muRata
INNOVATOR IN ELECTRONICS

LG2430E

802.15.4 Wireless Ethernet Gateway

- ***802.15.4 Wireless Ethernet Gateway***
- ***Optional 128-Bit AES Encryption and Authentication Mode***
- ***Point-to-point or Point-to-multipoint Operation***
- ***Transmitter Power 100 mW EIRP with 2 dBi Antenna***
- ***10/100Base-T Auto-sensing Ethernet Port***

The LG2430E Wireless Ethernet gateway is the Murata M2M family's gateway for 802.15.4 based remote nodes. On the wireless side, the LG2430E has a 100 mW 802.15.4 radio to provide extended range. On the wired side, the LG2430E provides a 10/100Base-T interface to connect to virtually any Ethernet network. In between is the intelligence to allow seamless integration of the 802.15.4 remote devices into network or Internet cloud based applications. The wide array of Ethernet and Internet protocols supported reduce the effort to tie LG2430E networks into existing sensing and monitoring applications. The LG2430E gateway shares the same API as the other RFM2M gateway products letting you pick the wireless technology that best suits your application with only a minimum of changes to your application.

LG2430E Absolute Maximum Ratings

Rating	Value	Units
Power Supply Input Voltage Range	-0.5 to +30	V
Non-Operating Ambient Temperature Range	-40 to +85	°C

LG2430E Specifications

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Wireless Standard			IEEE 802.15.4			
Operating Frequency Range			2405		2475	MHz
Spread Spectrum Method			Direct Sequence (DTS)			
Modulation Type			O-QPSK			
Number of RF Channels				15		
RF Data Transmission Rate				250		kbps
Receiver Sensitivity				-95		dBm
Transmitter RF Output Power Level					18	dBm
Transmitter Power Adjustment Range					20	dB
Optimum Antenna Impedance				50		Ω
Antenna Connector			Reverse SMA Male			
Network Topologies			Point-to-Point, Point-to-Multipoint			
Network Integrity			Heartbeat Transmissions			
Encryption			128-bit AES			
Path Obstruction Mitigation			One-hop Message Relay			
Total Number of Nodes in Network			2		63	

LG2430E Specifications

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Number of Sensor Nodes in Network			1		62	
RJ-45 Ethernet Port			10/100Base-T, Auto-sensing			
Ethernet Protocols			TCP/IP, UDP, ARP, ICMP, DHCP			
Internet Protocols			HTTP Posts, SimpleDB, XML			
USB Diagnostic Console Port			USB 2.0			
Power Supply Voltage Range	V_{CC}		+9		+30	VDC
Current Consumption					1.1	A
AC Power Supply			110/220 VAC Wall-plug Adaptor with International Plug Set			
Nominal Dimensions			7.30 x 4.67 x 1.5 inches (185.4 x 118.6 x 38.1 mm)			
Mounting			Left and Right Flanges, Two Pre-drilled Holes in Each Flange			
Operating Temperature Range			-40		85	°C
Operating Relative Humidity Range, Non-condensing			5		95	%

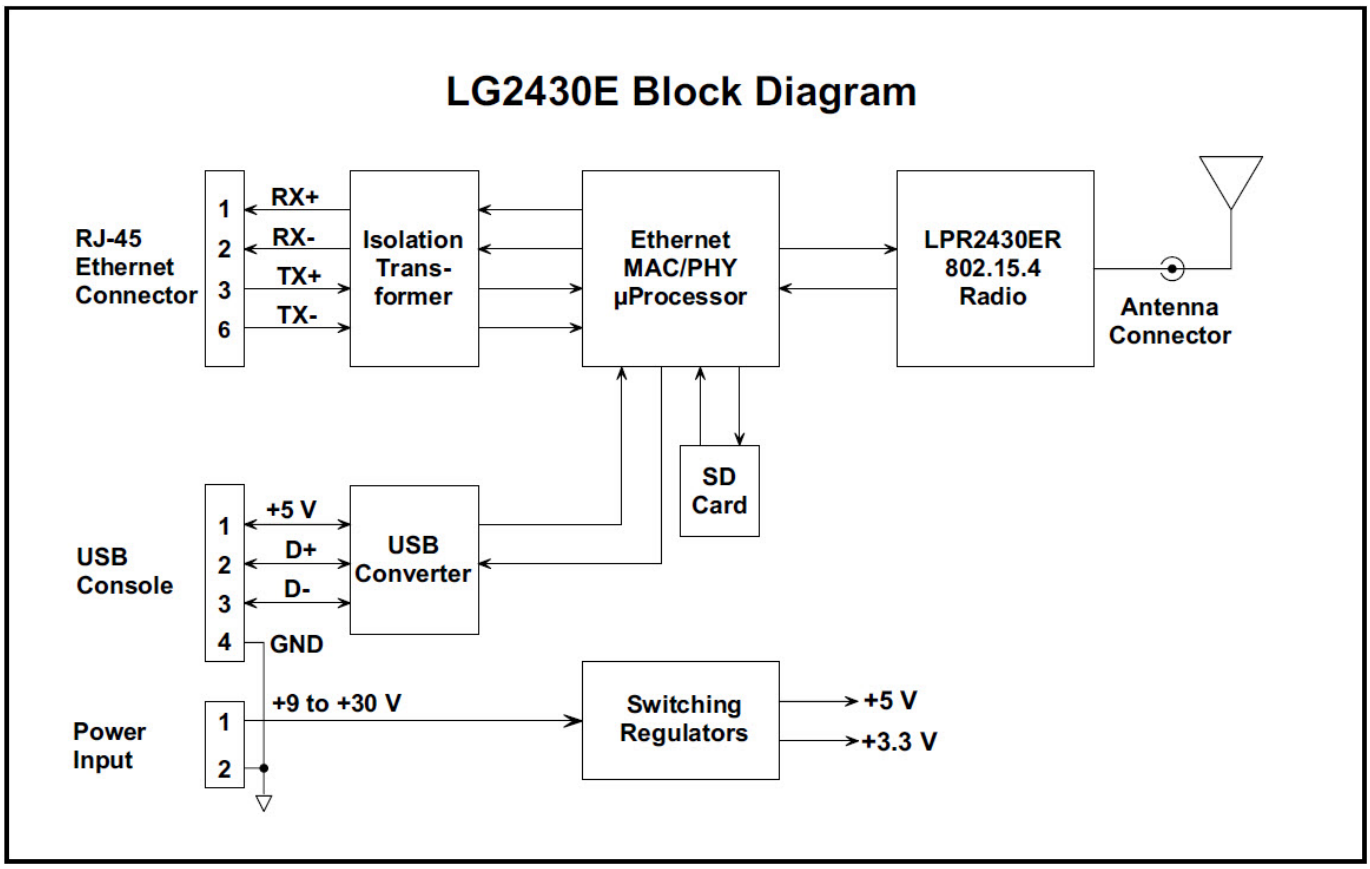

Figure 1

LG2430E Operation

The LG2430E is a robust wireless Ethernet gateway based on Murata's LPR2430ER 802.15.4 radio. The LPR2430ER operates in the world-wide 2.4 GHz license-free band. The LG2430E transmits data at 250 kbps with a power output of up to 100 mW EIRP.

The unit is packaged in a rugged aluminum enclosure, and ships with a universal wall-plug power supply and dipole antenna. The LG2430E is also compatible with RFM's complete line of 2.4 GHz antennas, allowing extended operating range where allowed by local regulations.

The switching regulators used in the LG2430E supports a wide input voltage range, from +9 to +30 Vdc.

LG2430E units can operate in point-to-point or point-to-multipoint networks. Point-to-multipoint networks can include up to 62 sensor nodes, such as the SN2430R420.

The LG2430E provides a 10/100Base-T interface to connect to virtually any Ethernet network, providing seamless integration of 802.15.4 remote devices into network or Internet cloud based applications. The LG2430E includes support for TCP/IP, UDP, ARP, ICMP and DHCP Ethernet protocols, plus HTTP Posts, SimpleDB and XML Internet protocols. This wide array of protocol support greatly reduces the effort to tie LG2430E networks into existing sensing and monitoring applications.

The LG2430E is configured through the Ethernet port using a built-in configuration utility formatted as a web page.

RJ-45 Ethernet Connector

Pin	Name	I/O	Description
1	TX+	O	This pin is the Ethernet positive differential output.
2	TX-	O	This pin is the Ethernet negative differential output.
3	RX+	I	This pin is the Ethernet positive differential input.
4	RESERVED	-	This pin is reserved for future use and should not be connected.
5	RESERVED	-	This pin is reserved for future use and should not be connected.
6	RX-	I	This pin is the Ethernet negative differential input.
7	RESERVED	-	This pin is reserved for future use and should not be connected.
8	RESERVED	-	This pin is reserved for future use and should not be connected.

USB Console Port Connector

Pin	Name	I/O	Description
1	+5 V	I	This terminal is the +5 V USB input.
2	D+	I/O	This terminal is the USB positive differential I/O port.
3	D-	I/O	This terminal is the USB negative differential I/O port.
4	GND	-	LG2430E ground.

DC Power Terminal Block

Ref	Name	I/O	Description
1	+ PWR	I	Positive power supply input, +9 to +30 V.
2	GND	-	LG2430E ground.

LED Indicators

Ref	Name	I/O	Description
1	ACTIVITY	O	Left-most LED on the front of the unit, amber, indicates RF communications activity.
2	LINK	O	Middle LED on the front of the unit, red. On a base, this LED indicates one or more remotes are linked to it. On a remote, this LED indicates it is linked to the base.
3	POWER	O	Right-most LED on the front of the unit, green, indicates the unit is powered up.
4	ETH ACT	O	Upper-left LED on the RJ-45 Ethernet connector, green, indicates the Ethernet port is linked.
5	ETH LINK	O	Upper-right LED on the RJ-45 Ethernet connector, amber, indicates Ethernet port communications activity.

LG2430E Outline Drawing

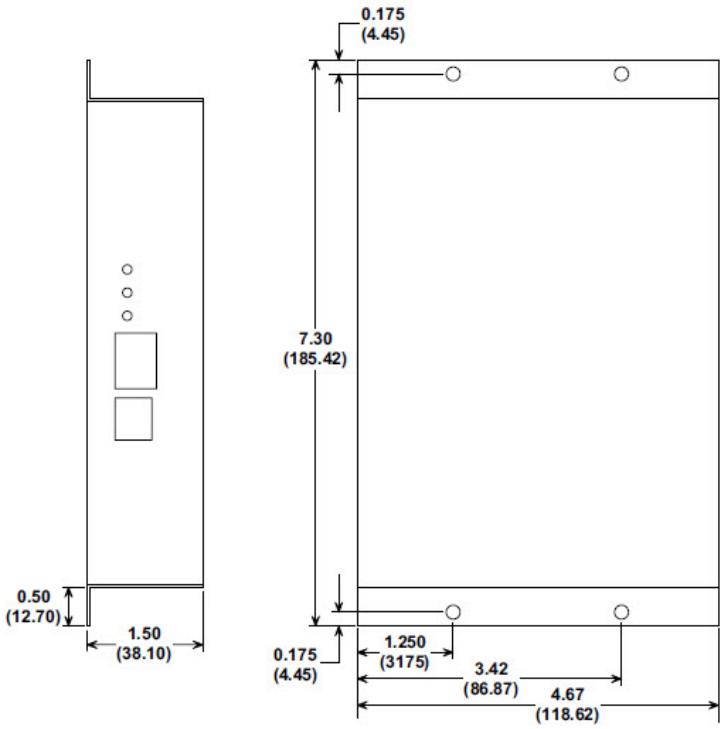

Figure 2

Note: Specifications subject to change without notice.