

# SmartPick™ Software Download

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## Change History

Author	Version	Date	Comments
Jürg Werthmüller	01.00	Long ago	Created
Jürg Werthmüller	01.01	12.12.2018	Modifications concerning License handling PEMicro

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## 1 FIRST STEPS

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You will need a Windows PC with one available USB-Port. To this USB port you connect:

- either the USB PowerPC BDM Multilink adapter (part no. E11687) to program the Main Board
- or the USB Mon08 Multilink adapter (part no. E11520) to program the following slave devices:
  - Control Board
  - Terminal Board
  - InfoPick Board (a.k.a. Display Board)
  - SafePick Board (a.k.a. Redundancy Board)
- or the USB to setial-TTL adapter (ask Truninger) to program the I/O board.

The CablePPC Adapter for the parallel port (part no. E11521) used in the early days of SmartPick is no longer available, but is still supported by the present programmer software.

The drivers and the latest releases of the SmartPick™ system software can be downloaded from page **Downloads - Software** at the [www.truninger.com](http://www.truninger.com) site.

The programming software itself is only available from PEMicro .You will need a user account at [www.pemicro.com](http://www.pemicro.com) in order to obtain a copy of the following programs:

Master: PROGPPCZ Power Architecture 5xx/8xx Flash/EEPROM Programmer, approx. \$199

Slaves: CPROG08SZ 68HC08 Command-Line Programming Software, approx. \$129

We recommend using a ZIP program like IZArc, which is also available from [www.truninger.com](http://www.truninger.com)

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## 2 INSTALLATION ON THE PC

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### 2.1 USB Adapter Driver Installation

First, execute the file Drivers\_install.exe. This will install the driver for the USB adapters. Change the installation path to `<program folder>\pemicro\drivers`<sup>1</sup>. Reboot the PC after the installation.

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<sup>1</sup> `<program folder>`: C:\Program Files is the default path to install programs in English and some other language systems like French, Turkish, etc, but the path may vary, e.g.:

German: C:\Programme

Portuguese: C:\Arquivos de Programas

Swedish: C:\Program

Spanish: C:\Archivos de programa

To find out the path to use, open the command prompt window and enter the command **SET**. The environment variable ProgramFiles indicates the correct path to use. You will find the path in the system handbook, too.

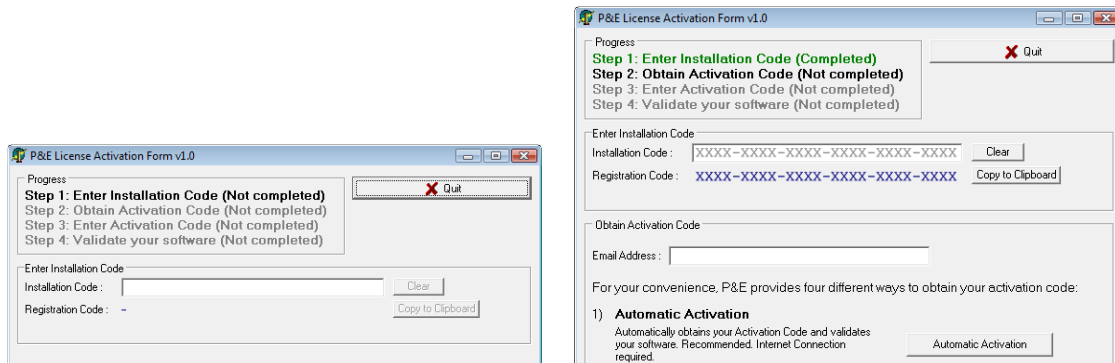
## 2.2 USB PowerPC BDM Multilink Adapter

Any previously installed older version has to be deinstalled first. Former revisions of the adapter are still usable with the current programmer software.

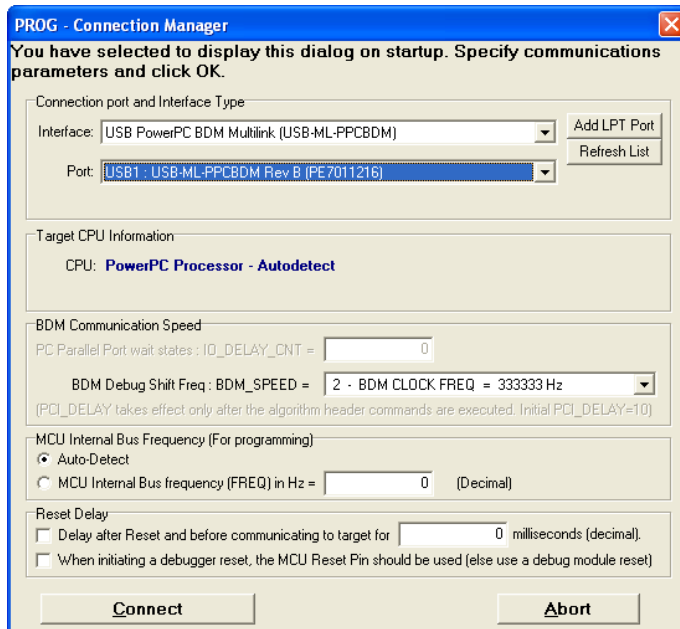
To start the installation, execute PPC\_install.exe.

*Important: Change the installation path to <program folder>\pemicro\progppcz<sup>1</sup>. Otherwise the SmartPick software download will not work!*

After installation, the software have to be unlocked. You will need the installation code that you received when purchasing the software. Follow the instructions on the screen.



When starting the PROGPPCZ - PowerPC programmer software for the first time, change the settings according to the picture below:



Click **Abort**, this will close the program and save the settings.

**Warning, danger of confusion!** The only difference between USB Mon08 and USB PowerPC adapters is their label on the bottom; the indications on the top are the same. We recommend to permanently and uniquely mark the devices.

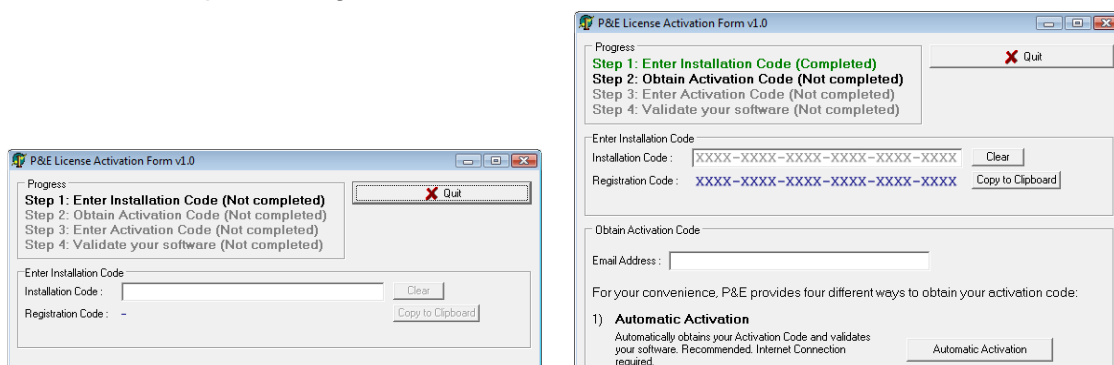
## 2.3 USB Mon08 Adapter

Any previously installed older version has to be deinstalled first. Former revisions of the adapter are still usable with the current programmer software.

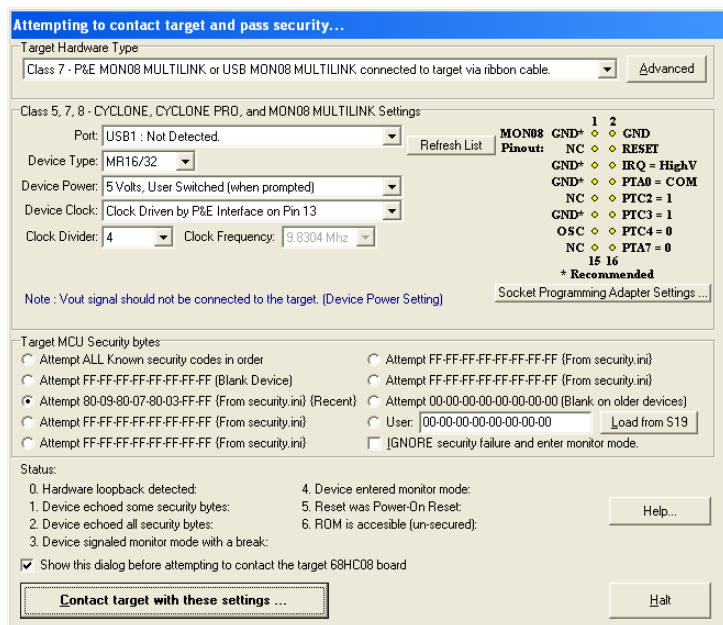
To start the installation, unpack the file HC08\_CLP\_2.12.zip, e.g. to C:\Temp, and execute set-up.exe.

*Important: Change the installation path to <program folder>\pemicrol\prog08sz<sup>1</sup>. Otherwise the SmartPick software download will not work!*

After installation, the software have to be unlocked. You will need the installation code that you received when purchasing the software. Follow the instructions on the screen.



When starting the PROG08SZ programmer software for the first time, change the settings according to the picture below:



Click **Halt**, this will close the program and save the settings.

**Warning, danger of confusion!** The only difference between USB Mon08 and USB PowerPC adapters is their label on the bottom; the indications on the top are the same. We recommend to permanently and uniquely mark the devices.

## 2.4 USB to Serial-TTL Adapter

Any previously installed older version has to be uninstalled first. From the Truninger software download page, download "Driver for PL2303 USB to serial adapter cable, Windows XP/7", unzip it and run PL2303\_Prolific\_DriverInstaller\_vxxx.exe, xxx being the current software version.

## 2.5 Programming Software for I/O Board

From the Truninger software download page, download "I/O Board Programmer" and run the downloaded file IODownloadInstall.exe, click "Next >" button, then "Install" button. At the end of installation, click "Finish" button. The I/O board downloading software is automatically installed into folder *<program folder>\STMFlashIO*. See footnote above for information about the precise location.

It can be uninstalled from the Control Panel – Software – "STMFlashIO".

### 3 SOFTWARE DOWNLOAD

#### 3.1 Devices to Download

The following SmartPick components contain downloadable software:

- Main Board
- Slave devices:
  - Redundancy Board (SafePick)
  - Display Board (InfoPick)
  - **either** Terminal Board and Control Board(s)
  - **or** I/O Board

#### Automatic Software Download to Slave Devices

If the software release **currently installed** on the SmartPick system is **RL708 or higher**, then, in order to install a newer release, this new release needs to be **downloaded only to the main board**. When powering up the system after download, the main board will then reprogram all the other components automatically.

Similarly, if you had to replace a slave device, e.g. during repair, and the installed software release is RL708 or higher, then, if necessary, the new slave device will automatically be reprogrammed by main board in most cases.

#### Manual Software Download

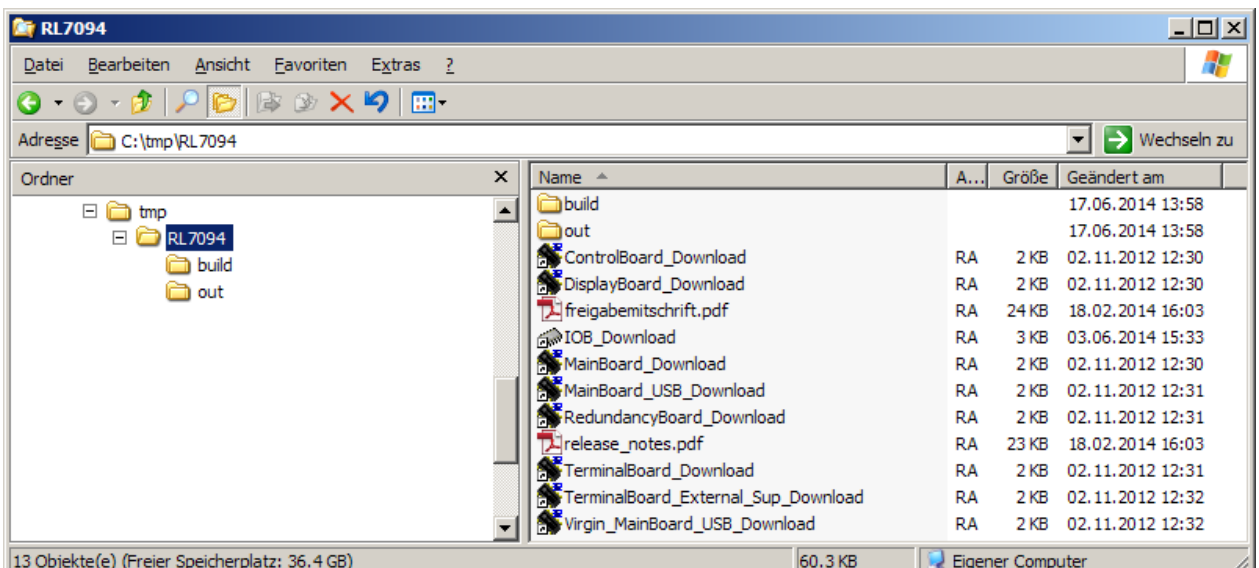
If the software release currently installed on the SmartPick system is RL7073 or smaller, a newer release has to be installed manually to all devices.

Similarly, if a slave device had to be replaced (e.g. during repair) and automatic software download failed, you must manually install the matching software to this device. Automatic download always fails if the currently installed slave software has a version smaller than 200.

#### 3.2 Preparation

Download the latest SmartPick software release (eg. RL7094) from the SmartPick download page (**Lifting Magnets – SmartPick Download**) on [www.truninger.com](http://www.truninger.com). **Unpack the zip file and open the unpacked folder.**

Here is an example of the content of the unpacked software RL7094:



The folders and files serve the following purpose:

File	Purpose
build	Contains all files needed by the programming adapter software
out	Contains the software to be downloaded to SmartPick components.
ControlBoard_Download	Double-clicking this link downloads the software to the Control Board via the USB Mon08 adapter.
DisplayBoard_Download	Double-clicking this link downloads the software to the InfoPick Board via the USB Mon08 adapter.
freigabemitschrift.pdf	Same as release_notes.pdf, but in German.
IOB_Download	Double-clicking this file downloads the software to the I/O board via the serial-TTL (or USB to serial-TTL) adapter.
MainBoard_Download	Double-clicking this link downloads the software to the Main Board via the old CablePPC parallel port adapter.
MainBoard_USB_Download	Double-clicking this link downloads the software to the Main Board via the USB PowerPick BDM Multilink adapter.
RedundancyBoard_Download	Double-clicking this link downloads the software to the SafePick (Redundancy) Board via the USB Mon08 adapter.
release_notes.pdf	This document lists all changes made in this software release.
TerminalBoardDownload	Double-clicking this link downloads the software to the Terminal Board via the USB Mon08 adapter.
TerminalBoard_External_Sup_Download	Is used in lieu of TerminalBoardDownload if the USB port of your PC is not capable of delivering enough DC power to the Terminal Board during programming. It allows the board to be powered by SmartPick.
Virgin MainBoard_USB_Download	Used at Truninger only during Main Board assembly.

The software versions installed in the Main Board and all slave devices must match. Document release\_notes.pdf lists the required software release number for each device. It also shows which software has changed since the last release.

### 3.3 Download to Main Board

1. Connect the USB PowerPC BDM Multilink adapter to the USB socket or the CablePPC parallel port adapter to the parallel port of your PC.
2. Remove all power from the SmartPick system by swivelling out all mains and battery fuses in all cabinets, starting with the rightmost cabinet and proceeding towards the leftmost one.
3. Insert the adapter cable into the 10-pin programming plug on the Main Board. You find this plug near the top end of the right-hand side of the Main Board housing.
4. Power the Main Board by swivelling in the mains fuse 1F0 in the Main Board cabinet.
5. Double click the link **MainBoard\_USB\_Download** (USB PowerPC BDM Multilink) or **MainBoard\_Download** (CablePPC).
6. The programming process starts automatically. Programming is finished when the message 'All programming steps completed' appears.
7. Terminate the program by clicking **Quit**.
8. Swivel out the mains fuse 1F0 in the Main Board cabinet.
9. Unplug the adapter cable.

### 3.4 Download to Terminal Board

Note that if the currently installed software release is RL708 or higher, you don't normally need to download any software manually to the terminal board (see 3.1).

1. Connect the USB Mon08 adapter to the USB socket of your PC.
2. Remove all power from the SmartPick system by swivelling out all mains and battery fuses in all cabinets, starting with the rightmost cabinet and proceeding towards the leftmost one.
3. Insert the adapter cable into the 10-pin programming plug on the Terminal Board.
4. Double click the link **TerminalBoard\_Download**.
5. The programming process starts automatically. Programming is finished when the message 'All programming steps completed' appears.
6. Terminate the program by clicking **Quit**.
7. Unplug the adapter cable.

If programming failed, the reason might be the USB port of your PC (typically a laptop) not providing enough DC power for the Terminal Board during programming. In such cases, the power supply of the SmartPick system could be used. Proceed then as follows:

1. Assure that the USB Mon08 adapter is connected to the USB socket of your PC and the adapter cable is connected to the 10-pin programming plug of the Terminal Board.
2. Double click the link **TerminalBoard\_External\_Sup\_Download**.
3. From time to time a window pops up (examples see below) asking you to turn on or off power. Do this by swivelling in or out the mains fuse 1F0 in the Main Board cabinet. After swivelling in or out, wait for five seconds before clicking **OK**.
4. Programming is finished when the message 'All programming steps completed' appears.
5. Terminate the program by clicking **Quit**.
6. Swivel out the mains fuse 1F0 in the Main Board cabinet.
7. Unplug the adapter cable.



Prompt to swivel in the mains fuse 1F0



Prompt to swivel out the mains fuse 1F0

### 3.5 Download to Control Board and InfoPick (Display) Board

Note that if the currently installed software release is RL708 or higher, you don't normally need to download any software manually to the display board (see 3.1).

Downloading software to the Control Board and the InfoPick Board is very similar. However, the front cover of the InfoPick housing must be removed in order to gain access to the 10-pin programming plug. Note that if the SmartPick system has more than one Control Board or more than one InfoPick, each device has to be programmed.



1. Connect the USB Mon08 adapter to the USB socket of your PC.
2. Remove all power from the SmartPick system by swivelling out all mains and battery fuses in all cabinets, starting with the rightmost cabinet and proceeding towards the leftmost one.
3. Insert the adapter cable into the 10-pin programming plug on the Control Board / InfoPick Board.
4. Double click the link **ControlBoard\_Download** (for Control Boards) or **DisplayBoard\_Download** (for InfoPick Boards).
5. The programming process starts automatically. Programming is finished when the message 'All programming steps completed' appears.
6. Terminate the program by clicking **Quit**.
7. Unplug the adapter cable.

### 3.6 Download to SafePick (Redundancy) Board

Note that if the currently installed software release is RL708 or higher, you don't normally need to download any software manually to the redundancy board (see 3.1).

1. Connect the USB Mon08 adapter to the USB socket of your PC.
2. Remove all power from the SmartPick system by swivelling out all mains and battery fuses in all cabinets, starting with the rightmost cabinet and proceeding towards the leftmost one.
3. Insert the adapter cable into the 10-pin programming plug on the SafePick Board.
4. Double click the link **RedundancyBoard\_Download**.
5. From time to time a window pops up (see pictures in 3.4 Download to Terminal Board) asking you to turn on or off power.
6. If the hardware revision number of the SafePick Board is Rev06 or higher (see lower left corner of the board), you can simply click **OK** when prompted.
7. If the hardware revision number of the SafePick Board is Rev05 or lower, turn on or off power when prompted by swivelling in or out the mains fuse 1F0 in the Main Board cabinet. After swivelling in or out, wait for five seconds before clicking **OK**.
8. The programming process starts automatically. Programming is finished when the message 'All programming steps completed' appears.
9. Terminate the program by clicking **Quit**.
10. Swivel out mains fuse 1F0 in Main Board cabinet if it is swivelled in.
11. Unplug the adapter cable.

### 3.7 Download to I/O Board

Note that you don't normally need to download any software manually to the I/O board since it is supported only starting from software release RL709.

1. Connect either the RS232 to TTL adapter to the COM1 socket of your PC, or the USB to serial-TTL adapter to USB socket on your PC. If COM1 port is used for programming, all the USB to serial adapters must be disconnected. Only one USB to serial adapter might be connected to the PC at programming time of the I/O board.
2. Remove all power from the SmartPick system by swivelling out all mains and battery fuses in all cabinets, starting with the rightmost cabinet and proceeding towards the leftmost one.
3. Remove jumper B1 and install jumper B0 on the I/O board.
4. Connect the RS232-TTL (or USB to serial-TTL) adapter cable to the X102 (4-pins) plug on the I/O board. Pay attention to correct orientation of the plug: RX to RX and VCC to VCC.

5. Apply the +24V power to the I/O board by swivelling in the mains fuse 1F0 in the I/O Board cabinet.
6. Double click the link **IOB\_Download**. The programming process starts automatically in the DOS-box window as shown below:

```

Found USB-COM port 2
Opening Port [OK]
Activating device [OK]
Setting Option bytes data [OK]
Resetting device [OK]
disabling write protection [OK]
reseting device [OK]
erasing all pages [OK]

DOWNLOADING ...

downloading page 0 @0x 8000000 size 2.00 (KB) [OK]
downloading page 1 @0x 8000800 size 2.00 (KB) [OK]
...
downloading page 51 @0x 8019800 size 0.64 (KB) [OK]

Press any key to continue ...

```

7. Terminate the program by pressing Enter key.
8. Unplug the adapter cable from I/O Board.
9. Disconnect power from I/O board by swivelling out the mains fuse 1F0.
10. Remove jumper B0 and install jumper B1 on the I/O board.

If programming failed with the message:

```

Activating device [KO]
No response from the target, the Boot loader can not be started..

```

The reason might be that I/O board was not properly reset at power-up. Reconnect I/O board power and repeat the programming procedure again.

The next message will appear, if more than 1 USB to serial adapters are connected to the PC:

```

Found more then 1 USB-COM ports
Please leave connected the only programming adapter and try
again.

```

If the USB to serial-TTL adapter is connected to your PC for programming, but your received the next message:

```

USB-COM port not found !
Use standard COM1.

```

Please verify that the USB to serial-TTL adapter driver has the latest version and it is properly installed.

## 4 OPERATION

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After having successfully downloaded the new software to Main Board (and possibly the slave devices, see 3.1) the SmartPick system can be restarted. Proceed as follows:

1. Swivel in all mains and battery fuses of all SmartPick cabinets, starting with the leftmost cabinet and proceeding towards the rightmost cabinet.
2. In case of **automatic software download** (see 3.1), the download from main board to the slave devices starts automatically at the first power-up. It takes about ten minutes. During this time, the system is not in working order. Each slave device automatically goes online after successful download. To see which devices are online, inspect status page "Slave Status".
3. In case of **manual software download** to all devices, the system should be ready to use after half a minute, i.e. magnets can be switched on and off.
4. If the system cannot be operated, the reason might be a software incompatibility, e.g. because a board has been left out during programming. Please use the status page "Slave Status" to find out which devices are missing and reprogram them manually.