This document supports the service technician with the firmware update of RP-Technik components. It should be kept up-to-date regularly by downloading from http://www.rptechnik.de/index.php/de/component/docman/cat_view/6-module-modules/430-io-modul.html?Itemid

Here you can also find the firmware files for the individual components.
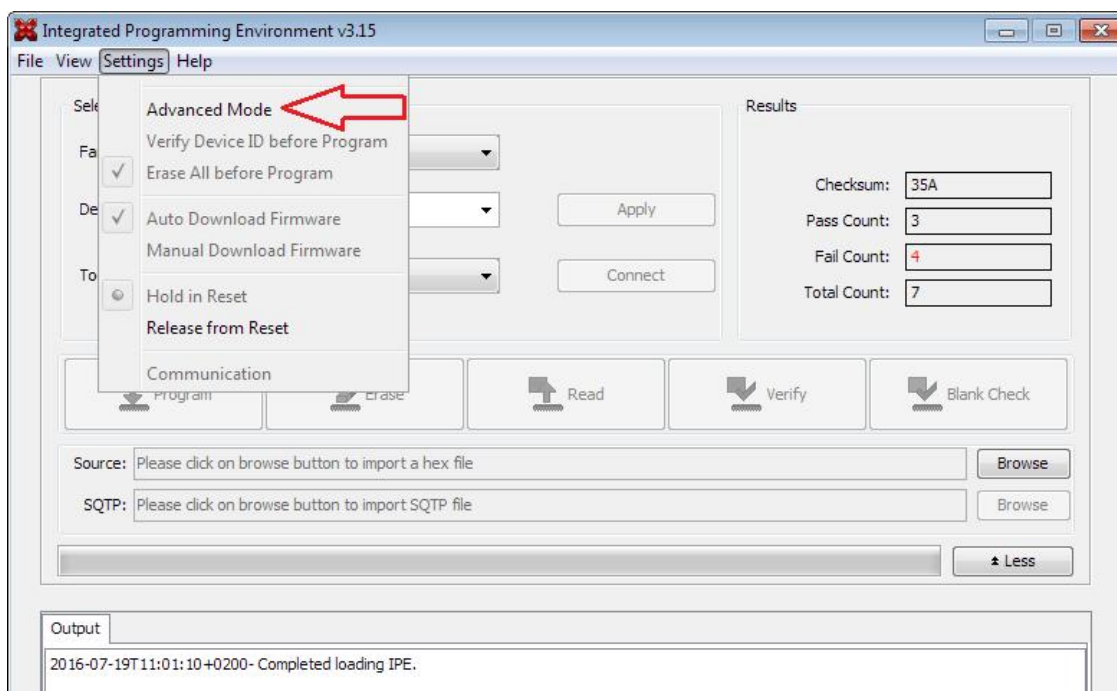
The free software MPLAB IPE has to be used as programming software. It can be downloaded for free from the microchip website:

http://ww1.microchip.com/downloads/en/DeviceDoc/MPLABX-v3.50-windows-installer.exe

Note: Choose "IPE" only during the installation; the "IDE" part is not needed.
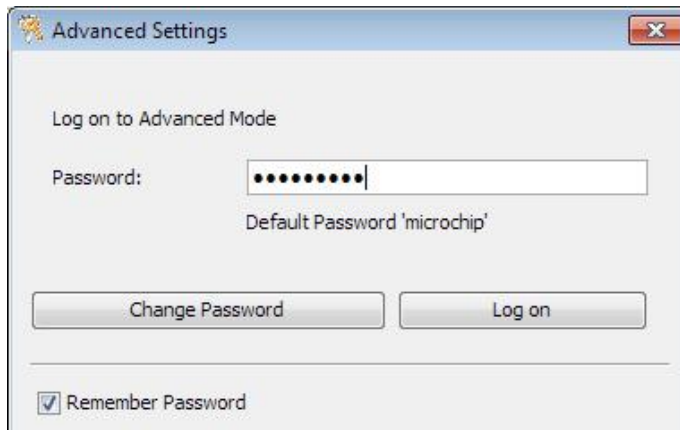
1. Presetting of the programming software MPLAB IPE

1. Activate *Advanced Mode*:

2. - enter password *microchip* and tick *Remember Password* (spares re-entering later)
   - click on *Log on* for confirmation:

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3. - select *Power* on the left
   - tick *Power Target Circuit from Tool*, this supplies the processor to be programmed
     with power from the programming adapter (PICkit3)
   - VDD: select *4.5V*
   - these settings are assumed without confirmation
   - go back to the page *Operate*
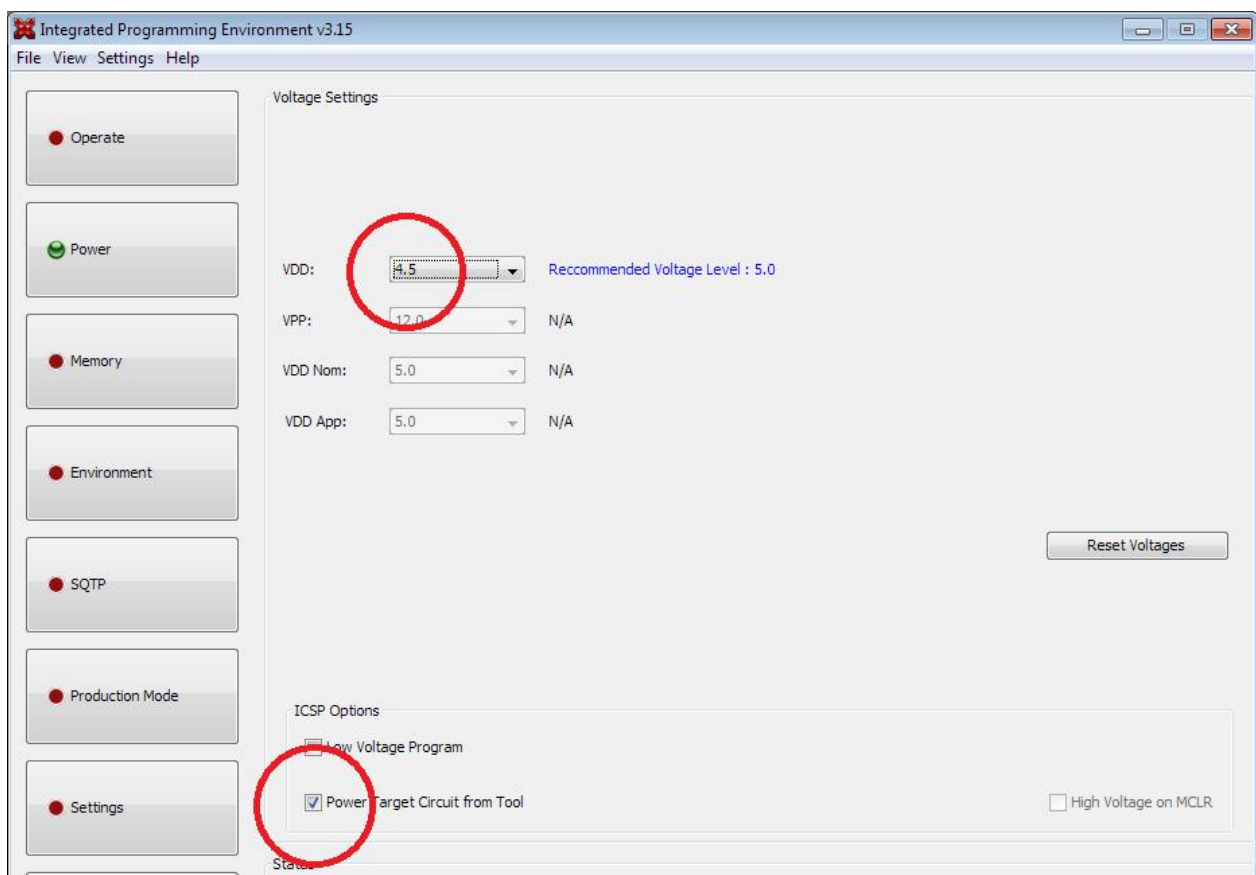
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2. Selection of processor type and firmware

The module IOMODUL is based on the controller

PIC16F917

Select PIC16F917 in the *Device* drop down list.
Now load a firmware file (*.hex) via *Source:* → *Browse*. At the end of the file name you can see a 4-digit check sum. After loading the file, this number must be readable the file in the field *Checksum*:
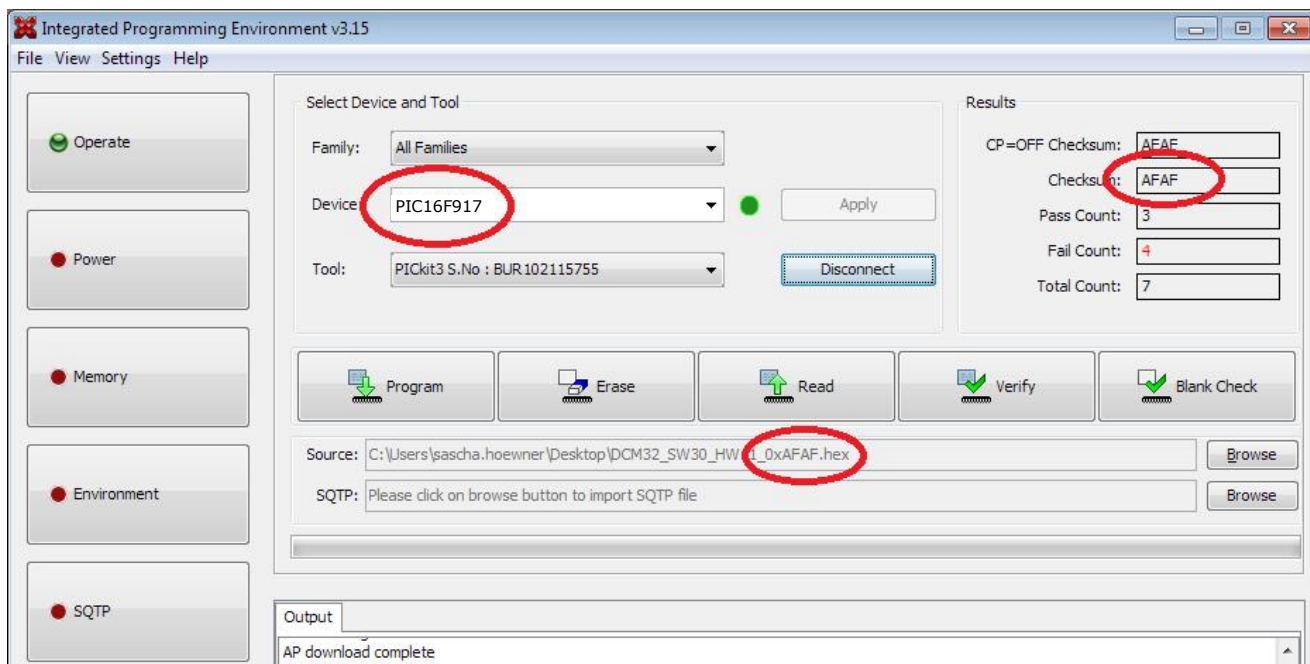
If the PICkit3 is already connected to the PC, it is shown in the field *Tool*. Otherwise connect it now. Then select the PICkit3 by clicking on *Connect*.
If the following error message appears, click on *OK*:
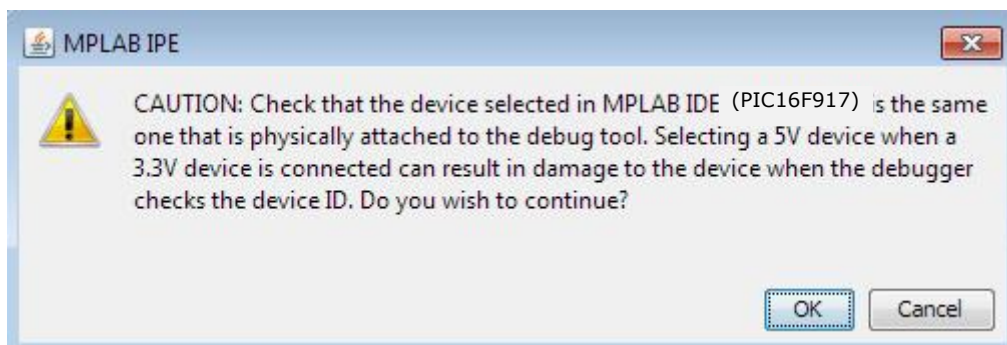
If this error message also appears during other process steps, it does not indicate a faulty operation. Just click on *OK* then.

3. Localisation of the programming interface on the module

Now connect the PICkit3 to the circled header on the module by means of the adapter cable 5-3x2. Remove the jumper before and plug it in again after the programming – the module does not work without the jumper.

IMPORTANT: Pin 1 of the module must match with Pin 1 on the PICkit3 (indicated by the white arrow)!
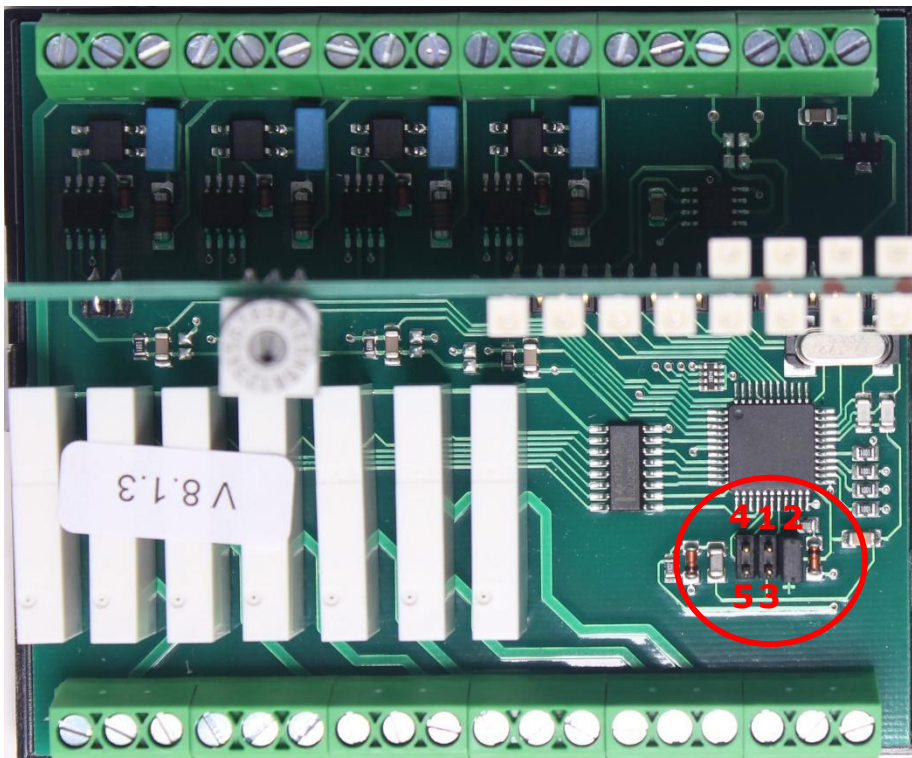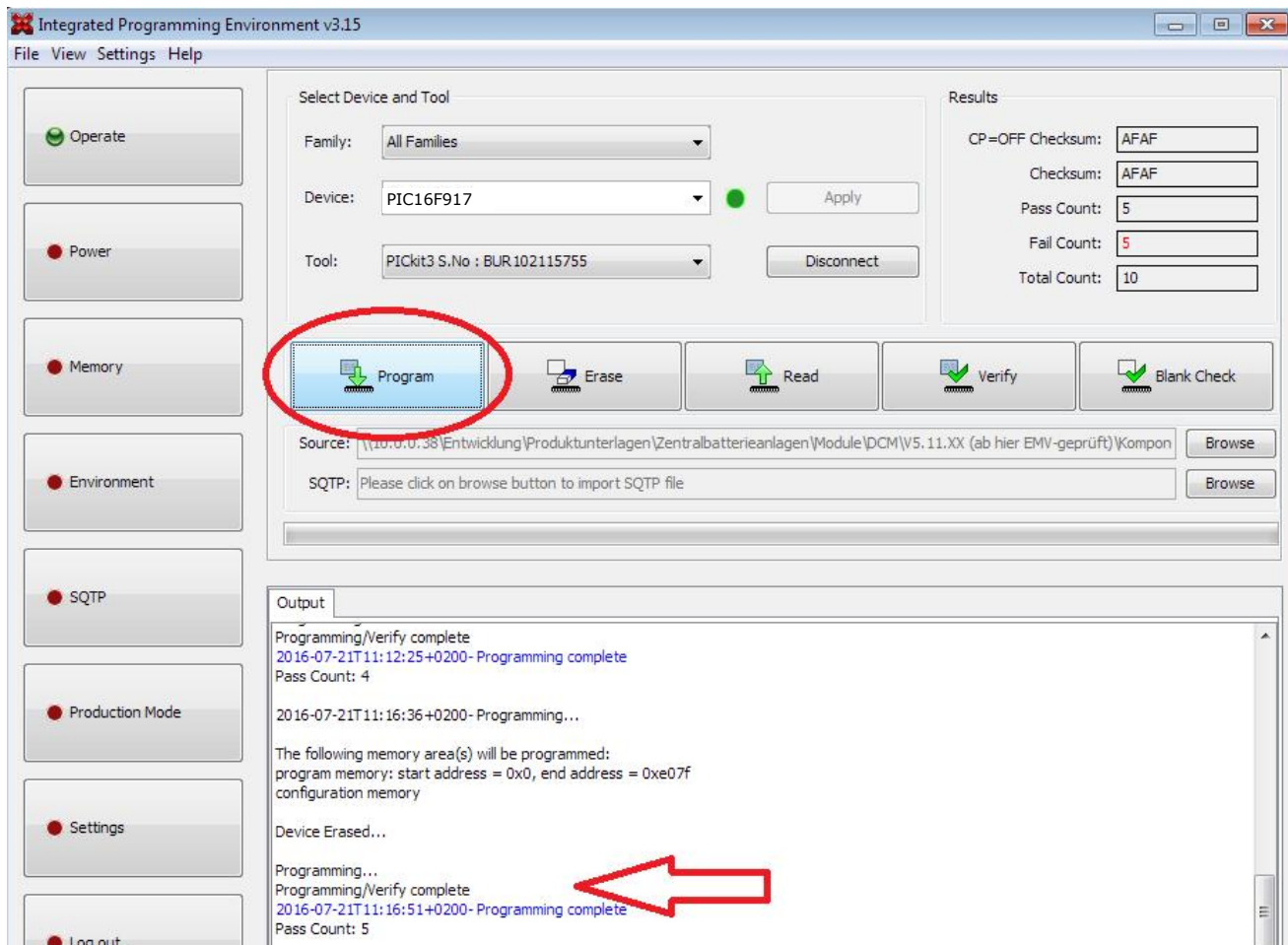

Adapter cable 5-3x2:
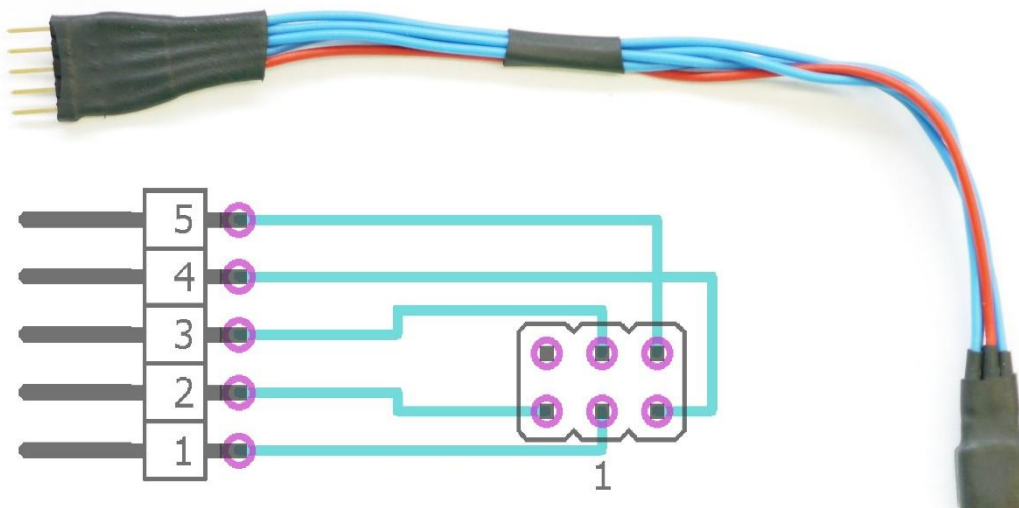
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4. Start programming and verify

The programming of the module is started by clicking on *Program*:

The written data are automatically checked after the programming. The successful completion of the programming is indicated by the line *Programming/Verify complete* or *Programming complete*.

When the programming failed:

- Has the correct processor type been selected?
- Check the settings on the page *Power* (→ 1.3)
- The settings shown in chapter 1.3 have to be made again after changing the processor type

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