

LPRF BLE HCITester

Bluetooth Low Energy Wiki Main Page (<http://processors.wiki.ti.com/index.php/Category:BluetoothLE>)

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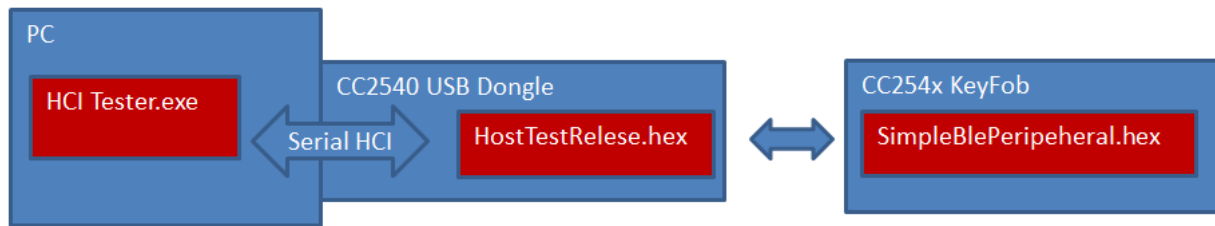
HCI Tester

HCI Tester is a Windows PC scripting tool which will send/receive serial HCI packets to CC254X or CC2640/CC2650. This can be used to control a supported BLE device which is programmed with HostTestRelease hex file.

HCI Tester will work with the following configurations

- PC to CC2540 USB Dongle
- PC to CC254X EM on SmartRF board (over USB to Serial Cable)
- PC to CC254X with UART pins connected
- PC to CC2640 with UART pins connected (e.g., CC2650DK with COM port exposed via USB JTAG connection)

Overview



Program USB Dongle and KeyFob

See QuickStart guide on how to program USB Dongle and KeyFob. [QuickStartGuide \(http://www.ti.com/litv/pdf/swru342\)](http://www.ti.com/litv/pdf/swru342)

A prebuilt HostTestRelease hex can be found in the accessories folder.

```
<install>/BLE-CC254x-x.x.x/Accessories/HexFiles/CC2540_USBdongle_HostTestRelease_All.hex
```

A prebuilt SimpleBlePeripheral hex can be found in the accessories folder.

```
<install>/BLE-CC254x-x.x.x/Accessories/HexFiles/CC2540_SimpleBlePeripheral.hex
```

Download, Install and Configure HCI Tester

There is no official support for this tool, but you can download it from the [WILINK-BT_WIFI-WIRELESS_TOOLS \(http://www.ti.com/tool/wilink-bt_wifi-wireless_tools\)](http://www.ti.com/tool/wilink-bt_wifi-wireless_tools) page.

Once installed, you will need to configure HCITester to point to the latest .XML library file. This file contains all of the supported HCI commands. Click on the middle icon in the Command Library pane to change HCI libraries.

The following are the HCITester library files for the respective BLE wireless MUCs and supported protocol stack versions:

CC254x:

[BLEv4.0 (<http://processors.wiki.ti.com/images/archive/c/c5/20170119182836%21HCITesterXML.zip>)]

CC26xx:

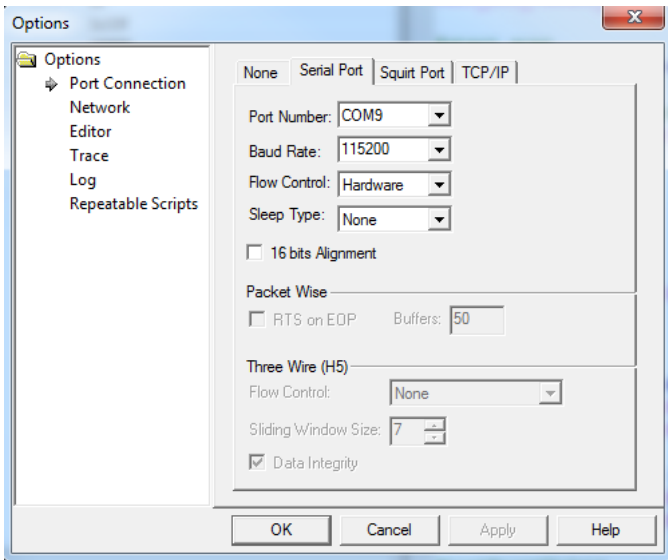
[BLE Stack versions 2.x, 3.x, 5.0.x (<http://processors.wiki.ti.com/images/archive/c/c5/20171128003351%21HCITesterXML.zip>)]

[BLE5 Stack versions 5.1.x+ (<http://processors.wiki.ti.com/images/c/c5/HCITesterXML.zip>)]

Running HCI Tester

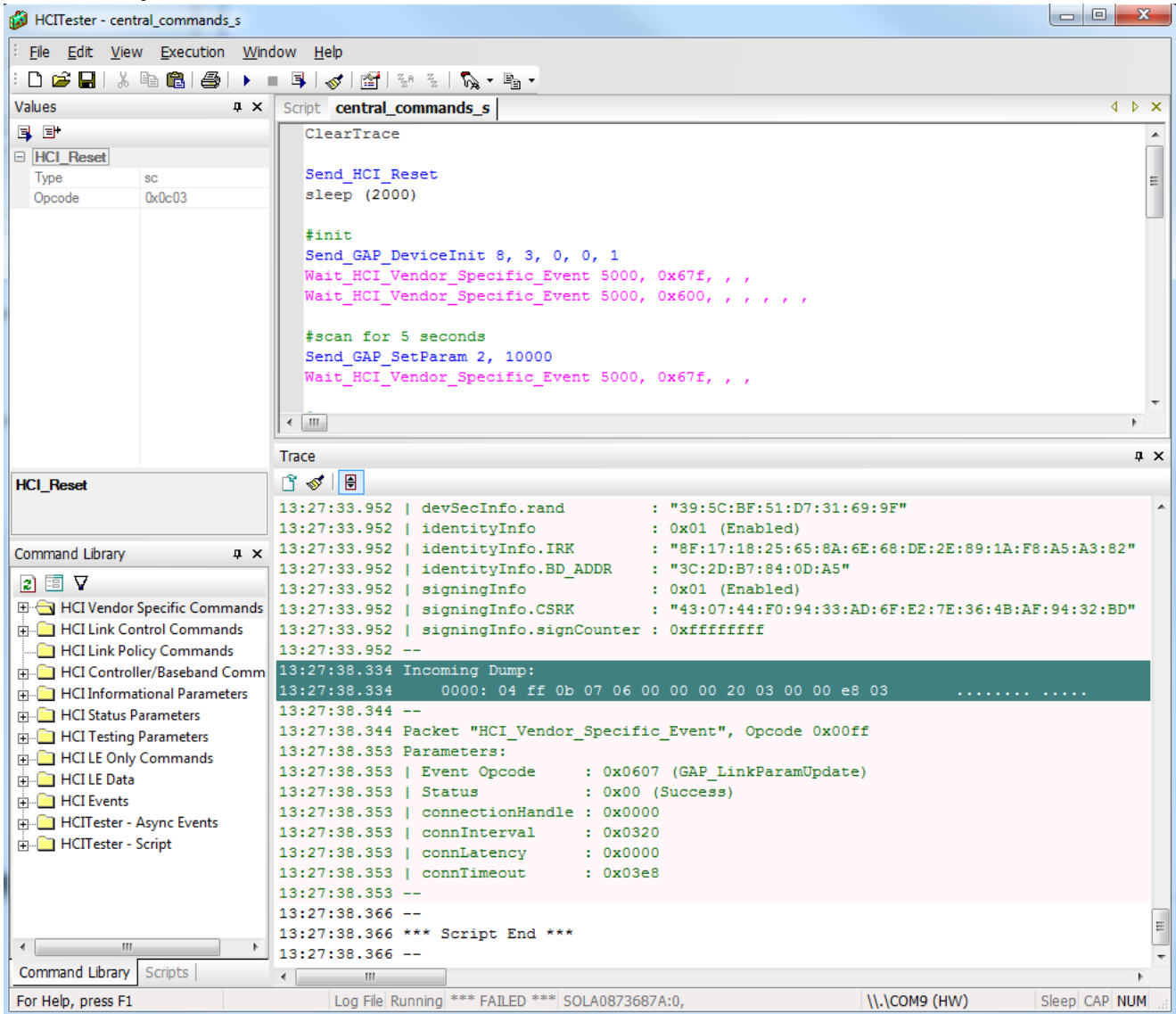
Once configured, go to menu and select com port.

Note for CC2640: Use "Flow Control" set to 'None' in the Serial Port setup menu.



Download this script file which contains the central commands to discover, connect and pair with SimpleBlePeripheral running on the keyFob.
 File:Central commands sbp.zip

HCITester with script loaded.



Advertise and Connect

If using keyFob loaded with SimpleBlePeripheral, advertise by pressing right button. After this, press the "go" button on HCITester to run the script.


```

13:27:21.415 0000: 04 ff 06 7f 06 00 04 fe 00 .....
13:27:21.429 --
13:27:21.430 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:21.443 Parameters:
13:27:21.443 | Event Opcode : 0x067f (CommandStatus)
13:27:21.443 | Status : 0x00 (SUCCESS)
13:27:21.443 | opCode : 0xfe04 (GAP_DeviceDiscoveryRequest)
13:27:21.443 | dataLen : 0x00
13:27:21.443 --
13:27:21.576 Incoming Dump:
13:27:21.577 0000: 04 ff 14 0d 06 00 00 00 06 b6 d6 e3 14 33 88 bb 07 .....k...3..
13:27:21.577 0010: 02 01 06 03 02 f0 ff .....
13:27:21.600 --
13:27:21.600 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:21.610 Parameters:
13:27:21.610 | Event Opcode : 0x060d (GAP_DeviceInformation)
13:27:21.610 | Status : 0x00 (SUCCESS)
13:27:21.610 | eventTypes : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:21.610 | addrType : 0x00 (ADDRTYPE_PUBLIC)
13:27:21.610 | addr : "88:33:14:E3:D6:6B"
13:27:21.610 | rssi : -69
13:27:21.610 | dataLen : 0x07
13:27:21.610 | dataField : "02:01:06:03:02:F0:FF"
13:27:21.610 --
13:27:24.016 Incoming Dump:
13:27:24.016 0000: 04 ff 14 0d 06 00 00 00 a5 0d 84 b7 2d 3c d5 07 .....-<..
13:27:24.016 0010: 02 01 06 03 02 f0 ff .....
13:27:24.042 --
13:27:24.042 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:24.063 Parameters:
13:27:24.063 | Event Opcode : 0x060d (GAP_DeviceInformation)
13:27:24.063 | Status : 0x00 (SUCCESS)
13:27:24.063 | eventTypes : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:24.063 | addrType : 0x00 (ADDRTYPE_PUBLIC)
13:27:24.063 | addr : "3C:2D:B7:84:0D:A5"
13:27:24.063 | rssi : -43
13:27:24.063 | dataLen : 0x07
13:27:24.063 | dataField : "02:01:06:03:02:F0:FF"
13:27:24.063 --
13:27:28.602 Incoming Dump:
13:27:28.602 0000: 04 ff 28 0d 06 00 00 01 de bc 22 2d 9f c7 a7 1b ..(....."-....
13:27:28.602 0010: 02 01 06 11 06 ba 56 89 a6 fa bf a2 bd 01 46 7d .....V.....F)
13:27:28.602 0020: 0e 56 63 ab ad 05 16 0a 18 08 04 nVc.....
13:27:28.612 --
13:27:28.612 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:28.627 Parameters:
13:27:28.627 | Event Opcode : 0x060d (GAP_DeviceInformation)
13:27:28.627 | Status : 0x00 (SUCCESS)
13:27:28.627 | eventTypes : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:28.627 | addrType : 0x01 (ADDRTYPE_STATIC)
13:27:28.627 | addr : "C7:9F:2D:22:BC:DE"
13:27:28.627 | rssi : -89
13:27:28.627 | dataLen : 0x1b
13:27:28.627 | dataField : "02:01:06:11:06:BA:56:89:A6:FA:BF:A2:BD:01:46:7D:6E:56:63:AB:AD:05:16:0A:18:08:04"
13:27:28.627 --
13:27:31.415 Incoming Dump:
13:27:31.415 0000: 04 ff 1c 01 06 00 03 00 00 06 b6 d6 e3 14 33 88 00 .....k...3..
13:27:31.415 0010: 00 a5 0d 84 b7 2d 3c 00 01 de bc 22 2d 9f c7 .....-<....."-..
13:27:31.425 --
13:27:31.425 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:31.434 Parameters:
13:27:31.434 | Event Opcode : 0x0601 (GAP_DeviceDiscovery)
13:27:31.434 | Status : 0x00 (SUCCESS)
13:27:31.434 | numDevs : 0x03
13:27:31.434 | eventType : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:31.434 | addrType : 0x00 (ADDRTYPE_PUBLIC)
13:27:31.434 | addr : "88:33:14:E3:D6:6B"
13:27:31.434 | eventType : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:31.434 | addrType : 0x00 (ADDRTYPE_PUBLIC)
13:27:31.434 | addr : "3C:2D:B7:84:0D:A5"
13:27:31.434 | eventType : 0x00 (GAP_ADRPT_ADV_IND - Connectable undirected)
13:27:31.434 | addrType : 0x01 (ADDRTYPE_STATIC)
13:27:31.434 | addr : "C7:9F:2D:22:BC:DE"
13:27:31.434 --
13:27:31.444 --
13:27:31.444 Packet "GAP_EstablishLinkReq", Opcode 0xfe09
13:27:31.445 Parameters:
13:27:31.445 | highDutyCycle : 0 (Disabled)
13:27:31.445 | whiteList : 0 (Disabled)
13:27:31.445 | addrTypePeer : 0 (ADDRTYPE_PUBLIC)
13:27:31.445 | peerAddr : "3C:2D:B7:84:0D:A5"
13:27:31.445 --
13:27:31.445 Outgoing Dump:
13:27:31.445 0000: 01 09 fe 09 00 00 00 a5 0d 84 b7 2d 3c .....-<
13:27:31.451 Incoming Dump:
13:27:31.451 0000: 04 ff 06 7f 06 00 09 fe 00 .....
13:27:31.463 --
13:27:31.464 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:31.476 Parameters:
13:27:31.476 | Event Opcode : 0x067f (CommandStatus)
13:27:31.476 | Status : 0x00 (SUCCESS)
13:27:31.476 | opCode : 0xfe09 (GAP_EstablishLinkReq)
13:27:31.476 | dataLen : 0x00
13:27:31.476 --
13:27:31.614 Incoming Dump:
13:27:31.614 0000: 04 ff 13 05 06 00 00 a5 0d 84 b7 2d 3c 00 00 50 .....-<.P
13:27:31.614 0010: 00 00 00 a0 07 00 .....
13:27:31.624 --
13:27:31.624 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:31.634 Parameters:
13:27:31.634 | Event Opcode : 0x0605 (GAP_LinkEstablished)
13:27:31.634 | Status : 0x00 (SUCCESS)
13:27:31.634 | Device Address Type : 0x00 (ADDRTYPE_PUBLIC)
13:27:31.634 | Device Address : "3C:2D:B7:84:0D:A5"
13:27:31.634 | connectionHandle : 0x0000
13:27:31.634 | connInterval : 0x0050
13:27:31.634 | connLatency : 0x0000
13:27:31.634 | connTimeout : 0x07d0
13:27:31.634 | clockAccuracy : 0x00
13:27:31.634 --
13:27:31.643 --
13:27:31.643 Packet "GAP_Authenticate", Opcode 0xfe0b

```

```

13:27:31.644 Parameters:
13:27:31.643 | connectionHandle      : 0
13:27:31.643 | secReq.ioCaps         : 0x03 (NoInputNoOutput)
13:27:31.643 | secReq.oobAvailable   : 0 (Disabled)
13:27:31.644 | secReq.oob            : "4d:9f:88:5a:6e:03:12:fe:00:00:00:00:00:00:00:00"
13:27:31.644 | secReq.authReq        : 0x00
13:27:31.644 | secReq.maxEncKeySize  : 16
13:27:31.644 | secReq.keyDist        : 63 (sEncKey|sIdKey|sSign|mEncKey|mIdKey|mSign)
13:27:31.644 | pairReq.Enable        : 0 (Disabled)
13:27:31.644 | pairReq.ioCaps        : 0x03 (NoInputNoOutput)
13:27:31.644 | pairReq.oobDataFlag   : 0 (Disabled)
13:27:31.644 | pairReq.authReq       : 0x00
13:27:31.644 | pairReq.maxEncKeySize : 16
13:27:31.644 | pairReq.keyDist       : 63 (sEncKey|sIdKey|sSign|mEncKey|mIdKey|mSign)
13:27:31.644 --
13:27:31.644 Outgoing Dump:
13:27:31.644 0000: 01 0b fe 1d 00 00 03 00 4d 9f 88 5a 6e 03 12 fe .....M.Zn...
13:27:31.644 0010: 00 00 00 00 00 00 00 00 10 3f 00 03 00 00 10 .....?.....
13:27:31.644 0020: 3f .....?
13:27:31.647 Incoming Dump:
13:27:31.647 0000: 04 ff 06 7f 06 00 0b fe 00 .....
13:27:31.658 --
13:27:31.658 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:31.667 Parameters:
13:27:31.667 | Event Opcode   : 0x067f (CommandStatus)
13:27:31.667 | Status         : 0x00 (SUCCESS)
13:27:31.667 | opCode        : 0xfe0b (GAP_Authenticate)
13:27:31.667 | dataLen       : 0x00
13:27:31.667 --
13:27:33.922 Incoming Dump:
13:27:33.922 0000: 04 ff 6a 0a 06 00 00 00 01 10 ce e8 5c d6 d1 ..j.....\..
13:27:33.922 0010: 39 59 df e1 79 86 0b 28 60 2a 9e 5d fa e3 81 56 9Y..y.([]*)...V
13:27:33.922 0020: c8 a1 7c 62 7b 01 10 13 c2 a5 8c 62 78 de 2b b9 ..|b{.....bx.+
13:27:33.922 0030: 5a a7 71 92 3b 0d ef c6 d0 39 5c bf 51 d7 31 69 Z.q;....9\Q.li
13:27:33.922 0040: 9f 01 8f 17 18 25 65 8a 6e 68 de 2e 89 1a f8 a5 .....%e.nh.....
13:27:33.922 0050: a3 82 a5 0d 84 b7 2d 3c 01 43 07 44 f0 94 33 ad .....-<.C.D..3.
13:27:33.922 0060: 6f e2 7e 36 4b af 94 32 bd ff ff ff ff .....o."6K..2....
13:27:33.940 --
13:27:33.940 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:33.952 Parameters:
13:27:33.952 | Event Opcode   : 0x060a (GAP_AuthenticationComplete)
13:27:33.952 | Status         : 0x00 (SUCCESS)
13:27:33.952 | connectionHandle : 0x0000
13:27:33.952 | authState      : 0x00
13:27:33.952 | securityInfo   : 0x01 (Enabled)
13:27:33.952 | securityInfo.LTKsize : 0x10
13:27:33.952 | securityInfo.LTK : "CE:E8:5C:D6:D1:39:59:DF:E1:79:86:0B:28:60:2A:9E"
13:27:33.952 | securityInfo.DIV : 0xfa5d
13:27:33.952 | securityInfo.rand : "E3:81:56:C8:A1:7C:62:7B"
13:27:33.952 | devSecInfo    : 0x01 (Enabled)
13:27:33.952 | devSecInfo.LTKsize : 0x10
13:27:33.952 | devSecInfo.LTK : "13:C2:A5:8C:62:78:DE:2B:B9:5A:A7:71:92:3B:0D:EF"
13:27:33.952 | devSecInfo.DIV : 0xd0e6
13:27:33.952 | devSecInfo.rand : "39:5C:BF:51:D7:31:69:9F"
13:27:33.952 | identityInfo   : 0x01 (Enabled)
13:27:33.952 | identityInfo.IRK : "8F:17:18:25:65:8A:6E:68:DE:2E:89:1A:F8:A5:A3:82"
13:27:33.952 | identityInfo.BD_ADDR : "3C:2D:B7:84:0D:A5"
13:27:33.952 | signingInfo    : 0x01 (Enabled)
13:27:33.952 | signingInfo.CSRK : "43:07:44:F0:94:33:AD:6F:E2:7E:36:4B:AF:94:32:BD"
13:27:33.952 | signingInfo.signCounter : 0xffffffff
13:27:33.952 --
13:27:38.334 Incoming Dump:
13:27:38.334 0000: 04 ff 0b 07 06 00 00 00 20 03 00 00 e8 03 .....
13:27:38.344 --
13:27:38.344 Packet "HCI_Vendor_Specific_Event", Opcode 0x00ff
13:27:38.353 Parameters:
13:27:38.353 | Event Opcode   : 0x0607 (GAP_LinkParamUpdate)
13:27:38.353 | Status         : 0x00 (Success)
13:27:38.353 | connectionHandle : 0x0000
13:27:38.353 | connInterval   : 0x0320
13:27:38.353 | connLatency    : 0x0000
13:27:38.353 | connTimeout    : 0x03e8
13:27:38.353 --
13:27:38.366 --
13:27:38.366 *** Script End ***
13:27:38.366 --
    
```

<p>1. switchcategory:MultiCore=</p> <ul style="list-style-type: none"> For technical support on MultiCore devices, please post your questions in the C6000 MultiCore Forum For questions related to the BIOS MultiCore SDK (MCSDK), please use the BIOS Forum <p>Please post only comments related to the article LPRF BLE HCITester here.</p>	<p>Keystone=</p> <ul style="list-style-type: none"> For technical support on MultiCore devices, please post your questions in the C6000 MultiCore Forum For questions related to the BIOS MultiCore SDK (MCSDK), please use the BIOS Forum <p>Please post only LPRF BLE HCITester comments related to the article LPRF BLE HCITester here.</p>	<p>C2000=For DaVinci=For technical support on the C2000 please post your questions on The C2000 Forum. Please post only comments about the article LPRF BLE HCITester here.</p>	<p>MSP430=For OMAP35x=For technical support on MSP430 please post your questions on The MSP430 Forum. Please post only comments about the article LPRF BLE HCITester here.</p>	<p>OMAPL1=For MAVRK=For technical support on OMAP please post your questions on The OMAP Forum. Please post only comments about the article LPRF BLE HCITester here.</p>	<p>su yo htt Ple coi art HC }} Toolbox Forum. Please post only comments about the article LPRF BLE HCITester here.</p>
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