

# Master Butchers Wingfield

Wireless Transmitter Temperature Monitoring & Alarming to SMS & Email

Presenters

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Project with Sudel industries Pty Ltd

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# First Aware of Plant Problem

If a monitoring system was available, the plant would never have reached this temperature



# 2nd Stage of Incident

- Introduction of Water to the Vessel caused the flash off to fire
- Because of CO2 Gas bottle Dosage System piped into ducting, the Fire was put out within 30 Seconds.

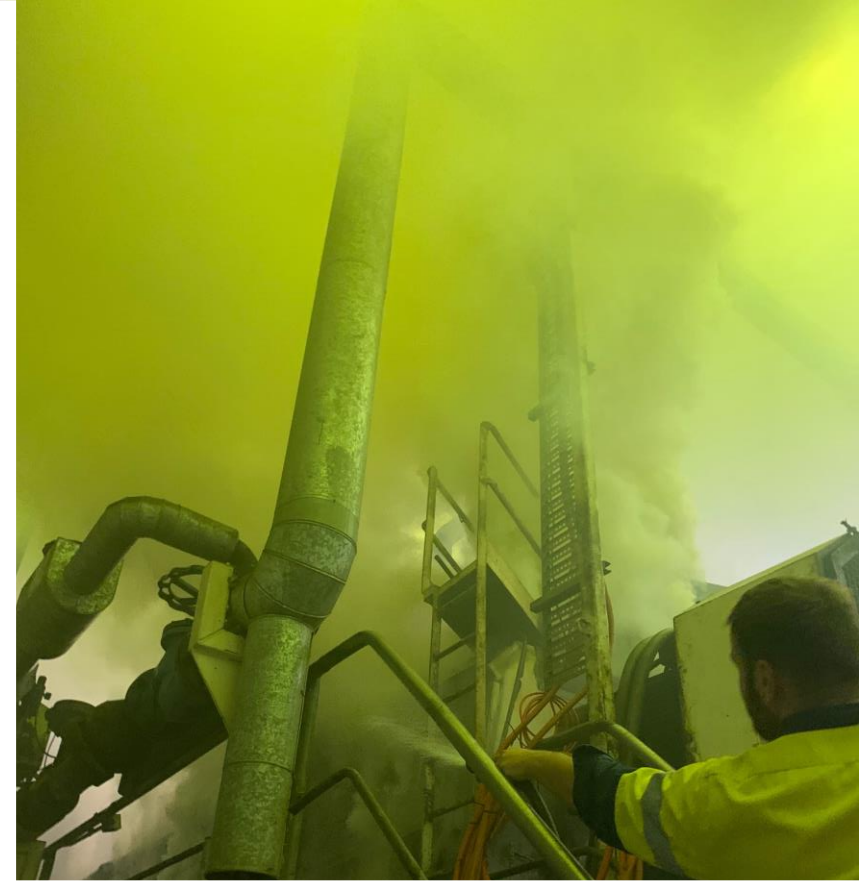




# CO2 Gas Bottle System & Injection Point



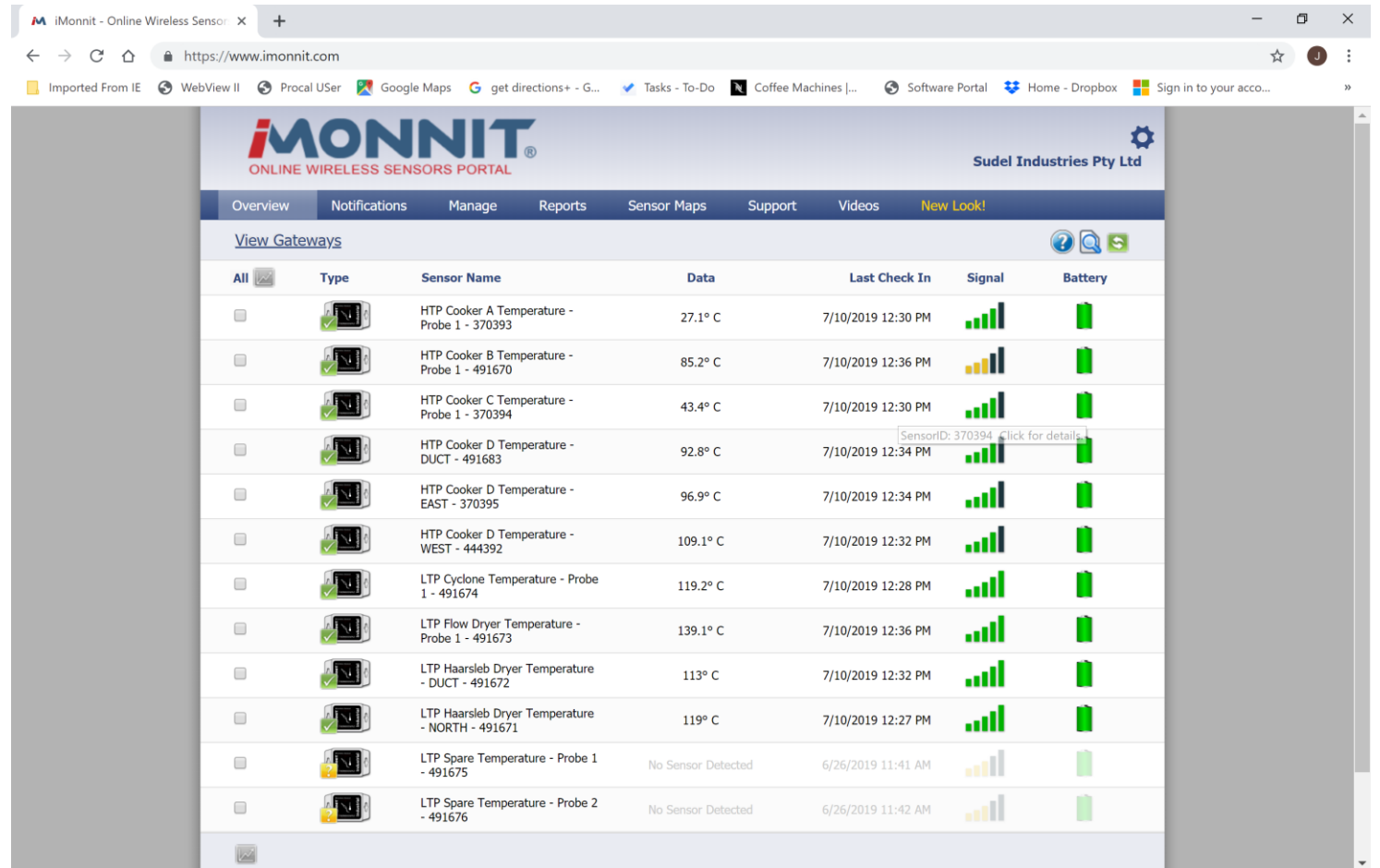




Aftermath of Cooker Fire

# Inception

- Due to a Near Miss on a Cooker at MBL SA, which could have caused a Catastrophic fire and potentially could have demolished the High Temperature Plant, it was determined that an automated monitoring & Alarming system was required to react to high risk plant situations when the plant was unattended
- The Original Brief was for a monitoring system that could SMS when High Temperatures were encountered
- Monitoring was required for Shifts when the Plant was unattended such as Public Holidays, or Weekend events



The screenshot displays the iMonnit Online Wireless Sensors Portal interface. The page features a navigation bar with tabs for Overview, Notifications, Manage, Reports, Sensor Maps, Support, Videos, and a New Look! button. Below the navigation bar, there is a table listing various sensors. Each row includes a checkbox, a sensor icon, the sensor name, the current data, the last check-in time, a signal strength indicator, and a battery level indicator. A tooltip is visible over the 'Signal' column for the sensor 'HTP Cooker D Temperature - DUCT - 491683', showing the sensor ID 370394 and a link to click for details.

All	Type	Sensor Name	Data	Last Check In	Signal	Battery
<input type="checkbox"/>		HTP Cooker A Temperature - Probe 1 - 370393	27.1° C	7/10/2019 12:30 PM		
<input type="checkbox"/>		HTP Cooker B Temperature - Probe 1 - 491670	85.2° C	7/10/2019 12:36 PM		
<input type="checkbox"/>		HTP Cooker C Temperature - Probe 1 - 370394	43.4° C	7/10/2019 12:30 PM		
<input type="checkbox"/>		HTP Cooker D Temperature - DUCT - 491683	92.8° C	7/10/2019 12:34 PM		
<input type="checkbox"/>		HTP Cooker D Temperature - EAST - 370395	96.9° C	7/10/2019 12:34 PM		
<input type="checkbox"/>		HTP Cooker D Temperature - WEST - 444392	109.1° C	7/10/2019 12:32 PM		
<input type="checkbox"/>		LTP Cyclone Temperature - Probe 1 - 491674	119.2° C	7/10/2019 12:28 PM		
<input type="checkbox"/>		LTP Flow Dryer Temperature - Probe 1 - 491673	139.1° C	7/10/2019 12:36 PM		
<input type="checkbox"/>		LTP Haarsleb Dryer Temperature - DUCT - 491672	113° C	7/10/2019 12:32 PM		
<input type="checkbox"/>		LTP Haarsleb Dryer Temperature - NORTH - 491671	119° C	7/10/2019 12:27 PM		
<input type="checkbox"/>		LTP Spare Temperature - Probe 1 - 491675	No Sensor Detected	6/26/2019 11:41 AM		
<input type="checkbox"/>		LTP Spare Temperature - Probe 2 - 491676	No Sensor Detected	6/26/2019 11:42 AM		

# Required System Functionality



Temperature Monitoring system to SMS & Email alarm when temperatures reached 1st Stage & 2<sup>nd</sup> Stage alarm setpoints



Wireless System to negate costly supply & install of cabling. Easy change of Location when required



Multiple person notification of Alarming by SMS or Email



Historical graphing of temperatures



Computer & Mobile phone Application access



Event notification if sensors or system/ Gateway fails in any way



Sensors to be able to be calibrated for Accuracy Compliance



Automatic Email Reporting for System Health



Administration Level for Secure Setup



Configurable Reporting System

# Scope of Work

System  
Supplied by  
Sudel industries  
Pty Ltd

Supply & Configuration of Wireless Thermocouple sensors and Transmitters ( 10Yr Battery Powered )

Supply & Configuration of 4G Gateway with Battery Backup

1 Year subscription for Online Software to monitor temperatures – 12 sensor allowable under this license

1 Year subscription for SMS alerts to multiple people

1 year of SIM Data allowance 10MB / Month, and credits for 100 SMS alerts

On-site Install & Testing of system for data logging & SMS alert



# Imonnit System Structure

Sensors

Gateway

Reports

Events

Maps

Sensors – Historical Trending / Events Logging / Settings Configuration / Calibration settings

Gateway – Configuration & History of Events

Reports – Gateway Battery Health & Signal / Battery Health of Transmitters

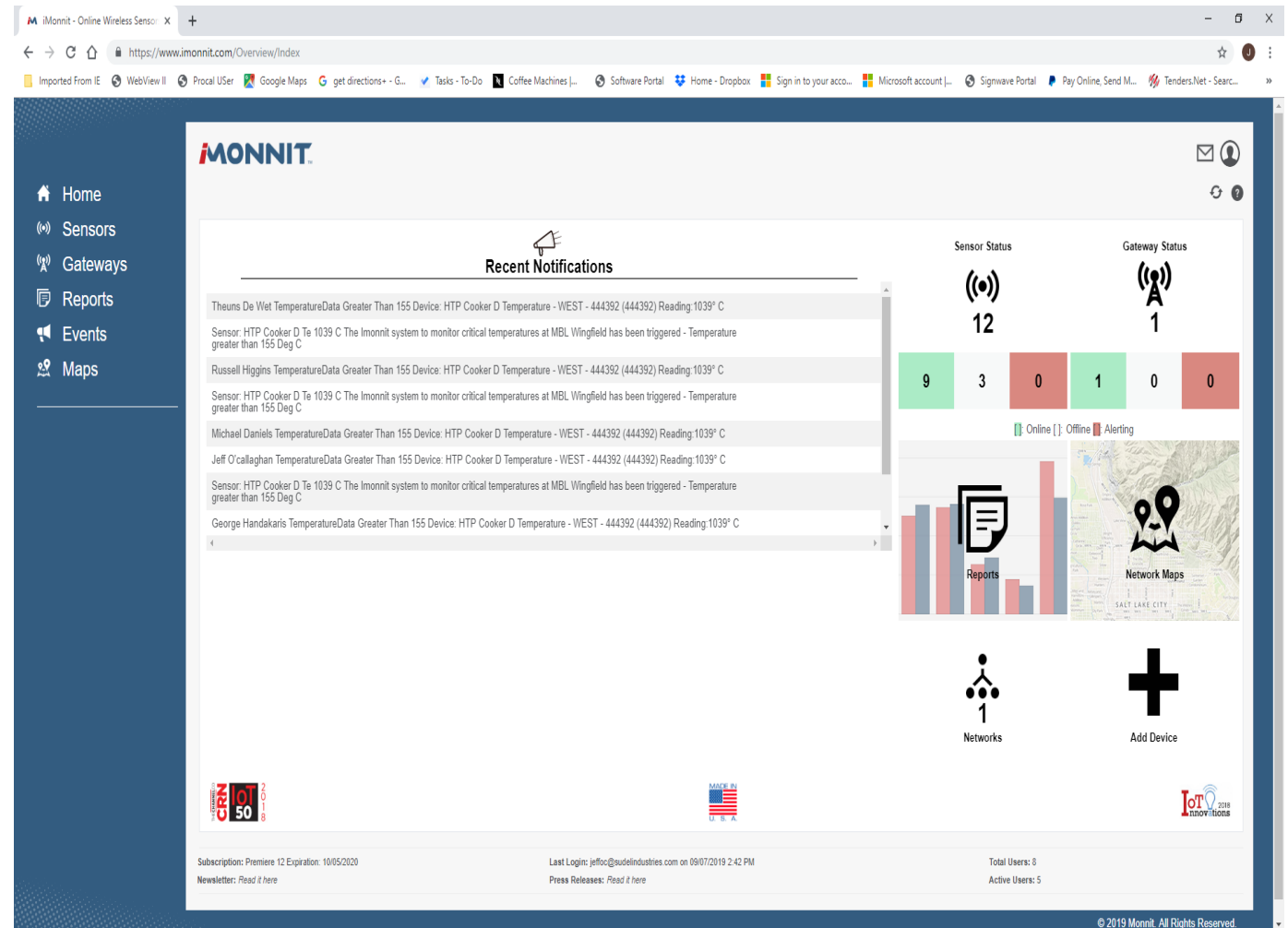
Events – Inactivity / High Alarm Temps / First Aware Message / Gateway on Battery

Maps – Have plant layout for easy location of Temperature Transmitters

# Online Monitoring & Alarming System

Home Screen Shows Snapshot of Sensor and Gateway Status

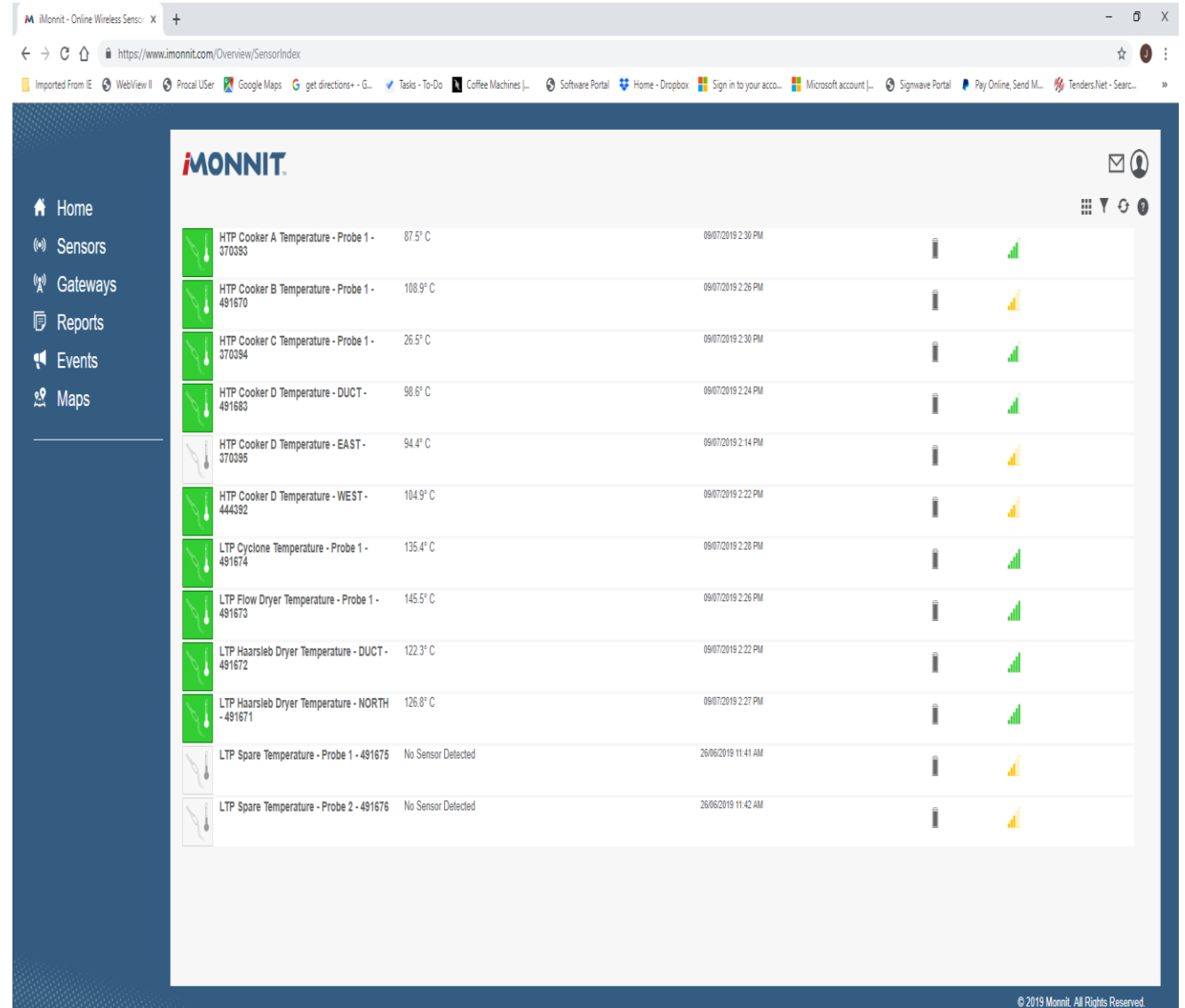
Launch point to View Sensors / Gateways / Reports / Events / Maps





# Sensors Screen – Temperature Reading

- Shows Green or Red status of alarm, current temperature reading, Wireless Transmitter Battery Status and Wireless transmitter Signal strength
- Can switch Sensors On or Off from being monitored
- Shows status if a Sensor is disconnected



# Sensor Screen Configuration

This screen gives access to the following

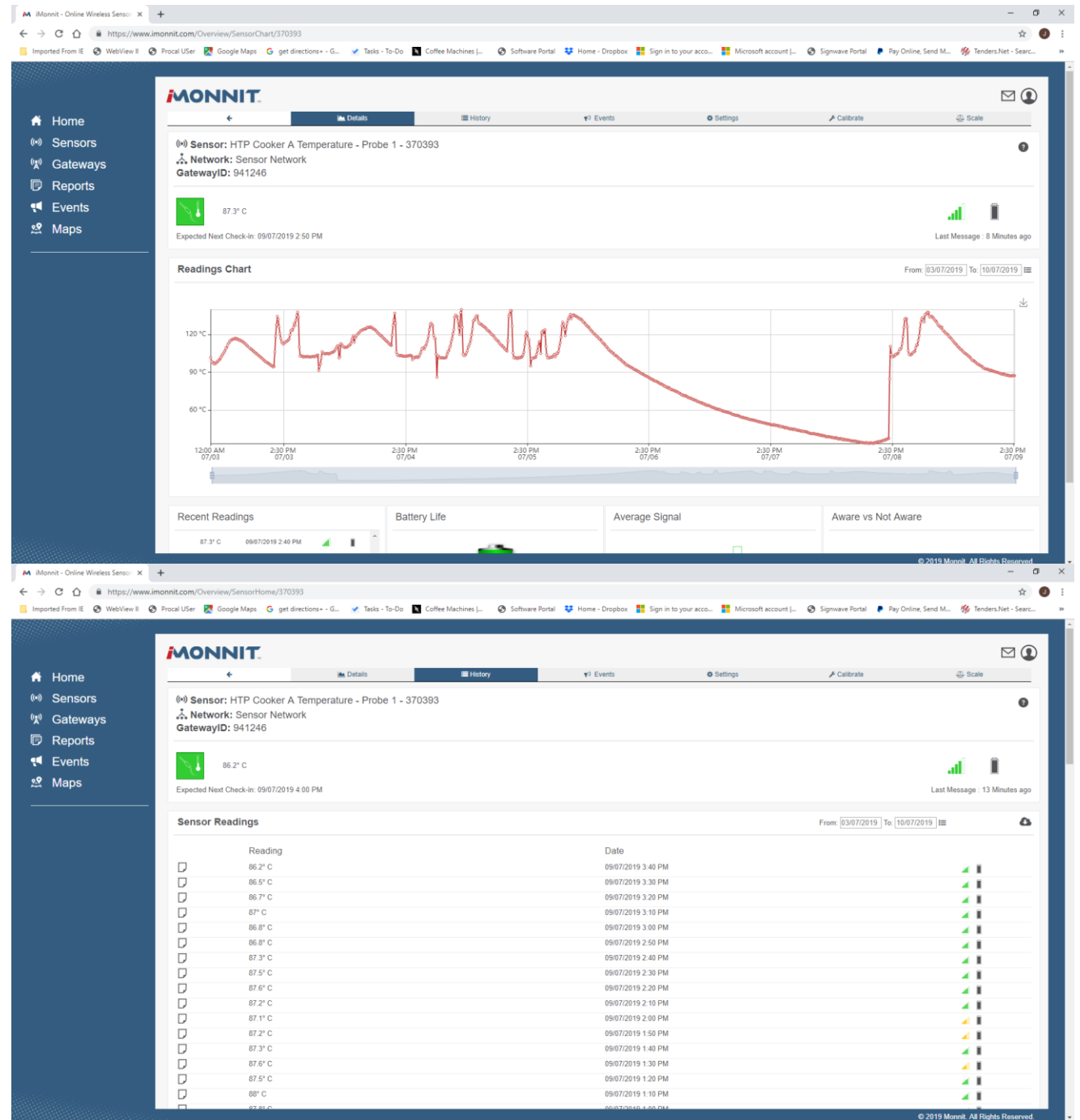
Details Graph – adjustable for detail

History – Shows date & Time of all alarms

Events – Turn Events on or off

Settings – Configuration of Aware State, Range, Sensor Name, Cycle Time

Calibration – Adjustment for accuracy





# Gateway Screen

This screen gives access to  
History / Events / Settings for  
the Wireless Gateway

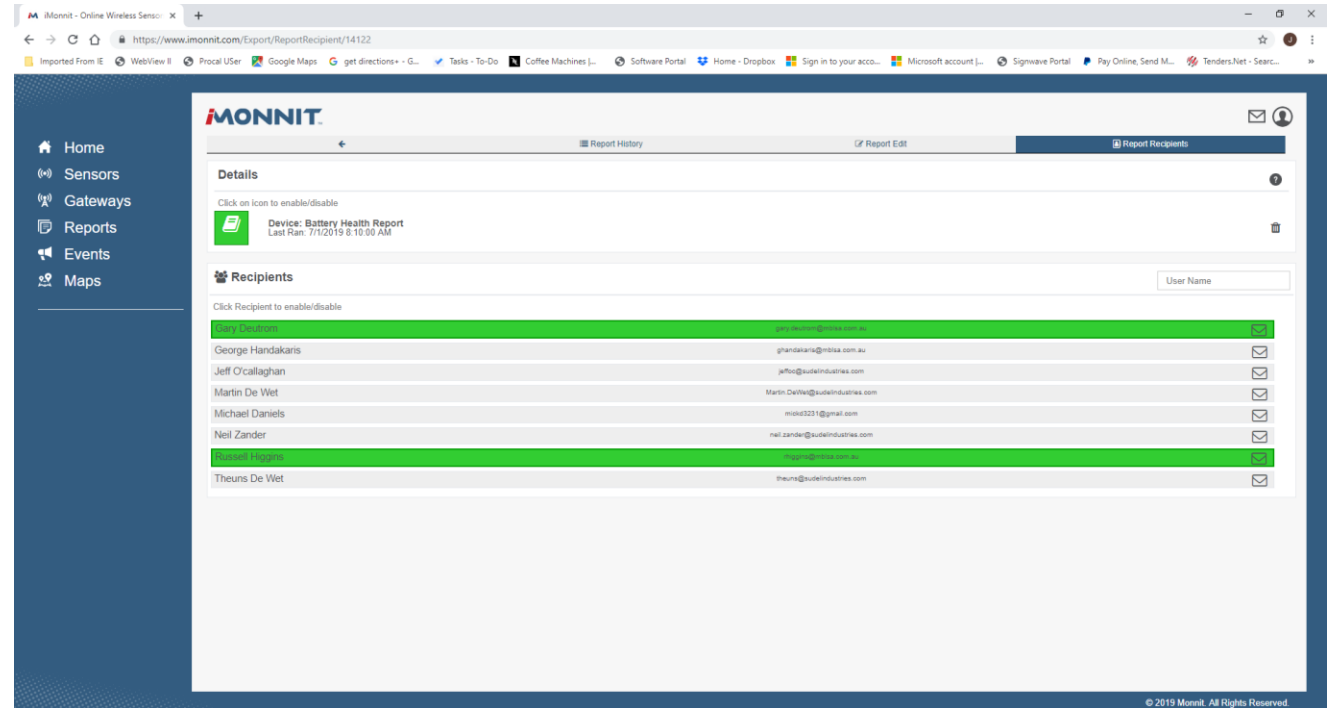
The screenshot displays the Monnit web interface for a specific gateway. The left sidebar contains navigation links: Home, Sensors, Gateways, Reports, Events, and Maps. The main content area is titled 'Gateway: LTE Gateway - 941246' and 'Network: Sensor Network'. It shows a status icon, a green checkmark, and the text 'Expected Next Check-in: 09/07/2019 3:01 PM'. Below this is a 'Gateway Messages' section with a date range filter set to 'From: 03/07/2019 To: 10/07/2019'. The messages are listed in a table with columns for Date, Type, Signal, Power, and Messages.

Date	Type	Signal	Power	Messages
09/07/2019 2:45 PM	Data		Line Powered	25
09/07/2019 2:32 PM	Data		Line Powered	14
09/07/2019 2:32 PM	Gateway Management		Line Powered	
09/07/2019 2:17 PM	Data		Line Powered	16
09/07/2019 2:02 PM	Data		Line Powered	14
09/07/2019 1:47 PM	Data		Line Powered	25
09/07/2019 1:33 PM	Data		Line Powered	15
09/07/2019 1:33 PM	Gateway Management		Line Powered	
09/07/2019 1:18 PM	Data		Line Powered	15
09/07/2019 1:03 PM	Data		Line Powered	15
09/07/2019 12:48 PM	Data		Line Powered	26
09/07/2019 12:34 PM	Data		Line Powered	14
09/07/2019 12:34 PM	Gateway Management		Line Powered	
09/07/2019 12:19 PM	Data		Line Powered	16
09/07/2019 12:04 PM	Data		Line Powered	37
09/07/2019 11:49 AM	Data		Line Powered	21
09/07/2019 11:35 AM	Data		Line Powered	16
09/07/2019 11:35 AM	Gateway Management		Line Powered	
09/07/2019 11:20 AM	Data		Line Powered	12
09/07/2019 11:05 AM	Data		Line Powered	14
09/07/2019 10:50 AM	Data		Line Powered	23
09/07/2019 10:36 AM	Data		Line Powered	14

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# Reports Screen

- Configure system to Auto email reports on Wireless Transmitter battery Health, and Signal Strength in Excel format

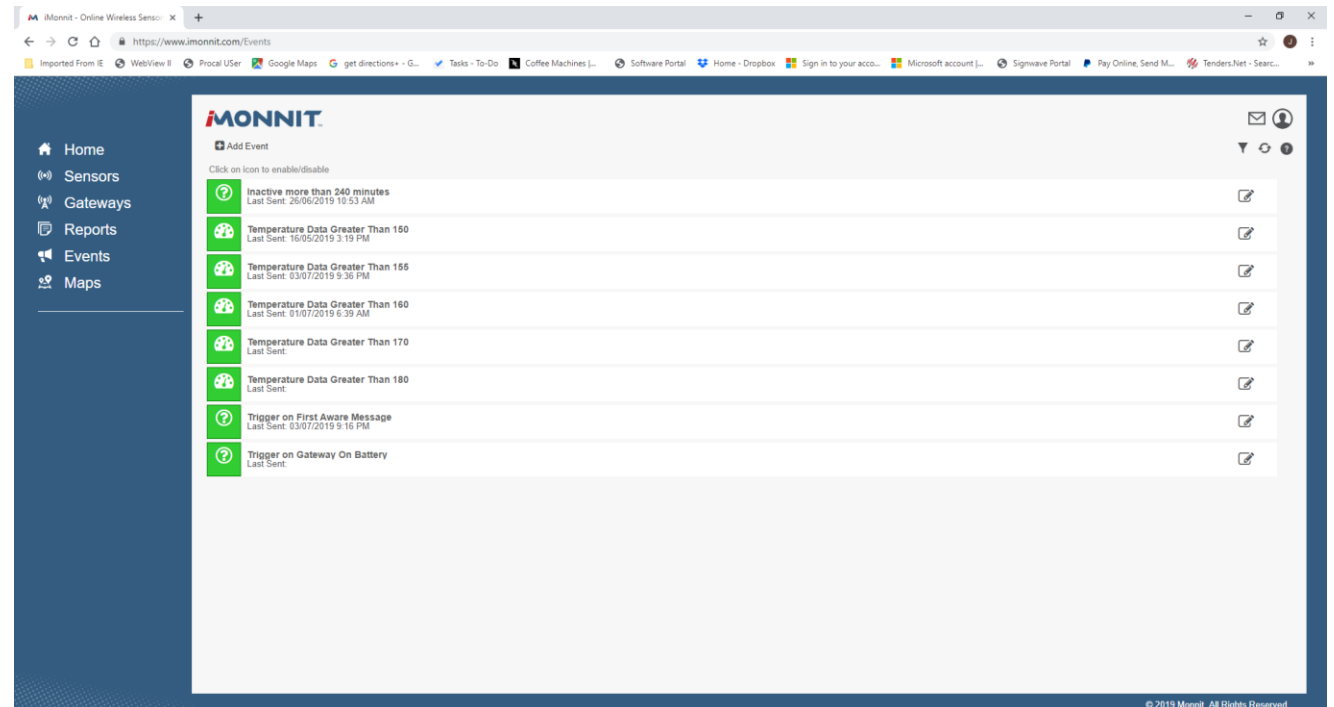


DeviceID	DeviceType	DeviceName	LastSignalStrength	LastBatteryReading	LastCommunicationDate	NetworkName	Last Gateway Sensor Communicated On
941246	Gateway	LTE Gateway - 941246	100	101	7/01/19 14:04	Sensor Network	
370393	Sensor	HTP Cooker A Temperature - Probe 1 - 370393	36	100	7/01/19 14:00	Sensor Network	941246
370394	Sensor	HTP Cooker C Temperature - Probe 1 - 370394	36	100	7/01/19 14:00	Sensor Network	941246
370395	Sensor	HTP Cooker D Temperature - EAST - 370395	48	100	7/01/19 13:55	Sensor Network	941246
444392	Sensor	HTP Cooker D Temperature - WEST - 444392	58	100	7/01/19 14:04	Sensor Network	941246
491670	Sensor	HTP Cooker B Temperature - Probe 1 - 491670	43	100	7/01/19 13:58	Sensor Network	941246
491671	Sensor	LTP Haarsleb Dryer Temperature - NORTH - 491671	100	100	7/01/19 13:58	Sensor Network	941246
491672	Sensor	LTP Haarsleb Dryer Temperature - DUCT - 491672	100	100	7/01/19 14:03	Sensor Network	941246
491673	Sensor	LTP Flow Dryer Temperature - Probe 1 - 491673	100	100	7/01/19 13:56	Sensor Network	941246
491674	Sensor	LTP Cyclone Temperature - Probe 1 - 491674	100	100	7/01/19 13:58	Sensor Network	941246
491675	Sensor	LTP Spare Temperature - Probe 1 - 491675	41	100	06/26/2019 2:11 AM	Sensor Network	941246
491676	Sensor	LTP Spare Temperature - Probe 2 - 491676	43	100	06/26/2019 2:12 AM	Sensor Network	941246
491683	Sensor	HTP Cooker D Temperature - DUCT - 491683	46	100	7/01/19 14:04	Sensor Network	941246



# Event Monitoring

- Trigger Events to Alarm and notify when Transmitters do not respond or communicate to Gateway for long periods of time to ensure operation
- Trigger Event when above Specific Temperatures for First Aware or 1st Alarm
- Trigger Event when above specific temperatures for 2<sup>nd</sup> Alarm
- Trigger Event when Power is lost to Gateway – On Battery



# Event monitoring

- Set the Message that is sent via Email, and / or Message sent via SMS Text when a First or Second stage event occurs, and who the recipients are for Email or SMS Text

The screenshot displays the Monnit Online Wireless Sensor web interface. The left sidebar contains navigation links: Home, Sensors, Gateways, Reports, Events, and Maps. The main content area is titled 'Event Information' and shows a specific event: 'Temperature Data Greater Than 150' with a last sent time of '3:19 PM, 16/05/2019'. Below this, the 'Add Action' section is visible, including 'Alert Users' settings. The 'Notification Settings' section allows configuring the subject and message for the event. The 'Notify Users' section lists recipients and their notification preferences for Email, SMS, and Voice.

**Event Information**

Click on icon to enable/disable

**Temperature Data Greater Than 150**  
Last Sent: 3:19 PM, 16/05/2019

**Add Action**

**Alert Users**

**Notification Settings**

Subject: The Monnit system to monitor critical temperatures at MBL Wingfield has been triggered - Temperature

Message:   
Temperature Data Greater Than 150  
Date: (Date) - Date the Notification was sent  
Time: (Time) - Time the Notification was sent  
Device: (Name) (ID)  
Reading: (Reading)

**Notify Users**

Recipient	Email	SMS	Voice
Gary Deutrom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
George Handakaris	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Jeff O'callaghan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Martin De Wet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Michael Daniels	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Neil Zander	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Russell Higgins	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Theuns De Wet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**SMS Message (160 max):**  
The Monnit system to monitor critical temperatures at MBL Wingfield has been triggered - Temperature greater than 150 Deg C

**Voice Text:**  
(If left blank, default message used)

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# Event History

View History of any Monitored Event. E.g. Temperature greater than 155 Event

The screenshot displays the Monnit Online Wireless Sensor web interface. The browser address bar shows the URL <https://www.monnit.com/Events/History/184110>. The interface features a left-hand navigation menu with links to Home, Sensors, Gateways, Reports, Events, and Maps. The main content area is titled "Event History" and shows details for a specific event.

**Event Information**

Click on icon to enable/disable

**Temperature Data Greater Than 155**  
Last Sent: 9:36 PM, 03/07/2019

**Event History** From: 01/06/2019 To: 10/07/2019

1039° C		Date: 03/07/2019 9:36 PM		Disarmed	
Type	Target	Status	Date	Type	Target
<input type="checkbox"/> Text (SMS)	George Handakakis	delivered:	03/07/2019 9:36 PM	<input type="checkbox"/> Text (SMS)	George Handakakis
<input checked="" type="checkbox"/> Email	Jeff O'callaghan	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	Jeff O'callaghan
<input checked="" type="checkbox"/> Email	Michael Daniels	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	Michael Daniels
<input type="checkbox"/> Text (SMS)	Michael Daniels	delivered:	03/07/2019 9:36 PM	<input type="checkbox"/> Text (SMS)	Michael Daniels
<input checked="" type="checkbox"/> Email	Russel Higgins	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	Russel Higgins
<input type="checkbox"/> Text (SMS)	Russel Higgins	delivered:	03/07/2019 9:36 PM	<input type="checkbox"/> Text (SMS)	Russel Higgins
<input checked="" type="checkbox"/> Email	Theuns De Vlet	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	Theuns De Vlet
<input checked="" type="checkbox"/> Email	Gary Deudrom	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	Gary Deudrom
<input type="checkbox"/> Text (SMS)	Gary Deudrom	delivered:	03/07/2019 9:36 PM	<input type="checkbox"/> Text (SMS)	Gary Deudrom
<input checked="" type="checkbox"/> Email	George Handakakis	Delivered	03/07/2019 9:36 PM	<input checked="" type="checkbox"/> Email	George Handakakis

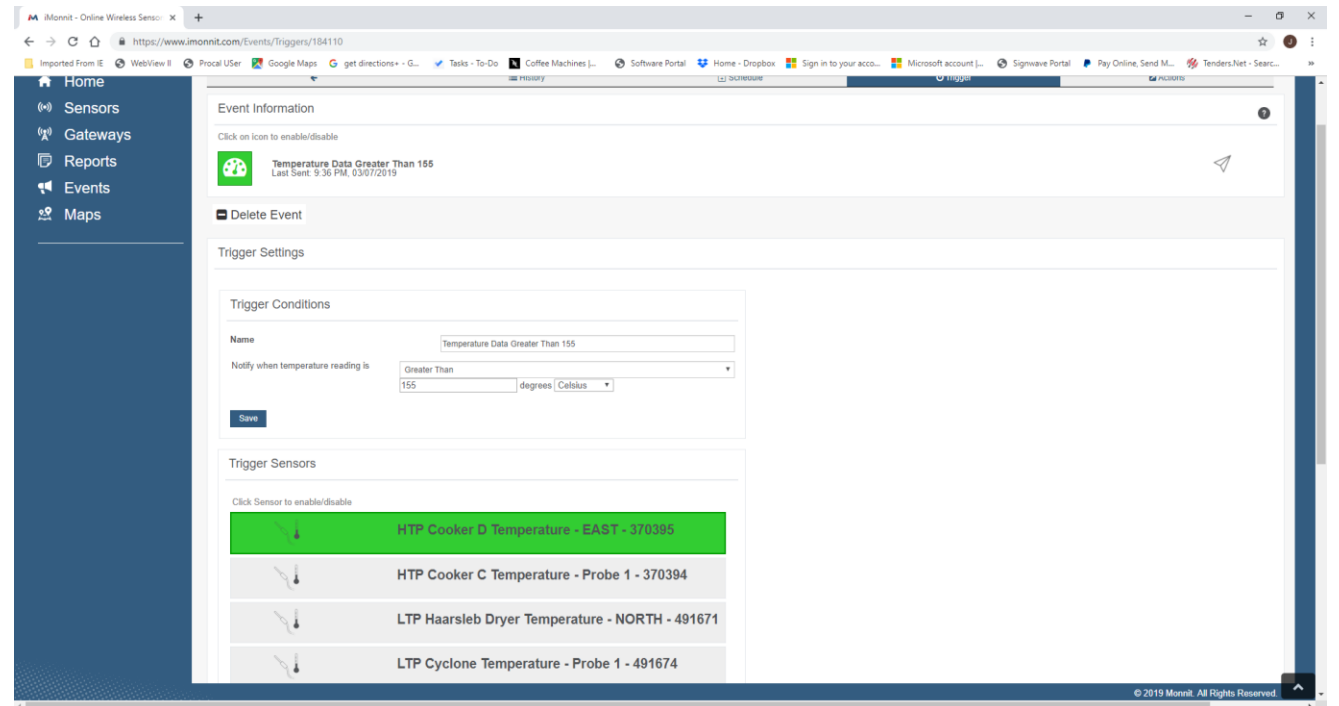
  

392.2° C		Date: 03/07/2019 9:31 PM		Disarmed	
Type	Target	Status	Date	Type	Target
<input checked="" type="checkbox"/> Email	Jeff O'callaghan	Delivered	03/07/2019 9:31 PM	<input checked="" type="checkbox"/> Email	Jeff O'callaghan
<input checked="" type="checkbox"/> Email	Michael Daniels	Delivered	03/07/2019 9:31 PM	<input checked="" type="checkbox"/> Email	Michael Daniels
<input type="checkbox"/> Text (SMS)	Michael Daniels	delivered:	03/07/2019 9:31 PM	<input type="checkbox"/> Text (SMS)	Michael Daniels
<input checked="" type="checkbox"/> Email	Russel Higgins	Delivered	03/07/2019 9:31 PM	<input checked="" type="checkbox"/> Email	Russel Higgins
<input type="checkbox"/> Text (SMS)	Russel Higgins	delivered:	03/07/2019 9:31 PM	<input type="checkbox"/> Text (SMS)	Russel Higgins

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# Event Trigger

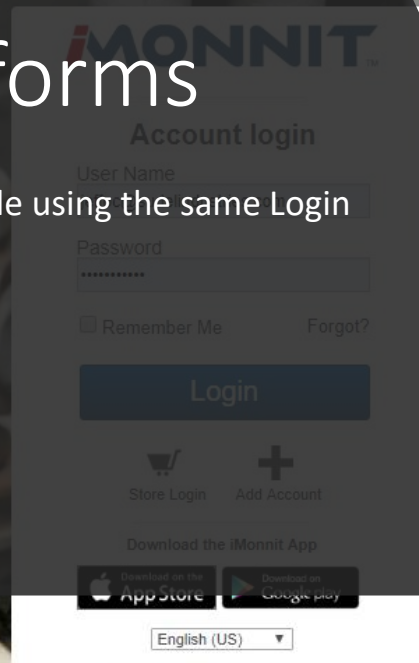
Select Which Tags are monitored in any event



# Multiple Platforms

- Access to the system is available using the same Login credentials

Computer – Internet  
and  
Mobile Phone application



The image shows a screenshot of the iMonnit web application's login page. It features a dark grey background with the iMonnit logo at the top. Below the logo, there is a section titled 'Account login'. This section contains input fields for 'User Name' and 'Password', a 'Remember Me' checkbox, and a 'Forgot?' link. A large 'Login' button is positioned below these fields. At the bottom of the login section, there are links for 'Store Login' and 'Add Account', and a prompt to 'Download the iMonnit App' with buttons for the App Store and Google Play. A language dropdown menu is located at the very bottom, currently set to 'English (US)'.

**iMONNIT™**



**Account login**

User Name

Password

☐ Remember Me [Forgot?](#)

**Login**

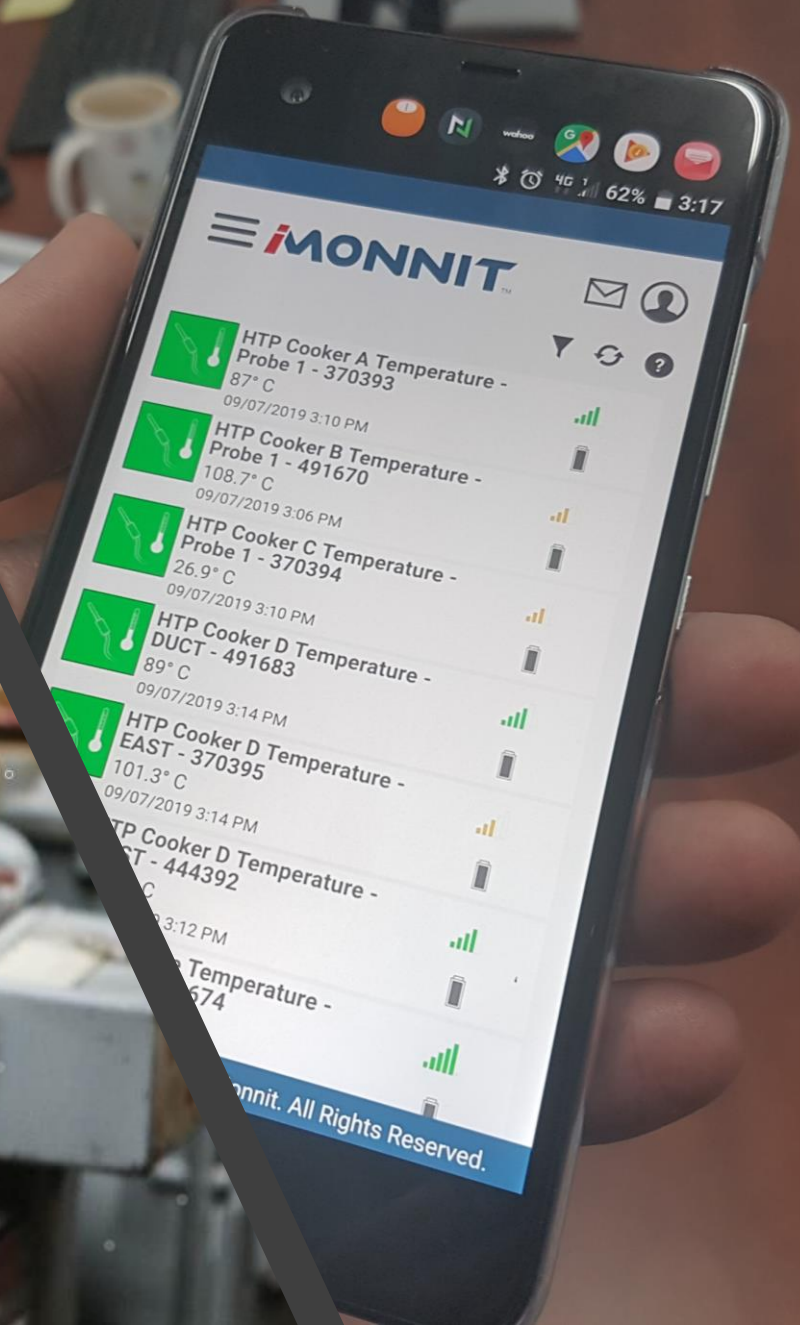
 

[Store Login](#) [Add Account](#)

Download the iMonnit App

[Download on the App Store](#) [Download on Google play](#)

English (US) ▼



# Future Expansion



Capability of Many sensors – Temperature / Humidity / Water Detection / Open & Closed Door / Motion detection / Gas Detection / Electrical Metering / Light / Pressure / Diff Air Pressure / Seat Occupancy / Air Velocity and many others



Software License Expandable for Increased Monitored Devices as required



Sudel Automatically Notify when SMS Credits about to Expire / or Data Allowance has been exceeded. Automatic Renewal of Software Licensing by Sudel and invoicing to ensure operation of system



Capability of Multiple Sites



Feedback Into Control System to Trigger CO2 Purge in Ductwork or Fire Control System





# Project Complete & Operational

Project was completed in desired timeframe to quoted budgets and exceeded customer expectation

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561 Grand Junction Road  
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# Question & Answer Time

- Please ask any question on this system