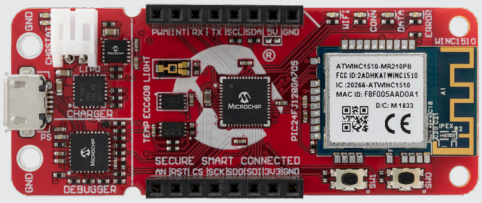
AVR® and PIC® IoT Development Solutions

Connect to the AWS Cloud

Out of The Box and into The Cloud in 30 Seconds

Microchip and Amazon Web Services have partnered to provide you with an ideal foundation for building your next cloud-connected design. Combining powerful microcontrollers, a CryptoAuthentication™ secure element and a fully certified Wi-Fi® network controller these boards offer the most simple and effective way to connect embedded applications to the AWS Cloud platform. Leveraging the Microchip Trust Platform, each board comes pre-provisioned and ready to upload light and temperature sensor data to the free sandbox account, ready to be visualized in real time on a dedicated web page. Choose from your favorite AVR® or PIC® microcontroller architecture to make an easy and secure cloud connection.



AVR-IoT WA Development Board (EV15R70A)
PIC-IoT WA Development Board (EV54Y39A)

Smart

At the heart of the IoT Development Board is your choice of microcontroller. Choose the AVR or PIC MCU that you are most comfortable with. These powerful and efficient MCUs allow you to intelligently bring your data to the Cloud. These scalable MCUs allow you to expand upon the IoT functionality and add your customized sensors into the application. For rapid prototyping, the IoT Development Boards are supported by both Studio 7 and MPLAB® X IDEs as well as graphical development tools such as START and MPLAB Code Configurator (MCC). These tools simplify connecting existing applications to the cloud or developing new IoT designs.

Connected

The critical component that propels your design into the Cloud is Microchip's ATWINC1510, a single-band 2.4 GHz Wi-Fi network controller that was specifically optimized for low-power IoT applications. Featuring extremely low-power consumption, the ability to store various security certificates, and 8 Mb of on-board Flash memory, this device offloads all networking tasks from the main CPU while automatically providing a secure socket connection and server authentication to the Cloud.

Secure

The integrity of any network is determined by its weakest link. As the attack surface of IoT devices continues to grow with clear acceleration, security can no longer be an afterthought. The IoT Development Boards entrust data encryption to the latest in Microchip's CryptoAuthentication portfolio, the hardware based ATECC608A. By employing ultra-secure key storage, cryptographic countermeasures and obscuring private keys from both users and software this secure element ensures the highest fidelity of your transmission to the cloud.

Each board comes pre-associated with a default shared AWS cloud (sandbox) account for immediate successful authentication and data sharing without a custom user account. At any time, you can disconnect the board from the default sandbox and register to a new/private account.

Beyond

The on-board mikroBUS™ connector allows for both the seamless integration of any MIKROE® Click™ boards and the ability to quickly interface with other sensors or actuators that support the popular footprint. With over 700 click boards to choose from, this board can rapidly be made into an IoT enabled motion detector, heart rate monitor or anything else you can imagine.

A USB Mass Storage interface allows easy drag-and-drop update of the microcontroller Flash memory and configuration of Wi-Fi credentials. The integrated USB serial port can also be used for diagnostics and to support a command line interface.

AVR or PIC Microcontroller-Based Solution

AVR-IoT WA Development Board (EV15R70A)	PIC-IoT WA Development Board (EV54Y39A)
ATmega4808 AVR® Microcontroller AVR RISC CPU, 48 KB Flash Memory & 6 KB SRAM	**PIC24FJ128GA705 Microcontroller** PIC24 CPU, 128 KB Flash Memory & 16 KB SRAM
ATECC608A Secure Element Protected Storage for 16 Keys, SHA256, AES-CCM, ECDH (Elliptic Curve Diffie-Hellman), ECDSA	
ATWINC1510 Wi-Fi® Network Controller Single-band 2.4GHz b/g/n IoT Network Controller, Pre-certified Module	
MCP9808 Digital Temperature Sensor 0.25°C typical accuracy, Config. Temp. Window Limit, Config. Measurement Resolution: 0.5°C, 0.25°C, 0.125°C, 0.0625°C	
MIC33050 Voltage Regulator 600 mA PWM Control Scheme, HyperLight Load®, Input Volt. Range (V): 2.7 to 5.5, Output Volt. (V): 1.0, 1.2, 1.8, 3.3, Adj	
MCP73871 Battery Charger Preset charge voltage: 4.10V, 4.20V, 4.35V or 4.40V, Complete Linear Charge Management Controller, Charge Safety Timers	
• IDE: Atmel Studio 7 or MPLAB® X • Rapid Prototyping: Atmel START or MPLAB Code Configurator • Dedicated web page to view sensor data from Google Cloud [avr-iot.com]	• IDE: MPLAB X • Rapid Prototyping: MPLAB Code Configurator • Dedicated web page to view sensor data from Google Cloud [pic-iot.com]

Complementary Devices

Expansion sensor boards: MikroElektronika™ Click boards

- Weather (I^2C/SPI) MIKROE-1978
- UV Click (I^2C) MIKROE-1677
- Humidity/Temp (I^2C) MIKROE-949
- 3D Motion (I^2C) MIKROE-1877
- Indoor air quality(I^2C) MIKROE-2529
- Heart Rate 7 click (I^2C) MIKROE-2998

For more information, visit: www.mikroe.com

Key Applications

- Smart home IoT Sensors and actuators (lighting, access control, climate control)
- Smart city industrial sensors (air quality, traffic forecast)
- Health (blood pressure, heart rate)
- Industry 4.0 process control sensors (level, pressure, temperature, flow)

For all documentation, visit: www.microchip.com/IoTWA

Services and Third Party

- AWS Cloud Platform
- Microchip IoT Design Partners
- Microchip Training

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