mikroProg™ for AVR® is a fast USB programmer. With its outstanding performance, simplicity and unique design it is a great tool for programming Atmel® AVR microcontroller family.
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

The AVR® and Windows® logos and product names are trademarks of Atmel® Holdings and Microsoft® in the U.S.A. and other countries.
# Table of Contents

Introduction to mikroProg™  
Key features  
1. Driver installation  
   - step 1 - Start installation  
   - step 2 - Accept EULA  
   - step 3 - Installing the drivers  
   - step 4 - Finish installation  
2. Connecting to a PC  
3. AVRFlash software  
4. Connecting with a target device  
5. Connector Pinout  
6. Connection schematic example  
   - 40-pin ATmega16 schematic
**Introduction to mikroProg™**

mikroProg™ for AVR® is a fast USB programmer. It is a great tool for programming Atmel® AVR microcontroller family. Outstanding performance, easy operation, elegant design and low price are it’s top features.
Key features

What you see

- Flat cable
- USB MINIB connector
- DATA transfer indication LED
- ACTIVE indication LED
- LINK indication LED
- POWER indication LED
1. Driver installation

mikroProg™ requires drivers in order to work. Drivers are located on the Product DVD that you received with the mikroProg™ package:

When you locate the drivers, please extract files from the ZIP archive. Folder with extracted files contains folders with drivers for different operating systems. Depending on which operating system you use, choose adequate folder and open it.

In the opened folder you should be able to locate the driver setup file. Double click on setup file to begin installation of the programmer drivers.
step 1 - Start installation

01 In welcome screen click the Next> button

step 2 - Accept EULA

02 Select I accept this EULA option

03 Click the Next> button
step 3 - Installing the drivers

Click the Finish button to end installation process.
After driver installation is complete, you can connect the programmer with your PC using USB cable provided with the package. Green **POWER LED** should turn ON, indicating the presence of power supply. Amber-colored **LINK LED** will turn ON when link between mikroProg™ for AVR® and PC is established. Link can be established only when correct drivers are installed on your PC.
3. AVRFlash software

mikroProg™ for AVR® programmer requires special programming software called AVRFlash. This software is used for programming AVR® microcontrollers from Atmel®. It features intuitive interface and SingleClick™ programming technology. Software installation comes on a Product DVD:

DVD://download/eng/software/development-tools/avr/avrprog2/avrprog2_programmer_v214.zip

Available on Product DVD!

After downloading, extract the package and double click the executable setup file, to start installation.

Figure 3-1: AVRFlash software window

Quick Guide

01 Select the microcontroller to be programmed
02 Click the Load button to open pop-up window and select the .hex code to be loaded in microcontroller
03 Click the Write option to start programming
Software installation wizard

01 Start Installation

02 Accept EULA and continue

03 Click Next > button

04 Choose destination folder

05 Installation in progress

06 Finish installation
4. Connecting with a target device

For connection with a target device mikroProg™ uses IDC10 connector, as shown on Figure 4-1. In order to make proper connection with the target board it is necessary to pay attention to IDC10 connector pinout. Every pin has a different purpose and for easy orientation IDC10 connector is marked with a little knob and incision between pins number 9 and 7, Figure 5-1.
5. Connector Pinout

01 **MOSI** - Master output slave input
03 **NC** - Not connected
05 **RST** - Reset pin
07 **SCK** - Clock
09 **MISO** - Master input slave output

01 **VCC** - Power supply
02 **NC** - Not connected
04 **NC** - Not connected
06 **NC** - Not connected
08 **NC** - Not connected
10 **GND** - Ground

Figure 5-1: Female connector pinout
6. Connection schematic example

Following example demonstrate connections with one of the most popular supported microcontroller. MCU use MISO, MOSI, SCK and RST lines for programming. In order for microcontroller to work properly, decoupling capacitors must be connected as close as possible to microcontroller’s VCC pins. Whichever microcontroller you decide to use, make sure to connect each pin properly.
Figure 6-1: Connection schematic for 40-pin ATmega16 MCU via 2x5 male header
DISCLAIMER

All the products owned by MikroElektronika are protected by copyright law and international copyright treaty. Therefore, this manual is to be treated as any other copyright material. No part of this manual, including product and software described herein, may be reproduced, stored in a retrieval system, translated or transmitted in any form or by any means, without the prior written permission of MikroElektronika. The manual PDF edition can be printed for private or local use, but not for distribution. Any modification of this manual is prohibited.

MikroElektronika provides this manual ‘as is’ without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties or conditions of merchantability or fitness for a particular purpose.

MikroElektronika shall assume no responsibility or liability for any errors, omissions and inaccuracies that may appear in this manual. In no event shall MikroElektronika, its directors, officers, employees or distributors be liable for any indirect, specific, incidental or consequential damages (including damages for loss of business profits and business information, business interruption or any other pecuniary loss) arising out of the use of this manual or product, even if MikroElektronika has been advised of the possibility of such damages. MikroElektronika reserves the right to change information contained in this manual at any time without prior notice, if necessary.

HIGH RISK ACTIVITIES

The products of MikroElektronika are not fault – tolerant nor designed, manufactured or intended for use or resale as on – line control equipment in hazardous environments requiring fail – safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines or weapons systems in which the failure of Software could lead directly to death, personal injury or severe physical or environmental damage (‘High Risk Activities’). MikroElektronika and its suppliers specifically disclaim any expressed or implied warranty of fitness for High Risk Activities.

TRADEMARKS

The MikroElektronika name and logo, the MikroElektronika logo, mikroC™, mikroBasic™, mikroPascal™, mikroProg™, EasyAVR™, mikromedia™ and Ready™ are trademarks of MikroElektronika. All other trademarks mentioned herein are property of their respective companies. All other product and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are only used for identification or explanation and to the owners' benefit, with no intent to infringe.

Copyright © MikroElektronika, 2013 All Rights Reserved.
If you want to learn more about our products, please visit our website at www.mikroe.com
If you are experiencing some problems with any of our products or just need additional information, please place your ticket at www.mikroe.com/esupport
If you have any questions, comments or business proposals, do not hesitate to contact us at office@mikroe.com