

PIC32MZ

clicker

a new idea just a click away

A compact starter kit with your favorite microcontroller and a mikroBUS™ socket.

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.

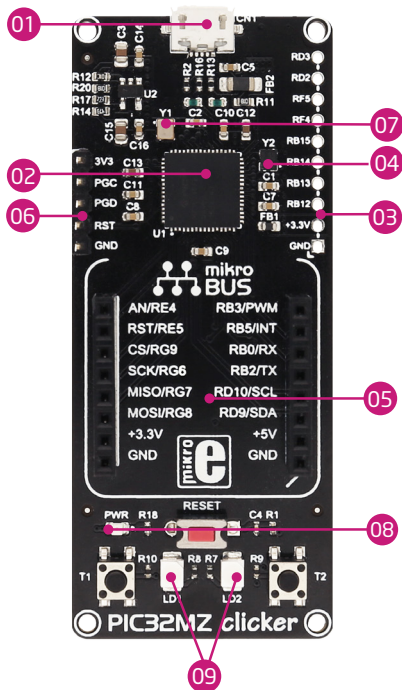
A handwritten signature in black ink, appearing to read 'N. Matic', written in a cursive style.

Nebojsa Matic
General Manager

Table of Contents

1. Key features	4	step 4 - Uploading .HEX file	12
2. What is PIC32MZ clicker?	5	step 5 - Finish upload	13
2.1. PIC32MZ clicker schematic	6	Programming with mikroProg™ Programmer	14
3. Power supply	7	7. mikroProg Suite™ for PIC® Software	15
4. PIC32MZ microcontroller	8	7.1. Software Installation Wizard	16
5. Programming the microcontroller	9	8. click boards™ are plug and play!	17
Programming with mikroBootloader	10	9. Dimensions	19
step 1 - Connecting PIC32MZ clicker	10		
step 2 - Browsing for .HEX file	11		
step 3 - Selecting .HEX file	11		

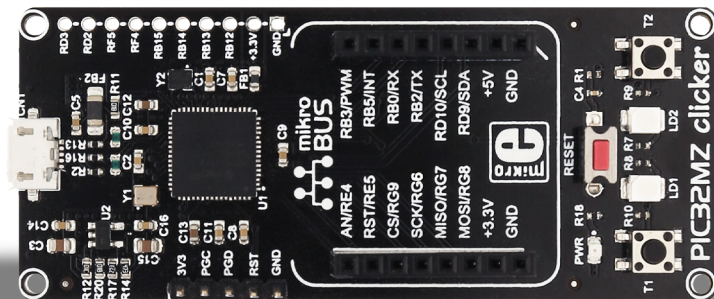
1. Key features



- 01 Micro USB connector
- 02 PIC32MZ MCU
- 03 Expansion header
- 04 24 MHz crystal oscillator
- 05 mikroBUS™ socket
- 06 mikroProg connector
- 07 32.768 KHz crystal oscillator
- 08 Power indication LED
- 09 Additional LEDs

PIC32MZ clicker

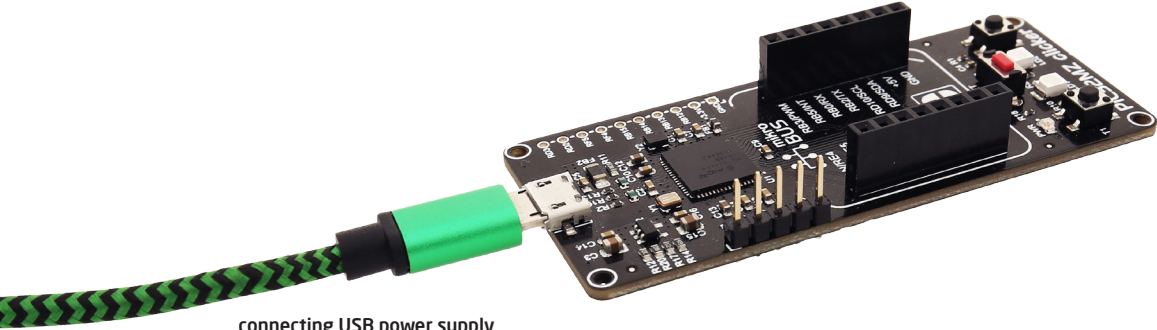
2. What is PIC32MZ clicker?



PIC32MZ clicker

PIC32MZ clicker is an amazingly compact starter development kit which brings innovative mikroBUS™ host socket to your favorite microcontroller. It features PIC32MZ 32-bit microcontroller, two indication LEDs, two general purpose buttons, micro USB connector and a single mikroBUS™ host socket. mikroProg connector and pads for interfacing with external electronics are provided as well. mikroBUS™ host connector consists of two 1x8 female headers with SPI, I2C, UART, RST, PWM, Analog and Interrupt lines as well as 3.3V, 5V and GND power lines.

4. Power supply



connecting USB power supply
through CN1 connector

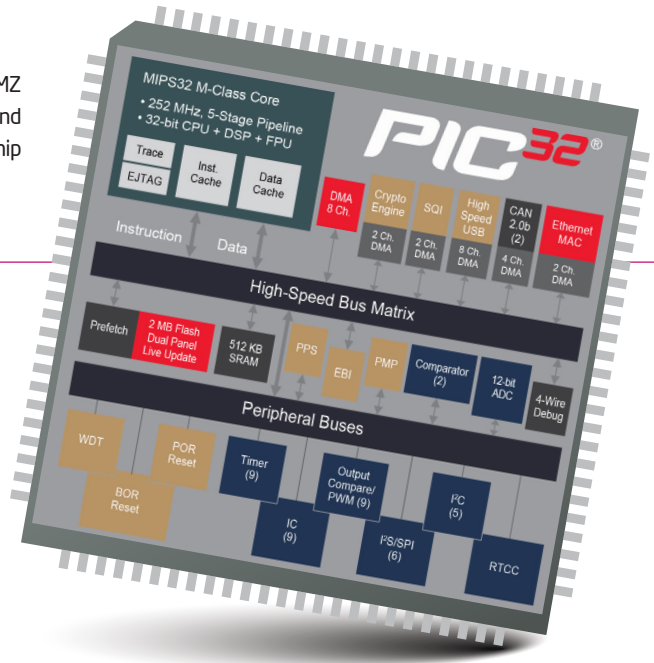
When the board is powered up the power indication **LED** will be automatically turned on. The **USB** connection can provide up to 500mA of current which is more than enough for the operation of all on-board and additional modules.

5. PIC32MZ microcontroller

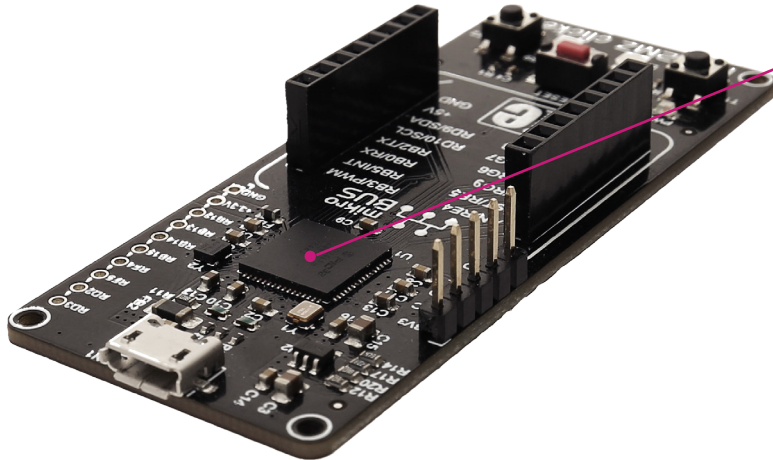
The PIC32MZ clicker development tool comes with the PIC32MZ microcontroller. This 32-bit (up to 1 MB Live-Update Flash and 512 KB SRAM) microcontroller with FPU is rich with on-chip peripherals.

Key microcontroller features

- 1MB of Live-Update flash
- Core: 200MHz
- Nine 16-bit or up to four 32-bit timers/counters
- 5V-tolerant pins with up to 32 mA source/sink



6. Programming the microcontroller



PIC32MZ
microcontroller

The microcontroller can be programmed in two ways:

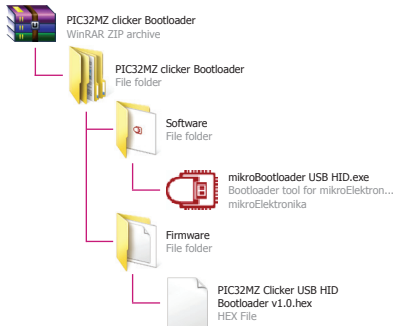
- 01 Using USB HID mikroBootloader,
- 02 Using external mikroProg™ for PIC®, dsPIC®, PIC32® programmer.

Programming with mikroBootloader

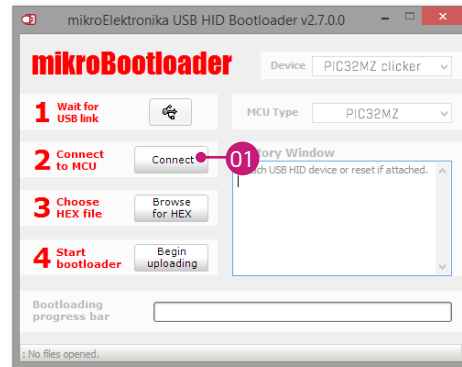
You can program the microcontroller with bootloader which is preprogrammed by default. To transfer .hex file from a PC to MCU you need bootloader software (**mikroBootloader USB HID**) which can be downloaded from:

[download.mikroe.com/examples/starter-boards/clicker/pic32mz/pic32mz-clicker-bootloader.zip](https://www.mikroe.com/examples/starter-boards/clicker/pic32mz/pic32mz-clicker-bootloader.zip)

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



step 1 – Connecting PIC32MZ clicker



USB HID mikroBootloader window

- 01 To start, connect the USB cable, or if already connected press the **Reset** button on your PIC32MZ clicker. Click the **Connect** button within 5s to enter the bootloader mode, otherwise existing microcontroller program will execute.

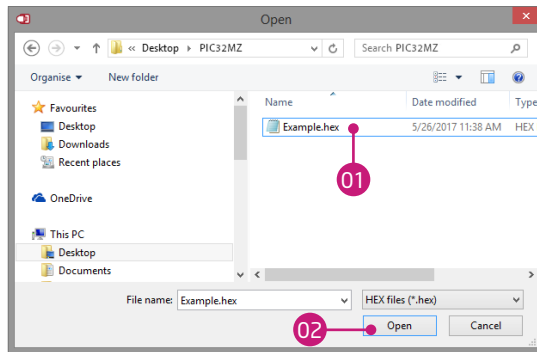
step 2 – Browsing for .HEX file



Browse for HEX

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

step 3 – Selecting .HEX file



Selecting HEX

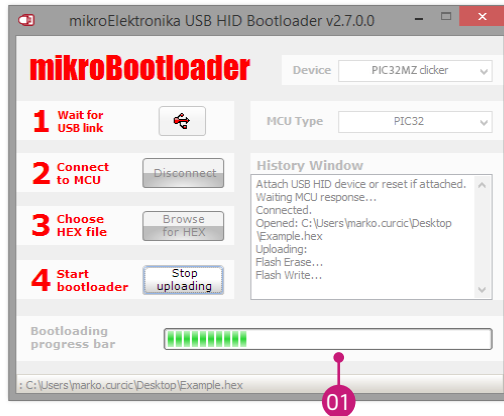
- 01 Select .HEX file using open dialog window.
- 02 Click the **Open** button.

step 4 – Uploading .HEX file



Begin uploading

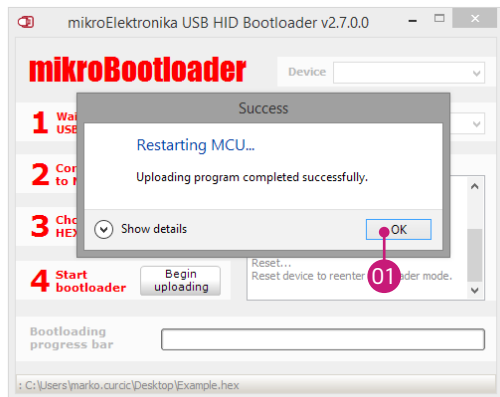
- 01 To start .HEX file bootloading click the **Begin uploading** button.



Progress bar

- 01 Progress bar enables you to monitor .HEX file uploading.

step 5 – Finish upload



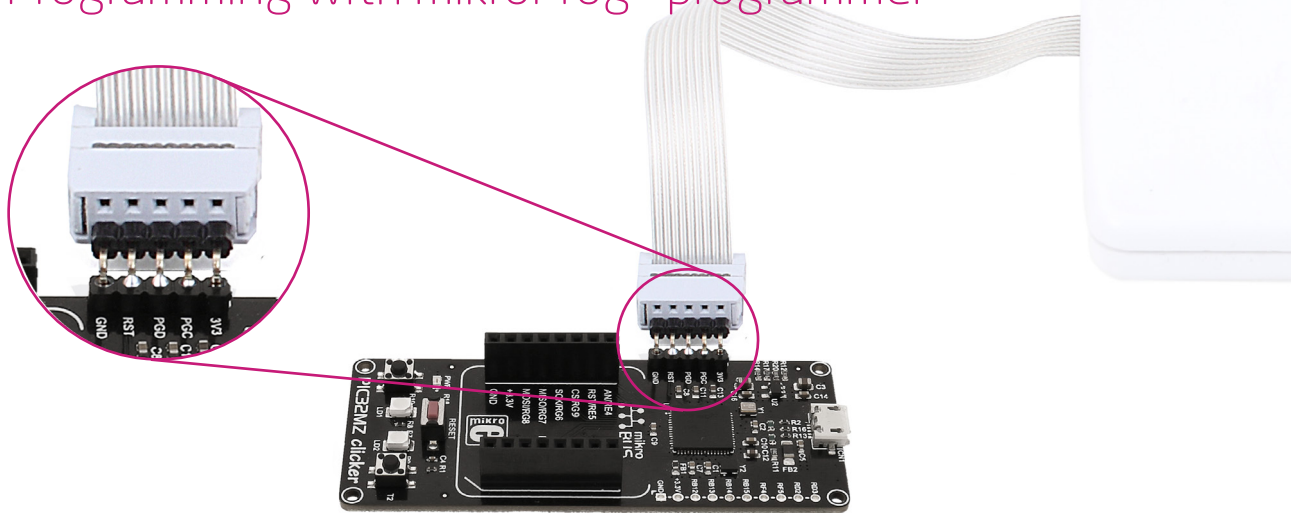
Restarting MCU

- 01 Click **OK** button after the uploading process is finished.
- 02 Press **Reset** button on PIC32MZ clicker board and wait for 5 seconds. Your program will run automatically.



mikroBootloader ready for next job

Programming with mikroProg™ programmer



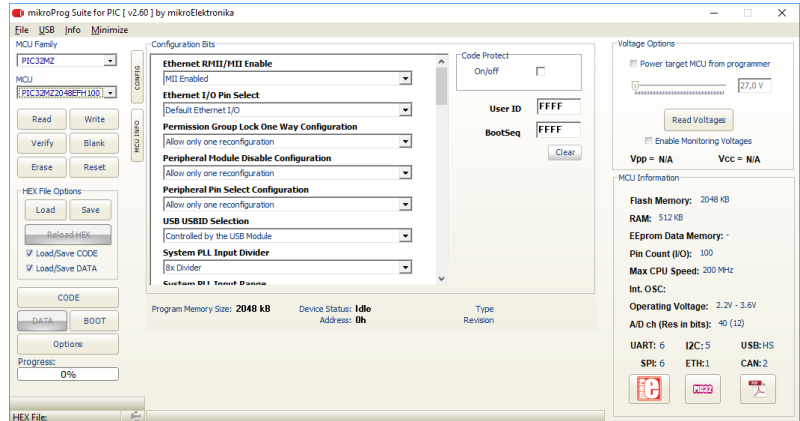
mikroProg™ connector

The microcontroller can be programmed with external mikroProg™ for PIC®, dsPIC® and PIC32® programmer and mikroProg Suite™ for PIC® software. The external programmer is connected to the development system via 1x5 mikroProg™ connector. mikroProg™ is a fast USB 2.0 programmer with hardware debugger support. It supports PIC10®, PIC12®, PIC16®, PIC18®, dsPIC30/33®, PIC24® and PIC32® devices from Microchip®. Outstanding performance, easy operation and elegant design are its key features.

7. mikroProg Suite™ for PIC® Software

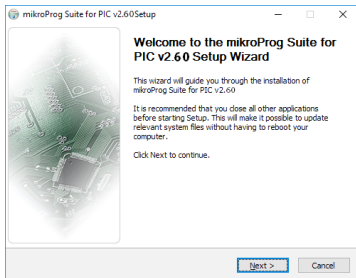


The **mikroProg** programmer requires special programming software called mikroProg Suite for **PIC®**. It can be used for programming all Microchip® microcontroller families, including **PIC10®**, **PIC12®**, **PIC16®**, **PIC18®**, **dsPIC30/33®**, **PIC24®** and **PIC32®**. The software has intuitive interface and **SingleClick™** programming technology. Just download the latest version of mikroProg Suite™ and your programmer is ready to program new devices. mikroProg Suite is updated regularly, at least four times a year, so your programmer will be more and more powerful with each new release.

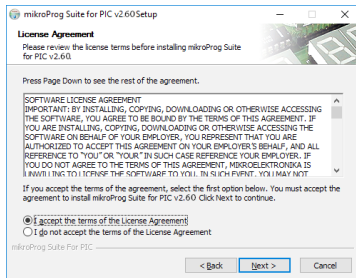


Main window of mikroProg Suite™ for PIC® programming software

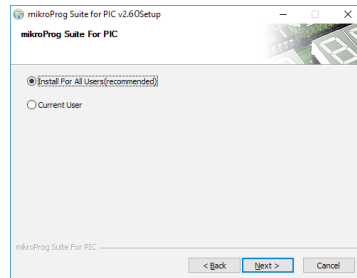
Software Installation Wizard



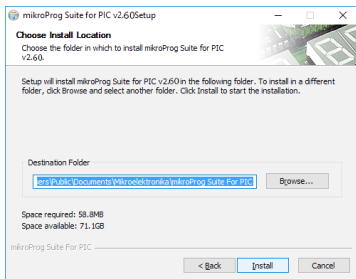
01 Start Installation



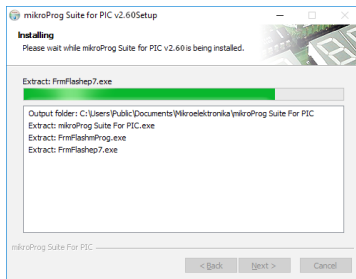
02 Accept EULA and continue



03 Install for all users



04 Choose destination folder

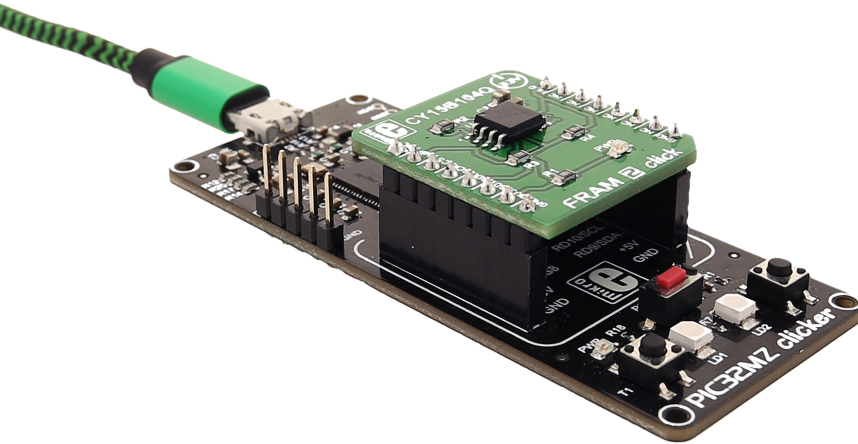


05 Installation in progress



06 Finish installation

8. click boards are plug and play!



PIC32MZ clicker driving
FRAM 2 click™ board

Up to now, MikroElektronika has released more than 300 mikroBUS™ compatible click™ boards. On the average, we make one click per day. It is our intention to provide you with as many add-on boards as possible, so you will be able to expand your development board with additional functionality. Each board comes with a set of working example codes. Please visit the click™ boards webpage for the complete list of currently available boards:

shop.mikroe.com/click

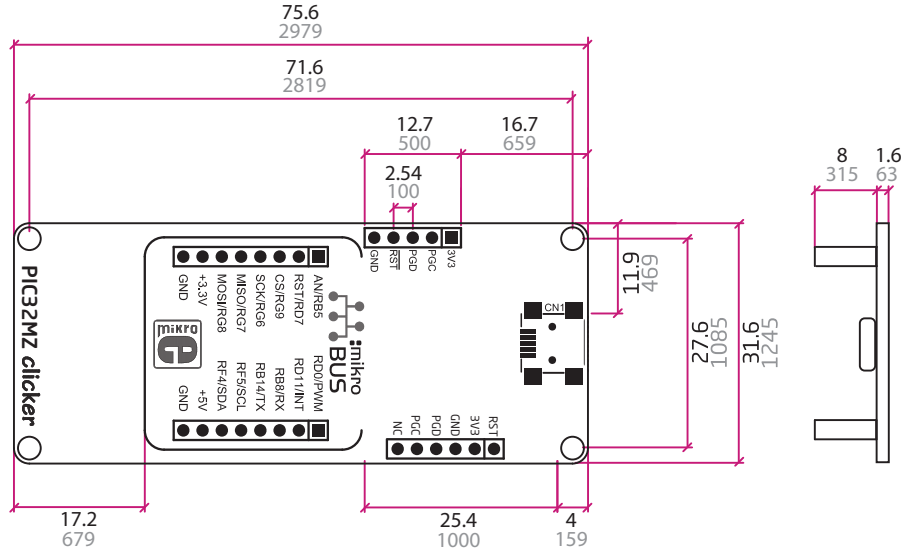
9. Dimensions

Legend

-  mm
-  mils

Mounting hole size

- Ø2 mm
- Ø79 mils



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, mikroC™, mikroBasic™, mikroPascal™, Visual TFT™, Visual GLCD™, mikroProg™, Ready™, MINI™, mikroBUS™, EasyPIC™, EasyAVR™, Easy8051™, click™ boards and mikromedia™ 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 © 2017 MikroElektronika. All Rights Reserved.



If you want to learn more about our products, please visit our web site 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 **helpdesk.mikroe.com** If you have any questions, comments or business proposals, do not hesitate to contact us at **office@mikroe.com**



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331