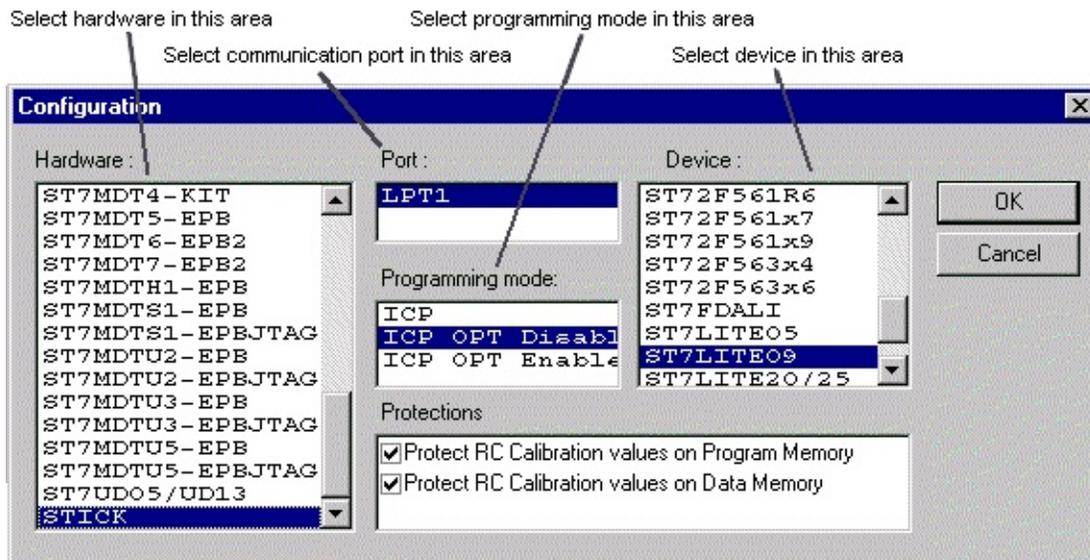
Setting a project hardware environment

A project hardware environment defines:

- The programming hardware used to program the ST microcontroller (EPB, DVP, STICK, etc).
- The PC port that the programming hardware is connected to.
- The programming mode to be used.
- The ST microcontroller to be programmed.

To set a project hardware environment:

1. Click on **Configure ST Visual Programmer** from the Configure menu (or press the  button). The Configuration dialog box opens:



2. From the *Hardware* list, select the one you are using (EPB, DVP or STICK).
3. From the *Port* list, select the PC port from which STVP is connected.
4. From the *Programming mode* list, select the programming mode you want to use.
5. From the *Device* list, select the ST microcontroller you want to program.
6. Click **OK** to save your changes and close the dialog box.

TIP: You can also select a ST microcontroller from the drop-down list in the main window toolbar.





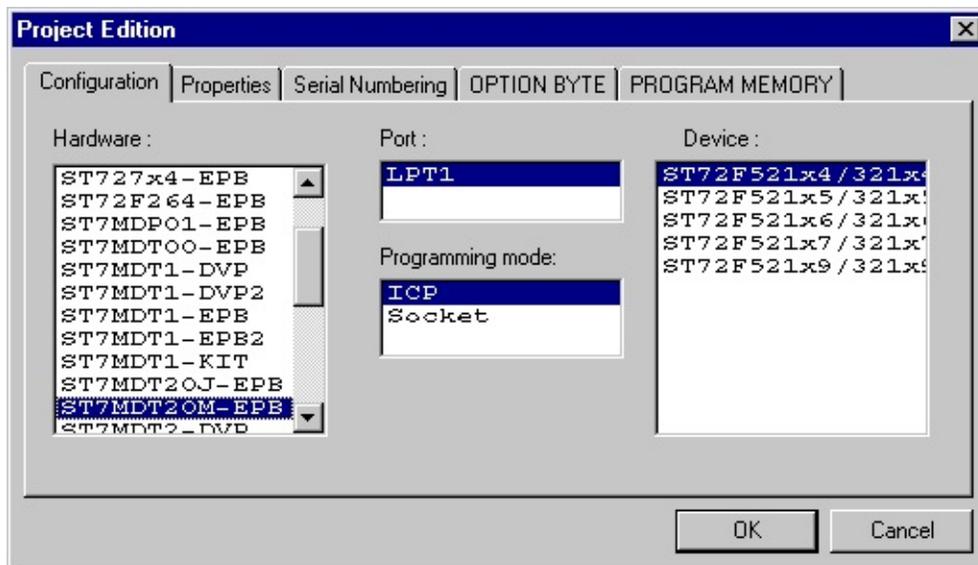
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Setting EPROM, FLASH, EEPROM or Option files in your project

Data files contain data to program into memory. Setting data files in a project file (.stp extension), enables these data files to be loaded automatically each time a project file is open.

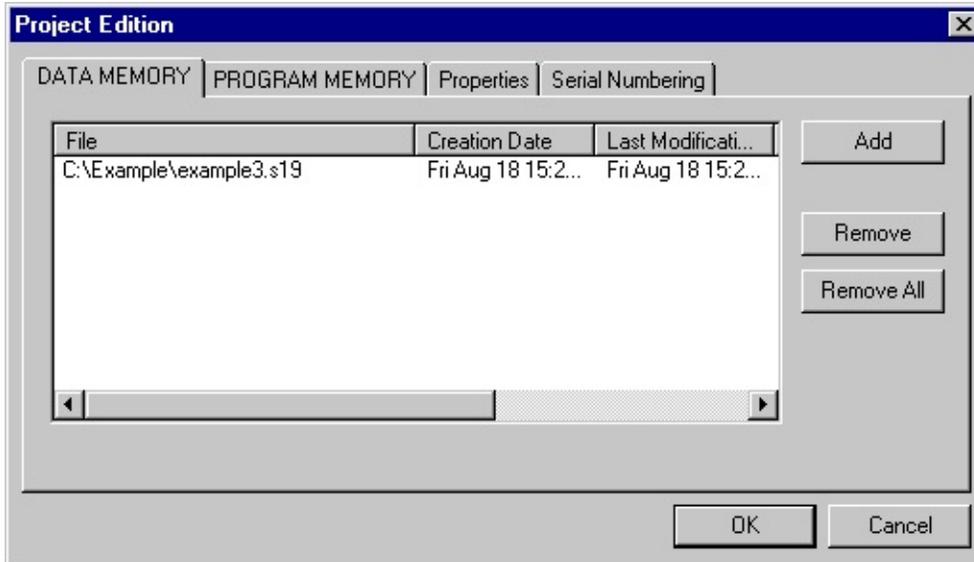
To set data files in a project:

1. Click on **Edit** in the **Project** menu. The Project Edition window opens as follows:



NOTE: this is a Project Edition window with two types of memory area (option byte and program memory) for the device.

2. Click on a memory tab (**DATA MEMORY**, **PROGRAM MEMORY** or **OPTION BYTE**) and then click on **Add**.
3. The **Open** dialog box is displayed.
4. Find and select the file you want to set to the project and click on **Open**. The file is set to the project - its path name and other attributes are displayed in the Project Edition window.



NOTE: this is a Project Edition window with two types of memory area (data memory and program memory) for the device.

5. Click on **OK** to save your changes and close the Project Edition window.
6. Repeat steps 2 to 5 if you want to set files for the **DATA MEMORY**, **PROGRAM MEMORY** or **OPTION BYTE** memory areas.





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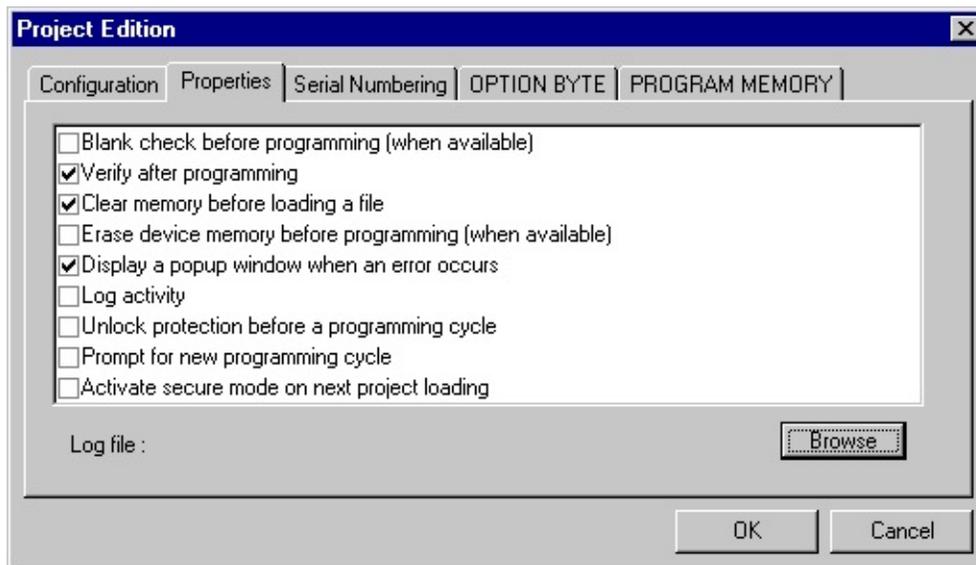
Setting up automatic programming procedures

Automatic programming procedures allow you to accomplish the following actions:

- [Blank check](#) before programming.
- [Verify](#) after programming.
- Clear memory before loading a file.
- [Erase](#) device memory before programming.
- Display a popup window when an error occurs.
- Log activity.
- Unlock protection before a programming cycle
- Prompt for new programming cycle.
- Activate user mode on next project loading.

To set up automatic programming procedures:

1. Click on **Edit** in the **Project** menu. The Project Edition window opens.
2. Click on the **Properties** tab. The Properties dialog box opens as shown below (this is a Project Edition window with two types of memory areas (option byte and program memory) for the device.)



3. Check the Programming Option boxes you want to perform.
 - *Blank check before programming (when available):*
This option is only available with FLASH devices.

- *Verify after programming*
- *Clear memory before loading a file:* Checking this option will clear the existing memory values in your STVP session when loading a new file. If you do not check this option, each time you load a new file, only those memory values also present in the newly loaded file will be overwritten.
- *Erase device memory before programming (when available):* This option is only available with FLASH devices.
- *Display a popup window when an error occurs*
- *Log activity*
- *Unlock protection before a programming cycle:* This option is only available if a project file is open and on certain devices. Click this option if you want to unlock the protection at the beginning of a cycle to be able to reprogram the device if it was protected before executing the project.
- *Prompt for new programming cycle:* This option is only available if a project file is open. Click this option if you want to repeat the same programming procedure for several microcontrollers. When this option is checked, a dialog box will appear at the end of each programming cycle, asking you if you wish to perform the same programming cycle again.
- *Activate secure mode on next project loading:* This option is only available if a project file is open. Checking this option only allows the programming session saved in the project file to be performed while the project is open. This option is useful if you want a specific programming session to be used repeatedly without tampering. Once applied, this option can be removed from the Project Edition window, Properties tab, accessible by selecting **Project>Edit** from the main menu.

4. Click on **OK** to save your changes and close the Project Edition window.





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Setting up automatic serial numbering

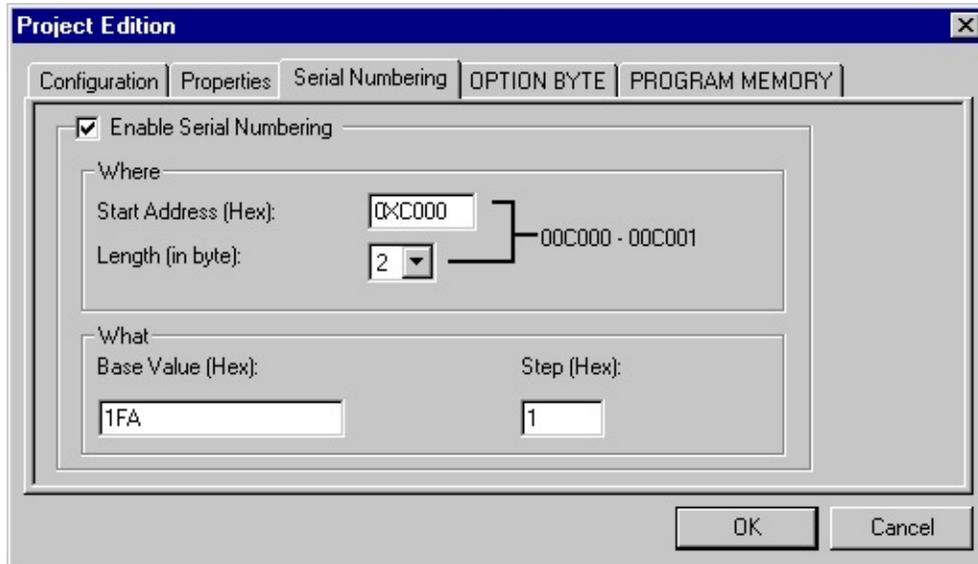
STVP can automatically generate and write serial numbers into the memory of ST microcontrollers. You define automatic serial numbering by specifying:

- the memory address where to program it,
- the length (in byte),
- the starting value,
- the step increment value.

NOTE 1: Each time you leave a project, the current serial number value is saved. It will be reloaded during the next project opening.

To set up automatic serial numbering:

1. Click on **Edit** in the **Project** menu. The Project Edition window opens.
2. Click on the **Serial Numbering** tab. The Serial Numbering dialog box opens:



NOTE: This is a Project Edition window with two types of memory areas (data memory and program memory) in the device

3. Check the **Enable Serial Numbering** box.
4. In the *Start Address (Hex)* field, enter the start address where to write the serial number.

5. In the *Length (in byte)* field, select the number of bytes (1, 2, 4 or 8) of the serial number.
 6. In the *Base Value (Hex)* field, enter the starting value for the serial number.
 7. In the *Step (Hex)* field, enter the step increment value to apply to the serial number.
 8. Click on **OK** to save your changes and close the Project Edition window.
-





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Executing a project programming cycle

If you have defined a project, you can execute a [blank check](#), program all the memory areas that have associated files in one go, and [verify](#) that all areas have been correctly programmed.

There are two ways of doing this

1. Manually, by using the functions available under the menu bar

- **To perform a blank check:**

With the defined project already open, click on **Current tab** or **Active Sector(s)** in the **Blank-Check** menu.

- **To program all the memory areas whose corresponding files are loaded:**

With the defined project already open, click on **All tabs** in the **Program** menu (or press the  button).

- **To verify all programmed areas:**

With the defined project already open, click on **All tabs** in the **Verify** menu (or press the  button).

2. Automatically, by using the [automatic programming procedure](#).

Refer to the documentation provided with the programming device you are using for further details about how the blank check, program and verify are executed.





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Troubleshooting

When I try to read or write to the ST microcontroller the message "Cannot communicate with the device" is displayed:

- Check that the port to which the programming device is connected is correctly configured in STVP.

Note: If you use the LPT port, you must configure this port using Centronics, EPP, ECP or bidirectional modes only. With Windows® NT®, 2000® and XP®, the PARSTM driver must be installed.

- Check that STVP is correctly configured for the programming device in use.
- Check that the ST microcontroller for which STVP is configured is the same as that which is plugged into the programming device.

Refer to [Configuring ST Visual Programmer](#) for further information.

When I try to read, program, verify or blank check a ST microcontroller, the message "... failed at address xxxx" is displayed:

- Check that the correct device is plugged into the socket or that STVP is correctly [configured](#) for the device in use.
- Check that the device isn't defective (change the device).

When I open a project file, the message "Data file not found" is displayed:

Check that data files associated with the project file exist or that data files have not been moved

When using the STICK, the message “PC parallel port cable not connected” is displayed:

Most communication failures between the host PC running STVP and the STICK interface board stem from problems in the parallel port connection. To prevent communication problems, when setting up your parallel port connection, ensure that:

- You use the parallel cable provided with your STICK—using a longer parallel cable may cause malfunctions.
- Connect the cable directly between the host PC and STICK interface board— the insertion of additional cables or switch boxes between the host PC and the interface board may cause malfunctions.
- You remove any parallel port dongles.
- Ensure LPT1 address is in the range 03BC-03BF or 0378-037F or 0278-027F.
- Ensure that “printer port LPT1” is not disabled in your PC. For example, in the IBM® ThinkPad, you can select “infrared printing (LPT) port on”.

When using the STICK, the message “Problem on supply voltages” is displayed:

When you have supply voltage problems the green LED will not come on.

To find the cause of the problem:

- Check that the AC/DC power supply adaptor is firmly connected to both the main power supply and to the STICK interface board. To check that the main power supply is on, disconnect ICC cable and measure the voltage at test pin 2 at location TP1. This pin should have unregulated DC value in the range 18 V to 21 V. (Ground is on TP1 pin 1 which has a white dot mark.)
- Check that the W1 jumper is set on one of the three positions outlined in the STICK User Manual. If it is set on the “VDD” position, check that the ICC cable is connected properly and that your application’s VDD is connected to ICC connector pin 7. Your application VDD must be in the range 2.4 V to 5 V. On test pin 4 at location TP1, you must have the same voltage value that you selected with the W1 jumper.
- Check that there is 5 V on test pin 3 at location TP1.

If you have made all of these checks and you still get the “Problem on supply voltages” message, contact your ST distributor or sales office in order to have your STICK repaired.

When using the STICK, the message “Cannot communicate with the device” is displayed:

Check that:

- The ICC cable is well connected.
- You have selected the right ST7 device.
- The ICC signals are clear and within the following ranges:

ICCDATA: This application signal must not drive more than 1 mA.

ICCCLK: This application must not drive more than 1 mA.

ICCRESET: This application must not drive more than 5 mA.

ICCSEL_VPP: The pull-down resistor must not be lower than 10 kOhm.

- You have selected the right programming mode in the main menu ***Configure window > programming mode*** list .
Remember that if you use:
 - **ICP OPT Enable** mode, check that your application clock circuitry does match the **CLOCK SOURCE** and **OSCTYPE** options already programmed in ST7 Flash microcontroller option byte. For devices out of factory you have to check these values in datasheet. If you don't know these values you have to select **ICP OPT Disable**.
 - **ICP OPT Disable** mode, ensure that external source clock is a square wave signal from 0 V to VDD. If not, you have to connect ICCOSC safe clock (ICC connector pin 9) to the OSC1 pin of the ST7Flash microcontroller in your application.

Other frequently asked questions:

[How can I find out which STVP and Hardware configuration file versions I'm using?](#)





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Programming mode

Socket programming mode is used when putting the device in the EPB/DVP sockets. Take care to place only one device if there are several sockets. The arrow indicates pin 1 of the device on the EPB/DVP sockets. If the EPB/DVP support also ISP or ICP programming mode, remove the flat cable provided with the board from the ISP or ICP connector to use Socket programming mode.

ISP/ICP programming modes are used when you have soldered your device on your application board and you want to access the device afterwards.

ISP stands for **In Situ Programming**, it is working with ST72C254xx/ST72C334xx/ST72C171xx and ST72C411xx devices only. Refer to the Data sheet of the device for more details on ISP connector and ISP programming. Take care to remove the devices that are in the socket of the EPB/DVP before using the ISP programming mode.

ICP stands for **In Circuit Programming**, it is working with the latest Flash devices (XFlash or HDFlash). Refer to the data sheet of the device for more details on ICP connector and In Circuit Programming. Take care to remove the devices that are in the socket of the EPB/DVP before using the ICP programming mode.

Before selecting the **Programming mode** you have to check the option byte description in your ST Flash microcontroller Data sheet and also whether the ST is ex-factory or not. Ex-factory devices are brand new devices with factory default options programmed.

ICP OPT Disable: This programming mode is ICP mode with *Option Bytes Disabled*. This means that the setting or state of the device's option bytes have no effect in application, **which the exception of Read-out Protection**. The clock configuration is forced to "External Source" and if your ST7 Flash application clock is not a square wave from 0v to VDD (i.e. if you use the internal RC oscillator of the ST7 Flash Microcontroller or if you have a resonator or an external RC

oscillator on the OSC1/OSC2 pins), you have to connect the clock ICCOSC from the ICC connector to the OSC1 pin of the ST7 Flash microcontroller in your application. This programming mode is a safe mode. It must be used when the ICP OPT Enable configuration does not work. This can be the case if your application clock circuitry doesn't match the previously programmed clock source or osctype option byte selection.

ICP OPT Enable: This programming mode is ICP mode with *Option Bytes Enabled*. This means that the option bytes of the ST7 device in the application are activated with their programmed values. The Read-out Protection and the Clock Configuration (OSC Type, OSC Range, PLL) are Enabled, the Watchdog is forced to Software during communication. This programming mode has to be selected if the ST7 Flash is has the factory default settings or if your application clock circuitry matches the previously programmed clock source or osctype option byte selection. In this Programming mode, the ICCOSC clock from the ICC connector is not needed.

ICP: This programming mode is the same as **ICP OPT Enable**, the Option Bytes are 'Enabled' and the Watchdog is forced to Software during communication. Normally, this mode is the only choice for that device because there is no clock configuration, at least a resonator must be used with that ST7 device. So, the ICCOSC clock from the ICC connector must not be connected to the application.

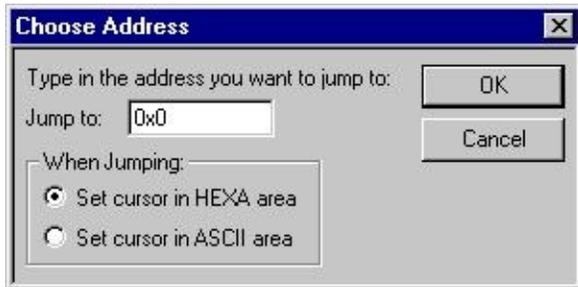
Refer to the latest **Errata sheet** of the device to get extra useful information.



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Choose address

When you select **Go to...** from the **Edit** menu, the Choose Address dialog box appears:



1. Enter the address you want to jump to in the *Jump to* field.
2. Choose **Set cursor in HEXA area** if you want the cursor to appear in the [Hexadecimal view](#) or **Set cursor in ASCII area** if you want the cursor to appear in the [ASCII view](#).
3. Click on **OK**. If the address is valid, STVP places the cursor at the specified address in the [display area](#).

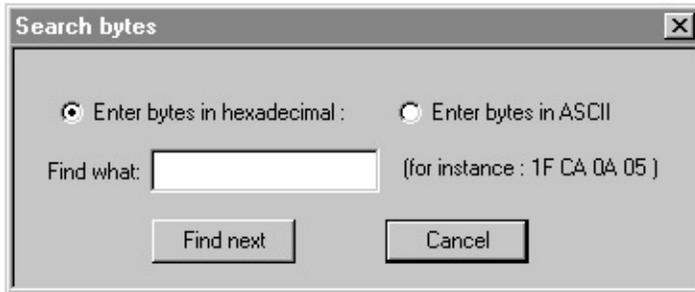
NOTE: Use backspace to clear the input area.



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Search bytes

When you select **Search...** from the **Edit** menu, the Search bytes dialog box appears:



1. Click to choose in which view (Hexadecimal or ASCII) you want to search the bytes.
2. Enter the bytes you want to find in the input area.
3. Click **Find next** to begin the search. If the search is successful, STVP places the cursor on the found occurrence in the [display area](#).



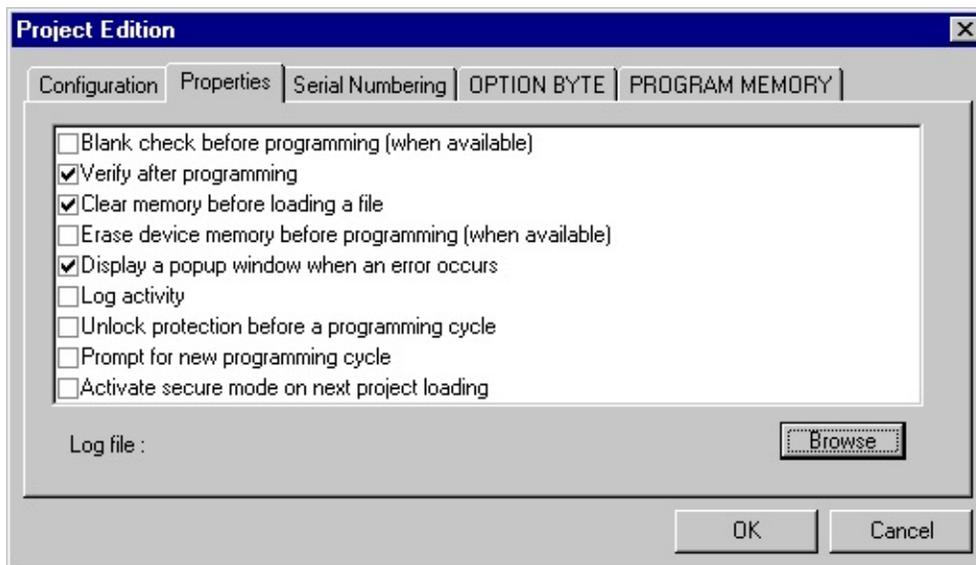
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Properties window

When you select **Preferences** from the Edit menu, the Properties window appears.

Note: These same programming options appear in the Properties tab of the Project Edition window, which appears when you create or edit a project.

Click on a property check box to turn on/off that property. Click on OK to save [settings](#) and exit the window.



Check the Programming Option boxes you want to perform.

- *Blank check before programming (when available):* This option is only available with FLASH devices.
- *Verify after programming*
- *Clear memory before loading a file:* Checking this option will clear the existing memory values in your STVP session when loading a new file. If you do not check this option, each time you load a new file, only those memory values also present in the newly loaded file will be overwritten.
- *Erase device memory before programming (when available):* This option is only available with FLASH devices.
- *Display a popup window when an error occurs*

- *Log activity*
- *Unlock protection before a programming cycle:* This option is only available if a project file is open and on certain devices. Click this option if you want to unlock the protection at the beginning of a cycle to be able to reprogram the device if it was protected before executing the project.
- *Prompt for new programming cycle:* This option is only available if a project file is open. Click this option if you want to repeat the same programming procedure for several microcontrollers. When this option is checked, a dialog box will appear at the end of each programming cycle, asking you if you wish to perform the same programming cycle again.
- *Activate secure mode on next project loading:* This option is only available if a project file is open. Checking this option only allows the programming session saved in the project file to be performed while the project is open. This option is useful if you want a specific programming session to be used repeatedly without tampering. Once applied, this option can be removed from the Project Edition window, Properties tab, accessible by selecting **Project>Edit** from the main menu.

NOTE 1: The 'Unlock protection before a programming cycle', 'Prompt for new programming cycle' and 'Activate user mode on next project loading' options are only available when a project is opened.

NOTE 2: Click on **Browse** to create or select a log file. The log file name is displayed in the bottom left hand corner of the **Properties** window.



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Read active sectors

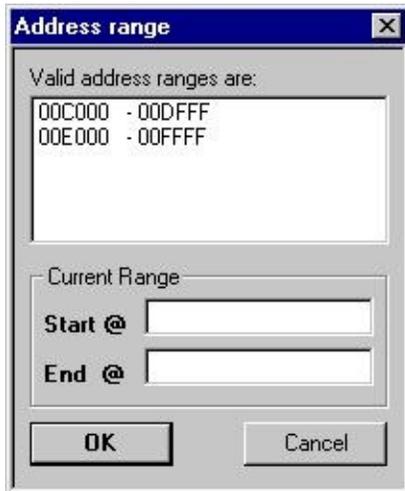
1. Click **Flash Sector** from the **View** menu to display the [Flash sector area](#) if not already displayed.
2. Select the sectors you want to read from by clicking on their respective check boxes
3. Click **Active Sector(s)** from the **Read** menu.



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Read address range

When you select **Address Range...** from the **Read** menu, the Address range dialog box appears:



1. Choose the area you want to read from either by selecting it from the *Valid address ranges are* list, or entering its start and end addresses in the *Start @* and *End @* fields.
2. Click on **OK**. If the address range is valid, STVP reads from the ST microcontroller and displays the contents of the selected memory area from the selected memory tab.

NOTE: Use backspace to clear the input areas.



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Program active sectors

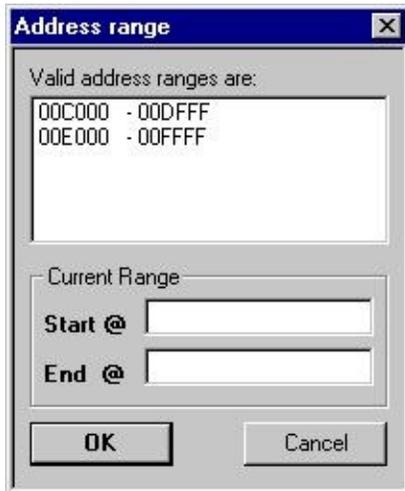
1. Click on **Flash Sector** from the **View** menu to display the [Flash sector area](#) if not already displayed.
2. Select the sectors you want to blank-check by clicking on their respective check boxes
3. Click on **Active Sector(s)** from the **Program** menu.



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Program address range

When you select **Address Range...** from the **Program** menu, the Address range dialog box appears:



1. Choose the area you want to program either by selecting it from the *Valid address ranges are* list, or entering its start and end addresses in the *Start @* and *End @* fields.
2. Click on **OK**. If the address range is valid, STVP writes to the ST microcontroller the contents of the selected memory area from the current memory tab.

NOTE: Use backspace to clear the input areas.



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Verify active sectors

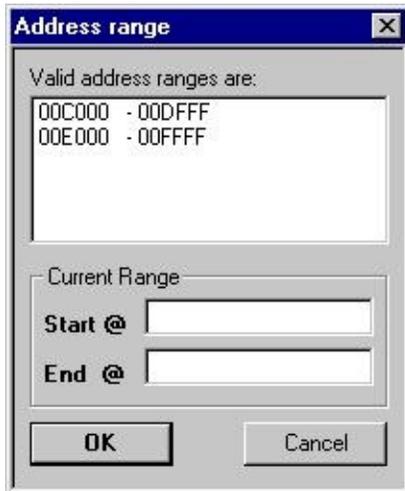
1. Click **Flash Sector** from the **View** menu to display the [Flash sector area](#) if not already displayed.
2. Select the sectors you want to verify by clicking on their respective check boxes
3. Click **Active Sector(s)** from the **Verify** menu.



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Verify address range

When you select **Address Range...** from the **Verify** menu, the Address range dialog box appears:



1. Choose the area you want to verify either by selecting it from the **Valid address ranges are:** list, or entering its start and end addresses in the **Start @** and **End @** fields.
2. Click on **OK**. If the address range is valid, STVP checks that data displayed in the selected memory area is identical to the corresponding ST microcontroller memory.

NOTE: Use backspace to clear the input areas.



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Erase active sectors

1. Click on **Flash Sector** from the **View** menu to display the [Flash sector area](#) if not already displayed.
2. Select the sectors you want to erase by clicking on their respective check boxes
3. Click on **Active Sector(s)** from the **Erase** menu.



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Blank-Check active sectors

1. Click **Flash Sector** from the **View** menu to display the [Flash sector area](#) if not already displayed.
2. Select the sectors you want to be blank-checked by clicking on their respective check boxes
3. Click **Active Sector(s)** from the **Blank-Check** menu.

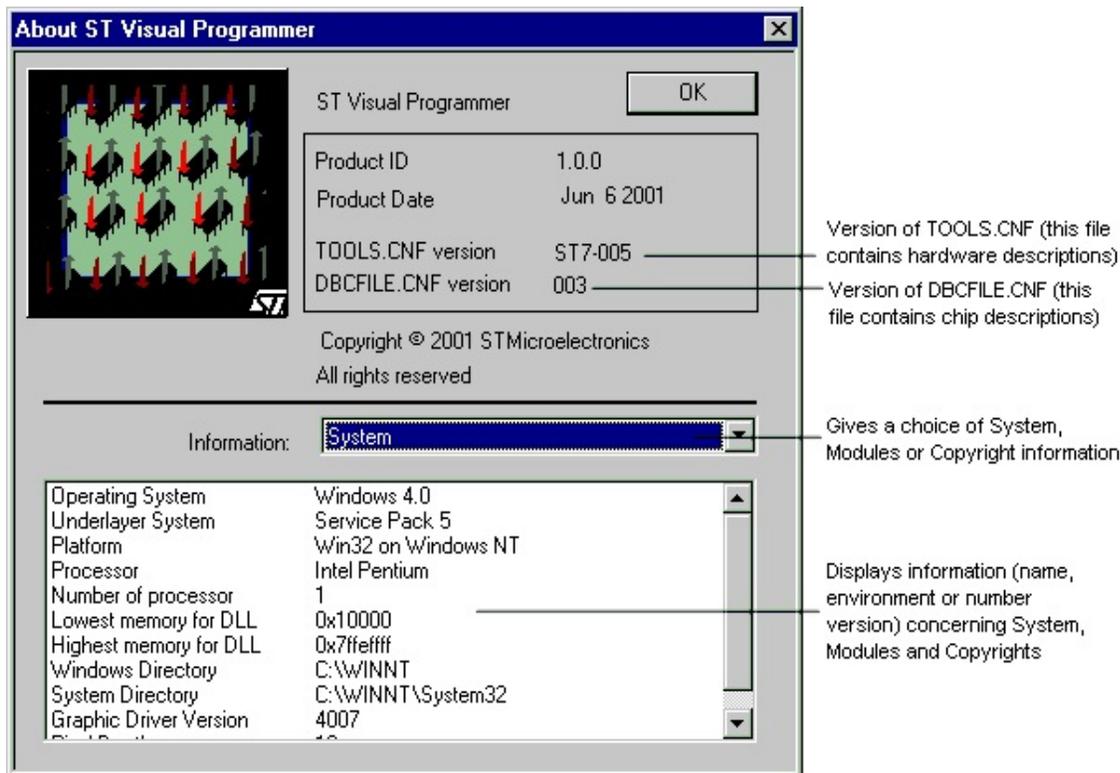


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About ...

This window describes general information concerning STVP. In it, you can find:

- the version number of STVP,
- the version number of configuration files (Hardware Configuration and Target Configuration),
- by selecting Modules in the Information combo box, you can read the version numbers of STVP's DLLs and the PARSTM driver. The DLL information will appear in the information area.





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A typical programming session - configuring STVP

1. In the **Configure** menu, click **Configure ST Visual Programmer** (or press the  button). The [Configuration dialog box](#) opens.
2. From the **Hardware** list, select the hardware you are using.
3. From the **Port** list, select the parallel port on the host PC to which the EPB or DVP is connected. Only the ports that are compatible with the selected hardware are listed.
4. From the **Programming mode** list, select the [programming mode](#) you want to use.
5. From the **Device** list, select the ST microcontroller you want to program.
6. Click **OK** to save your changes and close the dialog box.

TIP: You can also select a ST microcontroller type from the drop-down list in the toolbar.

File checksum

This checksum is done on all data present in a data file. This could include data on a non existing memory area of a ST microcontroller (for example: EPROM split in two areas).

The file checksum operation is performed simply by calculating the sum of all of the file's data bytes, giving a unique signature for each file. The Device Status window shows for all different areas, all the files loaded with their file checksums.

NOTE: one data file is needed per memory area (EPROM, FLASH, EEPROM and Option Byte).

Memory checksum

This checksum is done on device existing memory area. Each existing memory area (EPROM, FLASH and EEPROM) has its own device checksum.

Each checksum operation is performed simply by calculating the sum of each device tab data bytes, giving a unique signature for each memory type.

The Device Status window shows all memory checksums for all memory types.



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Blank Check

You can perform a blank check on the EPROM or FLASH memory area. When you perform a blank check, you check that the ST microcontroller's EPROM or FLASH has not been written. This is a useful way of verifying that a ST microcontroller has not already been programmed.



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Verify

STVP can check that the code written to the ST microcontroller EPROM, FLASH, EEPROM or Options Byte are consistent with that stored in the files whose contents were used.



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Erase

You can perform an automatic erase on a FLASH memory area. This is the way to erase all information in a FLASH memory area before programming.