

# New! 2.4 GHz Mesh RF Module

Ultra Low Power, Ultra Reliable  
Wireless Sensor Networking



## XDM2140



Featuring Dust Networks'  
SmartMesh-XD™ Technology

Building Monitoring /Control • Machine Health Monitoring • Structural Integrity Monitoring  
Energy Management • Asset Management • Temperature Monitoring  
Urban Infrastructure Monitoring • Agricultural/Forestry Sensor Networks

### INTELLIGENT NETWORKING FOR ULTRA DIFFICULT ENVIRONMENTS

Based on DUST Networks' SmartMesh-XD technology, the RFM XDM2140 module is designed to provide ultra-reliable communications and ultra-low-power for ultra-long battery life in a wide range of sensor network applications. The XDM2140 is tailored for use in battery and line powered wireless devices for applications that require proven performance and scalability.

The XDM2140's combination of an IEEE 802.15.4 transceiver and Time Synchronized Mesh Protocol (TSMP) blends the reliability of self-organizing and self-healing mesh networking with synchronized power duty cycling to achieve very long battery life operation.

The full-featured API of the XDM2140 gives it the flexibility to be used in a wide variety of applications, from energy management to building control to machine health monitoring. The XDM2140 requires no embedded programming, greatly reducing the development time and cost of a wireless sensor network application.

#### ULTRA LOW POWER CONSUMPTION

- Innovative radio design consumes 80% less power in receive mode than competing solutions
- Ultra-efficient power usage delivers over a decade of network operation on two AA batteries
- Automatic network-wide coordination for efficient power usage

#### ULTRA RELIABLE NETWORKING

- SmartMesh-XD protocol delivers better than 99.9% typical network reliability
- Frequency hopping provides interference rejection and minimizes multipath fading
- Mesh networking provides built-in redundancy
- Every XDM2140 acts as both an endpoint and a router, increasing network reliability with *mesh-to-the edge*™
- Automatic self-organizing mesh networking capability built in

#### ULTRA EASY INTEGRATION

- Provides all the module functionality with no embedded programming or complex configuration required
- Interfaces is well designed and multi-functional
- High-level Data Link Control (HDLC) serial interface includes bi-directional flow control
- Industrial temperature range -40 to +85 °C
- XDM2140P version for plug in installation, XDM2140C version for solder reflow

## XG2400E Gateway



**Rugged metal enclosure with mounting tabs and locking power supply connector.**

## Companion Product - XG2400E Gateway

The XG2400E gateway and network manager is multi-functional, combining standard Ethernet gateway functions with sophisticated networking, data, and security management capabilities for a network of XDM2140 products. The XG2400E includes a standard IEEE 802.15.4 compliant, 2.4 GHz radio with a power amplifier, processor and memory, embedded networking software, and interfaces to host systems.

- Automatic network formation and management, including security
- Full industrial temperature operating range - 40°C to +85°C
- Manages networks of up to 250 XDM2140-based devices
- Ethernet or Serial communications interface
- 2.4GHz RF operation for international deployment
- Channel hopping for robust performance

### OPTIMUM NETWORK PERFORMANCE

The network manager portion runs advanced algorithms to continuously optimize network performance and communications reliability to accommodate changing RF and environmental conditions. The XG2400E gateway continuously monitors network performance and makes on-the-fly adjustments to insure ultra-high data communications reliability. Adjustments include black-listing poor performing channels on a node-by-node basis and then white-listing them when conditions improve.

### HIGHLY CONFIGURABLE TO FINE-TUNE YOUR APPLICATION

The XG2400E features several APIs including an XML over an Ethernet connection, an XML API over the RS-232 serial port using PPP, and a serial API through the RS-232 interface. All three APIs provide a plethora of information regarding the SmartMesh-XD network performance as well as a wide assortment of configuration commands that allow the SmartMesh-XD network performance to be fine-tuned for your application.

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

- Everything you need to get a 4 node network up and running in minutes
- 4 developer kit boards providing a simple means to interface to your device
- XG2400E gateway to control the network activity and provide either Ethernet or serial connectivity
- Utility programs that demonstrate network operation and performance
- Full documentation to speed integration into your product

### XDM2140DK CONTAINS:

- 4 XDM2140 modules
- 4 XDM2140 development boards
- 1 XG2400E gateway
- 1 Ethernet and 5 Serial cables
- 9V batteries and wall-mount power supplies
- Antennas and RF cables
- Program CD with software and manuals
- Quick Start Guide

## How To Buy

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

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## XDM2140DK - Introductory Discount

Purchase by December 31, 2008 to receive \$1,000 discount off of the \$2,995 list price

**\$1,995**  
After Discount

Developer Board

