

Bringing Wi-Fi 7 to IoT: Tri-band Wi-Fi/BT/15.4 radio supports 20MHz

The Sona IF703 and IF713 next-generation Wi-Fi 7/BT/5.4 radios are designed to target IoT. Leveraging the advanced features provided by Wi-Fi 7 radio family bringing the latest Wi-Fi generation to medical, industrial and IoT applications.

Introducing the first member of the Sona™ Wi-Fi 7 product line from Ezurio, the IF7x3, based upon Infineon's leading AIROC™ AWE74x3 chipset. A truly robust industrial IoT module: one that is low power, rugged, small, globally certified, has reliable connectivity, and is easy to integrate.

Our new Sona™ IF7x3 answers the call for next-gen wireless IoT. It is purpose-built for industrial IoT connectivity with access to a SDIO Wi-Fi and UART Bluetooth host interfaces, industrial operating temp range, latest generation Wi-Fi and BT, with an option for 802.15.4 (IF713 only), combined with both pluggable card and SMT M.2 packaging.

Designed with IoT in mind the IF7x3 family includes class leading low power operation and standby modes, MLO MLSSR link capability, support for matter over thread using the 15.4 radio, BT LE 6 core with channel sounding and long-range capability, industrial temperature range and packaging and antenna options.

When matched with our industry leading services and support, the Sona IF7x3 is the only Wi-Fi module of its kind, addressing all your low power, high performance IoT Wi-Fi 7, BT 6.0 and 15.4 needs.

Compatible: Linux Ezurio Connectivity Stack supports many kernels including v6.12.x.

Reliable: Integrated PA (Power Amplifier) and LNA (Low Noise Amplifier) with 1x1 MU-MIMO antenna for reliable connectivity in harsh RF environments. Support for Multi-Link Operation (MLO)

Robust: Rich feature-set including 802.11be Wi-Fi 7 and BT LE v6 core. Rugged design, industrial temperature range, and solder-down module make it best suited for industrial rugged applications.

Secure: Supports the latest WPA2/3 personal and Enterprise security standards. Supports encrypted firmware, anti-rollback, secure boot, firmware authentication



- Antenna: 1x1 **Wi-Fi 7** (802.11be), x1 **Bluetooth LE v6**, x1 **802.15.4** (IF713 only) with diversity options
- Support for 2.4, 5 and 6GHz (UNII-1 – 3 & UNII-5 – 8)
- 802.11be STA mode and Soft AP mode
- **Wi-Fi 7** features include OFMDA, CSI (802.11bf), MLO MLSSR, MU-MIMO, rTWT, MRU
- **Bluetooth 6 core** Bluetooth Low Energy with channel sounding
- **802.15.4** (IF713 only) Radio Co-Processor (RCP) Mode, Thread border router, Matter over Thread
- Integrated **Wi-Fi + BT/15.4 coexistence** for seamless connectivity
- High Speed host interface:
 - Mode 2: SDIO 2.0/3.0 (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
- Module options:
 - **Form factor:** M.2 1216, 1218, 2230
 - **Antenna Options:** RF Pin, MHF4, Integrated chip antenna
 - **Antenna Port Options:** Shared Wi-Fi Bluetooth, Diversity
- **Rugged Design** – solder down form factor
- **Global Certifications** – FCC, IC, CE, UKCA, MIC, RCM, BT SIG
- **Ezurio Connectivity Stack** including Android support.

Key Features



Tri-band Wi-Fi 7 (2.4/5/6 spectrum support)

2.4/5/6 GHz spectrum available for flexibility and high performance.



Class Leading Low Power Modes

Uses up to 3x less operating power than similar devices, with low power modes up to 15x more efficient (DTIM10).



Multi Link Operation

Connect virtually using all 3 bands and switch between them without disconnecting from the network



Reliable connectivity

Operate in the best frequency band with the best antenna, enhancing robustness and reliability.



Global Certification

Pre-certified for global markets with multiple embedded antenna and integrated chip antenna options



Ezurio Connectivity Stack

Supported by our Ezurio Connectivity stack with broad Linux kernel and Android support. Fully QA and tested software for rapid, reliable integration.

Application Areas



Medical Devices (Infusion pumps, Handheld analysers, Vitals Monitoring, Gateways, Beds)



Industrial (IoT Sensors, access control, wireless security cameras, HVAC)



Telematics (Vehical gateways, sensors, printers, distribution infrastructure)

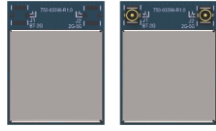


Robotics and AGV (Controller communications, sensors, actuators, AI subsystems)

Variations and Form Factors


M.2 1216

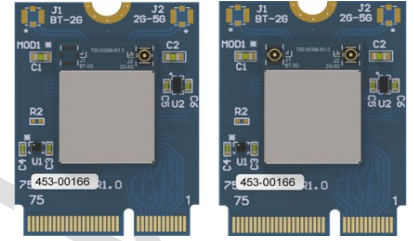
RF Trace or Single MHF4


M.2 1216 Diversity

RF Trace or Dual MHF4


Integrated Chip Antenna

Single Chip Antenna


M.2 2230

Single or Dual MHF4

Specifications

Category	Feature	Specification
Wireless Specification	Wi-Fi	Wi-F 7 (802.11 a/b/g/n/ac/ax/be)
	Bluetooth®	V6 Core (BLE)
	802.15.4	Radio Co-processor (RCP) mode, Thread border router capable
	Frequency	Tri-Band 2.4 GHz & 5 GHz & 6 GHz (Up to 7.125 GHz)
	Transmit Power	TBD
	Antenna Options	On-board MHF4 connector(s), trace pin for external antennas Integrated chip antenna Supports diversity
	Raw Data Rates (PHY)	Up to 86 Mbps, 64-QAM, MCS 7, 20MHz channel, 1x1 MIMO
Key Wi-Fi Features	Wi-Fi 7 (802.11be)	<ul style="list-style-type: none"> 20MHz wide channels, 64 QAM Integrated PA/LNA Supports OFDMA, rTWT, Virtual Simultaneous Dual Band, Zero Wait DFS, BSS Coloring, MLO MLSSR 802.11bf Channel State Information (CSI) 802.11d/h/mc/k/v/r/w/ai/i
Host Interface and Peripherals	Network Interfaces	SDIO 2.0/3.0 (Wi-Fi) and HCI using HS-UART (BT)
Key Bluetooth Features	Bluetooth Low Energy	<ul style="list-style-type: none"> BLE 6.0 core Channel Sounding Link Layer Extended feature set LE 2 M, LE 1M, LE LR, ADV ext LE Coded PHY Shared LNA LE Audio
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) 12mm x 18mm x 1.75mm (Integrated Antenna 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/UKCA/MIC/RCM/KCC (Pending)
Qualifications	Bluetooth SIG	Bluetooth SIG Approval

Ordering Information

Part	Description
IF703 Series	
453-00596R	Module, Sona IF703, MHF4L, M.2 1216, Tape and Reel
453-00596C	Module, Sona IF703, MHF4L, M.2 1216, Cut Tape
453-00597R	Module, Sona IF703, Trace Pin, M.2 1216, Tape and Reel
453-00597C	Module, Sona IF703, Trace Pin, M.2 1216, Cut Tape
453-00598R	Module, Sona IF703, Antenna Diversity, MHF4L, M.2 1216, Tape and Reel
453-00598C	Module, Sona IF703, Antenna Diversity, MHF4L, M.2 1216, Cut Tape
453-00599R	Module, Sona IF703, Antenna Diversity, Trace Pin, M.2 1216, Tape and Reel
453-00599C	Module, Sona IF703, Antenna Diversity, Trace Pin, M.2 1216, Cut Tape
453-00600R	Module, Sona IF703, Integrated Antenna, M.2 1218, Tape and Reel
453-00600C	Module, Sona IF703, Integrated Antenna, M.2 1218, Cut Tape
453-00601	Module, Sona IF703, M.2 2230, Key E, SDIO, UART
453-00602	Module, Sona IF703, Antenna Diversity, M.2 2230, Key E, SDIO, UART
453-00596-K1	Development Kit, Module, Sona IF703, MHF4L
453-00598-K1	Development Kit, Module, Sona IF703, Antenna Diversity, MHF4L
453-00600-K1	Development Kit, Module, Sona IF703, Integrated Antenna
IF713 Series	
453-00603R	Module, Sona IF713, MHF4L, Tape and Reel
453-00603C	Module, Sona IF713, MHF4L, Cut Tape
453-00604R	Module, Sona IF713, Trace Pin, Tape and Reel
453-00604C	Module, Sona IF713, Trace Pin, Cut Tape
453-00605R	Module, Sona IF713, Antenna Diversity, MHF4L, Tape and Reel
453-00605C	Module, Sona IF713, Antenna Diversity, MHF4L, Cut Tape
453-00606R	Module, Sona IF713, Antenna Diversity, Trace Pin, Tape and Reel
453-00606C	Module, Sona IF713, Antenna Diversity, Trace Pin, Cut Tape
453-00607R	Module, Sona IF713, Integrated Antenna, Tape and Reel
453-00607C	Module, Sona IF713, Integrated Antenna, Cut Tape
453-00608	Module, Sona IF713, M.2 2230, Key E, SDIO, UART
453-00609	Module, Sona IF713, Antenna Diversity, M.2 2230, Key E, SDIO, UART
453-00603-K1	Development Kit, Module, Sona IF713, MHF4L
453-00605-K1	Development Kit, Module, Sona IF713, Antenna Diversity, MHF4L
453-00607-K1	Development Kit, Module, Sona IF713, Integrated Antenna

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