Telematics & Wireless M2M

MODULE PORTFOLIO

Laird TECHNOLOGIES®

Innovative **Technology**
for a **Connected** World

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About Laird Technologies

Laird Technologies designs and manufactures customized, performance-critical products for wireless and other advanced electronics applications.

Headquartered in Saint Louis, Missouri, USA, Laird Technologies has a global presence, with engineering, manufacturing, and sales facilities located in the Americas, Europe, and Asia.

The company is a global market leader in the design and supply of electromagnetic interference (EMI) shielding, thermal management products, specialty metal products, signal integrity components, and wireless antenna solutions, as well as radio frequency (RF) modules and systems.

Laird Technologies partners with its customers to customize product solutions for applications in many industries including:

- Telecommunications
- Mobile Communications
- Network Equipment
- Automotive
- Industrial & Instrumentation

Laird Technologies offers customers unique product solutions, dedication to research and development, as well as a seamless network of manufacturing and customer support facilities across the globe.

A Brief Introduction to Telematics and Wireless

Laird Technologies is active in the wireless M2M market, offering the widest range of high-performance wireless modules including Bluetooth®, ZigBee®, 802.11 and proprietary wireless standards that are incorporated into Machine-to-Machine (M2M) applications and systems, as well as integrated antennas and electronic components. The company's broad selection of M2M products provides solutions for the automotive, telematics, healthcare, EPOS, retail, finance, and security, as well as asset management markets.

Telematics & Wireless Product Portfolio

Antennas

Embedded Modules

Devices

Smart Antennas

ANTENNAS & RECEPTION
WIRELESS REMOTE CONTROL
EMI SOLUTIONS
THERMAL MANAGEMENT
WIRELESS M2M & TELEMATICS

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Application/Markets Served

Laird Technologies' wireless modules provide complete RF solutions for quick time to market for a wide range of embedded markets. Due to the full certifications and easy-to-use AT command interface, the modules can often be up and working in a few days. With a variety of connector or machine-placeable surface mount modules, integration into products is straightforward. The versatility of these intelligent modules allows them to be used in a wide range of industrial and commercial products.

Retail

Bluetooth, Wireless LAN and Proprietary Modules are designed to provide simple connectivity between ePOS terminals, vending terminals, and signage.

- Wire-like connectivity through easy-to-use UART interface
- Bluetooth modules are fully Bluetooth SIG End Device approved
- Proprietary modules offer better than average range, from 1 mile to 20 miles

Medical

Bluetooth modules provide a secure, robust link for medical diagnosing equipment. Freeing medical sensors and equipment from wires allows patients to move freely and safely while providing real-time data to medical personnel.

- Secure, standard Bluetooth connection
- Lower power, small form factor options available
- Enables better, safer care

Sensor and Industrial Control

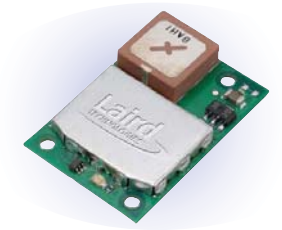
Bluetooth and Proprietary Modules are available over full Industrial temperature ranges from -40 to +85°C. In addition, many Proprietary Modules are available in a packaged, rugged enclosure for simple connectivity.

- Full industrial temperature range
- Simple, easy to use modules for wire-like serial connectivity
- Low power options available for sensor networks

Module Portfolio

Laird Technologies offers a full range of embedded modules in a variety of technologies, output powers and frequencies.

Bluetooth® Modules



- FCC, CE, and IC fully certified modules
- Class 1 and Class 2 output power available
- BT 2.0 or 2.1 End Device Approved
- Simple integration with AT command set

Product	Part Numbers	BT Profiles	Interfaces	Size (mm)	Form Factor	Output Power	Antenna
BT Data	BTM410, BTM411, BTM430, BTM431, BTM440, BTM441	BT 2.0 or 2.1 (SPP, HID, HFP, DUN, HSP, FTP, Obex)	UART	18 x 22	Surface Mount	Class 2: +4 dBm	Integrated antenna or 50 Ohm trace
BT Voice	BTM510, BTM511, BTM520, BTM521	BT2.1 (HFP, HSP, A2DP, AVRCP, SPP)	UART, I2S, Analog Mic In, Stereo Out	14 x 25	Surface Mount	Class 2: +4 dBm or Class 1 +8 dBm	Integrated antenna, 50 Ohm trace or U.FL
BISMII	BTM403, TRBLU23, TRBLU24 (HCI), BISM202BI	BT 2.0 (SPP, HSP, HFP, DUN, GAP, SDAP, GOEP Client)	UART or USB depending on module	25 x 35 (connector) 17.7 x 46 (SMT)	SMT or Connector	Class 1: +6 dBm	Integrated antenna or U.FL
BISMII PA	BTM402, BTM404	BT 2.0 (SPP, HSP, HFP, DUN, FTP, Obex)	UART	25 x 35	Connector	Class 1: +18 dBm	Integrated Antenna

WLAN Modules

- FCC, CE and IC fully certified modules
- High throughput, up to 12 Mbps
- ConnexLAN, point-to-point wireless Ethernet bridge with no configuration necessary, up to 1 mile range
- WISM+ supports all security, including WPA2 Enterprise

Product	Part Numbers	WLAN Protocol	Interfaces	Size (mm)	Form Factor	Security	Antenna
WISM+	WLM400, WLM402	802.11b/g	UART, SPI, RMII, USB	32 x 58.1	SMT	WEP, WPA, WPA2, Personal and Enterprise	Dual U.FL for Antenna Diversity
ConnexLAN Wireless Ethernet Bridge	CL400	Ad-hoc 802.11b	RJ-45 Ethernet	111.76 x 68.58	Industrial Package	128bit AES Encryption	RP-SMA

Proprietary Modules

- FCC, CE, and IC fully certified modules
- Packaged versions available as ConnexLinks
- Point-to-point and Point-to-Multipoint networks
- Simple integration with AT command set

Product	Part Numbers	Frequency	Interfaces	Size (mm)	Form Factor	Output Power	Antenna
AC4x90	AC4490, AC4790	902-928 MHz	UART	41.9 x 48.26	Connector	+10 dBm to +27 dBm	Integrated antenna (200 mW version) or MMCX
LT2510	PRM110, PRM111, PRM112, PRM113, PRM120, PRM121, PRM122, PRM123	2400-2483.5 MHz	UART	25.4 x 39	Connector or SMT	+10 dBm to +21 dBm	Integrated antenna or U.FL
LT1110	PRM210, PRM211, PRM220, PRM221	902-928 MHz	UART	26 x 33	Connector or SMT	-30 to +8 dBm	Integrated antenna or U.FL
ConnexLink Packaged Radios	CL4490, CL4790, CL2510	900 MHz or 2.4 GHz	RS-232, RS485 or USB also available on 900 MHz)	111.76 x 68.58	Industrial package	Varies, up to 27 dBm	RP-SMA

Capabilities

Electronic Design and RF Reception Expertise

- In-house wireless radio and antenna expertise
- Complex and miniature electronic layouts
- Robust packaging and industrial design
- Firmware to support multiple operating systems
- Rapid prototyping capabilities

Testing and Validation Capabilities

- Mobile asset test range for reception development and verification
- Up to 3 GHz capability
- Indoor anechoic chamber
- Stringent environmental testing
- Electromagnetic interference

Manufacturing

- Fine pitch electronic component placement
- High-volume / complex assembly capabilities
- ISO/TS-16949:2009 and ISO 9001: 2008 certified facilities
- World-class global logistics and supply chain
- In-house production test development

CW 2010 100

Laird Technologies has won numerous awards for its industry-leading wireless & M2M capabilities, including the 2010 CW 100 by Connected World magazine. The 2010 CW 100 represents the top companies who demonstrate market traction, and who also pursue game-changing technologies in wireless connectivity.

Design Centers and Production Facilities
Lenexa, Kansas, USA
Shanghai, China, APAC

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