



# RAK Dash Button User Guide

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Final

Ashok Chilukuri

7/6/2018



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## 1 Revision History

Version	Date	Author	Remarks
1.0	06/07/2018	Ashok	Initial release for RDB device

## 2 Acronyms

RDB – RAK DASH Button device

CREATER pro – CREATER pro device



### 3 Introduction

The document explains the requirement and procedure to setup RAK DASH button to connect to Tantiv4 Server.

## 4 RAK Dash Button Development Environment setup

### 4.1 Hardware Requirement

- 1) RAK Dash button
- 2) System
- 3) CREATR pro

### 4.2 Software Requirement

- 1) Standard ARM MBED CMSIS DAP driver (USB driver for CREATR pro.)
- 2) Arduino IDE (From version 1.6.5)
- 3) GitHub account

### 4.3 Development environment

The Dash Button use the CREATR pro to download the program, so the development environment is same as the CREATR pro.

#### 4.3.1 Download the source code

Please download the complete source code package from GitHub from the following link  
<https://github.com/Tantiv4/RakButton.git>

#### 4.3.2 Installing driver

Step 1: First, Connect CREATR pro to the computer via Micro USB.

Step 2: If this is the first time you connect CREATR pro to your computer, you have to install the USB driver for CREATR pro. CREATR pro uses the standard ARM MBED CMSIS DAP driver, you can get the installation file and related information in the following website:

<https://developer.mbed.org/handbook/Windows-serial-configuration>

The screenshot shows the ARM mbed website with the following details:

- Header:** ARM mbed, Developer Resources, Partners, Cloud, Search mbed...
- Breadcrumbs:** Handbook » Windows serial configuration
- Section:** Windows serial configuration
- Text:** The mbed serial port works by default on Mac and Linux, but Windows needs a driver. These instructions explain how to setup the mbed Microcontroller to use the USB serial port on Windows.
- List:** 1. Download the mbed Windows serial port driver
  - Download the installer to your PC, e.g. your desktop.
  - Download latest driver
- Note:** Note: Not Required for Windows 10!
- List:** 2. Run the installer
  - With your mbed plugged in, and no explorer drive windows open, run the installer.
- Table of Contents:** 1.1. Download the mbed Windows serial port driver, 1.2. Run the installer
- Recent changes:**
  - Firmware FRDM K64F
  - Debugging
  - mbed Compiler Getting Started
  - mbed SDK
  - USBMSD
  - USBDevice

Step 3: In "Download latest driver" download and install MbedWinSerial\_16466.exe.



Step 4: If you are using the WIN10 system, when installing the mbed Serial Port driver, the installation fails. Please re-power the module and install the mbed Serial Port driver again. If the device driver does not display the mbed Serial Port driver after installing the driver, update the module DAP firmware.

#### 4.3.3 Set up Arduino IDE

Step 1) From version 1.6.5, Arduino IDE supports third-party hardware. Therefore, we can use Arduino IDE to develop applications on CREATOR pro, and the examples of Arduino can run on CREATOR pro too. Arduino IDE can be downloaded in the Arduino website:

<https://www.arduino.cc/en/Main/Software>

Download the Arduino IDE

ARDUINO 1.8.5

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.

This software can be used with any Arduino board. Refer to the [Getting Started](#) page for installation instructions.

Windows Installer, for Windows XP and up  
Windows ZIP file for non admin install

Windows app Requires Win 8.1 or 10  
Get

Mac OS X 10.7 Lion or newer

Linux 32 bits  
Linux 64 bits  
Linux ARM

Release Notes  
Source Code  
Checksums (sha512)

HOURLY BUILDS      LAST UPDATE 8 Mar 2018, 20:43:37 UTC      BETA BUILDS      CO BETA

Step 2) When the installation is finished, open up Arduino IDE. To set up **Realtek Ameba** correctly in Arduino IDE, go to "File" -> "Preferences".

Tantiv4\_RAK\_Dash\_button\_code | Arduino 1.8.5

File Edit Sketch Tools Help

New Ctrl+N  
Open... Ctrl+O  
Open Recent  
Sketchbook  
Examples  
Close Ctrl+W  
Save Ctrl+S  
Save As... Ctrl+Shift+S  
Page Setup Ctrl+Shift+P  
Print Ctrl+P  
Preferences Ctrl+Comma  
Quit Ctrl+Q

#define RED 0  
#define GREEN 1  
#define BLUE 2  
#define OFF 3

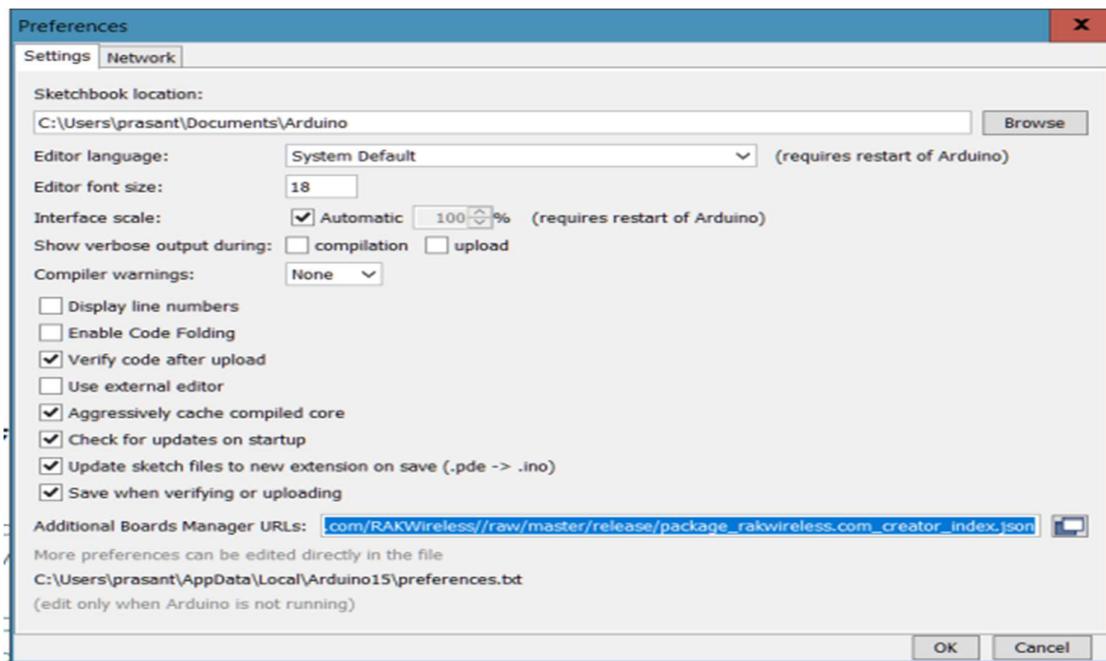
void printWifiStatus();  
void led\_off();  
void led\_ctrl(uint8\_t led\_num, uint8\_t rgb);  
void trigger\_action();  
char ssid[] = "Ashok\_JIO"; // your network SSID (name)  
char pass[] = "Tanvi@2016"; // your network password (use for WPA, or use as key for WEP)  
char server[] = "api-dev.tantiv4.com"; // Name of the server we want to connect to  
unsigned char test\_ca\_cert[] = \n"-----BEGIN CERTIFICATE-----\n" \n"MIIDSjCCAjKgAwIBAgIQRK+wgNajJ7qJMDmGLvhAazANBgkqhkiG9w0BAQUFADA/\n" \n

Done compiling

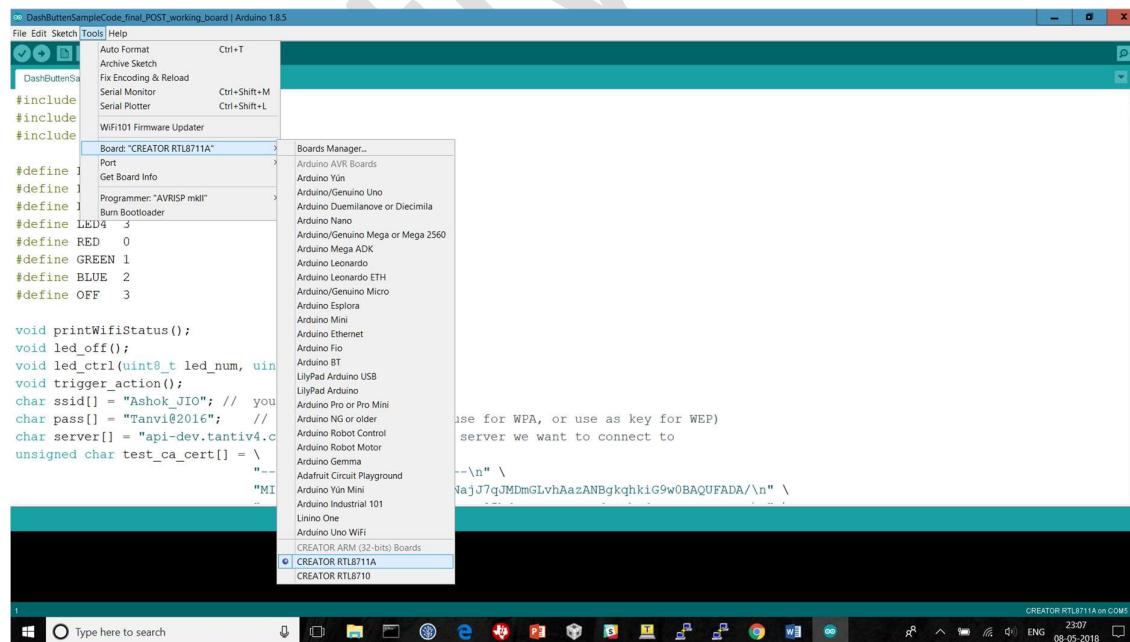


Step 3) And paste the following URL into "Additional Boards Manager URLs" field:

[https://github.com/RAKWireless/CREATOR-Arduino-SDK/raw/master/release/package\\_rakwireless.com\\_creator\\_index.json](https://github.com/RAKWireless/CREATOR-Arduino-SDK/raw/master/release/package_rakwireless.com_creator_index.json)

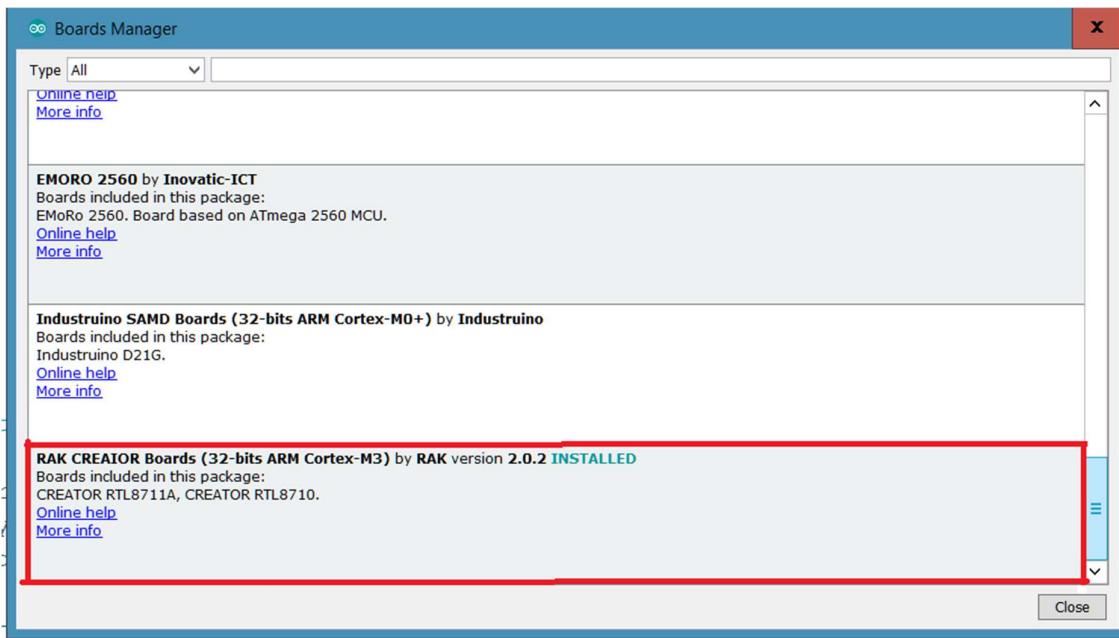


Step 4) Next, go to "Tools" -> "Board" -> "Boards Manager":

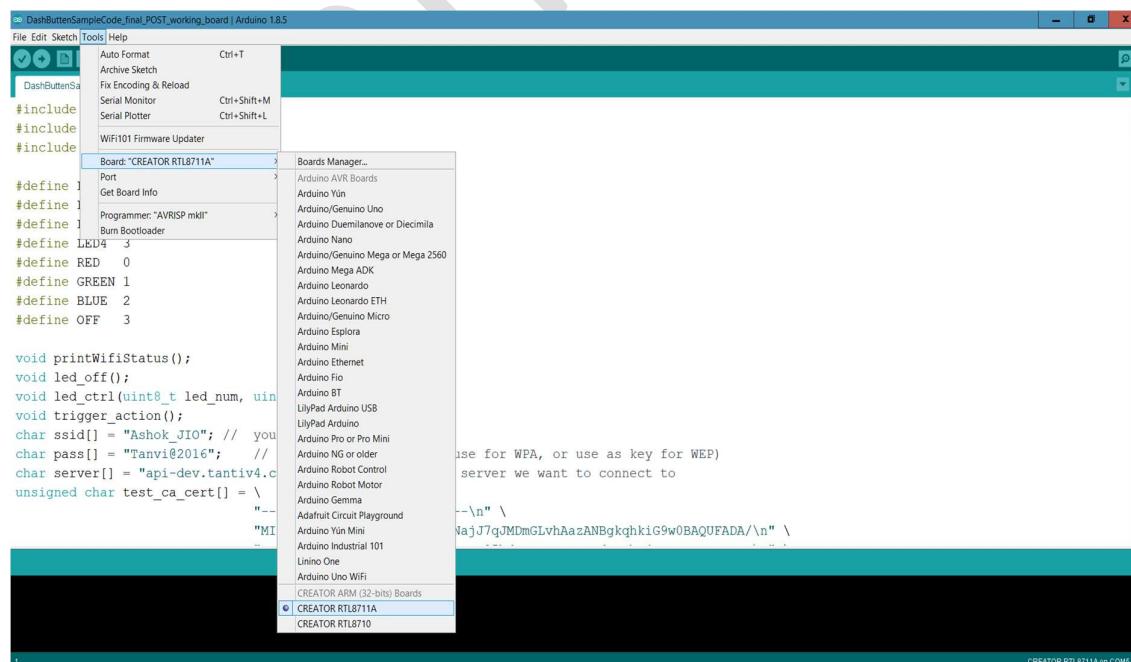




Step 5) The "Boards Manager" requires 10 seconds to refresh all hardware files (if the network is in bad condition, it may take longer). Every time the new hardware is connected, we need to reopen the Board Manager. So, we close the Boards Manager, and then open it again. Find "RAK CREATOR Boards" in the list, click "Install", then the Arduino IDE starts to download required files for CREATOR pro.



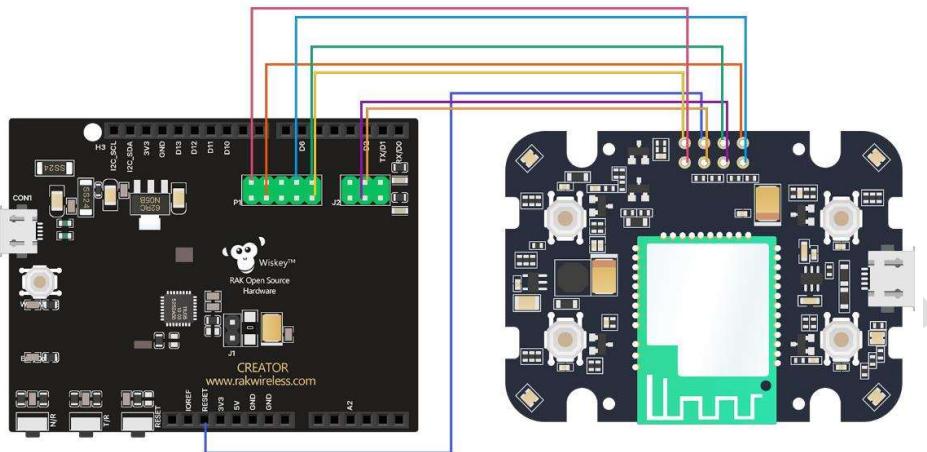
Step 6) Finally, we select CREATOR pro as current connected board in "tools" -> "Board" -> "CREATOR RTL8711A": (NOTE: RTL8195 and RTL8711 are compatible)



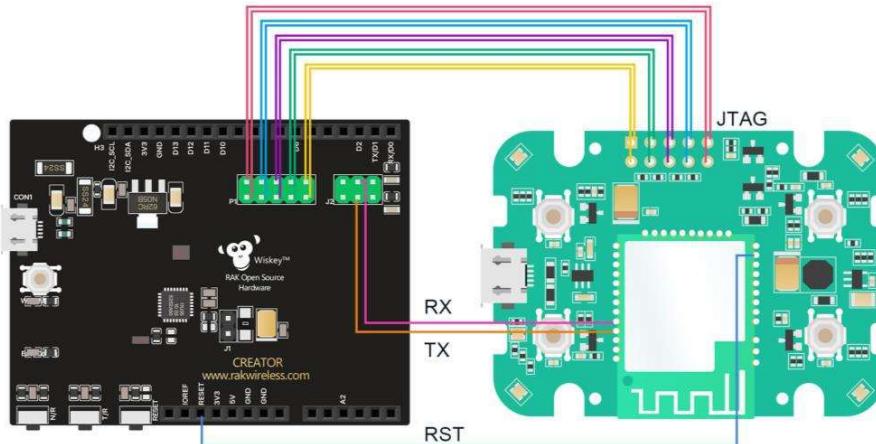


#### 4.3.4 The Hardware JTAG connection see below

DashButton\_V12 version:



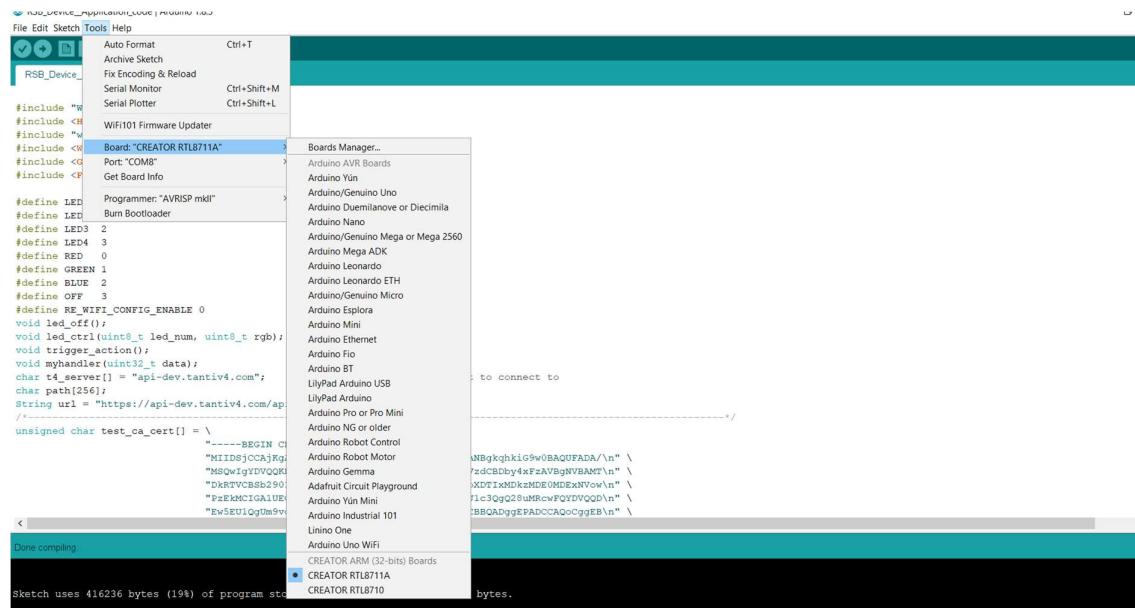
DashButton\_V1.1 version:



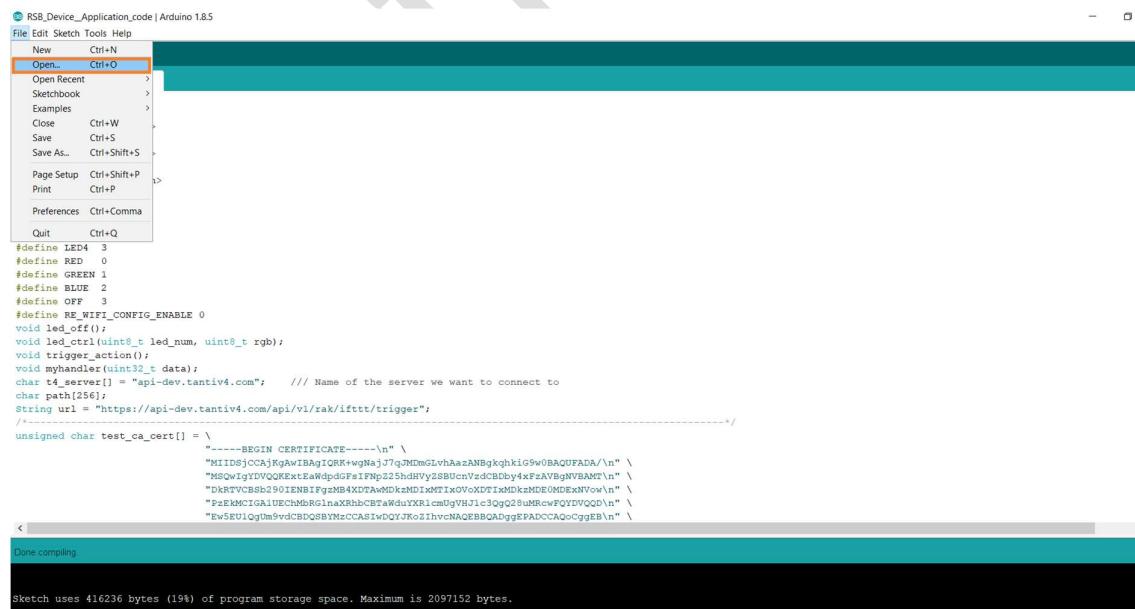


#### 4.3.5 Run the RDB Device Application code example

Step 1) First, make sure CREATOR pro is selected in Arduino IDE: "Tools" -> "Board" -> "CREATOR RTL8711A"(NOTE:RTL8195 and RTL8711 are compatible).



**Step 2)** Next, Open the **RDB Device Application code** example, "File" -> "Open" -> "<RDB Device Application code file path from section 4.1>" and select "RDB\_Device\_Application\_code" file and click on open option.





A screenshot of the Arduino IDE interface. The title bar says "RDB\_Device\_Application\_code | Arduino 1.8.5". A modal dialog box titled "Open an Arduino sketch..." is in the foreground. It shows a file list with one item: "RDB\_Device\_Application\_code" by "RDB\_Device\_Application\_code" last modified on "07-06-2018 17:11" as an "Arduino file". Below the list are dropdown menus for "Object name:" set to "RDB\_Device\_Application\_code" and "Objects of type:" set to "All Files (\*)". There are "Open" and "Cancel" buttons at the bottom right of the dialog. The background shows the main workspace with some code visible. On the left, there's a sidebar with icons for "Quick access", "Desktop", "Libraries", "This PC", and "Network".

**Step 3) Modify the above source file opened with proper DeviceID and WiFi Access Point details**

DeviceID acts as a signature to grant access to Tantiv4 server. WiFi Access Point details like SSID and Password needed to connect RDB to internet.

- 1) Update Device ID
  - 2) Update WiFi configuration

#### 1) Update Device ID:

Device id is generated in Tantiv4 server. The steps are beyond scope of this document. Please contact us [support@tantiv4.com](mailto:support@tantiv4.com) for to generate device id.

In the place marked below, you can modify the device id for to communicate Tantiv4 server.



## 2) Update WiFi configuration:

There are two ways to configure WiFi network,

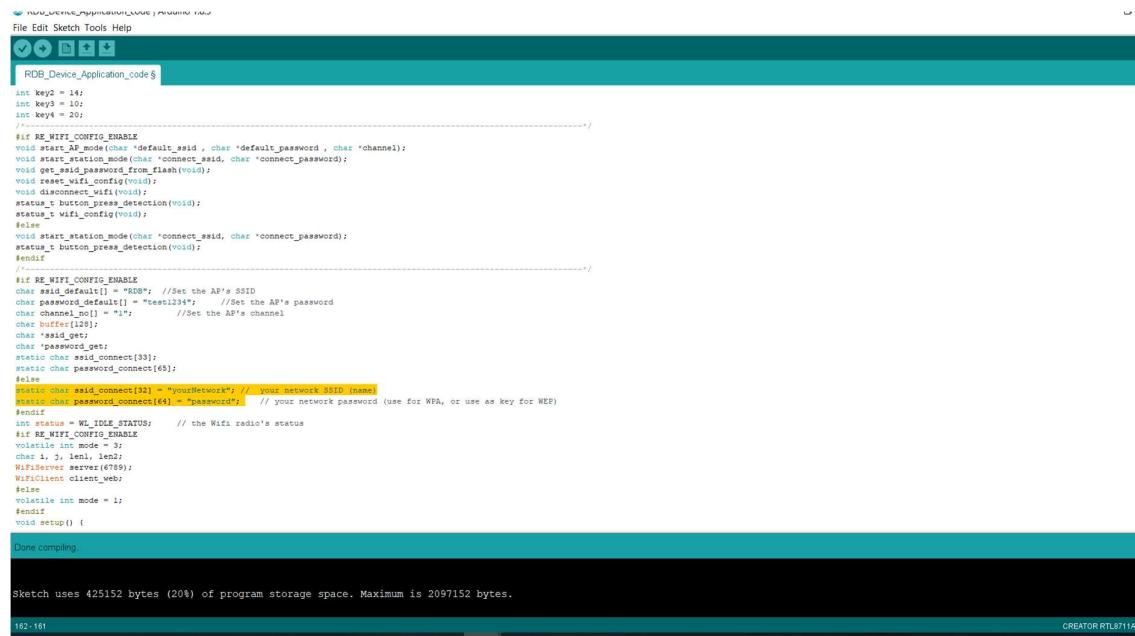
- a. Use Predefined WiFi network SSID and PASSWORD
- b. Use WiFi provisioning over HTTP

### a) Use Predefined WiFi network SSID and PASSWORD

#### 1) Make sure RE\_WIFI\_CONFIG\_ENABLE set to 0 in code.

```
#define RE_WIFI_CONFIG_ENABLE 0
```

In the place marked below, you can modify the device needs to connect the router's SSID and password. We need to reflash/reprogramming device for to change SSID and PASSWORD in device.



The screenshot shows the Arduino IDE interface with the file 'RDB\_Device\_Application\_code.ino' open. The code is written in C and defines WiFi configuration parameters. A large watermark 'Tantiv4' is overlaid across the code area. The code includes comments for defining WiFi mode (AP or station), default SSID, password, and channel, along with functions for connecting and disconnecting.

```
int key2 = 1;
int key3 = 10;
int key4 = 20;
/*-----*/
#ifndef RE_WIFI_CONFIG_ENABLE
void start_AP_mode(char *default_ssid, char *default_password, char *channel);
void start_station_mode(char *connect_ssid, char *connect_password);
void get_ssid_password_from_flash(void);
void reset_wifi_config(void);
void disconnect_wifi(void);
status_t button_press_detection(void);
status_t wifi_config(void);
else
void start_station_mode(char *connect_ssid, char *connect_password);
status_t button_press(void);
#endif
/*-----*/
#ifndef RE_WIFI_CONFIG_ENABLE
char ssid_def[32] = "RDB"; //Set the AP's SSID
char password_def[32] = "test1234"; //Set the AP's password
char channel_def[3] = "1"; //Set the AP's channel
char buffer[128];
char *ssid_get;
char *password_get;
static char password_connect[33];
static char password_connect165;
else
static char ssid_connect[32] = "yourNetwork" // your network SSID [name]
static char password_connect165 = "password"; // your network password (use for WPA, or use as key for WEP)
#endif
int status = WL_IDLE_STATUS; // the WiFi radio's status
#ifndef RE_WIFI_CONFIG_ENABLE
volatile int mode = 3;
char *ssid; int len;
WiFiServer server(4789);
WiFiClient client_web;
#else
volatile int mode = 1;
#endif
void setup() {
Done compiling.
Sketch uses 425152 bytes (20%) of program storage space. Maximum is 2097152 bytes.
162-161
CREATOR RTL8711A
```

### b) Use WiFi provisioning over HTTP

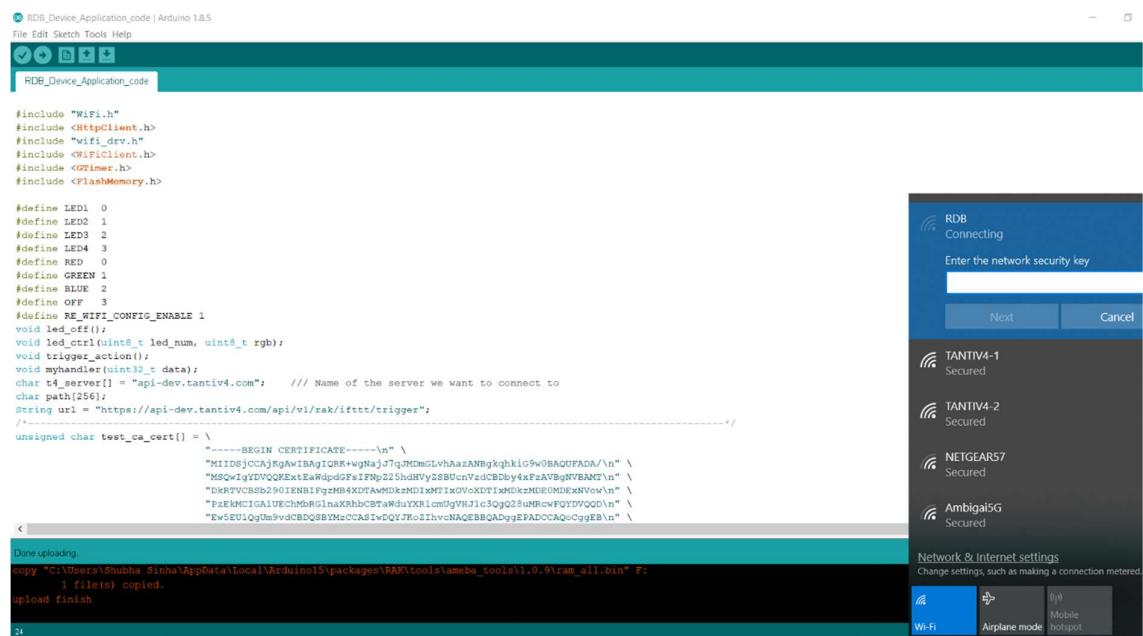
#### 1) Make sure RE\_WIFI\_CONFIG\_ENABLE set to 1 in code.

```
#define RE_WIFI_CONFIG_ENABLE 1
```



## How to configure WiFi:

- 1) Connect any Mobile or System to WiFi network with SSID “RDB” available. Enter the “test1234” as password when prompted.



```

#include "WiFi.h"
#include <HTTPClient.h>
#include "wifi_drv.h"
#include <WiFiClient.h>
#include <GTTimer.h>
#include <FlashMemory.h>

#define LED1 0
#define LED2 1
#define LED3 2
#define LED4 3
#define RED 0
#define GREEN 1
#define BLUE 2
#define OFF 3
#define RE_WIFI_CONFIG_ENABLE 1
void led_off();
void led_ctrl(uint8_t led_num, uint8_t rgb);
void trigger_action();
void myhandler(uint32_t data);
char t4_server[] = "api-dev.tantiv4.com"; // Name of the server we want to connect to
char path[256];
String url = "https://api-dev.tantiv4.com/api/v1/rak/ifttt/trigger";
/*-----BEGIN CERTIFICATE-----\n" \
"MIIDJSCCAjBgkqhkiBQHNaJzTqJNDmLlvhaazANBgkqhkiG9w0BAQUFADw/\n" \
"MSQwIgYDvQKExtaEdpdgFeTFhpZ25hdWVzSBUDnVzdCB0by4xPxAVBqgVBAM/\n" \
"DRtRVCBSd290tENB1PgM84X7Am0kEMD1MTIxOVxDTiXMDkzMDR0NDEXNvow/\n" \
"PExEKNCIGA1UEChbGRlnaRbhCERtaMdUYRK1cm0gVHJic3QoQ28uMRgwFOYDVQOD/\n" \
"EwSEU1QgUm9vdCBQSBVmzCCAS1wDQYJKoZIhvCNQEBBQAQdgEPADCCAQcCggEB\n" \
"-----END CERTIFICATE-----\n"

```

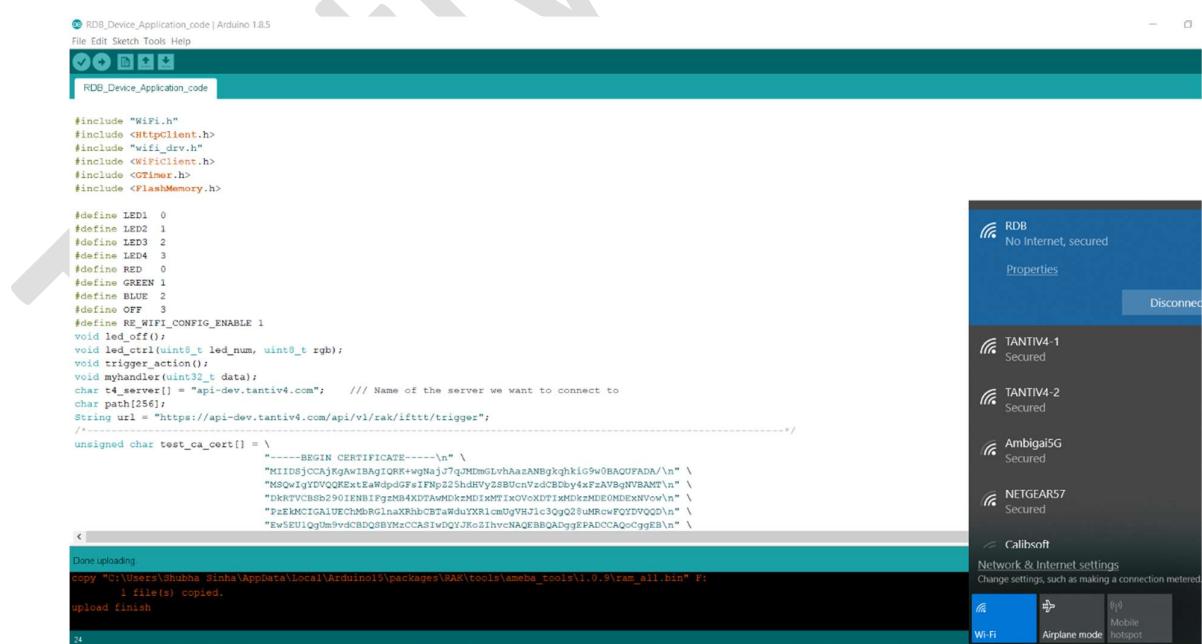
Done uploading  
copy "C:\Users\Shubha\_Sinha\AppData\Local\Arduino15\packages\RAA\tools\ameba\_tools\1.0.9\ram\_all.bin" F:  
1 file(s) copied.  
upload finish

24

RDB  
Connecting  
Enter the network security key  
Next Cancel

TANTIV4-1 Secured  
TANTIV4-2 Secured  
NETGEAR5 Secured  
Ambigal5G Secured

Network & Internet settings  
Change settings, such as making a connection metered.  
Wi-Fi Mobile  
Airplane mode hotspot



```

#include "WiFi.h"
#include <HTTPClient.h>
#include "wifi_drv.h"
#include <WiFiClient.h>
#include <GTTimer.h>
#include <FlashMemory.h>

#define LED1 0
#define LED2 1
#define LED3 2
#define LED4 3
#define RED 0
#define GREEN 1
#define BLUE 2
#define OFF 3
#define RE_WIFI_CONFIG_ENABLE 1
void led_off();
void led_ctrl(uint8_t led_num, uint8_t rgb);
void trigger_action();
void myhandler(uint32_t data);
char t4_server[] = "api-dev.tantiv4.com"; // Name of the server we want to connect to
char path[256];
String url = "https://api-dev.tantiv4.com/api/v1/rak/ifttt/trigger";
/*-----BEGIN CERTIFICATE-----\n" \
"MIIDJSCCAjBgkqhkiBQHNaJzTqJNDmLlvhaazANBgkqhkiG9w0BAQUFADw/\n" \
"MSQwIgYDvQKExtaEdpdgFeTFhpZ25hdWVzSBUDnVzdCB0by4xPxAVBqgVBAM/\n" \
"DRtRVCBSd290tENB1PgM84X7Am0kEMD1MTIxOVxDTiXMDkzMDR0NDEXNvow/\n" \
"PExEKNCIGA1UEChbGRlnaRbhCERtaMdUYRK1cm0gVHJic3QoQ28uMRgwFOYDVQOD/\n" \
"EwSEU1QgUm9vdCBQSBVmzCCAS1wDQYJKoZIhvCNQEBBQAQdgEPADCCAQcCggEB\n" \
"-----END CERTIFICATE-----\n"

```

Done uploading  
copy "C:\Users\Shubha\_Sinha\AppData\Local\Arduino15\packages\RAA\tools\ameba\_tools\1.0.9\ram\_all.bin" F:  
1 file(s) copied.  
upload finish

24

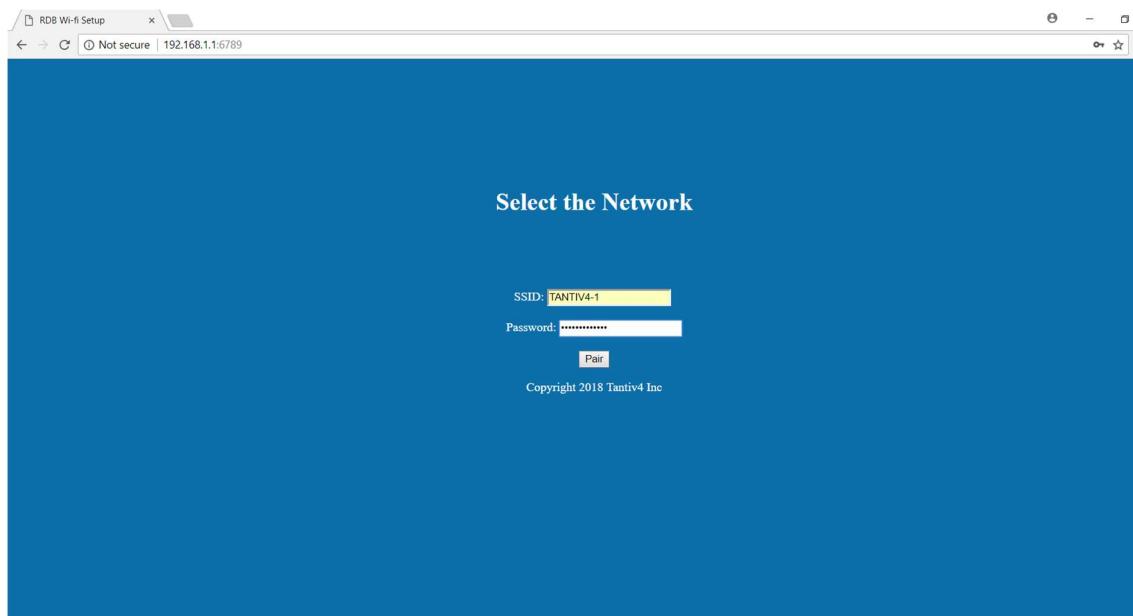
RDB  
No Internet, secured  
Properties  
Disconnected

TANTIV4-1 Secured  
TANTIV4-2 Secured  
Ambigal5G Secured  
NETGEAR5 Secured  
Calibsoft

Network & Internet settings  
Change settings, such as making a connection metered.  
Wi-Fi Mobile  
Airplane mode hotspot



- 2) After connection to WiFi network is established, open any web browser and type "**198.162.1.1:6789**" and enter, a web page as shown in the screenshot.



- 3) Enter working Wi-Fi network SSID and password in the box available as shown in the screenshot above.
- 4) Click on the "Pair" button to send the Wi-Fi network details to device. At this time the web page will be closed.
- 5) Device will try to connect to given WiFi network and get IP from router. All button LED's will turn GREEN for half second to indicate device has got IP from router.

Note:

- 1) Device supports short press only and will send trigger messages to server.
- 2) There is no LED indication to show device in AP mode or station mode.
- 3) If Device is in Access Point mode, button press won't work until access point is configured.

LEDs behavior

- 1) All LED's turn Blue for half second - Indicate device is in AP mode.
- 2) All LED's turn Green for half second – Indicate device got IP from router.



Step 4) Next, we compile the code directly, click "Sketch" -> "Verify/Compile", Or you can click the icon in the upper left corner.

RDB\_Device\_Application\_code | Arduino 1.8.5

File Edit Sketch Tools Help

Verify/Compile Ctrl+R

- Upload Ctrl+U
- Upload Using Programmer Ctrl+Shift+U
- Export compiled Binary Ctrl+Alt+S
- Show Sketch Folder Ctrl+K
- Include Library >
- Add File...

```

if (c == '\n' && currentLineIsBlank()) {
    while (client_web.available()) {
        char c = client_web.read();
        // if you've gotten to the end of the line (received a newline
        // character) and the line is blank, the http request has ended,
        // so you can send a reply
    }

    if (c == '\n' && currentLineIsBlank()) {
        Serial.println("Sending response");
        // send a standard http response header
        client_web.println("HTTP/1.1 200 OK");
        client_web.println("Content-Length: 2048 - 167");
        client_web.println("Content-type: text/html");//\r\nExpires: Sun, 31 Dec 2028 23:59:59 GMT\r\nPragma: no-cache\r\n\r\n");
        client_web.println("
```

Step 5) Afterwards, we will upload the compiled code to RDB device via CREATOR pro. Please make sure CREATOR pro and RDB device is connected to your system, then click "Sketch" -> "Upload" Or You can also click the shortcut icon.

RDB\_Device\_Application\_code | Arduino 1.8.5

File Edit Sketch Tools Help

Verify/Compile Ctrl+R

- Upload Ctrl+U
- Upload Using Programmer Ctrl+Shift+U
- Export compiled Binary Ctrl+Alt+S
- Show Sketch Folder Ctrl+K
- Include Library >
- Add File...

```

if (c == '\n' && currentLineIsBlank()) {
    while (client_web.available()) {
        char c = client_web.read();
        // if you've gotten to the end of the line (received a newline
        // character) and the line is blank, the http request has ended,
        // so you can send a reply
    }

    if (c == '\n' && currentLineIsBlank()) {
        Serial.println("Sending response");
        // send a standard http response header
        client_web.println("HTTP/1.1 200 OK");
        client_web.println("Content-Length: 2048 - 167");
        client_web.println("Content-type: text/html");//\r\nExpires: Sun, 31 Dec 2028 23:59:59 GMT\r\nPragma: no-cache\r\n\r\n");
        client_web.println("
```

Done compiling.

Sketch uses 425152 bytes (20%) of program storage space. Maximum is 2097152 bytes.



Step 6) Again, during the uploading procedure the IDE prints messages. Uploading procedure requires respectively longer time (depends on system - about 1 minute to 2 minutes). When upload completed, the "upload finish" message is printed.

The screenshot shows the Arduino IDE interface. The code in the main window is for the RDB\_Device\_Application\_code sketch. It includes logic for handling web requests from clients connected via WiFi. The upload progress bar at the bottom indicates the upload is complete, showing "upload finish". The status bar at the bottom right shows "CREATOR RTL8711A".

```
RDB_Device_Application_code
...
if (client_web.available()) {
    Serial.println("Client connected");
    // an http request ends with a blank line
    boolean currentLineIsBlank = true;
}

if (client_web.connected()) {
    while (client_web.available()) {
        char c = client_web.read();
        // if you receive a carriage return at the end of the line (received a newline
        // character) and the line is blank, the http request has ended,
        // so you can send a reply
        if (c == '\n' & currentLineIsBlank) {
            Serial.println("Sendin response");
            // send a standard http response header
            client_web.println("HTTP/1.1 200 OK");
            client_web.println("Content-Length: 2048 - 167");
            client_web.println("Content-Type: text/html\r\n\r\n");
            client_web.println();
            client_web.println();
            client_web.println("<!-- Wi-Fi Setup --&gt;\r\n&lt;html&gt;\r\n&lt;head&gt;\r\n&lt;meta charset='UTF-8'&gt;\r\n&lt;meta name='viewport' content='width=device-width, initial-scale=1'&gt;\r\n&lt;/head&gt;\r\n&lt;body style='background-color:#00fear; color:#fff; text-align: center; padding: 10px;'&gt;\r\n&lt;h1&gt;Select the Network&lt;/h1&gt;\r\n&lt;form class='form' action='http://192.168.1.1:6789' method='POST'&gt;\r\n&lt;div&gt;\r\n&lt;label for='ssid'&gt;Select the network&lt;/label&gt;\r\n&lt;select id='ssid'&gt;\r\n&lt;/select&gt;\r\n&lt;div&gt;\r\n&lt;label for='password'&gt;Enter the password&lt;/label&gt;\r\n&lt;input type='password' name='password' id='password'&gt;\r\n&lt;/div&gt;\r\n&lt;/form&gt;\r\n&lt;/body&gt;\r\n&lt;/html&gt;");
            client_web.println("Content-Type: application/javascript\r\n");
            client_web.println("Content-Length: 167\r\n");
            client_web.println("Connection: close\r\n");
            client_web.println("Cache-Control: no-store, no-cache, must-revalidate, pre-check=0, post-check=0, max-age=0\r\n");
            client_web.println("Pragma: no-cache\r\n");
            client_web.println("Date: Sun, 31 Dec 2028 23:59:59 GMT\r\n");
            client_web.println("Expires: Sun, 31 Dec 2028 23:59:59 GMT\r\n");
            client_web.println("Content-Type: text/html\r\n\r\n");
            client_web.println("<!-- Wi-Fi Setup --&gt;\r\n&lt;html&gt;\r\n&lt;head&gt;\r\n&lt;meta charset='UTF-8'&gt;\r\n&lt;meta name='viewport' content='width=device-width, initial-scale=1'&gt;\r\n&lt;/head&gt;\r\n&lt;body style='background-color:#00fear; color:#fff; text-align: center; padding: 10px;'&gt;\r\n&lt;h1&gt;Select the Network&lt;/h1&gt;\r\n&lt;form class='form' action='http://192.168.1.1:6789' method='POST'&gt;\r\n&lt;div&gt;\r\n&lt;label for='ssid'&gt;Select the network&lt;/label&gt;\r\n&lt;select id='ssid'&gt;\r\n&lt;/select&gt;\r\n&lt;div&gt;\r\n&lt;label for='password'&gt;Enter the password&lt;/label&gt;\r\n&lt;input type='password' name='password' id='password'&gt;\r\n&lt;/div&gt;\r\n&lt;/form&gt;\r\n&lt;/body&gt;\r\n&lt;/html&gt;");
            client_web.println();
            client_web.println();
        }
    }
}</pre>

Done uploading.  
copy "C:\Users\Subhra\Downloads\Arduino\Local\Arduino\packages\RAK\tools\raakme_tools\1.0.0\ram_all.bin" F:  
1 file(s) copied.  
upload finish  
401


```

Step7) Finally, Repower the Dash button, and you can see related information shown in serial monitor.

The screenshot shows the Serial Monitor window. The log output includes the boot process, SPIF calibration, and WiFi initialization steps. It shows the device attempting to connect to an AP named "RDB" with SSID "RDB". The WiFi connection is successful, and the IP address assigned is 192.168.1.1.

```
=====
Check boot type form eFuse
SPI
Image length: 0x1a88, Image Addr: 0x10000bc8
Image Validate OK, Going jump to Image1
BOOT from Flash:YES
SPI Calibration
First available window
Baud(0): auto length:0 Delay startt:0 Delay end:63
[SPIF Err]Spi0tWNCalStore: The flash memory@0x9000 = 0x0) is not able to be write, Erase it first!===== Enter Image 1 ====
SPI Calibration
First available window
Baud(2): auto length:31 Delay startt:0 Delay end:63
[SPIF Err]Spi0tWNCalStore: The flash memory@0x9000 = 0x0) is not able to be write, Erase it first!!
SR0 Controller Init
Test 0: No match addrs 0xac8d38 => 0xf != 0xc
Test 0: No match addrs 0x1ff1c0 => 0x5 != 0x5
0x5 addrs 0x0 INVALID
0x5 addrs 0x0 INVALID

Image 1
Flash Image1 Addr: 0xb000, Len 213000, Load to SRAM 0x10006000
Image1 length: 0x1c088, Image1 Addr: 0x30000000
Img Sign: RTXWIN, InfStart @ 0x1000649
===== Enter Image 2 =====
interface 0 is initialized
interface 1 is initialized

Initializing WiFi ...
WIFI initialized ...
Attempting to start AP with SSID: RDB

LwIP_DNSC: drop stop.
Deinitializing WiFi ...
WIFI deinitialized
Initializing WiFi ...
WIFI initialized

Starting AP ...
AP start
IP Address: 192.168.1.1
NetMask: 255.255.255.0
Gateway: 192.168.1.1

SSID: RDB
SSID: RDB
IP Address: 192.168.1.1
signal strength (RSSI):10 dBm
To see this page in action, open a browser to http://192.168.1.1
```



```

COM6

DIOV2 - EMMC FIRMWARE
SPI calibration
Find the available window
Baud:3; auto_length:0; Delay start:0; Delay end:63
[SPIF Err]SpicNVMeCalStore: The flash memory(0x9080 = 0x0) is not able to be write, Erase it first!===== Enter Image 1 ====
SPI calibration
Find the available window
Baud:2; auto_length:2; Delay start:0; Delay end:63
[SPIF Err]SpicNVMeCalStore: The flash memory(0x90b0 = 0x0) is not able to be write, Erase it first!
SDR Controller Init
Test 0: No match addr 0xc9d38 => 0xf != 0xc
Test 0: No match addr 0x1f7c10 => 0x5 != 0x8
OTA addr 0xd0 INVALID

load NEW fw: 0
Flash Image0:Addr 0xb000, Len 205700, Load to SRAM 0x10006000
Image3 length: 0x2638, Image3 Addr: 0x30000000
Img2 Sign: RTKWin, InfraStart @ 0x10006049
===== Enter Image 2 ====
interface 0 is initialized
interface 1 is initialized

Initializing WIFI ...
WIFI initialized
Attempting to connect to SSID: TANTIV4-1

RTL8195A[Driver]: set ssid [TANTIV4-1]

RTL8195A[Driver]: start auth to 6c:72:20:f9:f6:b4

RTL8195A[Driver]: auth success, start assoc

RTL8195A[Driver]: association success(res=5)

RTL8195A[Driver]: set pairwise key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4)

RTL8195A[Driver]: set group key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4) keyid:1

Interface 0 IP address : 192.168.0.110SSID: TANTIV4-1
IP Address: 192.168.0.110
signal strength (RSSI):-49 dBm
192.168.0.110

 Autoscroll
 No line ending
 9600 baud
 Clear

```

```

COM6
|_
Verify requested for (Depth 0):
ceThis certificate has no flags
connected to server
Serial.printlnlnbr_no =
1
requesting URL: HTTP/1.1 200 OK
X-Powered-By: Express
Access-Control-Allow-Origin: *
content-type: application/json
content-length: 20
set-cookie: connect.sid=s%3AgREJFNUkeOROsNkguZOLYbDwjnUm4Kk.BNJoAh80aYqM%2FVfJ5vS45BLrjrwA145i2n1Mb0x4M; Path=/; Expires=Thu, 07 Jun 2018 11:16:44 GMT; HttpOnly
Date: Thu, 07 Jun 2018 11:15:04 GMT
Connection: close

>{"status":"success"
Success
key3
Verify requested for (Depth 2):
ceThis certificate has no flags

Verify requested for (Depth 1):
ceThis certificate has no flags

Verify requested for (Depth 0):
ceThis certificate has no flags
connected to server
Serial.printlnlnbr_no =
3
requesting URL: HTTP/1.1 200 OK
X-Powered-By: Express
Access-Control-Allow-Origin: *
content-type: application/json
content-length: 20
set-cookie: connect.sid=s%3AJE2PcbxpAdCerhT1CV0r2zs07AasoUL8.M6Gbkcle9Vw%2PHRC3Yvyxp%2ByNhSMzhCzu9892Y6G07Fc; Path=/; Expires=Thu, 07 Jun 2018 11:17:10 GMT; HttpOnly
Date: Thu, 07 Jun 2018 11:15:30 GMT
Connection: close

>{"status":"success"
Success
 Autoscroll
 No line ending
 9600 baud
 Clear

```

### Step 8) Device LED behavior to notify device action

**Button press:**

If any device button is configured and pressed the corresponding LED will turn BLUE until it successfully sends the trigger to Tantiv4 server or timeout. The LED will turn GREEN for one second if it is successful. Otherwise LED will turn RED for one second.

If device buttons are not configured and if any button is pressed, the corresponding LED will turn BLUE until it successfully sends the trigger to Tantiv4 server or timeout. LED will turn RED for one second in both success or failure cases.



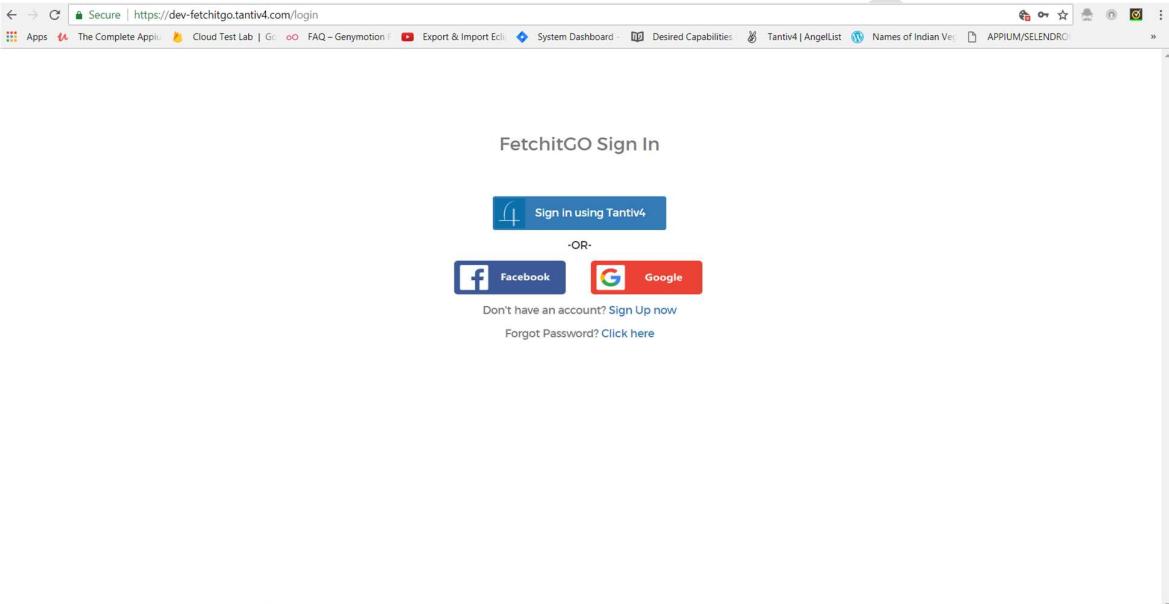
WiFi reconfiguration:

If WiFi provisioning is enabled, pressing and holding button “2” for 10 seconds will reset WiFi configuration detail from device flash memory. All button LEDs will turn BLUE for half second to indicate device is in Access Point mode.

Step 9) If you encounter any problem, please contact [support@tantiv4.com](mailto:support@tantiv4.com).

## 5 Device configuration in Web Application

### Step 1: Signup

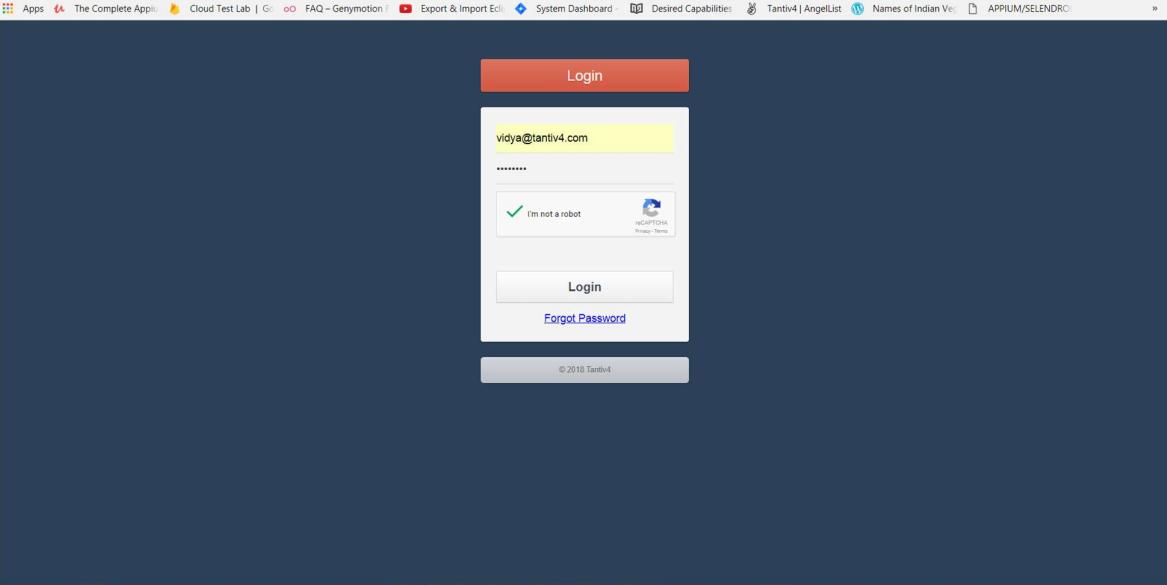


The screenshot shows a web browser window with the URL <https://dev-fetchitgo.tantiv4.com/login>. The page title is "FetchitGO Sign In". It features three sign-in options: "Sign in using Tantiv4" (with a key icon), "Facebook" (with a blue 'f' icon), and "Google" (with a red 'G' icon). Below these options, there are links for "Don't have an account? [Sign Up now](#)" and "Forgot Password? [Click here](#)". The browser's address bar shows the secure connection, and the top navigation bar includes links for "Apps", "The Complete App", "Cloud Test Lab", "FAQ – Genymotion", "Export & Import Emu", "System Dashboard", "Desired Capabilities", "Tantiv4 | AngelList", "Names of Indian V", and "APPUIUM/SELENDROID".

Create your account at [dev-fetchitgo.tantiv4.com](https://dev-fetchitgo.tantiv4.com) and **Sign Up** through Tantiv4



## Step 2: SignIn

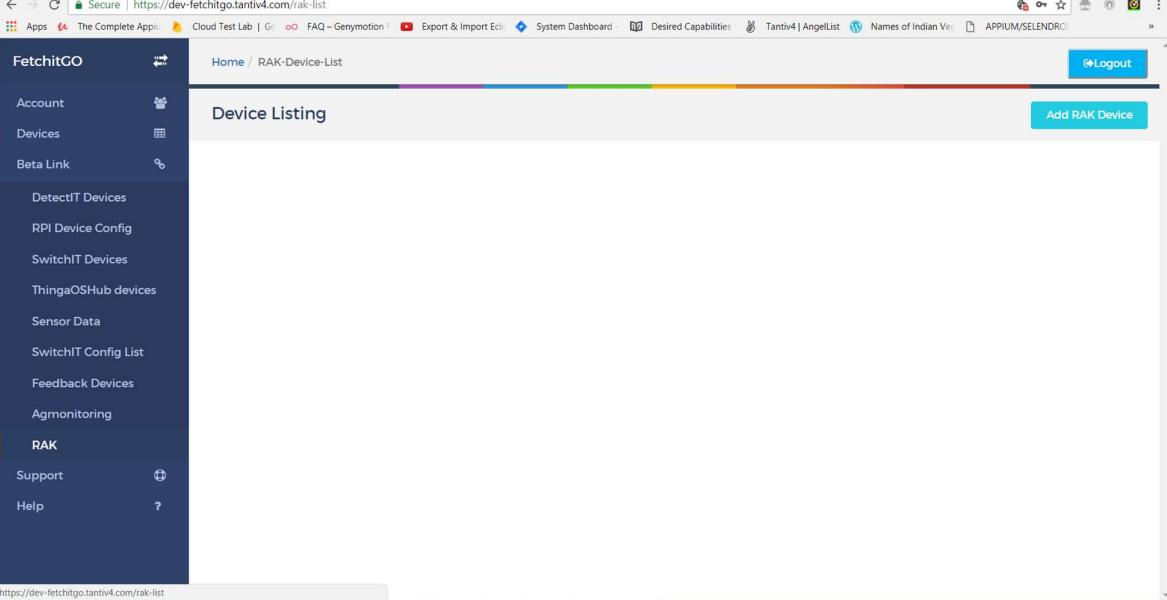


The screenshot shows a login page for the Tantiv4 application. At the top right is a large orange 'Login' button. Below it is a yellow input field containing the email address 'vidya@tantiv4.com'. Underneath is a password input field with several dots. A reCAPTCHA box follows, containing the text 'I'm not a robot' with a checked checkbox and a 'reCAPTCHA' logo. At the bottom of the form are two buttons: a large white 'Login' button and a smaller blue 'Forgot Password' link. The background of the page is dark blue, and there is a footer bar at the bottom with the text '© 2016 Tantiv4'.

Once you have signed up, go head and login

## Step 3: Add RAK Device

-> Click on **Beta Link** and click on **RAK** option it will show **Device List page**.



The screenshot shows the 'Device Listing' page from the FetchitGO application. The left sidebar has a dark blue background with white text and icons. It includes sections for 'Account', 'Devices', 'Beta Link', 'DetectIT Devices', 'RPI Device Config', 'SwitchIT Devices', 'ThingaOSHub devices', 'Sensor Data', 'SwitchIT Config List', 'Feedback Devices', 'Agmonitoring', 'RAK', 'Support', and 'Help'. The 'RAK' section is currently selected, indicated by a yellow background. The main content area shows a table titled 'Device Listing' with columns for 'Device Name', 'Status', and 'Actions'. A blue 'Add RAK Device' button is located at the top right of this area. The top navigation bar shows the URL 'https://dev-fetchitgo.tantiv4.com/rak-list' and includes links for 'Logout', 'Home', and 'RAK-Device-List'. The bottom of the page shows the URL 'https://dev-fetchitgo.tantiv4.com/rak-list' again.



-> In **Devices listing page** by clicking on “**Add RAK Device**” tab you can add device either by entering serial number/customer ID or by Scanning QR code.

FetchitGO

Home / Device / Scan

Logout

Device QR Scan

Scan the QR-Code of Device

OR

Enter Serial Number (OR) Customer ID and Device Friendly Name

Serial Number/Customer ID: 54463243484E030418000025

Device Friendly Name: Enter Device Friendly Name

Save

-> Click on **save** button after entered Serial number/customer ID or by Scanning QR code. Device will be added to your account.

FetchitGO

Home / RAK-Device-List

Logout

Device Listing

Add RAK Device

Name : rak1	Battery : 100%
Device ID : 54463243484E030418000025	
IFTTT	Delete

-> When devices get added successfully device ID and device name is shown.



#### Step 4: Device-Configuration

-> Click on the **IFTTT** option at the bottom of the added device box. You will be directed to the Device-Action viewing page with 4 buttons.

The screenshot shows the 'Device Action Viewing' page for a device named 'rak-1'. It displays four buttons, each with a placeholder 'Select a recipe'. The fourth button has an 'IFTTT' icon and a note field labeled 'Set IFTTT Action Notes'. A 'Save' button is located at the bottom right of the form.

->Click on **button** it will re-direct to **IFTTT** page.

->Create **New Applet** in IFTTT

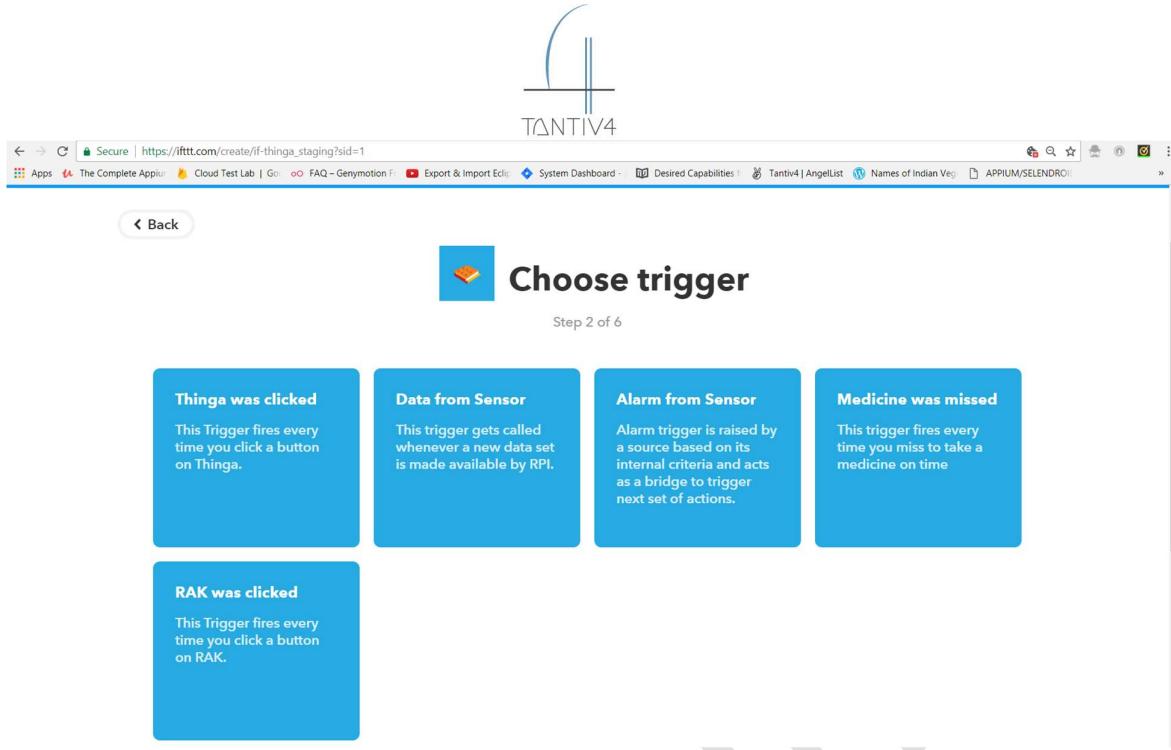
The screenshot shows the 'New Applet' page on the IFTTT website. The top navigation bar includes 'Discover', 'Search', 'My Applets', and 'Activity'. A user profile 'vidya6' is visible on the right. The main heading 'New Applet' is prominently displayed in a blue banner.

# if +this then that

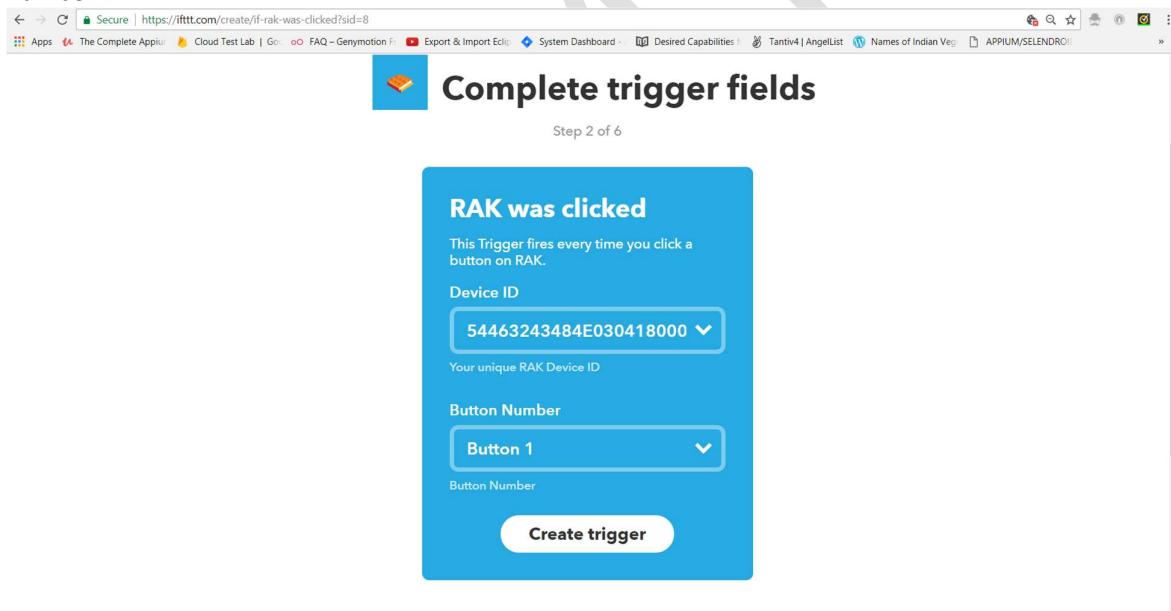
Want to do more? Partner with IFTTT, work with everyone. Build and publish your service and Applets on our platform.

[Partner with IFTTT](#)

-> Click on **+ this** and choose service as **Thinga (Staging)** it will show **Choose Trigger** page.



->Click on **RAK was clicked** it will show **Complete Trigger fields** page with device id and button number.



->Configure the device with Device ID, Button number and click on **Create Trigger**.

->Select +that it will show **Choose Action Services** page and Select any services like **Gmail, Slack** etc.

## 6 References



Tantiv4 Inc.