

# MINI-M4™

development board for MSP432

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

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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 white, handwritten signature in cursive script, appearing to read 'N. Matic', is positioned on the right side of the page.

Nebojsa Matic  
General Manager

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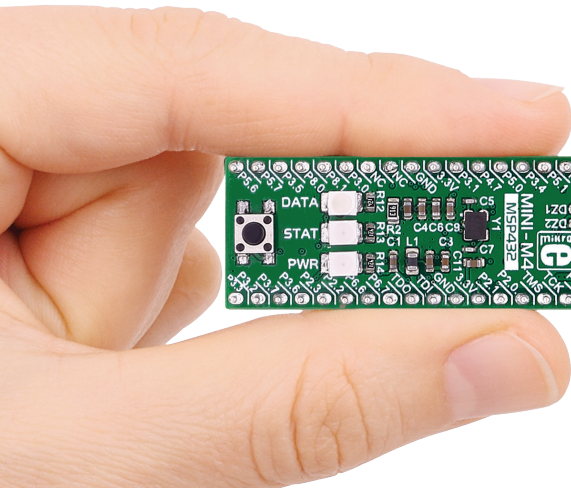
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# Introduction to MINI-M4 for MSP432

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

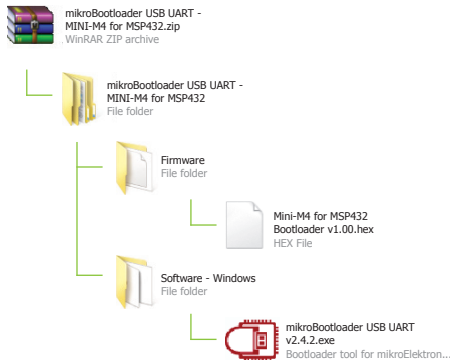


# 1. Programming with mikroBootloader

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

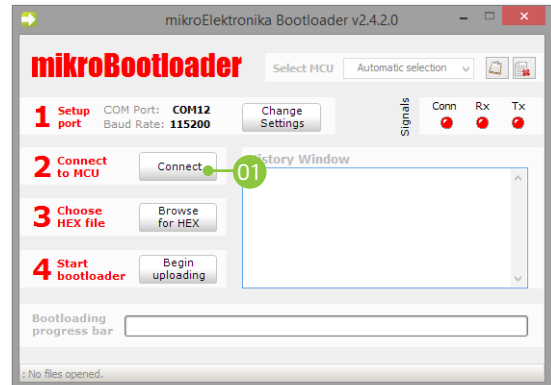


Figure 1-1: USB UART mikroBootloader

- 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

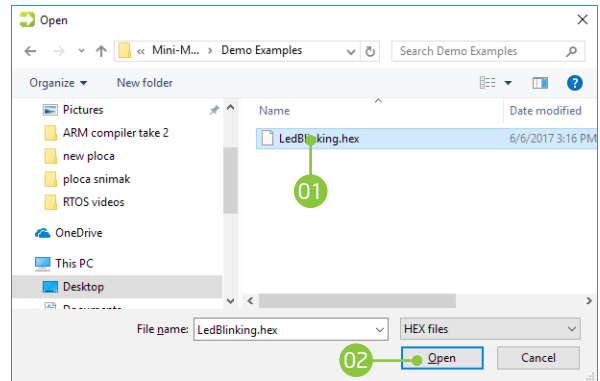


Figure 1-3: Selecting HEX

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

## step 4 - Uploading .HEX file

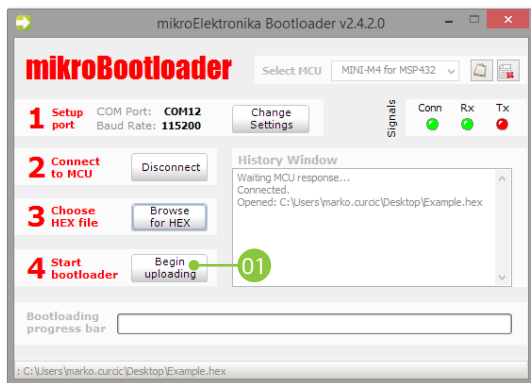


Figure 1-4: Begin uploading

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

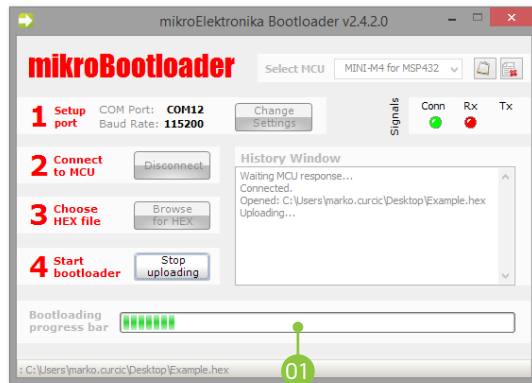


Figure 1-5: Progress bar

01 You can monitor .HEX file uploading via progress bar



## step 5 - Finish upload

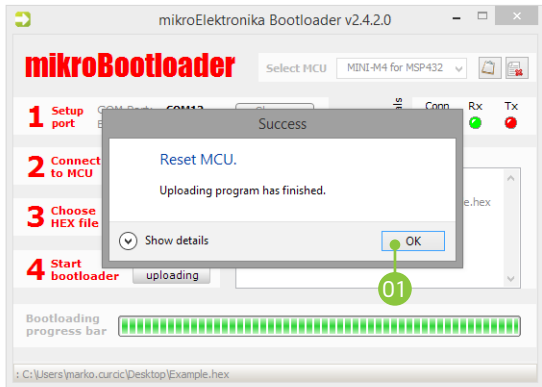


Figure 1-6: Restarting MCU

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

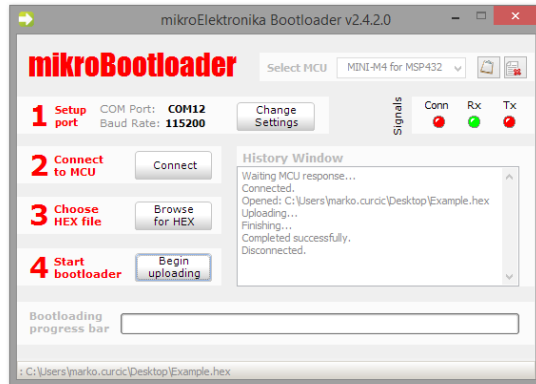
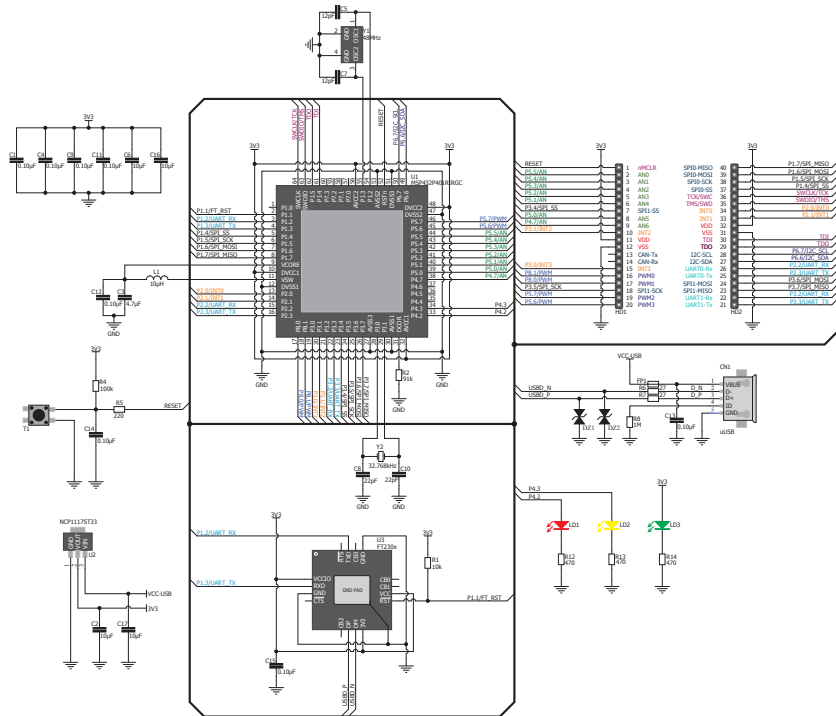
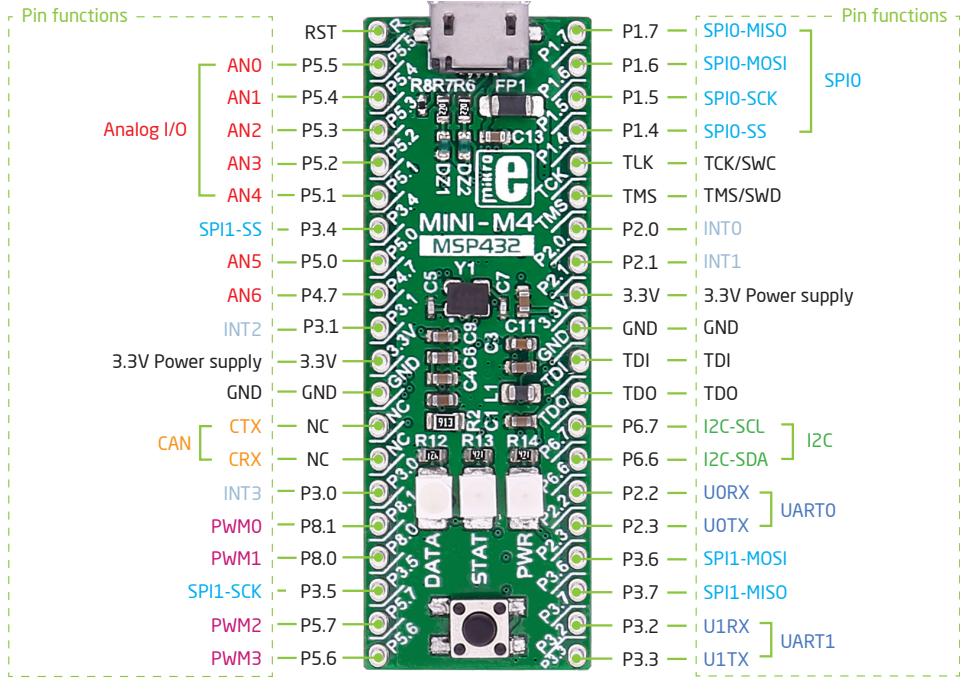


Figure 1-7: mikroBootloader ready for next job

# 2. Schematic



# 3. Pinout



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





Notes:

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