LAMPIRAN-LAMPIRAN

Program Uji SIM900A :

```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(9, 10);

void setup()
{
  mySerial.begin(9600);   // Setting the baud rate of GSM Module
  Serial.begin(9600);    // Setting the baud rate of Serial Monitor
(Arduino)
  delay(100);
}


void loop()
{
  if (Serial.available()>0)
   switch(Serial.read())
  {
    case 's':
      SendMessage();
      break;
    case 'r':
      RecieveMessage();
      break;
  }

 if (mySerial.available()>0)
   Serial.write(mySerial.read());
}


 void SendMessage()
{
  mySerial.println("AT+CMGF=1");    //Sets the GSM Module in Text Mode
  delay(1000);  // Delay of 1000 milli seconds or 1 second
  mySerial.println("AT+CMGS=\"+6285803794550\"\r"); // Replace x with
mobile number
  delay(1000);
  mySerial.println("Terdapat API dirumah anda");// The SMS text you want to
send
  delay(100);
   mySerial.println((char)26);// ASCII code of CTRL+Z
  delay(1000);
}


 void RecieveMessage()
{
  mySerial.println("AT+CNMI=2,2,0,0,0"); // AT Command to receive a live
SMS
  delay(1000);
 }
```

Program Uji Sensor Api :

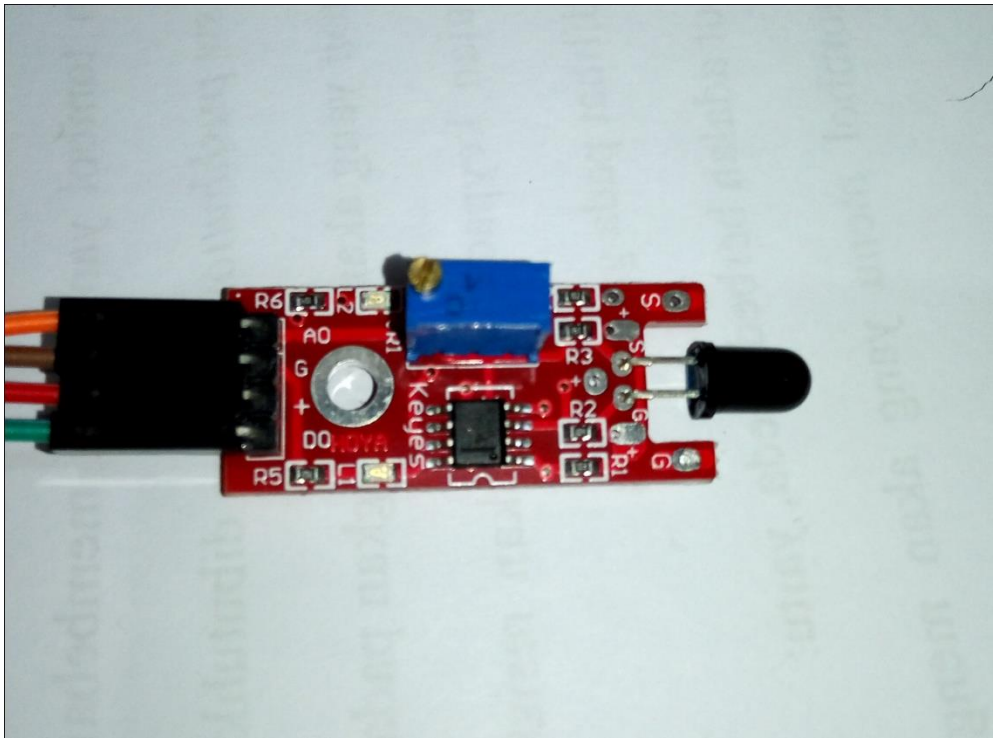
```
const int analogInPin = A1;  // Analog input pin that the
potentiometer is attached to
const int analogOutPin = 13; // Analog output pin that the LED is
attached to

int sensorValue = 0;        // value read from the pot
int outputValue = 0;        // value output to the PWM (analog out)

void setup() {
  // initialize serial communications at 9600 bps:
  Serial.begin(9600);
}

void loop() {
  // read the analog in value:
  sensorValue = analogRead(analogInPin);
  // map it to the range of the analog out:
  outputValue = map(sensorValue, 0, 1023, 0, 255);
  // change the analog out value:
  analogWrite(analogOutPin, outputValue);

  // print the results to the serial monitor:
  Serial.print("sensor = ");
  Serial.print(sensorValue);
  Serial.print("\t output = ");
  Serial.println(outputValue);

  // wait 2 milliseconds before the next loop
  // for the analog-to-digital converter to settle
  // after the last reading:
  delay(1000);
}
```

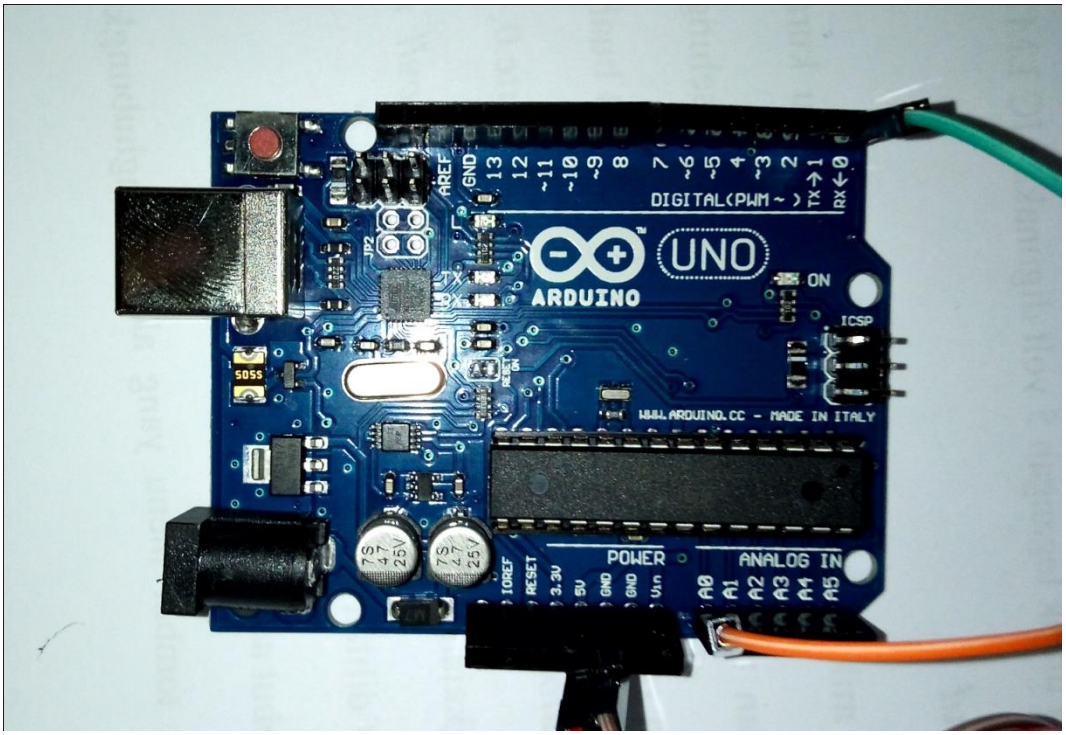
Program Uji Sistem Keseluruhan :

```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(9, 10);
const int analogInPin = A1;  // Analog input pin that the
potentiometer is attached to
const int analogOutPin = 13; // Analog output pin that the LED is
attached to

int sensorValue = 0;        // value read from the pot
int outputValue = 0;        // value output to the PWM (analog out)
int flag=1;
void setup()
{
  mySerial.begin(9600);   // Setting the baud rate of GSM Module
  Serial.begin(9600);    // Setting the baud rate of Serial Monitor
(Arduino)
  delay(100);
  Serial.begin(9600);
}

void SendMessage()
{
  mySerial.println("AT+CMGF=1");    //Sets the GSM Module in Text
Mode
  delay(1000);  // Delay of 1000 milli seconds or 1 second
  mySerial.println("AT+CMGS=\"+6285803794550\"\r"); // Replace x
with mobile number
  delay(1000);
  mySerial.println("Terdapat API dirumah anda");// The SMS text you
want to send
  delay(100);
   mySerial.println((char)26);// ASCII code of CTRL+Z
  delay(1000);
}
void loop()
{
   sensorValue = analogRead(analogInPin);
   outputValue = map(sensorValue, 0, 1023, 0, 255);
   analogWrite(analogOutPin, outputValue);

  if ( sensorValue < 800)
      {
          digitalWrite(LED_BUILTIN, HIGH);
          if(flag==1)
          {
            SendMessage();
            flag=0;
          }
      }
  else
      {
          digitalWrite(LED_BUILTIN, LOW);
```

```
            flag = 1;
        }

    }
```

Foto – foto Komponen Utama :




DIGITAL(PWM~)
UNO
ARDUINO
ON
ICSP
WWW.ARDUINO.CC - MADE IN ITALY
POWER
ANALOG IN

Features	ATmega328/P
Pin Count	28/32
Flash (Bytes)	32K
SRAM (Bytes)	2K
EEPROM (Bytes)	1K
General Purpose I/O Lines	23
SPI	2
TWI (I^2C)	1
USART	1
ADC	10-bit 15kSPS
ADC Channels	8
8-bit Timer/Counters	2
16-bit Timer/Counters	1

Speed [MHz][3]	Power Supply [V]	Ordering Code[2]	Package[1]	Operational Range
20	1.8 - 5.5	ATmega328-AU ATmega328-AUR[5] ATmega328-MMH[4] ATmega328-MMHR[4][5] ATmega328-MU ATmega328-MUR[5] ATmega328-PU	32A 32A 28M1 28M1 32M1-A 32M1-A 28P3	Industrial (-40°C to 85°C)

Note:

1. This device can also be supplied in wafer form. Please contact your local Atmel sales office for detailed ordering information and minimum quantities.
2. Pb-free packaging, complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
3. Please refer to *Speed Grades* for Speed vs. V_{CC}
4. Tape & Reel.
5. NiPdAu Lead Finish.

Package Type	
28M1	28-pad, 4 x 4 x 1.0 body, Lead Pitch 0.45mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
28P3	28-lead, 0.300" Wide, Plastic Dual Inline Package (PDIP)
32M1-A	32-pad, 5 x 5 x 1.0 body, Lead Pitch 0.50mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
32A	32-lead, Thin (1.0mm) Plastic Quad Flat Package (TQFP)

Speed [MHz][3]	Power Supply [V]	Ordering Code[2]	Package[1]	Operational Range
20	1.8 - 5.5	ATmega328P-AU ATmega328P-AUR[5] ATmega328P-MMH[4] ATmega328P-MMHR[4][5] ATmega328P-MU ATmega328P-MUR[5] ATmega328P-PU	32A 32A 28M1 28M1 32M1-A 32M1-A 28P3	Industrial (-40°C to 85°C)
		ATmega328P-AN ATmega328P-ANR[5] ATmega328P-MN ATmega328P-MNR[5] ATmega328P-PN	32A 32A 32M1-A 32M1-A 28P3	Industrial (-40°C to 105°C)

Note:

1. This device can also be supplied in wafer form. Please contact your local Atmel sales office for detailed ordering information and minimum quantities.
2. Pb-free packaging, complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
3. Please refer to *Speed Grades* for Speed vs. V_{CC}
4. Tape & Reel.
5. NiPdAu Lead Finish.

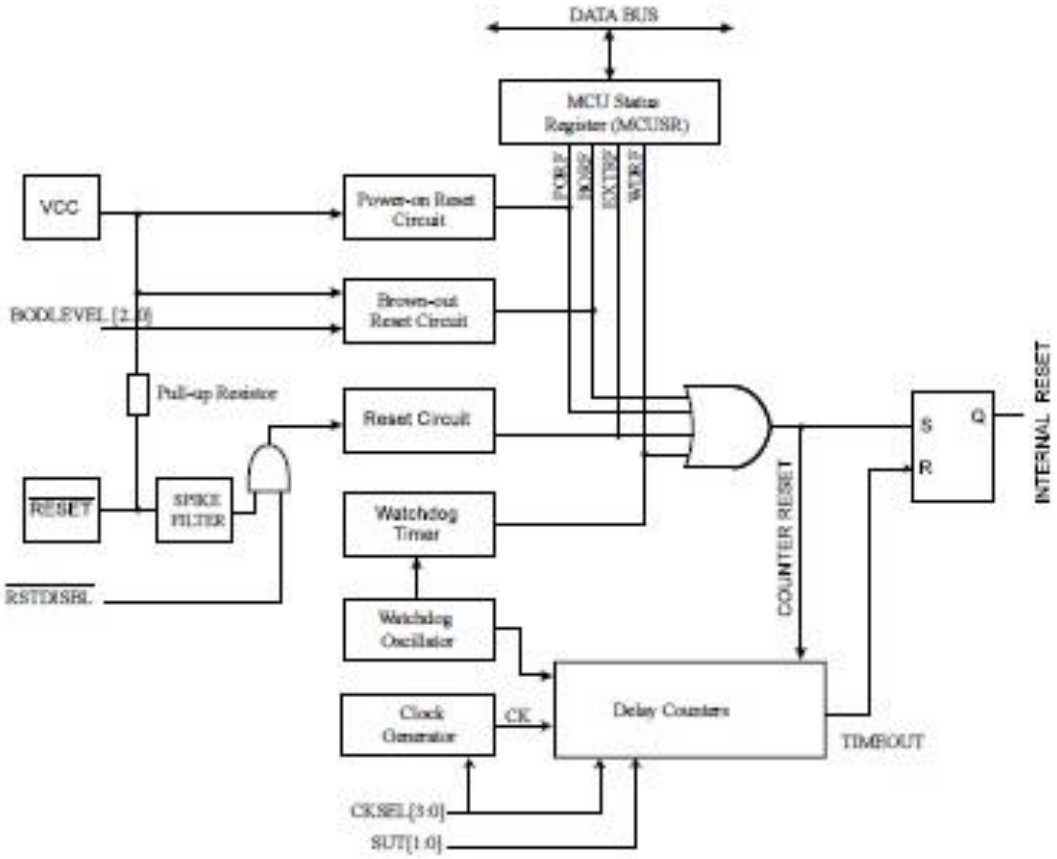
Package Type	
28M1	28-pad, 4 x 4 x 1.0 body, Lead Pitch 0.45mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
28P3	28-lead, 0.300" Wide, Plastic Dual Inline Package (PDIP)
32M1-A	32-pad, 5 x 5 x 1.0 body, Lead Pitch 0.50mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
32A	32-lead, Thin (1.0mm) Plastic Quad Flat Package (TQFP)

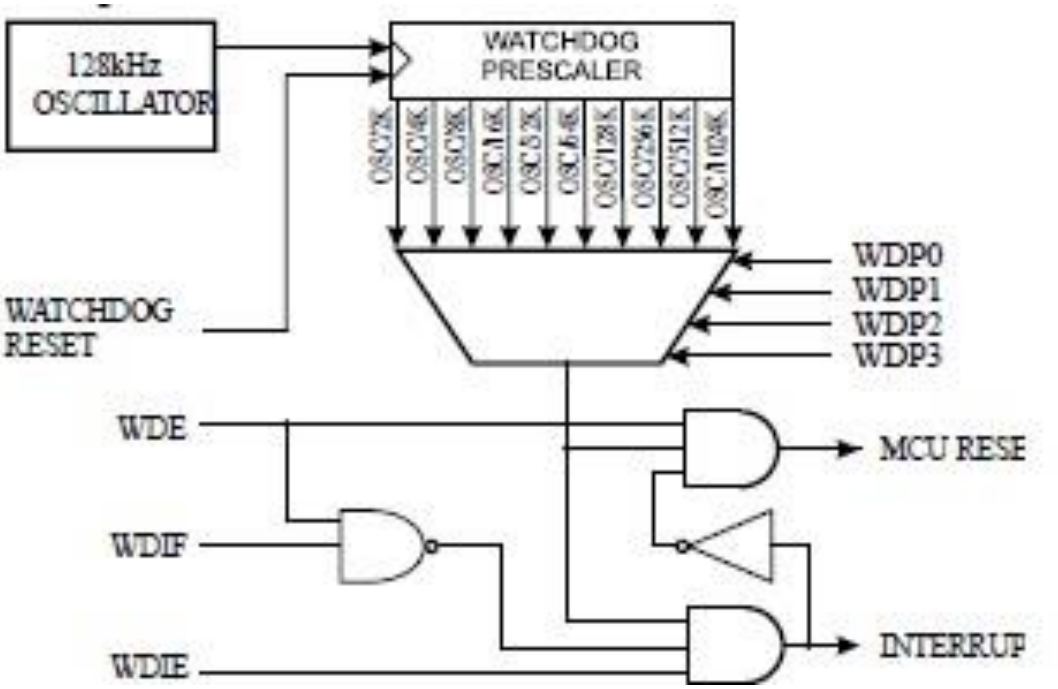
(32-pin MLF/TQFP) Pin#	(28-pin MLF) Pin#	(28-pin PIPD) Pin#	PAD	EXTINT	PCINT	ADC/AC	OSC	T/C #0	T/C #1	USART 0	I2C 0	SPI 0
1	1	5	PD[3]	INT1	PCINT19			OC2B				
2	2	6	PD[4]		PCINT20			T0		XCK0		
4	3	7	VCC									
3	4	8	GND									
6	-	-	VCC									
5	-	-	GND									
7	5	9	PB[6]		PCINT6		XTAL1/ TOSC1					
8	6	10	PB[7]		PCINT7		XTAL2/ TOSC2					
9	7	11	PD[5]		PCINT21			OC0B	T1			
10	8	12	PD[6]		PCINT22	AIN0		OC0A				
11	9	13	PD[7]		PCINT23	AIN1						
12	10	14	PB[0]		PCINT0		CLKO	ICP1				
13	11	15	PB[1]		PCINT1			OC1A				
14	12	16	PB[2]		PCINT2			OC1B				SS0
15	13	17	PB[3]		PCINT3			OC2A				MOSI0
16	14	18	PB[4]		PCINT4							MISO0
17	15	19	PB[5]		PCINT5							SCK0
18	16	20	AVCC									
19	-	-	ADC6			ADC6						
20	17	21	AREF									
21	18	22	GND									
22	-	-	ADC7			ADC7						
23	19	13	PC[0]		PCINT8	ADC0						
24	20	24	PC[1]		PCINT9	ADC1						
25	21	25	PC[2]		PCINT10	ADC2						
26	22	26	PC[3]		PCINT11	ADC3						
27	23	27	PC[4]		PCINT12	ADC4					SDA0	
28	24	28	PC[5]		PCINT13	ADC5					SCL0	
29	25	1	PC[6]/ RESET		PCINT14							

Instruction	Stack pointer	Description
PUSH	Decremented by 1	Data is pushed onto the stack
CALL ICALL RCALL	Decremented by 2	Return address is pushed onto the stack with a subroutine call or interrupt
POP	Incremented by 1	Data is popped from the stack
RET RETI	Incremented by 2	Return address is popped from the stack with return from subroutine or return from interrupt

Device Clocking Option	CKSEL[3:0]
Low Power Crystal Oscillator	1111 - 1000
Full Swing Crystal Oscillator	0111 - 0110
Low Frequency Crystal Oscillator	0101 - 0100
Internal 128kHz RC Oscillator	0011
Calibrated Internal RC Oscillator	0010
External Clock	0000
Reserved	0001

Oscillator Source / Power Conditions	Start-Up Time from Power-down and Power-save	Additional Delay from Reset (V_{CC} = 5.0V)	CKSEL0	SUT[1:0]
Ceramic resonator, fast rising power	258 CK	14CK + 4.1ms[1]	0	00
Ceramic resonator, slowly rising power	258 CK	14CK + 65ms[1]	0	01
Ceramic resonator, BOD enabled	1K CK	14CK[2]	0	10
Ceramic resonator, fast rising power	1K CK	14CK + 4.1ms[2]	0	11
Ceramic resonator, slowly rising power	1K CK	14CK + 65ms[2]	1	00
Crystal Oscillator, BOD enabled	16K CK	14CK	1	01
Crystal Oscillator, fast rising power	16K CK	14CK + 4.1ms	1	10
Crystal Oscillator, slowly rising power	16K CK	14CK + 65ms	1	11


DATA BUS
MCU Status Register (MCUSR)
VCC
Power-on Reset Circuit
Brown-out Reset Circuit
BODLEVEL [2..0]
Pull-up Resistor
Reset Circuit
RESET
SPIKE FILTER
Watchdog Timer
RSTDISBL
Watchdog Oscillator
Clock Generator
CK
Delay Counters
TIMEOUT
COUNTER RESET
INTERNAL RESET
CKSEL[3:0]
SUT[1:0]


128kHz OSCILLATOR
WATCHDOG PRESCALER
WDP0
WDP1
WDP2
WDP3
WATCHDOG RESET
WDE
WDIF
WDIE
MCU RESE
INTERRUP