# **NUTTYFI** An IoT Hardware Platform





**NUTTYFI** is a self-contained WiFi networking solution hardware platform offering as a bridge from existing micro controller to WiFi and is also capable of running self-contained applications. This module comes with a built in capability to program via any USB to UART Bridge Converter like FTDI, CH340 or CP2102. With these, you can connect **NUTTYFI** Board to your laptop and flash it without any trouble, just like Arduino.

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## Specification:

- Voltage:Input 5v to 21V DC
- Wi- Fi Direct (P2P), soft- AP.
- Current consumption: 100A~170mA.
- Flash memory attachable: 16MB max (512K normal).
- Integrated TCP/IP protocol stack.
- Processor: Tensilica L106 32 bit.
- Processor speed: 80~160MHz.
- RAM: 32K + 8oK.
- GPIOs: 17 (multiplexed with other functions).
- Analog to Digita I: 1 input with 1024 step resolution.
- +19.5dBm output power in 802.11b mode
- 802.11 support: b/g/n.
- Maximum concurrent TCP connections: 5

#### **Pin Definition:**

- 1. 8 digital pins: From Do to D7,
- 2. 1 Analog pin- Ao
- 3. Vinput- From 5V to 21v
- 4. 3.3V output pin

- 5. UART Pins to Flash program to NUTTYFI
- Cloud Device using <u>FTDI UART Bridge</u>.



#### How to install NUTTYFI in to Arduino IDE:

The most basic way to use the ESP8266 module is to use serial commands, as the chip is basically a WiFi/Serial transceiver.

You need to follow these steps.

1. Open the Arduino IDE. Arduino IDE version must be 1.6.4 or greater.

2. Note That your Laptop/ Computer must Connected with Internet to install NUTTYFI in Arduino IDE.

3. Click on File & Click on Preferences like this

🥯 m	aster   Arduing	o 1.6.14 Hourly B	uild 2016/12/21 11:33
File	Edit Sketch	Fools Help	
	New	Ctrl+N	
	Open	Ctrl+O	
	Open Recent	►	
	Sketchbook	+	* * * * * * * * * * * *
	Examples	►	
	Close	Ctrl+W	e is designed
	Save	Ctrl+S	g of this code
	Save As	Ctrl+Shift+S	gh
	Page Setup	Ctrl+Shift+P	
	Print	Ctrl+P	croelectronics
	Preferences	Ctrl+Comma	
	Quit	Ctrl+Q	
12	//#incl	ude <liqu< th=""><th>idCrystal.h&gt;</th></liqu<>	idCrystal.h>
13	//const	int rs =	: 13, en = 12,

4. Preference window will appear.

You have to copy & paste given below link to Additional Board Manager URLs as shown in image in next page-

http://arduino.esp8266.com/stable/package\_esp8266com\_index.json

### 5. After Paste the Link, click on

**OK** button

Preferences		×					
Settings Network							
Sketchbook location:							
C:\Users\My\Documents\Ard	uino	Browse					
Editor language:	System Default   (requires restart of Arduino)						
Editor font size:	16						
Interface scale:	V Automatic 100 - % (requires restart of Arduino)						
Show verbose output during:	Compilation V upload						
Compiler warnings:	None 👻						
📝 Display line numbers							
🔲 Enable Code Folding							
📝 Verify code after upload							
🔲 Use external editor							
Check for updates on sta	rtup						
📝 Update sketch files to nev	w extension on save (.pde -> .ino)						
📝 Save when verifying or u	ploading						
Additional Boards Manager UR	Ls: http://arduino.esp8266.com/stable/package_esp8266com_index.json						
More preferences can be edite	ed directly in the file						
C:\Users\My\AppData\Local\A	C:\Users\My\AppData\Local\Arduino15\preferences.txt						
(edit only when Arduino is not	running)						
		OK Cancel					
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6. Now, Click on Tools on Arduino IDE,

Then Boards-> Board Manager like

Shown in image.

File Edit Sketch Tools Help	
Auto Format Ctrl+T	
Archive Sketch	
Fix Encoding & Reload	
1 /*** Serial Monitor Ctrl+Shift+1	M
2 * Serial Plotter Ctrl+Shift+L	+L
3 * This WiEi101 Eirpware Undater	ematics Microelectroni
4 * Cop	ictly prohibited.
5 * Bhuj Board: "Arduino/Genuino Uno"	
6 * MD · Port	Boards Manager
7 * Sche Get Board Info	Arduino AVR Boards
8 * Deh: Programmer: "AVRISP mkII"	Arduino Yún
9 */ Burn Bootloader	Arduino/Genuino Uno
10	Arduno Duemilanove or Diecimila
11	Arduino Nano
12 //#include <liquidcrystal.h></liquidcrystal.h>	Arduino/Genuino Mega or Mega 2560
13 //const int rs = 13, en = 12, d4 =	= Arduino Mega ADK
14 //LiquidCrystal lcd(rs, en, d4, d	15, Arduino Leonardo
15 #include < <b>SoftwareSerial</b> .h>	Arduino Leonardo ETH
<pre>16 SoftwareSerial mySerial(6, 7); //</pre>	R Arduino/Genuino Micro
17	Arduino Espiora
18 //int IR, IR_pin=5;	
19 //int LDR, LDR_pin=A0;	Arduino Ethernet
20 //int IR1;	Arduino PT
21//int_ont=0_ont1=0.	Lib/Pad Arduine USP
	LikePad Arduino
Invalid library found in E: embedded	S Arduino Pro or Pro Mini
Invalid library found in E. embedded	S Arduino NG or older
Invalid library found in E:\embedded	S Arduine Robot Control
invalid library found in E:\embedded	S Arduine Rebot Motor
Invaria ribrary round in E. (embedded	Arduino Germa
	Adafruit Circuit Playground
	▼

#### 7. Now, list of all boards appear in board manager now like shown in image.



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8. Scroll to bottom of the list of board manager, you will see the the "esp8266 by esp8266 community version ". install it.

Industruino SA Boards includer	MD Boards (32-bits ARM Cortex-M0+) by Industruino
Industruino D2	LG.
<u>Online help</u> More info	
esp8266 by ES	8266 Community version 2.4.2
Boards included	in this package: 6 Module, Generic ESP8285 Module, ESPDuino (ESP-13 Module), Adafruit Feather HUZZAH ESP8266, XinaBox
CW01, ESPress	<ul> <li>bite 1.0, ESPresso Lite 2.0, Phoenix 1.0, Phoenix 2.0, NodeMCU 0.9 (ESP-12 Module), NodeMCU 1.0 (ESP-12</li> </ul>
Module), Olime	x MOD-WIFI-ESP8266(-DEV), SparkFun ESP8266 Thing, SparkFun ESP8266 Thing Dev, SweetPea ESP-210, D1 D2 & mini + OLIN(WEMOS) D1 mini Bra + OLIN(WEMOS) D1 mini + the WeMaa D1 D1 - SSBina (SSB 12 Madu
ThaiEasyElec's	SPino, WifInfo, Arduino, 4D Systems gen4 IoD Range, Digistump Oak, WiFiduino, Amperka WiFi Slot, Seeed V
Link.	
Online help More info	
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Once installation completed, close and re -open Arduino IDE for ESP8266 library to take effect

9. Now, go to Tools > Board > ESP8266 Modules and you can see many option for ESP8266. For NuttyFi, it is recommended to select "NodeMCU 1.0 (ESP-12E Module).

Sketch Tools Help Ctrl+T Auto Format Archive Sketch \_feb26a Fix Encoding & Reload oid Manage Libraries... Ctrl+Shift+1 Serial Monitor Ctrl+Shift+M 11 Boards Manager... Serial Plotter Ctrl+Shift+L WiFi101 / WiFiNINA Firmware Updater XinaBox CW01 Board: "NodeMCU 1.0 (ESP-12E Module)" ESPresso Lite 1.0 oid Upload Speed: "115200" ESPresso Lite 2.0 11 CPU Frequency: "80 MHz" Phoenix 1.0 Flash Size: "4M (no SPIFFS)" Phoenix 2.0 Debug port: "Disabled" NodeMCU 0.9 (ESP-12 Module) Debug Level: "None" NodeMCU 1.0 (ESP-12E Module) IwIP Variant: "v2 Lower Memory" Olimex MOD-WIFI-ESP8266(-DEV) VTables: "Flash" SparkFun ESP8266 Thing Exceptions: "Disabled" SparkFun ESP8266 Thing Dev Erase Flash: "Only Sketch" SweetPea ESP-210 Port LOLIN(WEMOS) D1 R2 & mini Get Board Info LOLIN(WEMOS) D1 mini Pro LOUN(WEMOS) D1 mini Lite

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10. Now Your NUTTYFI Wifi Board is ready to use.

11. Next, select your port. If you cant recognize your port, go to the Control Panel > System > Device Manager > Port and update your USB driver.

If you feel any trouble in installing FTDI USB to UART Bridge Driver in your computer, then <u>click here to step by step guide</u> to install FTDI to your computer.

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