

Wi-Fi 5 with Bluetooth 5 for Next Generation Industrial IoT

Ezurio's customers across multiple industries have a diverse set of requirements and specific needs. They asked for a truly robust industrial IoT module: one that's rugged, small, simplifies their BOM, is globally certified, has reliable connectivity, and easy to integrate.

Ezurio's new Sterling-LWB5+ answers that call for next-gen wireless IoT. Powered by Infineon's CYW4373E silicon, the Sterling-LWB5+ is purpose-built for industrial IoT connectivity through a secure, reliable, and robust feature set. It's IoT from the start: fully certified, easy to integrate, and is the fastest route to the market for IoT.

Compatible: Our **Linux Backports** package supports many Linux kernels.

Reliable: Integrated PA (Power Amplifier) and LNA (Low Noise Amplifier) with **antenna diversity** for reliable connectivity in harsh RF environments.

Robust: Rich feature-set including 802.11ac Wi-Fi and Dual-Mode Bluetooth Low Energy. Reliable in **industrial temperature range**, and solder-down module is suitable for industrial vibration and impact demands.

Secure: Supports the latest WPA2/WPA3 Enterprise security standards.



M.2 2230 E-Key Module



On-board Chip Antenna Module

- 1x1 **Wi-Fi 5** (802.11ac)
- Optional **Wi-Fi antenna diversity** for reliable connectivity
- **Bluetooth 5** Bluetooth Low Energy (BLE)
- Integrated **Wi-Fi + Bluetooth coexistence** for seamless connectivity
- High Speed host interface:
 - Mode 1: SDIO 3.0 (Wi-Fi) and UART (BT)
 - Mode 2: USB 2.0 (Wi-Fi) and USB 2.0 (BT)
- Industrial Temperature Rating (-40° to +85 °C)
- **Ultra-small footprint** (12 mm x 17 mm) including on-board antenna
- Module options:
 - External antenna module
 - On-board antenna module
 - M.2 module w/antenna diversity
- List options of external antennas available
- **Rugged Design** – solder down form factor
- **Global Certifications** – FCC, IC, CE, MIC, RCM
- **Linux Backports** for broad kernel support

Key Features



Reliable Connectivity

802.11ac Wi-Fi with integrated PA and LNA combined with Antenna Diversity add up to a reliable module for harsh RF conditions



Software Flexibility and Speed to Market

Open-sourced software and Linux Backports ensures compatibility with a wide variety of Linux kernels



Industrial Operating Range

Designed to the industrial temperature range of -40 °C to +85 °C for every component utilized



Global Approvals

Carries several modular FCC, IC, CE, RCM, MIC and Bluetooth SIG approvals



Personal Support from Design to Manufacture

Our industry-renowned support is passionate about helping you speed your design to market



Application Areas



Rugged Handheld Devices



Industrial IoT Connectivity



Battery-Powered Medical Devices



Industrial IoT Sensors

Specifications

Category	Feature	Specification
Wireless Specification	Wi-Fi	Wi-Fi 5 (802.11ac)
	Bluetooth®	v5.2 Low Energy
	Frequency	Dual-Band 2.4GHz & 5GHz
	Transmit Power	+ 18 dBm (maximum)
	Receive Sensitivity	IEEE 802.11b: -96 dBm @ 1 Mbps IEEE 802.11g: -93 dBm @ 6 Mbps IEEE 802.11a: -92 dBm @ 6 Mbps IEEE 802.11n (2.4 GHz band): -93 dBm @ MCS0 IEEE 802.11n (5 GHz band): -91 dBm @ MCS0
Antenna Options		Base Module: On-board ceramic chip, MHF4 connector(s), trace pin for external antennas M.2 Board: Antenna diversity w/MHF4 connectors
	Raw Data Rates (Air)	433.3Mbps - MCS9, 80MHz, 256QAM, SGI
Host Interface and Peripherals	Network Interfaces	Mode 1: SDIO 3.0 (Wi-Fi) and UART (BT) Mode 2: USB 2.0 (Wi-Fi) and USB 2.0 (BT)
	Key Wi-Fi Features	Wi-Fi 5 (802.11ac) <ul style="list-style-type: none"> • 20, 40, and 80MHz wide channels • Single-stream spatial multiplexing up to 433.3 Mbps data rate. • Integrated PA/LNA • Antenna Diversity (optional on base module, mandatory on M.2 board)
Key Bluetooth Features	Bluetooth Low Energy <ul style="list-style-type: none"> • Central/Peripheral roles • Up to 7 BLE connections • UART baud rates up to 4 Mbps • Adaptive frequency hopping (AFH) • Quality of service (QoS) • Secure simple pairing (SSP) • LE Secure Connections • LE Privacy 1.2 • LE Data Length Extension • Fast connect (interlaced page and inquiry scans) 	
Supply Voltage		3.3V
Power Consumption	Estimated Current	Continuous TX: <ul style="list-style-type: none"> • 2.4 GHz band - 369 mA @ 1 Mbps @ +18 dBm output power • 5 GHz band - 441 mA @ VHT80_MCS0 @ +17.5 dBm output power
Physical	Dimensions	12 mm x 17 mm x 2.2 mm (Modules)
		22 mm x 30 mm x 3.1 mm (M.2 E-Key Module)
Environmental	Temp Range	-40°C to +85°C
Miscellaneous	Lead Free	Lead-free and RoHS-compliant
	Development Kit	Development board, accessories, and evaluation software
Qualifications	Bluetooth® SIG	Bluetooth 5.2
Regulatory	Approvals	FCC/IC/CE/MIC/RCM

For full specifications on the Sterling-LWB5+ modules, please see the appropriate datasheet.

Ordering Information

Part	Description
453-00045C	Module, Sterling LWB5+, Chip Antenna, Cut Tape
453-00045R	Module, Sterling LWB5+, Chip Antenna, Tape/Reel
453-00046C	Module, Sterling LWB5+, MHF4, Cut Tape
453-00046R	Module, Sterling LWB5+, MHF4, Tape/Reel
453-00047C	Module, Sterling LWB5+, Trace Pin, Cut Tape
453-00047R	Module, Sterling LWB5+, Trace Pin, Tape/Reel
453-00048	Module, Sterling LWB5+, M.2, Key E, SDIO, UART
453-00049	Module, Sterling LWB5+, M.2, Key E, USB, USB
453-00045-K1	Development Kit, Sterling LWB5+, Chip Antenna
453-00046-K1	Development Kit, Sterling LWB5+, MHF4
453-00048-K1	Development Kit, Sterling LWB5+, M.2, Key E, SDIO, UART
453-00049-K1	Development Kit, Sterling LWB5+, M.2, Key E, USB, USB

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