

# DTMF

From Robot Wiki

## Contents

- 1 Introduction
- 2 Pin Definition
- 3 Connection Diagram
- 4 Sample Code
- 5 Modulating DTMF from Arduino
- 6 Troubleshooting
- 7 Documents

## Introduction

This board is a Dual-tone multi-frequency signaling module decoder for Arduino and gadgeteer. With its audio connector you can decode the crazy funny noises common phones make. If you are not sure what I'm talking about, imagine a home phone while pressing several of its keys. These Touch-Tones have a specific frequency or sound that this module can decode.

Together with GSM / GPRS / GPS shield this module can communicate your Arduino with any phone land line or Cell phone in the world, within GSM signal range. Which goes as far as your cellphone.

## Pin Definition

For Gadgeteer module just connect the IDC 10; For Arduino shield here is the pin definition

DTMF Arduino

Q1 12

Q2 11

Q3 10

Q4 9

STD 8

SPK1 2

SPK2 3

Q1~Q4 and STD are part of the DTMF demodulation interface. These pins are required for this board SPK pins are for an optional DTMF modulation from arduino. Which requires an alternative library for tone generation, read below for more details

## Connection Diagram

For the Shield version, just stack it on an Arduino compatible device. If you are using the module, just wire the pins like the table above to your Arduino.

## Sample Code

You must download the library

```
?
1 /*
2   DTMF.cpp - Example code for DTMF library
3   Pin Diagram
4
5   DTMF      Arduino
6   Q1      12
7   Q2      11
8   Q3      10
9   Q4      9
10  STD     8
11  SPK1     2
12  SPK2     3
13
14 */
15
16
17
18 #include "dtmf.h"
19
20 DTMF dtmf;
21
22 void setup()
23 {
24   Serial.begin(9600);
25 }
26
27 void loop()
28 {
29   // Play a default number with all possibilities
30   //dtmf.playDTMF();
31
32   // Read DTMF codes one by one and print it on Serial
33   int myDtmf;
34   myDtmf = dtmf.getDTMF();
35   if(myDtmf != -1) Serial.println(myDtmf);
36   delay(80); // to avoid getting repeated output.
37 }
```

# Modulating DTMF from Arduino

Arduino current Tone library performs very well for single tone generation. Since it uses a single timer, dual tone generation at the same time is not possible. DTMF is a dual tone signal, and in order to enable this feature we need to use an external library. The DTMF library integrates an updated version of the Arduino Tone Library - V0006 from 2010. Note that using this feature, will occupy an extra timer and might affect some other libraries requiring timers to function.

However this function, is not entirely reliable due to the performance of Arduino. Requiring an amplifier  
(updating)

## Troubleshooting

- Timing means performance. If you are getting duplicated numbers, you need to change the delay in the example.
- If Some numbers are incorrectly displayed. edit the dtmf.cpp file or drop a line in the forums.

## Documents

- Library download (<https://github.com/DFRobot/DTMF/archive/master.zip>)
- Datasheet (<http://www.dfrobot.com/image/data/TOY0047/MT8870.pdf>)

Retrieved from "<http://www.dfrobot.com/wiki/index.php?title=DTMF&oldid=26662>"

Categories: [Product Manual](#) | [DFR Series](#) | [Sensors](#)

- 
- This page was last modified on 22 May 2014, at 19:05.
  - This page has been accessed 1,541 times.