



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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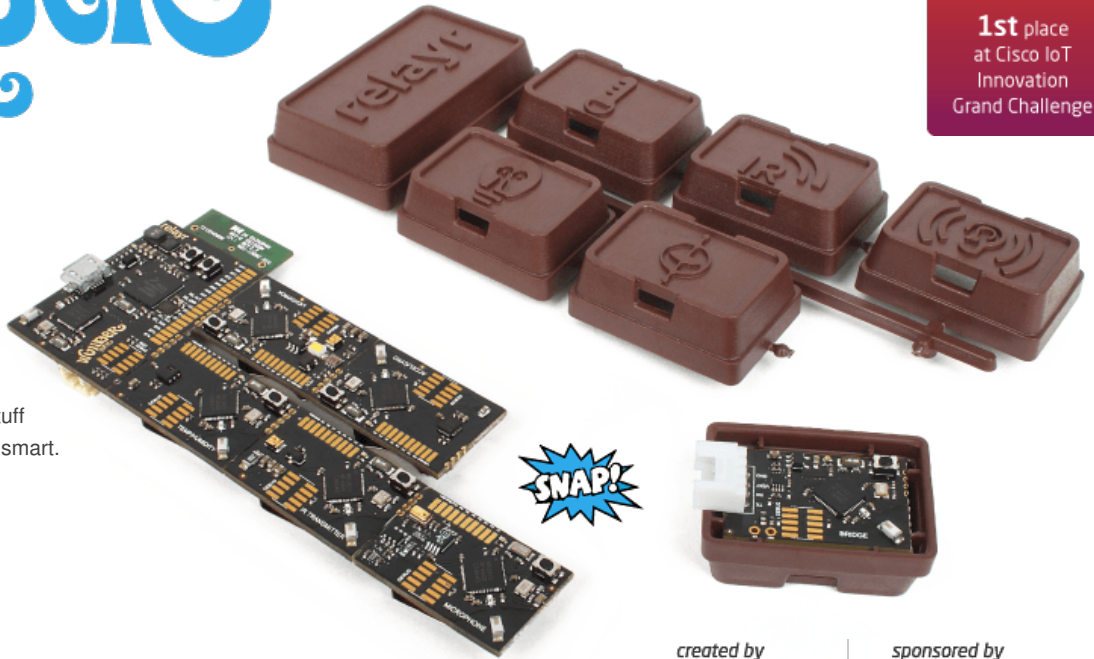
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# WUNDERBAR



As easy as breaking off a piece from a chocolate bar, the WunderBar turns App developers into Internet of Things innovators. It's a set of six sensors and a WiFi enabled main module, same stuff that makes your tablets and smartphones smart.



created by  
**relayr**  
bring things to life

sponsored by  
**CONRAD**

As seen on:



## A World Beyond Your Smartphone

Imagine if you could take apart a smartphone and pull out all the hardware that makes it smart, then snap off a single sensor and stick it to a wall or wherever, as simply as you would cut & paste blocks of working code in a text editor?

That's the essence of the WunderBar.

You have access to all the data from these sensors and modules, without having to learn about hardware. No wires no soldering no nothing. You can develop Android or iOS Internet Of Things apps just like you're used to, in Xcode, Android SDK or any text editor with command-line



compilers.

It's all because it's connected to a cloud.



## It's Raining Chocolate!

Sensor readings are instantly sent to the Relayr Cloud which stores them into your secure personal account. The cloud hosts iOS, Android and node.js SDKs, APIs, frameworks and libraries that allow you to read all the data from the sensors so you can easily access them and process them from within your app.



Main Module

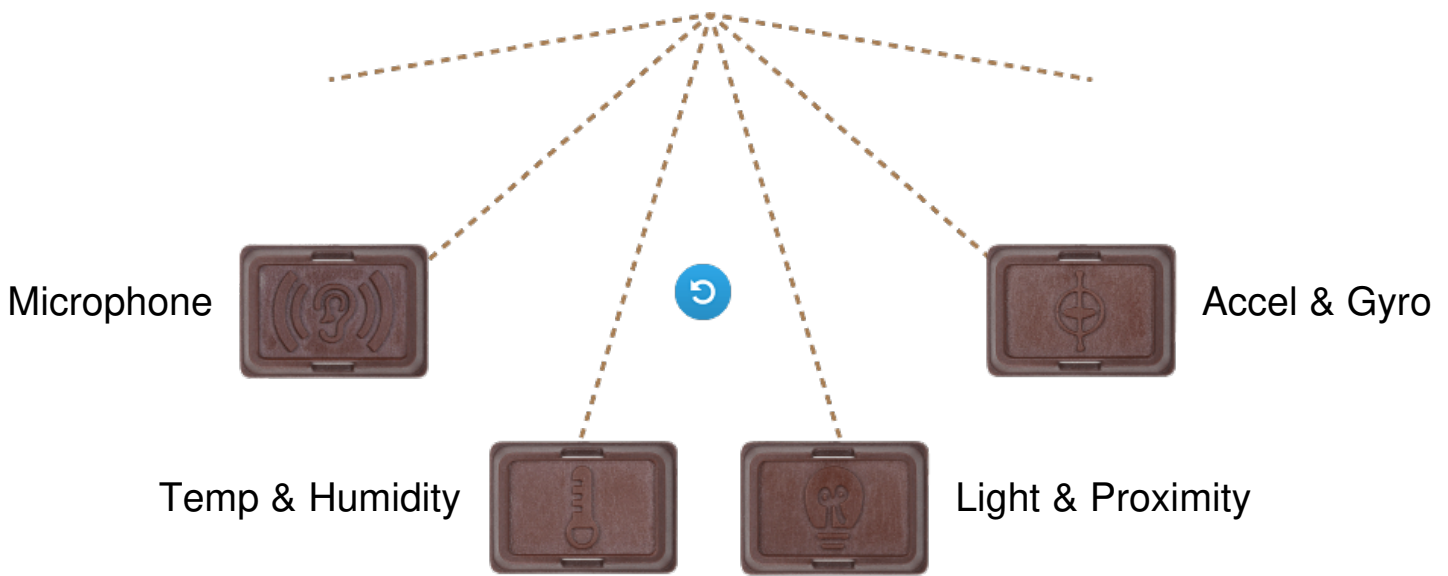


Bridge



IR Transmitter





### Works right away

Each module is fitted with firmware that makes it fully functional from the start. Yet it's flexible enough to allow you to configure it for your App.



### Fast and secure

Based on core technologies developed by Twitter, LinkedIn and Yahoo, the Wunderbar kit and Cloud constitute a fast, secure and scalable system.



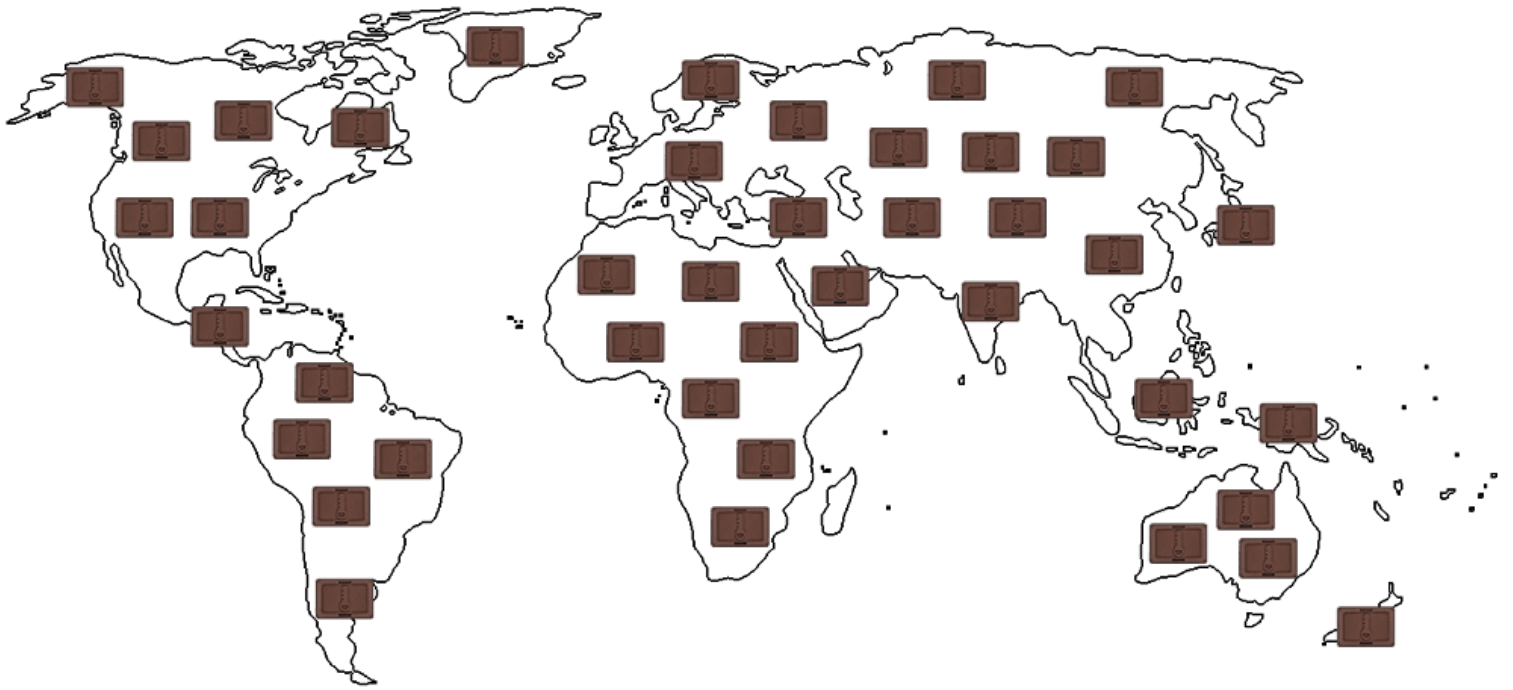
### Energy-efficient

Each sensor module runs on a single coin cell battery that will last for at least a month. It's because of the way the firmware utilizes the BLE transmitter.

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## Tastes Better When You Share It

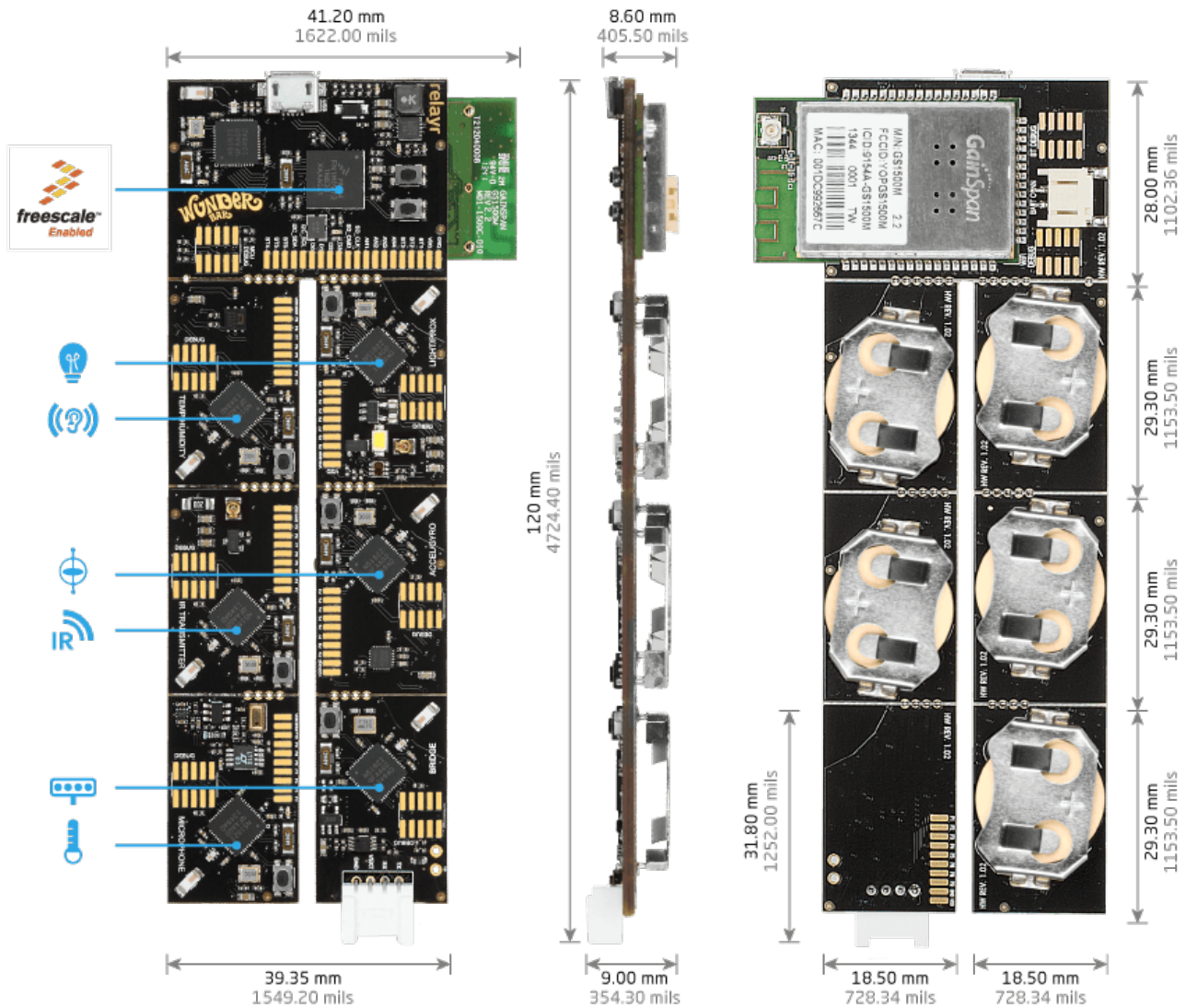
The temperature sensor is publicly accessible right out of the box. Over time, every developer will be able to tap in to a world wide network of WunderBar sensors, giving you a wealth of data you can put into use in your Internet of Things apps.



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## Tech specs

The WunderBar is delivered as a single block of PCB. The modules are separated with V-cut incisions. You can snap each of them off if needed. Put a battery into a socket on the backside of each sensor and plug in the USB power supply to the main module. They will start communicating right away through Bluetooth Low Energy (BLE).



## Master module



- Main MCU: Freescale MK24FN1M0VDC12, Kinetis-K 32-bit ARM® Cortex™-M4 core with DSP instructions
  - Clock Speed: 120MHz
  - Flash: 1024 KB
  - SRAM: 250 KB
- GainSpan GS1500M WiFi module: IEEE 802.11b/g/n, WPA/WPA2, full TCP/IP stack including SSL/TLS
- Nordic nRF51822 BLE (ARM® Cortex™-M0, Bluetooth 4.0 stack)
- IO: 12 exposed GPIO pads, including 4 ADC, SPI, I2C and SDIO
- 3.3V regulator including Li-Ion/Li-Po charger
- Full-speed USB w/OTG controller
- 32 kHz Xtal oscillator for RTC

## Sensor modules



- SoC: Nordic nRF51822 BLE (ARM® Cortex™-M0, Bluetooth 4.0 stack)
  - Clock Speed: 16MHz
  - RAM: 16 KB
  - Flash: 256 KB
- IO: 8 exposed GPIO pads, including SPI, I2C, TWI, UART, ADC
- 32 kHz Xtal oscillator
- One of the following sensors:



### Temp / Humidity

Features **HTU21D**, a low power digital sensor of relative humidity and temperature.



### Accel & Gyro

Features **MPU-6500** six-axis (gyro + accelerometer) MEMS MotionTracking™ device.



### Light / Proximity

Features **TCS37717** high sensitivity RGB color sensing and proximity detector.



### IR Transmitter

Features **SFH4441** high power infrared emitter, 950 nm, special package, half angle  $\pm 17^\circ$



### Microphone

Features **SPQ0410HR5H-B**, a miniature, high-performance, low power silicon microphone.



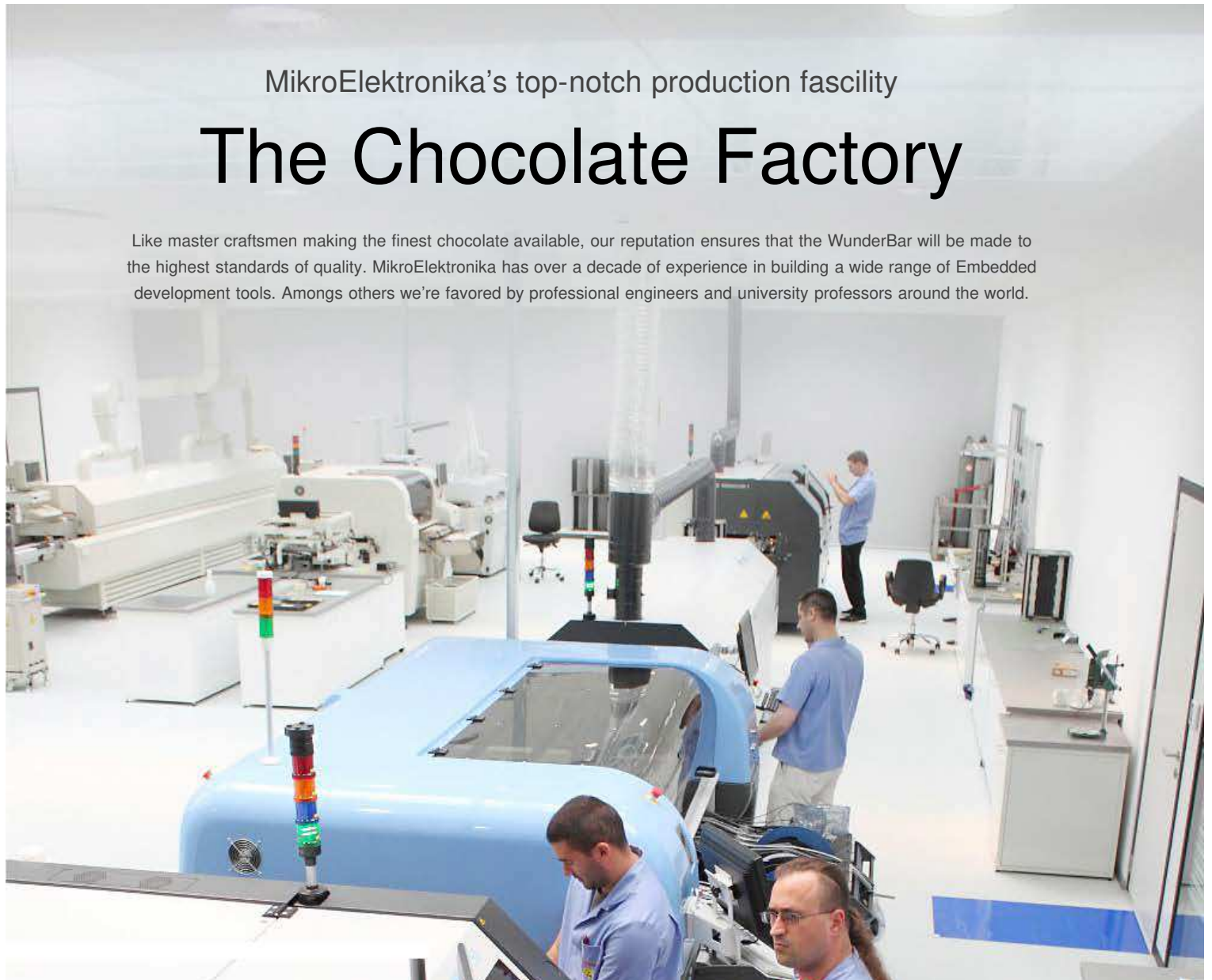
### Bridge

Features 4-pin connector compatible with Grove add-on boards and sensors.

MikroElektronika's top-notch production facility

# The Chocolate Factory

Like master craftsmen making the finest chocolate available, our reputation ensures that the WunderBar will be made to the highest standards of quality. MikroElektronika has over a decade of experience in building a wide range of Embedded development tools. Amongst others we're favored by professional engineers and university professors around the world.





Our credentials include: authorized design partner and premier third party partner of Microchip®.  
Official consultant and third party partner of Atmel® corporation, Texas Instruments® and STmicroelectronics®. Official competence center of Telit® company, an official consultant of NXP® Semiconductors, design partner of Cypress® semiconductors company and a member of ARM® connected.

## What you get



Package dimensions:  
L 215mm, W 145mm, H 40mm



Package weight:  
~400g





## Order Now

Try the WunderBar and watch how yesterday's limits of App development for iOS and Android devices start melting away like a piece of chocolate on your tongue, releasing an abundance of new possibilities that will amaze and excite you. You'll be like a wide eyed kid tasting chocolate for the first time!

MIKROE-1703

WunderBar - IoT Starter Kit

### PIC Solution

PIC Development Boards  
PIC Compilers  
PIC Programmers/Debuggers  
PIC Kits  
PIC Books

### PIC32 Solution

PIC32 Development Boards  
PIC32 Compilers  
PIC32 Programmers/Debuggers  
PIC32 Kits

### dsPIC Solution

dsPIC Development Boards  
dsPIC Compilers  
dsPIC Programmers/Debuggers  
dsPIC Kits  
dsPIC Books

### AVR Solution

AVR Development Boards  
AVR Compilers  
AVR Programmers/Debuggers  
AVR Kits

### STM32 Solution

STM32 Development Boards  
STM32 Compilers  
STM32 Programmers/Debuggers  
STM32 Kits

### Tiva C Series Solution

Tiva C Development Boards  
Tiva C Compilers  
Tiva C Programmers/Debuggers  
Tiva C Kits

### 8051 Solution

8051 Dev. Boards  
8051 Compilers  
8051 Programmers  
8051 Books  
8051 Kits

### Additional Software

Visual TFT  
Visual GLCD  
Package Manager  
GLCD Font Creator  
Timer Calculator

### Add-on boards

Click Boards  
mikromedia shields  
Communication  
Storage  
Real Time Clock  
Display  
Measurement  
Audio & Voice  
Power Supply  
GPS  
GSM/GPRS



Support



Forum



mikroBUS



Lets make



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Customization

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