AzureWave
AzureWave Technologies, Inc.

AW-CU277B EVB User Guide

IEEE 802.11 b/g/n + Bluetooth 4.0 HS Smart Energy Module

(PCB 1288 Ver:I2,I3)

V0.2

2016/06/06

Kai. Wu

Relative Software

Application Software

•FTDI VCP Drivers (FT2232D)
•Libusb-win32-bin-1.2.6.0
•Cygwin

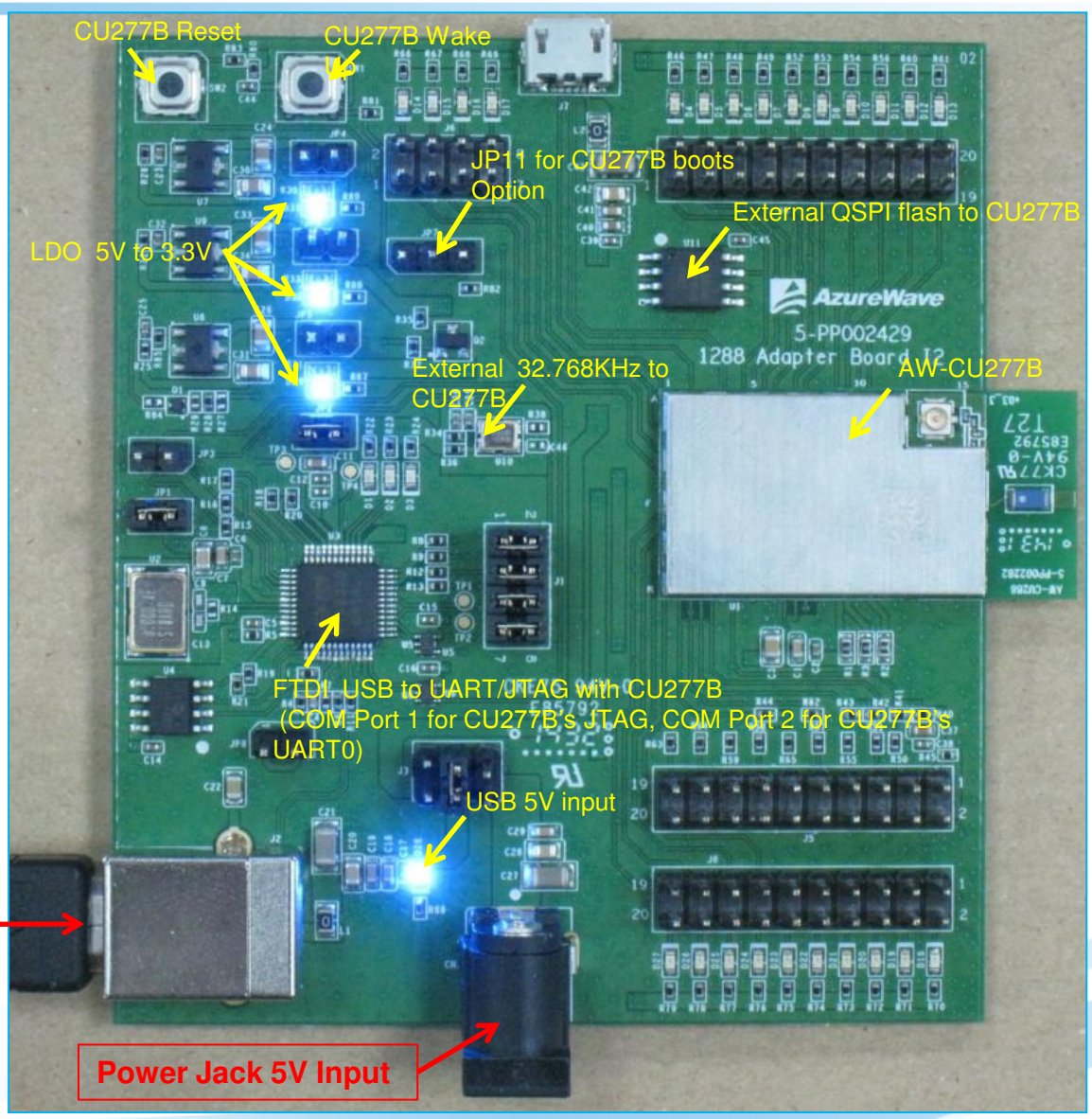
Set-up Procedure

1. Download FTDI VCP Drivers (FT2232D)
2. Download Libusb-win32-bin-1.2.6.0
3. Set Up CU277B EVB for Windows
4. Install FTDI VCP Drivers
5. Install Libusb-win32-bin-1.2.6.0
6. Install Cygwin
7. Insert file “OpenOCD.zip” (By wmsdk_bundle-2.13.78)
8. Burning MCU Image with normal firmware
9. Run WIFI Normal Driver
10. Burning MCU Image with MFG firmware
11. Run WIFI/BT MFG tool
12. Radiation Statement

Relative Hardware I2

EVB Power Supply Option:

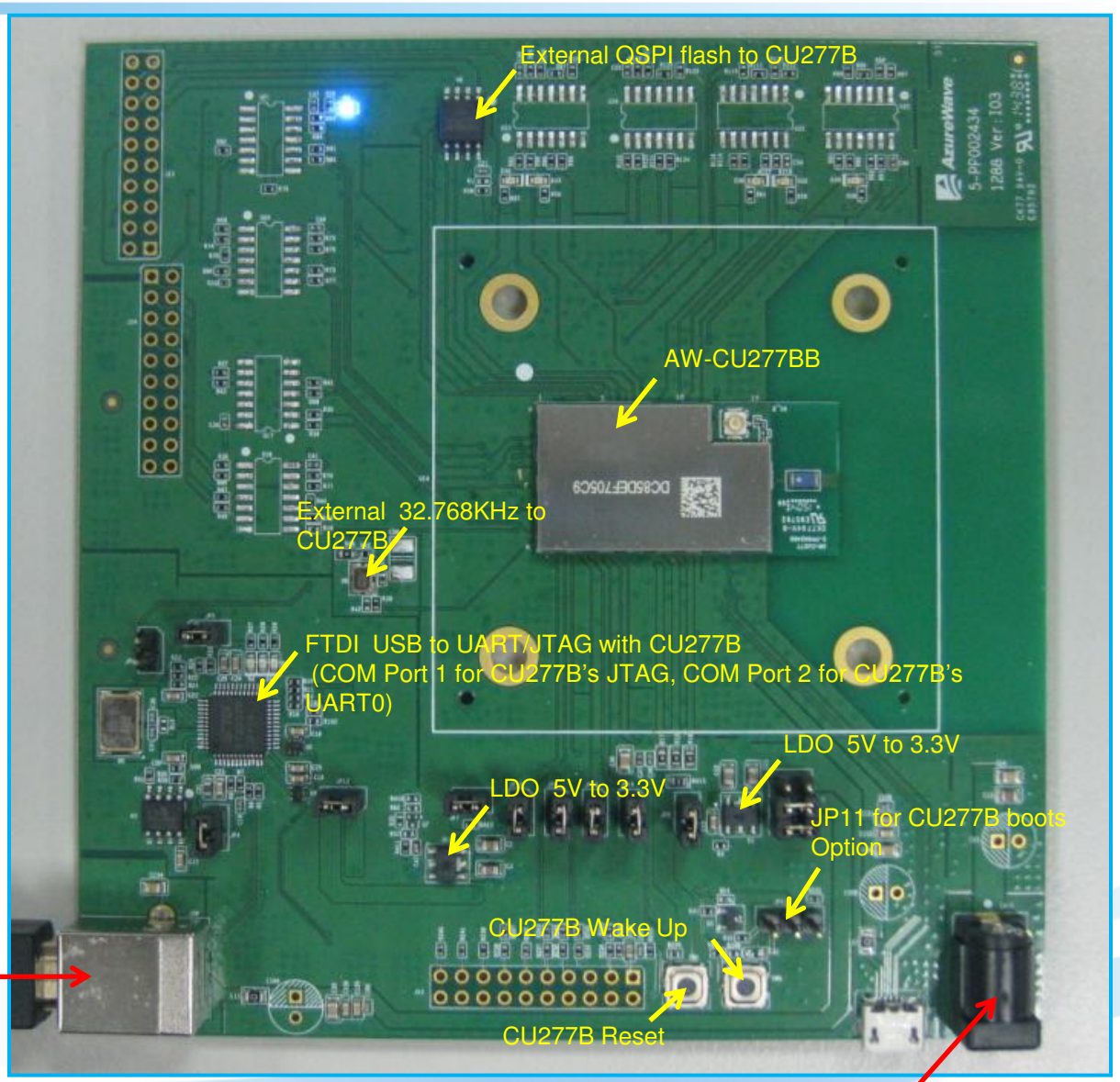
1. USB B-type 5V Input
2. Power Jack 5V Input
   (If the USB B-type driving force shortage)



Relative Hardware I3

EVB Power Supply Option:

1. USB B-type 5V Input
2. Power Jack 5V Input
   (If the USB B-type driving force shortage)



1. Download FTDI VCP Drivers (FT2232D)

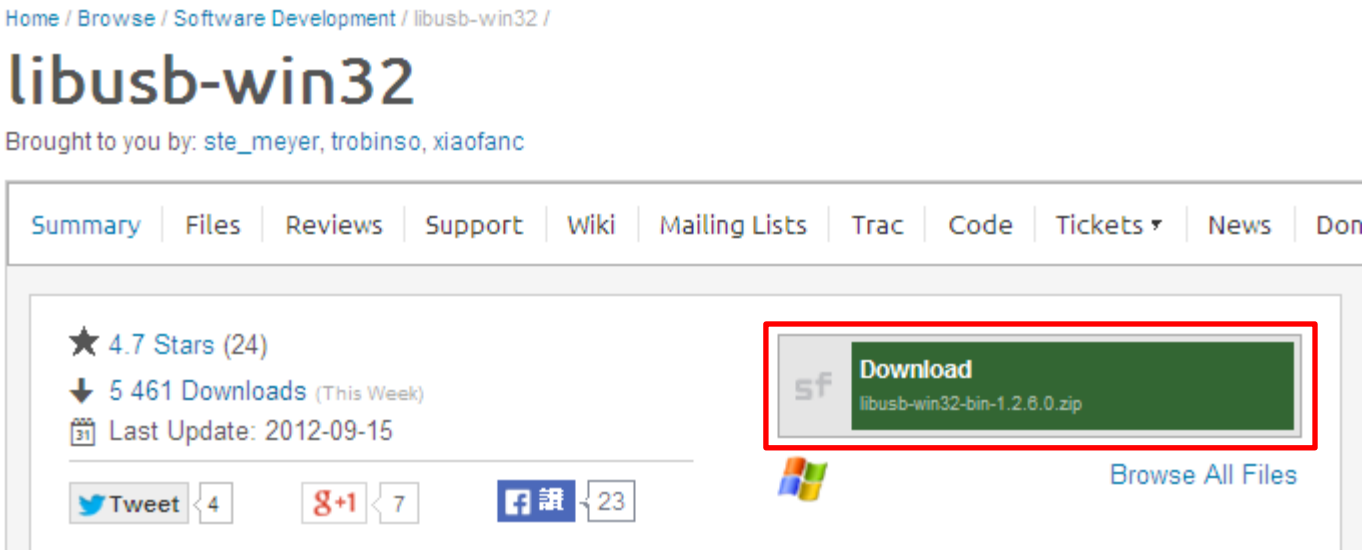
Install the driver manually. You can get the driver from FTDI's web site.
http://www.ftdichip.com/Drivers/VCP.htm

Currently Supported VCP Drivers:

		Processor Architecture							
Operating System	Release Date	x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	Comments
Windows	2014-02-21	2.10.00	2.10.00	-	-	-	-	-	2.10.00 WHQL Certified Available as setup executable Release Notes

2. Download Libusb-win32

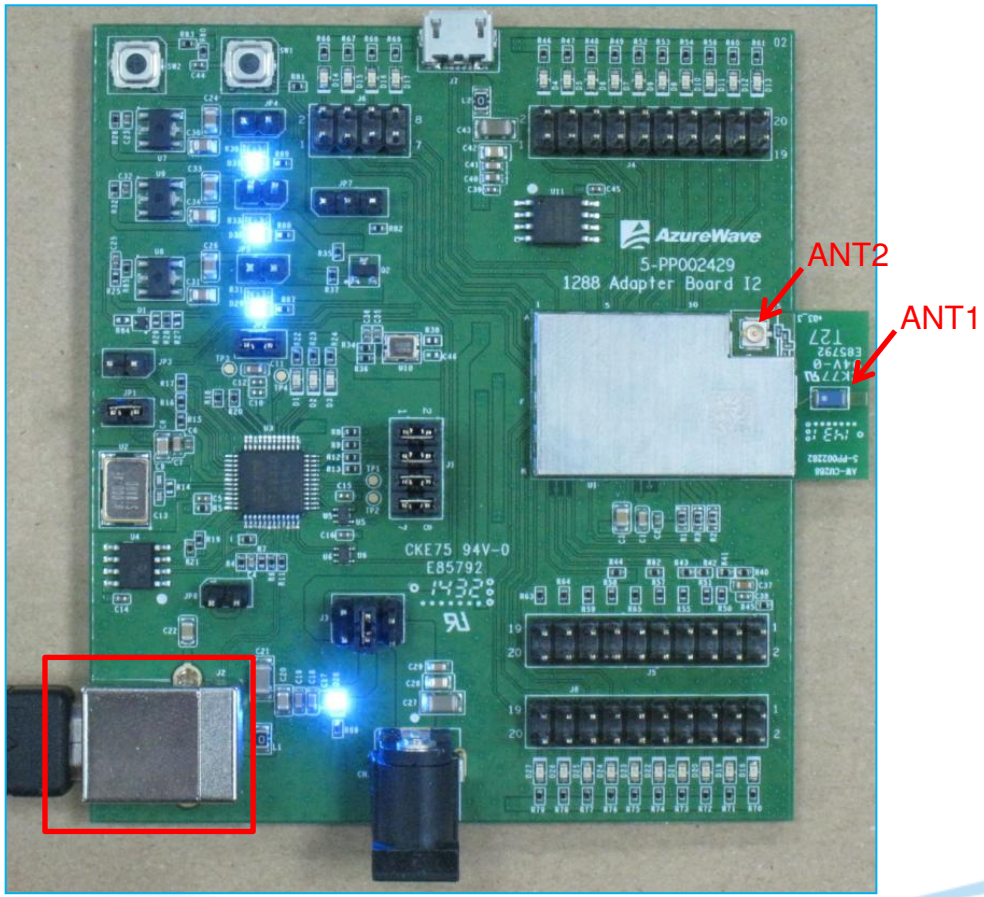
You can get the driver from libusb-win32's web site.
http://sourceforge.net/projects/libusb-win32



3-1. Set Up CU277B EVB I2 for Windows

The USB port (B type) connects the CU277B evaluation board to the PC.

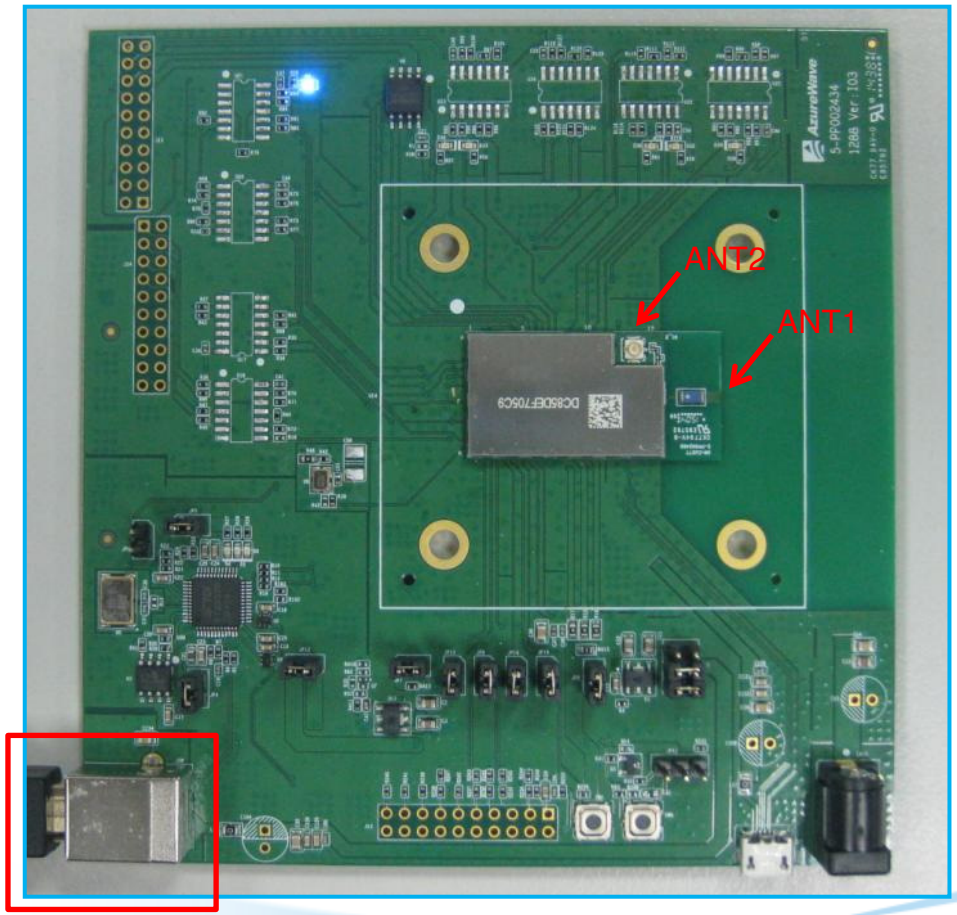
Please refer to “AW-CU277B EVB PCB Info” document.



3-2. Set Up CU277B EVB I3 for Windows

The USB port (B type) connects the CU277B evaluation board to the PC.

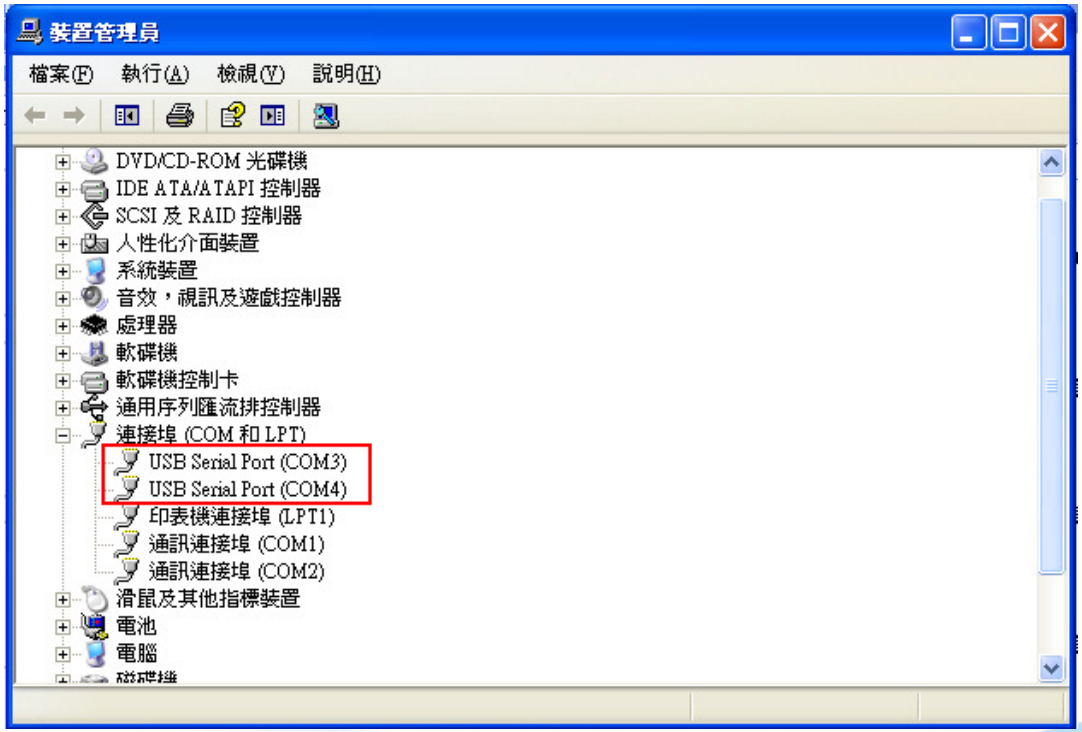
Please refer to “AW-CU277B EVB PCB Info” document.



4-1. Install FTDI VCP Drivers

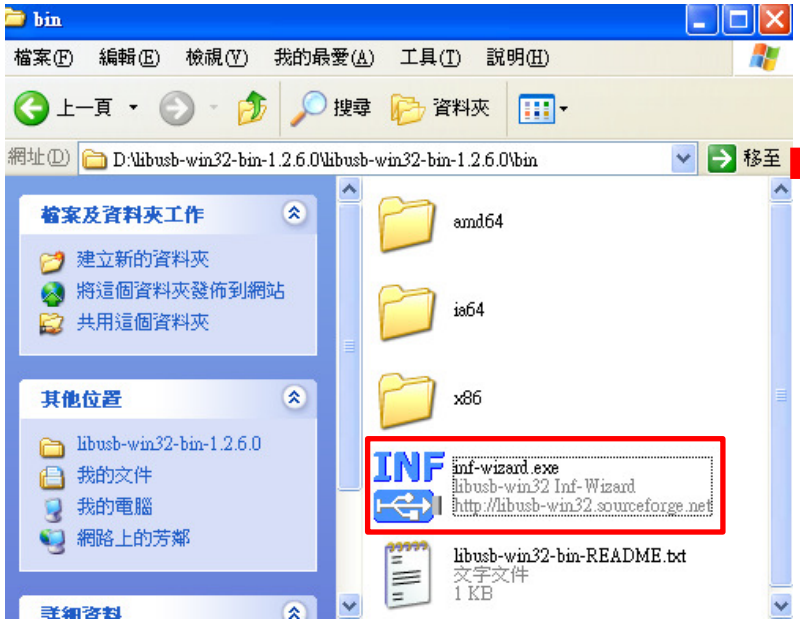
4-2. Install FTDI VCP Drivers

Verifying Driver Installation:
To verify that driver installation has completed successfully, you can open the "**Device Manager" (right-click My Computer, select Properties).**
In the **System Properties windows, select Hardware, Device Manager.**
Two "**USB Serial Port" should be listed under MY-PC\Ports (COM & LPT)**

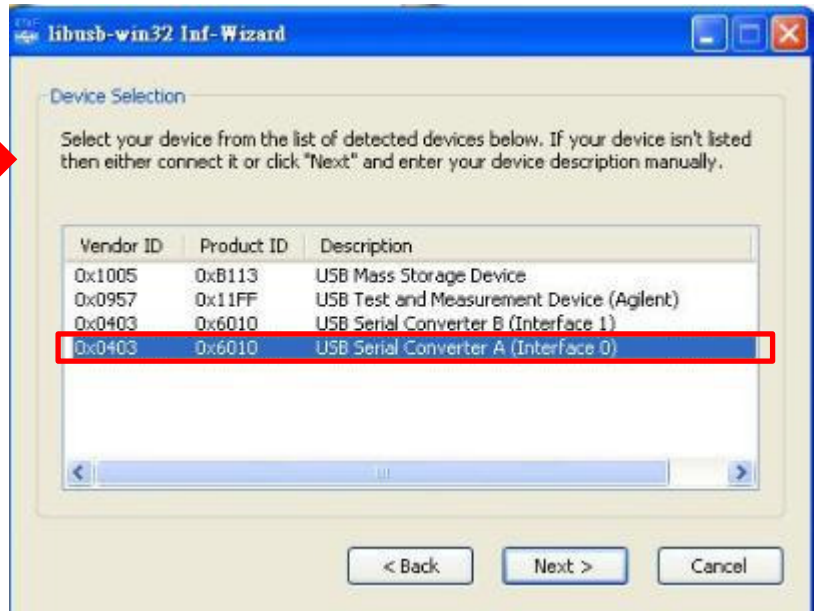


5-1. Install Libusb-win32

Install inf-wizard:

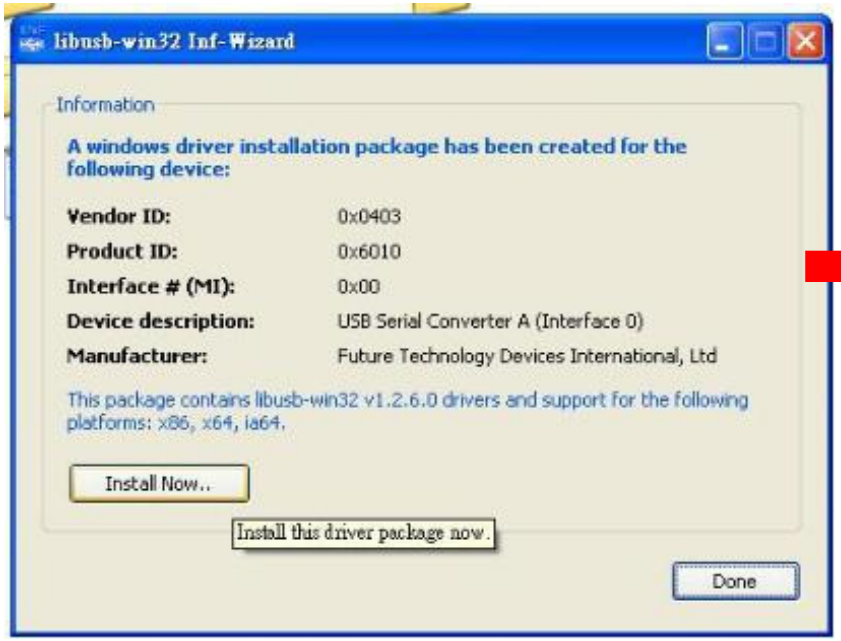


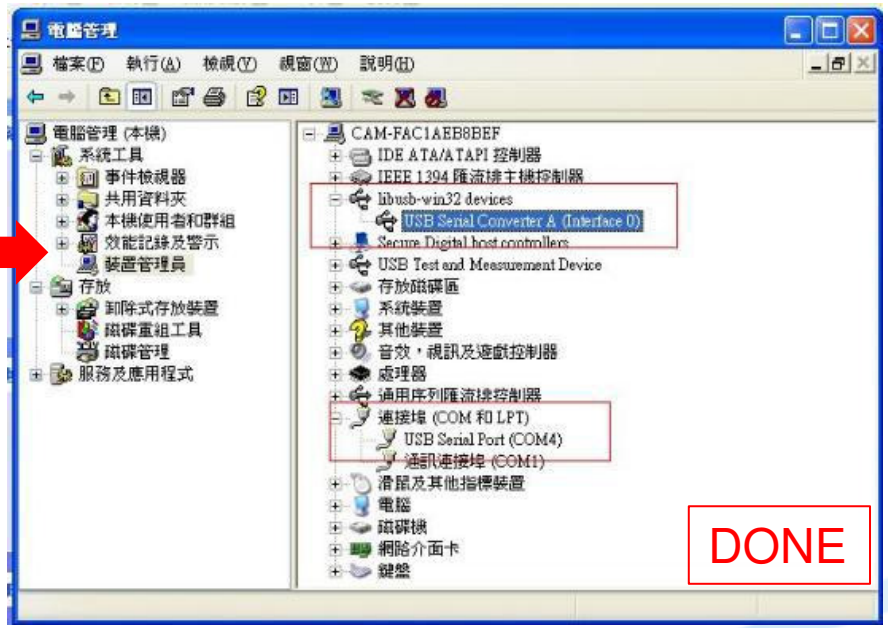
USB Serial Converter A (Interface 0)



5-2. Install Libusb-win32

Verifying Driver Installation:
To verify that driver installation has completed successfully, you can open the "**Device Manager" (right-click My Computer, select Properties).**
In the **System Properties windows, select Hardware, Device Manager.**
One "**USB Serial Converter A" should be listed under MY-PC\Ports (lib usb-win32 devices)**





6-1. Install Cygwin

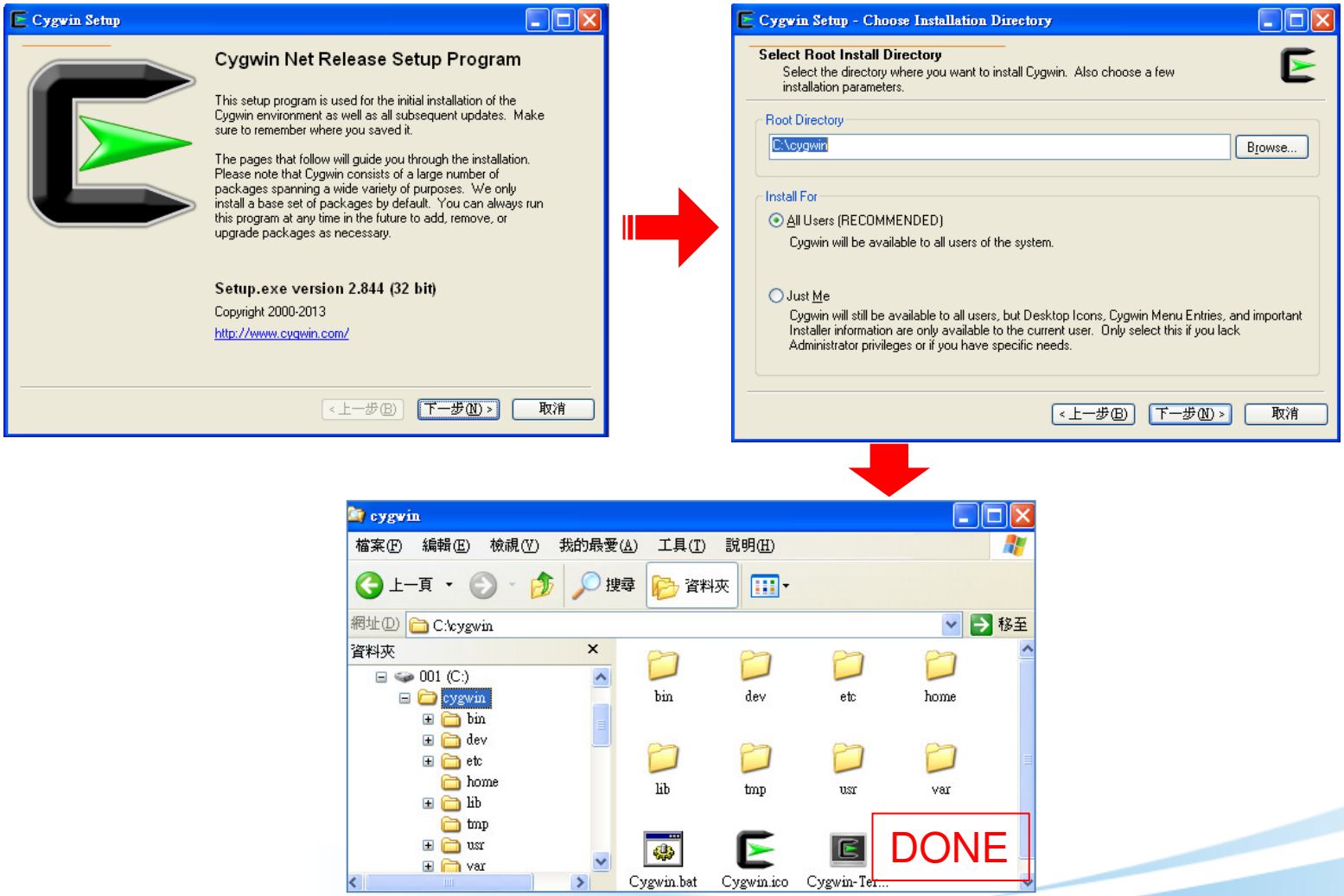
Install Cygwin:

1. Install Cygwin from: http://www.cygwin.com/setup_x86.exe (for x86 32-bit systems) or http://www.cygwin.com/setup_x86_64.exe (for x86 64-bit systems)
2. Select the option Install from Internet
3. Use default installation path: c:\cygwin. If you chose an alternate installation directory, please make sure that there are no spaces in the path.
4. Pick the Local Package Directory (this is the download cache directory)
5. Select the option Direct Connection
6. Select any mirror you want to use
7. Add additional packages to the default selection:

Click “Next”. The Cygwin Setup window will show the progress as each package gets installed.

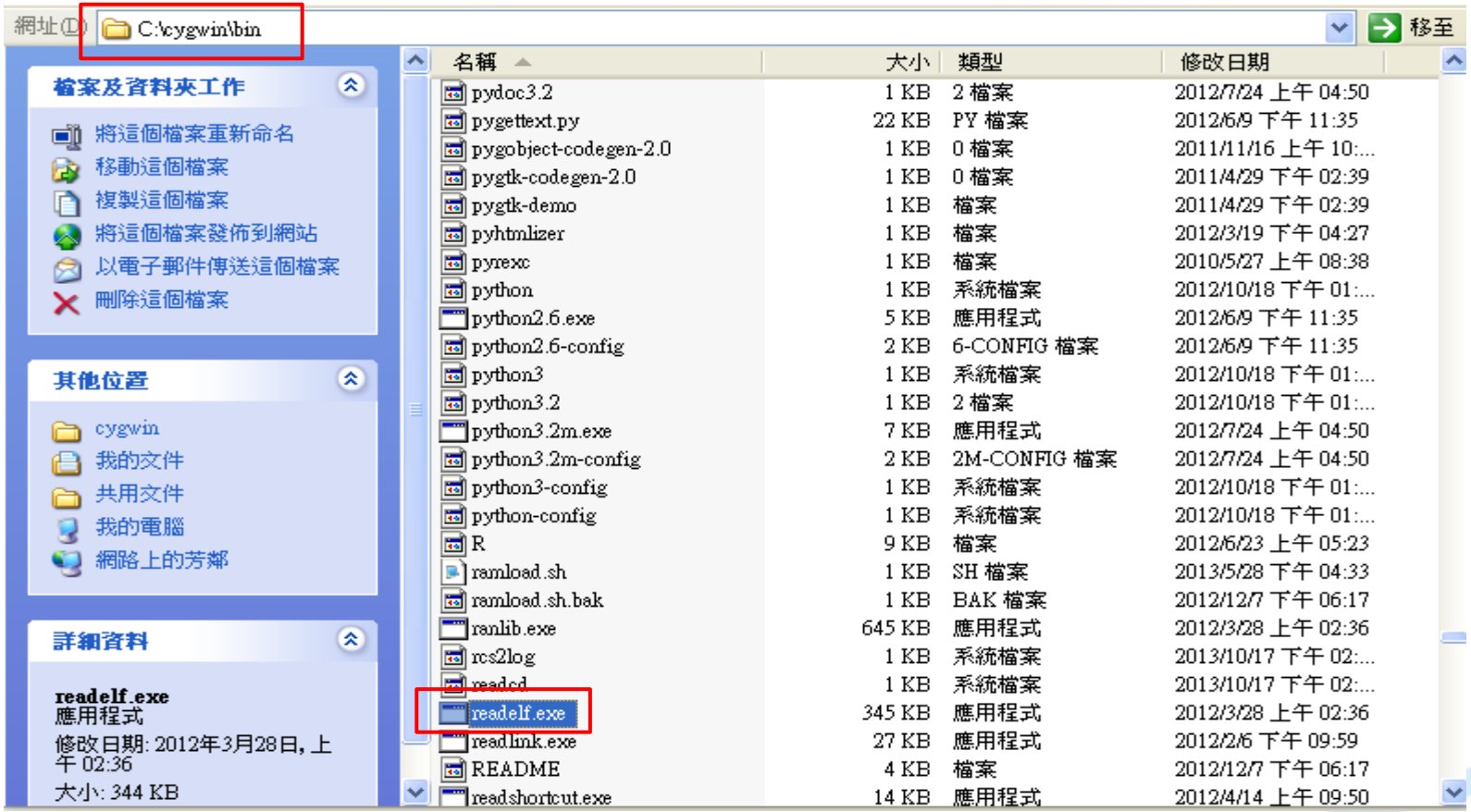
Note:
If you are not familiar with cygwin, please visit http://cygwin.com/ for additional information and details. In particular, the Cygwin User Guide (http://cygwin.com/cygwin-ug-net/) is a good resource for new users.

6-2. Install Cygwin



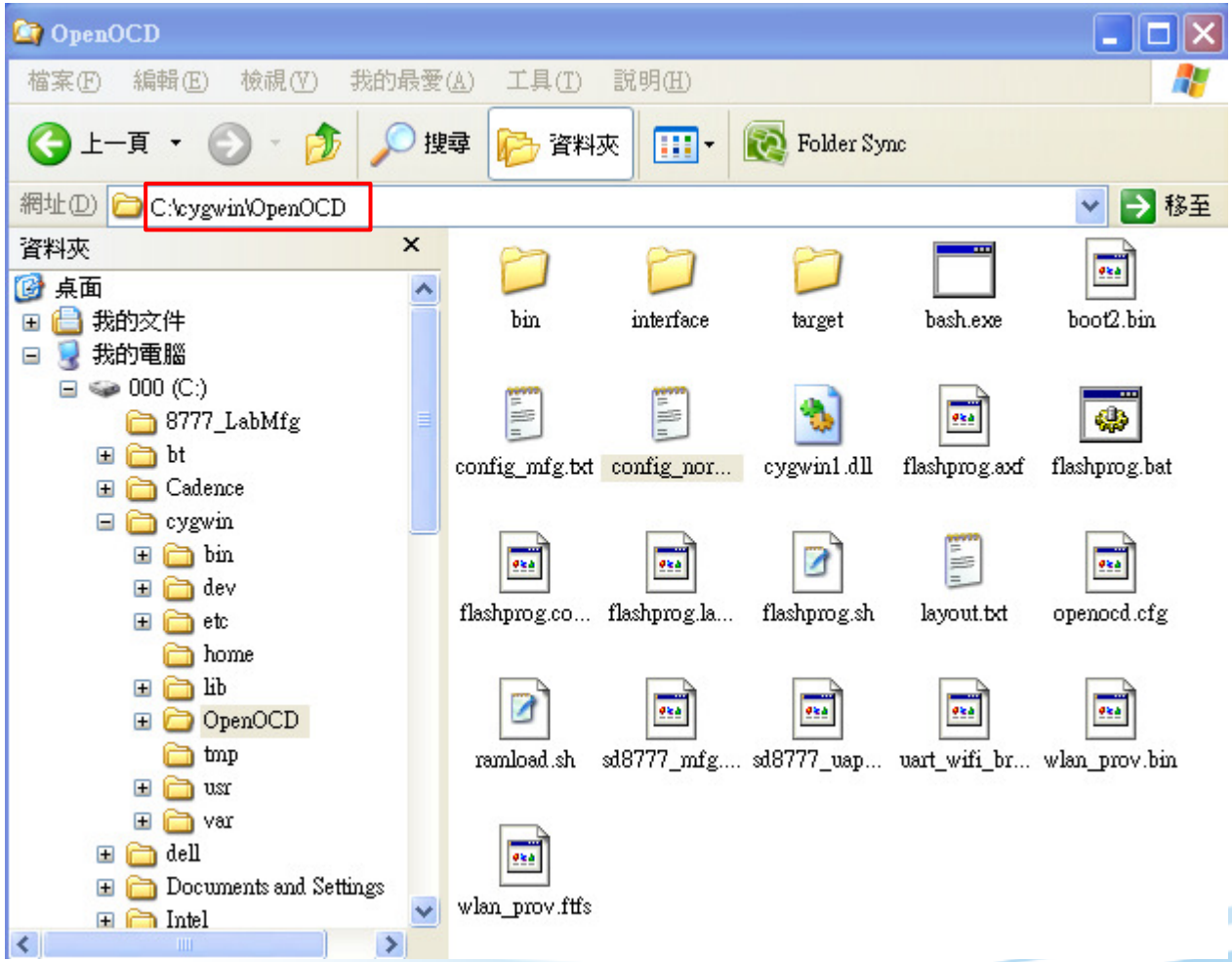
7-1. Insert file “OpenOCD.zip”

Unzip “CU277B_OpenOCD.zip” and put “readelf.exe” to C:\cygwin\bin



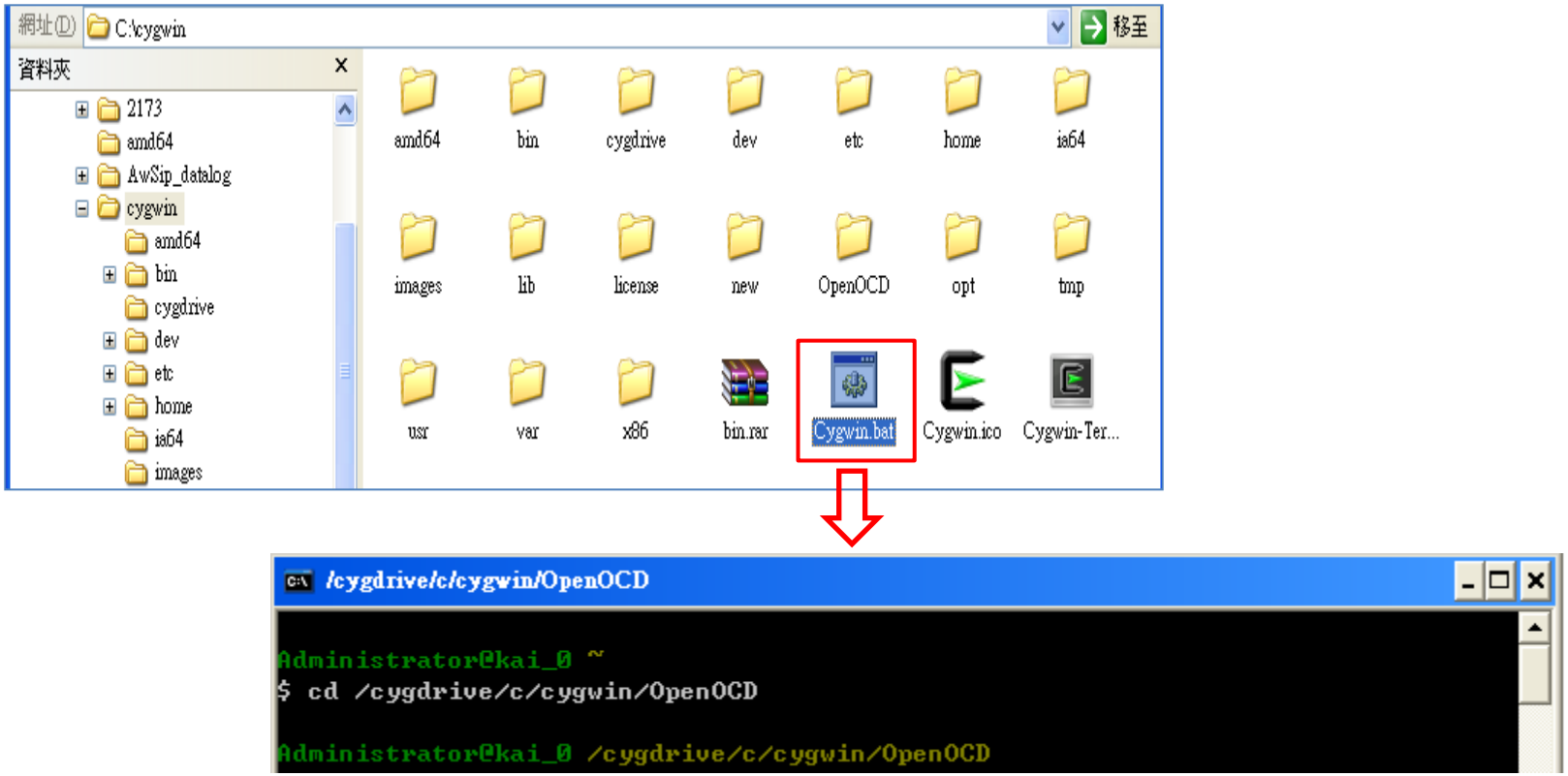
7-2. Insert file “OpenOCD.zip”

Unzip “CU277B_OpenOCD.zip” and put them to C:\cygwin



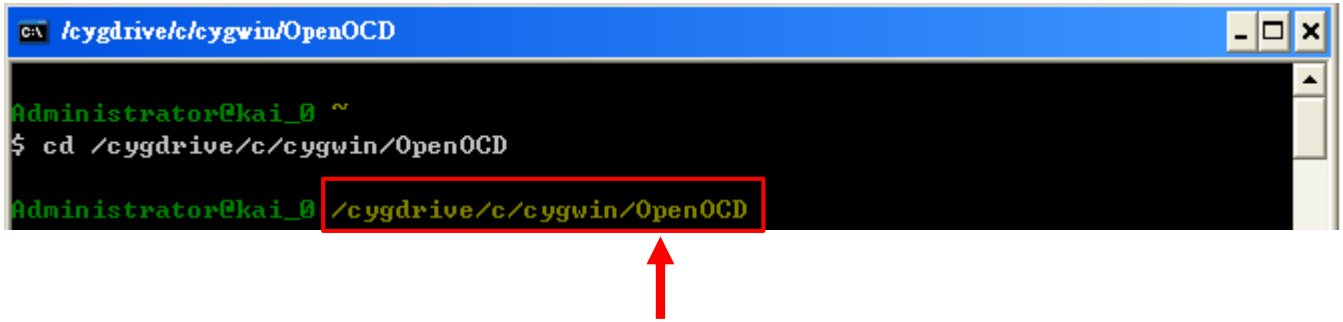
7-3. Insert file “OpenOCD.zip”

Process C:\cygwin\Cygwin.bat



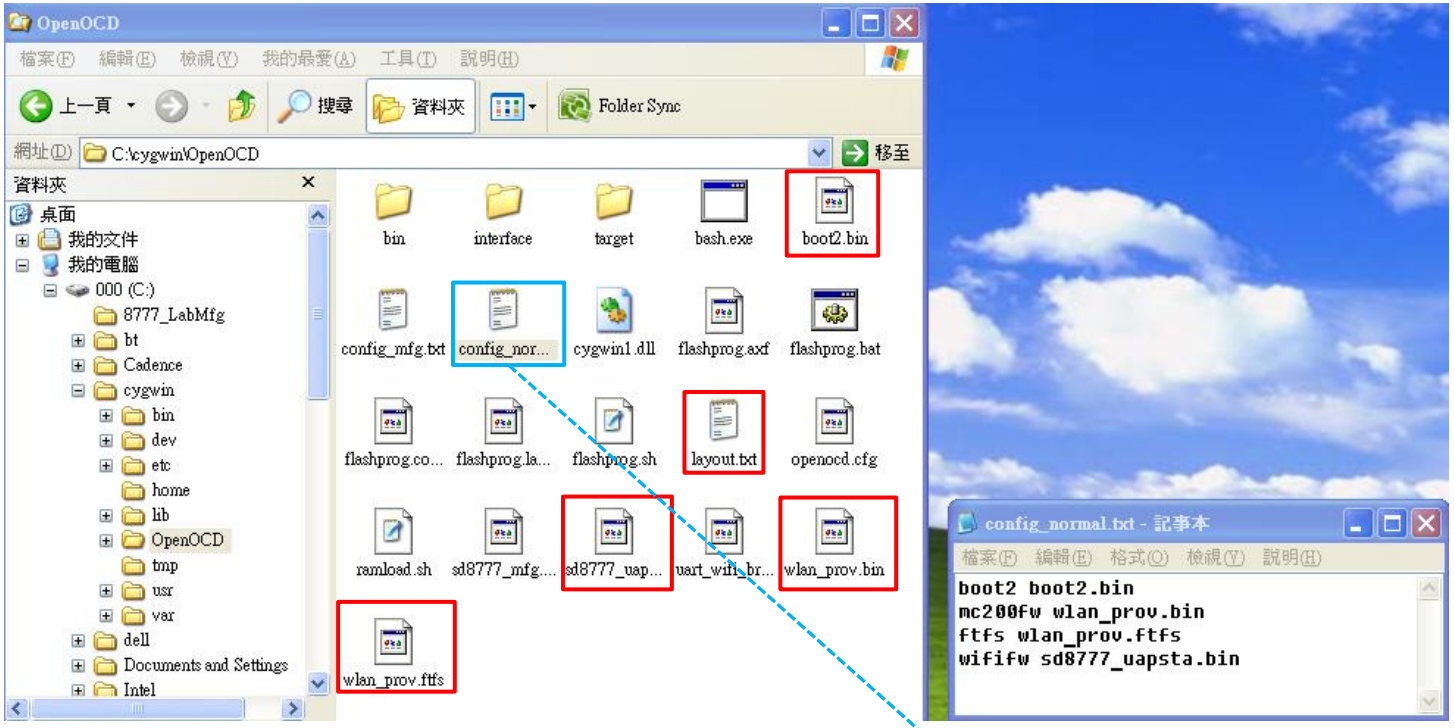
7-4. Insert file “OpenOCD.zip”

Key in command : cd /cygdrive/c/cygwin/OpenOCD



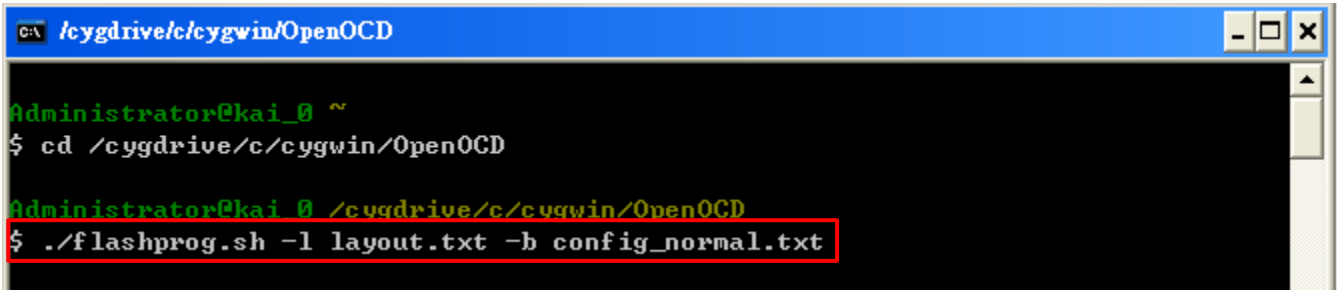
8-1. Burning Normal F/W

Check config_normal.txt, layout.txt … 6 files in the OpenOCD folder



8-2. Burning Normal F/W

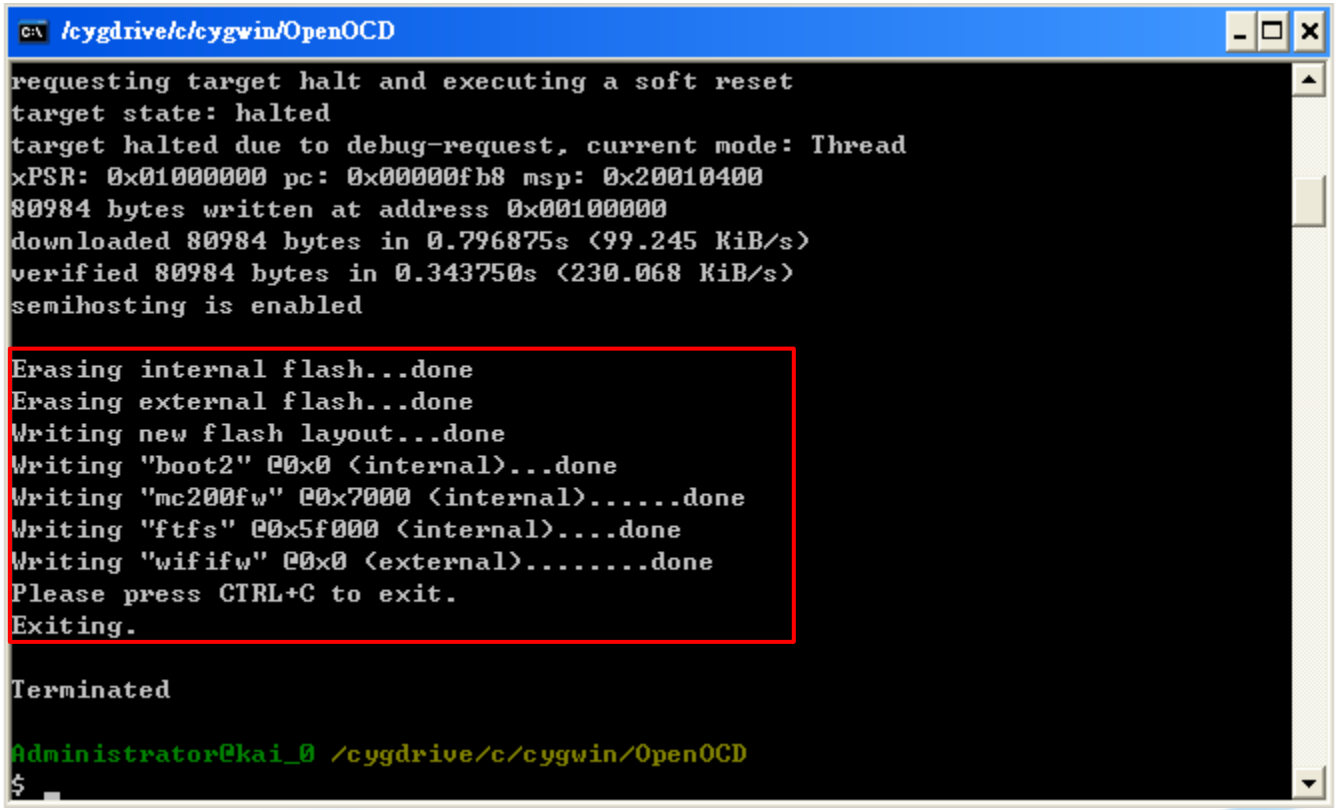
Key in command : ./flashprog.sh -l layout.txt -b config_normal.txt



8-3. Burning Normal F/W

Burning information print as followed:

Note : Please restart DUT after burning (Plug-in and Plug-out USB)



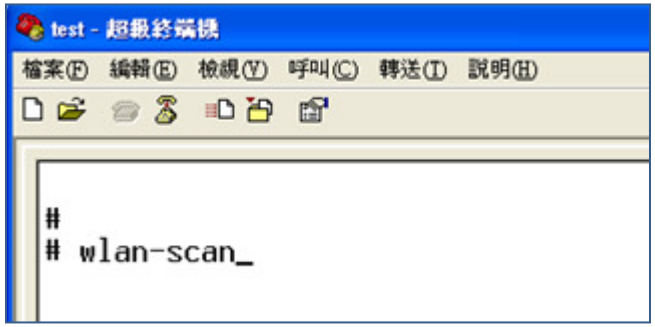
9-1. Run normal F/W

Open OS terminal and set USB comport (reference to the page9), set baud-rate as 115200

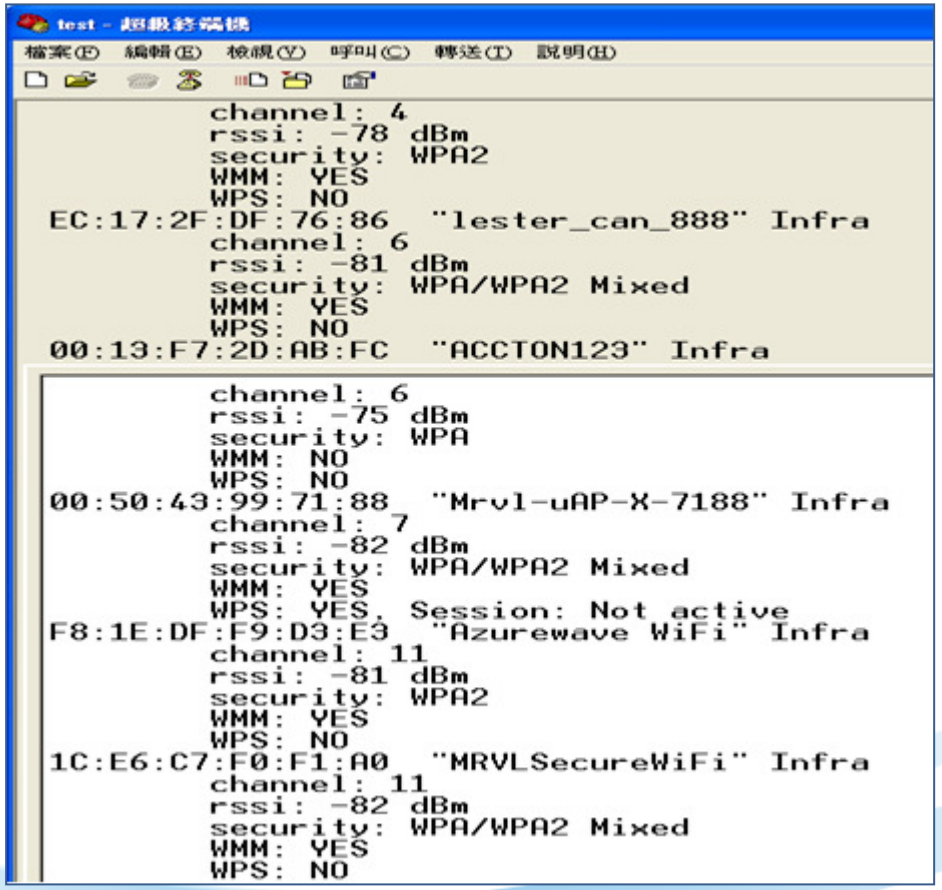
9-2. Run normal F/W

Enter help on the screen to see a full list of commands available for use

EX:
wlan-scan



That will scan around AP



9-3. Normal F/W Antenna Switch

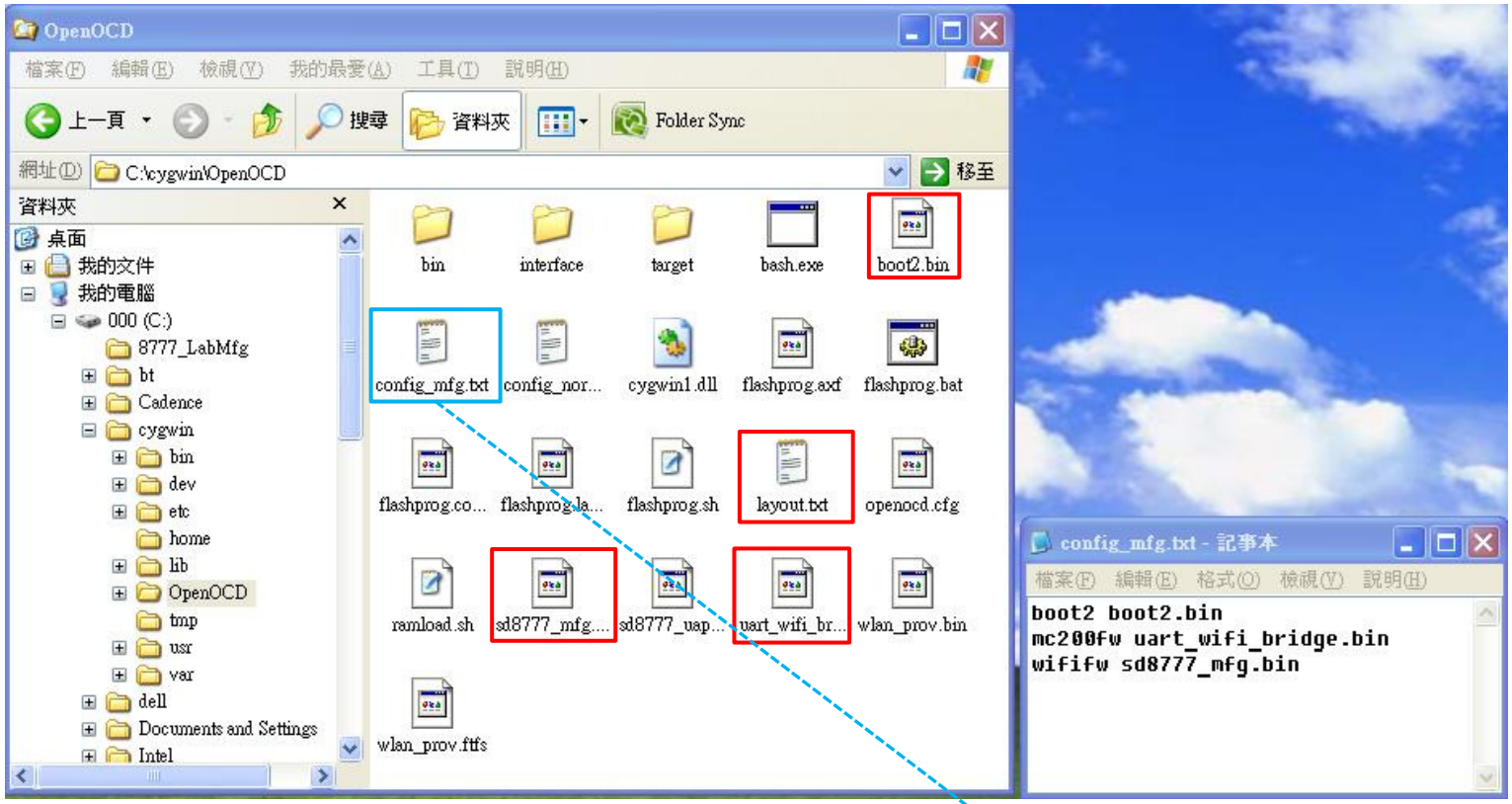
Antenna Switch Command for Internal/External Paths

AW-CU277B External Antenna Path command:
iwpriv mlan0 regrdwr 1 0x232c 0x20
iwpriv mlan0 regrdwr 7 0x1005 0
iwpriv mlan0 regrdwr 7 0x1005 **Check GPIO is Reg 0x00**

AW-CU277B Internal Antenna Path command:
iwpriv mlan0 regrdwr 1 0x232c 0x20
iwpriv mlan0 regrdwr 7 0x1005 1
iwpriv mlan0 regrdwr 7 0x1005 **Check GPIO is Reg 0x20**

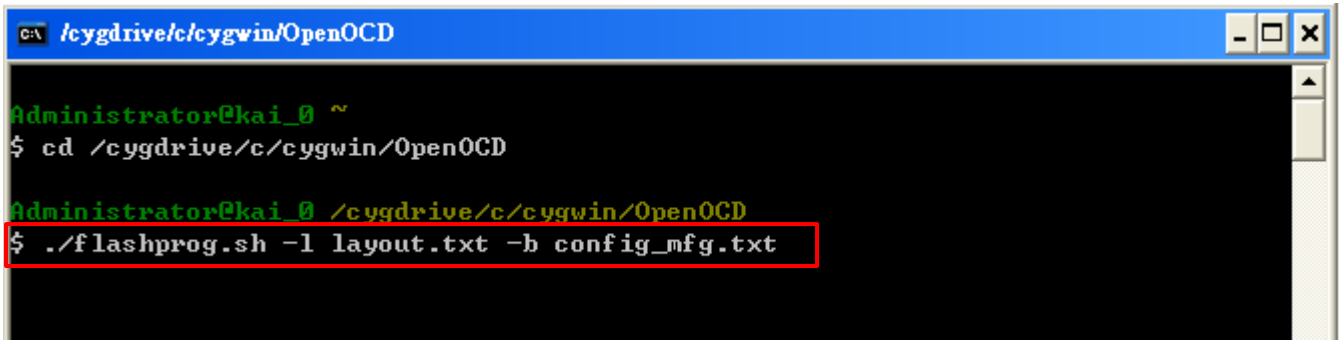
10-1. Burning MFG F/W

Check config8777_mfg.txt, layout.txt … 5files in OpenOCD folder



10-2. Burning MFG F/W

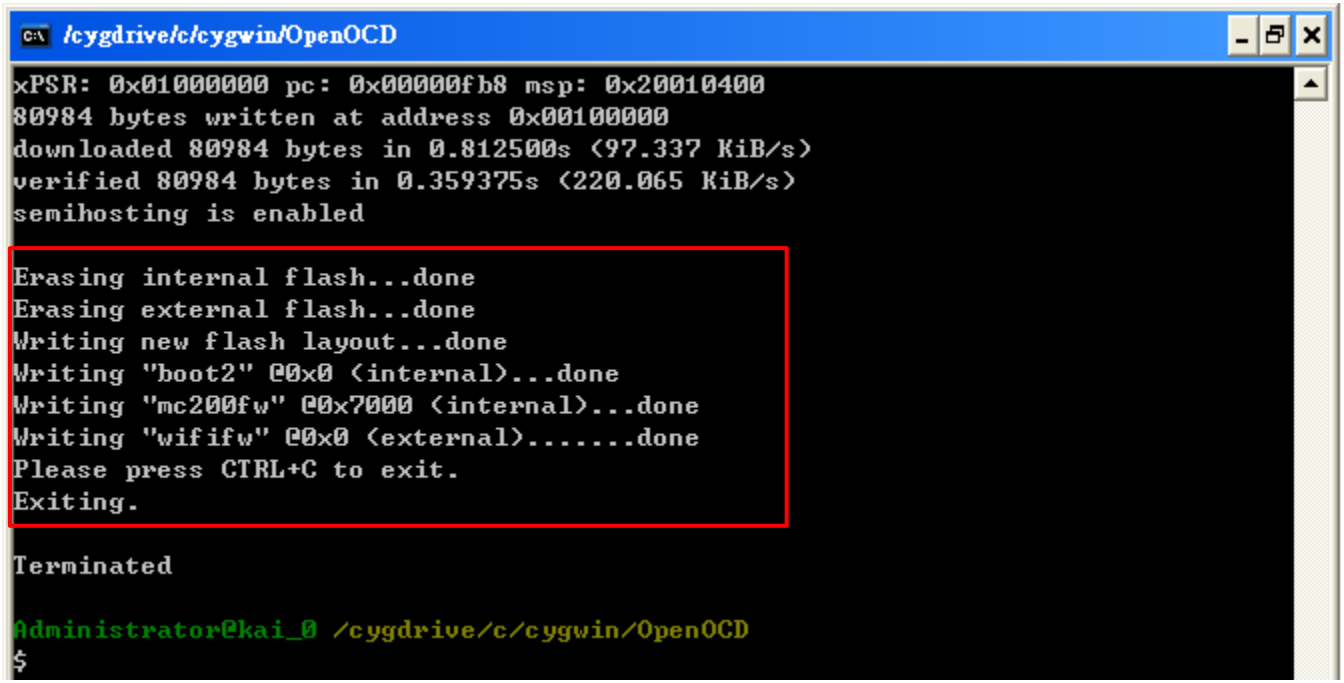
Command : ./flashprog.sh –l layout.txt –b config_mfg.txt



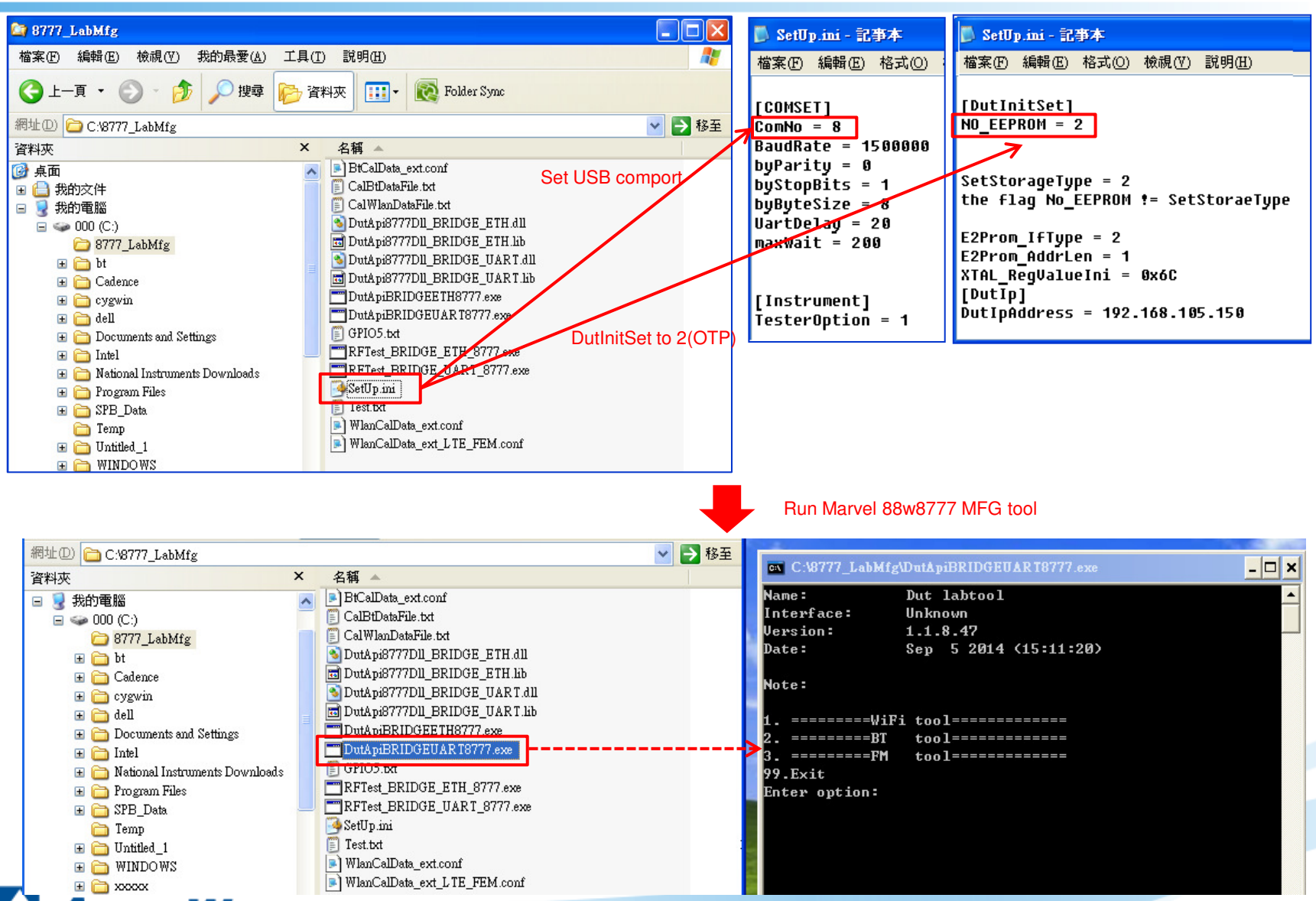
10-3. Burning MFG F/W

Burning information print as followed:

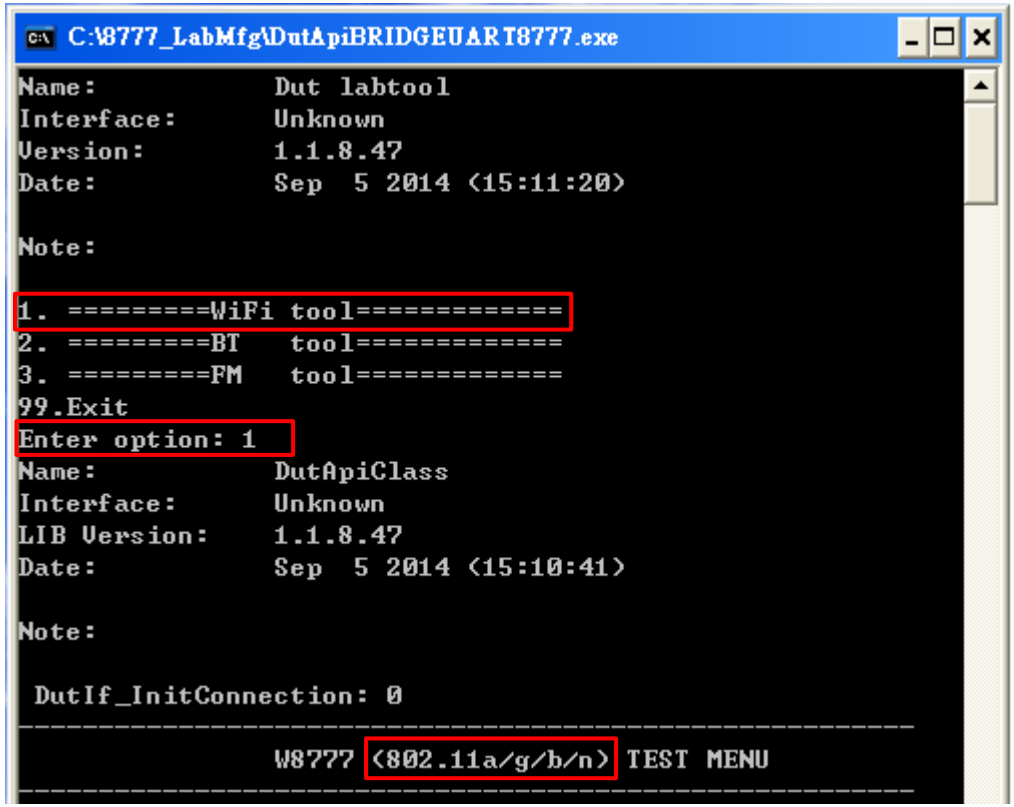
Note : Please restart DUT after burning (Plug-in and Plug-out USB)



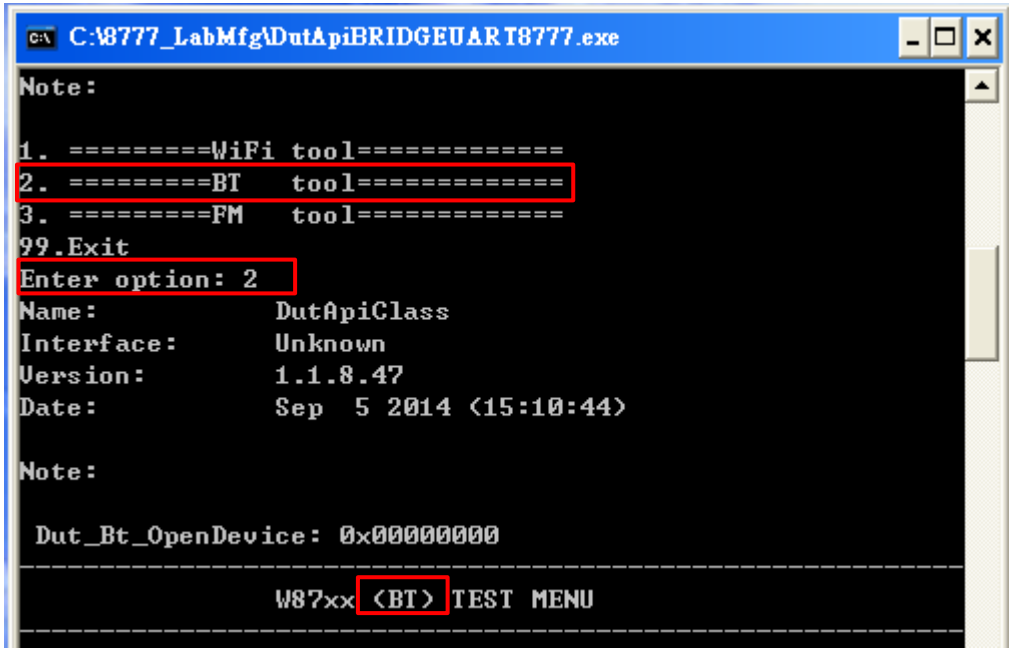
11-1. Run Marvel 88w8777 WIFI MFG tool



11-2. Run Marvel 88w8777 WIFI MFG tool



11-3. Run Marvel 88w8777 BT MFG tool



12-1. Radiation 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 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 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.

IMPORTANT NOTE:

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

Country Code selection feature to be disabled for products marketed to the US/CANADA

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,
3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 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.

12-2. Radiation Statement

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

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-CU277B”.

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 Industry Canada’s licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.
Cet appareil est conforme aux CNR exemptes de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes:
(1) Ce dispositif ne peut causer d'interférences; et(2) Ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

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.

12-3. Radiation Statement

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.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:

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-CU277B”.

12-4. Radiation Statement

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-CU277B".

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.

This radio transmitter (IC: 6100A-CU277B) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Cet émetteur radio (IC: 6100A-CU277B) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous avec le gain maximal admissible indiqué. Types d'antennes ne figurent pas dans cette liste, ayant un gain supérieur au gain maximum indiqué pour ce type, sont strictement interdits pour une utilisation avec cet appareil.

Model	Type	Connector	Gain
			2400~2483.5MHz
ANT3216	Chip	UFL	3.29
FXP73.07.0100A	Monopole	UFL	3
NanoBlue	Monopole	UFL	2
PC11.07.0100A	Dipole	UFL	3
GW.17.07.0250E	Dipole	UFL	2.7
EDA-1313-2G4C1-A16	Dipole	UFL	2.39
DQ60CQA1200	Dipole	UFL	2.84
FXP74.07.0100A	PIFA	UFL	4
MSA-4008-25GC1-A1	PIFA	UFL	2.98
PC17.07.0070A	PIFA	UFL	0.9
T-543-80A1077-1	PIFA	UFL	0.55

12-5. Radiation Statement

Taiwan 警語：

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。

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: CC XX xx YY yyy Z z W」字樣

AzureWave

AzureWave Technologies, Inc.

THANK YOU!

Inspired by wireless