

// NGR-30-5

Industrial IoT Gateway

based on Dell Edge Gateway 3002 hardware



For more information, contact:
sales@episensor.com

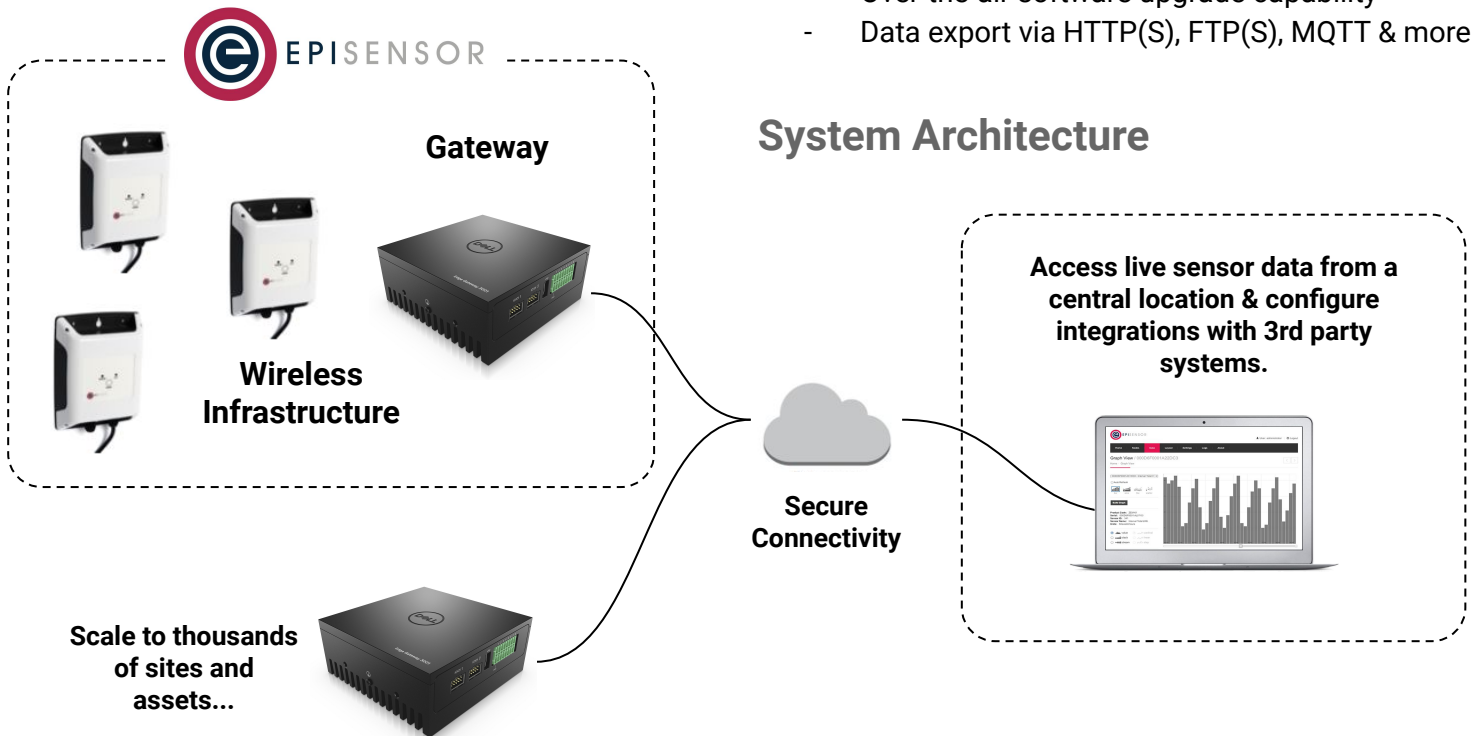
visit <http://episensor.com> or call +353 61 512 500

// Introduction

EpiSensor's Industrial IoT Gateway manages networks of EpiSensor wireless nodes and provides users with an intuitive web interface to quickly and easily build complete Industrial IoT solutions. From this interface, the Gateway can be configured to push sensor data to edge or cloud software applications for archiving, and analysis and visualisation.

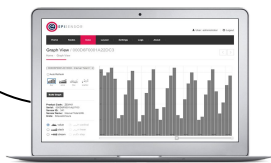
// Key Features

- Powerful Intel Atom® 1.33GHz Processor
- Ubuntu Core operating system
- Expand functionality with 3rd party apps
- Dual Ethernet, 3G/4G Cellular, USB, Wi-Fi, Bluetooth, ZigBee, CANbus, GPS & more
- RESTful API for bi-directional communication
- Connect up to 100 nodes / 1000 sensors
- 2.4GHz ISM band ZigBee® wireless radio
- Over-the-air software upgrade capability
- Data export via HTTP(S), FTP(S), MQTT & more



System Architecture

Access live sensor data from a central location & configure integrations with 3rd party systems.



Technical Specification

// System

Category	Parameter	Value
Computer	Processor	Intel Atom® dual core 1.33GHz
	RAM	2 GB, DDR3L @ 1066 MHz
	Operating System	Ubuntu Core
Data Export	Transport Protocols	HTTP(S), FTP(S), MQTT & more
	Data Formats	JSON, CSV & more
	Software Integrations	50+ (see EpiSensor website)

// Electrical

Category	Parameter	Value
Power Supply	Input Voltage Range	12 - 57 V DC
	Power over Ethernet	Yes, IEEE 802.3.af (15.4W)
	Wake up events	Wake on LAN, Ignition, Alarm
	Max Power Consumption	12.9 watts
	Idle Power Consumption	4.2 watts

// Communications

Category	Parameter	Value
WAN	Ethernet	2x 10/100 (RJ-45)
	Cellular	3G / 4G LTE (varies by country)
Wireless Sensor Network	Radio Technology	ZigBee Pro
	Radio Frequency	2.4 GHz ISM band
	Network Topology	Mesh
	Channels	16 (802.15.4 Channels 11 to 26)
	Max Tx Power	+8dBm
	Tx modulation	O-QPSK
	Rx Sensitivity	-101dBm
	Max Data Rate	256kbit/s
Wireless Range	up to 50m indoor / 300m outdoor	

Technical Specification

// Software & Security

Category	Parameter	Value
Real Time Clock & Sync	Real Time Clock Backup	Battery (3V, 200mAh, BR-2032)
	Hold-up time	5+ years
	Synchronisation	NTP time server
	Timestamp Format	ISO-8601
	Timestamp Resolution	1 second
Data Logging	Storage Type	Non-volatile flash (eMMC)
	Capacity	8GB / 32GB (cellular versions)
Security	Sensor Network Encryption	AES 128-bit
	Server Communications	TLS v1.2 / various

// Operating Conditions

Category	Parameter	Value
Operating Conditions	Operating Temperature	-30°C to 70°C (-22°F to 158°F)
	Storage Temperature	-40°C to 70°C (-40°F to 158°F)
	Operating Humidity Range	10% to 95% (non-condensing)
Physical	Weight	1 kg +/- 0.02kg
	Dimensions (W x H x D)	125 x 125 x 51mm

// Certifications

Category	Parameter	Value
Certifications	Safety	CE, UL, CCC, EAC & more
	Environmental	RoHS, WEEE
	EMC/RF	IC, FCC
	Vertical Certification	Marine, Rail, Vehicle, Aircraft

EpiSensor products are not suitable or specifically designed, manufactured or licensed for use in military, aviation, powerplant, medical or in other inherently dangerous or safety critical applications.

Technical Specification

// Order Codes

SKU	Description
NGR-30-5-3G-POEUK	3G cellular, PoE Power Supply w/ UK plug, Dell Edge Gateway 3002
NGR-30-5-3G-POEEU	3G cellular, PoE Power Supply w/ EU plug, Dell Edge Gateway 3002
NGR-30-5-3G-NOPSU	3G cellular, no Power Supply, Dell Edge Gateway 3002
NGR-30-5-4G-EMEA-NOPSU	4G cellular (DW5818 for EMEA), no Power Supply, Dell Edge Gateway 3002
NGR-30-5-4G-USCA-NOPSU	4G cellular (DW5815 for USA/CANADA), no Power Supply, Dell Edge Gateway 3002
NGR-30-5-4G-APAC-NOPSU	4G cellular (DW5819 for Asia Pacific), no Power Supply, Dell Edge Gateway 3002
NGR-30-5-NC-POEUK	no cellular, PoE Power Supply w/ UK plug, Dell Edge Gateway 3002
NGR-30-5-NC-POEEU	no cellular, PoE Power Supply w/ EU plug, Dell Edge Gateway 3002
NGR-30-5-NC-NOPSU	no cellular, no Power Supply, Dell Edge Gateway 3002

// Accessories

SKU	Description
EP-575-BBNV	Standard wall mounting bracket for NGR-30-5
EP-575-BBNS	DIN rail mounting bracket for NGR-30-5
NGR-30-5-UPS	Mains UPS (up to 3hrs backup time) for NGR-30-5
NGR-30-5-GW-ENC	IP67 Waterproof enclosure for NGR-30-5
EPI-ANT-0002	Bracket mount 2G/3G/4G cellular antenna for NGR-30-5

Installation & Safety Notes



**HAZARD OF ELECTRIC SHOCK,
EXPLOSION, OR ARC FLASH**



- EpiSensor equipment should be installed, operated, serviced and maintained only by qualified personnel. EpiSensor does not assume any responsibility for any consequences arising out of the use of this equipment.
- For detailed installation and safety information, consult the Install Sheet.

// Contact

For technical support, please contact support@episensor.com or phone +353 61 512 500

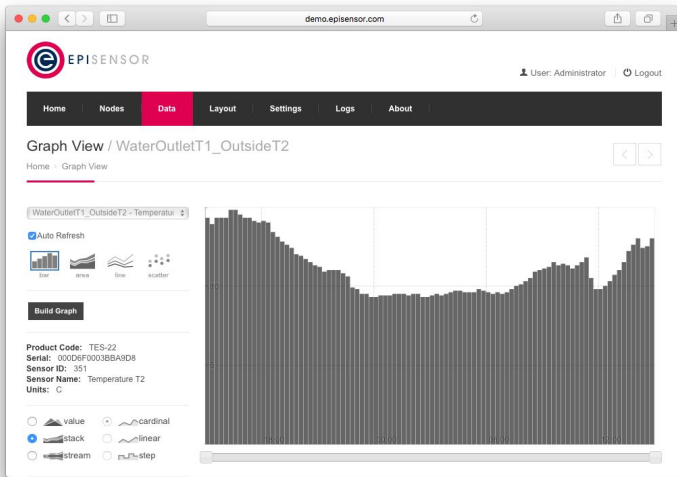
Address: EpiSensor Ltd. National Technology Park, Limerick, V94 C61W, Ireland

Manufactured in an ISO 9001 / ISO 14001 certified facility. Gateway 3002 Manufactured by Dell.

Designed and
manufactured
in Ireland



Screenshots



// Graph View

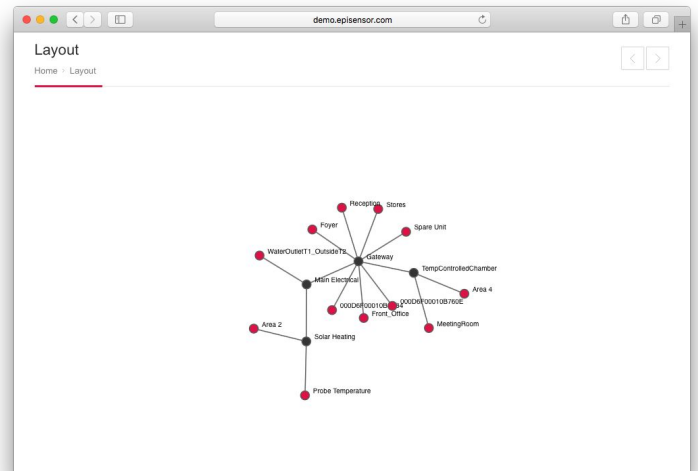


From the Graph view on EpiSensor's Industrial IoT Gateway, users can view live sensor data from any browser or mobile device. Up to 24 hours of live data is available from each sensor, which is intended to assist installers with confirming that the sensors joined to the Gateway are reporting data as expected, so they can leave site with confidence that the system is working.

// Layout View



EpiSensor wireless nodes form a mesh network using the ZigBee® Pro wireless communications standard. Mains-powered nodes will route data for other nodes close by, so wireless coverage can be extended by up to 10 'hops' covering very large areas. The Layout View shows the path that nodes are using within the mesh network to communicate with the Gateway.



// Nodes List



Every aspect of how a node communicates and sends data is configurable from the Nodes List page on the Gateway. Users can easily drill-down into the settings of a specific node or sensor, and get an overview of the firmware version, status, and configuration, and make changes to how data should be produced and exported. This can also be automated using the Gateway's API.

Name	Product	Serial	Last Data	Export	In-Sync	Status	Firmware	Action
000D6F00010B52B4	TES-11	000D6F00010B52B4	13 minutes ago	✓	✓	✓	3.00	Action
000D6F00010B760E	TES-11	000D6F00010B760E	13 minutes ago	✓	✓	✓	3.00	Action
Area 2	TES-11	000D6F00010B75D0	57 seconds ago	✓	✓	✓	3.00	Action
Area 4	TES-11	000D6F00010B7377	13 minutes ago	✓	✓	✓	3.00	Action
Foyer	TES-11	000D6F00010B7564	13 minutes ago	✓	✓	✓	2.66	Action
Front_Office	TES-11	000D6F0007FE318	13 minutes ago	✓	✓	✓	3.00	Action
Main Electrical	ZEM-61	000D6F0001A310AE	57 seconds ago	✓	✓	✓	2.60	Action
MeetingRoom	TES-11	000D6F00010B73C3	13 minutes ago	✓	✓	✓	3.00	Action
Probe Temperature	TES-22	000D6F0001A30F78	3 minutes ago	✓	✓	✓	3.00	Action