

## **Temp-Humid-Board Datasheet**

An add-on board with a DHT22 based Temperature and Humidity monitor.

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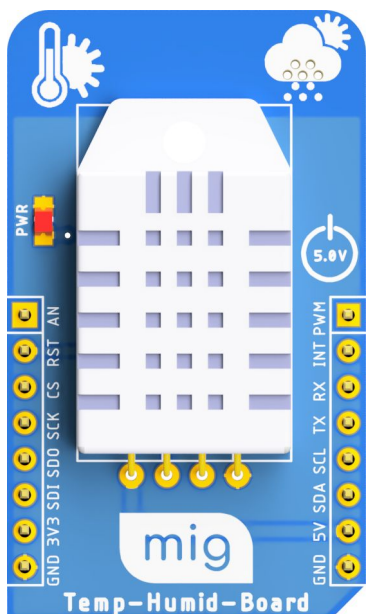
## 1. Introduction

Temperature and Humidity is an important parameter in many IoT based application projects. By accepting this fact, this add on peripheral board opens up an easy to go Temperature and Humidity sensor integration into your targeted hardware. It is based on a popular DHT22 sensor.

To ensure compatibility over a wide range of development boards the Peripheral is designed using popular mikroBUS™ standard from *MikroElektronika*.

This Peripheral Board also supports the Micro IoT Gateway platform. For additional hasslefree support of integration, it is advisable to use this sensor with the EmMate platform.

## 2. Board Overview

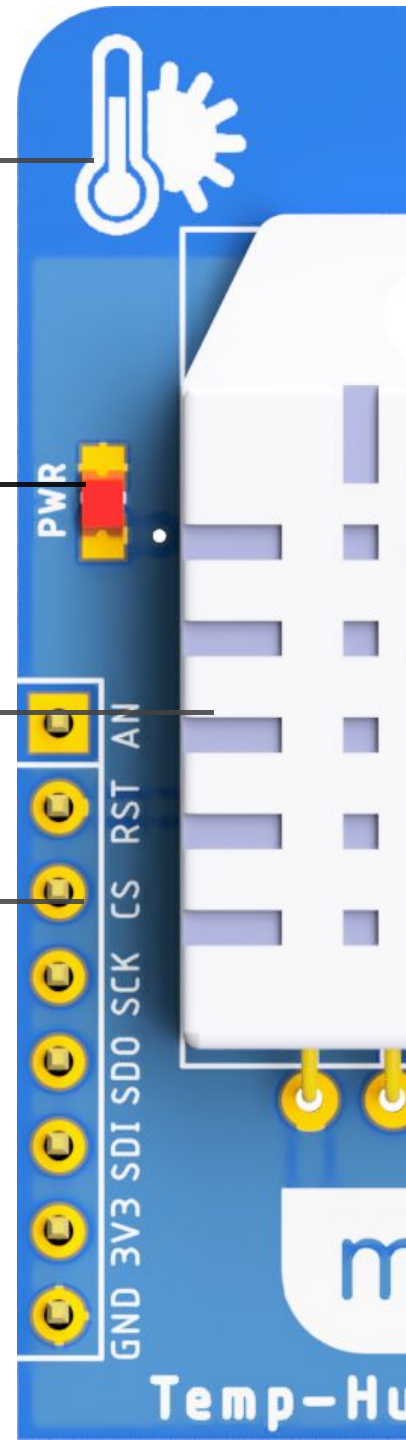


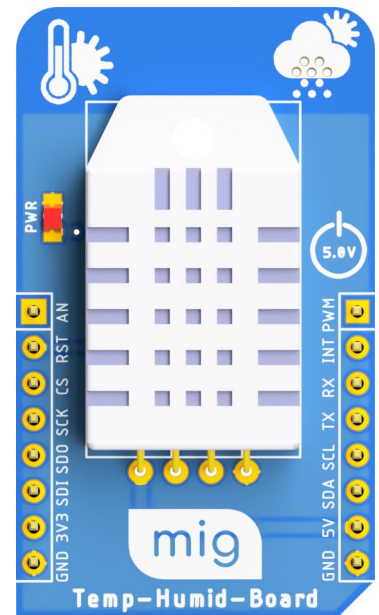
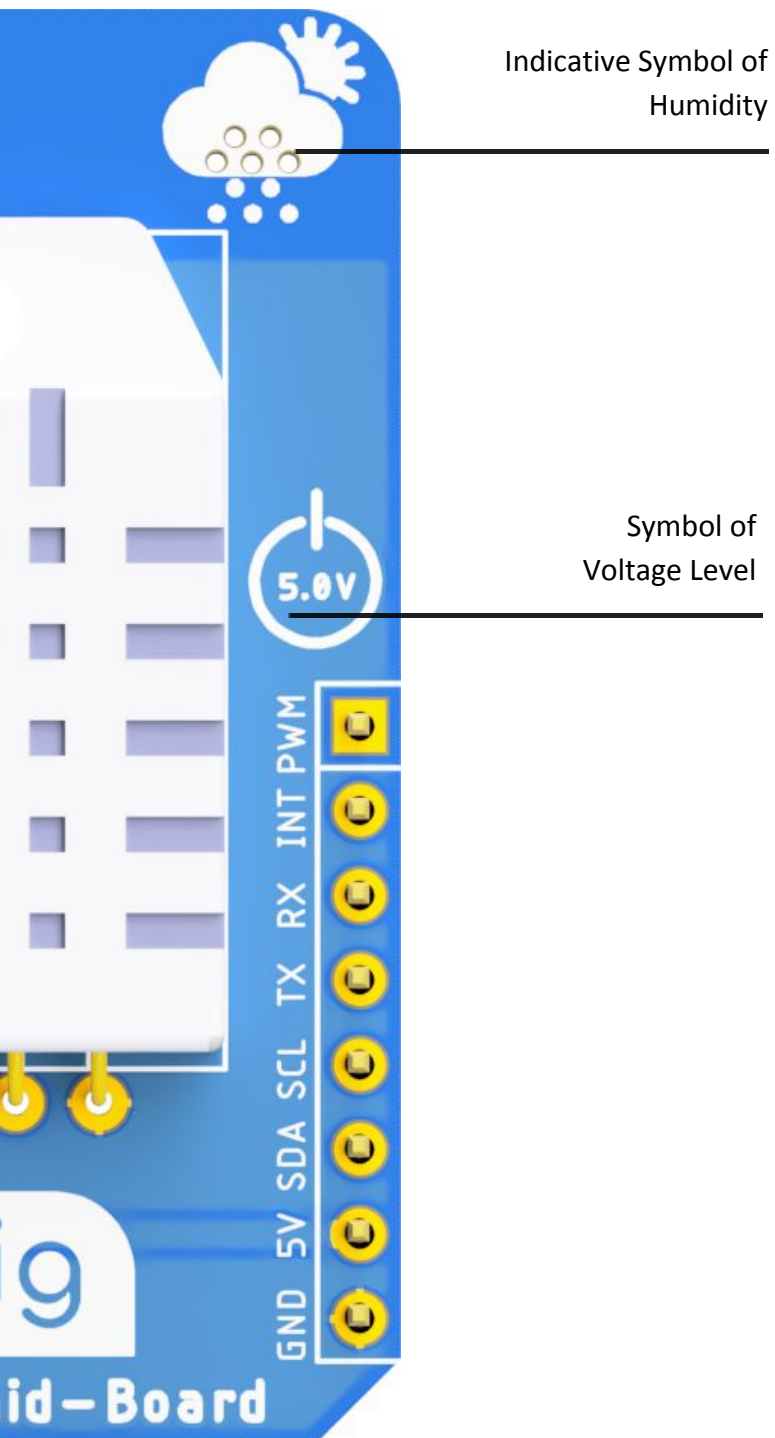
Indicative symbol of Temperature

Power LED

Temperature and Humidity Sensor (DHT22)

mikroBUS™ Port





### 3. Specification

Temp-Humid Peripheral Board is specified to sense Temperature and Humidity to a specified level. The Peripheral Board uses Digital communication and 5.0V operational voltage.

As this board uses DHT22 as the main sensor, the operating specification is highly dependable on the specification of DHT22.

The below table can be useful to identify the key parameters of this Temperature and Humidity sensor based Peripheral Board.

Type	Description
Click Board Type	Temperature & Humidity
On Board Module	DHT22
Key Features	Humidity 0-100%RH, Temperature -40~80 Celsius   Accuracy +/- 2% RH, +/-0.2 Celsius   Resolution 0.1%RH, 0.1 Celsius
Interface	Digital
Size	25.4mm x 57.15mm
Input Voltage	5.0V
Indication	Power LED

**Note 1:** See the reference document section and find the DHT22 datasheet to know the detailed features of the DHT22 module.

### 4. Absolute maximum rating.

Using this module above the maximum rating could potentially damage the sensor. Therefore, it is essential to know the limitations and maximum rating of the Peripheral Board before integrating with the hardware platform.

Description	Min	Typ	Max	Unit
Power Supply Voltage	3.3	-	5.5	VDC
Sensing Period		2		Seconds
Humidity Hysteresis		+/- 0.3		%RH
Operating Range Humidity	0		100	%RH
Operating Range Temperature	-40	-	80	Celsius

**Note:** Kindly go through the reference document section for more info about DHT22 Sensor.

**WARNING 1:** Do not use the module over 5.5VDC.

**WARNING 2:** Do not use the module to sense Humidity or Temperature beyond the minimum and maximum range.

## 5. Pinout Diagram

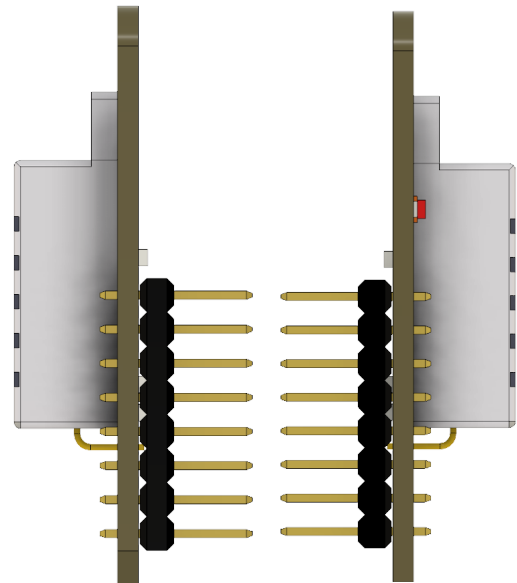
The Temperature and Humidity Board uses the mikroBUS™ standard. Thus, the pinout is the same as other mikroBUS boards.


Four pins are associated with this Peripheral Board, three for the Power related operations and the other one for DATA communication.

The Board uses .254" Berg header pins. One can use Berg Wires to connect the board with other development boards where mikroBUS™ ports are not available.

If a wired connection is used, make sure to connect all GND connections.

To know more about the pinout diagram, use the table below.



Notes	Pin					Pin	Notes
	NC	1	AN	PWM	16	NC	
Data	<b>DATA</b>	2	RST	INT	15	NC	
	NC	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
	NC	7	3.3V	5V	10	<b>+5V</b>	Power Supply
Ground	<b>GND</b>	8	GND	GND	9	<b>GND</b>	Ground

## 6. Onboard Setting, Symbols and indicators

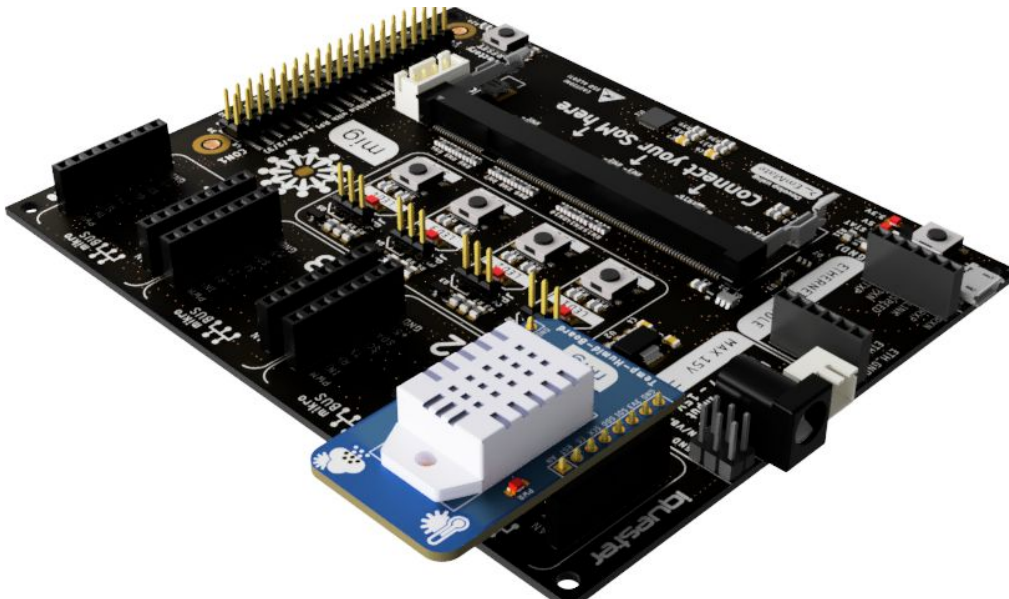
This sensor board does not have any onboard setting.

An LED is available to indicate power-on status. Kindly check the LED status before proceeding with the actual operation.

## 7. How to use this Peripheral Board

Attaching the Peripheral Board in the mikroBUS™ socket is effortless.

Before proceeding with the hardware interfacing, make sure that the development board has a clean 5V Power Output.



Connect the board carefully without putting a lot of pressure on the development board.

**Note 1:** - Use the board cutout marking in Peripheral and development boards to find out the orientation.

To setup the development board use the “hardware setup guide” guide for quick and effortless installation of this peripheral board. For “hardware setup guide” video, Go to - <https://mig.iquesters.com/video/hw-setup.mp4>

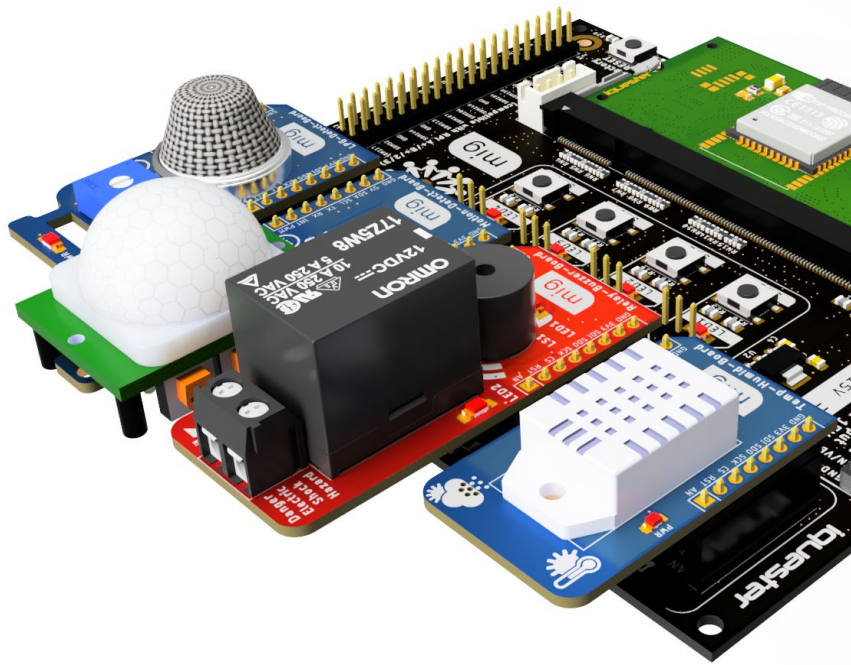
After connecting everything on the development board, kindly power up the board. For detail information on how to power up the board use “Power up your hardware” guide on the below link -

Go to - <https://mig.iquesters.com/video/power-up-hw.mp4>

Use EmMate or your desired development platform to integrate the sensor.



## 8. Reference Documentation



### **mikroBUS™ Standard and Specification**

<https://download.mikroe.com/documents/standards/mikrobus/mikrobus-standard-specification-v200.pdf>

### **EmMate Documentation**

<https://mig.iquesters.com/?s=embedded&p=documentation>

### **DHT22 Datasheet**

[http://www.farnell.com/datasheets/2702924.pdf?\\_ga=2.93046296.486950392.1568626475-422260341.1553852971](http://www.farnell.com/datasheets/2702924.pdf?_ga=2.93046296.486950392.1568626475-422260341.1553852971)

### **DHT22 Based Application and Firmware**

<https://gitlab.com/micro-iot-platform/projects/temp-humidity-monitor>

### **Schematic Diagram**

<https://gitlab.com/micro-iot-platform/projects/temp-humidity-monit>

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