AW-BT715C

Bluetooth Module

Demo Board User Guide

Version 0.1

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Document release	Date	Modification	Initials	Approved
Version 0.1	2014/06/26	Initial Version	N.C. Chen	Chihhao Liao

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Contents

1. Install driver and tool

install active perl version: 5.8.4.810 before install Broadcom tool

install Broadcom tool BLUETOOL version:1.7.3.3

install CP210X(USB to UART) driver CP210X_VCP_Win2K_XP_S2K3

2. Connect the EVB to a PC

Use the cable to connect EVB with PC

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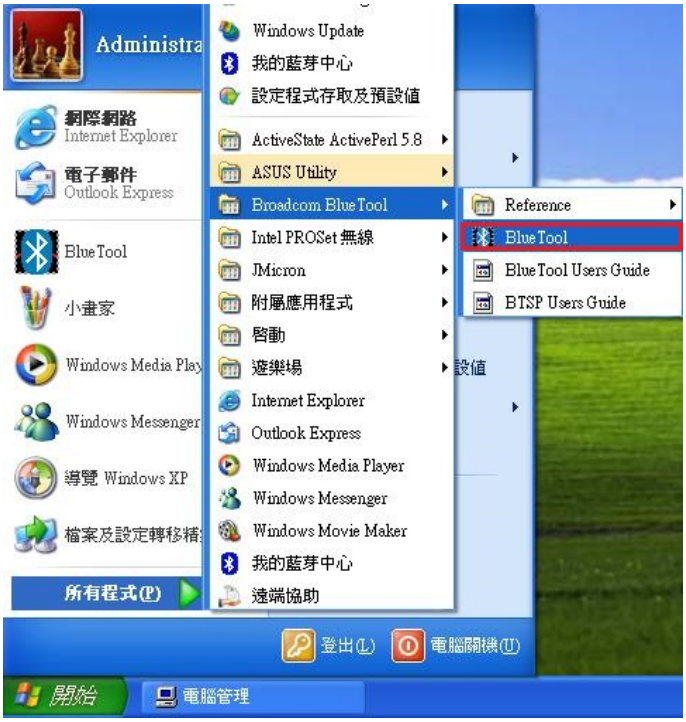
Check the com port that will be used.

A.CONNECT TO A BLUETOOTH TESTER

Run **BlueTool**, and then:



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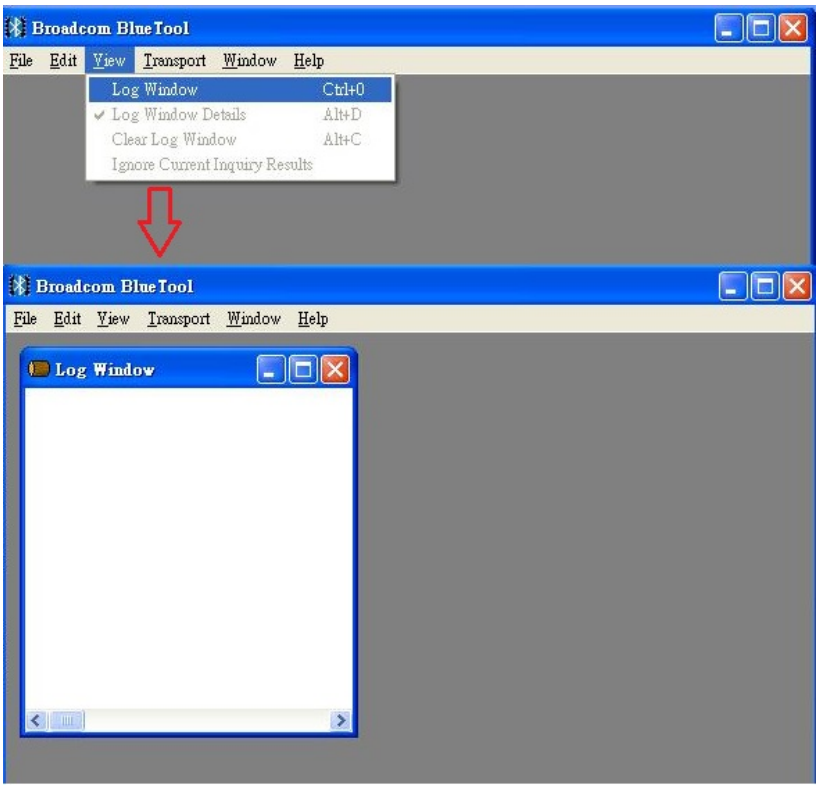
1. From the BlueTool **View** menu, select **Log Window.** A record of issued commands will be maintained in the log window.



2. From the **Transport** menu, select **HCI Control**.

a. In the Select HCI Control Window Transport window (screenshot below), select UART, the COM port that will be used, 115200, and CTS flow control.

b. Click **OK.**

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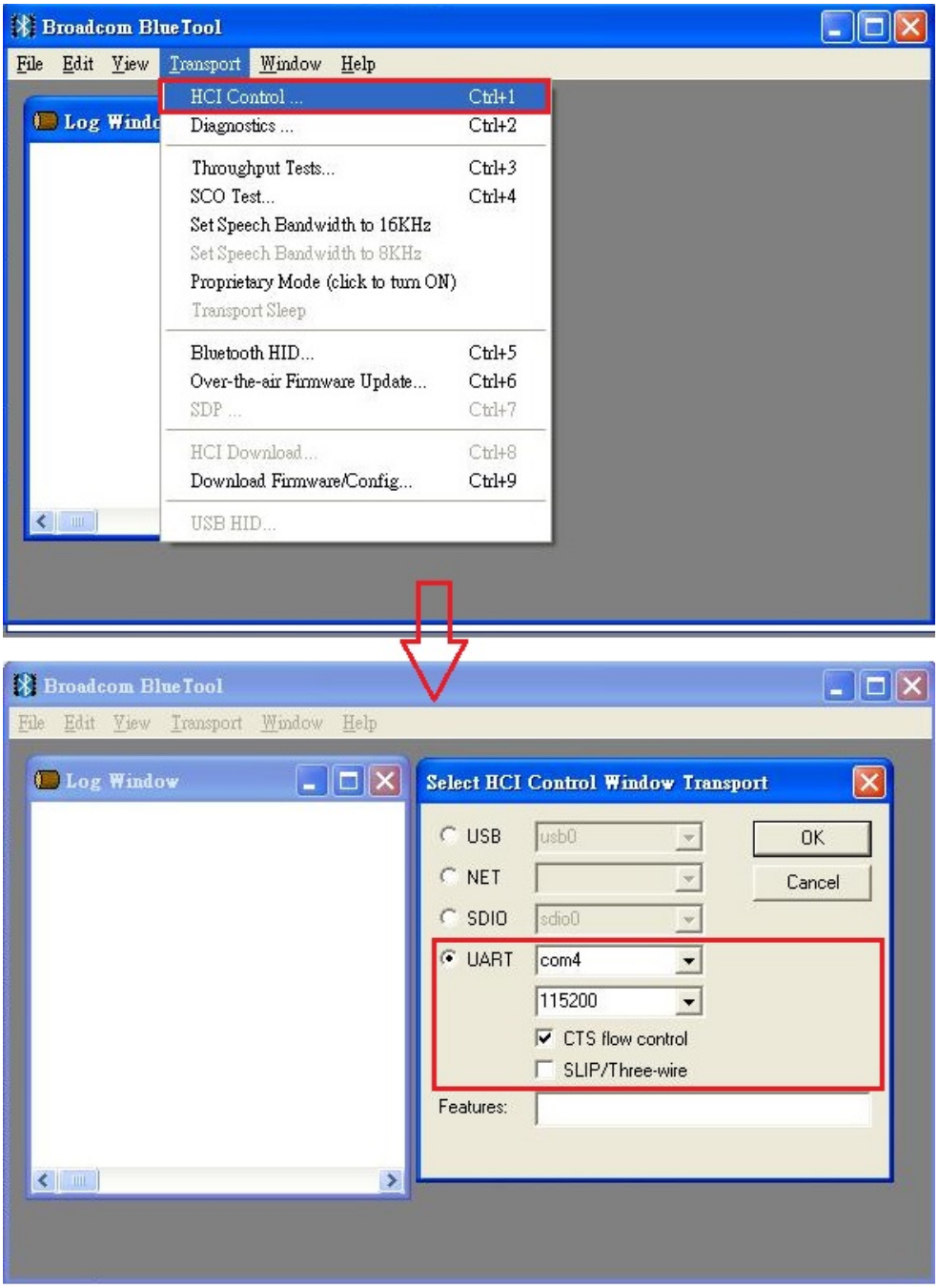

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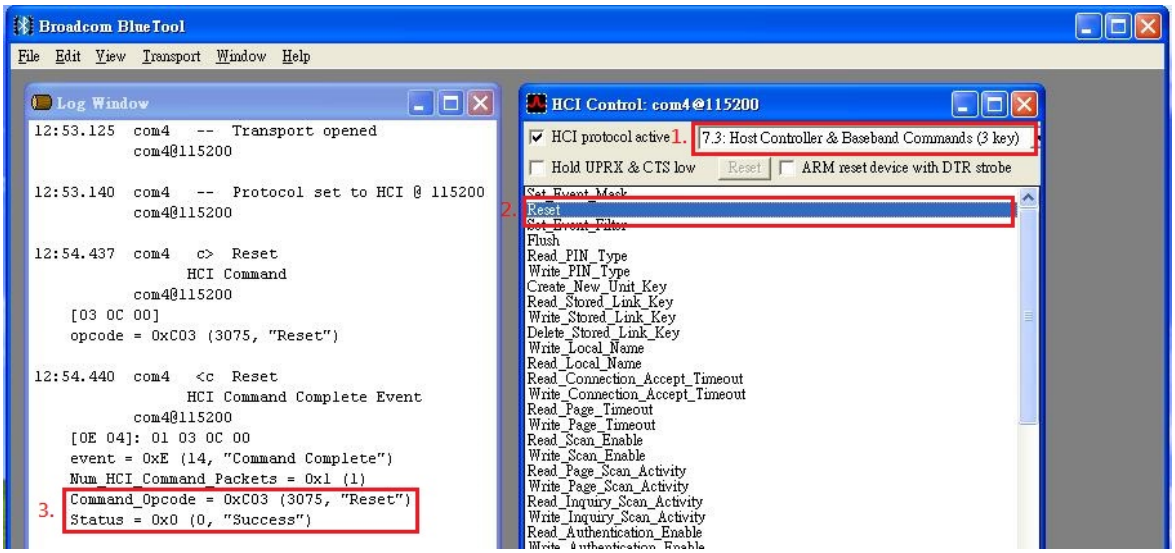
B. Reset

1.In the HCI Control window

a. Select **7.3 Host Controller & Baseband Commands (3 key)** for HCI protocol active

b.Double-click **Reset**.

2. Confirm that this step is done successfully by viewing the log window



C. Download the Configuration File

1. In the HCI Control window

   a. Select **0: Vendor-specific Commands (0 key)** for HCI protocol active

   b.Double-click **Download Minidriver.**

2. Confirm that this step is done successfully by viewing the log window

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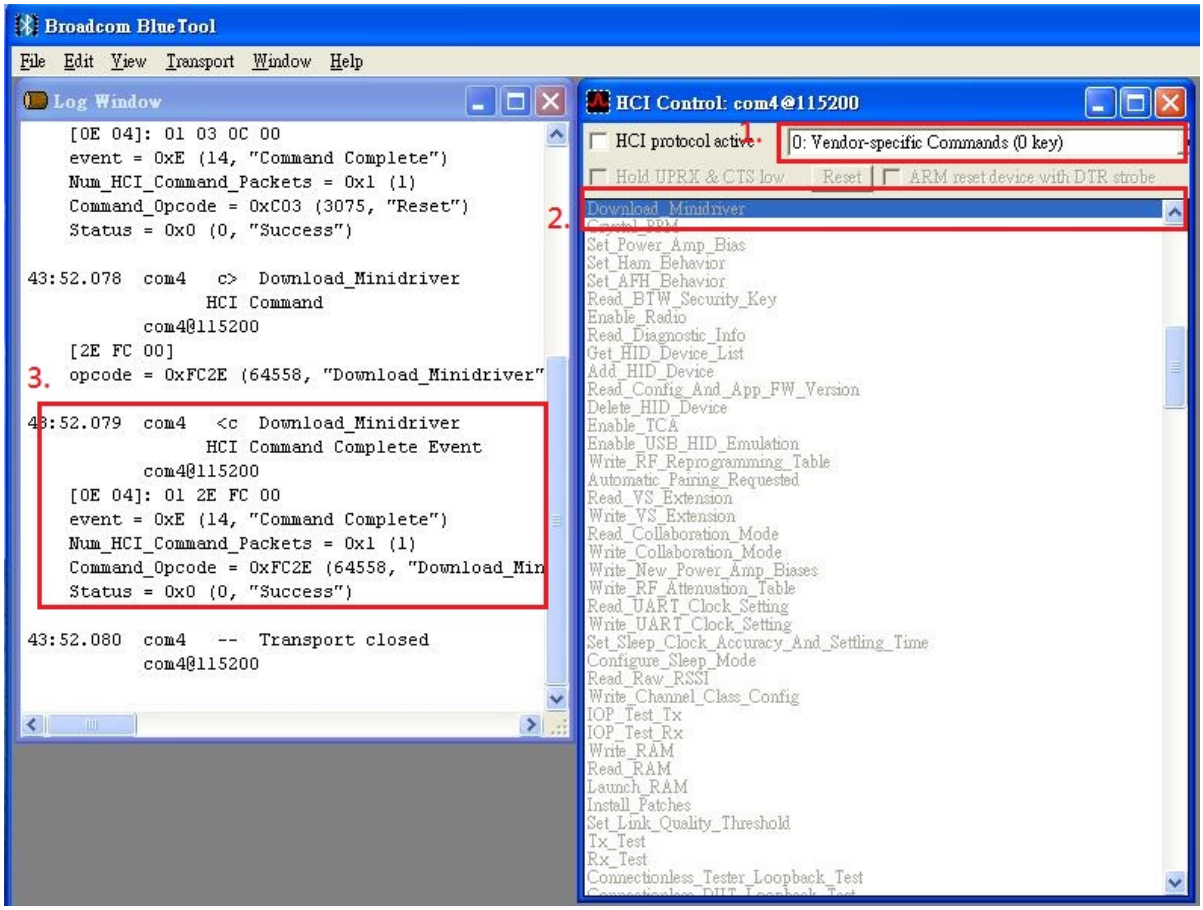
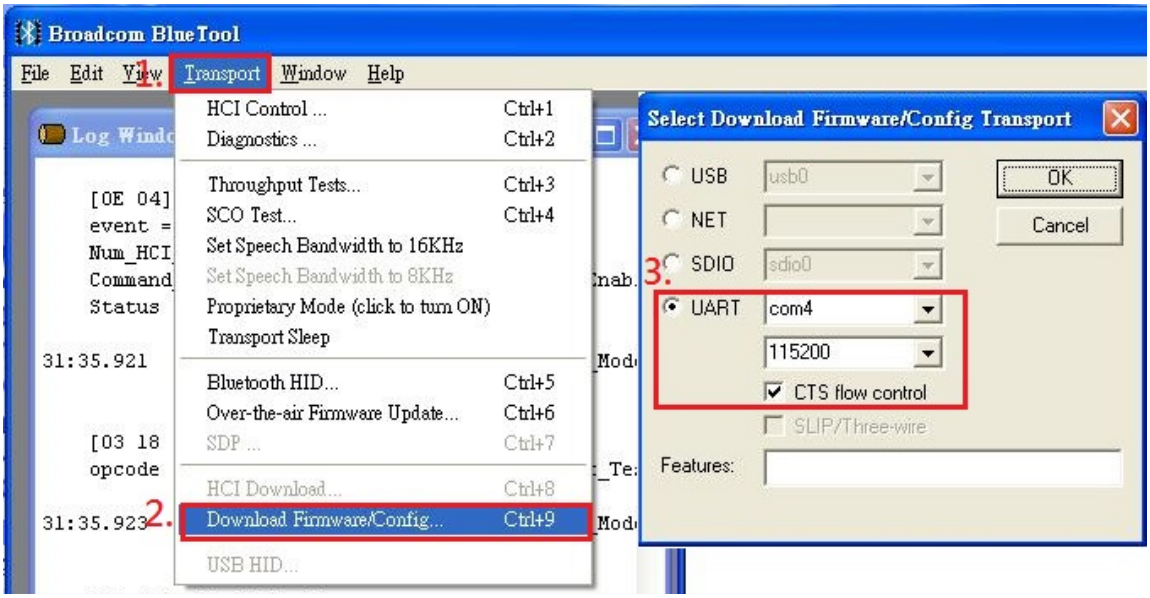


3. From the BlueTool **Transport** menu, select **Download Firmware/Config…**.
4. In the Select Download Firmware/Config Transport window

   a. select UART, the COM port that will be used, 115200,and CTS flow control.

   b. Click **OK**.



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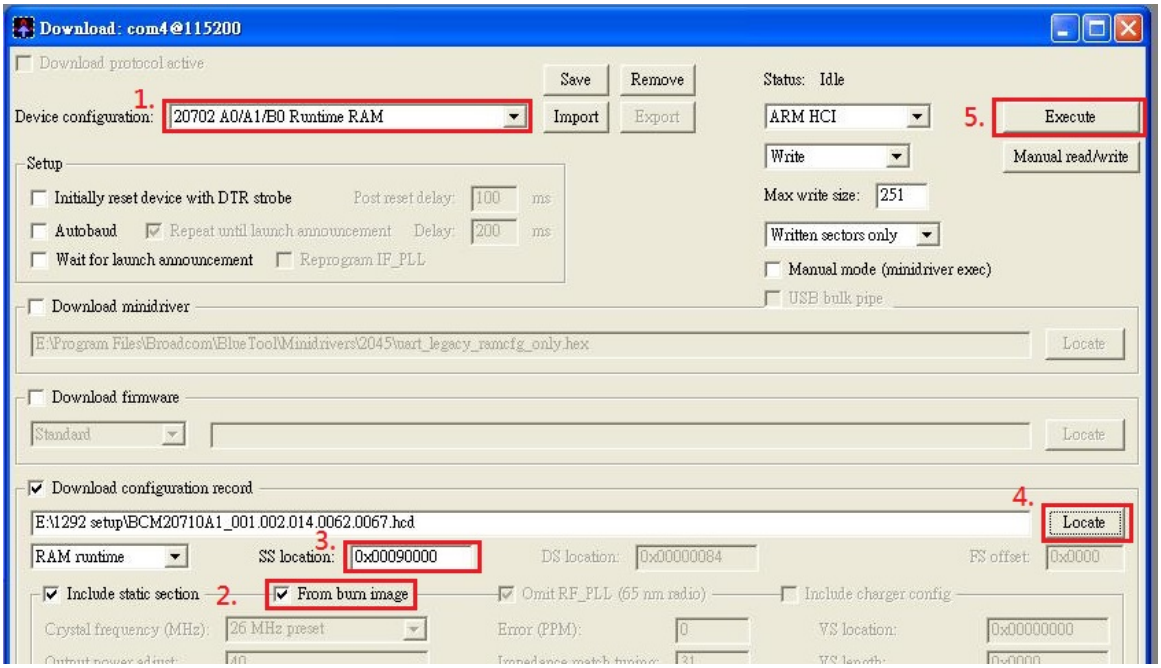
5. In the Download: com @115200 window,
   a. select **20702 A0/A1/B0 Runtime RAM** for Device configuration
   b. mark **From burn image**
   c. key in **0x00090000** on SS location
   d. click **Locate**
   e. select the configuration
   f. click **open**
   g. click **Execute**
   h. close the window



D. Verify the DUT condition by reading the BD address

1. In the HCI Control window
   a. mark **HCI protocol active** ,select **7.4 Informational Parameters(4 keys)**from it
   b. Double-click **Read BD ADDR**.
2. The Log Window will show the BD address.

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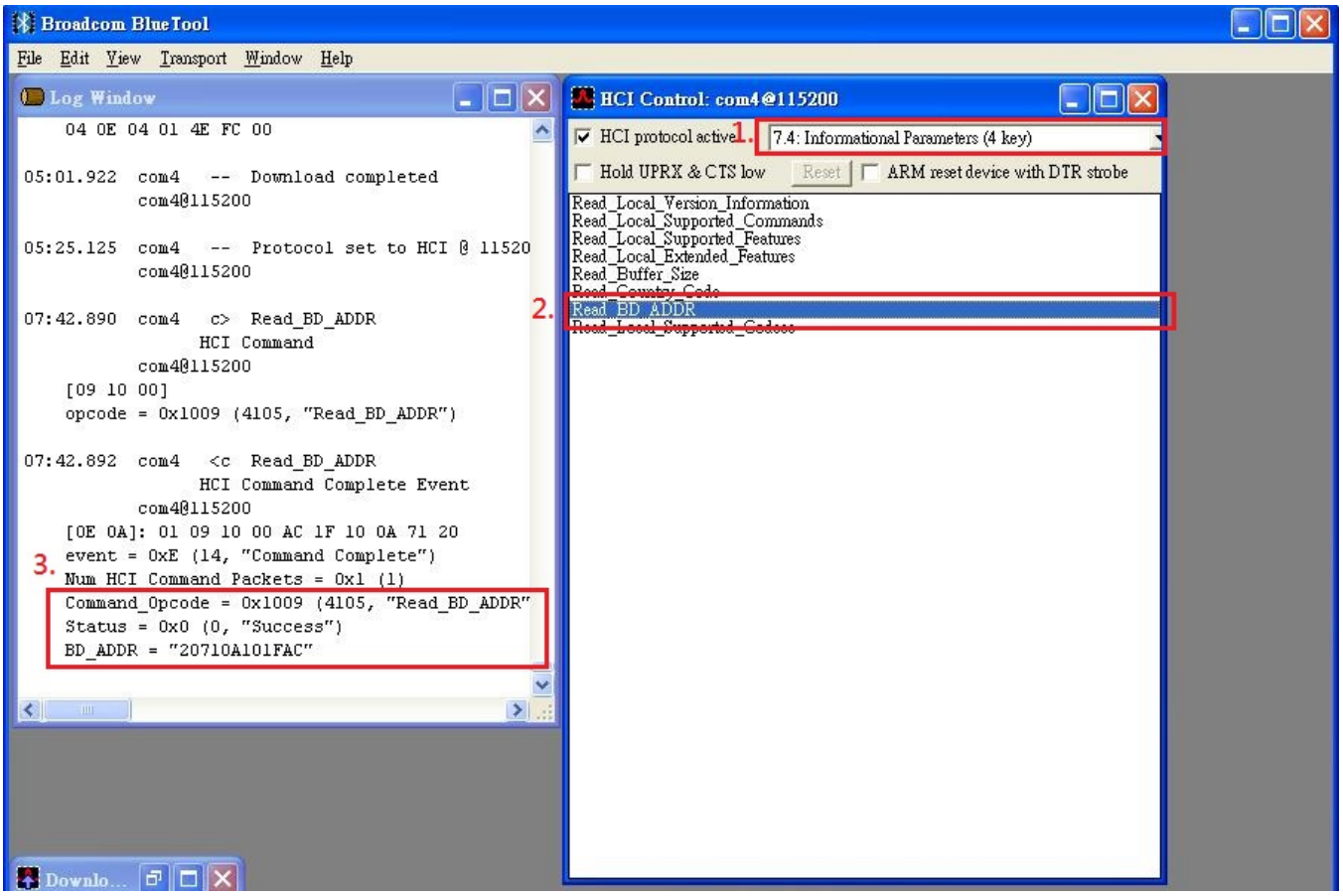

E. Set Event Filter

1. In the HCI Control window
   a. select **7.3 Host Controller & Baseband Commands (3 key)** for HCI protocol active
   b. Double-click **Set Event Filter**.
2. In the HCI Command window
   a. select **connection setup** for filter type
   b. select **Allow Connecttion from all devices** for Connection_Setup_ Filter _Condition_type
   c. select **Do Auto accept the connection with role switch disabled** for Auto_Accept_Flag
   d. Click **OK.**
3. Confirm that this step is done successfully by viewing the log window .

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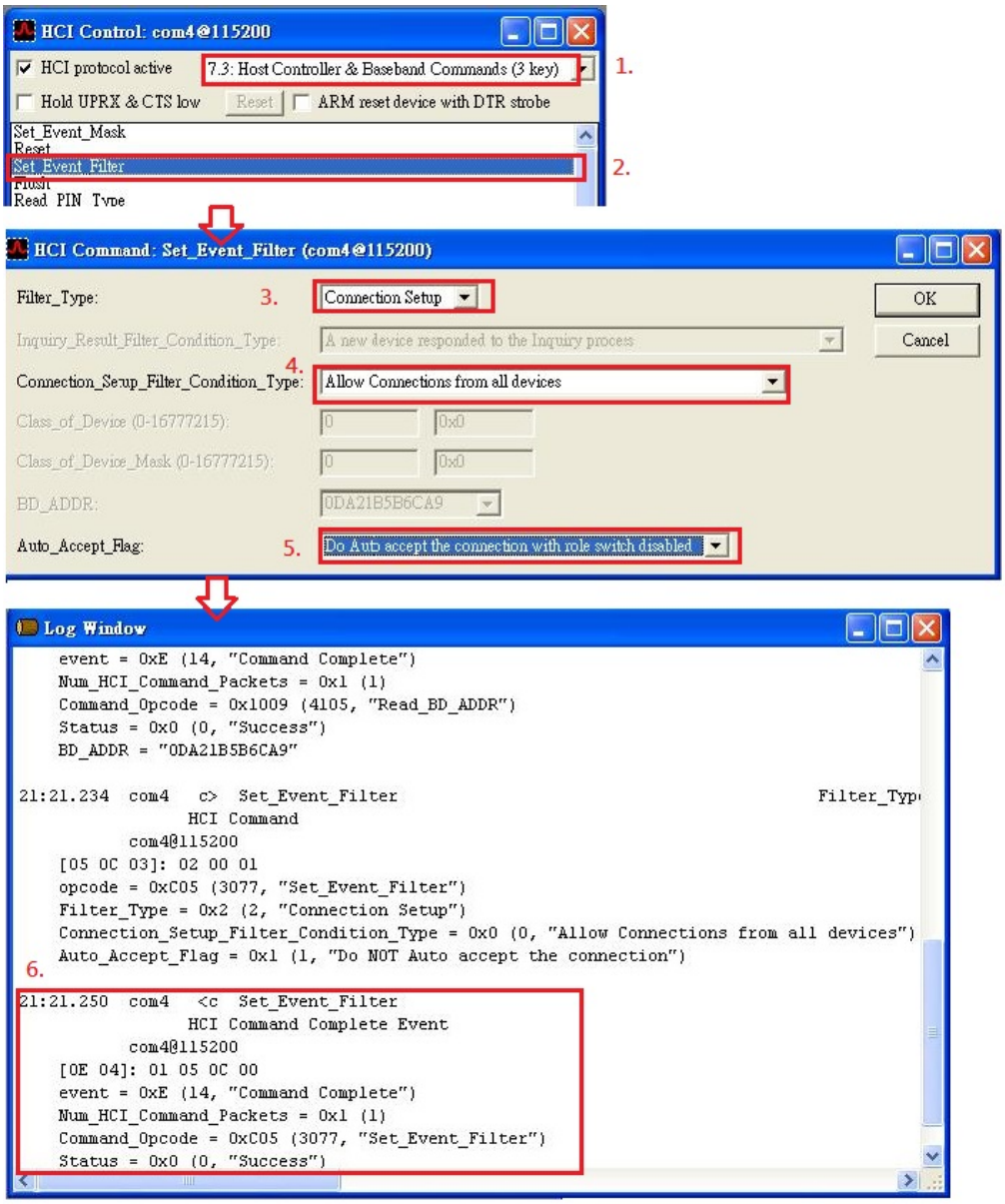

F. Write Scan Enable

1. In the HCI Control window
   a. select **7.3 Host Controller & Baseband Commands (3 key)** for HCI protocol active
   b. Double-click. **Write Scan Enable**
2. In the HCI Command window
   a. select **Inquiry and Page Scan enabled** for scan_Enable
   b. Click **OK.**
3. Confirm that this step is done successfully by viewing the log window .

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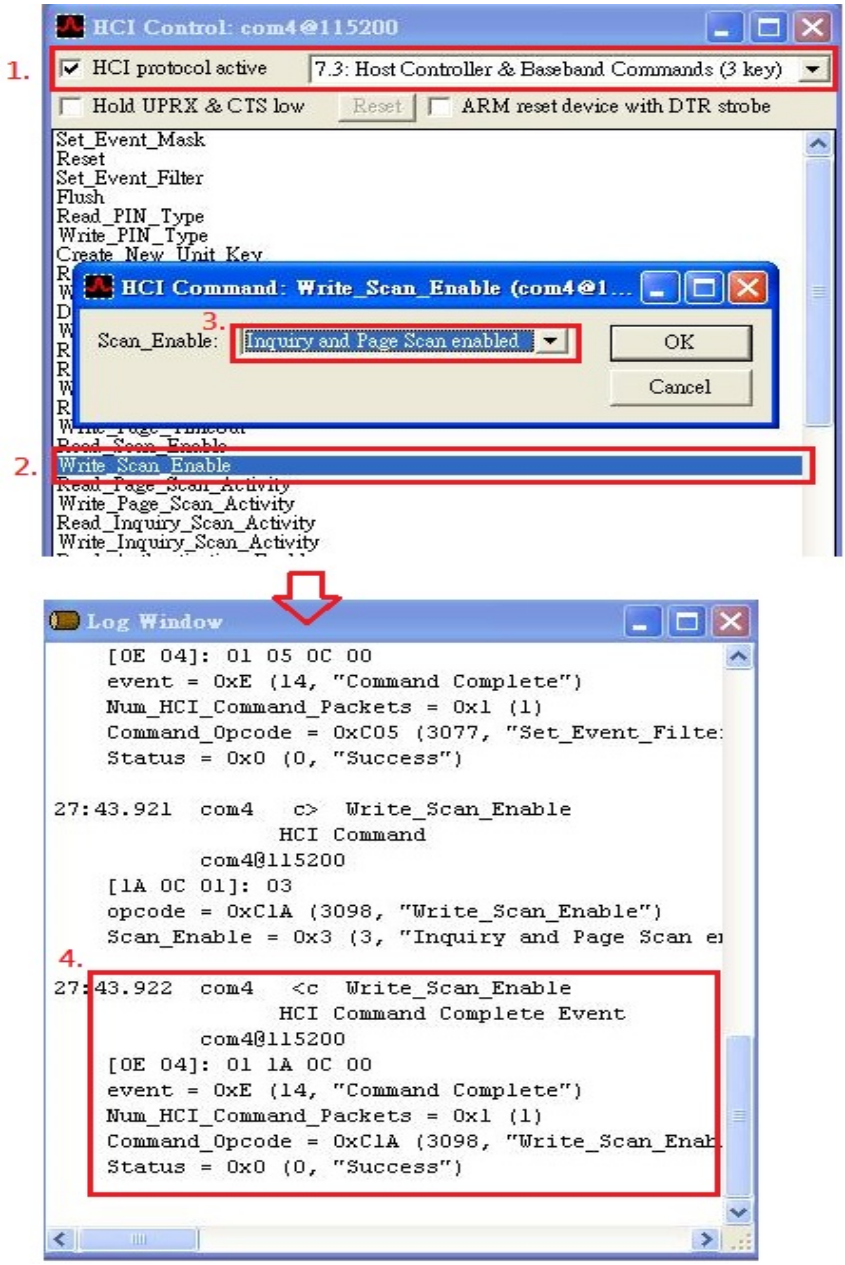

G. Enable Device Under Test Mode

1. In the HCI Control window
   a. select **7.6 Testing Commands (6 key)** for HCI protocol active
   b. Double-click **Enable Device Under Test Mode**
2. Confirm that this step is done successfully by viewing the log window .

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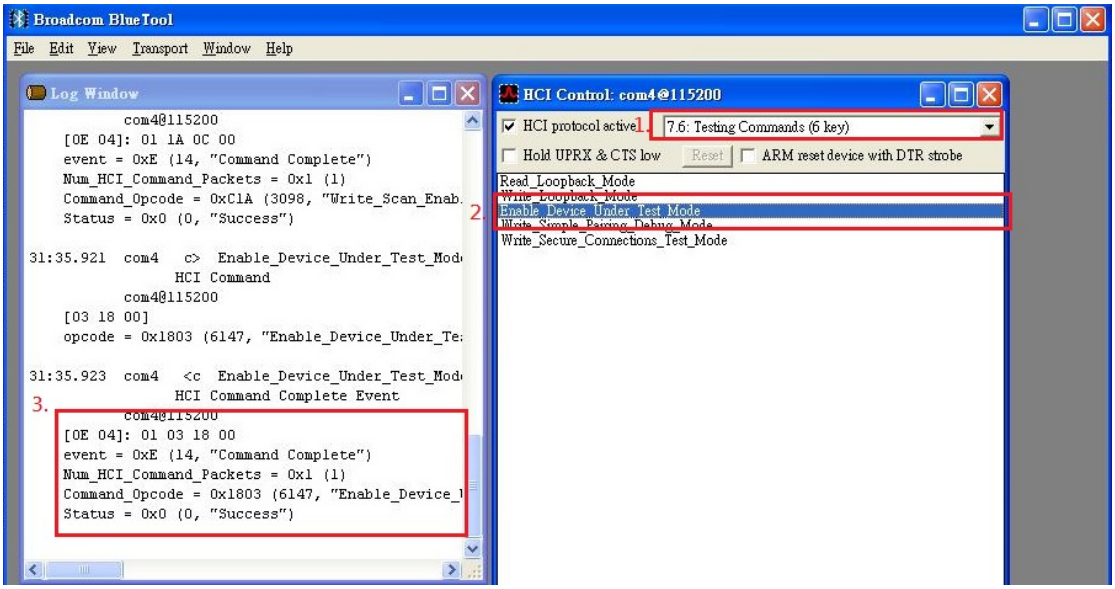

H.TX Testing

1. In the HCI Control window
   a. select **0: Vendor-specific Commands (0 key)** for HCI protocol active
   b. Double-click **TX Test**
2. In the HCI command window
   a. From the **Local_Device_BD_ADDR** shortcut menu, select the **Bluetooth device address** of the DUT.
   b. From the **Hopping_Mode** shortcut menu, select **single frequency**.
   c. From the **frequency** shortcut menu, select **which frequency you want to test**.
   d. From the **Modulation_Type** shortcut menu, select **PRBS9 Pattern**.
   e. From the **Logical_Channel** shortcut menu, select **ACL Basic**.
   f. From the **BB_Packet_Type** shortcut menu, **DH5/3-DH5**, **DH3/3-DH3**, or **DH1/2-DH1**.
   g. From the **BB_Packet_length(….)** shortcut menu, key **65535**
   h. From the **Tx Power Level** shortcut menu, select **Specify Power in dBm**
   i. From the **Transmit Power dBm** shortcut menu, key in **which power you want to transmit**.
   j. Click **OK**.
3. Confirm that this step is done successfully by viewing the log window.

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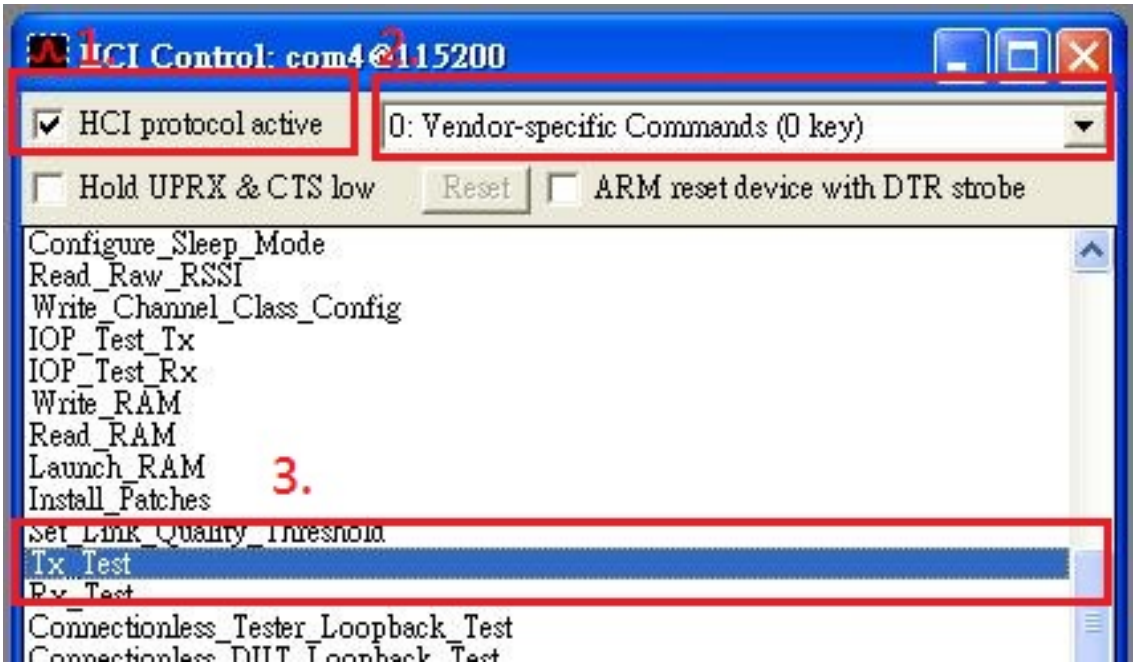

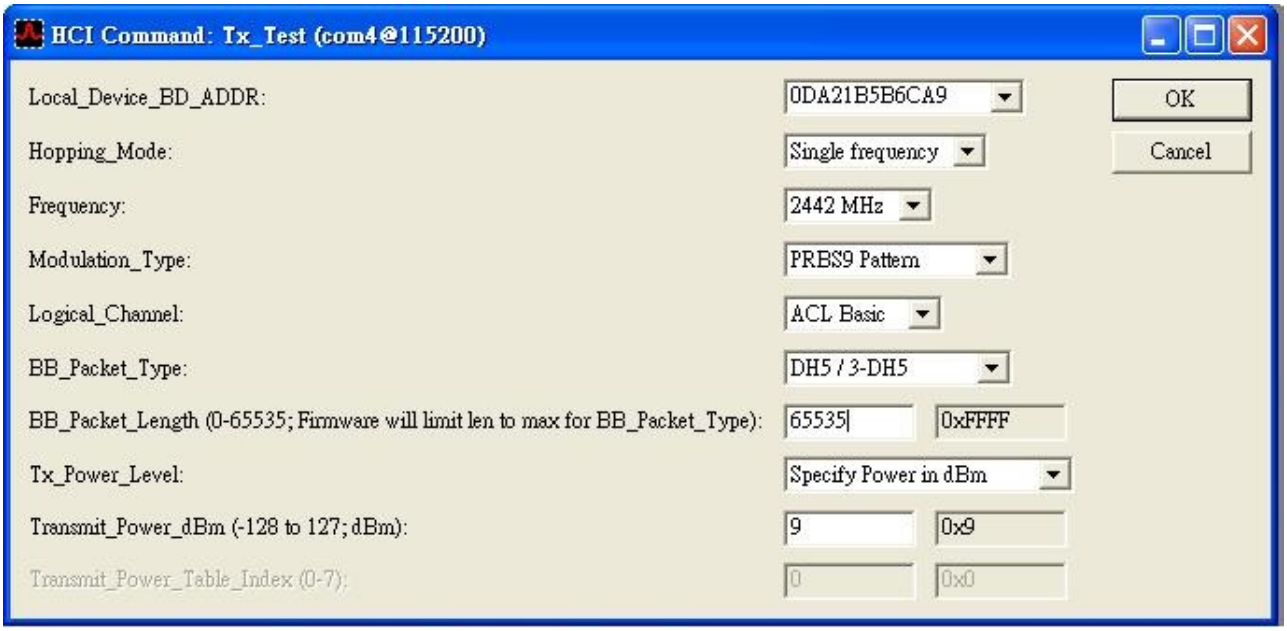

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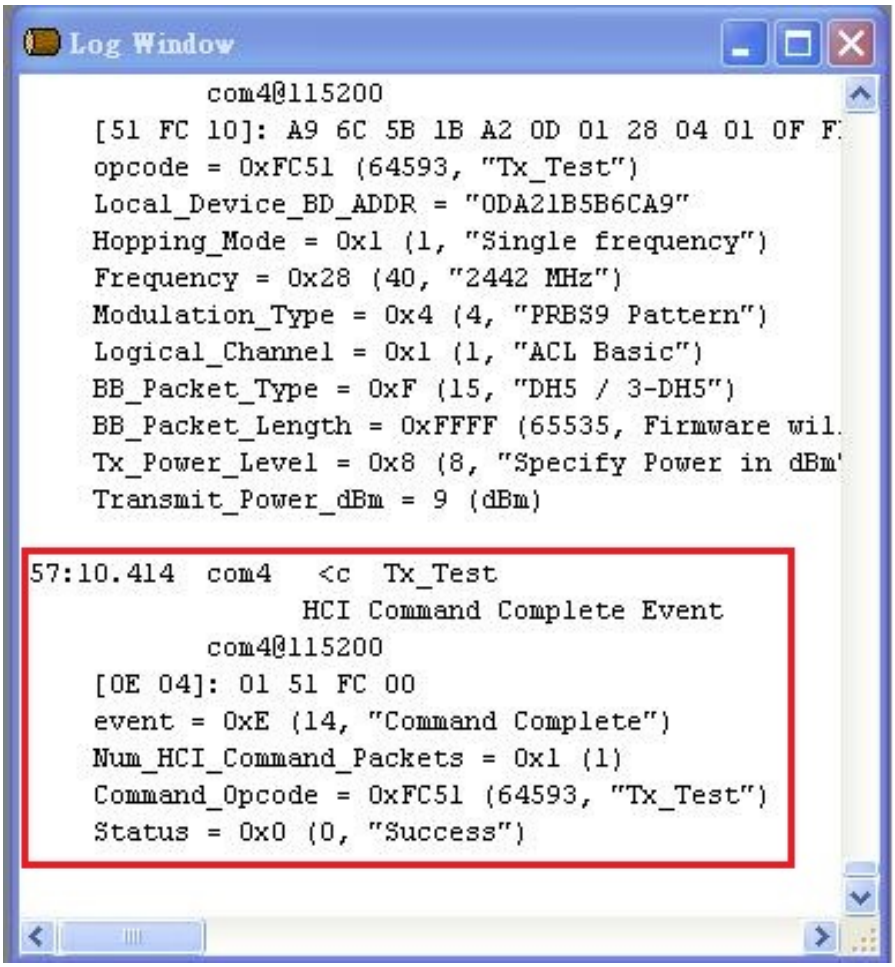

I. RX Testing

1. In the HCI Control window
   a. select **0: Vendor-specific Commands (0 key)** for HCI protocol active b. Double-click **RX Test**
2. In the HCI command window
   a. From the **Local_Device_BD_ADDR** shortcut menu, select the **Bluetooth device address** of the DUT.
   b. From the **report period** shortcut menu, select **which period you want to used**
   c. From the **frequency** shortcut menu, select **which frequency you want to test**.
   d. From the **Modulation_Type** shortcut menu, select **PRBS9 Pattern**.
   e. From the **Logical_Channel** shortcut menu, select **ACL Basic**.
   f. From the **BB_Packet_Type** shortcut menu, **DH5/3-DH5**, **DH3/3-DH3**, or **DH1/2-DH1**.
   g. From the **BB_Packet_length(….)** shortcut menu, key in **65535**
   h. Click **OK**.
3. Confirm that this step is done successfully by viewing the log window .

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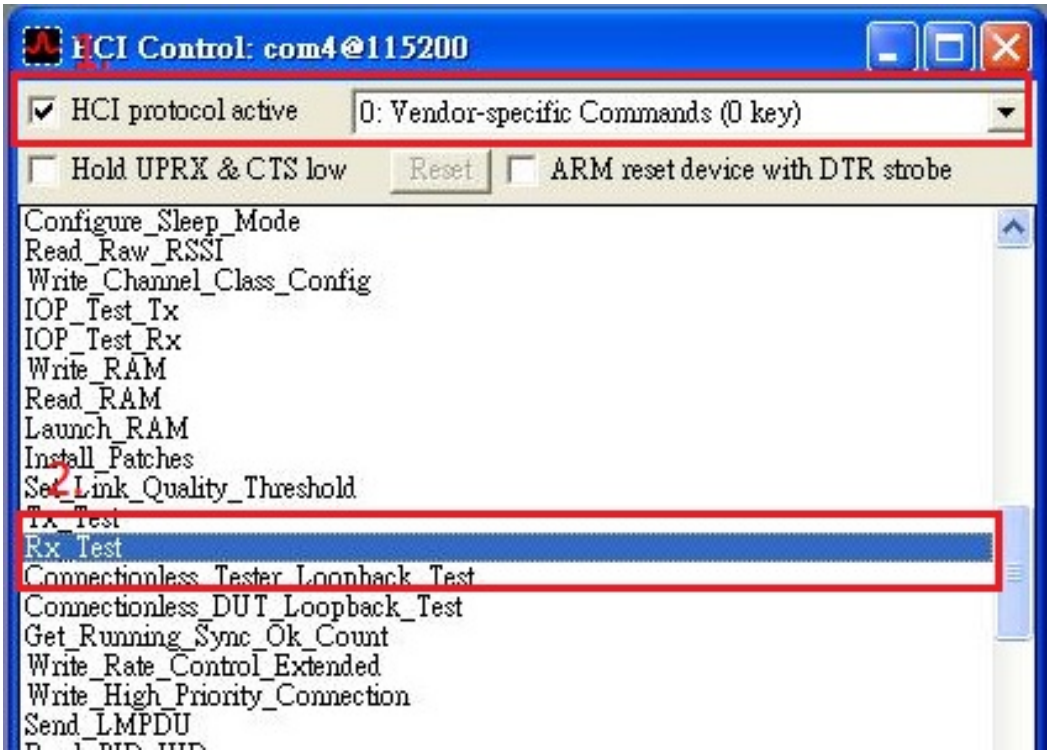

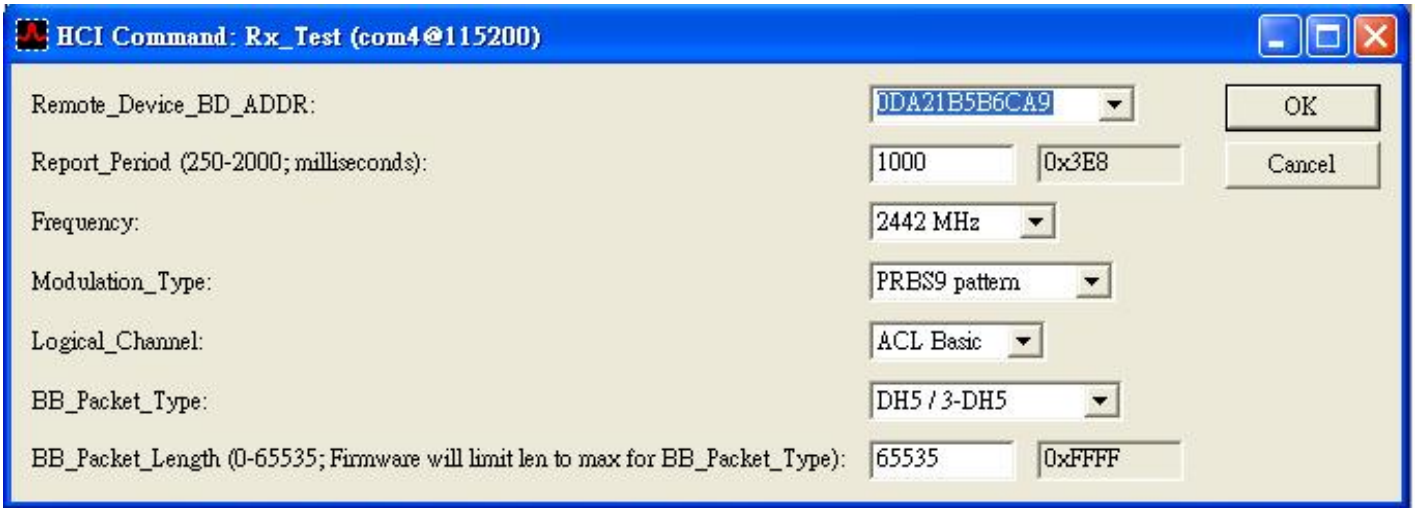

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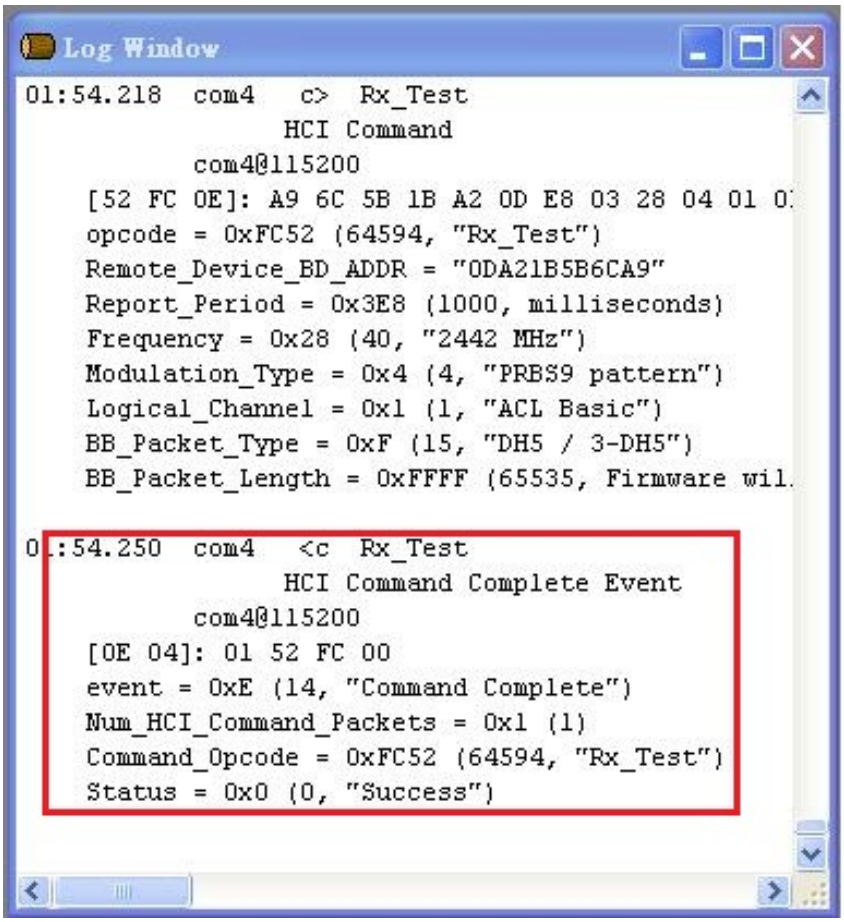

Measure performance with instrument for auto testing (ex. Agilent N4010)

Step : A to G

Measure performance with instrument for manual testing (ex. Spectrum Analyzer)

Step :A to D ,H(testing TX) or I(testing RX)

The device under test (DUT) should be reset before each procedure. Re-test or replace the DUT need to switch **Bluetool** and plug DUT.

If the Log Window didn't show successful message in any step (Step B~I),please reset it.

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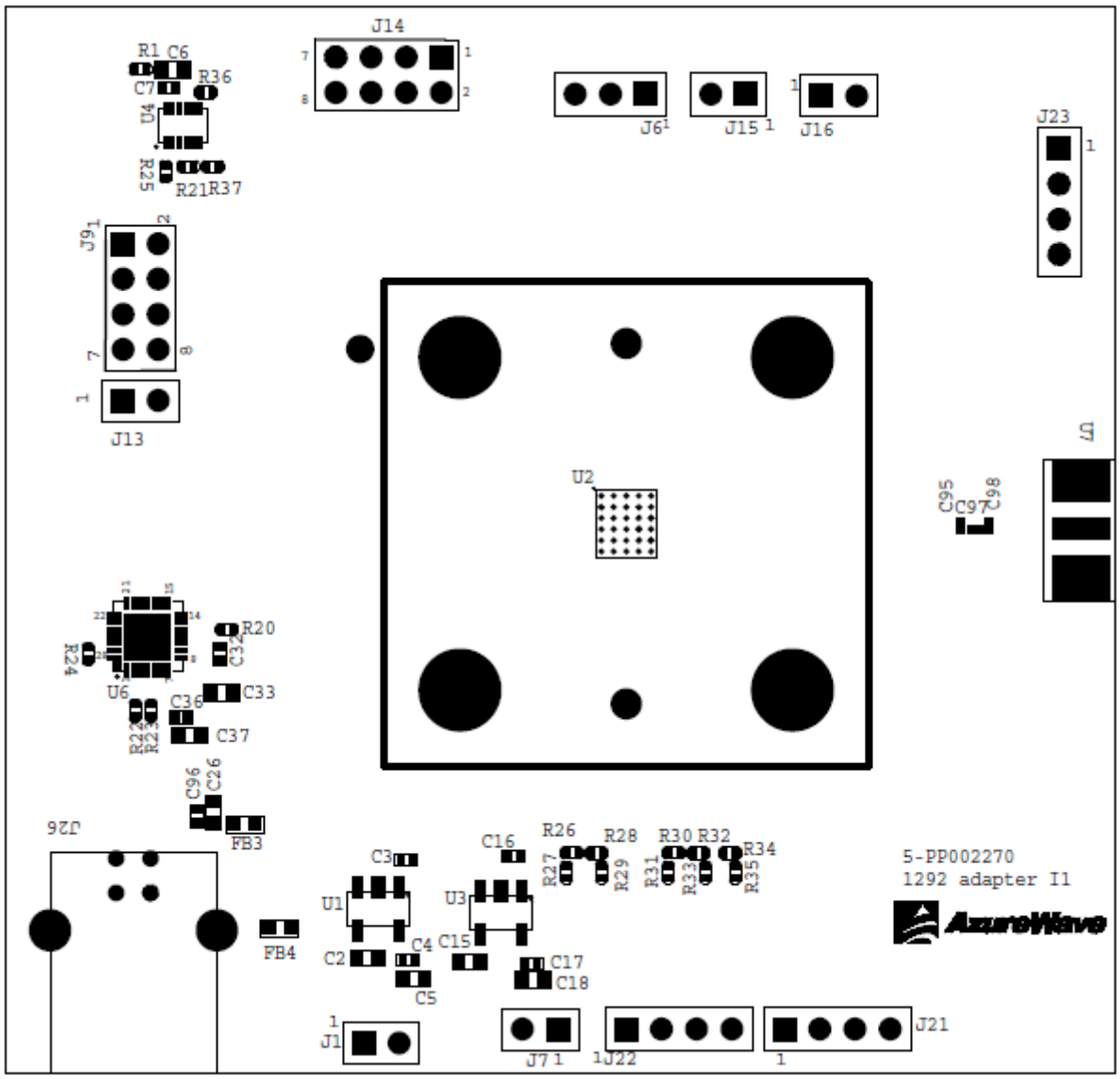
2. AW-BT715C EVB



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EVB PCB Stackup

品名	供應商	供應商料號	材質	厚度(mil)	厚度(um)
solder mask		HG-65	S/M	0.8	20.00
電鍍銅（磷銅球）	---	---	Plating	0.8	20.00
銅箔	---	---	CU	1.3	33.00
P.P膠片	南亞	NPG-B	玻纖布 EPOXY	7.1	180.00
內層板-L2/L3基板	南亞	NPG-R	CU	1.3	33.00
			FR-4 0.9T	32.86	834.00
			CU	1.3	33.00
P.P.膠片	南亞	(Helogen free)	玻纖布 EPOXY	7.1	180.00
銅箔	---	---	CU	1.3	33.00
電鍍銅（磷銅球）	---	---	Plating	0.8	20.00
solder mask		HG-65	S/M	0.8	20.00
			Total：	55.46	1406.00
			SPEC "T"	55.12	1.40

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Federal Communication Commission Interference Statement

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: TLZ- BT715C”. 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.

Industry Canada statement:

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet 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 IC 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.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement 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 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.

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

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée 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 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 IC: 6100A-BT715C”.

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 6100A-BT715C".

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.

低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

模組認證：

1. 本模組於取得認證後將依規定於模組本體標示審驗合格標籤。

2. 系統廠商應於平台上標示「本產品內含射頻模組：

XXXyyyLPDzzzz-x」字樣。