LAMPIRAN A

Source code mikrokontroler

```
#include <HP03.h>
#include <Wire.h>

void setup()
{
  Serial.begin(9600);
  Serial.flush();
  pinMode(10,OUTPUT);
  pinMode(3,OUTPUT);
  digitalWrite(10,HIGH);
  if(HP03.begin() == false){
  delay(5000);
    Serial.println(" "); }
}
void loop()
{
  if(HP03.update() == false){
    digitalWrite(10,HIGH);
    digitalWrite(3,HIGH);
    Serial.println(" ");}
  else
  {
    digitalWrite(3,HIGH);
```

```
    tampil();
  }
}
void tampil()
{
    Int asap;
    asap=analogRead(A0);
    Serial.print((HP03.Temperature/10.0)-( HP03.Temperature/10.0*0.01));
    Serial.print("/");
    Serial.print(HP03.Pressure/100.0);
    HP03.distanceUnits = METERS;
    Serial.print("/");
    Serial.print((HP03.getAltitude(HP03.Pressure)/10)+((HP03.getAltitude(HP03.Pressure)/10)*0
    .002);
    HP03.distanceUnits = FEET;
    Serial.print("/");
    long kaki = HP03.getAltitude(HP03.Pressure);
    Serial.print(kaki);
    Serial.print("/");
    Serial.print(asap);
    delay(900);
    Serial.println(" ");
}
```

LAMPIRAN B

Source code Delphi 7 - FORM MAIN

```
unit U_chart;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, CPort, ExtCtrls, StdCtrls, TeeProcs, TeEngine, Chart, Series,
  Menus, ComCtrls;

type
  TfrmMain = class(TForm)
    Chart2: TChart;
    Chart1: TChart;
    Button1: TButton;
    Button2: TButton;
    Button3: TButton;
    Timer1: TTimer;
    Series1: TLineSeries;
    Edit1: TEdit;
    Edit2: TEdit;
    Chart3: TChart;
    Edit3: TEdit;
    Edit4: TEdit;
```

```
Label1: TLabel;
Label2: TLabel;
Label3: TLabel;
MainMenu1: TMainMenu;
About1: TMenuItem;
Series2: TLineSeries;
Timer2: TTimer;
Timer3: TTimer;
Timer4: TTimer;
Series3: TBarSeries;
Series4: TBarSeries;
Label4: TLabel;
Timer5: TTimer;
Exit1: TMenuItem;
filenya: TMenuItem;
logfile: TMenuItem;
procedure Button1Click(Sender: TObject);
procedure Button2Click(Sender: TObject);
procedure Button3Click(Sender: TObject);
procedure Timer1Timer(Sender: TObject);
procedure Timer2Timer(Sender: TObject);
procedure Timer3Timer(Sender: TObject);
procedure Timer4Timer(Sender: TObject);
procedure Timer5Timer(Sender: TObject);
procedure Exit1Click(Sender: TObject);
procedure logfileClick(Sender: TObject);
```

```
  private
    { Private declarations }
  public
    { Public declarations }

  end;

var
  frmMain: TfrmMain;
  x: integer;
  s: string;
  a,b,c,d,e : string;
  temperatur,tekanan,altitude,kaki,asap : real;

implementation

uses U_DM, U_note,CEK;

{$R *.dfm}

procedure TfrmMain.Button1Click(Sender: TObject);
begin
    x:=0;
    Series1.Clear;
    Series2.Clear;
    Series3.Clear;
    Series4.Clear;
```

```
    timer1.Enabled := true;
    timer2.Enabled := true;
    timer3.Enabled := true;
    timer4.Enabled := true;
    timer5.Enabled := true;
    DmTA.comport1.Open;
    DmTA.comport1.Connected := true;

end;

procedure TfrmMain.Button2Click(Sender: TObject);
begin
    DmTA.comport1.ShowSetupDialog;
end;

procedure TfrmMain.Button3Click(Sender: TObject);
begin
    x:=0;
    timer1.Enabled :=false;
    timer2.Enabled :=false;
    timer3.Enabled :=false;
    timer4.Enabled :=false;
    timer5.Enabled :=false;
    DmTA.comport1.Connected := false;
    DmTA.comport1.Close;
    chart1.BottomAxis.Minimum:=0;
    chart2.BottomAxis.Minimum:=0;
```

```
    chart3.BottomAxis.Minimum:=0;
    Series1.Clear;
    Series2.Clear;
    Series3.Clear;
    Series4.Clear;
end;

procedure TfrmMain.Timer1Timer(Sender: TObject);
var
    z: TStringList;
    begin
x:=x+1;
      DMTA.comport1.ReadStr(s,16384);
      z := TStringList.Create;
      z.Delimiter:='/';
      z.DelimitedText:=s;
      a:=z[0];
      b:=z[1];
      c:=z[2];
      d:=z[3];
      e:=z[4];
      edit1.text := a;
      temperatur:= strtofloat(a);
      edit2.text := b;
      tekanan:= strtofloat(b);
      edit3.text := c;
      altitude:= strtofloat(c);
```

```
    edit4.text := d;
    kaki:= strtofloat(d);
    asap:= strtofloat(e);
end;


procedure TfrmMain.Timer2Timer(Sender: TObject);
begin
x:=x;
   with chart1 do begin
    AllowPanning := pmHorizontal;
    AllowPanning := pmVertical;
    leftAxis.StartPosition := 2;
    BottomAxis.Automatic := False;
    BottomAxis.Maximum := x;
    BottomAxis.Minimum := BottomAxis.Maximum-60;
    series1.AddY(temperatur);
    if BottomAxis.Minimum <= 0 then begin
       BottomAxis.Minimum := 0;
    end;
    end;

end;

procedure TfrmMain.Timer3Timer(Sender: TObject);
begin
x:=x;
```

```
    with chart2 do
    begin
      AllowPanning := pmHorizontal;
      AllowPanning := pmVertical;
      leftAxis.StartPosition := 2;
      BottomAxis.Automatic := False;
      BottomAxis.Maximum := x;
      BottomAxis.Minimum := BottomAxis.Maximum-60;
      series2.AddY(tekanan);
        if BottomAxis.Minimum <= 0 then begin
          BottomAxis.Minimum := 0;
      end;
        end;

end;

procedure TfrmMain.Timer4Timer(Sender: TObject);
begin
x:=x;
with chart3 do
  begin
      AllowPanning := pmHorizontal;
      BottomAxis.Automatic := False;
      BottomAxis.Maximum := x;
      BottomAxis.Minimum := BottomAxis.Maximum-10;
      series3.AddY(altitude);
      series4.AddY(kaki);
```

```
      if BottomAxis.Minimum <= 0 then begin
         BottomAxis.Minimum := 0;
      end;

      end;
end;

procedure TfrmMain.Timer5Timer(Sender: TObject);
begin
  if (temperatur>55) and (asap>450) then
    begin
      frmCEK.Show;
    end;
end;

procedure TfrmMain.logfileClick(Sender: TObject);
begin
frmNote.Show;
end;

procedure TfrmMain.Exit1Click(Sender: TObject);
begin
close;
end;


end.
```

LAMPIRAN C

Source code Delphi 7 – form logfile

```
unit U_note;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, ComCtrls, StdCtrls, Menus, FileManagers, ExtCtrls;

type
  TfrmNote = class(TForm)
    FileManager1: TFileManager;
    MainMenu1: TMainMenu;
    Memo1: TMemo;
    StatusBar1: TStatusBar;
    File1: TMenuItem;
    New1: TMenuItem;
    Open1: TMenuItem;
    Save1: TMenuItem;
    Saveas1: TMenuItem;
    N1: TMenuItem;
    N2: TMenuItem;
    Mostrecentfiles1: TMenuItem;
    N3: TMenuItem;
```

```
  Exit1: TMenuItem;
  OpenDialog1: TOpenDialog;
  SaveDialog1: TSaveDialog;
  StartLogging1: TMenuItem;
  StopLogging1: TMenuItem;
  Timer1: TTimer;
  procedure FileManager1ChangeFile(Sender: TObject);
  function FileManager1New(Sender: TObject): Boolean;
  function FileManager1Open(Sender: TObject;
    FileName: TFileName): Boolean;
  function FileManager1Save(Sender: TObject;
    FileName: TFileName): Boolean;
  procedure FormCreate(Sender: TObject);
  procedure FormDestroy(Sender: TObject);
  procedure FormClose(Sender: TObject; var Action: TCloseAction);
  procedure New1Click(Sender: TObject);
  procedure Open1Click(Sender: TObject);
  procedure Save1Click(Sender: TObject);
  procedure Saveas1Click(Sender: TObject);
  procedure Exit1Click(Sender: TObject);
  procedure Memo1Change(Sender: TObject);
  procedure StartLogging1Click(Sender: TObject);
  procedure Timer1Timer(Sender: TObject);
  procedure StopLogging1Click(Sender: TObject);
private
  { Private declarations }
public
```

```
    { Public declarations }
  end;

var
  frmNote: TfrmNote;
  y: integer;

implementation
uses U_DM,U_Chart;
{$R *.dfm}

procedure TfrmNote.FileManager1ChangeFile(Sender: TObject);
begin
  if (FileManager1.FileName <> '')
    then Caption := 'LOG - ' + ExtractFileName(FileManager1.FileName)
    else Caption := 'LOG';
  StatusBar1.Panels[1].Text := FileManager1.FileName;
end;




function TfrmNote.FileManager1New(Sender: TObject): Boolean;
begin
  Memo1.Lines.Clear;
  Result := True;
```

```
end;

function TfrmNote.FileManager1Open(Sender: TObject;
  FileName: TFileName): Boolean;
begin
  Memo1.Lines.LoadFromFile(FileName);
  Result := True;
end;

function TfrmNote.FileManager1Save(Sender: TObject;
  FileName: TFileName): Boolean;
begin
  Memo1.Lines.SaveToFile(FileName);
  Result := True;
end;

procedure TfrmNote.FormCreate(Sender: TObject);
begin
  FileManager1.LoadMRUFromFile('MostRecentFiles.ini');
  FileManager1.ShowMRUList(Mostrecentfiles1);
end;

procedure TfrmNote.FormDestroy(Sender: TObject);
begin
  FileManager1.SaveMRUToFile('MostRecentFiles.ini');
end;
```

```
procedure TfrmNote.FormClose(Sender: TObject; var Action: TCloseAction);
begin
  Action := FileManager1.Close;
end;

procedure TfrmNote.New1Click(Sender: TObject);
begin
  FileManager1.New;
end;

procedure TfrmNote.Open1Click(Sender: TObject);
begin
  FileManager1.Open;
end;

procedure TfrmNote.Save1Click(Sender: TObject);
begin
  FileManager1.Save;
end;

procedure TfrmNote.Saveas1Click(Sender: TObject);
begin
  FileManager1.SaveAs;
end;

procedure TfrmNote.Exit1Click(Sender: TObject);
begin
```

```
  Close;
end;

procedure TfrmNote.Memo1Change(Sender: TObject);
begin
  FileManager1.Modified := True;
end;

procedure TfrmNote.StartLogging1Click(Sender: TObject);
begin
Timer1.Enabled := true;
y := 0;
end;




procedure TfrmNote.Timer1Timer(Sender: TObject);
begin
y := y+1;
memo1.Lines.Add(FormatDateTime('c',now)+'--'+'temperatur='+' '+U_Chart.a+' '+
'tekanan='+' '+U_Chart.b+' '+'altitude(meter)='+' '+U_Chart.c+' '+'altitude(kaki)='+
' '+U_Chart.d+');
end;

procedure TfrmNote.StopLogging1Click(Sender: TObject);
begin
```

```
Timer1.Enabled:= false;
end;


end.
```