

BCM92046 Manual

FCC/IC Warning Statement

- **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/IC 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 device complies with Part 15 of the FCC/RSS-210 or IC 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 complies with FCC/IC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC/IC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.

FCC/IC Warning Statement for Module

- **This device is intended only for OEM integrators under the following conditions:**
- The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- The transmitter module may not be co-located with any other transmitter or antenna,
- For all products market in US/Canada, OEM has to limit the operation channels in CH1 to CH79(2402~2480MHz) of Bluetooth for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.
- As long as 3 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 (for example, digital device emissions, PC peripheral requirements, etc.).
- **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:MCLBCM92046”.
- **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.

NCC 警語

- 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。
- 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。
- 本模組於取得認證後將依規定於模組本體標示審合格籤，並要求平台上標示「本產品內含射頻模組：ID編號」

Product Specification

Items	Contents
Bluetooth standard	BT V2.1+EDR
Modulation type	FHSS, GFSK, $\pi/4$ -DQPSK, 8DPSK
Number of channels	Channel for USA ,Europe and most other countries as below: f=2402+k MHz ,k=0,1,2,3.....,78
Carrier frequency of each channel	f=2402+k MHz ,k=0,1,2,3.....,78
Maximum output power to Antenna, power control value	Bluetooth: 1.09dBm
Power Rating (DC/AC, Volt rating)	3.3V+/-5%
I/O Port or data cable if any	USB2.0
Antenna Type, Gain and Connector Type	Gain:2.2 dBi Brand :ethertronics / Model:GB04001-A01 Type : PIFA / Connector : NA
Operation temperature range	0 ~ +55 degree C

To execute ActivePerl



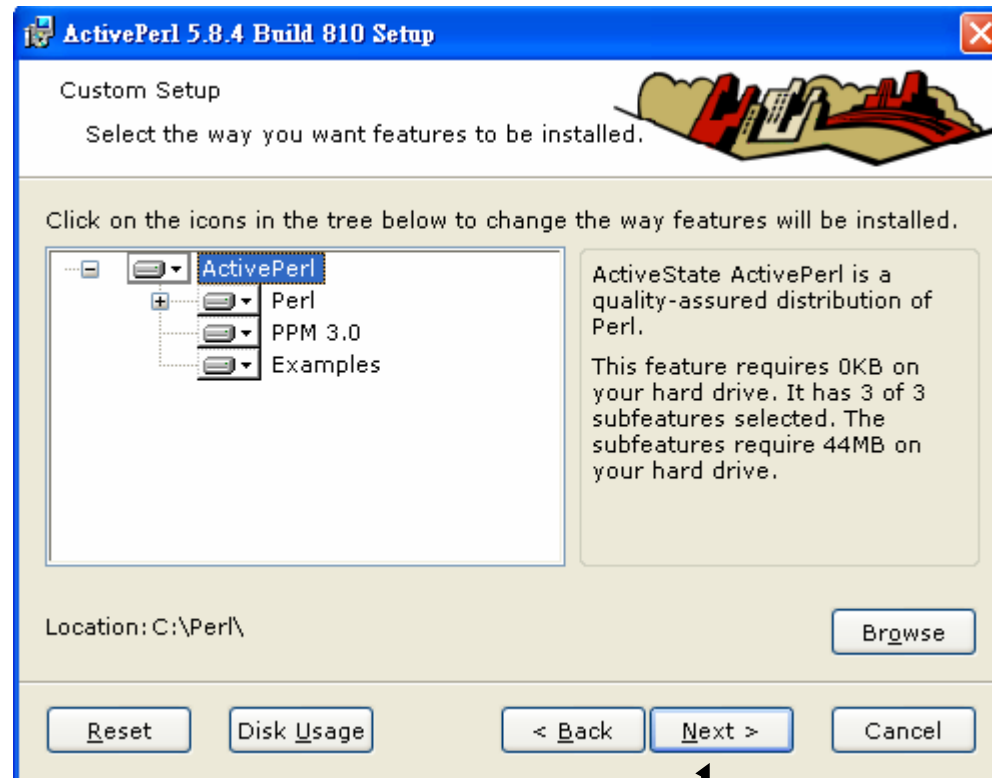
ActivePerl-5.8.4.810-MSWin32-x8...
Windows Installer 封裝
12,757 KB



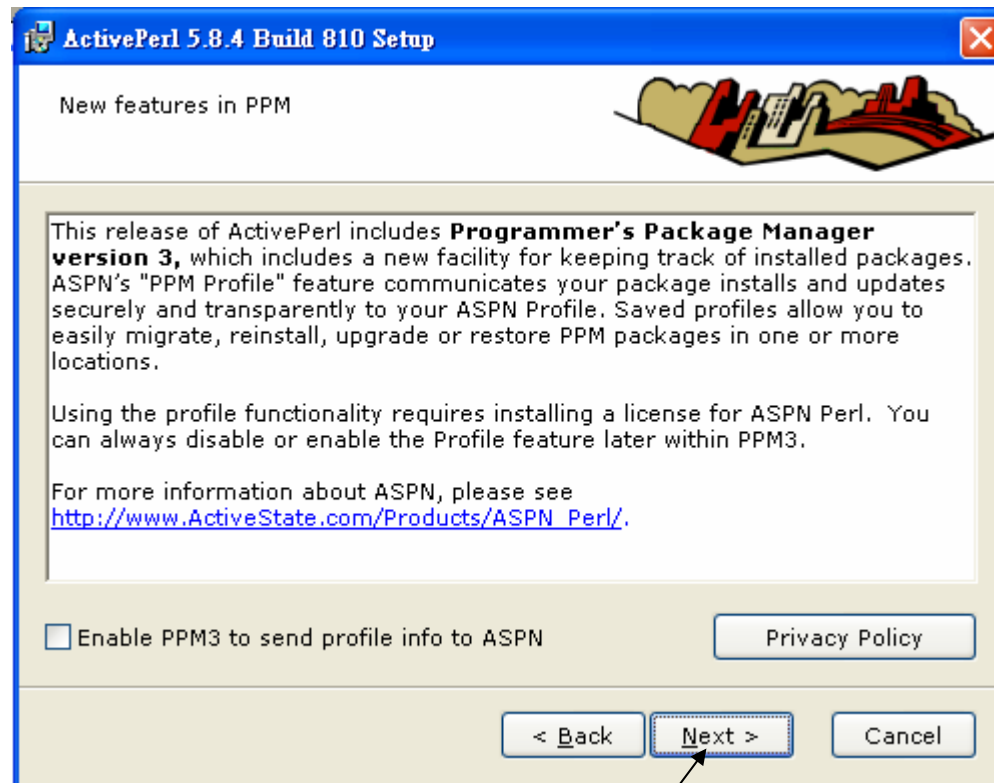


Select it

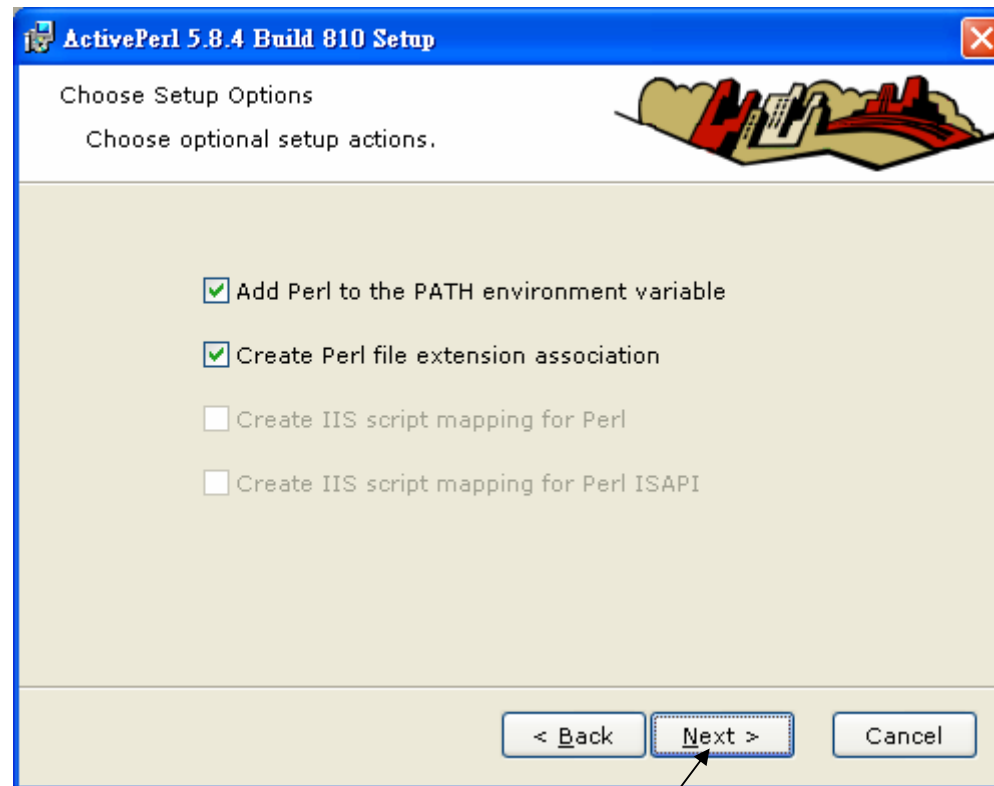
Click it

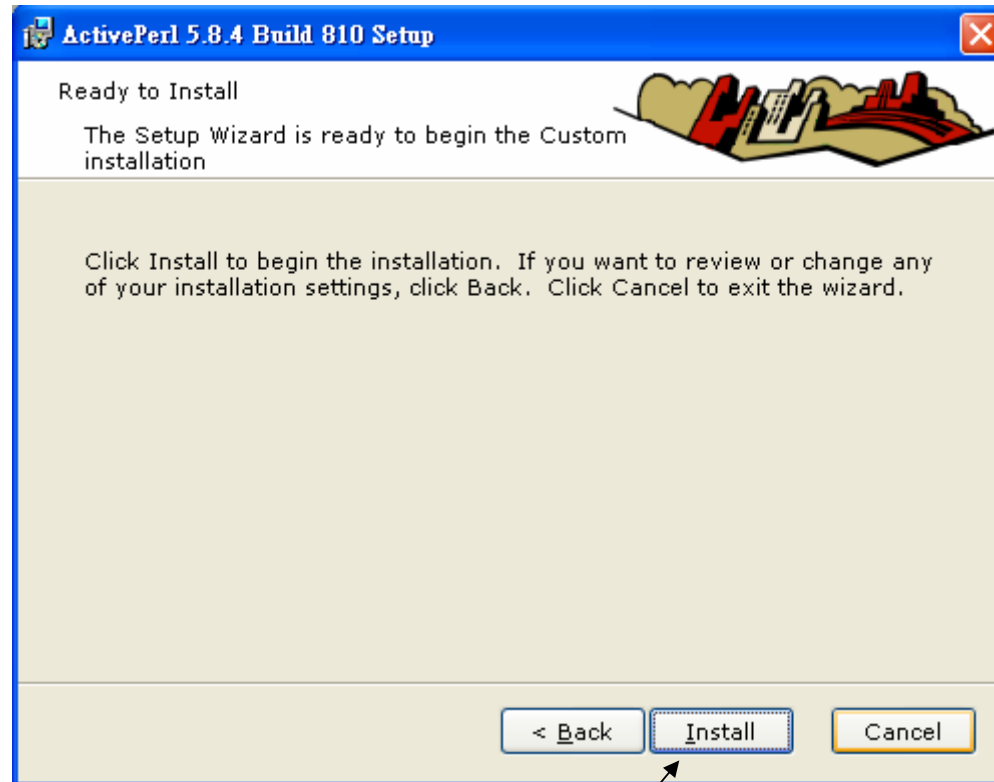


select it

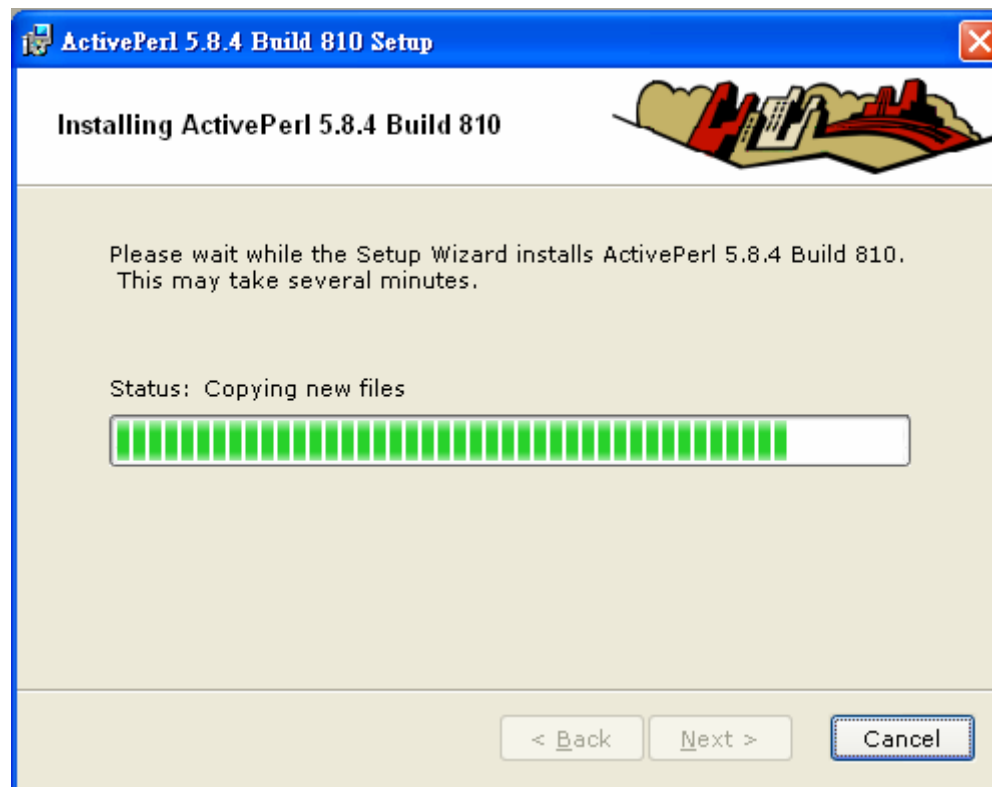


select it





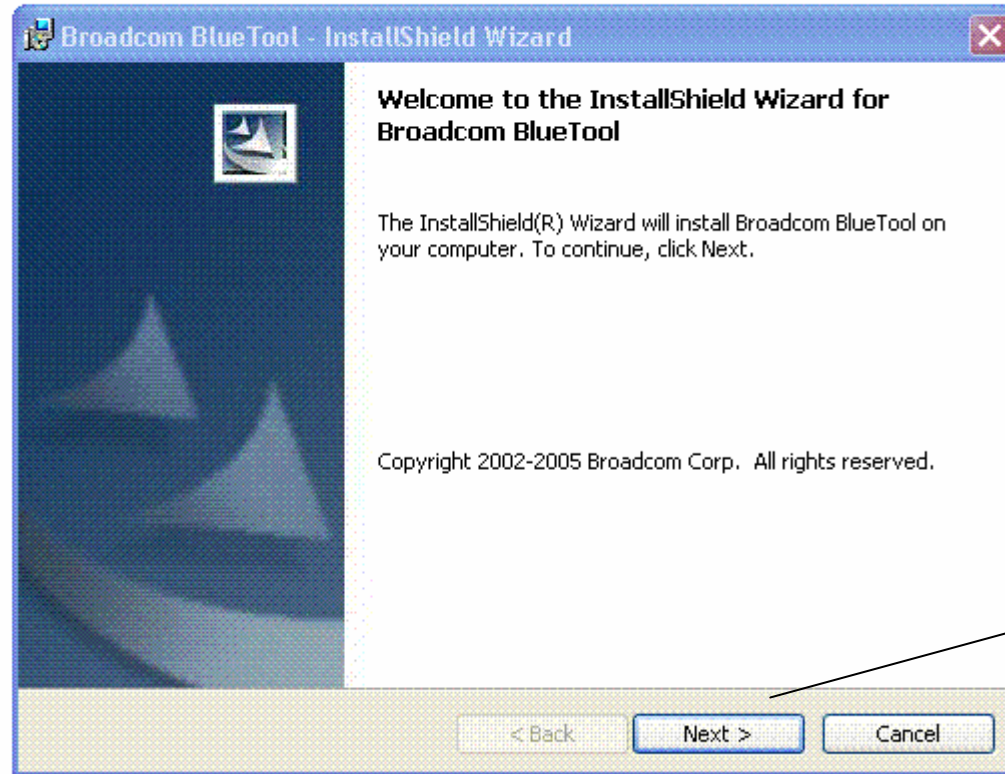
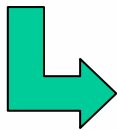
Select it



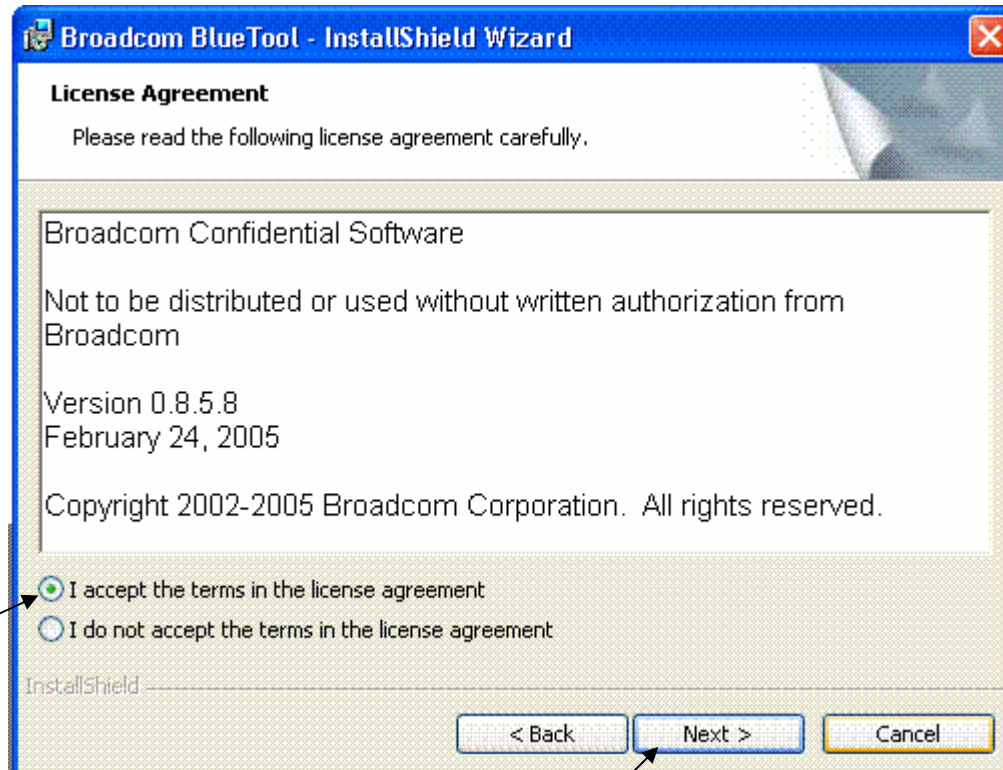


1.To execute BlueToolInstall (Version:V.0.8.7.2)

Execute below BluetoolInstall

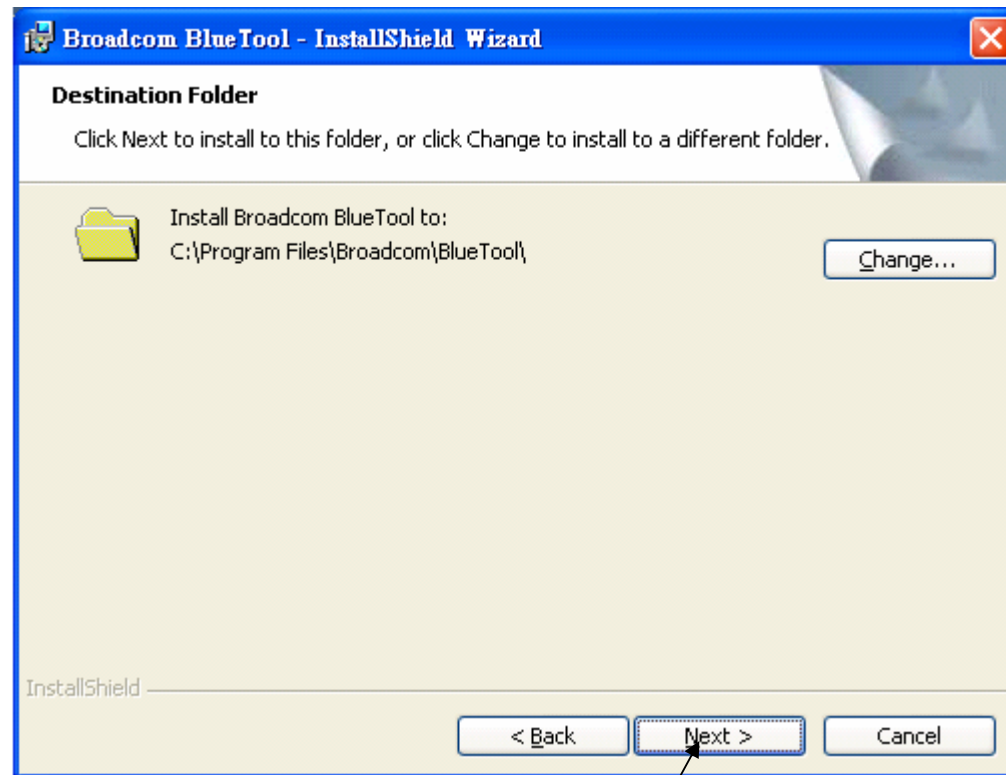


Click it

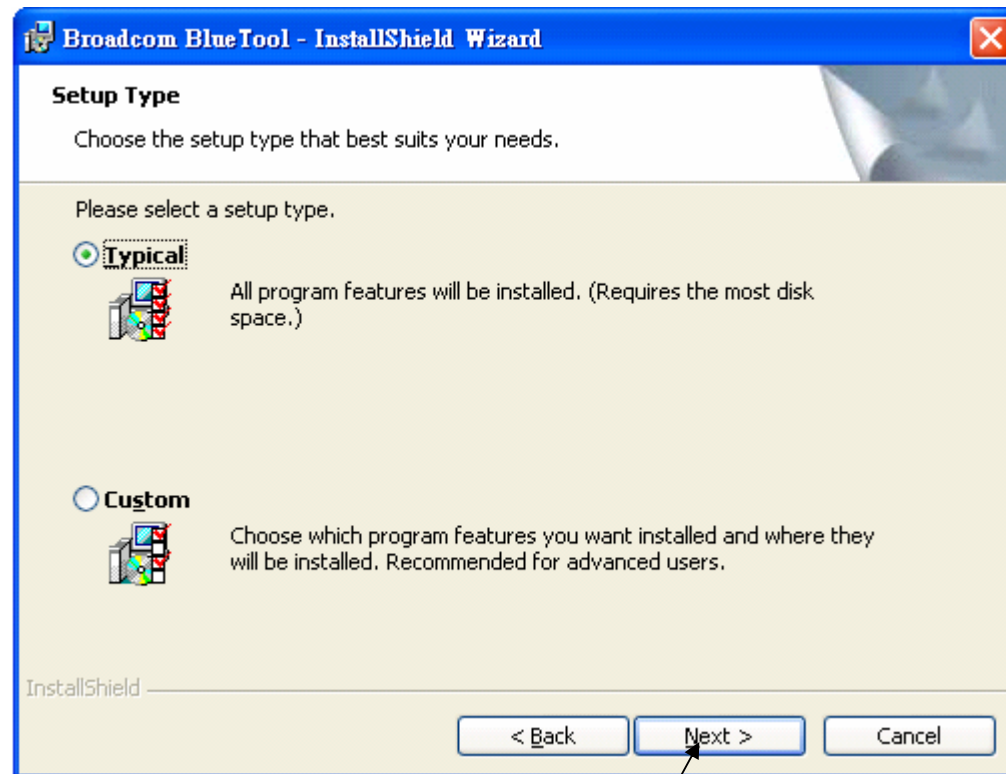


Choice that.

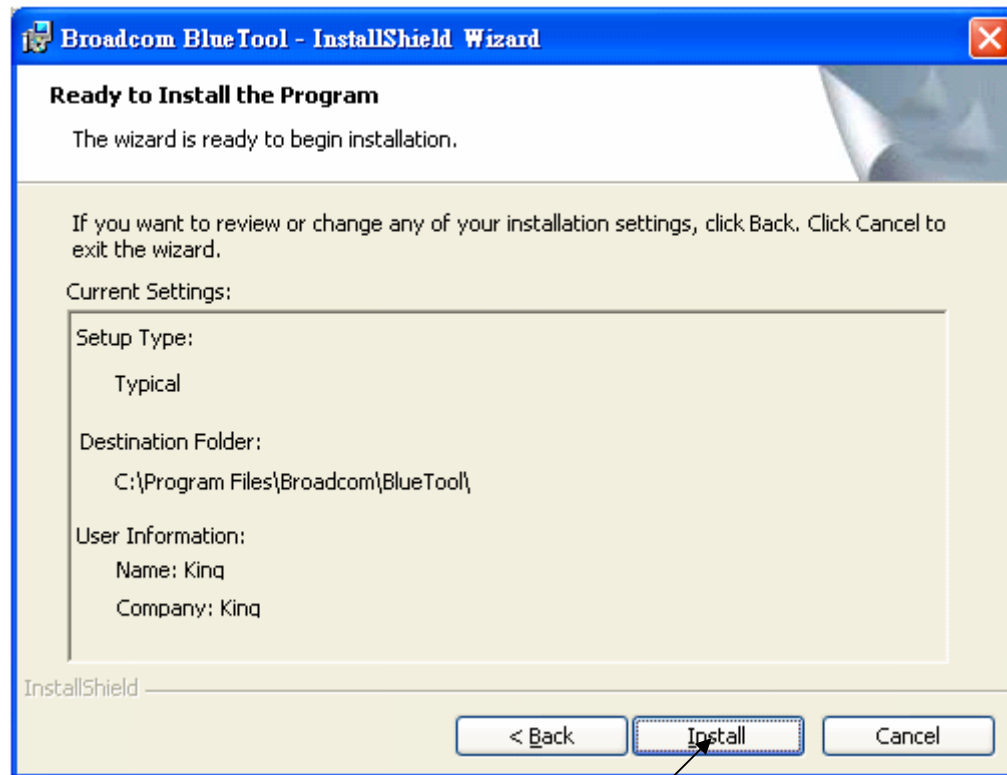
Click it.



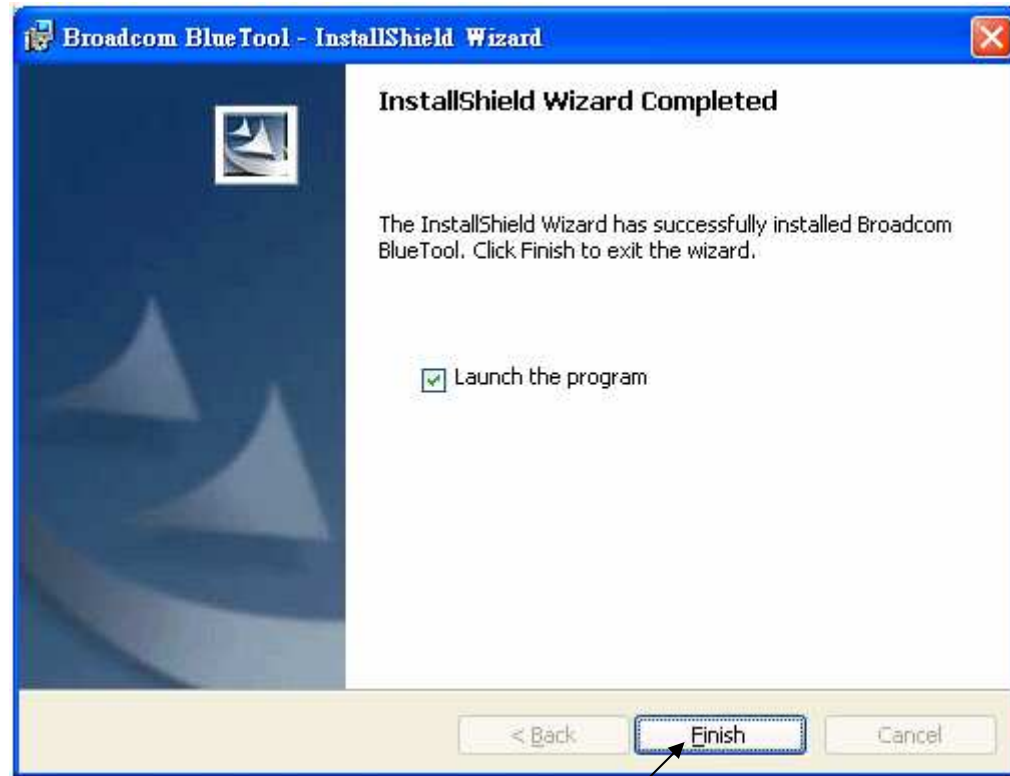
Click it.



Click it.



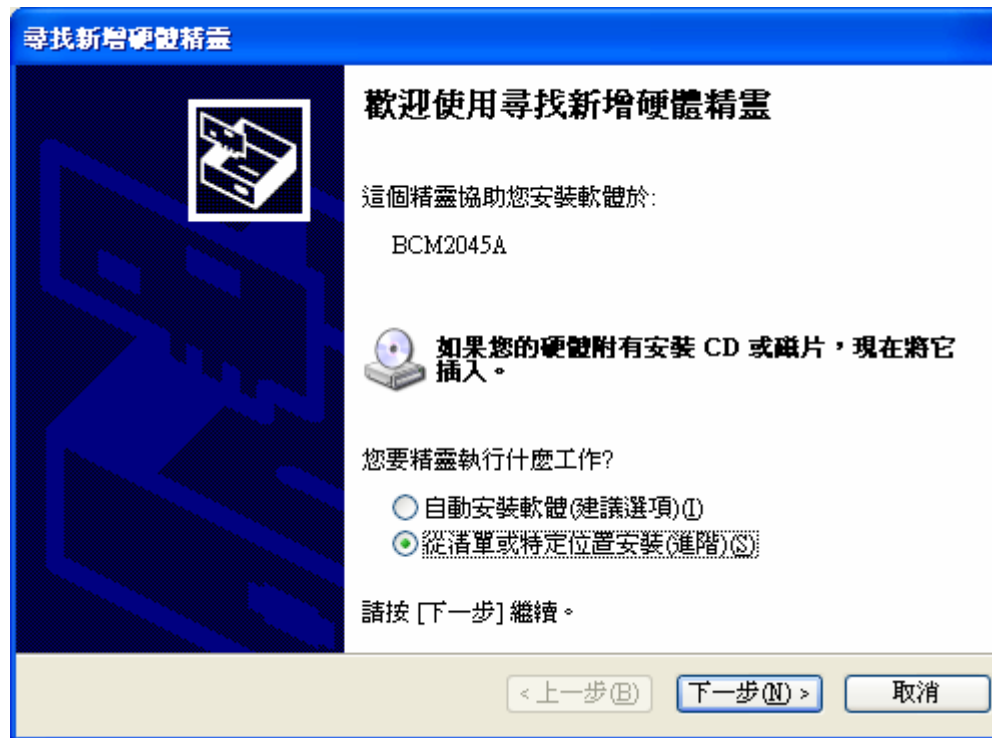
Click it



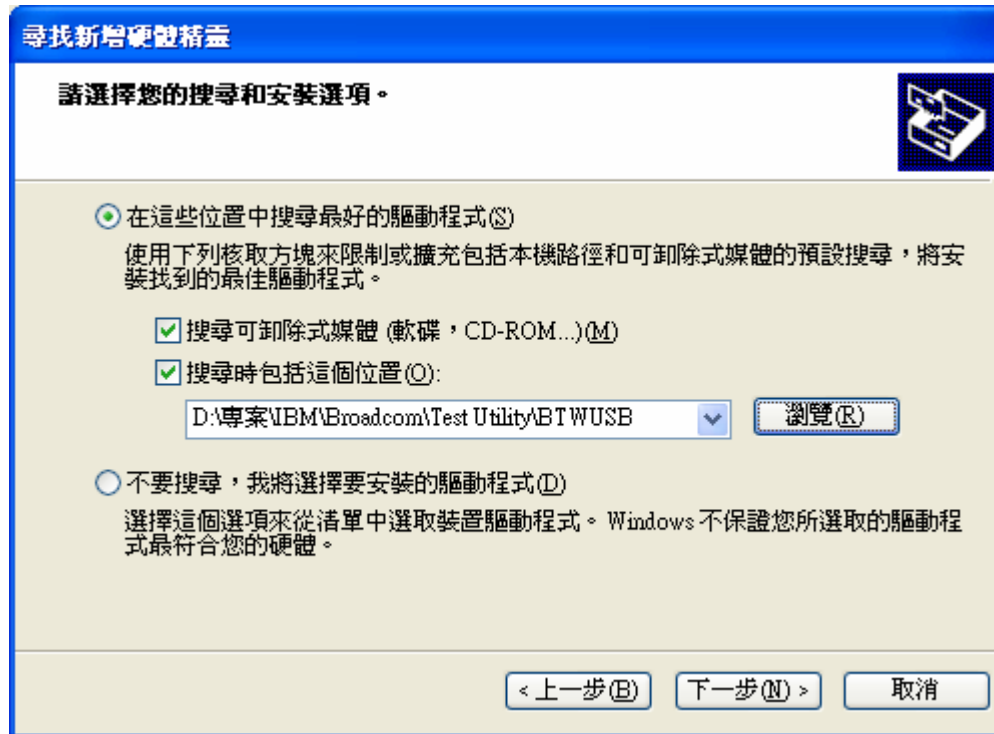
Click it

2. Driver in BTWUSB

After inserting the bluetooth module, it will search driver of BTWUSB as below.



Then Select the Driver location and press “Next”



尋找新增硬體精靈

精靈搜尋中，請稍候...



BCM2045A



< 上一步(B)

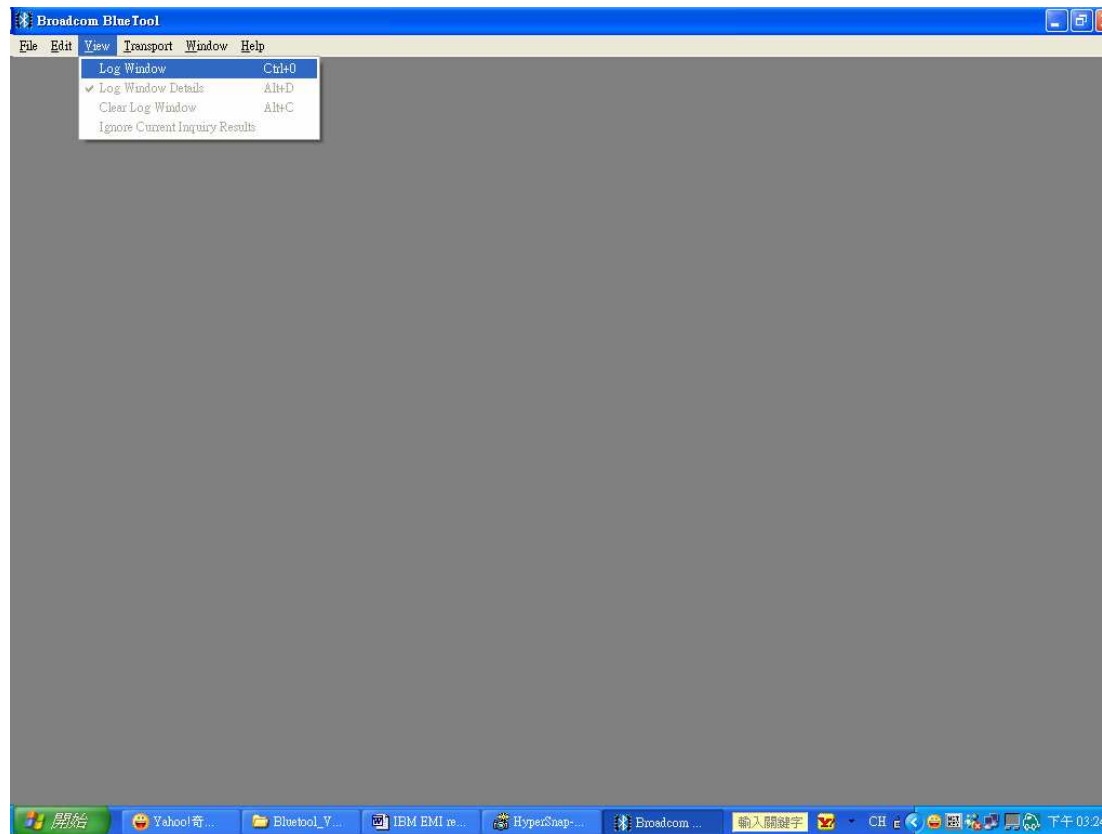
下一步(N) >

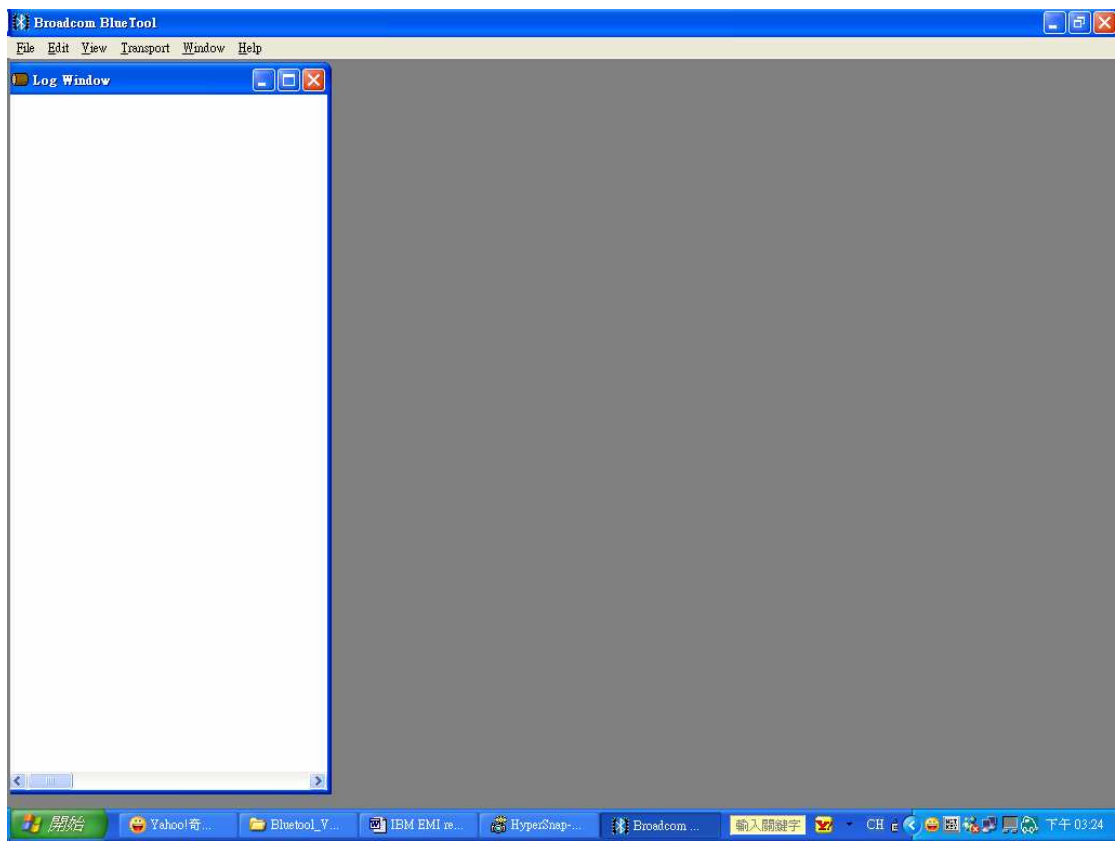
取消



3.How to use Bluetool

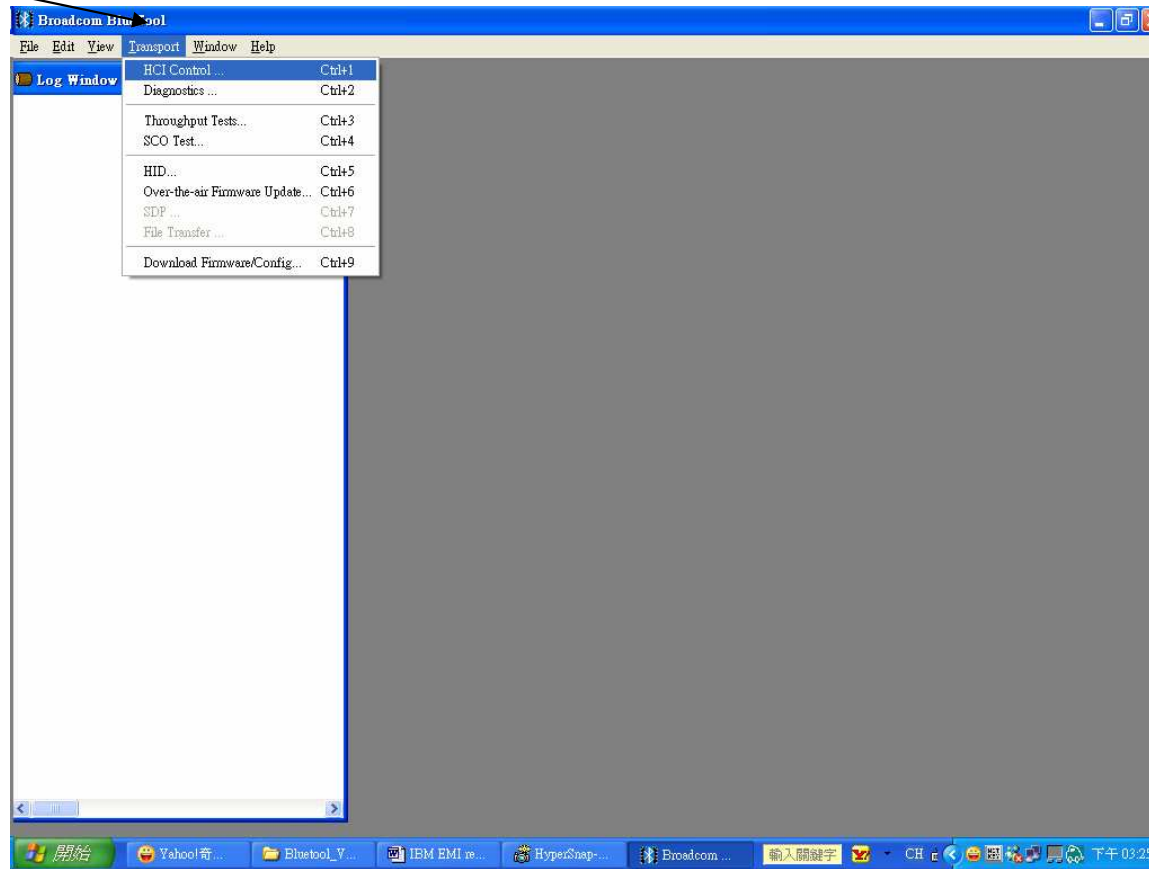
- Open Log window



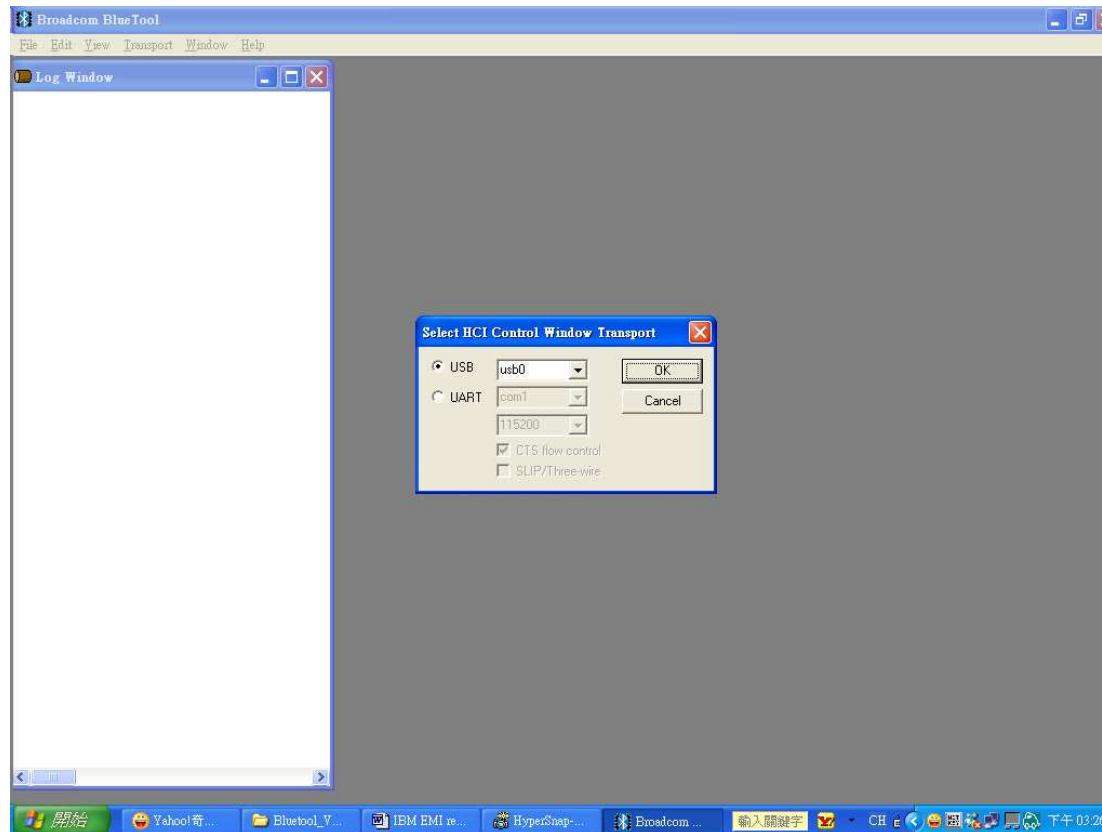


Click HCI control in Transport to launch Bluetooth Module

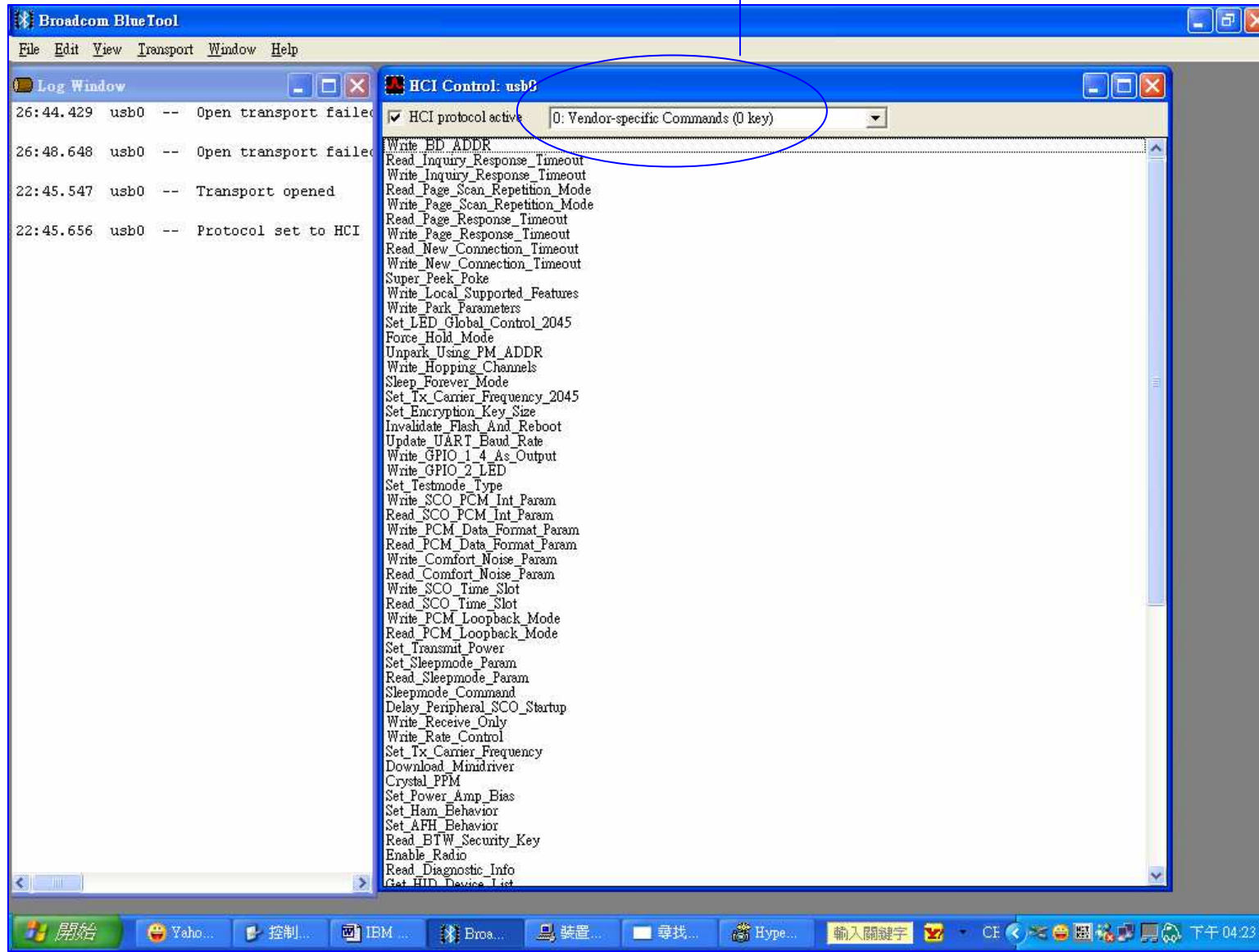
Select HCI control



Select USB 0



Choose 0-Vendor-specific Commands(0 key)



Click Set_TX_Carrier_Frequency_2045 for Transmitter Testing

The screenshot displays the Broadcom BlueTool application window. The title bar reads "Broadcom BlueTool" and the menu bar includes "File", "Edit", "View", "Transport", "Window", and "Help".

The "Log Window" panel shows the following log entries:

```
16:02.078 usb0 <c Tx_Test
HCI Command Complete Event
[OE 04]: 01 51 FC 00
event = 0xE (14, "Command Complete")
Num_HCI_Command_Packets = 0x1 (1)
Command_Opcode = 0xFC51 (64593, "Tx_Test")
Status = 0x0 (0, "Success")

16:10.015 usb0 -- Transport closed

19:05.921 usb0 -- Open transport failed:

19:09.515 usb0 -- Open transport failed:

20:06.609 usb0 -- Transport opened

20:06.625 usb0 -- Protocol set to HCI

20:19.531 usb0 >c Set_Tx_Carrier_Frequenc
HCI Command
[14 FC 05]: 00 50 01 00 00
opcode = 0xFC14 (64532, "Set_Tx_Carrier_
Carrier_Enable = 0x0 (0, "Carrier on")
Carrier_Frequency_Encoded = 0x50 (80)
Carrier_Frequency = 0x9B0 (2480, MHz)
Mode = 0x1 (1, "PRBS9")
Modulation_Type = 0x0 (0, "GFSK")
Transmit_Power = 0x0 (0, "0 dB")

20:19.547 usb0 <c Set_Tx_Carrier_Frequenc
HCI Command Complete Event
[OE 04]: 01 14 FC 00
event = 0xE (14, "Command Complete")
Num_HCI_Command_Packets = 0x1 (1)
Command_Opcode = 0xFC14 (64532, "Set_Tx_
Status = 0x0 (0, "Success")
```

The "HCI Control: usb0" panel shows a list of HCI commands. The "Set_Tx_Carrier_Frequency_2045" command is highlighted in blue. The list includes:

- Write_BD_ADDR
- Read_Inquiry_Response_Timeout
- Write_Inquiry_Response_Timeout
- Read_Page_Scan_Repetition_Mode
- Write_Page_Scan_Repetition_Mode
- Read_Page_Response_Timeout
- Write_Page_Response_Timeout
- Read_New_Connection_Timeout
- Write_New_Connection_Timeout
- Super_Peek_Poke
- Write_Local_Supported_Features
- Write_Park_Parameters
- Set_LED_Global_Control_2045
- Force_Hold_Mode
- Factory_Commit_BD_ADDR
- Unpark_Using_PM_ADDR
- Write_Hopping_Channels
- Sleep_Forever_Mode
- Set_Tx_Carrier_Frequency_2045**
- Set_Encryption_Key_Size
- Invalidate_Flash_And_Reboot
- Update_UART_Baud_Rate
- Write_GPIO_1_4_As_Output
- Write_GPIO_2_LED
- Set_Testmode_Type
- Write_SCD_PCM_Int_Param
- Read_SCD_PCM_Int_Param
- Write_PCM_Data_Format_Param
- Read_PCM_Data_Format_Param
- Write_Comfort_Noise_Param
- Read_Comfort_Noise_Param
- Write_SCD_Time_Slot
- Read_SCD_Time_Slot
- Write_PCM_Loopback_Mode
- Read_PCM_Loopback_Mode
- Set_Transmit_Power
- Set_Sleepmode_Param
- Read_Sleepmode_Param
- Sleepmode_Command
- Delay_Peripheral_SCD_Startup
- Write_Receive_Only
- Write_Rate_Control
- Set_Tx_Carrier_Frequency
- Download_Minidriver
- Crystal_PPM

The Windows taskbar at the bottom shows the "start" button, the Broadcom BlueTool application, an "untitled - Paint" window, and the system tray with the time "9:23 AM".

Broadcom BlueTool

File Edit View Transport Window Help

Log Window

```
16:02.078 usb0 <c Tx_Test
HCI Command Complete Event
[0E 04]: 01 51 FC 00
event = 0xE (14, "Command Complete")
Num_HCI_Command_Packets = 0x1 (1)
Command_Opcode = 0xFC51 (64593, "Tx_Test")
Status = 0x0 (0, "Success")

16:10.015 usb0 -- Transport closed

19:05.921 usb0 -- Open transport failed:

19:09.515 usb0 -- Open transport failed:

20:06.609 usb0 -- Transport opened

20:06.625 usb0 -- Protocol set to HCI

20:19.531 usb0 c> Set_Tx_Carrier_Frequenc
HCI Command
[14 FC 05]: 00 50 01 00 00
opcode = 0xFC14 (64532, "Set_Tx_Carrier_
Carrier_Enable = 0x0 (0, "Carrier on")
Carrier_Frequency_Encoded = 0x50 (80)
Carrier_Frequency = 0x9B0 (2480, MHz)
Mode = 0x1 (1, "PRBS9")
Modulation_Type = 0x0 (0, "GFSK")
Transmit_Power = 0x0 (0, "0 dB")

20:19.547 usb0 <c Set_Tx_Carrier_Frequenc
HCI Command Complete Event
[0E 04]: 01 14 FC 00
event = 0xE (14, "Command Complete")
Num_HCI_Command_Packets = 0x1 (1)
Command_Opcode = 0xFC14 (64532, "Set_Tx_
Status = 0x0 (0, "Success")
```

HCI Control: usb0

✓ HCI protocol active 0: Vendor-specific Commands (0 key)

Write_BD_ADDR
Read_Inquiry_Response_Timeout
Write_Inquiry_Response_Timeout
Read_Page_Scan_Repetition_Mode
Write_Page_Scan_Repetition_Mode
Read_Page_Response_Timeout
Write_Page_Response_Timeout
Read_New_Connection_Timeout
Write_New_Connection_Timeout
Super_Peek_Poke
Write_Local_Supported_Features
Write_Park_Parameters
Set_LED_Global_Control_2045
Force_Hold_Mode
Factory_Commit_BD_ADDR
Unpark_Using_PM_ADDR
Write_Hopping_Channels
Sleep_Forever_Mode
Set_Tx_Carrier_Frequency_2045
Set_Encryption_Key_Size
Invalidate_Flash_And_Reboot
Update_UA
Write_GPIO
Write_GPIO
Set_Testmc
Write_SCO
Read_SCO
Write_PCM
Read_PCM
Write_Comit
Read_Comit
Write_SCO
Read_SCO
Write_PCM
Read_PCM
Set_Transmit_Power
Set_Sleepmode_Param
Read_Sleepmode_Param
Sleepmode_Command
Delay_Peripheral_SCO_Startup
Write_Receive_Only
Write_Rate_Control
Set_Tx_Carrier_Frequency
Download_Minidriver
Crystal_PPM

HCI Command: Set_Tx_Carrier_Frequency_2045 (usb0)

Carrier_Enable: Carrier on [OK] [Cancel]

Carrier_Frequency (2402-2490; MHz): 2402 [0x962]

Mode: PRBS9

Modulation Type: GFSK

Transmit_Power: 0 dB

Select frequency

Select Carrier on

Select Modulation Type

Select Mode

Select TX_Power_Level (We select 0dBm)

Click Write_Receive_Only for Receiving Testing

Broadcom BlueTool

File Edit View Transport Window Help

Log Window

```
26:44.429 usb0 -- Open transport failed
26:48.648 usb0 -- Open transport failed
22:45.547 usb0 -- Transport opened
22:45.656 usb0 -- Protocol set to HCI
```

HCI Control: usb0

HCI protocol active | 0: Vendor-specific Commands (0 key)

- Write_GPIO_2_LED
- Set_Testmode_Type
- Write_SCO_PCM_Int_Param
- Read_SCO_PCM_Int_Param
- Write_PCM_Data_Format_Param
- Read_PCM_Data_Format_Param
- Write_Comfort_Noise_Param
- Read_Comfort_Noise_Param
- Write_SCO_Time_Slot
- Read_SCO_Time_Slot
- Write_PCM_Loopback_Mode
- Read_PCM_Loopback_Mode
- Set_Transmit_Power
- Set_Sleepmode_Param
- Read_Sleepmode_Param
- Sleepmode_Command
- Delay_Peripheral_SCO_Startup
- Write_Receive_Only**
- Write_Rate_Control
- Set_Tx_Carrier_Frequency
- Download_Minidriver
- Crystal_PPM
- Set_Power_Amp_Bias
- Set_Ham_Behavior
- Set_AFH_Behavior
- Read_BTW_Security_Key
- Enable_Radio
- Read_Diagnostic_Info
- Get_HID_Device_List
- Add_HID_Device
- Read_Config_And_App_FW_Version
- Delete_HID_Device
- Enable_TCA
- Enable_USB_HID_Emulation
- Write_RF_Reprogramming_Table
- Automatic_Pairing_Requested
- Read_VS_Extension
- Write_VS_Extension
- Read_Collaboration_Mode
- Write_Collaboration_Mode
- Write_New_Power_Amp_Biases
- Write_RF_Attenuation_Table
- Configure_Sleep_Mode
- Read_Raw_RSSI
- IOP_Test_Tx
- IOP_Test_Rx
- Write_RAM
- Read_RAM
- Launch_RAM
- Set_Link_Quality_Threshold
- Tx_Test

Windows taskbar: 開始, Yahoo..., 控制..., IBM..., Broa..., 裝置..., 尋找..., Hype..., 輸入關鍵字, 下午 04:25

