# New! 2.4 GHz 802.15.4 Modules

**Low-cost, Low-power**
**Wireless Sensor Networking**

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# LPR2430 Series

Available in 1mW and 100mW
Chip Antenna and RF Pin Versions

$22.00 - $37.00
Qty 1
Volume Discounts Available


Security Systems • Wireless Sensor Networks • Industrial Monitoring
Environmental Monitoring • Building Automation and Control • Cold Chain / Food Safety Monitoring
Medical Patient Telemetry • Medical Lab Equipment Monitoring/Control

**The RFM LPR Series of 802.15.4 2.4GHz modules for OEMs is loaded with features and functions that enable designers to configure the module to do just what they need it to do without having to write their own code. These features and functions make the LPR2430 Series the obvious choice for wireless sensor networking including battery-powered applications for peer-to-peer, point-to-point and point-to-multipoint wireless designs.**

**Comprised of the low-power 1mW RF power LPR2430 / LPR2430A and the extended range 100mW RF power LPR2430ER / LPR2430ERA, the RFM LPR2430 Series modules provide the flexibility and versatility to serve a variety of applications, from simple cable replacement to remote terminal data collection to sophisticated sensor networks. Based on the IEEE standard 802.15.4, the LPR2430 Series modules are easy to integrate and provide robust wireless communications in applications where meshing is not needed or desired.**

## Serial, Analog & Digital I/O *including* Analog & Digital I/O Binding

- Standard UART interface for serial communications plus 6 GPIO, 3 ADCs, and 2DACs (PWMs)
- With the I/O Binding feature, one node has the ability to output on 2 GPIO lines the input value of 2 GPIO lines from another node; supports outputting the input value of one of the ADC lines from one node on the DAC (PWM) line of another node; one of the nodes can be the base node but it doesn't have to be

## Full sensor functions *including* auto reporting on timer, ADC values, and interrupts

- Auto-reporting features allow many sensor nodes to be built without a dedicated microcontroller - the micro-controller on the module does all the work
- Auto-reporting mode provides module I/O updates based on timer or interrrupts - without the need for the application to poll or otherwise request data
- Interrupts are generated by edge-triggered events or by exeeding user-defined limits on ADC values - and any interrupt can be used to wake a sleeping mode and have the module send its I/O data

## Advanced Networking Features

- One-hop relay overcomes obstacles and fading
- Notification when nodes join AND leave the network
- AES-128 Encryption provides secure data transmission



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Development Board from Developer's Kit

Whether the application is temperature sensing in a cold-chain application, door/lock status for access control, tank level monitoring in process control, or transformer monitoring in a substation automation application, the LPR2430 products have the capabilities to deliver required wireless communications functionality.

- 2.4 GHz IEEE 802.15.4 Transceiver
- 250 kp/s RF data transmission rate
- AES-128 Encryption
- Small Size, Light Weight, Low Cost
- Sleep Current less than 3 µA
- Peer-to-peer, Point-to-Point, and Point-to-Multipoint
- I/O Binding allows analog and digital I/O mirroring
- One-hop relay overcomes obstructions and multipath
- Same footprint as RFM ZigBee and 802.11g modules
- FCC, ETSI and Canadian IC Certified for Unlicensed Operation

## YEARS OF BATTERY OPERATION SUPPORTED THROUGH TWO SLEEP MODES

**Timer sleep allows the module to be configured to wake as often as every 100 milliseconds or as infrequently as once every 3.5 years. Interrupt sleep lets the module sleep until it is awoken by either an edge triggered interrupt or an ADC value exceeding configurable limits. Regardless of what woke the module, the designer can configure the module to remain awake for up to 2 seconds after sending its data to provide an opportunity for an application to communicate to the module before it returns to sleep.**

## UNIQUE ONE-HOP RELAY OVERCOMES OBSTRUCTIONS / MULTIPATH FADES WITHOUT BURDEN OF MESH

**LPR2430 modules feature one-hop relay that enables one node to send data to a base radio through another node. This unique feature alleviates problems caused when a network works well at commissioning but later periodically loses nodes for periods of time. Yet it doesn't burden the entire network with the complexity and latency of full mesh – the relay is only used when the node cannot communicate directly with the base. Nodes periodically verify their communication paths to the base as well as to other nodes in the network. The application is not even aware this is happening – it is all handled by the modules.**

## Fast-track your design -- order a Developer Kit today!

- Everything you need to get a wireless link going in less than 10 minutes
- Two development boards providing a simple means to interface to your device and showcasing LPR2430 features
- Utility programs that demonstrate network operation and performance
- Documentation, including source code to the utility programs to speed integration of the LPR2430 into your product

*Items supplied in developer kits:*

- (4) LPR2430, LPR2430A, LPR2430ER, or LPR2430ERA radios, two of which are installed on developer boards
- (2) patch antennas and (2) dipole antennas with MMCX to SMA-R adaptor cables (only in LPR2430DK & LPR2430ERDK - antennas are built into the LPR2430A and LPR2430ERA radios)
- (2) RJ-11 cables with DB-9F adaptors (only in LPR2430DK & LPR2430ERDK)
- (2) Cat 5 Ethernet cables with RJ-45/DB-9F adaptors (only in LPR2430ADK & LPR2430ERADK)
- (2) 9 V wall-plug power suppliers, 120/240 VAC, plus two 9 V batteries
- (2) A/B USB cables
- Documentation and software CD


## How To Buy

RFM products are sold through a world-wide network of manufacturer's sales reps and distributors. Go to www.RFM.com and visit our "How to Buy" section to locate a sales / distribution partner near you.


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