JSOM CONNECT MODULE

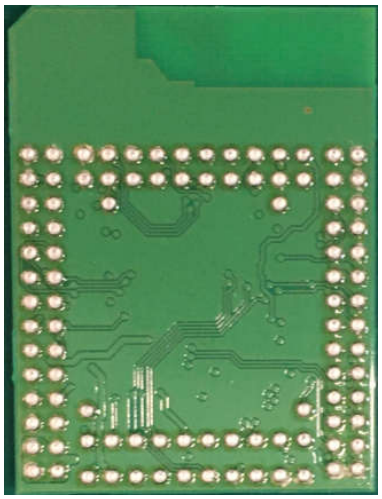
OEM/Integrators Installation Manual

1. Features

JSOM CONNECT is a highly integrated module with low power single band (2.4GHz) Wireless LAN (WLAN) and Bluetooth Low Energy communication. The module is limited to OEM installation ONLY, and the OEM integrator is responsible for ensuring that the end-user has no manual instructions to remove or install the module that is limited to installation in mobile or fixed application.

- 802.11 b/g/n 1x1, 2.4GHz
- BLE 5.0
- Internal 2.4GHz PCB antenna
- Size: 40mm x 30mm
- USB2.0 Host Interface
- Supporting: SPI, UART, I^2C, I^2S interface application
- LCD driver supporting
- Audio DAC driver
- Supply Power Voltages: 3.135V ~ 3.465V

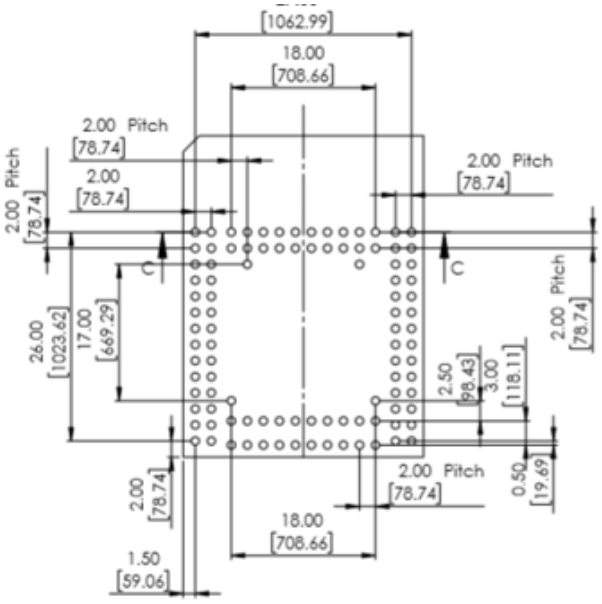
2. Picture of Product

Top view	Bottom View
	

3. Temperature Limit Ratings

Parameter	Minimum	Maximum	Unit
Storage Temperature	-40	+125	°C
Ambient Operating Temperature	-20	+85	°C

4. Package Specifications



Note: Unit MILIMETERS [MILS]

LGA100 Device Dimensions

5. Product general specification

Product Specification	
OPERATING FREQUENCY	802.11 b/g/n: 2412MHz ~ 2472 MHz BLE 5.0: 2402 ~ 2480 MHz
NUMBER OF CHANNEL	802.11 b/g/n: 1 ~ 13 CH (US, Canada) BLE 5.0: 0 ~ 39 CH
CHANNEL OF SPACING	802.11 b/g/n: 5 MHz BLE 5.0: 2 MHz
RF OUTPUT POWER	802.11 b/g/n: 19.5/23.5/23.5 dBm BLE 5.0: 3.0 dBm
MODULATION TYPE	802.11 b/g/n: BPSK/QPSK/16-QAM/64-QAM BLE 5.0: GFSK

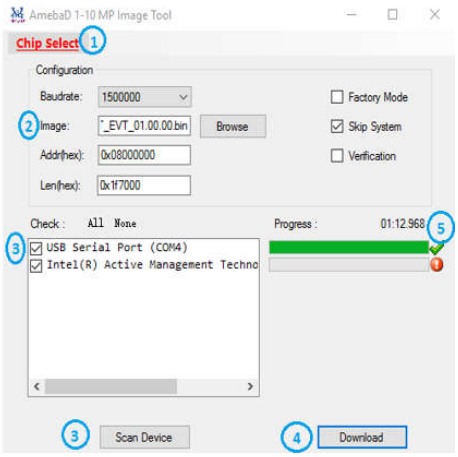
MODE OF OPERATION	Simplex
BIT RATE OF TRANSMISSION	802.11 b/g/n: 1/2/5.5/6/9/11/12/18/24/36/48/54 Mbps BLE 5.0: 1/2 Mbps
ANTENNA TYPE	PCB antenna
ANTENNA GAIN	4.97 dBi
TEMPERATURE RANGE	-20 ~ 85 °C

Remark: When using an external antenna with the module, only a PCB/Flex/FPC self-adhesive type antenna can be used, and the maximum gain shall not exceed 4.97dBi.

6. Application/ Tools

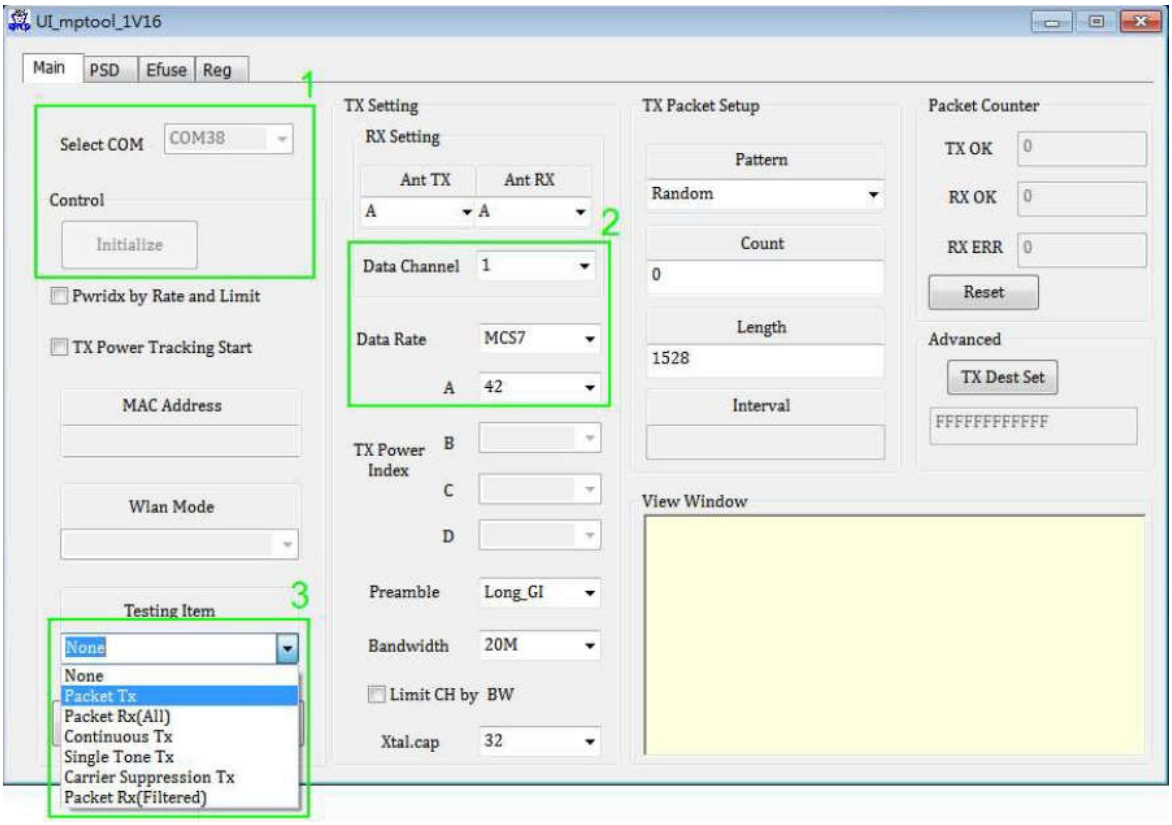
A. Image tool

- Download the latest image JSOM-CONNECT-evt-1.0.0-mfg-test.
- Download **Software Download Tool** to install on PC, and put the module on the fixture and connect USB (micro-B to Type A) to PC to power on the PUT.
- Launch "1-10_MP_Image_Tool.exe"
  1. Select "AmebaD(8721D)" in Chip Select
  2. Select "Browse" to designate FW location
  3. Select "Scan Device" and it will appear USB Serial Port in the message window
  4. Press "Download" to start image programming
  5. It will show green check in the progress while programming done
- Reboot device and then issue "**ATSC**" command and then reboot again (From MP mode to Normal mode)
- Reboot device and then issue "**ATSR**" command and then reboot again (From Normal mode to MP mode)



B. Wi-Fi UI MP tool

UI MP tool could control Wi-Fi radio on test mode for testing purpose.


UI_mptool_1V16
Main
PSD
Efuse
Reg
1
Select COM
COM38
Control
Initialize
Pwridx by Rate and Limit
TX Power Tracking Start
MAC Address
Wlan Mode
Testing Item
3
None
None
Packet Tx
Packet Rx(All)
Continuous Tx
Single Tone Tx
Carrier Suppression Tx
Packet Rx(Filtered)
TX Setting
RX Setting
Ant TX
Ant RX
A
A
2
Data Channel
1
Data Rate
MCS7
A
42
TX Power Index
B
C
D
Preamble
Long_GI
Bandwidth
20M
Limit CH by BW
Xtal.cap
32
TX Packet Setup
Pattern
Random
Count
0
Length
1528
Interval
Packet Counter
TX OK
0
RX OK
0
RX ERR
0
Reset
Advanced
TX Dest Set
FFFFFFFFFFFF
View Window

C. BT RF Test tool

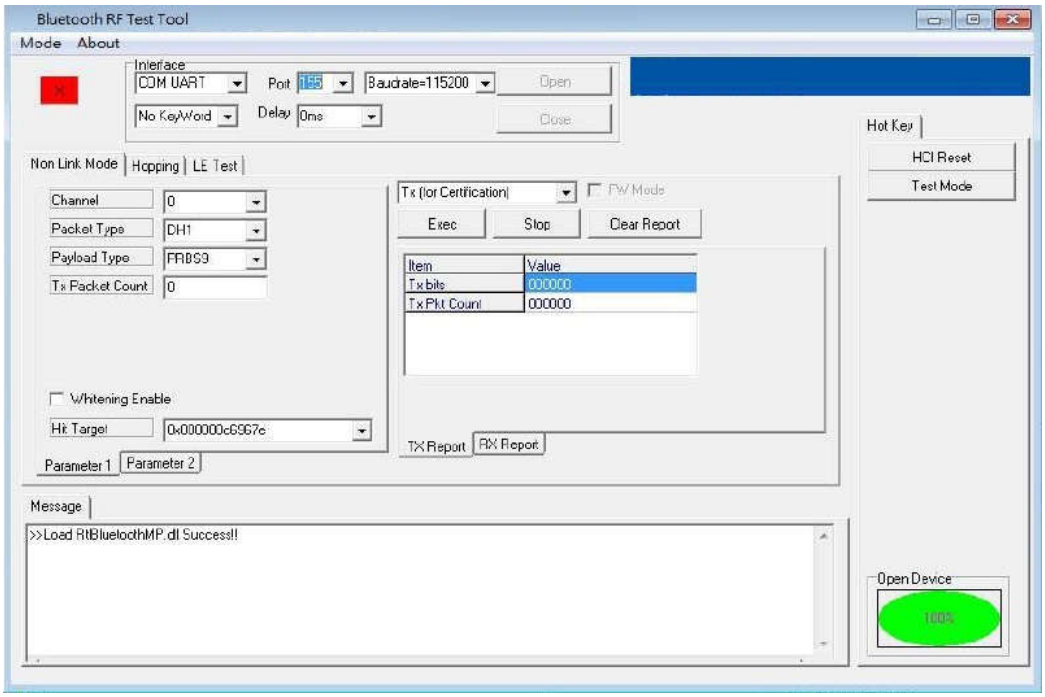
BT RF test tool could control BLE radio on test mode for testing purpose by following command.

ATM2=bt_power,on

ATM2=gnt_bt,bt

ATM2=bridge

(disconnect Putty and then turn on the tool)



Regulatory Notices

1. Federal Communications Commission (FCC) Compliance Statement

FCC Part 15.19 Statements:

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 operation.

FCC Part 15.21 statement

WARNING: Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

FCC Part 15.105 statement

NOTE: 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 or more 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.

IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna 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.

2. Industry Canada (IC) Compliance Statement

CAN ICES-3 (B)/NMB-3(B)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe B prescrites dans la norme sur le material brouilleur: "Appareils Numeriques," NMB-003 edictee par l'Industrie.

ISED Canada: This device contains license-exempt transmitter (s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-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.

L'émetteur/récepteur exempt de licence contenu dans le present 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.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

End Product Labeling

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:
Contains FCC ID: 2AXNJ-JSOM-CN
Contains IC: 26680-JSOMCN