



### THE FASTEST WAY TO WIRELESS

Laird Technologies' fifth generation 2.4GHz FHSS module sets the standard for industrial RF communication. Based on proprietary FlexRF™ technology, this globally-accepted module will exceed most OEM application and performance requirements.

Embedded with Laird Technologies' robust server-client protocol, the LT2510 permits an unlimited number of clients to synchronize to a single server for low latency communications. The server and all clients in a network can communicate with any radio in range via either addressed or broadcast packets. The configuration and test software allows OEMs to design and test networks to suit their applications.

Enhanced API commands provide packet routing control and network intelligence. With its field-proven FHSS air interface protocol, the LT2510 rejects RF noise, excels in multipath scenarios, allows for co-located systems, and provides an extremely reliable communication link. It also provides a more robust, but simpler, link than ZigBee for RF applications that do not require a mesh topology.

With a throughput of up to 280 Kb/s, LT2510 delivers speedy data rates. In addition, variable output power options (up to +21 dBm) enable communication over distances that aren't achievable with competing technologies. At the same time, a range of ultra-low power modes plus low Tx/Rx power consumption make the LT2510 ideal for power-restrictive or battery-operated applications. The mini SMT package is well-suited for space-constrained designs and is available in pick-and-place packaging for volume manufacturing. A pluggable version with two single row headers is also available for ease of integration.

### FEATURES

- Very robust in the presence of interference
- High throughput
- Ultra-low power consumption
- Long range capability
- Miniature SMT form factor
- Global acceptance
- Integrated battery monitor, temperature sensor, GPIOs and ADC
- Simple integration

### MARKETS

- Commercial buildings
- Field surveillance
- Utility management
- Recreation
- Fleet telemetry

**global solutions: local support™**

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### FLEXIBLE RF PROTOCOL

Embedded into Laird Technologies' 900MHz and 2.4GHz FHSS modules, FlexRF technology supports unrivaled flexibility in industrial wireless applications. OEMs have the ability to control and optimize both the radio module and the network, allowing them to develop a highly reliable system for their specific application.

Numerous "software hooks" empower, control, and provide flexibility. They allow designers to mold the communication link around applications, as opposed to squeezing the application into a fixed communication technology or standard. Each transceiver is designed to provide OEMs with a feature-rich, high-performance, configurable, secure, compatible, integrated solution, allowing OEMs to build the most optimized network possible.

Parameter	PRM110/111/120/121	PRM112/113/122/123
<b>Interface</b>	UART	UART
<b>Frequency</b>	2400-2483.5 MHz	2400-2483.5 MHz
<b>RF Data Rate</b>	280 / 500 kbps	280 / 500 kbps
<b>Serial Interface Options</b>	3.3V TTL	3.3V TTL
<b>Serial Interface Data Rate</b>	Up to 460,800 baud	Up to 460,800 baud
<b>Variable Conducted Output Power</b>	+4 to +21dBm (125 mW)	+4 to +17dBm (50 mW)
<b>Maximum Radiated Power (E.I.R.P)</b>	+30dBm	+20dBm
<b>Current Consumption</b>		
<b>Tx</b>	<180mA	90mA
<b>Average Rx</b>	<10mA	<10mA
<b>Hibernate</b>	<0.05mA	<0.05mA
<b>Channels</b>	43/78 channels	43 channels
<b>Sensitivity (BER 10-6)</b>	-98dBm at 280kbps RF data rate, -94dBm at 500kbps RF data rate	-98dBm at 280kbps RF data rate, -94dBm at 500kbps RF data rate
<b>Voltage</b>	3.3 VDC	3.3 VDC
<b>Range (Indoor, Outdoor)</b>	400m/4km	240m/2.4km
<b>Temperature</b>	-40° to +85° C	-40° to +85° C
<b>Dimensions**</b>	26mm x 33mm x 4mm	26mm x 33mm x 4mm
<b>Antenna</b>	U.FL connector (PRM110/120) Integrated chip antenna (PRM111/121)	U.FL connector (PRM112/122) Integrated chip antenna (PRM113/123)  CE-approved for European use, FCC/ IC for the United States and Canada. PRM122/123 also approved for use in Japan.
<b>Approvals*</b>	FCC/IC for the United States and Canada.	

\*This is only a partial list, contact your Laird Technologies representative for a complete list of approvals.

\*\*Dimensions are for the surface mount module with U.FL connector. See user manual for specific dimensions for each model.

### ORDERING INFORMATION

<b>PRM110</b>	2.4GHz RF Module – 125mW with external antenna
<b>PRM111</b>	2.4GHz RF Module – 125mW with integrated antenna
<b>PRM120</b>	2.4GHz RF Module – Pluggable 125mW with external antenna
<b>PRM121</b>	2.4GHz RF Module – Pluggable 125mW with integrated antenna
<b>DVK-PRM110</b>	Development Kit for PRM110 with module
<b>DVK-PRM111</b>	Development Kit for PRM111 with module
<b>DVK-PRM120</b>	Development Kit for PRM120 with module

<b>DVK-PRM121</b>	Development Kit for PRM121 with module
<b>PRM112</b>	2.4GHz RF Module – 50mW with external antenna
<b>PRM113</b>	2.4GHz RF Module – 50mW with integrated antenna
<b>PRM122</b>	2.4GHz RF Module – Pluggable 50mW with external antenna
<b>PRM123</b>	2.4GHz RF Module – Pluggable 50mW with integrated antenna
<b>DVK-PRM112</b>	Development Kit for PRM112 with module
<b>DVK-PRM113</b>	Development Kit for PRM113 with module
<b>DVK-PRM122</b>	Development Kit for PRM122 with module
<b>DVK-PRM123</b>	Development Kit for PRM123 with module

### RF PROTOCOL MODES

- a) Communication
  - Unicast (one-to-one addressing)
  - Broadcast (one-to-multiple addressing)
- b) Fast sync time
- d) Random back-off
- e) Dynamic radio data table:
  - Retains data from up to 32 radio modules
- f) Configurable retries
- g) Auto channel

### INTERFACE PROTOCOL

- a) On-the-fly radio module configuration:
  - Full API control
  - Destination address
  - RF transmit power
  - RF channel
  - Broadcast/addressed
- b) Raw data or transmit/receive API
- c) Battery monitor
- d) A/D, PWM Output and Generic I/Os
- e) Variable baud rate
- f) Configurable RF packet size, timeout control
- g) Onboard temperature sensor
- h) Handshaking, CTS/RTS
- i) In-range indicator
- j) Error detection, onboard CRC, duplicate packet filtering

### SECURITY

- a) Frequency hopping air interface
- b) System IDs
- c) Unique IEEE MAC Addresses
- d) Proprietary hardware
- e) Proprietary protocol



The details contained within the document are subject to change. Download the product specification from [www.lairdtech.com/wireless](http://www.lairdtech.com/wireless) for the most current specification.

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