

# SmartSwarm 342

## Quick Start Guide

### 1. Introduction

The SmartSwarm™ 342 IIoT Gateway provides configuration management, data aggregation, filtering and business logic for data recovered from a mesh-network of connected WZZARD™ MESH wireless nodes.



#### Safety

- Use the device in compliance with national and international law and in compliance with any special or additional restrictions regulating use of the Advantech B+B SmartWorx device in specific applications and environments.
- Use only the original accessories as provided by Advantech B+B SmartWorx. Using unapproved accessories can result in device damage, warranty termination, and/or violation of legal regulations.
- Unauthorized device or accessory modification can result in device damage, warranty termination, and/or violation of legal regulations.
- Do not open the device.
- When connecting the device to a power supply, do not exceed the defined voltage.
- Do not expose the device to extreme ambient conditions. Protect the device against dust, moisture and high temperature.



Hereby, Advantech B+B SmartWorx s.r.o. declares that the radio equipment type SmartSwarm **SG300** (versions with radio interface only), **SG303**, **SG305** is in compliance with Directive **2014/53/EU**. SmartSwarm SG300 versions without radio interfaces are in compliance with the essential requirements and other relevant provisions of Directives **2014/30/EU** and **2014/35/EU**.

The full text of the EU Declaration of Conformity is available at the following internet address: [www.advantech-bb.com/eudoc](http://www.advantech-bb.com/eudoc)

## **CE** Declarations of Conformity

These products are in conformity with the provisions of the following directives when used in accordance with the instructions contained in the product documentation.

2014/35/EU Low Voltage Directive

2014/53/EU Radio Equipment Directive

2011/65/EU Reduction of Hazardous Substances Directive

2012/19/EU Waste Electrical and Electronic Equipment (WEEE) Directive

## **FCC Compliance Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

## **Canadian Compliance Notice**

### **For Class B Computing Devices**

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulation of the Canadian Department of Communications.

"Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada."

## **Product Disposal**

The WEEE (Waste Electrical and Electronic Equipment: 2002/96/EC) directive has been introduced to ensure that electrical/electronic products are recycled using the best available recovery techniques to minimize the impact on the environment. This product contains high quality materials and components which can be recycled. At the end of its life this product **MUST NOT** be mixed with other commercial waste for disposal. Check with the terms and conditions of your supplier for disposal information.



## 2. Connect Antennas



Connect a 2.4GHz antenna to the connector marked "MESH."

If required, and if you have a cellular enabled version of SmartSwarm 342, connect the main cellular antennas to the device by screwing them into the ANT and DIV connectors.

## 3. Install SIM Card

If you intend to use this device to communicate over a cellular network, place an activated data-provisioned SIM card into the SIM1 card reader.



**NOTE: SIM2 is not currently supported.**

## 4. Connect Power

The device requires between +10 to +60V DC power. 4W typical; 11 W peak.

## 5. Connect Ethernet

An Ethernet cable may be connected to the ETH0, and/or ETH1, connector/s on the front panel. By default, the Ethernet ports are configured as follows:

PORT	PURPOSE	DEFAULT SETTING
ETH0	LAN port (default) Connect your laptop or PC to get a local web-server for device configuration and diagnostics.	<b>DHCP Server</b> <b>IP Address:</b> 192.168.1.1 <b>NetMask:</b> 255.255.255.0
ETH1	WAN port (default) Connect this port to your WAN to allow the device to obtain access to the remote device management service, SmartWorx Hub, over Ethernet.	<b>DHCP Client:</b> The device will automatically obtain an IP address from your DHCP server.

## 6. Configuration

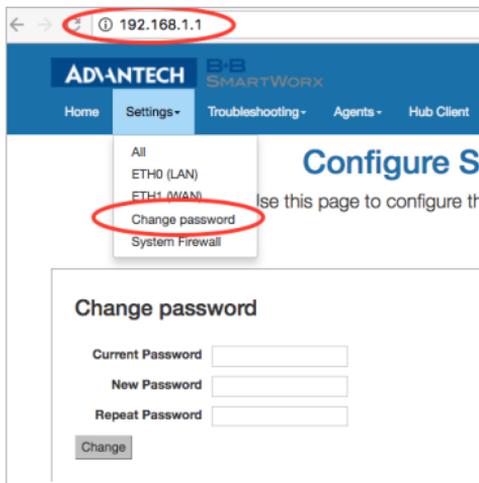
By default, the device will make a secure connection to the cloud-hosted device management service: SmartWorx Hub <https://hub.bb-smartworx.com>

This will automatically happen if there is an outbound WAN connection available via ETH1, with a route to the public Internet.

ALTERNATIVELY, you may want to use cellular. This requires a valid SIM card in SIM Slot 1.

In order to configure the cellular connection, connect your laptop or PC directly into ETH0, then point your web browser at: **192.168.1.1**.

You will be prompted to sign in. The default password is **"5smart5warm"**. We recommend that you change this default password after you login for the first time.



Enter the APN name and optional credentials, as required by your SIM card provider / network operator.

The WAN LED will turn ON (yellow) when the cellular connection has been successfully established.



## 7. Remote Configuration Using SmartWorx Hub

The USR LED will turn on (yellow) when the device successfully makes a secure connection with SmartWorx Hub <https://hub.bb-smartworx.com>.

The SmartSwarm 342, and all of the connected WZZARD MESH wireless sensor nodes, can be configured remotely via the SmartWorx Hub cloud-hosted device management service. To access this service, go to: <https://hub.bb-smartworx.com>

If this is your first time accessing this service, you will need a SmartWorx Hub account.

If you do not have an account, you may create an account for yourself, using the “**Create Account**” option available on the login page at: <https://hub.bb-smartworx.com>

If you have an account, please login to claim and manage your devices. By selecting the “**Devices/View Devices**” screen we can see that the device is available, and that it is currently online.

## 7.1 Claim Your SmartSwarm Device

Go to the “**Devices**”->“**Claim Device**” page to bring your new SmartSwarm device into your Managed Device Farm on SmartWorx Hub.

Type in the entire Device-ID or Serial Number (this is written both on the device itself and on the box that you took your device out of).

Enter the entire MAC address (this is written both on the device itself and on the box that you took your device out of), then select “**Check Device ID**” to check that your device is available to be claimed by you. Assuming it is, then select “**Claim Device**” .

If this process fails, carefully re-enter the information indicated above. Be very careful not to confuse ‘8’ & ‘B’ or ‘0’ & ‘D’/‘C’. If the process still fails, please contact B+B SmartWorx technical support.

Dashboard > Devices > Claim/Release Device

This device is available to be claimed

Device ID or SN  
203-01-6006405

MAC Address  
00:0A:14:77:D9:66

Check Device ID Claim Device Cancel

Your device is now available for you to manage.

By selecting the “**Devices/View Devices**” screen we can see that the device is available, and that it is currently On-line.

In order to fully verify the installation, please check that the device is shown as “**Online**” in SmartWorx Hub:

Dashboard > Devices > View Devices

Managed devices in list below

Device ID	Name	Model	Owner	Status	More
203-01-6006405	NewUser_SmartSwarm	BB-Peak	Pat O'Connell	Operational	
203-01-6006406	NewUser_SmartSwarm	V3-LTE	BB-Peak	Operational	
203-01-6006404	NewUser_Device1	V3-LTE	BB-Peak	Operational	

## 8. WZZARD Mesh

There is no configuration required for Wzzard Mesh wireless sensor nodes to join the SmartSwarm 342 IoT Gateway.

Any available Wzzard Mesh wireless sensor nodes that are powered on, and in close proximity to the Gateway, will be automatically discovered.

They will automatically appear on SmartWorx Hub, in the **Manage Device -> Wzzard Mesh UI**.

Dashboard > Devices > Manage Device > Wzzard Mesh

00170d300058efee

- 00170d300059068b
  - Temp F
  - ai1
  - ai2
  - ai3
  - di1
  - vbatt
- 00170d300059069e
- 00170d30005906af

Refresh Status Open Network Close Network Advertising:

### Mesh Network Status

Generated Date	09/10/2017 16:50:46
Health Color	<span style="color: green;">●</span>
Network Reliability	100 %

More Info

Please refer to the Wzzard Mesh documentation for further information.

## 9. Factory Defaults

The unit may be reset to Factory Defaults at any time by pressing the Reset button on the back-panel of the device for more than 10 seconds.

## 10. Additional Documents

The User Manual for the SmartSwarm 342 can be found on the company web site:  
<http://advantech-bb.com/product-technology/iot-and-network-edge-platforms/smartswarm>

## 11. LEDs

LED	COLOR	STATE	DESCRIPTION
PWR	Green	Off	No power
		On	Device is booting
		Blinking	Device is in normal operating mode
		Fast Blinking	Device is updating firmware. Do not power off
USR	Yellow	Off	The device does not have a working session established with SmartWorX Hub
		On	The device has a working secure session established with SmartWorX Hub
PoE	n/a	n/a	Not used
Mesh Status	Yellow	Off	The WZZARD Mesh App on the Gateway is either not installed or not running.
		On	The WZZARD™ App is installed and running.
		Blinking	There is communication in progress on the DUST mesh network
DAT	Red	Off	There is no communication on the cellular interface at this moment
		Blinking	There is communication in progress on the cellular interface
SIM	Green	Off	Reset button pressed or the device is booting
		On	Ready for operation. SIM 1 is enabled
WAN	Yellow	Off	There is no cellular connection between the Gateway and the cellular service provider
		On	A cellular connection has been successfully established between the Gateway and the cellular service provider
IN0	Green	Off	The default state
		On	Binary input no. 0 is active (user defined)
IN1	Green	Off	The default state
		On	Binary input no. 1 is active (user defined)
Out	Yellow	Off	The default state
		On	Binary output is active (user defined)
ETH0 ETH1	Green	On	10 Mb/s
		Off	100 Mb/s
ETH0 ETH1	Yellow	On	The network cable is not connected
		Off	Network cable is connected
		Blinking	Data transmission in progress

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