**Microcontrollers**

**Introduction**:

**Criteria of selecting microcontroller:**

1)Select the architecture

2)Make a list of required hardware interfaces

3)Select the communication systems

4)Examine the software architecture

## 5) Identify Memory Needs

## 6)Start searching for microcontrollers

## 7)Examine Costs and Power Constraints

**In order to ably IOT technology :**

**We need an approach to use mobile data internet which would be done by:**

**SIM900A GSM module:**

Quad-band 850/900/1800/1900MHz

Make and receive voice calls

Send and receive SMS messages

Send and receive GPRS data (TCP/IP, HTTP, etc.)Applications like SMS Control, data transfer, remote control and logging can be developed. SIM900 modem supports features like voice call, SMS, Data/Fax, GPRS etc.

 Input Voltage: 7V - 12V DC

**Examples of Sim900A interfacing**

1. [Sim900A GSM Module Interfacing with PIC18F4550](http://electronicwings.com/pic/gsm-module-interfacing-with-pic18f4550)
2. [Sim900A GSM Module Interfacing with ATmega32](http://www.electronicwings.com/avr-atmega/sim900a-gsm-module-interfacing-with-atmega1632-)
3. [Sim900A GSM Module Interfacing with Arduino](http://www.electronicwings.com/arduino/sim900a-gsm-module-interfacing-with-arduino-uno)
4. [Sim900A GSM Module Interfacing with TI Launchpad](http://www.electronicwings.com/ti-launchpad/sim900a-gsm-module-interfacing-with-msp-exp430g2-launchpad)
5. [Sim900A GSM Module Interfacing with LPC2148](http://www.electronicwings.com/arm7/sim900a-gsm-module-interfacing-with-lpc2148)
6. [Sim900A GPRS Module MQTT Client with ATmega16](http://www.electronicwings.com/avr-atmega/mqtt-client-using-sim900a-gprs-and-atmega16)
7. [Sim900A GPRS Module HTTP Client with ATmega16](http://www.electronicwings.com/avr-atmega/http-client-using-sim900a-gprs-and-atmega16)
8. [Sim900A GPRS Module TCP Client with ATmega16](http://www.electronicwings.com/avr-atmega/tcp-client-using-sim900a-gprs-and-atmega16)
9. [Sim900A GPRS Module Interfacing with PIC18F4550](http://www.electronicwings.com/pic/pic18f4550-interface-with-sim900a-gprs)
10. [Sim900A GPRS Module Interfacing with Arduino](http://www.electronicwings.com/arduino/sim900a-gprs-module-interfacing-with-arduino-uno)
11. [Sim900A GPRS Module Interfacing with TI Launchpad](http://www.electronicwings.com/ti-launchpad/sim900a-gprs-module-interfacing-with-msp-exp430g2-ti-launchpad)
12. [Sim900A GPRS Module Interfacing with LPC2148](http://www.electronicwings.com/arm7/sim900a-gprs-module-interfacing-with-lpc2148)

**SIM808 GSM/GPRS+GPS Module**

The board has two antenna connectors, one for GSM the other for GPS. The bottom side has a SIM card slot and a Micro USB connector for interfacing with a PC.  
  
GSM-GPS click communicates with the target board MCU through mikroBUS UART interface, with additional functionality provided by STAT, PWRKEY, RTS, RS, and CTS. Beside the mikroBUS, the board has additional pins for connecting speakers and a microphone to the GSM engine.  
  
GSM-GPS click uses the 3.3V and 5V power supply.

**Examples of Sim808 interfacing**

1. Atmega32 AVR microcontroller
2. PIC18f4580
3. Arduino
4. TM4C123GH6PM
5. TM4C123G

References:

<https://community.arm.com/iot/embedded/b/embedded-blog/posts/10-steps-to-selecting-a-microcontroller>  
<http://www.electronicwings.com/avr-atmega/sim900a-gsm-module-interfacing-with-atmega1632->

<https://www.mikroe.com/gsm-gps-click>

<http://mcuhq.com/34/sms-example-using-tiva-c-launchpad-and-sim-808-gsm-module>

<https://www.microchip.com/forums/m977520.aspx>

<http://www.ablab.in/sim808-gsm-gprs-gps-modem-interfacing-with-avr-atmega32-microcontroller/>