BB-SG30000520-42 BB-SG30300525-42 BB-SG30000525-42 BB-SG30500520-42 BB-SG30300520-42

SmartSwarm 342 series
Asset Integration Gateways

Features

- Configurable user business logic data processing and display engine
- Comprehensive data outputs via MQTT, email, SMS and a variety of other services and database connections
- Integrates data from Wzzard Mesh, WISE & ADAM series, third-party devices
- Integrates data from internet feeds
- Cellular or Ethernet connection to IIoT system
- Acts as LAN to WAN bridge for third party device connection
- Cellular (EMEA/NATAM support) and wired models available

Introduction

Seamlessly integrate data from diverse systems, devices and sensors into the Industrial Internet of Things

The SmartSwarm 342 IIoT gateway is aimed at owners and operators of remote assets wishing to integrate data from the asset into IIoT applications such as dashboarding, analytics or predictive maintenance.

Data can be collected from a number of sources, including web feeds, databases and files, as well as from locally connected physical devices and sensors. SmartSwarm 342 also includes an interface and manager for Advantech Wzzard™ wireless sensor platform providing robust acquisition and transmission of asset sensor data without the expense or time involved in installing cables. For bulk I/O requirements where cabling is not an issue, it is also compatible with WISE and ADAM Ethernet connected I/O modules.

User Applications - SmartSwarm 342 offers flexible data acquisition, processing and handoff via an inbuilt Node-RED user applications environment. Node-RED is a powerful, yet simple to use, applications programming environment optimized for proc essing data streams. Users drag and drop function nodes to acquire, process and output data, via an internal web server interface provided by the SmartSwarm 342. Crucially, the Node-RED environment is containerized, meaning that any user error made in programming cannot crash the gateway, which will remain connected and available for remote management in order to correct the error without the expense of a site visit.

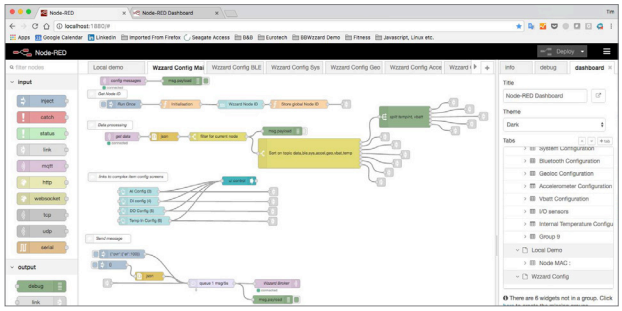
In addition to offering local data processing, the Node-RED environment is also able to create and serve local dashboards, providing a mechanism to serve summary data to engineers, managers or operational staff.

Connectivity and Security- SmartSwarm 342 connects to enterprise applications either via a local Ethernet WAN, or wirelessly via an internal cellular modem, and includes the ability to switch between these connections for redundancy purposes. In addition, the gateway provides a second Ethernet port intended to provide a local LAN connection, and bridges traffic from this LAN to its active WAN connection. As such it may be used as a cellular modem to allow any local Ethernet enabled device to obtain an outbound WAN connection. All inbound WAN connections are prohibited by default via an internal firewall and all enterprise communications can be via VPN with device authentication and message encryption, significantly increasing the security of the device.

Configuration - Configuration is achieved via the Advantech SmartWorx Hub remote configuration management tool that provides access to all configurable parameters and allows the download of additional Node-RED nodes to enrich the base installed palette without the need to visit the site.

Ordering Information

Model No.	Description
BB-SG30000520-42	2 Ethernet, Dust (no power supply)
BB-SG30000525-42	2 Ethernet, Dust, International Power Supply
BB-SG30300520-42	2 Ethernet, LTE-EMEA, Dust (no power supply)
BB-SG30300525-42	2 Ethernet, LTE-EMEA, Dust, International Power Supply
BB-SG30500520-42	2 Ethernet, LTE-NATAM, Dust (no power supply)



Node-RED - easy drag and drop configuration

Node-RED - at-a-glance dashboards

Specifications

Cellular Module Parameters		
	BB-SG303 series - EMEA	BB-SG305 series - NATAM
LTE	Bit rate 100 Mbps (DL) /50 Mbps (UL) Supported frequencies: 800/900/1800/2100/2600 MHz	Bit rate 100 Mbps (DL) /50 Mbps (UL) Supported frequencies: 700/700/850/AWS (1700/2100)/1900 MHz
WCDMA	Bit rate 42.0 Mbps (DL) / 5.76 Mbps (UL) Supported frequencies: 900/1800/2100 MHz	Bit rate 42.0 Mbps (DL) / 5.76 Mbps (UL) Supported frequencies: 850/AWS (1700/2100)/1900 MHz
GPRS/ EDGE	Bit rate 237 kbps (DL) / 59.2 kbps (UL) Supported frequencies: 900/1800 MHz	Bit rate 236 kbps (DL) / 59.2 kbps (UL) Supported frequencies: 850/900/1800/1900 MHz

Wzzard Radio - 802.15.4E, 2.4 GHz		
Number of Channels	15	
Channel Separation	5 MHz	
Channel Clear Frequency	2405 + 5* (k-11) MHz	
Modulation	IEEE 802.15.4 Direct Sequence Spread Spectrum (DSSS)	
Raw Data Rate	250 kbps	
Range (25 °C, 50% RH, +2 dBi omni-directional antenna, antenna 2m)	Indoor	100 m
	Outdoor	300 m
	Free Space	1200 m
Receiver Sensitivity	Packet Data Error Rate (PER) = 1%	-93 dBm
Receiver Sensitivity	Packet Data Error Rate (PER) = 50%	-95 dBm
Output Power (delivered to a 50 Ω load)	High Calibration Setting	8 dBm
	Low Calibration Setting	0 dBm

Ports, LEDs, Antennas	
(2) Ethernet Ports	RJ45, 10/100 Mbps
SIM	(2) Mini SIM, 2FF, 1 supported (rear panel)
LED Indicators	PWR, DAT, WAN, ETH, SIM, USR, POE, IN0, IN1, OUT
Wzzard	R-SMA connector
RST	RESET button (rear panel)
*Optional: 3x ANT - ANT, DIV	SMA connectors
SD	Available for file storage from Node-RED applications
(USB)	(currently unsupported)

Power	
*Optional - Power Supply	10 – 60 VDC (2–way Molex connector)
Power Consumption	Idle: 2.5 W Average: 4 W Peak: 11 W Sleep Mode: 10mW
Environmental	
Temperature Range	Operating: -40 to +75 °C Storage: -40 to +85 °C
Temperature Range LTE450	Operating: -20 to +60 °C Storage: -40 to +85 °C
Humidity	Operating: 0 to 95 % Storage: 0 to 95 %, non-condensing
Cold Start	-35 °C
Operating Altitude	2000 m / 70 kPa
Ingress Protection Rating	IP30
Mechanical	
Metal case with metal DIN rail	
Dimensions	55 x 97 x 125 mm
Weight	375 g
Regulatory – Approvals / Standards / Directives	
Radio - general LTE	ETSI EN 301 511 v9.0.2, ETSI EN 301 908–1 v5.2.1, ETSI EN 301 908-2 v5.2.1, ETSI EN 301 908-13 v5.2.1
Emissions/ Immunity	IEC 61000-6-2, ETSI EN 301 489-1 v1.9.2, EN 55022
Safety	EN 60950-1:06 ed.2 (not Hazardous Locations), EN 62311
Vehicle	E8
Environmental	RoHS-3 (RoHS-10), REACH, WEEE

** Optional items sold separately.*