

Low-Energy Bluetooth RF Testing Using BlueTool

Associated Part Family: CYW20738

This document contains detailed information on using BlueTool to perform RF testing on Bluetooth Low Energy (BLE) devices.

1 Introduction

This document contains detailed information on using BlueTool to perform RF testing on Bluetooth Low Energy (BLE) devices.

1.1 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
BCM20738	CYW20738

1.2 Acronyms and Abbreviations

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

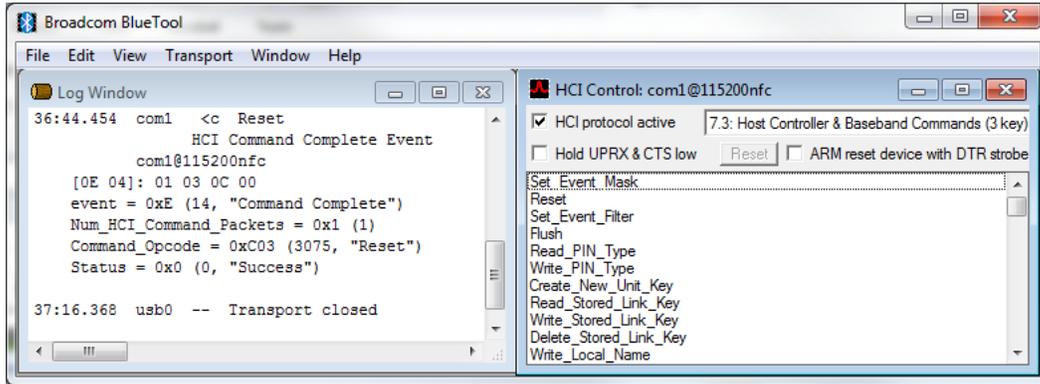
2 IoT Resources

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/>).

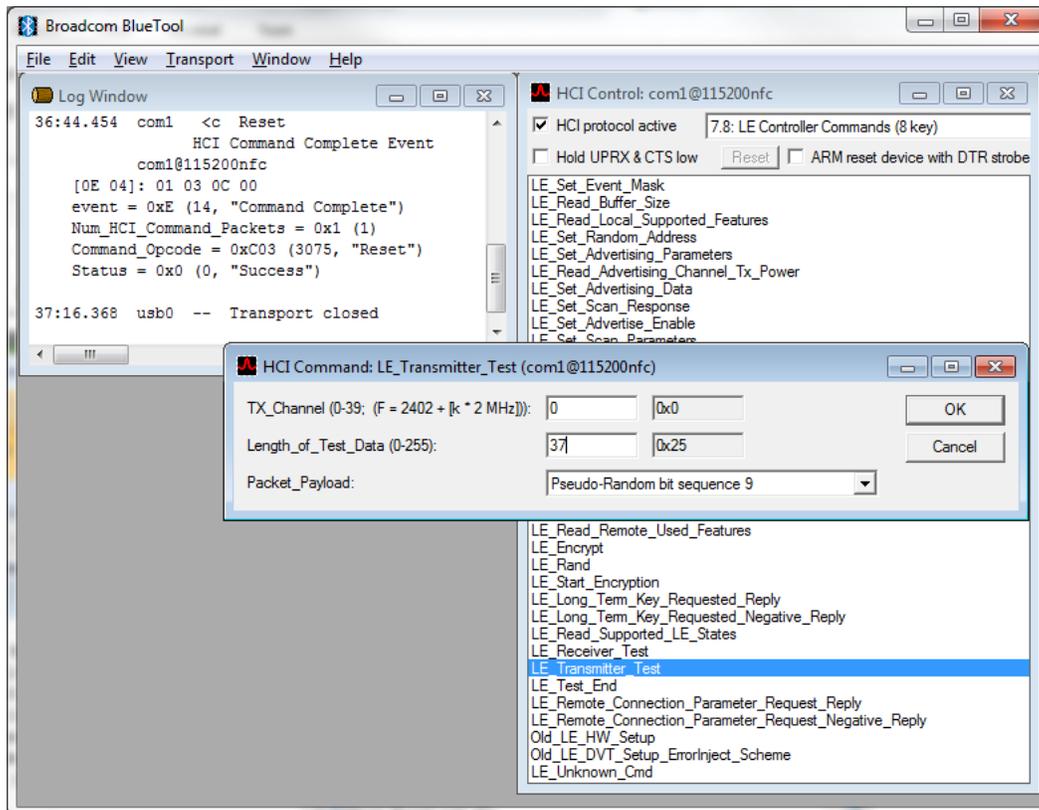
3 Low-Energy RF Testing

3.1 Performing a Low-Energy Transmit Test

1. Under HCI Control, select **7.3: Host Controller & Baseband Commands (3 key)**, and then double-click **Reset** to reset the DUT.



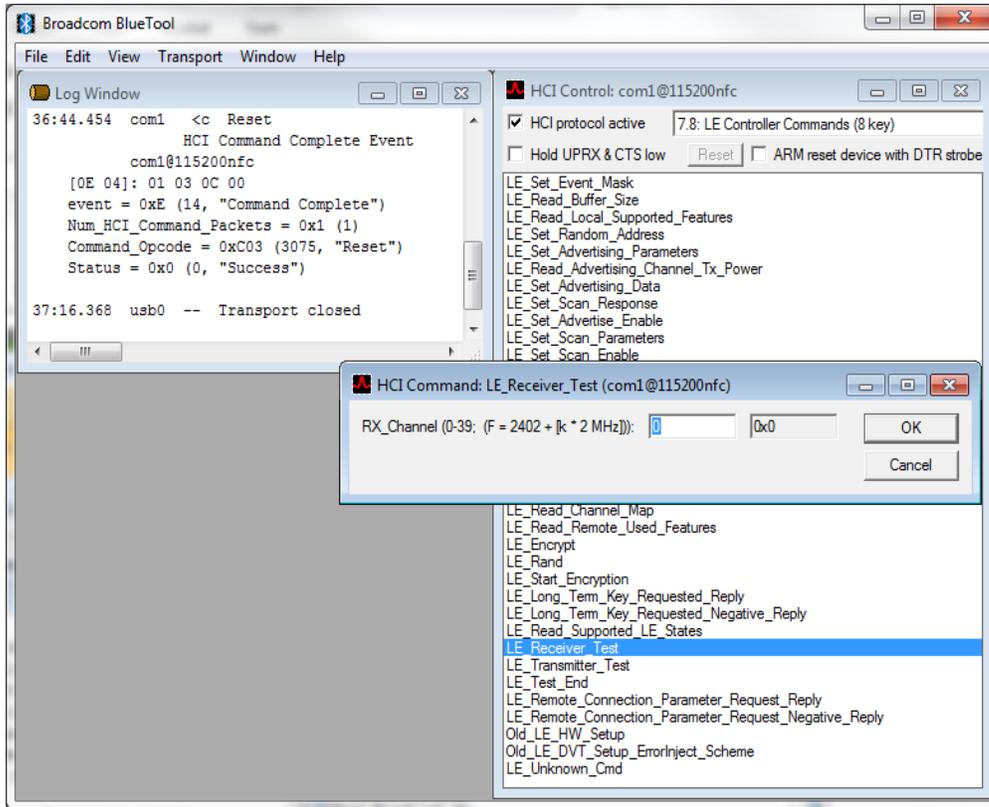
2. Select **7.8: LE Controller Commands (8 key)**, and then double-click **LE_Transmitter_Test**.
3. In HCI Command: LE_Receiver_Test window, enter the channel number (k) as indicated by TX_Channel (0-39; $F=2402+[k*2\text{MHz}]$).



4. Enter number of bytes (37) per packet as indicated by Length_of_Test_Data (0-37).
5. In the Packet_Payload field, select the packet type.
6. Click **OK**.
The tester analyzes the data, and then outputs the results.
7. Repeat [Step 1](#) through [Step 6](#) to make the next transmit test measurement.

3.2 Perform a Low-Energy Receive Test

1. Under HCI Control, select **7.3: Host Controller & Baseband Commands (3 key)**, and then double-click **Reset** to reset the DUT.
2. Select **7.8: LE Controller Commands (8 key)**, and then double-click select **LE_Receiver_Test**.
3. Enter the channel number (k) as indicated by TX_Channel (0-39; (F=2402+[k*2MHz])).

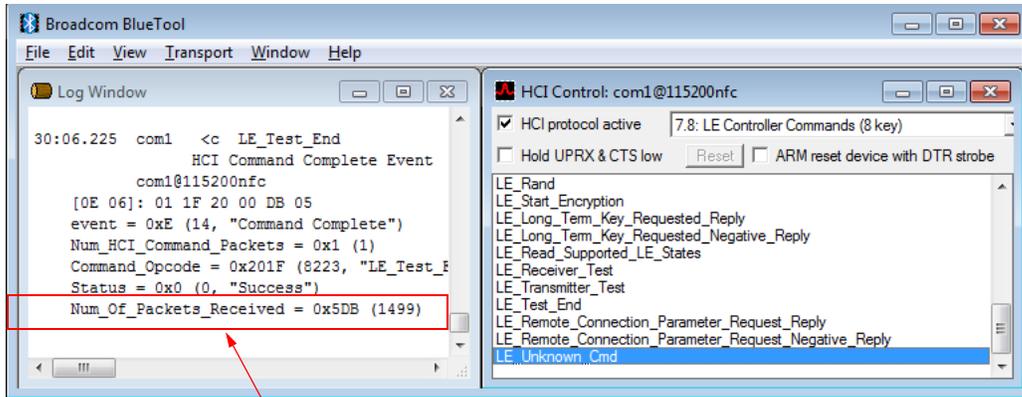


4. Click **OK**.

Note: Make sure the tester transmits the number of packets (1500 packets as specified) and the level appropriately.

5. After the test completes the transmission, under HCI Control, select **7.8: LE Controller Commands (8 key)**, and then double-click **LE_Test_End**.

The number of good packets received is reported in the log window.



Good Packets Received

- Repeat Step 1 through Step 5 to make the next receive test measurement.

Document History Page

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Rev.	ECN No.	Orig. of Change	Submission Date	Description of Change
**	-	-	03/18/2014	20738-AN300-R Initial release
*A	5452409	UTSV	09/28/2016	Updated in Cypress template
*B	5824556	AESATMP8	07/19/2017	Updated logo and Copyright.

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