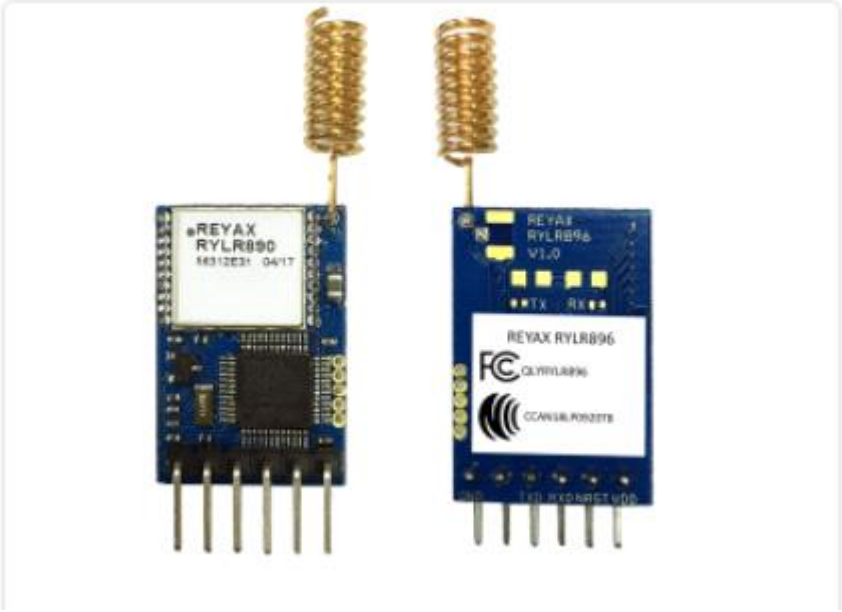
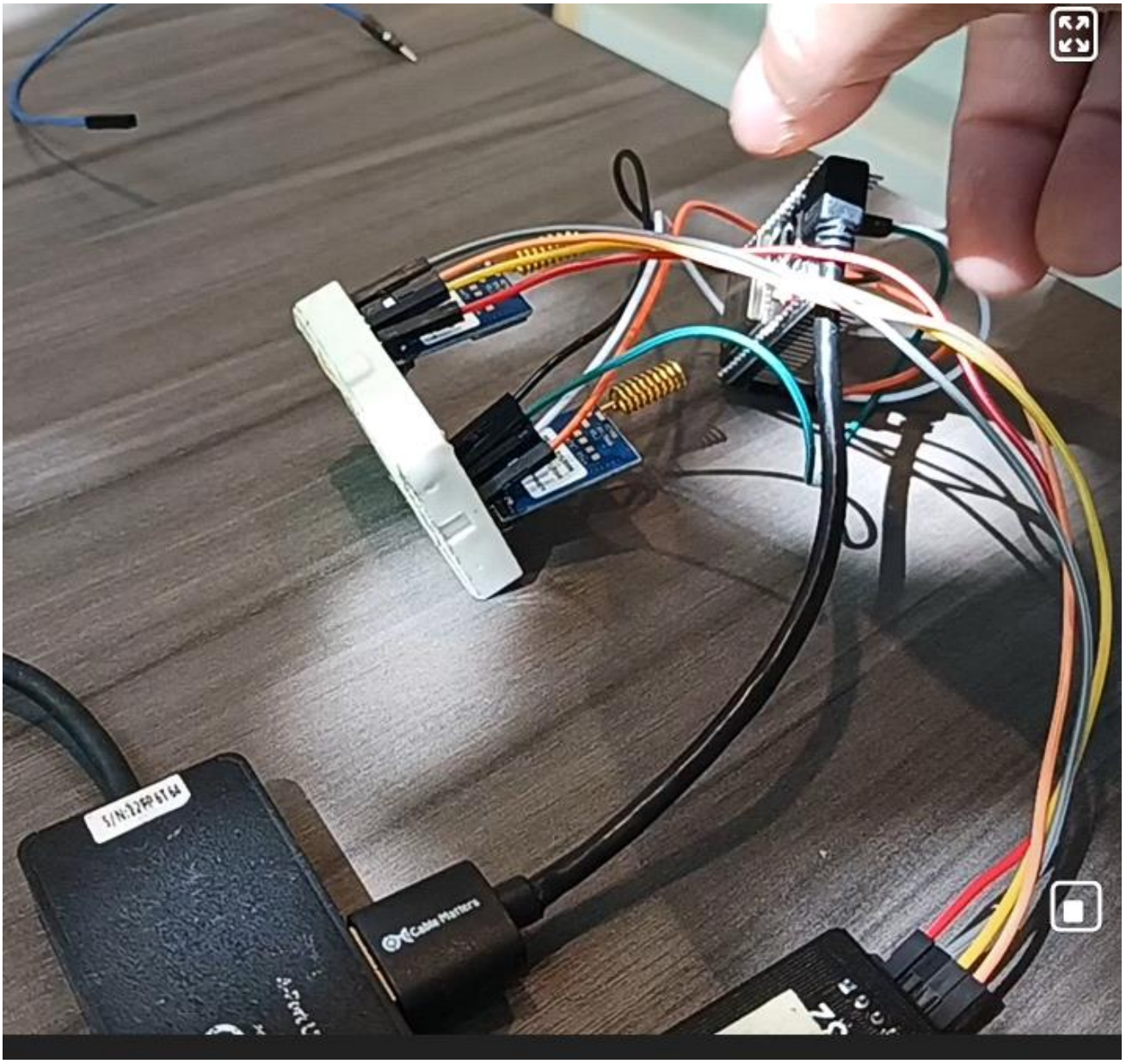
LoRa modules speaking to one another

Saturday, May 14, 2022 11:17 AM

With two REYAX LoRa module devices I was able to get a simple transmit and receive connection for the first time ever with LoRa for me.



Bought the two devices, each $19.00 USD and get one to transmit via AT Commands over a ESP32 to the other LoRa device.



I've configured each device with the following information.
One (the receiver) via the Serial AT commands manually inputting the values via Arduino IDE serial connection, which is the only one that works with error.

The other (the transmitter) via ESP32 serial2 connection and C++ programming

The connection values-:
AT+NETWORKID=4
AT+CPIN=FABC0002EEDCAA90FABC0002EEDCAA90
AT+ADDRESS=11
AT+CRFOP=3

C++ The code snippet below
********** Class Lorawrapper in file name: lorawrapper.cpp **********

```
#include <string.h>
#include <stdio.h>
```

```
#include <iostream>
#include <Arduino.h>
//#include <random>
//#include "esp_random.h"
using namespace std;

class Lorawrapper{
    String sendstr;
    String response;
    String output;
    String password = "FABC0002EEDCAA90FABC0002EEDCAA90";
    static const int ADDRESS = 11;
    static const int NETWORKID = 4;
    String data[10];

    public:
    void setupDevice();
    String getRandomString();
    void sendToLora();
};

void Lorawrapper::setupDevice(){

    vTaskDelay(1000);
    Serial2.println("AT+NETWORKID=4");
    vTaskDelay(1000);
    Serial2.println("AT+CPIN=FABC0002EEDCAA90FABC0002EEDCAA90");
    vTaskDelay(1000);
    Serial2.println("AT+ADDRESS=11");
    vTaskDelay(1000);
    Serial2.println("AT+CRFOP=3");
    vTaskDelay(1000);
    data[0] = "outdoorsensor|active|run";
    data[1] = "lvingsensor|disable|loadit";
    data[2] = "bathroomsensor|idle|run";
    data[3] = "kitchensensor|idle|run";
    data[4] = "laundroomsensor|active|run";
    data[5] = "closetsensor|active|run";
    data[6] = "guestBathroomsensor|active|run";
    data[7] = "cupboardsensor|idle|loader";
    data[8] = "refrigeratorsensor|active|run";
    data[9] = "backshedsensor|idle|run";
}
String  Lorawrapper::getRandomString(){
    if(!Serial){
        Serial.begin(115200);
    }
    const unsigned int intnum = random(10);
    String devicestr = data[intnum];
    Serial.println(devicestr.c_str());
    //vTaskDelay(2000);
    return devicestr;
}
void Lorawrapper::sendToLora(){
    String toSend = this->getRandomString();
    unsigned int size = toSend.length();
    String addressStr = String(this->ADDRESS);
    String sizeStr    = String(size);
```

```
    String payload = "AT+SEND="+addressStr+","+sizeStr+","+toSend;
    Serial.print("sending payload = ");
    Serial.println(payload);
    Serial2.println(payload);
}
```

********** main class **********

```
#include <Arduino.h>
#include <string.h>
#include "lorawrapper.cpp"

Lorawrapper lorawrap;
void setup() {
  Serial.begin(115200);
  Serial2.begin(115200);
  lorawrap.setupDevice();
  //lorawrap.getRandomString();
  lorawrap.sendToLora();
}
void loop() {
  // put your main code here, to run repeatedly:
}
```

****

All it does it, once the reset is pressed, it'll send one string and the receiver outputs it in the Serial connection.