Hive Module User Manual

Purpose

The intent of this document is to provide step-by-step instructions on how to start a hive module to a nearby 2.4 GHz WI-Fi access point.

Note: This Hive Module should be used with Danby Host device only.

Required Materials

- Smart phone running Android version greater than 5.0
- Hive Module Onboarding App
- 12V DC Powered Hive module. The Hive Module board will display a purple LED when it is booted and ready to connect to a wireless access point.
- Take special note of the MAC address displayed on the label which will be on top face of the Hive Module mechanical housing.

Technical specifications

Qualcomm 2.4 GHz Single band Wi-Fi Chipset (IEEE 802.11 b/g/n)

1GB RAM

8GB eMMC as a Memory

Processor Qualcomm Snapdragon APQ8009

High Resolution Camera 5MP

DC Power and Peripheral Connector on board

12VDC operated board

Instructions

1. Open the latest version of the Onboarding App, on an appropriate device.

2. The app will automatically attempt to detect nearby Hive Module. Please wait to allow for discovery. If the app fails to detect a Hive Module, proceed to the troubleshooting section.

3. When a Hive Module is discovered, click on the mailbox field. If multiple Hive Modules are detected, make sure to select the correct device, discernible by the MAC address written on the top of the PCBA case.

4. Click the connect button. Wait for the Wi-Fi icon to appear on the top icon ribbon on the phone screen. The Wi-Fi symbol will have an exclamation mark beside it. Not waiting for this step will crash the app.

5. Ensure directional antenna is oriented in approximately the correct direction in the Hive Module unit. It should be angled towards the location of a Wi-Fi connection's broadcasting router. Click the configure Wi-Fi button. This will bring up a list of connectable Wi-Fi hotspots.

6. In order to verify the antenna is oriented in an optimal direction, the back arrow must be selected at the top left of the screen. The signal strengths will not automatically update, so checking proper orientation requires making an adjustment and switching back and forth.

7. Once the correct access point has been found, click the SSID name, prompting a window to enter in the password. Take extra care to enter the password correctly. An incorrect password will require resetting the board and starting from the beginning. (This requires holding the reset button on the harness for 5 seconds until the board resets to a purple LED).

8. If done correctly, the Hive Module will successfully onboard to the internet. This will be demonstrated by the onboard LED blinking green, then blinking purple, followed by a solid blue LED. This indicates it has been properly connected to the internet and onboarded to the back-end cloud platform. The app can then be closed.

Troubleshooting

- If no Hive Modules are displayed on the first screen of the app, ensure power is connected. Also ensure the board displaying a solid purple LED. (In direct sunlight it may be difficult to view. Cupping your hands around the LED and viewing will help viewing). A yellow LED indicates the board is booting up.
- If multiple Hive Modules are powered on an in soft AP mode, ensure correct board is onboarded
- Weak/No Wifi signal can be attributed to orientation of the antenna depending on the distance from the access point. Ensure the antenna is directed in the appropriate orientation.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

. Reorient or relocate the receiving antenna.

. Increase the separation between the equipment and receiver.

. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

. Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired

Innovation, Science and Economic Development Canada (ISED) Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Déclaration d'Innovation, Sciences et Développement économique Canada (ISED)

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISED RADIATION EXPOSURE STATEMENT

This equipment complies with ISED RSS-102 RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

DÉCLARATION ISED D'EXPOSITION AU RAYONNEMENT

Cet équipement est conforme aux limites d'exposition au rayonnement RF ISED RSS-102 définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 centimètres entre le radiateur et votre corps.

Cet émetteur ne doit pas être co-localisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.

Les antennes utilisées pour cet émetteur doivent être installées de manière à assurer une distance de séparation d'au moins 20 cm de toute personne et ne doivent pas être co-localisées ou utilisées en association avec une autre antenne ou un autre émetteur.

This radio transmitter [IC: 25031-Z00718] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna Type	Manufacturer	Model	Maximum Gain (dBi)	Nominal Impedance (Ω)
Directional	TP-LINK	TL-ANT2409A	9	50

Information to user

The Hive module has been granted as a limited approval, which is designed to be fixed to a specific host only with all below information.

1. A label must be affixed to the outside of the Host device into which the Hive module is incorporated with a statement to the following:
   This device contains FCC ID: 2AS9OZ00718 & IC: 25031-Z00718
2. This Hive module is to be installed to a specify host device only. The host integrators that the radiated spurious emissions from the module will need to be verified in the host product.
3. Separate approval is required for different antenna configuration.
4. The host will need to comply with all other regulatory requirements, such as unintentional radiators from the host (FCC Part 15, Subpart B and ISED ICES-003 for Information Technology Equipment Including Digital Apparatus).
5. If the conditions specified in the user manual cannot be met, then the host integrators will need to seek a new certification filing.
6. The user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.