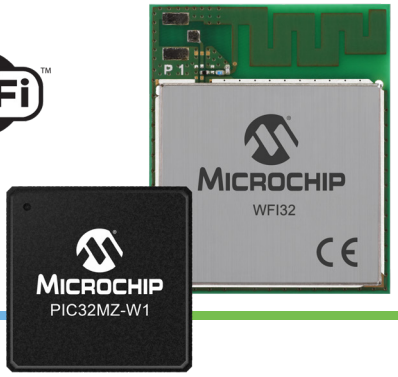
PIC32MZ-W1 and WFI32 Family

Industrial-Strength, Low-Power Wi-Fi® MCUs With Advanced Security



Summary

Designed to thrive in extreme environments, this MCU family features the PIC32MZ-W1, a high-performance, 200-MHz core with:

- Industry-leading, low-power Wi-Fi connectivity
- A rich set of peripherals to add features to your application

We make it easy to get started by providing fully certified modules, a simple development environment and turnkey software examples featuring AWS and Azure cloud connectivity.

Example Applications

- Industrial Automation
- Electric Vehicle (EV) Charging
- Automotive Diagnostics Port
- Security Systems, CCTV
- Protocol Gateway/Bridging
- Industrial Wi-Fi Dongles

Key Features

MCU Features

- 200 MHz, MIPS32-bit MCU
- Up to 2 MB Embedded Flash
- Up to 512 KB SRAM for Program and Data
- 128 KB RAM for Data Buffer
- Full-speed USB
- CAN and CAN-FD
- 10/100 MAC
- 12-bit dual ADCs
- Up to 18 CVD Touch inputs
- 3 × UART, 2 × I2C, 2 x SPI
- Up to 60 GPIOs

Wi-Fi and Networking Features

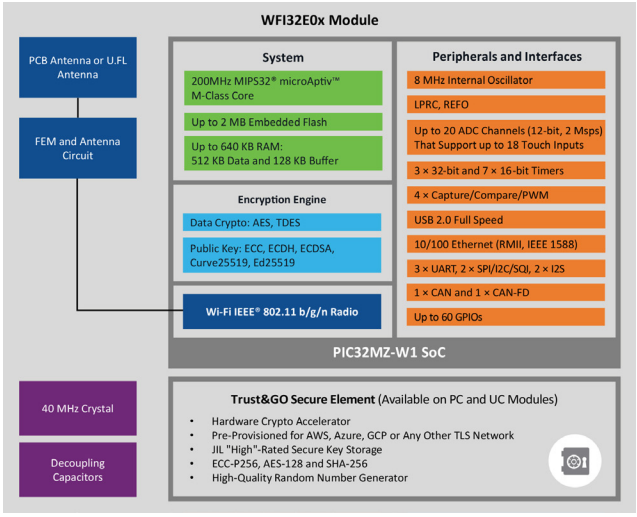
- Single-band 2.4 GHz 802.11b/g/n
- Wi-Fi Security protocols supported: WPA/WPA2/WPA3, TLS, SSL, Enterprise Security
- Support for AP, STA, SoftAP, Wi-Fi Direct modes
- Optional Full Featured Hardware Crypto Accelerator
- Antenna Type: PCB or U.FL

Other Features

- Certifications: CE (EU), UKCA (UK), FCC (USA), ISEDC (Canada), MIC (Japan), KC (South Korea), SRRC (China), NCC (Taiwan)
- Packages:
  - 54-pin SMD module, 24.5 × 20.5 × 2.5 mm
  - 87-pin SMD module, 24.5 × 22.5 × 2.5 mm
  - 132-pin DQFN SoC, 10 x 10 x 0.9 mm
- 3.0 to 3.63V, -40 to +85°C
- Extreme deep sleep current consumption down to 0.7 uA

Trust&GO

The Trust&GO platform, available on PC and UC modules, streamlines the process of enabling network authentication. The hardware secure element is pre-configured and pre-provisioned for cloud authentication.



Key Features

Feature	Benefit
Robust Analog	Accurate and highly linear dual 12-bit analog-to-digital converters (ADCs)
	Repeatable ADC performance with minimal effect from temperature variation
Best-in-Class Peripherals	ADC and CVD input channels with largest number of GPIOs
	Highly integrated on-chip Ethernet, CAN/CAN-FD, USB and CVD touch
	Dual CAN bus supporting CAN and CAN-FD
Functional Safety (Class B Library)	The PIC32MZ-W1 family supports IEC 60730, the functional safety standard used in appliances such as washing machines, ovens, and microwaves. IEC 60730 defines standards addressing electronic control safety in appliances and contains test and diagnostic methods.

Development Tools Guide

Tool	Description	Part Number/Link
WFI32 2.0 High Pin Count Curiosity Development Board	A full featured development platform with enhanced pin headers, this board features our WFI32E04 modules.	EV68D28A microchip.com/ev68d28a
WFI32 2.0 Curiosity Development Board	A full featured development platform, featuring our WFI32E03 modules.	EV67T15A microchip.com/ev67t15a
WFI32-IoT 2.0 Development Board	Our IoT board is a compact development platform that is well suited to battery-powered applications. This board features our WFI32E03 modules.	EV80S51A microchip.com/ev80s51a
Ethernet to Wi-Fi Bridge Board	This is a low-cost, compact and easy-to-use reference design board that enables Ethernet connection on the WFI32E01PE module.	EV49N51A microchip.com/ev49n51a
MPLAB® X Integrated Development Environment (IDE) and MPLAB Harmony v3	MPLAB is an expandable, highly configurable software program that incorporates powerful tools to help you discover, configure, develop, debug and qualify embedded designs.	Learn more about MPLAB
Application and Code Examples	Jumpstart development with turnkey application examples including Ethernet bridging, AWS Free RTOS, secure cloud connections and many more.	Browse MPLAB Discover

Product Selection Guide

Part Number	Device Type	GPIO	Flash (KB)	RAM (KB)	Class B Library	Trust&GO	Antenna Type
PIC32MZ1025W104132	SoC	60	1024	320	Yes	–	–
WFI32E01PE	Module	37	1024	320	Yes	–	PCB
WFI32E01UE	Module	37	1024	320	Yes	–	U.FL
WFI32E01PC	Module	37	1024	320	Yes	Yes	PCB
WFI32E01UC	Module	37	1024	320	Yes	Yes	U.FL
WFI32E02UE	Module	60	1024	320	Yes	–	PCB
WFI32E02UC	Module	60	1024	320	Yes	Yes	U.FL
PIC32MZ2051W104132	SoC	60	2048	640	Yes	–	–
WFI32E03PE	Module	37	2048	640	Yes	–	PCB
WFI32E03UE	Module	37	2048	640	Yes	–	U.FL
WFI32E03PC	Module	37	2048	640	Yes	Yes	PCB
WFI32E03UC	Module	37	2048	640	Yes	Yes	U.FL
WFI32E04UE	Module	60	2048	640	Yes	–	PCB
WFI32E04UC	Module	60	2048	640	Yes	Yes	U.FL