

# SIMATIC

## STEP 7-Micro/WIN 32 Version 3.1

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## Notes on Installation

### 1 Hardware Requirements:

- Recommended Processor & Memory: a personal computer (PC) with a Pentium or greater processor with at least 32 Mbytes of RAM, or a Siemens programming device (such as a PG 740)
- Microsoft Windows 95, Windows 98, or Windows NT 4.0 Service Pack 5
- At least 50 Mbytes of free hard disk space.
- Recommended resolution of 1024x768 pixels.
- Optional but recommended: any mouse supported by Microsoft Windows
- One of the following sets of equipment:
  - A PC/PPI cable connected to your communications port (PC COM1 or COM2)
  - A communications processor (CP) card and multipoint interface (MPI) cable
  - A multipoint interface (MPI) card. A communications cable comes with the MPI card.

### 2 Installation:

Close all applications including the MS-Office Toolbar before installing STEP 7-Micro/WIN 32. Other applications that use the same set of system files must be closed in order for STEP 7-Micro/WIN 32 to install properly.

Installation Instructions:

1. Insert STEP 7-Micro/WIN 32 CD into CD-Rom drive.
2. The Setup program should run automatically.
3. Follow the instructions displayed to complete the installation.

# Notes on Usage

## 1 What's new in Version 3.1

- + Bumpless Edit in Run Mode. This is only available within 224 Release 1.1 or greater and 226 Release 1.0 or greater CPUs.
- + STL Execution Status. This is only available within 22x Series CPUs.
- + Trigonometric instructions Sine, Cosine, Tangent, Log, and Exponent. These are only available within 224 Release 1.1 or greater and 226 Release 1.0 or greater CPUs.
- + Byte Immediate Read, Byte Immediate Write, Get Port Address, Set Port Address instructions. These are available for all 22x Series CPUs with firmware Release 1.1 (Release 1.0 for 226 CPU) or greater.
- + Additional 16 words of analog support for 224 Release 1.1 or greater and 226 Release 1.0 or greater CPUs.
- + Wizard support for Version 2.0 of the TD200 Text Display.
- + PROFIBUS-DP Slave Module support.
- + Symbolic Information Table (with absolute address, symbol, and symbol comment following each network in LAD & FBD
- + Ability to view the symbol and absolute address for each element during editing and status monitoring in LAD & FBD
- + Multiple network cut/copy/paste with both keyboard and mouse selection
- + Improved view settings with preview of grid width in LAD & FBD
- + Print preview for all settings with auto-display of current rung position or selection
- + Ability to renumber subroutines & interrupts from the POU properties
- + Symbolic names for subroutines, interrupts, and indirect addressing in all editors
- + Find/Replace improvements
- + Print preview and printing enhancements

## 2 Known Problems and Remedies

### 2.1 Problems

1. If you experience problems printing with a HP DeskJet color printer, or you are experiencing problems with other printers, try downloading the newest available drivers for the printer from the printer manufacturer. Otherwise you can change the printer driver to the Windows universal driver for your printer, which in the case of the DeskJet is the 550c driver.
2. If STEP 7-Micro/WIN 32 exhibits strange behavior (i.e. very wide dialogs) or an application fault occurs while using the Find/Replace/Goto functionality on a Windows 95 operating system, the most likely problem is out-of-date system files. The Microsoft update for these files is located on the STEP 7-Micro/WIN 32 installation CD in the file COM32UPD.exe. Run this file to update your system. If STEP 7-Micro/WIN 32 still exhibits the same behavior after this contact customer support.
3. If you are experiencing problems using the SIEMENS PPI Multi-Master Configuration you may need to fix your port settings on your computer. SOLUTION: right click on My Computer on the Desktop and select Properties. Select the Device manager Tab and then double click on the Ports (COM & LPT). Select the on Communications Port (i.e. COM1) that you are currently using. On the Port Settings tab -

click the "Advanced" button in bottom left. In the new window set the Receive Buffer to the MINIMUM value while leaving the Transmit Buffer at the Default. Then Reboot computer to set these new settings.

4. Once STEP 7-Micro/WIN 32 V3.1 is installed, Step 7-Micro/WIN 32 V2.x will not be able to communicate via the PPI multiple master network option.

## 2.2 WIPEOUT.EXE

The WIPEOUT utility is a DOS-based application, which will restore the PLC to factory defaults. This program is useful if you have a PLC at an unknown address or baud rate and you cannot communicate to it with STEP 7-Micro/WIN 32. The WIPEOUT utility will delete the user program (OB1), the data block (DB1) and all configuration information (SDB). The PLC will be set to address 2 at 9600 baud. The WIPEOUT utility is not installed along with STEP 7-Micro/WIN 32. A copy of the utility is on the STEP 7-Micro/WIN 32 installation CD. The utility may be run from the CD or copied and run from the hard drive. To run the WIPEOUT utility, open a DOS Window and type "WIPEOUT", and follow the directions.

## 2.3 National Languages

STEP 7-Micro/WIN 32 uses several Microsoft common dialog boxes. The text in these dialogs will appear in the national language of the operating system, regardless of the language you have chosen for STEP 7-Micro/WIN 32.

## 2.4 General Communications

NOTE : All of the following information is explained in detail in the S7-200 Programmable Controller System Manual.

PLC Type	Hardware Supported	Baud Rates	OS	Communications
212, 214, 216 215 (port 0)	PC/PPI Cable MPI-ISA Card MPI-ISA Card on Board CP5411, CP5511, CP5611	9.6 kbaud 19.2 kbaud	Win95 Win98 WinNT 4.0	PPI PPI Multi-Master
215 (DP port)	PC/PPI Cable MPI-ISA Card MPI-ISA Card on Board CP5411, CP5511, CP5611	9.6 kbaud 12 Mbaud	Win95 Win98 WinNT 4.0	MPI
22x	PC/PPI Cable	9.6 kbaud 19.2 kbaud	Win95 Win98 WinNT 4.0	PPI PPI Multi-Master
22x	MPI-ISA Card MPI-ISA Card on Board CP5411, CP5511, CP5611	9.6 kbaud 19.2 kbaud 187.5 kbaud	Win95 Win98 WinNT 4.0	PPI PPI Multi-Master

### 2.4.1 Multi-Master Communications

Special Note:

When using Multi-Master communications on networks with several masters (including TDs, OPs, etc.), the hardware takes several seconds to be initialized onto the PLC network. If communication is attempted before this initialization is complete, an error may occur. If such an error does occur, retrying the last request should correct it.

Setting STEP 7-Micro/WIN 32 Network Addresses:

As a general rule, use the lowest available addresses for masters and the higher addresses for slaves. It is preferable, but not required to use consecutive addresses for the masters on a network. For example, a

network with STEP 7-Micro/WIN 32, a TD 200, an OP15, and some number of S7-200s could use address 0 for STEP 7-Micro/WIN 32, 1 for a TD 200, and 2 for an OP15. The S7-200s could then be addressed as 3, 4, and 5, or you could leave these numbers free for additional masters and start the numbering of the S7-200s at 16.

#### TD 200/MPI:

There exists a possible problem when downloading or uploading a program with the CPU 215 or CPU 216 when an older TD 200 (pre-v1.2) is polling the CPU. The current time-out error on the TD 200 is no longer appropriate for these newer CPU models. A workaround is to temporarily disconnect the TD 200 from the network, download or upload the program, and then reconnect the TD 200 to the network.

#### Master Mode Communications Error:

STEP 7-Micro/WIN 32 might report erroneous communications time-out errors when the PLC is in Master mode. For example, using STEP 7-Micro/WIN 32 to put the CPU in STOP mode might return this error even though the CPU did in fact go to STOP mode.

### 2.4.2 PPI Communications

#### Using PPI Multi-Master Configuration:

When Multi-Master is checked on the PPI Network tab and STEP 7-Micro/WIN 32 is communicating through COM1 or COM2, if you start another application which uses the same COM port as STEP 7-Micro/WIN 32, neither application will operate correctly. If this occurs, close both applications, then restart only one.

### 2.4.3 MPI Communications

#### Setting up the MPI Cards with STEP 7-Micro/WIN 32:

In order to communicate using the MPI card, the STEP 7-Micro/WIN 32 MPI driver requires that the memory space used by the card be reserved (excluded) by the system. This prevents the memory manager from allocating this area of memory to another application. SIMATIC STEP 7 does not require this memory to be excluded, but should operate properly with the memory either included or excluded.

The memory space used by the MPI card is selected by using the switches on the card. The default address space on the MPI card is 0xDC000-0xDC407 on a PC, which is the recommended address space. On a PG, the default is 0xCC000-0xCC407. The procedure for excluding this memory depends upon the memory manager in use.

- Case 1: MPI Card on a PG or PC running Windows 95 or Windows 98.

1. In the CONFIG.SYS file, look for a line of code similar to the following that loads the memory manager: `DEVICE=EMM386.EXE X=A000-BFFF I=C000-CCFF I=CD00-DFFF X=E000-EFFF FRAME=D000`
2. Change the `I=C000-CCFF` to `X=C000-CCFF` and save the file.
3. The end result should look as follows: `DEVICE=EMM386.EXE X=A000-BFFF X=C000-CCFF I=CD00-DFFF X=E000-EFFF FRAME=D000`

Please note that this configuration example assumes that the MPI card is at address 0xCC00, which is the default for a PG. If the settings are different, then the address range to be excluded should be changed to match the card.

#### MPI Cards for STEP 7-Micro/WIN 32 using Windows 95 and Windows 98

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- Case 1: CP5511, CP5611  
These cards are Plug-and-Play; they are automatically detected and self-initializing.
- Case 2: CP5411, MPI-ISA Card, MPI-ISA Card on Board

These cards are installed from the communications setup. The address ranges and interrupt are detected by Windows and set up automatically.

#### MPI Cards for STEP 7-Micro/WIN 32 using Windows NT

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- Case 1: CP5511, CP5611

These cards are automatically detected and self-initializing.

- Case 2: CP5411, MPI-ISA Card, MPI-ISA Card on Board

These cards are installed from the communications setup. It is necessary to specify the resources (addresses space and interrupt) used by the card from the communications setup.

### 3 Using the Force Function

#### **WARNING: Beware of Injury to Personnel and Damage to Property:**

Note that when using the "Force" function, any incorrect action could:

- Endanger the life or health of personnel
- Cause damage to machines or the whole plant.

**The Force function should be used only by authorized personnel who understand the Force function and how it affects system operation.**

The following should be considered when using the Force function:

- Any Forced values will remain Forced even when the PLC is in STOP mode.
- The Force function overrides an output that has been configured to go to a specified value when the PLC transitions to STOP mode.
- If the PLC is power cycled, any Forced values will be reapplied when power is restored to the PLC.

For more information about using the Force function, consult the [S7-200 Programmable Controller System Manual](#).