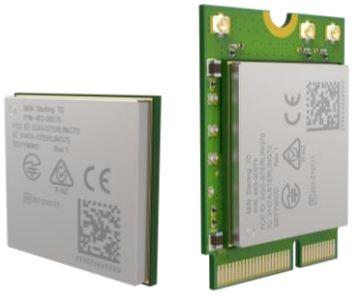
Sterling 70 Series

Dual-Band 2x2 Wi-Fi 6 (802.11ax) + Bluetooth 5.1 Modules

Performance IoT From The Start: Wi-Fi 6 (802.11ax) with concurrent dual Wi-Fi and Bluetooth 5.1



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

Our new Sterling 70 series answers that call for next-generation Wi-Fi 6 (802.11ax) connectivity. Powered by **NXP's innovative 88W9098** silicon, the Sterling 70 is purpose-built for industrial IoT connectivity through a secure, reliable, and robust feature set. It's **performance IoT from the start**: fully certified, easy to integrate, and is the fastest route to the market for IoT.

- **Reliable:** Integrated PA (Power Amplifier) and LNA (Low Noise Amplifier) with **2x2 MU-MIMO** for reliable connectivity in harsh RF environments.
- **Multi Wireless:** Rich feature-set including latest 802.11ax Wi-Fi, simultaneous dual band 2.4 and 5 GHz, Dual-Mode Bluetooth including LE Long Range.
- **Robust:** With **industrial temperature range,** solder-down and M.2 E-key modules are suitable for industrial vibration and impact demands.
- **Compatible:** Our **Linux Backports** package supports many Linux kernels, as well as **native NXP BSP** support in i.MX 6, 7 and 8.
- **Secure:** Supports the latest **WPA3-Personal and WPA3-Enterprise** security standards.

- 2x2 **Wi-Fi 6** (802.11ax) MU-MIMO – Dual independent WLAN radios
  - Dual-MAC and dual baseband
- **Wi-Fi antenna diversity** for reliable connectivity
- **Bluetooth 5.1** Classic BT & Bluetooth Low Energy (LE)
  - Includes 2MPHY, LE Coded
- Integrated **Wi-Fi + Bluetooth coexistence** for seamless connectivity
- High Speed host interface options:
  - SDIO 3.0 (WLAN)/UART(BT)
  - PCIe 2.0 (WLAN)/UART(BT)
- Industrial Temperature Rating (-40° to +85 °C)
- Module options:
  - SIP Module (all interfaces)
  - M.2 Card (2230 E-key): 1 x SDIO/UART, 1 x PCIe/UART variants
- Extensive range of pre-certified antennas
- **Rugged Design** – solder down and M.2 2230 E-Key form factor
- **Global Certifications** – FCC, IC, CE, MIC, RCM
- **Out-of-Box** native software support for NXP's latest i.MX 6/7/8 microprocessors board support packages
- **Laird Linux Backports** for Linux kernel 4.1 and later
- **Yocto Layer –** example layer for faster integration into a variety of microprocessor's Yocto based board support packages

NXP GOLD PARTNER

FEATURES AT A GLANCE

RELIABLE CONNECTIVITY

802.11ax Wi-Fi 2x2 MU-MIMO with integrated PA and LNA add up to a reliable module for harsh RF conditions.

SOFTWARE FLEXIBILITY AND SPEED TO MARKET

Open source, MPU-neutral software including Linux Backports and a Yocto layer ensures broad kernel and BSP compatibility. Native support for NXP's latest i.MX 6/7/8 evaluation kits and Linux BSPs.

INDUSTRIAL OPERATING RANGE

Designed to the industrial temperature range of -40 ºC to +85 ºC 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

- Smart Buildings
- Industrial IoT Connectivity
- Medical Devices
- Industrial Gateways

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For documentation, software, sample apps and more visit:
http://www.lairdconnect.com/sterling-70

KEY SPECIFICATIONS

CATEGORY	FEATURE	SPECIFICATION
Wireless Specification	Wi-Fi	Wi-Fi 6 (802.11ax) and Wi-Fi 5 (802.11ac)
	Bluetooth®	v5.1
	Frequency	Dual-Band 2.4GHz & 5GHz
	Transmit Power	+ 16.5 dBm (maximum)
	Receive Sensitivity	-96 dBm (minimum)
	Antenna Options	SIP Module: trace pins for external antennas M.2 Board: 3 x MHF4 connectors for external antennas
	Raw Data Rates (Air)	Wi-Fi 6 1.2Gbps - MCS11, 2 Spatial Streams, 80MHz, 1024QAM, SGI Wi-Fi 5 866.7Mbit/s - MCS9, 2 Spatial Streams, 80MHz, 256QAM, SGI
Host Interface and Peripherals	WLAN Interfaces	PCIe 2.0, SDIO 3.0
	Bluetooth Interface	UART
Key Wi-Fi Features	Wi-Fi 6 (802.11ax) Wi-Fi 5 (802.11ac)	• IEEE 802.11 a/b/g/n/ac/ax • Dual-Basebands – two independent basebands (Wi-Fi 6 and Wi-Fi 5) to support true simultaneous Wi-Fi operation in the 2.4GHz and 5GHz bands • 20, 40 & 80MHz bandwidth support • MU-MIMO, OFDMA • Transmit Beamforming
Key Bluetooth Features	Bluetooth	• Classic Bluetooth – BR / EDR • 2 x WideBand Speech (WBS) links • Central / Peripheral Modes • Up to 16 Bluetooth LE connections • LE Secure Connections • 2MPHY • LE Coded (long range)
Supply Voltage		3.3V
Power Consumption	Estimated Current	Continuous TX: • 2.4 GHz band – TBD • 5 GHz band – TBD
Physical	Dimensions	18 mm x 20 mm x 2.8 mm (SIP Modules) 22 mm x 30 mm x 3.1 mm (M.2 E-Key Cards)
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 5.1
Regulatory	Approvals	FCC/IC/CE/MIC/RCM

For full specifications on the Sterling-70 modules, please see the appropriate datasheet.

PART #	DESCRIPTION
453-00075C	Wi-Fi6 (802.11ax) + Bluetooth Module, Sterling 70, (Cut Tape)
453-00075R	Wi-Fi6 (802.11ax) + Bluetooth Module, Sterling 70, (Tape/Reel)
453-00081	M.2 Card Key E, Sterling 70, SDIO / UART, MHF4 Connectors
453-00082	M.2 Card Key E, Sterling 70, PCIe / UART, MHF4 Connectors
453-00075-K1	Development Kit, Sterling 70, SIP Module
453-00081-K1	Development Kit, Sterling 70, M.2, Key E, SDIO / UART
453-00082-K1	Development Kit, Sterling 70 M.2, Key E, PCIe/ UART

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