AMPAK

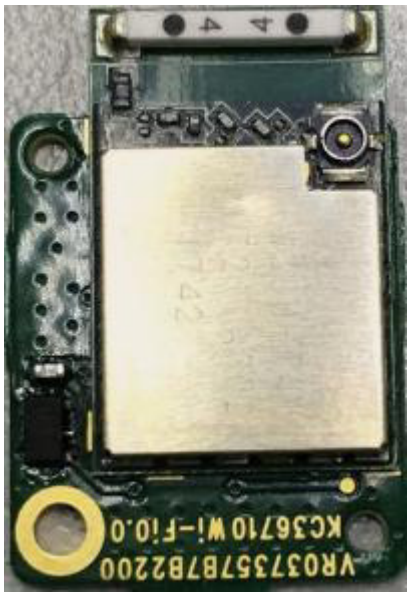
WSDB-741

Setup Guide

Rev. 0.1

1. WLAN Function HW Setup Guide

Physical hardware configuration likes as figure1. Please follow the following procedure step by step to get starting WLAN and Bluetooth function.

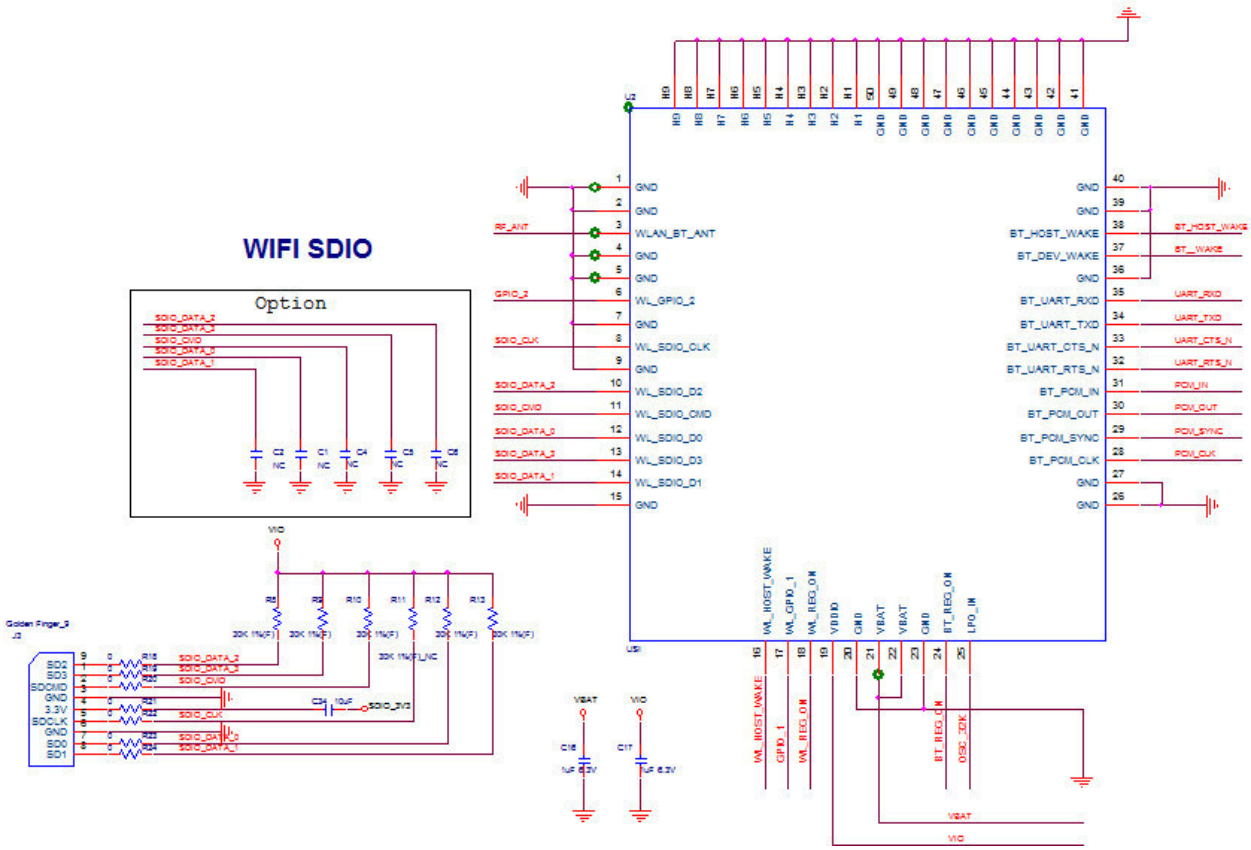


Pin Assignment

PIN	NAME	TYPE	DESCRIPTION
1	GND	G	Ground connections
2	GND	G	Ground connections
3	RF_ANT	I/O	RF I/O Port (Option)
4	GND	G	Ground connections
5	GND	G	Ground connections
6	WL_GPIO2	I/O	WLAN GPIO2(Internal 10K PD)
7	GND	G	Ground connections
8	SDIO_DATA_CLK	I/O	SDIO clock line
9	GND	G	Ground connections
10	SDIO_DATA_2	I/O	SDIO data line 2
11	SDIO_DATA_CMD	I/O	SDIO command line
12	SDIO_DATA_0	I/O	SDIO data line 0
13	SDIO_DATA_3	I/O	SDIO data line 3
14	SDIO_DATA_1	I/O	SDIO data line 1
15	GND	G	Ground connections

16	WL_HOST_WAKE (WL_GPIO_0)	O	WLAN to wake-up HOST
17	WL_GPIO1	I/O	WLAN GPIO1(Internal 10K PD)
18	WL_REG_ON	I	Internal regulators power enable/disable Chip has an internal default 200k Ohm pull-down resistor. It can be disabled through programming.
19	VDDIO	P	I/O Voltage supply input
20	GND	G	Ground connections
21	VBAT	P	Main power voltage source input
22	VBAT	P	Main power voltage source input
23	GND	G	Ground connections
24	BT_REG_ON	I	Internal regulators power enable/disable Chip has an internal default 200k Ohm pull-down resistor. It can be disabled through programming.
25	LPO_IN	I	External Low Power Clock input (32.768KHz)
26	GND	G	Ground connections
27	GND	G	Ground connections
28	PCM_CLK	I/O	PCM clock
29	PCM_SYNC	I/O	PCM sync signal
30	PCM_OUT	O	PCM Data output
31	PCM_IN	I	PCM data input
32	UART_RTS_N	O	Bluetooth UART interface
33	UART_CTS_N	I	Bluetooth UART interface
34	UART_TXD	O	Bluetooth/FM UART interface
35	UART_RXD	I	Bluetooth/FM UART interface
36	GND	G	Ground connections
37	BT_DEV_WAKE UP	I	HOST wake-up Bluetooth device
38	BT_HOST_WAKE	O	Bluetooth device to wake-up HOST
39-50	GND	G	Ground connections
H1~H9	GND	G	BOT GND PAD (with open 9 solder mask)

Application Schematic



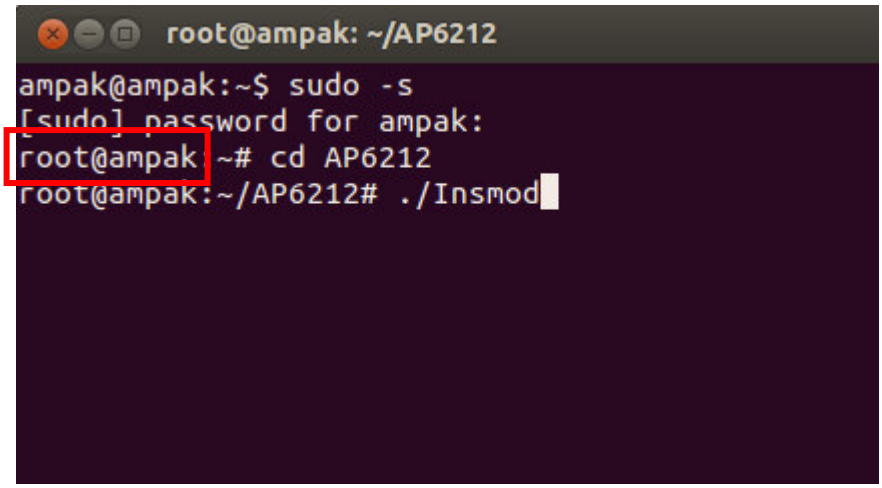
1. Software wi-fi setup:(Ubuntu 12.04 LTS kernel Linux3.4.0)

1-1.Put four files in the select document.

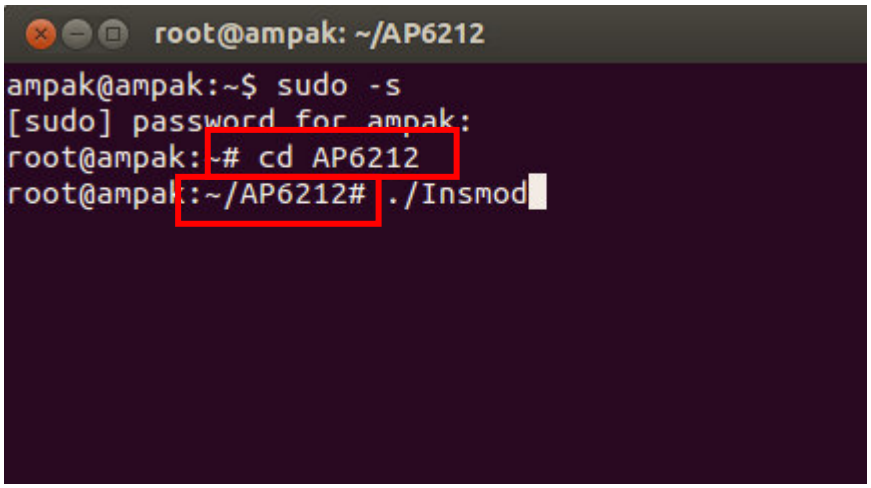
1. bcmdhd.ko
2. Fw.bin
3. Nvram.txt
4. Insmod

1-2. You have to marked the path of three files.

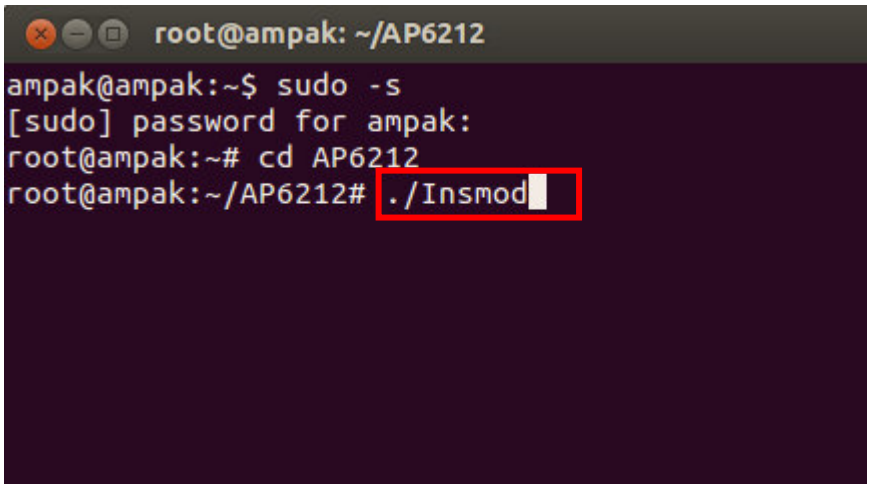
1-3.Enter "sudo –s" to root.



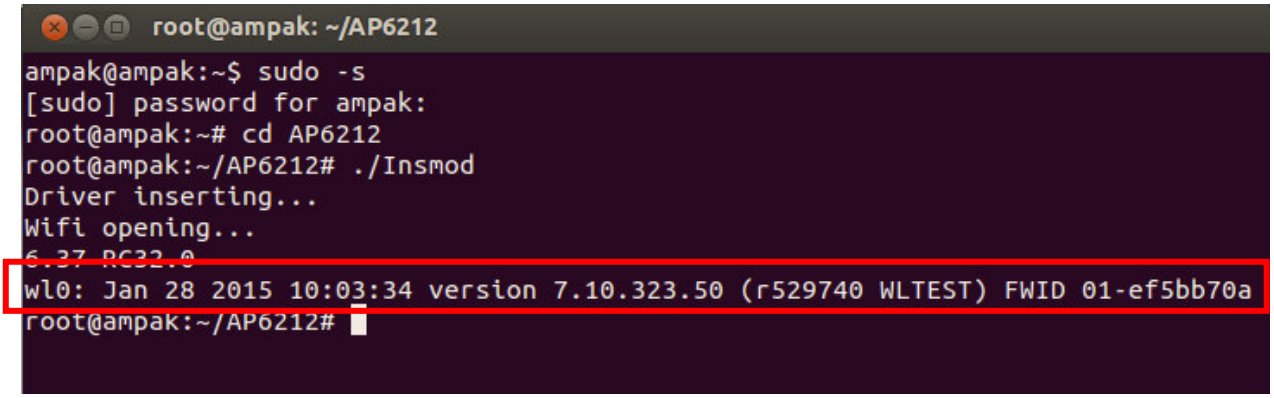
1-4.Change directory to the select document.



1-5.Enter "./Insmod" to execute the file Insmod.



1-6.It will show the messege means success.



2. Software Bluetooth setup:(Ubuntu 12.04 LTS kernel Linux3.2.0)

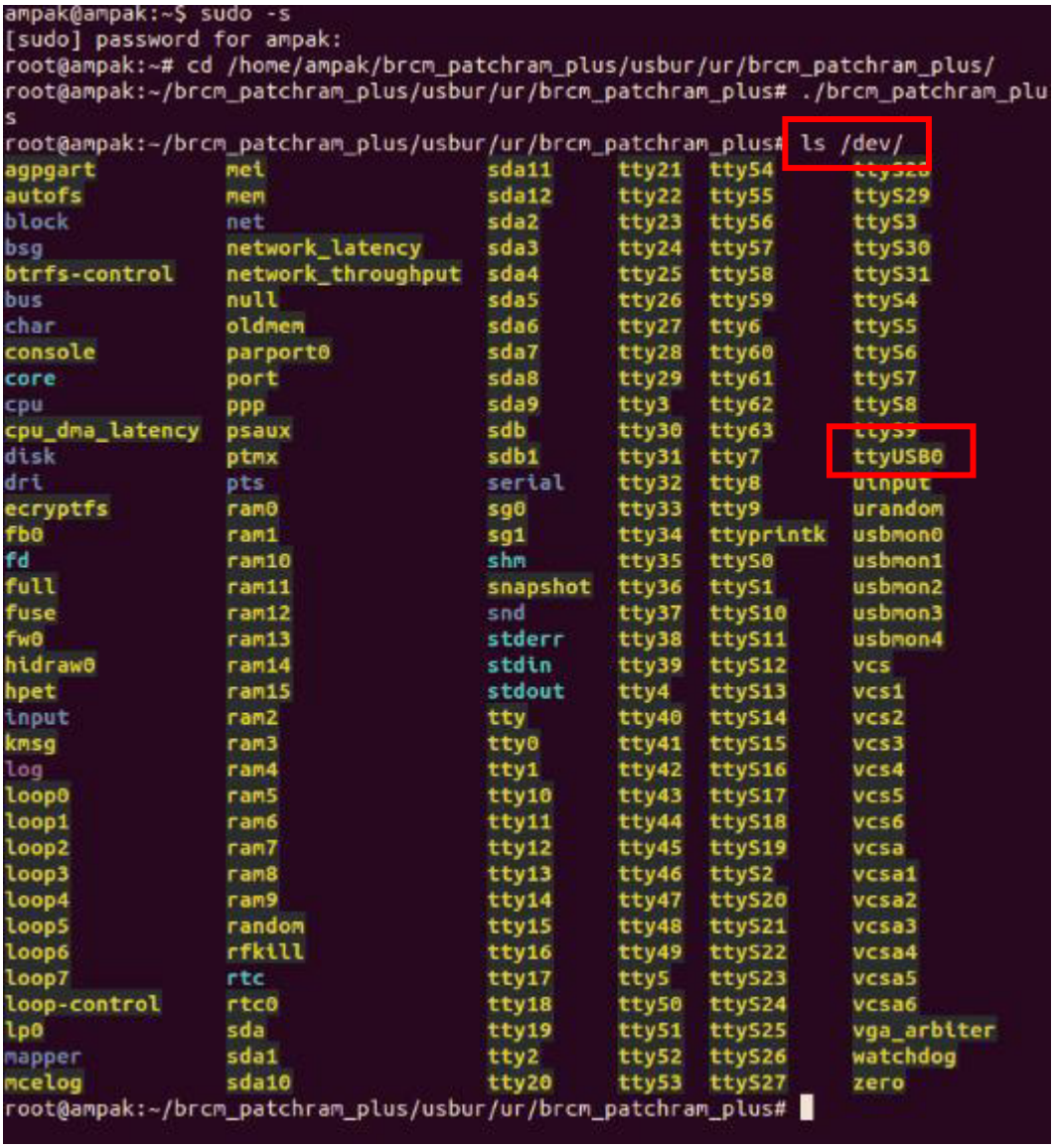
2-1. Change directory to document "brcm_patchram_plus"

```
root@ampak: ~/brcm_patchram_plus/usbur/ur/brcm_patchram_plus
ampak@ampak:~$ sudo -s
[sudo] password for ampak:
root@ampak:~# cd /home/ampak/brcm_patchram_plus/usbur/ur/brcm_patchram_plus/
root@ampak:~/brcm_patchram_plus/usbur/ur/brcm_patchram_plus#
```

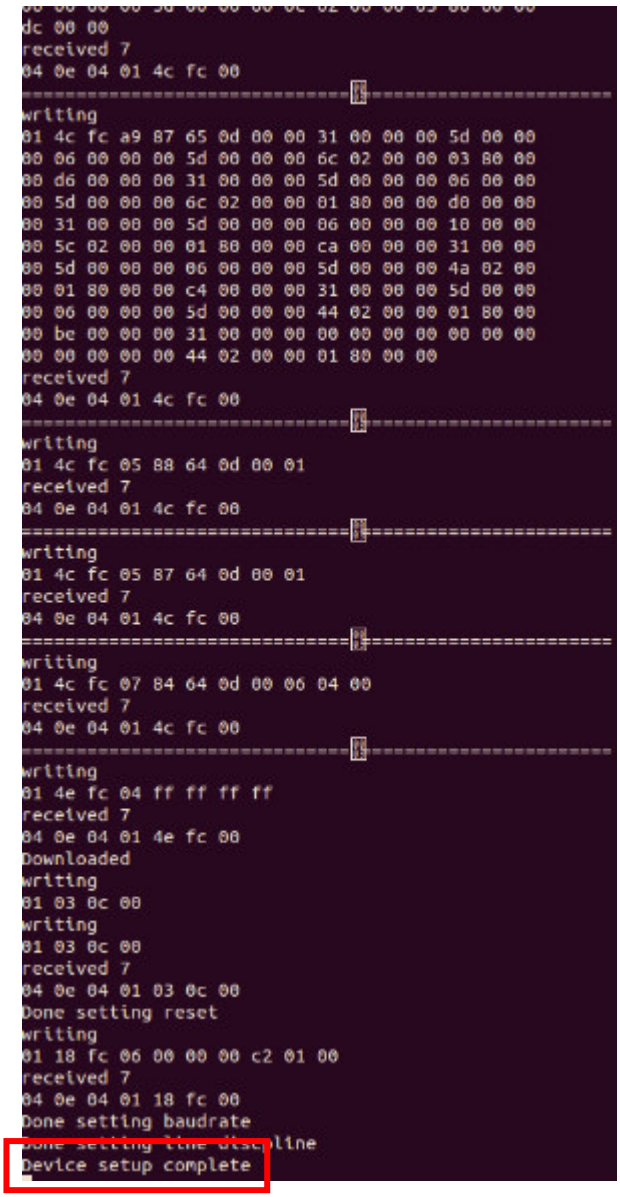
2-2. Enter "./brcm_patchram_plus".

```
root@ampak:~# cd /home/ampak/brcm_patchram_plus/usbur/ur/brcm_patchram_plus/
root@ampak:~/brcm_patchram_plus/usbur/ur/brcm_patchram_plus# ./brcm_patchram_plu
s
root@ampak:~/brcm_patchram_plus/usbur/ur/brcm_patchram_plus# ./brcm_patchram_plus
root@ampak:~/brcm_patchram_plus/usbur/ur/brcm_patchram_plus#
```

2-3. Enter "ls /dev/" and you will found the device "ttyUSB0".



3-3. Put the HCD file to the path ” /brcm_patchram_plus/ur/brcm_patchram_plus/” and enter “./brcm_patchram_plus --enable_hci --no2bytes --tosleep 200000 --baudrate 115200 --patchram bcm43438a1.hcd /dev/ttyUSB0 –d” to download firmware.


dc 00 00
received 7
04 0e 04 01 4c fc 00
writing
01 4c fc a9 87 65 0d 00 00 31 00 00 00 5d 00 00
00 06 00 00 00 5d 00 00 00 6c 02 00 00 03 80 00
00 d6 00 00 00 31 00 00 00 5d 00 00 00 06 00 00
00 5d 00 00 00 6c 02 00 00 01 80 00 00 d0 00 00
00 31 00 00 00 5d 00 00 00 06 00 00 00 10 00 00
00 5c 02 00 00 01 80 00 00 ca 00 00 00 31 00 00
00 5d 00 00 00 06 00 00 00 5d 00 00 00 4a 02 00
00 01 80 00 00 c4 00 00 00 31 00 00 00 5d 00 00
00 06 00 00 00 5d 00 00 00 44 02 00 00 01 80 00
00 be 00 00 00 31 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 44 02 00 00 01 80 00 00
received 7
04 0e 04 01 4c fc 00
writing
01 4c fc 05 88 64 0d 00 01
received 7
04 0e 04 01 4c fc 00
writing
01 4c fc 05 87 64 0d 00 01
received 7
04 0e 04 01 4c fc 00
writing
01 4c fc 07 84 64 0d 00 06 04 00
received 7
04 0e 04 01 4c fc 00
writing
01 4e fc 04 ff ff ff ff
received 7
04 0e 04 01 4e fc 00
Downloaded
writing
01 03 0c 00
writing
01 03 0c 00
received 7
04 0e 04 01 03 0c 00
Done setting reset
writing
01 18 fc 06 00 00 00 c2 01 00
received 7
04 0e 04 01 18 fc 00
Done setting baudrate
line
Device setup complete

FEDERAL COMMUNICATIONS 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 or more 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.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the 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.

RF exposure warning

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20cm 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: W2Z-02100006 "and "Contains IC: 7736B-02100006"

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an

OEM or integrator, but should not be distributed to the end user.

1) This device is intended for OEM integrators only.

2) Please see the full Grant of Equipment document for other restrictions.

Canada, Industry Canada (IC) Notices

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.

Canada, avis d'Industry Canada (IC)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has been evaluated for and shown compliant with the IC Specific Absorption Rate (“SAR”)limits when operated in portable exposure conditions.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l’appareil de sans fil est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l’appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce dispositif a été évalué pour et démontré conforme à la Taux IC d'absorption spécifique ("SAR") des limites lorsqu'il est utilisé dans des conditions d'exposition portatifs.