

This document describes the firmware update procedure for the more recent class of mesytec VME modules via the MVP updater tool. Currently the MDPP-16/32, VMMR, MVLC and MCPD-8\_v2 can be updated via MVP.

## Requirements

- MVP 1.1.0 or later
- USB Cable Type A → Micro USB (VME Modules)  
or Type A → Type B (MCPD-8\_v2)
- MVP Software for Windows or Linux
- Firmware file for your device

## Download and Installation

- MVP: <https://mesytec.com/downloads/firmware%20updates/mvp/>
- Firmware files: [https://mesytec.com/downloads/firmware%20updates/firmware\\_VME.html](https://mesytec.com/downloads/firmware%20updates/firmware_VME.html)

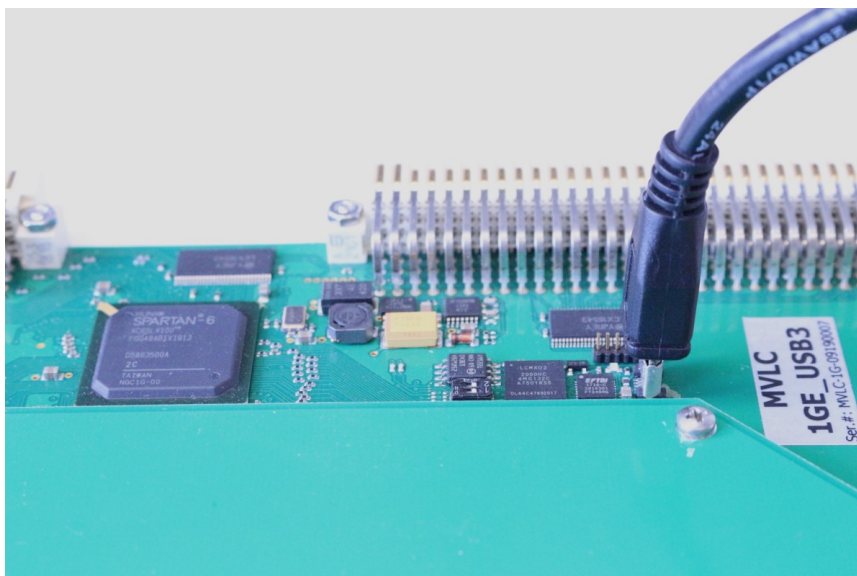
For Windows run the downloaded installer, then start MVP from the Start Menu. Alternatively download and unpack the ZIP file.

Under Linux unpack the downloaded archive via “tar xf mvp-0.9-3-linux-x86\_64.tar.bz2”. Start MVP using “./mvp-0.9-3-ga1d1070-x86\_64/bin/mvp”.

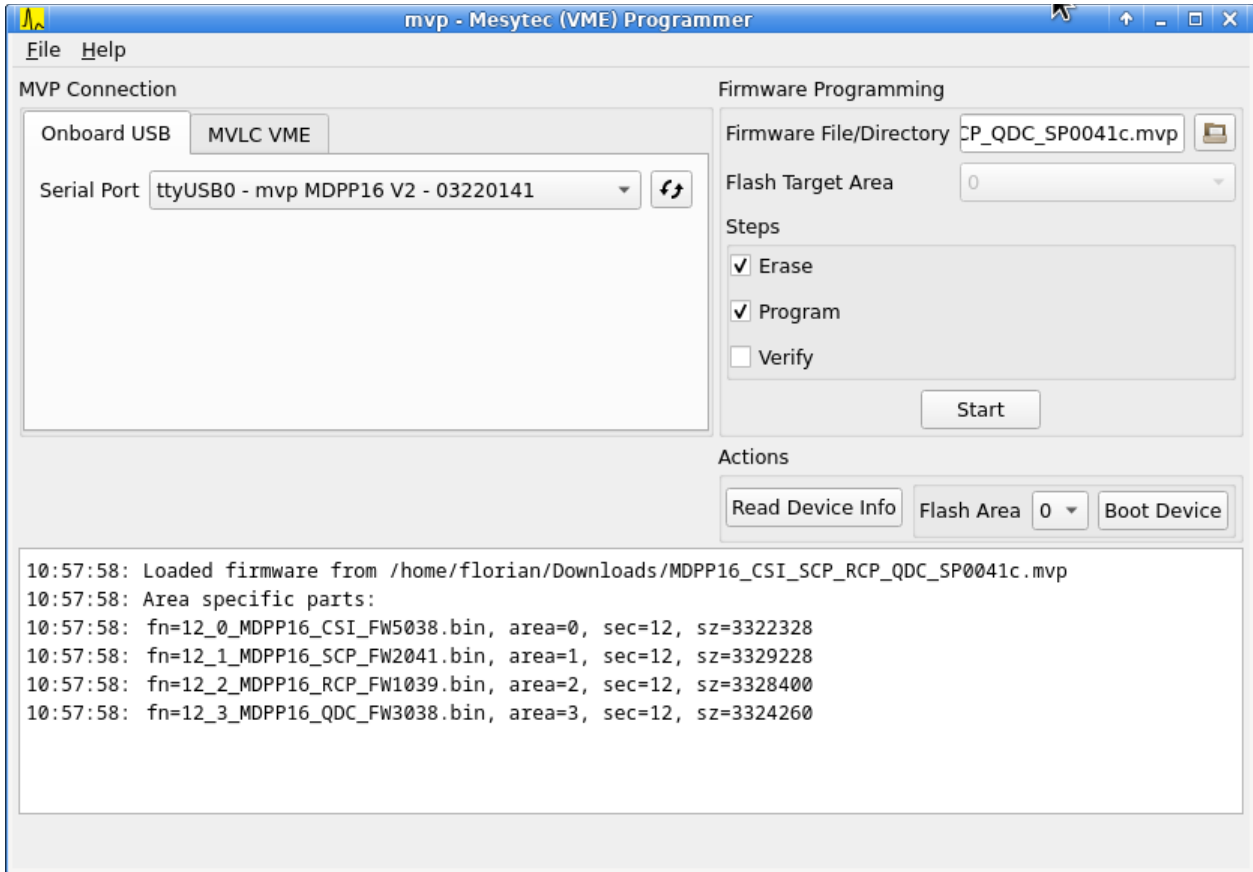
## Usage via onboard USB

Connect the Micro USB cable to the internal USB port of the VME module and to your PC. The VME module does not need to be inserted into a VME crate to complete the firmware update.

For the MCPD-8\_v2 use the USB-B port on the rear side of the module.



Start MVP and use the „Serial Port“ drop down box to select the correct port. Under Linux and Windows 10 or later the text description next to the serial port device name shows information and serial number of the connected module.



When using a firmware package (filename ending in ‚mvp‘) the „Flash Target Area“ drop down box will be disabled: the packages contain a standard set of firmware files which are automatically written to the correct flash areas. For stand-alone firmware files (‚bin‘ files) the area selection allows you to place the firmware into one of four available slots.

Use the DIP switches close to the Micro-USB connector to select the firmware slot that should be booted on power up of the VME module.

Press ‚Start‘ to begin the update process. After writing is complete the current DIP switch position will be output in the log window.

## Troubleshooting

- If writing fails with „Permission denied“ the user running mvp does not have write access to the serial port. Check and adjust the permissions and group ownership of the serial port device, e.g. ‚**chmod 666 /dev/ttyUSB1**‘ to make the device world-writeable.
- If Windows does not recognize the device you might be missing the FTDI VCP driver. Driver packages for manual installation can be found here: <https://ftdichip.com/drivers/vcp-drivers/>

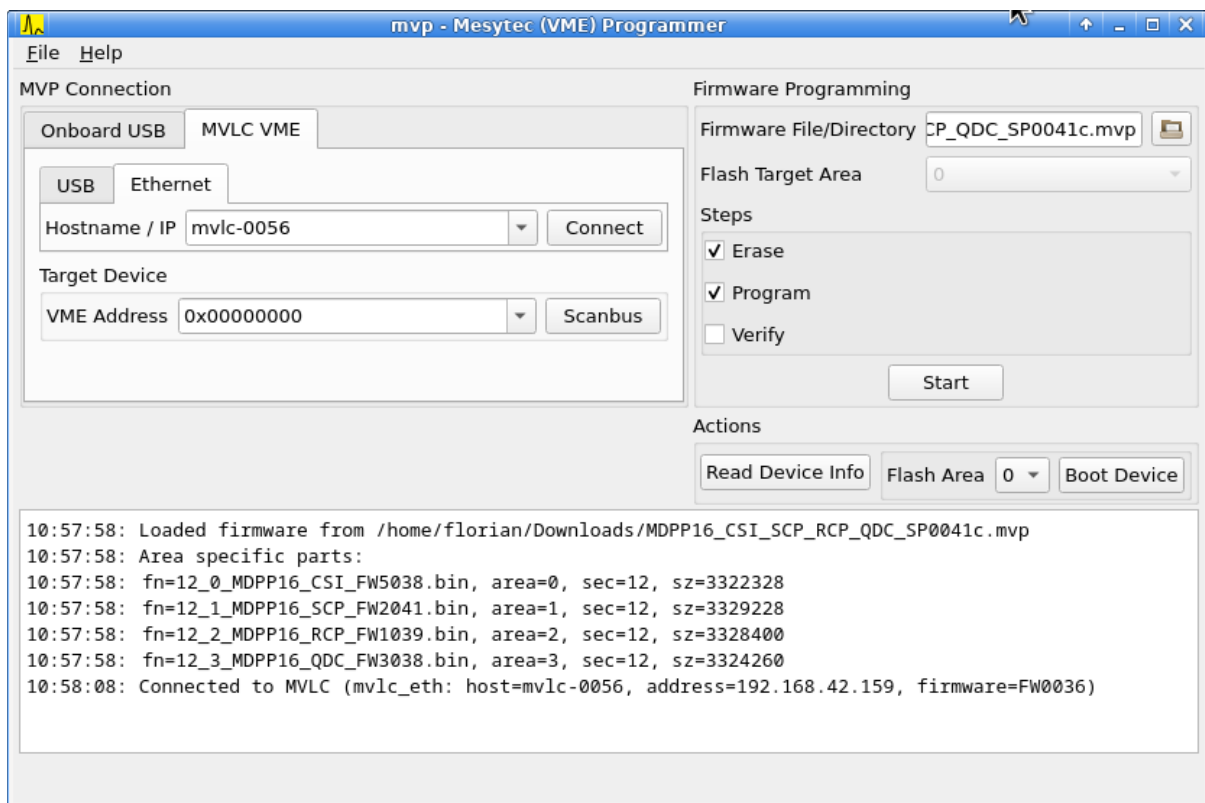
## Usage via VME Bus with the MVLC controller

The MVLC VME controller can be used to update compatible mesytec VME modules directly through the VME bus. Since firmware FW0036 the MVLC can also update itself through VME.

Table 1: Minimum Target Firmware Revisions

Module	Minimum Firmware
VMMR-8/16	FW8120
MVLC	FW0036

In the MVP GUI select the „MVLC VME“ connection method and either USB or Ethernet depending on how the connection to the MVLC should be established. Press „Connect“ to test connectivity to the MVLC.



The next step is to supply the VME address of the target device. Either directly enter a 32-bit hex address in the „VME Address“ line or use the „Scanbus“ button to scan the VME bus for mesytec modules. Found modules are shown in a table. Double-clicking a table row copies the selected VME address into the address field.

Use „Read Device Info“ to read out and display the device type and installed firmware keys. Use „Start“ to start the firmware update procedure, just like for the onboard USB case.

## MVLC Command Line Updater

The MVP distribution contains a command line utility for performing firmware updates through VME. The tool can be found under „bin/mvlc-mvp-updater“.

Example usage:

```
./mvlc-mvp-updater -h      # General help text
./mvlc-mvp-updater -h -a  # Full list of subcommands

# Connect to MVLC via USB. Scan the VME bus for mesytec modules.
./mvlc-mvp-updater --mvlc-usb scanbus

# Update the MDPP-16 at address 0x01000000
./mvlc-mvp-updater --mvlc-usb write-firmware -firmware \
~/Downloads/MDPP16_CSI_SCP_RCP_QDC_SP0041c.mvp --vme-address 0x01000000
# Now boot the module into area 1 (SCP firmware in this case).
./mvlc-mvp-updater --mvlc-usb boot-module --vme-address 0x01000000 --area 1
```