



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

*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

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

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

RF PROTOCOL MODES

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

INTERFACE PROTOCOL

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

SECURITY

- Frequency hopping air interface
- System IDs
- Unique IEEE MAC Addresses
- Proprietary hardware
- Proprietary protocol



The details contained within the document are subject to change. Download the product specification from www.lairdtech.com/wireless for the most current specification.

LWS-DS-LT2510 0310

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