WFI32E01

Wi-Fi® MCU Module With Optional Trust&Go

Summary

Microchip's highly integrated Wi-Fi MCU module, the WFI32E01, contains the PIC32MZW1 series Wi-Fi SoC, which is a 200 MHz high performance MCU with industrial leading Wi-Fi connectivity and rich peripheral options. This not only provides a robust Wi-Fi connection, but also serves as a powerful MCU core for the entire IoT system. The WFI32E01PC/UC module variants feature the Trust&Go platform, which are pre-provisioned for cloud platforms like Google Cloud, Amazon AWS and Microsoft Azure.

Example Applications

- IoT applications
- Industrial automation
- Wire replacement
- Automotive diagnostics port
- Security systems, CCTV
- Protocol gateway/bridging
- Industrial Wi-Fi dongles
- Home automation

Key Features

MCU Features

- 200 MHz, MIPS32-bit MCU
- 1 MB embedded Flash
- 256KB SRAM for program and data
- 64KB RAM for data buffer
- Full-speed USB
- CAN and CAN-FD
- 10/100 MAC
- 12-bit dual ADCs
- 6 CVD touch inputs
- 3x UART, 2x I^2C, 2x SPI
- 37 GPIOs

Wi-Fi and Networking Features

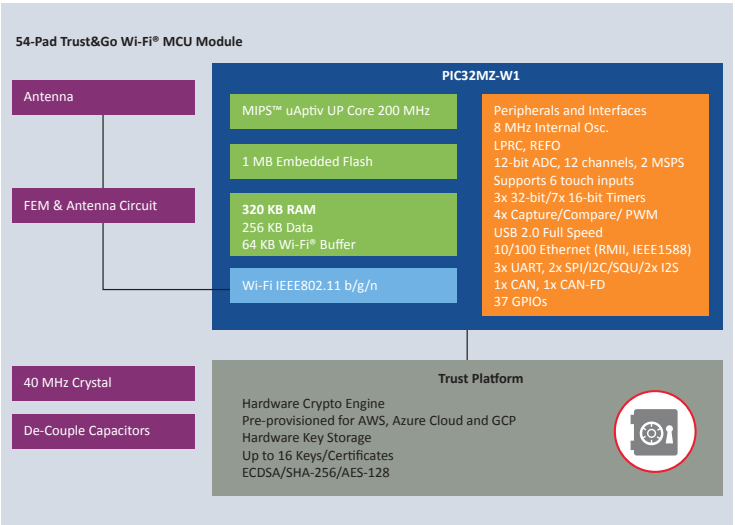
- Single-band 2.4 GHz 802.11b/g/n
- Wi-Fi security protocols supported: WPA/WPA2/WPA3, TLS, SSL
- Support for AP, STA, SoftAP, Wi-Fi direct modes
- Optional full featured hardware crypto accelerator
- Antenna type: PCB/uFL

Other Features

- Certifications: FCC, CE, IC (China, Taiwan, Japan, Korea planned)
- 54-pin SMD, 24.5 x 20.5 x 2.5 mm
- 3.0V to 3.63V, –40ºC to +85ºC

Trust&Go Feature

Implement secure authentication for your Internet of Things (IoT) design. The Trust&GO platform inside the WFI32E01PC and WFI32E01UC is designed to streamline the process of enabling network authentication using hardware secure element technology, which is pre-configured and pre-provisioned for Cloud Authentication.



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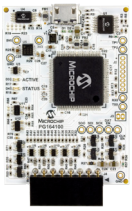
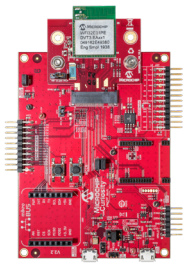
Development Tools





The PIC32 WFI32 Curiosity Board to help the customer fully evaluate and quickly prototype the features of WFI32E01 module. The board has an In-Circuit Serial Programming Header (ICSP) for adding an external debugger such as MPLAB® Snap In-Circuit Debugger/Programmer, MPLAB PICkit 4 or MPLAB ICD 4 In-Circuit Debugger/Programmer.

WFI32E01's software development tools include Microchip's MPLAB X Integrated Development Environment (IDE) and MPLAB Harmony v3. All WLAN software libraries, MCU peripheral drivers, complementary device drivers and rich application examples are located in Harmony v3, where users can easily integrate the needed functions into their applications. The out-of-box demonstration features an AWS Cloud connection with voice control. Microchip provides a getting started webpage on Github to guide the users through the demonstration and to configure/add voice commands.

Table of Products

CPN	Trust&Go	Antenna Type	Regulatory
WFI32E01PE-I	No	PCB	FCC, RED, IC, (SRRC, Taiwan, Japan, Korea, WFA are planned)
WFI32E01UE-I	No	U.FL connector	FCC, RED, IC
WFI32E01PC-I	Yes	PCB	FCC, RED, IC, (SRRC, Taiwan, Japan, Korea, WFA are planned)
WFI32E01UC-I	Yes	U.FL connector	FCC, RED, IC

A Complete Solution for Faster Time to the Market

System integration can be difficult due to the need to develop drivers and circuits for chips from multiple vendors. And it is difficult to receive system level help from vendors as their expertise is in their products. With a diverse product portfolio, Microchip can provide a total solution by offering the key electronic components needed in the design. This leads to a simplified IoT system design when using the WFI32E01 module with Microchip's other market leading components such as Ethernet PHY, CAN transceivers, sensors, and other BLE, LoRa or 802.15.4 radios. Microchip's system solution provides ready-to-use software drivers and hardware reference designs, significantly reducing the project risks and enables getting market faster.

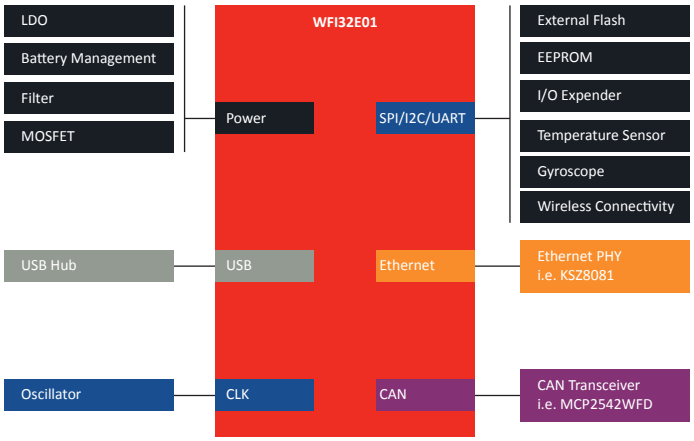


Figure 1: Possible Microchip products that may be used together with WFI32W01