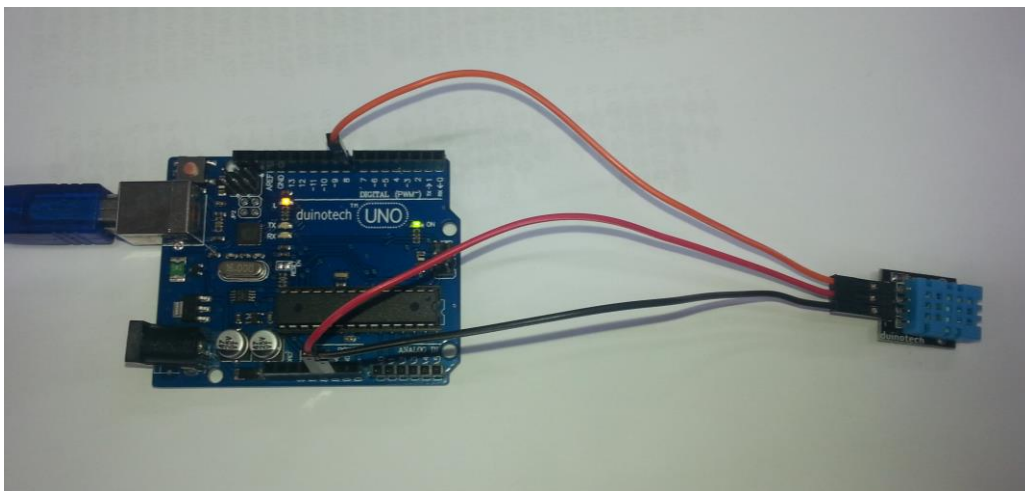


## XC4520 DHT11 Temperature and Humidity Sensor Module

The XC4520 DHT11 Temperature and Humidity Sensor Module is a fully digital temperature and humidity sensor that only uses one digital IO pin on your Duinotech Main Board. It's accurate to within 2 degrees and 5% humidity.

Pin	Duinotech Pin	Function	Comment
Middle	5V	5V supply	Supplies power to the module
S	D8	Sensor output	For communication with Duinotech Main Board
-	GND	Ground connection	Ground connection



The sample code below doesn't need a library, just connect as above and upload the code. It outputs the current temperature and humidity to the serial monitor about once a second.

### Sample Code:

```
int DHpin = 8;
byte dat [5];

void setup () {
  Serial.begin (9600);
  pinMode (DHpin, OUTPUT);
}

void loop () {
  start_test ();
  Serial.print ("Current humidity =");
  Serial.print (dat [0], DEC); // display the humidity-bit integer;
  Serial.print ('.');
  Serial.print (dat [1], DEC); // display the humidity decimal places;
  Serial.println ("%");
  Serial.print ("Current temperature =");
  Serial.print (dat [2], DEC); // display the temperature of integer bits;
  Serial.print ('.');
  Serial.print (dat [3], DEC); // display the temperature of decimal places;
  Serial.println ('C');
  delay (700);
}

byte read_data () {
  byte data;
```

```

    for (int i = 0; i < 8; i++) {
        if (digitalRead (DHpin) == LOW) {
            while (digitalRead (DHpin) == LOW); // wait for 50us
            delayMicroseconds (30); // determine the duration of the high level to determine the
data is '0 'or '1'
            if (digitalRead (DHpin) == HIGH)
                data |= (1 << (7-i)); // high front and low in the post
            while (digitalRead (DHpin) == HIGH); // data '1 ', wait for the next one receiver
        }
    }
    return data;
}

void start_test () {
    digitalWrite (DHpin, LOW); // bus down, send start signal
    delay (30); // delay greater than 18ms, so DHT11 start signal can be detected

    digitalWrite (DHpin, HIGH);
    delayMicroseconds (40); // Wait for DHT11 response

    pinMode (DHpin, INPUT);
    while (digitalRead (DHpin) == HIGH);
    delayMicroseconds (80); // DHT11 response, pulled the bus 80us
    if (digitalRead (DHpin) == LOW);
    delayMicroseconds (80); // DHT11 80us after the bus pulled to start sending data

    for (int i = 0; i < 4; i++) // receive temperature and humidity data, the parity bit is not
considered
        dat[i] = read_data ();

    pinMode (DHpin, OUTPUT);
    digitalWrite (DHpin, HIGH); // send data once after releasing the bus, wait for the host to
open the next Start signal
}

```