



THIS SPEC IS OBSOLETE

Spec No: 002-14918

Spec Title: AN214918 - INSTALLING DRIVERS FOR
COMBINED WLAN/BLUETOOTH
COMMUNICATION

Replaced by: NONE

Installing Drivers for Combined WLAN/Bluetooth Communication

Associated Part Family: CYW43242

This application note describes how to set up a CYW43242 PCB to support combined WLAN/Bluetooth wireless communication through a single virtual USB port, and includes information on running BlueTool™ scripts. It is intended for application, software, and test engineers.

1 About This Document

1.1 Purpose and Audience

This application note describes how to set up a CYW43242 PCB to support combined WLAN/Bluetooth wireless communication through a single virtual USB port, and includes information on running BlueTool™ scripts. It is intended for application, software, and test engineers.

1.2 Cypress Part Numbering Scheme

Cypress is converting the acquired IoT part numbers from Broadcom to the Cypress part numbering scheme. Due to this conversion, there is no change in form, fit, or function as a result of offering the device with Cypress part number marking. The table provides Cypress ordering part number that matches an existing IoT part number.

Table 1. Mapping Table for Part Number between Broadcom and Cypress

Broadcom Part Number	Cypress Part Number
BCM43242	CYW43242

1.3 Acronyms and Abbreviations

In most cases, acronyms and abbreviations are defined on first use. For a more complete list of acronyms and other terms used in Cypress documents, go to: <http://www.cypress.com/glossary>.

2 IoT Resources

Cypress provides a wealth of data at <http://www.cypress.com/internet-things-iot> to help you to select the right IoT device for your design, and quickly and effectively integrate the device into your design. Cypress provides customer access to a wide range of information, including technical documentation, schematic diagrams, product bill of materials, PCB layout information, and software updates. Customers can acquire technical documentation and software from the Cypress Support Community website (<http://community.cypress.com/>).

3 Overview

The release notes for the WLAN and Bluetooth software packages listed under [Software Requirements](#) include instructions for installing the software on the host PC. The procedures in this document assume that the WLAN and Bluetooth packages are already loaded on the host PC.

3.1 Hardware Requirements

Minimum requirements for the host computer:

- CPU: Pentium 4
- RAM: 512 MB
- Hard drive: 5 GB of free space

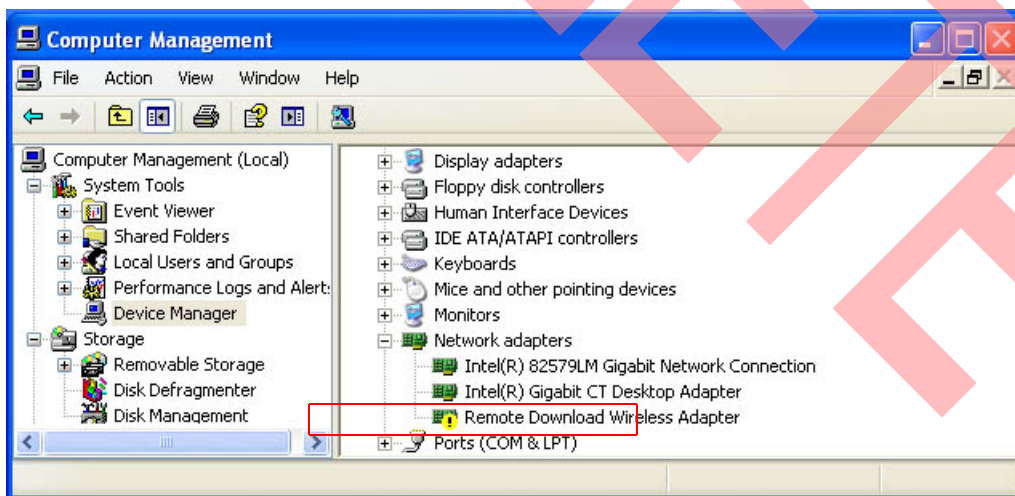
3.2 Software Requirements

- Windows XP or later
- AARDVARK-6.37.114.20-Win-MFGTools: Drivers for a WLAN-only USB virtual port or a combined WLAN/Bluetooth USB virtual port, and a command line interface for programming the Card Information System (CIS) tuple on the CYW43242 PCB.
- BT_Package_For_ODMs_VER_3.zip: Bluetooth driver, BlueTool™ test software (version 1.8.0.8), and test scripts.
- ActivePerl (required to run BlueTool test scripts).

4 Programming the CIS Tuple

A specific CIS tuple (0x800364010A) must be programmed into CYW43242 OTP memory before installing the combined WLAN/Bluetooth USB driver files. This requirement applies to both “blank” CYW43242 PCBs and CYW43242 PCBs that are programmed with a different tuple. Follow the steps below to program the CIS tuple.

1. Plug the CYW43242 PCB into a USB port on the host computer.
2. On the host PC desktop, right-click the **Computer** icon and select **Properties** to open the Control Panel Home window.
3. In the Control Panel Home window, click **Device Manger** to open the **Device Manager** window. If the CIS tuple is not programmed, or is programmed with a tuple other than 0x800364010A, the CYW43242 PCB will be enumerated as **Remote Download Wireless Adapter** within the **Network adapters** group and will be tagged with an exclamation mark.



4. Right-click **Remote Download Wireless Adapter** and click **Update Driver Software**. The **Update Driver Software** window will open.
5. In the **Update Driver Software** window, click **Browse my computer for driver software** and navigate to the AARDVARK-6.37.114.20-Win-MFGTools folder.

6. In the AARDVARK-6.37.114.20-Win-MFGTools folder, select the bcmwlhigh5.inf file and click **OK**.
7. Open a command window and navigate to the AARDVARK-6.37.114.20-Win-MFGTools folder. Enter the following command:

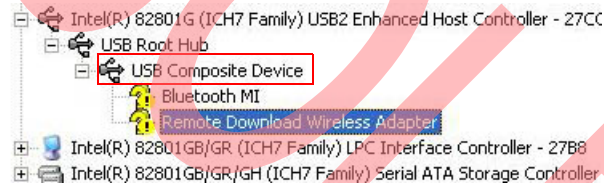
```
wl wrvar usbdesc_composite=0x010a
```

The CYW43242 PCB is now set up to load drivers for simultaneous WLAN/Bluetooth communication through a single USB virtual port (see [Installing the WLAN/Bluetooth Driver Files on page 3](#)).

5 Installing the WLAN/Bluetooth Driver Files

The procedure below describes how to install the WLAN and Bluetooth driver files to create a composite USB virtual port that supports simultaneous WLAN/Bluetooth communications.

1. Make sure the CYW43242 PCB is not plugged into the host PC.
2. On the host PC, go to Windows\System32\Drivers and delete the following WLAN and Bluetooth driver files:
 - bcmwlhigh5.sys
 - btwsecfl.sys
 - btwusb.sys
3. Go to the Windows\inf folder and delete all INF files (oem*.inf).
4. Plug the CYW43242 PCB into the host PC.
5. On the host PC desktop, right-click the **Computer** icon and select **Properties** to open the Control Panel Home window.
6. In the Control Panel Home window, click **Device Manager** to open the Device Manager window. Scroll down in the Device Manager window to verify that the device has been enumerated as **USB Composite Device**.



7. If the Device Manager window shows **Broadcom 802.11n Wireless USB Adapter** and **CYW43242** with an exclamation mark (!) next to them, right-click each item and select **Uninstall**.
8. After these items are uninstalled, unplug the CYW43242 PCB from the host PC and plug it back in to trigger enumeration of the device. Check the Device Manager window again to verify that the CYW43242 PCB has been enumerated as a USB composite device.
9. Right-click **Remote Download Wireless Adapter** and click **Update Driver Software**. The Update Driver Software window will open.
10. In the Update Driver Software window, click **Browse my computer for driver software**. Navigate to the AARDVARK-6.37.114.20-Win-MFGTools folder and select the bcmwlhigh5.inf file, then click **OK** to load the new driver.
11. Right-click **Bluetooth MI** and click **Update Driver Software**. The Update Driver Software window will open.
12. In the Update Driver Software window, click **Browse my computer for driver software**. Navigate to the BT_Package_For_ODMs_VER_3\Drivers folder and select the btwusb.inf file, then click **OK** to load the new driver.

The host PC is now ready to accept simultaneous WLAN and Bluetooth communication through a single USB virtual port.

Note: After updating the Bluetooth drivers it is no longer necessary to run “enable/disable” batch files before plugging in or unplugging the CYW43242 PCB.

6 Running BlueTool Scripts

The Bluetooth update package (BT_Package_For_ODMs_VER_3) includes the following BlueTool scripts:

- Download firmware to sflash
- Read firmware version
- Write Bluetooth address
- Read Bluetooth address

ActivePerl must be installed on the host PC to support these scripts. The scripts are executed through a command line interface. The example below shows the command line structure for downloading firmware to sflash:

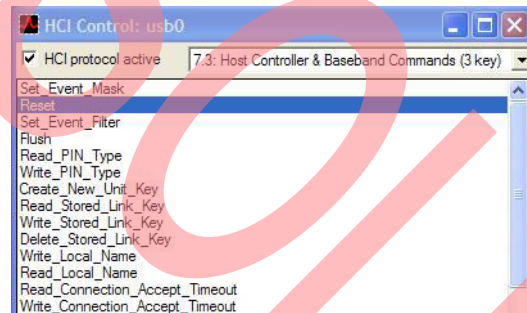
```
perl patchdl.pl usb0 <filename.hex> SFLASH
```

As shown in the example above, the firmware file must be in .hex format. If the firmware file is in .cgr format, use BlueTool to convert it to .hex format.

Note: The hex file must use Bluetooth address 0xFFFFFFFFFFFF; otherwise the BD Address cannot be overwritten by BlueTool.

Note: Running any of the scripts above will cause BlueTool to open. Open a BlueTool log window to verify whether a given script executed properly.

Note: Close the HCI Control window before running scripts. Leaving the HCI window open may prevent the WLAN driver from loading properly



7 References

The references in this section may be used in conjunction with this document.

	Document (or Item) Name	Number	Source
[1]	Single Chip IEEE 802.11 a/b/g/n 2x2 MAC/Baseband/Radio with Integrated Bluetooth 4.0 + HS	43242-DS1xx-R	Cypress Developer Community

Document History Page

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Rev.	ECN No.	Orig. of Change	Submission Date	Description of Change
**	-	-	01/03/2014	43242-AN300-R Initial release.
*A	5461480	UTSV	10/04/2016	Updated About This Document on page 1 : Added Cypress Part Numbering Scheme on page 1 . Updated to Cypress template.
*B	5840362	AESATMP8	08/01/2017	Updated logo and Copyright.
*C	6439045	JPCH	01/11/2019	Obsolete document. Completing Sunset Review.

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Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709

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