

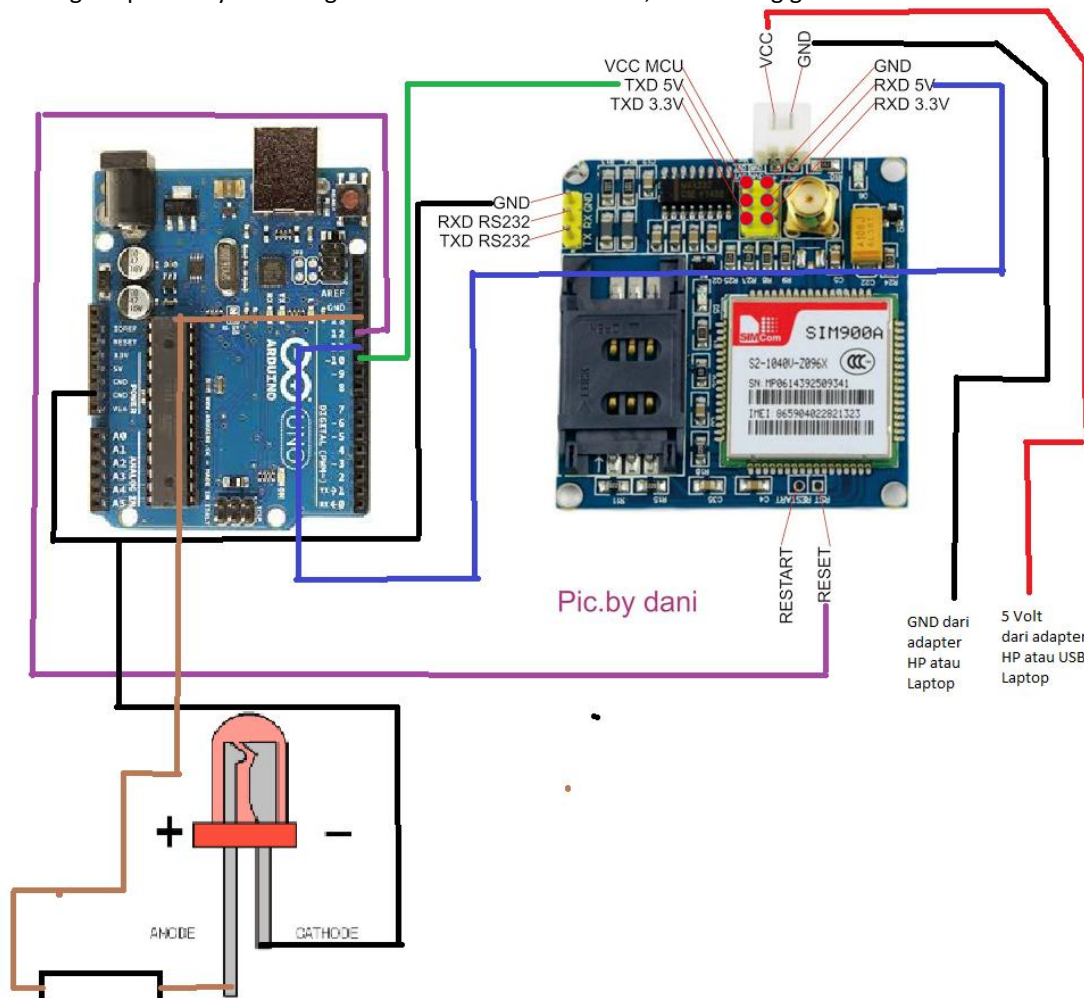
ARDUINO dan SIM900A

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SIM900A merupakan modul GSM keluaran dari SIMCOM, modul ini memiliki frekuensi dual band (yaitu di 900 MHz dan 1800 MHz). Sebenarnya untuk di Indonesia cukup menggunakan dual band karena operator di kita hanya menggunakan dual band. Sejauh ini yang pernah saya coba, konsumsi arus modul SIM900A ini lebih rendah dari SIM900. Untuk berkomunikasi dengan modul ini biasanya menggunakan AT COMMAND

1. Langkah pertama yaitu mengkoneksikan secara hardware, Ikuti Wiring gambar dibawah ini.



Referensi gambar diatas dari

<http://www.belajarduino.com/2016/06/sim900a-connect-to-arduino-getting.html>

Saya modifikasi sedikit sesuai kebutuhan saya

Catatan:

1. Arus yang digunakan pada SIM900A sekitar >1.5 A.
2. Jika power board arduino dan sim900A berbeda sumber, maka GND dari SIM900A dan arduino perlu digabung.

2. Untuk programnya bisa copy dari sini atau dari gitHub saya.

```
#include <SoftwareSerial.h>
```

```
#define SIM900A_RxPin 10
#define SIM900A_TxPin 11
#define PinResetSIM900A 12
#define LED 13
```

```
SoftwareSerial SIM900A(SIM900A_RxPin,SIM900A_TxPin);
```

```
String  cpin          ="";
String  csq            ="";
String  cipstatus      ="";
String  respondsend    ="";
String  Reply          ="";
String  Command        ="";
String  sender_phone   ="";
String  ResponseSMS     ="";
```

```
unsigned long    currentMillis    =0;
long            previousMillis    =0;
```

```
long int time      =0;
```

```
uint8_t FI        =0;
uint8_t LI        =0;
```

```
boolean sender    =false;
boolean LEDState   ;
```

```
#define S1debug true
```

```
void setup() { //setup
  Serial.begin(9600);
  SIM900A.begin(9600);
```

```
  //declare pin
  pinMode(PinResetSIM900A,OUTPUT);
  pinMode(LED,OUTPUT);
  delay(100);
```

```
  //warming up sim90A
  digitalWrite(PinResetSIM900A,LOW);
  delay(1000);
  digitalWrite(PinResetSIM900A,HIGH);
  delay(10000);
  //Connection();
  //DialVoiceCall();
} //setup
```

```
void loop() { //loop
  Connection();
  ReceivedMessage();
  SendMessage();
  DeletedSMSBerkala();
} //loop
```

```

//SendCommand
void SendCommand(String command, const int timeout, boolean debug){

    Reply="";

    SIM900A.println(command);
    if (command=="AT+CPIN?")
    {
        cpin="";
        if(debug){
            time = millis();
            while( (time+timeout) > millis()){
                while(SIM900A.available()){
                    Reply += char(SIM900A.read());
                }
            }
            FI=0;
            LI=0;
            FI=Reply.indexOf("+CPIN:");
            LI=Reply.indexOf('Y',FI);
            cpin=Reply.substring(FI+6,LI+1);
            cpin.trim();
            if (cpin=="READY"){
                cpin="";
                cpin+="READY";
            }
            else{
                cpin="";
                cpin+="UNREADY";
            }
            Serial.print("respon CPIN:");
            Serial.println(cpin);
        }
    }

    else if(command=="AT+CSQ"){
        csq="";
        if(debug){
            time = millis();
            while( (time+timeout) > millis()){
                while(SIM900A.available()){
                    Reply += char(SIM900A.read());
                }
            }
            FI=0;
            LI=0;
            FI=Reply.indexOf("+CSQ:");
            LI=Reply.indexOf(',',FI);
            csq=Reply.substring(FI+6,LI+3);
            csq.trim();
            Serial.print("response CSQ:");
            Serial.println(csq);
        }
    }

    else{
        if(debug){

```

```

        time = millis();
        while( (time+timeout) > millis()){
            while(SIM900A.available()){
                Reply += char(SIM900A.read());
            }
        }
        Serial.println(Reply);
    }
}

} //SendCommand

//CekKoneksi
void Connection(){
    SendCommand("AT+CPIN?",250,S1debug);
    SendCommand("AT+CSQ",250,S1debug);
    SendCommand("AT+CREG=2",250,S1debug);
    SendCommand("AT+CREG?",250,S1debug);
} //CekKoneksi

//ReceivedMessage
void ReceivedMessage(){
    String      Password      ="";
                    Command      ="";

    SendCommand("AT+CMGF=1\r",500,S1debug);//Text Mode
    SendCommand("AT+CNMI=3,3,0,0,0\r",500,S1debug);//open message manual
    SendCommand("AT+CMGR=1\r",500,S1debug);//read SMS first index

    FI=Reply.indexOf("GONDRL");
    Password=Reply.substring(FI,FI+7);
    Password.trim();
    Serial.print("Key:");Serial.println>Password);

    if>Password=="GONDRL"){

        LI=Reply.indexOf('#',FI);
        LI++;
        FI=Reply.indexOf('#',LI);
        Command=Reply.substring(LI,FI);
        Serial.print("Command:");Serial.println(Command);

        if(Command=="LED_ON"){
            digitalWrite(LED,HIGH);
            LEDState=true;
        }

        else if(Command=="LED_OFF"){
            digitalWrite(LED,LOW);
            LEDState=false;
        }

        //dapetin nomor hp pengirim
        FI=Reply.indexOf("+CMGR:");
        FI++;
        LI=Reply.indexOf('+',FI);
        FI=Reply.indexOf(',',LI);
        sender_phone=Reply.substring(LI,FI-1);
    }
}

```

```

sender_phone.trim();
Serial.print("sender_phone:");Serial.println(sender_phone);

if (sender_phone.length()>10){
  sender=true;
  //Serial.println("GET PHONE SEND NUMBER");
  SendCommand("AT+CMGD=1,4\r",500,S1debug);//Deleted all message
}
else{
  sender=false;
}

}
}

//ReceivedMessage

//SendMessage
void SendMessage(){
  if (sender){
    if (Command=="LED_ON" || Command=="LED_OFF"){
      ResponseSMS="";
      ResponseSMS+="SN:";ResponseSMS.concat("BIR001");
      ResponseSMS+="\nSIM:";ResponseSMS.concat(cpin);
      ResponseSMS+="\nSQ :";ResponseSMS.concat(csq);

      if(LEDState==true){
        ResponseSMS+="\nLED:";ResponseSMS.concat("ON");
      }
      else{
        ResponseSMS+="\nLED :";ResponseSMS.concat("OFF");
      }

      SendCommand("AT+CMGS=\""+sender_phone+"\"",1000,S1debug);
      SendCommand(ResponseSMS,500,S1debug);
      SendCommand(String ((char)26),2000,S1debug);
    }
    sender=false;
  }
}

//SendMessage

//DeletedSMSBerkala
void DeletedSMSBerkala(){
  currentMillis = millis();
  if (currentMillis - previousMillis > 300000) { //5 menit
    Serial.println("DeletedSMSBerkala");
    previousMillis = currentMillis;
  }
}

//DeletedSMSBerkala

//DialVoiceCall
void DialVoiceCall(){
  SendCommand("ATD+62;",2000,S1debug);// "ATD+628xxxxxxx"dial the number
  delay(1000);
}

//DialVoiceCall

```

Semoga Bermanfaat

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