```
*******************
* PROGRAMA PARA REALIZAR O ENVIO DE PACOTES PARA O RESTE DE LARGURA DE BANDA
#include <SoftwareSerial.h>
#include <TinyGPS.h>
#include <SdFat.h>
#include <SPI.h>
#include <LoRa.h>
SdFat sdCard;
SdFile meuArquivo;
SoftwareSerial serial1(5, 6); // RX, TX
int counter1=0;
int pacote=0;
#define ledLoRa 8
#define ledSD 7
#define chave 2
const int chipSelect = 4;
void setup() {
 if (!LoRa.begin(915E6)) {
  //Serial.println("Starting LoRa failed!");
  while (1);
 }
 LoRa.setTxPower(14);
 LoRa.setSpreadingFactor(12);
 LoRa.setSignalBandwidth(125E3);
 //LoRa.setCodingRate4(8);
 LoRa.disableCrc();
  pinMode(ledSD,OUTPUT);
 digitalWrite(ledSD,LOW);
 pinMode(ledLoRa,OUTPUT);
 digitalWrite(ledLoRa,LOW);
 pinMode(chave,INPUT);
 //TESTE DO CARTÃO SD
  bool testesd= false;
   if(!sdCard.begin(chipSelect,SPI_HALF_SPEED))
     sdCard.initErrorHalt();
     digitalWrite(ledSD, HIGH);
     delay(500);
```

```
digitalWrite(ledSD, LOW);
     delay(500);
     digitalWrite(ledSD, HIGH);
     delay(500);
     digitalWrite(ledSD, LOW);
     testesd=true;
   }
  // Abre o arquivo LER_POT.TXT
  if (!meuArquivo.open("teste1.txt", O_RDWR | O_CREAT | O_AT_END))//MUDE AQUI O
NOME DO ARQUIVO AO QUAL VOCÊ ESTÁ USANDO OU VAI SALVAR
     digitalWrite(ledSD, HIGH);
    delay(1000);
    testesd=false;
   delay(1000);
  delay(1000);
  digitalWrite(ledSD, LOW);
meuArquivo.println("Medidas de altitude e posição com GPS");
while(digitalRead(chave) ==0)
     digitalWrite(ledLoRa, HIGH);
     delay(500);
     digitalWrite(ledLoRa, LOW);
     delay(500);
     digitalWrite(ledSD, HIGH);
     delay(500);
     digitalWrite(ledSD, LOW);
}
}
void loop() {
int pause=0;
if(pause==0)
 {
   meuArquivo.print("pisição: ");
   meuArquivo.println(counter1);
 for(pacote=1;pacote<=10;pacote++)</pre>
 LoRa.beginPacket();
 bytes
 //LoRa.print("AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA");//32 bytes
 //LoRa.print("AAAAAAAAAAAAAAAA");//16 bytes
 //LoRa.print("AAAAAAAA");//8 bytes
 LoRa.endPacket();
 delay(1000);
 meuArquivo.print("pacote: ");
 meuArquivo.println(pacote);
```

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LoRa.beginPacket();
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 delay(1000);
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 LoRa.beginPacket();
 bytes
 //LoRa.print("AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA");//32 bytes
 //LoRa.print("AAAAAAAAAAAAAAAA");//16 bytes
 LoRa.print("AAAAAAAA");//8 bytes
 LoRa.endPacket();
 delay(1000);
 meuArquivo.print("pacote: ");
 meuArquivo.println(pacote);
 }
}
if(digitalRead(chave)==0){
 meuArquivo.close();
while(digitalRead(chave)==0)
 {
    digitalWrite(ledSD, HIGH);
    delay(500);
    digitalWrite(ledSD, LOW);
   delay(500);
  }
}
 pause=1;
 while(digitalRead(chave)==1)
  digitalWrite(ledLoRa, HIGH);
    delay(500);
    digitalWrite(ledLoRa, LOW);
    delay(500);
```

```
digitalWrite(ledSD, HIGH);
  delay(500);
  digitalWrite(ledSD, LOW);
  }
  pause = 0;
  counter1++;
}
```