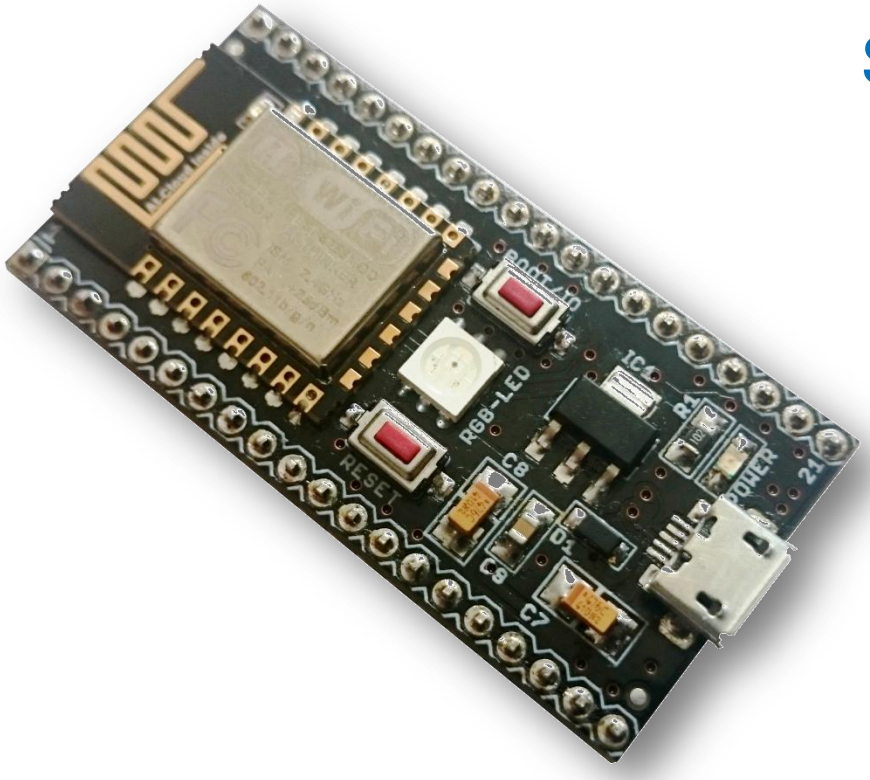

SmartWiFi Development Module

V 1.0

SmartWiFi is a Wi-Fi module development kit that can help you to prototype your Wi-Fi based products within a few lines of Lua script.

Based on ESP8266 chip and module built over it, the board is packed with many exciting features & functions that are jam-packed in this tiny little development module at a very affordable price.

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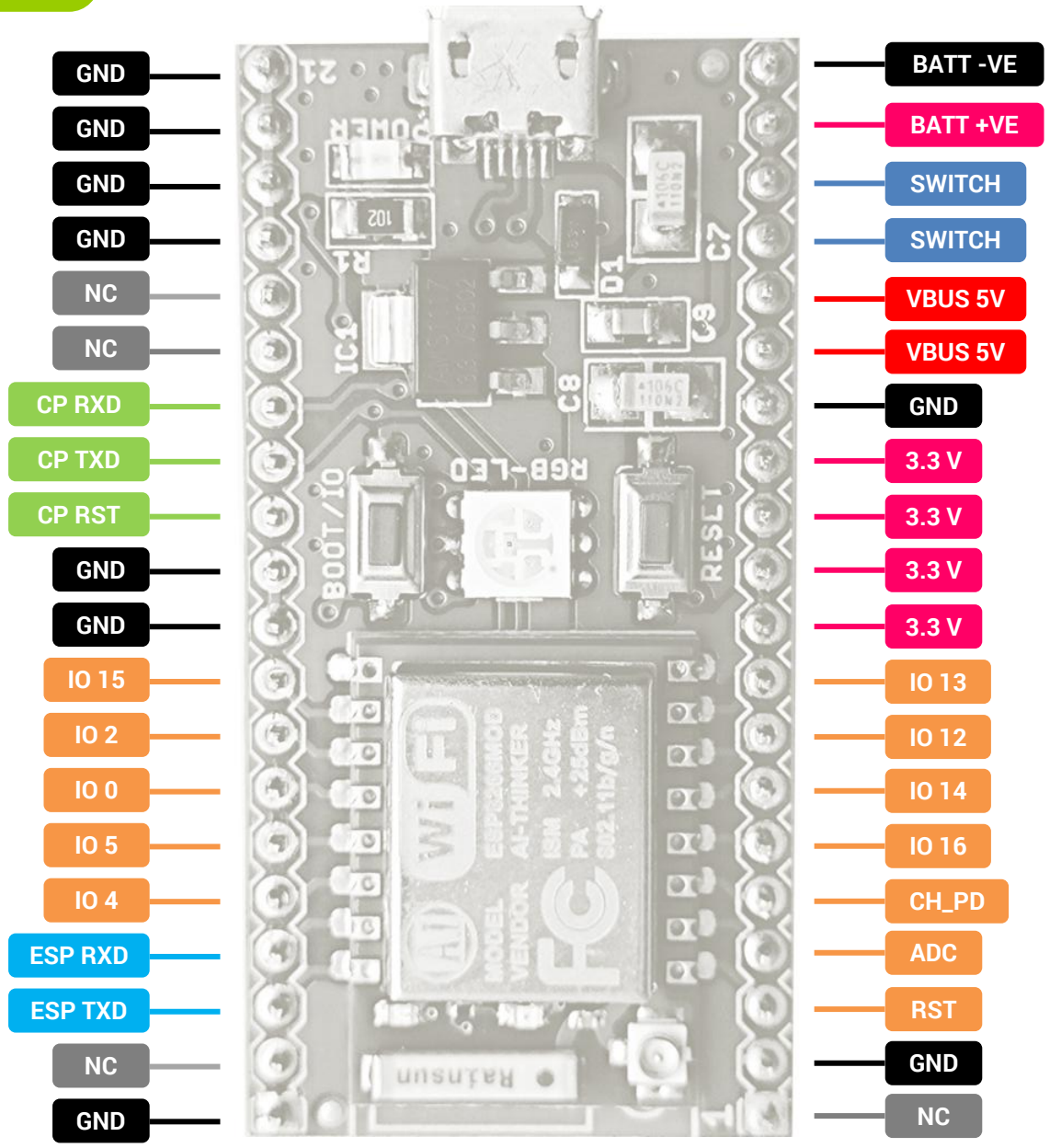
FEATURES

- **Arduino-like hardware IO**: Open source firmware NodeMCU i.e. an advanced API for hardware IO, reduces the redundant work for configuring and manipulating hardware. The board allows you to code like Arduino in interactive manner with Lua scripting language.
- **NodeJS style network API:** The firmware provides event-driven API for network applications, which facilitates developers writing code running this tiny little board in NodeJS style. Greatly speed up your Wi-Fi / IOT application developing process.
- **Reprogramming possibility:** IO button available on the kit also functions as a re-flashing button.
- **Multiple uses:** The module has ESP, serial to USB converter as well as 3.7V LiPo battery charger, RGB LED.

TECHNICAL SPECIFICATIONS

- One ADC input and 8 digital IOs; all digital IOs could be used as I2C, PWM, Input, Output or Interrupt
- 3.3V operation, can be directly powered from USB, no separate power supply needed
- 3.7V LiPo operation enabled along with 500mA battery charger inbuilt
- Onboard RGB LED and one IO button
- Compact size: 25.4mm x 50.8mm (2" x 1") Double sided PCB with robust and compact assembly
- Provision for external battery along with on/off switch
- Uses micro-USB cable for connectivity which is commonly available
- Production ready module with direct integration capabilities

smartWiFi – overview [V 1.0]



* While above image shows older ESP module (ESP-07) on board, newer boars have ESP-12E on them without any pinout changes.

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Jumpers & pin details

NodeMCU pin index	Onboard GPIO	Description
0	IO16	Only IO, No PWM or interrupt functionality
1	IO4	Connected to charger status , normally high impedance, becomes active when battery is connected. Remove J2 to use this pin as a normal GPIO.
2	IO5	
3	IO0	Boot pin - NEVER make output
4	IO2	
5	IO14	Green of RGB LED
6	IO12	Red of RGB LED
7	IO13	Blue of RGB LED
8	IO15	Pulled down via 10K resistor

- To use IO5 as output: gpio.mode(2, gpio.HIGH)
- One ADC pin at internal 1.1V reference (10 bit ADC)
- ESP RXD & ESP TXD are connected to USB bridge, to use them separately J1 and J4 should be removed

Jumper	Description	Default
JG	RGB green input to IO14	Connected
JR	RGB red input to IO12	Connected
JB	RGB blue input to IO13	Connected
J1	ESP TXD to CP RXD	Connected
J4	ESP RXD to CP TXD	Connected
J7	ESP RST to CP DTR	Connected
J2	Charger status to IO4	Connected

Other parameters	Absolute max
BAUD rate	9600
VBUS supply / USB header	5.5 V
Battery voltage	3.7 V LiPo [4.2V max]
Max current through 3.3V rail	500 mA
GPIO voltage levels	3.3 V
Battery charging current	500 mA max

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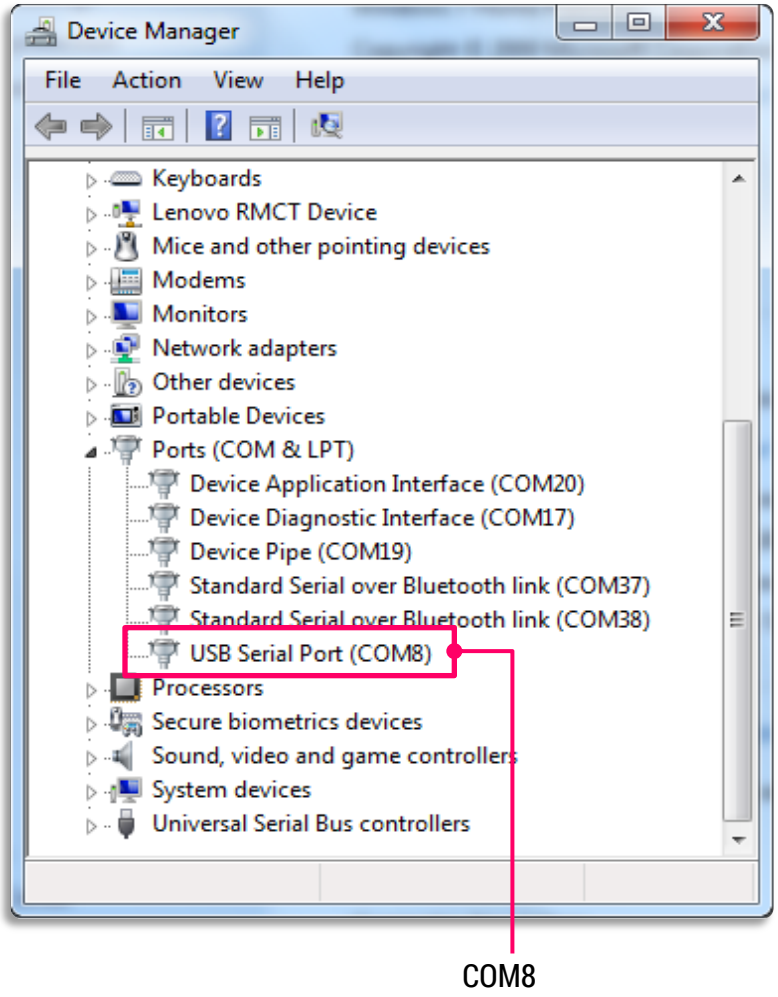
Installing USB driver



smartWiFi comes with CP2102 chip for Serial-USB conversion & corresponding drivers must be installed before using Serial-USB feature. Download these drivers before proceeding.

Unzip downloaded files into a separate folder and connect the board using USB cable. It will ask for drivers (if not already installed). Point the installer unzipped folder. System will install the driver from given files automatically.

Once the drivers are installed it would appear in device manager list as "USB Serial Port (COMx)". You can change the COM port number by right click of a mouse on the port-name and changing advance properties from 'Port Settings'; if needed.

This ensures that your board will always enumerate as same COMx port, whenever connected.

The same port can be used for PC ↔ smartWiFi communication.

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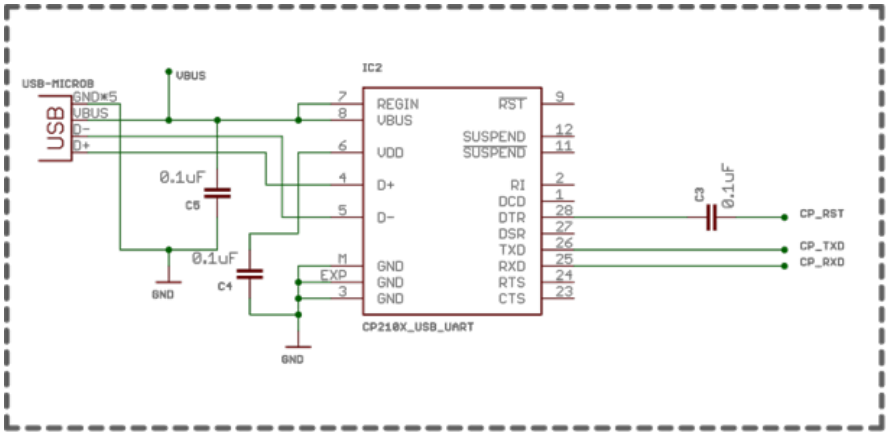
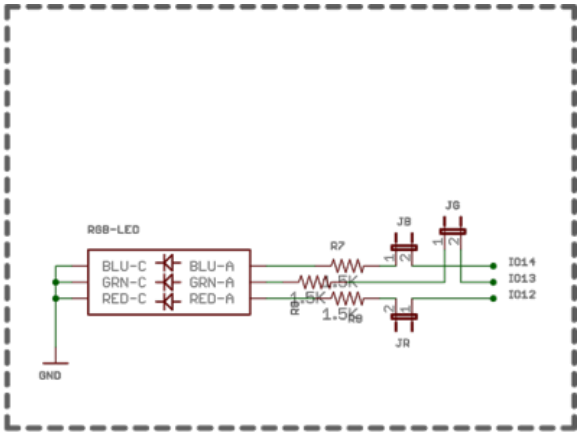
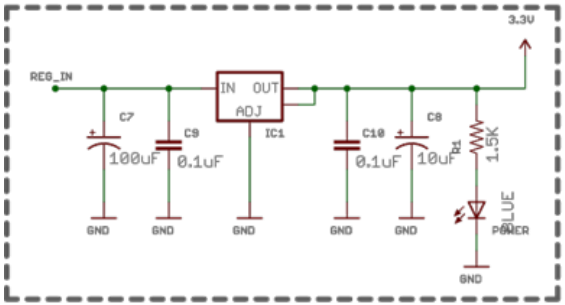
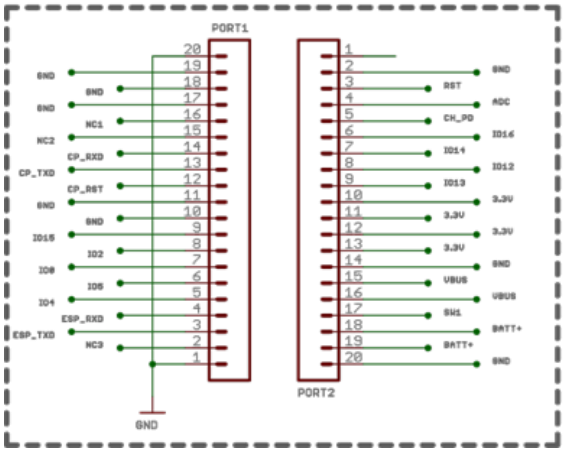
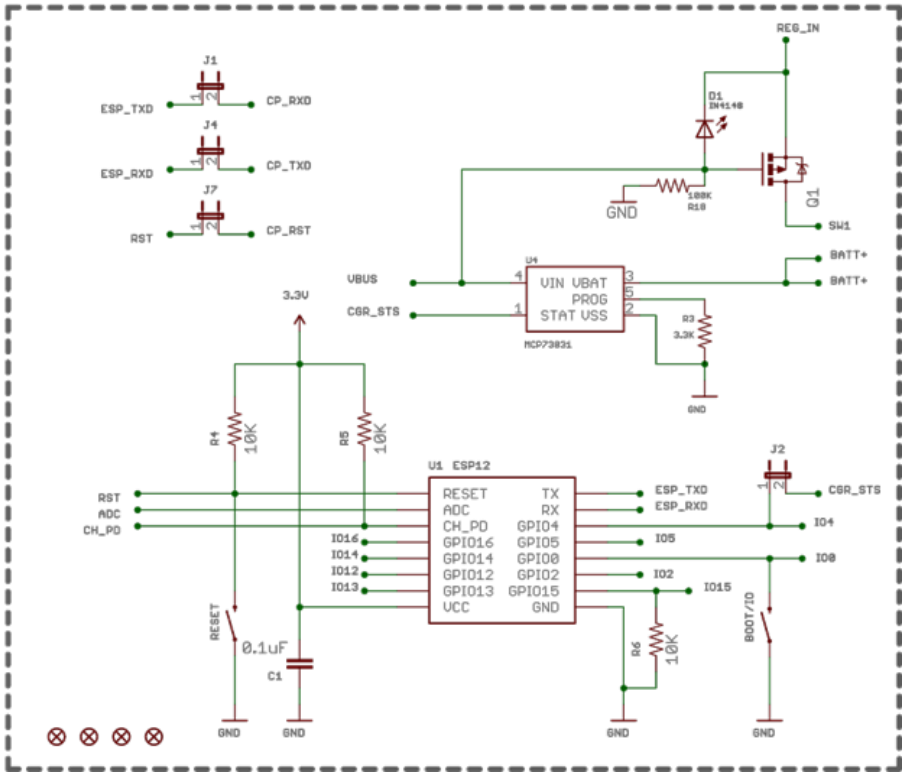
Circuit schematic diagram











* This schematic is for full version board, some of the components and associated circuits may not be applicable if you have different version of the board. Kindly check actual board received while referring to this schematic.

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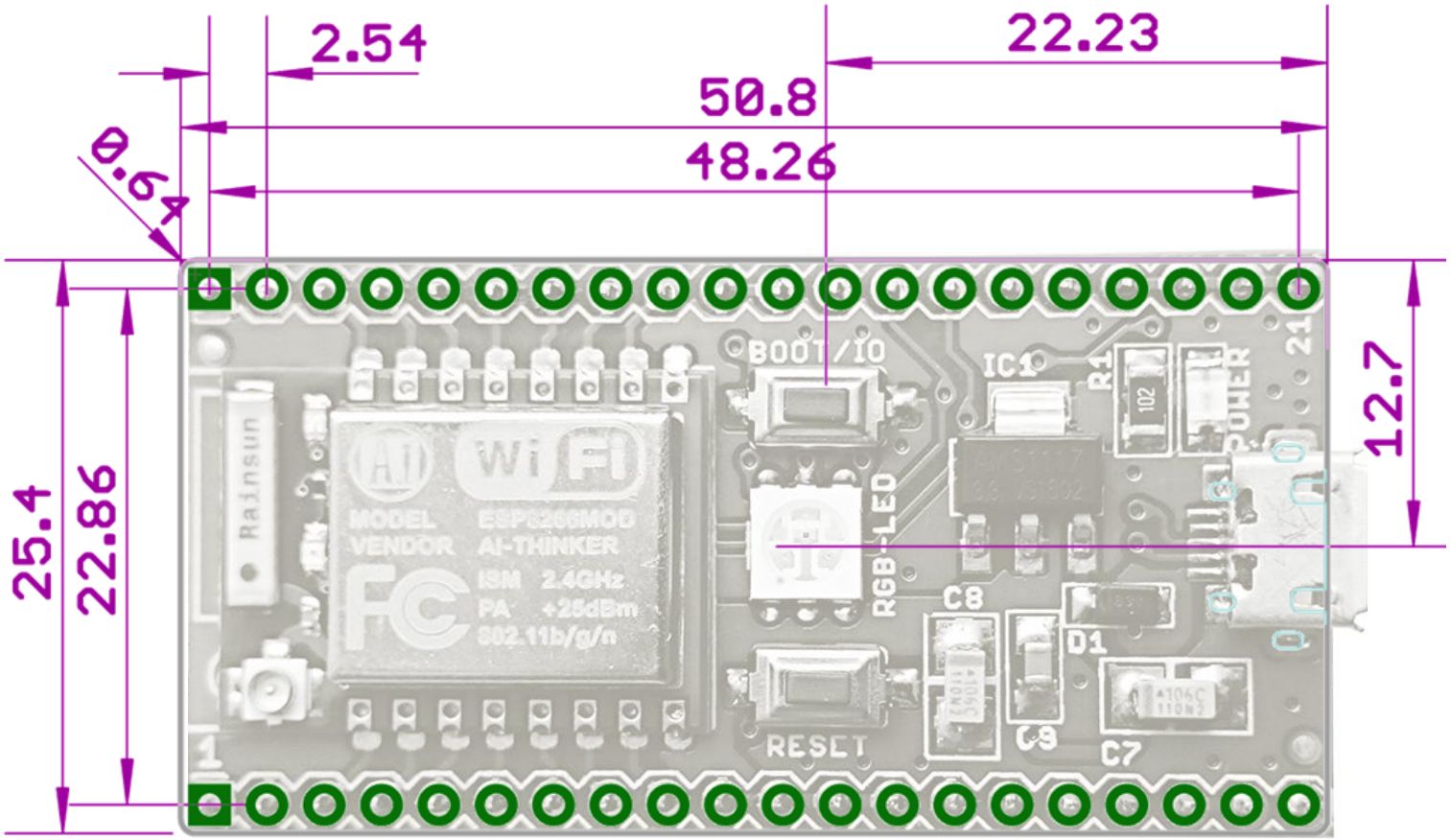
Mechanical dimensions



* All dimensions in mm

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Revision history

Rev.	Version	Date	Remarks / Change-list	Added by
0	1.0	01.09.2015	Initial document	Anand T.

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