WE310G4

Wi-Fi 802.11 a/b/g/n
Bluetooth® Low Energy 5.0

Product Description

The WE310G4 is a fully integrated, dual-band, combination Wi-Fi (802.11 a/b/g/n) and Bluetooth® Low Energy 5.0 module. It provides an easy, cost-effective way for manufacturers to add wireless connectivity to their products. The module is based on an integrated dual-core system on chip, composed by:

- A high-performance application processor (running on ARM® Cortex®-M33)
- A low-power MCU (ARM Cortex-M23) for Wi-Fi and Bluetooth® Low Energy

The module also integrates 4MB of internal flash with wide array of peripherals (SDIO, SPI, UART, ADC, PWM, GPIO, I2S, I2C, USB). The WE310G4 provides a low-cost, high-speed serial-to-Wi-Fi/Bluetooth® Low Energy connection to an embedded design built on an 8/16/32-bit microcontroller through UART, SPI or SDIO interfaces. Furthermore, the module can be implemented as a hostless (stand-alone) solution. It offers up to 456 Kb of SRAM dedicated to customer application development.

The WE310G4 is ideal for organizations with limited Wi-Fi/ Bluetooth® Low Energy or RF expertise or those seeking a faster time to market. It reduces RF design time and removes testing and certification burdens. The module is IEEE 802.11 a/ b/g/n and Bluetooth certified and complies with Wi-Fi Alliance and BT SIG-v5 requirements.

The module is self-contained with full Wi-Fi, BLE and TCP/IP networking stacks. It supports a complete security feature suite with modes that include (among others):

- Secure Boot
- TrustZone-M
- WPA3 Personal and Enterprise
- Upper-layer security protocols (e.g., TLS-1.3/SSL and HTTPS)

The module can be set up (provisioning) from a smartphone or laptop through the innovative Limited AP mode or Bluetooth® Low Energy. The WE310G4 module is easily designed into embedded systems. It allows customers to develop devices and appliances that connect to other local devices or the internet over Wi-Fi. Finally, the WE310G4 is pin-to-pin compatible with the Telit WE310F5 (single-band module alternative). This compatibility guarantees effortless hardware and software migration.

Key Features

- Dual-band 2.4 GHz/5 GHz Wi-Fi and Bluetooth® Low Energy 5.0 combination module, based on Realtek RTL8720 SoC
- Ease of system integration, pin-to-pin compatible with WE310F5 (single-band module alternative)
- Low power consumption
- Serial-to-Wi-Fi hosted implementation
- Telit IoT AppZone IDE for hostless customer application development
- Wide range of peripherals (including UART, SPI and SDIO)
- Advanced security features (including WPA3) with integrated crypto hardware
- Industrial-grade temperature range (-40 °C to +85 °C)
- Variants with (WE310G4-I) and without (WE310G4-P) antenna
- Certified modules

Target Applications

Smart Home

- Home automation
- Home appliances
- Home security and alarm
- IP cameras/speakers
- Smart lighting

Industrial and commercial

- Industrial automation
- Energy management
- Robotics
- Building automation
- Smart city

Health Care & Medical

- Remote Patient Monitoring
- Healthcare Devices
- Wellness Devices
- Pet/Animal Trackers
- Medical Wearables

Others Applications

- Aftermarket OEM telematics
- Fleet management
- Smart parking
- Printers
- Asset management

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Wireless Specification	Wi-Fi - 802.11 a/b/g/n (2.4 GHz, 5 GHz), Bluetooth® Low Energy 5.0 (2.4 GHz)
Solution Architecture	Hosted IoT module (AT command) or Standalone (hostless)
Host Interface	UART, SPI, SDIO
Other Interface	I2C, ADC (12-bit), DAC, I2S, SWD, USB, GPIOs
Wi-Fi Modes	Wi-Fi AP (Access Point) STA (Client) Wi-Fi (AP + STA) Concurrent Mode Wi-Fi Direct (P2P)*
BLE Modes	Central Peripheral Concurrent
Security Features	WPA/WPA2 (personal) WPA3 (personal) WPA3 (enterprise)* HTTPS server & client TLS-1.2 TLS-1.3* Secure Boot TrustZone HW crypto accelerators Secure eFuse
Coexistence	Built-in Wi-Fi/Bluetooth®
Provisioning (Through web-apps and native apps)	Bluetooth®-enabled Wi-Fi HTTPS-enabled Wi-Fi
Cloud Agent	Amazon AWS IoT* Microsoft Azure*
Firmware Upgrade	FOTA
Dimension	Integrated antenna (WE310G4-I): 18 x 15 mm (LGA package) – WE310F5-I P2P compatible External antenna (WE310G4-P): 14.3 x 13.1 mm (LGA package) – WE310F5-P P2P compatible
Wi-Fi Tx output power	18 dBm @ 2.4 GHz 19 dBm @ 5.0 GHz
BLE Tx output power	8 dBm (TBC)
Internal Flash	4 MB
Operating Temperature	-40 °C to +85 °C (industrial grade)
Operating Voltage	3.3 V
Compliance	FCC/IC/RED Wi-Fi Alliance Bluetooth® Low Energy-SIG
Environmental Compliance	RoHS, REACH

Not available in first release

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