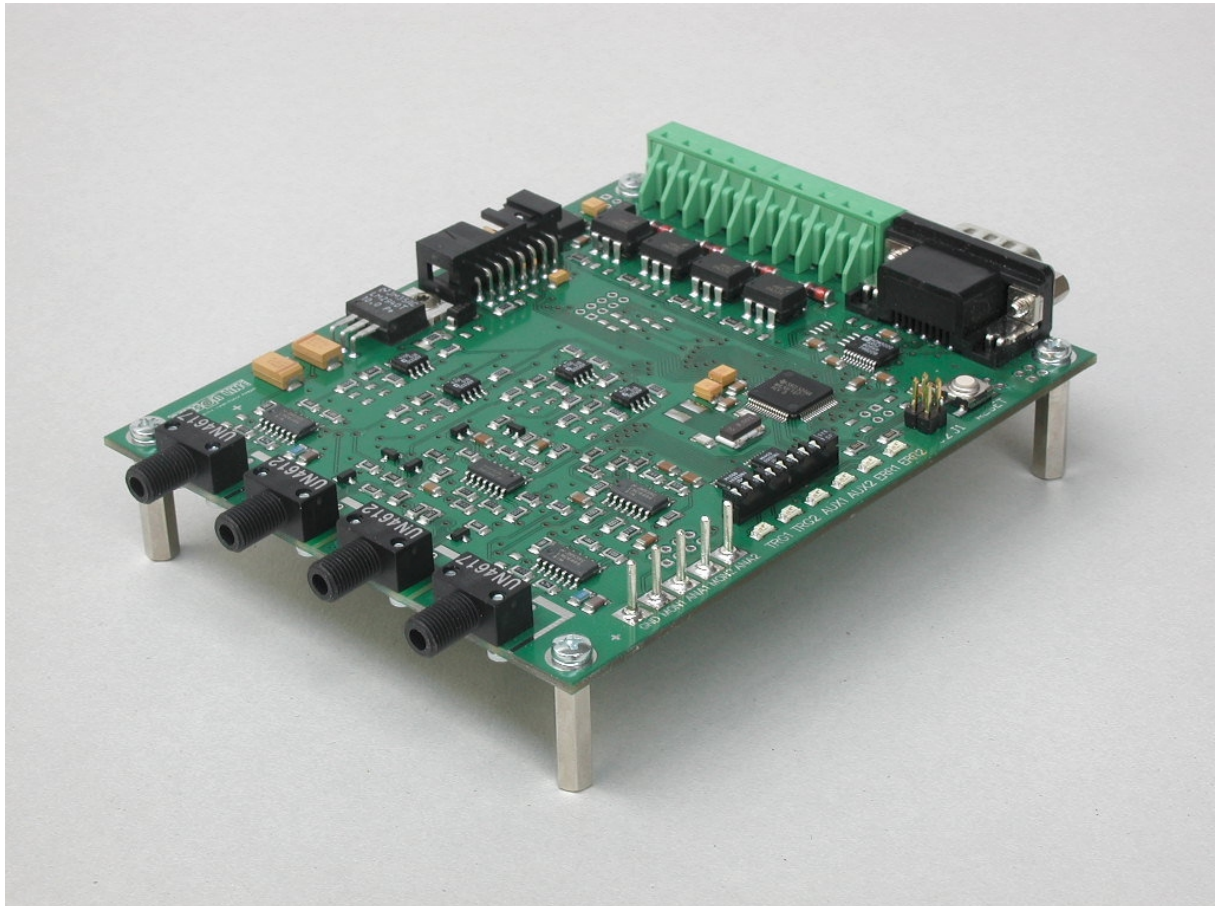


Optical Transmittance Analyzer SL MD-220



PROGRAMMING INSTRUCTIONS

Software: MA220STD v1.3

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1. Preparatory Steps

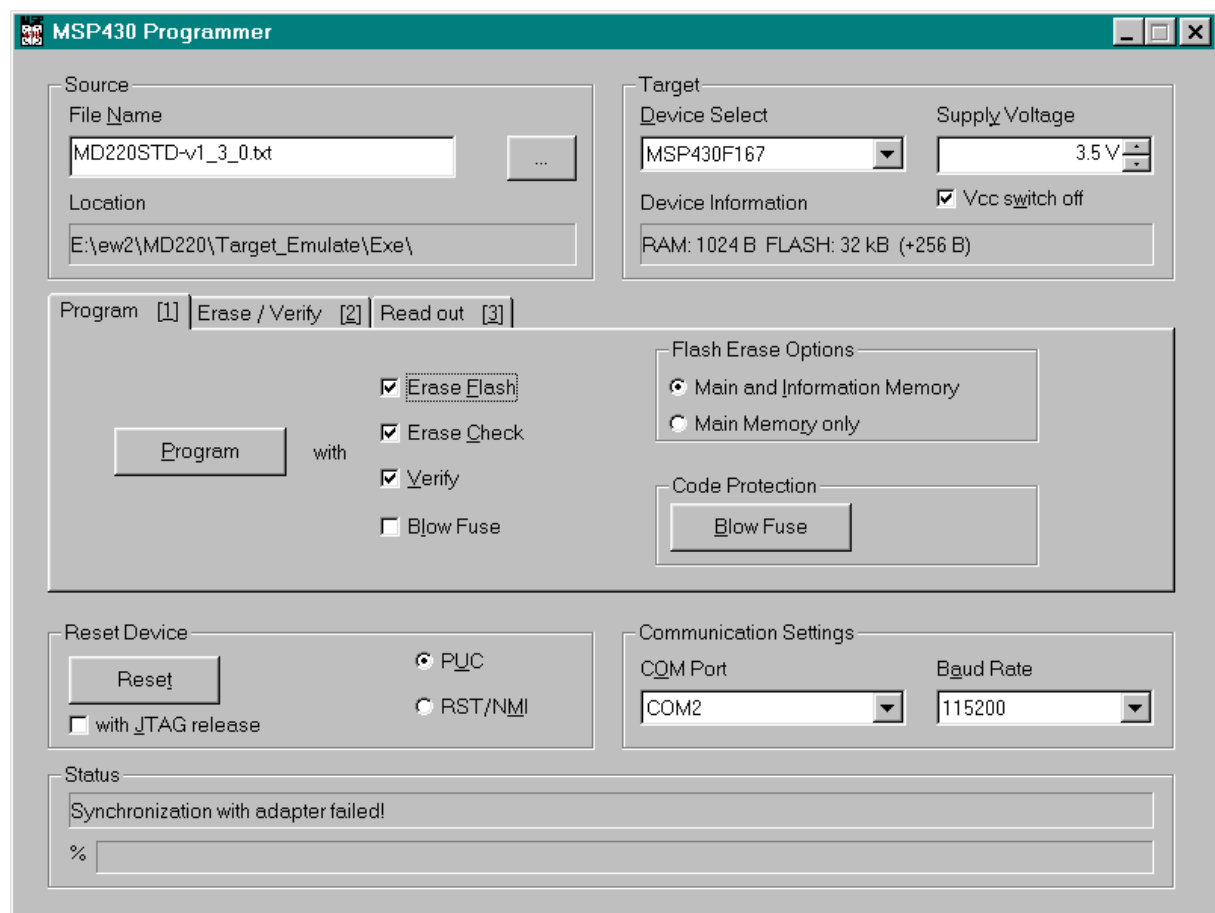
1.1 Handling of the Program File

The file which contains the MD-220 program has the extension ".txt". THIS IS NOT A TEXT FILE - DO NOT DOUBLE-CLICK ON IT. If you accidentally open it with an editor do not save it because this may corrupt the file. Simply drag the file to a folder of your choice.

1.2 Power Supply

The MSP-PRGS430 adapter needs an external 14-20V power supply (not provided). A common 12V/800mA power adapter may work since most of these adapters deliver a higher voltage than specified.

1.3 Program Settings



After connecting the MSP-PRGS430 to the PC and installing the programming software launch the program "PRGS430" without the MD-220 connected in order to make the appropriate settings.

Please refer to the above screen shot. Under "Source" click the button to the right of "File Name" and browse to the program file.

Under "Target" you must select the device your MD-220 is equipped with. Most likely this is "MSP430F167", but you may also have a board with an MSP430F135, MSP430F155 or MSP430F169.

Under "Supply Voltage" select "3.5V" and check "Vcc switch off." Please mind that every time you change the target device the supply voltage is reset to 2.5V so the program can later complain of this being too few.

Under "Program" check "Erase Flash", "Erase Check" and "Verify." **DO NOT CHECK "Blow Fuse."** **If a device is programmed with this option checked it can never be programmed again! DO NOT click the button "Blow Fuse" when the interface is connected.**

There are no settings necessary under "Erase/Verify" and "Read Out."

Under "Flash Erase Options" choose "Main and Information Memory." Under "Reset Device" check "with JTAG release" and select "RST/NMI."

Under "Communication Settings" the COM port that the adapter was connected to must be specified. If communication problems occur which are not covered below, try selecting baud rates different from 115200.

If the adapter is powered and the button "Program" is clicked the program might state "Communication failed!" Ignore this message and try again. If the communication settings are correct the next error message should be "Target not connected!" If this occurs exit the program in order to save all settings and restart it again with the adapter still powered. The final message under "Status" should now be "Adapter connected." Now the unit is ready to program the first MD-220.

If you do not get the error message "Target not connected!" there is still a problem with communication. Most likely the wrong COM port was specified. Please repeat the above steps until you get the status message "Adapter connected." on startup.

If the adapter is powered down when the programming software is running an error message "Communication failed!" is received when the next "Program" is clicked. This is not an issue the next attempt will work.

2. Programming Procedure

2.1 Connecting the MD-220

DO NOT POWER THE MD-220. During programming the necessary power is supplied by the MSP-PRGS430. Simply connect the MD-220 to the programming adapter. There is only one position for the JTAG connector to fit. When programming an installed MD-220 first interrupt the power supply to the interface.

2.2 Programming

Once the MD-220 is connected **DO NOT CLICK ON "Blow Fuze."** Click "Program" and wait until you get the status message "Program successful." Now click "Reset." The MD-220's ERRx LEDs will now flash for about one second. After the LEDs have stopped flashing the JTAG connector can safely be pulled from the MD-220.

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