**Guide To Connect To LORA Gateway by a LoRA Transceiver**

Main requirements are:

- Arduino IDE

- LMIC Library (Written by IBM and downloaded through Arduino IDE) \* JUST drag and drop into the "libraries" folder, under the root Arduino directory created by the Arduino IDE.

- Arduino .ino file (uploaded) \*NOTE to open with Arduino IDE you need this file in a folder of the same name

- Arduino + Lora Shield

Setup:

- Make an application via The Things Network.

- You will then need to register a new device under this application. Make sure you register it as ABP instead of over the air authentication.

- This will then give you the Network Secret Key, Application Key and the Device ID take these and open the .ino file.

- Near the top of the file there are 3 variables of interest. NWKSKEY (network secret key), APPKEY (application key), and DEVADDR (device address ID). Follow the instructions just above each of these variables explaining how to encode them.

- If you are using this device in Australia then you're all set to simply just upload the Arduino sketch onto the device and it will transmit Hello World to your TTN application (but it will be in hexadecimal).

- If you are not in Australia you will need to alter files in the LMIC framework to do so. The changes are mostly just needed in the lorabase.h file and occur between Lines 133 and 141If you are in Europe you can easily change this by going into config.h and commenting CFG\_us915 whilst uncommenting CFG\_eu868.