TDS Water Quality Detector Module

BME63M001
Arduino Library Description

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www.bestmodulescorp.com

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Introduction

The Best Modules BME63M001 is a water quality detector module, which uses the UART communication method. This document provides the description of the BME63M001 Arduino Lib functions and how to install the Arduino Lib. The example demonstrates the functions of get the version information and read the TDS and temperature values in the specified channel.

Arduino Lib Functions

Arduino Lib Name: BME63M001		Lib Version: V1.0.1
Constructors & Initialisation		
1	BME63M001(HardwareSerial*theSerial=&Serial)	
	Description	Constructor, uses hardware serial interface
	Parameter	* theSerial: select hardware serial interface
	Return Value	—
	Note	—
2	BME63M001(uint8_t rxPin,uint8_t txPin)	
	Description	Constructor, uses software serial interface
	Parameter	rxPin: RX pin, connected to the module TX pin txPin: TX pin, connected to the module RX pin
	Return Value	—
	Note	—
3	void begin(uint32_t baud=9600)	
	Description	Module initialisation, configure the UART communication baud rate
	Parameter	baud: baud rate
	Return Value	void
	Note	—
Performance Functions		
4	uint16_t getFWVer()	
	Description	Get the module version number
	Parameter	—
	Return Value	Version number
	Note	—
5	float readTDS(uint8_t channel)	
	Description	Read the TDS value of the specified channel
	Parameter	channel: 0x01: channel 1 0x02: channel 2
	Return Value	TDS value (unit: ppm)
	Note	The channel is CH1 or CH2
6	float readTemperature(uint8_t channel)	
	Description	Read the temperature value of the specified channel
	Parameter	channel: 0x01: channel 1 0x02: channel 2
	Return Value	Temperature value (unit: °C)
	Note	The channel is CH1 or CH2

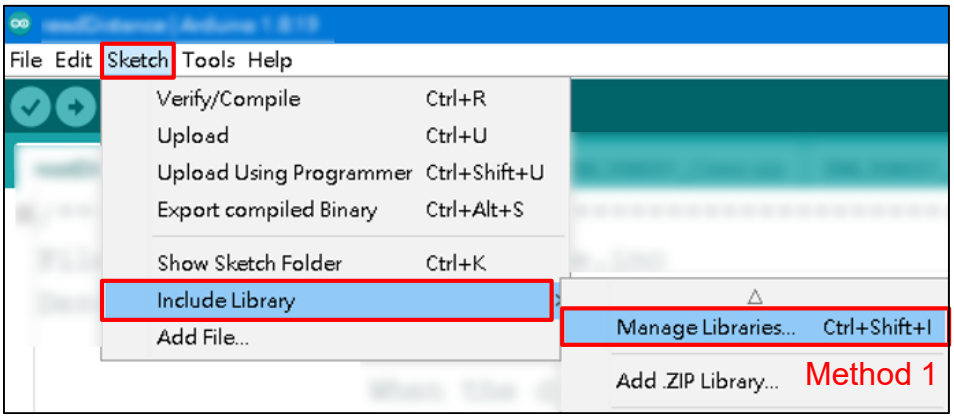
7	uint8_t sleep()	
	Description	Set the module to enter sleep mode
	Parameter	—
	Return Value	Execution result: 1: Succeeded 0: Failed
	Note	—
8	uint8_t reset()	
	Description	Set the module to reset
	Parameter	—
	Return Value	Execution result: 1: Succeeded 0: Failed
	Note	—

Arduino Lib Download and Installation

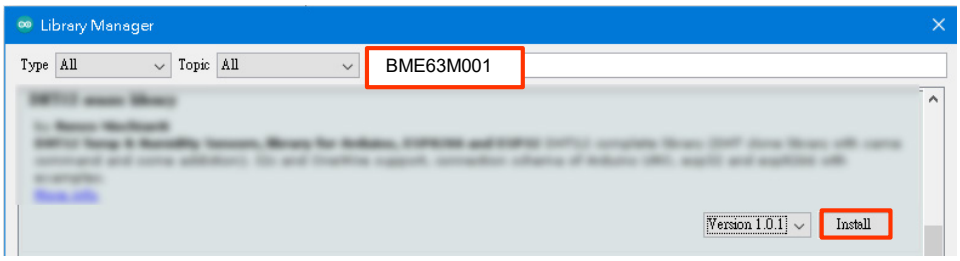
BME63M001 Library: Refer to the following two methods to install the BME63M001 Arduino Library

Method 1: Search for installation

Arduino IDE → Sketch → Include Library → Manage Libraries... → Search BME63M001 → Install



Search for Installation Step 1

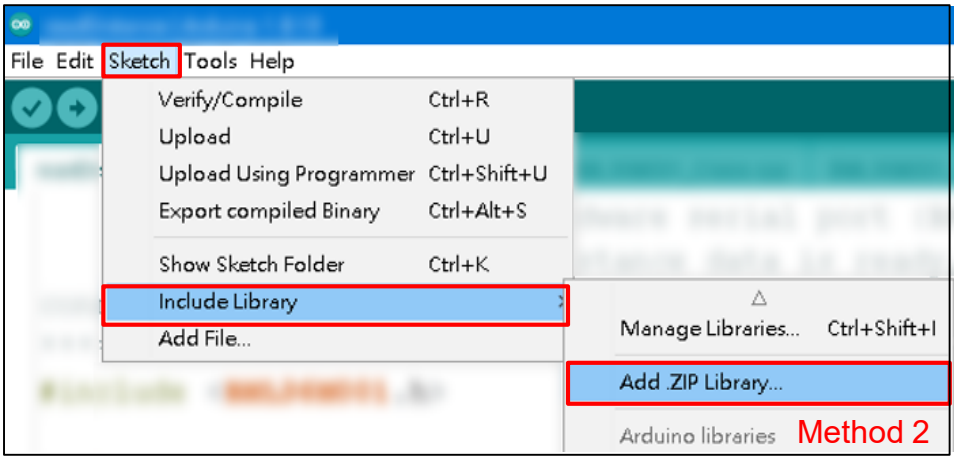


Search for Installation Step 2

Method 2: Download the .ZIP library before adding it

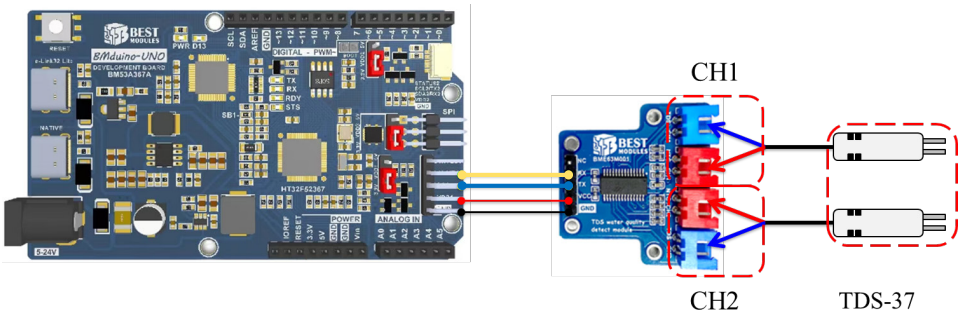
Download the Arduino example (BME63M001Library) under the DOCUMENTS menu from the Best Modules website (https://www.bestmodulescorp.com/ bme63m001.html#tab-product2).

Add .ZIP library: Arduino IDE → Sketch → Include Library → Add .ZIP Library...



Arduino Example

Example: readTDS



Physical Connection Diagram

Example function: Get the module version number and read the TDS and temperature values of the specified channel.

1. Open an example program: File → Examples → Select Lib(BME63M001) → Select the program (readTDS)

2. Example program description:

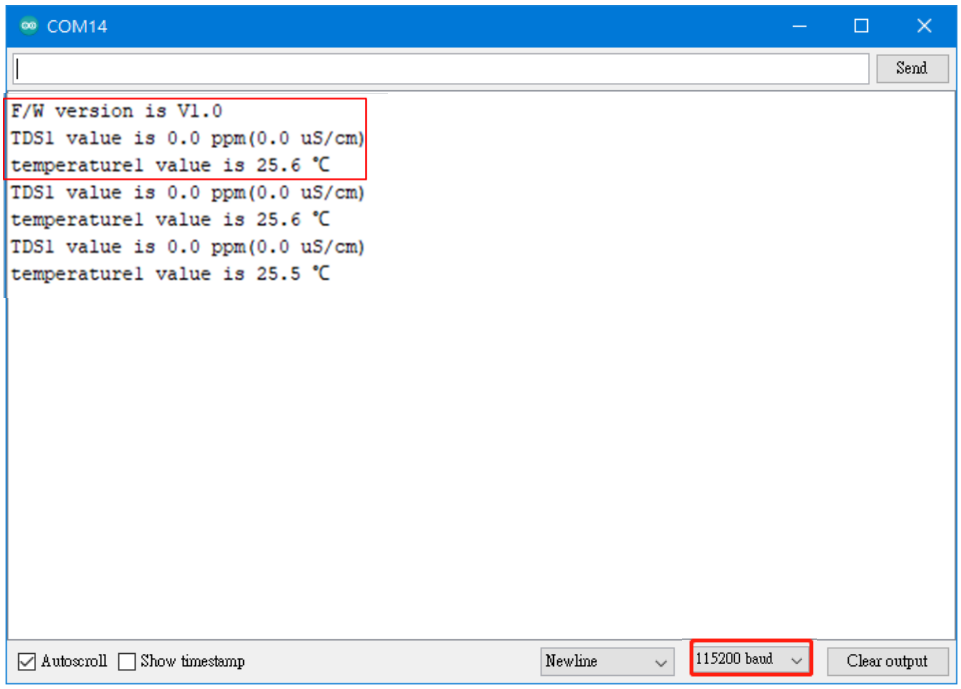
a. Create object & module initialisation, get the module version number information.

```
#include <BME63M001.h>
BME63M001 myTDS (6,7);        // Create the Arduino development board
                              // general software serial object
uint8_t channel;              // Channel selection
uint16_t FWVer;               // Version number
float TDSValue;               // TDS value
float TempValue;              // Temperature value
void setup()
{
  myTDS.begin();              // Module initialisation
  Serial.begin(115200);       // Configure the serial port monitor
  /* Get the module version number information */
  FWVer = myTDS.getFWVer();
  Serial.print("F/W version is V");
  Serial.print(FWVer/256);
  Serial.print(".");
  Serial.println(FWVer%256);
}
```

b. Get the TDS and temperature values per second and display them on the serial monitoring window.

```
void loop()
{
  channel = 1;                // Select the CH1 channel
  TDSValue  = myTDS.readTDS(channel);
  TempValue = myTDS. readTemperature(channel) ;
  /* Print the TDS and temperature values and output them on the
  serial monitor */
  Serial.print("TDS");
  Serial.print(channel);      // Output the specified channel value
  Serial.print(" value is ");
  Serial.print(TDSValue,1);   // Output the TDS value
  Serial.print(" ppm");
  Serial.print("(");
  Serial.print(TDSValue*2,1);// Output the conductivity value
  Serial.println(" μS/cm)");
  Serial.print("temperature");
  Serial.print(channel);
  Serial.print(" value is ");
  Serial.print(TempValue,1); // Output the temperature value
  Serial.println(" °C");
}
```

3. Open the serial monitor and select the baud rate to be 115200. The module version number and the TDS and temperature values of the specified channel will be displayed on the serial monitor:



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