

SmartGLCD Bootloader v20.0.0

Setup

2 Connect with MCU

3 Choose HEX file

Bootloading

progress bar

: C:\Project\GLCD.hex

4 Start bootloader

mikroBootloader

COM Port:

Baud Rate: 115200

Disconnect

Browse

for HEX

Step

uploading

............

Select MCU

History Window Opened: C:\Project\GLCD.hex

Waiting MOU response....

Opened: C: Project/GLCD.hex

Change Settings

Connected.

Uploading...

PIC 18

Show Activity

Conn

Bootloader

Smart GLCD 240x128

Bootloader software represents irreplaceable tool for transferring program from a PC to microcontroller on SmartGLCD

for

TO OUR VALUED CUSTOMERS

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

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Nebojsa Matic General Manager

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1. Programming with bootloader

For programming, microcontroller use bootloader program which is preinstaled in to MCU memory. To transfer .hex file from a PC to MCU you need bootloader software (**mikroBootloader**) which can be downloaded from:



http://www.mikroe.com/eng/products/view/443/ smartglcd-240x128-board/

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





Figure 1-1: mikroBootloader software



Connect SmartGLCD with a PC before starting mikroBootloader software

Identifying device COM port



Figure 1-2: Identifying COM port



In Device Manager you can see which COM port is assigned to mikromedia (in this case COM5)

step 1 - Choosing COM port

mikroElektronika Bootloader v2.0.0.0	
mikroBootloader	Select MCU PIC16 -
Setup port COM Port: Baud Rate: COM1 9600 C S	hange 01 Conn Rx Tx ettings 0
2 Connect with MCU Connect 3 Choose Browse HEX file for HEX	Settings 02 Port COM5 • • Baud rate 115200 • •
4 Start Begin uploading Bootloading	Data bits 8 03 V Stop bits 1 V Parity None V Flow control Software V
: No files opened.	04 OK Cancel

Figure 1-3: Selecting COM port

- 01 CI 02 Si 03 Si 04 CI
 - Click on Change Settings button
 - Select USB COM port (in this case COM5)
 - Set Baud rate to 115200
 - Click OK button

step 2 - Connecting with a PC

mikroElektronika Bootloader v2.0.0.0		- • •
mikroBootloader	Select MCU	PIC18 🗸
1 Setup COM Port: COM5 Ch port Baud Rate: 115200 Se	ange trings	Conn Rx Tx
2 Connect Connect 02	story Window up: Port COM5.	*
3 Choose Browse for HEX		
4 Start Begin uploading		Ŧ
Bootloading progress bar		Show Activity
: No files opened.		

Figure 1-4: Connecting mikromedia with mikroBootloader

0	1
	5

From drop down list Select MCU chose PIC18

Reset SmartGLCD and within 5s click on Connect button

step 3 - Browse for .hex file

mikroElektronika Bootloader v2.0.0.0			x
mikroBootloader	Select MCU	PIC18	•
1 Setup COM Port: COM5 port Baud Rate: 115200	Change Settings	Conn Rx	Tx @
2 Connect Disconnect	History Window etup: Port COM5. Vaiting MCU response		*
3 Choose Browse 01	Connected.		
4 Start Begin uploading			-
Bootloading progress bar		Show Ac	tivity
: No files opened.			

Figure 1-5: Browsing for .hex file



Click on Browse for HEX and from pop-up window (figure 3-6) select .hex file which will be uploaded to MCU memory

step 4 - Select .hex file

Open						x
😋 🔾 🗢 🕌 🕨 Compute	er 🔸 Local Disk (C:)	 Project 	• 4 9	Search Project		٩
Organize 👻 New fold	er			8:	• 🖬 (9
🔆 Favorites 👘	Name	Date modified	Туре	Size		
Sale Recent Places	SmartGLCD.he	x • 12.1.2011 10:50	HEX File	16 KB		
E Desktop						
Downloads		M				
🔁 Libraries 🛛 🗉						
Documents						
🚽 Music	-02					
Pictures						
Videos						
: Computer						
💒 Local Disk (C:)						
👝 Local Disk (D:)						
👝 mikro (E:)						
DVD Drive (F:) M: *						-
File n	ame: SmartGLCD.he	¢	-	HEX files		•
			03-	🔴 Open 🛛 🔫	Cancel	
						at

Figure 1-6: Selecting .hex file



step 5 - Uploading .hex file

🔁 mikroElektronika Bootloader v2.0.0.0		- • •
mikroBootloader	Select MCU	PIC18 👻
1 Setup COM Port: COM5 Port Baud Rate: 115200	Change To Cor Settings I Cor	n Rx Tx
2 Connect Disconnect 3 Choose Browse for HEX for HEX	History Window Setup: Port COM5. Waiting MCU response Connected. Opened: C:\Project\SmartGl Cl	D.hex
4 Start Begin uploading	01	+
Bootloading progress har		Show Activity
: C:\Project\SmartGLCD.hex		

Figure 1-7: Begin uploading



Click on Begin uploading button to start .hex file transfer from a PC to microcontroler

step 6 - Progress bar

mikroElektronika Bootloader v2.0.0.0	- • •
mikroBootloader	Select MCU PIC18
Setup COM Port: COM5 port Baud Rate: 115200	Change Settings
2 Connect with MCU	History Window Setup: Port COM5. Waiting MCU response Connected.
3 HEX file Browse for HEX	Opened: C:\Project\SmartGLCD.hex Uploading
Bootloading	Show Activity
: C:\Project\SmartGLCD.hex	

Figure 1-8: Bootloading progress bar



01 Via progress bar you can monitor .hex file uploading process

step 7 - Reset MCU

mikroElektr	onika Bootloader v2.0.0.0		
mikro	Bootloader	Select MCU	PIC18 -
4 Setup	Success		Tx
- port	Reset MCU.		•
2 Conne with M	Uploading program h	as finished.	01
3 Choose HEX fil	Show details		• ОК
4 Start bootlo	ader uploading Co	mpleted successfully.	~
Bootloadin progress b	g IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Show Activity
: C:\Project\Sma	rtGLCD.hex		

Figure 1-9: Uploading is finished

01 Click on OK button after uploading is finished. Reset MCU and you can see product of your work

Tips and Tricks: Speed-up UART data transfer

🚔 Device Manager 📃 🗖 💌	USB Serial Port (COM5) Properties	Advanced Settings for COM5
File Action View Help	General Port Settingo Driver Details	COM Port Number: COM5 •
Keyboards Mice and other pointing devices Monitors Network adapters	Data bita: 8 v	USD Transfer Sizes Select lower settings to correct performance problems at low baud rates. Select higher settings for faster performance. Receive (Byles):
Ports (COM & LPT) Ormunications Port (COM1) Printer Port (LPT1)	Stop bits: 1	Transmit (Bytes): 4096 - BM Options 04 Miscellar
USB Serial Port (COM5) Update Driver Software So Disable	Advanced	Select lower settings to correct response problems. Latency Timer (msec):
⊳ - C Stc ⊳ - 1 Sys		Timeouts Event O
>- Un Scan for hardware changes >- WS Properties		Minimum Kead I imeout (msec): 0 • Set RTS- Minimum Write Timeout (msec): 0 • Disable II

note

If .hex file transfer from your PC to MCU is to slow you can try to speed-up data transfer by seting latency time of COM port to 1. To change latency time go to Device manager:

- 01 Right click on USB Serial Port (COM5) and click on Properties
- 02 In USB Serial Port (COM5) Properties select Port Settings tab
 - Click on Advanced... button

04 Set latency Timer to 1 (or chose another value) and click on OK button



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Bootloader for SmartGLCD 240x128

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