



IoT Starter Kit (2nd Generation)

Quick Start Guide

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Table of Contents

Overview	3
Kit contents	4
Out of Box Operation.....	5
Assembling the kit	5
Power-on.....	6
Module Connects to LTE Service	7
User Push Button Operation	8
Data Sent to M2X.....	9
Viewing Data on AT&T Dashboard	10
Conclusion	11
Revision History	12

Overview

When the IoT Starter Kit (2nd Generation) is initially powered-on, a basic user interface will allow the user to perform complete Transmit/Receive operations. This initial will post readings from the sensors located on the IoT Starter Kit module to a preconfigured AT&T Dashboard. Sensor data from the module includes:

- Motion sensor¹ data provides 3-axis accelerometer data indicating board position.
- Temperature sensor¹ data
- Ambient Light Sensor² data

Demonstration software is pre-loaded onto the module so there is no need for additional software for the initial operation of this kit.

¹ See <http://www.st.com/en/mems-and-sensors/lis2dw12.html> for details

² See <http://www.everlight.com/file/productfile/201407061531031645.pdf> for details

Kit contents

The IoT Starter Kit (2nd Generation) contains all the elements needed to implement a complete wireless IoT solution. It includes all the components shown and described below:



Out of Box Operation

Assembling the kit

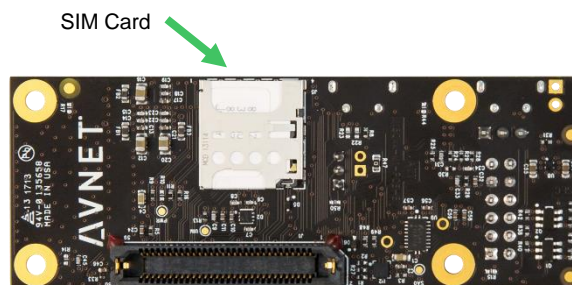
To assemble IoT Starter Kit (2nd Generation) components, there are just a few connection steps required to connect the three main items needed for basic operation.

- Antenna
- SIM card
- Power adapter cable

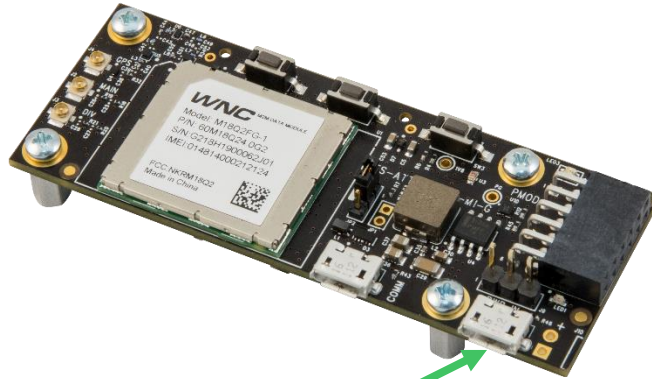
1. The flexible antenna arrays should be gently connected to the module antenna terminals as shown by matching each of the labelled antenna cables to the corresponding connector:



2. The included AT&T IoT SIM card must be installed into SIM card holder:



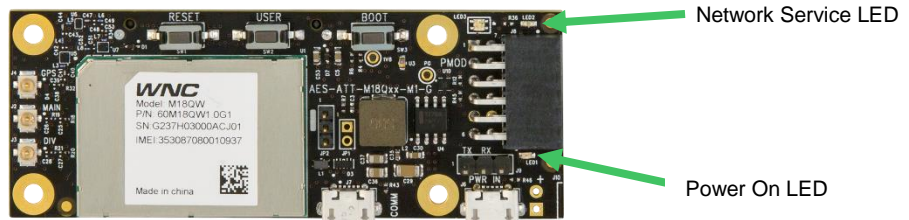
3. The included power adapter cable should be connected to the micro-USB connector labelled PWR IN and the wall adapter plugged into an AC power outlet which will power on the module:



Connect power adapter cable to the **PWR IN** micro-USB connector

Power-on

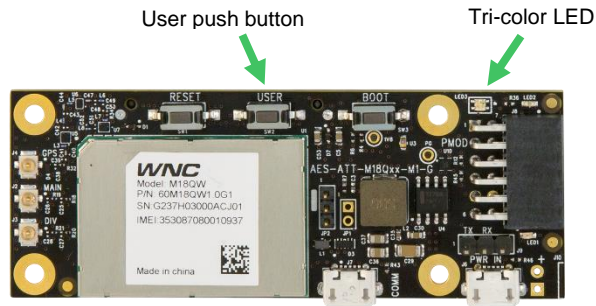
When power is provided to the IoT module it automatically begins basic operations. The presence of power is indicated by the Power On LED (LED1) illumination:



After the module is powered on, the Network Service LED (LED2) will begin flashing. This indicates that the module is attempting to register with the network and establish a connection. The Network Service LED will quit flashing and become constantly on once the module has registered with the AT&T network and has an established connection.

Module Connects to LTE Service

After Network Service is established and the module is ready to receive user input. The user interacts with the module by pressing the USER push button (SW2) and status is provided via the tri-color LED (LED3) shown below.



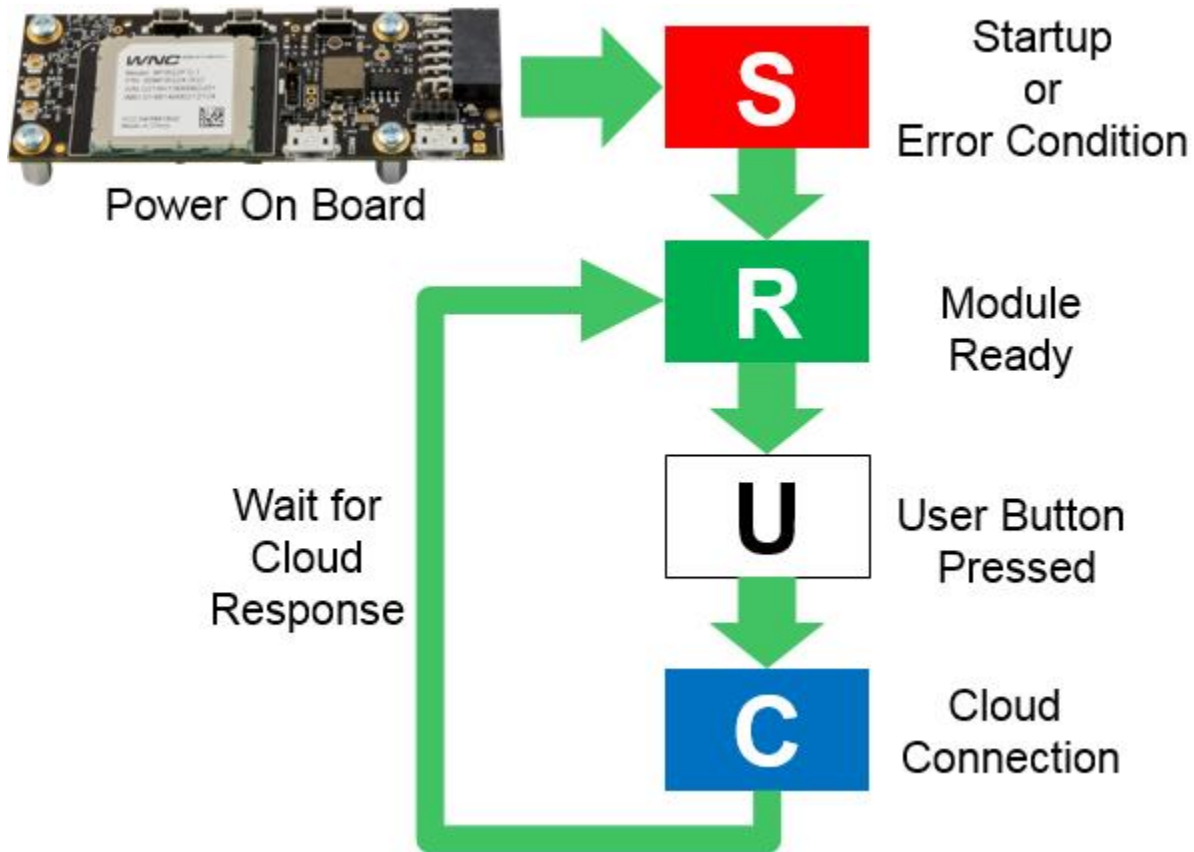
After network service is obtain, the module will connect to the AT&T M2X service. This connection will be indicated once the tri-color LED becomes GREEN.

User Push Button Operation

While the tri-color LED is GREEN, the user may press the USER button to initiate an M2X data transmission. While the push button is pressed, the tri-color LED will illuminate white, while the tri-color LED is WHITE no transmission takes place. The WHITE LED only indicates that the module detects that the USER button is being depressed.

Once the USER push button is released, the tri-color LED will illuminate BLUE and the sensor data will be collected and sent to the M2X Dashboard associated with your IoT Marketplace account. It will stay BLUE until all the data has been sent and acknowledged by M2X.

After the data transmission is completed, the tri-color LED will go back to GREEN. This process can be repeated and the Quick Start demonstration application will continue to follow this execution logic as indicated in the following diagram:



If the USER push button is depressed for greater than 3 seconds, it signals that the demonstration programming should be terminated and no further operations performed. At this point to restart the Quick Start demonstration application, you will need to depress the RESET button for longer than 3 seconds to reset the module.

Data Sent to M2X

The following sensor data is sent to your AT&T Marketplace Dashboard each time the user presses the USER key:

3-Axis Acceleration Sensor Data:

- XVALUE = X data point from the onboard LIS2DW12 sensor chip
- YVALUE = Y data point from the onboard LIS2DW12 sensor chip
- ZVALUE = Z data point from the onboard LIS2DW12 sensor chip

Temperature Sensor Data:

- TEMP = Temperature data from the onboard LIS2DW12 sensor

Ambient Light Sensor Data:

- ADC = Light intensity measurement data from the integrated ADC and onboard light sensor

The data is stored within your AT&T Marketplace Dashboard so that you can access this data from your IoT applications later.

Stream Capture



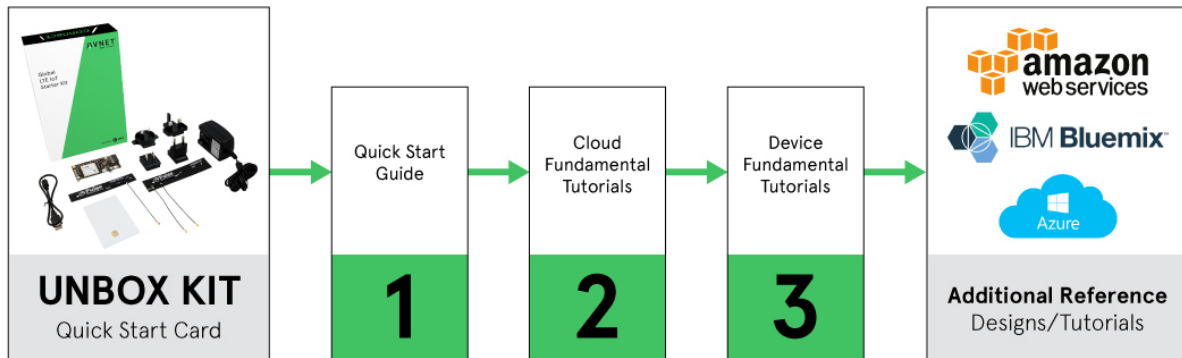
Viewing Data on AT&T Dashboard

Log into your AT&T IoT Marketplace account and access your device Dashboard view the data sent from your IoT module to M2X.

marketplace.att.com/amoc/devices/gsk/register

Conclusion

This concludes the activities of the Quick Start Guide and the basic functionality of the IoT Starter Kit (2nd Generation) Quick Start demonstration application. Follow up the knowledge gained within this tutorial by moving on to the Cloud Fundamental Tutorials and then the Device Fundamental Tutorials listed below:



Cloud Fundamental Tutorials - Coming Soon

In early 2018, look for a series of Cloud Fundamental Tutorials which will help you to gain a better understanding of the underlying IoT services that are available from AT&T for this module.

Device Fundamental Tutorials

Finally, explore the Device Fundamental Tutorials to gain a better understanding of the application and sensing capability for this IoT LTE module.

Device Fundamental Tutorial 1 - Setup Your Development Environment

<http://avnet.me/DF1-ATT>

Device Fundamental Tutorial 2 - Obtain and Build `iot_monitor` Example Application Source Code

<http://avnet.me/DF2-ATT>

Device Fundamental Tutorial 3 - Run Example Application on LTE Module Hardware

<http://avnet.me/DF3-ATT>

Device Fundamental Tutorial 4 - Explore `iot_monitor` Example Application Source Code

<http://avnet.me/DF4-ATT>

Revision History

Date	Version	Revision
14 Dec 17	1.0	Initial document release to CloudConnectKits.org site.
01 Feb 18	1.1	Updated to reflect more specific Dashboard URL