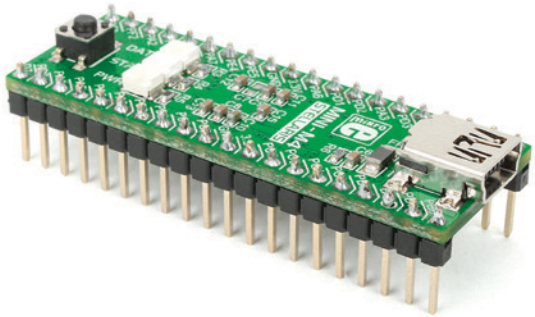


MINI-M4™

development board for Stellaris®

The whole Stellaris® development board fitted in DIP40 form factor, containing powerful LX4F230H5QR microcontroller.

MINI ARM

MikroElektronika
DEVELOPMENT TOOLS | COMPILERS | BOOKS

TO OUR VALUED CUSTOMERS

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

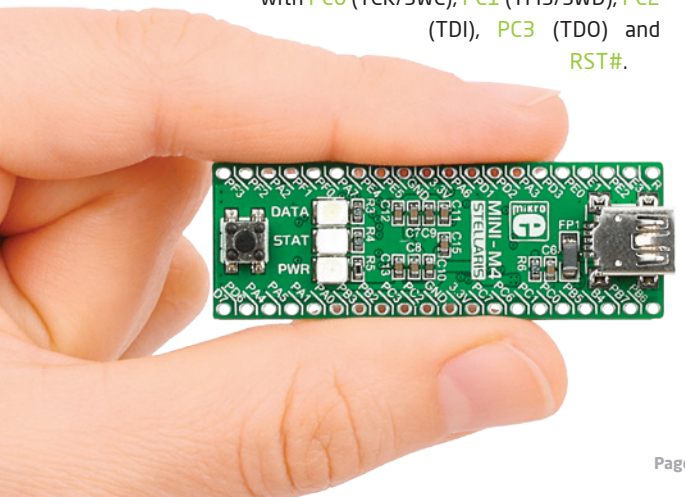
The primary aim of our company is to design and produce high quality electronic products and to constantly improve the performance thereof in order to better suit your needs.

Nebojsa Matic
General Manager

Table of Contents

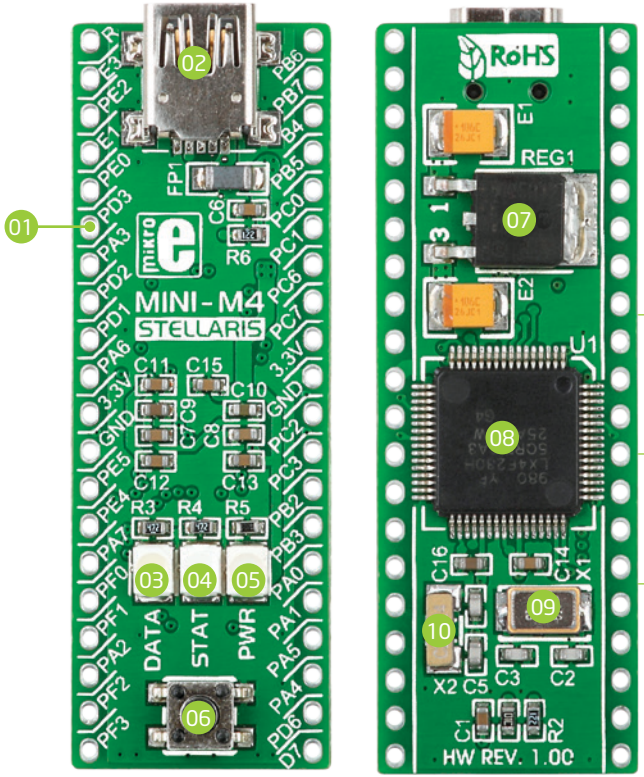
Introduction to MINI-M4 for Stellaris®

Miniature and powerful development tool designed to work as stand alone device or as MCU card in DIP40 socket. MINI-M4 for Stellaris® is pre programmed with USB HID bootloader so it is not necessary to have external programmer. If there is need for external programmer (mikroProg™ for Stellaris®) attach it to MINI-M4 for STM32 via pads marked with PC0 (TCK/SWC), PC1 (TMS/SWD), PC2 (TDI), PC3 (TDO) and RST#.



Key features

01 Connection Pads
02 USB MINI-B connector
03 DATA LED
04 STAT LED
05 POWER supply LED
06 Reset button
07 Power supply regulator
08 Microcontroller LX4F230H5QR
09 16 MHz Crystal oscillator
10 32.768kHz Crystal oscillator



System Specification

power supply

3.3V via pads or 5V via USB

power consumption

depends on MCU state (max current into 3.3V pad is 800mA)

board dimensions

50.8 x 17.78mm (2 x 0.7")

weight

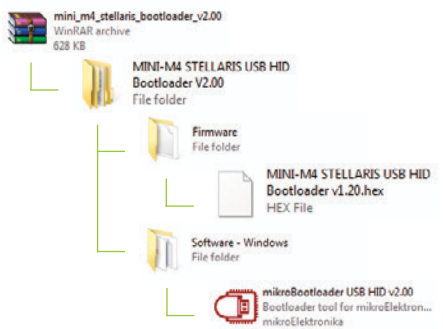
~6g (0.013 lbs)

1. Programming with mikroBootloader

You can program the microcontroller with 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 HID**) which can be downloaded from:

http://www.mikroe.com/downloads/get/1937/mini_m4_stellaris_bootloader_v200.zip

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



step 1 – Connecting MINI-M4

Figure 1-1: USB HID mikroBootloader window

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

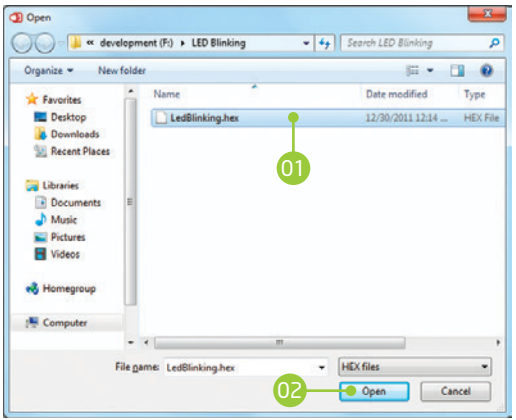


Figure 1-3: Selecting HEX

01 Select .HEX file using open dialog window.

02 Click the **"Open"** button.

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

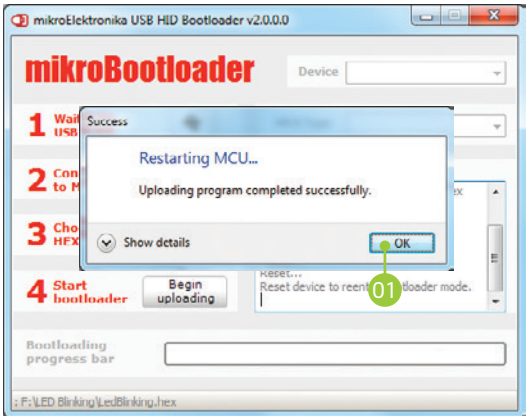
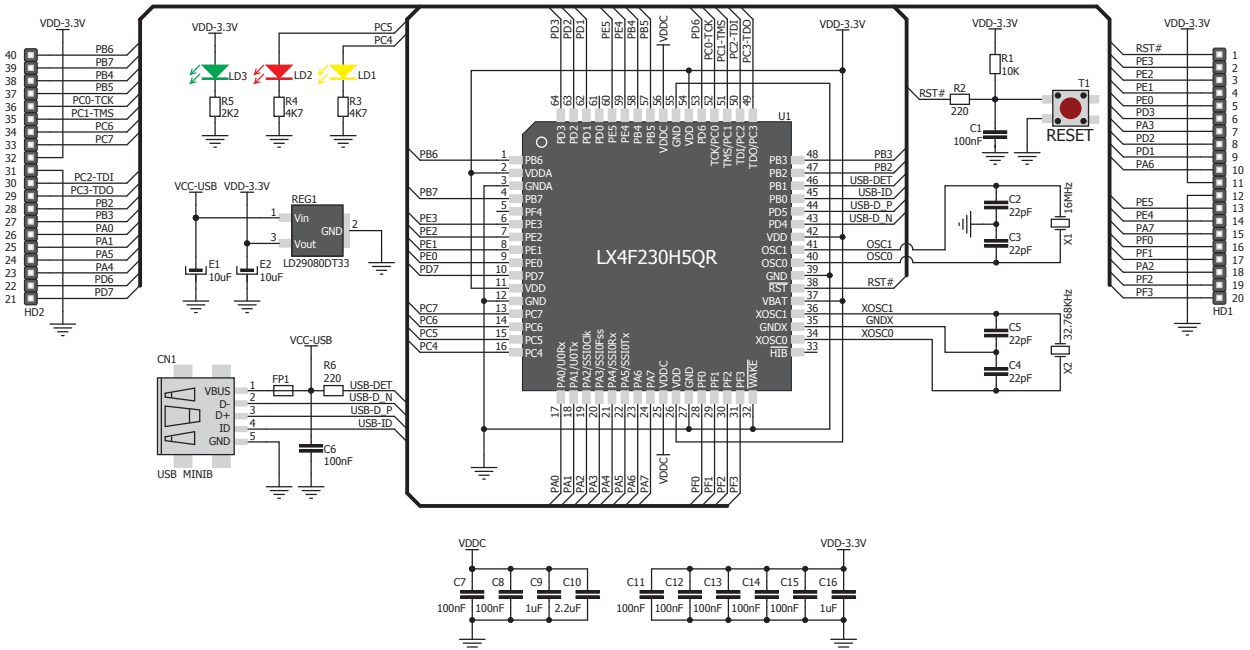


Figure 1-6: Restarting MCU

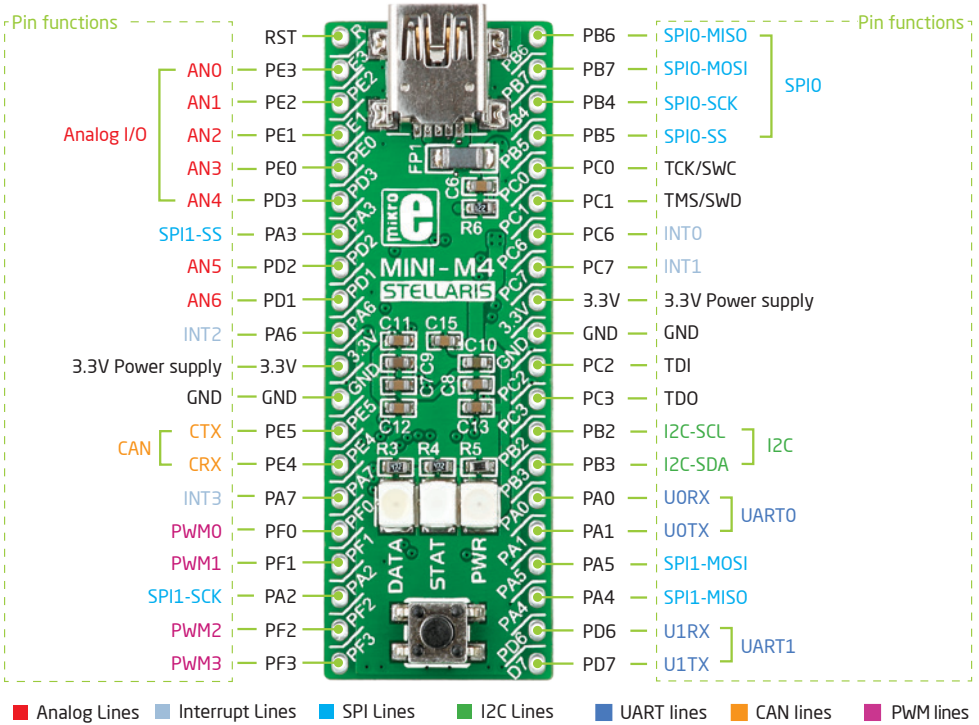
Figure 1-7: mikroBootloader ready for next job

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

2. Schematic


LX4F230H5QR
U1
HD2
HD1
LD1
LD2
LD3
R1 10K
R2 220
R3 4K7
R4 4K7
R5 2K2
R6 220
RST#
RESET
T1
C1 100nF
C2 22pF
C3 22pF
C4 22pF
C5 22pF
C6 100nF
C7 100nF
C8 100nF
C9 1uF
C10 2.2uF
C11 100nF
C12 100nF
C13 100nF
C14 100nF
C15 100nF
C16 1uF
E1 10uF
E2 10uF
REG1
LD29080DT33
VCC-USB
VDD-3.3V
VDDC
CN1
USB MINIB
FP1
X1 16MHz
X2 32.768KHz
USB-DET
USB-D_N
USB-D_P
USB-ID
OSC1
OSC0
XOSC1
XOSC0
GNDX

3. Pinout


Pin functions
RST
AN0
PE3
AN1
PE2
Analog I/O
AN2
PE1
AN3
PE0
AN4
PD3
SPI1-SS
PA3
AN5
PD2
AN6
PD1
INT2
PA6
3.3V Power supply
3.3V
GND
GND
CAN
CTX
PE5
CRX
PE4
INT3
PA7
PWM0
PF0
PWM1
PF1
SPI1-SCK
PA2
PWM2
PF2
PWM3
PF3
PB6
SPI0-MISO
PB7
SPI0-MOSI
PB4
SPI0-SCK
PB5
SPI0-SS
PC0
TCK/SWC
PC1
TMS/SWD
PC6
INT0
PC7
INT1
3.3V
3.3V Power supply
GND
GND
PC2
TDI
PC3
TDO
PB2
I2C-SCL
PB3
I2C-SDA
I2C
PA0
U0RX
PA1
U0TX
UART0
PA5
SPI1-MOSI
PA4
SPI1-MISO
PD6
U1RX
PD7
U1TX
UART1
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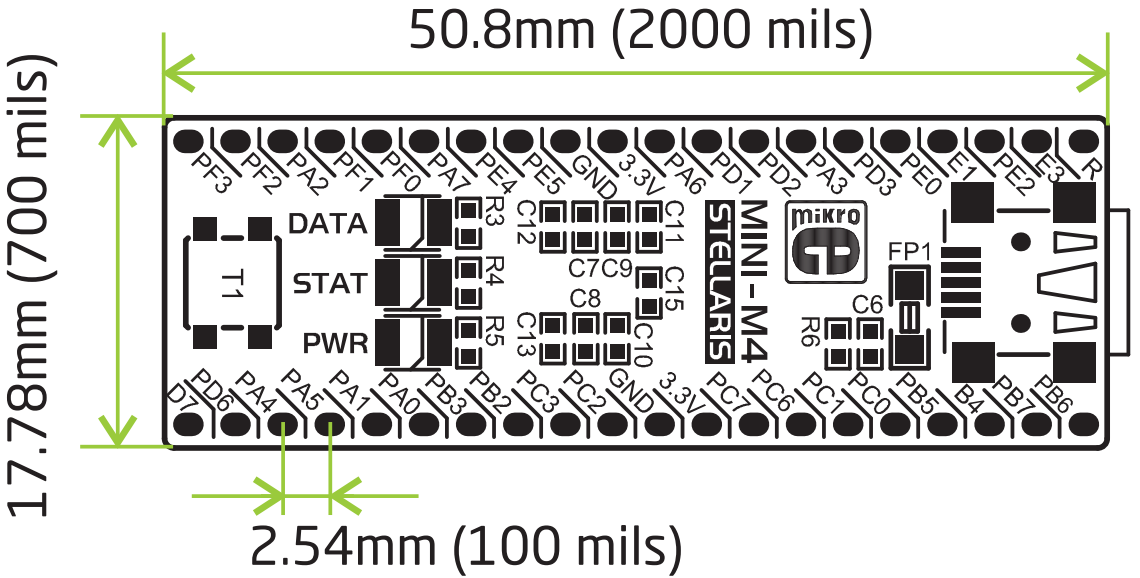
STELLARIS
DATA
STAT
PWR
Pin functions
Analog Lines
Interrupt Lines
SPI Lines
I2C Lines
UART lines
CAN lines
PWM lines

4. Dimensions



Notes:

Notes:

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