

**Model EA000144**

**NEST Receiver**

# **USER MANUAL**

**VERSION 1.00**



**BossPac Engineering & Technology**

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**WARNING**

**READ THIS MANUAL BEFORE OPERATING THIS DEVICE.**

**MISE EN GARDE**

**LISEZ LE MANUEL AVANT D'UTILISER CET APPAREIL.**

**WARNING**

**TO PREVENT EQUIPMENT FAILURE, AND/OR DAMAGE,  
AND/OR PERSONAL INJURY, REGULAR CALIBRATION  
AND INSPECTION OF THIS DEVICE IS REQUIRED.**

**MISE EN GARDE**

**POUR PREVENIR L'ENDOMMAGEMENT DE L'EQUIPMENT, ET/OU  
AUX PERSONNES, LA CALIBRATION ET L'INSPECTION  
REGULIERE DE CET APPAREIL SONT REQUISES.**

**WARNING: OPERATING TEMPERATURE**

**NEST UNIT IS DESIGNED TO WORK BETWEEN -40C AND +80C.**

**MISE EN GARDE : TEMPERATURE DE  
FONCTIONNEMENT**

**L'UNITE NEST EST CONCUE POUR FONCTIONNER ENTRE -40C ET  
+80C.**

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## Table of Contents

1. Introduction .....	6
1.1. NEST System overview .....	6
1.2. Included Contents .....	6
1.3. NEST Receiver .....	7
2. Installation.....	8
2.1. NEST Installation .....	8
2.2. NEST Receiver Mounting.....	8
2.3. Attaching the 915 MHz Antenna.....	8
2.4. Attaching the LTE Antenna .....	8
2.5. Wiring .....	9
3. Interface.....	9
3.1. STATUS SCREEN (Default Screen) .....	10
3.1.1. Network status .....	10
3.2. System Menu.....	11
3.3. System Info.....	11
3.4. Network Settings.....	11
3.4.1. Factory RESET .....	11
3.4.2. Join Network .....	12
3.4.3. Select Server.....	12
3.5. Set Time / Date.....	12
3.6. Send Test Message .....	13
3.7. Device Menu.....	13
3.8. Set Scan Interval .....	14
4. Maintenance .....	15
4.1. Rear Cover .....	15
4.2. Replacing Batteries.....	15
4.3. RTC coin battery .....	15
5. Contact Info .....	16

# 1.Introduction

## 1.1. NEST System overview

The NEST is a wireless communication system designed to transmit data from fixed, mobile and quick deploy sensors to a server.

The NEST Receiver is compatible with 915 MHz BossPac wireless sensors bearing the BossPac WASP™ logo.

This Operations Manual provides basic information on how to install and operate the NEST System.

## 1.2. Included Contents

- 1x EA000144 - NEST Receiver
- 1x 3 dBi 915MHz antenna.
- 8' SMA to N-Type cable for 915 MHz antenna
- 1x LTE Antenna

### 1.3. NEST Receiver



## 2. Installation

### 2.1. NEST Installation

The equipment should be installed by a professional or certified technician conversant with the certification requirements of the installation site.

### 2.2. NEST Receiver Mounting

The BossPac NEST™ receiver may be installed into an existing panel or an enclosure. Ideal location would have direct line of sight to the sensors. There are four mounting locations (threaded holes) and an environmental gasket on the flange of the receiver. A cutout mounting template is also included with the receiver.

### 2.3. Attaching the 915 MHz Antenna

A 915 MHz antenna is provided by BossPac, included and shipped with the NEST Receiver. The NEST Receiver is certified for use with the following models:

BossPac PN	Gain
EH002058 (Standard)	3 dBi
EH002059	1.2 dBi
EH002060	8 dBi
EH000625	11 dBi

The technician must ensure proper mounting of antenna to meet certification requirements of installation site.

To attach the antenna, carefully screw the antenna cable to the 915 MHz SMA connection at the base of the BossPac NEST™ Receiver Gateway. See photo below. Attach antenna to opposite end of cable, (N type connector).

### 2.4. Attaching the LTE Antenna

If your NEST Receiver is equipped with an LTE modem you will need to install an LTE antenna as well.

Attach the LTE antenna (BossPac part number EH000622) to the SMA port labelled LTE.





## 2.5. Wiring

The rear cover, (backplate), needs to be removed to access the following connections:

Power (+5 to 30 VDC), GND, Inputs and Outputs, RS485, USB and SD Card connections.

The NEST circuit board has an 8 pin terminal block. A diagram of the terminal block is shown to the right.

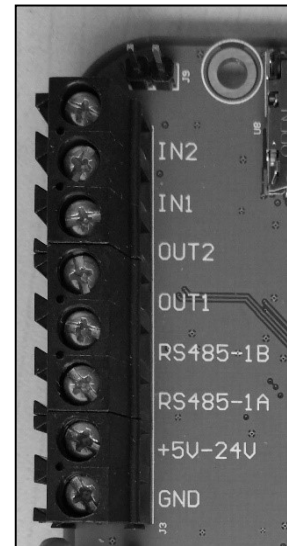
**INPUT 1 and INPUT 2** have not been enabled on the NEST™ system.

**OUTPUT 1 and OUTPUT 2** have not been enabled on the NEST™ system.

**RS485-1B and RS485-1A** are used for 2-wire serial connections.

**+5V-24V and GND** are the power connections. The NEST Receiver must be powered with a **Class 2** power supply providing an input voltage between 5 VDC to 30 VDC

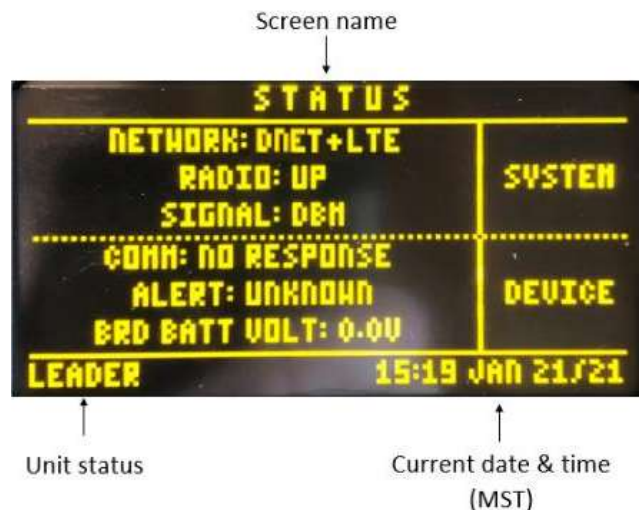
**RS485/RS422 A, B, Y and Z** are used for 4-wire serial connections.



## 3. Interface

The touch screen interface on the BossPac NEST™ displays important current information throughout all its screens. The name of the current screen is displayed at the top center. The current time and date are displayed at the bottom right\*

These information sections, top bar and bottom bar of the touch screen, are not interactive and are only intended to provide current system statistics to the viewer.



## 3.1. STATUS SCREEN (Default Screen)

The default screen, when turning on the BossPac NEST™ receiver or waking the screen from sleep mode, is the **STATUS** screen. To wake the system when display is OFF, just tap anywhere on the display. The SYSTEM STATUS screen displays general communication status.

On the right-hand side, tapping SYSTEM or DEVICE accesses the related menus. (description below)



### 3.1.1. Network status

A device can be in 1 of 4 network states.

- Leader means the node is the leader of the network it's connected to.
- Router means the node can receive and route messages for other devices in the network.
- Child means the device only sends data and can not receive and route messages for other devices.
- Disabled means the device has been associated with a network, but cannot currently connect to the network.

## 3.2. System Menu

The NEST System Information, Factory Reset, Join Network, Edit Subdivision, Edit Mile Post, Edit Track Indicator, Select Server, Set Time/Date, System Test, System Settings are accessed through the SYSTEM MENU tab of the SYSTEM STATUS default screen. Tapping **MAIN MENU** will bring up a list of options.

Tap the **UP/DOWN** arrows to scroll through the available options. Choose **SELECT** to access the desired high-lighted option. Tap **BACK** to return to the default startup screen.

## 3.3. System Info

Selecting **SYSTEM INFO** displays the current information related to NEST:

- The server (PRODUCTION or TEST) the data are sent to.
- The current firmware and hardware versions that have been flashed into it.
- The UID (Unique IDentifier). This UID will match S/N label affixed on the front side of the NEST.

Tap **BACK** to return to the SYSTEM MENU screen, or **HOME** to return to the DEFAULT screen.

## 3.4. Network Settings

### 3.4.1. Factory RESET

Selecting **FACTORY RESET** allows the user to clear current wireless data stored into the NEST.

When RESET button is tapped, current radio network credentials are reset, and the node will be disconnected from any previously joined network. It will automatically create a new network that other devices can join.

Tap RESET to reset wireless data from NEST.

Tap BACK to cancel operation.



If RESET has been tapped, wait a few seconds for the results:

Either RESET is SUCCESSFUL, all the data have been cleared,

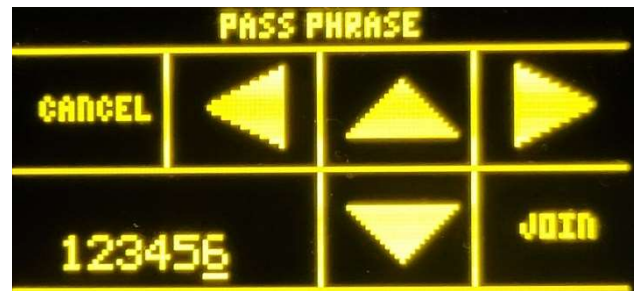
Or RESET has FAILED, Wireless data are still in the NEST memory. Try again resetting or tap any key to Exit.

Tap **BACK** or **SYSTEM** to return to the SYSTEM MENU screen.

### 3.4.2. Join Network

To join a network: Select **JOIN NETWORK** and enter the 6 digit numeric pass phrase of the network that you wish to join.

Tap **BACK** to return to the SYSTEM MENU screen, or **HOME** to return to the DEFAULT screen.



### 3.4.3. Select Server

Selecting **SELECT SERVER** allows the user to change the destination server the data are sent to: PRODUCTION server or TEST server.



Tap **BACK** to return to the SYSTEM MENU screen, or **HOME** to return to the DEFAULT screen.

## 3.5. Set Time / Date

Selecting **SET TIME / DATE** allows the user to set the time and date displayed on the default screen and all the sub screens.

Tap **BACK** to return to the SYSTEM MENU screen, or **HOME** to return to the DEFAULT screen.

### 3.6. Send Test Message

Selecting **SEND TEST MESSAGE** allows the user to send a communication message to be able to check communication status without waiting for the duration that has been set up in the section 3.8 below.



To check if NEST unit is sending data, refer to Section **Error! Reference source not found.**  
**Error! Reference source not found.**

### 3.7. Device Menu

Selecting **DEVICE MENU** displays the 2 options below:

SET SCAN INTERVAL and DEVICE SETTINGS.



Tap **BACK** to return to the STATUS SCREEN or tap the arrows to select the desired option and then tap **SELECT**.

### 3.8. Set Scan Interval

Selecting **SET SCAN INTERVAL** allows the user to select the interval duration the NEST unit is sending out data.



Tap **BACK** to return to the SYSTEM MENU screen, or **HOME** to return to the DEFAULT screen.

## 4. Maintenance

### 4.1. Rear Cover

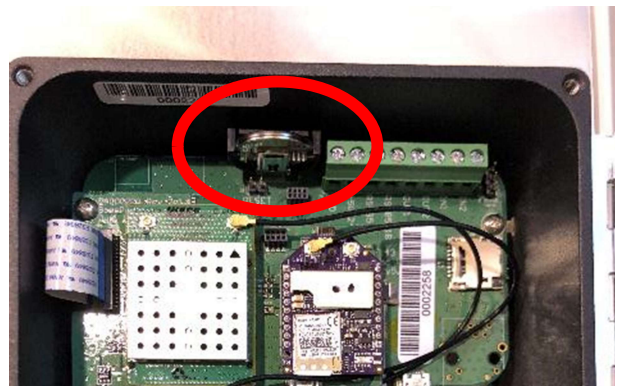
The rear cover of the NEST receiver should remain in place during operation. Do not remove except to access the NEST circuit board when necessary. Replace rear cover upon completion of task.



### 4.2. Replacing Batteries

#### 4.3. RTC coin battery

The BossPac NEST™ Receiver uses a 3V Lithium Battery to maintain clock and memory function. After several years of use the battery may need to be replaced. Use a standard CR2032 Lithium Coin Cell.



## 5.Contact Info

BossPac engineers can be reached at:

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## FCC & IC Statements

### FCC Class B Part 15

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.

Changes or modifications not expressly approved by BossPac Engineering Technology Inc. may void the user's authority to operate the equipment.

### ISED RSP-100 Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### FCC/IC RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this equipment must be installed to provide a separation distance of at least 8 inches (20cm) from all persons.

Cet équipement est conforme à l'exposition aux radiations de FCC et d'Industrie Canada établies pour un environnement non contrôlé. L'antenne (s) utilisé pour cet équipement doit être installé pour fournir une distance d'au moins 20cm à partir de toutes les personnes.



**For further Technical Assistance**

**Email [support@bosspac.com](mailto:support@bosspac.com)**

**Or call (866) 616-1226 or (403) 216-1226**