SNS COLLEGE OF TECHNOLOGY

Coimbatore-35

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECT213- IoT SYSTEM ARCHITECTURE

II ECE / IV SEMESTER

UNIT 3 – ACTUATORS AND IOT NETWORKING DEVICES

TOPIC 5 –GSM Modem

GSM MODEM

- A GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscripti to a mobile operator, just like a mobile phone.
- From the mobile operator perspective, a GSM mode looks just like a mobile phone.
- The GSM SIM 900 Module is a type of Arduinc Shield, which means it can also be mounted on top of Arduino UNO.
- This is a type of modem, used for long-distance data transmission with the use of GSM technology where there is no internet connectivity.

GSM MODEM

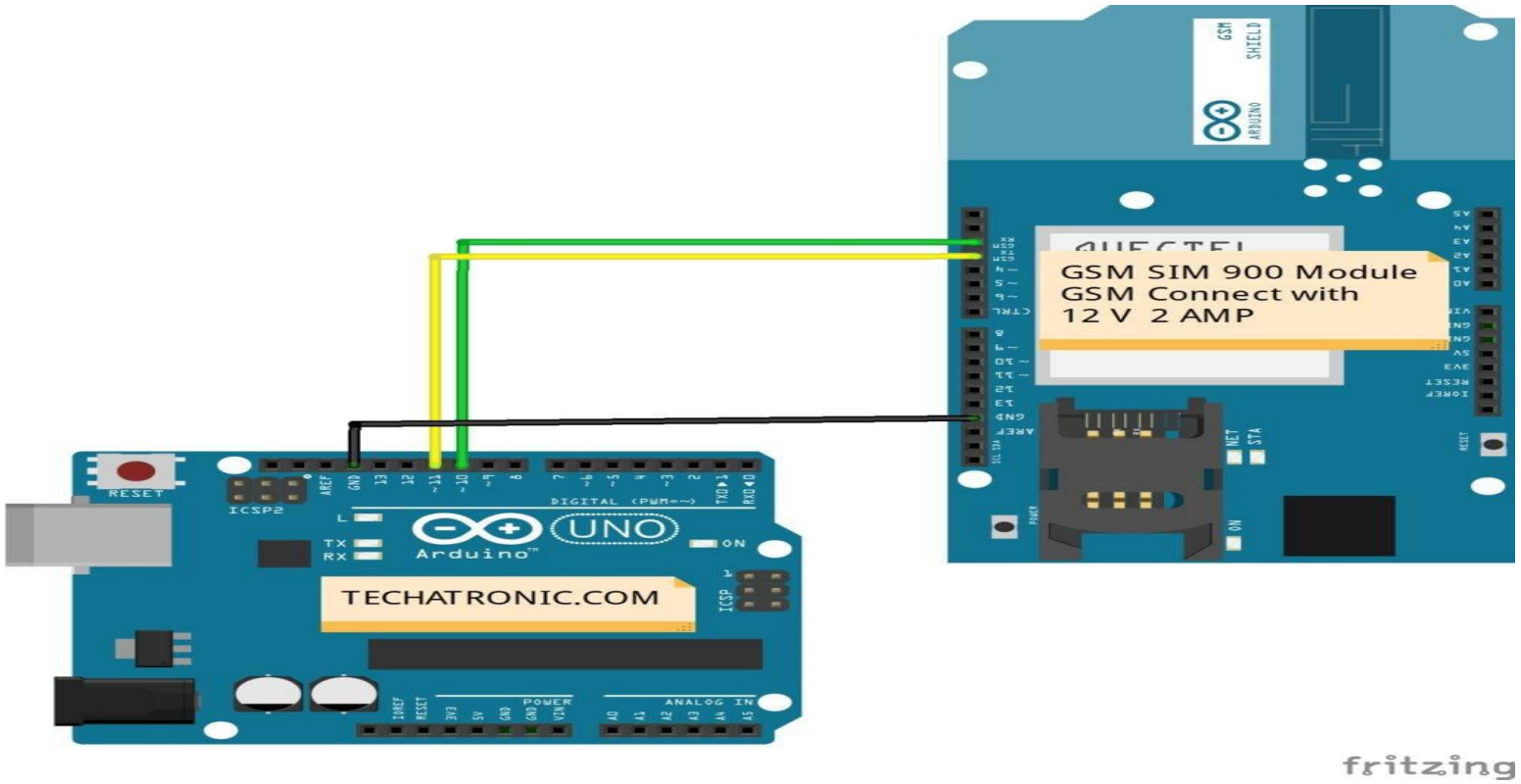
- GSM modem is used as a generic term to refer to any modem that supports one or more of the protocols in the GSM evolutionary family, including the 2.5G technologies GPRS and EDGE, as well as the 3G technologies WCDMA, UMTS, HSDPA and HSUPA.
- The GSM SIM 900 module uses GSM and GPRS technology to communicate with another device wirelessly. It uses 2G network to connect with the internet and supports Quad-band(EGSM 900, GSM 850, DCS 1800, PCS1900).
- Because of this, one can send or receive messages from this or make or receive voice calls using the module by connecting the microphone and speakers to the respective ports given on it.

GSM MODEM

Components Required

- Arduino UNO
- SIM 900 GSM Module
- Full-Size SIM Card (Unlocked)
- 12V 2Amp Power Supply
- Connecting Wires
- Breadboard
- USB cable for uploading code into Arduino UNO

INTERFACING GSM MODEM



INTERFACING GSM MODEM

Connection Table

Arduino UNO	**GSM SIM 900 Module**
TX	RX
RX	TX
GND	GND
12 Volt 2 Amp Adaptor	**GSM SIM 900 Module**
Connect	Connect

INTERFACING GSM MODEM

```
#include <SoftwareSerial.h>
SoftwareSerial SIM900A(10,11); // SoftSerial( RX , TX );
// 10 pin connect to TX of GSM SIM 900 Module
// 11 pin connect to RX of GSM SIM 900 Module
void setup()
{
SIM900A.begin(9600); // Setting the baud rate of GSM Module
Serial.begin(9600); // Setting the baud rate of Serial Monitor (Arduino)
Serial.println ("SIM900A Ready");
delay(100);
Serial.println ("Type s to send message or r to receive message");
 }
void loop()
 {
if (Serial.available()>0)
 switch(Serial.read())
```

INTERFACING GSM MODEM

```
{
case 's': SendMessage();
break;
 case 'r': RecieveMessage();
break;
}
If
 (SIM900A.available()>0)
Serial.write(SIM900A.read());
 }
void SendMessage()
 {
Serial.println ("Sending Message");
SIM900A.println("AT+CMGF=1"); //Sets the GSM Module in Text Mode
delay(1000);
Serial.println ("Set SMS Number");
SIM900A.println("AT+CMGS=\"911234567890\"\r"); //Type Your Mobile number to send message
delay(1000);
```

INTERFACING GSM MODEM

```
Serial.println ("Set SMS Content");
SIM900A.println("Good morning, how are you doing?");// Messsage content
delay(100);
 Serial.println ("Finish");
 SIM900A.println((char)26);// ASCII code of CTRL+Z
 delay(1000);
Serial.println ("Message has been sent ->SMS Selesai dikirim");
}
void RecieveMessage()
 {
Serial.println ("SIM900A Membaca SMS");
 delay (1000);
SIM900A.println("AT+CNMI=2,2,0,0,0"); // AT Command to receive a live SMS delay(1000);
Serial.write ("Unread Message done");
 }
```