

MOSTLink Starter KIT

Quick Stater Guide



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1. Introduction

MOSTLink Starter KIT is an IOT development kit based on LoRa technology which provide both SDK including library and sample code, and also hardware including MOSTLink gateway EVB, MOSTLink shield, Arduino UNO R3 development board and relevant accessories. MOSTLink Shield support Arduino, LinkITOne, and Raspberry pi

This GUIDE is to help the user setup MOSTLink node connectivity as very first step.

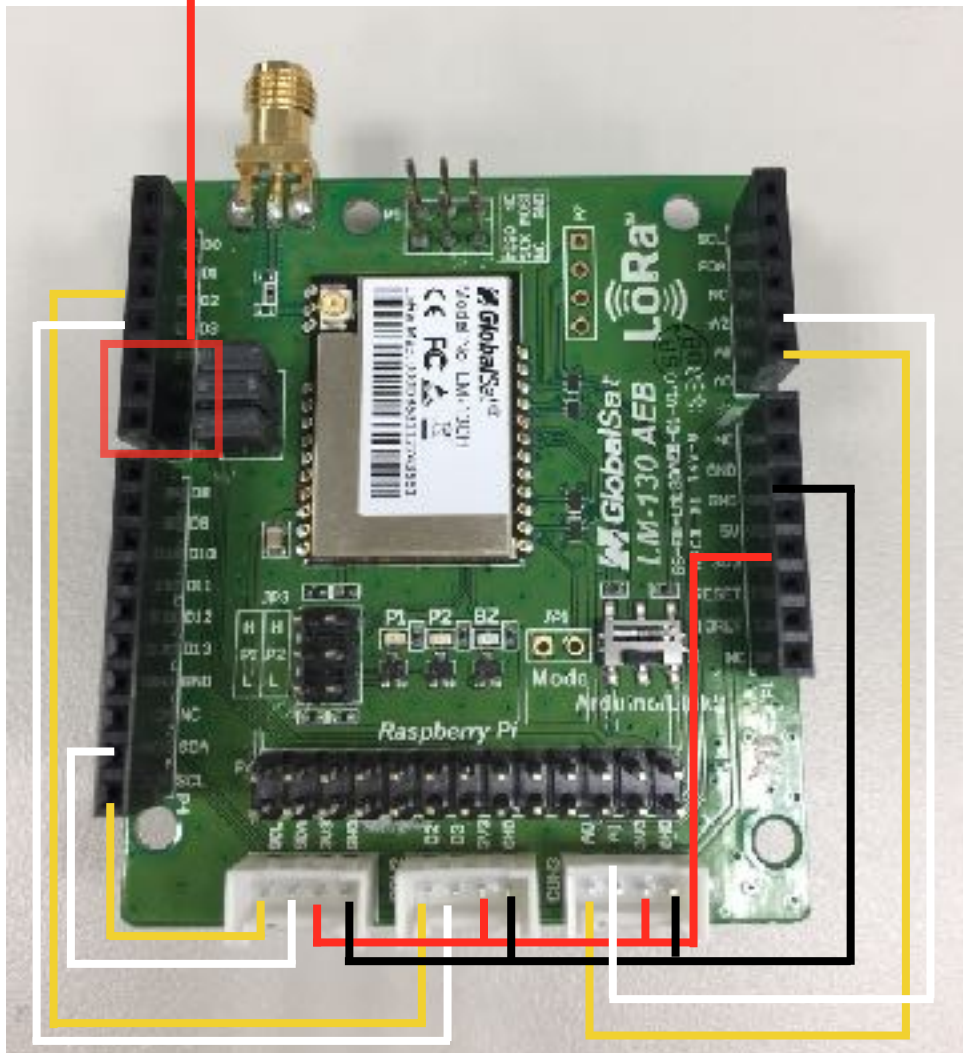


#	Item	Unit
1	MOSTLink Gateway EVB	1
2	MOSTLink Shield	2
3	MOSTLink Antennas	4
4	WIFI Antenna	1
5	Arduino UNO R3	2
6	Power Adapter	1
7	RGB LED	1
8	Temperature & Humidity sensor	1
9	Cables	2

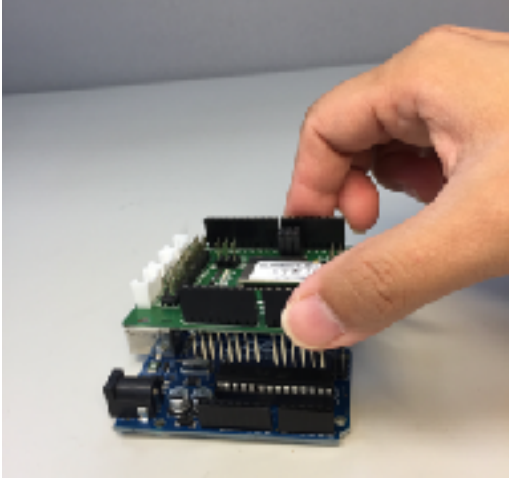
2. Setup

2.1.MOSTLink Shield

D5,D6,D7 Occupied by MOSTLink



2.2.MOSTLink Node Shield on Arduino UNO



1. Adapte MOSTLink Node to Arduino UNO



2. Adapted MOSTLink node and Arduino UNO



3. Adapted MOSTLink Antenna

2.3.Download and Installation

2.3.1.Install then Arduino Software (IDE)

if you don't have Arduino IDE installed yet, please follow the links below to get step-by-step instructions to set up the Arduino IDE on your computer. ([Arduino Official Guide](#))

[Windows](#)

[Mac OS X](#)


[Linux](#)

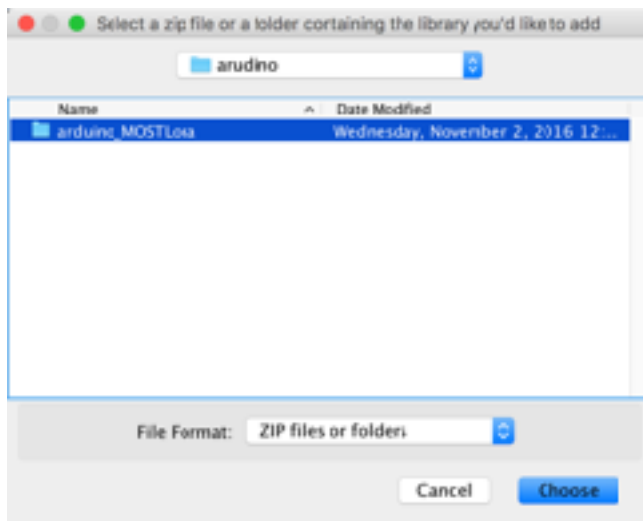
2.3.2.Install MOSTLink LoRa Library in your computer

Get the MOSTLora library with the git command: ([GitHub](#))

```
git clone https://github.com/viWavePublic/MOSTLink_LoRa_Arduino
```

2.3.3.Add MOSTLink LoRa Library to Arduino IDE

Open the Arduino IDE  on your computer. Click to the “Sketch” menu and the Include Library > Add .ZIP Library.... Select the folder of arduino_MOSTLora cloned from [MOSTLink Github](#) and click Choose button.

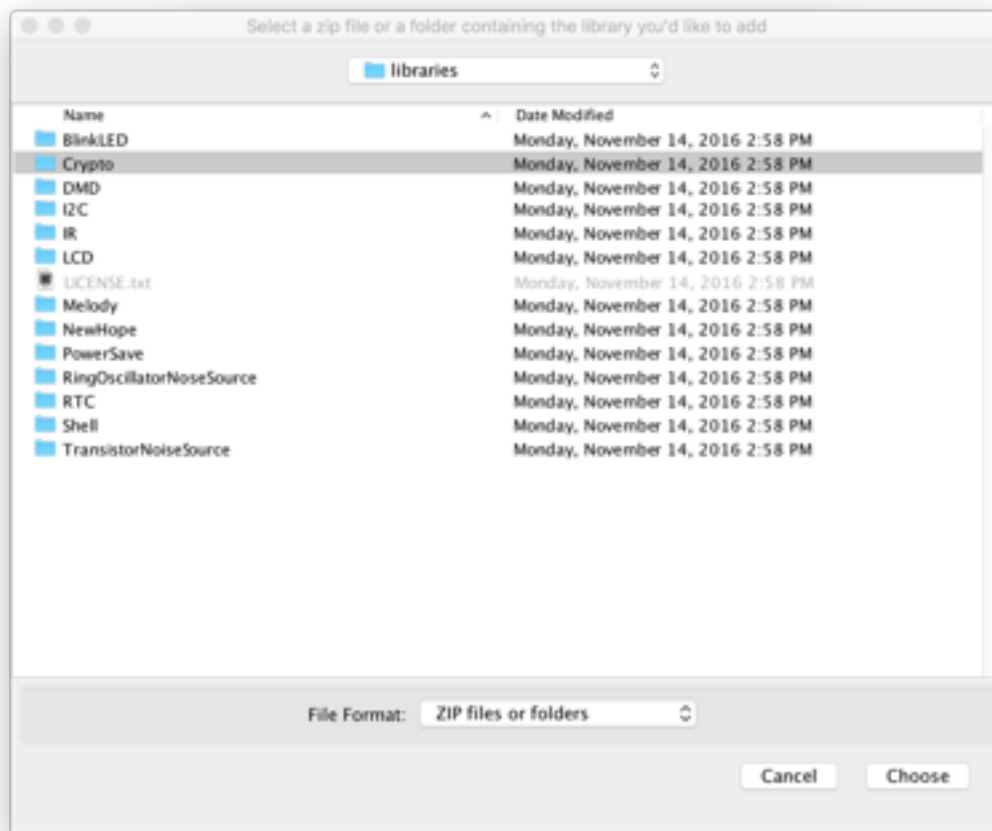


2.3.4.Install MOSTLink LoRa Dependency

Get the MOSTLora library with the git command: ([GitHub](#))
git clone https://github.com/rweather/arduinolibs

```
git clone https://github.com/rweather/arduinolibs
```


Add the dependency library, Crypto, located at arduinolibs/libraries/Crypto from Arduino IDE's menu bar: Sketch > Include Library > Add .ZIP Libraries...

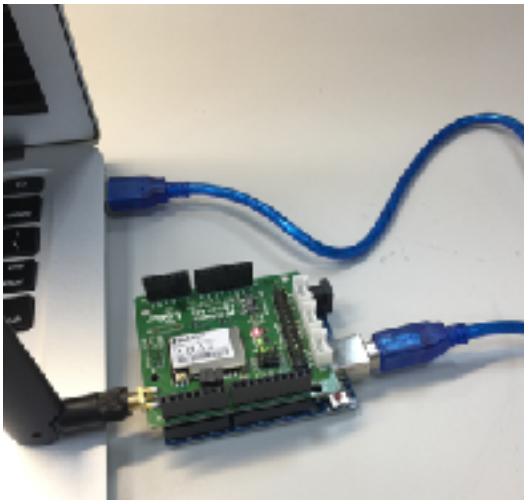


2.3.5. Let's run up MOSTLink shield

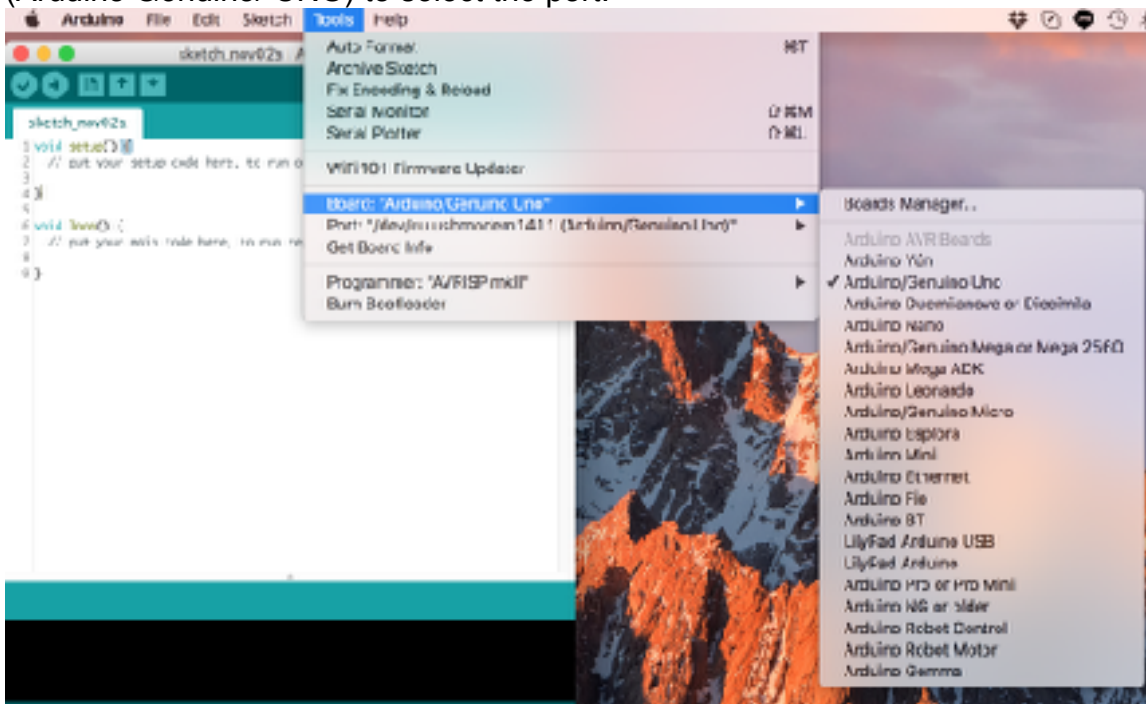
Before start running MOSTLink shield, please ensure your MOSTLink shield has switched to Arduino.



Step 1. Connect MOSTLink Shield to computer with USB cable.



Step2. Open Arduino IDE and create a new sketch. Click Tools > Board: XXX > Arduino Genuino/ UNO to select Arudino Uno board. Then click Port > /dev/cu.usbmodem xxxx (Arduino Genuino/ UNO) to select the port.



Step 3. Copy the codes below to your sketch.


```
#include "MOSTLora.h"
#include "MLPacketParser.h"

#define LED_PIN 13

MOSTLora lora;

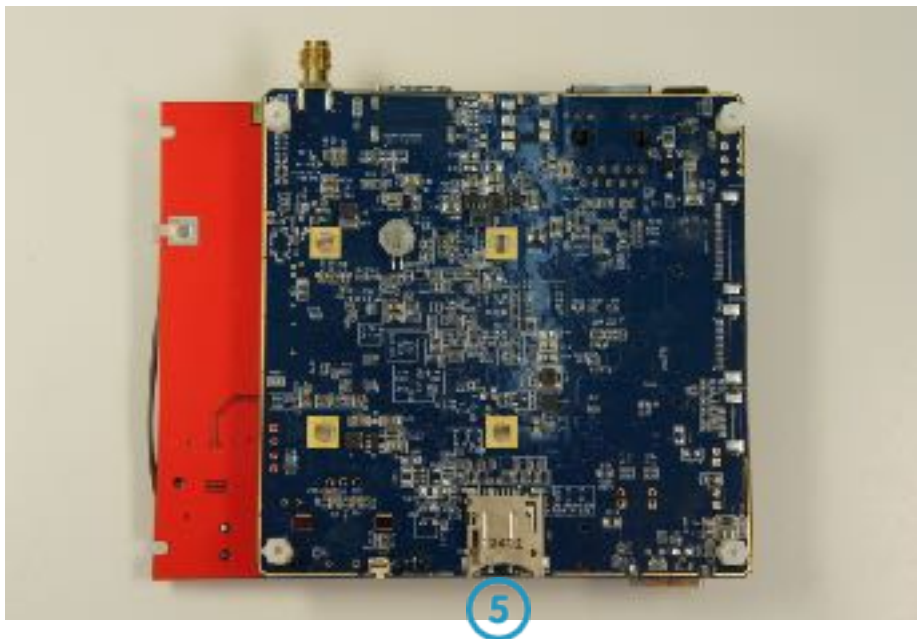
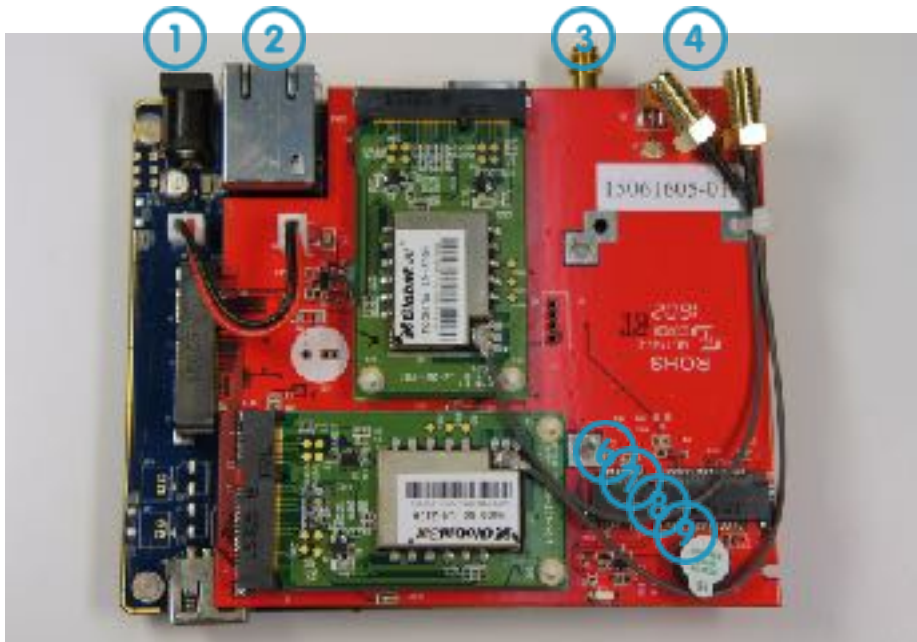
void setup() {
  pinMode(LED_PIN, OUTPUT);
  lora.begin();
  lora.writeConfig(915000, 0, 0, 7, 5);
  lora.setMode(E_LORA_POWERSAVING);    // module mode: power-saving
  lora.setCallbackPacketReqData(blink); // set polling request callback
}

void loop() {
  lora.run(); // lora handle input messages
  delay(100);
}

// Callback method when getting request packet from a station gateway
void blink() {
  for (int i=0; i<10;i++) {
    digitalWrite(LED_PIN, HIGH);
    delay(100);
    digitalWrite(LED_PIN, LOW);
    delay(100);
  }
}
```

Verify and Upload it to your LoRa Node. Now, your first MOSTLink Shield is up and its led on Arduino board will flash 10 times when receiving query from the station gateway.

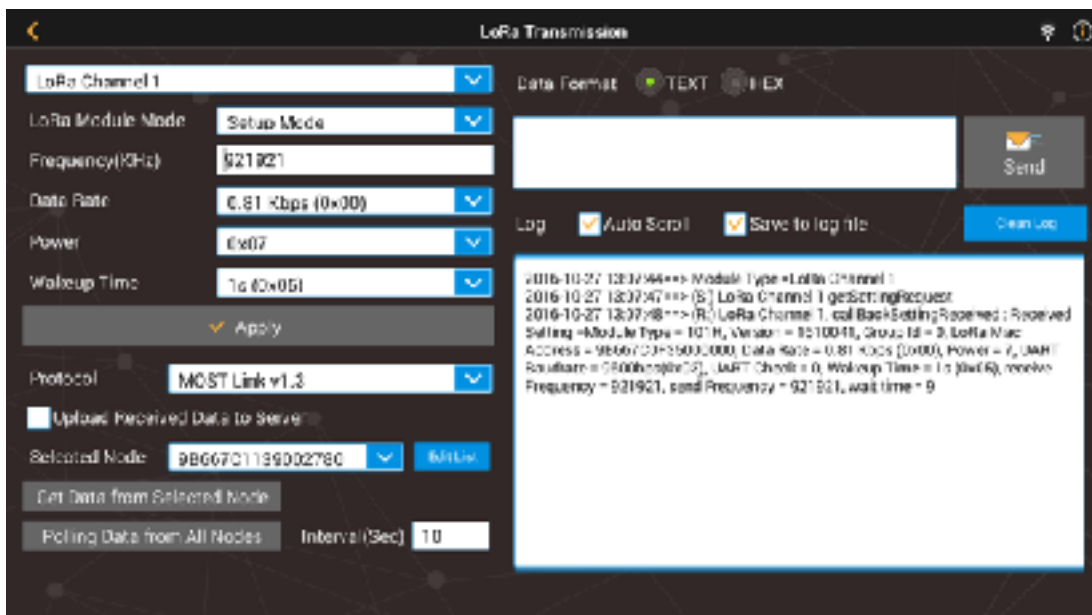
2.4.MOSTLink Gateway EVB



#	Part Name
1	Power
2	HDMI Port
3	WIFI
4	MOSTLink Antenna
5	SD Card

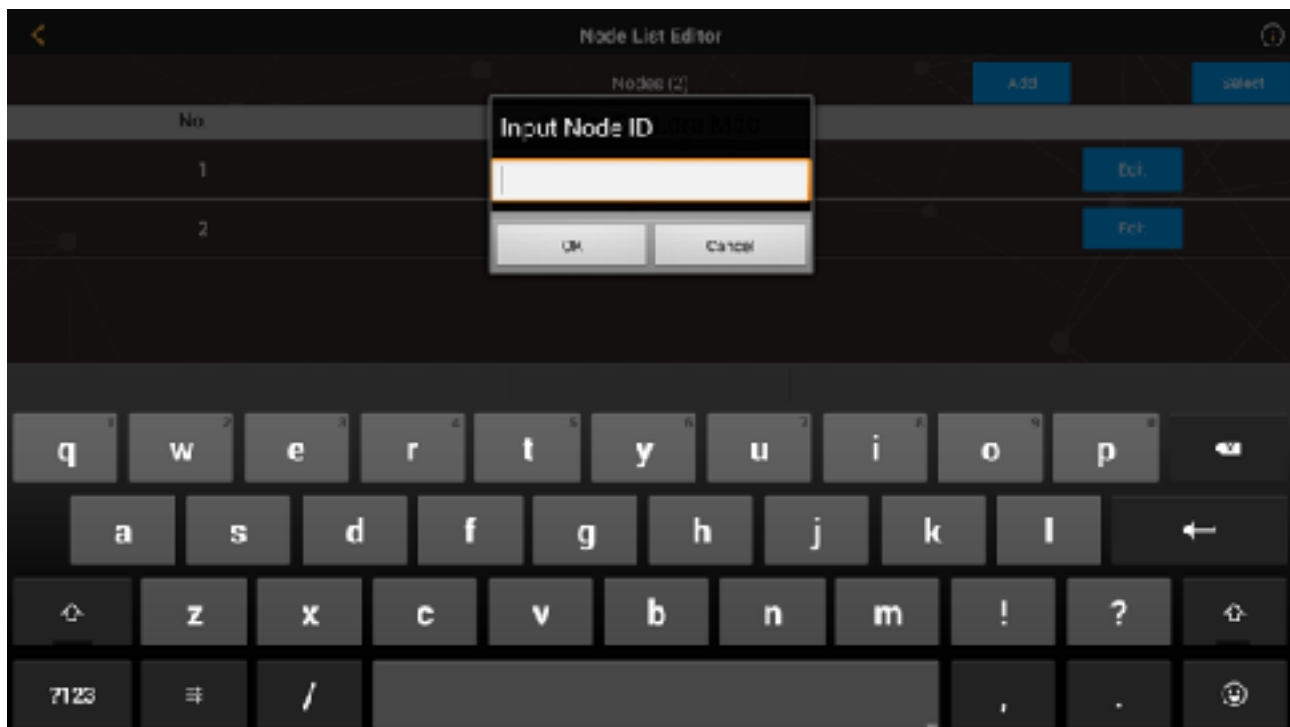
Adapts MOSTLink Antenna, WIFI Antenna, HDMI Monitor, mouse, keyboard, to initialize MOSTLink Gateway. After the gateway is initialized, the gateway's home page will be displayed.

Please select “Lora Transmission Utility” to enter MOSTLink configuration page (For detail MOSTLink gateway, viWave provide MOSTLink Utility user guide)



Click “Edit List” to register your MOSTLink shield to this utility. At Node ID list click “Add” and input shield.

You may find the MAC of MOSTLink shield can be from the label of the LoRa module.



After that, Switch the LoRa Module Mode from Setup Mode to Wake-up Mode. Then click Polling Data from All Nodes to start querying all nodes in polling list with interval of customized value. (Default: 10 seconds)

LoRa Channel 1

LoRa Module Mode: Wake-up Mode

Frequency(KHz): 915000

Data Rate: 0.81 Kbps (0x00)

Power: 0x07

Wakeup Time: 1s (0x05)

Apply

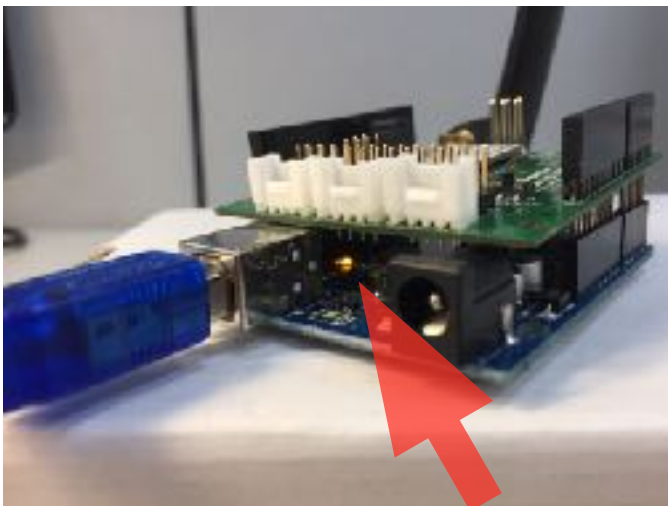
Protocol: MOST Link v1.3

☐ Upload Received Data to Server

Selected Node: [] Edit List

Get Data from Selected Node

Polling Data from All Nodes Interval(Sec) 10



Q & A:

1. Why do I get warning message of 'Arduino AVR Boards' contains deprecated recipe.ar.pattern' ?

Ans:

Your Arduino AVR Boards's version is not up to date. Please update to the latest release at
Tool> Board: Arduino XXX> Boards Manager... > Arduino AVR Boards by Arduino > Update

2. Always receive "Can't open device "/dev/...": Resource busy

Ans:

Sometimes, port might be always occupied by some program with invalid status. Reset it by unplug & plug your usb cable.

3. Why can't I use PIN 5, PIN 6, and PIN 7.

Ans:

MOSTLink uses there three pins to handle modes & busy signal. Please don't use these three pins.

4. The communication between the station gateway and node is not stable?

Ans:

Please keep a node from a station gateway at least one meter away. They will interfere with each other if too close.

5. Why the screen is always black?

Ans:

Please make sure your HDMI cable is connected to the screen firmly and the resolution is recommended to set to 1280x720.