Laird TECHNOLOGIES

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

915 MHz Wireless Module
LT1110

THE FASTEST WAY TO WIRELESS

Laird Technologies' third generation 915MHz FHSS module sets yet another 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 LT1110 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.

From the OEM integrator's point of view, the LT1110's interface (API, configuration, etc) is 100% compatible with the LT2510 allowing the OEM to choose either 915MHz or 2.4GHz. The enhanced API commands provide packet routing control and network intelligence. With its field-proven proprietary FHSS RF protocol and increased penetration at 915 MHz, the LT1110 rejects RF noise, excels in multipath scenarios, allows for co-located systems, and provides an extremely reliable communication link.

The LT1110 achieves RF data rates three times faster than our previous generation 915MHz transceivers. With 10mW of radiated output power (using a 2dBi dipole), line of sight communication up to ½ mile is possible while consuming only 32mA of current in full transmit mode! It also comes with a modular approval allowing higher gain antennae to greatly increase the effective range. At the same time, a range of ultra-low power modes make the LT1110 your best solution for power-restrictive or battery-operated applications.

The mini SMT package is well-suited for space-constrained designs and has the same pin-out and mechanical form factor as the 2.4GHz LT2510 module. It is available in pick-and-place packaging for volume manufacturing. A pluggable version with two single row headers is offered for ease of integration.

FEATURES

- Very robust in the presence of interference
- 915 MHz for improved RF penetration
- High throughput
- Ultra-low power consumption
- Long range capability
- Miniature SMT form factor
- 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	PRM210/211/220/221
Interface	UART
Frequency	902-928 MHz
RF Data Rate	230 kbps (53 hop) / 500kbps (13 hop)
Serial Interface Options	Logic level (matching your supply voltage)
Serial Interface Data Rate	Up to 460,800 baud
Variable Conducted Output Power	-30 to +8dBm (6.3mW)
Maximum Radiated Power (E.I.R.P)	+23dBm (200mW) with 13dBd yagi
Current Consumption	
Tx	<32mA
Average Rx	<10mA
Hibernate	<1µA
Channels	12/52 channels
Sensitivity (BER 10-6)	-89dBm
Voltage	2.0 - 3.6 VDC
Range (Indoor, Outdoor)	150 feet / 0.5 mile (with 2dBi dipole)
Temperature	-40° to +85° C
Dimensions**	26mm x 33mm x 4mm (Surface Mount U.FL)
Antenna	U.FL connector (PRM210,PRM220) Integrated chip antenna (PRM211/221)
Approvals*	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.

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

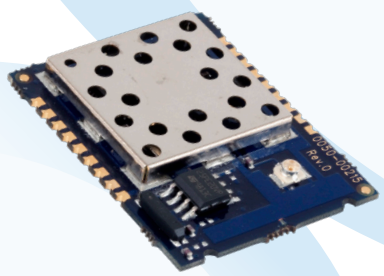
SECURITY

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

ORDERING INFORMATION

PRM210 915MHz RF Module – Surface Mount with U.FL for external antenna
PRM211 915MHz RF Module – Surface Mount with Integrated Antenna
PRM220 915MHz RF Module – Pluggable with U.FL for external antenna
PRM221 915MHz RF Module – Pluggable with Integrated Antenna

DVK-PRM210 Development Kit for Surface Mount with U.FL for external antenna
DVK-PRM211 Development Kit for Surface Mount with Integrated Antenna
DVK-PRM220 Development Kit for Pluggable with U.FL for external antenna
DVK-PRM221 Development Kit for Pluggable with Integrated Antenna



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

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