

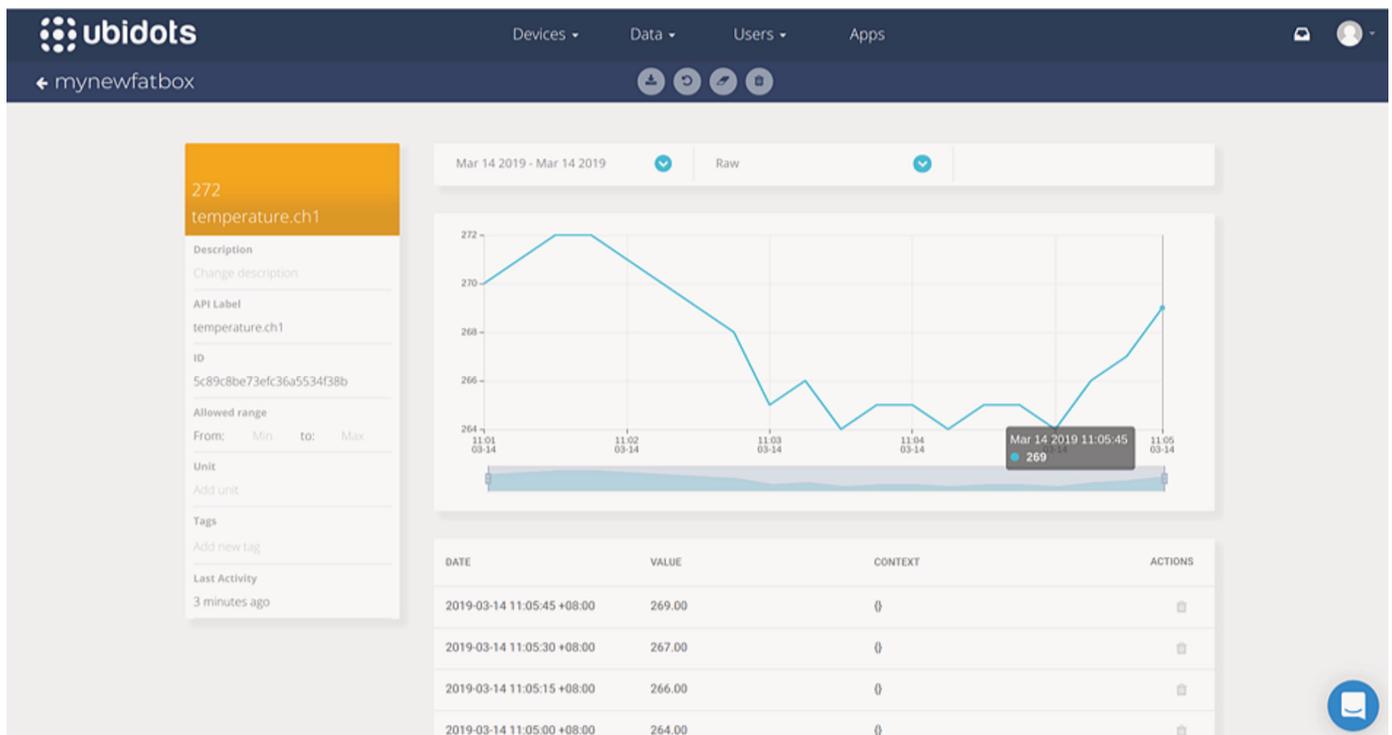
# Ubidots IoT Quickstart Guide

Ubidots is a low-code IoT development platform for engineers and developers without the time or energy to build an entire, production-ready IoT application themselves. Ubidots provides the essential building blocks of smart products and services—such as Web or Mobile IoT Apps — without having to hire an expensive team of engineers to develop and maintain a customized solution.

This quick start guide is for engineers to quickly get their Modbus device wired up, collecting data and remotely managed on a Ubidots cloud application using the dual SIM FATBOX G3 IIoT gateway. With Ubidots client integrated on the FATBOX G3, you can easily collect data from remote industrial devices like power meters, PLCs or sensors.

The programmable FATBOX G3, equipped with MODBUS (RTU and TCP), Serial RS-485/232, Ethernet, CAN Bus, ZigBee, WIFI and BLE is a robust IIoT device gateway for remote monitoring on Ubidots using a cellular (LTE/3G) backhaul or the existing ADSL/Fibre.

Below you can see a sample Ubidots Device/Variable overview from our demo kit.



In the following pages, we will show you step-by-step, how to get your own device data streamed on the Ubidots IoT Development Platform

# What You Need To Start

## The Assembly

### 1. FATBOX G3 AZURE IOT STARTER KIT

Available at <https://www.amplified.com.au/azure-iot-starter-kit>

### 2. A SIM CARD

Get this from your local operator/Telco.  
You will also need to get the SIM card's APN from them.

### 3. A UBIDOTS ACCOUNT

Create an Ubidots Account at <https://ubidots.com>

### 4. A SMALL PHILLIPS SCREWDRIVER

#### Optional Downloads

### 5. WINSCP (only for Windows Users)

Download from <https://winscp.net/eng/download.php>  
You can skip this step if you have a flash drive handy.

#### FATBOX G3 Ubidots IOT Starter Kit

#### 1 x FATBOX G3



Industrial 3G Gateway  
with Azure IOT Client &  
MODBUS RTU/TCP server

#### 1 x DIGITAL INPUT MODULE



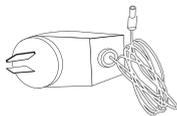
4 x digital inputs  
(or switch contacts)  
MODBUS RTU slave unit

#### 1 x ANALOG INPUT MODULE



2 x analog input  
MODBUS RTU  
slave unit.

#### 2 X 24VDC POWER SUPPLY 100-240 VAC



1 for the FATBOX G3  
1 for the MODBUS Slave units

#### 1 X CELLULAR ANTENNA



Cellular antenna with  
2m wire

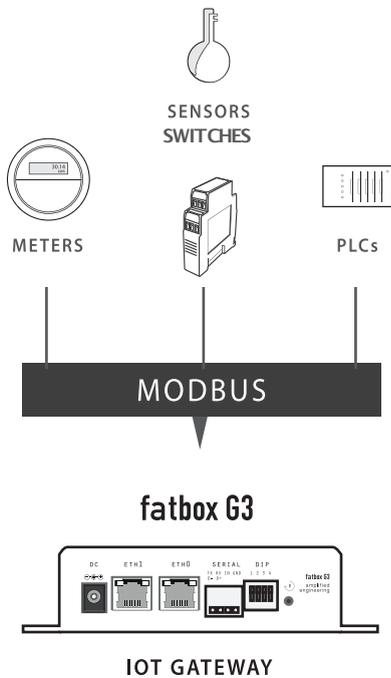
#### 1 X TEMPERATURE SENSOR



Temperature sensor probe  
(0c - 400c) with 1m wire

# Set Up An Overview

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## 1 Wiring Inputs to the NOVUS Modules

To collect data from industrial MODBUS RTU/TCP Power meters, PLCs or Sensors

[pg. 4]

## 2 Setting Up the FATBOX G3

Configure your FATBOX G3 to stream data to Ubidots over a 3G network

[pg. 5-6]

## 3 Setting Up your Ubidots Report

Register your FATBOX G3 as a new device with Ubidots & access your report

[pg. 7-10]

*approx. set up time: 2 hours*

# 1. Wiring Inputs To The NOVUS Modules

This section describes how to wire up the MODBUS RS485 I/O modules included in the starter kit to the FATBOX G3 and also to its 24VDC power supply. It will also show you how to wire up the temperature sensor to the analog MODBUS module. The following are simplified wiring diagrams for the NOVUS Automation I/O modules. For detailed instructions please refer to the instruction manual. ▲

## Instruction Manual Links:

### Analog Input Modules

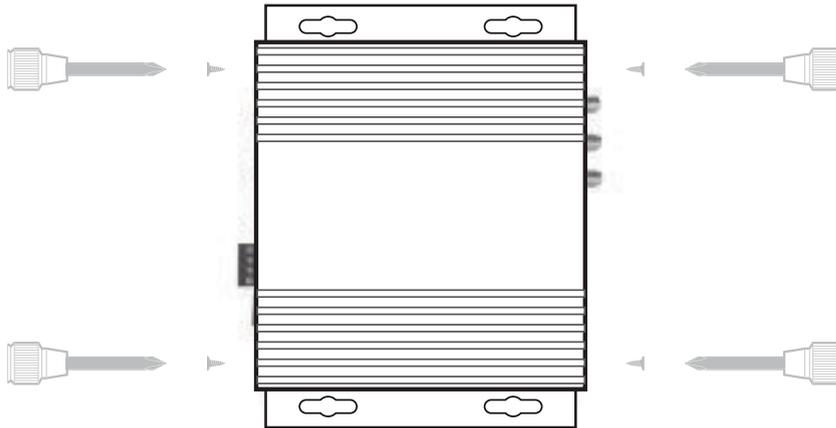
<https://www.novusautomation.co.uk/digirail2a>

### Digital Input Module

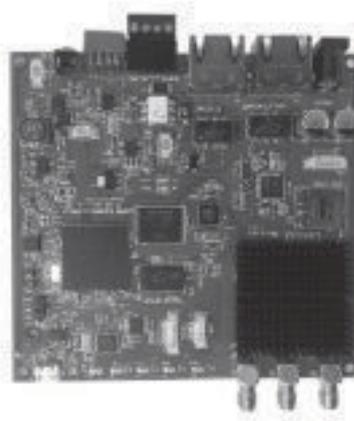
<https://www.novusautomation.co.uk/digirail4c>

**Before you begin wiring, make sure to insert the an active SIM card into the FATBOX G3:**

1. Dismantle the casing cover and slide out the PCB. Avoid touching the electronics, handle the board by the edges.



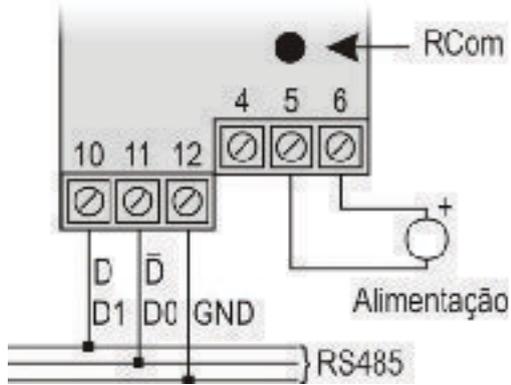
2. Insert your micro SIM card into the SIM card slot. Push the metal latch left/right to lock/unlock. Reassemble the metal casing.



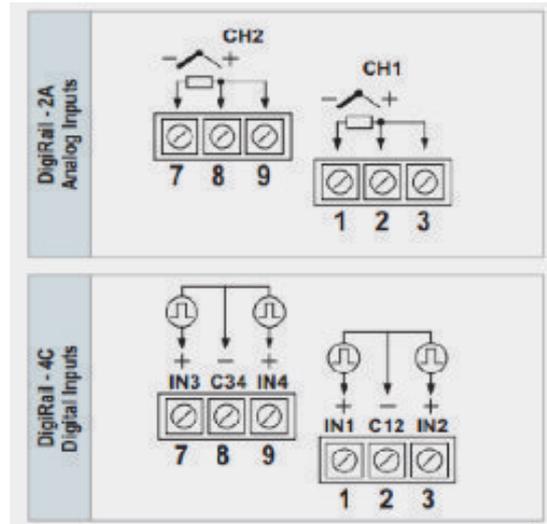
(SIM card's orientation fits as shown)

3. To finish, connect the power adapter/antenna and plug the Ethernet cable to your pc. Power up the FATBOX G3.

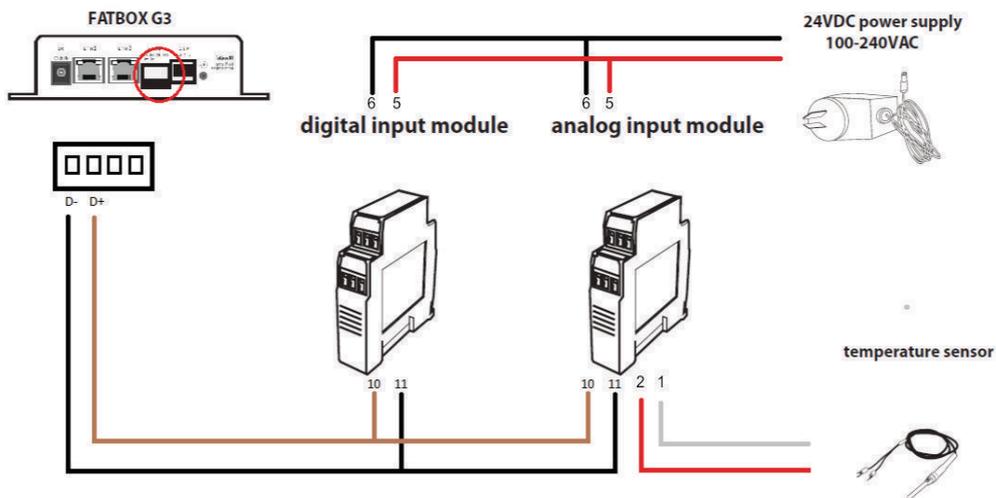
**Wiring up:**



*The communications/power are the same for both modules*



*Input connections for individual modules are shown here*



# 2. Setting Up The FATBOX G3

## 2A. Log into the FATBOX web console

Connect the Ethernet cable from your computer to the FATBOX [ETH0 port]. Then, log into the web browser using the IP address[192.168.1.1].  
By default the username is **admin** and password is **fatbox12345**

## 2B. Configuring the cellular (3G) settings

Go to <Cellular Settings>, and enter in the APN details you got from your SIM card operator. Then to confirm the settings, click the **UPDATE** button.

## 2C. Reboot the FATBOX to save your 3G settings

For the cellular settings we also want to reboot the FATBOX G3 to ensure that it is saved. Go to the <Management>, scroll down and select the option to reboot.

## 2D. Ensure the G3 is connected to a cellular network

You can now do a quick & easy test here to check that the FATBOX G3 is connected to the 3G network.

To do this go to the <System Status> Tab and scroll to the bottom and click the button that says **"PING TEST"**.



If it returns the status "OK", congrats you are connected to the Internet!

If the status returns as "FAIL" repeat steps 2B & 2C to ensure that you have entered in the right APN details. If that is correct but you still do not get an Internet connection, please contact our technical support at:

support@amplified.com.au

## 2E. Ensure the G3 is receiving data from the sensor

Once you have confirmed that the G3 is connecting to the Internet, you can now also check whether your G3 is receiving data from your sensor simply by going on the <IoT Hardware> tab.



Click on the **"JSON DATA"** link (see above). This will open up in a new tab in your browser with the latest JSON message string collected by the G3.



If you see a JSON string similar to the one above it shows that your G3 is successfully receiving data from your sensor, congratulations!

However if you see an error message (like the one below), go back and check on your wiring set up again. [pg. 5].

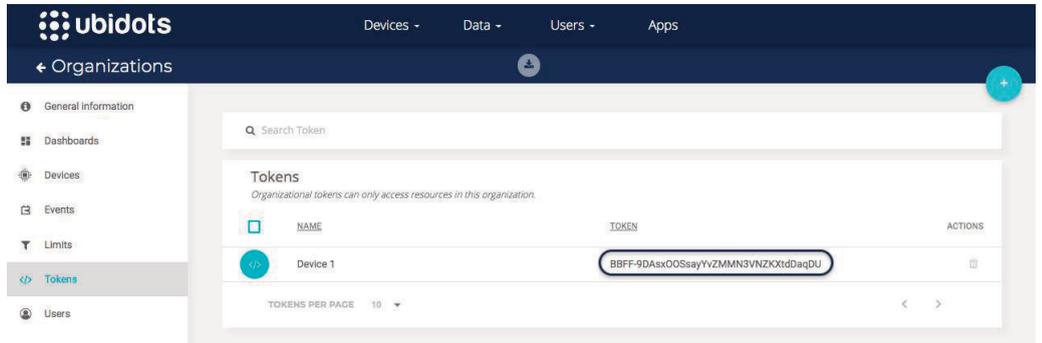


Or if no data (i.e. JSON message string) appears, go to page 9 of this guide to run the troubleshooting steps .

# 3. Set Up Your Ubidots Report

## 3A. Obtain your Ubidots token

1. Log into your Ubidots account.
2. Go to <Users\Organizations>.
3. Create a new organization by pressing the plus (+) icon located at the upper right side of the platform. Enter the organization once it gets created.
4. Go to the <Tokens> tab to create a new token pressing the plus (+) icon. Assign the token name of your preference, and press **ACCEPT**.
5. Copy the token created.

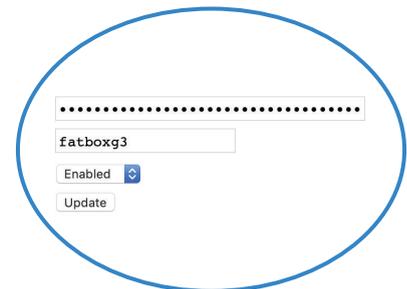


## 3B. Set Up the FATBOX G3 IoT Client

1. Now, login to your FATBOX G3 and go the <IoT Clients> tab.
2. In the 'Client Setup :: Ubidots' menu section and paste that Token you copied from Ubidots into the Device Token field.
3. Also, give your new FATBOX a name in 'Device Name' (no spaces or special characters and keep it within a reasonable string length e.g. 24 characters).
4. Choose 'Enabled' in the Enable client.
5. To save the changes made, make sure to press the **UPDATE** button.

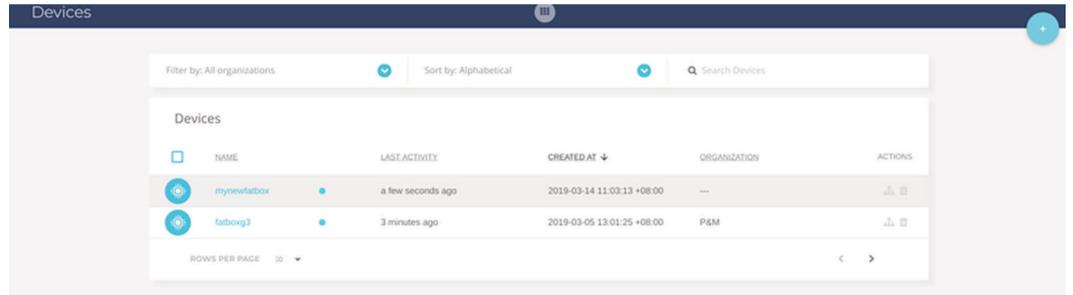
- IPsec VPN
- Port Settings
- IoT Hardware
- IoT Client**
- SNMP
- Management
- System Status
- Logout

- Client Setup :: ubidots
- [G3 ubidots IoT Quick Start Guide.pdf](#)
- Device Token
- Device Name
- Enable client

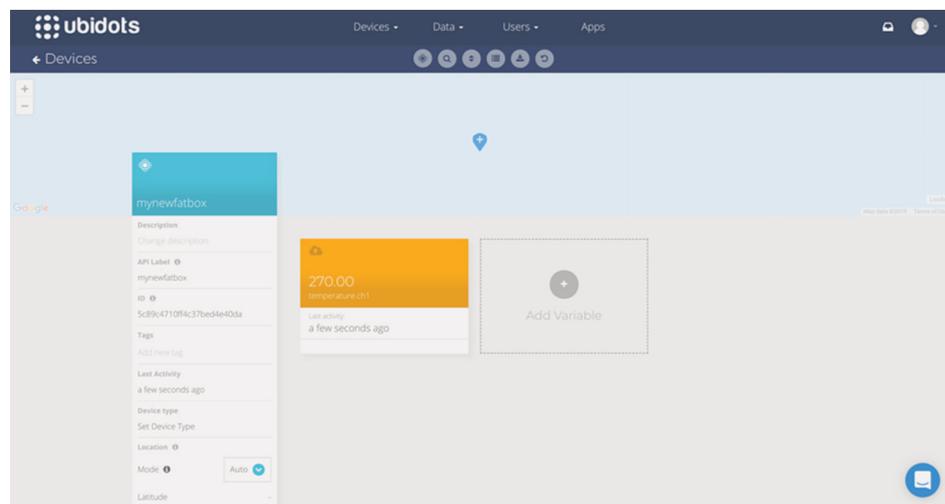


### 3C. Access your data report on Ubidots

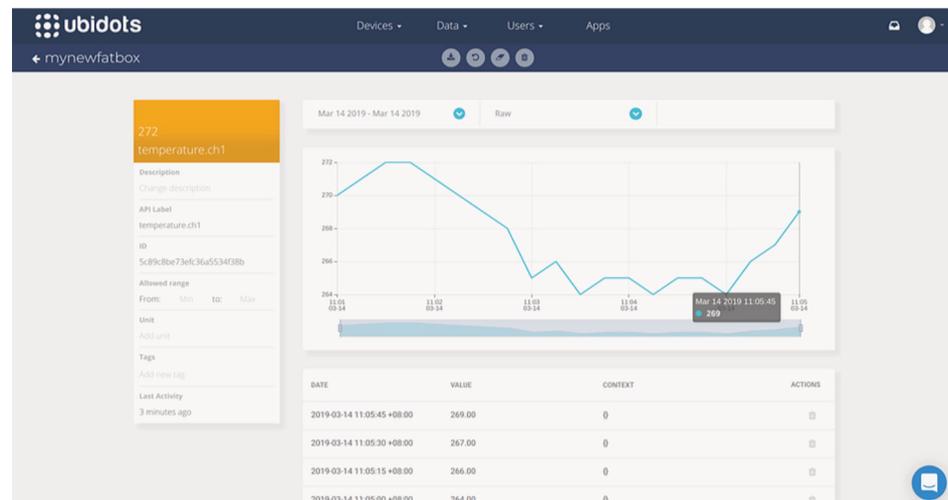
If everything has been setup correctly, your FATBOX will start sending the JSON sensor data that you have generated from Section 2 to Ubidots. You will also be able to see your new FATBOX G3 created and listed under your 'Devices' in your Ubidots account. Note: This process will take from 3 to 4 minutes.



Click on your new device and you should see the latest sensor data sent from your FATBOX, e.g. if using our FATBOX G3 Ubidots IoT Starter Kit, you will see similar data as following:



Click on the 'data' itself and you will see a chart and table of the data (Dots) just received from your FATBOX gateway.



**CONGRATULATIONS!** You have successfully set up the data reporting from your device, streamed and visualised it onto Ubidots!

Thank you and we look forward to working with your team!

For more information about all the Ubidots' features visit Ubidots Help Center (<http://help.ubidots.com>)

# Annex Troubleshooting Guide

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## Configure the Serial Port settings

Go to <Port Settings>. Ensure your serial port parameters are configured as follows:

Serial Port Parameters	
Port Mode Selection	RS-485
Speed	9600 e.g. 9600, 19200, 38400, 57600, 115200
Data Bits	8 e.g. 7, 8
Parity	EVEN
Stop Bits	1

Remember to confirm the settings by clicking the **UPDATE** button.

## Ensure your G3 is receiving data from the sensor

Repeat step 2E in this guide to check whether your G3 is now collecting data from the sensor. If you still do not see any data or message, continue with the following steps.

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## Ensure your G3 has the right 'iotasset.txt' file

The FATBOX G3 has `iotasset.txt` preconfigured to work with your Modbus temperature sensor (for more information on `iotasset.txt` configuration see our website's Modbus user manual.). If it is overwritten, you have to copy the `iotasset.txt` to the FATBOX's /user directory via SCP.

## Create your 'iotasset.txt' file

To do this, create a file called "**iotasset.txt**" on *TextEdit* (for Mac) or *NotePad* (for Windows). Copy and paste the string below into this file and save it.

```
MBM_START

TYPE,R
ADDR,1
MBFC,3
REGS,8,1,UINT16HL
Key,4C_IN1

TYPE,R
ADDR,2
MBFC,3
REGS,14,1,UINT16HL
Key,2A_IN1

MBM_STOP
```

# Annex Troubleshooting Guide

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## Download the new settings to the G3

### FOR MAC:

Open a terminal session and run the following commands:

```
> cd <folder where you saved the iotasset.txt> i.e." cd documents"  
> scp iotasset.txt root@192.168.1.1:/user  
> enter in the password for your G3 [default is fatbox12345].
```

You can run the following commands to check that your iotasset.txt is loaded:

```
> ssh root@192.168.1.1  
> enter the password.  
> cd /user  
> ls [check to see if there is a iotasset.txt file in the list]  
> cat iotasset.txt [verify the contents of the iotasset.txt file]
```

### FOR WINDOWS:

Go to the <Management> tab in the G3 web configuration menu. Enable the SSH option (see blow) and click the **UPDATE** button to save your settings.

System Hostname	<input type="text" value="FATBOX"/>
Web Login Username	<input type="text" value="admin"/>
Enable https access from WAN	<input type="button" value="Enabled"/>
Enable Secure Shell (SSH)	<input type="button" value="Enabled"/>
Enable System Log	<input type="button" value="Enabled"/>

Next run the "Winscp" program and connect using the following File Protocol

```
> SCP Hostname: 192.168.1.1  
> User/password: root/fatbox12345
```

When you have logged in select the 'iotasset.txt' file from the folder where you have saved in your computer and drag it over to the over to the /user directory of the FATBOX G3.

## Reboot the G3 to save your settings

Go to the <Management> tab and select the **REBOOT** button to save your settings.

## Ensure your G3 is receiving data from the sensor

Repeat step 2E in this guide to check whether your G3 is now collecting data from the sensor. If you still do not see any data or message, please contact our technical support at: support@amplified.com.au

# Contact Us

## Customer Support Info

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