Wi-Fi 6E with Bluetooth 5.4 for Low Power Industrial IoT

Introducing the newest member of the Sona™ Wi-Fi 6/6E product line from Laird Connectivity, the IF513, based upon Infineon's leading AIROC™ CYW55513 chipset. A truly robust industrial IoT module: one that's rugged, small, globally certified, has reliable connectivity, and is easy to integrate.

Our new Sona™ IF513 answers the call for next-gen wireless IoT. The Sona™ IF513 is purpose-built for industrial IoT connectivity with access to SDIO and UART interfaces, industrial operating temp range, latest generation Wi-Fi and BT combined with both pluggable card and SMT M.2 packaging.

When matched with our industry leading services and support, the Sona IF513 is the only Wi-Fi module of its kind, addressing all your Wi-Fi 6E needs.

Compatible: Our **Linux Backports** package supports many Linux kernels including v6.1.x.

Reliable: Integrated PA (Power Amplifier) and LNA (Low Noise Amplifier) with 1x1 **MU-SISO** antenna for reliable connectivity in harsh RF environments.

Robust: Rich feature-set including 802.11ax Wi-Fi 6E and Dual-Mode BT v5.4. Support for the 6GHz spectrum. Reliable **industrial temperature range,** and solder-down module is suitable for industrial rugged applications.

Secure: Supports the latest WPA2/3 personal and Enterprise security standards.

- Antenna: 1x1 **Wi-Fi 6E** (802.11ax), x1 **Bluetooth 5.4**
- Support for 2.4, 5 and 6GHz (UNII-1 – 3 & UNII-5 – 8)
- 802.11ax STA mode and Soft AP mode
- **Bluetooth 5.4** Bluetooth Low Energy (BLE)
- Integrated **Wi-Fi + Bluetooth coexistence** for seamless connectivity
- High Speed host interface:
  - Mode 2: SDIO 3.0 (Wi-Fi) and UART (BT)
- Industrial Temperature Rating (-40° to +85 °C)
- **Ultra-small footprint** (12 mm x 16 mm) including on-board antenna MHF4 connectors
- **Antenna diversity**
- Module options:
  - RF Antenna pin
  - On-board MHF4 connector
  - M.2 2230 Key E Plug-in module
  - M.2 1216 SMT module
- **Rugged Design** – solder down form factor
- **Global Certifications** – FCC, IC, CE, MIC, RCM, BT SIG
- **Linux and Android Support** through the Ezurio Connectivity Stack.

Key Features

Tri-Band Wi-Fi 6 (6GHz Spectrum Support)
2.4/5/6 GHz spectrum availability for flexibility and higher performance.

Reliable Connectivity
802.11ax Wi-Fi with integrated PA and LNA combined add up to a reliable module for harsh RF conditions.

Software Flexibility and Speed to Market
Open-Source software and Linux Backports ensures compatibility with a wide variety of Linux kernels and latest security standards.

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

Global Approvals
Carries worldwide FCC, IC, CE, RCM, MIC and Bluetooth SIG approvals.

Infineon

WiFi 6E

Application Areas

Medical Devices (Infusion pumps, HD Imaging, Vitals Monitoring, Gateways, Beds, blood analyzers)

Industrial IoT Sensors

Rugged Handheld Devices

Premium Wi-Fi Advantage

EXPERIENCE WHAT PREMIUM PARTNERSHIPS ARE ALL ABOUT:
WWW.EZURIO.COM/WIFI-ADVANTAGE

Interested in our Sona IF513?
Visit www.ezurio.com/ sona-if513-series

Specifications

Category	Feature	Specification
Wireless Specification	Wi-Fi	Wi-Fi 6E (802.11 a/b/g/n/ac/ax)
	Bluetooth®	v5.4 (BDR + EDR + BLE)
	Frequency	Tri-Band 2.4 GHz & 5 GHz & 6 GHz (Up to 7.125 GHz)
	Transmit Power	+18 dBm (maximum)
	Antenna Options	On-board MHF4 connector(s), trace pin for external antennas
		Separate Wi-Fi and BT antenna RF connections
	Raw Data Rates (PHY)	2.4 GHz/5 GHz/6 GHz: Up to 143 Mbps, 1024-QAM, 1x1 SISO
Key Wi-Fi Features	Wi-Fi 6E (802.11ax)	• 20MHz wide channels, 1024 QAM • Integrated PA/LNA • On-board MHF4 connectors/RF pin • Supports OFDMA, TWT, Virtual Simultaneous Dual Band, Zero Wait DFS, BSS Coloring • 802.11d/h/k/r/v/w/ai
Host Interface and Peripherals	Network Interfaces	SDIO 3.0 (Wi-Fi) and HCI using HS-UART (BT)
Key Bluetooth Features	Bluetooth Low Energy	• BDR + EDR + BLE • LE 2 Mbps PHY • LE Long Range (LE-LR) • Adaptive frequency hopping (AFH) • Quality of service (QoS) • Secure simple pairing (SSP) • UART baud rates up to 4 Mbps • Fast connect (interlaced page and inquiry scans) • Dedicated BT path with MHF4 connector or trace pin
Supply Voltage		3.3VDC (Supply) and 1.8VDC (I/O)
Physical	Dimensions	12 mm x 16 mm x 1.75 mm (M.2 1216 SMT Module)
		22 mm x 30 mm x 3.1 mm (M.2 E-Key Module)
Environmental	Operating Temp Range	-40°C to +85°C
Miscellaneous	Lead Free	Lead-free and RoHS-compliant
	Development Kit	Development board, accessories, and evaluation software
Regulatory	Approvals	FCC/IC/CE/MIC/RCM (Pending)
Qualifications	Bluetooth SIG	Bluetooth SIG Approval

For full specifications on the Sona IF513 modules, please see the appropriate datasheet.

Ordering Information

Part	Description
453-00184-R	Module, Sona IF513, 1216, MHF4L, Tape and Reel
453-00184-C	Module, Sona IF513, 1216, MHF4L, Cut Tape
453-00185-R	Module, Sona IF513, 1216, Trace Pin, Tape and Reel
453-00185-C	Module, Sona IF513, 1216, Trace Pin, Cut Tape
453-00193-R	Module, Sona IF513, 1216, Antenna Diversity, MHF4L, Tape and Reel
453-00193-C	Module, Sona IF513, 1216, Antenna Diversity, MHF4L, Cut Tape
453-00194-R	Module, Sona IF513, 1216, Antenna Diversity, Trace Pin, Tape and Reel
453-00194-C	Module, Sona IF513, 1216, Antenna Diversity, Trace Pin, Cut Tape
453-00186	Module, Sona IF513, M.2, Key E, SDIO, UART
453-00195	Module, Sona IF513, Antenna Diversity, M.2, Key E, SDIO, UART
453-00186-K1	Development Kit, Sona IF513, M.2, Key E, SDIO, UART
453-00195-K1	Development, Sona IF513, Antenna Diversity, M.2, Key E, SDIO, UART

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