

EXHIBIT 19B – USER'S MANUAL – HOST 2 – NEST2

See Attached

WASP™ NEST2
SMART RECEIVER AND GATEWAY



USER MANUAL

VERSION 4.13
2018/12/04



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BossPac Engineering & Technology

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BossPac Engineering & Technology

BossPac Engineering & Technology

1450 – 28 Street NE Bay 8, Calgary, Alberta, Canada T2A 7W6

Phone: (403) 216-1226 Fax: (403) 216-5557 E-Mail: info@bosspac.com

Visit our website for more information www.bosspac.com

WARNING

READ THIS MANUAL BEFORE OPERATING THIS DEVICE.

MISE EN GARDE

LISEZ LE MANUEL AVANT UTILISATER

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 PRÉVENIR LE DOMMAGE À L'EQUIPMENT, ET/AU AUX
PERSON, LA CÀLIBRATION ET L'INSPECTION REGULIER EST
REQUIS.**

WARNING - EXPLOSION HAZARD

**SUBSTITUTION OF COMPONENTS MAY IMPAIR
SUITABILITY FOR CLASS 1, DIVISION 2.**

AVERTISSEMENT – RISQUE D’EXPLOSION

**LA SUBSTITUTION DE COMPOSANTS RENDRE CE MATÉRIEL
INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1,
DIVISION 2**

WARNING - EXPLOSION HAZARD

**DO NOT RECONNECT POWER
IN A HAZARDOUS ENVIRONMENT.**

AVERTISSEMENT - RISQUE D’EXPLOSION

**NE PAS BRANCHEZ LA PRISE DANS UN ENVIRONNEMENT
FLAMMABLE.**

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1. Introduction

1.1 NEST Receiver Introduction

This Operations Manual provides basic information on how to operate the **WASP™ Nest Smart Receiver and Gateway**. This manual covers the following topics:

- Installation of WASP™ NEST
- Wiring of WASP™ NEST
- Configuring of Individual WASP™ Sensors
- System Information and Settings of WASP™ NEST
- Maintenance of WASP™ NEST

2. Installation

2.1 Included In The Package

The BossPac WASP™ NEST Receiver is shipped with an attachable antenna and required cables. The BossPac WASP™ sensors, (configurable), are typically shipped alongside.

2.2 Installation

2.2.1 Nest Receiver Installation

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

2.3 Wiring NEST Receiver

2.3.1 Nest Receiver Mounting

The BossPac NEST™ receiver may be installed into existing panels or an enclosure mounted within 300 meters (1000') of the WASP™s. 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.

2.3.2 Attaching the Antenna

A mobile antenna is provided by BossPac, included and shipped with the NEST Receiver. BossPac recommends any replacement or additional antenna be compliant. BossPac currently uses the following models:

- MRO Model: M2425, 2.4 GHz band, +3 dBi Gain
- Larsen Model: RO2408NF, 2.4 GHz Omnidirectional, +8 dBi Gain
- Nearson Model SG1013NF-2450, 2.4 GHz, + 3 dBi Gain
- Nearson Model SG102N-2450, 2.4 GHz, +6 dBi Gain

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



Figure 1: Attach Antenna to NEST

WARNING – EXPLOSION HAZARD. DO NOT CONNECT OR DISCONNECT THE ANTENNA IN A HAZARDOUS ENVIRONMENT.

AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS BRANCHER OU DÉ-BRANCHER L'ANTENNE DANS UN ENVIRONNEMENT FLAMMABLE.

2.3.3 Wiring NEST Circuit Board

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

Power (+5 to 24V), GND, Inputs and Outputs, RS485, USB and SD Card connections.



Figure 2: NEST Circuit Board

2.3.4 Circuit Board Terminal Block

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 WASP™ system.

OUTPUT 1 and OUTPUT 2 are assigned for critical error and warning signals respectively.

RS485-1B and RS485-1A are assigned for MODBUS connections.

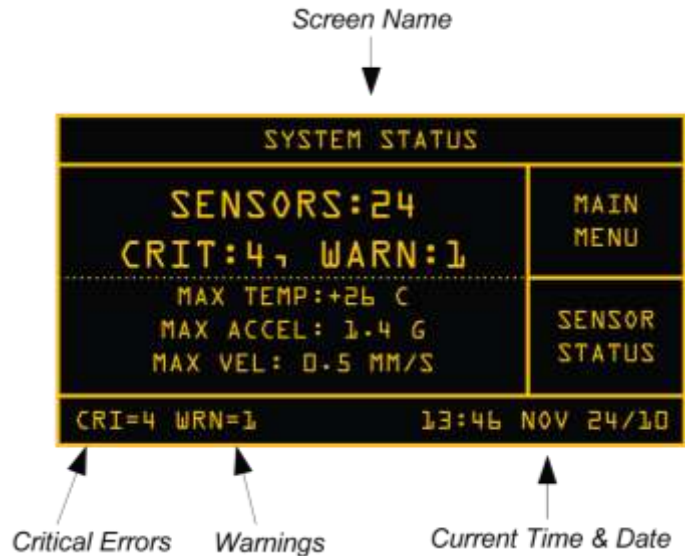
+5V-24V and GND are the power connections. The NEST Receiver must be powered with a **Class 2** power supply providing an input voltage between 5VDC to 30VDC



Figure 3: NEST Terminal Block

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. Current critical error count and warning count are displayed in the bottom left of the interface. 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.



NOTE: Warnings indicate a sensor(s) has reached the warning limit pre-determined in the Sensor Setup screen. Critical Alarms indicate a sensor(s) has reached the pre-determined shutdown limit and a shutdown signal has been issued. See the section of this manual on "Configuring Individual Sensors" for details about setting warning and critical alarm limits.

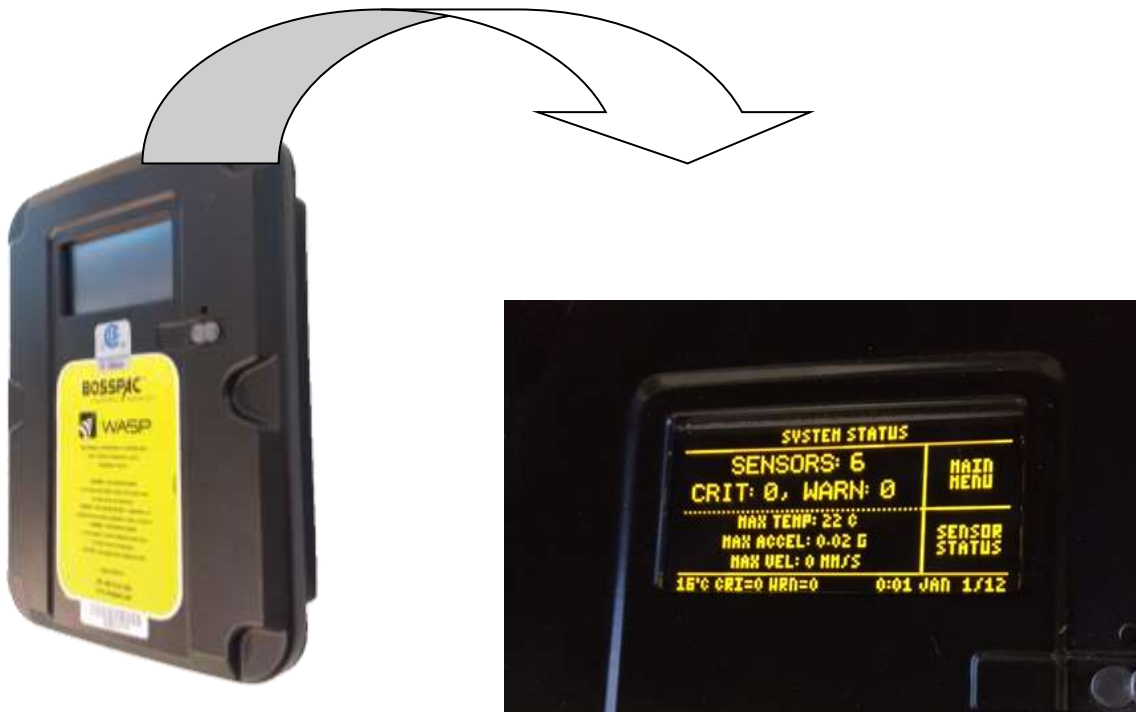


Figure 4: BossPac NEST showing Touch Screen Interface

3.1 System Status Screens

When activating the BossPac WASP™ system for the first time the BossPac NEST receiver will automatically detect all sensor pucks within the working radius (assuming battery modules are attached to the sensors).

The default screen, when turning on the BossPac NEST™ receiver or waking the screen from sleep mode, is the SYSTEM STATUS screen. The SYSTEM STATUS screen displays the number of sensors attached to the system as well as any current critical or warning alarm. The screen will also cycle through the critical screen and warning screen when the top half of the screen is tapped. The max values displayed are the current max values of the entire sensor array.

SYSTEM STATUS	
SENSORS: 24 CRIT: 4, WARN: 1	MAIN MENU
MAX TEMP: +26 C MAX ACCEL: 1.4 G MAX VEL: 0.5 MM/S	SENSOR STATUS
21'C CRI=4 WRN=1 13:46 NOV 24/10	

Tapping on the **SENSOR STATUS** square will take you to the sensor status grid screen. Further tapping on a sensor square, **EXHA 01** for example, will take you to a status screen for that individual sensor. Tapping on **NEXT** will cycle through available status grid pages, (all other sensors).

SENSOR STATUS> PAGE 2 OF 2			
INTK 07 NORM	INTK 08 NORM	INTK 09 NORM	SYSTEM STATUS
INTK 10 NORM	EXHA 01 WARN	EXHA 02 NORM	NEXT
21'C CRI=4 WRN=1 13:46 NOV 24/10			

Each individual sensor status screen will display the name of the sensor along with the current status. Tapping on the bottom half of the screen will cycle the screen through more status data and settings of the sensor. Tapping on the top half of the screen will cycle the screen through the available sensors. (For example: Tap on right side of the top section cycles to next listed sensor **EXHA 02**. Tap on left side of the top section cycles to previous listed sensor **INTK 10**). To configure a sensor, or modify the settings, tap on the **SETUP** section.

SENSOR STATUS	
EXHA 01 WARN: 2.33 G	BACK
TEMP: 80 C ACCEL: 2.33 G VEL: 5 MM/S	SETUP
21'C CRI=4 WRN=1 13:46 NOV 24/10	

Instructions on configuring individual sensors are covered under Section 3.2.9

Note: if no limits have been set, zeros will be displayed beside the parameter.

3.2 Main Menu

The NEST system information, sensor settings, configuration area, and log options are accessed through the MAIN 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 **SYSTEM STATUS** to return to the default startup screen.



3.2.1 System Info

Choosing the SYSTEM INFO screen will display 3 options: VERSION, UPTIME, and RADIO. Use the UP/DOWN arrows to highlight the desired system information option and tap **SELECT**.

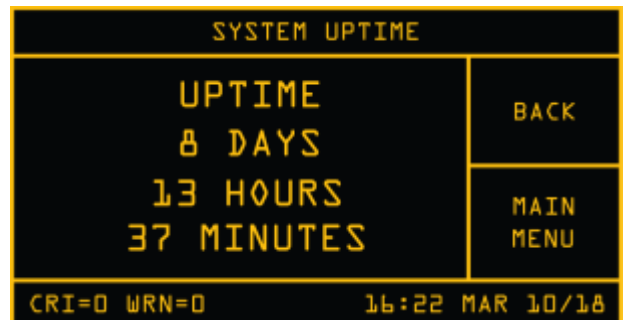
3.2.1.1 Version

Selecting **VERSION** displays the current NEST firmware version. The screen also displays the firmware compile date/time as well as the revision number. Tap **BACK** to return to the SYSTEM INFO screen, or **MAIN MENU** to return to the MAIN MENU screen.



3.2.1.2 Uptime

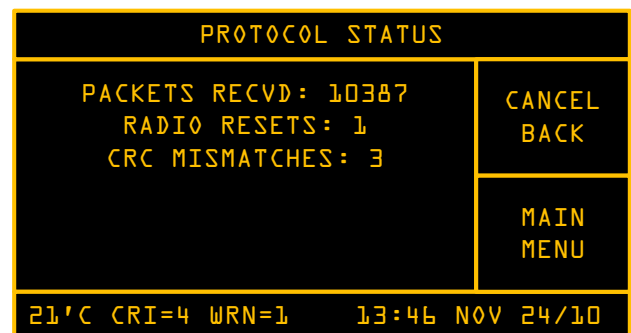
The uptime screen simply displays how long the NEST has been active.



3.2.1.3 Radio

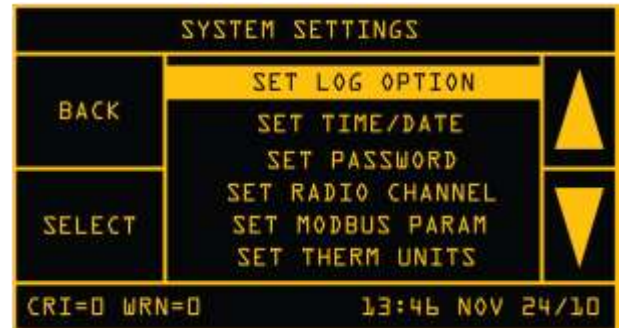
Selecting **RADIO** from the SYSTEM INFO screen will access the PROTOCOL STATUS screen.

This screen displays the number of data packets received by the NEST from active connected sensor pucks. RADIO RESETS displays the number of times the NEST has reset its internal radio. CRC MISMATCHES displays the number of packets received that contain incomplete or bad data.



3.2.2 System Settings

To input or modify settings you will need to access the **SYSTEM SETTINGS** from the **MAIN MENU** screen. Use the **UP/DOWN** arrows to highlight the **SYSTEM SETTINGS** option and tap **SELECT**. The **SYSTEM SETTINGS** screen will be displayed with several options that can be configured or modified.

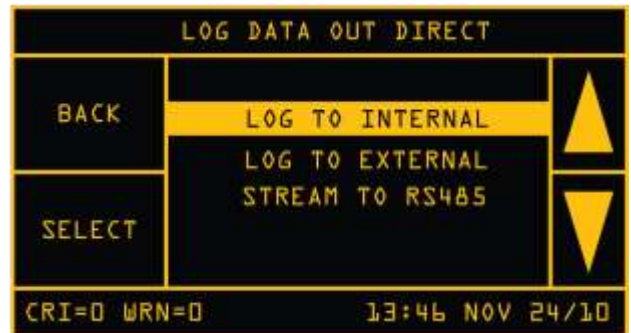


3.2.2.1 Log Data Out Direct

The **SET LOG OPTION** allows you to either log bound sensor data on the internal non-volatile memory, externally, or stream live data over RS485 port to an external device. The stream live data option is for use with the optional data logger or the accompanied NEST software on a personal computer.

Set the log data out direct option by choosing **SET LOG OPTION** from the **SYSTEM SETTINGS** menu.

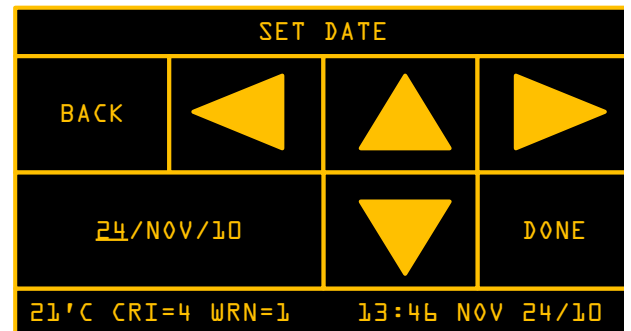
> **MAIN MENU** > **SYSTEM SETTINGS** > **SET LOG OPTION**



Once in the **LOG DATA OUT DIRECT** screen simply choose **LOG TO INTERNAL**, **LOG TO EXTERNAL**, or **STREAM TO RS485** and tap on **SELECT**.

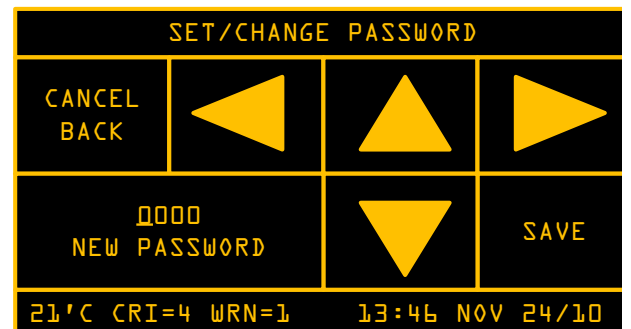
3.2.2.2 Set Time/Date

To set the time and date on the NEST select the **SET TIME/DATE** option from the **SYSTEM SETTINGS** screen. Set the time using the **UP / DOWN** arrows to change the numeric value of the hour character. Use the **LEFT / RIGHT** arrows to move the cursor to the minute character position. Once the time has been entered, tap **SET DATE** and use the arrows to input the correct date. Once both the time and date have been entered, choose **DONE** to save new time and date and return to the **SYSTEM SETTINGS** screen.



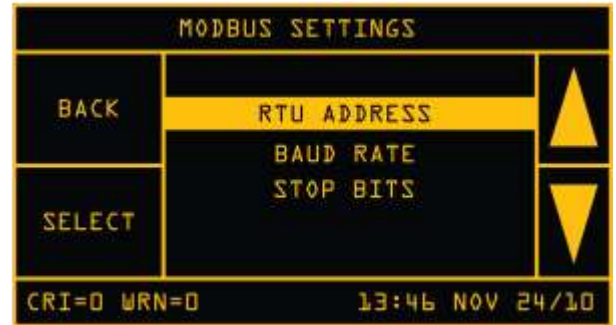
3.2.2.3 Set Password

You can setup a system password by selecting **SET PASSWORD** from the **SYSTEM SETTINGS** menu. Once in the **SET/CHANGE PASSWORD** screen choose a 4-digit password by using the up/down and right/left arrows. Click **SAVE** to save the new password.



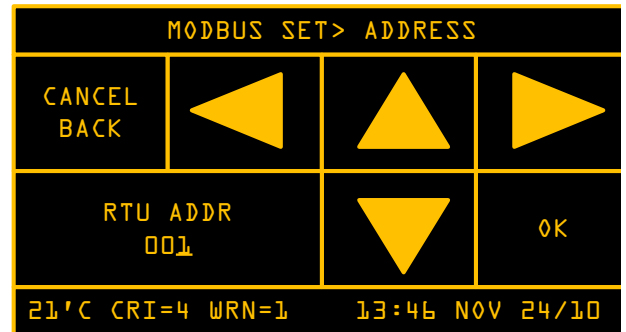
3.2.2.4 Set Modbus Parameter

To configure MODBUS parameters, select **SET MODBUS PARAM** from the SYSTEM SETTINGS selection screen. A submenu will display the parameters to select: RTU ADDRESS, BAUD RATE, or STOP BITS. If the direct output option was enabled, you would be asked to disable it before modifying MODBUS parameters.



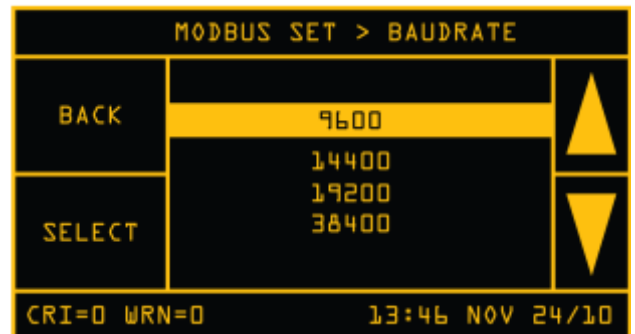
3.2.2.4.1 RTU Address

Configure the RTU ADDRESS of the receiver by using the arrow keys to navigate and input the digits.



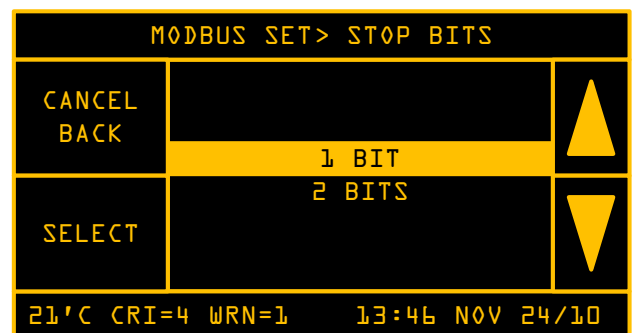
3.2.2.4.2 BAUD Rate

Configure the BAUD RATE of the receiver to either 9600 or 19200 by using the arrows on the right of the screen and choosing **SELECT**.



3.2.2.4.3 Stop Bits

Configure the STOP BITS of the receiver to either 1 or 2 by using the **arrows** on the right of the screen and choosing **SELECT**.



3.2.2.5 Set Temperature Unit

You can set the units of temperature to either Celsius or Fahrenheit by selecting **SET THERM UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

TEMPERATURE UNITS		
CANCEL BACK	CELSIUS	▲
SELECT	FAHRENHEIT	▼
21'C CRI=4 WRN=1 13:46 NOV 24/10		

3.2.2.6 Set Velocity Units

You can set the units of velocity to either mm/s or IPS (inch-per-second) by selecting **SET VEL UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

VELOCITY UNITS		
CANCEL BACK	MM/S	▲
SELECT	IPS	▼
21'C CRI=4 WRN=1 13:46 NOV 24/10		

3.2.2.7 Set Pressure Units

You can set the units of pressure to either BAR or PSI by selecting **SET PRESS UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

3.2.2.8 Set Level Units

You can set the units to either METERS or FEET by selecting **SET LEVEL UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

3.2.2.9 Clearing All Sensors

You can clear all sensors from the NEST's memory by choosing **CLEAR SENSORS** from the System menu. Once in the SENSOR SETTINGS> CLEAR ALL screen tap **OK** to clear the sensors or **CANCEL** to go back to the System screen.

SENSOR SETTINGS> CLEAR ALL	
CLEAR	CANCEL
SENSOR SETTINGS	OK
21'C CRI=4 WRN=1 13:46 NOV 24/10	

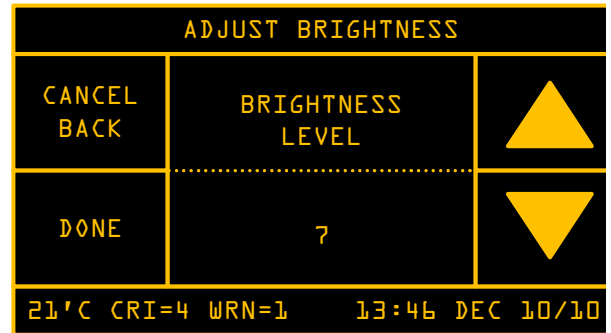
WARNING – CLEARING ALL SENSORS WILL REMOVE THE SENSORS AND ALL SETTINGS FROM THE NEST'S MEMORY. BE SURE THIS IS WHAT YOU INTEND TO DO BEFORE CLICKING “OK”

MISE EN GARDE – “CLEAR ALL” DÉGAGE LA LISTE DE CAPTEUR ET TOUT LEUR PARAMÈTRAGE. SOYEZ SURE AVANT DE CLIQUER “OK”

3.2.2.10 Adjust Brightness

The adjust brightness option allows you to change the brightness of the screen to improve the readability of the screen under different lightning conditions. *Note: the higher level of brightness will increase the current consumption.

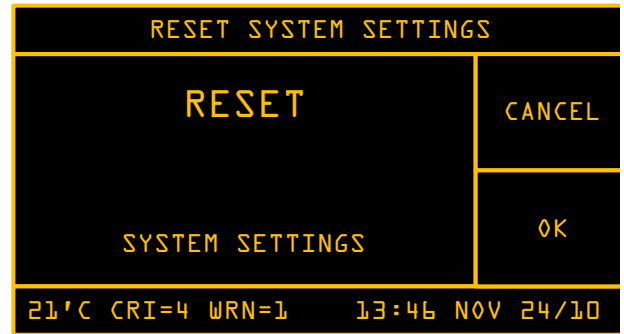
You can adjust and set the screen brightness by choosing **ADJUST BRIGHTNESS** from the SYSTEM SETTINGS menu. In the ADJUST BRIGHTNESS screen use the **UP/DOWN** arrows to change the brightness level and tap **DONE** to save the level.



3.2.2.11 Reset System Settings

The reset system settings option allows you to restore the receiver to its default setting.

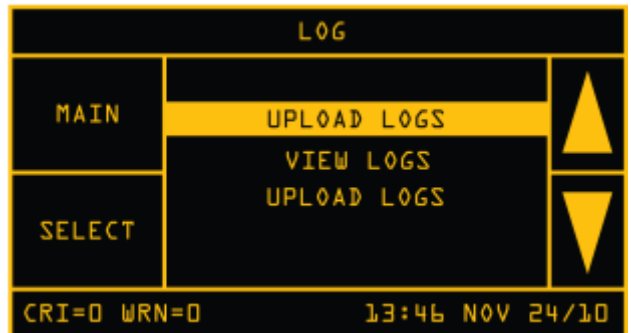
You can restore the receiver default setting by choosing **RESET SYS SETTINGS** from the SYSTEM SETTINGS menu. Once in the RESET SYS SETTINGS screen tap on **OK** to authorize the system setting reset.



3.2.3 LOGS

The BossPac NEST System has extensive logging capabilities. To access the LOG screen select **LOGS** from the MAIN MENU screen. This brings up the main LOG screen with 3 available options: UPLOAD LOGS, VIEW LOGS, and CLEAR LOGS.

Highlight the desired action, (**VIEW, UPLOAD, or CLEAR**), and tap **SELECT**.



Upon **UPLOAD** action, the receiver sends records of specific type of log over the RS485 port to an external device.

Upon **VIEW** action, the receiver displays records of specific type of log which were recorded in the internal non-volatile memory.

Upon **CLEAR** action, the receiver erases records of specific type of log from its internal non-volatile memory.

3.2.3.1 Upload Logs

All records in the selected type of logs are sent sequentially over the RS485 port to an external device. This feature is for use with the accompanied software on a personal computer.

For the UPLOAD LOGS action, you will need to tap on **OK** at the confirmation screen to authorize the action. Tap **CANCEL** to return to previous screen.



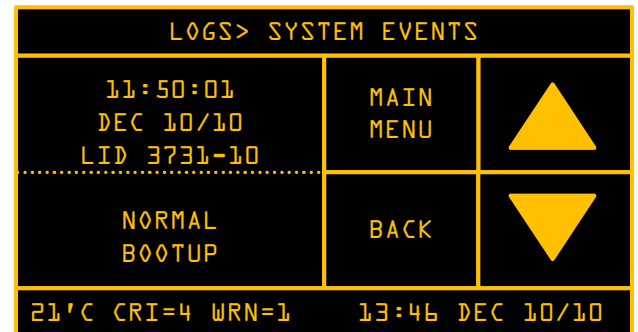
3.2.3.2 View Logs

The VIEW LOGS window displays 4 options.

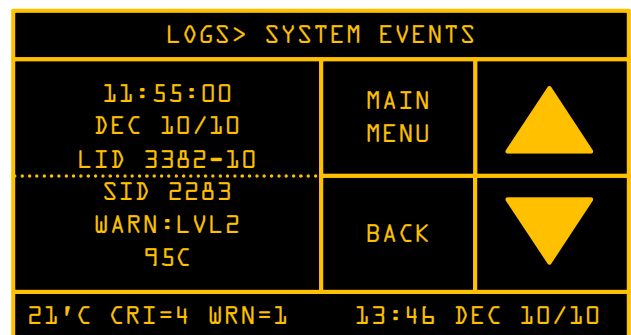
For the VIEW LOGS action, choose the desired option and tap **VIEW** to bring up the log data.



In the LOGS> SYSTEM EVENTS window, the events are displayed with the time, date, and log ID on the top half of the information area. The details of an event are displayed on the bottom half of the information area. For the critical and warning alarm events, the details include the sensor ID or name, type of the alarm, and the data associated with the alarm such as temperature, acceleration, or velocity.



24-hr data records are displayed with similar time stamp and log ID on the top half of the information area. The details of a record are displayed on the bottom half of the information area. For the 24-hr data records, the details include sensor ID or name, battery level, temperature, acceleration, and velocity.



Daily data and weekly data are displayed in similar format. The details of a record include sensor ID or name, average temperature, peak temperature, average acceleration, and average velocity.

LOGS> LAST 24 HRS DATA		
11:50:02 DEC 10/10 LID 3382-3 SID 2283 B=3.5, T=24 A=0.02, V=0.00	MAIN MENU	▲
	BACK	▼
21'C CRI=4 WRN=1 13:46 DEC 10/10		

3.2.3.4 Clear Logs

All records in the selected type of logs are erased permanently from the internal non-volatile memory.

For the CLEAR LOGS action, choose the desired option and tap **CLEAR**. You will need to tap **OK** to confirm the action, or **CANCEL**, to return to the LOG menu.

LOGS> CLEAR		
BACK	ALL	▲
	24 HOUR DATA	
CLEAR	DAILY DATA	▼
	WEEKLY DATA	
	SYSTEM EVENTS	
CRI=0 WRN=0 13:46 NOV 24/10		

3.2.4 Record Information Legend

B = battery level in volts

T = temperature in Celsius or Fahrenheit, according to the temperature unit setting

TP = peak temperature in Celsius or Fahrenheit

A = acceleration in G

V = velocity in mm/s or IPS, according to the velocity unit setting

3.2.5 Sensor Lists

When first configuring or adding WASP™ Sensors to the WASP™ systems, it is necessary to “bind” the sensors to the receiver. The SENSOR LISTS will show all available sensors within range of the NEST.

To access SENSOR LIST:

> **MAIN MENU** > **SENSOR LISTS** > **SELECT**.

This brings up the main SENSOR LISTS screen with 3 options: FREE, BOUND, and IGNORED.

FREE: Shows all available sensors within range.

BOUND: Identifies all sensors currently “bound” to the NEST Receiver.

IGNORED: Identifies all sensors chosen to be ignored by the NEST Receiver, (if any).

3.2.5.1 Binding And Ignoring Sensor Pucks

To bind a sensor to the receiver, you will need to select a sensor from the **FREE** sensor list and bind it to the receiver. To access the FREE SENSOR LIST:

> **MAIN MENU** > **SENSOR LISTS** > **FREE**.

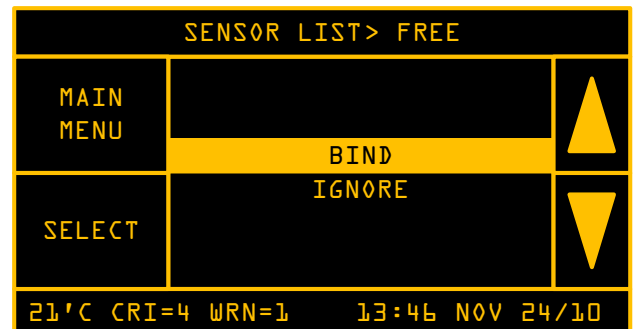
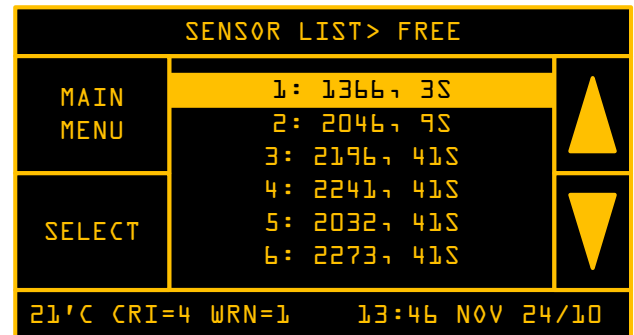
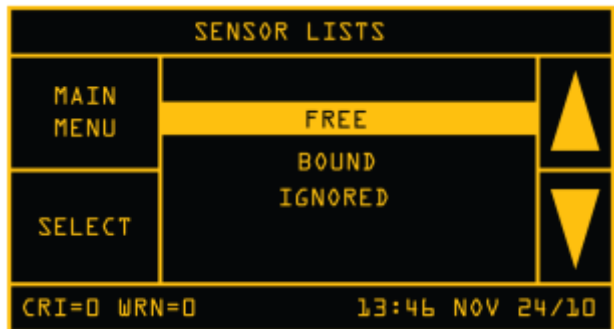
The FREE SENSOR LIST displays all sensors which have been seen by the receiver, and currently not bound to the receiver. Each sensor listed is displayed with list index, sensor serial number, and the elapsed time since last update.

Example: “**1: 1366, 3S**” means the NEST received the last data update 3 seconds ago from the WASP sensor with serial number 1366.

To bind a sensor, scroll up/down and highlight a sensor from the FREE sensor list. Once found, tap **SELECT** to move to BIND/IGNORE screen.

BIND will add this sensor to this receiver’s database.

IGNORE will ignore the sensor allowing another receiver to pick up that sensor. This is useful in large installations where you may have overlap between the effective range of sensors and receivers.



After BIND action is selected, you need to select an input to attach the sensor to. Attaching to an input allows the information to be pulled for that individual sensor via MODBUS. The SELECT INPUT screen will highlight the next “available” input and will also show the current bound sensor inputs. Choose **SELECT** to attach to next available input or scroll to desired input and SELECT.

SELECT INPUT		
BACK	1: 1360	▲
	2: 1370	
	3: AVAILABLE	
SELECT	4: AVAILABLE	▼
	5: AVAILABLE	
	6: AVAILABLE	
21'C CRI=4 WRN=1 13:46 NOV 24/10		

The NEST Receiver will request confirmation to bind the sensor to the selected input, tap **YES** or **NO**.

The receiver will jump back to the FREE list screen after the confirmation allowing this process to be repeated.

Repeat this process until all the sensors you would like to bind are bound to the receiver.

BIND SENSOR		
BIND 1366 TO INPUT 3		
YES TO BIND		
NO TO CANCEL	YES	NO
21'C CRI=4 WRN=1 13:46 NOV 24/10		

If you happen to bind a sensor that you should not have - go to **SENSOR LISTS**. Then choose **BOUND** and scroll to find the sensor that should not have been bound. Select the sensor - then choose to **IGNORE** or **REMOVE**.

IGNORE places the sensor on the ignored list - it can be bound at a later time.

REMOVE- removes the sensor entirely from the system (until the next packet of information is received) allowing another sensor to take its place. There is a functional limit to the number of sensors that can be bound to the system. If the number of sensors in the area is greater than the functional limit, then the remove feature should be used to give the wanted sensor a chance to get on the list.

3.2.6 Alarm Override

The ALARM OVERRIDE is used to ignore an alarm during the startup process of the machinery. During startup, or restart procedure, some machinery may run rougher than normal. The override provides a waiting period, (usually about 5 minutes), to allow the machinery to get into sync, or natural rhythm, prior to sending out warnings or alarms.

MAIN MENU		
SYSTEM STATUS	SYSTEM INFO	▲
	SYSTEM SETTINGS	
	LOGS	
	SENSOR LISTS	
SELECT	ALARM OVERRIDE	▼
	DIAGNOSTIC	
CRI=0 WRN=0 13:46 NOV 24/10		

3.2.7 Diagnostic

The DIAGNOSTIC info and sensor log are both set to “Disable” as a default.

3.2.8 Bi-Directional Settings

Bi-directional communication is an enhanced feature of the first generation of WASP™ NEST systems. This feature implements a simple user interface for WASP configuration directly in the NEST touch screen and facilitates the radio-silent mode for WASP in oil field explosive operations.

3.2.9 Configuring Individual Sensors

To configure an individual sensor, you must access that particular sensor's SENSOR SETTINGS screen.

To access this screen, follow the instructions, starting from the default SYSTEM STATUS screen.

First tap the bottom right **SENSOR STATUS** section of the default screen. This will take you to the sensor status grid screen.

SYSTEM STATUS	
SENSORS:24 CRIT:4, WARN:1	MAIN MENU
MAX TEMP: +26 C MAX ACCEL: 1.4 G MAX VEL: 0.5 MM/S	SENSOR STATUS
21'C CRI=4 WRN=1 13:46 NOV 24/10	

From this screen choose the sensor you would like to configure, (**EXHA 01** for example). Tapping on the sensor square, will take you to a status screen for this individual sensor.

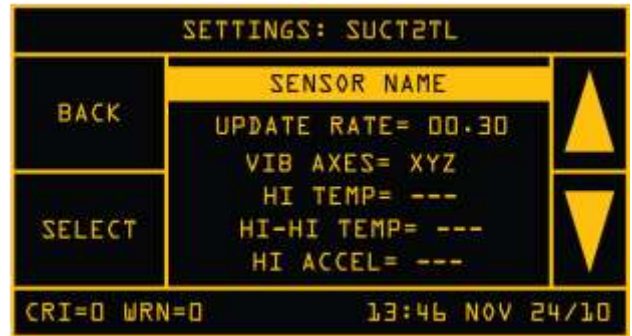
SENSOR STATUS> PAGE 2 OF 2			
INTK 07 NORM	INTK 08 NORM	INTK 09 NORM	SYSTEM STATUS
INTK 10 NORM	EXHA 01 WARN	EXHA 02 NORM	NEXT
21'C CRI=4 WRN=1 13:46 NOV 24/10			

To configure or modify the settings for this sensor, tap the **SETUP** section, (bottom right), from the SENSOR STATUS screen. This will take you to the individual sensor SETTINGS screen.

SENSOR STATUS	
EXHA 01 WARN: 2.33 G	BACK
TEMP: 80 C ACCEL: 2.33 G VEL: 5 MM/S	SETUP
21'C CRI=4 WRN=1 13:46 NOV 24/10	

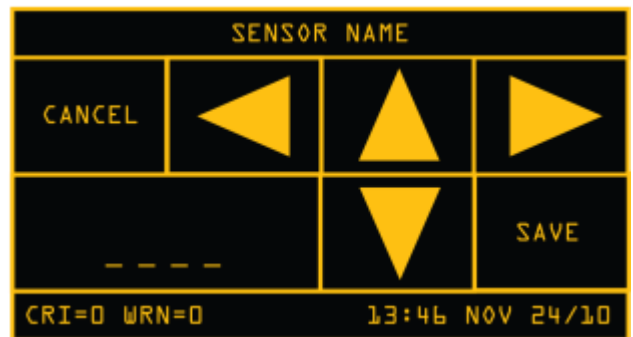
This SETTINGS screen allows the user to modify the sensor name, update rate, choose vibration axes, and configure the warning alarm and critical alarm thresholds for the supported parameters.

To set an individual parameter scroll the **UP/DOWN** arrows to the desired setting, or by tapping either the top or bottom part of the screen. Press **SELECT** when the desired option is highlighted.



3.2.9.1 Setting Sensor Name

The sensors are identified by serial number and can be named to display a descriptive nomenclature of up to 7 characters. To name a sensor, select the **SENSOR NAME** option from the SETUP menu and use the **UP / DOWN** arrows to toggle through the numeric and alphabetic option for each character. The **LEFT / RIGHT** arrows will move the cursor to the next character position. Tap **SAVE** when completed.

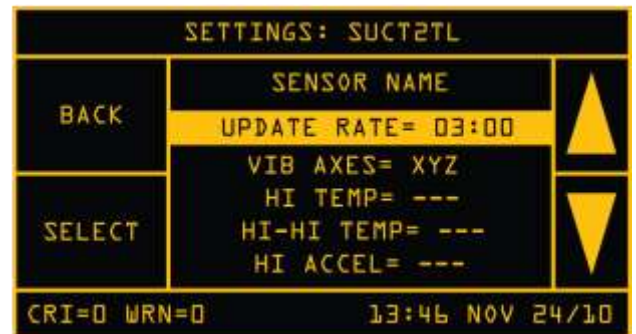


The new name will appear in the SENSOR STATUS windows. Serial numbers remain intact and visible in the SENSOR STATUS>DETAILS window.

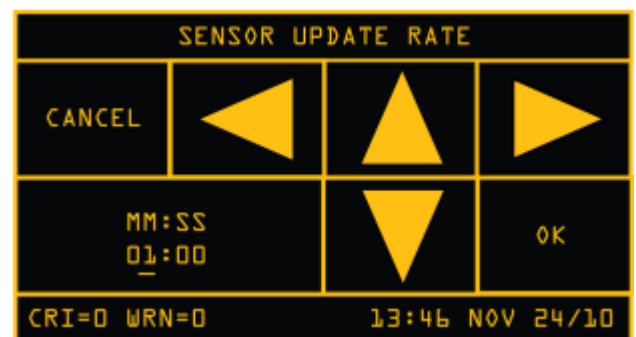
3.2.9.2 Setting Update Rate

The update rate of each sensor can be individually set within a range of 3 seconds to 10 minutes.

To modify the update rate, tap the **SETUP** section from the SENSOR STATUS screen. This takes you to the individual sensor SETTINGS screen. Scroll and highlight **UPDATE RATE** and tap **SELECT**.



At the SENSOR UPDATE RATE menu use the arrow keys to move the cursor **LEFT / RIGHT** to the desired character position. Use the **UP / DOWN** arrows to add or subtract the minute or second numeric options. Tap **OK** to complete or **CANCEL** to return to settings screen.



***Note:** The sensor will finish the current cycle, then complete one full cycle at the previous update rate prior to switching to the new update time. While the request is waiting to be sent, three dots (...) are shown instead of the update interval.

3.2.9.3 Setting Sensor Vibration Axes

The sensors can be individually configured to measure all three vibration axes (XYZ) combined, a combination of, or independently. To set the preferred option, highlight **VIB AXES** from the sensor SETTINGS screen and tap **SELECT**.

Use the arrow keys to move cursor **LEFT / RIGHT** to the desired character position. Use the **UP / DOWN** arrows to toggle between 1 (enabled) or 0 (ignore).

VIBRATION AXIS			
CANCEL	←	↑	→
XYZ 001 —		↓	OK
CRI=0 WRN=0		13:46 NOV 24/10	

***Note:** The request is sent to the sensor at next complete update cycle. While the request is waiting to be sent, three dots (...) are shown instead of the axes selection.

3.2.9.4 Setting Temperature Warning and Critical Alarm Thresholds

To set the desired temperature warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI TEMP / HI-HI TEMP / LO TEMP / LO-LO TEMP**. Press **SELECT** when the desired option is highlighted.

The bottom left quadrant of the screen will display the current setting in Celsius (C) or Fahrenheit (F) or DISABLED if there is no current threshold setting. Select or modify the desired temperature by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired number, (temperature), has been selected press **OK** to save, or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

HI TEMP THRESHOLD			
CANCEL	←	↑	→
C 085 —		↓	OK
CRI=0 WRN=0		13:46 NOV 24/10	

3.2.9.5 Setting Acceleration Warning and Critical Alarm Threshold

To set the desired acceleration warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI ACCEL / HI-HI ACCEL / LO ACCEL / LO-LO ACCEL**.

The bottom left quadrant of the screen will display the current setting (in G's) or DISABLED if there is no current threshold setting. Select or modify the desired maximum warning or maximum critical value by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired value has been selected press **OK** to save or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

HI ACCEL THRESHOLD			
CANCEL	←	↑	→
G 08.0 —		↓	OK
CRI=0 WRN=0		13:46 NOV 24/10	

3.2.9.6 Setting Velocity Warning and Critical Alarm Thresholds

To set the desired velocity warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI VEL / HI-HI VEL / LO VEL / LO-LO VEL**

The bottom left quadrant of the screen will display the current setting (in mm/s) or DISABLED if there is no current threshold setting. Select or modify the desired maximum warning or maximum critical value by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired value has been selected press **OK** to save or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

HIGH VEL THRESHOLD			
CANCEL	◀	▲	▶
MM/S DISABLED		▼	OK
CRI=0 WRN=0		13:46 NOV 24/10	

3.2.9.7 Setting Sensor Lost Warning

A warning can be issued to alert that a sensor has not reported to the NEST Receiver for a pre-determined timeframe.

To set the amount of elapsed time a sensor can go without reporting, scroll down to, and highlight the **LOST WARN** parameter, and tap **SELECT** to access the LOST SENSOR WARNING screen.

SETTINGS: SUCT2TL		
BACK	LO-LO ACCEL= --- LO VEL= --- LO-LO VEL= ---	▲
SELECT	LOST WARN = 30 MIN TEMP MULT= 100 P TEMP CALIBRATION	▼
CRI=0 WRN=0		13:46 NOV 24/10

The bottom left quadrant of the screen will display the current setting (in minutes) or 0000 if no setting. Tap the **UP / DOWN** and **LEFT / RIGHT** arrows to set the desired value and **OK** to save. Press **CANCEL** to cancel the editing and return to the SENSOR SETTINGS screen.

LOST SENSOR WARNING		
CANCEL	◀	▶
MIN 0030	▼	OK
CRI=0 WRN=0		13:46 NOV 24/10

3.2.9.8 Setting Temperature Multiplier Factor

To change the default setting highlight the parameter and modify the PERCENT factor using the UP/DOWN and LEFT/RIGHT arrows. Tap **OK** to save.

THERM MULT FACTOR		
CANCEL	◀	▶
PERCENT 100.00	▼	OK
CRI=0 WRN=0		13:46 NOV 24/10

3.2.9.10 Temperature Calibration

To set from the settings screen, scroll to, and select **TEMP CALIBRATION** to calibrate the sensor temperature reading to a reference reading. Using the UP/DOWN and LEFT/RIGHT arrows enter the reference reading from an external device such as thermometer gun. Tap on **OK** to save the calibration or tap on **CANCEL** to return to the settings screen.

Example: If the WASP™ reads 23 °C and the thermometer gun you are reading reads 26 °C, set the REF point to 26 °C for that sensor. This automatically applies a preset multiplier to the sensor ensuring accuracy.

TEMP CALIBRATE (REF °C)			
CANCEL BACK	◀	▲	▶
REF °C 025.2		▼	OK
21.1°C CRI=4 WRN=1 13:46 NOV 24/10			

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

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. In some models the battery is a component of the circuit board and replacement is not necessary.

Sensors:

WARNING – DO NOT CONNECT OR DISCONNECT BATTERY UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

NE PAS BRANCHER OU DÉ-BRANCHER LA BATTERIE DANS UN ENVIRONNEMENT FLAMMABLE.

Portable/Battery Powered NEST Systems:

WARNING – DO NOT CHARGE BATTERY UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

NE PAS CHARGER LA BATTERIE À MOINS QUE L'ENVIRONNEMENT SOIS NON-FLAMMABLE.

WARNING – USE ONLY BATTERIES DESIGNED FOR THE ENVIRONMENT THE BOSSPAC NEST RECEIVER IS OPERATING IN.

UTILISER SEULEMENT LES BATTERIES CONÇU POUR L'ENVIRONNEMENT.

5. Contact Info

BossPac engineers can be reached at:

Email: support@bosspac.com

Web: www.bosspac.com

Phone: +1 403-216-1226

Toll Free: 866-616-1226

BossPac Engineering & Technology

1450 28th Street NE, Bay 8, Calgary, Alberta, CANADA T2A 7W6

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 licence-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.

Appendix A: Resetting The System Board

In the event the NEST Receiver becomes unresponsive, it may be necessary to reset the system board. This is accomplished by briefly shorting the pins on jumper J8. Depending on the PCB revision of your board, J8 will be located as shown in one of the following picture.

