

LAMPIRAN I
PEMROGRAMAN PADA CODE WIZARD AVR

```
/******
```

This program was produced by the
CodeWizardAVR V1.25.5 Standard
Automatic Program Generator
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Project :

Version :

Date : 15/08/2013

Author : F4CG

Company : F4CG

Comments:

Chip type : ATmega8535

Program type : Application

Clock frequency : 16,000000 MHz

Memory model : Small

External SRAM size : 0

Data Stack size : 128

```
*****/
```

```
int frekuensi=0;
```

```
float pulsa;
```

```
char temp[8];
```

```
#include <mega8535.h>
```

```
#include <lcd.h>
```

```
#include <delay.h>
```

```
#include <stdlib.h>
```

```
#include <stdio.h>
```

```
// Alphanumeric LCD Module functions
```

```
#asm
.equ __lcd_port=0x15 ;PORTC
#endasm
#include <lcd.h>
// External Interrupt 0 service routine
interrupt [EXT_INT0] void ext_int0_isr(void)
{
frekuensi++; // baca frekuensi yg masuk trus di increment
}
// Timer 1 overflow interrupt service routine
interrupt [TIM1_OVF] void timer1_ovf_isr(void)
{
// Reinitialize Timer 1 value
TCNT1H=0xD23A >> 8;
TCNT1L=0xD23A & 0xff;
pulsa=frekuensi;
frekuensi=0;
lcd_clear();
}
void tampilkan_LCD()
{
ftoa(pulsa,1,temp);
lcd_gotoxy(0,1);
lcd_puts(temp);
/*
if (pulsa >= 1000)
{
pulsa=pulsa/1000;
ftoa(pulsa,1,temp);
lcd_gotoxy(0,1);
lcd_puts(temp);
lcd_gotoxy(6,1);
}
*/
}
```

```
    lcd_putsf(" KHz");
}
else
{
    ftoa(pulsa,1,temp);
    lcd_gotoxy(0,1);
    lcd_puts(temp);
    lcd_gotoxy(6,1);
    lcd_putsf(" Hz");
}
*/
}
void main(void)
{
    // Declare your local variables here
    // Input/Output Ports initialization
    // Port A initialization
    // Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
    Func0=In
    // State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
    PORTA=0x00;
    DDRA=0x00;
    // Port B initialization
    // Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
    Func0=In
    // State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
    PORTB=0x00;
    DDRB=0x00;
    // Port C initialization
    // Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
    Func0=In
    // State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
```

```
PORTC=0x00;
DDRC=0x00;
// Port D initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTD=0x00;
DDRD=0x00;
// Timer/Counter 0 initialization
// Clock source: System Clock
// Clock value: Timer 0 Stopped
// Mode: Normal top=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=0x00;
// Timer/Counter 1 initialization
// Clock source: System Clock
// Clock value: 15,625 kHz
// Mode: Normal top=FFFFh
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer 1 Overflow Interrupt: On
// Input Capture Interrupt: Off
// Compare A Match Interrupt: Off
// Compare B Match Interrupt: Off
TCCR1A=0x00;
TCCR1B=0x05;
TCNT1H=0x00;
TCNT1L=0x00;
```

```
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;
// Timer/Counter 2 initialization
// Clock source: System Clock
// Clock value: Timer 2 Stopped
// Mode: Normal top=FFh
// OC2 output: Disconnected
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;
// External Interrupt(s) initialization
// INT0: On
// INT0 Mode: Falling Edge
// INT1: Off
// INT2: Off
GICR|=0x40;
MCUCR=0x02;
MCUCSR=0x00;
GIFR=0x40;
// Timer(s)/Counter(s) Interrupt(s) initialization
TIMSK=0x04;
// USART initialization
// Communication Parameters: 8 Data, 1 Stop, No Parity
// USART Receiver: On
// USART Transmitter: On
// USART Mode: Asynchronous
// USART Baud Rate: 9600
```

```
UCSRA=0x00;
UCSRB=0x18;
UCSRC=0x86;
UBRRH=0x00;
UBRRL=0x67;
// Analog Comparator initialization
// Analog Comparator: Off
// Analog Comparator Input Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;
// LCD module initialization
lcd_init(16);
// Global enable interrupts
#asm("sei")
while (1)
{
    lcd_gotoxy(0,0);
    lcd_putsf("Nilai Frekuensi");
    tampilkan_LCD();
    puts(temp);
    delay_ms(100);
};
}
```

PEMROGRAMAN PADA DELPHI

```
unit Unit1;
interface
uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, StdCtrls, CPort, ExtCtrls;
type
  TForm1 = class(TForm)
    ComPort1: TComPort;
    Button1: TButton;
    Button2: TButton;
    Edit1: TEdit;
    Edit2: TEdit;
    Label1: TLabel;
    Label2: TLabel;
    Button3: TButton;
    Memo1: TMemo;
    Edit3: TEdit;
    Button4: TButton;
    Timer1: TTimer;
    Edit4: TEdit;
    ComPort2: TComPort;
    Button5: TButton;
    Button6: TButton;
    Label3: TLabel;
    Timer2: TTimer;
    Label4: TLabel;
    Label5: TLabel;
    Label6: TLabel;
    Label7: TLabel;
    procedure Button1Click(Sender: TObject);
    procedure Button2Click(Sender: TObject);
```

```
procedure Button3Click(Sender: TObject);
procedure Button4Click(Sender: TObject);
procedure Timer1Timer(Sender: TObject);
procedure Button5Click(Sender: TObject);
procedure Button6Click(Sender: TObject);
procedure Timer2Timer(Sender: TObject);
private
  { Private declarations }
public
  { Public declarations }
end;

var
  Form1: TForm1;

implementation

{$R *.dfm}

procedure TForm1.Button1Click(Sender: TObject);
begin
  ComPort1.ShowSetupDialog;
end;

procedure TForm1.Button2Click(Sender: TObject);
begin
  if ComPort1.Connected then
    begin
      ComPort1.Close;
      button2.Caption:='Open';
    end
  else
```

```
begin
ComPort1.Open;
button2.Caption:='Close';
ComPort1.WriteStr('at+cmgf=1'+#13#10);
ComPort1.WriteStr('at+cscs="GSM"+#13#10);
end;
end;

procedure TForm1.Button3Click(Sender: TObject);
begin
ComPort1.WriteStr('at+cmgs="'+edit2.text+'"+#13#10);
ComPort1.WriteStr(edit1.text);
ComPort1.WriteStr(#26);
end;

procedure TForm1.Button4Click(Sender: TObject);
begin
Timer1.Enabled:=True;
end;

procedure TForm1.Timer1Timer(Sender: TObject);
var
data:string;
hasil:string;
count:integer;
frekuensi:real;

begin
//if count>5 then frekuensi:=StrToFloat(data);
//frekuensi:=StrToInt(data);
Memo1.Clear;
Edit3.Clear;
```

```
ComPort2.ReadStr(data,count);
Memo1.Lines.Add(data);
Edit3.Text:=data;

Label4.Caption:=IntToStr(length(data));

//hasil:=copy(data,1,2);
if length(data)=7 then
begin
//frekuensi:=StrToFloat(Edit3.Text);
hasil:=copy(data,1,2);
Label5.Caption:=hasil;
if StrToInt(hasil)>=StrToInt(Edit4.Text) then
begin
ComPort1.WriteStr('at+cmgs="'+edit2.text+'"+#13#10);
ComPort1.WriteStr((edit1.text));
ComPort1.WriteStr(#26);
Timer2.Enabled:=true;
Timer1.Enabled:=False;
Label6.Caption:='Kirim SMS';
end;
end;
end;
procedure TForm1.Button5Click(Sender: TObject);
begin
ComPort2.ShowSetupDialog;
end;

procedure TForm1.Button6Click(Sender: TObject);
begin
```

```
if ComPort2.Connected then
  begin
    ComPort2.Close;
    button6.Caption:='Open';
  end
else
  begin
    ComPort2.Open;
    button6.Caption:='Close';
  end;
end;
procedure TForm1.Timer2Timer(Sender: TObject);
var
  data:string;
  hasil:string;
  count:integer;
  frekuensi:real;
begin
  ComPort2.ReadStr(data,count);
  Memo1.Lines.Add(data);
  Edit3.Text:=data;
end;
end.
```