HTU21D
PERIPHERAL MODULE

Digital humidity and Temperature Sensor

RoHS

General Description

The HTU21D peripheral module provides the necessary hardware to interface the HTU21D digital relative humidity and temperature sensor to any system that utilizes Xplained pro compatible expansion ports configurable for I^2C communication. The HTU21D sensor is a self-contained humidity and temperature sensor that is fully calibrated during manufacture. The sensor can operate from 1.5V to 3.6V, has selectable resolution, low battery detect, and checksum capability. The HTU21D has a low power stand-by mode for power-sensitive applications.

Specifications

- Measures relative humidity from 0% to 100%
- Measures temperature from -40℃ to 125℃
- I^2C communication
- Fully calibrated
- Fast response time
- Selectable resolution
- Very low power consumption

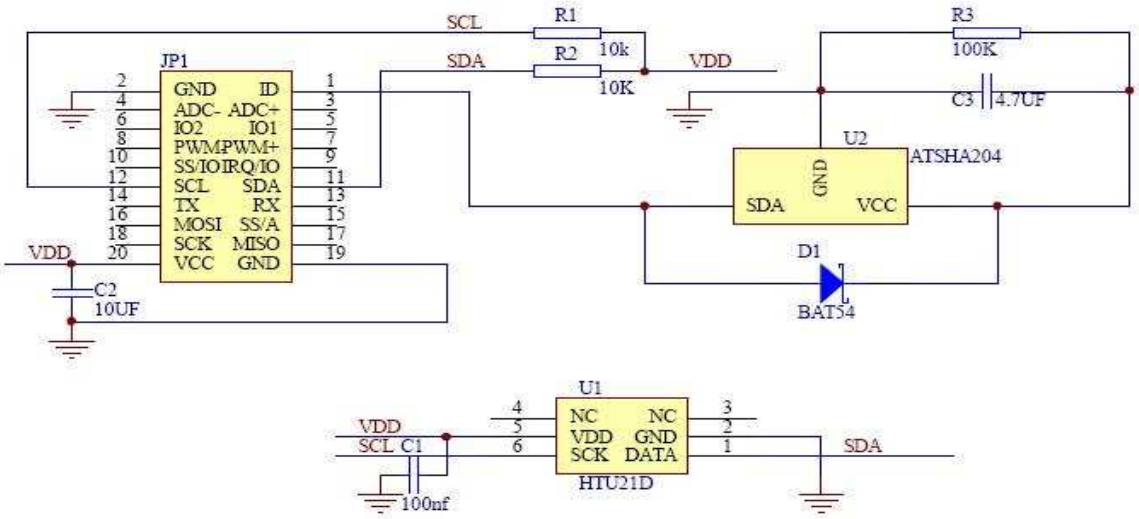
Features

- 20-pin Xplained pro compatible connector
- I^2C interface
- Xplained Pro hardware identification chip
- Atmel Studio 6 Project available for download
- µC C code available for download
- Selectable 8-12 bit resolution for humidity
- Selectable 11-14 bit resolution for temperature

Performance

- 0% to 100% relative humidity range
- -40℃ to 125℃ temperature range
- Very low power consumption
- Operates from 1.5V to 3.6V
- Fast response time – 5 seconds typical
- Built-in heater for fast recovery from saturation
- Recovers fully from condensation
- Fast conversion time – 14 mS typical

Schematic

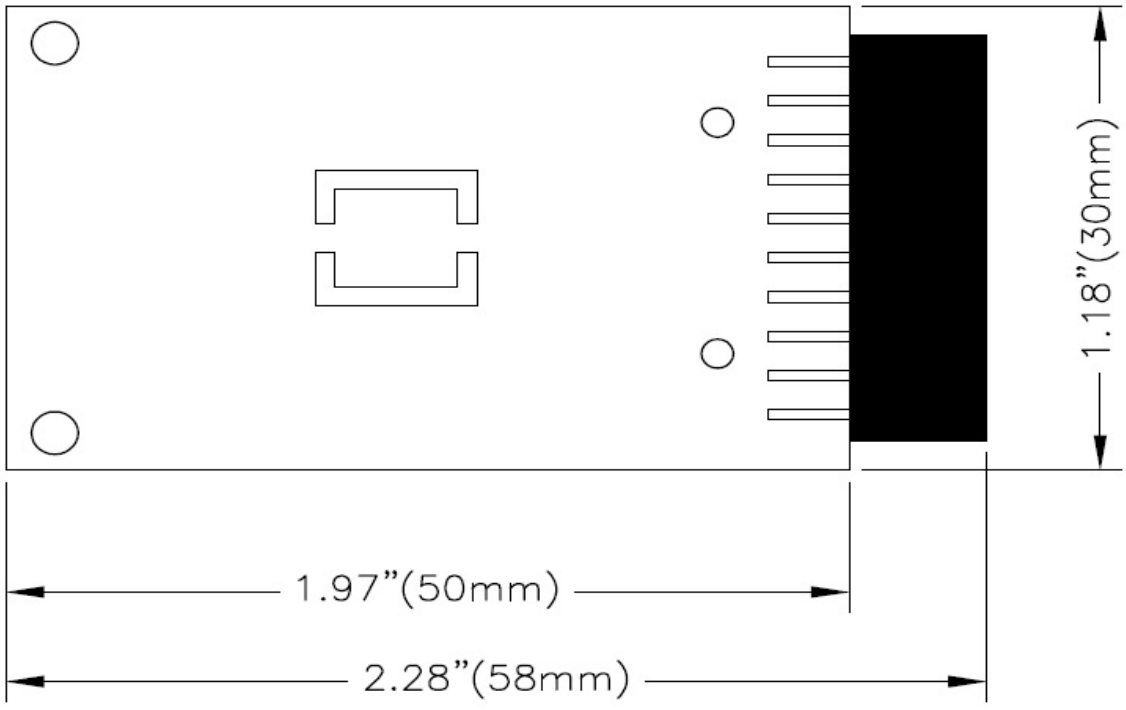


Connector Pin Assignments (1^2C Communications)

System Plug (Table 1)

Connector JP1					
Pin No.	**Signal**	**Description**	**Pin No.**	**Signal**	**Description**
1	ID	Address	11	SDA	I2C Serial Data
2	GND	Ground	12	SCL	I2C Serial Clock
3	N/C	Not Connected	13	N/C	Not Connected
4	N/C	Not Connected	14	N/C	Not Connected
5	N/C	Not Connected	15	N/C	Not Connected
6	N/C	Not Connected	16	N/C	Not Connected
7	N/C	Not Connected	17	N/C	Not Connected
8	N/C	Not Connected	18	N/C	Not Connected
9	N/C	Not Connected	19	GND	Ground
10	N/C	Not Connected	20	Vdd	Power Supply

Dimensions(mm)



Detailed Description

I²C Interface

The peripheral module can interface to the host being plugged directly into an Xplained Pro extension port (configured for I2C) through connector JP1

External Control Signals

The IC operates as an I²C slave using the standard 2 wire I²C connection scheme. The IC is controlled either by the host (through the Xplained pro connector). In cases where one or more of the SCL and SDA signals are driven from an external source, resistors R1, R2 provide pull-up. However, this also increases the apparent load to the external driving source. If the external source is *in*capable of driving these loads, they should be removed.

Reference Material

- Detailed information regarding operation of the IC:
  HTU21D Datasheet
- Detailed information regarding SAMD2x Driver:
  HTU21D SAMD2x Driver
- Complete software sensor evaluation kit for Xplained Pro:
  HTU21D SAMD2x Software

Ordering Information

Description	Part Number
HTU21D PERIPHERAL MODULE	DPP301A000

te.com/en/products/sensors.html

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