



WM-BAC-BM-25 Setup Guide

cTX/RX & EMC for WiFi

1. The command shall be used in Linux OS.
2. Open terminal and enter the path (`cd /usr/local/custom/EMC/Sheldon/BM25`).
3. Enter “`dmesg`” and BM-25 is enabled while the information (`mmc0: new high speed SDIO card at address 0001`) is shown.
4. Enter “`modprobe cfg80211`” and then enter “`sh wifi_bringup.sh fw_bm25_7.45.100.9_mfg_enc.bin bcm943457wlsagb-EMC-bm25.txt`”.
5. Enter “`cd Test_Script/`” and then enter “`tx`”, “`rx`” or “`cw`”.
**The command to generate single tone signal is in “`cw`”, the command to generate continuous TX signal is in “`tx`” and the command to generate continuous RX signal is in “`rx`”.
6. Example of the command for WiFi_TX
 - 1) “`sh tx_b_2g.sh <channel> <data rate> <power setting>`” will generate 802.11b signal.
 - 2) Change “`tx_b_2g.sh`” to other file name and then the signal with other modulation will be generated.
7. Example of the command for WiFi_RX
 - 1) “`sh rx_b_2g.sh <channel> <data rate>`” will generate 802.11b signal.
 - 2) Change “`rx_b_2g.sh`” to other file name and then the signal with other modulation will be generated.
8. Example of the command for single tone
 - 1) “`sh cw_2g.sh <channel>`” will generate the single tone of 2.4GHz band.
 - 2) “`sh cw_5g.sh <channel>`” will generate the single tone of 5GHz band



cTX/RX & EMC for BT

1. The command shall be used in Linux OS.
2. Open terminal and enter the path (cd /usr/local/custom/EMC/Sheldon/BM25).
3. Enter "dmesg" to check which USB port it is.
4. Enter "sh bt_mfg.sh
BCM4345C0_003.001.025.0111.0000_Generic_UART_37_4MHz_wlbg_ref_iLNA_iTR_eLG_BT4.
2_test_only.hcd ttyUSB0".
5. TX test for BT2.0 for "T) TX Test" item
 - 1) Set "001122334455" as MAC address.
 - 2) Set "1" as Hopping mode.
 - 3) Set the number as the channel you need.
 - 4) Set "4 (PRBS9 Pattern)" as Modulation type.
 - 5) Set "0 (ACL EDR) or 1 (ACL Basic)" as Logic channel of 1Mbps rate while set "0 (ACL EDR) or 1 (ACL Basic)" as Logic channel of 2Mbps or 3Mbps rate.
 - 6) Set the number as the Packet type you need/
 - 7) Set "65535" as Packet length.
 - 8) Set "0" as Power table index.
6. RX test for BT2.0 for "R) RX Test" item
 - 1) Set "001122334455" as MAC address.
 - 2) Set "2000" as Report period
 - 3) Set the number as the channel you need.
 - 4) Set "4 (PRBS9 Pattern)" as Modulation type.
 - 5) Set "0 (ACL EDR) or 1 (ACL Basic)" as Logic channel of 1Mbps rate while set "0 (ACL EDR) or 1 (ACL Basic)" as Logic channel of 2Mbps or 3Mbps rate.
 - 6) Set the number as the Packet type you need/
 - 7) Set "65535" as Packet length.
 - 8) Set "1" as Timeout
7. BT2.0 hopping mode for "T) TX Test" item
 - 1) Set "001122334455" as MAC address.
 - 2) Set "0" as Hopping mode.
8. LE TX test for BT4.0/BT4.1 for "P) [LE] TX Test" item
 - 1) Set the number as the channel you need.
 - 2) Set "37" as Packet length.



- 3) Set "0" as Payload type
- 4) Set "0" as Timeout
9. LE RX test for BT4.0/BT4.1 for "Q) [LE] RX Test" item
 - 1) Set the number as the channel you need.
 - 2) Set "0" as Timeout
10. Single tone of BT2.0, BT4.0/BT4.1 for "C) Set TX Carrier Frequency ARM" item
 - 1) Set "0" as Carrier
 - 2) Set the number as the channel you need.
 - 3) Set "0" as Mode
 - 4) Set "0" as Modulation type
 - 5) Set "0" as Power table index
11. DUT mode for "c) Enable Device Under Test Mode" item



Regulatory statements

US

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.

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

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

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance



20cm between the radiator & your body.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: COF-WMBACBM25". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed with 20 cm is maintained between the antenna and users in



mobile or fixed applications.

- 2) The Antenna for Module (WM-BAC-BM-25) is Non-detachable and the maximum antenna gain allowed for use with this device is 1.59 [dBi@2.4GHz](#) band & [2.23dBi@5GHz](#) band.
- 3) The transmitter module may not be co-located with any other transmitter or antenna.
- 4) OEM integrators Must demonstrate SAR test and meet compliance before end-product with module (WM-BAC-BM-25) marketed in portable application.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

OEM integrators Must demonstrate Part 15B test and meet compliance before end-product with module (WM-BAC-BM-25) marketed.

Canada

This device complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un



environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

- 1) The antenna must be installed and operated with greater than 20cm between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as **2** conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée et exploitée avec plus de 20 cm entre l'antenne et les utilisateurs, et
- 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les **2** conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans



ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed and operated with greater than 20cm between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 10293A-WMBACBM25".

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un appareil où l'antenne peut être installée et utilisée à plus de 20 cm entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 10293A-WMBACBM25".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

Caution :

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;



(ii) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

(i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués