

MINI-M4™

development board for MSP432

The whole MSP432 development board fitted
in DIP40 form factor, containing powerful
MSP432P401R microcontroller.

TO OUR VALUED CUSTOMERS

I want to express my thanks to you for being interested in our products and for having confidence in MikroElektronika.

The primary aim of our company is to design and produce high quality electronic products and to constantly improve the performance thereof in order to better suit your needs.

A stylized, handwritten signature in black ink, consisting of a large 'C' followed by several loops and a long horizontal stroke.

Nebojsa Matic
General Manager

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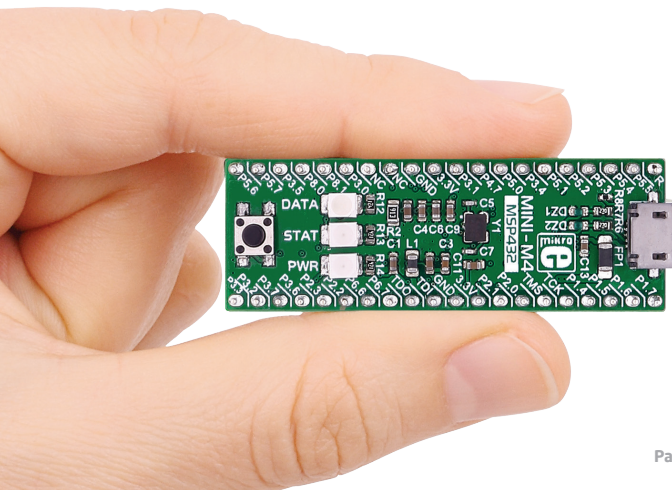
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Introduction to MINI-M4 for MSP432

Miniature and powerful development tool designed to work as stand alone device or as MCU card in DIP40 socket.

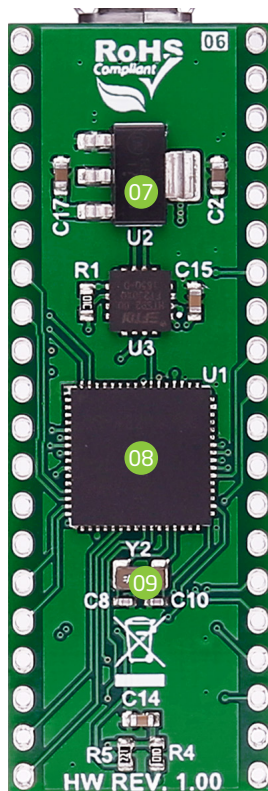
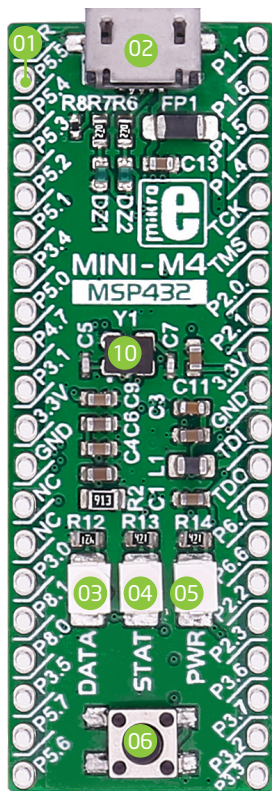
MINI-M4 for MSP432 is pre programmed with USB UART Bootloader so it is not necessary to have external programmer.

If there is need for external programmers (mikroProg™ or ST-LINK V2) attach it to MINI-M4 for STM32 via pads marked with TCK/SWC, TMS/SWD, INTO, INT1.



Key features

- 01 Connection pads
- 02 micro USB connector
- 03 DATA LED
- 04 STAT LED
- 05 POWER supply LED
- 06 Reset button
- 07 Power supply regulator
- 08 MSP432P401RIRGC microcontroller
- 09 32.768kHz Crystal oscillator
- 10 48 MHz Crystal oscillator



System specifications



power supply

3.3V via pads or 5V via USB



power consumption

depends on MCU state (max current into 3.3V pad is 300mA)



board dimensions

50.8 x 17.78mm (2 x 0.7")



weight

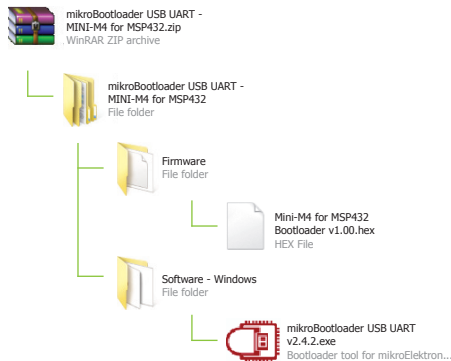
~6g (0.013 lbs)

1. Programming with mikroBootloader

You can program the microcontroller with the bootloader which is pre-programmed into the device by default. To transfer .hex file from a PC to MCU you need bootloader software (**mikroBootloader USB UART**) which can be downloaded from:

<https://download.mikroe.com/examples/starter-boards/mini/msp432/mini-m4-msp432-bootloader-v242.zip>

After the software is downloaded unzip it to the desired location and start mikroBootloader USB UART software.



step 1 - Connecting MINI-M4

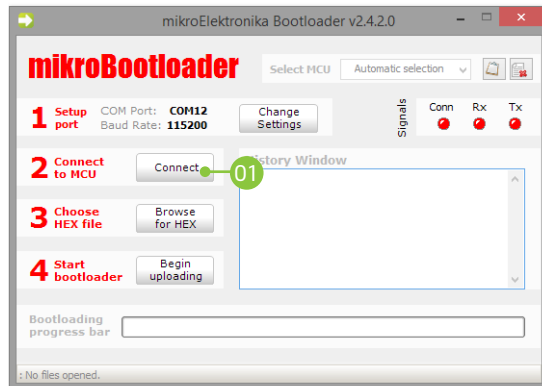


Figure 1-1: USB UART mikroBootloader

- 01 To start, connect the USB cable, or if already connected press the **Reset** button on your MINI-M4 board. Click the **Connect** button within 5s to enter the bootloader mode, otherwise existing microcontroller program will execute.

step 2 - Browsing for .HEX file

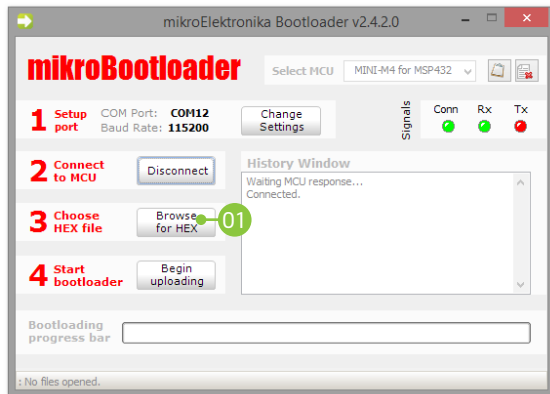


Figure 1-2: Browse for HEX

- 01 Click the **"Browse for HEX"** button and from a pop-up window (**Figure 1-3**) choose the .HEX file which will be uploaded to MCU memory.

step 3 - Selecting .HEX file

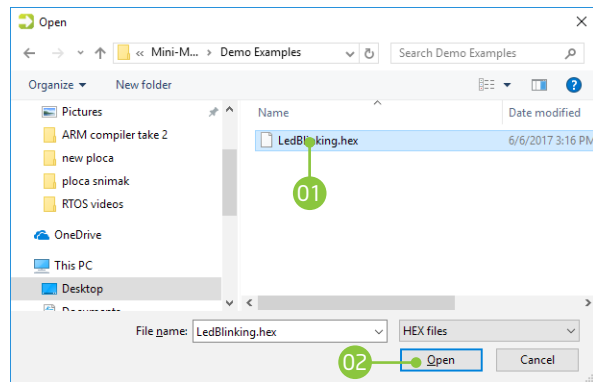


Figure 1-3: Selecting HEX

- 01 Select .HEX file using open dialog window.
- 02 Click **Open**.

step 4 - Uploading .HEX file

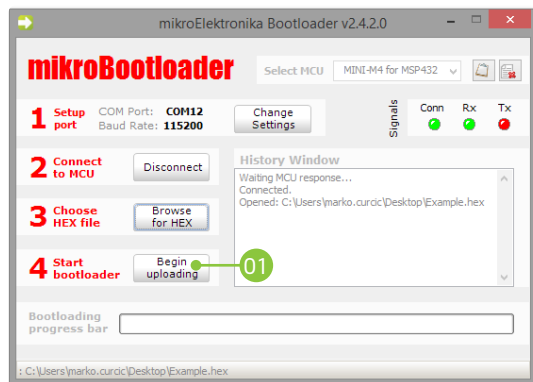


Figure 1-4: Begin uploading

- 01 To start .HEX file bootloading click the **Begin uploading** button.

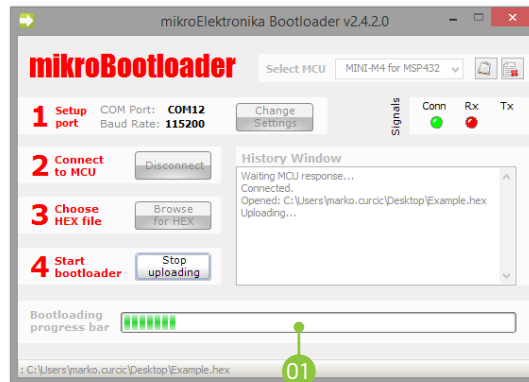


Figure 1-5: Progress bar

- 01 You can monitor .HEX file uploading via progress bar

step 5 - Finish upload

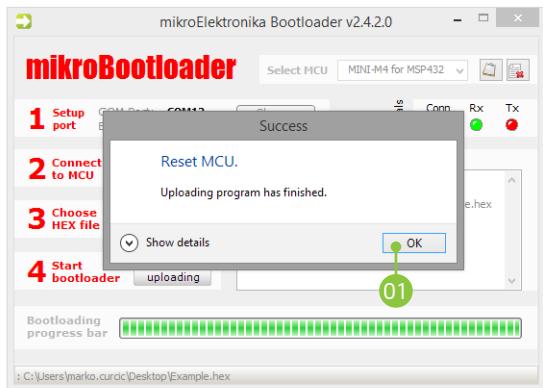


Figure 1-6: Restarting MCU

- 01 Click **OK** after uploading is finished and wait for 5 seconds. Board will automatically reset and your new program will execute.

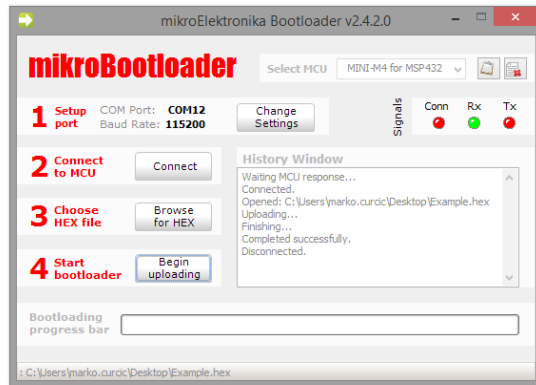
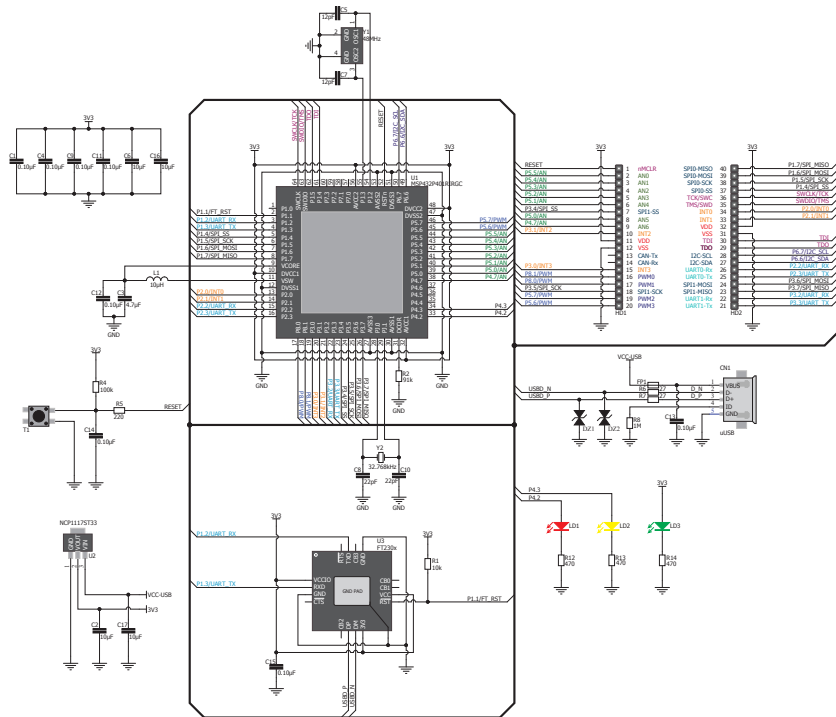
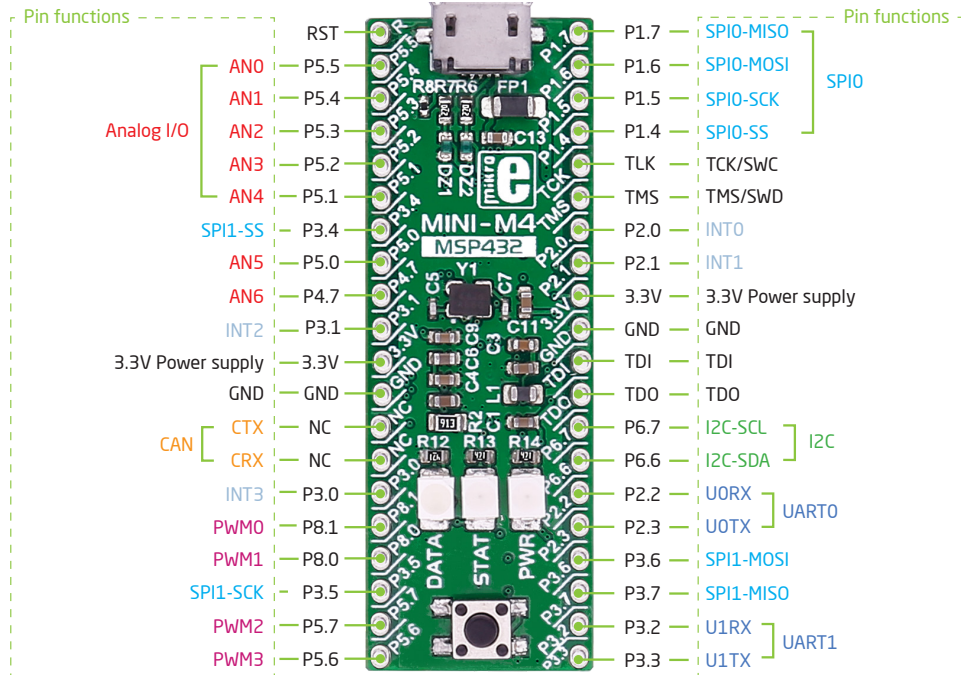


Figure 1-7: mikroBootloader ready for next job

2. Schematic

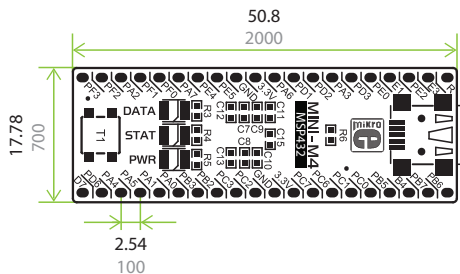


3. Pinout



■ Analog Lines ■ Interrupt Lines ■ SPI Lines ■ I2C Lines ■ UART lines ■ CAN lines ■ PWM lines

4. Dimensions



Legend

— mm
— mils

Notes:

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