(EAP1028B-12-0115-EC)

MFG Test Plan

EAP1028B-12-0115-EC

Version: V0.80

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Doc. Number: FMA-TA01000-01
Date: 3 24th, 2015
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Released By: Maxime *Date:* 2015/ 03/ 24

Revision History

Rev.	Date	Author	Revision Description
V0.80	2015/03/24	Maxime	1st Release

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1. Overview

1.1 Purpose

This document describes the manufacturing test plan for the EAP1028B-12-0115-EC product. It also identifies design requirements that need to be fulfilled for successful implementation of this test plan. Target audience for this document is the EC operations & design team and contract manufacturing personnel.

2. Test Process

2.1 Goals

Follow up the Test Plan and sync with all member include MFG. Development team and customer side can well understanding and follow up to maintain the good quality for shipment.

2.2 Key Issues

2.3 Test Process Flow

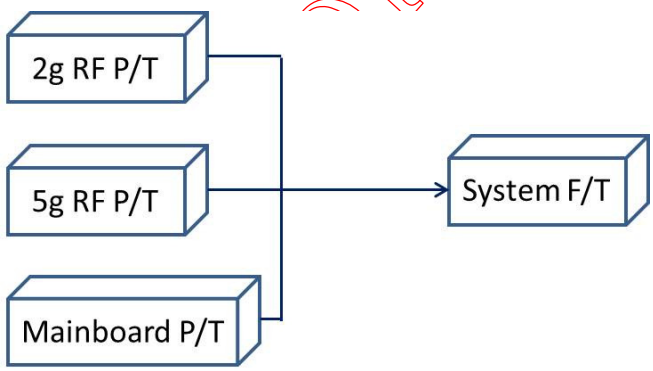

Figure 1 Test Process Flow

2.3.1 2.4g RF Card Configuration Testing (P/T)

2.3.1.1 Test Environment Setup

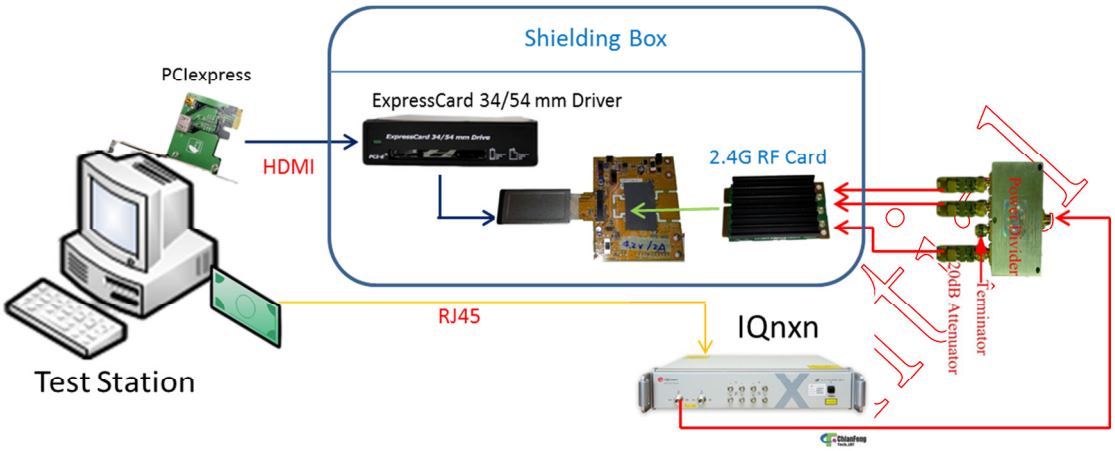

Figure 2 2G RF P/T Testing Configuration

2.3.1.2 Hardware Requirement

1	Pentium PC (or above) running WinXP	x 1
2	PCI Express with HDMI cable	x 1
3	ExpressCard 34/54 mm Drive (or PCIE extended card)	x 1
4	Express Card to PCMCIA (or PCIE extended card)	x 1
5	Power Divider	x 1
6	20db Attenuator	x 3
7	IQnxn	x 1
8	Shielding Box	x 1

Table 1 2G RF Testing HW Requirement

2.3.1.3 Software Requirement

1	Microsoft OS Windows XP or above	
2	ActiveTCL: Tcl v8.5.15	
3	MATLAB(R) Compiler Runtime 7.9	
4	Microsoft Visual C++ 2005 Redistributable	
5	Microsoft Visual C++ 2008 Redistributable	

6	IQ201X Applications	

Table 2 2G RF Testing Software Requirement

2.3.1.4 Test Requirements

Run requested Test Items without any fail condition.

2.3.1.5 Test Log

EAP1028B_RF2G_PT_AF10017971_20150311_102046_PASS_Y_1.cap

2.3.1.6 Test Estimated Cycle Test

Station Name	Max of Units	Estimation (Second (s) of Time)
P/T	1	70 (s)

Notice :

(1) This is not really cycle time of the DUT run, it just only references for engineering and manufacturing.

(2) The program does not comprise the factitious manipulation time in manufacturing.

(3) ACCTON IE has controlled evaluation the real testing cycle time in manufacturing.

2.3.2 5g RF Card Configuration Testing (P/T)

2.3.2.1 Test Environment Setup

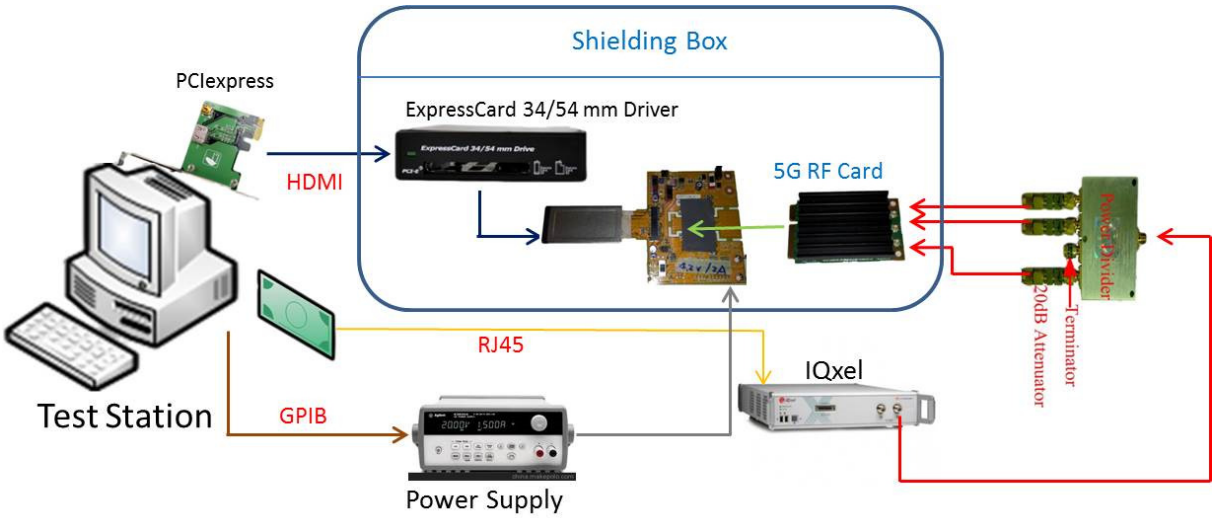

Figure 3 5G RF P/T Testing Configuration

2.3.2.2 Hardware Requirement

1	Pentium PC (or above) running WinXP	x 1
2	PCI Express with HDMI cable	x 1
3	ExpressCard 34/54 mm Drive (or PCIE extended card)	x 1
4	Express Card to PCMCIA (or PCIE extended card)	x 1
5	Power Divider	x 1
6	20db Attenuator	x 3
7	IQxel	x 1
8	Shielding Box	x 1
9	Power supply	x 1
10	USB to GPIB	x 1

Table 3 5G RF Testing HW Requirement

2.3.2.3 Software Requirement

1	Microsoft OS Windows XP or above	

2	ActiveTCL: Tcl v8.5.15	
3	MATLAB(R) Compiler Runtime 7.9	
4	Microsoft Visual C++ 2005 Redistributable	
5	Microsoft Visual C++ 2008 Redistributable	
6	IQ201X Applications	

Table 4 5G RF Testing Software Requirement

2.3.2.4 Test Requirements

Run requested Test Items without any fail condition.

2.3.2.5 Test Log

EAP1028B_RF5G_PT_AE17018062_20150320_010047_PASS_N_1.cap

2.3.2.6 Test Estimated Cycle Test

Station Name	Max of Units	Estimation (Second (s) of Time)
P/T	1	65 (s)

Notice :

(1) This is not really cycle time of the DUT run, it just only references for engineering and manufacturing.

(2) The program does not comprise the factitious manipulation time in manufacturing.

(3) ACCTON IE has controlled evaluation the real testing cycle time in manufacturing.

2.3.3 Board Level Functional Test (P/T)

2.3.3.1 Test Environment Setup

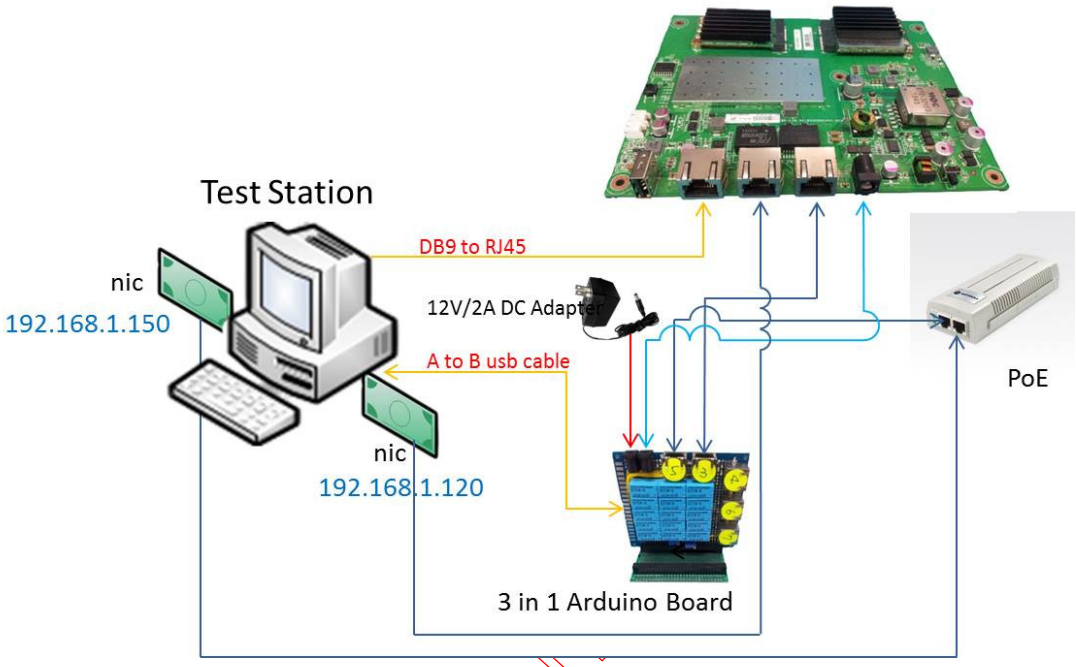

Figure 4 Main Board P/T Test Setup Configuration

2.3.3.2 Hardware Requirement

1	Pentium PC (or above) running WinXP	x 1
2	RS232 Console cable	x 1
3	PoE injector	x 1
4	DC Adapter 12A/2.5A	x 1
5	RJ45 cable	x 3
6	3 in 1 Arduino Board	x 1
7	A to B USB cable	x 1
8	Gb nic	x 2
9	Gb switch (for 1 to 2 setup environment only)	x 2

Table 5 P/T **Main Board Test Hardware Requirement**

2.3.3.3 Software Requirement

1	Microsoft OS Windows XP	

2	ActiveTCL: Tcl v8.5.15	

Table 6 P/T Main Board Test Software Requirement

2.3.3.4 Test Requirements (PASS/FAIL Criteria)

Run requested Test Items without any fail condition.

2.3.3.4.1. Check Power on via PoE

Check Power on via PoE

2.3.3.4.2. Check Power on via AC

Check Power on via AC

2.3.3.4.3. SET Board Data

Set Board Data via nvram

2.3.3.4.4. Get and Check Board Data

Check Board Data that write before

2.3.3.4.5. Check NAND Flash

Check NAND Flash bad block numbers.

2.3.3.4.6. Check SW Reset Button

Check SW Reset Button , it requires OP to press the button

Figure 5 P/T Reset Button

2.3.3.4.7. Load rootfs code

Load runtime kernel code.

2.3.3.4.8. Enter Kernel

Boot to Kernel

2.3.3.4.9. Check Memory

Check DDR in uboot

2.3.3.4.10. Check PCIe

Check PCIE interface of 2.4g and 5g RF card

2.3.3.4.11. Check LED

Check LED on DUT, it requires OP to check

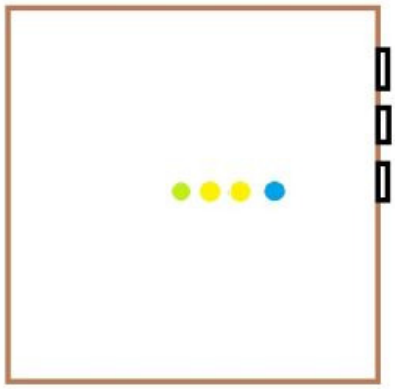

Figure 6 P/T Led Test

2.3.3.4.12. Check Ethernet

Check Ethernet via ping server PC

2.3.3.4.13. Check PWC

Check PWC via 3 in 1 fixture

2.3.3.5 Notes

P/T test station can be setup as 1 to 2, the setup configuration is shown as follow:

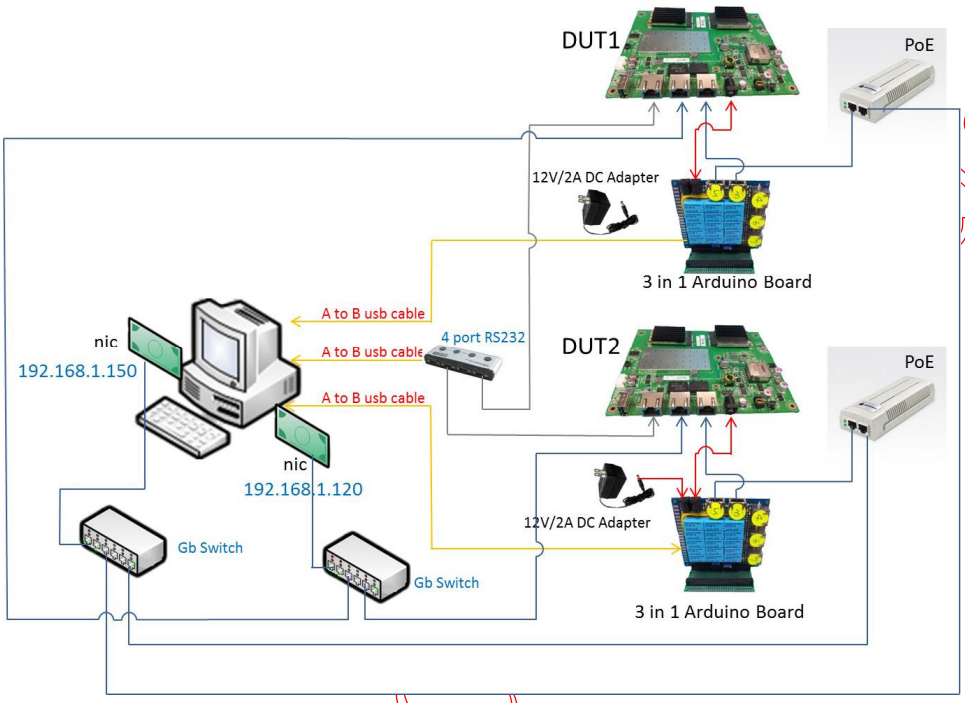

Figure 7 1 to 2 Main Board P/T Test Setup Configuration

2.3.3.6 Test Log

<TBD>

2.3.3.7 Test Estimated Cycle Time

Station Name	Max of Units	Estimation (Second (s) of Time)
P/T	1	300 (s)

Notice :

(1) This is not really cycle time of the DUT run, it just only references for engineering and manufacturing.

(2) The program does not comprise the factitious manipulation time in manufacturing.

(3) ACCTON IE has controlled evaluation the real testing cycle time in manufacturing.

2.3.4 System Level Final Test (F/T)

2.3.4.1 Test Environment Setup

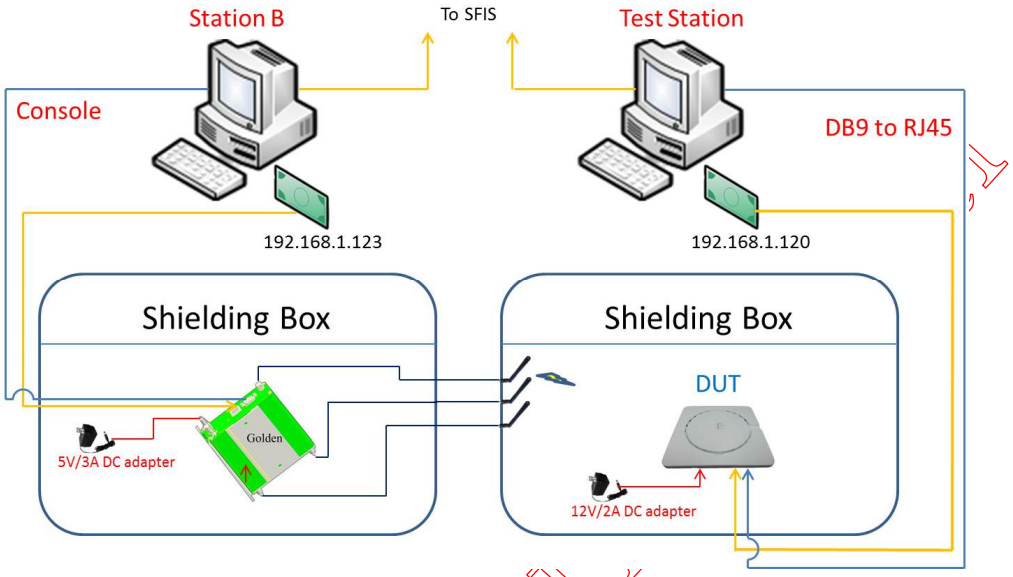

Figure 8 System Level F/T Test Setup Configuration

2.3.4.2 Hardware Requirement

1	Pentium PC (or above) running WinXP	x 2
2	RS232 Console cable	x 2
3	DC Adapter 12A/2.5A (for DUT)	x 1
4	DC Adapter 5A/3A (for golden)	x 1
5	RJ45 cable	x 4
6	Golden Unit (EAP1016B)	x 1
7	Shielding Box	x 2
8	Antenna	x 6
9	RF cable	x 6
10	Gb NIC	x 2

Table 7 F/T Test Hardware Requirement

2.3.4.3 Software Requirement

1	Microsoft OS Windows XP	
2	ActiveTCL: Tcl v8.5.15	

Table 8 F/T Test Software Requirement

2.3.4.4 Test Requirements (PASS/FAIL Criteria)

Run requested Test Items without any fail condition.

2.3.4.4.1. Get and Check Board Data

Check Board Data that write before

2.3.4.4.2. Check SW Reset Button

Check SW Reset Button , it requires OP to press the button

Figure 9 F/T Reset Button

2.3.4.4.3. Check LED

Check LED on DUT, it requires OP to check

Figure 10 F/T Led Test

2.3.4.4.4. Set 2G Radio

Set 2.4G Radio bridge mode with EAP1016B

2.3.4.4.5. F/T 2G Traffic Test

Test 2.4G Throughput

2.3.4.4.6. Set 5G Radio

Set 5G Radio bridge mode with EAP1016B

2.3.4.4.7. F/T 5G Traffic Test

Test 5G Throughpu

2.3.4.4.8. Factory Reset

Factory Reset DUT

2.3.4.5 Test Log

EAP1028B-12-0115-EC_SYS_FT_EC0000099999_7072CFFD9080_20150318_133220_PASS_N_1.cap

2.3.4.6 Test Estimated Cycle Time

Station Name	Max of Units	Estimation (Second (s) of Time)
F/T	1	450 (s)

Notice :

(1) This is not really cycle time of the DUT run, it just only references for engineering and manufacturing.

(2) The program does not comprise the factitious manipulation time in manufacturing.

(3) ACCTON IE has controlled evaluation the real testing cycle time in manufacturing.

2.4 Error Code Definition

Error Code	Brief Description
T01100	boot-up fail
T01200	Enter uboot fail
T01300	check power on PoE fail
T01400	check power on DC fail
T01500	check Uboot Version fail
T01600	boot to login status fail
T01700	check login status fail
T01800	keyin username fail
T01900	update test pattern code fail
T01A00	update ramboot code fail
T01B00	update testOS code fail
T01C00	check ramboot Version fail
T01010	Set Board Data fail
T01020	Get Board Data fail

T01001	Switch watchdog in uboot fail
T01002	Ping server ip fail
T01003	turn eth port 0 fail
T01004	Check SPI Flash fail
T01005	Check NAND Flash fail
T01006	Check SW Reset Button fail
T01007	Check DDR fail
T01008	Check TPM fail
T01009	inst lspci fail
T02009	check 5G Radio card fail
T03009	check 2.4G Radio card fail
T0100A	check USB read/write fail
T0100B	check Ethernet via loopback fail
T0100C	check watchdog fail
T0100D	check LED fail
RF2001	RF 2G Test Failed

3. Appendix

3.1 RF Test Setup notification 1

Before Testing, Driver should be configured as following

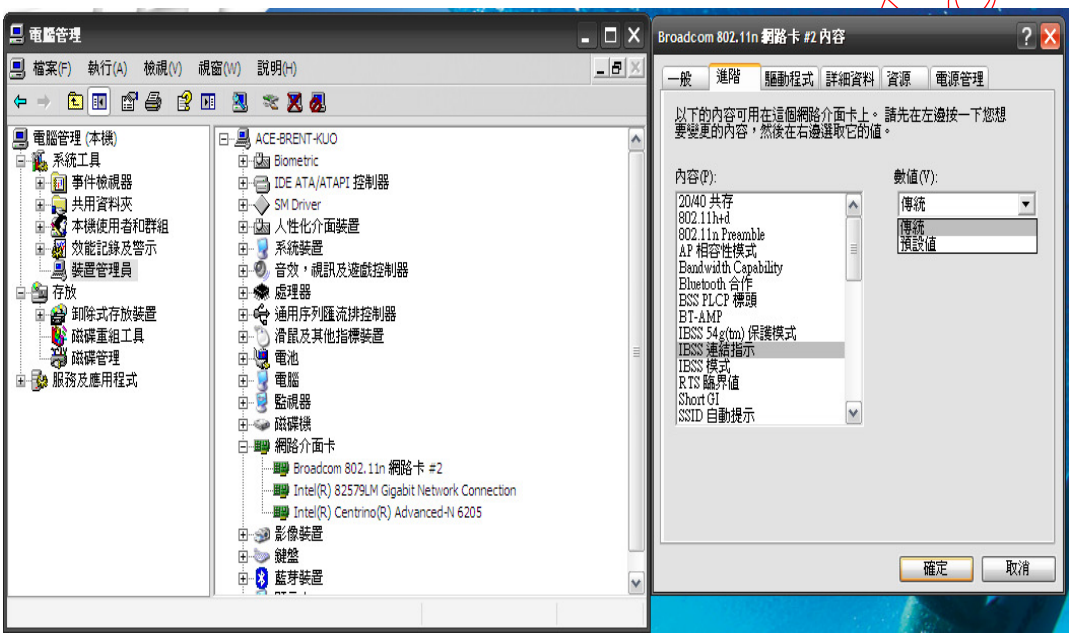

Figure 11IBSS 連結指示 = 傳統

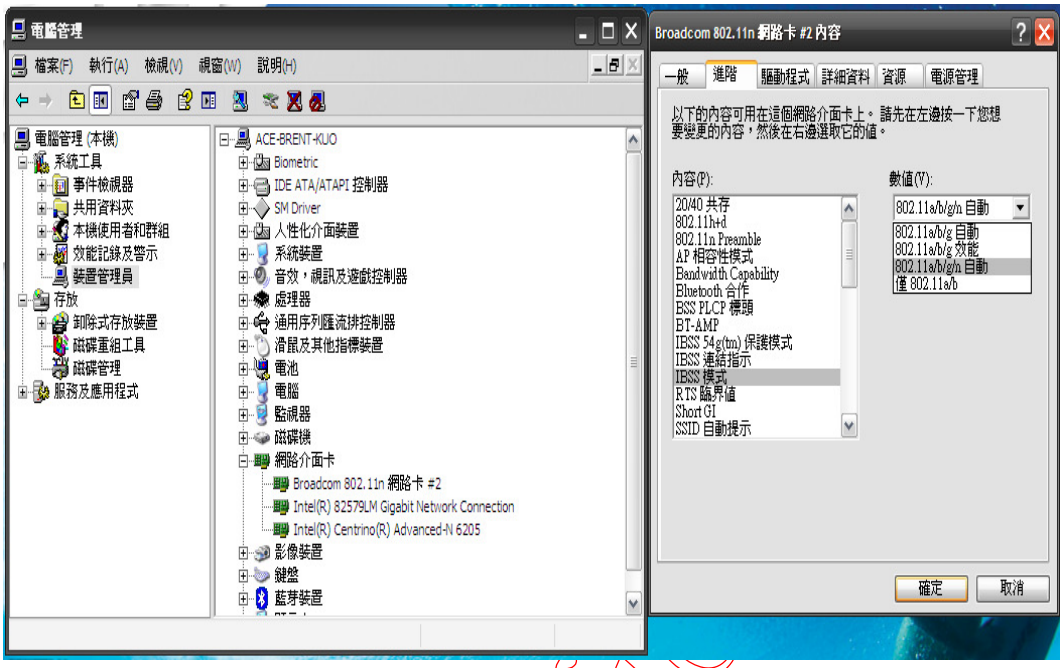

Figure 12　　IBSS 模式 = 802.11 a/b/g/n 自動

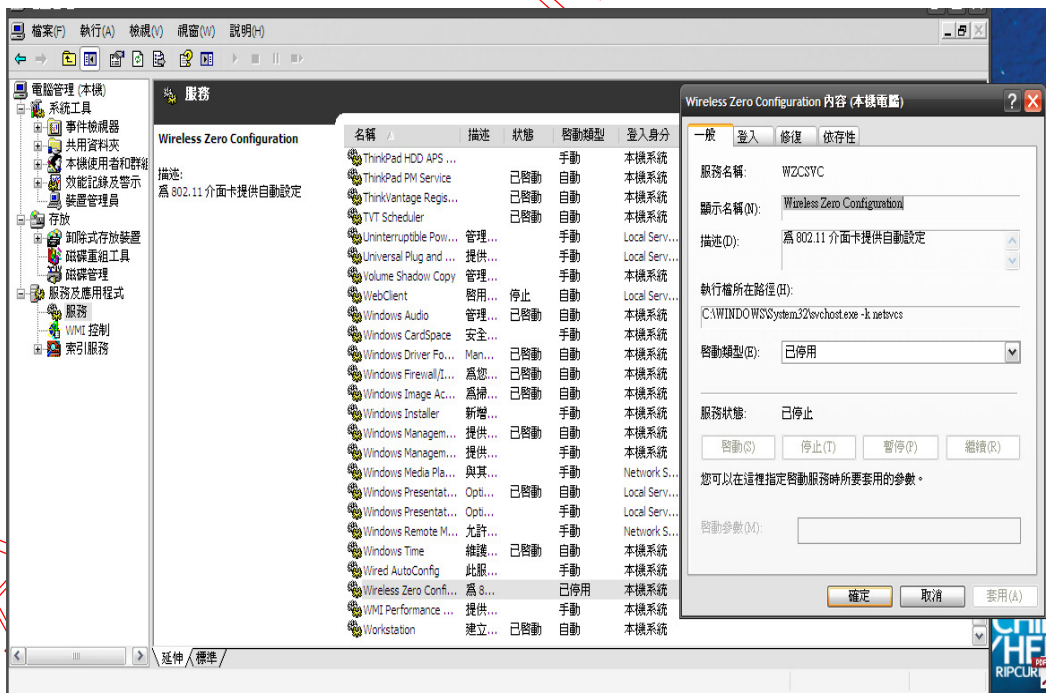

Figure 13 Stop Windows "Wireless Zero Configuration" service

Except the installed BCM4331 driver , Remove any other of BCM wifi driver from PC

3.2 RF Test Setup notification 2

- **RF Test Driver**

  i. Driver for Windows XP only.

  ii. For 2.4G RF card, the driver is put in ./ EAP1028B-15-0115-EC/extapp/ATSuite/2G/BCM43431 5_100_164_XP/Mfgtest driver

  iii. For 2.4G RF card, the driver is put in ./ EAP1028B-15-0115-EC/extapp/ATSuite/5G/ 6_30_150_mfgtest_XP/

  iv.

- **Remove existing inf file**

  i. The files existed in C:/Windows/inf/ and which the file name with oemxxx.inf should be checked. If these files' contents with "Broadcom", "BCMxxx" or "Arthros" should be deleted.

  ii. The ATsuit software may act abnormal without removing inf file as above.