LAMPIRAN

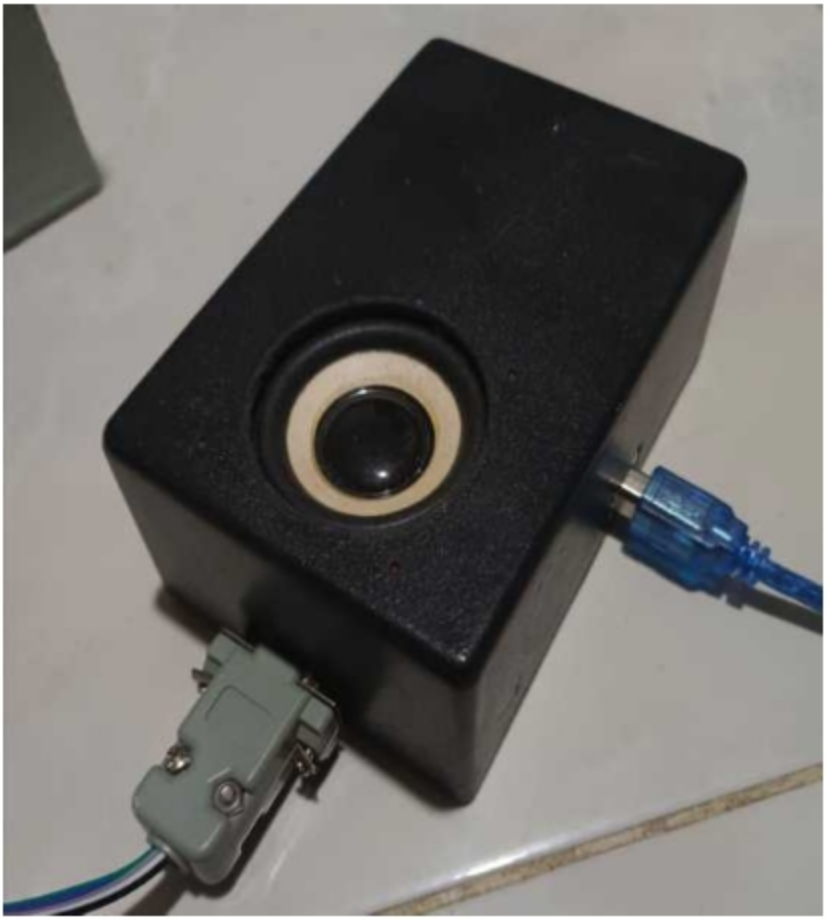
Lampiran. 1 Program Alat

```
#include "SoftwareSerial.h"
#include "DFRobotDFPlayerMini.h"

SoftwareSerial softwareSerial(3, 2); //RX, TX
DFRobotDFPlayerMini player;

const int tunda = 100;
const int lamaSuara = 3000;
int nilaiAmbang = 550; // threshold Sensor yg kita
inginkan

void setup()
{
    Serial.begin(9600);
    softwareSerial.begin(9600);
    if (player.begin(softwareSerial))
      {
        Serial.println("OK");
        player.volume(1);
      } else
          {
            Serial.println("Connecting to DFPlayer
Mini failed!");
          }
}

void loop()
{
      //baca sensor 1
      int nilaiSensor1 = analogRead(A0);
      Serial.print("Sensor 1 : ");
      Serial.println(nilaiSensor1);
```

```
    if (nilaiSensor1 > nilaiAmbang)
        {
          Serial.println("Kebakaran di titik A");
          player.play(1);
          delay(lamaSuara);
          player.stop();
        }
    //baca sensor 2
    int nilaiSensor2 = analogRead(A1);
    Serial.print("Sensor 2 : ");
    Serial.println(nilaiSensor2);
    if (nilaiSensor2 > nilaiAmbang)
        {
          Serial.println("Kebakaran di titik B");
          player.play(2);
          delay(lamaSuara);
          player.stop();
        }
    //baca sensor 3
    int nilaiSensor3 = analogRead(A2);
    Serial.print("Sensor 3 : ");
    Serial.println(nilaiSensor3);
    if (nilaiSensor3 > nilaiAmbang)
        {
          Serial.println("Kebakaran di titik C");
          player.play(3);
          delay(lamaSuara);
          player.stop();
        }
    //baca sensor 4
    int nilaiSensor4 = analogRead(A3);
    Serial.print("Sensor 4 : ");
    Serial.println(nilaiSensor4);
    if (nilaiSensor4 > nilaiAmbang)
        {
          Serial.println("Kebakaran di titik D");
```

```
            player.play(4);
            delay(lamaSuara);
            player.stop();
          }
}
```

Lampiran. 2 Dokumentasi Penelitian



Lampiran. 3 Datasheet Arduino Uno

Arduino® UNO R3

Product Reference Manual
SKU: A000066

Description

The Arduino® UNO R3 is the perfect board to get familiar with electronics and coding. This versatile development board is equipped with the well-known ATmega328P and the ATMega 16U2 Processor.

This board will give you a great first experience within the world of Arduino.

Target areas:

Maker, introduction, industries

Features

- **ATMega328P** Processor
  - **Memory**
    - AVR CPU at up to 16 MHz
    - 32 kB Flash
    - 2 kB SRAM
    - 1 kB EEPROM
  - **Security**
    - Power On Reset (POR)
    - Brown Out Detection (BOD)
  - **Peripherals**
    - 2x 8-bit Timer/Counter with a dedicated period register and compare channels
    - 1x 16-bit Timer/Counter with a dedicated period register, input capture and compare channels
    - 1x USART with fractional baud rate generator and start-of-frame detection
    - 1x controller/peripheral Serial Peripheral Interface (SPI)
    - 1x Dual mode controller/peripheral I2C
    - 1x Analog Comparator (AC) with a scalable reference input
    - Watchdog Timer with separate on-chip oscillator
    - Six PWM channels
    - Interrupt and wake-up on pin change
  - **ATMega16U2 Processor**
    - 8-bit AVR® RISC-based microcontroller
  - **Memory**
    - 16 kB ISP Flash
    - 512B EEPROM
    - 512B SRAM
    - debugWIRE interface for on-chip debugging and programming
  - **Power**
    - 2.7-5.5 volts

2 Ratings

2.1 Recommended Operating Conditions

Symbol	Description	Min	Max
	Conservative thermal limits for the whole board:	-40 °C (-40 °F)	85 °C (185 °F)

NOTE: In extreme temperatures, EEPROM, voltage regulator, and the crystal oscillator, might not work as expected.

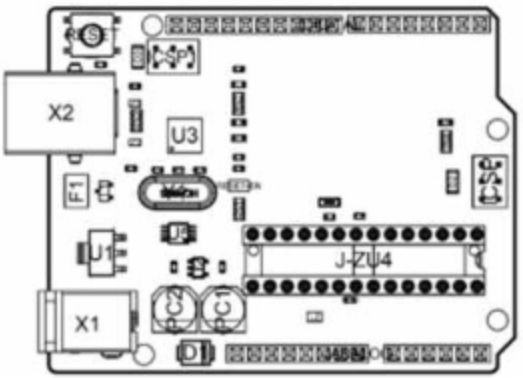
2.2 Power Consumption

Symbol	Description	Min	Typ	Max	Unit
VINMax	Maximum input voltage from VIN pad	6	-	20	V
VUSBMax	Maximum input voltage from USB connector		-	5.5	V
PMax	Maximum Power Consumption	-	-	xx	mA

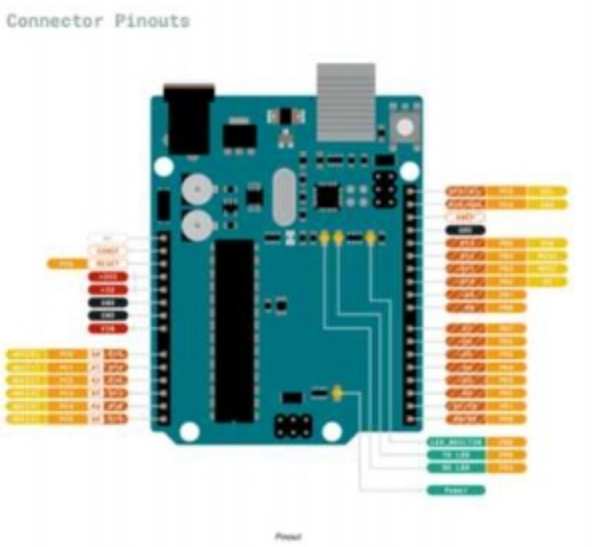
3 Functional Overview

3.1 Board Topology

Top view



5 Connector Pinouts



Lampiran. 4 Datasheet PAM8403

PAM8403

Filterless 3W Class-D Stereo Audio Amplifier

Key Features

- 3W Output at 10% THD with a 4 Ω Load and 5V Power Supply
- Filterless, Low Quiescent Current and Low EMI
- Low THD+N
- Superior Low Noise
- Efficiency up to 90%
- Short Circuit Protection
- Thermal Shutdown
- Few External Components to Save the Space and Cost
- Pb-Free Package

Applications

- LCD Monitors / TV Projectors
- Notebook Computers
- Portable Speakers
- Portable DVD Players, Game Machines
- Cellular Phones Speaker Phones

General Description

The PAM8403 is a 3W, class-D audio amplifier. It offers low THD+N, allowing it to achieve high-quality sound reproduction. The new filterless architecture allows the device to drive the speaker directly , requiring no low-pass output filters, thus to save the system cost and PCB area.

With the same numbers of external components, the efficiency of the PAM8403 is much better than that of class-AB cousins. It can extend the battery life, ideal for portable applications.

The PAM8403 is available in SOP-16 package.

Lampiran. 5 Datasheet Sensor Asap

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	Circuit voltage	5V±0.1	AC OR DC
V_H	Heating voltage	5V±0.1	ACOR DC
R_L	Load resistance	can adjust	
R_H	Heater resistance	33 Ω ± 5%	Room Tem
P_H	Heating consumption	less than 800mw	

B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	-20℃-50℃	
Tas	Storage Tem	-20℃-70℃	
R_H	Related humidity	less than 95%Rh	
O_2	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value is over 2%

C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remarks
Rs	Sensing Resistance	3K Ω -30K Ω (1000ppm iso-butane)	Detecting concentration scope: 200ppm-5000ppm LPG and propane 300ppm-5000ppm butane 5000ppm-20000ppm methane 300ppm-5000ppm H_2 100ppm-2000ppm Alcohol
α (3000/1000) isobutane	Concentration Slope rate	≤0.6	
Standard Detecting Condition	Temp: 20℃±2℃ Humidity: 65%±5%	Vc:5V±0.1 Vh: 5V±0.1	
Preheat time	Over 24 hour		

	Parts	Materials
1	Gas sensing layer	SnO_2
2	Electrode	Au
3	Electrode line	Pt
4	Heater coil	Ni-Cr alloy
5	Tubular ceramic	Al_2O_3
6	Anti-explosion network	Stainless steel gauze (SUS316 100-mesh)
7	Clamp ring	Copper plating Ni
8	Resin base	Bakelite
9	Tube Pin	Copper plating Ni

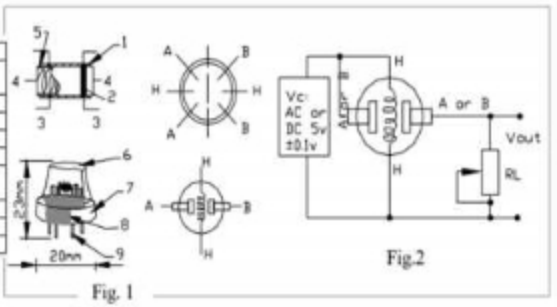
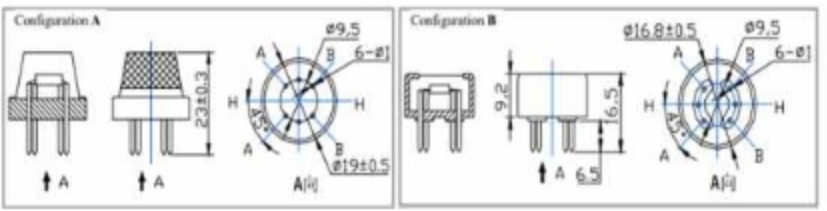


Fig. 1

Fig.2



Lampiran. 6 Datasheet Dfplayer Mini

DFPLayer Mini

1. Summary

1.1 .Brief Instruction

DFPLayer Mini module is a serial MP3 module provides the perfect integrated MP3, WMV hardware decoding. While the software supports TF card driver, supports FAT16, FAT32 file system. Through simple serial commands to specify music playing, as well as how to play music and other functions, without the cumbersome underlying operating, easy to use, stable and reliable are the most important features of this module.

1.2 .Features

- Support Mp3 and WMV decoding
- Support sampling rate of 8KHz,11.025KHz,12KHz,16KHz,22.05KHz,24KHz,32KHz,44.1KHz,48KHz
- 24-bit DAC output, dynamic range support 90dB, SNR supports 85dB
- Supports FAT16, FAT32 file system, maximum support 32GB TF card
- A variety of control modes, serial mode, AD key control mode
- The broadcast language spots feature, you can pause the background music being played
- Built-in 3W amplifier
- The audio data is sorted by folder; supports up to 100 folders, each folder can be assigned to 1000 songs
- 30 levels volume adjustable, 10 levels EQ adjustable.

1.3 .Application

- Car navigation voice broadcast
- Road transport inspectors, toll stations voice prompts
- Railway station, bus safety inspection voice prompts
- Electricity, communications, financial business hall voice prompts
- Vehicle into and out of the channel verify that the voice prompts
- The public security border control channel voice prompts
- Multi-channel voice alarm or equipment operating guide voice
- The electric tourist car safe driving voice notices
- Electromechanical equipment failure alarm
- Fire alarm voice prompts
- The automatic broadcast equipment, regular broadcast.

2. Module Application Instruction

2.1. Specification Description

Item	Description
MP3Format	1、Support 11172-3 and ISO13813-3 layer3 audio decoding
	2、Support sampling rate (KHZ):8/11.025/12/16/22.05/24/32/44.1/48
	3、Support Normal、Jazz、Classic、Pop、Rock etc
UART Port	Standard Serial; TTL Level; Baud rate adjustable(default baud rate is 9600)
Working Voltage	DC3.2~5.0V; Type :DC4.2V
Standby Current	20mA
Operating Temperature	-40~+70
Humidity	5% ~95%

Table 2.1 Specification Description

2.2 .Pin Description

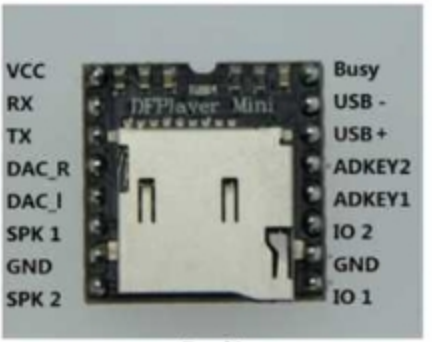


Figure 2.1

No	Pin	Description	Note
1	VCC	Input Voltage	DC3.2~5.0V;Type: DC4.2V
2	RX	UART serial input	
3	TX	UART serial output	
4	DAC_R	Audio output right channel	Drive earphone and amplifier
5	DAC_L	Audio output left channel	Drive earphone and amplifier
6	SPK2	Speaker-	Drive speaker less than 3W
7	GND	Ground	Power GND
8	SPK1	Speaker+	Drive speaker less than 3W
9	IO1	Trigger port 1	Short press to play previous(`long press to decrease volume`)
10	GND	Ground	Power GND
11	IO2	Trigger port 2	Short press to play next（long press to increase volume）
12	ADKEY1	AD Port 1	Trigger play first segment
13	ADKEY2	AD Port 2	Trigger play fifth segment
14	USB+	USB+ DP	USB Port
15	USB-	USB- DM	USB Port
16	BUSY	Playing Status	Low means playing ?High means no

KARTU MONITORING BIMBINGAN

MAHASISWA PROGRAM STUDI TEKNIK ELEKTRO
FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH PAREPARE

PROPOSAL

Mahasiswa : A. Muh. Batara Ramadhan	**Pembimbing I** : Muhammad Basri, ST., MT.
NIM : 217180032	**Pembimbing II** : Alauddin Y., ST., M.Kom.
Judul Skripsi : Alat Mikrokontroller Multi Sensor Pengaman Rumah	

ARAHAN PEMBIMBING I	HARI/TGL & PARAF PEMBIMBING	ARAHAN PEMBIMBING II	HARI/TGL & PARAF PEMBIMBING
Konsultasi 1		Konsultasi 1 - Format Penulisan - Daftar Pustaka	
Konsultasi 2		Konsultasi 2 Flow Chart, dan Perancangan Langkah	
Konsultasi 3		Konsultasi 3 - Flow Chart Sistem Langkah	
Konsultasi 4		Konsultasi 4 - Sensor Level air ditambah menggunakan Sensor Kemiringan.	
Konsultasi 5 Proposal		Konsultasi 5 Acc	

Lanjut ke halaman selanjut...

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Lanjutan ...

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Konsultasi 6		Konsultasi 6	
Konsultasi 7		Konsultasi 7	
Konsultasi 8		Konsultasi 8	
Konsultasi 9		Konsultasi 9	
Konsultasi 10		Konsultasi 10	

Parepare, 7/7/2024

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Mahasiswa

A. Muh. Batara Ramadhan
NIM. 217180032

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SKRIPSI

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Judul Skripsi : Alat Mikrokontroller Multi Sensor Pengaman Rumah	

ARAHAN PEMBIMBING I	HARI/TGL & PARAF PEMBIMBING	ARAHAN PEMBIMBING II	HARI/TGL & PARAF PEMBIMBING
Konsultasi 1		Konsultasi 1 - Perbaikan penggunaan sensor - gambar flowchart	28/8/2024
Konsultasi 2		Konsultasi 2 - Bab 4 pengujian	
Konsultasi 3		Konsultasi 3 - Abstrak	14/9/2024
Konsultasi 4 - Kata IV di fix kan - Pembagian Si Penguji		Konsultasi 4	
Konsultasi 5 Acc Hasil		Konsultasi 5 Acc	16/9/2024

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Konsultasi 6		Konsultasi 6	
Konsultasi 7		Konsultasi 7	
Konsultasi 8		Konsultasi 8	
Konsultasi 9		Konsultasi 9	
Konsultasi 10		Konsultasi 10	

Parepare, _____

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