

v3 7x8 Sensors board project

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Code

<https://github.com/liutyi/arduino-humidity-sensors-test/blob/master/humidity-sensor-tester-v2.ino>

Screen



Sensor map

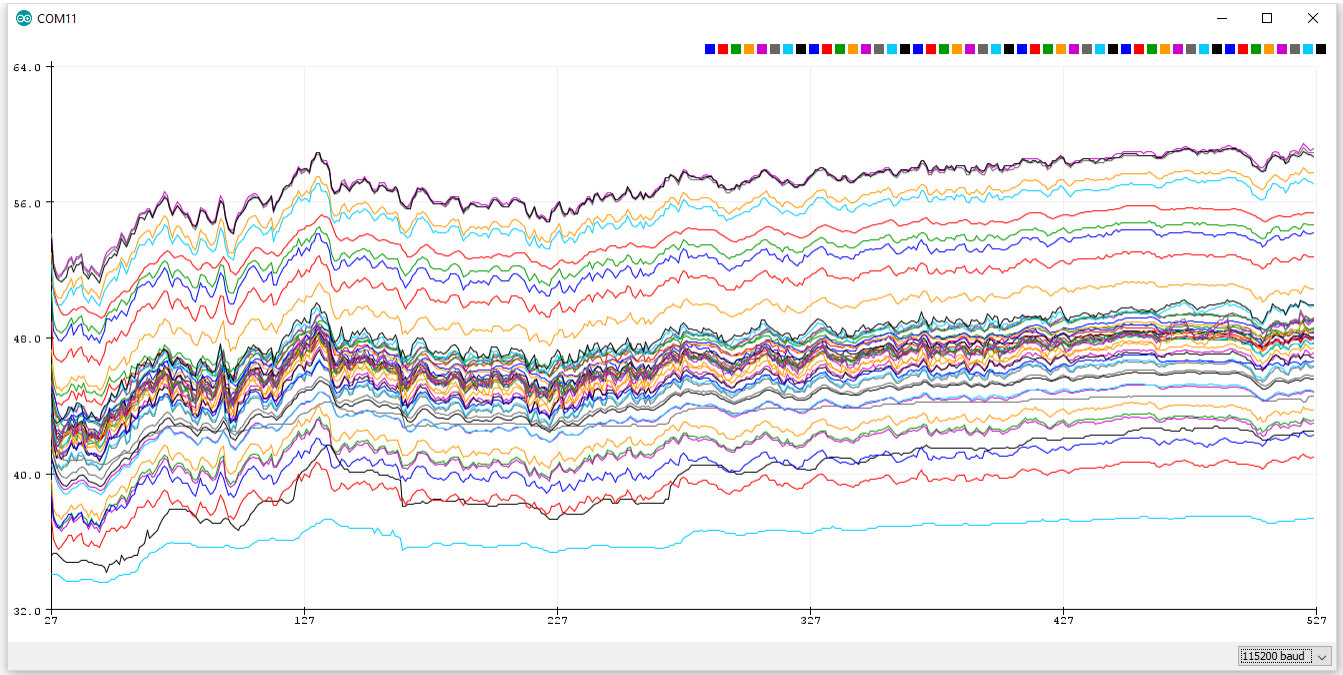
SHT2	SHT3	BME+	SI7x	HDCx	SHT8
SHT25	SHT35	BME680	SI7021-A	HDC1080	BME680-2
SHT21	SHT35	BME680	SI7021-4	HDC1080	BME680-2

SHT21	SHT31-2	BME280	Si7021-3	HDC1080	SHT31-A
SHT21-c	SHT31-2	BME280	Si7021-3	HDC1080-C	SHT85
SHT21-c	SHT31	BME280	Si7021-2	HDC1080-C	SHT85
SHT20	SHT31	DHT12	Si7021-2	HDC1080-C	SHT85
SHT20	SHT30	DHT12	Si7021	HDC1080-C	SHT32-2
SHT20	SHT30	DHT12	Si7021	HDC1080-C	SHT32-2

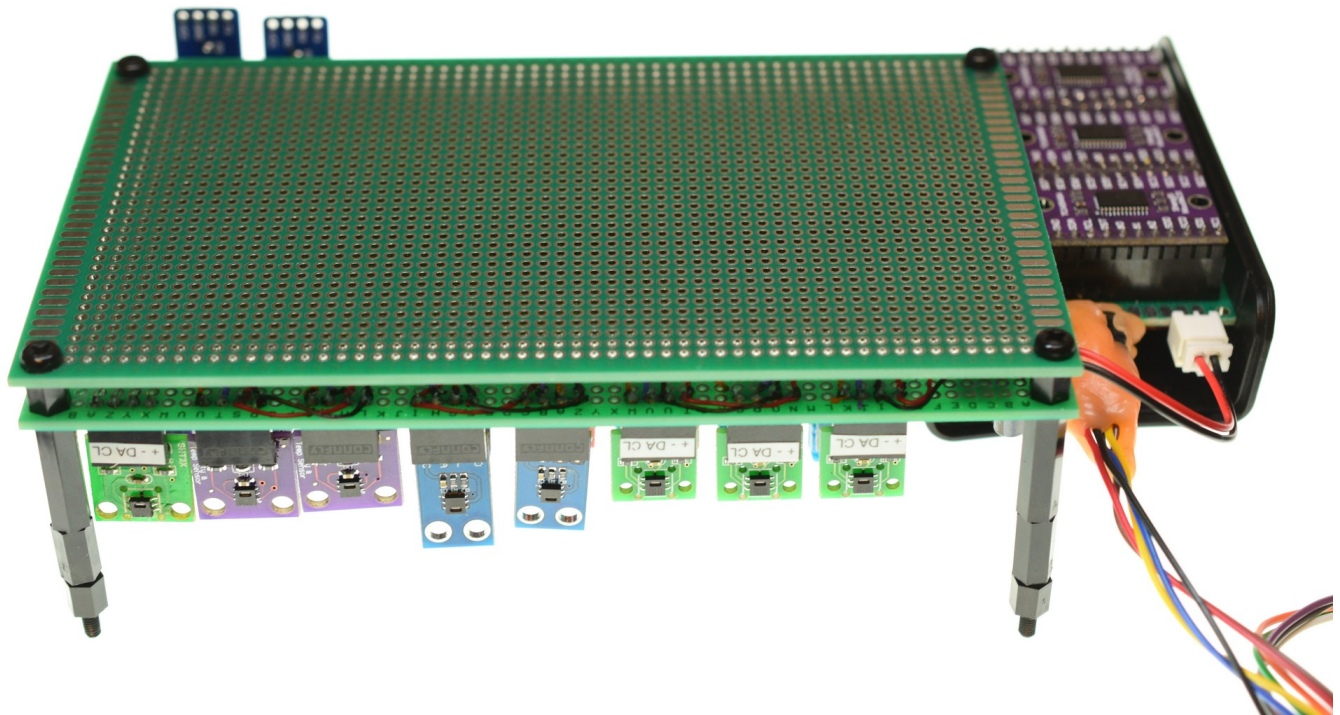
-A mean Adafruit sensor

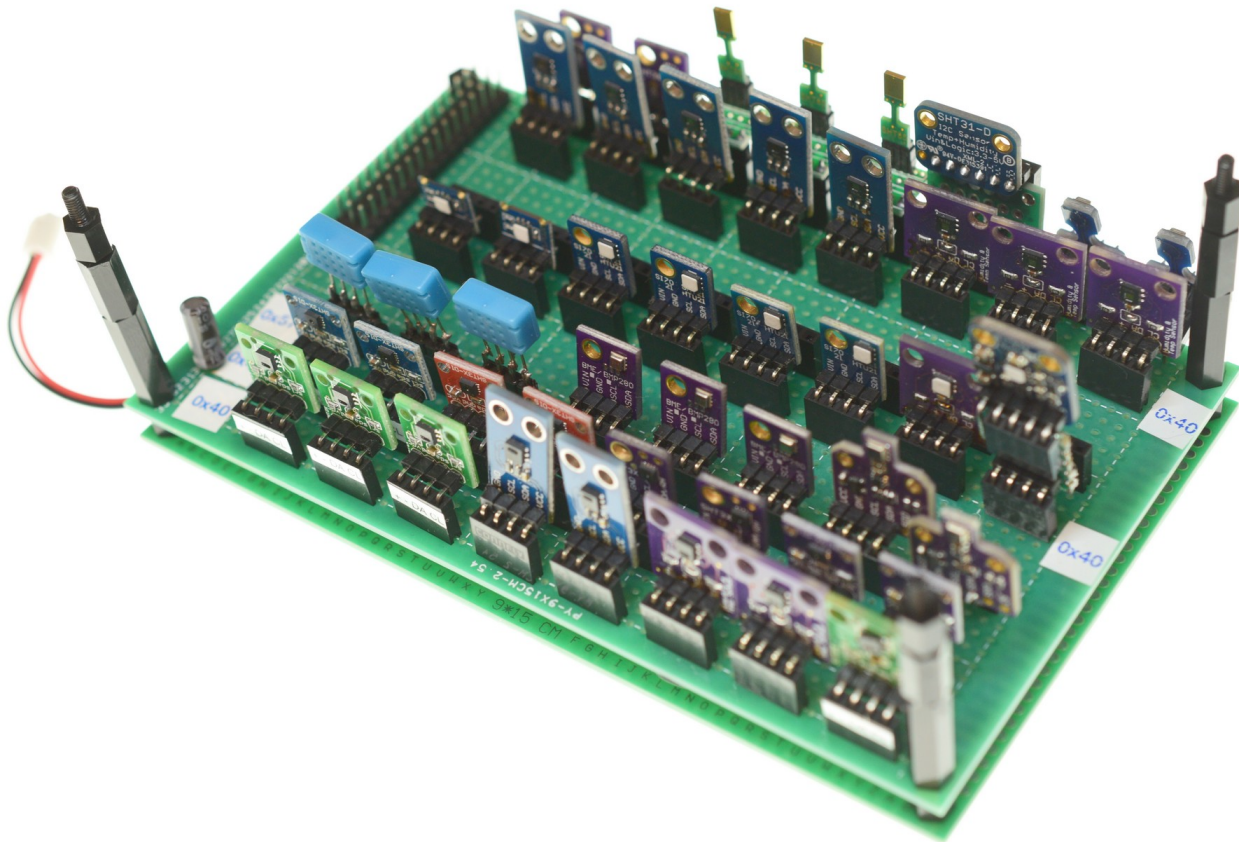
BME680-2 - GY-MCU680 with STM MCU on board

Serial plotter example



Hardware





Project components cost

Main Unit hardware

Keystudio Super Mega 2560 R3 Advanced [16\\$](#)

3.5 inch TFT LCD screen module Ultra HD 320X480 [9.5\\$](#)

OOTDTY 125x83x32mm Black Waterproof Box [3.5\\$](#)

4 channel IIC I2C Logic Level Converter Bi-Directional Module 5V to 3.3V [2\\$ for 10pcs + delivery](#)

Pololu 5V Step-Up Voltage Regulator U1V10F5 [4\\$ \(arduino.ua\)](#)

AMS1117 4.5-7V Turn 3.3V DC-DC Step Down Power Supply Module [0.5\\$ \(arduino.ua\)](#)

TZT type-c USB 5V 1A 18650 TP4056 Lithium Battery Charger Module [0.8\\$](#)

2500mAh Li-Pol 505378LP battery unprotected ~5\$

SD Card 8GB ~5\$

Sensor board hardware

Multiplexors board

TCA9548A I2C Multiplexer Breakout board for chaining Modules [3x3\\$](#)

SHT85 pin converter

Adapter board 1.27MM 2.0MM 2.54MM 8/12 pin [6.3\\$ for 20pcs](#)

1.27mm Pin Header Single Row Female 4 pin [1\\$](#)

1.27mm Pin Header Single Row Female 40 pin [2\\$](#)

One Roll 8 Colors 30AWG Wire Wrapping Wire, Tinned Copper Solid [4.2\\$](#)

M3 Nylon Black Hex M-F Spacers/ Screws/ Nuts Assorted Kit [4\\$](#)

9*15 Double Side Prototype PCB Board 2x[3\\$](#)

5x7 4x6 3x7 2x8 cm double Side Prototype PCB Board [2\\$ for 4 pcs](#)

 Components SubTotal (w/o connectors and sensors): **304\$**

Sensors

Si7021 2x[2\\$](#) 2x[3.2\\$](#) 1x[10\\$](#) 1x[3.5\\$](#)

BME280 3x[2.1\\$](#)

DHT12 3x [1.1\\$](#)

SHT20 3x[3.3\\$](#)

CJMCU-SHT21 3x[10\\$](#)

CJMCU-HDC1080 3x[4\\$](#)

GY-213V-HDC1080 3x[2\\$](#)

SHT25 [8.5\\$](#) + board

SHT30 2x[6.5\\$](#)

SHT31 2x[8.5\\$](#)

SHT31-2 1x[7\\$](#) 3x[3.5\\$](#)

SHT35 2x[17\\$](#)

AHT10 8x [1.12\\$](#)

AM2320 5x [1.5\\$](#)

BME680 2x[10.65\\$](#)

MCU680 2x[10.70\\$](#)

SHT85 3x[30\\$](#) + delivery

 sensors cost **340\$** (100 from that is SHT85 only)

Project v3 components approximate total cost: **700\$**