## HCI API

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# **Chapter 1**

# **Module Documentation**

# 1.1 Host Controller Interface (HCI)

#### **Modules**

- · Generic HCI Definitions
- · HCI Initialization, Regisration, Reset
- · HCI Command Interface
- · HCI Optimization Interface
- HCI Event Interface
- · HCI ACL Data Interface

# 1.1.1 Detailed Description

# 1.1.2 Introduction

The HCI subsystem implements the host-controller interface specification. This specification defines commands, events, and data packets sent between a Bluetooth Low Energy protocol stack on a host and a link layer on a controller.

The HCI API is optimized to be a thin interface layer for a single-chip system. It is configurable for either a single-chip system or traditional system with wired HCI.

This configurability is accomplished through a layered implementation. A routing layer can be configured for either a single-chip system or wired HCI. A transport and driver layer below the routing layer can be configured for different wired transports such as UART or USB.

HCI also contains certain configurable initialization features which are executed as part of the stack initialization.

For full API, see Generic HCI Definitions

#### 1.1.2.1 Overview

This page describes the API for the *Host Controller Interface* (HCI) layer of Packetcraft's Bluetooth Low Energy protocol stack.

This API is used by the Bluetooth Low Energy stack to communicate with a Bluetooth Low Energy controller or link layer. Traditionally, HCI is a message passing interface consisting of command and event messages defined by the Bluetooth specification.

The Bluetooth specification defines the HCI messages and parameters. Rather than repeat that information here, this document describes how details of the API implementation differ from the *Bluetooth Core Specification*.

### 1.1.2.2 HCI Topologies

The different HCI topologies for a single-chip system and a traditional stack with HCI are shown below in Figure 2.

In a single-chip system the HCI layer mainly serves two purposes. First, it implements a message passing interface between the stack and the link layer. Second, it translates the HCI API used by the stack (as defined in this document) to the API used by the link layer.

In a traditional stack with HCI, the HCI layer serves several purposes. It implements a message passing interface between the stack and the wired transport. It builds and parses byte-oriented messages for transmission on the wired transport. It also implements a transport-specific driver to send and receive data on the wired transport.

There are also differences in the data flow. In a traditional stack, the HCI layer also implements handling of transmit path data flow and processing of HCI Number of Completed Packets events. In a single-chip system the HCI layer adapts the data path interface required by the stack to the link layer's data path.

### 1.1.2.3 Basic Data Types

The Bluetooth HCl specification defines parameters in terms of octets. These octets map to integer data types as shown below:

| Octets        | Stack Data Types                      |  |
|---------------|---------------------------------------|--|
| 1 Octet       | int8_t or uint8_t                     |  |
| 2 Octets      | uint16_t                              |  |
| 3 or 4 Octets | uint32_t                              |  |
| > 4 Octets    | uint8_t array or other data structure |  |

The following type is used for the Bluetooth device address.

| Type   | Name        |  |
|--------|-------------|--|
| uint8← | bdAddr_t[6] |  |
| _t     |             |  |

#### 1.1.3 Initialization, Registration, and Reset

A Reset of the HCl reset sequence is initiated by a call to HciResetSequence(). This function initiates an HCl reset sequence, which sends an HCl Reset command followed by several other HCl commands. This HCl command

sequence is configurable for each platform. When the reset sequence is complete, a Reset Sequence Complete event is sent via the event callback.

Syntax:

void HciResetSequence(void)

A typical reset sequence is as follows:

- 1. Reset Command
- 2. Set Event Mask Command
- 3. LE Set Event Mask Command
- 4. Set Event Mask Page 2 Command
- 5. Read BD ADDR Command
- 6. LE Read Buffer Size Command
- 7. Read Buffer Size Command
- 8. LE Read Supported States Command
- 9. LE Read White List Size Command
- 10. LE Read Local Supported Feature Command
- 11. LE Read Resolving List Size Command
- 12. LE Read Maximum Data Length Command
- 13. LE Write Suggested Default Data Length Command
- 14. LE Random Command

See HCI Initialization, Regisration, Reset for API.

#### 1.1.4 Optimization Interface

This is an optimized interface for certain HCl commands that simply read a value. The stack uses these functions rather than their corresponding functions in the command interface.

These functions can only be called after the reset sequence has been completed.

See HCI Optimization Interface for API.

#### 1.1.5 Command Interface

This interface contains functions that map directly to HCI commands. The operation of the HCI commands and their parameters are not described in this document. See the *Bluetooth Core Specification* document.

The HCI implementation for a particular platform does not need to implement all functions in the command interface. For example, a single-chip system that implements the functions in the optimization interface, such as HciGetBdAddr(), might not need to implement the corresponding functions in the command interface (for example HciReadBdAddrCmd()).

See HCI Command Interface for API.

# 1.1.5.1 Commands

The command interface functions are shown in the table below. See the *Bluetooth Core Specification* document for a description of the parameters and operation of these functions. Functions shown as not implemented are not used by Packetcraft's Bluetooth Low Energy stack.

| HCI Command                             | Function                   |
|---|----------------------------|
| Disconnect                              | HciDisconnectCmd           |
| Read Remote Version Information         | HciReadRemoteVerInfoCmd    |
| Set Event Mask                          | HciSetEventMaskCmd         |
| Reset                                   | HciResetCmd                |
| Read Transmit Power Level               | HciReadTxPwrLvlCmd         |
| Set Controller To Host Flow Control     | Not Supported              |
| Host Buffer Size                        | Not Supported              |
| Host Number of Completed Packets        | Not Supported              |
| Set Event Mask Page 2                   | HciSetEventMaskPage2Cmd    |
| Read Authenticated Payload Timeout      | HciReadAuthPayloadTimeout  |
| Write Authenticated Payload Timeout     | HciWriteAuthPayloadTimeout |
| Read Local Version Information          | HciReadLocalVerInfoCmd     |
| Read Local Supported Features           | HciReadLocalSupFeatCmd     |
| Read Buffer Size                        | HciReadBufSizeCmd          |
| Read BD ADDR                            | HciReadBdAddrCmd           |
| Read RSSI                               | HciReadRssiCmd             |
| LE Set Event Mask                       | HciLeSetEventMaskCmd       |
| LE Read Buffer Size                     | HciLeReadBufSizeCmd        |
| LE Read Local Supported Features        | HciLeReadLocalSupFeatCmd   |
| LE Set Random Address                   | HciLeSetRandAddrCmd        |
| LE Set Advertising Parameters           | HciLeSetAdvParamCmd        |
| LE Read Advertising Channel TX Power    | HciLeReadAdvTXPowerCmd     |
| LE Set Advertising Data                 | HciLeSetAdvDataCmd         |
| LE Set Scan Response Data               | HciLeSetScanRespDataCmd    |
| LE Set Advertise Enable                 | HciLeSetAdvEnableCmd       |
| LE Set Scan Parameters                  | HciLeSetScanParamCmd       |
| LE Set Scan Enable                      | HciLeSetScanEnableCmd      |
| LE Create Connection                    | HciLeCreateConnCmd         |
| LE Create Connection Cancel             | HciLeCreateConnCancelCmd   |
| LE Read White List Size                 | HciLeReadWhiteListSizeCmd  |
| LE Clear White List                     | HciLeClearWhiteListCmd     |
| LE Add Device to White List             | HciLeAddDevWhiteListCmd    |
| LE Remove Device from White List        | HciLeRemoveDevWhiteListCmd |
| LE Connection Update                    | HciLeConnUpdateCmd         |
| LE Set Host Channel Classification      | HciLeSetHostChanClassCmd   |
| LE Read Channel Map                     | HciLeReadChanMapCmd        |
| LE Read Remote Used Features            | HciLeReadRemoteFeatCmd     |
| LE Encrypt                              | HciLeEncryptCmd            |
| LE Rand                                 | HciLeRandCmd               |
| LE Start Encryption                     | HciLeStartEncryptionCmd    |
| LE Long Term Key Request Negative Reply | HciLeLtkReqNegReplCmd      |
| LE Long Term Key Requested Reply        | HciLeLtkReqReplCmd         |
| LE Read Supported States                | HciLeReadSupStatesCmd      |
| LE Receiver Test                        | Not Supported              |
| LE Transmitter Test                     | Not Supported              |

| HCI Command   | Function                             |
|---|--------------------------------------|
| LE Test End   | Not Supported                        |
| LE Remote Connection Parameter Request Reply          | HciLeRemoteConnParamReqReply         |
| LE Remote Connection Parameter Request Negative Reply | HciLeRemoteConnParamReqNegReply      |
| LE Set Data Length                                    | HciLeSetDataLen                      |
| LE Read Suggested Default Data Length                 | HciLeReadDefDataLen                  |
| LE Write Suggested Default Data Length                | HciLeWriteDefDataLen                 |
| LE Read Local P-256 Public Key                        | HciLeReadLocalP256PubKey             |
| LE Generate DH Key                                    | HciLeGenerateDHKey                   |
| LE Add Device to Resolving List                       | HciLeAddDeviceToResolvingListCmd     |
| LE Remove Device from Resolving List                  | HciLeRemoveDeviceFromResolvingList   |
| LE Clear Resolving List                               | HciLeClearResolvingList              |
| LE Read Resolving List Size                           | HciLeReadResolvingListSize           |
| LE Read Peer Resolvable Address                       | HciLeReadPeerResolvableAddr          |
| LE Read Local Resolvable Address                      | HciLeReadLocalResolvableAddr         |
| LE Set Address Resolution Enable                      | HciLeSetAddrResolutionEnable         |
| LE Set Resolvable Private Address Timeout             | HciLeSetResolvablePrivateAddrTimeout |
| LE Read Maximum Data Length                           | HciLeReadMaxDataLen                  |
| LE Read PHY   | HciLeReadPhyCmd                      |
| LE Set Default PHY                                    | HciLeSetDefaultPhyCmd                |
| LE Set PHY  | HciLeSetPhyCmd                       |
| LE Enhanced Receiver Test                             | Not Supported                        |
| LE Enhanced Transmitter Test                          | Not Supported                        |
| LE Set Advertising Set Random Address                 | HciLeSetAdvSetRandAddrCmd            |
| LE Set Extended Advertising Parameters                | HciLeSetExtAdvParamCmd               |
| LE Set Extended Advertising Data                      | HciLeSetExtAdvDataCmd                |
| LE Set Extended Scan Response Data                    | HciLeSetExtScanRespDataCmd           |
| LE Set Extended Advertising Enable                    | HciLeSetExtAdvEnableCmd              |
| LE Read Maximum Advertising Data Length               | HciLeReadMaxAdvDataLen               |
| LE Read Number of Supported Advertising Sets          | HciLeReadNumSupAdvSets               |
| LE Set Periodic Advertising Parameters                | HciLeSetPerAdvParamCmd               |
| LE Set Periodic Advertising Data                      | HciLeSetPerAdvDataCmd                |
| LE Set Periodic Advertising Enabled                   | HciLeSetPerAdvEnableCmd              |
| LE Remove Advertising Set                             | HciLeRemoveAdvSet                    |
| LE Clear Advertising Sets                             | HciLeClearAdvSets                    |
| LE Set Extended Scanning Parameters                   | HciLeSetExtScanParamCmd              |
| LE Set Extended Scan Enable                           | HciLeExtScanEnableCmd                |
| LE Extended Create Connection                         | HciLeExtCreateConnCmd                |
| LE Periodic Advertising Create Sync                   | HciLePerAdvCreateSyncCmd             |
| LE Periodic Advertising Create Sync Cancel            | HciLePerAdvCreateSyncCancelCmd       |
| LE Periodic Advertising Terminate Sync                | HciLeAddDeviceToPerAdvListCmd        |
| LE Add Device to Periodic Advertiser List             | HciLeAddDeviceToPerAdvListCmd        |
| LE Remove Device from Periodic Advertiser List        | HciLeRemoveDeviceFromPerAdvListCmd   |
| LE Clear Periodic Advertiser List                     | HciLeClearPerAdvListCmd              |
| LE Read Periodic Advertiser List Size                 | HciLeReadPerAdvListSizeCmd           |
| LE Read Transmit Power                                | HciLeReadTxPower                     |
| LE Read RF Path Compensation                          | HciLeReadRfPathComp                  |
| LE Write RF Path Compensation                         | HciLeWriteRfPathComp                 |
| LE Set Privacy Mode                                   | HciLeSetPrivacyModeCmd               |
| Vendor Specific                                       | HciVendorSpecificCmd                 |
|   | 113113113013430113                   |

#### 1.1.6 Event Interface

The event interface defines event data structures which are passed from HCI to the stack. HCI events and their parameters defined in the *Bluetooth Core Specification* document are mapped to internal event values and data structures that can be processed efficiently by the stack.

See HCI Event Interface for event interface details.

#### 1.1.7 ACL Data Interface

The ACL data interface contains the following functions:

- · An API function for sending data to HCI
- A callback function for receiving data from HCI, and a callback function for managing flow control.

ACL data is sent using HciSendAclData(). The ACL packet is formatted as defined in the *Bluetooth Core Specification* document:

- The first two bytes of the buffer contain the handle for the ACL connection.
- The next two bytes of the buffer contain the length.

The caller of this function is responsible for allocating the WSF buffer pointed to by pAcIData. HCI is responsible for deallocating the buffer.

ACL data is received by the stack from HCI through the hciAclCback\_t callback. HCI allocates the WSF buffer pointed to by pData. The stack is responsible for deallocating the buffer. The ACL packet is formatted as defined the *Bluetooth Core Specification* document:

- The first two bytes of the buffer contain the handle for the ACL connection.
- The next two bytes of the buffer contain the length.

ACL data manages flow control with the hciFlowCback\_t callback. If parameter flowDisabled is TRUE then the stack cannot send ACL data to HCI. If flowDisabled is FALSE then data flow can resume on the specified connection handle.

See HCI ACL Data Interface for API.

# 1.1.8 Usage Scenarios

#### 1.1.8.1 Reset

Figure 3 shows the operation of the reset sequence.

- 1. The DM subsystem of the stack calls HciResetSequence() to initiate the reset sequence.
- 2. HCl begins sending a sequence of HCl commands to the controller, starting with the HCl Reset command.
- 3. After each command a Command Complete event is received.
- 4. HCl continues sending commands until it has sent all the commands in its sequence.
- 5. When it has received a Command Complete event for the last command it calls the event callback and sends a Reset Sequence Complete event.

#### 1.1.8.2 HCI Command and Event

Figure 4 shows an HCl command and event.

- 1. The DM subsystem of the stack calls an HCI function to create a connection.
- 2. HCI sends an LE Create Connection command to the controller.
- 3. The controller responds with a Command Status event. Note: This event is not sent to the stack; it is processed internally by HCI.
- 4. The controller sends an LE Connection Complete event.
- 5. HCl calls the event callback and sends an LE Connection Complete event to the stack.

#### 1.1.8.3 ACL Data Transmit and Receive

Figure 5 shows ACL data transmit and receive.

- 1. The L2CAP layer of the stack calls function HciSendAclData() to send data from the stack to HCI.
- 2. HCl builds and sends an ACL data packet to the controller.
- 3. The controller then sends a Number of Completed Packets event to HCI and HCI processes this event internally without passing it to the stack.

For receive data, the controller sends an ACL data packet to HCI, processes the packet and calls the ACL data callback to send the packet to L2CAP.

#### 1.2 Generic HCI Definitions

#### **Data Structures**

struct hciEvtStats t

HCI event statistics.

#### **Packet definitions**

- #define HCI CMD HDR LEN 3
- #define HCI ACL HDR LEN 4
- #define HCI\_ISO\_HDR\_LEN 4
- #define HCI EVT HDR LEN 2
- #define HCI\_EVT\_PARAM\_MAX\_LEN 255
- #define HCI ACL DEFAULT LEN 27
- #define HCI PB FLAG MASK 0x3000
- #define HCI\_PB\_START\_H2C 0x0000
- #define HCI\_PB\_CONTINUE 0x1000
- #define HCI\_PB\_START\_C2H 0x2000
- #define HCI\_HANDLE\_MASK 0x0FFF
- #define HCI\_HANDLE\_NONE 0xFFFF
- #define HCI TS FLAG MASK (1 << 14)</li>
- #define HCI DATA LOAD LEN MASK 0x3FFF
- #define HCI\_ISO\_DL\_MIN\_LEN 4
- #define HCI\_ISO\_DL\_MAX\_LEN 8
- #define HCI ISO TS LEN 4
- #define HCI\_ISO\_DL\_SDU\_LEN\_MASK 0x0FFF
- #define HCI\_ISO\_DL\_PS\_MASK 0xC000

### Packet types

- #define HCI CMD TYPE 0x01
- #define HCI ACL TYPE 0x02
- #define HCI\_EVT\_TYPE 0x04
- #define HCI\_ISO\_TYPE 0x05

#### **Error codes**

- #define HCI\_SUCCESS 0x00
- #define HCI\_ERR\_UNKNOWN\_CMD 0x01
- #define HCI\_ERR\_UNKNOWN\_HANDLE 0x02
- #define HCI ERR HARDWARE FAILURE 0x03
- #define HCI ERR PAGE TIMEOUT 0x04
- #define HCI\_ERR\_AUTH\_FAILURE 0x05
- #define HCI\_ERR\_KEY\_MISSING 0x06
- #define HCI\_ERR\_MEMORY\_EXCEEDED 0x07
- #define HCI\_ERR\_CONN\_TIMEOUT 0x08
- #define HCI ERR CONN LIMIT 0x09
- #define HCI ERR SYNCH CONN LIMIT 0x0A
- #define HCI ERR ACL CONN EXISTS 0x0B
- #define HCI\_ERR\_CMD\_DISALLOWED 0x0C

- #define HCI ERR REJ RESOURCES 0x0D
- #define HCI\_ERR\_REJ\_SECURITY 0x0E
- #define HCI\_ERR\_REJ\_BD\_ADDR 0x0F
- #define HCI ERR ACCEPT TIMEOUT 0x10
- #define HCI ERR UNSUP FEAT 0x11
- #define HCI\_ERR\_INVALID\_PARAM 0x12
- #define HCI\_ERR\_REMOTE\_TERMINATED 0x13
- #define HCI\_ERR\_REMOTE\_RESOURCES 0x14
- #define HCI\_ERR\_REMOTE\_POWER\_OFF 0x15
- #define HCI\_ERR\_LOCAL\_TERMINATED 0x16
- #define HCI\_ERR\_REPEATED\_ATTEMPTS 0x17
- #define HCI\_ERR\_PAIRING\_NOT\_ALLOWED 0x18
- #define HCI ERR UNKNOWN LMP PDU 0x19
- #define HCI\_ERR\_UNSUP\_REMOTE\_FEAT 0x1A
- #define HCI\_ERR\_SCO\_OFFSET 0x1B
- #define HCI\_ERR\_SCO\_INTERVAL 0x1C
- #define HCI ERR SCO MODE 0x1D
- #define HCI ERR LMP PARAM 0x1E
- #define HCI\_ERR\_UNSPECIFIED 0x1F
- #define HCI\_ERR\_UNSUP\_LMP\_PARAM 0x20
- #define HCI ERR ROLE CHANGE 0x21
- #define HCI ERR LL RESP TIMEOUT 0x22
- #define HCI\_ERR\_LMP\_COLLISION 0x23
- #define HCI\_ERR\_LMP\_PDU 0x24
- #define HCI\_ERR\_ENCRYPT\_MODE 0x25
- #define HCI ERR LINK KEY 0x26
- #define HCI\_ERR\_UNSUP\_QOS 0x27
- #define HCI\_ERR\_INSTANT\_PASSED 0x28
- #define HCI\_ERR\_UNSUP\_UNIT\_KEY 0x29
- #define HCI\_ERR\_TRANSACT\_COLLISION 0x2A
- #define HCI\_ERR\_CHANNEL\_CLASS 0x2E
- #define HCI\_ERR\_MEMORY 0x2F
- #define HCI\_ERR\_PARAMETER\_RANGE 0x30
- #define HCI ERR ROLE SWITCH PEND 0x32
- #define HCI\_ERR\_RESERVED\_SLOT 0x34
- #define HCI\_ERR\_ROLE\_SWITCH 0x35
- #define HCI ERR INQ TOO LARGE 0x36
- #define HCI\_ERR\_UNSUP\_SSP 0x37
- #define HCI ERR HOST BUSY PAIRING 0x38
- #define HCI\_ERR\_NO\_CHANNEL 0x39
- #define HCI ERR CONTROLLER BUSY 0x3A
- #define HCI\_ERR\_CONN\_INTERVAL 0x3B
- #define HCI\_ERR\_ADV\_TIMEOUT 0x3C
- #define HCI\_ERR\_MIC\_FAILURE 0x3D
- #define HCI\_ERR\_CONN\_FAIL 0x3E
- #define HCI\_ERR\_MAC\_CONN\_FAIL 0x3F
- #define HCI\_ERR\_COARSE\_CLK\_ADJ\_REJ 0x40
- #define HCI\_ERR\_TYPE0\_SUBMAP\_NOT\_DEF 0x41
- #define HCI\_ERR\_UNKNOWN\_ADV\_ID 0x42
- #define HCI ERR LIMIT REACHED 0x43
- #define HCI ERR OP CANCELLED BY HOST 0x44
- #define HCI\_ERR\_PKT\_TOO\_LONG 0x45

# **Command groups**

- #define HCI\_OGF\_NOP 0x00
- #define HCI\_OGF\_LINK\_CONTROL 0x01
- #define HCI\_OGF\_LINK\_POLICY 0x02
- #define HCI\_OGF\_CONTROLLER 0x03
- #define HCI\_OGF\_INFORMATIONAL 0x04
- #define HCI OGF STATUS 0x05
- #define HCI\_OGF\_TESTING 0x06
- #define HCI OGF LE CONTROLLER 0x08
- #define HCI OGF VENDOR SPEC 0x3F

#### **NOP** command

#define HCI OCF NOP 0x00

#### Link control commands

- #define HCI\_OCF\_DISCONNECT 0x06
- #define HCI\_OCF\_READ\_REMOTE\_VER\_INFO 0x1D

#### Controller and baseband commands

- #define HCI\_OCF\_SET\_EVENT\_MASK 0x01
- #define HCI\_OCF\_RESET 0x03
- #define HCI\_OCF\_READ\_TX\_PWR\_LVL 0x2D
- #define HCI\_OCF\_SET\_CONTROLLER\_TO\_HOST\_FC 0x31
- #define HCI\_OCF\_HOST\_BUFFER\_SIZE 0x33
- #define HCI\_OCF\_HOST\_NUM\_CMPL\_PKTS 0x35
- #define HCI\_OCF\_SET\_EVENT\_MASK\_PAGE2 0x63
- #define HCI\_OCF\_READ\_AUTH\_PAYLOAD\_TO 0x7B
- #define HCI\_OCF\_WRITE\_AUTH\_PAYLOAD\_TO 0x7C
- #define HCI\_OCF\_CONFIG\_DATA\_PATH 0x83

#### Informational commands

- #define HCI OCF READ LOCAL VER INFO 0x01
- #define HCI OCF READ LOCAL SUP CMDS 0x02
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_FEAT 0x03
- #define HCI OCF READ BUF SIZE 0x05
- #define HCI\_OCF\_READ\_BD\_ADDR 0x09
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CODECS 0x0D
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CODEC\_CAP 0x0E
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY 0x0F

### **Status commands**

• #define HCI\_OCF\_READ\_RSSI 0x05

#### LE controller commands

- #define HCI OCF LE SET EVENT MASK 0x01
- #define HCI OCF LE READ BUF SIZE 0x02
- #define HCI OCF LE READ LOCAL SUP FEAT 0x03
- #define HCI OCF LE SET RAND ADDR 0x05
- #define HCI\_OCF\_LE\_SET\_ADV\_PARAM 0x06
- #define HCI OCF LE READ ADV TX POWER 0x07
- #define HCI\_OCF\_LE\_SET\_ADV\_DATA 0x08
- #define HCI\_OCF\_LE\_SET\_SCAN\_RESP\_DATA 0x09
- #define HCI OCF LE SET ADV ENABLE 0x0A
- #define HCI OCF LE SET SCAN PARAM 0x0B
- #define HCI\_OCF\_LE\_SET\_SCAN\_ENABLE 0x0C
- #define HCI\_OCF\_LE\_CREATE\_CONN 0x0D
- #define HCI OCF LE CREATE CONN CANCEL 0x0E
- #define HCI\_OCF\_LE\_READ\_WHITE\_LIST\_SIZE 0x0F
- #define HCI OCF LE CLEAR WHITE LIST 0x10
- #define HCI\_OCF\_LE\_ADD\_DEV\_WHITE\_LIST 0x11
- #define HCI OCF LE REMOVE DEV WHITE LIST 0x12
- #define HCI\_OCF\_LE\_CONN\_UPDATE 0x13
- #define HCI\_OCF\_LE\_SET\_HOST\_CHAN\_CLASS 0x14
- #define HCI\_OCF\_LE\_READ\_CHAN\_MAP 0x15
- #define HCI OCF LE READ REMOTE FEAT 0x16
- #define HCI OCF LE ENCRYPT 0x17
- #define HCI OCF LE RAND 0x18
- #define HCI OCF LE START ENCRYPTION 0x19
- #define HCI\_OCF\_LE\_LTK\_REQ\_REPL 0x1A
- #define HCI OCF LE LTK REQ NEG REPL 0x1B
- #define HCI OCF LE READ SUP STATES 0x1C
- #define HCI\_OCF\_LE\_RECEIVER\_TEST 0x1D
- #define HCI\_OCF\_LE\_TRANSMITTER\_TEST 0x1E
- #define HCI\_OCF\_LE\_TEST\_END 0x1F
- #define HCI\_OCF\_LE\_REM\_CONN\_PARAM\_REP 0x20
- #define HCI OCF LE REM CONN PARAM NEG REP 0x21
- #define HCI OCF LE SET DATA LEN 0x22
- #define HCI OCF LE READ DEF DATA LEN 0x23
- #define HCI\_OCF\_LE\_WRITE\_DEF\_DATA\_LEN 0x24
- #define HCI OCF LE READ LOCAL P256 PUB KEY 0x25
- #define HCI\_OCF\_LE\_GENERATE\_DHKEY 0x26
- #define HCI OCF LE ADD DEV RES LIST 0x27
- #define HCI\_OCF\_LE\_REMOVE\_DEV\_RES\_LIST 0x28
- #define HCI\_OCF\_LE\_CLEAR\_RES\_LIST 0x29
- #define HCI\_OCF\_LE\_READ\_RES\_LIST\_SIZE 0x2A
- #define HCI\_OCF\_LE\_READ\_PEER\_RES\_ADDR 0x2B
- #define HCI\_OCF\_LE\_READ\_LOCAL\_RES\_ADDR 0x2C
- #define HCI\_OCF\_LE\_SET\_ADDR\_RES\_ENABLE 0x2D
- #define HCI\_OCF\_LE\_SET\_RES\_PRIV\_ADDR\_TO 0x2E
- #define HCI OCF LE READ MAX DATA LEN 0x2F
- #define HCI\_OCF\_LE\_READ\_PHY 0x30
- #define HCI\_OCF\_LE\_SET\_DEF\_PHY 0x31
- #define HCI\_OCF\_LE\_SET\_PHY 0x32
- #define HCI\_OCF\_LE\_ENHANCED\_RECEIVER\_TEST 0x33
- #define HCI\_OCF\_LE\_ENHANCED\_TRANSMITTER\_TEST 0x34
- #define HCI OCF LE SET ADV SET RAND ADDR 0x35
- #define HCI\_OCF\_LE\_SET\_EXT\_ADV\_PARAM 0x36

- #define HCI OCF LE SET EXT ADV DATA 0x37
- #define HCI\_OCF\_LE\_SET\_EXT\_SCAN\_RESP\_DATA 0x38
- #define HCI\_OCF\_LE\_SET\_EXT\_ADV\_ENABLE 0x39
- #define HCI OCF LE READ MAX ADV DATA LEN 0x3A
- #define HCI OCF LE READ NUM SUP ADV SETS 0x3B
- #define HCI\_OCF\_LE\_REMOVE\_ADV\_SET 0x3C
- #define HCI OCF LE CLEAR ADV SETS 0x3D
- #define HCI\_OCF\_LE\_SET\_PER\_ADV\_PARAM 0x3E
- #define HCI\_OCF\_LE\_SET\_PER\_ADV\_DATA 0x3F
- #define HCI OCF LE SET PER ADV ENABLE 0x40
- #define HCI OCF LE SET EXT SCAN PARAM 0x41
- #define HCI OCF LE SET EXT SCAN ENABLE 0x42
- #define HCI OCF LE EXT CREATE CONN 0x43
- #define HCI OCF LE PER ADV CREATE SYNC 0x44
- #define HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0x45
- #define HCI OCF LE PER ADV TERM SYNC 0x46
- #define HCI OCF LE ADD DEV PER ADV LIST 0x47
- #define HCI OCF LE REMOVE DEV PER ADV LIST 0x48
- #define HCI OCF LE CLEAR PER ADV LIST 0x49
- #define HCI\_OCF\_LE\_READ\_PER\_ADV\_LIST\_SIZE 0x4A
- #define HCI\_OCF\_LE\_READ\_TX\_POWER 0x4B
- #define HCI OCF LE READ RF PATH COMP 0x4C
- #define HCI OCF LE WRITE RF PATH COMP 0x4D
- #define HCI\_OCF\_LE\_SET\_PRIVACY\_MODE 0x4E
- #define HCI OCF LE RECEIVER TEST V3 0x4F
- #define HCI\_OCF\_LE\_TRANSMITTER\_TEST\_V3 0x50
- #define HCI OCF LE SET CONNLESS CTE TX PARAMS 0x51
- #define HCI\_OCF\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE 0x52
- #define HCI OCF LE SET CONNLESS IQ SAMP ENABLE 0x53
- #define HCI OCF LE SET CONN CTE RX PARAMS 0x54
- #define HCI OCF LE SET CONN CTE TX PARAMS 0x55
- #define HCI OCF LE CONN CTE REQ ENABLE 0x56
- #define HCI\_OCF\_LE\_CONN\_CTE\_RSP\_ENABLE 0x57
- #define HCI\_OCF\_LE\_READ\_ANTENNA\_INFO 0x58
- #define HCI\_OCF\_LE\_SET\_PER\_ADV\_RCV\_ENABLE 0x59
- #define HCI\_OCF\_LE\_PER\_ADV\_SYNC\_TRANSFER 0x5A
- #define HCI\_OCF\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER 0x5B
- #define HCI OCF LE SET PAST PARAM 0x5C
- #define HCI\_OCF\_LE\_SET\_DEFAULT\_PAST\_PARAM 0x5D
- #define HCI OCF LE GENERATE DHKEY V2 0x5E
- #define HCI OCF LE MODIFY SLEEP CLK ACC 0x5F
- #define HCI\_OCF\_LE\_READ\_BUF\_SIZE\_V2 0x60
- #define HCI\_OCF\_LE\_READ\_ISO\_TX\_SYNC 0x61
- #define HCI\_OCF\_LE\_SET\_CIG\_PARAMS 0x62
- #define HCI\_OCF\_LE\_SET\_CIG\_PARAMS\_TEST 0x63
- #define HCI OCF LE CREATE CIS 0x64
- #define HCI OCF LE REMOVE CIG 0x65
- #define HCI OCF LE ACCEPT CIS REQ 0x66
- #define HCI\_OCF\_LE\_REJECT\_CIS\_REQ 0x67
- #define HCI\_OCF\_LE\_CREATE\_BIG 0x68
- #define HCI OCF LE CREATE BIG TEST 0x69
- #define HCI OCF LE TERMINATE BIG 0x6A
- #define HCI OCF LE BIG CREATE SYNC 0x6B
- #define HCI OCF LE BIG TERMINATE SYNC 0x6C
- #define HCI OCF LE REQUEST PEER SCA 0x6D

- #define HCI\_OCF\_LE\_SETUP\_ISO\_DATA\_PATH 0x6E
- #define HCI\_OCF\_LE\_REMOVE\_ISO\_DATA\_PATH\_0x6F
- #define HCI\_OCF\_LE\_ISO\_TX\_TEST 0x70
- #define HCI OCF LE ISO RX TEST 0x71
- #define HCI OCF LE ISO READ TEST COUNTERS 0x72
- #define HCI OCF LE ISO TEST END 0x73
- #define HCI OCF LE SET HOST FEATURE 0x74
- #define HCI\_OCF\_LE\_READ\_ISO\_LINK\_QUAL 0x75
- #define HCI OCF LE READ ENHANCED TX POWER 0x76
- #define HCI OCF LE READ REMOTE TX POWER 0x77
- #define HCI OCF LE SET PATH LOSS REPORTING PARAMS 0x78
- #define HCI\_OCF\_LE\_SET\_PATH\_LOSS\_REPORTING\_ENABLE 0x79
- #define HCI\_OCF\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE 0x7A

#### **Opcode manipulation macros**

- #define HCI\_OPCODE(ogf, ocf) (((ogf) << 10) + (ocf))</li>
- #define **HCI\_OGF**(opcode) ((opcode) >> 10)
- #define **HCI\_OCF**(opcode) ((opcode) & 0x03FF)

#### **Command opcodes**

- #define HCI OPCODE NOP HCI OPCODE(HCI OGF NOP, HCI OCF NOP)
- #define HCI\_OPCODE\_DISCONNECT HCI\_OPCODE(HCI\_OGF\_LINK\_CONTROL, HCI\_OCF\_DISCON← NECT)
- #define HCI\_OPCODE\_READ\_REMOTE\_VER\_INFO HCI\_OPCODE(HCI\_OGF\_LINK\_CONTROL, HCI\_
   —
   OCF\_READ\_REMOTE\_VER\_INFO)
- #define HCI\_OPCODE\_SET\_EVENT\_MASK HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_SET ← EVENT\_MASK)
- #define HCI OPCODE RESET HCI OPCODE(HCI OGF CONTROLLER, HCI OCF RESET)
- #define HCI\_OPCODE\_HOST\_BUFFER\_SIZE HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_H
  OST\_BUFFER\_SIZE)
- #define HCI\_OPCODE\_READ\_TX\_PWR\_LVL HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_RE

   AD\_TX\_PWR\_LVL)
- #define HCI\_OPCODE\_READ\_AUTH\_PAYLOAD\_TO HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_
   —
   OCF\_READ\_AUTH\_PAYLOAD\_TO)
- #define HCI\_OPCODE\_WRITE\_AUTH\_PAYLOAD\_TO HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_
   —
   OCF\_WRITE\_AUTH\_PAYLOAD\_TO)
- #define HCI\_OPCODE\_CONFIG\_DATA\_PATH HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_C
   — ONFIG\_DATA\_PATH)
- #define **HCI\_OPCODE\_READ\_LOCAL\_VER\_INFO** HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HCI\_← OCF\_READ\_LOCAL\_VER\_INFO)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CMDS HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HCI
   — OCF\_READ\_LOCAL\_SUP\_CMDS)

• #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CODECS HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, H← CI\_OCF\_READ\_LOCAL\_SUP\_CODECS)

- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CODEC\_CAP HCI\_OPCODE(HCI\_OGF\_INFORMATION ← AL, HCI\_OCF\_READ\_LOCAL\_SUP\_CODEC\_CAP)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY HCI\_OPCODE(HCI\_OGF\_INFORM ← ATIONAL, HCI OCF READ LOCAL SUP CONTROLLER DLY)
- #define HCI\_OPCODE\_READ\_RSSI HCI\_OPCODE(HCI\_OGF\_STATUS, HCI\_OCF\_READ\_RSSI)
- #define **HCI\_OPCODE\_LE\_SET\_EVENT\_MASK** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_SET\_EVENT\_MASK)
- #define HCI\_OPCODE\_LE\_READ\_BUF\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← LE\_READ\_BUF\_SIZE)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_SUP\_FEAT HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_LOCAL\_SUP\_FEAT)
- #define HCI\_OPCODE\_LE\_SET\_RAND\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_SET\_RAND\_ADDR)
- #define **HCI\_OPCODE\_LE\_SET\_ADV\_PARAM** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_SET\_ADV\_PARAM)
- #define HCI\_OPCODE\_LE\_READ\_ADV\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI OCF LE READ ADV TX POWER)
- #define HCI\_OPCODE\_LE\_SET\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← LE SET ADV DATA)
- #define **HCI\_OPCODE\_LE\_SET\_SCAN\_RESP\_DATA** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI\_OCF\_LE\_SET\_SCAN\_RESP\_DATA)
- #define HCI\_OPCODE\_LE\_SET\_ADV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_SET\_ADV\_ENABLE)
- #define HCI\_OPCODE\_LE\_SET\_SCAN\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_SET\_SCAN\_PARAM)
- #define HCI\_OPCODE\_LE\_SET\_SCAN\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_SET\_SCAN\_ENABLE)
- #define HCI\_OPCODE\_LE\_CREATE\_CONN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_
   LE\_CREATE\_CONN)
- #define HCI\_OPCODE\_LE\_CREATE\_CONN\_CANCEL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CREATE\_CONN\_CANCEL)
- #define HCI\_OPCODE\_LE\_READ\_WHITE\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI\_OCF\_LE\_READ\_WHITE\_LIST\_SIZE)
- #define HCI\_OPCODE\_LE\_CLEAR\_WHITE\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_CLEAR\_WHITE\_LIST)
- #define **HCI\_OPCODE\_LE\_ADD\_DEV\_WHITE\_LIST** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I\_OCF\_LE\_ADD\_DEV\_WHITE\_LIST)
- #define **HCI\_OPCODE\_LE\_REMOVE\_DEV\_WHITE\_LIST** HCI\_OPCODE(**HCI\_OGF\_LE\_CONTROLLER**, HCI\_OCF\_LE\_REMOVE\_DEV\_WHITE\_LIST)
- #define **HCI\_OPCODE\_LE\_CONN\_UPDATE** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_ ← LE\_CONN\_UPDATE)
- #define HCI\_OPCODE\_LE\_SET\_HOST\_CHAN\_CLASS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_HOST\_CHAN\_CLASS)
- #define HCI\_OPCODE\_LE\_READ\_CHAN\_MAP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_READ\_CHAN\_MAP)
- #define HCI\_OPCODE\_LE\_READ\_REMOTE\_FEAT HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI → \_ OCF\_LE\_READ\_REMOTE\_FEAT)
- #define **HCI\_OPCODE\_LE\_ENCRYPT** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_E ↔ NCRYPT)
- #define HCI OPCODE LE RAND HCI OPCODE(HCI OGF LE CONTROLLER, HCI OCF LE RAND)
- #define **HCI\_OPCODE\_LE\_START\_ENCRYPTION** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_START\_ENCRYPTION)
- #define **HCI\_OPCODE\_LE\_LTK\_REQ\_REPL** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← \_ LE\_LTK\_REQ\_REPL)

• #define **HCI\_OPCODE\_LE\_LTK\_REQ\_NEG\_REPL** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI↔ \_OCF\_LE\_LTK\_REQ\_NEG\_REPL)

- #define **HCI\_OPCODE\_LE\_READ\_SUP\_STATES** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_READ\_SUP\_STATES)
- #define HCI\_OPCODE\_LE\_RECEIVER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← \_ LE\_RECEIVER\_TEST)
- #define HCI\_OPCODE\_LE\_TRANSMITTER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_TRANSMITTER\_TEST)
- #define HCI\_OPCODE\_LE\_TEST\_END HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_T ← EST\_END)
- #define HCI\_OPCODE\_LE\_REM\_CONN\_PARAM\_REP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_REM\_CONN\_PARAM\_REP)
- #define HCI\_OPCODE\_LE\_REM\_CONN\_PARAM\_NEG\_REP HCI\_OPCODE(HCI\_OGF\_LE\_CONTRO← LLER, HCI\_OCF\_LE\_REM\_CONN\_PARAM\_NEG\_REP)
- #define HCI\_OPCODE\_LE\_SET\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← LE SET DATA LEN)
- #define HCI\_OPCODE\_LE\_READ\_DEF\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I\_OCF\_LE\_READ\_DEF\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_WRITE\_DEF\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI OCF LE WRITE DEF DATA LEN)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_P256\_PUB\_KEY HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL ← LER, HCI\_OCF\_LE\_READ\_LOCAL\_P256\_PUB\_KEY)
- #define HCI\_OPCODE\_LE\_GENERATE\_DHKEY HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O
   CF\_LE\_GENERATE\_DHKEY)
- #define HCI\_OPCODE\_LE\_ADD\_DEV\_RES\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_ADD\_DEV\_RES\_LIST)
- #define HCI\_OPCODE\_LE\_REMOVE\_DEV\_RES\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_REMOVE\_DEV\_RES\_LIST)
- #define **HCI\_OPCODE\_LE\_CLEAR\_RES\_LIST** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_CLEAR\_RES\_LIST)
- #define HCI\_OPCODE\_LE\_READ\_RES\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC↔ I OCF LE READ RES LIST SIZE)
- #define HCI\_OPCODE\_LE\_READ\_PEER\_RES\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_PEER\_RES\_ADDR)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_RES\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_LOCAL\_RES\_ADDR)
- #define **HCI\_OPCODE\_LE\_SET\_ADDR\_RES\_ENABLE** HCI\_OPCODE(**HCI\_OGF\_LE\_CONTROLLER**, HCI\_OCF\_LE\_SET\_ADDR\_RES\_ENABLE)
- #define HCI\_OPCODE\_LE\_SET\_RES\_PRIV\_ADDR\_TO HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_RES\_PRIV\_ADDR\_TO)
- #define HCI\_OPCODE\_LE\_READ\_MAX\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI OCF LE READ MAX DATA LEN)
- #define **HCI\_OPCODE\_LE\_READ\_PHY** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_← READ\_PHY)
- #define **HCI\_OPCODE\_LE\_SET\_DEF\_PHY** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_L E\_SET\_DEF\_PHY)
- #define HCI\_OPCODE\_LE\_ENHANCED\_RECEIVER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_ENHANCED\_RECEIVER\_TEST)
- #define HCI\_OPCODE\_LE\_ENHANCED\_TRANSMITTER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTR↔ OLLER, HCI\_OCF\_LE\_ENHANCED\_TRANSMITTER\_TEST)
- #define HCI\_OPCODE\_LE\_SET\_ADV\_SET\_RAND\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_ADV\_SET\_RAND\_ADDR)
- #define **HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_PARAM** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC → I\_OCF\_LE\_SET\_EXT\_ADV\_PARAM)

#define HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
 —
 OCF\_LE\_SET\_EXT\_ADV\_DATA)

- #define HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_RESP\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_SET\_EXT\_SCAN\_RESP\_DATA)
- #define **HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_ENABLE** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI\_OCF\_LE\_SET\_EXT\_ADV\_ENABLE)
- #define HCI\_OPCODE\_LE\_READ\_MAX\_ADV\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_READ\_MAX\_ADV\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_READ\_NUM\_SUP\_ADV\_SETS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_READ\_NUM\_SUP\_ADV\_SETS)
- #define HCI\_OPCODE\_LE\_REMOVE\_ADV\_SET HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O

  CF LE REMOVE ADV SET)
- #define HCI\_OPCODE\_LE\_CLEAR\_ADV\_SETS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O

  CF LE CLEAR ADV SETS)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI OCF LE SET PER ADV PARAM)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
  OCF LE SET PER ADV DATA)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI OCF LE SET PER ADV ENABLE)
- #define **HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_PARAM** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI\_OCF\_LE\_SET\_EXT\_SCAN\_PARAM)
- #define **HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_ENABLE** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_EXT\_SCAN\_ENABLE)
- #define HCI\_OPCODE\_LE\_EXT\_CREATE\_CONN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_EXT\_CREATE\_CONN)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_CREATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL HCI\_OPCODE(HCI\_OGF\_LE\_CON← TROLLER, HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_TERMINATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_PER\_ADV\_TERM\_SYNC)
- #define HCI\_OPCODE\_LE\_ADD\_DEV\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_ADD\_DEV\_PER\_ADV\_LIST)
- #define HCI\_OPCODE\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL ← LER, HCI\_OCF\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST)
- #define HCI\_OPCODE\_LE\_CLEAR\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI\_OCF\_LE\_CLEAR\_PER\_ADV\_LIST)
- #define HCI\_OPCODE\_LE\_READ\_PER\_ADV\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_PER\_ADV\_LIST\_SIZE)
- #define HCI\_OPCODE\_LE\_READ\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F LE READ TX POWER)
- #define HCI\_OPCODE\_LE\_WRITE\_RF\_PATH\_COMP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI\_OCF\_LE\_WRITE\_RF\_PATH\_COMP)
- #define  $HCI_OPCODE_LE_READ_RF_PATH_COMP$   $HCI_OPCODE(HCI_OGF_LE_CONTROLLER, H \leftarrow CI_OCF_LE_READ_RF_PATH_COMP)$
- #define HCI\_OPCODE\_LE\_SET\_PRIVACY\_MODE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI → OCF\_LE\_SET\_PRIVACY\_MODE)
- #define HCI\_OPCODE\_LE\_RECEIVER\_TEST\_V3 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_RECEIVER\_TEST\_V3)
- #define HCI\_OPCODE\_LE\_TRANSMITTER\_TEST\_V3 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H ← CI OCF LE TRANSMITTER TEST V3)
- #define HCI\_OPCODE\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CON ← TROLLER, HCI\_OCF\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS)
- #define HCI\_OPCODE\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONT ← ROLLER, HCI\_OCF\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE)

• #define HCI\_OPCODE\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CON ← TROLLER, HCI\_OCF\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE)

- #define HCI\_OPCODE\_LE\_SET\_CONN\_CTE\_RX\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL ← LER, HCI\_OCF\_LE\_SET\_CONN\_CTE\_RX\_PARAMS)
- #define HCI\_OPCODE\_LE\_SET\_CONN\_CTE\_TX\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL ← LER, HCI\_OCF\_LE\_SET\_CONN\_CTE\_TX\_PARAMS)
- #define HCI\_OPCODE\_LE\_CONN\_CTE\_REQ\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CONN\_CTE\_REQ\_ENABLE)
- #define **HCI\_OPCODE\_LE\_CONN\_CTE\_RSP\_ENABLE** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CONN\_CTE\_RSP\_ENABLE)
- #define HCI\_OPCODE\_LE\_READ\_ANTENNA\_INFO HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I\_OCF\_LE\_READ\_ANTENNA\_INFO)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_RCV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_SET\_PER\_ADV\_RCV\_ENABLE)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_SYNC\_TRANSFER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_PER\_ADV\_SYNC\_TRANSFER)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER HCI\_OPCODE(HCI\_OGF\_LE\_CONTR← OLLER, HCI\_OCF\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER)
- #define HCI\_OPCODE\_LE\_SET\_PAST\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O ← CF\_LE\_SET\_PAST\_PARAM)
- #define HCI\_OPCODE\_LE\_SET\_DEFAULT\_PAST\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_SET\_DEFAULT\_PAST\_PARAM)
- #define HCI\_OPCODE\_LE\_GENERATE\_DHKEY\_V2 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI\_OCF\_LE\_GENERATE\_DHKEY\_V2)
- #define HCI\_OPCODE\_LE\_MODIFY\_SLEEP\_CLK\_ACC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_MODIFY\_SLEEP\_CLK\_ACC)
- #define HCI\_OPCODE\_LE\_READ\_BUF\_SIZE\_V2 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF LE READ BUF SIZE V2)
- #define HCI\_OPCODE\_LE\_READ\_ISO\_TX\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_READ\_ISO\_TX\_SYNC)
- #define HCI\_OPCODE\_LE\_SET\_CIG\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_SET\_CIG\_PARAMS)
- #define HCI\_OPCODE\_LE\_SET\_CIG\_PARAMS\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_CIG\_PARAMS\_TEST)
- #define **HCI\_OPCODE\_LE\_CREATE\_CIS** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE ← \_ CREATE\_CIS)
- #define **HCI\_OPCODE\_LE\_REMOVE\_CIG** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_L← E\_REMOVE\_CIG)
- #define HCI\_OPCODE\_LE\_ACCEPT\_CIS\_REQ HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_ACCEPT\_CIS\_REQ)
- #define HCI\_OPCODE\_LE\_REJECT\_CIS\_REQ HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F LE REJECT CIS REQ)
- #define HCI\_OPCODE\_LE\_CREATE\_BIG HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE ← CREATE\_BIG)
- #define HCI\_OPCODE\_LE\_CREATE\_BIG\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O

  CF LE CREATE BIG TEST)
- #define **HCI\_OPCODE\_LE\_TERMINATE\_BIG** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF ← LE\_TERMINATE\_BIG)
- #define HCI\_OPCODE\_LE\_BIG\_CREATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_BIG\_CREATE\_SYNC)
- #define HCI\_OPCODE\_LE\_BIG\_TERMINATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI OCF LE BIG TERMINATE SYNC)
- #define HCI\_OPCODE\_LE\_REQUEST\_PEER\_SCA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI← OCF\_LE\_REQUEST\_PEER\_SCA)
- #define **HCI\_OPCODE\_LE\_SETUP\_ISO\_DATA\_PATH** HCI\_OPCODE(**HCI\_OGF\_LE\_CONTROLLER**, HCI\_OCF\_LE\_SETUP\_ISO\_DATA\_PATH)

• #define HCI\_OPCODE\_LE\_REMOVE\_ISO\_DATA\_PATH HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_REMOVE\_ISO\_DATA\_PATH)

- #define HCI\_OPCODE\_LE\_ISO\_RX\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_L ← E ISO RX TEST)
- #define HCI\_OPCODE\_LE\_ISO\_READ\_TEST\_COUNTERS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_ISO\_READ\_TEST\_COUNTERS)
- #define HCI\_OPCODE\_LE\_SET\_HOST\_FEATURE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
   — OCF\_LE\_SET\_HOST\_FEATURE)
- #define HCI\_OPCODE\_LE\_READ\_ISO\_LINK\_QUAL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H

  CI OCF LE READ ISO LINK QUAL)
- #define HCI\_OPCODE\_LE\_READ\_REMOTE\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_REMOTE\_TX\_POWER)

- #define HCI\_OPCODE\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CON← TROLLER, HCI\_OCF\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE)

#### **Packetcraft Vendor Specific**

• #define HCI OPCODE LE VS ENABLE READ FEAT ON CONN ((uint16 t)(0xfff3))

#### **Command parameter lengths**

- #define HCI\_LEN\_NOP 0
- #define HCI\_LEN\_DISCONNECT 3
- #define HCI\_LEN\_READ\_REMOTE\_VER\_INFO 2
- #define HCI\_LEN\_SET\_EVENT\_MASK 8
- #define HCI\_LEN\_SET\_EVENT\_MASK\_PAGE2 8
- #define **HCI\_LEN\_RESET** 0
- #define HCI\_LEN\_READ\_TX\_PWR\_LVL 3
- #define HCI LEN SET CONTROLLER TO HOST FC 1
- #define HCI LEN HOST BUFFER SIZE 7
- #define HCI LEN HOST NUM CMPL PKTS 1
- #define HCI LEN CONFIG DATA PATH(cLen) (3 + (cLen))
- #define HCI\_LEN\_READ\_LOCAL\_VER\_INFO 0
- #define HCI\_LEN\_READ\_LOCAL\_SUP\_CMDS 0
- #define HCI LEN READ LOCAL SUP FEAT 0
- #define HCI\_LEN\_READ\_BUF\_SIZE 0
- #define HCI\_LEN\_READ\_BD\_ADDR 0
- #define HCI\_LEN\_READ\_LOCAL\_SUP\_CODECS 0
- #define HCI\_LEN\_READ\_LOCAL\_SUP\_CODEC\_CAP 7
- #define HCI\_LEN\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY(ccLen) (8 + (ccLen))
- #define HCI LEN READ RSSI 2
- #define HCI LEN READ AUTH PAYLOAD TO 2
- #define HCI\_LEN\_WRITE\_AUTH\_PAYLOAD\_TO 4

- #define HCI\_LEN\_LE\_SET\_EVENT\_MASK 8
- #define HCI\_LEN\_LE\_READ\_BUF\_SIZE 0
- #define HCI\_LEN\_LE\_READ\_LOCAL\_SUP\_FEAT 0
- · #define HCI LEN LE SET RAND ADDR 6
- #define HCI\_LEN\_LE\_SET\_ADV\_PARAM 15
- #define HCI\_LEN\_LE\_READ\_ADV\_TX\_POWER 0
- #define HCI LEN LE SET ADV DATA 32
- #define HCI\_LEN\_LE\_SET\_SCAN\_RESP\_DATA 32
- #define HCI\_LEN\_LE\_SET\_ADV\_ENABLE 1
- #define HCI LEN LE SET SCAN PARAM 7
- #define HCI LEN LE SET SCAN ENABLE 2
- #define HCI LEN LE CREATE CONN 25
- #define HCI\_LEN\_LE\_CREATE\_CONN\_CANCEL 0
- #define HCI LEN LE READ WHITE LIST SIZE 0
- #define HCI\_LEN\_LE\_CLEAR\_WHITE\_LIST 0
- #define HCI LEN LE ADD DEV WHITE LIST 7
- #define HCI LEN LE REMOVE DEV WHITE LIST 7
- #define HCI LEN LE CONN UPDATE 14
- #define HCI LEN LE SET HOST CHAN CLASS 5
- #define HCI\_LEN\_LE\_READ\_CHAN\_MAP 2
- #define HCI\_LEN\_LE\_READ\_REMOTE\_FEAT 2
- #define HCI LEN LE ENCRYPT 32
- #define HCI LEN LE RAND 0
- #define HCI\_LEN\_LE\_START\_ENCRYPTION 28
- #define HCI\_LEN\_LE\_LTK\_REQ\_REPL 18
- #define HCI\_LEN\_LE\_LTK\_REQ\_NEG\_REPL 2
- #define HCI\_LEN\_LE\_READ\_SUP\_STATES 0
- #define HCI\_LEN\_LE\_RECEIVER\_TEST 1
- #define HCI\_LEN\_LE\_TRANSMITTER\_TEST 3
- #define HCI\_LEN\_LE\_TEST\_END 0
- #define HCI LEN LE REM CONN PARAM REP 14
- #define HCI LEN LE REM CONN PARAM NEG REP 3
- #define HCI\_LEN\_LE\_SET\_DATA\_LEN 6
- #define HCI\_LEN\_LE\_READ\_DEF\_DATA\_LEN 0
- #define HCI\_LEN\_LE\_WRITE\_DEF\_DATA\_LEN 4
- #define HCI\_LEN\_LE\_READ\_LOCAL\_P256\_PUB\_KEY 0
- #define HCI\_LEN\_LE\_GENERATE\_DHKEY 64
- #define HCI\_LEN\_LE\_ADD\_DEV\_RES\_LIST 39
- #define HCI LEN LE REMOVE DEV RES LIST 7
- · #define HCI LEN LE CLEAR RES LIST 0
- #define HCI LEN LE READ RES LIST SIZE 0
- #define HCI\_LEN\_LE\_READ\_PEER\_RES\_ADDR 7
- #define HCI\_LEN\_LE\_READ\_LOCAL\_RES\_ADDR 7
- #define HCI\_LEN\_LE\_SET\_ADDR\_RES\_ENABLE 1
- #define HCI\_LEN\_LE\_SET\_RES\_PRIV\_ADDR\_TO 2
- #define HCI LEN LE READ MAX DATA LEN 0
- #define HCI LEN LE READ PHY 2
- #define HCI\_LEN\_LE\_SET\_DEF\_PHY 3
- #define HCI\_LEN\_LE\_SET\_PHY 7
- #define HCI\_LEN\_LE\_ENHANCED\_RECEIVER\_TEST 3
- #define HCI LEN LE ENHANCED TRANSMITTER TEST 4
- #define HCI\_LEN\_LE\_SET\_ADV\_SET\_RAND\_ADDR 7
- #define HCI\_LEN\_LE\_SET\_EXT\_ADV\_PARAM 25
- #define HCI\_LEN\_LE\_SET\_EXT\_ADV\_DATA(len) (4 + (len))
- #define HCI\_LEN\_LE\_SET\_EXT\_SCAN\_RESP\_DATA(len) (4 + (len))

- #define HCI\_LEN\_LE\_EXT\_ADV\_ENABLE(numSets) (2 + (4 \* (numSets)))
- #define HCI\_LEN\_LE\_READ\_MAX\_ADV\_DATA\_LEN 0
- #define HCI\_LEN\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS 0
- · #define HCI LEN LE REMOVE ADV SET 1
- #define HCI LEN LE CLEAR ADV SETS 0
- #define HCI\_LEN\_LE\_SET\_PER\_ADV\_PARAM 7
- #define HCI\_LEN\_LE\_SET\_PER\_ADV\_DATA(len) (3 + (len))
- #define HCI\_LEN\_LE\_SET\_PER\_ADV\_ENABLE 2
- #define HCI\_LEN\_LE\_SET\_EXT\_SCAN\_PARAM(numPhys) (3 + (5 \* (numPhys)))
- #define HCI LEN LE SET EXT SCAN ENABLE 6
- #define HCI LEN LE EXT CREATE CONN(numPhys) (10 + (16 \* (numPhys)))
- #define HCI LEN LE PER ADV CREATE SYNC 14
- #define HCI\_LEN\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0
- #define HCI LEN LE PER ADV TERMINATE SYNC 2
- #define HCI\_LEN\_LE\_ADD\_DEV\_PER\_ADV\_LIST 8
- #define HCI LEN LE REMOVE DEV PER ADV LIST 8
- #define HCI LEN LE CLEAR PER ADV LIST 0
- #define HCI LEN LE READ PER ADV LIST SIZE 0
- #define HCI\_LEN\_LE\_READ\_TX\_POWER 0
- #define HCI LEN LE READ RF PATH COMP 0
- #define HCI\_LEN\_LE\_WRITE\_RF\_PATH\_COMP 4
- #define HCI\_LEN\_LE\_SET\_PRIVACY\_MODE 8
- #define HCI LEN LE SET CONN CTE RX PARAMS(spLen) (5 + (spLen))
- #define HCI\_LEN\_LE\_SET\_CONN\_CTE\_TX\_PARAMS(spLen) (4 + (spLen))
- #define HCI LEN LE CONN CTE REQ ENABLE 7
- #define HCI\_LEN\_LE\_CONN\_CTE\_RSP\_ENABLE 3
- #define HCI LEN LE READ ANTENNA INFO 0
- #define HCI LEN LE SET PER ADV RCV ENABLE 3
- #define HCI LEN LE PER ADV SYNC TRANSFER 6
- #define HCI\_LEN\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER 5
- #define HCI\_LEN\_LE\_SET\_PAST\_PARAM 8
- #define HCI LEN LE SET DEFAULT PAST PARAM 6
- #define HCI\_LEN\_LE\_GENERATE\_DHKEY\_V2 65
- #define HCI\_LEN\_LE\_SET\_CIG\_PARAMS(numCis) (15 + (9 \* (numCis)))
- #define HCI\_LEN\_LE\_CREATE\_CIS(numCis) (1 + (4 \* (numCis)))
- #define HCI\_LEN\_LE\_REMOVE\_CIG 1
- #define HCI LEN LE ACCEPT CIS REQ 2
- #define HCI\_LEN\_LE\_REJECT\_CIS\_REQ 3
- #define HCI LEN LE REQUEST PEER SCA 2
- #define HCI\_LEN\_LE\_CREATE\_BIS (15 + HCI\_BC\_LEN)
- #define HCI LEN LE TERMINATE BIG 2
- #define HCI\_LEN\_LE\_BIG\_CREATE\_SYNC(numBis) (8 + HCI\_BC\_LEN + (numBis))
- #define HCI\_LEN\_LE\_BIG\_TERMINATE\_SYNC 1
- #define HCI\_LEN\_LE\_SETUP\_ISO\_DATA\_PATH(ccLen) (13 + (ccLen))
- #define HCI LEN LE REMOVE ISO DATA PATH 3
- #define HCI LEN LE ISO TX TEST 3
- #define HCI LEN LE ISO RX TEST 3
- #define HCI LEN LE ISO READ TEST COUNTERS 2
- #define HCI\_LEN\_LE\_ISO\_TEST\_END 2
- #define HCI\_LEN\_LE\_SET\_HOST\_FEATURE 2
- #define HCI LEN LE DISABLE SLAVELATENCY 3
- #define HCI\_LEN\_LE\_OVERRULE\_REMOTE\_MAX\_RX\_OCTETS\_AND\_TIME 6
- #define HCI LEN LE SET TRANSMIT POWER 1
- #define HCI LEN LE SET EVENT NOTIFICATION BIT 1
- #define HCI\_LEN\_LE\_RESET\_EVENT\_NOTIFICATION\_BIT 1

#### **Events**

- #define HCI DISCONNECT CMPL EVT 0x05
- #define HCI ENC CHANGE EVT 0x08
- #define HCI READ REMOTE VER INFO CMPL EVT 0x0C
- #define HCI CMD CMPL EVT 0x0E
- #define HCI\_CMD\_STATUS\_EVT 0x0F
- #define HCI HW ERROR EVT 0x10
- #define HCI NUM CMPL PKTS EVT 0x13
- #define HCI\_DATA\_BUF\_OVERFLOW\_EVT 0x1A
- #define HCI\_ENC\_KEY\_REFRESH\_CMPL\_EVT 0x30
- #define HCI LE META EVT 0x3E
- #define HCI AUTH PAYLOAD TIMEOUT EVT 0x57
- #define HCI VENDOR SPEC EVT 0xFF

#### LE Subevents

- #define HCI LE CONN CMPL EVT 0x01
- #define HCI\_LE\_ADV\_REPORT\_EVT 0x02
- #define HCI LE CONN UPDATE CMPL EVT 0x03
- #define HCI LE READ REMOTE FEAT CMPL EVT 0x04
- #define HCI LE LTK REQ EVT 0x05
- #define HCI LE REM CONN PARAM REQ EVT 0x06
- #define HCI LE DATA LEN CHANGE EVT 0x07
- #define HCI\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL\_EVT 0x08
- #define HCI\_LE\_GENERATE\_DHKEY\_CMPL\_EVT 0x09
- #define HCI\_LE\_ENHANCED\_CONN\_CMPL\_EVT 0x0A
- #define HCI\_LE\_DIRECT\_ADV\_REPORT\_EVT 0x0B
- #define HCI\_LE\_PHY\_UPDATE\_CMPL\_EVT 0x0C
- #define HCI\_LE\_EXT\_ADV\_REPORT\_EVT 0x0D
- #define HCI\_LE\_PER\_ADV\_SYNC\_EST\_EVT 0x0E
- #define HCI\_LE\_PER\_ADV\_REPORT\_EVT 0x0F
- #define HCI\_LE\_PER\_ADV\_SYNC\_LOST\_EVT 0x10
- #define HCI LE SCAN TIMEOUT EVT 0x11
- #define HCI\_LE\_ADV\_SET\_TERM\_EVT 0x12
- #define HCI LE SCAN REQ RCVD EVT 0x13
- #define HCI LE CH SEL ALGO EVT 0x14
- #define HCI\_LE\_CONNLESS\_IQ\_REPORT\_EVT 0x15
- #define HCI LE CONN IQ REPORT EVT 0x16
- #define HCI\_LE\_CTE\_REQ\_FAILED\_EVT 0x17
- #define HCI LE PER SYNC TRSF RCVD EVT 0x18
- #define HCI\_LE\_CIS\_EST\_EVT 0x19
- #define HCI\_LE\_CIS\_REQ\_EVT 0x1A
- #define HCI\_LE\_CREATE\_BIG\_CMPL\_EVT 0x1B
- #define HCI\_LE\_TERMINATE\_BIG\_CMPL\_EVT\_0x1C
- #define HCI\_LE\_BIG\_SYNC\_EST\_EVT 0x1D
- #define HCI\_LE\_BIG\_SYNC\_LOST\_EVT 0x1E
- #define HCI\_LE\_REQ\_PEER\_SCA\_CMPLT\_EVT 0x1F
- #define HCI LE PATH LOSS REPORT EVT 0x20
- #define HCI\_LE\_POWER\_REPORT\_EVT 0x21
- #define HCI\_LE\_BIG\_INFO\_ADV\_REPORT\_EVT 0x22

#### **Event parameter lengths**

- #define HCI LEN DISCONNECT CMPL 4
- #define HCI LEN READ REMOTE VER INFO CMPL 8
- #define HCI LEN CMD CMPL 3
- #define HCI LEN CMD STATUS 4
- #define HCI LEN HW ERR 1
- #define HCI\_LEN\_NUM\_CMPL\_PKTS(numHdls) (1 + (4 \* numHdls))
- #define HCI\_LEN\_ENC\_CHANGE 4
- #define HCI\_LEN\_ENC\_KEY\_REFRESH\_CMPL 3
- #define HCI LEN LE CONN CMPL 19
- #define HCI LEN LE ADV RPT MIN 12
- #define HCI\_LEN\_LE\_CONN\_UPDATE\_CMPL 10
- #define HCI\_LEN\_LE\_READ\_REMOTE\_FEAT\_CMPL 12
- #define HCI LEN LE LTK REQ 13
- #define HCI\_LEN\_LE\_REM\_CONN\_PARAM\_REQ 11
- #define HCI LEN LE DATA LEN CHANGE 11
- #define HCI LEN LE READ PUB KEY CMPL 66
- #define HCI LEN LE GEN DHKEY CMPL 34
- #define HCI\_LEN\_LE\_ENHANCED\_CONN\_CMPL 31
- #define HCI\_LEN\_LE\_DIRECT\_ADV\_REPORT 18
- #define HCI\_LEN\_AUTH\_PAYLOAD\_TIMEOUT 2
- #define HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL 6
- #define HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL 6
- #define HCI LEN LE CH SEL ALGO 4
- #define HCI LEN LE EXT ADV REPORT MIN 26
- #define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_EST 16
- #define HCI LEN LE PER ADV REPORT 8
- #define HCI LEN LE PER ADV SYNC LOST 3
- #define HCI\_LEN\_LE\_SCAN\_TIMEOUT 1
- #define HCI\_LEN\_LE\_ADV\_SET\_TERM 6
- #define HCI\_LEN\_LE\_SCAN\_REQ\_RCVD 9
- #define HCI LEN LE PER SYNC TRSF RCVT 20
- #define HCI LEN LE CIS EST 29
- #define HCI LEN LE CIS REQ 7
- #define HCI LEN LE PEER SCA CMPL 5
- #define HCI\_LEN\_LE\_CREATE\_BIG\_CMPL(numBis) (19 + (2 \* numBis))
- #define HCI LEN LE TERMINATE BIG CMPL 3
- #define HCI\_LEN\_LE\_BIG\_SYNC\_EST(numBis) (15 + (2 \* numBis))
- #define HCI\_LEN\_LE\_BIG\_SYNC\_LOST 3
- #define HCI\_LEN\_LE\_POWER\_REPORT 9
- #define HCI\_LEN\_LE\_PATH\_LOSS\_ZONE 5
- #define HCI\_LEN\_LE\_BIG\_INFO\_ADV\_REPORT 20

### Supported commands

- #define HCI\_SUP\_DISCONNECT 0x20
- #define HCI\_SUP\_READ\_REMOTE\_VER\_INFO 0x80
- #define HCI\_SUP\_SET\_EVENT\_MASK 0x40
- #define HCI\_SUP\_RESET 0x80
- #define HCI SUP READ TX PWR LVL 0x04
- #define HCI SUP READ LOCAL VER INFO 0x08
- #define HCI\_SUP\_READ\_LOCAL\_SUP\_FEAT\_0x20
- #define HCI\_SUP\_READ\_BD\_ADDR 0x02

- #define HCI\_SUP\_READ\_RSSI 0x20
- #define HCI\_SUP\_SET\_EVENT\_MASK\_PAGE2 0x04
- #define HCI\_SUP\_LE\_SET\_EVENT\_MASK 0x01
- #define HCI\_SUP\_LE\_READ\_BUF\_SIZE 0x02
- #define HCI SUP LE READ LOCAL SUP FEAT 0x04
- #define HCI\_SUP\_LE\_SET\_RAND\_ADDR 0x10
- #define HCI SUP LE SET ADV PARAM 0x20
- #define HCI\_SUP\_LE\_READ\_ADV\_TX\_POWER 0x40
- #define HCI\_SUP\_LE\_SET\_ADV\_DATA 0x80
- #define HCI SUP LE SET SCAN RESP DATA 0x01
- #define HCI SUP LE SET ADV ENABLE 0x02
- #define HCI SUP LE SET SCAN PARAM 0x04
- #define HCI\_SUP\_LE\_SET\_SCAN\_ENABLE 0x08
- #define HCI SUP LE CREATE CONN 0x10
- #define HCI\_SUP\_LE\_CREATE\_CONN\_CANCEL 0x20
- #define HCI SUP LE READ WHITE LIST SIZE 0x40
- #define HCI SUP LE CLEAR WHITE LIST 0x80
- #define HCI SUP LE ADD DEV WHITE LIST 0x01
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_WHITE\_LIST 0x02
- #define HCI\_SUP\_LE\_CONN\_UPDATE 0x04
- #define HCI\_SUP\_LE\_SET\_HOST\_CHAN\_CLASS 0x08
- #define HCI\_SUP\_LE\_READ\_CHAN\_MAP 0x10
- #define HCI SUP LE READ REMOTE FEAT 0x20
- #define HCI\_SUP\_LE\_ENCRYPT 0x40
- #define HCI SUP LE RAND 0x80
- #define HCI\_SUP\_LE\_START\_ENCRYPTION 0x01
- #define HCI\_SUP\_LE\_LTK\_REQ\_REPL 0x02
- #define HCI SUP LE LTK REQ NEG REPL 0x04
- #define HCI SUP LE READ SUP STATES 0x08
- #define HCI\_SUP\_LE\_RECEIVER\_TEST 0x10
- #define HCI\_SUP\_LE\_TRANSMITTER\_TEST 0x20
- #define HCI SUP LE TEST END 0x40
- #define HCI\_SUP\_READ\_AUTH\_PAYLOAD\_TO 0x10
- #define HCI\_SUP\_WRITE\_AUTH\_PAYLOAD\_TO 0x20
- #define HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_REPL 0x10
- #define HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_NEG\_REPL 0x20
- #define HCI\_SUP\_LE\_SET\_DATA\_LEN 0x40
- #define HCI\_SUP\_LE\_READ\_DEF\_DATA\_LEN 0x80
- #define HCI\_SUP\_LE\_WRITE\_DEF\_DATA\_LEN 0x01
- #define HCI SUP LE READ LOCAL P256 PUB KEY 0x02
- #define HCI SUP LE GENERATE DHKEY 0x04
- #define HCI\_SUP\_LE\_ADD\_DEV\_RES\_LIST\_EVT 0x08
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_RES\_LIST 0x10
- #define HCI\_SUP\_LE\_CLEAR\_RES\_LIST 0x20
- #define HCI\_SUP\_LE\_READ\_RES\_LIST\_SIZE 0x40
- #define HCI SUP LE READ PEER RES ADDR 0x80
- #define HCI\_SUP\_LE\_READ\_LOCAL\_RES\_ADDR 0x01
- #define HCI\_SUP\_LE\_SET\_ADDR\_RES\_ENABLE 0x02
- #define HCI\_SUP\_LE\_SET\_RES\_PRIV\_ADDR\_TO 0x04
- #define HCI\_SUP\_LE\_READ\_MAX\_DATA\_LEN 0x08
- #define HCI SUP LE READ PHY 0x10
- #define HCI\_SUP\_LE\_SET\_DEF\_PHY 0x20
- #define HCI SUP LE SET PHY 0x40
- #define HCI\_SUP\_LE\_ENHANCED\_RECEIVER\_TEST 0x80
- #define HCI\_SUP\_LE\_ENHANCED\_TRANSMITTER\_TEST 0x01

- #define HCI SUP LE SET ADV SET RAND ADDR 0x02
- #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_PARAM 0x04
- #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_DATA 0x08
- #define HCI SUP LE SET EXT SCAN RESP DATA 0x10
- #define HCI SUP LE SET EXT ADV ENABLE 0x20
- #define HCI\_SUP\_LE\_READ\_MAX\_ADV\_DATA\_LEN 0x40
- #define HCI\_SUP\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS 0x80
- #define HCI\_SUP\_LE\_REMOVE\_ADV\_SET 0x01
- #define HCI\_SUP\_LE\_CLEAR\_ADV\_SETS 0x02
- #define HCI SUP LE SET PER ADV PARAM 0x04
- #define HCI SUP LE SET PER ADV DATA 0x08
- #define HCI SUP LE SET PER ADV ENABLE 0x10
- #define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_PARAM 0x20
- #define HCI SUP LE SET EXT SCAN ENABLE 0x40
- #define HCI\_SUP\_LE\_EXT\_CREATE\_CONN 0x80
- #define HCI SUP LE PER ADV CREATE SYNC 0x01
- #define HCI SUP LE PER ADV CREATE SYNC CANCEL 0x02
- #define HCI SUP LE PER ADV TERMINATE SYNC 0x04
- #define HCI SUP LE ADD DEV PER ADV LIST 0x08
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST 0x10
- #define HCI\_SUP\_LE\_CLEAR\_PER\_ADV\_LIST 0x20
- #define HCI SUP LE READ PER ADV LIST SIZE 0x40
- #define HCI SUP LE READ TX POWER 0x80
- #define HCI\_SUP\_LE\_READ\_RF\_PATH\_COMP 0x01
- #define HCI\_SUP\_LE\_WRITE\_RF\_PATH\_COMP 0x02
- #define HCI\_SUP\_LE\_SET\_PRIVACY\_MODE 0x04
- #define HCI\_SUP\_LE\_RECEIVER\_TEST\_V3 0x08
- #define HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V3 0x10
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS 0x20
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE 0x40
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE 0x80
- #define HCI SUP LE SET CONN CTE RX PARAMS 0x01
- #define HCI\_SUP\_LE\_SET\_CONN\_CTE\_TX\_PARAMS 0x02
- #define HCI\_SUP\_LE\_CONN\_CTE\_REQ\_ENABLE 0x04
- #define HCI\_SUP\_LE\_CONN\_CTE\_RSP\_ENABLE 0x08
- #define HCI\_SUP\_LE\_READ\_ANTENNA\_INFO 0x10
- #define HCI\_SUP\_LE\_SET\_PER\_ADV\_RCV\_ENABLE 0x20
- #define HCI\_SUP\_LE\_PER\_ADV\_SYNC\_TRANSFER 0x40
- #define HCI SUP LE PER ADV SET INFO TRANSFER 0x80
- #define HCI SUP LE SET PAST PARAM 0x01
- #define HCI SUP LE SET DEFAULT PAST PARAM 0x02
- #define HCI\_SUP\_LE\_GENERATE\_DHKEY\_V2 0x04
- #define HCI\_SUP\_LE\_MODIFY\_SLEEP\_CLK\_ACCURACY 0x10
- #define HCI\_SUP\_LE\_READ\_BUF\_SIZE\_V2 0x20
- #define HCI\_SUP\_LE\_READ\_ISO\_TX\_SYNC 0x40
- #define HCI SUP LE SET CIG PARAM 0x80
- #define HCI\_SUP\_LE\_SET\_CIG\_PARAM\_TEST 0x01
- #define HCI\_SUP\_LE\_CREATE\_CIS 0x02
- #define HCI\_SUP\_LE\_REMOVE\_CIG 0x04
- #define HCI\_SUP\_LE\_ACCEPT\_CIS\_REQ 0x08
- #define HCI SUP LE REJECT CIS REQ 0x10
- #define HCI\_SUP\_LE\_CREATE\_BIG 0x20
- #define HCI SUP LE CREATE BIG TEST 0x40
- #define HCI SUP LE TERMINATE BIG 0x80
- #define HCI\_SUP\_LE\_BIG\_CREATE\_SYNC 0x01

- #define HCI\_SUP\_LE\_BIG\_TERMINATE\_SYNC 0x02
- #define HCI\_SUP\_LE\_REQ\_PEER\_SCA 0x04
- #define HCI\_SUP\_LE\_SETUP\_ISO\_DATA\_PATH 0x08
- #define HCI SUP LE REMOVE ISO DATA PATH 0x10
- #define HCI SUP LE ISO TRANSMIT TEST 0x20
- #define HCI\_SUP\_LE\_ISO\_RECEIVE\_TEST 0x40
- #define HCI SUP LE ISO READ TEST COUNTERS 0x80
- #define HCI\_SUP\_LE\_ISO\_TEST\_END 0x01
- #define HCI SUP LE SET HOST FEATURE 0x02
- #define HCI SUP LE READ ISO LINK QUALITY 0x04
- #define HCI SUP LE ENH READ TX POWER LEVEL 0x08
- #define HCI SUP LE READ REMOTE TX POWER LEVEL 0x01
- #define HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_PARAM 0x02
- #define HCI SUP LE SET PATH LOSS REPORT ENABLE 0x04
- #define HCI\_SUP\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE 0x08
- #define HCI SUP LE TRANSMITTER TEST V4 0x01
- #define HCI SUP READ LOCAL SUP CODECS V2 0x02
- #define HCI SUP READ LOCAL SUP CODEC CAP 0x04
- #define HCI\_SUP\_READ\_LOCAL\_SUP\_CTR\_DLY 0x08
- #define HCI\_SUP\_CONFIG\_DATA\_PATH 0x10
- #define HCI\_SUP\_CMD\_LEN 64

#### **Event mask**

- #define HCI\_EVT\_MASK\_DISCONNECT\_CMPL 0x10
- #define HCI\_EVT\_MASK\_ENC\_CHANGE 0x80
- #define HCI EVT MASK READ REMOTE VER INFO CMPL 0x08
- #define HCI EVT MASK HW ERROR 0x80
- #define HCI EVT MASK DATA BUF OVERFLOW 0x02
- #define HCI\_EVT\_MASK\_ENC\_KEY\_REFRESH\_CMPL 0x80
- #define HCI EVT MASK LE META 0x20

#### **Event mask page 2**

• #define HCI\_EVT\_MASK\_AUTH\_PAYLOAD\_TIMEOUT 0x80

#### LE event mask

- #define HCI\_EVT\_MASK\_LE\_CONN\_CMPL\_EVT 0x01
- #define HCI\_EVT\_MASK\_LE\_ADV\_REPORT\_EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_CONN\_UPDATE\_CMPL\_EVT 0x04
- #define HCI\_EVT\_MASK\_LE\_READ\_REMOTE\_FEAT\_CMPL\_EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_LTK\_REQ\_EVT\_0x10
- #define HCI EVT MASK LE REMOTE CONN PARAM REQ EVT 0x20
- #define HCI\_EVT\_MASK\_LE\_DATA\_LEN\_CHANGE\_EVT 0x40
- #define HCI\_EVT\_MASK\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL 0x80
- #define HCI\_EVT\_MASK\_LE\_GENERATE\_DHKEY\_CMPL 0x01
- #define HCI EVT MASK LE ENHANCED CONN CMPL EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_DIRECT\_ADV\_REPORT\_EVT 0x04
- #define HCI\_EVT\_MASK\_LE\_PHY\_UPDATE\_CMPL\_EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_EXT\_ADV\_REPORT\_EVT 0x10
- #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_EST\_EVT 0x20

- #define HCI EVT MASK LE PER ADV REPORT EVT 0x40
- #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_LOST\_EVT 0x80
- #define HCI\_EVT\_MASK\_LE\_SCAN\_TIMEOUT\_EVT 0x01
- #define HCI EVT MASK LE ADV SET TERM EVT 0x02
- #define HCI EVT MASK LE SCAN REQ RCVD EVT 0x04
- #define HCI\_EVT\_MASK\_LE\_CH\_SEL\_ALGO\_EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_CONNLESS\_IQ\_REPORT\_EVT\_0x10
- #define HCI\_EVT\_MASK\_LE\_CONN\_IQ\_REPORT\_EVT 0x20
- #define HCI\_EVT\_MASK\_LE\_CTE\_REQ\_FAILED\_EVT 0x40
- #define HCI EVT MASK LE PER SYNC TRSF RCVT EVT 0x80
- #define HCI EVT MASK LE CIS EST EVT 0x01
- #define HCI\_EVT\_MASK\_LE\_CIS\_REQ\_EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_CREATE\_BIG\_CMPL\_EVT 0x04
- #define HCI EVT MASK LE TERMINATE BIG CMPL EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_EST\_EVT 0x10
- #define HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_LOST\_EVT 0x20
- #define HCI EVT MASK LE PEER SCA CMPL EVT 0x40
- #define HCI\_EVT\_MASK\_LE\_PATH\_LOSS\_REPORT\_EVT\_0x80
- #define HCI EVT MASK LE TX POWER REPORT EVT 0x01
- #define HCI\_EVT\_MASK\_LE\_BIG\_INFO\_ADV\_RPT\_EVT 0x02

### LE supported features

- #define HCI\_LE\_SUP\_FEAT\_ENCRYPTION 0x0000000000000001
- #define HCI\_LE\_SUP\_FEAT\_EXT\_REJECT\_IND 0x00000000000000004
- #define HCI LE SUP FEAT SLV INIT FEAT EXCH 0x0000000000000000
- #define HCI LE SUP FEAT LE PING 0x00000000000000010

- #define HCI\_LE\_SUP\_FEAT\_LE\_2M\_PHY 0x00000000000000100

- #define HCI\_LE\_SUP\_FEAT\_LE\_EXT\_ADV 0x000000000001000
- #define HCI LE SUP FEAT CH SEL 2 0x0000000000000004000
- #define HCI LE SUP FEAT MIN NUN USED CHAN 0x0000000000010000
- #define HCI\_LE\_SUP\_FEAT\_CONN\_CTE\_RSP 0x000000000000040000
- #define HCI\_LE\_SUP\_FEAT\_CONNLESS\_CTE\_RECV 0x000000000100000
- #define HCI\_LE\_SUP\_FEAT\_ANTENNA\_SWITCH\_AOD 0x00000000000200000
- #define HCI LE SUP FEAT ANTENNA SWITCH AOA 0x000000000000400000
- #define HCI\_LE\_SUP\_FEAT\_PAST\_SENDER 0x000000001000000
- #define HCI\_LE\_SUP\_FEAT\_PAST\_RECIPIENT 0x00000000002000000
- #define HCI LE SUP FEAT SCA UPDATE 0x0000000004000000
- #define HCI\_LE\_SUP\_FEAT\_CIS\_MASTER 0x000000010000000
- #define HCI LE SUP FEAT CIS SLAVE 0x0000000020000000
- #define HCI LE SUP FEAT ISO BROADCASTER 0x0000000040000000

- #define HCI\_LE\_SUP\_FEAT\_ISO\_SYNC\_RECEIVER 0x0000000080000000
- #define HCI\_LE\_SUP\_FEAT\_ISO\_HOST\_SUPPORT 0x0000000100000000
- #define HCI\_LE\_SUP\_FEAT\_POWER\_CONTROL\_REQUEST 0x00000000200000000
- #define HCI\_LE\_SUP\_FEAT\_POWER\_CHANGE\_IND 0x0000000400000000
- #define HCI LE SUP FEAT PATH LOSS MONITOR 0x0000000000000000

### LE feature bit positon in FeatureSet stored in the Controller

• #define HCI\_LE\_FEAT\_BIT\_ISO\_HOST\_SUPPORT 32

# Advertising command parameters

- #define HCI ADV MIN INTERVAL 0x0020
- #define HCI ADV MAX INTERVAL 0x4000
- #define HCI\_ADV\_DIRECTED\_MAX\_DURATION 0x0500
- #define HCI\_ADV\_TYPE\_CONN\_UNDIRECT 0x00
- #define HCI\_ADV\_TYPE\_CONN\_DIRECT 0x01
- #define HCI ADV TYPE DISC UNDIRECT 0x02
- #define HCI\_ADV\_TYPE\_NONCONN\_UNDIRECT 0x03
- #define HCI\_ADV\_TYPE\_CONN\_DIRECT\_LO\_DUTY 0x04
- #define HCI\_ADV\_CHAN\_37 0x01
- #define HCI\_ADV\_CHAN\_38 0x02
- #define HCI\_ADV\_CHAN\_39 0x04
- #define HCI\_ADV\_FILT\_NONE 0x00
- #define HCI ADV FILT SCAN 0x01
- #define HCI\_ADV\_FILT\_CONN 0x02
- #define HCI\_ADV\_FILT\_ALL 0x03

#### Scan command parameters

- #define HCI SCAN TYPE PASSIVE 0
- #define HCI SCAN TYPE ACTIVE 1
- #define HCI\_SCAN\_INTERVAL\_MIN 0x0004
- #define HCI\_SCAN\_INTERVAL\_MAX 0x4000
- #define HCI\_SCAN\_INTERVAL\_DEFAULT 0x0010
- #define HCI\_SCAN\_WINDOW\_MIN 0x0004
- #define HCI\_SCAN\_WINDOW\_MAX 0x4000
- #define HCI\_SCAN\_WINDOW\_DEFAULT 0x0010

# **Connection command parameters**

- #define HCI\_CONN\_INTERVAL\_MIN 0x0006
- #define HCI\_CONN\_INTERVAL\_MAX 0x0C80
- #define HCI CONN LATENCY MAX 0x01F3
- #define HCI SUP TIMEOUT MIN 0x000A
- #define HCI\_SUP\_TIMEOUT\_MAX 0x0C80

# **Connection event parameters**

- #define HCI CLOCK 500PPM 0x00
- #define HCI CLOCK 250PPM 0x01
- #define HCI CLOCK 150PPM 0x02
- #define HCI\_CLOCK\_100PPM 0x03
- #define HCI\_CLOCK\_75PPM 0x04
- #define HCI CLOCK 50PPM 0x05
- #define HCI CLOCK 30PPM 0x06
- #define HCI\_CLOCK\_20PPM 0x07

### Advertising report event parameters

- #define HCI\_ADV\_CONN\_UNDIRECT 0x00
- #define HCI ADV CONN DIRECT 0x01
- #define HCI ADV DISC UNDIRECT 0x02
- #define HCI\_ADV\_NONCONN\_UNDIRECT 0x03
- #define HCI\_ADV\_SCAN\_RESPONSE 0x04

# **Extended advertising data operations**

- #define HCI\_ADV\_DATA\_OP\_FRAG\_INTER 0x00
- #define HCI\_ADV\_DATA\_OP\_FRAG\_FIRST 0x01
- #define HCI\_ADV\_DATA\_OP\_FRAG\_LAST 0x02
- #define HCI\_ADV\_DATA\_OP\_COMP\_FRAG 0x03
- #define HCI\_ADV\_DATA\_OP\_UNCHANGED\_DATA 0x04

# Advertising data fragment preference

- #define HCI\_ADV\_DATA\_FRAG\_PREF\_FRAG 0x00
- #define HCI\_ADV\_DATA\_FRAG\_PREF\_NO\_FRAG 0x01

### Number of advertising sets

• #define HCI ADV NUM SETS ALL DISABLE 0x00

# Maximum number of scanning or initiating PHYs

#define HCI\_MAX\_NUM\_PHYS 3

### **Advertising PHY values**

- #define HCI\_ADV\_PHY\_LE\_1M 0x01
- #define HCI ADV PHY LE 2M 0x02
- #define HCI\_ADV\_PHY\_LE\_CODED 0x03

#### Scanner PHY value bits

- #define HCI\_SCAN\_PHY\_LE\_1M\_BIT (1<<0)
- #define HCI\_SCAN\_PHY\_LE\_2M\_BIT (1<<1)</li>
- #define HCI\_SCAN\_PHY\_LE\_CODED\_BIT (1<<2)</li>

#### **Initiator PHY value bits**

- #define HCI\_INIT\_PHY\_LE\_1M\_BIT (1<<0)
- #define HCI\_INIT\_PHY\_LE\_2M\_BIT (1<<1)</li>
- #define HCI\_INIT\_PHY\_LE\_CODED\_BIT (1<<2)</li>

#### Transmitter PHY value bits

- #define HCI\_TRANS\_PHY\_LE\_1M\_BIT (1<<0)</li>
- #define HCI\_TRANS\_PHY\_LE\_2M\_BIT (1<<1)
- #define HCI\_TRABS\_PHY\_LE\_CODED\_BIT (1<<2)

# Advertising event properties type bits

- #define HCI ADV PROP CONN ADV BIT (1<<0)
- #define HCI ADV PROP SCAN ADV BIT (1<<1)
- #define HCI\_ADV\_PROP\_DIRECT\_ADV\_BIT (1<<2)
- #define HCI\_ADV\_PROP\_CONN\_DIRECT\_ADV\_BIT (1<<3)</li>
- #define HCI ADV PROP USE LEG PDU BIT (1<<4)</li>
- #define HCI\_ADV\_PROP\_OMIT\_ADV\_ADDR\_BIT (1<<5)</li>
- #define HCI\_ADV\_PROP\_INC\_TX\_PWR\_BIT (1<<6)

# Advertising event properties for legacy PDUs

- #define HCI ADV PROP LEG CONN UNDIRECT 0x13
- #define HCI ADV PROP LEG CONN DIRECT 0x1D
- #define HCI ADV PROP LEG SCAN UNDIRECT 0x12
- #define HCI\_ADV\_PROP\_LEG\_NONCONN\_UNDIRECT 0x10
- #define HCI\_ADV\_PROP\_LEG\_CONN\_DIRECT\_LO\_DUTY 0x15

### Extended advertising report event type bits

- #define HCI\_ADV\_RPT\_CONN\_ADV\_BIT (1<<0)
- #define HCI\_ADV\_RPT\_SCAN\_ADV\_BIT (1<<1)
- #define HCI ADV RPT DIRECT ADV BIT (1<<2)
- #define HCI ADV RPT SCAN RSP BIT (1<<3)</li>
- #define HCI\_ADV\_RPT\_LEG\_ADV\_BIT (1<<4)</li>
- #define HCI\_ADV\_RPT\_DATA\_STATUS\_BITS (3<<5)</li>

# Advertising report event types for legacy PDUs

- #define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT 0x13
- #define HCI ADV RPT LEG CONN DIRECT 0x15
- #define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT 0x12
- #define HCI ADV RPT LEG NONCONN UNDIRECT 0x10
- #define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT\_SCAN\_RSP 0x1B
- #define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT\_SCAN\_RSP 0x1A

## Advertising report data status

- #define HCI ADV RPT DATA CMPL 0x00
- #define HCI\_ADV\_RPT\_DATA\_INCMPL\_MORE 0x01
- #define HCI\_ADV\_RPT\_DATA\_INCMPL\_TRUNC 0x02

### **Extended advertising report event primary PHY values**

- #define HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_1M 0x01
- #define HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_CODED 0x03

# Extended advertising report event seconday PHY values

- #define HCI\_ADV\_RPT\_PHY\_SEC\_NONE 0x00
- #define HCI\_ADV\_RPT\_PHY\_SEC\_LE\_1M 0x01
- #define HCI ADV RPT PHY SEC LE 2M 0x02
- #define HCI\_ADV\_RPT\_PHY\_SEC\_LE\_CODED 0x03

# Channel selection algorithm used

- #define HCI\_CH\_SEL\_ALGO\_1 0x00
- #define HCI\_CH\_SEL\_ALGO\_2 0x01

### **KeyType parameters**

- #define HCI\_PRIVATE\_KEY\_GENERATED 0x00
- #define HCI\_PRIVATE\_KEY\_DEBUG 0x01

#### Minimum number of used channels

#define HCI\_MIN\_NUM\_OF\_USED\_CHAN 8

# Synchronization timeout for the periodic advertising

- #define HCI SYNC MIN TIMEOUT 0x000A
- #define HCI\_SYNC\_MAX\_TIMEOUT 0x4000

### Maximum synchronization skip

• #define HCI SYNC MAX SKIP 0x01F3

#### Maximum synchronization handle

#define HCI\_SYNC\_MAX\_HANDLE 0x0EFF

## Periodic sync transfer receive mode

```
    #define HCI_SYNC_TRSF_MODE_OFF 0x00
```

- #define HCI\_SYNC\_TRSF\_MODE\_REP\_DISABLED 0x01,
- #define HCI\_SYNC\_TRSF\_MODE\_REP\_ENABLED 0x02,

### Periodic advertising create sync options bits

```
    #define HCI_OPTIONS_FILT_POLICY_BIT (1<<0)</li>
```

#define HCI\_OPTIONS\_INIT\_RPT\_ENABLE\_BIT (1<<1)</li>

# Misc command parameters

- #define HCI\_ROLE\_MASTER 0
- #define HCI ROLE MASTER 0
- #define HCI ROLE SLAVE 1
- #define HCI\_ROLE\_SLAVE 1
- #define HCI\_READ\_TX\_PWR\_CURRENT 0
- #define HCI\_READ\_TX\_PWR\_MAX 1
- #define HCI\_TX\_PWR\_MIN -30
- #define HCI\_TX\_PWR\_MAX 20
- #define HCI\_TX\_PWR\_NO\_PREFERENCE 127
- #define HCI VERSION 6
- #define HCI RSSI MIN -127
- #define HCI\_RSSI\_MAX 20
- #define HCI\_ADDR\_TYPE\_PUBLIC 0
- #define HCI\_ADDR\_TYPE\_RANDOM 1
- #define HCI\_ADDR\_TYPE\_PUBLIC\_IDENTITY 2
- #define HCI\_ADDR\_TYPE\_RANDOM\_IDENTITY 3
- #define HCI ADDR TYPE ANONYMOUS 0xFF
- #define HCI\_FILT\_NONE 0
- #define HCI\_FILT\_WHITE\_LIST 1
- #define HCI\_FILT\_RES\_INIT 2
- #define HCI\_FILT\_WHITE\_LIST\_RES\_INIT 3
- #define HCI\_FILT\_PER\_ADV\_PARAM 0
- #define HCI FILT PER ADV LIST 1
- #define HCI PRIV MODE NETWORK 0x00
- #define HCI\_PRIV\_MODE\_DEVICE 0x01

# **PHY types**

- #define HCI PHY NONE 0x00
- #define HCI PHY LE 1M BIT (1<<0)
- #define HCI\_PHY\_LE\_2M\_BIT (1<<1)
- #define HCI\_PHY\_LE\_CODED\_BIT (1<<2)</li>

#### All PHYs preference

- #define HCI ALL PHY ALL PREFERENCES 0x00
- #define HCI ALL PHY TX PREFERENCE BIT (1<<0)
- #define HCI\_ALL\_PHY\_RX\_PREFERENCE\_BIT (1<<1)</li>

# **PHY options**

- #define HCI PHY OPTIONS NONE 0x00
- #define HCI PHY OPTIONS S2 PREFERRED 0x01
- #define HCI\_PHY\_OPTIONS\_S8\_PREFERRED 0x02

#### **CTE Slot Durations**

- #define HCI\_CTE\_SLOT\_DURATION\_NONE 0x00
- #define HCI CTE SLOT DURATION 1 US 0x01
- #define HCI\_CTE\_SLOT\_DURATION\_2\_US 0x02

#### **Permitted CTE Type bits**

- #define HCI\_CTE\_TYPE\_PERMIT\_AOA\_RSP\_BIT (1<<0)</li>
- #define HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_1\_US\_BIT (1<<1)
- #define HCI CTE TYPE PERMIT AOD RSP 2 US BIT (1<<2)

# **Requested CTE Types**

- #define HCI\_CTE\_TYPE\_REQ\_AOA 0x00
- #define HCI\_CTE\_TYPE\_REQ\_AOD\_1\_US 0x01
- #define HCI\_CTE\_TYPE\_REQ\_AOD\_2\_US 0x02

### Bluetooth core specification versions

- #define HCI VER BT CORE SPEC 4 0 0x06
- #define HCI\_VER\_BT\_CORE\_SPEC\_4\_1 0x07
- #define HCI\_VER\_BT\_CORE\_SPEC\_4\_2 0x08
- #define HCI VER BT CORE SPEC 5 0 0x09
- #define HCI VER BT CORE SPEC 5 1 0x0A
- #define HCI\_VER\_BT\_CORE\_SPEC\_5\_2 0x0B

### **Parameter lengths**

- #define HCI\_EVT\_MASK\_LEN 8
- #define HCI\_EVT\_MASK\_PAGE\_2\_LEN 8
- #define HCI\_LE\_EVT\_MASK\_LEN 8
- #define HCI FEAT LEN 8
- #define HCI\_ADV\_DATA\_LEN 31
- #define HCI\_SCAN\_DATA\_LEN 31
- #define HCI\_EXT\_ADV\_DATA\_LEN 251
- #define HCI EXT ADV CONN DATA LEN 191
- #define HCI\_PER\_ADV\_DATA\_LEN 252
- #define HCI\_EXT\_ADV\_RPT\_DATA\_LEN 229
- #define HCI PER ADV RPT DATA LEN 247
- #define HCI\_CHAN\_MAP\_LEN 5
- #define HCI\_KEY\_LEN 16
- #define HCI\_ENCRYPT\_DATA\_LEN 16
- #define HCI\_RAND\_LEN 8
- #define HCI LE STATES LEN 8
- #define HCI\_P256\_KEY\_LEN 64
- #define HCI DH KEY LEN 32
- #define HCI\_BC\_LEN 16
- #define HCI\_EXT\_ADV\_RPT\_DATA\_LEN\_OFFSET 23
- #define HCI PER ADV RPT DATA LEN OFFSET 6

### **Number of Antenna IDs in Switching Pattern**

- #define HCI\_MIN\_NUM\_ANTENNA\_IDS 2
- #define HCI\_MAX\_NUM\_ANTENNA\_IDS 75

### **IQ Report Sample Counts**

- #define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MIN 9
- #define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MAX 82
- #define HCI\_CONN\_IQ\_RPT\_SAMPLE\_CNT\_OFFSET 12

#### **CIS Count**

• #define HCI\_MAX\_CIS\_COUNT 0x10

#### **BIS Count**

• #define HCI MAX BIS COUNT 0x10

### **CIG IDs**

- #define HCI MIN CIG ID 0x00
- #define HCI\_MAX\_CIG\_ID 0xEF

# **CIS IDs**

- #define HCI\_MIN\_CIS\_ID 0x00
- #define HCI\_MAX\_CIS\_ID 0xEF

# **Packing Scheme**

- #define HCI\_PACKING\_SEQUENTIAL 0x00
- #define HCI PACKING INTERLEAVED 0x01

# **Framing**

- #define HCI FRAMING UNFRAMED 0x00
- #define HCI FRAMING FRAMED 0x01

# **Slave Clock Accuracy**

- #define HCI MIN SCA 0x00
- #define HCI\_MAX\_SCA 0x07

#### **SDU Size**

- #define HCI MIN SDU SIZE 0x0000
- #define HCI\_MAX\_SDU\_SIZE 0x0FFF

#### SDU Interval

- #define HCI\_MIN\_SDU\_INTERV 0x0000FF
- #define HCI\_MAX\_SDU\_INTERV 0x0FFFFF
- #define HCI\_DEFAULT\_SDU\_INTERV 0x004E20

# **CIS Transport Latency**

- #define HCI\_MIN\_CIS\_TRANS\_LAT 0x0005
- #define HCI\_MAX\_CIS\_TRANS\_LAT 0x0FA0
- #define HCI\_DEFAULT\_CIS\_TRANS\_LAT 0x0028

### **CIS Flush Time**

- #define HCI MIN CIS FT 0x01
- #define HCI\_MAX\_CIS\_FT 0xFF

# **CIS Burst Number**

- #define HCI MIN CIS BN 0x00
- #define HCI\_MAX\_CIS\_BN 0x0F

#### **CIS Retransmission Number**

- #define HCI\_MIN\_CIS\_RTN 0x00
- #define HCI\_MAX\_CIS\_RTN 0x0F

#### **ISO Data Path Direction**

- #define HCI\_ISO\_DATA\_DIR\_INPUT 0
- #define HCI\_ISO\_DATA\_DIR\_OUTPUT 1

#### ISO Data Path Direction Bit

- #define HCI\_ISO\_DATA\_PATH\_INPUT\_BIT (1<<HCI\_ISO\_DATA\_DIR\_INPUT)</li>
- #define HCI ISO DATA PATH OUTPUT BIT (1<<HCI ISO DATA DIR OUTPUT)</li>

# ISO Data Path ID

- #define HCI ISO DATA PATH HCI 0x00
- #define HCI\_ISO\_DATA\_PATH\_VS 0x01
- #define HCI\_ISO\_DATA\_PATH\_DISABLED 0xFF

# ISO test packet payload type

- #define HCI\_ISO\_ISO\_PLD\_TYPE\_ZERO\_LEN 0x00
- #define HCI\_ISO\_ISO\_PLD\_TYPE\_VAR\_LEN 0x01
- #define HCI\_ISO\_ISO\_PLD\_TYPE\_MAX\_LEN 0x02

#### Maximum number of codecs

• #define HCI\_MAX\_CODEC 5

# Maximum length of codec-specific capability data

• #define HCI\_CODEC\_CAP\_DATA\_LEN 4

# Codec transport types

- #define HCI\_CODEC\_TRANS\_CIS\_BIT (1<<2)
- #define HCI\_CODEC\_TRANS\_BIS\_BIT (1<<3)

# **ISO Header Packet Boundary**

- #define HCI ISO HDR PB START FRAG 0x00
- #define HCI\_ISO\_HDR\_PB\_CONT\_FRAG 0x01
- #define HCI ISO HDR PB COMP FRAG 0x02
- #define HCI\_ISO\_HDR\_PB\_END\_FRAG 0x03

# **ISOAL Segmentation Header Start/Continuation Bit**

- #define HCI\_ISOAL\_SEG\_HDR\_SC\_START 0x00
- #define HCI\_ISOAL\_SEG\_HDR\_SC\_CONT 0x01

# **Company ID**

- #define HCI\_ID\_PACKETCRAFT 0x07E8
- #define HCI ID GREENPEAK 0x0453

Greenpeak company ID.

# Manufacturer location in Local version

• #define HCI\_LOCAL\_VER\_MANUFACTURER\_POS 4

# **Coding Format Assigned Numbers**

- #define HCI\_ID\_LC3 0x01
- #define HCI\_ID\_VS 0xFF
- #define HCI\_CODEC\_TRANSPORT\_CIS 0x02
- #define HCI\_CODEC\_TRANSPORT\_BIS 0x03

# 1.2.1 Detailed Description

# 1.2.2 Macro Definition Documentation

```
1.2.2.1 HCI CMD HDR LEN
```

#define HCI\_CMD\_HDR\_LEN 3

Command packet header length

Definition at line 63 of file hci\_defs.h.

1.2.2.2 HCI\_ACL\_HDR\_LEN

#define HCI\_ACL\_HDR\_LEN 4

ACL packet header length

Definition at line 64 of file hci\_defs.h.

# 1.2.2.3 HCI\_ISO\_HDR\_LEN

#define HCI\_ISO\_HDR\_LEN 4

ISO packet header length

Definition at line 65 of file hci\_defs.h.

# 1.2.2.4 HCI\_EVT\_HDR\_LEN

#define HCI\_EVT\_HDR\_LEN 2

Event packet header length

Definition at line 66 of file hci\_defs.h.

# 1.2.2.5 HCI\_EVT\_PARAM\_MAX\_LEN

#define HCI\_EVT\_PARAM\_MAX\_LEN 255

Maximum length of event packet parameters

Definition at line 67 of file hci\_defs.h.

# 1.2.2.6 HCI\_ACL\_DEFAULT\_LEN

#define HCI\_ACL\_DEFAULT\_LEN 27

Default maximum ACL packet length

Definition at line 68 of file hci\_defs.h.

# 1.2.2.7 HCI\_PB\_FLAG\_MASK

#define HCI\_PB\_FLAG\_MASK 0x3000

ACL packet boundary flag mask

Definition at line 69 of file hci\_defs.h.

# 1.2.2.8 HCI\_PB\_START\_H2C

#define HCI\_PB\_START\_H2C 0x0000

Packet boundary flag, start, host-to-controller

Definition at line 70 of file hci defs.h.

# 1.2.2.9 HCI\_PB\_CONTINUE

#define HCI\_PB\_CONTINUE 0x1000

Packet boundary flag, continue

Definition at line 71 of file hci\_defs.h.

#### 1.2.2.10 HCI\_PB\_START\_C2H

#define HCI\_PB\_START\_C2H 0x2000

Packet boundary flag, start, controller-to-host

Definition at line 72 of file hci\_defs.h.

# 1.2.2.11 HCI\_HANDLE\_MASK

#define HCI\_HANDLE\_MASK 0x0FFF

Mask for handle bits in ACL packet

Definition at line 73 of file hci\_defs.h.

# 1.2.2.12 HCI\_HANDLE\_NONE

#define HCI\_HANDLE\_NONE 0xFFFF

Value for invalid handle

Definition at line 74 of file hci\_defs.h.

# 1.2.2.13 HCI\_TS\_FLAG\_MASK

```
\#define HCI_TS_FLAG_MASK (1 << 14)
```

Timestamp flag mask for ISO packets.

Definition at line 77 of file hci\_defs.h.

# 1.2.2.14 HCI\_DATA\_LOAD\_LEN\_MASK

```
#define HCI_DATA_LOAD_LEN_MASK 0x3FFF
```

HCI Data load length.

Definition at line 79 of file hci\_defs.h.

# 1.2.2.15 HCI\_ISO\_DL\_MIN\_LEN

```
#define HCI_ISO_DL_MIN_LEN 4
```

ISO Data Load header minimum length

Definition at line 82 of file hci\_defs.h.

# 1.2.2.16 HCI\_ISO\_DL\_MAX\_LEN

```
#define HCI_ISO_DL_MAX_LEN 8
```

ISO Data Load header maximum length

Definition at line 83 of file hci\_defs.h.

# 1.2.2.17 HCI\_ISO\_TS\_LEN

#define HCI\_ISO\_TS\_LEN 4

ISO Data Load timestamp length

Definition at line 84 of file hci\_defs.h.

1.2.2.18 HCI\_ISO\_DL\_SDU\_LEN\_MASK

#define HCI\_ISO\_DL\_SDU\_LEN\_MASK 0x0FFF

HCI SDU Length mask.

Definition at line 85 of file hci\_defs.h.

1.2.2.19 HCI\_ISO\_DL\_PS\_MASK

#define HCI\_ISO\_DL\_PS\_MASK 0xC000

HCI Packet status mask.

Definition at line 86 of file hci\_defs.h.

1.2.2.20 HCI\_CMD\_TYPE

#define HCI\_CMD\_TYPE 0x01

HCI command packet

Definition at line 93 of file hci\_defs.h.

1.2.2.21 HCI\_ACL\_TYPE

#define HCI\_ACL\_TYPE 0x02

HCI ACL data packet

Definition at line 94 of file hci\_defs.h.

1.2.2.22 HCI\_EVT\_TYPE

#define HCI\_EVT\_TYPE 0x04

HCI event packet

Definition at line 95 of file hci\_defs.h.

1.2.2.23 HCI\_ISO\_TYPE

#define HCI\_ISO\_TYPE 0x05

HCI ISO data packet

Definition at line 96 of file hci\_defs.h.

1.2.2.24 HCI\_SUCCESS

#define HCI\_SUCCESS 0x00

Success

Definition at line 103 of file hci\_defs.h.

1.2.2.25 HCI\_ERR\_UNKNOWN\_CMD

#define HCI\_ERR\_UNKNOWN\_CMD 0x01

Unknown HCI command

Definition at line 104 of file hci\_defs.h.

1.2.2.26 HCI\_ERR\_UNKNOWN\_HANDLE

#define HCI\_ERR\_UNKNOWN\_HANDLE 0x02

Unknown connection identifier

Definition at line 105 of file hci\_defs.h.

1.2.2.27 HCI\_ERR\_HARDWARE\_FAILURE

#define HCI\_ERR\_HARDWARE\_FAILURE 0x03

Hardware failure

Definition at line 106 of file hci\_defs.h.

# 1.2.2.28 HCI\_ERR\_PAGE\_TIMEOUT

#define HCI\_ERR\_PAGE\_TIMEOUT 0x04

Page timeout

Definition at line 107 of file hci\_defs.h.

# 1.2.2.29 HCI\_ERR\_AUTH\_FAILURE

#define HCI\_ERR\_AUTH\_FAILURE 0x05

Authentication failure

Definition at line 108 of file hci\_defs.h.

#### 1.2.2.30 HCI\_ERR\_KEY\_MISSING

#define HCI\_ERR\_KEY\_MISSING 0x06

PIN or key missing

Definition at line 109 of file hci\_defs.h.

# 1.2.2.31 HCI\_ERR\_MEMORY\_EXCEEDED

 $\verb|#define HCI_ERR_MEMORY_EXCEEDED 0x07|\\$ 

Memory capacity exceeded

Definition at line 110 of file hci\_defs.h.

# 1.2.2.32 HCI\_ERR\_CONN\_TIMEOUT

#define HCI\_ERR\_CONN\_TIMEOUT 0x08

Connection timeout

Definition at line 111 of file hci\_defs.h.

#### 1.2.2.33 HCI\_ERR\_CONN\_LIMIT

#define HCI\_ERR\_CONN\_LIMIT 0x09

Connection limit exceeded

Definition at line 112 of file hci defs.h.

# 1.2.2.34 HCI\_ERR\_SYNCH\_CONN\_LIMIT

#define HCI\_ERR\_SYNCH\_CONN\_LIMIT 0x0A

Synchronous connection limit exceeded

Definition at line 113 of file hci\_defs.h.

#### 1.2.2.35 HCI\_ERR\_ACL\_CONN\_EXISTS

#define HCI\_ERR\_ACL\_CONN\_EXISTS 0x0B

ACL connection already exists

Definition at line 114 of file hci\_defs.h.

# 1.2.2.36 HCI\_ERR\_CMD\_DISALLOWED

#define HCI\_ERR\_CMD\_DISALLOWED 0x0C

Command disallowed

Definition at line 115 of file hci\_defs.h.

# 1.2.2.37 HCI\_ERR\_REJ\_RESOURCES

#define HCI\_ERR\_REJ\_RESOURCES 0x0D

Connection rejected limited resources

Definition at line 116 of file hci\_defs.h.

# 1.2.2.38 HCI\_ERR\_REJ\_SECURITY

#define HCI\_ERR\_REJ\_SECURITY 0x0E

Connection rejected security reasons

Definition at line 117 of file hci defs.h.

# 1.2.2.39 HCI\_ERR\_REJ\_BD\_ADDR

#define HCI\_ERR\_REJ\_BD\_ADDR 0x0F

Connection rejected unacceptable BD\_ADDR

Definition at line 118 of file hci\_defs.h.

#### 1.2.2.40 HCI\_ERR\_ACCEPT\_TIMEOUT

#define HCI\_ERR\_ACCEPT\_TIMEOUT 0x10

Connection accept timeout exceeded

Definition at line 119 of file hci\_defs.h.

# 1.2.2.41 HCI\_ERR\_UNSUP\_FEAT

#define HCI\_ERR\_UNSUP\_FEAT 0x11

Unsupported feature or parameter value

Definition at line 120 of file hci\_defs.h.

# 1.2.2.42 HCI\_ERR\_INVALID\_PARAM

#define HCI\_ERR\_INVALID\_PARAM 0x12

Invalid HCI command parameters

Definition at line 121 of file hci\_defs.h.

#### 1.2.2.43 HCI\_ERR\_REMOTE\_TERMINATED

#define HCI\_ERR\_REMOTE\_TERMINATED 0x13

Remote user terminated connection

Definition at line 122 of file hci defs.h.

# 1.2.2.44 HCI\_ERR\_REMOTE\_RESOURCES

#define HCI\_ERR\_REMOTE\_RESOURCES 0x14

Remote device low resources

Definition at line 123 of file hci\_defs.h.

#### 1.2.2.45 HCI\_ERR\_REMOTE\_POWER\_OFF

#define HCI\_ERR\_REMOTE\_POWER\_OFF 0x15

Remote device power off

Definition at line 124 of file hci\_defs.h.

# 1.2.2.46 HCI\_ERR\_LOCAL\_TERMINATED

#define HCI\_ERR\_LOCAL\_TERMINATED 0x16

Connection terminated by local host

Definition at line 125 of file hci\_defs.h.

# 1.2.2.47 HCI\_ERR\_REPEATED\_ATTEMPTS

#define HCI\_ERR\_REPEATED\_ATTEMPTS 0x17

Repeated attempts

Definition at line 126 of file hci\_defs.h.

# 1.2.2.48 HCI\_ERR\_PAIRING\_NOT\_ALLOWED

#define HCI\_ERR\_PAIRING\_NOT\_ALLOWED 0x18

Pairing not allowed

Definition at line 127 of file hci\_defs.h.

# 1.2.2.49 HCI\_ERR\_UNKNOWN\_LMP\_PDU

#define HCI\_ERR\_UNKNOWN\_LMP\_PDU 0x19

Unknown LMP PDU

Definition at line 128 of file hci\_defs.h.

# 1.2.2.50 HCI\_ERR\_UNSUP\_REMOTE\_FEAT

#define HCI\_ERR\_UNSUP\_REMOTE\_FEAT 0x1A

Unsupported remote feature

Definition at line 129 of file hci\_defs.h.

# 1.2.2.51 HCI\_ERR\_SCO\_OFFSET

#define HCI\_ERR\_SCO\_OFFSET 0x1B

SCO offset rejected

Definition at line 130 of file hci\_defs.h.

# 1.2.2.52 HCI\_ERR\_SCO\_INTERVAL

#define HCI\_ERR\_SCO\_INTERVAL 0x1C

SCO interval rejected

Definition at line 131 of file hci\_defs.h.

1.2 Generic HCI Definitions 47 1.2.2.53 HCI\_ERR\_SCO\_MODE #define HCI\_ERR\_SCO\_MODE 0x1D SCO air mode rejected Definition at line 132 of file hci\_defs.h. 1.2.2.54 HCI\_ERR\_LMP\_PARAM #define HCI\_ERR\_LMP\_PARAM 0x1E Invalid LMP parameters Definition at line 133 of file hci\_defs.h. 1.2.2.55 HCI\_ERR\_UNSPECIFIED #define HCI\_ERR\_UNSPECIFIED 0x1F Unspecified error Definition at line 134 of file hci\_defs.h. 1.2.2.56 HCI\_ERR\_UNSUP\_LMP\_PARAM #define HCI\_ERR\_UNSUP\_LMP\_PARAM 0x20 Unsupported LMP parameter value Definition at line 135 of file hci\_defs.h.

# 1.2.2.57 HCI\_ERR\_ROLE\_CHANGE

#define HCI\_ERR\_ROLE\_CHANGE 0x21

Role change not allowed

Definition at line 136 of file hci\_defs.h.

# 1.2.2.58 HCI\_ERR\_LL\_RESP\_TIMEOUT

#define HCI\_ERR\_LL\_RESP\_TIMEOUT 0x22

LL response timeout

Definition at line 137 of file hci\_defs.h.

1.2.2.59 HCI\_ERR\_LMP\_COLLISION

#define HCI\_ERR\_LMP\_COLLISION 0x23

LMP error transaction collision

Definition at line 138 of file hci\_defs.h.

1.2.2.60 HCI\_ERR\_LMP\_PDU

#define HCI\_ERR\_LMP\_PDU 0x24

LMP pdu not allowed

Definition at line 139 of file hci\_defs.h.

1.2.2.61 HCI\_ERR\_ENCRYPT\_MODE

#define HCI\_ERR\_ENCRYPT\_MODE 0x25

Encryption mode not acceptable

Definition at line 140 of file hci\_defs.h.

1.2.2.62 HCI\_ERR\_LINK\_KEY

#define HCI\_ERR\_LINK\_KEY 0x26

Link key can not be changed

Definition at line 141 of file hci\_defs.h.

1.2.2.63 HCI\_ERR\_UNSUP\_QOS

#define HCI\_ERR\_UNSUP\_QOS 0x27

Requested qos not supported

Definition at line 142 of file hci\_defs.h.

1.2.2.64 HCI\_ERR\_INSTANT\_PASSED

#define HCI\_ERR\_INSTANT\_PASSED 0x28

Instant passed

Definition at line 143 of file hci\_defs.h.

1.2.2.65 HCI\_ERR\_UNSUP\_UNIT\_KEY

#define HCI\_ERR\_UNSUP\_UNIT\_KEY 0x29

Pairing with unit key not supported

Definition at line 144 of file hci\_defs.h.

1.2.2.66 HCI\_ERR\_TRANSACT\_COLLISION

#define HCI\_ERR\_TRANSACT\_COLLISION 0x2A

Different transaction collision

Definition at line 145 of file hci\_defs.h.

1.2.2.67 HCI\_ERR\_CHANNEL\_CLASS

#define HCI\_ERR\_CHANNEL\_CLASS 0x2E

Channel classification not supported

Definition at line 146 of file hci\_defs.h.

# 1.2.2.68 HCI\_ERR\_MEMORY

#define HCI\_ERR\_MEMORY 0x2F

Insufficient security

Definition at line 147 of file hci\_defs.h.

# 1.2.2.69 HCI\_ERR\_PARAMETER\_RANGE

#define HCI\_ERR\_PARAMETER\_RANGE 0x30

Parameter out of mandatory range

Definition at line 148 of file hci\_defs.h.

# 1.2.2.70 HCI\_ERR\_ROLE\_SWITCH\_PEND

#define HCI\_ERR\_ROLE\_SWITCH\_PEND 0x32

Role switch pending

Definition at line 149 of file hci\_defs.h.

# 1.2.2.71 HCI\_ERR\_RESERVED\_SLOT

#define HCI\_ERR\_RESERVED\_SLOT 0x34

Reserved slot violation

Definition at line 150 of file hci\_defs.h.

# 1.2.2.72 HCI\_ERR\_ROLE\_SWITCH

#define HCI\_ERR\_ROLE\_SWITCH 0x35

Role switch failed

Definition at line 151 of file hci\_defs.h.

#### 1.2.2.73 HCI\_ERR\_INQ\_TOO\_LARGE

#define HCI\_ERR\_INQ\_TOO\_LARGE 0x36

Extended inquiry response too large

Definition at line 152 of file hci\_defs.h.

# 1.2.2.74 HCI\_ERR\_UNSUP\_SSP

#define HCI\_ERR\_UNSUP\_SSP 0x37

Secure simple pairing not supported by host

Definition at line 153 of file hci\_defs.h.

#### 1.2.2.75 HCI\_ERR\_HOST\_BUSY\_PAIRING

#define HCI\_ERR\_HOST\_BUSY\_PAIRING 0x38

Host busy - pairing

Definition at line 154 of file hci\_defs.h.

# 1.2.2.76 HCI\_ERR\_NO\_CHANNEL

#define HCI\_ERR\_NO\_CHANNEL 0x39

Connection rejected no suitable channel

Definition at line 155 of file hci\_defs.h.

# 1.2.2.77 HCI\_ERR\_CONTROLLER\_BUSY

#define HCI\_ERR\_CONTROLLER\_BUSY 0x3A

Controller busy

Definition at line 156 of file hci\_defs.h.

# 1.2.2.78 HCI\_ERR\_CONN\_INTERVAL

#define HCI\_ERR\_CONN\_INTERVAL 0x3B

Unacceptable connection interval

Definition at line 157 of file hci\_defs.h.

# 1.2.2.79 HCI\_ERR\_ADV\_TIMEOUT

#define HCI\_ERR\_ADV\_TIMEOUT 0x3C

Advertising timeout

Definition at line 158 of file hci\_defs.h.

#### 1.2.2.80 HCI\_ERR\_MIC\_FAILURE

#define HCI\_ERR\_MIC\_FAILURE 0x3D

Connection terminated due to MIC failure

Definition at line 159 of file hci\_defs.h.

# 1.2.2.81 HCI\_ERR\_CONN\_FAIL

#define HCI\_ERR\_CONN\_FAIL 0x3E

Connection failed to be established

Definition at line 160 of file hci\_defs.h.

# 1.2.2.82 HCI\_ERR\_MAC\_CONN\_FAIL

#define HCI\_ERR\_MAC\_CONN\_FAIL 0x3F

MAC connection failed

Definition at line 161 of file hci\_defs.h.

#### 1.2.2.83 HCI\_ERR\_COARSE\_CLK\_ADJ\_REJ

#define HCI\_ERR\_COARSE\_CLK\_ADJ\_REJ 0x40

Coarse clock adjustment rejected

Definition at line 162 of file hci\_defs.h.

# 1.2.2.84 HCI\_ERR\_TYPE0\_SUBMAP\_NOT\_DEF

#define HCI\_ERR\_TYPE0\_SUBMAP\_NOT\_DEF 0x41

Type0 submap not defined

Definition at line 163 of file hci\_defs.h.

#### 1.2.2.85 HCI\_ERR\_UNKNOWN\_ADV\_ID

#define HCI\_ERR\_UNKNOWN\_ADV\_ID 0x42

Unknown advertising identifier

Definition at line 164 of file hci\_defs.h.

# 1.2.2.86 HCI\_ERR\_LIMIT\_REACHED

#define HCI\_ERR\_LIMIT\_REACHED 0x43

Limit reached

Definition at line 165 of file hci\_defs.h.

# 1.2.2.87 HCI\_ERR\_OP\_CANCELLED\_BY\_HOST

#define HCI\_ERR\_OP\_CANCELLED\_BY\_HOST 0x44

Operation cancelled by host

Definition at line 166 of file hci\_defs.h.

**Module Documentation** 54 1.2.2.88 HCI\_ERR\_PKT\_TOO\_LONG #define HCI\_ERR\_PKT\_TOO\_LONG 0x45 Packet too long Definition at line 168 of file hci\_defs.h. 1.2.2.89 HCI\_OGF\_NOP #define HCI\_OGF\_NOP 0x00 No operation Definition at line 175 of file hci\_defs.h. 1.2.2.90 HCI\_OGF\_LINK\_CONTROL #define HCI\_OGF\_LINK\_CONTROL 0x01 Link control Definition at line 176 of file hci\_defs.h. 1.2.2.91 HCI\_OGF\_LINK\_POLICY #define HCI\_OGF\_LINK\_POLICY  $0 \times 02$ Link policy Definition at line 177 of file hci\_defs.h. 1.2.2.92 HCI\_OGF\_CONTROLLER

#define HCI\_OGF\_CONTROLLER 0x03

Definition at line 178 of file hci\_defs.h.

Controller and baseband

# 1.2.2.93 HCI\_OGF\_INFORMATIONAL #define HCI\_OGF\_INFORMATIONAL 0x04 Informational parameters Definition at line 179 of file hci\_defs.h. 1.2.2.94 HCI\_OGF\_STATUS #define HCI\_OGF\_STATUS 0x05 Status parameters Definition at line 180 of file hci\_defs.h. 1.2.2.95 HCI\_OGF\_TESTING #define HCI\_OGF\_TESTING 0x06 Testing Definition at line 181 of file hci\_defs.h. 1.2.2.96 HCI\_OGF\_LE\_CONTROLLER #define HCI\_OGF\_LE\_CONTROLLER 0x08 LE controller Definition at line 182 of file hci\_defs.h. 1.2.2.97 HCI\_OGF\_VENDOR\_SPEC #define HCI\_OGF\_VENDOR\_SPEC 0x3F Vendor specific

Definition at line 183 of file hci\_defs.h.

# 1.2.2.98 HCI\_LEN\_DISCONNECT\_CMPL

#define HCI\_LEN\_DISCONNECT\_CMPL 4

Disconnect event length.

Definition at line 768 of file hci defs.h.

# 1.2.2.99 HCI\_LEN\_READ\_REMOTE\_VER\_INFO\_CMPL

```
#define HCI_LEN_READ_REMOTE_VER_INFO_CMPL 8
```

Read remove version info complete event length.

Definition at line 769 of file hci\_defs.h.

#### 1.2.2.100 HCI\_LEN\_CMD\_CMPL

#define HCI\_LEN\_CMD\_CMPL 3

Command complete event length.

Definition at line 770 of file hci\_defs.h.

# 1.2.2.101 HCI\_LEN\_CMD\_STATUS

#define HCI\_LEN\_CMD\_STATUS 4

Command status event length.

Definition at line 771 of file hci\_defs.h.

# 1.2.2.102 HCI\_LEN\_HW\_ERR

#define HCI\_LEN\_HW\_ERR 1

Hardware error event length.

Definition at line 772 of file hci\_defs.h.

```
1.2.2.103 HCI_LEN_NUM_CMPL_PKTS
```

```
#define HCI_LEN_NUM_CMPL_PKTS( numHdls \ ) \ (1 \ + \ (4 \ * \ numHdls))
```

Number of completed packets event length.

Definition at line 773 of file hci\_defs.h.

1.2.2.104 HCI\_LEN\_ENC\_CHANGE

```
#define HCI_LEN_ENC_CHANGE 4
```

Encryption change event length.

Definition at line 774 of file hci\_defs.h.

1.2.2.105 HCI\_LEN\_ENC\_KEY\_REFRESH\_CMPL

```
#define HCI_LEN_ENC_KEY_REFRESH_CMPL 3
```

Encryption key refresh complete event length.

Definition at line 775 of file hci\_defs.h.

1.2.2.106 HCI\_LEN\_LE\_CONN\_CMPL

```
#define HCI_LEN_LE_CONN_CMPL 19
```

Connection complete event length.

Definition at line 776 of file hci\_defs.h.

1.2.2.107 HCI\_LEN\_LE\_ADV\_RPT\_MIN

```
#define HCI_LEN_LE_ADV_RPT_MIN 12
```

Advertising report event minimum length.

Definition at line 777 of file hci\_defs.h.

# 1.2.2.108 HCI\_LEN\_LE\_CONN\_UPDATE\_CMPL

#define HCI\_LEN\_LE\_CONN\_UPDATE\_CMPL 10

Connection update complete event length.

Definition at line 778 of file hci defs.h.

# 1.2.2.109 HCI\_LEN\_LE\_READ\_REMOTE\_FEAT\_CMPL

#define HCI\_LEN\_LE\_READ\_REMOTE\_FEAT\_CMPL 12

Read remote feature event length.

Definition at line 779 of file hci\_defs.h.

#### 1.2.2.110 HCI\_LEN\_LE\_LTK\_REQ

#define HCI\_LEN\_LE\_LTK\_REQ 13

LTK request event length.

Definition at line 780 of file hci\_defs.h.

# 1.2.2.111 HCI\_LEN\_LE\_REM\_CONN\_PARAM\_REQ

#define HCI\_LEN\_LE\_REM\_CONN\_PARAM\_REQ 11

Remote connection parameter event length.

Definition at line 782 of file hci\_defs.h.

# 1.2.2.112 HCI\_LEN\_LE\_DATA\_LEN\_CHANGE

#define HCI\_LEN\_LE\_DATA\_LEN\_CHANGE 11

Data length change event length.

Definition at line 783 of file hci\_defs.h.

1.2.2.113 HCI\_LEN\_LE\_READ\_PUB\_KEY\_CMPL

#define HCI\_LEN\_LE\_READ\_PUB\_KEY\_CMPL 66

Read local P256 public key compete event length.

Definition at line 784 of file hci defs.h.

1.2.2.114 HCI\_LEN\_LE\_GEN\_DHKEY\_CMPL

#define HCI\_LEN\_LE\_GEN\_DHKEY\_CMPL 34

Generate DH key complete event length.

Definition at line 785 of file hci\_defs.h.

1.2.2.115 HCI\_LEN\_LE\_ENHANCED\_CONN\_CMPL

#define HCI\_LEN\_LE\_ENHANCED\_CONN\_CMPL 31

Enhanced connection complete event length.

Definition at line 786 of file hci\_defs.h.

1.2.2.116 HCI\_LEN\_LE\_DIRECT\_ADV\_REPORT

#define HCI\_LEN\_LE\_DIRECT\_ADV\_REPORT 18

Direct advertising report event length.

Definition at line 787 of file hci\_defs.h.

1.2.2.117 HCI\_LEN\_AUTH\_PAYLOAD\_TIMEOUT

#define HCI\_LEN\_AUTH\_PAYLOAD\_TIMEOUT 2

Authenticated payload timeout event length.

Definition at line 788 of file hci\_defs.h.

```
1.2.2.118 HCI_LEN_LE_PHY_UPDATE_CMPL [1/2]
```

#define HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL 6

PHY update complete event length.

Definition at line 792 of file hci\_defs.h.

1.2.2.119 HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL [2/2]

#define HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL 6

PHY update complete event length.

Definition at line 792 of file hci\_defs.h.

1.2.2.120 HCI\_LEN\_LE\_CH\_SEL\_ALGO

#define HCI\_LEN\_LE\_CH\_SEL\_ALGO 4

Channel selection algorithm event length.

Definition at line 791 of file hci\_defs.h.

1.2.2.121 HCI\_LEN\_LE\_EXT\_ADV\_REPORT\_MIN

#define HCI\_LEN\_LE\_EXT\_ADV\_REPORT\_MIN 26

Extended advertising report minimum length.

Definition at line 793 of file hci\_defs.h.

1.2.2.122 HCI\_LEN\_LE\_PER\_ADV\_SYNC\_EST

#define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_EST 16

Periodic advertising sync established event length.

Definition at line 794 of file hci\_defs.h.

#### 1.2.2.123 HCI\_LEN\_LE\_PER\_ADV\_REPORT

#define HCI\_LEN\_LE\_PER\_ADV\_REPORT 8

Periodic advertising report event length.

Definition at line 795 of file hci defs.h.

# 1.2.2.124 HCI\_LEN\_LE\_PER\_ADV\_SYNC\_LOST

#define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_LOST 3

Periodic advertising sync lost event length.

Definition at line 796 of file hci\_defs.h.

#### 1.2.2.125 HCI\_LEN\_LE\_SCAN\_TIMEOUT

#define HCI\_LEN\_LE\_SCAN\_TIMEOUT 1

Scan timeout event length.

Definition at line 797 of file hci\_defs.h.

# 1.2.2.126 HCI\_LEN\_LE\_ADV\_SET\_TERM

#define HCI\_LEN\_LE\_ADV\_SET\_TERM 6

Advertising set terminated event length.

Definition at line 798 of file hci\_defs.h.

# 1.2.2.127 HCI\_LEN\_LE\_SCAN\_REQ\_RCVD

#define HCI\_LEN\_LE\_SCAN\_REQ\_RCVD 9

Scan request received event length.

Definition at line 799 of file hci\_defs.h.

```
1.2.2.128 HCI_LEN_LE_PER_SYNC_TRSF_RCVT
```

```
#define HCI_LEN_LE_PER_SYNC_TRSF_RCVT 20
```

Periodic advertising sync transfer received event length.

Definition at line 801 of file hci\_defs.h.

```
1.2.2.129 HCI_LEN_LE_CIS_EST
```

```
#define HCI_LEN_LE_CIS_EST 29
```

CIS established event length.

Definition at line 803 of file hci\_defs.h.

#### 1.2.2.130 HCI\_LEN\_LE\_CIS\_REQ

```
#define HCI_LEN_LE_CIS_REQ 7
```

CIS request event length.

Definition at line 804 of file hci\_defs.h.

# 1.2.2.131 HCI\_LEN\_LE\_PEER\_SCA\_CMPL

```
#define HCI_LEN_LE_PEER_SCA_CMPL 5
```

Request peer SCA complete event length.

Definition at line 805 of file hci\_defs.h.

# 1.2.2.132 HCI\_LEN\_LE\_CREATE\_BIG\_CMPL

Create BIG complete event length.

Definition at line 806 of file hci\_defs.h.

#### 1.2.2.133 HCI\_LEN\_LE\_TERMINATE\_BIG\_CMPL

```
#define HCI_LEN_LE_TERMINATE_BIG_CMPL 3
```

Terminate BIG complete event length.

Definition at line 807 of file hci\_defs.h.

#### 1.2.2.134 HCI\_LEN\_LE\_BIG\_SYNC\_EST

BIG sync established event length.

Definition at line 808 of file hci\_defs.h.

# 1.2.2.135 HCI\_LEN\_LE\_BIG\_SYNC\_LOST

```
#define HCI_LEN_LE_BIG_SYNC_LOST 3
```

BIG sync lost event length.

Definition at line 809 of file hci\_defs.h.

# 1.2.2.136 HCI\_LEN\_LE\_POWER\_REPORT

```
#define HCI_LEN_LE_POWER_REPORT 9
```

Power reporting event length.

Definition at line 810 of file hci\_defs.h.

# 1.2.2.137 HCI\_LEN\_LE\_PATH\_LOSS\_ZONE

```
#define HCI_LEN_LE_PATH_LOSS_ZONE 5
```

Path loss reporting event length.

Definition at line 811 of file hci\_defs.h.

# 1.2.2.138 HCI\_LEN\_LE\_BIG\_INFO\_ADV\_REPORT

#define HCI\_LEN\_LE\_BIG\_INFO\_ADV\_REPORT 20

BIG Info advertising report length.

Definition at line 812 of file hci\_defs.h.

# 1.2.2.139 HCI\_SUP\_DISCONNECT

#define HCI\_SUP\_DISCONNECT 0x20

Byte 0

Definition at line 820 of file hci\_defs.h.

# 1.2.2.140 HCI\_SUP\_READ\_REMOTE\_VER\_INFO

#define HCI\_SUP\_READ\_REMOTE\_VER\_INFO 0x80

Byte 2

Definition at line 821 of file hci\_defs.h.

# 1.2.2.141 HCI\_SUP\_SET\_EVENT\_MASK

#define HCI\_SUP\_SET\_EVENT\_MASK 0x40

Byte 5

Definition at line 822 of file hci\_defs.h.

# 1.2.2.142 HCI\_SUP\_RESET

#define HCI\_SUP\_RESET 0x80

Byte 5

Definition at line 823 of file hci\_defs.h.

# 1.2.2.143 HCI\_SUP\_READ\_TX\_PWR\_LVL #define HCI\_SUP\_READ\_TX\_PWR\_LVL 0x04 Byte 10 Definition at line 824 of file hci\_defs.h. 1.2.2.144 HCI\_SUP\_READ\_LOCAL\_VER\_INFO #define HCI\_SUP\_READ\_LOCAL\_VER\_INFO 0x08 Byte 14 Definition at line 825 of file hci\_defs.h. 1.2.2.145 HCI\_SUP\_READ\_LOCAL\_SUP\_FEAT #define HCI\_SUP\_READ\_LOCAL\_SUP\_FEAT 0x20 Byte 14 Definition at line 826 of file hci\_defs.h. 1.2.2.146 HCI\_SUP\_READ\_BD\_ADDR #define HCI\_SUP\_READ\_BD\_ADDR 0x02 Byte 15 Definition at line 827 of file hci\_defs.h. 1.2.2.147 HCI\_SUP\_READ\_RSSI #define HCI\_SUP\_READ\_RSSI 0x20 Byte 15 Definition at line 828 of file hci\_defs.h.

# 1.2.2.148 HCI\_SUP\_SET\_EVENT\_MASK\_PAGE2

#define HCI\_SUP\_SET\_EVENT\_MASK\_PAGE2 0x04

Byte 22

Definition at line 829 of file hci\_defs.h.

# 1.2.2.149 HCI\_SUP\_LE\_SET\_EVENT\_MASK

#define HCI\_SUP\_LE\_SET\_EVENT\_MASK 0x01

Byte 25

Definition at line 830 of file hci\_defs.h.

# 1.2.2.150 HCI\_SUP\_LE\_READ\_BUF\_SIZE

#define HCI\_SUP\_LE\_READ\_BUF\_SIZE 0x02

Byte 25

Definition at line 831 of file hci\_defs.h.

# 1.2.2.151 HCI\_SUP\_LE\_READ\_LOCAL\_SUP\_FEAT

 $\verb|#define HCI_SUP_LE_READ_LOCAL_SUP_FEAT 0x04|\\$ 

Byte 25

Definition at line 832 of file hci\_defs.h.

# 1.2.2.152 HCI\_SUP\_LE\_SET\_RAND\_ADDR

#define HCI\_SUP\_LE\_SET\_RAND\_ADDR 0x10

Byte 25

Definition at line 833 of file hci\_defs.h.

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# 1.2 Generic HCI Definitions 1.2.2.153 HCI\_SUP\_LE\_SET\_ADV\_PARAM #define HCI\_SUP\_LE\_SET\_ADV\_PARAM 0x20 Byte 25 Definition at line 834 of file hci\_defs.h. 1.2.2.154 HCI\_SUP\_LE\_READ\_ADV\_TX\_POWER #define HCI\_SUP\_LE\_READ\_ADV\_TX\_POWER 0x40 Byte 25 Definition at line 835 of file hci\_defs.h. 1.2.2.155 HCI\_SUP\_LE\_SET\_ADV\_DATA #define HCI\_SUP\_LE\_SET\_ADV\_DATA 0x80 Byte 25 Definition at line 836 of file hci\_defs.h. 1.2.2.156 HCI\_SUP\_LE\_SET\_SCAN\_RESP\_DATA #define HCI\_SUP\_LE\_SET\_SCAN\_RESP\_DATA 0x01 Byte 26 Definition at line 837 of file hci\_defs.h. 1.2.2.157 HCI\_SUP\_LE\_SET\_ADV\_ENABLE #define HCI\_SUP\_LE\_SET\_ADV\_ENABLE 0x02

Byte 26

Definition at line 838 of file hci\_defs.h.

# 1.2.2.158 HCI\_SUP\_LE\_SET\_SCAN\_PARAM

#define HCI\_SUP\_LE\_SET\_SCAN\_PARAM 0x04

Byte 26

Definition at line 839 of file hci\_defs.h.

# 1.2.2.159 HCI\_SUP\_LE\_SET\_SCAN\_ENABLE

#define HCI\_SUP\_LE\_SET\_SCAN\_ENABLE 0x08

Byte 26

Definition at line 840 of file hci\_defs.h.

# 1.2.2.160 HCI\_SUP\_LE\_CREATE\_CONN

#define HCI\_SUP\_LE\_CREATE\_CONN 0x10

Byte 26

Definition at line 841 of file hci\_defs.h.

# 1.2.2.161 HCI\_SUP\_LE\_CREATE\_CONN\_CANCEL

#define HCI\_SUP\_LE\_CREATE\_CONN\_CANCEL 0x20

Byte 26

Definition at line 842 of file hci\_defs.h.

# 1.2.2.162 HCI\_SUP\_LE\_READ\_WHITE\_LIST\_SIZE

#define HCI\_SUP\_LE\_READ\_WHITE\_LIST\_SIZE 0x40

Byte 26

Definition at line 843 of file hci\_defs.h.

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# 1.2 Generic HCI Definitions 1.2.2.163 HCI\_SUP\_LE\_CLEAR\_WHITE\_LIST #define HCI\_SUP\_LE\_CLEAR\_WHITE\_LIST 0x80 Byte 26 Definition at line 844 of file hci\_defs.h. 1.2.2.164 HCI\_SUP\_LE\_ADD\_DEV\_WHITE\_LIST #define HCI\_SUP\_LE\_ADD\_DEV\_WHITE\_LIST 0x01 Byte 27 Definition at line 845 of file hci\_defs.h. 1.2.2.165 HCI\_SUP\_LE\_REMOVE\_DEV\_WHITE\_LIST #define HCI\_SUP\_LE\_REMOVE\_DEV\_WHITE\_LIST 0x02 Byte 27 Definition at line 846 of file hci\_defs.h. 1.2.2.166 HCI\_SUP\_LE\_CONN\_UPDATE #define HCI\_SUP\_LE\_CONN\_UPDATE 0x04 Byte 27 Definition at line 847 of file hci\_defs.h. 1.2.2.167 HCI\_SUP\_LE\_SET\_HOST\_CHAN\_CLASS

Byte 27

Definition at line 848 of file hci\_defs.h.

#define HCI\_SUP\_LE\_SET\_HOST\_CHAN\_CLASS 0x08

# 1.2.2.168 HCI\_SUP\_LE\_READ\_CHAN\_MAP

#define HCI\_SUP\_LE\_READ\_CHAN\_MAP 0x10

Byte 27

Definition at line 849 of file hci\_defs.h.

# 1.2.2.169 HCI\_SUP\_LE\_READ\_REMOTE\_FEAT

#define HCI\_SUP\_LE\_READ\_REMOTE\_FEAT 0x20

Byte 27

Definition at line 850 of file hci\_defs.h.

# 1.2.2.170 HCI\_SUP\_LE\_ENCRYPT

#define HCI\_SUP\_LE\_ENCRYPT 0x40

Byte 27

Definition at line 851 of file hci\_defs.h.

# 1.2.2.171 HCI\_SUP\_LE\_RAND

#define HCI\_SUP\_LE\_RAND 0x80

Byte 27

Definition at line 852 of file hci\_defs.h.

# 1.2.2.172 HCI\_SUP\_LE\_START\_ENCRYPTION

#define HCI\_SUP\_LE\_START\_ENCRYPTION 0x01

Byte 28

Definition at line 853 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.173 HCI\_SUP\_LE\_LTK\_REQ\_REPL #define HCI\_SUP\_LE\_LTK\_REQ\_REPL 0x02 Byte 28 Definition at line 854 of file hci\_defs.h. 1.2.2.174 HCI\_SUP\_LE\_LTK\_REQ\_NEG\_REPL #define HCI\_SUP\_LE\_LTK\_REQ\_NEG\_REPL 0x04 Byte 28 Definition at line 855 of file hci\_defs.h. 1.2.2.175 HCI\_SUP\_LE\_READ\_SUP\_STATES #define HCI\_SUP\_LE\_READ\_SUP\_STATES 0x08 Byte 28 Definition at line 856 of file hci\_defs.h. 1.2.2.176 HCI\_SUP\_LE\_RECEIVER\_TEST #define HCI\_SUP\_LE\_RECEIVER\_TEST 0x10 Byte 28 Definition at line 857 of file hci\_defs.h. 1.2.2.177 HCI\_SUP\_LE\_TRANSMITTER\_TEST

#define HCI\_SUP\_LE\_TRANSMITTER\_TEST 0x20

Byte 28

Definition at line 858 of file hci\_defs.h.

# 1.2.2.178 HCI\_SUP\_LE\_TEST\_END #define HCI\_SUP\_LE\_TEST\_END 0x40

Byte 28

Definition at line 859 of file hci defs.h.

# 1.2.2.179 HCI\_SUP\_READ\_AUTH\_PAYLOAD\_TO

#define HCI\_SUP\_READ\_AUTH\_PAYLOAD\_TO 0x10

Byte 32

Definition at line 860 of file hci\_defs.h.

# 1.2.2.180 HCI\_SUP\_WRITE\_AUTH\_PAYLOAD\_TO

#define HCI\_SUP\_WRITE\_AUTH\_PAYLOAD\_TO 0x20

Byte 32

Definition at line 861 of file hci\_defs.h.

#### 1.2.2.181 HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_REPL

#define HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_REPL 0x10

Byte 33

Definition at line 863 of file hci\_defs.h.

# 1.2.2.182 HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_NEG\_REPL

#define HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_NEG\_REPL 0x20

Byte 33

Definition at line 864 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.183 HCI\_SUP\_LE\_SET\_DATA\_LEN #define HCI\_SUP\_LE\_SET\_DATA\_LEN 0x40 Byte 33 Definition at line 866 of file hci\_defs.h. 1.2.2.184 HCI\_SUP\_LE\_READ\_DEF\_DATA\_LEN #define HCI\_SUP\_LE\_READ\_DEF\_DATA\_LEN 0x80 Byte 33 Definition at line 867 of file hci\_defs.h. 1.2.2.185 HCI\_SUP\_LE\_WRITE\_DEF\_DATA\_LEN #define HCI\_SUP\_LE\_WRITE\_DEF\_DATA\_LEN 0x01 Byte 34 Definition at line 868 of file hci\_defs.h. 1.2.2.186 HCI\_SUP\_LE\_READ\_LOCAL\_P256\_PUB\_KEY #define HCI\_SUP\_LE\_READ\_LOCAL\_P256\_PUB\_KEY 0x02 Byte 34 Definition at line 869 of file hci\_defs.h.

# 1.2.2.187 HCI\_SUP\_LE\_GENERATE\_DHKEY

#define HCI\_SUP\_LE\_GENERATE\_DHKEY 0x04

Byte 34

Definition at line 870 of file hci\_defs.h.

# 1.2.2.188 HCI\_SUP\_LE\_ADD\_DEV\_RES\_LIST\_EVT

#define HCI\_SUP\_LE\_ADD\_DEV\_RES\_LIST\_EVT 0x08

Byte 34

Definition at line 871 of file hci\_defs.h.

# 1.2.2.189 HCI\_SUP\_LE\_REMOVE\_DEV\_RES\_LIST

#define HCI\_SUP\_LE\_REMOVE\_DEV\_RES\_LIST 0x10

Byte 34

Definition at line 872 of file hci\_defs.h.

# 1.2.2.190 HCI\_SUP\_LE\_CLEAR\_RES\_LIST

#define HCI\_SUP\_LE\_CLEAR\_RES\_LIST 0x20

Byte 34

Definition at line 873 of file hci\_defs.h.

#### 1.2.2.191 HCI\_SUP\_LE\_READ\_RES\_LIST\_SIZE

#define HCI\_SUP\_LE\_READ\_RES\_LIST\_SIZE 0x40

Byte 34

Definition at line 874 of file hci\_defs.h.

# 1.2.2.192 HCI\_SUP\_LE\_READ\_PEER\_RES\_ADDR

#define HCI\_SUP\_LE\_READ\_PEER\_RES\_ADDR 0x80

Byte 34

Definition at line 875 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.193 HCI\_SUP\_LE\_READ\_LOCAL\_RES\_ADDR #define HCI\_SUP\_LE\_READ\_LOCAL\_RES\_ADDR 0x01 Byte 35 Definition at line 876 of file hci\_defs.h. 1.2.2.194 HCI\_SUP\_LE\_SET\_ADDR\_RES\_ENABLE #define HCI\_SUP\_LE\_SET\_ADDR\_RES\_ENABLE 0x02 Byte 35 Definition at line 877 of file hci\_defs.h. 1.2.2.195 HCI\_SUP\_LE\_SET\_RES\_PRIV\_ADDR\_TO #define HCI\_SUP\_LE\_SET\_RES\_PRIV\_ADDR\_TO 0x04 Byte 35 Definition at line 878 of file hci\_defs.h. 1.2.2.196 HCI\_SUP\_LE\_READ\_MAX\_DATA\_LEN #define HCI\_SUP\_LE\_READ\_MAX\_DATA\_LEN 0x08 Byte 35 Definition at line 879 of file hci\_defs.h. 1.2.2.197 HCI\_SUP\_LE\_READ\_PHY #define HCI\_SUP\_LE\_READ\_PHY 0x10

Byte 35

Definition at line 881 of file hci\_defs.h.

# **Module Documentation** 76 1.2.2.198 HCI\_SUP\_LE\_SET\_DEF\_PHY #define HCI\_SUP\_LE\_SET\_DEF\_PHY 0x20 Byte 35 Definition at line 882 of file hci\_defs.h. 1.2.2.199 HCI\_SUP\_LE\_SET\_PHY #define HCI\_SUP\_LE\_SET\_PHY 0x40 Byte 35 Definition at line 883 of file hci\_defs.h. 1.2.2.200 HCI\_SUP\_LE\_ENHANCED\_RECEIVER\_TEST #define HCI\_SUP\_LE\_ENHANCED\_RECEIVER\_TEST 0x80 Byte 35 Definition at line 884 of file hci\_defs.h. 1.2.2.201 HCI\_SUP\_LE\_ENHANCED\_TRANSMITTER\_TEST #define HCI\_SUP\_LE\_ENHANCED\_TRANSMITTER\_TEST 0x01 Byte 36 Definition at line 885 of file hci\_defs.h.

1.2.2.202 HCI\_SUP\_LE\_SET\_ADV\_SET\_RAND\_ADDR

#define HCI\_SUP\_LE\_SET\_ADV\_SET\_RAND\_ADDR 0x02

Byte 36

Definition at line 886 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.203 HCI\_SUP\_LE\_SET\_EXT\_ADV\_PARAM #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_PARAM 0x04 Byte 36 Definition at line 887 of file hci\_defs.h. 1.2.2.204 HCI\_SUP\_LE\_SET\_EXT\_ADV\_DATA #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_DATA 0x08 Byte 36 Definition at line 888 of file hci\_defs.h. 1.2.2.205 HCI\_SUP\_LE\_SET\_EXT\_SCAN\_RESP\_DATA #define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_RESP\_DATA 0x10 Byte 36 Definition at line 889 of file hci\_defs.h. 1.2.2.206 HCI\_SUP\_LE\_SET\_EXT\_ADV\_ENABLE #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_ENABLE 0x20 Byte 36 Definition at line 890 of file hci\_defs.h. 1.2.2.207 HCI\_SUP\_LE\_READ\_MAX\_ADV\_DATA\_LEN

Byte 36

Definition at line 891 of file hci\_defs.h.

#define HCI\_SUP\_LE\_READ\_MAX\_ADV\_DATA\_LEN 0x40

# 1.2.2.208 HCI\_SUP\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS

#define HCI\_SUP\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS 0x80

Byte 36

Definition at line 892 of file hci\_defs.h.

# 1.2.2.209 HCI\_SUP\_LE\_REMOVE\_ADV\_SET

#define HCI\_SUP\_LE\_REMOVE\_ADV\_SET 0x01

Byte 37

Definition at line 893 of file hci\_defs.h.

# 1.2.2.210 HCI\_SUP\_LE\_CLEAR\_ADV\_SETS

#define HCI\_SUP\_LE\_CLEAR\_ADV\_SETS 0x02

Byte 37

Definition at line 894 of file hci\_defs.h.

#### 1.2.2.211 HCI\_SUP\_LE\_SET\_PER\_ADV\_PARAM

#define HCI\_SUP\_LE\_SET\_PER\_ADV\_PARAM 0x04

Byte 37

Definition at line 895 of file hci\_defs.h.

# 1.2.2.212 HCI\_SUP\_LE\_SET\_PER\_ADV\_DATA

#define HCI\_SUP\_LE\_SET\_PER\_ADV\_DATA 0x08

Byte 37

Definition at line 896 of file hci\_defs.h.

# 1.2.2.213 HCI\_SUP\_LE\_SET\_PER\_ADV\_ENABLE

#define HCI\_SUP\_LE\_SET\_PER\_ADV\_ENABLE 0x10

Byte 37

Definition at line 897 of file hci\_defs.h.

# 1.2.2.214 HCI\_SUP\_LE\_SET\_EXT\_SCAN\_PARAM

#define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_PARAM 0x20

Byte 37

Definition at line 898 of file hci\_defs.h.

# 1.2.2.215 HCI\_SUP\_LE\_SET\_EXT\_SCAN\_ENABLE

#define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_ENABLE 0x40

Byte 37

Definition at line 899 of file hci\_defs.h.

#### 1.2.2.216 HCI\_SUP\_LE\_EXT\_CREATE\_CONN

#define HCI\_SUP\_LE\_EXT\_CREATE\_CONN 0x80

Byte 37

Definition at line 900 of file hci\_defs.h.

# 1.2.2.217 HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC

#define HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC 0x01

Byte 38

Definition at line 901 of file hci\_defs.h.

# 1.2.2.218 HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL

#define HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0x02

Byte 38

Definition at line 902 of file hci\_defs.h.

# 1.2.2.219 HCI\_SUP\_LE\_PER\_ADV\_TERMINATE\_SYNC

#define HCI\_SUP\_LE\_PER\_ADV\_TERMINATE\_SYNC 0x04

Byte 38

Definition at line 903 of file hci\_defs.h.

# 1.2.2.220 HCI\_SUP\_LE\_ADD\_DEV\_PER\_ADV\_LIST

#define HCI\_SUP\_LE\_ADD\_DEV\_PER\_ADV\_LIST 0x08

Byte 38

Definition at line 904 of file hci\_defs.h.

#### 1.2.2.221 HCI\_SUP\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST

#define HCI\_SUP\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST 0x10

Byte 38

Definition at line 905 of file hci\_defs.h.

# 1.2.2.222 HCI\_SUP\_LE\_CLEAR\_PER\_ADV\_LIST

#define HCI\_SUP\_LE\_CLEAR\_PER\_ADV\_LIST 0x20

Byte 38

Definition at line 906 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.223 HCI\_SUP\_LE\_READ\_PER\_ADV\_LIST\_SIZE #define HCI\_SUP\_LE\_READ\_PER\_ADV\_LIST\_SIZE 0x40 Byte 38 Definition at line 907 of file hci\_defs.h. 1.2.2.224 HCI\_SUP\_LE\_READ\_TX\_POWER #define HCI\_SUP\_LE\_READ\_TX\_POWER 0x80 Byte 38 Definition at line 908 of file hci\_defs.h. 1.2.2.225 HCI\_SUP\_LE\_READ\_RF\_PATH\_COMP #define HCI\_SUP\_LE\_READ\_RF\_PATH\_COMP 0x01 Byte 39 Definition at line 909 of file hci\_defs.h. 1.2.2.226 HCI\_SUP\_LE\_WRITE\_RF\_PATH\_COMP #define HCI\_SUP\_LE\_WRITE\_RF\_PATH\_COMP 0x02 Byte 39 Definition at line 910 of file hci\_defs.h. 1.2.2.227 HCI\_SUP\_LE\_SET\_PRIVACY\_MODE

#define HCI\_SUP\_LE\_SET\_PRIVACY\_MODE 0x04

Byte 39

Definition at line 911 of file hci\_defs.h.

# 82 1.2.2.228 HCI\_SUP\_LE\_RECEIVER\_TEST\_V3 #define HCI\_SUP\_LE\_RECEIVER\_TEST\_V3 0x08 Byte 39 Definition at line 913 of file hci\_defs.h. 1.2.2.229 HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V3 #define HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V3 0x10 Byte 39 Definition at line 914 of file hci\_defs.h. 1.2.2.230 HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS 0x20 Byte 39 Definition at line 915 of file hci\_defs.h. 1.2.2.231 HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE 0x40 Byte 39 Definition at line 916 of file hci\_defs.h.

1.2.2.232 HCI\_SUP\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE

#define HCI\_SUP\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE 0x80

Byte 39

Definition at line 917 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.233 HCI\_SUP\_LE\_SET\_CONN\_CTE\_RX\_PARAMS #define HCI\_SUP\_LE\_SET\_CONN\_CTE\_RX\_PARAMS 0x01 Byte 40 Definition at line 918 of file hci\_defs.h. 1.2.2.234 HCI\_SUP\_LE\_SET\_CONN\_CTE\_TX\_PARAMS #define HCI\_SUP\_LE\_SET\_CONN\_CTE\_TX\_PARAMS 0x02 Byte 40 Definition at line 919 of file hci\_defs.h. 1.2.2.235 HCI\_SUP\_LE\_CONN\_CTE\_REQ\_ENABLE #define HCI\_SUP\_LE\_CONN\_CTE\_REQ\_ENABLE 0x04 Byte 40 Definition at line 920 of file hci\_defs.h. 1.2.2.236 HCI\_SUP\_LE\_CONN\_CTE\_RSP\_ENABLE #define HCI\_SUP\_LE\_CONN\_CTE\_RSP\_ENABLE 0x08 Byte 40 Definition at line 921 of file hci\_defs.h. 1.2.2.237 HCI\_SUP\_LE\_READ\_ANTENNA\_INFO

Byte 40

Definition at line 922 of file hci\_defs.h.

#define HCI\_SUP\_LE\_READ\_ANTENNA\_INFO 0x10

# 1.2.2.238 HCI\_SUP\_LE\_SET\_PER\_ADV\_RCV\_ENABLE

#define HCI\_SUP\_LE\_SET\_PER\_ADV\_RCV\_ENABLE 0x20

Byte 40

Definition at line 923 of file hci\_defs.h.

# 1.2.2.239 HCI\_SUP\_LE\_PER\_ADV\_SYNC\_TRANSFER

#define HCI\_SUP\_LE\_PER\_ADV\_SYNC\_TRANSFER 0x40

Byte 40

Definition at line 924 of file hci\_defs.h.

# 1.2.2.240 HCI\_SUP\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER

#define HCI\_SUP\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER 0x80

Byte 40

Definition at line 925 of file hci\_defs.h.

#### 1.2.2.241 HCI\_SUP\_LE\_SET\_PAST\_PARAM

#define HCI\_SUP\_LE\_SET\_PAST\_PARAM 0x01

Byte 41

Definition at line 926 of file hci\_defs.h.

# 1.2.2.242 HCI\_SUP\_LE\_SET\_DEFAULT\_PAST\_PARAM

#define HCI\_SUP\_LE\_SET\_DEFAULT\_PAST\_PARAM 0x02

Byte 41

Definition at line 927 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.243 HCI\_SUP\_LE\_GENERATE\_DHKEY\_V2 #define HCI\_SUP\_LE\_GENERATE\_DHKEY\_V2 0x04 Byte 41 Definition at line 928 of file hci\_defs.h. 1.2.2.244 HCI\_SUP\_LE\_MODIFY\_SLEEP\_CLK\_ACCURACY #define HCI\_SUP\_LE\_MODIFY\_SLEEP\_CLK\_ACCURACY 0x10 Byte 41 Definition at line 929 of file hci\_defs.h. 1.2.2.245 HCI\_SUP\_LE\_READ\_BUF\_SIZE\_V2 #define HCI\_SUP\_LE\_READ\_BUF\_SIZE\_V2 0x20 Byte 41 Definition at line 931 of file hci\_defs.h. 1.2.2.246 HCI\_SUP\_LE\_READ\_ISO\_TX\_SYNC #define HCI\_SUP\_LE\_READ\_ISO\_TX\_SYNC 0x40 Byte 41 Definition at line 932 of file hci\_defs.h. 1.2.2.247 HCI\_SUP\_LE\_SET\_CIG\_PARAM

#define HCI\_SUP\_LE\_SET\_CIG\_PARAM 0x80

Byte 41

Definition at line 933 of file hci\_defs.h.

# **Module Documentation** 86 1.2.2.248 HCI\_SUP\_LE\_SET\_CIG\_PARAM\_TEST #define HCI\_SUP\_LE\_SET\_CIG\_PARAM\_TEST 0x01 Byte 42 Definition at line 934 of file hci\_defs.h. 1.2.2.249 HCI\_SUP\_LE\_CREATE\_CIS #define HCI\_SUP\_LE\_CREATE\_CIS 0x02 Byte 42 Definition at line 935 of file hci\_defs.h. 1.2.2.250 HCI\_SUP\_LE\_REMOVE\_CIG #define HCI\_SUP\_LE\_REMOVE\_CIG 0x04 Byte 42 Definition at line 936 of file hci\_defs.h. 1.2.2.251 HCI\_SUP\_LE\_ACCEPT\_CIS\_REQ #define HCI\_SUP\_LE\_ACCEPT\_CIS\_REQ 0x08 Byte 42 Definition at line 937 of file hci\_defs.h.

# 1.2.2.252 HCI\_SUP\_LE\_REJECT\_CIS\_REQ

#define HCI\_SUP\_LE\_REJECT\_CIS\_REQ 0x10

Byte 42

Definition at line 938 of file hci\_defs.h.

# 1.2.2.253 HCI\_SUP\_LE\_CREATE\_BIG #define HCI\_SUP\_LE\_CREATE\_BIG 0x20 Byte 42 Definition at line 939 of file hci\_defs.h. 1.2.2.254 HCI\_SUP\_LE\_CREATE\_BIG\_TEST #define HCI\_SUP\_LE\_CREATE\_BIG\_TEST 0x40 Byte 42 Definition at line 940 of file hci\_defs.h. 1.2.2.255 HCI\_SUP\_LE\_TERMINATE\_BIG #define HCI\_SUP\_LE\_TERMINATE\_BIG 0x80 Byte 42 Definition at line 941 of file hci\_defs.h. 1.2.2.256 HCI\_SUP\_LE\_BIG\_CREATE\_SYNC #define HCI\_SUP\_LE\_BIG\_CREATE\_SYNC 0x01 Byte 43 Definition at line 942 of file hci\_defs.h. 1.2.2.257 HCI\_SUP\_LE\_BIG\_TERMINATE\_SYNC #define HCI\_SUP\_LE\_BIG\_TERMINATE\_SYNC 0x02

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Definition at line 943 of file hci\_defs.h.

Byte 43

# 1.2.2.258 HCI\_SUP\_LE\_REQ\_PEER\_SCA

#define HCI\_SUP\_LE\_REQ\_PEER\_SCA 0x04

Byte 43

Definition at line 944 of file hci\_defs.h.

# 1.2.2.259 HCI\_SUP\_LE\_SETUP\_ISO\_DATA\_PATH

#define HCI\_SUP\_LE\_SETUP\_ISO\_DATA\_PATH 0x08

Byte 43

Definition at line 945 of file hci\_defs.h.

# 1.2.2.260 HCI\_SUP\_LE\_REMOVE\_ISO\_DATA\_PATH

#define HCI\_SUP\_LE\_REMOVE\_ISO\_DATA\_PATH 0x10

Byte 43

Definition at line 946 of file hci\_defs.h.

#### 1.2.2.261 HCI\_SUP\_LE\_ISO\_TRANSMIT\_TEST

#define HCI\_SUP\_LE\_ISO\_TRANSMIT\_TEST 0x20

Byte 43

Definition at line 947 of file hci\_defs.h.

# 1.2.2.262 HCI\_SUP\_LE\_ISO\_RECEIVE\_TEST

#define HCI\_SUP\_LE\_ISO\_RECEIVE\_TEST 0x40

Byte 43

Definition at line 948 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.263 HCI\_SUP\_LE\_ISO\_READ\_TEST\_COUNTERS #define HCI\_SUP\_LE\_ISO\_READ\_TEST\_COUNTERS 0x80 Byte 43 Definition at line 949 of file hci\_defs.h. 1.2.2.264 HCI\_SUP\_LE\_ISO\_TEST\_END #define HCI\_SUP\_LE\_ISO\_TEST\_END 0x01 Byte 44 Definition at line 950 of file hci\_defs.h. 1.2.2.265 HCI\_SUP\_LE\_SET\_HOST\_FEATURE #define HCI\_SUP\_LE\_SET\_HOST\_FEATURE 0x02 Byte 44 Definition at line 951 of file hci\_defs.h. 1.2.2.266 HCI\_SUP\_LE\_READ\_ISO\_LINK\_QUALITY #define HCI\_SUP\_LE\_READ\_ISO\_LINK\_QUALITY 0x04 Byte 44 Definition at line 952 of file hci\_defs.h. 1.2.2.267 HCI\_SUP\_LE\_ENH\_READ\_TX\_POWER\_LEVEL

#define HCI\_SUP\_LE\_ENH\_READ\_TX\_POWER\_LEVEL 0x08

Byte 44

Definition at line 953 of file hci\_defs.h.

# 1.2.2.268 HCI\_SUP\_LE\_READ\_REMOTE\_TX\_POWER\_LEVEL

#define HCI\_SUP\_LE\_READ\_REMOTE\_TX\_POWER\_LEVEL 0x01

#### Byte 44

Definition at line 954 of file hci defs.h.

# 1.2.2.269 HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_PARAM

#define HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_PARAM 0x02

# Byte 44

Definition at line 955 of file hci\_defs.h.

# 1.2.2.270 HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_ENABLE

#define HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_ENABLE 0x04

# Byte 44

Definition at line 956 of file hci\_defs.h.

#### 1.2.2.271 HCI\_SUP\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE

#define HCI\_SUP\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE 0x08

# Byte 44

Definition at line 957 of file hci\_defs.h.

# 1.2.2.272 HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V4

#define HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V4 0x01

# Byte 45

Definition at line 958 of file hci\_defs.h.

# 1.2 Generic HCI Definitions 1.2.2.273 HCI\_SUP\_READ\_LOCAL\_SUP\_CODECS\_V2 #define HCI\_SUP\_READ\_LOCAL\_SUP\_CODECS\_V2 0x02 Byte 45 Definition at line 959 of file hci\_defs.h. 1.2.2.274 HCI\_SUP\_READ\_LOCAL\_SUP\_CODEC\_CAP #define HCI\_SUP\_READ\_LOCAL\_SUP\_CODEC\_CAP 0x04 Byte 45 Definition at line 960 of file hci\_defs.h. 1.2.2.275 HCI\_SUP\_READ\_LOCAL\_SUP\_CTR\_DLY #define HCI\_SUP\_READ\_LOCAL\_SUP\_CTR\_DLY 0x08 Byte 45 Definition at line 961 of file hci\_defs.h. 1.2.2.276 HCI\_SUP\_CONFIG\_DATA\_PATH #define HCI\_SUP\_CONFIG\_DATA\_PATH 0x10 Byte 45 Definition at line 962 of file hci\_defs.h. 1.2.2.277 HCI\_SUP\_CMD\_LEN #define HCI\_SUP\_CMD\_LEN 64 Byte length of support cmd field.

Definition at line 964 of file hci\_defs.h.

# 92 **Module Documentation** 1.2.2.278 HCI\_EVT\_MASK\_DISCONNECT\_CMPL #define HCI\_EVT\_MASK\_DISCONNECT\_CMPL 0x10 Byte 0 Definition at line 972 of file hci\_defs.h. 1.2.2.279 HCI\_EVT\_MASK\_ENC\_CHANGE #define HCI\_EVT\_MASK\_ENC\_CHANGE 0x80 Byte 0 Definition at line 973 of file hci\_defs.h. 1.2.2.280 HCI\_EVT\_MASK\_READ\_REMOTE\_VER\_INFO\_CMPL #define HCI\_EVT\_MASK\_READ\_REMOTE\_VER\_INFO\_CMPL 0x08 Byte 1 Definition at line 974 of file hci\_defs.h. 1.2.2.281 HCI\_EVT\_MASK\_HW\_ERROR #define HCI\_EVT\_MASK\_HW\_ERROR 0x80 Byte 1 Definition at line 975 of file hci\_defs.h. 1.2.2.282 HCI\_EVT\_MASK\_DATA\_BUF\_OVERFLOW

#define HCI\_EVT\_MASK\_DATA\_BUF\_OVERFLOW 0x02

Byte 3

Definition at line 976 of file hci\_defs.h.

# 1.2.2.283 HCI\_EVT\_MASK\_ENC\_KEY\_REFRESH\_CMPL #define HCI\_EVT\_MASK\_ENC\_KEY\_REFRESH\_CMPL 0x80 Byte 5 Definition at line 977 of file hci\_defs.h. 1.2.2.284 HCI\_EVT\_MASK\_LE\_META #define HCI\_EVT\_MASK\_LE\_META 0x20 Byte 7 Definition at line 978 of file hci\_defs.h. 1.2.2.285 HCI\_EVT\_MASK\_AUTH\_PAYLOAD\_TIMEOUT #define HCI\_EVT\_MASK\_AUTH\_PAYLOAD\_TIMEOUT 0x80 Byte 2 Definition at line 985 of file hci\_defs.h. 1.2.2.286 HCI\_EVT\_MASK\_LE\_CONN\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_CONN\_CMPL\_EVT 0x01 Byte 0 Definition at line 992 of file hci\_defs.h. 1.2.2.287 HCI\_EVT\_MASK\_LE\_ADV\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_ADV\_REPORT\_EVT 0x02 Byte 0 Definition at line 993 of file hci\_defs.h.

# 1.2.2.288 HCI\_EVT\_MASK\_LE\_CONN\_UPDATE\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_CONN\_UPDATE\_CMPL\_EVT 0x04

Byte 0

Definition at line 994 of file hci defs.h.

# 1.2.2.289 HCI\_EVT\_MASK\_LE\_READ\_REMOTE\_FEAT\_CMPL\_EVT

#define HCI\_EVT\_MASK\_LE\_READ\_REMOTE\_FEAT\_CMPL\_EVT 0x08

Byte 0

Definition at line 995 of file hci\_defs.h.

#### 1.2.2.290 HCI\_EVT\_MASK\_LE\_LTK\_REQ\_EVT

#define HCI\_EVT\_MASK\_LE\_LTK\_REQ\_EVT 0x10

Byte 0

Definition at line 996 of file hci\_defs.h.

#### 1.2.2.291 HCI\_EVT\_MASK\_LE\_REMOTE\_CONN\_PARAM\_REQ\_EVT

#define HCI\_EVT\_MASK\_LE\_REMOTE\_CONN\_PARAM\_REQ\_EVT 0x20

Byte 0

Definition at line 998 of file hci defs.h.

# 1.2.2.292 HCI\_EVT\_MASK\_LE\_DATA\_LEN\_CHANGE\_EVT

#define HCI\_EVT\_MASK\_LE\_DATA\_LEN\_CHANGE\_EVT 0x40

Byte 0

Definition at line 1000 of file hci\_defs.h.

# 1.2.2.293 HCI\_EVT\_MASK\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL #define HCI\_EVT\_MASK\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL 0x80 Byte 0 Definition at line 1001 of file hci defs.h. 1.2.2.294 HCI\_EVT\_MASK\_LE\_GENERATE\_DHKEY\_CMPL #define HCI\_EVT\_MASK\_LE\_GENERATE\_DHKEY\_CMPL 0x01 Byte 1 Definition at line 1002 of file hci\_defs.h. 1.2.2.295 HCI\_EVT\_MASK\_LE\_ENHANCED\_CONN\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_ENHANCED\_CONN\_CMPL\_EVT 0x02 Byte 1 Definition at line 1003 of file hci\_defs.h. 1.2.2.296 HCI\_EVT\_MASK\_LE\_DIRECT\_ADV\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_DIRECT\_ADV\_REPORT\_EVT 0x04 Byte 1 Definition at line 1004 of file hci defs.h. 1.2.2.297 HCI\_EVT\_MASK\_LE\_PHY\_UPDATE\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_PHY\_UPDATE\_CMPL\_EVT 0x08 Byte 1

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Definition at line 1006 of file hci\_defs.h.

# 96 1.2.2.298 HCI\_EVT\_MASK\_LE\_EXT\_ADV\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_EXT\_ADV\_REPORT\_EVT 0x10 Byte 1 Definition at line 1007 of file hci defs.h. 1.2.2.299 HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_EST\_EVT #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_EST\_EVT 0x20 Byte 1 Definition at line 1008 of file hci\_defs.h. 1.2.2.300 HCI\_EVT\_MASK\_LE\_PER\_ADV\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_REPORT\_EVT 0x40 Byte 1 Definition at line 1009 of file hci\_defs.h. 1.2.2.301 HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_LOST\_EVT #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_LOST\_EVT 0x80 Byte 1 Definition at line 1010 of file hci defs.h.

# 1.2.2.302 HCI\_EVT\_MASK\_LE\_SCAN\_TIMEOUT\_EVT

#define HCI\_EVT\_MASK\_LE\_SCAN\_TIMEOUT\_EVT 0x01

Byte 2

Definition at line 1011 of file hci\_defs.h.

# 1.2.2.303 HCI\_EVT\_MASK\_LE\_ADV\_SET\_TERM\_EVT #define HCI\_EVT\_MASK\_LE\_ADV\_SET\_TERM\_EVT 0x02 Byte 2 Definition at line 1012 of file hci defs.h. 1.2.2.304 HCI\_EVT\_MASK\_LE\_SCAN\_REQ\_RCVD\_EVT #define HCI\_EVT\_MASK\_LE\_SCAN\_REQ\_RCVD\_EVT 0x04 Byte 2 Definition at line 1013 of file hci\_defs.h. 1.2.2.305 HCI\_EVT\_MASK\_LE\_CH\_SEL\_ALGO\_EVT #define HCI\_EVT\_MASK\_LE\_CH\_SEL\_ALGO\_EVT 0x08 Byte 2 (Bit 19) Definition at line 1014 of file hci\_defs.h. 1.2.2.306 HCI\_EVT\_MASK\_LE\_CONNLESS\_IQ\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_CONNLESS\_IQ\_REPORT\_EVT 0x10 Byte 2 Definition at line 1016 of file hci\_defs.h. 1.2.2.307 HCI\_EVT\_MASK\_LE\_CONN\_IQ\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_CONN\_IQ\_REPORT\_EVT 0x20 Byte 2

Definition at line 1017 of file hci\_defs.h.

# 1.2.2.308 HCI\_EVT\_MASK\_LE\_CTE\_REQ\_FAILED\_EVT

#define HCI\_EVT\_MASK\_LE\_CTE\_REQ\_FAILED\_EVT 0x40

Byte 2

Definition at line 1018 of file hci defs.h.

# 1.2.2.309 HCI\_EVT\_MASK\_LE\_PER\_SYNC\_TRSF\_RCVT\_EVT

#define HCI\_EVT\_MASK\_LE\_PER\_SYNC\_TRSF\_RCVT\_EVT 0x80

Byte 2 (Bit 23)

Definition at line 1019 of file hci\_defs.h.

#### 1.2.2.310 HCI\_EVT\_MASK\_LE\_CIS\_EST\_EVT

#define HCI\_EVT\_MASK\_LE\_CIS\_EST\_EVT 0x01

Byte 3 (Bit 24)

Definition at line 1021 of file hci\_defs.h.

#### 1.2.2.311 HCI\_EVT\_MASK\_LE\_CIS\_REQ\_EVT

#define HCI\_EVT\_MASK\_LE\_CIS\_REQ\_EVT 0x02

Byte 3

Definition at line 1022 of file hci defs.h.

# 1.2.2.312 HCI\_EVT\_MASK\_LE\_CREATE\_BIG\_CMPL\_EVT

#define HCI\_EVT\_MASK\_LE\_CREATE\_BIG\_CMPL\_EVT 0x04

Byte 3

Definition at line 1023 of file hci\_defs.h.

# 1.2.2.313 HCI\_EVT\_MASK\_LE\_TERMINATE\_BIG\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_TERMINATE\_BIG\_CMPL\_EVT 0x08 Byte 3 Definition at line 1024 of file hci defs.h. 1.2.2.314 HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_EST\_EVT #define HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_EST\_EVT 0x10 Byte 3 Definition at line 1025 of file hci\_defs.h. 1.2.2.315 HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_LOST\_EVT #define HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_LOST\_EVT 0x20 Byte 3 Definition at line 1026 of file hci\_defs.h. 1.2.2.316 HCI\_EVT\_MASK\_LE\_PEER\_SCA\_CMPL\_EVT #define HCI\_EVT\_MASK\_LE\_PEER\_SCA\_CMPL\_EVT 0x40 Byte 3 Definition at line 1027 of file hci\_defs.h. 1.2.2.317 HCI\_EVT\_MASK\_LE\_PATH\_LOSS\_REPORT\_EVT #define HCI\_EVT\_MASK\_LE\_PATH\_LOSS\_REPORT\_EVT 0x80

Byte 3

Definition at line 1028 of file hci\_defs.h.

# 1.2.2.318 HCI\_EVT\_MASK\_LE\_TX\_POWER\_REPORT\_EVT

#define HCI\_EVT\_MASK\_LE\_TX\_POWER\_REPORT\_EVT 0x01

Byte 4 (Bit 32)

Definition at line 1030 of file hci defs.h.

# 1.2.2.319 HCI\_EVT\_MASK\_LE\_BIG\_INFO\_ADV\_RPT\_EVT

#define HCI\_EVT\_MASK\_LE\_BIG\_INFO\_ADV\_RPT\_EVT 0x02

Byte 4

Definition at line 1031 of file hci\_defs.h.

#### 1.2.2.320 HCI\_LE\_SUP\_FEAT\_ENCRYPTION

#define HCI\_LE\_SUP\_FEAT\_ENCRYPTION 0x0000000000000001

Encryption supported

Definition at line 1040 of file hci\_defs.h.

#### 1.2.2.321 HCI\_LE\_SUP\_FEAT\_CONN\_PARAM\_REQ\_PROC

Connection Parameters Request Procedure supported

Definition at line 1042 of file hci\_defs.h.

# 1.2.2.322 HCI\_LE\_SUP\_FEAT\_EXT\_REJECT\_IND

#define HCI\_LE\_SUP\_FEAT\_EXT\_REJECT\_IND 0x00000000000000004

Extended Reject Indication supported

Definition at line 1043 of file hci\_defs.h.

1.2.2.323 HCI\_LE\_SUP\_FEAT\_SLV\_INIT\_FEAT\_EXCH

#define HCI\_LE\_SUP\_FEAT\_SLV\_INIT\_FEAT\_EXCH 0x0000000000000008

Slave-Initiated Features Exchange supported

Definition at line 1044 of file hci defs.h.

1.2.2.324 HCI\_LE\_SUP\_FEAT\_LE\_PING

LE Ping supported

Definition at line 1045 of file hci\_defs.h.

1.2.2.325 HCI\_LE\_SUP\_FEAT\_DATA\_LEN\_EXT

Data Length Extension supported

Definition at line 1047 of file hci\_defs.h.

1.2.2.326 HCI\_LE\_SUP\_FEAT\_PRIVACY

#define HCI\_LE\_SUP\_FEAT\_PRIVACY 0x00000000000000040

LL Privacy supported

Definition at line 1048 of file hci defs.h.

1.2.2.327 HCI\_LE\_SUP\_FEAT\_EXT\_SCAN\_FILT\_POLICY

Extended Scan Filter Policy supported

Definition at line 1049 of file hci\_defs.h.

1.2.2.328 HCI\_LE\_SUP\_FEAT\_LE\_2M\_PHY

LE 2M PHY supported

Definition at line 1051 of file hci defs.h.

1.2.2.329 HCI\_LE\_SUP\_FEAT\_STABLE\_MOD\_IDX\_TRANSMITTER

Stable Modulation Index - Transmitter supported

Definition at line 1052 of file hci\_defs.h.

1.2.2.330 HCI\_LE\_SUP\_FEAT\_STABLE\_MOD\_IDX\_RECEIVER

#define HCI\_LE\_SUP\_FEAT\_STABLE\_MOD\_IDX\_RECEIVER 0x00000000000000400

Stable Modulation Index - Receiver supported

Definition at line 1053 of file hci\_defs.h.

1.2.2.331 HCI\_LE\_SUP\_FEAT\_LE\_CODED\_PHY

LE Coded PHY supported

Definition at line 1054 of file hci defs.h.

1.2.2.332 HCI\_LE\_SUP\_FEAT\_LE\_EXT\_ADV

#define HCI\_LE\_SUP\_FEAT\_LE\_EXT\_ADV 0x0000000000001000

LE Extended Advertising supported

Definition at line 1055 of file hci\_defs.h.

1.2.2.333 HCI\_LE\_SUP\_FEAT\_LE\_PER\_ADV

LE Periodic Advertising supported

Definition at line 1056 of file hci defs.h.

1.2.2.334 HCI\_LE\_SUP\_FEAT\_CH\_SEL\_2

#define HCI\_LE\_SUP\_FEAT\_CH\_SEL\_2 0x0000000000004000

Channel Selection Algorithm #2 supported

Definition at line 1057 of file hci\_defs.h.

1.2.2.335 HCI\_LE\_SUP\_FEAT\_LE\_POWER\_CLASS\_1

LE Power Class 1 supported

Definition at line 1058 of file hci\_defs.h.

1.2.2.336 HCI\_LE\_SUP\_FEAT\_MIN\_NUN\_USED\_CHAN

#define HCI\_LE\_SUP\_FEAT\_MIN\_NUN\_USED\_CHAN 0x0000000000010000

Minimum Number of Used Channels Procedure supported

Definition at line 1059 of file hci defs.h.

1.2.2.337 HCI\_LE\_SUP\_FEAT\_CONN\_CTE\_REQ

Connection CTE Request supported

Definition at line 1061 of file hci\_defs.h.

1.2.2.338 HCI\_LE\_SUP\_FEAT\_CONN\_CTE\_RSP

#define HCI\_LE\_SUP\_FEAT\_CONN\_CTE\_RSP 0x00000000000040000

Connection CTE Response supported

Definition at line 1062 of file hci\_defs.h.

1.2.2.339 HCI\_LE\_SUP\_FEAT\_CONNLESS\_CTE\_TRANS

Connectionless CTE Transmitter supported

Definition at line 1063 of file hci\_defs.h.

1.2.2.340 HCI\_LE\_SUP\_FEAT\_CONNLESS\_CTE\_RECV

#define HCI\_LE\_SUP\_FEAT\_CONNLESS\_CTE\_RECV 0x0000000000100000

Connectionless CTE Receiver supported

Definition at line 1064 of file hci\_defs.h.

1.2.2.341 HCI\_LE\_SUP\_FEAT\_ANTENNA\_SWITCH\_AOD

Anetenna Switching during CTE Transmission (AoD) supported

Definition at line 1065 of file hci\_defs.h.

1.2.2.342 HCI\_LE\_SUP\_FEAT\_ANTENNA\_SWITCH\_AOA

#define HCI\_LE\_SUP\_FEAT\_ANTENNA\_SWITCH\_AOA 0x0000000000400000

Anetenna Switching during CTE Reception (AoA) supported

Definition at line 1066 of file hci\_defs.h.

1.2.2.343 HCI\_LE\_SUP\_FEAT\_RECV\_CTE

Receive Constant Tone Extension supported

Definition at line 1067 of file hci defs.h.

1.2.2.344 HCI\_LE\_SUP\_FEAT\_PAST\_SENDER

#define HCI\_LE\_SUP\_FEAT\_PAST\_SENDER 0x0000000001000000

Periodic Advertising Sync Transfer Sender supported

Definition at line 1068 of file hci\_defs.h.

1.2.2.345 HCI\_LE\_SUP\_FEAT\_PAST\_RECIPIENT

Periodic Advertising Sync Transfer Recipient supported

Definition at line 1069 of file hci\_defs.h.

1.2.2.346 HCI\_LE\_SUP\_FEAT\_SCA\_UPDATE

#define HCI\_LE\_SUP\_FEAT\_SCA\_UPDATE 0x0000000004000000

Sleep Clock Accuracy Update supported

Definition at line 1070 of file hci defs.h.

1.2.2.347 HCI\_LE\_SUP\_FEAT\_REMOTE\_PUB\_KEY\_VALIDATION

Remote Public Key Validation supported

Definition at line 1071 of file hci\_defs.h.

# 1.2.2.348 HCI\_LE\_SUP\_FEAT\_CIS\_MASTER

#define HCI\_LE\_SUP\_FEAT\_CIS\_MASTER 0x0000000010000000

Connected Isochronous Master Role supported

Definition at line 1073 of file hci defs.h.

# 1.2.2.349 HCI\_LE\_SUP\_FEAT\_CIS\_SLAVE

#define HCI\_LE\_SUP\_FEAT\_CIS\_SLAVE 0x0000000020000000

Connected Isochronous Slave Role supported

Definition at line 1074 of file hci\_defs.h.

#### 1.2.2.350 HCI\_LE\_SUP\_FEAT\_ISO\_BROADCASTER

#define HCI\_LE\_SUP\_FEAT\_ISO\_BROADCASTER 0x0000000040000000

Isochronous Broadcaster Role supported

Definition at line 1075 of file hci\_defs.h.

#### 1.2.2.351 HCI\_LE\_SUP\_FEAT\_ISO\_SYNC\_RECEIVER

#define HCI\_LE\_SUP\_FEAT\_ISO\_SYNC\_RECEIVER 0x0000000080000000

Isochronous Synchronized Receiver Role supported

Definition at line 1076 of file hci\_defs.h.

# 1.2.2.352 HCI\_LE\_SUP\_FEAT\_ISO\_HOST\_SUPPORT

#define HCI\_LE\_SUP\_FEAT\_ISO\_HOST\_SUPPORT 0x0000000100000000

Host support for ISO Channels

Definition at line 1077 of file hci\_defs.h.

#### 1.2.2.353 HCI\_LE\_SUP\_FEAT\_POWER\_CONTROL\_REQUEST

Power control requests supported

Definition at line 1078 of file hci defs.h.

## 1.2.2.354 HCI\_LE\_SUP\_FEAT\_POWER\_CHANGE\_IND

#define HCI\_LE\_SUP\_FEAT\_POWER\_CHANGE\_IND 0x0000000400000000

Power control power change indication supported

Definition at line 1079 of file hci\_defs.h.

#### 1.2.2.355 HCI\_LE\_SUP\_FEAT\_PATH\_LOSS\_MONITOR

#define HCI\_LE\_SUP\_FEAT\_PATH\_LOSS\_MONITOR 0x0000000800000000

Path loss monitoring supported

Definition at line 1080 of file hci\_defs.h.

#### 1.2.2.356 HCI\_LE\_FEAT\_BIT\_ISO\_HOST\_SUPPORT

#define HCI\_LE\_FEAT\_BIT\_ISO\_HOST\_SUPPORT 32

Host support for ISO Channels

Definition at line 1087 of file hci\_defs.h.

## 1.2.2.357 HCI\_ADV\_MIN\_INTERVAL

#define HCI\_ADV\_MIN\_INTERVAL 0x0020

Minimum advertising interval

Definition at line 1094 of file hci\_defs.h.

#### 1.2.2.358 HCI\_ADV\_MAX\_INTERVAL

#define HCI\_ADV\_MAX\_INTERVAL 0x4000

Maximum advertising interval

Definition at line 1095 of file hci defs.h.

## 1.2.2.359 HCI\_ADV\_DIRECTED\_MAX\_DURATION

#define HCI\_ADV\_DIRECTED\_MAX\_DURATION 0x0500

Maximum high duty cycle connectable directed advertising duration

Definition at line 1096 of file hci\_defs.h.

#### 1.2.2.360 HCI\_ADV\_TYPE\_CONN\_UNDIRECT

#define HCI\_ADV\_TYPE\_CONN\_UNDIRECT 0x00

Connectable undirected advertising

Definition at line 1097 of file hci\_defs.h.

#### 1.2.2.361 HCI\_ADV\_TYPE\_CONN\_DIRECT

#define HCI\_ADV\_TYPE\_CONN\_DIRECT 0x01

Connectable directed high duty cycle advertising

Definition at line 1098 of file hci defs.h.

## 1.2.2.362 HCI\_ADV\_TYPE\_DISC\_UNDIRECT

#define HCI\_ADV\_TYPE\_DISC\_UNDIRECT 0x02

Discoverable undirected advertising

Definition at line 1099 of file hci\_defs.h.

1.2.2.363 HCI\_ADV\_TYPE\_NONCONN\_UNDIRECT

#define HCI\_ADV\_TYPE\_NONCONN\_UNDIRECT 0x03

Nonconnectable undirected advertising

Definition at line 1100 of file hci defs.h.

1.2.2.364 HCI\_ADV\_TYPE\_CONN\_DIRECT\_LO\_DUTY

#define HCI\_ADV\_TYPE\_CONN\_DIRECT\_LO\_DUTY 0x04

Connectable directed low duty cycle advertising

Definition at line 1101 of file hci\_defs.h.

1.2.2.365 HCI\_ADV\_CHAN\_37

#define HCI\_ADV\_CHAN\_37 0x01

Advertising channel 37

Definition at line 1102 of file hci\_defs.h.

1.2.2.366 HCI\_ADV\_CHAN\_38

#define HCI\_ADV\_CHAN\_38 0x02

Advertising channel 38

Definition at line 1103 of file hci\_defs.h.

1.2.2.367 HCI\_ADV\_CHAN\_39

#define HCI\_ADV\_CHAN\_39 0x04

Advertising channel 39

Definition at line 1104 of file hci\_defs.h.

## 1.2.2.368 HCI\_ADV\_FILT\_NONE

#define HCI\_ADV\_FILT\_NONE 0x00

No scan request or connection filtering

Definition at line 1105 of file hci defs.h.

## 1.2.2.369 HCI\_ADV\_FILT\_SCAN

#define HCI\_ADV\_FILT\_SCAN 0x01

White list filters scan requests

Definition at line 1106 of file hci\_defs.h.

#### 1.2.2.370 HCI\_ADV\_FILT\_CONN

#define HCI\_ADV\_FILT\_CONN 0x02

White list filters connections

Definition at line 1107 of file hci\_defs.h.

#### 1.2.2.371 HCI\_ADV\_FILT\_ALL

#define HCI\_ADV\_FILT\_ALL 0x03

White list filters scan req. and conn.

Definition at line 1108 of file hci\_defs.h.

## 1.2.2.372 HCI\_SCAN\_TYPE\_PASSIVE

#define HCI\_SCAN\_TYPE\_PASSIVE 0

Passive scan

Definition at line 1115 of file hci\_defs.h.

1.2.2.373 HCI\_SCAN\_TYPE\_ACTIVE #define HCI\_SCAN\_TYPE\_ACTIVE 1 Active scan Definition at line 1116 of file hci defs.h. 1.2.2.374 HCI\_SCAN\_INTERVAL\_MIN #define HCI\_SCAN\_INTERVAL\_MIN 0x0004 Minimum scan interval Definition at line 1117 of file hci\_defs.h. 1.2.2.375 HCI\_SCAN\_INTERVAL\_MAX #define HCI\_SCAN\_INTERVAL\_MAX 0x4000 Maximum scan interval Definition at line 1118 of file hci\_defs.h. 1.2.2.376 HCI\_SCAN\_INTERVAL\_DEFAULT #define HCI\_SCAN\_INTERVAL\_DEFAULT 0x0010 Default scan interval Definition at line 1119 of file hci\_defs.h. 1.2.2.377 HCI\_SCAN\_WINDOW\_MIN #define HCI\_SCAN\_WINDOW\_MIN 0x0004 Minimum scan window

Definition at line 1120 of file hci\_defs.h.

## 1.2.2.378 HCI\_SCAN\_WINDOW\_MAX

#define HCI\_SCAN\_WINDOW\_MAX 0x4000

Maximum scan window

Definition at line 1121 of file hci defs.h.

## 1.2.2.379 HCI\_SCAN\_WINDOW\_DEFAULT

#define HCI\_SCAN\_WINDOW\_DEFAULT 0x0010

Default scan window

Definition at line 1122 of file hci\_defs.h.

#### 1.2.2.380 HCI\_CONN\_INTERVAL\_MIN

#define HCI\_CONN\_INTERVAL\_MIN 0x0006

Minimum connection interval

Definition at line 1129 of file hci\_defs.h.

#### 1.2.2.381 HCI\_CONN\_INTERVAL\_MAX

#define HCI\_CONN\_INTERVAL\_MAX 0x0C80

Maximum connection interval

Definition at line 1130 of file hci\_defs.h.

## 1.2.2.382 HCI\_CONN\_LATENCY\_MAX

#define HCI\_CONN\_LATENCY\_MAX 0x01F3

Maximum connection latency

Definition at line 1131 of file hci\_defs.h.

```
1.2.2.383 HCI_SUP_TIMEOUT_MIN
#define HCI_SUP_TIMEOUT_MIN 0x000A
Minimum supervision timeout
Definition at line 1132 of file hci_defs.h.
1.2.2.384 HCI_SUP_TIMEOUT_MAX
#define HCI_SUP_TIMEOUT_MAX 0x0C80
Maximum supervision timeout
Definition at line 1133 of file hci_defs.h.
1.2.2.385 HCI_ROLE_MASTER [1/2]
#define HCI_ROLE_MASTER 0
Role is master
Definition at line 1393 of file hci_defs.h.
1.2.2.386 HCI_ROLE_MASTER [2/2]
#define HCI_ROLE_MASTER 0
Role is master
Definition at line 1393 of file hci_defs.h.
1.2.2.387 HCI_ROLE_SLAVE [1/2]
#define HCI_ROLE_SLAVE 1
Role is slave
```

Definition at line 1394 of file hci\_defs.h.

```
1.2.2.388 HCI_ROLE_SLAVE [2/2]
#define HCI_ROLE_SLAVE 1
Role is slave
Definition at line 1394 of file hci defs.h.
1.2.2.389 HCI_CLOCK_500PPM
#define HCI_CLOCK_500PPM 0x00
500 ppm clock accuracy
Definition at line 1142 of file hci_defs.h.
1.2.2.390 HCI_CLOCK_250PPM
#define HCI_CLOCK_250PPM 0x01
250 ppm clock accuracy
Definition at line 1143 of file hci_defs.h.
1.2.2.391 HCI_CLOCK_150PPM
#define HCI_CLOCK_150PPM 0x02
150 ppm clock accuracy
Definition at line 1144 of file hci_defs.h.
1.2.2.392 HCI_CLOCK_100PPM
#define HCI_CLOCK_100PPM 0x03
100 ppm clock accuracy
```

Definition at line 1145 of file hci\_defs.h.

1.2.2.393 HCI\_CLOCK\_75PPM #define HCI\_CLOCK\_75PPM 0x04 75 ppm clock accuracy Definition at line 1146 of file hci\_defs.h. 1.2.2.394 HCI\_CLOCK\_50PPM #define HCI\_CLOCK\_50PPM 0x05 50 ppm clock accuracy Definition at line 1147 of file hci\_defs.h. 1.2.2.395 HCI\_CLOCK\_30PPM #define HCI\_CLOCK\_30PPM 0x06 30 ppm clock accuracy Definition at line 1148 of file hci\_defs.h. 1.2.2.396 HCI\_CLOCK\_20PPM #define HCI\_CLOCK\_20PPM 0x07 20 ppm clock accuracy Definition at line 1149 of file hci\_defs.h. 1.2.2.397 HCI\_ADV\_CONN\_UNDIRECT #define HCI\_ADV\_CONN\_UNDIRECT 0x00

Connectable undirected advertising

Definition at line 1156 of file hci\_defs.h.

1.2.2.398 HCI\_ADV\_CONN\_DIRECT

#define HCI\_ADV\_CONN\_DIRECT 0x01

Connectable directed advertising

Definition at line 1157 of file hci\_defs.h.

1.2.2.399 HCI\_ADV\_DISC\_UNDIRECT

#define HCI\_ADV\_DISC\_UNDIRECT 0x02

Discoverable undirected advertising

Definition at line 1158 of file hci\_defs.h.

1.2.2.400 HCI\_ADV\_NONCONN\_UNDIRECT

#define HCI\_ADV\_NONCONN\_UNDIRECT 0x03

Non-connectable undirected advertising

Definition at line 1159 of file hci\_defs.h.

1.2.2.401 HCI\_ADV\_SCAN\_RESPONSE

#define HCI\_ADV\_SCAN\_RESPONSE 0x04

Scan response

Definition at line 1160 of file hci\_defs.h.

1.2.2.402 HCI\_ADV\_DATA\_OP\_FRAG\_INTER

#define HCI\_ADV\_DATA\_OP\_FRAG\_INTER 0x00

Intermediate fragment

Definition at line 1167 of file hci\_defs.h.

1.2.2.403 HCI\_ADV\_DATA\_OP\_FRAG\_FIRST

#define HCI\_ADV\_DATA\_OP\_FRAG\_FIRST 0x01

First fragment

Definition at line 1168 of file hci defs.h.

1.2.2.404 HCI\_ADV\_DATA\_OP\_FRAG\_LAST

#define HCI\_ADV\_DATA\_OP\_FRAG\_LAST 0x02

Last fragment

Definition at line 1169 of file hci\_defs.h.

1.2.2.405 HCI\_ADV\_DATA\_OP\_COMP\_FRAG

#define HCI\_ADV\_DATA\_OP\_COMP\_FRAG 0x03

Complete extended advertising data

Definition at line 1170 of file hci\_defs.h.

1.2.2.406 HCI\_ADV\_DATA\_OP\_UNCHANGED\_DATA

#define HCI\_ADV\_DATA\_OP\_UNCHANGED\_DATA 0x04

Unchanged data (just update Advertising DID)

Definition at line 1171 of file hci\_defs.h.

1.2.2.407 HCI\_ADV\_DATA\_FRAG\_PREF\_FRAG

#define HCI\_ADV\_DATA\_FRAG\_PREF\_FRAG 0x00

Controller may fragment all Host advertising data

Definition at line 1178 of file hci\_defs.h.

## 1.2.2.408 HCI\_ADV\_DATA\_FRAG\_PREF\_NO\_FRAG

#define HCI\_ADV\_DATA\_FRAG\_PREF\_NO\_FRAG 0x01

Controller should not fragment nor minimize fragmentation of Host advertising data

Definition at line 1179 of file hci defs.h.

## 1.2.2.409 HCI\_ADV\_NUM\_SETS\_ALL\_DISABLE

#define HCI\_ADV\_NUM\_SETS\_ALL\_DISABLE 0x00

Disable all advertising sets

Definition at line 1186 of file hci\_defs.h.

#### 1.2.2.410 HCI\_MAX\_NUM\_PHYS

#define HCI\_MAX\_NUM\_PHYS 3

Maximum number of scanning or initiating PHYs

Definition at line 1193 of file hci\_defs.h.

#### 1.2.2.411 HCI\_ADV\_PHY\_LE\_1M

 $\verb|#define HCI_ADV_PHY_LE_1M 0x01|\\$ 

LE 1M PHY

Definition at line 1200 of file hci\_defs.h.

## 1.2.2.412 HCI\_ADV\_PHY\_LE\_2M

#define HCI\_ADV\_PHY\_LE\_2M 0x02

LE 2M PHY

Definition at line 1201 of file hci\_defs.h.

1.2.2.413 HCI\_ADV\_PHY\_LE\_CODED #define HCI\_ADV\_PHY\_LE\_CODED 0x03 LE Coded PHY Definition at line 1202 of file hci defs.h. 1.2.2.414 HCI\_SCAN\_PHY\_LE\_1M\_BIT  $\verb|#define HCI_SCAN_PHY_LE_1M_BIT (1<<0)|\\$ LE 1M PHY Definition at line 1209 of file hci\_defs.h. 1.2.2.415 HCI\_SCAN\_PHY\_LE\_2M\_BIT #define HCI\_SCAN\_PHY\_LE\_2M\_BIT (1<<1)</pre> LE 2M PHY Definition at line 1210 of file hci\_defs.h. 1.2.2.416 HCI\_SCAN\_PHY\_LE\_CODED\_BIT #define HCI\_SCAN\_PHY\_LE\_CODED\_BIT (1<<2)</pre> LE Coded PHY Definition at line 1211 of file hci\_defs.h. 1.2.2.417 HCI\_INIT\_PHY\_LE\_1M\_BIT

LE 1M PHY

Definition at line 1218 of file hci\_defs.h.

 $\verb|#define HCI_INIT_PHY_LE_1M_BIT (1<<0)|\\$ 

```
1.2.2.418 HCI_INIT_PHY_LE_2M_BIT
\verb|#define HCI_INIT_PHY_LE_2M_BIT (1<<1)|\\
LE 2M PHY
Definition at line 1219 of file hci defs.h.
1.2.2.419 HCI_INIT_PHY_LE_CODED_BIT
\#define HCI_INIT_PHY_LE_CODED_BIT (1<<2)
LE Coded PHY
Definition at line 1220 of file hci_defs.h.
1.2.2.420 HCI_TRANS_PHY_LE_1M_BIT
#define HCI_TRANS_PHY_LE_1M_BIT (1<<0)</pre>
LE 1M PHY
Definition at line 1227 of file hci_defs.h.
1.2.2.421 HCI_TRANS_PHY_LE_2M_BIT
\#define HCI\_TRANS\_PHY\_LE\_2M\_BIT (1<<1)
LE 2M PHY
Definition at line 1228 of file hci_defs.h.
```

1.2.2.422 HCI\_TRABS\_PHY\_LE\_CODED\_BIT

#define HCI\_TRABS\_PHY\_LE\_CODED\_BIT (1<<2)</pre>

LE Coded PHY

Definition at line 1229 of file hci\_defs.h.

1.2.2.423 HCI\_ADV\_PROP\_CONN\_ADV\_BIT

#define HCI\_ADV\_PROP\_CONN\_ADV\_BIT (1<<0)</pre>

Connectable advertising bit

Definition at line 1236 of file hci defs.h.

1.2.2.424 HCI\_ADV\_PROP\_SCAN\_ADV\_BIT

#define  $HCI\_ADV\_PROP\_SCAN\_ADV\_BIT$  (1<<1)

Scannable advertising bit

Definition at line 1237 of file hci\_defs.h.

1.2.2.425 HCI\_ADV\_PROP\_DIRECT\_ADV\_BIT

#define HCI\_ADV\_PROP\_DIRECT\_ADV\_BIT (1<<2)</pre>

Directed advertising bit

Definition at line 1238 of file hci\_defs.h.

1.2.2.426 HCI\_ADV\_PROP\_CONN\_DIRECT\_ADV\_BIT

#define  $HCI\_ADV\_PROP\_CONN\_DIRECT\_ADV\_BIT$  (1<<3)

High duty cycle connectable directed advertising bit

Definition at line 1239 of file hci defs.h.

1.2.2.427 HCI\_ADV\_PROP\_USE\_LEG\_PDU\_BIT

#define  $HCI\_ADV\_PROP\_USE\_LEG\_PDU\_BIT$  (1<<4)

Use legacy advertising PDUs bit

Definition at line 1240 of file hci\_defs.h.

```
1.2.2.428 HCI_ADV_PROP_OMIT_ADV_ADDR_BIT
```

```
#define HCI_ADV_PROP_OMIT_ADV_ADDR_BIT (1<<5)</pre>
```

Omit advertiser's address from all PDUs (anonymous advertising) bit

Definition at line 1241 of file hci defs.h.

## 1.2.2.429 HCI\_ADV\_PROP\_INC\_TX\_PWR\_BIT

```
#define HCI_ADV_PROP_INC_TX_PWR_BIT (1<<6)</pre>
```

Include TxPower in extended header of advertising PDU bit

Definition at line 1242 of file hci\_defs.h.

#### 1.2.2.430 HCI\_ADV\_PROP\_LEG\_CONN\_UNDIRECT

```
#define HCI_ADV_PROP_LEG_CONN_UNDIRECT 0x13
```

Connectable and scannable undirected advertising (00010011b)

Definition at line 1249 of file hci\_defs.h.

#### 1.2.2.431 HCI\_ADV\_PROP\_LEG\_CONN\_DIRECT

```
#define HCI_ADV_PROP_LEG_CONN_DIRECT 0x1D
```

Connectable directed high duty cycle advertising (00011101b)

Definition at line 1250 of file hci\_defs.h.

## 1.2.2.432 HCI\_ADV\_PROP\_LEG\_SCAN\_UNDIRECT

```
#define HCI_ADV_PROP_LEG_SCAN_UNDIRECT 0x12
```

Scannable undirected advertising (00010010b)

Definition at line 1251 of file hci\_defs.h.

1.2.2.433 HCI\_ADV\_PROP\_LEG\_NONCONN\_UNDIRECT

#define HCI\_ADV\_PROP\_LEG\_NONCONN\_UNDIRECT 0x10

Non-connectable and non-scannable undirected advertising (00010000b)

Definition at line 1252 of file hci defs.h.

1.2.2.434 HCI\_ADV\_PROP\_LEG\_CONN\_DIRECT\_LO\_DUTY

#define HCI\_ADV\_PROP\_LEG\_CONN\_DIRECT\_LO\_DUTY 0x15

Connectable directed low duty cycle advertising (00010101b)

Definition at line 1253 of file hci\_defs.h.

1.2.2.435 HCI\_ADV\_RPT\_CONN\_ADV\_BIT

#define HCI\_ADV\_RPT\_CONN\_ADV\_BIT (1<<0)</pre>

Connectable advertising event bit

Definition at line 1260 of file hci\_defs.h.

1.2.2.436 HCI\_ADV\_RPT\_SCAN\_ADV\_BIT

 $\verb|#define HCI_ADV_RPT_SCAN_ADV_BIT (1<<1)|\\$ 

Scannable advertising event bit

Definition at line 1261 of file hci\_defs.h.

1.2.2.437 HCI\_ADV\_RPT\_DIRECT\_ADV\_BIT

#define HCI\_ADV\_RPT\_DIRECT\_ADV\_BIT (1<<2)</pre>

Directed advertising event bit

Definition at line 1262 of file hci\_defs.h.

```
1.2.2.438 HCI_ADV_RPT_SCAN_RSP_BIT
```

#define HCI\_ADV\_RPT\_SCAN\_RSP\_BIT (1<<3)</pre>

Scan response event bit

Definition at line 1263 of file hci defs.h.

1.2.2.439 HCI\_ADV\_RPT\_LEG\_ADV\_BIT

#define  $HCI\_ADV\_RPT\_LEG\_ADV\_BIT$  (1<<4)

Legacy advertising PDU event bit

Definition at line 1264 of file hci\_defs.h.

1.2.2.440 HCI\_ADV\_RPT\_DATA\_STATUS\_BITS

#define HCI\_ADV\_RPT\_DATA\_STATUS\_BITS (3<<5)</pre>

Data status bits

Definition at line 1265 of file hci\_defs.h.

1.2.2.441 HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT

#define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT 0x13

Connectable and scannable undirected advertising (0010011b)

Definition at line 1272 of file hci defs.h.

1.2.2.442 HCI\_ADV\_RPT\_LEG\_CONN\_DIRECT

#define HCI\_ADV\_RPT\_LEG\_CONN\_DIRECT 0x15

Connectable directed advertising (0010101b)

Definition at line 1273 of file hci\_defs.h.

1.2.2.443 HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT

#define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT 0x12

Scannable undirected advertising (0010010b)

Definition at line 1274 of file hci defs.h.

1.2.2.444 HCI\_ADV\_RPT\_LEG\_NONCONN\_UNDIRECT

#define HCI\_ADV\_RPT\_LEG\_NONCONN\_UNDIRECT 0x10

Non-connectable and non-scannable undirected advertising (0010000b)

Definition at line 1275 of file hci\_defs.h.

1.2.2.445 HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT\_SCAN\_RSP

#define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT\_SCAN\_RSP 0x1B

Scan response to connectable and scannable undirected advertising (0011011b)

Definition at line 1276 of file hci\_defs.h.

1.2.2.446 HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT\_SCAN\_RSP

#define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT\_SCAN\_RSP 0x1A

Scan response to scannable undirected advertising (0011010b)

Definition at line 1277 of file hci defs.h.

1.2.2.447 HCI\_ADV\_RPT\_DATA\_CMPL

#define HCI\_ADV\_RPT\_DATA\_CMPL 0x00

Data complete

Definition at line 1284 of file hci\_defs.h.

1.2.2.448 HCI\_ADV\_RPT\_DATA\_INCMPL\_MORE

#define HCI\_ADV\_RPT\_DATA\_INCMPL\_MORE 0x01

Data incomplete, more date to come

Definition at line 1285 of file hci defs.h.

1.2.2.449 HCI\_ADV\_RPT\_DATA\_INCMPL\_TRUNC

#define HCI\_ADV\_RPT\_DATA\_INCMPL\_TRUNC 0x02

Data incomplete, data truncated, no more date to come

Definition at line 1286 of file hci\_defs.h.

1.2.2.450 HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_1M

#define HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_1M 0x01

Advertiser PHY is LE 1M

Definition at line 1293 of file hci\_defs.h.

1.2.2.451 HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_CODED

#define HCI\_ADV\_RPT\_PHY\_PRIM\_LE\_CODED 0x03

Advertiser PHY is LE Coded

Definition at line 1294 of file hci\_defs.h.

1.2.2.452 HCI\_ADV\_RPT\_PHY\_SEC\_NONE

#define HCI\_ADV\_RPT\_PHY\_SEC\_NONE 0x00

No packets on seconday advertising channel

Definition at line 1301 of file hci\_defs.h.

1.2.2.453 HCI\_ADV\_RPT\_PHY\_SEC\_LE\_1M

#define HCI\_ADV\_RPT\_PHY\_SEC\_LE\_1M 0x01

Advertiser PHY is LE 1M

Definition at line 1302 of file hci\_defs.h.

1.2.2.454 HCI\_ADV\_RPT\_PHY\_SEC\_LE\_2M

#define HCI\_ADV\_RPT\_PHY\_SEC\_LE\_2M 0x02

Advertiser PHY is LE 2M

Definition at line 1303 of file hci\_defs.h.

1.2.2.455 HCI\_ADV\_RPT\_PHY\_SEC\_LE\_CODED

#define HCI\_ADV\_RPT\_PHY\_SEC\_LE\_CODED 0x03

Advertiser PHY is LE Coded

Definition at line 1304 of file hci\_defs.h.

1.2.2.456 HCI\_CH\_SEL\_ALGO\_1

 $\#define\ HCI\_CH\_SEL\_ALGO\_1\ 0x00$ 

LE channel selection algorithm #1 used

Definition at line 1311 of file hci\_defs.h.

1.2.2.457 HCI\_CH\_SEL\_ALGO\_2

#define HCI\_CH\_SEL\_ALGO\_2 0x01

LE channel selection algorithm #2 used

Definition at line 1312 of file hci\_defs.h.

## 1.2.2.458 HCI\_PRIVATE\_KEY\_GENERATED

#define HCI\_PRIVATE\_KEY\_GENERATED 0x00

Use generated private key

Definition at line 1319 of file hci defs.h.

## 1.2.2.459 HCI\_PRIVATE\_KEY\_DEBUG

#define HCI\_PRIVATE\_KEY\_DEBUG 0x01

Use debug private key

Definition at line 1320 of file hci\_defs.h.

#### 1.2.2.460 HCI\_MIN\_NUM\_OF\_USED\_CHAN

#define HCI\_MIN\_NUM\_OF\_USED\_CHAN 8

Minimum number of used channels

Definition at line 1328 of file hci\_defs.h.

#### 1.2.2.461 HCI\_SYNC\_MIN\_TIMEOUT

#define HCI\_SYNC\_MIN\_TIMEOUT 0x000A

Minimum synchronization timeout

Definition at line 1335 of file hci\_defs.h.

## 1.2.2.462 HCI\_SYNC\_MAX\_TIMEOUT

#define HCI\_SYNC\_MAX\_TIMEOUT 0x4000

Maximum synchronization timeout

Definition at line 1336 of file hci\_defs.h.

1.2.2.463 HCI\_SYNC\_MAX\_SKIP

#define HCI\_SYNC\_MAX\_SKIP 0x01F3

Maximum synchronization skip

Definition at line 1343 of file hci defs.h.

1.2.2.464 HCI\_SYNC\_MAX\_HANDLE

#define HCI\_SYNC\_MAX\_HANDLE 0x0EFF

Maximum synchronization handle

Definition at line 1350 of file hci\_defs.h.

1.2.2.465 HCI\_SYNC\_TRSF\_MODE\_OFF

#define HCI\_SYNC\_TRSF\_MODE\_OFF 0x00

Periodic sync transfer receive is disabled

Definition at line 1357 of file hci\_defs.h.

1.2.2.466 HCI\_SYNC\_TRSF\_MODE\_REP\_DISABLED

#define HCI\_SYNC\_TRSF\_MODE\_REP\_DISABLED 0x01,

Periodic sync transfer receive is enabled, report event is disabled

Definition at line 1358 of file hci\_defs.h.

1.2.2.467 HCI\_SYNC\_TRSF\_MODE\_REP\_ENABLED

#define HCI\_SYNC\_TRSF\_MODE\_REP\_ENABLED 0x02,

Periodic sync transfer receive is enabled, report event is enabled

Definition at line 1359 of file hci\_defs.h.

# 1.2.2.468 HCI\_OPTIONS\_FILT\_POLICY\_BIT

#define HCI\_OPTIONS\_FILT\_POLICY\_BIT (1<<0)</pre>

filter policy bit

Definition at line 1366 of file hci defs.h.

## 1.2.2.469 HCI\_OPTIONS\_INIT\_RPT\_ENABLE\_BIT

#define  $HCI_OPTIONS_INIT_RPT_ENABLE_BIT$  (1<<1)

initial periodic advertisement reporting bit

Definition at line 1367 of file hci\_defs.h.

#### 1.2.2.470 HCI\_READ\_TX\_PWR\_CURRENT

#define HCI\_READ\_TX\_PWR\_CURRENT 0

Read current tx power

Definition at line 1374 of file hci\_defs.h.

#### 1.2.2.471 HCI\_READ\_TX\_PWR\_MAX

#define HCI\_READ\_TX\_PWR\_MAX 1

Read maximum tx power

Definition at line 1375 of file hci\_defs.h.

## 1.2.2.472 HCI\_TX\_PWR\_MIN

#define HCI\_TX\_PWR\_MIN -30

Minimum tx power dBm

Definition at line 1376 of file hci\_defs.h.

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1.2 Generic HCI Definitions 1.2.2.473 HCI\_TX\_PWR\_MAX #define HCI\_TX\_PWR\_MAX 20 Maximum tx power dBm Definition at line 1377 of file hci\_defs.h. 1.2.2.474 HCI\_TX\_PWR\_NO\_PREFERENCE #define HCI\_TX\_PWR\_NO\_PREFERENCE 127 Tx power no preference Definition at line 1378 of file hci\_defs.h. 1.2.2.475 HCI\_VERSION #define HCI\_VERSION 6 HCI specification version Definition at line 1379 of file hci\_defs.h. 1.2.2.476 HCI\_RSSI\_MIN #define HCI\_RSSI\_MIN -127 Minimum RSSI dBm Definition at line 1380 of file hci\_defs.h. 1.2.2.477 HCI\_RSSI\_MAX #define HCI\_RSSI\_MAX 20

Maximum RSSI dBm

Definition at line 1381 of file hci\_defs.h.

## 1.2.2.478 HCI\_ADDR\_TYPE\_PUBLIC

#define HCI\_ADDR\_TYPE\_PUBLIC 0

Public device address

Definition at line 1382 of file hci defs.h.

## 1.2.2.479 HCI\_ADDR\_TYPE\_RANDOM

#define HCI\_ADDR\_TYPE\_RANDOM 1

Random device address

Definition at line 1383 of file hci\_defs.h.

#### 1.2.2.480 HCI\_ADDR\_TYPE\_PUBLIC\_IDENTITY

#define HCI\_ADDR\_TYPE\_PUBLIC\_IDENTITY 2

Public identity address

Definition at line 1384 of file hci\_defs.h.

#### 1.2.2.481 HCI\_ADDR\_TYPE\_RANDOM\_IDENTITY

#define HCI\_ADDR\_TYPE\_RANDOM\_IDENTITY 3

Random identity address

Definition at line 1385 of file hci\_defs.h.

## 1.2.2.482 HCI\_ADDR\_TYPE\_ANONYMOUS

#define HCI\_ADDR\_TYPE\_ANONYMOUS 0xFF

Anonymous device address

Definition at line 1386 of file hci\_defs.h.

```
1.2.2.483 HCI_FILT_NONE
```

#define HCI\_FILT\_NONE 0

Accept all advertising packets

Definition at line 1387 of file hci\_defs.h.

1.2.2.484 HCI\_FILT\_WHITE\_LIST

#define HCI\_FILT\_WHITE\_LIST 1

Accept from While List only

Definition at line 1388 of file hci\_defs.h.

1.2.2.485 HCI\_FILT\_RES\_INIT

#define HCI\_FILT\_RES\_INIT 2

Accept directed advertisements with RPAs

Definition at line 1389 of file hci\_defs.h.

1.2.2.486 HCI\_FILT\_WHITE\_LIST\_RES\_INIT

#define HCI\_FILT\_WHITE\_LIST\_RES\_INIT 3

Accept from White List or directed advertisements with RPAs

Definition at line 1390 of file hci\_defs.h.

1.2.2.487 HCI\_FILT\_PER\_ADV\_PARAM

#define HCI\_FILT\_PER\_ADV\_PARAM 0

Listen to advertiser specified by create sync command parameters

Definition at line 1391 of file hci\_defs.h.

```
1.2.2.488 HCI_FILT_PER_ADV_LIST
#define HCI_FILT_PER_ADV_LIST 1
Listen to advertiser from Periodic Advertiser List only
Definition at line 1392 of file hci defs.h.
1.2.2.489 HCI_PRIV_MODE_NETWORK
#define HCI_PRIV_MODE_NETWORK 0x00
Network privacy mode (default)
Definition at line 1395 of file hci_defs.h.
1.2.2.490 HCI_PRIV_MODE_DEVICE
#define HCI_PRIV_MODE_DEVICE 0x01
Device privacy mode
Definition at line 1396 of file hci_defs.h.
```

1.2.2.491 HCI\_PHY\_NONE

#define HCI\_PHY\_NONE 0x00

No selected PHY

Definition at line 1403 of file hci\_defs.h.

1.2.2.492 HCI\_PHY\_LE\_1M\_BIT

#define  $HCI\_PHY\_LE\_1M\_BIT$  (1<<0)

LE 1M PHY

Definition at line 1404 of file hci\_defs.h.

```
1.2.2.493 HCI_PHY_LE_2M_BIT
\#define\ HCI\_PHY\_LE\_2M\_BIT\ (1<<1)
LE 2M PHY
Definition at line 1405 of file hci defs.h.
1.2.2.494 HCI_PHY_LE_CODED_BIT
#define HCI_PHY_LE_CODED_BIT (1 << 2)
LE Coded PHY
Definition at line 1406 of file hci_defs.h.
1.2.2.495 HCI_ALL_PHY_ALL_PREFERENCES
#define HCI_ALL_PHY_ALL_PREFERENCES 0x00
All PHY preferences
Definition at line 1413 of file hci_defs.h.
1.2.2.496 HCI_ALL_PHY_TX_PREFERENCE_BIT
\verb|#define HCI_ALL_PHY_TX_PREFERENCE_BIT (1<<0)|\\
Tx PHY preference
Definition at line 1414 of file hci_defs.h.
1.2.2.497 HCI_ALL_PHY_RX_PREFERENCE_BIT
#define HCI_ALL_PHY_RX_PREFERENCE_BIT (1<<1)</pre>
Rx PHY preference
```

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Definition at line 1415 of file hci\_defs.h.

## 1.2.2.498 HCI\_PHY\_OPTIONS\_NONE

#define HCI\_PHY\_OPTIONS\_NONE 0x00

No preferences

Definition at line 1422 of file hci defs.h.

## 1.2.2.499 HCI\_PHY\_OPTIONS\_S2\_PREFERRED

#define HCI\_PHY\_OPTIONS\_S2\_PREFERRED 0x01

S=2 coding preferred when transmitting on LE Coded PHY

Definition at line 1423 of file hci\_defs.h.

#### 1.2.2.500 HCI\_PHY\_OPTIONS\_S8\_PREFERRED

#define HCI\_PHY\_OPTIONS\_S8\_PREFERRED 0x02

S=8 coding preferred when transmitting on LE Coded PHY

Definition at line 1424 of file hci\_defs.h.

#### 1.2.2.501 HCI\_CTE\_SLOT\_DURATION\_NONE

#define HCI\_CTE\_SLOT\_DURATION\_NONE 0x00

No switching and sampling

Definition at line 1431 of file hci defs.h.

## 1.2.2.502 HCI\_CTE\_SLOT\_DURATION\_1\_US

#define HCI\_CTE\_SLOT\_DURATION\_1\_US 0x01

Switching and sampling slots are 1 us each

Definition at line 1432 of file hci\_defs.h.

1.2.2.503 HCI\_CTE\_SLOT\_DURATION\_2\_US

#define HCI\_CTE\_SLOT\_DURATION\_2\_US 0x02

Switching and sampling slots are 2 us each

Definition at line 1433 of file hci defs.h.

1.2.2.504 HCI\_CTE\_TYPE\_PERMIT\_AOA\_RSP\_BIT

#define  $HCI\_CTE\_TYPE\_PERMIT\_AOA\_RSP\_BIT$  (1<<0)

Allow AoA Constant Tone Extension Response

Definition at line 1440 of file hci\_defs.h.

1.2.2.505 HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_1\_US\_BIT

#define HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_1\_US\_BIT (1<<1)</pre>

Allow AoD Constant Tone Extension Response with 1 us slots

Definition at line 1441 of file hci\_defs.h.

1.2.2.506 HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_2\_US\_BIT

 $\verb|#define HCI_CTE_TYPE_PERMIT_AOD_RSP_2_US_BIT (1<<2)$ 

Allow AoD Constant Tone Extension Response with 2 us slots

Definition at line 1442 of file hci defs.h.

1.2.2.507 HCI\_CTE\_TYPE\_REQ\_AOA

#define HCI\_CTE\_TYPE\_REQ\_AOA 0x00

AoA Constant Tone Extension

Definition at line 1449 of file hci\_defs.h.

1.2.2.508 HCI\_CTE\_TYPE\_REQ\_AOD\_1\_US

#define HCI\_CTE\_TYPE\_REQ\_AOD\_1\_US 0x01

AoD Constant Tone Extension with 1 us slots

Definition at line 1450 of file hci defs.h.

1.2.2.509 HCI\_CTE\_TYPE\_REQ\_AOD\_2\_US

#define HCI\_CTE\_TYPE\_REQ\_AOD\_2\_US 0x02

AoD Constant Tone Extension with 2 us slots

Definition at line 1451 of file hci\_defs.h.

1.2.2.510 HCI\_VER\_BT\_CORE\_SPEC\_4\_0

#define HCI\_VER\_BT\_CORE\_SPEC\_4\_0 0x06

Bluetooth core specification 4.0

Definition at line 1458 of file hci\_defs.h.

1.2.2.511 HCI\_VER\_BT\_CORE\_SPEC\_4\_1

#define HCI\_VER\_BT\_CORE\_SPEC\_4\_1 0x07

Bluetooth core specification 4.1

Definition at line 1459 of file hci defs.h.

1.2.2.512 HCI\_VER\_BT\_CORE\_SPEC\_4\_2

#define HCI\_VER\_BT\_CORE\_SPEC\_4\_2 0x08

Bluetooth core specification 4.2

Definition at line 1460 of file hci\_defs.h.

1.2.2.513 HCI\_VER\_BT\_CORE\_SPEC\_5\_0

#define HCI\_VER\_BT\_CORE\_SPEC\_5\_0 0x09

Bluetooth core specification 5.0

Definition at line 1461 of file hci defs.h.

1.2.2.514 HCI\_VER\_BT\_CORE\_SPEC\_5\_1

#define HCI\_VER\_BT\_CORE\_SPEC\_5\_1 0x0A

Bluetooth core specification 5.1

Definition at line 1462 of file hci\_defs.h.

1.2.2.515 HCI\_VER\_BT\_CORE\_SPEC\_5\_2

#define HCI\_VER\_BT\_CORE\_SPEC\_5\_2 0x0B

Bluetooth core specification 5.2

Definition at line 1463 of file hci\_defs.h.

1.2.2.516 HCI\_EVT\_MASK\_LEN

#define HCI\_EVT\_MASK\_LEN 8

Length of event mask byte array

Definition at line 1470 of file hci\_defs.h.

1.2.2.517 HCI\_EVT\_MASK\_PAGE\_2\_LEN

#define HCI\_EVT\_MASK\_PAGE\_2\_LEN 8

Length of event mask page 2 byte array

Definition at line 1471 of file hci\_defs.h.

## 1.2.2.518 HCI\_LE\_EVT\_MASK\_LEN

#define HCI\_LE\_EVT\_MASK\_LEN 8

Length of LE event mask byte array

Definition at line 1472 of file hci\_defs.h.

## 1.2.2.519 HCI\_FEAT\_LEN

#define HCI\_FEAT\_LEN 8

Length of features byte array

Definition at line 1473 of file hci\_defs.h.

#### 1.2.2.520 HCI\_ADV\_DATA\_LEN

#define HCI\_ADV\_DATA\_LEN 31

Length of advertising data

Definition at line 1474 of file hci\_defs.h.

#### 1.2.2.521 HCI\_SCAN\_DATA\_LEN

#define HCI\_SCAN\_DATA\_LEN 31

Length of scan response data

Definition at line 1475 of file hci\_defs.h.

## 1.2.2.522 HCI\_EXT\_ADV\_DATA\_LEN

#define HCI\_EXT\_ADV\_DATA\_LEN 251

Length of extended advertising data

Definition at line 1476 of file hci\_defs.h.

1.2.2.523 HCI\_EXT\_ADV\_CONN\_DATA\_LEN

#define HCI\_EXT\_ADV\_CONN\_DATA\_LEN 191

Length of extended connectable advertising data

Definition at line 1477 of file hci defs.h.

1.2.2.524 HCI\_PER\_ADV\_DATA\_LEN

#define HCI\_PER\_ADV\_DATA\_LEN 252

Length of periodic advertising data

Definition at line 1478 of file hci\_defs.h.

1.2.2.525 HCI\_EXT\_ADV\_RPT\_DATA\_LEN

#define HCI\_EXT\_ADV\_RPT\_DATA\_LEN 229

Length of extended advertising report data

Definition at line 1479 of file hci\_defs.h.

1.2.2.526 HCI\_PER\_ADV\_RPT\_DATA\_LEN

#define HCI\_PER\_ADV\_RPT\_DATA\_LEN 247

Length of periodic advertising report data

Definition at line 1480 of file hci\_defs.h.

1.2.2.527 HCI\_CHAN\_MAP\_LEN

#define HCI\_CHAN\_MAP\_LEN 5

Length of channel map byte array

Definition at line 1481 of file hci\_defs.h.

## 1.2.2.528 HCI\_KEY\_LEN

#define HCI\_KEY\_LEN 16

Length of encryption key

Definition at line 1482 of file hci\_defs.h.

## 1.2.2.529 HCI\_ENCRYPT\_DATA\_LEN

#define HCI\_ENCRYPT\_DATA\_LEN 16

Length of data used in encryption

Definition at line 1483 of file hci\_defs.h.

#### 1.2.2.530 HCI\_RAND\_LEN

#define HCI\_RAND\_LEN 8

Length of random number

Definition at line 1484 of file hci\_defs.h.

#### 1.2.2.531 HCI\_LE\_STATES\_LEN

#define HCI\_LE\_STATES\_LEN 8

Length of LE states byte array

Definition at line 1485 of file hci\_defs.h.

## 1.2.2.532 HCI\_P256\_KEY\_LEN

#define HCI\_P256\_KEY\_LEN 64

Length of P256 key

Definition at line 1486 of file hci\_defs.h.

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1.2.2.533 HCI\_DH\_KEY\_LEN

#define HCI\_DH\_KEY\_LEN 32

Length of DH Key

Definition at line 1487 of file hci defs.h.

1.2.2.534 HCI\_BC\_LEN

#define HCI\_BC\_LEN 16

Broadcast code length

Definition at line 1488 of file hci\_defs.h.

1.2.2.535 HCI\_EXT\_ADV\_RPT\_DATA\_LEN\_OFFSET

#define HCI\_EXT\_ADV\_RPT\_DATA\_LEN\_OFFSET 23

Length field offset of extended advertising report data

Definition at line 1490 of file hci\_defs.h.

1.2.2.536 HCI\_PER\_ADV\_RPT\_DATA\_LEN\_OFFSET

#define HCI\_PER\_ADV\_RPT\_DATA\_LEN\_OFFSET 6

Length field offset of periodic advertising report data

Definition at line 1491 of file hci\_defs.h.

1.2.2.537 HCI\_MIN\_NUM\_ANTENNA\_IDS

#define HCI\_MIN\_NUM\_ANTENNA\_IDS 2

Minimum number of Antenna IDs in switching pattern

Definition at line 1498 of file hci\_defs.h.

#### 1.2.2.538 HCI\_MAX\_NUM\_ANTENNA\_IDS

#define HCI\_MAX\_NUM\_ANTENNA\_IDS 75

Maximum number of Antenna IDs in switching pattern

Definition at line 1499 of file hci defs.h.

## 1.2.2.539 HCI\_IQ\_RPT\_SAMPLE\_CNT\_MIN

#define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MIN 9

Minimum number of sample pairs in IQ report

Definition at line 1506 of file hci\_defs.h.

#### 1.2.2.540 HCI\_IQ\_RPT\_SAMPLE\_CNT\_MAX

#define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MAX 82

Maximum number of sample pairs in IQ report

Definition at line 1507 of file hci\_defs.h.

## 1.2.2.541 HCI\_CONN\_IQ\_RPT\_SAMPLE\_CNT\_OFFSET

#define HCI\_CONN\_IQ\_RPT\_SAMPLE\_CNT\_OFFSET 12

Sample count field offset of connection IQ report

Definition at line 1509 of file hci\_defs.h.

## 1.2.2.542 HCI\_MAX\_CIS\_COUNT

#define HCI\_MAX\_CIS\_COUNT 0x10

Maximum count for CIS

Definition at line 1516 of file hci\_defs.h.

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1.2 Generic HCI Definitions 1.2.2.543 HCI\_MAX\_BIS\_COUNT #define HCI\_MAX\_BIS\_COUNT 0x10 Maximum count for BIS Definition at line 1523 of file hci defs.h. 1.2.2.544 HCI\_MIN\_CIG\_ID #define HCI\_MIN\_CIG\_ID 0x00 Minimum value for CIG ID. Definition at line 1530 of file hci\_defs.h. 1.2.2.545 HCI\_MAX\_CIG\_ID #define HCI\_MAX\_CIG\_ID 0xEF Maximum value for CIG ID. Definition at line 1531 of file hci\_defs.h. 1.2.2.546 HCI\_MIN\_CIS\_ID #define HCI\_MIN\_CIS\_ID 0x00 Minimum value for CIS ID. Definition at line 1538 of file hci\_defs.h. 1.2.2.547 HCI\_MAX\_CIS\_ID

#define HCI\_MAX\_CIS\_ID 0xEF

Maximum value for CIS ID.

Definition at line 1539 of file hci\_defs.h.

# 1.2.2.548 HCI\_PACKING\_SEQUENTIAL #define HCI\_PACKING\_SEQUENTIAL 0x00 Sequential Definition at line 1546 of file hci\_defs.h. 1.2.2.549 HCI\_PACKING\_INTERLEAVED #define HCI\_PACKING\_INTERLEAVED 0x01 Interleaved Definition at line 1547 of file hci\_defs.h. 1.2.2.550 HCI\_FRAMING\_UNFRAMED #define HCI\_FRAMING\_UNFRAMED 0x00 Unframed Definition at line 1554 of file hci\_defs.h. 1.2.2.551 HCI\_FRAMING\_FRAMED #define HCI\_FRAMING\_FRAMED 0x01 Framed Definition at line 1555 of file hci\_defs.h. 1.2.2.552 HCI\_MIN\_SCA #define HCI\_MIN\_SCA 0x00 Minimum value for SCA.

Definition at line 1562 of file hci\_defs.h.

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1.2 Generic HCI Definitions 1.2.2.553 HCI\_MAX\_SCA #define HCI\_MAX\_SCA 0x07 Maximum value for SCA. Definition at line 1563 of file hci defs.h. 1.2.2.554 HCI\_MIN\_SDU\_SIZE #define HCI\_MIN\_SDU\_SIZE 0x0000 Minimum value for SDU size. Definition at line 1569 of file hci\_defs.h. 1.2.2.555 HCI\_MAX\_SDU\_SIZE #define HCI\_MAX\_SDU\_SIZE 0x0FFF Maximum value for SDU size. Definition at line 1570 of file hci\_defs.h. 1.2.2.556 HCI\_MIN\_SDU\_INTERV #define HCI\_MIN\_SDU\_INTERV 0x0000FF Minimum value for SDU interval. Definition at line 1577 of file hci\_defs.h. 1.2.2.557 HCI\_MAX\_SDU\_INTERV #define HCI\_MAX\_SDU\_INTERV 0x0FFFFF

Maximum value for SDU interval.

Definition at line 1578 of file hci\_defs.h.

## 1.2.2.558 HCI\_DEFAULT\_SDU\_INTERV

#define HCI\_DEFAULT\_SDU\_INTERV 0x004E20

Default value for SDU interval.

Definition at line 1579 of file hci defs.h.

## 1.2.2.559 HCI\_MIN\_CIS\_TRANS\_LAT

#define HCI\_MIN\_CIS\_TRANS\_LAT 0x0005

Minimum value for CIS transport latency.

Definition at line 1586 of file hci\_defs.h.

#### 1.2.2.560 HCI\_MAX\_CIS\_TRANS\_LAT

#define HCI\_MAX\_CIS\_TRANS\_LAT 0x0FA0

Maximum value for CIS transport latency.

Definition at line 1587 of file hci\_defs.h.

## 1.2.2.561 HCI\_DEFAULT\_CIS\_TRANS\_LAT

#define HCI\_DEFAULT\_CIS\_TRANS\_LAT 0x0028

Default value for CIS transport latency.

Definition at line 1588 of file hci\_defs.h.

## 1.2.2.562 HCI\_MIN\_CIS\_FT

#define HCI\_MIN\_CIS\_FT 0x01

Minimum value for CIS flush time.

Definition at line 1595 of file hci\_defs.h.

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1.2.2.563 HCI\_MAX\_CIS\_FT

Maximum value for CIS flush time.

#define HCI\_MAX\_CIS\_FT 0xFF

Definition at line 1596 of file hci defs.h.

1.2.2.564 HCI\_MIN\_CIS\_BN

#define HCI\_MIN\_CIS\_BN 0x00

Minimum value for CIS burst number.

Definition at line 1603 of file hci\_defs.h.

1.2.2.565 HCI\_MAX\_CIS\_BN

#define HCI\_MAX\_CIS\_BN 0x0F

Maximum value for CIS burst number.

Definition at line 1604 of file hci\_defs.h.

1.2.2.566 HCI\_MIN\_CIS\_RTN

#define HCI\_MIN\_CIS\_RTN 0x00

Minimum value for CIS retransmission number.

Definition at line 1611 of file hci defs.h.

1.2.2.567 HCI\_MAX\_CIS\_RTN

#define HCI\_MAX\_CIS\_RTN 0x0F

Maximum value for CIS retransmission number.

Definition at line 1612 of file hci\_defs.h.

```
1.2.2.568 HCI_ISO_DATA_DIR_INPUT
#define HCI_ISO_DATA_DIR_INPUT 0
Input (Host to Controller) data path.
Definition at line 1619 of file hci defs.h.
1.2.2.569 HCI_ISO_DATA_DIR_OUTPUT
#define HCI_ISO_DATA_DIR_OUTPUT 1
Output (Controller to Host) data path.
Definition at line 1620 of file hci_defs.h.
1.2.2.570 HCI_ISO_DATA_PATH_INPUT_BIT
#define HCI_ISO_DATA_PATH_INPUT_BIT (1<<HCI_ISO_DATA_DIR_INPUT)</pre>
Data path input bit.
Definition at line 1627 of file hci_defs.h.
1.2.2.571 HCI_ISO_DATA_PATH_OUTPUT_BIT
#define HCI_ISO_DATA_PATH_OUTPUT_BIT (1<<HCI_ISO_DATA_DIR_OUTPUT)
Data path output bit.
Definition at line 1628 of file hci_defs.h.
1.2.2.572 HCI_ISO_DATA_PATH_HCI
#define HCI_ISO_DATA_PATH_HCI 0x00
```

HCI data path.

Definition at line 1635 of file hci\_defs.h.

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## 1.2.2.573 HCI\_ISO\_DATA\_PATH\_VS

#define HCI\_ISO\_DATA\_PATH\_VS 0x01

Vendor Specific.

Definition at line 1636 of file hci defs.h.

## 1.2.2.574 HCI\_ISO\_DATA\_PATH\_DISABLED

#define HCI\_ISO\_DATA\_PATH\_DISABLED 0xFF

Data path is disabled.

Definition at line 1637 of file hci\_defs.h.

## 1.2.2.575 HCI\_ISO\_ISO\_PLD\_TYPE\_ZERO\_LEN

#define HCI\_ISO\_ISO\_PLD\_TYPE\_ZERO\_LEN 0x00

Zero length payload.

Definition at line 1644 of file hci\_defs.h.

## 1.2.2.576 HCI\_ISO\_ISO\_PLD\_TYPE\_VAR\_LEN

#define HCI\_ISO\_ISO\_PLD\_TYPE\_VAR\_LEN 0x01

Variable length payload.

Definition at line 1645 of file hci\_defs.h.

#### 1.2.2.577 HCI\_ISO\_ISO\_PLD\_TYPE\_MAX\_LEN

#define HCI\_ISO\_ISO\_PLD\_TYPE\_MAX\_LEN 0x02

Maximum length payload.

Definition at line 1646 of file hci\_defs.h.

#### 1.2.2.578 HCI\_MAX\_CODEC

```
#define HCI_MAX_CODEC 5
```

Maximum number of codecs to read from the Controller.

Definition at line 1653 of file hci defs.h.

## 1.2.2.579 HCI\_CODEC\_CAP\_DATA\_LEN

```
#define HCI_CODEC_CAP_DATA_LEN 4
```

Maximum length of codec-specific capability data.

Definition at line 1660 of file hci\_defs.h.

#### 1.2.2.580 HCI\_CODEC\_TRANS\_CIS\_BIT

```
#define HCI_CODEC_TRANS_CIS_BIT (1<<2)</pre>
```

Codec supported over LE CIS.

Definition at line 1667 of file hci\_defs.h.

## 1.2.2.581 HCI\_CODEC\_TRANS\_BIS\_BIT

```
#define HCI_CODEC_TRANS_BIS_BIT (1<<3)</pre>
```

Codec supported over LE BIS.

Definition at line 1668 of file hci\_defs.h.

## 1.2.2.582 HCI\_ISO\_HDR\_PB\_START\_FRAG

```
#define HCI_ISO_HDR_PB_START_FRAG 0x00
```

Start fragment of a fragmented SDU.

Definition at line 1675 of file hci\_defs.h.

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1.2.2.583 HCI\_ISO\_HDR\_PB\_CONT\_FRAG

#define HCI\_ISO\_HDR\_PB\_CONT\_FRAG 0x01

Continuation fragment of a fragmented SDU.

Definition at line 1676 of file hci defs.h.

1.2.2.584 HCI\_ISO\_HDR\_PB\_COMP\_FRAG

#define HCI\_ISO\_HDR\_PB\_COMP\_FRAG 0x02

Complete SDU.

Definition at line 1677 of file hci\_defs.h.

1.2.2.585 HCI\_ISO\_HDR\_PB\_END\_FRAG

#define HCI\_ISO\_HDR\_PB\_END\_FRAG 0x03

The end fragment of a fragmented SDU.

Definition at line 1678 of file hci\_defs.h.

1.2.2.586 HCI\_ISOAL\_SEG\_HDR\_SC\_START

#define HCI\_ISOAL\_SEG\_HDR\_SC\_START 0x00

ISOAL segmentation header start bit.

Definition at line 1685 of file hci defs.h.

1.2.2.587 HCI\_ISOAL\_SEG\_HDR\_SC\_CONT

#define HCI\_ISOAL\_SEG\_HDR\_SC\_CONT 0x01

ISOAL segmentation header continue bit.

Definition at line 1686 of file hci\_defs.h.

#### 1.2.2.588 HCI\_ID\_PACKETCRAFT

#define HCI\_ID\_PACKETCRAFT 0x07E8

Packetcraft Inc. company ID

Definition at line 1693 of file hci\_defs.h.

## 1.2.2.589 HCI\_LOCAL\_VER\_MANUFACTURER\_POS

#define HCI\_LOCAL\_VER\_MANUFACTURER\_POS 4

Manufacturer location in local version

Definition at line 1701 of file hci\_defs.h.

## 1.2.2.590 HCI\_ID\_LC3

#define HCI\_ID\_LC3 0x01

LC3 ID

Definition at line 1708 of file hci\_defs.h.

#### 1.2.2.591 HCI\_ID\_VS

#define HCI\_ID\_VS 0xFF

Vendor specific ID

Definition at line 1709 of file hci\_defs.h.

## 1.2.2.592 HCI\_CODEC\_TRANSPORT\_CIS

#define HCI\_CODEC\_TRANSPORT\_CIS 0x02

Codec supported over LE CIS

Definition at line 1716 of file hci\_defs.h.

## 1.2.2.593 HCI\_CODEC\_TRANSPORT\_BIS

#define HCI\_CODEC\_TRANSPORT\_BIS 0x03

Codec supported over LE BIS

Definition at line 1717 of file hci\_defs.h.

# 1.3 HCI Initialization, Registration, Reset

#### **Functions**

void HciVsAeInit (uint8\_t param)

Vendor-specific controller AE initialization function.

## **HCI Initialization, Registration, Reset**

void HciUnhandledCmdComplEvtRegister (hciUnhandledCmdComplEvtCback\_t unhandledCmdComplEvt
 — Cback)

Register a callback for Command Complete events not handled by Stack.

void HciEvtRegister (hciEvtCback t evtCback)

Register a callback for HCI events.

void HciSecRegister (hciSecCback\_t secCback)

Register a callback for certain HCI security events.

void HciAclRegister (hciAclCback\_t aclCback, hciFlowCback\_t flowCback)

Register callbacks for the HCl data path.

void HcilsoRegister (hcilsoCback\_t isoCback, hciFlowCback\_t flowCback)

Register callbacks for the HCI ISO data path.

void HciResetSequence (void)

Initiate an HCI reset sequence.

• void HciVsInit (uint8\_t param)

Vendor-specific controller initialization function.

· void HciCoreInit (void)

HCI core initialization.

void HciCoreHandler (wsfEventMask\_t event, wsfMsgHdr\_t \*pMsg)

WSF event handler for core HCI.

void HciSetMaxRxAclLen (uint16\_t len)

Set the maximum reassembled RX ACL packet length. Minimum value is 27.

void HciSetAclQueueWatermarks (uint8 t gueueHi, uint8 t gueueLo)

Set TX ACL queue high and low watermarks.

void HciSetLeSupFeat (uint64\_t feat, bool\_t flag)

Set LE supported features configuration mask.

void HciSetLeSupFeat32 (uint32\_t feat, bool\_t flag)

Set LE supported features configuration mask.

## 1.3.1 Detailed Description

## 1.3.2 Function Documentation

# 1.3.2.1 HciUnhandledCmdComplEvtRegister()

```
\label{lem:cond} \mbox{void HciUnhandledCmdComplEvtRegister (} $$ \mbox{hciUnhandledCmdComplEvtCback\_t } \mbox{\it unhandledCmdComplEvtCback} \mbox{\it )} $$
```

Register a callback for Command Complete events not handled by Stack.

## **Parameters**

| unhandledCmdComplEvtCback C | allback function. |
|-----------------------------|-------------------|
|-----------------------------|-------------------|

Returns

None.

## 1.3.2.2 HciEvtRegister()

Register a callback for HCI events.

**Parameters** 

```
evtCback | Callback function.
```

Returns

None.

## 1.3.2.3 HciSecRegister()

Register a callback for certain HCI security events.

# **Parameters**

Returns

None.

# 1.3.2.4 HciAclRegister()

Register callbacks for the HCI data path.

#### **Parameters**

| aclCback  | ACL data callback function.     |
|-----------|---------------------------------|
| flowCback | Flow control callback function. |

## Returns

None.

## 1.3.2.5 HcilsoRegister()

Register callbacks for the HCI ISO data path.

## **Parameters**

| isoCback  | ISO data callback function.     |
|-----------|---------------------------------|
| flowCback | Flow control callback function. |

## Returns

None.

# 1.3.2.6 HciResetSequence()

```
void HciResetSequence (
     void )
```

Initiate an HCI reset sequence.

## Returns

None.

## 1.3.2.7 HciVsInit()

Vendor-specific controller initialization function.

## **Parameters**

| Vendor-specific parameter. | param |
|----------------------------|-------|
|----------------------------|-------|

Returns

None.

## 1.3.2.8 HciCoreInit()

```
void HciCoreInit (
     void )
```

HCI core initialization.

Returns

None.

# 1.3.2.9 HciCoreHandler()

WSF event handler for core HCI.

## **Parameters**

| event | WSF event mask. |
|-------|-----------------|
| pMsg  | WSF message.    |

Returns

None.

## 1.3.2.10 HciSetMaxRxAclLen()

Set the maximum reassembled RX ACL packet length. Minimum value is 27.

## **Parameters**

| len ACL packet length. |
|------------------------|
|------------------------|

## Returns

None.

## 1.3.2.11 HciSetAclQueueWatermarks()

Set TX ACL queue high and low watermarks.

## **Parameters**

| queueHi | Disable flow on a connection when this many ACL buffers are queued. |
|---------|---|
| queueLo | Disable flow on a connection when this many ACL buffers are queued. |

## Returns

None.

## 1.3.2.12 HciSetLeSupFeat()

Set LE supported features configuration mask.

# **Parameters**

| feat | Feature bit to set or clear                   |
|------|---|
| flag | TRUE to set feature bit and FALSE to clear it |

## Returns

# 1.3.2.13 HciSetLeSupFeat32()

Set LE supported features configuration mask.

## **Parameters**

| feat | Feature bit to set or clear                   |
|------|---|
| flag | TRUE to set feature bit and FALSE to clear it |

## Returns

None.

## 1.3.2.14 HciVsAeInit()

Vendor-specific controller AE initialization function.

## **Parameters**

| param | Vendor-specific parameter. |
|-------|----------------------------|

## Returns

## 1.4 HCI Command Interface

## **Data Structures**

• struct hciConnSpec\_t

Connection specification type.

· struct hciExtInitParam\_t

Initiating parameters.

• struct hciExtInitScanParam\_t

Initiating scan parameters.

struct hciExtAdvParam\_t

Extended advertising parameters.

struct hciExtAdvEnableParam t

Extended advertising enable parameters.

struct hciExtScanParam\_t

Extended scanning parameters.

struct HciCisCisParams t

CIS parameters.

• struct HciCisCigParams\_t

CIG parameters.

• struct HciCisCreateCisParams\_t

CIS create CIS parameters.

• struct HciCreateBig\_t

BIG Create BIG parameters.

struct HciBigCreateSync\_t

BIG Create Sync parameters.

struct HcilsoSetupDataPath\_t

Setup ISO data path parameters.

· struct HciConfigDataPath t

Configure data path parameters.

struct HciReadLocalSupCodecCaps\_t

Read local supported codec capabilities parameters.

struct HciReadLocalSupControllerDly\_t

Read local supported controller delay parameters.

## **HCI Command Interface Functions**

#### **HCI** commands

void HciDisconnectCmd (uint16 t handle, uint8 t reason)

HCI disconnect command.

void HciLeAddDevWhiteListCmd (uint8\_t addrType, uint8\_t \*pAddr)

HCI LE add device white list command.

void HciLeClearWhiteListCmd (void)

HCI LE clear white list command.

• void HciLeConnUpdateCmd (uint16\_t handle, hciConnSpec\_t \*pConnSpec)

HCI connection update command.

void HciLeCreateConnCmd (uint16\_t scanInterval, uint16\_t scanWindow, uint8\_t filterPolicy, uint8\_t peer
 — AddrType, uint8\_t \*pPeerAddr, uint8\_t ownAddrType, hciConnSpec\_t \*pConnSpec)

HCI LE create connection command.

void HciLeCreateConnCancelCmd (void)

HCI LE create connection cancel command.

void HciLeEncryptCmd (uint8\_t \*pKey, uint8\_t \*pData)

HCI LE encrypt command.

void HciLeLtkReqNegReplCmd (uint16\_t handle)

HCI LE long term key request negative reply command.

void HciLeLtkReqReplCmd (uint16\_t handle, uint8\_t \*pKey)

HCI LE long term key request reply command.

void HciLeRandCmd (void)

HCI LE random command.

void HciLeReadAdvTXPowerCmd (void)

HCI LE read advertising TX power command.

void HciLeReadBufSizeCmd (void)

HCI LE read buffer size command.

void HciLeReadBufSizeCmdV2 (void)

HCI LE read buffer size version 2 command.

void HciLeReadChanMapCmd (uint16\_t handle)

HCI LE read channel map command.

void HciLeReadLocalSupFeatCmd (void)

HCI LE read local supported feautre command.

void HciLeReadRemoteFeatCmd (uint16 t handle)

HCI LE read remote feature command.

void HciLeReadSupStatesCmd (void)

HCI LE read supported states command.

void HciLeReadWhiteListSizeCmd (void)

HCI LE read white list size command.

void HciLeRemoveDevWhiteListCmd (uint8\_t addrType, uint8\_t \*pAddr)

HCI LE remove device white list command.

void HciLeSetAdvEnableCmd (uint8 t enable)

HCI LE set advanced enable command.

void HciLeSetAdvDataCmd (uint8\_t len, uint8\_t \*pData)

HCI LE set advertising data command.

void HciLeSetAdvParamCmd (uint16\_t advIntervalMin, uint16\_t advIntervalMax, uint8\_t advType, uint8\_
 t ownAddrType, uint8\_t peerAddrType, uint8\_t \*pPeerAddr, uint8\_t advChanMap, uint8\_t advFiltPolicy)

HCI LE set advertising parameters command.

void HciLeSetEventMaskCmd (uint8\_t \*pLeEventMask)

HCI LE set event mask command.

void HciLeSetHostChanClassCmd (uint8\_t \*pChanMap)

HCI set host channel class command.

void HciLeSetRandAddrCmd (uint8 t \*pAddr)

HCI LE set random address command.

void HciLeSetScanEnableCmd (uint8\_t enable, uint8\_t filterDup)

HCI LE set scan enable command.

void HciLeSetScanParamCmd (uint8\_t scanType, uint16\_t scanInterval, uint16\_t scanWindow, uint8\_t own
 — AddrType, uint8 t scanFiltPolicy)

HCI set scan parameters command.

void HciLeSetScanRespDataCmd (uint8 t len, uint8 t \*pData)

HCI LE set scan response data.

void HciLeStartEncryptionCmd (uint16 t handle, uint8 t \*pRand, uint16 t diversifier, uint8 t \*pKey)

HCI LE start encryption command.

· void HciReadBdAddrCmd (void)

HCI read BD address command.

void HciReadBufSizeCmd (void)

HCI read buffer size command.

void HciReadLocalSupFeatCmd (void)

HCI read local supported feature command.

void HciReadLocalVerInfoCmd (void)

HCI read local version info command.

void HciReadRemoteVerInfoCmd (uint16\_t handle)

HCI read remote version info command.

· void HciReadRssiCmd (uint16 t handle)

HCI read RSSI command.

void HciReadTxPwrLvlCmd (uint16\_t handle, uint8\_t type)

HCI read Tx power level command.

void HciHostBufferSizeCmd (uint16\_t hostAclDataPacketLength, uint8\_t hostSynDataPacketLength, uint16
 — t hostTotalNumAclDataPackets, uint16\_t hostTotalNumSynDataPackets)

HCI Host Buffer Size Command.

void HciResetCmd (void)

HCI reset command.

void HciSetEventMaskCmd (uint8\_t \*pEventMask)

HCI set event mask command.

void HciSetEventMaskPage2Cmd (uint8 t \*pEventMask)

HCI set event page 2 mask command.

void HciReadAuthPayloadTimeout (uint16\_t handle)

HCI read authenticated payload timeout command.

void HciWriteAuthPayloadTimeout (uint16\_t handle, uint16\_t timeout)

HCI write authenticated payload timeout command.

 void HciLeAddDeviceToResolvingListCmd (uint8\_t peerAddrType, const uint8\_t \*pPeerIdentityAddr, const uint8\_t \*pPeerIrk, const uint8\_t \*pLocalIrk)

HCI add device to resolving list command.

void HciLeRemoveDeviceFromResolvingList (uint8\_t peerAddrType, const uint8\_t \*pPeerIdentityAddr)

HCI remove device from resolving list command.

void HciLeClearResolvingList (void)

HCI clear resolving list command.

void HciLeReadResolvingListSize (void)

HCI read resolving list command.

• void HciLeReadPeerResolvableAddr (uint8\_t addrType, const uint8\_t \*pldentityAddr)

HCI read peer resolvable address command.

void HciLeReadLocalResolvableAddr (uint8\_t addrType, const uint8\_t \*pldentityAddr)

HCI read local resolvable address command.

• void HciLeSetAddrResolutionEnable (uint8\_t enable)

HCI enable or disable address resolution command.

void HciLeSetResolvablePrivateAddrTimeout (uint16\_t rpaTimeout)

HCI set resolvable private address timeout command.

void HciLeSetPrivacyModeCmd (uint8 t addrType, uint8 t \*pAddr, uint8 t mode)

HCI LE set privacy mode command.

void HciLeReadPhyCmd (uint16\_t handle)

HCI read PHY command.

void HciLeSetDefaultPhyCmd (uint8 t allPhys, uint8 t txPhys, uint8 t rxPhys)

HCI set default PHY command.

• void HciLeSetPhyCmd (uint16\_t handle, uint8\_t allPhys, uint8\_t txPhys, uint8\_t rxPhys, uint16\_t phyOptions)

HCI set PHY command.

• void HciVendorSpecificCmd (uint16\_t opcode, uint8\_t len, uint8\_t \*pData)

HCI vencor specific command.

void HciLeRemoteConnParamReqReply (uint16\_t handle, uint16\_t intervalMin, uint16\_t intervalMax, uint16—t latency, uint16\_t timeout, uint16\_t minCeLen, uint16\_t maxCeLen)

HCI Remote Connection Parameter Request Reply.

• void HciLeRemoteConnParamReqNegReply (uint16\_t handle, uint8\_t reason)

HCI Remote Connection Parameter Request Negative Reply.

void HciLeSetDataLen (uint16 t handle, uint16 t txOctets, uint16 t txTime)

HCI LE Set Data Length.

void HciLeReadDefDataLen (void)

HCI LE Read Default Data Length.

void HciLeWriteDefDataLen (uint16\_t suggestedMaxTxOctets, uint16\_t suggestedMaxTxTime)

HCI LE Write Default Data Length.

void HciLeReadLocalP256PubKey (void)

HCI LE Read Local P-256 Public Key.

void HciLeGenerateDHKey (uint8\_t \*pPubKeyX, uint8\_t \*pPubKeyY)

HCI LE Generate DH Key.

void HciLeGenerateDHKeyV2 (uint8\_t \*pPubKeyX, uint8\_t \*pPubKeyY, uint8\_t keyType)

HCI LE Generate DH Key Version 2.

void HciLeReadMaxDataLen (void)

HCI LE Read Maximum Data Length.

void HciLeReadTxPower (void)

HCI LE read transmit power command.

void HciLeReadRfPathComp (void)

HCI LE read RF path compensation command.

void HciLeWriteRfPathComp (int16\_t txPathComp, int16\_t rxPathComp)

HCI LE write RF path compensation command.

#### **HCI AE Advertiser Interface**

HCI Advertising Extension functions used by the Advertiser role.

void HciLeSetAdvSetRandAddrCmd (uint8 t advHandle, const uint8 t \*pAddr)

HCI LE set advertising set random device address command.

void HciLeSetExtAdvParamCmd (uint8\_t advHandle, hciExtAdvParam\_t \*pExtAdvParam)

HCI LE set extended advertising parameters command.

void HciLeSetExtAdvDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t fragPref, uint8\_t len, const uint8\_t \*p
 — Data)

HCI LE set extended advertising data command.

 void HciLeSetExtScanRespDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t fragPref, uint8\_t len, const uint8\_t \*pData)

HCI LE set extended scan response data command.

void HciLeSetExtAdvEnableCmd (uint8\_t enable, uint8\_t numSets, hciExtAdvEnableParam\_t \*pEnable → Param)

HCI LE set extended advertising enable command.

void HciLeReadMaxAdvDataLen (void)

HCI LE read maximum advertising data length command.

void HciLeReadNumSupAdvSets (void)

HCI LE read number of supported advertising sets command.

void HciLeRemoveAdvSet (uint8\_t advHandle)

HCI LE remove advertising set command.

· void HciLeClearAdvSets (void)

HCI LE clear advertising sets command.

void HciLeSetPerAdvParamCmd (uint8\_t advHandle, uint16\_t advIntervalMin, uint16\_t advIntervalMax, uint16\_t advProps)

HCI LE set periodic advertising parameters command.

• void HciLeSetPerAdvDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t len, const uint8\_t \*pData)

HCI LE set periodic advertising data command.

void HciLeSetPerAdvEnableCmd (uint8\_t enable, uint8\_t advHandle)

HCI LE set periodic advertising enable command.

#### **HCI AE Scanner Interface**

HCI Advertising Extension functions used in the Scanner role.

 void HciLeSetExtScanParamCmd (uint8\_t ownAddrType, uint8\_t scanFiltPolicy, uint8\_t scanPhys, hciExt← ScanParam t \*pScanParam)

HCI LE set extended scanning parameters command.

void HciLeExtScanEnableCmd (uint8\_t enable, uint8\_t filterDup, uint16\_t duration, uint16\_t period)

HCI LE extended scan enable command.

void HciLeExtCreateConnCmd (hciExtInitParam\_t \*pInitParam, hciExtInitScanParam\_t \*pScanParam, hci
 — ConnSpec\_t \*pConnSpec)

HCI LE extended create connection command.

void HciLePerAdvCreateSyncCmd (uint8\_t options, uint8\_t advSid, uint8\_t advAddrType, uint8\_t \*pAdvAddr, uint16\_t skip, uint16\_t syncTimeout, uint8\_t unused)

HCI LE periodic advertising create sync command.

void HciLePerAdvCreateSyncCancelCmd (void)

HCI LE periodic advertising create sync cancel command.

void HciLePerAdvTerminateSyncCmd (uint16 t syncHandle)

HCI LE periodic advertising terminate sync command.

• void HciLeAddDeviceToPerAdvListCmd (uint8\_t advAddrType, uint8\_t \*pAdvAddr, uint8\_t advSid)

HCI LE add device to periodic advertiser list command.

void HciLeRemoveDeviceFromPerAdvListCmd (uint8 t advAddrType, uint8 t \*pAdvAddr, uint8 t advSid)

HCI LE remove device from periodic advertiser list command.

void HciLeClearPerAdvListCmd (void)

HCI LE clear periodic advertiser list command.

void HciLeReadPerAdvListSizeCmd (void)

HCI LE read periodic advertiser size command.

void HciLeSetPerAdvRcvEnableCmd (uint16\_t syncHandle, uint8\_t enable)

HCI LE set periodic advertising receive enable command.

void HciLePerAdvSyncTrsfCmd (uint16\_t connHandle, uint16\_t serviceData, uint16\_t syncHandle)

HCI LE periodic advertising sync transfer command.

• void HciLePerAdvSetInfoTrsfCmd (uint16\_t connHandle, uint16\_t serviceData, uint8\_t advHandle)

HCI LE set periodic advertising set info transfer command.

void HciLeSetPerAdvSyncTrsfParamsCmd (uint16\_t connHandle, uint8\_t mode, uint16\_t skip, uint16\_
 t syncTimeout, uint8\_t cteType)

HCI LE set periodic advertising sync transfer parameters command.

void HciLeSetDefaultPerAdvSyncTrsfParamsCmd (uint8\_t mode, uint16\_t skip, uint16\_t syncTimeout, uint8←
 \_t cteType)

HCI LE set default periodic advertising sync transfer parameters command.

 void HciLeSetConnCteRxParamsCmd (uint16\_t connHandle, uint8\_t samplingEnable, uint8\_t slotDurations, uint8\_t switchPatternLen, uint8\_t \*pAntennalDs)

HCI LE set connection CTE receive parameters command.

 void HciLeSetConnCteTxParamsCmd (uint16\_t connHandle, uint8\_t cteTypeBits, uint8\_t switchPatternLen, uint8\_t \*pAntennalDs)

HCI LE set connection CTE transmit parameters command.

void HciLeConnCteReqEnableCmd (uint16\_t connHandle, uint8\_t enable, uint16\_t cteReqInt, uint8\_t req

 CteLen, uint8 t reqCteType)

HCI LE connection CTE request enable command.

void HciLeConnCteRspEnableCmd (uint16 t connHandle, uint8 t enable)

HCI LE connection CTE response enable command.

void HciLeReadAntennaInfoCmd (void)

HCI LE read antenna information command.

void HciLeSetCigParamsCmd (HciCisCigParams\_t \*pCigParam)

HCI LE set CIG parameters command.

void HciLeCreateCisCmd (uint8\_t numCis, HciCisCreateCisParams\_t \*pCreateCisParam)

HCI LE create CIS command.

void HciLeAcceptCisReqCmd (uint16\_t connHandle)

HCI LE accept CIS request command.

void HciLeRejectCisReqCmd (uint16 t connHandle, uint8 t reason)

HCI LE reject CIS request command.

void HciLeRemoveCigCmd (uint8\_t cigId)

HCI LE remove CIG command.

void HciLeRequestPeerScaCmd (uint16\_t handle)

HCI LE request peer SCA command.

void HciLeCreateBigCmd (HciCreateBig\_t \*pCreateBig)

HCI LE create BIG command.

• void HciTerminateBigCmd (uint8\_t bigHandle, uint8\_t reason)

HCI LE terminate BIG command.

void HciLeBigCreateSyncCmd (HciBigCreateSync\_t \*pCreateSync)

HCI LE BIG create sync command.

void HciLeBigTerminateSync (uint8\_t bigHandle)

HCI LE BIG terminate sync command.

void HciLelsoTxTest (uint16\_t handle, uint8\_t pldType)

HCI LE enable ISO Tx test.

void HciLelsoRxTest (uint16\_t handle, uint8\_t pldType)

HCI LE enable ISO Rx test.

void HciLelsoReadTestCounters (uint16\_t handle)

HCI LE read ISO test counter.

void HciLelsoTestEnd (uint16 t handle)

HCI LE ISO test end.

void HciLeSetupIsoDataPathCmd (HciIsoSetupDataPath\_t \*pDataPathParam)

HCI LE setup ISO data path command.

void HciLeRemovelsoDataPathCmd (uint16 t handle, uint8 t directionBits)

HCI LE remove ISO data path command.

void HciConfigDataPathCmd (HciConfigDataPath\_t \*pDataPathParam)

HCI configure data path command.

void HciReadLocalSupCodecsCmd (void)

HCI read local supported codecs command.

• void HciReadLocalSupCodecCapCmd (HciReadLocalSupCodecCaps\_t \*pCodecParam)

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HCI read local supported codec capabilities command.

• void HciReadLocalSupControllerDlyCmd (HciReadLocalSupControllerDly\_t \*pDelayParam)

HCI read local supported controller delay command.

void HciLeSetHostFeatureCmd (uint8\_t bitNum, bool\_t bitVal)

HCI LE set host feature command.

- void HciVsdDisableSlaveLatency (uint16\_t handle, bool\_t disabled)
- void HciVsdOverruleRemoteMaxRxOctetsAndTime (uint16\_t handle, uint16\_t maxRxOctetsRemote, uint16 t maxRxTimeRemote)
- void HciVsdEnableControlledBandwidthModeByDefault (bool\_t enable)
- 1.4.1 Detailed Description
- 1.4.2 Function Documentation

## 1.4.2.1 HciDisconnectCmd()

HCI disconnect command.

## Parameters

| handle | Connection handle.     |
|--------|------------------------|
| reason | Reason for disconnect. |

#### Returns

None.

## 1.4.2.2 HciLeAddDevWhiteListCmd()

HCI LE add device white list command.

## **Parameters**

| addrType | Address type. |
|----------|---------------|
| pAddr    | Peer address. |

#### Returns

None.

## 1.4.2.3 HciLeClearWhiteListCmd()

HCI LE clear white list command.

## Returns

None.

## 1.4.2.4 HciLeConnUpdateCmd()

```
void HciLeConnUpdateCmd (
          uint16_t handle,
          hciConnSpec_t * pConnSpec )
```

HCI connection update command.

## **Parameters**

| handle    | Connection handle.            |
|-----------|-------------------------------|
| pConnSpec | Update connection parameters. |

#### Returns

None.

# 1.4.2.5 HciLeCreateConnCmd()

```
void HciLeCreateConnCmd (
          uint16_t scanInterval,
          uint16_t scanWindow,
          uint8_t filterPolicy,
          uint8_t peerAddrType,
          uint8_t * pPeerAddr,
          uint8_t ownAddrType,
          hciConnSpec_t * pConnSpec )
```

HCI LE create connection command.

## **Parameters**

| scanInterval | Scan interval.          |
|--------------|-------------------------|
| scanWindow   | Scan window.            |
| filterPolicy | Filter policy.          |
| peerAddrType | Peer address type.      |
| pPeerAddr    | Peer address.           |
| ownAddrType  | Own address type.       |
| pConnSpec    | Connecdtion parameters. |

Returns

None.

## 1.4.2.6 HciLeCreateConnCancelCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE create connection cancel command.

Returns

None.

# 1.4.2.7 HciLeEncryptCmd()

HCI LE encrypt command.

## Parameters

| pKey  | Encryption key.  |
|-------|------------------|
| pData | Data to encrypt. |

Returns

# 1.4.2.8 HciLeLtkReqNegReplCmd()

HCI LE long term key request negative reply command.

## **Parameters**

| handle | Connection handle. |
|--------|--------------------|
|--------|--------------------|

Returns

None.

## 1.4.2.9 HciLeLtkReqReplCmd()

HCI LE long term key request reply command.

#### **Parameters**

| handle | Connection handle. |
|--------|--------------------|
| pKey   | LTK.               |

Returns

None.

## 1.4.2.10 HciLeRandCmd()

```
void HciLeRandCmd (
    void )
```

HCI LE random command.

Returns

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#### 1.4.2.11 HciLeReadAdvTXPowerCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE read advertising TX power command.

Returns

None.

## 1.4.2.12 HciLeReadBufSizeCmd()

HCI LE read buffer size command.

Returns

None.

#### 1.4.2.13 HciLeReadBufSizeCmdV2()

```
void HciLeReadBufSizeCmdV2 ( \label{eq:condV2} \mbox{void} \mbox{ )}
```

HCI LE read buffer size version 2 command.

Returns

None.

## 1.4.2.14 HciLeReadChanMapCmd()

HCI LE read channel map command.

**Parameters** 

handle Connection handle.

None.

## 1.4.2.15 HciLeReadLocalSupFeatCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE read local supported feautre command.

Returns

None.

# 1.4.2.16 HciLeReadRemoteFeatCmd()

HCI LE read remote feature command.

# Parameters

| handle | Connection handle. |
|--------|--------------------|

Returns

None.

# 1.4.2.17 HciLeReadSupStatesCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE read supported states command.

Returns

## 1.4.2.18 HciLeReadWhiteListSizeCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE read white list size command.

Returns

None.

## 1.4.2.19 HciLeRemoveDevWhiteListCmd()

HCI LE remove device white list command.

#### **Parameters**

| addrType | Address type. |
|----------|---------------|
| pAddr    | Peer address. |

Returns

None.

## 1.4.2.20 HciLeSetAdvEnableCmd()

HCI LE set advanced enable command.

## **Parameters**

| <i>enable</i>   Enable. |
|-------------------------|
|-------------------------|

Returns

## 1.4.2.21 HciLeSetAdvDataCmd()

HCI LE set advertising data command.

## **Parameters**

| len   | Length of advertising data. |
|-------|-----------------------------|
| pData | Advertising data.           |

#### Returns

None.

## 1.4.2.22 HciLeSetAdvParamCmd()

HCI LE set advertising parameters command.

## **Parameters**

| advIntervalMin | Adveritsing minimum interval. |
|----------------|-------------------------------|
| advIntervalMax | Advertising maximum interval. |
| advType        | Advertising type.             |
| ownAddrType    | Own address type.             |
| peerAddrType   | Peer address type.            |
| pPeerAddr      | Peer address.                 |
| advChanMap     | Advertising channel map.      |
| advFiltPolicy  | Advertising filter policy.    |

## Returns

## 1.4.2.23 HciLeSetEventMaskCmd()

HCI LE set event mask command.

**Parameters** 

```
pLeEventMask LE Event mask.
```

Returns

None.

## 1.4.2.24 HciLeSetHostChanClassCmd()

```
void HciLeSetHostChanClassCmd ( \label{eq:condition} \mbox{uint8\_t * $pChanMap$ })
```

HCI set host channel class command.

## **Parameters**

| pChanMap | Channel map. |
|----------|--------------|
|----------|--------------|

Returns

None.

#### 1.4.2.25 HciLeSetRandAddrCmd()

HCI LE set random address command.

## **Parameters**

| pAddr | Randon address. |
|-------|-----------------|

Returns

#### 1.4.2.26 HciLeSetScanEnableCmd()

HCI LE set scan enable command.

#### **Parameters**

| enable    | Enable.            |
|-----------|--------------------|
| filterDup | Filter duplicates. |

## Returns

None.

## 1.4.2.27 HciLeSetScanParamCmd()

HCI set scan parameters command.

#### **Parameters**

| scanType       | Scan type.              |
|----------------|-------------------------|
| scanInterval   | Scan interval.          |
| scanWindow     | Scan window.            |
| ownAddrType    | Own address type.       |
| scanFiltPolicy | Scanning filter policy. |

#### Returns

None.

## 1.4.2.28 HciLeSetScanRespDataCmd()

HCI LE set scan response data.

#### **Parameters**

| len   | Scan response data length. |
|-------|----------------------------|
| pData | Scan response data.        |

## Returns

None.

## 1.4.2.29 HciLeStartEncryptionCmd()

HCI LE start encryption command.

#### **Parameters**

| handle      | Connection handle. |
|-------------|--------------------|
| pRand       | Random number.     |
| diversifier | Diversifier.       |
| pKey        | Encryption key.    |

## Returns

None.

## 1.4.2.30 HciReadBdAddrCmd()

HCI read BD address command.

## Returns

## 1.4.2.31 HciReadBufSizeCmd()

```
void HciReadBufSizeCmd ( \label{eq:cond} \mbox{void} \mbox{ } \mbox{)}
```

HCI read buffer size command.

Returns

None.

## 1.4.2.32 HciReadLocalSupFeatCmd()

HCI read local supported feature command.

**Returns** 

None.

#### 1.4.2.33 HciReadLocalVerInfoCmd()

HCI read local version info command.

Returns

None.

## 1.4.2.34 HciReadRemoteVerInfoCmd()

HCI read remote version info command.

**Parameters** 

handle Connection handle.

## Returns

None.

# 1.4.2.35 HciReadRssiCmd()

HCI read RSSI command.

# **Parameters**

| handle | Connection handle. |
|--------|--------------------|
|--------|--------------------|

#### Returns

None.

## 1.4.2.36 HciReadTxPwrLvlCmd()

HCI read Tx power level command.

#### **Parameters**

| handle | Connection handle. |
|--------|--------------------|
| type   | Type.              |

# Returns

None.

# 1.4.2.37 HciHostBufferSizeCmd()

HCI Host Buffer Size Command.

## Returns

None.

# 1.4.2.38 HciResetCmd()

```
void HciResetCmd (
    void )
```

HCI reset command.

Returns

None.

## 1.4.2.39 HciSetEventMaskCmd()

HCI set event mask command.

### **Parameters**

| pEventMask | Page 1 of the event mask. |
|------------|---------------------------|
|------------|---------------------------|

Returns

None.

# 1.4.2.40 HciSetEventMaskPage2Cmd()

```
void HciSetEventMaskPage2Cmd ( \mbox{uint8\_t} \ * \ \mbox{\it pEventMask} \ )
```

HCI set event page 2 mask command.

## **Parameters**

| pEventMask | Page 2 of the event mask. |
|------------|---------------------------|
|------------|---------------------------|

#### Returns

None.

# 1.4.2.41 HciReadAuthPayloadTimeout()

HCI read authenticated payload timeout command.

#### **Parameters**

| handle | Connection handle. |
|--------|--------------------|

#### Returns

None.

# 1.4.2.42 HciWriteAuthPayloadTimeout()

```
void HciWriteAuthPayloadTimeout (
          uint16_t handle,
          uint16_t timeout )
```

HCI write authenticated payload timeout command.

### **Parameters**

| handle  | Connection handle. |
|---------|--------------------|
| timeout | Timeout value.     |

# Returns

None.

#### 1.4.2.43 HciLeAddDeviceToResolvingListCmd()

HCI add device to resolving list command.

## **Parameters**

| peerAddrType      | Peer identity address type. |
|-------------------|-----------------------------|
| pPeerIdentityAddr | Peer identity address.      |
| pPeerIrk          | Peer IRK.                   |
| pLocalIrk         | Local IRK.                  |

## Returns

None.

# 1.4.2.44 HciLeRemoveDeviceFromResolvingList()

HCI remove device from resolving list command.

## **Parameters**

| peerAddrType      | Peer identity address type. |
|-------------------|-----------------------------|
| pPeerldentityAddr | Peer identity address.      |

# Returns

None.

# 1.4.2.45 HciLeClearResolvingList()

```
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```

HCI clear resolving list command.

#### Returns

None.

# 1.4.2.46 HciLeReadResolvingListSize()

```
\begin{tabular}{ll} \beg
```

HCI read resolving list command.

Returns

None.

## 1.4.2.47 HciLeReadPeerResolvableAddr()

HCI read peer resolvable address command.

### **Parameters**

| addrType      | Peer identity address type. |
|---------------|-----------------------------|
| pldentityAddr | Peer identity address.      |

Returns

None.

# 1.4.2.48 HciLeReadLocalResolvableAddr()

HCI read local resolvable address command.

## **Parameters**

| addrType      | Peer identity address type. |
|---------------|-----------------------------|
| pldentityAddr | Peer identity address.      |

Returns

None.

## 1.4.2.49 HciLeSetAddrResolutionEnable()

HCI enable or disable address resolution command.

#### **Parameters**

enable Set to TRUE to enable address resolution or FALSE to disable address resolution.

#### Returns

None.

## 1.4.2.50 HciLeSetResolvablePrivateAddrTimeout()

HCI set resolvable private address timeout command.

#### **Parameters**

| rpaTimeout | Timeout measured in seconds. |
|------------|------------------------------|
|------------|------------------------------|

#### Returns

None.

#### 1.4.2.51 HciLeSetPrivacyModeCmd()

HCI LE set privacy mode command.

#### **Parameters**

| addrType | Peer identity address type. |
|----------|-----------------------------|
| pAddr    | Peer identity address.      |
| mode     | Privacy mode.               |

## Returns

None.

# 1.4.2.52 HciLeReadPhyCmd()

HCI read PHY command.

# **Parameters**

| handle | Connection handle. |
|--------|--------------------|
|--------|--------------------|

# Returns

None.

# 1.4.2.53 HciLeSetDefaultPhyCmd()

HCI set default PHY command.

#### **Parameters**

| allPhys | All PHYs. |
|---------|-----------|
| txPhys  | Tx PHYs.  |
| rxPhys  | Rx PHYs.  |

## Returns

None.

# 1.4.2.54 HciLeSetPhyCmd()

```
uint8_t allPhys,
uint8_t txPhys,
uint8_t rxPhys,
uint16_t phyOptions )
```

## HCI set PHY command.

#### **Parameters**

| handle     | Connection handle. |
|------------|--------------------|
| allPhys    | All PHYs.          |
| txPhys     | Tx PHYs.           |
| rxPhys     | Rx PHYs.           |
| phyOptions | PHY options.       |

## Returns

None.

# 1.4.2.55 HciVendorSpecificCmd()

HCI vencor specific command.

# **Parameters**

| opcode | Opcode.          |
|--------|------------------|
| len    | Length of pData. |
| pData  | Command data.    |

# Returns

None.

# 1.4.2.56 HciLeRemoteConnParamReqReply()

```
uint16_t timeout,
uint16_t minCeLen,
uint16_t maxCeLen )
```

HCI Remote Connection Parameter Request Reply.

#### **Parameters**

| handle      | Connection handle.               |
|-------------|----------------------------------|
| intervalMin | Interval minimum.                |
| intervalMax | Interval maximum.                |
| latency     | Connection latency.              |
| timeout     | Connection timeout.              |
| minCeLen    | Minimum connection event length. |
| maxCeLen    | Maximum connection event length. |

#### Returns

None.

## 1.4.2.57 HciLeRemoteConnParamReqNegReply()

HCI Remote Connection Parameter Request Negative Reply.

### **Parameters**

| handle | Connection handle.     |
|--------|------------------------|
| reason | Negative reply reason. |

#### Returns

None.

# 1.4.2.58 HciLeSetDataLen()

HCI LE Set Data Length.

## **Parameters**

| handle   | Connection handle. |
|----------|--------------------|
| txOctets | Tx octets.         |
| txTime   | Tx time.           |

#### Returns

None.

## 1.4.2.59 HciLeReadDefDataLen()

HCI LE Read Default Data Length.

#### Returns

None.

## 1.4.2.60 HciLeWriteDefDataLen()

HCI LE Write Default Data Length.

## **Parameters**

| suggestedMaxTxOctets | Suggested maximum Tx octets. |
|----------------------|------------------------------|
| suggestedMaxTxTime   | Suggested maximum Tx time.   |

# Returns

None.

# 1.4.2.61 HciLeReadLocalP256PubKey()

HCI LE Read Local P-256 Public Key.

## Returns

None.

# 1.4.2.62 HciLeGenerateDHKey()

```
void HciLeGenerateDHKey ( \label{eq:condition} \mbox{uint8\_t} \ * \ pPubKeyX, \\ \mbox{uint8\_t} \ * \ pPubKeyY \ )
```

# HCI LE Generate DH Key.

#### **Parameters**

| pPubKeyX | Public key X-coordinate. |
|----------|--------------------------|
| pPubKeyY | Public key Y-coordinate. |

## Returns

None.

# 1.4.2.63 HciLeGenerateDHKeyV2()

# HCI LE Generate DH Key Version 2.

## **Parameters**

| pPubKeyX | Public key X-coordinate. |
|----------|--------------------------|
| pPubKeyY | Public key Y-coordinate. |
| keyType  | Key type.                |

## Returns

None.

## 1.4.2.64 HciLeReadMaxDataLen()

HCI LE Read Maximum Data Length.

Returns

None.

# 1.4.2.65 HciLeReadTxPower()

HCI LE read transmit power command.

Returns

None.

# 1.4.2.66 HciLeReadRfPathComp()

HCI LE read RF path compensation command.

Returns

None.

# 1.4.2.67 HciLeWriteRfPathComp()

HCI LE write RF path compensation command.

# Parameters

| txPathComp | RF transmit path compensation value. |
|------------|--------------------------------------|
| rxPathComp | RF receive path compensation value.  |

## Returns

None.

# 1.4.2.68 HciLeSetAdvSetRandAddrCmd()

```
void HciLeSetAdvSetRandAddrCmd ( \label{eq:const_def} \mbox{uint8\_t } \mbox{\it advHandle,} \\ \mbox{const uint8\_t } * \mbox{\it pAddr} \mbox{\it )}
```

HCI LE set advertising set random device address command.

#### **Parameters**

| advHandle | Advertising handle.    |
|-----------|------------------------|
| pAddr     | Random device address. |

#### Returns

None.

# 1.4.2.69 HciLeSetExtAdvParamCmd()

HCI LE set extended advertising parameters command.

#### **Parameters**

| advHandle    | Advertising handle.              |
|--------------|----------------------------------|
| pExtAdvParam | Extended advertising parameters. |

# Returns

None.

# 1.4.2.70 HciLeSetExtAdvDataCmd()

```
uint8_t op,
uint8_t fragPref,
uint8_t len,
const uint8_t * pData )
```

HCI LE set extended advertising data command.

#### **Parameters**

| advHandle | Advertising handle.      |
|-----------|--------------------------|
| ор        | Operation.               |
| fragPref  | Fragment preference.     |
| len       | Data buffer length.      |
| pData     | Advertising data buffer. |

## Returns

None.

## 1.4.2.71 HciLeSetExtScanRespDataCmd()

HCI LE set extended scan response data command.

## **Parameters**

| advHandle | Advertising handle.        |
|-----------|----------------------------|
| ор        | Operation.                 |
| fragPref  | Fragment preference.       |
| len       | Data buffer length.        |
| pData     | Scan response data buffer. |

#### Returns

None.

# 1.4.2.72 HciLeSetExtAdvEnableCmd()

```
uint8_t numSets,
hciExtAdvEnableParam_t * pEnableParam )
```

HCI LE set extended advertising enable command.

#### **Parameters**

| enable       | Set to TRUE to enable advertising, FALSE to disable advertising. |  |
|--------------|--|--|
| numSets      | Number of advertising sets.                                      |  |
| pEnableParam | Advertising enable parameter array.                              |  |

## Returns

None.

## 1.4.2.73 HciLeReadMaxAdvDataLen()

```
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```

HCI LE read maximum advertising data length command.

#### Returns

None.

# 1.4.2.74 HciLeReadNumSupAdvSets()

```
\begin{tabular}{ll} \beg
```

HCI LE read number of supported advertising sets command.

# Returns

None.

# 1.4.2.75 HciLeRemoveAdvSet()

HCI LE remove advertising set command.

## **Parameters**

| advHandle | Advertising handle. |
|-----------|---------------------|
|-----------|---------------------|

## Returns

Status error code.

## 1.4.2.76 HciLeClearAdvSets()

```
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```

HCI LE clear advertising sets command.

## Returns

None.

## 1.4.2.77 HciLeSetPerAdvParamCmd()

HCI LE set periodic advertising parameters command.

## **Parameters**

| advHandle      | Advertising handle.                    |
|----------------|--|
| advIntervalMin | Periodic advertising interval minimum. |
| advIntervalMax | Periodic advertising interval maximum. |
| advProps       | Periodic advertising properties.       |

## Returns

None.

### 1.4.2.78 HciLeSetPerAdvDataCmd()

HCI LE set periodic advertising data command.

#### **Parameters**

| advHandle | Advertising handle.      |
|-----------|--------------------------|
| ор        | Operation.               |
| len       | Data buffer length.      |
| pData     | Advertising data buffer. |

#### Returns

None.

## 1.4.2.79 HciLeSetPerAdvEnableCmd()

HCI LE set periodic advertising enable command.

#### **Parameters**

| enable    | Set to TRUE to enable advertising, FALSE to disable advertising. |
|-----------|--|
| advHandle | Advertising handle.  |

#### Returns

None.

#### 1.4.2.80 HciLeSetExtScanParamCmd()

HCI LE set extended scanning parameters command.

## **Parameters**

| ownAddrType    | Address type used by this device. |  |
|----------------|-----------------------------------|--|
| scanFiltPolicy | Scan filter policy.               |  |
| scanPhys       | Scanning PHYs.                    |  |
| pScanParam     | Scanning parameter array.         |  |

## Returns

None.

# 1.4.2.81 HciLeExtScanEnableCmd()

HCI LE extended scan enable command.

## **Parameters**

| enable    | Set to TRUE to enable scanning, FALSE to disable scanning. |
|-----------|--|
| filterDup | Set to TRUE to filter duplicates.                          |
| duration  | Duration.  |
| period    | Period.  |

### Returns

None.

# 1.4.2.82 HciLeExtCreateConnCmd()

HCI LE extended create connection command.

## **Parameters**

| pInitParam | Initiating parameters.      |
|------------|-----------------------------|
| pScanParam | Initiating scan parameters. |
| pConnSpec  | Connection specification.   |

#### Returns

None.

## 1.4.2.83 HciLePerAdvCreateSyncCmd()

```
void HciLePerAdvCreateSyncCmd (
    uint8_t options,
    uint8_t advSid,
    uint8_t advAddrType,
    uint8_t * pAdvAddr,
    uint16_t skip,
    uint16_t syncTimeout,
    uint8_t unused )
```

HCI LE periodic advertising create sync command.

#### **Parameters**

| options     | options.   |
|-------------|--|
| advSid      | Advertising SID.   |
| advAddrType | Advertiser address type.   |
| pAdvAddr    | Advertiser address.  |
| skip        | Number of periodic advertising packets that can be skipped after successful receive. |
| syncTimeout | Synchronization timeout.   |
| unused      | Reserved for future use (must be zero).  |

#### Returns

None.

### 1.4.2.84 HciLePerAdvCreateSyncCancelCmd()

```
\begin{tabular}{ll} \beg
```

HCI LE periodic advertising create sync cancel command.

# Returns

None.

# 1.4.2.85 HciLePerAdvTerminateSyncCmd()

HCI LE periodic advertising terminate sync command.

## **Parameters**

| syncHandle | Sync handle. |
|------------|--------------|
|------------|--------------|

## Returns

None.

## 1.4.2.86 HciLeAddDeviceToPerAdvListCmd()

HCI LE add device to periodic advertiser list command.

#### **Parameters**

| advAddrType | Advertiser address type. |
|-------------|--------------------------|
| pAdvAddr    | Advertiser address.      |
| advSid      | Advertising SID.         |

# Returns

None.

## 1.4.2.87 HciLeRemoveDeviceFromPerAdvListCmd()

HCI LE remove device from periodic advertiser list command.

#### **Parameters**

| advAddrType | Advertiser address type. |  |
|-------------|--------------------------|--|
| pAdvAddr    | Advertiser address.      |  |
| advSid      | Advertising SID.         |  |

| _ | 0 | TI | • | 'n | С |
|---|---|----|---|----|---|
|   |   |    |   |    |   |

None.

# 1.4.2.88 HciLeClearPerAdvListCmd()

```
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```

HCI LE clear periodic advertiser list command.

#### Returns

None.

# 1.4.2.89 HciLeReadPerAdvListSizeCmd()

HCI LE read periodic advertiser size command.

## Returns

None.

# 1.4.2.90 HciLeSetPerAdvRcvEnableCmd()

HCI LE set periodic advertising receive enable command.

### **Parameters**

| syncHandle | Periodic sync handle.                             |
|------------|---|
| enable     | TRUE to enable reports, FALSE to disable reports. |

## Returns

None.

## 1.4.2.91 HciLePerAdvSyncTrsfCmd()

HCI LE periodic advertising sync transfer command.

#### **Parameters**

| connHandle  | connHandle Connection handle.      |  |
|-------------|------------------------------------|--|
| serviceData | Service data provided by the host. |  |
| syncHandle  | Periodic sync handle.              |  |

#### Returns

None.

## 1.4.2.92 HciLePerAdvSetInfoTrsfCmd()

HCI LE set periodic advertising set info transfer command.

#### **Parameters**

| connHandle  | Connection handle.                     |
|-------------|--|
| serviceData | Service data provided by the host.     |
| advHandle   | Handle to identify an advertising set. |

# Returns

None.

# 1.4.2.93 HciLeSetPerAdvSyncTrsfParamsCmd()

HCI LE set periodic advertising sync transfer parameters command.

#### **Parameters**

| connHandle  | Connection handle.   |
|-------------|--|
| mode        | Periodic sync advertising sync transfer mode.  |
| skip        | The number of periodic advertising packets that can be skipped after a successful receive. |
| syncTimeout | Synchronization timeout for the periodic advertising.                                      |
| cteType     | Constant tone extension type(Used in AoD/AoA).   |

#### Returns

None.

# 1.4.2.94 HciLeSetDefaultPerAdvSyncTrsfParamsCmd()

HCI LE set default periodic advertising sync transfer parameters command.

## **Parameters**

| mode        | Periodic sync advertising sync transfer mode.  |  |
|-------------|--|--|
| skip        | The number of periodic advertising packets that can be skipped after a successful receive. |  |
| syncTimeout | imeout Synchronization timeout for the periodic advertising.                               |  |
| cteType     | Constant tone extension type(Used in AoD/AoA).   |  |

# Returns

None.

### 1.4.2.95 HciLeSetConnCteRxParamsCmd()

```
void HciLeSetConnCteRxParamsCmd (
    uint16_t connHandle,
    uint8_t samplingEnable,
    uint8_t slotDurations,
    uint8_t switchPatternLen,
    uint8_t * pAntennaIDs )
```

HCI LE set connection CTE receive parameters command.

#### **Parameters**

| connHandle       | Connection handle.  |
|------------------|---|
| samplingEnable   | TRUE to enable Connection IQ sampling, FALSE to disable it.           |
| slotDurations    | Switching and sampling slot durations to be used while receiving CTE. |
| switchPatternLen | Number of Antenna IDs in switching pattern.                           |
| pAntennalDs      | List of Antenna IDs in switching pattern.                             |

#### Returns

None.

# 1.4.2.96 HciLeSetConnCteTxParamsCmd()

HCI LE set connection CTE transmit parameters command.

## **Parameters**

| connHandle       | Connection handle.  |
|------------------|---|
| cteTypeBits      | Permitted CTE type bits used for transmitting CTEs requested by peer. |
| switchPatternLen | Number of Antenna IDs in switching pattern.                           |
| pAntennalDs      | List of Antenna IDs in switching pattern.                             |

## Returns

None.

# 1.4.2.97 HciLeConnCteReqEnableCmd()

HCI LE connection CTE request enable command.

#### **Parameters**

| connHandle | Connection handle.  |
|------------|---|
| enable     | TRUE to enable CTE request for connection, FALSE to disable it. |
| cteReqInt  | CTE request interval.   |
| reqCteLen  | Minimum length of CTE being requested in 8 us units.            |
| reqCteType | Requested CTE type.   |

#### Returns

None.

# 1.4.2.98 HciLeConnCteRspEnableCmd()

HCI LE connection CTE response enable command.

#### **Parameters**

| connHandle | Connection handle.   |
|------------|--|
| enable     | TRUE to enable CTE response for connection, FALSE to disable it. |

#### Returns

None.

## 1.4.2.99 HciLeReadAntennalnfoCmd()

HCI LE read antenna information command.

#### Returns

None.

## 1.4.2.100 HciLeSetCigParamsCmd()

HCI LE set CIG parameters command.

## **Parameters**

| pCigParam | CIG parameters. |
|-----------|-----------------|
|-----------|-----------------|

## Returns

None.

## 1.4.2.101 HciLeCreateCisCmd()

# HCI LE create CIS command.

#### **Parameters**

| numCis          | Nunber of CISes.                                      |
|-----------------|---|
| pCreateCisParam | Parameters for creating connected isochronous stream. |

# Returns

None.

# 1.4.2.102 HciLeAcceptCisReqCmd()

HCI LE accept CIS request command.

## **Parameters**

| connHandle | Connection handle of the CIS to be accepted. |
|------------|--|
|------------|--|

### Returns

None.

# 1.4.2.103 HciLeRejectCisReqCmd()

HCI LE reject CIS request command.

## **Parameters**

| connHandle | Connection handle of the CIS to be rejected. |
|------------|--|
| reason     | Reason the CIS request was rejected.         |

#### Returns

None.

# 1.4.2.104 HciLeRemoveCigCmd()

HCI LE remove CIG command.

# **Parameters**

| cig← | Identifer of a CIG. |
|------|---------------------|
| ld   |                     |

## Returns

None.

# 1.4.2.105 HciLeRequestPeerScaCmd()

HCI LE request peer SCA command.

# **Parameters**

#### Returns

None.

# 1.4.2.106 HciLeCreateBigCmd()

HCI LE create BIG command.

## **Parameters**

| pCreateBis |
|------------|
|------------|

#### Returns

None.

# 1.4.2.107 HciTerminateBigCmd()

# HCI LE terminate BIG command.

# **Parameters**

| bigHandle | Used to identify the BIG. |
|-----------|---------------------------|
| reason    | Termination reason.       |

#### Returns

None.

# 1.4.2.108 HciLeBigCreateSyncCmd()

# HCI LE BIG create sync command.

# **Parameters**

| pCreateSync | BIG Create Sync parameters. |
|-------------|-----------------------------|
|-------------|-----------------------------|

Returns

None.

# 1.4.2.109 HciLeBigTerminateSync()

HCI LE BIG terminate sync command.

## **Parameters**

| bigHandle | Used to identify the BIG. |
|-----------|---------------------------|
|           |                           |

Returns

None.

# 1.4.2.110 HciLelsoTxTest()

HCI LE enable ISO Tx test.

# **Parameters**

| handle  | CIS or BIS handle. |
|---------|--------------------|
| pldType | Payload type.      |

Returns

None.

# 1.4.2.111 HciLelsoRxTest()

HCI LE enable ISO Rx test.

#### **Parameters**

| handle  | CIS or BIS handle. |
|---------|--------------------|
| pldType | Payload type.      |

#### Returns

None.

# 1.4.2.112 HciLelsoReadTestCounters()

HCI LE read ISO test counter.

# **Parameters**

#### Returns

None.

# 1.4.2.113 HciLelsoTestEnd()

HCI LE ISO test end.

# Parameters

| handle | CIS or BIS handle. |
|--------|--------------------|
|        |                    |

#### Returns

None.

# 1.4.2.114 HciLeSetupIsoDataPathCmd()

```
\label{local_policy} \mbox{void HciLeSetupIsoDataPathCmd (} $$ \mbox{HciIsoSetupDataPath\_t * pDataPathParam )} $$
```

HCI LE setup ISO data path command.

#### **Parameters**

| pDataPathParam      | Parameters for setup ISO data path.  |
|---------------------|--------------------------------------|
| p = atar atri arain | i arametere ici cetap ice data patin |

## Returns

None.

# 1.4.2.115 HciLeRemovelsoDataPathCmd()

HCI LE remove ISO data path command.

#### **Parameters**

| handle        | Connection handle of the CIS or BIS. |
|---------------|--------------------------------------|
| directionBits | Data path direction bits.            |

#### Returns

None.

# 1.4.2.116 HciConfigDataPathCmd()

```
\label{local_potential} void \ \mbox{HciConfigDataPathCmd (} \\ \mbox{HciConfigDataPath\_t * pDataPathParam )}
```

HCI configure data path command.

#### **Parameters**

| pDataPathParam | Parameters for configuring data path. |  |
|----------------|---------------------------------------|--|
|----------------|---------------------------------------|--|

Returns

None.

## 1.4.2.117 HciReadLocalSupCodecsCmd()

```
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```

HCI read local supported codecs command.

Returns

None.

## 1.4.2.118 HciReadLocalSupCodecCapCmd()

HCI read local supported codec capabilities command.

**Parameters** 

| pCodecParam | Parameters to read codec capabilities. |
|-------------|--|
|-------------|--|

Returns

None.

# 1.4.2.119 HciReadLocalSupControllerDlyCmd()

```
\label{localSupControllerDlyCmd} \mbox{ \begin{tabular}{ll} \label{localSupControllerDly_t * pDelayParam \end{tabular} } \mbox{ \begin{tabular}{ll} \label{localSupControllerDly_t * pDelayParam \end{tabular} } \mbox{ \end{tabular} } \mbox{ \begin{tabular}{ll} \label{localSupControllerDly_t * pDelayParam \end{tabular} } \mbox{ \end{tabular} } \mbox{ \begin{tabular}{ll} \label{localSupControllerDly_t * pDelayParam \end{tabular} } \mbox{ \begin{tabular}{ll} \l
```

HCI read local supported controller delay command.

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# **Parameters**

| pDelayParam | Parameters to read controller delay. |
|-------------|--------------------------------------|
|-------------|--------------------------------------|

Returns

None.

## 1.4.2.120 HciLeSetHostFeatureCmd()

HCI LE set host feature command.

## **Parameters**

| bitNum | Bit position in the FeatureSet. |
|--------|---------------------------------|
| bitVal | Enable or disable feature.      |

Returns

None.

# Note

Set or clear a bit in the feature controlled by the Host in the Link Layer FeatureSet stored in the Controller.

# 1.5 HCI Optimization Interface

## **HCI Optimization Interface Functions**

This is an optimized interface for certain HCI commands that simply read a value. The stack uses these functions rather than their corresponding functions in the command interface. These functions can only be called after the reset sequence has been completed.

uint8 t \* HciGetBdAddr (void)

Return a pointer to the BD address of this device.

uint8\_t HciGetWhiteListSize (void)

Return the white list size.

int8\_t HciGetAdvTxPwr (void)

Return the advertising transmit power.

uint16\_t HciGetBufSize (void)

Return the ACL buffer size supported by the controller.

• uint8\_t HciGetNumBufs (void)

Return the number of ACL buffers supported by the controller.

uint8\_t \* HciGetSupStates (void)

Return the states supported by the controller.

uint64 t HciGetLeSupFeat (void)

Return the LE supported features supported by the controller.

• uint32\_t HciGetLeSupFeat32 (void)

Return the LE supported features supported by the controller.

• uint16\_t HciGetMaxRxAclLen (void)

Get the maximum reassembled RX ACL packet length.

• uint8\_t HciGetResolvingListSize (void)

Return the resolving list size.

bool\_t HciLIPrivacySupported (void)

Whether LL Privacy is supported.

uint16\_t HciGetMaxAdvDataLen (void)

Get the maximum advertisement (or scan response) data length supported by the Controller.

uint8 t HciGetNumSupAdvSets (void)

Get the maximum number of advertising sets supported by the Controller.

bool\_t HciLeAdvExtSupported (void)

Whether LE Advertising Extensions is supported.

uint8\_t HciGetPerAdvListSize (void)

Return the periodic advertising list size.

hciLocalVerInfo\_t \* HciGetLocalVerInfo (void)

Return a pointer to the local version information.

### 1.5.1 Detailed Description

#### 1.5.2 Function Documentation

## 1.5.2.1 HciGetBdAddr()

Return a pointer to the BD address of this device.

Returns

Pointer to the BD address.

## 1.5.2.2 HciGetWhiteListSize()

Return the white list size.

Returns

White list size.

# 1.5.2.3 HciGetAdvTxPwr()

Return the advertising transmit power.

Returns

Advertising transmit power.

# 1.5.2.4 HciGetBufSize()

Return the ACL buffer size supported by the controller.

Returns

ACL buffer size.

## 1.5.2.5 HciGetNumBufs()

Return the number of ACL buffers supported by the controller.

Returns

Number of ACL buffers.

# 1.5.2.6 HciGetSupStates()

Return the states supported by the controller.

Returns

Pointer to the supported states array.

# 1.5.2.7 HciGetLeSupFeat()

Return the LE supported features supported by the controller.

Returns

Supported features.

# 1.5.2.8 HciGetLeSupFeat32()

Return the LE supported features supported by the controller.

Returns

Supported features.

# 1.5.2.9 HciGetMaxRxAclLen()

Get the maximum reassembled RX ACL packet length.

Returns

ACL packet length.

# 1.5.2.10 HciGetResolvingListSize()

Return the resolving list size.

Returns

resolving list size.

# 1.5.2.11 HciLlPrivacySupported()

```
bool_t HcillPrivacySupported ( \mbox{void} \quad \mbox{)}
```

Whether LL Privacy is supported.

Returns

TRUE if LL Privacy is supported. FALSE, otherwise.

# 1.5.2.12 HciGetMaxAdvDataLen()

Get the maximum advertisement (or scan response) data length supported by the Controller.

Returns

Maximum advertisement data length.

# 1.5.2.13 HciGetNumSupAdvSets()

Get the maximum number of advertising sets supported by the Controller.

# Returns

Maximum number of advertising sets.

# 1.5.2.14 HciLeAdvExtSupported()

```
bool_t HciLeAdvExtSupported ( \label{eq:condition} \mbox{void} \quad \mbox{)}
```

Whether LE Advertising Extensions is supported.

# Returns

TRUE if LE Advertising Extensions is supported. FALSE, otherwise.

# 1.5.2.15 HciGetPerAdvListSize()

Return the periodic advertising list size.

# Returns

periodic advertising list size.

# 1.5.2.16 HciGetLocalVerInfo()

Return a pointer to the local version information.

# Returns

Pointer to the local version information.

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# 1.6 HCI Event Interface

# **Data Structures**

struct hciLeConnCmplEvt\_t

LE connection complete event.

· struct hciDisconnectCmplEvt\_t

Disconnect complete event.

struct hciLeConnUpdateCmplEvt\_t

LE connection update complete event.

struct hciLeCreateConnCancelCmdCmplEvt\_t

LE create connection cancel command complete event.

• struct hciLeAdvReportEvt\_t

LE advertising report event.

struct hciLeExtAdvReportEvt\_t

LE extended advertising report.

struct hciLeScanTimeoutEvt t

LE scan timeout.

struct hciLeAdvSetTermEvt\_t

LE advertising set terminated.

struct hciLeScanReqRcvdEvt\_t

LE scan request received.

struct hciLePerAdvSyncEstEvt t

LE periodic advertising sync established.

struct hciLePerAdvReportEvt\_t

LE periodic advertising report.

struct hciLePerAdvSyncLostEvt\_t

LE periodic advertising synch lost.

struct HciLePerAdvSyncTrsfRcvdEvt\_t

LE periodic advertising sync transfer received.

· struct hciLeChSelAlgoEvt t

LE channel selection algorithm.

struct hciReadRssiCmdCmplEvt\_t

Read RSSI command complete event.

 $\hbox{-} \ \, struct\ hciReadChanMapCmdCmplEvt\_t\\$ 

LE Read channel map command complete event.

struct hciReadTxPwrLvlCmdCmplEvt\_t

Read transmit power level command complete event.

 $\bullet \ \, struct \ \, hciReadRemoteVerInfoCmplEvt\_t$ 

Read remote version information complete event.

• struct hciLeReadRemoteFeatCmplEvt\_t

LE read remote features complete event.

struct hciLeLtkReqReplCmdCmplEvt\_t

LE LTK request reply command complete event.

struct hciLeLtkReqNegReplCmdCmplEvt\_t

LE LTK request negative reply command complete event.

struct hciEncKeyRefreshCmpl\_t

Encryption key refresh complete event.

· struct hciEncChangeEvt\_t

Encryption change event.

struct hciLeLtkReqEvt\_t

LE LTK request event.

struct hciVendorSpecCmdStatusEvt t

Vendor specific command status event.

struct hciVendorSpecCmdCmplEvt\_t

Vendor specific command complete event.

struct hciVendorSpecEvt t

Vendor specific event.

struct hciHwErrorEvt t

Hardware error event.

struct hciLeEncryptCmdCmplEvt\_t

LE encrypt command complete event.

struct hciLeRandCmdCmplEvt\_t

LE rand command complete event.

struct hciLeRemConnParamRepEvt t

LE remote connection parameter request reply command complete event.

struct hciLeRemConnParamNegRepEvt\_t

LE remote connection parameter request negative reply command complete event.

struct hciLeReadDefDataLenEvt t

LE read suggested default data len command complete event.

struct hciLeWriteDefDataLenEvt t

LE write suggested default data len command complete event.

struct hciLeSetDataLenEvt t

LE set data len command complete event.

struct hciLeReadMaxDataLenEvt t

LE read maximum data len command complete event.

struct hciLeRemConnParamReqEvt\_t

LE remote connetion parameter request event.

struct hciLeDataLenChangeEvt\_t

LE data length change event.

struct hciLeP256CmplEvt t

LE local p256 ecc key command complete event.

· struct hciLeGenDhKeyEvt\_t

LE generate DH key command complete event.

struct hciLeReadPeerResAddrCmdCmplEvt t

LE read peer resolving address command complete event.

struct hciLeReadLocalResAddrCmdCmplEvt\_t

LE read local resolving address command complete event.

struct hciLeSetAddrResEnableCmdCmplEvt t

LE set address resolving enable command complete event.

struct hciLeAddDevToResListCmdCmplEvt t

LE add device to resolving list command complete event.

struct hciLeRemDevFromResListCmdCmplEvt\_t

LE remove device from resolving list command complete event.

struct hciLeClearResListCmdCmplEvt t

LE clear resolving list command complete event.

struct hciWriteAuthPayloadToCmdCmplEvt\_t

Write authenticated payload to command complete event.

struct hciAuthPayloadToExpiredEvt t

Authenticated payload to expire event.

struct hciLeReadPhyCmdCmplEvt\_t

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LE read PHY command complete event.

struct hciLeSetDefPhyCmdCmplEvt\_t

LE set default PHY command complete event.

struct hciLePhyUpdateEvt t

LE PHY update complete event.

struct hciLePerAdvSyncTrsfCmdCmplEvt t

LE periodic advertising sync transfer command complete event.

struct hciLePerAdvSetInfoTrsfCmdCmplEvt\_t

LE set periodic advertising set info transfer command complete event.

struct hciLeConnlQReportEvt\_t

LE connection IQ report.

struct hciLeCteReqFailedEvt\_t

LE CTE request failed event.

struct hciLeSetConnCteRxParamsCmdCmplEvt\_t

LE set connection CTE receive parameters command complete event.

struct hciLeSetConnCteTxParamsCmdCmplEvt\_t

LE set connection CTE transmit parameters command complete event.

• struct hciLeConnCteReqEnableCmdCmplEvt\_t

LE connection CTE request enable command complete event.

struct hciLeConnCteRspEnableCmdCmplEvt t

LE connection CTE response enable command complete event.

struct hciLeReadAntennaInfoCmdCmplEvt\_t

LE read antenna information command complete event.

struct HciLeCisEstEvt\_t

LE CIS established event.

struct HciLeCisRegEvt t

LE CIS request event.

struct HciLeReqPeerScaCmplEvt\_t\_t

LE request peer SCA complete.

struct hciLeSetCigParamsCmdCmplEvt t

LE set CIG parameters command complete event.

struct hciLeRemoveCigCmdCmplEvt\_t

LE remove CIG command complete event.

struct HciLeCreateBigCmplEvt\_t

LE Create BIG complete event.

struct HciLeTerminateBigCmplEvt\_t

LE Terminate BIG complete event.

struct HciLeBigTermSyncCmplEvt\_t

LE BIG Terminate Sync complete event.

struct HciLeBigSyncEstEvt\_t

LE BIG Sync Established event.

struct HciLeBigSyncLostEvt t

LE BIG sync lost event.

struct HciLeBigInfoAdvRptEvt\_t

LE BIG Info Advertising Report event.

struct hciLeSetupIsoDataPathCmdCmplEvt\_t

LE setup ISO data path command complete event.

struct hciLeRemovelsoDataPathCmdCmplEvt\_t

LE remove ISO data path command complete event.

struct hciConfigDataPathCmdCmplEvt\_t

Config data path command complete event.

struct HciStdCodecInfo\_t

Standard codec info block.

struct HciVsCodecInfo t

Vendor-specific codec info block.

struct hciReadLocalSupCodecsCmdCmplEvt\_t

Read local supported codecs command complete event.

struct HciCodecCap t

Codec capability block.

struct hciReadLocalSupCodecCapCmdCmplEvt\_t

Read local supported codec capabilities command complete event.

- struct hciReadLocalSupCtrDlyCmdCmplEvt\_t
- struct hciLocalVerInfo t

Local version information.

· union hciEvt t

Union of all event types.

# **Typedefs**

• typedef void(\* hciUnhandledCmdComplEvtCback\_t) (uint16\_t opCode, uint8\_t status, void \*param)

HCI direct event callback type.

typedef void(\* hciEvtCback\_t) (hciEvt\_t \*pEvent)

HCI event callback type.

typedef void(\* hciSecCback t) (hciEvt t \*pEvent)

HCI security callback type.

# **HCI Internal Event Codes**

Proprietary HCI event codes for handling HCI events in callbacks.

#define HCI\_RESET\_SEQ\_CMPL\_CBACK\_EVT 0

Reset sequence complete.

#define HCI\_LE\_CONN\_CMPL\_CBACK\_EVT 1

LE connection complete.

#define HCI\_LE\_ENHANCED\_CONN\_CMPL\_CBACK\_EVT 2

LE enhanced connection complete.

#define HCI\_DISCONNECT\_CMPL\_CBACK\_EVT 3

Disconnect complete.

#define HCI\_LE\_CONN\_UPDATE\_CMPL\_CBACK\_EVT 4

LE connection update complete.

#define HCI\_LE\_CREATE\_CONN\_CANCEL\_CMD\_CMPL\_CBACK\_EVT 5

LE create connection cancel command complete.

#define HCI LE ADV REPORT CBACK EVT 6

LE advertising report.

#define HCI\_READ\_RSSI\_CMD\_CMPL\_CBACK\_EVT 7

Read RSSI command complete.

#define HCI LE READ CHAN MAP CMD CMPL CBACK EVT 8

LE Read channel map command complete.

#define HCI\_READ\_TX\_PWR\_LVL\_CMD\_CMPL\_CBACK\_EVT 9

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Read transmit power level command complete.

#define HCI\_READ\_REMOTE\_VER\_INFO\_CMPL\_CBACK\_EVT 10

Read remote version information complete.

#define HCI LE READ REMOTE FEAT CMPL CBACK EVT 11

LE read remote features complete.

#define HCI LE LTK REQ REPL CMD CMPL CBACK EVT 12

LE LTK request reply command complete.

#define HCI LE LTK REQ NEG REPL CMD CMPL CBACK EVT 13

LE LTK request negative reply command complete.

#define HCI\_ENC\_KEY\_REFRESH\_CMPL\_CBACK\_EVT 14

Encryption key refresh complete.

• #define HCI\_ENC\_CHANGE\_CBACK\_EVT 15

Encryption change.

• #define HCI\_LE\_LTK\_REQ\_CBACK\_EVT 16

LE LTK request.

#define HCI\_VENDOR\_SPEC\_CMD\_STATUS\_CBACK\_EVT 17

Vendor specific command status.

#define HCI VENDOR SPEC CMD CMPL CBACK EVT 18

Vendor specific command complete.

#define HCI\_VENDOR\_SPEC\_CBACK\_EVT 19

Vendor specific.

#define HCI\_HW\_ERROR\_CBACK\_EVT 20

Hardware error.

#define HCI\_LE\_ADD\_DEV\_TO\_RES\_LIST\_CMD\_CMPL\_CBACK\_EVT 21

LE add device to resolving list command complete.

• #define HCI\_LE\_REM\_DEV\_FROM\_RES\_LIST\_CMD\_CMPL\_CBACK\_EVT 22

LE remove device from resolving command complete.

• #define HCI\_LE\_CLEAR\_RES\_LIST\_CMD\_CMPL\_CBACK\_EVT 23

LE clear resolving list command complete.

#define HCI LE READ PEER RES ADDR CMD CMPL CBACK EVT 24

LE read peer resolving address command complete.

#define HCI\_LE\_READ\_LOCAL\_RES\_ADDR\_CMD\_CMPL\_CBACK\_EVT 25

LE read local resolving address command complete.

#define HCI\_LE\_SET\_ADDR\_RES\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 26

LE set address resolving enable command complete.

#define HCI\_LE\_ENCRYPT\_CMD\_CMPL\_CBACK\_EVT 27

LE encrypt command complete.

• #define HCI\_LE\_RAND\_CMD\_CMPL\_CBACK\_EVT 28

LE rand command complete.

#define HCI LE REM CONN PARAM REP CMD CMPL CBACK EVT 29

LE remote connection parameter request reply complete.

• #define HCI LE REM CONN PARAM NEG REP CMD CMPL CBACK EVT 30

LE remote connection parameter request negative reply complete.

#define HCI\_LE\_READ\_DEF\_DATA\_LEN\_CMD\_CMPL\_CBACK\_EVT 31

LE read suggested default data length command complete.

#define HCI\_LE\_WRITE\_DEF\_DATA\_LEN\_CMD\_CMPL\_CBACK\_EVT 32

LE write suggested default data length command complete.

#define HCI\_LE\_SET\_DATA\_LEN\_CMD\_CMPL\_CBACK\_EVT 33

LE set data length command complete.

• #define HCI\_LE\_READ\_MAX\_DATA\_LEN\_CMD\_CMPL\_CBACK\_EVT 34

LE read maximum data length command complete.

#define HCI LE REM CONN PARAM REQ CBACK EVT 35

LE remote connection parameter request.

#define HCI LE DATA LEN CHANGE CBACK EVT 36

LE data length change.

#define HCI\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL\_CBACK\_EVT 37

LE read local P-256 public key.

#define HCI LE GENERATE DHKEY CMPL CBACK EVT 38

LE generate DHKey complete.

#define HCI WRITE AUTH PAYLOAD TO CMD CMPL CBACK EVT 39

Write authenticated payload timeout command complete.

#define HCI AUTH PAYLOAD TO EXPIRED CBACK EVT 40

Authenticated payload timeout expired event.

#define HCI\_LE\_READ\_PHY\_CMD\_CMPL\_CBACK\_EVT 41

LE read phy command complete.

#define HCI LE SET DEF PHY CMD CMPL CBACK EVT 42

LE set default phy command complete.

#define HCI\_LE\_PHY\_UPDATE\_CMPL\_CBACK\_EVT 43

LE phy update complete.

#define HCI LE EXT ADV REPORT CBACK EVT 44

LE extended advertising report.

• #define HCI LE SCAN TIMEOUT CBACK EVT 45

LE scan timeout event.

#define HCI LE ADV SET TERM CBACK EVT 46

LE advertising set terminated event.

#define HCI\_LE\_SCAN\_REQ\_RCVD\_CBACK\_EVT 47

LE scan request received event.

#define HCI\_LE\_PER\_ADV\_SYNC\_EST\_CBACK\_EVT 48

LE periodic advertising sync established event.

• #define HCI\_LE\_PER\_ADV\_REPORT\_CBACK\_EVT 49

LE periodic advertising report event.

#define HCI LE PER ADV SYNC LOST CBACK EVT 50

LE periodic advertising synch lost event.

#define HCI\_LE\_CH\_SEL\_ALGO\_CBACK\_EVT 51

LE channel selection algorithm event.

#define HCI\_LE\_SCAN\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 52

LE scan enable command complete.

#define HCI\_LE\_ADV\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 53

LE advertise enable command complete.

#define HCI\_LE\_EXT\_SCAN\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 54

LE extended scan enable command complete.

#define HCI\_LE\_EXT\_ADV\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 55

LE extended advertise enable command complete.

#define HCI\_LE\_PER\_ADV\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 56

LE periodic advertise enable command complete.

#define HCI LE SET RAND ADDR CMD CMPL CBACK EVT 57

LE set random address command complete.

#define HCI\_LE\_PER\_SYNC\_TRSF\_RCVD\_CBACK\_EVT 58

LE periodic advertising sync transfer received event.

#define HCI LE PER ADV SYNC TRSF CMD CMPL CBACK EVT 59

LE periodic advertising sync transfer command complete.

• #define HCI\_LE\_PER\_ADV\_SET\_INFO\_TRSF\_CMD\_CMPL\_CBACK\_EVT 60

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LE set periodic advertising set info transfer command complete.

#define HCI\_LE\_CONN\_IQ\_REPORT\_CBACK\_EVT 61

LE connection IQ report event.

• #define HCI\_LE\_CTE\_REQ\_FAILED\_CBACK\_EVT 62

LE CTE request failed event.

#define HCI LE SET CONN CTE RX PARAMS CMD CMPL CBACK EVT 63

LE set connection CTE receive parameters command complete.

#define HCI\_LE\_SET\_CONN\_CTE\_TX\_PARAMS\_CMD\_CMPL\_CBACK\_EVT 64

LE set connection CTE transmit parameters command complete.

#define HCI\_LE\_CONN\_CTE\_REQ\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 65

LE connection CTE request enable command complete.

• #define HCI\_LE\_CONN\_CTE\_RSP\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 66

LE connection CTE response enable command complete.

#define HCI\_LE\_READ\_ANTENNA\_INFO\_CMD\_CMPL\_CBACK\_EVT 67

LE read antenna information command complete.

#define HCI\_LE\_CIS\_EST\_CBACK\_EVT 68

LE CIS established event.

• #define HCI LE CIS REQ CBACK EVT 69

LE CIS request event.

#define HCI CIS DISCONNECT CMPL CBACK EVT 70

CIS disconnect complete.

#define HCI\_LE\_REQ\_PEER\_SCA\_CBACK\_EVT 71

LE Request peer SCA complete.

• #define HCI\_LE\_SET\_CIG\_PARAMS\_CMD\_CMPL\_CBACK\_EVT 72

LE set CIG parameters command complete.

#define HCI LE REMOVE CIG CMD CMPL CBACK EVT 73

LE remove CIG command complete.

#define HCI\_LE\_SETUP\_ISO\_DATA\_PATH\_CMD\_CMPL\_CBACK\_EVT 74

LE setup ISO data path command complete.

#define HCI LE REMOVE ISO DATA PATH CMD CMPL CBACK EVT 75

LE remove ISO data path command complete.

#define HCI\_CONFIG\_DATA\_PATH\_CMD\_CMPL\_CBACK\_EVT 76

Configure data path command complete.

#define HCI\_READ\_LOCAL\_SUP\_CODECS\_CMD\_CMPL\_CBACK\_EVT 77

Read local supported codecs command complete.

#define HCI\_READ\_LOCAL\_SUP\_CODEC\_CAP\_CMD\_CMPL\_CBACK\_EVT 78

Read local supported codec capabilities command complete.

#define HCI\_READ\_LOCAL\_SUP\_CTR\_DLY\_CMD\_CMPL\_CBACK\_EVT 79

Read local supported controller delay command complete.

#define HCI\_LE\_CREATE\_BIG\_CMPL\_CBACK\_EVT 80

LE create BIG complete.

#define HCI\_LE\_TERM\_BIG\_CMPL\_CBACK\_EVT 81

LE terminate BIG complete.

#define HCI\_LE\_BIG\_SYNC\_EST\_CBACK\_EVT 82

LE BIG sync established.

#define HCI LE BIG SYNC LOST CBACK EVT 83

LE BIG sync lost.

• #define HCI\_LE\_BIG\_TERM\_SYNC\_CMPL\_CBACK\_EVT 84

LE BIG terminate sync complete.

• #define HCI\_LE\_BIG\_INFO\_ADV\_REPORT\_CBACK\_EVT 85

LE BIG Info advertising report.

# 1.6.1 Detailed Description

# 1.6.2 Typedef Documentation

# 1.6.2.1 hciUnhandledCmdComplEvtCback\_t

typedef void(\* hciUnhandledCmdComplEvtCback\_t) (uint16\_t opCode, uint8\_t status, void \*param)

HCI direct event callback type.

This callback function sends command complete events not handled by Stack directly from HCI to Application.

opCode Event opcode.

# **Parameters**

| status | status of the command.           |
|--------|----------------------------------|
| pEvent | Pointer to HCI event parameters. |

# Returns

None.

Definition at line 1225 of file hci\_api.h.

# 1.6.2.2 hciEvtCback\_t

```
typedef void(* hciEvtCback_t) (hciEvt_t *pEvent)
```

HCI event callback type.

This callback function sends events from HCI to the stack.

# **Parameters**

| pEvent | Pointer to HCI callback event structure. |
|--------|--|

# Returns

None.

Definition at line 1235 of file hci\_api.h.

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# 1.6.2.3 hciSecCback\_t

```
typedef void(* hciSecCback_t) (hciEvt_t *pEvent)
```

HCI security callback type.

This callback function sends certain security events from HCI to the stack. The security events passed in this callback are the LE Rand Command Complete event and the LE Encrypt Command Complete event.

# **Parameters**

| pEvt Pointer to HCK callback event | structure. |
|------------------------------------|------------|
|------------------------------------|------------|

Returns

None.

Definition at line 1247 of file hci\_api.h.

# 1.7 HCI ACL Data Interface

# **Typedefs**

```
    typedef void(* hciAclCback_t) (uint8_t *pData)
    HCl ACL callback type.
```

typedef void(\* hcilsoCback\_t) (uint8\_t \*pData)
 HCI ISO callback type.

• typedef void(\* hciFlowCback\_t) (uint16\_t handle, bool\_t flowDisabled)

HCI flow control callback type.

# **HCI ACL Data Functions**

HCI ACL data interface

• void HciSendAclData (uint8\_t \*pAclData)

Send ACL Data from the stack to HCl.

# 1.7.1 Detailed Description

# 1.7.2 Typedef Documentation

# 1.7.2.1 hciAclCback\_t

```
typedef void(* hciAclCback_t) (uint8_t *pData)
```

HCI ACL callback type.

This callback function sends ACL data from HCI to the stack.

#### **Parameters**

| pData | WSF buffer containing an ACL packet. |
|-------|--------------------------------------|
|-------|--------------------------------------|

Returns

None.

Definition at line 1262 of file hci\_api.h.

1.7 HCI ACL Data Interface 227

# 1.7.2.2 hcilsoCback\_t

```
typedef void(* hciIsoCback_t) (uint8_t *pData)
```

HCI ISO callback type.

This callback function sends ISO data from HCI to the stack.

# **Parameters**

| pData | WSF buffer containing an ISO packet. |
|-------|--------------------------------------|
|-------|--------------------------------------|

# Returns

None.

Definition at line 1272 of file hci\_api.h.

# 1.7.2.3 hciFlowCback\_t

```
typedef void(* hciFlowCback_t) (uint16_t handle, bool_t flowDisabled)
```

HCI flow control callback type.

This callback function manages flow control in the TX path betrween the stack and HCI.

#### **Parameters**

| connld       | Connection handle.        |
|--------------|---------------------------|
| flowDisabled | TRUE if flow is disabled. |

#### Returns

None.

Definition at line 1283 of file hci\_api.h.

# 1.7.3 Function Documentation

# 1.7.3.1 HciSendAclData()

Send ACL Data from the stack to HCI.

# **Parameters**

| pAcIData    | WSF buffer containing an ACL packet. |
|-------------|--------------------------------------|
| p. 10.2 ata | ite same semanning and the passes    |

Returns

None.

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# 1.8 STACK\_EVENT

# **HCI Event Handling**

Message passing interface to HCI from application and other stack layers through WSF.

• void HciHandlerInit (wsfHandlerId\_t handlerId)

HCI handler init function called during system initialization.

void HciHandler (wsfEventMask\_t event, wsfMsgHdr\_t \*pMsg)

WSF event handler for HCI.

# 1.8.1 Detailed Description

# 1.8.2 Function Documentation

# 1.8.2.1 HciHandlerInit()

HCI handler init function called during system initialization.

# **Parameters**

| handler⊷ | WSF handler ID for HCI. |
|----------|-------------------------|
| ld       |                         |

# Returns

None.

# 1.8.2.2 HciHandler()

WSF event handler for HCI.

# **Parameters**

| event | WSF event mask. |
|-------|-----------------|
| pMsg  | WSF message.    |

Returns

None.

1.9 WSF\_TYPES 231

# 1.9 WSF\_TYPES

# **Integer Data Types**

- #define **bool\_t** uint8\_t
- #define FALSE 0
- #define TRUE (!FALSE)
- #define **UINT64\_C**(x) x##ULL
- #define **UINT32\_C**(x) x##UL
- #define **UINT8\_C**(x) (x)

# 1.9.1 Detailed Description

# **Chapter 2**

# **Data Structure Documentation**

# 2.1 hciAuthPayloadToExpiredEvt\_t Struct Reference

Authenticated payload to expire event.

```
#include <hci_api.h>
```

Collaboration diagram for hciAuthPayloadToExpiredEvt\_t:

hciAuthPayloadToExpiredEvt\_t
+ hdr
+ handle

# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint16\_t handle

Connection handle.

# 2.1.1 Detailed Description

Authenticated payload to expire event.

Definition at line 605 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

#### HciBigCreateSync\_t Struct Reference 2.2

BIG Create Sync parameters.

#include <hci\_api.h>

Collaboration diagram for HciBigCreateSync t:

# HciBigCreateSync\_t

- + bigHandle + syncHandle

- + encrypt + bcstCode
- + mse
- + bigSyncTimeout + numBis
- + bis

# **Data Fields**

• uint8\_t bigHandle

Used to identify the BIG.

uint16\_t syncHandle

Periodic advertising train handle.

uint8\_t encrypt

Unencrypted or Encrypted.

uint8 t bcstCode [HCI BC LEN]

Session key code for encrypt and decrypt BIS payloads.

uint8\_t mse

Maximum number of subevents.

uint16 t bigSyncTimeout

Synchronization timeout for the BIS, in the units of 10ms.

• uint8\_t numBis

Total number of BISes in the BIG.

• uint8\_t bis [HCI\_MAX\_BIS\_COUNT]

List of indices of BISes.

#### **Detailed Description** 2.2.1

BIG Create Sync parameters.

Definition at line 1148 of file hci\_api.h.

The documentation for this struct was generated from the following file:

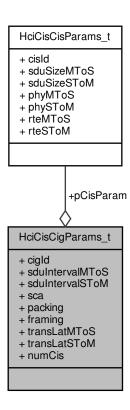
/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.3 HciCisCigParams\_t Struct Reference

CIG parameters.

#include <hci\_api.h>

Collaboration diagram for HciCisCigParams\_t:



# **Data Fields**

• uint8\_t cigld

Used to identify the connected isochronous group.

• uint32\_t sduIntervalMToS

The time interval between the start of consecutive SDUs from the master Host.

• uint32\_t sduIntervalSToM

The time interval between the start of consecutive SDUs from the slave Host.

• uint8\_t sca

Sleep clock accuracy.

uint8\_t packing

Packing scheme.

· uint8 t framing

Indicates the format of CIS Data PDUs.

uint16\_t transLatMToS

Maximum time, in milliseconds, for an SDU to be transported from the master Controller to slave Controller.

uint16\_t transLatSToM

Maximum time, in milliseconds, for an SDU to be transported from the slave Controller to master Controller.

uint8\_t numCis

Number of CIS to set.

• HciCisCisParams\_t \* pCisParam

CIS parameters.

# 2.3.1 Detailed Description

CIG parameters.

Definition at line 1109 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.4 HciCisCisParams\_t Struct Reference

CIS parameters.

#include <hci\_api.h>

Collaboration diagram for HciCisCisParams t:

+ cisld + sduSizeMToS + sduSizeSToM + phyMToS + phySToM + rteMToS + rteSToM

# **Data Fields**

• uint8\_t cisld

Used to identify a connected isochronous stream.

uint16\_t sduSizeMToS

Maximum size of a data SDU from the master to the slave.

uint16 t sduSizeSToM

Maximum size of a data SDU from the slave to the master.

uint8\_t phyMToS

PHY to be used for transmission from master to slave.

uint8\_t phySToM

PHY to be used for transmission from master to slave.

• uint8 t rteMToS

Maximum number of times every PDU should be retransmitted from the master to slave.

uint8\_t rteSToM

Maximum number of times every PDU should be retransmitted from the slave to master.

# 2.4.1 Detailed Description

CIS parameters.

Definition at line 1097 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.5 HciCisCreateCisParams\_t Struct Reference

CIS create CIS parameters.

#include <hci\_api.h>

Collaboration diagram for HciCisCreateCisParams\_t:

HciCisCreateCisParams\_t
+ pCisHandle

+ pAclHandle

# **Data Fields**

• uint16\_t \* pCisHandle

Pointer to the connected isochronous handle array.

uint16\_t \* pAclHandle

Pointer to the asynchronous connection link handle array.

# 2.5.1 Detailed Description

CIS create CIS parameters.

Definition at line 1124 of file hci\_api.h.

The documentation for this struct was generated from the following file:

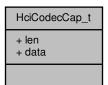
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.6 HciCodecCap\_t Struct Reference

Codec capability block.

```
#include <hci_api.h>
```

Collaboration diagram for HciCodecCap\_t:



# **Data Fields**

• uint8\_t len

Length of codec capability.

• uint8\_t data [HCI\_CODEC\_CAP\_DATA\_LEN]

Codec-specific capability data.

# 2.6.1 Detailed Description

Codec capability block.

Definition at line 911 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.7 HciConfigDataPath\_t Struct Reference

Configure data path parameters.

```
#include <hci_api.h>
```

Collaboration diagram for HciConfigDataPath\_t:

# HciConfigDataPath\_t + dpDir + dpId + configLen + pConfig

# **Data Fields**

uint8\_t dpDir

Data path direction.

uint8\_t dpld

Data path ID.

· uint8\_t configLen

Length of vendor-specific configuration data.

uint8\_t \* pConfig

Vendor-specific configuration data.

# 2.7.1 Detailed Description

Configure data path parameters.

Definition at line 1175 of file hci\_api.h.

The documentation for this struct was generated from the following file:

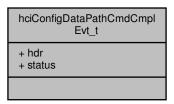
/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.8 hciConfigDataPathCmdCmplEvt\_t Struct Reference

Config data path command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciConfigDataPathCmdCmplEvt\_t:



# **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- uint8 t status

Status.

# 2.8.1 Detailed Description

Config data path command complete event.

Definition at line 878 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.9 hciConnSpec\_t Struct Reference

Connection specification type.

#include <hci\_api.h>

Collaboration diagram for hciConnSpec\_t:

# hciConnSpec\_t

- + connIntervalMin
- + connIntervalMax
- + connLatency
- + supTimeout
- + minCeLen
- + maxCeLen

# **Data Fields**

• uint16\_t connIntervalMin

Minimum connection interval.

uint16\_t connIntervalMax

Maximum connection interval.

uint16\_t connLatency

Connection latency.

uint16\_t supTimeout

Supervision timeout.

• uint16\_t minCeLen

Minimum CE length.

uint16\_t maxCeLen

Maximum CE length.

# 2.9.1 Detailed Description

Connection specification type.

Definition at line 1034 of file hci\_api.h.

The documentation for this struct was generated from the following file:

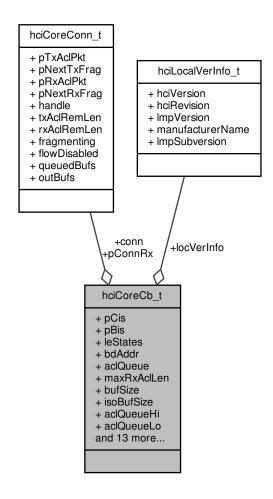
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.10 hciCoreCb\_t Struct Reference

Main control block for dual-chip implementation.

```
#include <hci_core.h>
```

Collaboration diagram for hciCoreCb\_t:



# **Data Fields**

hciCoreConn\_t conn [DM\_CONN\_MAX]

Connection structures.

hciCoreCis\_t \* pCis

CIS structures.

hciCoreBis\_t \* pBis

BIS structures.

• uint8\_t leStates [HCI\_LE\_STATES\_LEN]

Controller LE supported states.

bdAddr\_t bdAddr

Bluetooth device address.

• wsfQueue\_t aclQueue

HCI ACL TX queue.

hciCoreConn\_t \* pConnRx

Connection struct for current transport RX packet.

• uint16\_t maxRxAclLen

Maximum reassembled RX ACL packet length.

uint16\_t bufSize

Controller ACL data buffer size.

uint16\_t isoBufSize

ISO buffer size.

· uint8 t aclQueueHi

Disable flow when this many ACL buffers queued.

uint8\_t aclQueueLo

Enable flow when this many ACL buffers queued.

uint8\_t availBufs

Current avail ACL data buffers.

uint8\_t availlsoBufs

Current available ISO data buffers.

· uint8 t numBufs

Controller number of ACL data buffers.

· uint8 t isoNumBufs

Number of ISO buffers.

uint8\_t whiteListSize

Controller white list size.

uint8\_t numCmdPkts

Controller command packed count.

uint64\_t leSupFeat

Controller LE supported features.

int8 t advTxPwr

Controller advertising TX power.

uint8\_t resListSize

Controller resolving list size.

uint16\_t maxAdvDataLen

Controller maximum advertisement (or scan response) data length.

· uint8 t numSupAdvSets

Controller maximum number of advertising sets.

• uint8\_t perAdvListSize

Controller periodic advertising list size.

hciLocalVerInfo\_t locVerInfo

Controller version information.

hciResetSeq\_t extResetSeq

HCI extended reset sequence callback.

# 2.10.1 Detailed Description

Main control block for dual-chip implementation.

Definition at line 91 of file hci\_core.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_core.h

#### 2.11 hciCoreConn\_t Struct Reference

Per-connection structure for ACL packet accounting.

```
#include <hci_core.h>
```

Collaboration diagram for hciCoreConn t:

# hciCoreConn\_t

- + pTxAclPkt
- + pNextTxFrag
- + pRxAclPkt
- + pNextRxFrag
- + handle
- + txAclRemLen + rxAclRemLen
- + fragmenting
- + flowDisabled
- + queuedBufs + outBufs

# **Data Fields**

uint8\_t \* pTxAclPkt

Fragmenting TX ACL packet pointer.

uint8\_t \* pNextTxFrag

Next TX ACL packet fragment.

uint8\_t \* pRxAclPkt

RX ACL packet pointer.

uint8\_t \* pNextRxFrag

Next RX ACL packet fragment.

· uint16 t handle

Connection handle.

uint16\_t txAclRemLen

Fragmenting TX ACL packet remaining length.

• uint16\_t rxAclRemLen

Fragmented RX ACL packet remaining length.

bool\_t fragmenting

TRUE if fragmenting a TX ACL packet.

bool\_t flowDisabled

TRUE if data flow disabled.

uint8\_t queuedBufs

Queued ACL buffers on this connection.

uint8\_t outBufs

Outstanding ACL buffers sent to controller.

# 2.11.1 Detailed Description

Per-connection structure for ACL packet accounting.

Definition at line 75 of file hci\_core.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_core.h

# 2.12 HciCreateBig\_t Struct Reference

BIG Create BIG parameters.

#include <hci\_api.h>

Collaboration diagram for HciCreateBig\_t:

# HciCreateBig\_t + bigHandle + advHandle + numBis + sduInterUsec + maxSdu + mtlMs + rtn + phys + packing + framing + encrypt + bcstCode

# **Data Fields**

• uint8\_t bigHandle

Used to identify the BIG.

uint8\_t advHandle

Used to identify the periodic advertising train.

• uint8\_t numBis

Total number of BISes in the BIG.

uint32\_t sduInterUsec

Interval, in microseconds, of BIG SDUs.

uint16\_t maxSdu

Maximum size of an SDU.

• uint16\_t mtlMs

Maximum time in milliseconds.

• uint8\_t rtn

Retransmitted number.

uint8\_t phys

Transmitter PHYs of packets.

uint8\_t packing

Sequential or Interleaved packing.

· uint8\_t framing

Unframed or Framed.

uint8\_t encrypt

Unencrypted or Encrypted.

uint8\_t bcstCode [HCI\_BC\_LEN]

Session key used to encrypt and decrypt BIS payloads.

# 2.12.1 Detailed Description

BIG Create BIG parameters.

Definition at line 1131 of file hci\_api.h.

The documentation for this struct was generated from the following file:

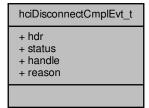
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.13 hciDisconnectCmplEvt\_t Struct Reference

Disconnect complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciDisconnectCmplEvt\_t:



# **Data Fields**

· wsfMsgHdr t hdr

Event header.

uint8\_t status

Disconnect complete status.

• uint16\_t handle

Connect handle.

uint8\_t reason

Reason.

# 2.13.1 Detailed Description

Disconnect complete event.

Definition at line 184 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.14 hciEncChangeEvt\_t Struct Reference

Encryption change event.

```
#include <hci_api.h>
```

Collaboration diagram for hciEncChangeEvt\_t:

hciEncChangeEvt\_t

+ hdr
+ status
+ handle
+ enabled

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

uint8\_t enabled

Encryption enabled flag.

# 2.14.1 Detailed Description

Encryption change event.

Definition at line 400 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx BLE Host Stack/vlatest/ble-host/include/hci api.h

# 2.15 hciEncKeyRefreshCmpl\_t Struct Reference

Encryption key refresh complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciEncKeyRefreshCmpl\_t:

hciEncKeyRefreshCmpl\_t

+ hdr
+ status
+ handle

# **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- uint8\_t status

Status.

uint16\_t handle

Connection handle.

# 2.15.1 Detailed Description

Encryption key refresh complete event.

Definition at line 392 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.16 hciEvt t Union Reference

Union of all event types.

#include <hci\_api.h>

Collaboration diagram for hciEvt t:



# **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

wsfMsgHdr\_t resetSeqCmpl

Reset sequence complete.

hciLeConnCmplEvt t leConnCmpl

LE connection complete.

hciDisconnectCmplEvt\_t disconnectCmpl

Disconnect complete.

hciLeConnUpdateCmplEvt t leConnUpdateCmpl

LE connection update complete.

hciLeCreateConnCancelCmdCmplEvt\_t leCreateConnCancelCmdCmpl

LE create connection cancel command complete.

hciLeAdvReportEvt t leAdvReport

LE advertising report.

hciReadRssiCmdCmplEvt\_t readRssiCmdCmpl

Read RSSI command complete.

hciReadChanMapCmdCmplEvt\_t readChanMapCmdCmpl

Read channel map command complete.

hciReadTxPwrLvlCmdCmplEvt\_t readTxPwrLvlCmdCmpl

Read Tx power level command complete.

hciReadRemoteVerInfoCmplEvt\_t readRemoteVerInfoCmpl

Read remote version information complete.

hciLeReadRemoteFeatCmplEvt\_t leReadRemoteFeatCmpl

LE read remote feature complete.

hciLeLtkReqReplCmdCmplEvt\_t leLtkReqReplCmdCmpl

LE LTK request reply command complete.

hciLeLtkReqNegReplCmdCmplEvt\_t leLtkReqNegReplCmdCmpl

LE LT request negative reply command complete.

hciEncKeyRefreshCmpl\_t encKeyRefreshCmpl

Encryption key refresh complete.

· hciEncChangeEvt t encChange

Encryption change.

hciLeLtkReqEvt\_t leLtkReq

LE LTK request.

hciVendorSpecCmdStatusEvt t vendorSpecCmdStatus

Vendor specific command status.

hciVendorSpecCmdCmplEvt\_t vendorSpecCmdCmpl

Vendor specific command complete.

hciVendorSpecEvt\_t vendorSpec

Vendor specific.

hciHwErrorEvt t hwError

Hardware error.

hciLeEncryptCmdCmplEvt t leEncryptCmdCmpl

LE encrypt command complete.

hciLeRandCmdCmplEvt\_t leRandCmdCmpl

LE random command complete.

hciLeReadPeerResAddrCmdCmplEvt\_t leReadPeerResAddrCmdCmpl

LE read peer resolvable address command complete.

hciLeReadLocalResAddrCmdCmplEvt\_t leReadLocalResAddrCmdCmpl

LE read local resolvable address command complete.

hciLeSetAddrResEnableCmdCmplEvt\_t leSetAddrResEnableCmdCmpl

LE set address resolution enable command complete.

hciLeAddDevToResListCmdCmplEvt\_t leAddDevToResListCmdCmpl

LE add device to resolving list command complete.

hciLeRemDevFromResListCmdCmplEvt\_t leRemDevFromResListCmdCmpl

LE remove device from resolving list command complete.

hciLeClearResListCmdCmplEvt t leClearResListCmdCmpl

LE clear resolving list command complete.

hciLeRemConnParamRepEvt\_t leRemConnParamRepCmdCmpl

LE Remo Connection Parameter Reply Command Complete.

hciLeRemConnParamNegRepEvt\_t leRemConnParamNegRepCmdCmpl

LE Remote Connection Parameter Negative Reply Command Complete.

hciLeReadDefDataLenEvt t leReadDefDataLenCmdCmpl

LE read default data length command complete.

hciLeWriteDefDataLenEvt t leWriteDefDataLenCmdCmpl

LE write default data length command complete.

hciLeSetDataLenEvt t leSetDataLenCmdCmpl

LE set data length command complete.

hciLeReadMaxDataLenEvt t leReadMaxDataLenCmdCmpl

LE read max data length command complete.

hciLeRemConnParamReqEvt\_t leRemConnParamReq

LE remote connection parameter request.

hciLeDataLenChangeEvt\_t leDataLenChange

LE data length change.

• hciLeP256CmplEvt\_t leP256

LE P-256.

hciLeGenDhKeyEvt t leGenDHKey

LE generate Diffie-Hellman key.

hciWriteAuthPayloadToCmdCmplEvt\_t writeAuthPayloadToCmdCmpl

Write authenticated payload to command complete.

hciAuthPayloadToExpiredEvt\_t authPayloadToExpired

Authenticated payload to expired.

hciLeReadPhyCmdCmplEvt t leReadPhyCmdCmpl

LE read PHY command complete.

hciLeSetDefPhyCmdCmplEvt\_t leSetDefPhyCmdCmpl

LE set default PHY command complete.

hciLePhyUpdateEvt\_t lePhyUpdate

LE PHY update.

hciLeExtAdvReportEvt\_t leExtAdvReport

LE extended advertising report.

hciLeScanTimeoutEvt t leScanTimeout

LE scan timeout.

hciLeAdvSetTermEvt t leAdvSetTerm

LE advertising set terminated.

hciLeScanRegRcvdEvt t leScanRegRcvd

LE scan request received.

hciLePerAdvSyncEstEvt t lePerAdvSyncEst

LE periodic advertising synchronization established.

hciLePerAdvReportEvt t lePerAdvReport

LE periodic advertising report.

hciLePerAdvSyncLostEvt\_t lePerAdvSyncLost

LE periodic advertising synchronization lost.

hciLeChSelAlgoEvt t leChSelAlgo

LE channel select algorithm.

HciLePerAdvSyncTrsfRcvdEvt\_t lePerAdvSyncTrsfRcvd

LE periodic advertising sync transfer received.

hciLePerAdvSyncTrsfCmdCmplEvt t lePerAdvSyncTrsfCmdCmpl

LE periodic advertising sync transfer command complete.

hciLePerAdvSetInfoTrsfCmdCmplEvt\_t lePerAdvSetInfoTrsfCmdCmpl

LE set periodic advertising set info transfer command complete.

hciLeConnIQReportEvt t leConnIQReport

LE connection IQ report.

hciLeCteReqFailedEvt\_t leCteReqFailed

LE CTE request failed.

hciLeSetConnCteRxParamsCmdCmplEvt t leSetConnCteRxParamsCmdCmpl

LE set connection CTE receive parameters command complete.

hciLeSetConnCteTxParamsCmdCmplEvt\_t leSetConnCteTxParamsCmdCmpl

LE set connection CTE transmit parameters command complete.

hciLeConnCteReqEnableCmdCmplEvt\_t leConnCteReqEnableCmdCmpl

LE connection CTE request enable command complete.

hciLeConnCteRspEnableCmdCmplEvt\_t leConnCteRspEnableCmdCmpl

LE connection CTE response enable command complete.

hciLeReadAntennaInfoCmdCmplEvt\_t leReadAntennaInfoCmdCmpl

LE read antenna information command complete.

hciLeSetCigParamsCmdCmplEvt\_t leSetCigParamsCmdCmpl

LE set CIG parameters command complete.

hciLeRemoveCigCmdCmplEvt\_t leRemoveCigCmdCmpl

LE remove CIG command complete.

· HciLeCisEstEvt t leCisEst

LE CIS established.

HciLeCisReqEvt\_t leCisReq

LE CIS request.

HciLeRegPeerScaCmplEvt t tleRegPeerSca

LE request peer SCA complete.

hciLeSetupIsoDataPathCmdCmpIEvt\_t leSetupIsoDataPathCmdCmpI

LE setup ISO data path command complete.

hciLeRemovelsoDataPathCmdCmplEvt\_t leRemovelsoDataPathCmdCmpl

LE remove ISO data path command complete.

hciConfigDataPathCmdCmplEvt\_t configDataPathCmdCmpl

Config data path command complete.

hciReadLocalSupCodecsCmdCmplEvt\_t readLocalSupCodecsCmdCmpl

Read local supported codecs command complete.

hciReadLocalSupCodecCapCmdCmplEvt\_t readLocalSupCodecCapCmdCmpl

Read local supported codec capablitlies command complete.

hciReadLocalSupCtrDlyCmdCmplEvt\_t readLocalSupCtrDlyCmdCmpl

Read local supported controller delay command complete.

HciLeCreateBigCmplEvt\_t leCreateBigCmpl

LE create BIG complete.

HciLeTerminateBigCmplEvt\_t leTerminateBigCmpl

LE terminate BIG complete.

• HciLeBigSyncEstEvt\_t leBigSyncEst

LE BIG sync established.

HciLeBigSyncLostEvt\_t leBigSyncLost

LE BIG sync lost.

HciLeBigTermSyncCmplEvt\_t leBigTermSyncCmpl

LE BIG terminate sync complete.

HciLeBigInfoAdvRptEvt\_t leBigInfoAdvRpt

LE BIG info advertising report.

### 2.16.1 Detailed Description

Union of all event types.

Definition at line 945 of file hci\_api.h.

The documentation for this union was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.17 hciEvtStats\_t Struct Reference

HCI event statistics.

#include <hci\_evt.h>

### Collaboration diagram for hciEvtStats\_t:

### hciEvtStats\_t

- + numDiscCmplEvt
- + numEncChangeEvt
- + numReadRemoteVerInfoCmpEvt
- + numCmdCmplEvt
- + numCmdStatusEvt
- + numHwErrorEvt
- + numCmplPktsEvt
- + numDataBufOverflowEvt
- + numEncKeyRefreshCmplEvt
- + numLeMetaEvt
- + numVendorSpecEvt
- + numAuthToEvt

### **Data Fields**

• uint16\_t numDiscCmplEvt

Number discovery complete events.

uint16\_t numEncChangeEvt

Number encryption change events.

uint16\_t numReadRemoteVerInfoCmpEvt

Number read remote version info complete events.

uint16\_t numCmdCmplEvt

Number command complete events.

uint16\_t numCmdStatusEvt

Number command status events.

• uint16\_t numHwErrorEvt

Number hardware error events.

uint16\_t numCmplPktsEvt

Number complete packet events.

uint16\_t numDataBufOverflowEvt

Number data buf overflow events.

uint16\_t numEncKeyRefreshCmplEvt

Number encryption key refresh complete events.

uint16\_t numLeMetaEvt

Number LE meta events.

uint16\_t numVendorSpecEvt

Number vendor specific events.

uint16\_t numAuthToEvt

Number authenticated to events.

### 2.17.1 Detailed Description

HCI event statistics.

Definition at line 39 of file hci evt.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx BLE Host Stack/vlatest/ble-host/include/hci evt.h

### 2.18 hciExtAdvEnableParam\_t Struct Reference

Extended advertising enable parameters.

```
#include <hci_api.h>
```

Collaboration diagram for hciExtAdvEnableParam\_t:

### hciExtAdvEnableParam\_t

- + advHandle
- + duration
- + maxEaEvents

### **Data Fields**

uint8\_t advHandle

Advertising handle.

• uint16 t duration

Advertising duration in 10 ms units.

uint8\_t maxEaEvents

Maximum number of extended advertising events.

### 2.18.1 Detailed Description

Extended advertising enable parameters.

Definition at line 1081 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.19 hciExtAdvParam\_t Struct Reference

Extended advertising parameters.

```
#include <hci_api.h>
```

Collaboration diagram for hciExtAdvParam\_t:

### + advEventProp + priAdvInterMin + priAdvInterMax + priAdvChanMap

hciExtAdvParam\_t

- + ownAddrType + peerAddrType
- + pPeerAddr + advFiltPolicy
- + advTxPwr
- + priAdvPhy
- + secAdvMaxSkip
- + secAdvPhy + advSID
- + scanReqNotifEna

### **Data Fields**

uint16\_t advEventProp

Advertising Event Properties.

uint32\_t priAdvInterMin

Primary Advertising Interval Minimum.

uint32\_t priAdvInterMax

Primary Advertising Interval Maximum.

uint8\_t priAdvChanMap

Primary Advertising Channel Map.

uint8\_t ownAddrType

Own Address Type.

uint8\_t peerAddrType

Peer Address Type.

uint8\_t \* pPeerAddr

Peer Address.

uint8\_t advFiltPolicy

Advertising Filter Policy.

int8\_t advTxPwr

Advertising Tx Power.

uint8\_t priAdvPhy

Primary Advertising PHY.

uint8\_t secAdvMaxSkip

Secondary Advertising Maximum Skip.

uint8\_t secAdvPhy

Secondary Advertising PHY.

uint8\_t advSID

Advertising SID.

• uint8\_t scanReqNotifEna

Scan Request Notification Enable.

### 2.19.1 Detailed Description

Extended advertising parameters.

Definition at line 1062 of file hci\_api.h.

The documentation for this struct was generated from the following file:

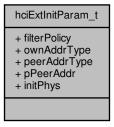
/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.20 hciExtInitParam t Struct Reference

Initiating parameters.

#include <hci\_api.h>

Collaboration diagram for hciExtInitParam\_t:



### **Data Fields**

uint8\_t filterPolicy

Scan filter policy.

uint8\_t ownAddrType

Address type used by this device.

uint8\_t peerAddrType

Address type used for peer device.

const uint8\_t \* pPeerAddr

Address of peer device.

uint8\_t initPhys

Initiating PHYs.

### 2.20.1 Detailed Description

Initiating parameters.

Definition at line 1045 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.21 hciExtInitScanParam\_t Struct Reference

Initiating scan parameters.

```
#include <hci_api.h>
```

Collaboration diagram for hciExtInitScanParam\_t:

hciExtInitScanParam\_t
+ scanInterval
+ scanWindow

### **Data Fields**

- uint16\_t scanInterval
  - Scan interval.
- uint16\_t scanWindow

Scan window.

### 2.21.1 Detailed Description

Initiating scan parameters.

Definition at line 1055 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.22 hciExtScanParam\_t Struct Reference

Extended scanning parameters.

```
#include <hci_api.h>
```

Collaboration diagram for hciExtScanParam\_t:

hciExtScanParam\_t

+ scanInterval
+ scanWindow
+ scanType

### **Data Fields**

- uint16\_t scanInterval
  - Scan interval.
- uint16\_t scanWindow
  - Scan window.
- uint8\_t scanType
  - Scan type.

### 2.22.1 Detailed Description

Extended scanning parameters.

Definition at line 1089 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.23 hciHwErrorEvt\_t Struct Reference

Hardware error event.

#include <hci\_api.h>

Collaboration diagram for hciHwErrorEvt\_t:

hciHwErrorEvt\_t
+ hdr
+ code

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t code

Error code.

### 2.23.1 Detailed Description

Hardware error event.

Definition at line 441 of file hci\_api.h.

The documentation for this struct was generated from the following file:

 $\bullet \ /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h$ 

### 2.24 HcilsoSetupDataPath\_t Struct Reference

Setup ISO data path parameters.

#include <hci\_api.h>

Collaboration diagram for HcilsoSetupDataPath\_t:

### HcilsoSetupDataPath\_t

- + handle
- + dpDir + dpId
- + codingFmt

- + codlingriff + compld + vsCodecld + ctrDly + codecConfigLen + pCodecConfig

### **Data Fields**

· uint16 t handle

Handle of CIS or BIS.

uint8\_t dpDir

Data path direction.

uint8\_t dpld

Data path ID.

uint8 t codingFmt

Coding Format.

uint16\_t compld

Company ID (ignored if 'codingFmt' not 0xFF).

uint16\_t vsCodecId

Vendor-defined codec ID (ignored if 'codingFmt' not 0xFF).

uint32\_t ctrDly

Controller delay (in usec).

• uint8\_t codecConfigLen

Codec configuration length.

uint8\_t \* pCodecConfig

Codec configuration.

### 2.24.1 **Detailed Description**

Setup ISO data path parameters.

Definition at line 1161 of file hci\_api.h.

The documentation for this struct was generated from the following file:

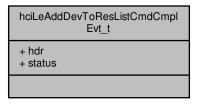
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.25 hciLeAddDevToResListCmdCmplEvt\_t Struct Reference

LE add device to resolving list command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeAddDevToResListCmdCmplEvt\_t:



### **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- · uint8 t status

Status.

### 2.25.1 Detailed Description

LE add device to resolving list command complete event.

Definition at line 576 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.26 hciLeAdvReportEvt\_t Struct Reference

LE advertising report event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeAdvReportEvt\_t:

### hciLeAdvReportEvt\_t + hdr + pData + len + rssi + eventType + addrType + addr + directAddrType + directAddr

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t \* pData

advertising or scan response data.

• uint8\_t len

length of advertising or scan response data.

int8\_t rssi

RSSI.

uint8\_t eventType

Advertising event type.

uint8\_t addrType

Address type.

bdAddr\_t addr

Device address.

uint8\_t directAddrType

Direct advertising address type.

bdAddr\_t directAddr

Direct advertising address.

### 2.26.1 Detailed Description

LE advertising report event.

Definition at line 211 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.27 hciLeAdvSetTermEvt\_t Struct Reference

LE advertising set terminated.

#include <hci\_api.h>

Collaboration diagram for hciLeAdvSetTermEvt\_t:

### hciLeAdvSetTermEvt\_t

- + hdr
- + status
- + advHandle
- + handle
- + numComplEvts

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

uint8\_t advHandle

Advertising handle.

• uint16\_t handle

Connection handle.

uint8\_t numComplEvts

Number of completed extended advertising events.

### 2.27.1 Detailed Description

LE advertising set terminated.

Definition at line 252 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.28 HciLeBigInfoAdvRptEvt\_t Struct Reference

LE BIG Info Advertising Report event.

```
#include <hci_api.h>
```

Collaboration diagram for HciLeBigInfoAdvRptEvt\_t:

# HciLeBigInfoAdvRptEvt\_t + hdr + syncHandle + numBis + nse + isoInterv + bn + pto + irc + maxPdu + sduInterv + maxSdu + phy + framing + encrypt

### **Data Fields**

- wsfMsgHdr t hdr
- uint16\_t syncHandle
- uint8\_t numBis
- uint8\_t nse
- uint16\_t isoInterv
- uint8\_t bn
- uint8\_t pto
- uint8\_t irc
- uint16\_t maxPdu
- uint32\_t sduInterv
- uint16\_t maxSdu
- uint8\_t phy
- · uint8\_t framing
- bool\_t encrypt

### 2.28.1 Detailed Description

LE BIG Info Advertising Report event.

Definition at line 843 of file hci\_api.h.

### 2.28.2 Field Documentation

2.28.2.1 hdr

wsfMsgHdr\_t HciLeBigInfoAdvRptEvt\_t::hdr

Event header.

Definition at line 845 of file hci\_api.h.

2.28.2.2 syncHandle

uint16\_t HciLeBigInfoAdvRptEvt\_t::syncHandle

Sync handle identifying the periodic advertising train.

Definition at line 846 of file hci\_api.h.

2.28.2.3 numBis

uint8\_t HciLeBigInfoAdvRptEvt\_t::numBis

Number of BIS.

Definition at line 847 of file hci\_api.h.

2.28.2.4 nse

uint8\_t HciLeBigInfoAdvRptEvt\_t::nse

Number of Sub-Events in each BIS event in the BIG.

Definition at line 848 of file hci\_api.h.

2.28.2.5 isoInterv

 $\verb|uint16_t| | \verb|HcileBigInfoAdvRptEvt_t:: isoInterv|\\$ 

ISO interval.

Definition at line 849 of file hci\_api.h.

### 2.28.2.6 bn

```
uint8_t HciLeBigInfoAdvRptEvt_t::bn
```

Number of new payloads in each BIS event.

Definition at line 850 of file hci\_api.h.

### 2.28.2.7 pto

```
uint8_t HciLeBigInfoAdvRptEvt_t::pto
```

Offset used for pre-transmissions.

Definition at line 851 of file hci\_api.h.

### 2.28.2.8 irc

```
uint8_t HciLeBigInfoAdvRptEvt_t::irc
```

Number of times a payload is transmitted in a BIS event.

Definition at line 852 of file hci\_api.h.

### 2.28.2.9 maxPdu

```
uint16_t HciLeBigInfoAdvRptEvt_t::maxPdu
```

Maximum size of the PDU.

Definition at line 853 of file hci\_api.h.

### 2.28.2.10 sduInterv

uint32\_t HciLeBigInfoAdvRptEvt\_t::sduInterv

SDU interval.

Definition at line 854 of file hci\_api.h.

### 2.28.2.11 maxSdu uint16\_t HciLeBigInfoAdvRptEvt\_t::maxSdu Maximum size of the SDU. Definition at line 855 of file hci\_api.h. 2.28.2.12 phy uint8\_t HciLeBigInfoAdvRptEvt\_t::phy Transmit PHY. Definition at line 856 of file hci\_api.h. 2.28.2.13 framing uint8\_t HciLeBigInfoAdvRptEvt\_t::framing Framing mode. Definition at line 857 of file hci\_api.h. 2.28.2.14 encrypt bool\_t HciLeBigInfoAdvRptEvt\_t::encrypt Encryption enabled. Definition at line 858 of file hci\_api.h.

 $\bullet \ /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h$ 

The documentation for this struct was generated from the following file:

### 2.29 HciLeBigSyncEstEvt\_t Struct Reference

LE BIG Sync Established event.

```
#include <hci_api.h>
```

Collaboration diagram for HciLeBigSyncEstEvt\_t:

### + hdr + status + bigHandle + transLatUsec + nse + bn + pto + irc + maxPdu + isoInterval + numBis + bisHandle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

uint8\_t bigHandle

BIG handle.

uint32\_t transLatUsec

The maximum time, in microseconds, for transmission of SDUs of all BISes.

• uint8 t nse

Number of Sub-Events in each BIS event in the BIG.

• uint8\_t bn

Number of new payloads in each BIS event.

uint8\_t pto

Offset used for pre-transmissions.

• uint8\_t irc

Number of times a payload is transmitted in a BIS event.

uint16\_t maxPdu

Maximum size of the payload.

• uint16\_t isoInterval

Time between two consecutive ISO anchor points.

uint8\_t numBis

Number of BIS.

uint16\_t bisHandle [HCI\_MAX\_BIS\_COUNT]

Connection handles of the BIS's.

### 2.29.1 Detailed Description

LE BIG Sync Established event.

Definition at line 818 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.30 HciLeBigSyncLostEvt\_t Struct Reference

LE BIG sync lost event.

```
#include <hci_api.h>
```

Collaboration diagram for HciLeBigSyncLostEvt\_t:

+ hdr + bigHandle + reason

### **Data Fields**

- wsfMsgHdr\_t hdr Event header.
- uint8\_t bigHandle

  BIG handle.
- · uint8\_t reason

Sync lost reason.

### 2.30.1 Detailed Description

LE BIG sync lost event.

Definition at line 835 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### HciLeBigTermSyncCmplEvt\_t Struct Reference 2.31

LE BIG Terminate Sync complete event.

#include <hci\_api.h>

Collaboration diagram for HciLeBigTermSyncCmplEvt\_t:

HciLeBigTermSyncCmplEvt\_t

- + hdr
- + status + bigHandle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

uint8\_t bigHandle

BIG handle.

### 2.31.1 Detailed Description

LE BIG Terminate Sync complete event.

Definition at line 810 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.32 hciLeChSelAlgoEvt\_t Struct Reference

LE channel selection algorithm.

#include <hci\_api.h>

Collaboration diagram for hciLeChSelAlgoEvt\_t:

+ hdr + handle + chSelAlgo

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint16\_t handle

Connection handle.

uint8\_t chSelAlgo

Channel selection algorithm.

### 2.32.1 Detailed Description

LE channel selection algorithm.

Definition at line 321 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### HciLeCisEstEvt\_t Struct Reference 2.33

### LE CIS established event.

```
#include <hci_api.h>
```

Collaboration diagram for HciLeCisEstEvt t:

### HciLeCisEstEvt t

- + hdr
- + status
- + cisHandle
- + cigSyncDelayUsec + cisSyncDelayUsec + transLatMToSUsec
- + transLatSToMUsec
- + phyMToS + phySToM
- + nse
- and 7 more...

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t cisHandle

CIS connection handle.

uint32\_t cigSyncDelayUsec

CIG synchronization delay in usec.

uint32 t cisSyncDelayUsec

CIS synchronization delay in usec.

uint32\_t transLatMToSUsec

The maximum time, in msec, for transmission of SDUs of all CISes from mater to slave.

uint32\_t transLatSToMUsec

The maximum time, in msec, for transmission of SDUs of all CISes from slave to master.

uint8\_t phyMToS

Master to slave PHY.

uint8\_t phySToM

Slave to master PHY.

• uint8\_t nse

Number of subevents.

uint8\_t bnMToS

Burst number master to slave.

uint8\_t bnSToM

Burst number slave to master.

• uint8\_t ftMToS

Flush timeout master to slave.

uint8 t ftSToM

Flush timeout slave to master.

uint16\_t maxPduMToS

Maximum payload size from master to slave.

uint16\_t maxPduSToM

Maximum payload size from slave to master.

· uint16 t isoInterval

Time between two consecutive ISO anchor points.

### 2.33.1 Detailed Description

LE CIS established event.

Definition at line 724 of file hci api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.34 HciLeCisReqEvt\_t Struct Reference

LE CIS request event.

#include <hci\_api.h>

Collaboration diagram for HciLeCisReqEvt\_t:



### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint16\_t aclHandle

ACL connection handle.

• uint16\_t cisHandle

CIS connection handle.

· uint8 t cigld

CIG identifier.

uint8\_t cisld

CIS identifier.

### 2.34.1 Detailed Description

LE CIS request event.

Definition at line 746 of file hci\_api.h.

The documentation for this struct was generated from the following file:

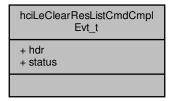
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.35 hciLeClearResListCmdCmplEvt\_t Struct Reference

LE clear resolving list command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeClearResListCmdCmplEvt\_t:



### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

### 2.35.1 Detailed Description

LE clear resolving list command complete event.

Definition at line 590 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.36 hciLeConnCmplEvt\_t Struct Reference

LE connection complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeConnCmplEvt\_t:

### hciLeConnCmplEvt\_t + hdr + status + handle + role + addrType + peerAddr + connInterval + connLatency + supTimeout + clockAccuracy + localRpa + peerRpa

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

Connection handle.

uint8\_t role

Local connection role.

uint8\_t addrType

Peer address type.

bdAddr\_t peerAddr

Peer address.

• uint16 t connInterval

Connection interval.

uint16\_t connLatency

Connection latency.

uint16\_t supTimeout

Supervision timeout.

uint8\_t clockAccuracy

Clock accuracy.

bdAddr\_t localRpa

Local RPA.

bdAddr\_t peerRpa

Peer RPA.

### 2.36.1 Detailed Description

LE connection complete event.

Definition at line 165 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.37 hciLeConnCteReqEnableCmdCmplEvt\_t Struct Reference

LE connection CTE request enable command complete event.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ hciLeConnCteReqEnableCmdCmplEvt\_t:$ 

hciLeConnCteReqEnableCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

### 2.37.1 Detailed Description

LE connection CTE request enable command complete event.

Definition at line 697 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.38 hciLeConnCteRspEnableCmdCmplEvt\_t Struct Reference

LE connection CTE response enable command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeConnCteRspEnableCmdCmplEvt\_t:

hciLeConnCteRspEnableCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

### 2.38.1 Detailed Description

LE connection CTE response enable command complete event.

Definition at line 705 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.39 hciLeConnlQReportEvt\_t Struct Reference

LE connection IQ report.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeConnIQReportEvt t:

### hciLeConnIQReportEvt\_t + hdr + handle + rxPhy + dataChldx + rssi + rssiAntennald + cteType + slotDurations + pktStatus + connEvtCnt + sampleCnt + plSample + pQSample

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint16\_t handle

Connection handle.

uint8\_t rxPhy

Rx Phy.

• uint8\_t dataChldx

Data Channel Index.

• int16\_t rssi

RSSI.

· uint8\_t rssiAntennald

RSSI Antenna ID.

uint8\_t cteType

CTE Type.

uint8\_t slotDurations

Slot Durations.

uint8\_t pktStatus

Packet Status.

uint16\_t connEvtCnt

Connection Event Counter.

uint8\_t sampleCnt

Sample Count.

int8\_t \* plSample

List of I Samples.

int8\_t \* pQSample

List of Q Samples.

### 2.39.1 Detailed Description

LE connection IQ report.

Definition at line 655 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.40 hciLeConnUpdateCmplEvt\_t Struct Reference

LE connection update complete event.

#include <hci\_api.h>

 $Collaboration\ diagram\ for\ hciLeConnUpdateCmplEvt\_t:$ 

### $hciLeConnUpdateCmplEvt\_t$

- + hdr
- + status
- + handle
- + connInterval
- + connLatency
- + supTimeout

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

• uint16\_t connInterval

Connection interval.

uint16\_t connLatency

Connection latency.

uint16\_t supTimeout

Supervision timeout.

### 2.40.1 Detailed Description

LE connection update complete event.

Definition at line 193 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.41 HciLeCreateBigCmplEvt\_t Struct Reference

LE Create BIG complete event.

#include <hci\_api.h>

Collaboration diagram for HciLeCreateBigCmplEvt\_t:

## HciLeCreateBigCmplEvt\_t + hdr + status + bigHandle + syncDelayUsec + transLatUsec + phy + nse + bn + pto + irc + maxPdu + isoInterval + numBis + bisHandle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

· uint8\_t status

Status.

uint8\_t bigHandle

BIG handle.

uint32\_t syncDelayUsec

Synchronization delay in microseconds.

uint32\_t transLatUsec

Transport latency, in microseconds.

uint8\_t phy

Transmit PHY.

• uint8\_t nse

Number of Sub-Events in each BIS event in the BIG.

uint8\_t bn

Number of new payloads in each BIS event.

uint8\_t pto

Offset used for pre-transmissions.

• uint8\_t irc

Number of times a payload is transmitted in a BIS event.

uint16\_t maxPdu

Maximum size of the payload.

uint16\_t isoInterval

Time between two consecutive ISO anchor points.

• uint8\_t numBis

Number of BIS.

uint16\_t bisHandle [HCI\_MAX\_BIS\_COUNT]

Connection handles of the BIS's.

### 2.41.1 Detailed Description

LE Create BIG complete event.

Definition at line 783 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.42 hciLeCreateConnCancelCmdCmplEvt\_t Struct Reference

LE create connection cancel command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeCreateConnCancelCmdCmplEvt\_t:

hciLeCreateConnCancelCmd CmplEvt\_t + hdr + status

### **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- uint8\_t status

Status.

### 2.42.1 Detailed Description

LE create connection cancel command complete event.

Definition at line 204 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.43 hciLeCteReqFailedEvt\_t Struct Reference

LE CTE request failed event.

#include <hci\_api.h>

Collaboration diagram for hciLeCteReqFailedEvt\_t:

hciLeCteReqFailedEvt\_t

+ hdr
+ status
+ handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

### 2.43.1 Detailed Description

LE CTE request failed event.

Definition at line 673 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.44 hciLeDataLenChangeEvt\_t Struct Reference

LE data length change event.

#include <hci\_api.h>

Collaboration diagram for hciLeDataLenChangeEvt\_t:

### hciLeDataLenChangeEvt\_t

- + hdr
- + handle
- + maxTxOctets
- + maxTxTime
- + maxRxOctets
- + maxRxTime

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint16\_t handle

Connection handle.

• uint16\_t maxTxOctets

Maximum Tx octets.

uint16\_t maxTxTime

Maximum Tx time.

uint16\_t maxRxOctets

Maximum Rx octets.

uint16\_t maxRxTime

Maximum Rx time.

### 2.44.1 Detailed Description

LE data length change event.

Definition at line 526 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.45 hciLeEncryptCmdCmplEvt\_t Struct Reference

LE encrypt command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeEncryptCmdCmplEvt\_t:

hciLeEncryptCmdCmplEvt\_t

+ hdr
+ status
+ data

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

uint8\_t data [HCI\_ENCRYPT\_DATA\_LEN]
 Data.

### 2.45.1 Detailed Description

LE encrypt command complete event.

Definition at line 448 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.46 hciLeExtAdvReportEvt\_t Struct Reference

LE extended advertising report.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeExtAdvReportEvt\_t:

### hciLeExtAdvReportEvt\_t + hdr + eventType + addrType + addr + priPhy + secPhy + advSid + txPower + rssi + perAdvInter + directAddrType + directAddr + len + pData

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint16\_t eventType

Event type.

uint8\_t addrType

Address type.

bdAddr\_t addr

Address.

uint8\_t priPhy

Primary PHY.

uint8\_t secPhy

Secondary PHY.

uint8\_t advSid

Advertising SID.

int8\_t txPower

Tx Power.

int8\_t rssi

RSSI.

int16\_t perAdvInter

Periodic advertising interval.

uint8\_t directAddrType

Directed address type.

bdAddr\_t directAddr

Directed address.

uint16\_t len

Data buffer length.

uint8\_t \* pData

Data buffer.

# 2.46.1 Detailed Description

LE extended advertising report.

Definition at line 227 of file hci\_api.h.

The documentation for this struct was generated from the following file:

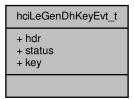
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.47 hciLeGenDhKeyEvt\_t Struct Reference

LE generate DH key command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeGenDhKeyEvt\_t:



# **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

uint8\_t key [HCI\_DH\_KEY\_LEN]

Diffie-Hellman (Share Secret) key.

# 2.47.1 Detailed Description

LE generate DH key command complete event.

Definition at line 545 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.48 hciLeLtkReqEvt\_t Struct Reference

LE LTK request event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeLtkReqEvt\_t:

# hciLeLtkReqEvt\_t

- + hdr
- + handle
- + randNum
- + encDiversifier

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint16\_t handle

Connection handle.

uint8\_t randNum [HCI\_RAND\_LEN]

LTK random number.

uint16\_t encDiversifier

LTK encryption diversifier.

# 2.48.1 Detailed Description

LE LTK request event.

Definition at line 409 of file hci\_api.h.

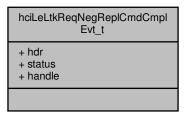
The documentation for this struct was generated from the following file:

# 2.49 hciLeLtkReqNegReplCmdCmplEvt\_t Struct Reference

LE LTK request negative reply command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeLtkReqNegReplCmdCmplEvt\_t:



### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.49.1 Detailed Description

LE LTK request negative reply command complete event.

Definition at line 384 of file hci\_api.h.

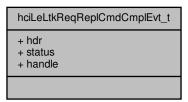
The documentation for this struct was generated from the following file:

# 2.50 hciLeLtkReqReplCmdCmplEvt\_t Struct Reference

LE LTK request reply command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeLtkReqReplCmdCmplEvt\_t:



### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

Connection handle.

# 2.50.1 Detailed Description

LE LTK request reply command complete event.

Definition at line 376 of file hci\_api.h.

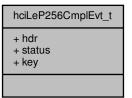
The documentation for this struct was generated from the following file:

# 2.51 hciLeP256CmplEvt\_t Struct Reference

LE local p256 ecc key command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeP256CmplEvt\_t:



### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint8\_t key [HCI\_P256\_KEY\_LEN]

P-256 public keys.

# 2.51.1 Detailed Description

LE local p256 ecc key command complete event.

Definition at line 537 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.52 hciLePerAdvReportEvt\_t Struct Reference

LE periodic advertising report.

```
#include <hci_api.h>
```

Collaboration diagram for hciLePerAdvReportEvt\_t:

# hciLePerAdvReportEvt\_t + hdr + syncHandle + txPower + rssi + unused + status + len + pData

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint16\_t syncHandle

Sync handle.

uint8\_t txPower

Tx power.

• uint8 t rssi

RSSI.

uint8\_t unused

Intended to be used in a future feature.

• uint8\_t status

Data status.

• uint16\_t len

Data buffer length.

uint8\_t \* pData

Data buffer.

# 2.52.1 Detailed Description

LE periodic advertising report.

Definition at line 285 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.53 hciLePerAdvSetInfoTrsfCmdCmplEvt\_t Struct Reference

LE set periodic advertising set info transfer command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLePerAdvSetInfoTrsfCmdCmplEvt\_t:

hciLePerAdvSetInfoTrsfCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.53.1 Detailed Description

LE set periodic advertising set info transfer command complete event.

Definition at line 647 of file hci\_api.h.

The documentation for this struct was generated from the following file:

### hciLePerAdvSyncEstEvt\_t Struct Reference 2.54

LE periodic advertising sync established.

```
#include <hci_api.h>
```

Collaboration diagram for hciLePerAdvSyncEstEvt\_t:

### hciLePerAdvSyncEstEvt\_t

- + hdr
- + status
- + syncHandle
- + advSid
- + advAddrType
- + advAddr
- + advPhy
- + perAdvInterval + clockAccuracy

### **Data Fields**

· wsfMsgHdr t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t syncHandle

Sync handle.

· uint8 t advSid

Advertising SID.

uint8\_t advAddrType

Advertiser address type.

bdAddr\_t advAddr

Advertiser address.

uint8\_t advPhy

Advertiser PHY.

uint16\_t perAdvInterval

Periodic advertising interval.

uint8\_t clockAccuracy

Advertiser clock accuracy.

# 2.54.1 Detailed Description

LE periodic advertising sync established.

Definition at line 271 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.55 hciLePerAdvSyncLostEvt\_t Struct Reference

LE periodic advertising synch lost.

```
#include <hci_api.h>
```

Collaboration diagram for hciLePerAdvSyncLostEvt\_t:

hciLePerAdvSyncLostEvt\_t
+ hdr
+ syncHandle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint16\_t syncHandle

Sync handle.

# 2.55.1 Detailed Description

LE periodic advertising synch lost.

Definition at line 298 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.56 hciLePerAdvSyncTrsfCmdCmplEvt\_t Struct Reference

LE periodic advertising sync transfer command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLePerAdvSyncTrsfCmdCmplEvt\_t:

hciLePerAdvSyncTrsfCmdCmpl Evt\_t + hdr + status + handle

# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.56.1 Detailed Description

LE periodic advertising sync transfer command complete event.

Definition at line 639 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.57 HciLePerAdvSyncTrsfRcvdEvt\_t Struct Reference

LE periodic advertising sync transfer received.

#include <hci\_api.h>

Collaboration diagram for HciLePerAdvSyncTrsfRcvdEvt\_t:

### HciLePerAdvSyncTrsfRcvdEvt\_t

- + hdr
- + status
- + connHandle
- + serviceData
- + syncHandle
- + advSid
- + advAddrType
- + advAddr
- + advPhy
- + perAdvInterval
- + clockAccuracy

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

· uint8 t status

Status.

• uint16\_t connHandle

Connection handle.

uint16\_t serviceData

Service data.

uint16\_t syncHandle

Sync handle.

uint8\_t advSid

Advertising SID.

uint8\_t advAddrType

Advertiser address type.

bdAddr\_t advAddr

Advertiser address.

uint8\_t advPhy

Advertiser PHY.

uint16\_t perAdvInterval

Periodic advertising interval.

uint8\_t clockAccuracy

Advertiser clock accuracy.

### 2.57.1 Detailed Description

LE periodic advertising sync transfer received.

Definition at line 305 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.58 hciLePhyUpdateEvt\_t Struct Reference

LE PHY update complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLePhyUpdateEvt\_t:

# hciLePhyUpdateEvt\_t + hdr + status + handle + txPhy + rxPhy

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

Handle.

uint8\_t txPhy

Tx PHY.

uint8\_t rxPhy

Rx PHY.

# 2.58.1 Detailed Description

LE PHY update complete event.

Definition at line 629 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.59 hciLeRandCmdCmplEvt\_t Struct Reference

LE rand command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeRandCmdCmplEvt\_t:

hciLeRandCmdCmplEvt\_t

+ hdr
+ status
+ randNum

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint8\_t randNum [HCI\_RAND\_LEN]

Random number buffer.

# 2.59.1 Detailed Description

LE rand command complete event.

Definition at line 456 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.60 hciLeReadAntennalnfoCmdCmplEvt\_t Struct Reference

LE read antenna information command complete event.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ hciLeReadAntennaInfoCmdCmplEvt\_t:$ 

# hciLeReadAntennaInfoCmdCmpl Evt\_t + hdr + status + switchSampleRates + numAntennae + switchPatternMaxLen + cteMaxLen

### **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status

• uint8\_t switchSampleRates

Supported Switching Sampling Rates.

• uint8\_t numAntennae

Number of Antennae.

uint8\_t switchPatternMaxLen

Max Length of Switching Pattern.

uint8\_t cteMaxLen

Max CTE Length.

### 2.60.1 Detailed Description

LE read antenna information command complete event.

Definition at line 713 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.61 hciLeReadDefDataLenEvt\_t Struct Reference

LE read suggested default data len command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeReadDefDataLenEvt\_t:

### hciLeReadDefDataLenEvt\_t

- + hdr
- + status
- + suggestedMaxTxOctets
- + suggestedMaxTxTime

# **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t suggestedMaxTxOctets

Suggested maximum Tx octets.

• uint16\_t suggestedMaxTxTime

Suggested maximum Tx time.

# 2.61.1 Detailed Description

LE read suggested default data len command complete event.

Definition at line 480 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.62 hciLeReadLocalResAddrCmdCmplEvt\_t Struct Reference

LE read local resolving address command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeReadLocalResAddrCmdCmplEvt\_t:

hciLeReadLocalResAddrCmd CmplEvt\_t + hdr + status + localRpa

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint8\_t localRpa [BDA\_ADDR\_LEN]

Local RPA.

# 2.62.1 Detailed Description

LE read local resolving address command complete event.

Definition at line 561 of file hci\_api.h.

The documentation for this struct was generated from the following file:

### 2.63 hciLeReadMaxDataLenEvt\_t Struct Reference

LE read maximum data len command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeReadMaxDataLenEvt\_t:

### hciLeReadMaxDataLenEvt\_t

- + status
- + supportedMaxTxOctets
- + supportedMaxTxTime + supportedMaxRxOctets
- + supportedMaxRxTime

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

· uint8\_t status

Status.

uint16\_t supportedMaxTxOctets

Supported maximum Tx octets.

uint16\_t supportedMaxTxTime

Supported maximum Tx time.

uint16\_t supportedMaxRxOctets

Supported maximum Rx octets.

uint16\_t supportedMaxRxTime

Supported maximum Rx time.

### **Detailed Description** 2.63.1

LE read maximum data len command complete event.

Definition at line 504 of file hci\_api.h.

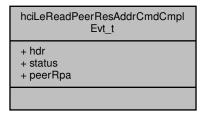
The documentation for this struct was generated from the following file:

# 2.64 hciLeReadPeerResAddrCmdCmplEvt\_t Struct Reference

LE read peer resolving address command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeReadPeerResAddrCmdCmplEvt\_t:



### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint8\_t peerRpa [BDA\_ADDR\_LEN]
  - Peer RPA.

# 2.64.1 Detailed Description

LE read peer resolving address command complete event.

Definition at line 553 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.65 hciLeReadPhyCmdCmplEvt\_t Struct Reference

LE read PHY command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeReadPhyCmdCmplEvt\_t:

### hciLeReadPhyCmdCmplEvt\_t

- + hd
- + status
- + handle
- + txPhy
- + rxPhy

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

uint8\_t txPhy

Tx PHY.

uint8\_t rxPhy

Rx PHY.

# 2.65.1 Detailed Description

LE read PHY command complete event.

Definition at line 612 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.66 hciLeReadRemoteFeatCmplEvt\_t Struct Reference

LE read remote features complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeReadRemoteFeatCmplEvt\_t:

# hciLeReadRemoteFeatCmplEvt\_t + hdr + status + handle + features

# **Data Fields**

· wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

Connection handle.

• uint8\_t features [HCI\_FEAT\_LEN]

Remote features buffer.

# 2.66.1 Detailed Description

LE read remote features complete event.

Definition at line 367 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.67 hciLeRemConnParamNegRepEvt\_t Struct Reference

LE remote connection parameter request negative reply command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeRemConnParamNegRepEvt\_t:

hciLeRemConnParamNegRepEvt\_t

+ hdr
+ status
+ handle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

Connection handle.

# 2.67.1 Detailed Description

LE remote connection parameter request negative reply command complete event.

Definition at line 472 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.68 hciLeRemConnParamRepEvt\_t Struct Reference

LE remote connection parameter request reply command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeRemConnParamRepEvt\_t:

# hciLeRemConnParamRepEvt\_t + hdr + status + handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.68.1 Detailed Description

LE remote connection parameter request reply command complete event.

Definition at line 464 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.69 hciLeRemConnParamReqEvt\_t Struct Reference

LE remote connetion parameter request event.

#include <hci\_api.h>

Collaboration diagram for hciLeRemConnParamReqEvt\_t:

### $\label{lem:connParamReqEvt\_t} h ciLeRemConnParamReqEvt\_t$

- + hdr
- + handle
- + intervalMin
- + intervalMax
- + latency
- + timeout

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint16\_t handle

Connection handle.

• uint16\_t intervalMin

Interval minimum.

• uint16\_t intervalMax

Interval maximum.

uint16\_t latency

Connection latency.

• uint16\_t timeout

Connection timeout.

# 2.69.1 Detailed Description

LE remote connetion parameter request event.

Definition at line 515 of file hci\_api.h.

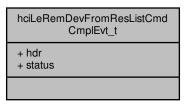
The documentation for this struct was generated from the following file:

# 2.70 hciLeRemDevFromResListCmdCmplEvt\_t Struct Reference

LE remove device from resolving list command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeRemDevFromResListCmdCmplEvt\_t:



### **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- uint8\_t status

Status.

# 2.70.1 Detailed Description

LE remove device from resolving list command complete event.

Definition at line 583 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.71 hciLeRemoveCigCmdCmplEvt\_t Struct Reference

LE remove CIG command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeRemoveCigCmdCmplEvt\_t:

hciLeRemoveCigCmdCmplEvt\_t

+ hdr
+ status
+ cigId

### **Data Fields**

- wsfMsgHdr\_t hdr Event header.
- uint8 t status

Status.

• uint8\_t cigld

CIG identifier.

### 2.71.1 Detailed Description

LE remove CIG command complete event.

Definition at line 775 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.72 hciLeRemovelsoDataPathCmdCmplEvt\_t Struct Reference

LE remove ISO data path command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeRemovelsoDataPathCmdCmplEvt\_t:

hciLeRemovelsoDataPathCmd CmplEvt\_t + hdr + status + handle

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

· uint8 t handle

Connection handle of the CIS or BIS.

# 2.72.1 Detailed Description

LE remove ISO data path command complete event.

Definition at line 870 of file hci api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.73 HciLeReqPeerScaCmplEvt\_t\_t Struct Reference

LE request peer SCA complete.

```
#include <hci_api.h>
```

Collaboration diagram for HciLeReqPeerScaCmplEvt\_t\_t:

HciLeReqPeerScaCmplEvt\_t\_t

- + hdi
- + status
- + handle
- + peerSca

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

• uint16\_t handle

ACL Connection handle.

uint8\_t peerSca

Peer SCA.

### 2.73.1 **Detailed Description**

LE request peer SCA complete.

Definition at line 756 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.74 hciLeScanReqRcvdEvt\_t Struct Reference

LE scan request received.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeScanReqRcvdEvt\_t:

### hciLeScanReqRcvdEvt\_t

- + advHandle
- + scanAddrType + scanAddr

### **Data Fields**

- · wsfMsgHdr\_t hdr Event header.
- uint8\_t advHandle

Advertising handle.

uint8\_t scanAddrType

Scanner address type.

bdAddr\_t scanAddr

Scanner address.

# 2.74.1 Detailed Description

LE scan request received.

Definition at line 262 of file hci\_api.h.

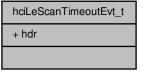
The documentation for this struct was generated from the following file:

# 2.75 hciLeScanTimeoutEvt\_t Struct Reference

LE scan timeout.

#include <hci\_api.h>

Collaboration diagram for hciLeScanTimeoutEvt\_t:



# **Data Fields**

 wsfMsgHdr\_t hdr Event header.

# 2.75.1 Detailed Description

LE scan timeout.

Definition at line 246 of file hci\_api.h.

The documentation for this struct was generated from the following file:

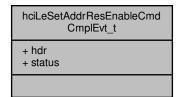
• /mnt/c/gpHub/Pxxx BLE Host Stack/vlatest/ble-host/include/hci api.h

# 2.76 hciLeSetAddrResEnableCmdCmplEvt\_t Struct Reference

LE set address resolving enable command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeSetAddrResEnableCmdCmplEvt\_t:



### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status

Status.

### 2.76.1 Detailed Description

LE set address resolving enable command complete event.

Definition at line 569 of file hci\_api.h.

The documentation for this struct was generated from the following file:

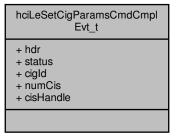
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.77 hciLeSetCigParamsCmdCmplEvt\_t Struct Reference

LE set CIG parameters command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeSetCigParamsCmdCmplEvt\_t:



# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint8\_t cigld
  - CIG identifier.
- uint8\_t numCis

Total number of CISes added or modified.

• uint16\_t cisHandle [HCI\_MAX\_CIS\_COUNT]

Connection handle of the CISes in the CIG.

# 2.77.1 Detailed Description

LE set CIG parameters command complete event.

Definition at line 765 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.78 hciLeSetConnCteRxParamsCmdCmplEvt\_t Struct Reference

LE set connection CTE receive parameters command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeSetConnCteRxParamsCmdCmplEvt\_t:

hciLeSetConnCteRxParamsCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

### 2.78.1 Detailed Description

LE set connection CTE receive parameters command complete event.

Definition at line 681 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.79 hciLeSetConnCteTxParamsCmdCmplEvt\_t Struct Reference

LE set connection CTE transmit parameters command complete event.

#include <hci\_api.h>

Collaboration diagram for hciLeSetConnCteTxParamsCmdCmplEvt\_t:

hciLeSetConnCteTxParamsCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.79.1 Detailed Description

LE set connection CTE transmit parameters command complete event.

Definition at line 689 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.80 hciLeSetDataLenEvt\_t Struct Reference

LE set data len command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeSetDataLenEvt\_t:

hciLeSetDataLenEvt\_t

+ hdr
+ status
+ handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint16\_t handle

Connection handle.

# 2.80.1 Detailed Description

LE set data len command complete event.

Definition at line 496 of file hci\_api.h.

The documentation for this struct was generated from the following file:

# 2.81 hciLeSetDefPhyCmdCmplEvt\_t Struct Reference

LE set default PHY command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeSetDefPhyCmdCmplEvt\_t:

hciLeSetDefPhyCmdCmplEvt\_t
+ hdr
+ status

### **Data Fields**

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

# 2.81.1 Detailed Description

LE set default PHY command complete event.

Definition at line 622 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.82 hciLeSetupIsoDataPathCmdCmpIEvt\_t Struct Reference

LE setup ISO data path command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciLeSetupIsoDataPathCmdCmpIEvt\_t:

hciLeSetupIsoDataPathCmd CmplEvt\_t + hdr + status + handle

### **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint8\_t handle

Connection handle of the CIS or BIS.

# 2.82.1 Detailed Description

LE setup ISO data path command complete event.

Definition at line 862 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.83 HciLeTerminateBigCmplEvt\_t Struct Reference

LE Terminate BIG complete event.

#include <hci\_api.h>

Collaboration diagram for HciLeTerminateBigCmplEvt\_t:

HciLeTerminateBigCmplEvt\_t

+ hdr
+ bigHandle
+ reason

# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t bigHandle
  - BIG handle.
- uint8\_t reason

Terminate reason.

# 2.83.1 Detailed Description

LE Terminate BIG complete event.

Definition at line 802 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.84 hciLeWriteDefDataLenEvt\_t Struct Reference

LE write suggested default data len command complete event.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ hciLeWriteDefDataLenEvt\_t:$ 

hciLeWriteDefDataLenEvt\_t
+ hdr
+ status

# **Data Fields**

- wsfMsgHdr\_t hdr
   Event header.
- uint8\_t status

Status.

# 2.84.1 Detailed Description

LE write suggested default data len command complete event.

Definition at line 489 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.85 hciLocalVerInfo\_t Struct Reference

Local version information.

```
#include <hci_api.h>
```

Collaboration diagram for hciLocalVerInfo\_t:

### hciLocalVerInfo\_t

- + hciVersion
- + hciRevision
- + ImpVersion
- + manufacturerName + ImpSubversion

### **Data Fields**

• uint8\_t hciVersion

HCI version.

• uint16\_t hciRevision

HCI revision.

uint8\_t ImpVersion

LMP version.

• uint16\_t manufacturerName

Manufacturer name.

• uint16\_t ImpSubversion

LMP Sub-version.

# 2.85.1 Detailed Description

Local version information.

Definition at line 935 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.86 hciReadChanMapCmdCmplEvt\_t Struct Reference

LE Read channel map command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciReadChanMapCmdCmplEvt\_t:

# hciReadChanMapCmdCmplEvt\_t + hdr + status + handle + chanMap

# **Data Fields**

wsfMsgHdr\_t hdr
 Event header.

• uint8\_t status

Status.

• uint16\_t handle

Connection handle.

• uint8\_t chanMap [HCI\_CHAN\_MAP\_LEN]

channel map.

# 2.86.1 Detailed Description

LE Read channel map command complete event.

Definition at line 338 of file hci\_api.h.

The documentation for this struct was generated from the following file:

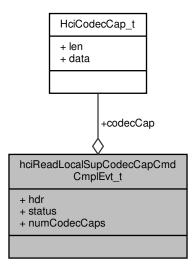
/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.87 hciReadLocalSupCodecCapCmdCmplEvt\_t Struct Reference

Read local supported codec capabilities command complete event.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ hciReadLocalSupCodecCapCmdCmplEvt\_t:$ 



# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint8\_t status
  - Status.
- uint8\_t numCodecCaps
- HciCodecCap\_t codecCap [HCI\_MAX\_CODEC]

Codec capabilities.

# 2.87.1 Detailed Description

Read local supported codec capabilities command complete event.

Definition at line 918 of file hci api.h.

# 2.87.2 Field Documentation

# 2.87.2.1 numCodecCaps

uint8\_t hciReadLocalSupCodecCapCmdCmplEvt\_t::numCodecCaps

Number of codec capabilities.

Definition at line 922 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

### 2.88 HciReadLocalSupCodecCaps\_t Struct Reference

Read local supported codec capabilities parameters.

```
#include <hci_api.h>
```

Collaboration diagram for HciReadLocalSupCodecCaps\_t:

# HciReadLocalSupCodecCaps\_t

- + codingFmt
- + compld
- + vsCodecld
- + transType
- + direction

# **Data Fields**

uint8\_t codingFmt

Coding Format.

uint16\_t compld

Company ID (ignored if 'codingFmt' not 0xFF).

uint16\_t vsCodecld

Vendor-defined codec ID (ignored if 'codingFmt' not 0xFF).

uint8\_t transType

Logical transport type.

· uint8\_t direction

Direction.

# 2.88.1 Detailed Description

Read local supported codec capabilities parameters.

Definition at line 1184 of file hci\_api.h.

The documentation for this struct was generated from the following file:

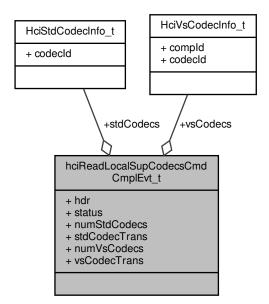
/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.89 hciReadLocalSupCodecsCmdCmplEvt\_t Struct Reference

Read local supported codecs command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciReadLocalSupCodecsCmdCmplEvt\_t:



# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint8 t numStdCodecs

Total number of standard codecs supported.

HciStdCodecInfo\_t stdCodecs [HCI\_MAX\_CODEC]

Standard codecs.

uint8\_t stdCodecTrans [HCI\_MAX\_CODEC]

Standard codec transport.

• uint8\_t numVsCodecs

Total number of vendor-specific codecs supported.

HciVsCodecInfo\_t vsCodecs [HCI\_MAX\_CODEC]

Vendor-specfic codecs.

uint8\_t vsCodecTrans [HCI\_MAX\_CODEC]

Vendor-specfic codec transport.

# 2.89.1 Detailed Description

Read local supported codecs command complete event.

Definition at line 898 of file hci api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.90 HciReadLocalSupControllerDly\_t Struct Reference

Read local supported controller delay parameters.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ HciReadLocalSupControllerDly\_t:$ 

# HciReadLocalSupController Dly\_t + codingFmt + compld + vsCodecld + transType + direction + codecConfigLen + pCodecConfig

uint8 t codingFmt

Coding Format.

uint16\_t compld

Company ID (ignored if 'codingFmt' not 0xFF).

uint16\_t vsCodecld

Vendor-defined codec ID (ignored if 'codingFmt' not 0xFF).

uint8\_t transType

Logical transport type.

• uint8\_t direction

Direction.

uint8\_t codecConfigLen

Length of codec configuration.

uint8\_t \* pCodecConfig

Codec-specific configuration data.

# 2.90.1 Detailed Description

Read local supported controller delay parameters.

Definition at line 1194 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.91 hciReadLocalSupCtrDlyCmdCmplEvt\_t Struct Reference

 $Collaboration\ diagram\ for\ hciReadLocalSupCtrDlyCmdCmplEvt\_t:$ 

hciReadLocalSupCtrDlyCmd CmplEvt\_t + hdr + status + minDly + maxDly

wsfMsgHdr\_t hdr

Event header.

• uint8\_t status

Status.

uint32\_t minDly

Minimum controller delay.

uint32\_t maxDly

Maximum controller delay.

# 2.91.1 Detailed Description

Definition at line 926 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.92 hciReadRemoteVerInfoCmplEvt\_t Struct Reference

Read remote version information complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciReadRemoteVerInfoCmplEvt\_t:

# hciReadRemoteVerInfoCmpl Evt\_t + hdr + status + handle + version + mfrName + subversion

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

uint8\_t version

Version.

uint16\_t mfrName

Manufacturer name.

• uint16\_t subversion

Sub-version.

# 2.92.1 Detailed Description

Read remote version information complete event.

Definition at line 356 of file hci\_api.h.

The documentation for this struct was generated from the following file:

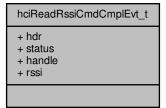
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.93 hciReadRssiCmdCmplEvt\_t Struct Reference

Read RSSI command complete event.

```
#include <hci_api.h>
```

 $Collaboration\ diagram\ for\ hciReadRssiCmdCmplEvt\_t:$ 



· wsfMsgHdr t hdr

Event header.

uint8\_t status

Status.

• uint16\_t handle

Connection handle.

int8\_t rssi

RSSI.

# 2.93.1 Detailed Description

Read RSSI command complete event.

Definition at line 329 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.94 hciReadTxPwrLvlCmdCmplEvt\_t Struct Reference

Read transmit power level command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciReadTxPwrLvlCmdCmplEvt\_t:

hciReadTxPwrLvlCmdCmplEvt\_t

+ hdr
+ status
+ handle
+ pwrLvl

# **Data Fields**

wsfMsgHdr\_t hdr

Event header.

uint8\_t status

Status.

• uint8\_t handle

Connection handle.

int8\_t pwrLvl

Tx power level.

# 2.94.1 Detailed Description

Read transmit power level command complete event.

Definition at line 347 of file hci\_api.h.

The documentation for this struct was generated from the following file:

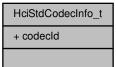
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.95 HciStdCodecInfo\_t Struct Reference

Standard codec info block.

```
#include <hci_api.h>
```

Collaboration diagram for HciStdCodecInfo\_t:



# **Data Fields**

• uint8\_t codecld

Codec ID.

# 2.95.1 Detailed Description

Standard codec info block.

Definition at line 885 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.96 hciVendorSpecCmdCmplEvt\_t Struct Reference

Vendor specific command complete event.

#include <hci\_api.h>

Collaboration diagram for hciVendorSpecCmdCmplEvt\_t:

hciVendorSpecCmdCmplEvt\_t

+ hdr
+ opcode
+ param

# **Data Fields**

- wsfMsgHdr\_t hdr
  - Event header.
- uint16\_t opcode
  - Opcode.
- uint8\_t param [1]

Operation parameter.

# 2.96.1 Detailed Description

Vendor specific command complete event.

Definition at line 425 of file hci\_api.h.

The documentation for this struct was generated from the following file:

/mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.97 hciVendorSpecCmdStatusEvt\_t Struct Reference

Vendor specific command status event.

#include <hci\_api.h>

Collaboration diagram for hciVendorSpecCmdStatusEvt t:

hciVendorSpecCmdStatusEvt\_t
+ hdr
+ opcode

# **Data Fields**

- wsfMsgHdr\_t hdr Event header.
- uint16\_t opcode Opcode.

# 2.97.1 Detailed Description

Vendor specific command status event.

Definition at line 418 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.98 hciVendorSpecEvt\_t Struct Reference

Vendor specific event.

#include <hci\_api.h>

Collaboration diagram for hciVendorSpecEvt\_t:



• wsfMsgHdr\_t hdr

Event header.

• uint8\_t param [1]

Vendor specific event.

• uint8\_t data [7]

generic data buffer to allow VS data with the event.

# 2.98.1 Detailed Description

Vendor specific event.

Definition at line 433 of file hci\_api.h.

The documentation for this struct was generated from the following file:

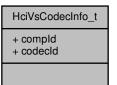
• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.99 HciVsCodecInfo\_t Struct Reference

Vendor-specific codec info block.

```
#include <hci_api.h>
```

Collaboration diagram for HciVsCodecInfo\_t:



# **Data Fields**

- uint16\_t compld
  - Company ID.
- uint16\_t codecld

Codec ID.

# 2.99.1 Detailed Description

Vendor-specific codec info block.

Definition at line 891 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

# 2.100 hciWriteAuthPayloadToCmdCmplEvt\_t Struct Reference

Write authenticated payload to command complete event.

```
#include <hci_api.h>
```

Collaboration diagram for hciWriteAuthPayloadToCmdCmplEvt\_t:

hciWriteAuthPayloadToCmd CmplEvt\_t + hdr + status + handle

# **Data Fields**

- wsfMsgHdr\_t hdr Event header.
- uint8\_t status

Status.

uint16\_t handle

Connection handle.

# 2.100.1 Detailed Description

Write authenticated payload to command complete event.

Definition at line 597 of file hci\_api.h.

The documentation for this struct was generated from the following file:

• /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h

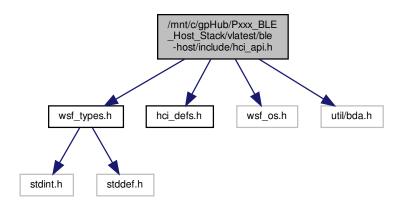
# **Chapter 3**

# **File Documentation**

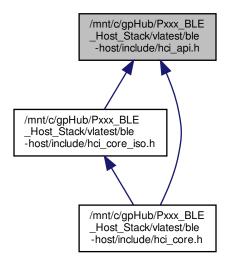
3.1 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_api.h File Reference

HCI subsystem API.

```
#include "wsf_types.h"
#include "hci_defs.h"
#include "wsf_os.h"
#include "util/bda.h"
Include dependency graph for hci_api.h:
```



This graph shows which files directly or indirectly include this file:



# **Data Structures**

struct hciLeConnCmplEvt\_t

LE connection complete event.

• struct hciDisconnectCmplEvt\_t

Disconnect complete event.

• struct hciLeConnUpdateCmplEvt\_t

LE connection update complete event.

struct hciLeCreateConnCancelCmdCmplEvt\_t

LE create connection cancel command complete event.

struct hciLeAdvReportEvt\_t

LE advertising report event.

• struct hciLeExtAdvReportEvt\_t

LE extended advertising report.

· struct hciLeScanTimeoutEvt\_t

LE scan timeout.

struct hciLeAdvSetTermEvt\_t

LE advertising set terminated.

• struct hciLeScanReqRcvdEvt\_t

LE scan request received.

struct hciLePerAdvSyncEstEvt\_t

LE periodic advertising sync established.

• struct hciLePerAdvReportEvt\_t

LE periodic advertising report.

struct hciLePerAdvSyncLostEvt\_t

LE periodic advertising synch lost.

• struct HciLePerAdvSyncTrsfRcvdEvt\_t

LE periodic advertising sync transfer received.

struct hciLeChSelAlgoEvt\_t

LE channel selection algorithm.

• struct hciReadRssiCmdCmplEvt t

Read RSSI command complete event.

struct hciReadChanMapCmdCmplEvt t

LE Read channel map command complete event.

struct hciReadTxPwrLvlCmdCmplEvt t

Read transmit power level command complete event.

struct hciReadRemoteVerInfoCmplEvt\_t

Read remote version information complete event.

struct hciLeReadRemoteFeatCmplEvt\_t

LE read remote features complete event.

struct hciLeLtkReqReplCmdCmplEvt\_t

LE LTK request reply command complete event.

struct hciLeLtkReqNegReplCmdCmplEvt\_t

LE LTK request negative reply command complete event.

struct hciEncKeyRefreshCmpl\_t

Encryption key refresh complete event.

struct hciEncChangeEvt t

Encryption change event.

struct hciLeLtkReqEvt\_t

LE LTK request event.

struct hciVendorSpecCmdStatusEvt\_t

Vendor specific command status event.

struct hciVendorSpecCmdCmplEvt\_t

Vendor specific command complete event.

struct hciVendorSpecEvt\_t

Vendor specific event.

struct hciHwErrorEvt t

Hardware error event.

struct hciLeEncryptCmdCmplEvt t

LE encrypt command complete event.

struct hciLeRandCmdCmplEvt\_t

LE rand command complete event.

struct hciLeRemConnParamRepEvt\_t

LE remote connection parameter request reply command complete event.

struct hciLeRemConnParamNegRepEvt\_t

LE remote connection parameter request negative reply command complete event.

struct hciLeReadDefDataLenEvt t

LE read suggested default data len command complete event.

• struct hciLeWriteDefDataLenEvt t

LE write suggested default data len command complete event.

struct hciLeSetDataLenEvt\_t

LE set data len command complete event.

struct hciLeReadMaxDataLenEvt t

LE read maximum data len command complete event.

struct hciLeRemConnParamReqEvt\_t

LE remote connetion parameter request event.

struct hciLeDataLenChangeEvt\_t

LE data length change event.

struct hciLeP256CmplEvt\_t

LE local p256 ecc key command complete event.

struct hciLeGenDhKeyEvt t

LE generate DH key command complete event.

struct hciLeReadPeerResAddrCmdCmplEvt\_t

LE read peer resolving address command complete event.

struct hciLeReadLocalResAddrCmdCmplEvt\_t

LE read local resolving address command complete event.

struct hciLeSetAddrResEnableCmdCmplEvt t

LE set address resolving enable command complete event.

struct hciLeAddDevToResListCmdCmplEvt\_t

LE add device to resolving list command complete event.

struct hciLeRemDevFromResListCmdCmplEvt\_t

LE remove device from resolving list command complete event.

struct hciLeClearResListCmdCmplEvt t

LE clear resolving list command complete event.

• struct hciWriteAuthPayloadToCmdCmplEvt\_t

Write authenticated payload to command complete event.

struct hciAuthPayloadToExpiredEvt t

Authenticated payload to expire event.

struct hciLeReadPhyCmdCmplEvt t

LE read PHY command complete event.

struct hciLeSetDefPhyCmdCmplEvt\_t

LE set default PHY command complete event.

struct hciLePhyUpdateEvt\_t

LE PHY update complete event.

struct hciLePerAdvSyncTrsfCmdCmplEvt\_t

LE periodic advertising sync transfer command complete event.

struct hciLePerAdvSetInfoTrsfCmdCmplEvt\_t

LE set periodic advertising set info transfer command complete event.

struct hciLeConnlQReportEvt t

LE connection IQ report.

· struct hciLeCteReqFailedEvt\_t

LE CTE request failed event.

struct hciLeSetConnCteRxParamsCmdCmplEvt\_t

LE set connection CTE receive parameters command complete event.

struct hciLeSetConnCteTxParamsCmdCmplEvt\_t

LE set connection CTE transmit parameters command complete event.

struct hciLeConnCteReqEnableCmdCmplEvt t

LE connection CTE request enable command complete event.

struct hciLeConnCteRspEnableCmdCmplEvt\_t

LE connection CTE response enable command complete event.

struct hciLeReadAntennaInfoCmdCmplEvt\_t

LE read antenna information command complete event.

struct HciLeCisEstEvt\_t

LE CIS established event.

struct HciLeCisReqEvt\_t

LE CIS request event.

struct HciLeReqPeerScaCmplEvt t t

LE request peer SCA complete.

• struct hciLeSetCigParamsCmdCmplEvt\_t

LE set CIG parameters command complete event.

struct hciLeRemoveCigCmdCmplEvt\_t

LE remove CIG command complete event.

struct HciLeCreateBigCmplEvt\_t

LE Create BIG complete event.

struct HciLeTerminateBigCmplEvt\_t

LE Terminate BIG complete event.

struct HciLeBigTermSyncCmplEvt\_t

LE BIG Terminate Sync complete event.

struct HciLeBigSyncEstEvt\_t

LE BIG Sync Established event.

struct HciLeBigSyncLostEvt\_t

LE BIG sync lost event.

struct HciLeBigInfoAdvRptEvt\_t

LE BIG Info Advertising Report event.

struct hciLeSetupIsoDataPathCmdCmplEvt\_t

LE setup ISO data path command complete event.

struct hciLeRemovelsoDataPathCmdCmplEvt t

LE remove ISO data path command complete event.

• struct hciConfigDataPathCmdCmplEvt t

Config data path command complete event.

struct HciStdCodecInfo t

Standard codec info block.

struct HciVsCodecInfo\_t

Vendor-specific codec info block.

struct hciReadLocalSupCodecsCmdCmplEvt\_t

Read local supported codecs command complete event.

struct HciCodecCap\_t

Codec capability block.

struct hciReadLocalSupCodecCapCmdCmplEvt\_t

Read local supported codec capabilities command complete event.

- struct hciReadLocalSupCtrDlyCmdCmplEvt\_t
- struct hciLocalVerInfo\_t

Local version information.

· union hciEvt t

Union of all event types.

struct hciConnSpec\_t

Connection specification type.

struct hciExtInitParam\_t

Initiating parameters.

• struct hciExtInitScanParam\_t

Initiating scan parameters.

struct hciExtAdvParam\_t

Extended advertising parameters.

struct hciExtAdvEnableParam t

Extended advertising enable parameters.

struct hciExtScanParam\_t

Extended scanning parameters.

· struct HciCisCisParams t

CIS parameters.

• struct HciCisCigParams\_t

CIG parameters.

struct HciCisCreateCisParams t

CIS create CIS parameters.

struct HciCreateBig t

BIG Create BIG parameters.

struct HciBigCreateSync\_t

BIG Create Sync parameters.

struct HcilsoSetupDataPath t

Setup ISO data path parameters.

· struct HciConfigDataPath\_t

Configure data path parameters.

struct HciReadLocalSupCodecCaps t

Read local supported codec capabilities parameters.

struct HciReadLocalSupControllerDly\_t

Read local supported controller delay parameters.

# **Macros**

### **HCI Internal Event Codes**

Proprietary HCI event codes for handling HCI events in callbacks.

#define HCI RESET SEQ CMPL CBACK EVT 0

Reset sequence complete.

#define HCI\_LE\_CONN\_CMPL\_CBACK\_EVT 1

LE connection complete.

#define HCI\_LE\_ENHANCED\_CONN\_CMPL\_CBACK\_EVT 2

LE enhanced connection complete.

• #define HCI\_DISCONNECT\_CMPL\_CBACK\_EVT 3

Disconnect complete.

• #define HCI LE CONN UPDATE CMPL CBACK EVT 4

LE connection update complete.

• #define HCI LE CREATE CONN CANCEL CMD CMPL CBACK EVT 5

LE create connection cancel command complete.

#define HCI\_LE\_ADV\_REPORT\_CBACK\_EVT 6

LE advertising report.

#define HCI\_READ\_RSSI\_CMD\_CMPL\_CBACK\_EVT 7

Read RSSI command complete.

#define HCI\_LE\_READ\_CHAN\_MAP\_CMD CMPL CBACK EVT 8

LE Read channel map command complete.

• #define HCI READ TX PWR LVL CMD CMPL CBACK EVT 9

Read transmit power level command complete.

• #define HCI\_READ\_REMOTE\_VER\_INFO\_CMPL\_CBACK\_EVT 10

Read remote version information complete.

#define HCI\_LE\_READ\_REMOTE\_FEAT\_CMPL\_CBACK\_EVT 11

LE read remote features complete.

#define HCI\_LE\_LTK\_REQ\_REPL\_CMD\_CMPL\_CBACK\_EVT 12

LE LTK request reply command complete.

• #define HCI\_LE\_LTK\_REQ\_NEG\_REPL\_CMD\_CMPL\_CBACK\_EVT 13

LE LTK request negative reply command complete.

#define HCI\_ENC\_KEY\_REFRESH\_CMPL\_CBACK\_EVT 14

Encryption key refresh complete.

#define HCI\_ENC\_CHANGE\_CBACK\_EVT 15

Encryption change.

#define HCI\_LE\_LTK\_REQ\_CBACK\_EVT 16

LE LTK request.

#define HCI\_VENDOR\_SPEC\_CMD\_STATUS\_CBACK\_EVT 17

Vendor specific command status.

#define HCI VENDOR SPEC CMD CMPL CBACK EVT 18

Vendor specific command complete.

#define HCI\_VENDOR\_SPEC\_CBACK\_EVT 19

Vendor specific.

#define HCI HW ERROR CBACK EVT 20

Hardware error.

• #define HCI LE ADD DEV TO RES LIST CMD CMPL CBACK EVT 21

LE add device to resolving list command complete.

#define HCI LE REM DEV FROM RES LIST CMD CMPL CBACK EVT 22

LE remove device from resolving command complete.

#define HCI LE CLEAR RES LIST CMD CMPL CBACK EVT 23

LE clear resolving list command complete.

• #define HCI\_LE\_READ\_PEER\_RES\_ADDR\_CMD\_CMPL CBACK EVT 24

LE read peer resolving address command complete.

#define HCI\_LE\_READ\_LOCAL\_RES\_ADDR\_CMD\_CMPL\_CBACK\_EVT 25

LE read local resolving address command complete.

#define HCI LE SET ADDR RES ENABLE CMD CMPL CBACK EVT 26

LE set address resolving enable command complete.

• #define HCI LE ENCRYPT CMD CMPL CBACK EVT 27

LE encrypt command complete.

#define HCI LE RAND CMD CMPL CBACK EVT 28

LE rand command complete.

• #define HCI\_LE\_REM\_CONN\_PARAM\_REP\_CMD\_CMPL\_CBACK\_EVT 29

LE remote connection parameter request reply complete.

• #define HCI LE REM CONN PARAM NEG REP CMD CMPL CBACK EVT 30

LE remote connection parameter request negative reply complete.

• #define HCI LE READ DEF DATA LEN CMD CMPL CBACK EVT 31

LE read suggested default data length command complete.

#define HCI LE WRITE DEF DATA LEN CMD CMPL CBACK EVT 32

LE write suggested default data length command complete.

• #define HCI\_LE\_SET\_DATA\_LEN\_CMD\_CMPL\_CBACK\_EVT 33

LE set data length command complete.

• #define HCI LE READ MAX DATA LEN CMD CMPL CBACK EVT 34

LE read maximum data length command complete.

#define HCI\_LE\_REM\_CONN\_PARAM\_REQ\_CBACK\_EVT 35

LE remote connection parameter request.

#define HCI\_LE\_DATA\_LEN\_CHANGE\_CBACK\_EVT 36

LE data length change.

• #define HCI\_LE\_READ\_LOCAL\_P256\_PUB\_KEY\_CMPL\_CBACK\_EVT 37

LE read local P-256 public key.

#define HCI\_LE\_GENERATE\_DHKEY\_CMPL\_CBACK\_EVT 38

LE generate DHKey complete.

#define HCI\_WRITE\_AUTH\_PAYLOAD\_TO\_CMD\_CMPL\_CBACK\_EVT 39

Write authenticated payload timeout command complete.

#define HCI\_AUTH\_PAYLOAD\_TO\_EXPIRED\_CBACK\_EVT 40

Authenticated payload timeout expired event.

#define HCI\_LE\_READ\_PHY\_CMD\_CMPL\_CBACK\_EVT 41

LE read phy command complete.

#define HCI\_LE\_SET\_DEF\_PHY\_CMD\_CMPL\_CBACK\_EVT 42

LE set default phy command complete.

• #define HCI\_LE\_PHY\_UPDATE\_CMPL\_CBACK\_EVT 43

LE phy update complete.

#define HCI LE EXT ADV REPORT CBACK EVT 44

LE extended advertising report.

• #define HCI LE SCAN TIMEOUT CBACK EVT 45

LE scan timeout event.

#define HCI\_LE\_ADV\_SET\_TERM\_CBACK\_EVT 46

LE advertising set terminated event.

#define HCI LE SCAN REQ RCVD CBACK EVT 47

LE scan request received event.

#define HCI LE PER ADV SYNC EST CBACK EVT 48

LE periodic advertising sync established event.

• #define HCI\_LE\_PER\_ADV\_REPORT\_CBACK\_EVT 49

LE periodic advertising report event.

#define HCI LE PER ADV SYNC LOST CBACK EVT 50

LE periodic advertising synch lost event.

• #define HCI\_LE\_CH\_SEL\_ALGO\_CBACK\_EVT 51

LE channel selection algorithm event.

#define HCI LE SCAN ENABLE CMD CMPL CBACK EVT 52

LE scan enable command complete.

• #define HCI\_LE\_ADV\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 53

LE advertise enable command complete.

#define HCI\_LE\_EXT\_SCAN\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 54

LE extended scan enable command complete.

#define HCI\_LE\_EXT\_ADV\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 55

LE extended advertise enable command complete.

#define HCI LE PER ADV ENABLE CMD CMPL CBACK EVT 56

LE periodic advertise enable command complete.

#define HCI\_LE\_SET\_RAND\_ADDR\_CMD\_CMPL\_CBACK\_EVT 57

LE set random address command complete.

#define HCI LE PER SYNC TRSF RCVD CBACK EVT 58

LE periodic advertising sync transfer received event.

#define HCI LE PER ADV SYNC TRSF CMD CMPL CBACK EVT 59

LE periodic advertising sync transfer command complete.

#define HCI\_LE\_PER\_ADV\_SET\_INFO\_TRSF\_CMD\_CMPL\_CBACK\_EVT 60

LE set periodic advertising set info transfer command complete.

#define HCI\_LE\_CONN\_IQ\_REPORT\_CBACK\_EVT 61

LE connection IQ report event.

• #define HCI LE CTE REQ FAILED CBACK EVT 62

LE CTE request failed event.

• #define HCI LE SET CONN CTE RX PARAMS CMD CMPL CBACK EVT 63

LE set connection CTE receive parameters command complete.

#define HCI\_LE\_SET\_CONN\_CTE\_TX\_PARAMS\_CMD\_CMPL\_CBACK\_EVT 64

LE set connection CTE transmit parameters command complete.

#define HCI\_LE\_CONN\_CTE\_REQ\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 65

LE connection CTE request enable command complete.

#define HCI\_LE\_CONN\_CTE\_RSP\_ENABLE\_CMD\_CMPL\_CBACK\_EVT 66

LE connection CTE response enable command complete.

• #define HCI LE READ ANTENNA INFO CMD CMPL CBACK EVT 67

LE read antenna information command complete.

• #define HCI LE CIS EST CBACK EVT 68

LE CIS established event.

• #define HCI\_LE\_CIS\_REQ\_CBACK\_EVT 69

LE CIS request event.

#define HCI\_CIS\_DISCONNECT\_CMPL\_CBACK\_EVT 70

CIS disconnect complete.

• #define HCI LE REQ PEER SCA CBACK EVT 71

LE Request peer SCA complete.

• #define HCI LE SET CIG PARAMS CMD CMPL CBACK EVT 72

LE set CIG parameters command complete.

• #define HCI LE REMOVE CIG CMD CMPL CBACK EVT 73

LE remove CIG command complete.

#define HCI\_LE\_SETUP\_ISO\_DATA\_PATH\_CMD\_CMPL\_CBACK\_EVT 74

LE setup ISO data path command complete.

#define HCI\_LE\_REMOVE\_ISO\_DATA\_PATH\_CMD\_CMPL\_CBACK\_EVT 75

LE remove ISO data path command complete.

• #define HCI\_CONFIG\_DATA\_PATH\_CMD\_CMPL\_CBACK\_EVT 76

Configure data path command complete.

#define HCI READ LOCAL SUP CODECS CMD CMPL CBACK EVT 77

Read local supported codecs command complete.

#define HCI\_READ\_LOCAL\_SUP\_CODEC\_CAP\_CMD\_CMPL\_CBACK\_EVT 78

Read local supported codec capabilities command complete.

#define HCI READ LOCAL SUP CTR DLY CMD CMPL CBACK EVT 79

Read local supported controller delay command complete.

• #define HCI\_LE\_CREATE\_BIG\_CMPL\_CBACK\_EVT 80

LE create BIG complete.

#define HCI\_LE\_TERM\_BIG\_CMPL\_CBACK\_EVT 81

LE terminate BIG complete.

#define HCI\_LE\_BIG\_SYNC\_EST\_CBACK\_EVT 82

LE BIG sync established.

#define HCI\_LE\_BIG\_SYNC\_LOST\_CBACK\_EVT 83

LE BIG sync lost.

• #define HCI\_LE\_BIG\_TERM\_SYNC\_CMPL\_CBACK\_EVT 84

LE BIG terminate sync complete.

• #define HCI LE BIG INFO ADV REPORT CBACK EVT 85

LE BIG Info advertising report.

# **Typedefs**

typedef void(\* hciUnhandledCmdComplEvtCback t) (uint16 t opCode, uint8 t status, void \*param)

HCI direct event callback type.

typedef void(\* hciEvtCback t) (hciEvt t \*pEvent)

HCI event callback type.

typedef void(\* hciSecCback t) (hciEvt t \*pEvent)

HCI security callback type.

typedef void(\* hciAclCback\_t) (uint8\_t \*pData)

HCI ACL callback type.

• typedef void(\* hcilsoCback\_t) (uint8\_t \*pData)

HCI ISO callback type.

typedef void(\* hciFlowCback\_t) (uint16\_t handle, bool\_t flowDisabled)

HCI flow control callback type.

# **Functions**

void HciVsAeInit (uint8\_t param)

Vendor-specific controller AE initialization function.

# HCI Initialization, Registration, Reset

Register a callback for Command Complete events not handled by Stack.

void HciEvtRegister (hciEvtCback\_t evtCback)

Register a callback for HCI events.

void HciSecRegister (hciSecCback\_t secCback)

Register a callback for certain HCI security events.

void HciAclRegister (hciAclCback t aclCback, hciFlowCback t flowCback)

Register callbacks for the HCI data path.

void HcilsoRegister (hcilsoCback\_t isoCback, hciFlowCback\_t flowCback)

Register callbacks for the HCI ISO data path.

void HciResetSequence (void)

Initiate an HCI reset sequence.

· void HciVsInit (uint8 t param)

Vendor-specific controller initialization function.

void HciCoreInit (void)

HCI core initialization.

void HciCoreHandler (wsfEventMask\_t event, wsfMsgHdr\_t \*pMsg)

WSF event handler for core HCI.

void HciSetMaxRxAclLen (uint16 t len)

Set the maximum reassembled RX ACL packet length. Minimum value is 27.

void HciSetAclQueueWatermarks (uint8 t queueHi, uint8 t queueLo)

Set TX ACL queue high and low watermarks.

void HciSetLeSupFeat (uint64\_t feat, bool\_t flag)

Set LE supported features configuration mask.

void HciSetLeSupFeat32 (uint32\_t feat, bool\_t flag)

Set LE supported features configuration mask.

# **HCI Optimization Interface Functions**

This is an optimized interface for certain HCI commands that simply read a value. The stack uses these functions rather than their corresponding functions in the command interface. These functions can only be called after the reset sequence has been completed.

uint8\_t \* HciGetBdAddr (void)

Return a pointer to the BD address of this device.

• uint8 t HciGetWhiteListSize (void)

Return the white list size.

int8 t HciGetAdvTxPwr (void)

Return the advertising transmit power.

uint16\_t HciGetBufSize (void)

Return the ACL buffer size supported by the controller.

uint8\_t HciGetNumBufs (void)

Return the number of ACL buffers supported by the controller.

uint8\_t \* HciGetSupStates (void)

Return the states supported by the controller.

uint64\_t HciGetLeSupFeat (void)

Return the LE supported features supported by the controller.

uint32\_t HciGetLeSupFeat32 (void)

Return the LE supported features supported by the controller.

uint16\_t HciGetMaxRxAclLen (void)

Get the maximum reassembled RX ACL packet length.

uint8 t HciGetResolvingListSize (void)

Return the resolving list size.

bool\_t HciLlPrivacySupported (void)

Whether LL Privacy is supported.

uint16\_t HciGetMaxAdvDataLen (void)

Get the maximum advertisement (or scan response) data length supported by the Controller.

uint8\_t HciGetNumSupAdvSets (void)

Get the maximum number of advertising sets supported by the Controller.

bool\_t HciLeAdvExtSupported (void)

Whether LE Advertising Extensions is supported.

uint8 t HciGetPerAdvListSize (void)

Return the periodic advertising list size.

hciLocalVerInfo\_t \* HciGetLocalVerInfo (void)

Return a pointer to the local version information.

# **HCI ACL Data Functions**

HCI ACL data interface

void HciSendAclData (uint8\_t \*pAclData)

Send ACL Data from the stack to HCI.

### **HCI Command Interface Functions**

HCI commands

void HciDisconnectCmd (uint16 t handle, uint8 t reason)

HCI disconnect command.

void HciLeAddDevWhiteListCmd (uint8 t addrType, uint8 t \*pAddr)

HCI LE add device white list command.

void HciLeClearWhiteListCmd (void)

HCI LE clear white list command.

void HciLeConnUpdateCmd (uint16\_t handle, hciConnSpec\_t \*pConnSpec)

HCI connection update command.

void HciLeCreateConnCmd (uint16\_t scanInterval, uint16\_t scanWindow, uint8\_t filterPolicy, uint8\_t peer
 — AddrType, uint8 t \*pPeerAddr, uint8 t ownAddrType, hciConnSpec t \*pConnSpec)

HCI LE create connection command.

void HciLeCreateConnCancelCmd (void)

HCI LE create connection cancel command.

void HciLeEncryptCmd (uint8\_t \*pKey, uint8\_t \*pData)

HCI LE encrypt command.

void HciLeLtkReqNegReplCmd (uint16\_t handle)

HCI LE long term key request negative reply command.

void HciLeLtkReqReplCmd (uint16 t handle, uint8 t \*pKey)

HCI LE long term key request reply command.

void HciLeRandCmd (void)

HCI LE random command.

void HciLeReadAdvTXPowerCmd (void)

HCI LE read advertising TX power command.

void HciLeReadBufSizeCmd (void)

HCI LE read buffer size command.

void HciLeReadBufSizeCmdV2 (void)

HCI LE read buffer size version 2 command.

void HciLeReadChanMapCmd (uint16\_t handle)

HCI LE read channel map command.

void HciLeReadLocalSupFeatCmd (void)

HCI LE read local supported feautre command.

void HciLeReadRemoteFeatCmd (uint16\_t handle)

HCI LE read remote feature command.

void HciLeReadSupStatesCmd (void)

HCI LE read supported states command.

void HciLeReadWhiteListSizeCmd (void)

HCI LE read white list size command.

void HciLeRemoveDevWhiteListCmd (uint8 t addrType, uint8 t \*pAddr)

HCI LE remove device white list command.

void HciLeSetAdvEnableCmd (uint8\_t enable)

HCI LE set advanced enable command.

void HciLeSetAdvDataCmd (uint8\_t len, uint8\_t \*pData)

HCI LE set advertising data command.

void HciLeSetAdvParamCmd (uint16\_t advIntervalMin, uint16\_t advIntervalMax, uint8\_t advType, uint8\_t ownAddrType, uint8\_t peerAddrType, uint8\_t \*pPeerAddr, uint8\_t advChanMap, uint8\_t advFiltPolicy)

HCI LE set advertising parameters command.

void HciLeSetEventMaskCmd (uint8 t \*pLeEventMask)

HCI LE set event mask command.

void HciLeSetHostChanClassCmd (uint8\_t \*pChanMap)

HCI set host channel class command.

void HciLeSetRandAddrCmd (uint8 t \*pAddr)

HCI LE set random address command.

void HciLeSetScanEnableCmd (uint8 t enable, uint8 t filterDup)

HCI LE set scan enable command.

void HciLeSetScanParamCmd (uint8\_t scanType, uint16\_t scanInterval, uint16\_t scanWindow, uint8\_
 t ownAddrType, uint8\_t scanFiltPolicy)

HCI set scan parameters command.

void HciLeSetScanRespDataCmd (uint8\_t len, uint8\_t \*pData)

HCI LE set scan response data.

• void HciLeStartEncryptionCmd (uint16\_t handle, uint8\_t \*pRand, uint16\_t diversifier, uint8\_t \*pKey)

HCI LE start encryption command.

void HciReadBdAddrCmd (void)

HCI read BD address command.

void HciReadBufSizeCmd (void)

HCI read buffer size command.

void HciReadLocalSupFeatCmd (void)

HCI read local supported feature command.

void HciReadLocalVerInfoCmd (void)

HCI read local version info command.

void HciReadRemoteVerInfoCmd (uint16\_t handle)

HCI read remote version info command.

void HciReadRssiCmd (uint16\_t handle)

HCI read RSSI command.

void HciReadTxPwrLvlCmd (uint16 t handle, uint8 t type)

HCI read Tx power level command.

 void HciHostBufferSizeCmd (uint16\_t hostAclDataPacketLength, uint8\_t hostSynDataPacketLength, uint16 t hostTotalNumAclDataPackets, uint16 t hostTotalNumSynDataPackets)

HCI Host Buffer Size Command.

void HciResetCmd (void)

HCI reset command.

void HciSetEventMaskCmd (uint8\_t \*pEventMask)

HCI set event mask command.

void HciSetEventMaskPage2Cmd (uint8 t \*pEventMask)

HCI set event page 2 mask command.

void HciReadAuthPayloadTimeout (uint16 t handle)

HCI read authenticated payload timeout command.

• void HciWriteAuthPayloadTimeout (uint16 t handle, uint16 t timeout)

HCI write authenticated payload timeout command.

 void HciLeAddDeviceToResolvingListCmd (uint8\_t peerAddrType, const uint8\_t \*pPeerIdentityAddr, const uint8\_t \*pPeerIrk, const uint8\_t \*pLocalIrk)

HCI add device to resolving list command.

• void HciLeRemoveDeviceFromResolvingList (uint8\_t peerAddrType, const uint8\_t \*pPeerIdentityAddr)

HCI remove device from resolving list command.

void HciLeClearResolvingList (void)

HCI clear resolving list command.

void HciLeReadResolvingListSize (void)

HCI read resolving list command.

void HciLeReadPeerResolvableAddr (uint8 t addrType, const uint8 t \*pldentityAddr)

HCI read peer resolvable address command.

• void HciLeReadLocalResolvableAddr (uint8 t addrType, const uint8 t \*pldentityAddr)

HCI read local resolvable address command.

void HciLeSetAddrResolutionEnable (uint8\_t enable)

HCI enable or disable address resolution command.

void HciLeSetResolvablePrivateAddrTimeout (uint16\_t rpaTimeout)

HCI set resolvable private address timeout command.

void HciLeSetPrivacyModeCmd (uint8 t addrType, uint8 t \*pAddr, uint8 t mode)

HCI LE set privacy mode command.

void HciLeReadPhyCmd (uint16 t handle)

HCI read PHY command.

void HciLeSetDefaultPhyCmd (uint8 t allPhys, uint8 t txPhys, uint8 t rxPhys)

HCI set default PHY command.

void HciLeSetPhyCmd (uint16\_t handle, uint8\_t allPhys, uint8\_t txPhys, uint8\_t rxPhys, uint16\_t phy
 —
 Options)

HCI set PHY command.

void HciVendorSpecificCmd (uint16\_t opcode, uint8\_t len, uint8\_t \*pData)

HCI vencor specific command.

• void HciLeRemoteConnParamReqReply (uint16\_t handle, uint16\_t intervalMin, uint16\_t intervalMax, uint16 t latency, uint16 t timeout, uint16 t minCeLen, uint16 t maxCeLen)

HCI Remote Connection Parameter Request Reply.

void HciLeRemoteConnParamReqNegReply (uint16 t handle, uint8 t reason)

HCI Remote Connection Parameter Request Negative Reply.

void HciLeSetDataLen (uint16 t handle, uint16 t txOctets, uint16 t txTime)

HCI LE Set Data Length.

void HciLeReadDefDataLen (void)

HCI LE Read Default Data Length.

void HciLeWriteDefDataLen (uint16\_t suggestedMaxTxOctets, uint16\_t suggestedMaxTxTime)

HCI LE Write Default Data Length.

void HciLeReadLocalP256PubKey (void)

HCI LE Read Local P-256 Public Key.

void HciLeGenerateDHKey (uint8 t \*pPubKeyX, uint8 t \*pPubKeyY)

HCI LE Generate DH Key.

void HciLeGenerateDHKeyV2 (uint8 t \*pPubKeyX, uint8 t \*pPubKeyY, uint8 t keyType)

HCI LE Generate DH Key Version 2.

void HciLeReadMaxDataLen (void)

HCI LE Read Maximum Data Length.

void HciLeReadTxPower (void)

HCI LE read transmit power command.

void HciLeReadRfPathComp (void)

HCI LE read RF path compensation command.

void HciLeWriteRfPathComp (int16\_t txPathComp, int16\_t rxPathComp)

HCI LE write RF path compensation command.

# **HCI AE Advertiser Interface**

HCI Advertising Extension functions used by the Advertiser role.

void HciLeSetAdvSetRandAddrCmd (uint8\_t advHandle, const uint8\_t \*pAddr)

HCI LE set advertising set random device address command.

void HciLeSetExtAdvParamCmd (uint8\_t advHandle, hciExtAdvParam\_t \*pExtAdvParam)

HCI LE set extended advertising parameters command.

void HciLeSetExtAdvDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t fragPref, uint8\_t len, const uint8\_t \*pData)

HCI LE set extended advertising data command.

 void HciLeSetExtScanRespDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t fragPref, uint8\_t len, const uint8\_t \*pData)

HCI LE set extended scan response data command.

void HciLeSetExtAdvEnableCmd (uint8\_t enable, uint8\_t numSets, hciExtAdvEnableParam\_t \*pEnable → Param)

HCI LE set extended advertising enable command.

void HciLeReadMaxAdvDataLen (void)

HCI LE read maximum advertising data length command.

void HciLeReadNumSupAdvSets (void)

HCI LE read number of supported advertising sets command.

void HciLeRemoveAdvSet (uint8\_t advHandle)

HCI LE remove advertising set command.

void HciLeClearAdvSets (void)

HCI LE clear advertising sets command.

void HciLeSetPerAdvParamCmd (uint8\_t advHandle, uint16\_t advIntervalMin, uint16\_t advIntervalMax, uint16\_t advProps)

HCI LE set periodic advertising parameters command.

• void HciLeSetPerAdvDataCmd (uint8\_t advHandle, uint8\_t op, uint8\_t len, const uint8\_t \*pData)

HCI LE set periodic advertising data command.

void HciLeSetPerAdvEnableCmd (uint8 t enable, uint8 t advHandle)

HCI LE set periodic advertising enable command.

# **HCI AE Scanner Interface**

HCI Advertising Extension functions used in the Scanner role.

void HciLeSetExtScanParamCmd (uint8\_t ownAddrType, uint8\_t scanFiltPolicy, uint8\_t scanPhys, hci
 ExtScanParam t \*pScanParam)

HCI LE set extended scanning parameters command.

• void HciLeExtScanEnableCmd (uint8\_t enable, uint8\_t filterDup, uint16\_t duration, uint16\_t period)

HCI LE extended scan enable command.

void HciLeExtCreateConnCmd (hciExtInitParam\_t \*pInitParam, hciExtInitScanParam\_t \*pScanParam, hciConnSpec t \*pConnSpec)

HCI LE extended create connection command.

void HciLePerAdvCreateSyncCmd (uint8\_t options, uint8\_t advSid, uint8\_t advAddrType, uint8\_t \*pAdv
 Addr, uint16\_t skip, uint16\_t syncTimeout, uint8\_t unused)

HCI LE periodic advertising create sync command.

void HciLePerAdvCreateSyncCancelCmd (void)

HCI LE periodic advertising create sync cancel command.

void HciLePerAdvTerminateSyncCmd (uint16 t syncHandle)

HCI LE periodic advertising terminate sync command.

void HciLeAddDeviceToPerAdvListCmd (uint8\_t advAddrType, uint8\_t \*pAdvAddr, uint8\_t advSid)

HCI LE add device to periodic advertiser list command.

void HciLeRemoveDeviceFromPerAdvListCmd (uint8\_t advAddrType, uint8\_t \*pAdvAddr, uint8\_t advSid)

HCI LE remove device from periodic advertiser list command.

void HciLeClearPerAdvListCmd (void)

HCI LE clear periodic advertiser list command.

void HciLeReadPerAdvListSizeCmd (void)

HCI LE read periodic advertiser size command.

void HciLeSetPerAdvRcvEnableCmd (uint16\_t syncHandle, uint8\_t enable)

HCI LE set periodic advertising receive enable command.

void HciLePerAdvSyncTrsfCmd (uint16 t connHandle, uint16 t serviceData, uint16 t syncHandle)

HCI LE periodic advertising sync transfer command.

• void HciLePerAdvSetInfoTrsfCmd (uint16\_t connHandle, uint16\_t serviceData, uint8\_t advHandle)

HCI LE set periodic advertising set info transfer command.

void HciLeSetPerAdvSyncTrsfParamsCmd (uint16\_t connHandle, uint8\_t mode, uint16\_t skip, uint16\_
 t syncTimeout, uint8\_t cteType)

HCI LE set periodic advertising sync transfer parameters command.

void HciLeSetDefaultPerAdvSyncTrsfParamsCmd (uint8\_t mode, uint16\_t skip, uint16\_t syncTimeout, uint8 t cteType)

HCI LE set default periodic advertising sync transfer parameters command.

void HciLeSetConnCteRxParamsCmd (uint16\_t connHandle, uint8\_t samplingEnable, uint8\_t slot
 — Durations, uint8\_t switchPatternLen, uint8\_t \*pAntennalDs)

HCI LE set connection CTE receive parameters command.

void HciLeSetConnCteTxParamsCmd (uint16\_t connHandle, uint8\_t cteTypeBits, uint8\_t switchPattern
 Len, uint8\_t \*pAntennalDs)

HCI LE set connection CTE transmit parameters command.

void HciLeConnCteReqEnableCmd (uint16\_t connHandle, uint8\_t enable, uint16\_t cteReqInt, uint8\_
 t reqCteLen, uint8\_t reqCteType)

HCI LE connection CTE request enable command.

void HciLeConnCteRspEnableCmd (uint16\_t connHandle, uint8\_t enable)

HCI LE connection CTE response enable command.

void HciLeReadAntennaInfoCmd (void)

HCI LE read antenna information command.

void HciLeSetCigParamsCmd (HciCisCigParams\_t \*pCigParam)

HCI LE set CIG parameters command.

• void HciLeCreateCisCmd (uint8\_t numCis, HciCisCreateCisParams\_t \*pCreateCisParam)

HCI LE create CIS command.

void HciLeAcceptCisReqCmd (uint16\_t connHandle)

HCI LE accept CIS request command.

void HciLeRejectCisRegCmd (uint16 t connHandle, uint8 t reason)

HCI LE reject CIS request command.

void HciLeRemoveCigCmd (uint8\_t cigId)

HCI LE remove CIG command.

void HciLeRequestPeerScaCmd (uint16\_t handle)

HCI LE request peer SCA command.

void HciLeCreateBigCmd (HciCreateBig\_t \*pCreateBig)

HCI LE create BIG command.

• void HciTerminateBigCmd (uint8 t bigHandle, uint8 t reason)

HCI LE terminate BIG command.

void HciLeBigCreateSyncCmd (HciBigCreateSync t\*pCreateSync)

HCI LE BIG create sync command.

void HciLeBigTerminateSync (uint8 t bigHandle)

HCI LE BIG terminate sync command.

void HciLelsoTxTest (uint16\_t handle, uint8\_t pldType)

HCI LE enable ISO Tx test.

void HciLelsoRxTest (uint16 t handle, uint8 t pldType)

HCI LE enable ISO Rx test.

void HciLelsoReadTestCounters (uint16 t handle)

HCI LE read ISO test counter.

• void HciLelsoTestEnd (uint16 t handle)

HCI LE ISO test end.

void HciLeSetupIsoDataPathCmd (HciIsoSetupDataPath t\*pDataPathParam)

HCI LE setup ISO data path command.

void HciLeRemovelsoDataPathCmd (uint16\_t handle, uint8\_t directionBits)

HCI LE remove ISO data path command.

void HciConfigDataPathCmd (HciConfigDataPath\_t \*pDataPathParam)

HCI configure data path command.

void HciReadLocalSupCodecsCmd (void)

HCI read local supported codecs command.

void HciReadLocalSupCodecCapCmd (HciReadLocalSupCodecCaps\_t \*pCodecParam)

HCI read local supported codec capabilities command.

• void HciReadLocalSupControllerDlyCmd (HciReadLocalSupControllerDly\_t \*pDelayParam)

HCI read local supported controller delay command.

void HciLeSetHostFeatureCmd (uint8 t bitNum, bool t bitVal)

HCI LE set host feature command.

- void HciVsdDisableSlaveLatency (uint16 t handle, bool t disabled)
- void HciVsdOverruleRemoteMaxRxOctetsAndTime (uint16\_t handle, uint16\_t maxRxOctetsRemote, uint16\_t maxRxTimeRemote)
- void HciVsdEnableControlledBandwidthModeByDefault (bool\_t enable)

# 3.1.1 Detailed Description

HCI subsystem API.

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# 3.2 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_cmd.h File Reference

HCI command module.

# **Functions**

void hciCmdSend (uint8\_t \*pData)

Send an HCI command and service the HCI command queue.

• uint8\_t \* hciCmdAlloc (uint16\_t opcode, uint16\_t len)

Allocate an HCI command buffer and set the command header fields.

void hciCmdInit (void)

Initialize the HCI cmd module.

void hciCmdTimeout (wsfMsgHdr\_t \*pMsg)

Process an HCI command timeout.

void hciCmdRecvCmpl (uint8\_t numCmdPkts)

Process an HCI Command Complete or Command Status event.

# 3.2.1 Detailed Description

HCI command module.

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# 3.2.2 Function Documentation

# 3.2.2.1 hciCmdSend()

Send an HCI command and service the HCI command queue.

# **Parameters**

| pData Buffer containing HCI command to send or NULL. |  |
|--|--|
|--|--|

Returns

None.

# 3.2.2.2 hciCmdAlloc()

Allocate an HCI command buffer and set the command header fields.

# **Parameters**

| opcode | Command opcode.               |
|--------|-------------------------------|
| len    | length of command parameters. |

# Returns

Pointer to WSF msg buffer.

# 3.2.2.3 hciCmdInit()

```
void hciCmdInit (
     void )
```

Initialize the HCI cmd module.

Returns

None.

# 3.2.2.4 hciCmdTimeout()

Process an HCI command timeout.

| Da |  |  |  |
|----|--|--|--|
|    |  |  |  |

| pMsg | Message. |
|------|----------|
|------|----------|

Returns

None.

# 3.2.2.5 hciCmdRecvCmpl()

Process an HCI Command Complete or Command Status event.

# **Parameters**

numCmdPkts | Number of commands that can be sent to the controller.

Returns

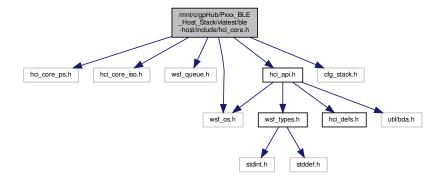
None.

3.3 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_core.h File Reference

HCI core interfaces.

```
#include "hci_core_ps.h"
#include "hci_core_iso.h"
#include "wsf_queue.h"
#include "wsf_os.h"
#include "hci_api.h"
#include "cfg_stack.h"
```

Include dependency graph for hci\_core.h:



# **Data Structures**

struct hciCoreConn\_t

Per-connection structure for ACL packet accounting.

struct hciCoreCb\_t

Main control block for dual-chip implementation.

# **Typedefs**

typedef void(\* hciResetSeq\_t) (uint8\_t \*pMsg, uint16\_t opcode)
 HCI Reset sequence callback type.

# **Functions**

void hciCoreInit (void)

HCI core initialization.

void hciCoreResetStart (void)

Start the HCI reset sequence.

• void hciCoreConnOpen (uint16\_t handle)

Perform internal processing on HCI connection open.

• void hciCoreConnClose (uint16\_t handle)

Perform internal processing on HCI connection close.

hciCoreConn\_t \* hciCoreConnByHandle (uint16\_t handle)

Get a connection structure by handle.

• void hciCoreSendAclData (hciCoreConn\_t \*pConn, uint8\_t \*pData, uint16\_t hciFraglen, uint16\_t hciFragPb) Send ACL data to transport.

void hciCoreTxReady (uint8\_t bufs)

Service the TX data path.

void hciCoreTxAclStart (hciCoreConn\_t \*pConn, uint16\_t len, uint8\_t \*pData)

Send ACL packets, start of packet.

• bool\_t hciCoreTxAclContinue (hciCoreConn\_t \*pConn)

Send ACL packets, continuation of fragmented packets.

void hciCoreTxAclComplete (hciCoreConn\_t \*pConn, uint8\_t \*pData)

This function is called from the HCI transport layer when transmission of an ACL packet is complete.

uint8\_t \* hciCoreAclReassembly (uint8\_t \*pData)

Reassemble an ACL packet.

bool t hciCoreTxAclDataFragmented (hciCoreConn t \*pConn)

Check if a TX ACL packet is being fragmented.

# **Variables**

· hciCoreCb t hciCoreCb

Control block.

const uint8\_t hciEventMask [HCI\_EVT\_MASK\_LEN]

Event mask.

const uint8 t hciLeEventMask [HCI LE EVT MASK LEN]

LE event mask.

const uint8\_t hciEventMaskPage2 [HCI\_EVT\_MASK\_LEN]

Event mask page 2.

uint64 t hciLeSupFeatCfg

LE supported features configuration mask.

# 3.3.1 Detailed Description

HCI core interfaces.

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# 3.3.2 Function Documentation

# 3.3.2.1 hciCorelnit()

```
void hciCoreInit (
     void )
```

HCI core initialization.

Returns

None.

# 3.3.2.2 hciCoreResetStart()

```
hciCoreResetStart (
     void )
```

Start the HCI reset sequence.

Returns

None.

# 3.3.2.3 hciCoreConnOpen()

Perform internal processing on HCI connection open.

# **Parameters**

| handle | Connection handle. |
|--------|--------------------|
|--------|--------------------|

Returns

None.

# 3.3.2.4 hciCoreConnClose()

Perform internal processing on HCI connection close.

# **Parameters**

| handle Connection handle. |
|---------------------------|
|---------------------------|

Returns

None.

# 3.3.2.5 hciCoreConnByHandle()

Get a connection structure by handle.

# **Parameters**

| handle | Connection handle. |
|--------|--------------------|
|--------|--------------------|

# Returns

Pointer to connection structure or NULL if not found.

# 3.3.2.6 hciCoreSendAclData()

```
void hciCoreSendAclData (
    hciCoreConn_t * pConn,
    uint8_t * pData,
    uint16_t hciFraglen,
    uint16_t hciFragPb )
```

Send ACL data to transport.

# **Parameters**

| pConn      | Pointer to connection structure.     |
|------------|--------------------------------------|
| pData      | WSF buffer containing an ACL packet. |
| hciFraglen | Length of the HCI fragment.          |
| hciFragPb  | Packet boundary flag.                |

# Returns

None.

# 3.3.2.7 hciCoreTxReady()

Service the TX data path.

#### **Parameters**

| bufs Number of new buffers now available. |  |
|---|--|
|---|--|

## Returns

None.

## 3.3.2.8 hciCoreTxAclStart()

```
void hciCoreTxAclStart (
    hciCoreConn_t * pConn,
    uint16_t len,
    uint8_t * pData )
```

Send ACL packets, start of packet.

## **Parameters**

| pConn | Pointer to connection structure.     |
|-------|--------------------------------------|
| len   | ACL packet length.                   |
| pData | WSF buffer containing an ACL packet. |

## Returns

None.

## 3.3.2.9 hciCoreTxAclContinue()

```
bool_t hciCoreTxAclContinue ( \label{eq:hciCoreConn_t} \mbox{$hciCoreConn_t * pConn$ )}
```

Send ACL packets, continuation of fragmented packets.

## **Parameters**

| pConn | Pointer to connection structure. If set non-NULL, then a fragment is sent from this connection  |
|-------|---|
|       | structure. If NULL the function finds the next connection structure with a fragment to be sent. |

## Returns

TRUE if packet sent, FALSE otherwise.

## 3.3.2.10 hciCoreTxAclComplete()

This function is called from the HCI transport layer when transmission of an ACL packet is complete.

## **Parameters**

| pConn | Pointer to connection structure.     |
|-------|--------------------------------------|
| pData | WSF buffer containing an ACL packet. |

#### Returns

None.

## 3.3.2.11 hciCoreAclReassembly()

Reassemble an ACL packet.

#### **Parameters**

| pData | Input ACL packet. |
|-------|-------------------|
|-------|-------------------|

## Returns

pointer to ACL packet to send, or NULL if no packet to send.

## 3.3.2.12 hciCoreTxAclDataFragmented()

```
bool_t hciCoreTxAclDataFragmented ( \label{eq:hciCoreConn_t * pConn} \ )
```

Check if a TX ACL packet is being fragmented.

#### **Parameters**

| pConn | Connection context. |
|-------|---------------------|

#### Returns

TRUE if fragmenting a TX ACL packet, FALSE otherwise.

# 3.4 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_drv.h File Reference

HCI driver interface.

#### **Functions**

```
• uint16_t hciDrvWrite (uint8_t type, uint16_t len, uint8_t *pData)
```

Write data the driver.

uint16\_t hciDrvRead (uint16\_t len, uint8\_t \*pData)

Read data bytes from the driver.

bool\_t hciDrvReadyToSleep (void)

Returns TRUE if driver allows MCU to enter low power sleep mode.

## 3.4.1 Detailed Description

HCI driver interface.

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## 3.4.2 Function Documentation

# 3.4.2.1 hciDrvWrite()

Write data the driver.

#### **Parameters**

| type  | HCI packet type           |
|-------|---------------------------|
| len   | Number of bytes to write. |
| pData | Byte array to write.      |

#### Returns

Return actual number of data bytes written.

## Note

The type parameter allows the driver layer to prepend the data with a header on the same write transaction.

## 3.4.2.2 hciDrvRead()

Read data bytes from the driver.

## Parameters

| len   | Number of bytes to read.  |
|-------|---------------------------|
| pData | Byte array to store data. |

#### Returns

Return actual number of data bytes read.

## 3.4.2.3 hciDrvReadyToSleep()

```
bool_t hciDrvReadyToSleep ( \mbox{void} \ \ \mbox{)}
```

Returns TRUE if driver allows MCU to enter low power sleep mode.

## Returns

TRUE if ready to sleep, FALSE otherwise.

# 3.5 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_evt.h File Reference

HCI event module.

## **Data Structures**

· struct hciEvtStats t

HCI event statistics.

#### **Functions**

void hciEvtProcessMsg (uint8 t \*pEvt)

Process received HCI events.

hciEvtStats\_t \* hciEvtGetStats (void)

Get event statistics.

#### 3.5.1 Detailed Description

HCI event module.

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#### 3.5.2 Function Documentation

## 3.5.2.1 hciEvtProcessMsg()

Process received HCI events.

#### **Parameters**

| pEvt | Buffer containing HCI event. |
|------|------------------------------|
|------|------------------------------|

Returns

None.

#### 3.5.2.2 hciEvtGetStats()

Get event statistics.

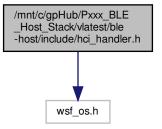
Returns

Event statistics.

# 3.6 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/ble-host/include/hci\_handler.h File Reference

Interface to HCI event handler.

```
#include "wsf_os.h"
Include dependency graph for hci_handler.h:
```



## **Functions**

#### **HCI Event Handling**

Message passing interface to HCI from application and other stack layers through WSF.

- void HciHandlerInit (wsfHandlerId\_t handlerId)
   HCI handler init function called during system initialization.
- void HciHandler (wsfEventMask\_t event, wsfMsgHdr\_t \*pMsg)

WSF event handler for HCI.

#### 3.6.1 Detailed Description

Interface to HCI event handler.

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## 3.7 /mnt/c/qpHub/Pxxx BLE Host Stack/vlatest/ble-host/include/hci tr.h File Reference

HCI transport interface.

#### **Functions**

- void hciTrSendAclData (void \*pContext, uint8\_t \*pAclData, uint16\_t hciFragLen, uint16\_t hciFragPb)

  Send a complete HCl ACL packet to the transport.
- void hciTrSendIsoData (void \*pContext, uint8 t \*pData)

Send a complete HCI ISO ACL packet to the transport.

void hciTrSendCmd (uint8\_t \*pCmdData)

Send a complete HCI command to the transport.

• bool\_t hciTrInit (uint8\_t port, uint32\_t baudRate, bool\_t flowControl)

Initialize HCI transport resources.

• void hciTrShutdown (void)

Close HCI transport resources.

## 3.7.1 Detailed Description

HCI transport interface.

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# 3.7.2 Function Documentation

## 3.7.2.1 hciTrSendAclData()

Send a complete HCI ACL packet to the transport.

#### **Parameters**

| pContext   | Connection context.                      |
|------------|--|
| pAclData   | WSF msg buffer containing an ACL packet. |
| hciFraglen | Length of the HCI fragment.              |
| hciFragPb  | HCI Packet boundary flag.                |

#### Returns

None.

## 3.7.2.2 hciTrSendIsoData()

Send a complete HCI ISO ACL packet to the transport.

#### **Parameters**

| pTxCb  | Transmit context. |
|--------|-------------------|
| isoPkt | ISO Packet.       |

## Returns

None.

#### 3.7.2.3 hciTrSendCmd()

```
void hciTrSendCmd ( \label{eq:cond_def} \mbox{uint8\_t} \ * \ p\mbox{\it CmdData} \ )
```

Send a complete HCI command to the transport.

## **Parameters**

#### Returns

None.

## 3.7.2.4 hciTrInit()

Initialize HCI transport resources.

## **Parameters**

| port        | COM port.                       |
|-------------|---------------------------------|
| baudRate    | Baud rate.                      |
| flowControl | TRUE if flow control is enabled |

#### Returns

TRUE if initialization succeeds, FALSE otherwise.

# 3.7.2.5 hciTrShutdown()

Close HCI transport resources.

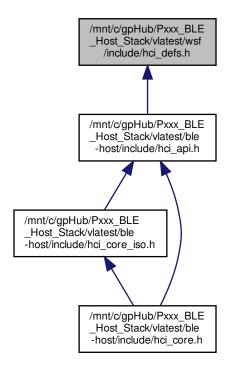
## Returns

None.

# 3.8 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/wsf/include/hci\_defs.h File Reference

HCI constants and definitions from the Bluetooth specification.

This graph shows which files directly or indirectly include this file:



## **Macros**

#### **Packet definitions**

- #define HCI\_CMD\_HDR\_LEN 3
- #define HCI\_ACL\_HDR\_LEN 4
- #define HCI ISO HDR LEN 4
- #define HCI\_EVT\_HDR\_LEN 2
- #define HCI EVT PARAM MAX LEN 255
- #define HCI ACL DEFAULT LEN 27
- #define HCI\_PB\_FLAG\_MASK 0x3000
- #define HCI\_PB\_START\_H2C 0x0000
- #define HCI\_PB\_CONTINUE 0x1000
- #define HCI\_PB\_START\_C2H 0x2000
- #define HCI\_HANDLE\_MASK 0x0FFF
- #define HCI\_HANDLE\_NONE 0xFFFF
- #define HCI\_TS\_FLAG\_MASK (1 << 14)
- #define HCI\_DATA\_LOAD\_LEN\_MASK 0x3FFF
- #define HCI\_ISO\_DL\_MIN\_LEN 4
- #define HCI\_ISO\_DL\_MAX\_LEN 8
- #define HCI\_ISO\_TS\_LEN 4
- #define HCI\_ISO\_DL\_SDU\_LEN\_MASK 0x0FFF

#define HCI\_ISO\_DL\_PS\_MASK 0xC000

#### Packet types

- #define HCI CMD TYPE 0x01
- #define HCI\_ACL\_TYPE 0x02
- #define HCI EVT TYPE 0x04
- #define HCI\_ISO\_TYPE 0x05

#### **Error codes**

- #define HCI SUCCESS 0x00
- #define HCI ERR UNKNOWN CMD 0x01
- #define HCI ERR UNKNOWN HANDLE 0x02
- #define HCI\_ERR\_HARDWARE\_FAILURE 0x03
- #define HCI\_ERR\_PAGE\_TIMEOUT 0x04
- #define HCI\_ERR\_AUTH\_FAILURE 0x05
- #define HCI\_ERR\_KEY\_MISSING 0x06
- #define HCI\_ERR\_MEMORY\_EXCEEDED 0x07
- #define HCI\_ERR\_CONN\_TIMEOUT 0x08
- #define HCI ERR CONN LIMIT 0x09
- #define HCI\_ERR\_SYNCH\_CONN\_LIMIT 0x0A
- #define HCI\_ERR\_ACL\_CONN\_EXISTS 0x0B
- #define HCI ERR CMD DISALLOWED 0x0C
- #define HCI\_ERR\_REJ\_RESOURCES 0x0D
- #define HCI\_ERR\_REJ\_SECURITY 0x0E
- #define HCI\_ERR\_REJ\_BD\_ADDR 0x0F
- #define HCI\_ERR\_ACCEPT\_TIMEOUT 0x10
- #define HCI ERR UNSUP FEAT 0x11
- #define HCI\_ERR\_INVALID\_PARAM 0x12
- #define HCI\_ERR\_REMOTE\_TERMINATED 0x13
- #define HCI\_ERR\_REMOTE\_RESOURCES 0x14
- #define HCI ERR REMOTE POWER OFF 0x15
- #define HCI\_ERR\_LOCAL\_TERMINATED 0x16
- #define HCI\_ERR\_REPEATED\_ATTEMPTS 0x17
- #define HCI\_ERR\_PAIRING\_NOT\_ALLOWED 0x18
- #define HCI\_ERR\_UNKNOWN\_LMP\_PDU 0x19
- #define HCI\_ERR\_UNSUP\_REMOTE\_FEAT 0x1A
- #define HCI ERR SCO OFFSET 0x1B
- #define HCI\_ERR\_SCO\_INTERVAL 0x1C
- #define HCI\_ERR\_SCO\_MODE 0x1D
- #define HCI ERR LMP PARAM 0x1E
- #define HCI\_ERR\_UNSPECIFIED 0x1F
- #define HCI ERR UNSUP LMP PARAM 0x20
- #define HCI\_ERR\_ROLE\_CHANGE 0x21
- #define HCI\_ERR\_LL\_RESP\_TIMEOUT 0x22
- #define HCI\_ERR\_LMP\_COLLISION 0x23
- #define HCI ERR LMP PDU 0x24
- #define HCI ERR ENCRYPT MODE 0x25
- #define HCI\_ERR\_LINK\_KEY 0x26
- #define HCI ERR UNSUP QOS 0x27
- #define HCI\_ERR\_INSTANT\_PASSED 0x28
- #define HCI\_ERR\_UNSUP\_UNIT\_KEY 0x29
- #define HCI\_ERR\_TRANSACT\_COLLISION 0x2A
- #define HCI\_ERR\_CHANNEL\_CLASS 0x2E
- #define HCI\_ERR\_MEMORY 0x2F
- #define HCI\_ERR\_PARAMETER\_RANGE 0x30
- #define HCI ERR ROLE SWITCH PEND 0x32
- #define HCI\_ERR\_RESERVED\_SLOT 0x34
- #define HCI\_ERR\_ROLE\_SWITCH 0x35
- #define HCI\_ERR\_INQ\_TOO\_LARGE 0x36
- #define HCI ERR UNSUP SSP 0x37

- #define HCI\_ERR\_HOST\_BUSY\_PAIRING 0x38
- #define HCI\_ERR\_NO\_CHANNEL 0x39
- #define HCI\_ERR\_CONTROLLER\_BUSY 0x3A
- #define HCI\_ERR\_CONN\_INTERVAL 0x3B
- #define HCI ERR ADV TIMEOUT 0x3C
- #define HCI\_ERR\_MIC\_FAILURE 0x3D
- #define HCI ERR CONN FAIL 0x3E
- #define HCI ERR MAC CONN FAIL 0x3F
- #define HCI\_ERR\_COARSE\_CLK\_ADJ\_REJ 0x40
- #define HCI\_ERR\_TYPE0\_SUBMAP\_NOT\_DEF 0x41
- #define HCI\_ERR\_UNKNOWN\_ADV\_ID 0x42
- #define HCI\_ERR\_LIMIT\_REACHED 0x43
- #define HCI\_ERR\_OP\_CANCELLED\_BY\_HOST 0x44
- #define HCI ERR PKT TOO LONG 0x45

#### **Command groups**

- #define HCI\_OGF\_NOP 0x00#define HCI\_OGF\_LINK\_CONTROL 0x01
- #define HCI\_OGF\_LINK\_POLICY 0x02
- #define HCI\_OGF\_CONTROLLER 0x03
- #define HCI\_OGF\_INFORMATIONAL 0x04
- #define HCI OGF STATUS 0x05
- #define HCI\_OGF\_TESTING 0x06
- #define HCI OGF LE CONTROLLER 0x08
- #define HCI OGF VENDOR SPEC 0x3F

## NOP command

• #define HCI\_OCF\_NOP 0x00

#### Link control commands

- #define HCI\_OCF\_DISCONNECT 0x06
- #define HCI OCF READ REMOTE VER INFO 0x1D

#### Controller and baseband commands

- #define HCI\_OCF\_SET\_EVENT\_MASK 0x01
- #define HCI\_OCF\_RESET 0x03
- #define HCI OCF READ TX PWR LVL 0x2D
- #define HCI\_OCF\_SET\_CONTROLLER\_TO\_HOST\_FC 0x31
- #define HCI\_OCF\_HOST\_BUFFER\_SIZE 0x33
- #define HCI OCF HOST NUM CMPL PKTS 0x35
- #define HCI OCF SET EVENT MASK PAGE2 0x63
- #define HCI OCF READ AUTH PAYLOAD TO 0x7B
- #define HCI\_OCF\_WRITE\_AUTH\_PAYLOAD\_TO 0x7C
- #define HCI\_OCF\_CONFIG\_DATA\_PATH 0x83

## Informational commands

- #define HCI\_OCF\_READ\_LOCAL\_VER\_INFO 0x01
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CMDS 0x02
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_FEAT 0x03
- #define HCI\_OCF\_READ\_BUF\_SIZE 0x05
- #define HCI\_OCF\_READ\_BD\_ADDR 0x09
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CODECS 0x0D
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CODEC\_CAP 0x0E
- #define HCI\_OCF\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY 0x0F

#### Status commands

• #define HCI OCF READ RSSI 0x05

#### LE controller commands

- #define HCI\_OCF\_LE\_SET\_EVENT\_MASK 0x01
- #define HCI\_OCF\_LE\_READ\_BUF\_SIZE 0x02
- #define HCI\_OCF\_LE\_READ\_LOCAL\_SUP\_FEAT 0x03
- #define HCI\_OCF\_LE\_SET\_RAND\_ADDR 0x05
- #define HCI\_OCF\_LE\_SET\_ADV\_PARAM 0x06
- #define HCI OCF LE READ ADV TX POWER 0x07
- #define HCI OCF LE SET ADV DATA 0x08
- #define HCI OCF LE SET SCAN RESP DATA 0x09
- #define HCI OCF LE SET ADV ENABLE 0x0A
- #define HCI OCF LE SET SCAN PARAM 0x0B
- #define HCI OCF LE SET SCAN ENABLE 0x0C
- #define HCI OCF LE CREATE CONN 0x0D
- #define HCI\_OCF\_LE\_CREATE\_CONN\_CANCEL 0x0E
- #define HCI\_OCF\_LE\_READ\_WHITE\_LIST\_SIZE 0x0F
- #define HCI\_OCF\_LE\_CLEAR\_WHITE\_LIST 0x10
- #define HCI\_OCF\_LE\_ADD\_DEV\_WHITE\_LIST 0x11
- #define HCI OCF LE REMOVE DEV WHITE LIST 0x12
- #define HCI OCF LE CONN UPDATE 0x13
- #define HCI OCF LE SET HOST CHAN CLASS 0x14
- #define HCI\_OCF\_LE\_READ\_CHAN\_MAP 0x15
- #define HCI OCF LE READ REMOTE FEAT 0x16
- #define HCI OCF LE ENCRYPT 0x17
- #define HCI OCF LE RAND 0x18
- #define HCI\_OCF\_LE\_START\_ENCRYPTION 0x19
- #define HCI\_OCF\_LE\_LTK\_REQ\_REPL 0x1A
- #define HCI OCF LE LTK REQ NEG REPL 0x1B
- #define HCI\_OCF\_LE\_READ\_SUP\_STATES 0x1C
- #define HCI\_OCF\_LE\_RECEIVER\_TEST 0x1D
- #define HCI\_OCF\_LE\_TRANSMITTER\_TEST 0x1E
- #define HCI\_OCF\_LE\_TEST\_END 0x1F
- #define HCI\_OCF\_LE\_REM\_CONN\_PARAM\_REP 0x20
- #define HCI OCF LE REM CONN PARAM NEG REP 0x21
- #define HCI OCF LE SET DATA LEN 0x22
- #define HCI\_OCF\_LE\_READ\_DEF\_DATA\_LEN 0x23
- #define HCI OCF LE WRITE DEF DATA LEN 0x24
- #define HCI OCF LE READ LOCAL P256 PUB KEY 0x25
- #define HCI\_OCF\_LE\_GENERATE\_DHKEY 0x26
- #define HCI\_OCF\_LE\_ADD\_DEV\_RES\_LIST 0x27
- #define HCI\_OCF\_LE\_REMOVE\_DEV\_RES\_LIST 0x28
- #define HCI\_OCF\_LE\_CLEAR\_RES\_LIST 0x29
- #define HCI\_OCF\_LE\_READ\_RES\_LIST\_SIZE 0x2A
- #define HCI\_OCF\_LE\_READ\_PEER\_RES\_ADDR 0x2B
- #define HCI OCF LE READ LOCAL RES ADDR 0x2C
- #define HCI\_OCF\_LE\_SET\_RES\_PRIV\_ADDR\_TO 0x2E
- #define HCI\_OCF\_LE\_READ\_MAX\_DATA\_LEN 0x2F
- #define HCI OCF LE READ PHY 0x30
- #define HCI OCF LE SET DEF PHY 0x31
- #define HCI\_OCF\_LE\_SET\_PHY 0x32
- #define HCI OCF LE ENHANCED RECEIVER TEST 0x33
- #define HCI OCF LE ENHANCED TRANSMITTER TEST 0x34
- #define HCI\_OCF\_LE\_SET\_ADV\_SET\_RAND\_ADDR 0x35
- #define HCI\_OCF\_LE\_SET\_EXT\_ADV\_PARAM 0x36
- #define HCI\_OCF\_LE\_SET\_EXT\_ADV\_DATA 0x37
- #define HCI\_OCF\_LE\_SET\_EXT\_SCAN\_RESP\_DATA 0x38
- #define HCI OCF LE SET EXT ADV ENABLE 0x39
- #define HCI\_OCF\_LE\_READ\_MAX\_ADV\_DATA\_LEN 0x3A
- #define HCI OCF LE READ NUM SUP ADV SETS 0x3B

- #define HCI OCF LE REMOVE ADV SET 0x3C
- #define HCI OCF LE CLEAR ADV SETS 0x3D
- #define HCI OCF LE SET PER ADV PARAM 0x3E
- #define HCI OCF LE SET PER ADV DATA 0x3F
- #define HCI\_OCF\_LE\_SET\_PER\_ADV\_ENABLE 0x40
- #define HCI\_OCF\_LE\_SET\_EXT\_SCAN\_PARAM 0x41
- #define HCI\_OCF\_LE\_SET\_EXT\_SCAN\_ENABLE 0x42
- #define HCI\_OCF\_LE\_EXT\_CREATE\_CONN 0x43
- #define HCI OCF LE PER ADV CREATE SYNC 0x44
- #define HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0x45
- #define HCI OCF LE PER ADV TERM SYNC 0x46
- #define HCI OCF LE ADD DEV PER ADV LIST 0x47
- #define HCI OCF LE REMOVE DEV PER ADV LIST 0x48
- #define HCI OCF LE CLEAR PER ADV LIST 0x49
- #define HCI OCF LE READ PER ADV LIST SIZE 0x4A
- #define HCI OCF LE READ TX POWER 0x4B
- #define HCI OCF LE READ RF PATH COMP 0x4C
- #define HCI OCF LE WRITE RF PATH COMP 0x4D
- #define HCI OCF LE SET PRIVACY MODE 0x4E
- #define HCI OCF LE RECEIVER TEST V3 0x4F
- #define HCI\_OCF\_LE\_TRANSMITTER\_TEST\_V3 0x50
- #define HCI\_OCF\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS 0x51
- #define HCI\_OCF\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE 0x52
- #define HCI OCF LE SET CONNLESS IQ SAMP ENABLE 0x53
- #define HCI\_OCF\_LE\_SET\_CONN\_CTE\_RX\_PARAMS 0x54
- #define HCI\_OCF\_LE\_SET\_CONN\_CTE\_TX\_PARAMS 0x55
- #define HCI\_OCF\_LE\_CONN\_CTE\_REQ\_ENABLE 0x56
- #define HCI OCF LE CONN CTE RSP ENABLE 0x57
- #define HCI\_OCF\_LE\_READ\_ANTENNA\_INFO 0x58
- #define HCI\_OCF\_LE\_SET\_PER\_ADV\_RCV\_ENABLE 0x59
- #define HCI\_OCF\_LE\_PER\_ADV\_SYNC\_TRANSFER 0x5A
- #define HCI\_OCF\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER 0x5B
- #define HCI\_OCF\_LE\_SET\_PAST\_PARAM 0x5C
- #define HCI OCF LE SET DEFAULT PAST PARAM 0x5D
- #define HCI\_OCF\_LE\_GENERATE\_DHKEY\_V2 0x5E
- #define HCI\_OCF\_LE\_MODIFY\_SLEEP\_CLK\_ACC 0x5F
- #define HCI\_OCF\_LE\_READ\_BUF\_SIZE\_V2 0x60
- #define HCI\_OCF\_LE\_READ\_ISO\_TX\_SYNC 0x61
- #define HCI\_OCF\_LE\_SET\_CIG\_PARAMS 0x62
- #define HCI\_OCF\_LE\_SET\_CIG\_PARAMS\_TEST 0x63
- #define HCI\_OCF\_LE\_CREATE\_CIS 0x64
- #define HCI\_OCF\_LE\_REMOVE\_CIG 0x65
- #define HCI\_OCF\_LE\_ACCEPT\_CIS\_REQ 0x66
- #define HCI\_OCF\_LE\_REJECT\_CIS\_REQ 0x67
- #define HCI\_OCF\_LE\_CREATE\_BIG 0x68
- #define HCI\_OCF\_LE\_CREATE\_BIG\_TEST 0x69
- #define HCI\_OCF\_LE\_TERMINATE\_BIG 0x6A
- #define HCI\_OCF\_LE\_BIG\_CREATE\_SYNC 0x6B
- #define HCI OCF LE BIG TERMINATE SYNC 0x6C
- #define HCI OCF LE REQUEST PEER SCA 0x6D
- #define HCI\_OCF\_LE\_SETUP\_ISO\_DATA\_PATH 0x6E
- #define HCI\_OCF\_LE\_REMOVE\_ISO\_DATA\_PATH 0x6F
- #define HCI\_OCF\_LE\_ISO\_TX\_TEST 0x70
- #define HCI\_OCF\_LE\_ISO\_RX\_TEST 0x71
- #define HCI OCF LE ISO READ TEST COUNTERS 0x72
- #define HCI\_OCF\_LE\_ISO\_TEST\_END 0x73
- #define HCI OCF LE SET HOST FEATURE 0x74
- #define HCI\_OCF\_LE\_READ\_ISO\_LINK\_QUAL 0x75
- #define HCI\_OCF\_LE\_READ\_ENHANCED\_TX\_POWER 0x76
- #define HCI\_OCF\_LE\_READ\_REMOTE\_TX\_POWER 0x77
- #define HCI\_OCF\_LE\_SET\_PATH\_LOSS\_REPORTING\_PARAMS 0x78
- #define HCI OCF LE SET PATH LOSS REPORTING ENABLE 0x79
- #define HCI OCF LE SET TX POWER REPORT ENABLE 0x7A

#### **Opcode manipulation macros**

- #define **HCI\_OPCODE**(ogf, ocf) (((ogf) << 10) + (ocf))
- #define HCI OGF(opcode) ((opcode) >> 10)
- #define HCI\_OCF(opcode) ((opcode) & 0x03FF)

#### **Command opcodes**

- #define HCI OPCODE NOP HCI OPCODE(HCI OGF NOP, HCI OCF NOP)
- #define HCI\_OPCODE\_DISCONNECT HCI\_OPCODE(HCI\_OGF\_LINK\_CONTROL, HCI\_OCF\_DISC← ONNECT)
- #define HCI\_OPCODE\_READ\_REMOTE\_VER\_INFO HCI\_OPCODE(HCI\_OGF\_LINK\_CONTROL, H
   CI OCF READ REMOTE VER INFO)
- #define HCI\_OPCODE\_SET\_EVENT\_MASK HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_S
   ET EVENT MASK)
- #define HCI\_OPCODE\_RESET HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_RESET)
- #define HCI\_OPCODE\_HOST\_BUFFER\_SIZE HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_

   HOST BUFFER SIZE)
- #define HCI\_OPCODE\_READ\_TX\_PWR\_LVL HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF\_← READ\_TX\_PWR\_LVL)
- #define HCI\_OPCODE\_SET\_EVENT\_MASK\_PAGE2 HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI
  OCF SET EVENT MASK\_PAGE2)
- #define HCI\_OPCODE\_READ\_AUTH\_PAYLOAD\_TO HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI←OCF\_READ\_AUTH\_PAYLOAD\_TO)
- #define HCI\_OPCODE\_WRITE\_AUTH\_PAYLOAD\_TO HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HC↔ I OCF WRITE AUTH PAYLOAD TO)
- #define HCI\_OPCODE\_CONFIG\_DATA\_PATH HCI\_OPCODE(HCI\_OGF\_CONTROLLER, HCI\_OCF
   — CONFIG\_DATA\_PATH)
- #define HCI\_OPCODE\_READ\_LOCAL\_VER\_INFO HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HC↔ I OCF READ LOCAL VER INFO)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CMDS HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, H
   —
   CI OCF READ LOCAL SUP CMDS)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_FEAT HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HC
   I OCF READ LOCAL SUP FEAT)
- #define HCI\_OPCODE\_READ\_BUF\_SIZE HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HCI\_OCF\_R ← EAD\_BUF\_SIZE)
- #define HCI\_OPCODE\_READ\_BD\_ADDR HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HCI\_OCF\_R ← EAD\_BD\_ADDR)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CODECS HCI\_OPCODE(HCI\_OGF\_INFORMATIONAL, HCI\_OCF\_READ\_LOCAL\_SUP\_CODECS)
- #define HCI\_OPCODE\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY HCI\_OPCODE(HCI\_OGF\_INFOR← MATIONAL, HCI\_OCF\_READ\_LOCAL\_SUP\_CONTROLLER\_DLY)
- #define HCI\_OPCODE\_READ\_RSSI HCI\_OPCODE(HCI\_OGF\_STATUS, HCI\_OCF\_READ\_RSSI)
- #define HCI\_OPCODE\_LE\_SET\_EVENT\_MASK HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_SET\_EVENT\_MASK)
- #define HCI\_OPCODE\_LE\_READ\_BUF\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_READ\_BUF\_SIZE)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_SUP\_FEAT HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_LOCAL\_SUP\_FEAT)
- #define HCI\_OPCODE\_LE\_SET\_RAND\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF LE SET RAND ADDR)
- #define HCI\_OPCODE\_LE\_SET\_ADV\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_SET\_ADV\_PARAM)
- #define HCI\_OPCODE\_LE\_READ\_ADV\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_ADV\_TX\_POWER)
- #define HCI\_OPCODE\_LE\_SET\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_SET\_ADV\_DATA)
- #define HCI\_OPCODE\_LE\_SET\_SCAN\_RESP\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_SCAN\_RESP\_DATA)

#define HCI\_OPCODE\_LE\_SET\_ADV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
 —
 OCF\_LE\_SET\_ADV\_ENABLE)

- #define HCI\_OPCODE\_LE\_SET\_SCAN\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI← OCF\_LE\_SET\_SCAN\_PARAM)
- #define HCI\_OPCODE\_LE\_CREATE\_CONN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F LE CREATE CONN)
- #define HCI\_OPCODE\_LE\_CREATE\_CONN\_CANCEL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CREATE\_CONN\_CANCEL)
- #define HCI\_OPCODE\_LE\_READ\_WHITE\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_WHITE\_LIST\_SIZE)
- #define HCI\_OPCODE\_LE\_CLEAR\_WHITE\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI↔ OCF\_LE\_CLEAR\_WHITE\_LIST)
- #define HCI\_OPCODE\_LE\_ADD\_DEV\_WHITE\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_ADD\_DEV\_WHITE\_LIST)
- #define HCI\_OPCODE\_LE\_REMOVE\_DEV\_WHITE\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ER, HCI\_OCF\_LE\_REMOVE\_DEV\_WHITE\_LIST)
- #define HCI\_OPCODE\_LE\_CONN\_UPDATE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F LE CONN UPDATE)
- #define HCI\_OPCODE\_LE\_SET\_HOST\_CHAN\_CLASS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_HOST\_CHAN\_CLASS)
- #define HCI\_OPCODE\_LE\_READ\_CHAN\_MAP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_←)
   OCF LE READ CHAN MAP)
- #define HCI\_OPCODE\_LE\_READ\_REMOTE\_FEAT HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H↔ CI\_OCF\_LE\_READ\_REMOTE\_FEAT)
- #define HCI\_OPCODE\_LE\_RAND HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_RAND)
- #define HCI\_OPCODE\_LE\_START\_ENCRYPTION HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI OCF LE START ENCRYPTION)
- #define HCI\_OPCODE\_LE\_LTK\_REQ\_REPL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_LTK\_REQ\_REPL)
- #define HCI\_OPCODE\_LE\_LTK\_REQ\_NEG\_REPL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI\_OCF\_LE\_LTK\_REQ\_NEG\_REPL)
- #define HCI\_OPCODE\_LE\_READ\_SUP\_STATES HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
   — OCF\_LE\_READ\_SUP\_STATES)
- #define HCI\_OPCODE\_LE\_RECEIVER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O

  CF\_LE\_RECEIVER\_TEST)
- #define HCI\_OPCODE\_LE\_TRANSMITTER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC → I\_OCF\_LE\_TRANSMITTER\_TEST)
- #define HCI\_OPCODE\_LE\_TEST\_END HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE
   \_TEST\_END)
- #define HCI\_OPCODE\_LE\_REM\_CONN\_PARAM\_REP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_REM\_CONN\_PARAM\_REP)
- #define HCI\_OPCODE\_LE\_REM\_CONN\_PARAM\_NEG\_REP HCI\_OPCODE(HCI\_OGF\_LE\_CONTR ← OLLER, HCI\_OCF\_LE\_REM\_CONN\_PARAM\_NEG\_REP)
- #define **HCI\_OPCODE\_LE\_SET\_DATA\_LEN** HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F\_LE\_SET\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_READ\_DEF\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_DEF\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_WRITE\_DEF\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_WRITE\_DEF\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_P256\_PUB\_KEY HCI\_OPCODE(HCI\_OGF\_LE\_CONTR← OLLER, HCI\_OCF\_LE\_READ\_LOCAL\_P256\_PUB\_KEY)
- #define HCI\_OPCODE\_LE\_GENERATE\_DHKEY HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
   — OCF\_LE\_GENERATE\_DHKEY)
- #define HCI\_OPCODE\_LE\_ADD\_DEV\_RES\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC → I\_OCF\_LE\_ADD\_DEV\_RES\_LIST)
- #define HCI\_OPCODE\_LE\_REMOVE\_DEV\_RES\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_REMOVE\_DEV\_RES\_LIST)

- #define HCI\_OPCODE\_LE\_CLEAR\_RES\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   OCF\_LE\_CLEAR\_RES\_LIST)
- #define HCI\_OPCODE\_LE\_READ\_RES\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H← CI\_OCF\_LE\_READ\_RES\_LIST\_SIZE)
- #define HCI\_OPCODE\_LE\_READ\_PEER\_RES\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI OCF LE READ PEER RES ADDR)
- #define HCI\_OPCODE\_LE\_READ\_LOCAL\_RES\_ADDR HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_LOCAL\_RES\_ADDR)
- #define HCI\_OPCODE\_LE\_SET\_ADDR\_RES\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_ADDR\_RES\_ENABLE)
- #define HCI\_OPCODE\_LE\_SET\_RES\_PRIV\_ADDR\_TO HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_RES\_PRIV\_ADDR\_TO)
- #define HCI\_OPCODE\_LE\_READ\_MAX\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_MAX\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_READ\_PHY HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE — READ\_PHY)
- #define HCI\_OPCODE\_LE\_SET\_DEF\_PHY HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF← LE\_SET\_DEF\_PHY)

- #define HCI\_OPCODE\_LE\_ENHANCED\_TRANSMITTER\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CON← TROLLER, HCI\_OCF\_LE\_ENHANCED\_TRANSMITTER\_TEST)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_EXT\_ADV\_PARAM)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC → I\_OCF\_LE\_SET\_EXT\_ADV\_DATA)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_RESP\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTRO

  LLER, HCI\_OCF\_LE\_SET\_EXT\_SCAN\_RESP\_DATA)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_ADV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_EXT\_ADV\_ENABLE)
- #define HCI\_OPCODE\_LE\_READ\_MAX\_ADV\_DATA\_LEN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL← LER, HCI\_OCF\_LE\_READ\_MAX\_ADV\_DATA\_LEN)
- #define HCI\_OPCODE\_LE\_REMOVE\_ADV\_SET HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
   — OCF\_LE\_REMOVE\_ADV\_SET)
- #define HCI\_OPCODE\_LE\_CLEAR\_ADV\_SETS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_CLEAR\_ADV\_SETS)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_PER\_ADV\_PARAM)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_DATA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI\_OCF\_LE\_SET\_PER\_ADV\_DATA)
- #define HCI\_OPCODE\_LE\_SET\_PER\_ADV\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_PER\_ADV\_ENABLE)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_EXT\_SCAN\_PARAM)
- #define HCI\_OPCODE\_LE\_SET\_EXT\_SCAN\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_EXT\_SCAN\_ENABLE)
- #define HCI\_OPCODE\_LE\_EXT\_CREATE\_CONN HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I OCF LE EXT CREATE CONN)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_CREATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC)
- #define HCI\_OPCODE\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL HCI\_OPCODE(HCI\_OGF\_LE\_CO← NTROLLER, HCI\_OCF\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL)
- #define HCI\_OPCODE\_LE\_ADD\_DEV\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_ADD\_DEV\_PER\_ADV\_LIST)

 #define HCI\_OPCODE\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTR← OLLER, HCI\_OCF\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST)

- #define HCI\_OPCODE\_LE\_CLEAR\_PER\_ADV\_LIST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CLEAR\_PER\_ADV\_LIST)
- #define HCI\_OPCODE\_LE\_READ\_PER\_ADV\_LIST\_SIZE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_READ\_PER\_ADV\_LIST\_SIZE)
- #define HCI\_OPCODE\_LE\_READ\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF LE READ TX POWER)
- #define HCI\_OPCODE\_LE\_WRITE\_RF\_PATH\_COMP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_WRITE\_RF\_PATH\_COMP)
- #define HCI\_OPCODE\_LE\_READ\_RF\_PATH\_COMP HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_RF\_PATH\_COMP)
- #define HCI\_OPCODE\_LE\_SET\_PRIVACY\_MODE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI OCF LE SET PRIVACY MODE)
- #define HCI\_OPCODE\_LE\_RECEIVER\_TEST\_V3 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I OCF LE RECEIVER TEST V3)
- #define HCI\_OPCODE\_LE\_TRANSMITTER\_TEST\_V3 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_TRANSMITTER\_TEST\_V3)

- #define HCI\_OPCODE\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_C
   ONTROLLER, HCI\_OCF\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE)
- #define HCI\_OPCODE\_LE\_SET\_CONN\_CTE\_RX\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTR
   — OLLER, HCI\_OCF\_LE\_SET\_CONN\_CTE\_RX\_PARAMS)
- #define HCI\_OPCODE\_LE\_SET\_CONN\_CTE\_TX\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTRO← LLER, HCI\_OCF\_LE\_SET\_CONN\_CTE\_TX\_PARAMS)
- #define HCI\_OPCODE\_LE\_CONN\_CTE\_REQ\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CONN\_CTE\_REQ\_ENABLE)
- #define HCI\_OPCODE\_LE\_CONN\_CTE\_RSP\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_CONN\_CTE\_RSP\_ENABLE)
- #define HCI\_OPCODE\_LE\_READ\_ANTENNA\_INFO HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_ANTENNA\_INFO)

- #define HCI\_OPCODE\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER HCI\_OPCODE(HCI\_OGF\_LE\_CONT ← ROLLER, HCI\_OCF\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER)
- #define HCI\_OPCODE\_LE\_SET\_PAST\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_SET\_PAST\_PARAM)
- \*#define HCI\_OPCODE\_LE\_SET\_DEFAULT\_PAST\_PARAM HCI\_OPCODE(HCI\_OGF\_LE\_CONTRO← LLER, HCI\_OCF\_LE\_SET\_DEFAULT\_PAST\_PARAM)
- #define HCI\_OPCODE\_LE\_GENERATE\_DHKEY\_V2 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_GENERATE\_DHKEY\_V2)
- #define HCI\_OPCODE\_LE\_MODIFY\_SLEEP\_CLK\_ACC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL← ER. HCI\_OCF\_LE\_MODIFY\_SLEEP\_CLK\_ACC)
- #define HCI\_OPCODE\_LE\_READ\_BUF\_SIZE\_V2 HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I OCF LE READ BUF SIZE V2)
- #define HCI\_OPCODE\_LE\_READ\_ISO\_TX\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HC ← I OCF LE READ ISO TX SYNC)
- #define HCI\_OPCODE\_LE\_SET\_CIG\_PARAMS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_← OCF\_LE\_SET\_CIG\_PARAMS)
- #define HCI\_OPCODE\_LE\_SET\_CIG\_PARAMS\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SET\_CIG\_PARAMS\_TEST)
- #define HCI\_OPCODE\_LE\_CREATE\_CIS HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_
   LE\_CREATE\_CIS)
- #define HCI\_OPCODE\_LE\_REMOVE\_CIG HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_
   LE\_REMOVE\_CIG)
- #define HCI\_OPCODE\_LE\_ACCEPT\_CIS\_REQ HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_ACCEPT\_CIS\_REQ)

- #define HCI\_OPCODE\_LE\_REJECT\_CIS\_REQ HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_
   —
   OCF\_LE\_REJECT\_CIS\_REQ)
- #define HCI\_OPCODE\_LE\_CREATE\_BIG HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_

   LE CREATE BIG)
- #define HCI\_OPCODE\_LE\_CREATE\_BIG\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI←OCF\_LE\_CREATE\_BIG\_TEST)
- #define HCI\_OPCODE\_LE\_TERMINATE\_BIG HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_O← CF\_LE\_TERMINATE\_BIG)
- #define HCI\_OPCODE\_LE\_BIG\_CREATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI
  OCF LE BIG CREATE SYNC)
- #define HCI\_OPCODE\_LE\_BIG\_TERMINATE\_SYNC HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_BIG\_TERMINATE\_SYNC)
- #define HCI\_OPCODE\_LE\_REQUEST\_PEER\_SCA HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI OCF LE REQUEST PEER SCA)
- #define HCI\_OPCODE\_LE\_SETUP\_ISO\_DATA\_PATH HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_SETUP\_ISO\_DATA\_PATH)
- #define HCI\_OPCODE\_LE\_REMOVE\_ISO\_DATA\_PATH HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLL ← ER, HCI\_OCF\_LE\_REMOVE\_ISO\_DATA\_PATH)
- #define HCI\_OPCODE\_LE\_ISO\_TX\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_

   LE ISO TX TEST)
- #define HCI\_OPCODE\_LE\_ISO\_RX\_TEST HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_

   LE ISO RX TEST)
- #define HCI\_OPCODE\_LE\_ISO\_READ\_TEST\_COUNTERS HCI\_OPCODE(HCI\_OGF\_LE\_CONTRO
   —
   LLER, HCI\_OCF\_LE\_ISO\_READ\_TEST\_COUNTERS)
- #define HCI\_OPCODE\_LE\_ISO\_TEST\_END HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OC← F LE ISO TEST END)
- #define HCI\_OPCODE\_LE\_SET\_HOST\_FEATURE HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, H
   CI\_OCF\_LE\_SET\_HOST\_FEATURE)
- #define HCI\_OPCODE\_LE\_READ\_ISO\_LINK\_QUAL HCI\_OPCODE(HCI\_OGF\_LE\_CONTROLLER, HCI\_OCF\_LE\_READ\_ISO\_LINK\_QUAL)
- #define HCI\_OPCODE\_LE\_READ\_REMOTE\_TX\_POWER HCI\_OPCODE(HCI\_OGF\_LE\_CONTROL ← LER, HCI\_OCF\_LE\_READ\_REMOTE\_TX\_POWER)
- #define HCI\_OPCODE\_LE\_SET\_PATH\_LOSS\_REPORTING\_ENABLE HCI\_OPCODE(HCI\_OGF\_LE CONTROLLER, HCI\_OCF\_LE\_SET\_PATH\_LOSS\_REPORTING\_ENABLE)

## **Packetcraft Vendor Specific**

• #define HCI OPCODE LE VS ENABLE READ FEAT ON CONN ((uint16 t)(0xfff3))

#### Command parameter lengths

- #define HCI LEN NOP 0
- #define HCI\_LEN\_DISCONNECT 3
- #define HCI LEN READ REMOTE VER INFO 2
- #define HCI\_LEN\_SET\_EVENT\_MASK 8
- #define HCI\_LEN\_SET\_EVENT\_MASK\_PAGE2 8
- #define HCI\_LEN\_RESET 0
- #define HCI\_LEN\_READ\_TX\_PWR\_LVL 3
- #define HCI\_LEN\_SET\_CONTROLLER\_TO\_HOST\_FC 1
- #define HCI\_LEN\_HOST\_BUFFER\_SIZE 7
- #define HCI LEN HOST NUM CMPL PKTS 1
- #define HCI\_LEN\_CONFIG\_DATA\_PATH(cLen) (3 + (cLen))
- #define HCI\_LEN\_READ\_LOCAL\_VER\_INFO 0
- #define HCI\_LEN\_READ\_LOCAL\_SUP\_CMDS 0

- #define HCI LEN READ LOCAL SUP FEAT 0
- #define HCI LEN READ BUF SIZE 0
- #define HCI\_LEN\_READ\_BD\_ADDR 0
- #define HCI LEN READ LOCAL SUP CODECS 0
- #define HCI LEN READ LOCAL SUP CODEC CAP 7
- #define HCI LEN READ LOCAL SUP CONTROLLER DLY(ccLen) (8 + (ccLen))
- #define HCI LEN READ RSSI 2
- #define HCI LEN READ AUTH PAYLOAD TO 2
- #define HCI LEN WRITE AUTH PAYLOAD TO 4
- #define HCI LEN LE SET EVENT MASK 8
- #define HCI\_LEN\_LE\_READ\_BUF\_SIZE 0
- #define HCI\_LEN\_LE\_READ\_LOCAL\_SUP\_FEAT 0
- #define HCI\_LEN\_LE\_SET\_RAND\_ADDR 6
- #define HCI\_LEN\_LE\_SET\_ADV\_PARAM 15
- #define HCI\_LEN\_LE\_READ\_ADV\_TX\_POWER 0
- #define HCI\_LEN\_LE\_SET\_ADV\_DATA 32
- #define HCI\_LEN\_LE\_SET\_SCAN\_RESP\_DATA 32
- #define HCI\_LEN\_LE\_SET\_ADV\_ENABLE 1
- #define HCI\_LEN\_LE\_SET\_SCAN\_PARAM 7
- #define HCI LEN LE SET SCAN ENABLE 2
- #define HCI\_LEN\_LE\_CREATE\_CONN 25
- #define HCI LEN LE CREATE CONN CANCEL 0
- #define HCI LEN LE READ WHITE LIST SIZE 0
- #define HCI\_LEN\_LE\_CLEAR\_WHITE\_LIST 0
- #define HCI LEN LE ADD DEV WHITE LIST 7
- #define HCI LEN LE REMOVE DEV WHITE LIST 7
- #define HCI LEN LE CONN UPDATE 14
- #define HCI LEN LE SET HOST CHAN CLASS 5
- #define HCI LEN LE READ CHAN MAP 2
- #define HCI LEN LE READ REMOTE FEAT 2
- #define HCI LEN LE ENCRYPT 32
- #define HCI\_LEN\_LE\_RAND 0
- #define HCI\_LEN\_LE\_START\_ENCRYPTION 28
- #define HCI\_LEN\_LE\_LTK\_REQ\_REPL 18
- #define HCI\_LEN\_LE\_LTK\_REQ\_NEG\_REPL 2
- #define HCI\_LEN\_LE\_READ\_SUP\_STATES 0
- #define HCI\_LEN\_LE\_RECEIVER\_TEST 1
- #define **HCI\_LEN\_LE\_TRANSMITTER\_TEST** 3
- #define HCI\_LEN\_LE\_TEST\_END 0
- #define HCI\_LEN\_LE\_REM\_CONN\_PARAM\_REP 14
- #define HCI\_LEN\_LE\_REM\_CONN\_PARAM\_NEG\_REP 3
- #define HCI LEN LE SET DATA LEN 6
- #define HCI LEN LE READ DEF DATA LEN 0
- #define HCI\_LEN\_LE\_WRITE\_DEF\_DATA\_LEN 4
- #define HCI\_LEN\_LE\_READ\_LOCAL\_P256\_PUB\_KEY 0
- #define HCI LEN LE GENERATE DHKEY 64
- #define HCI LEN LE ADD DEV RES LIST 39
- #define HCI LEN LE REMOVE DEV RES LIST 7
- #define HCI LEN LE CLEAR RES LIST 0
- #define HCI LEN LE READ RES LIST SIZE 0
- #define HCI LEN LE READ PEER RES ADDR 7
- #define HCI\_LEN\_LE\_READ\_LOCAL\_RES\_ADDR 7
   #define HCI\_LEN\_LE\_SET\_ADDR\_RES\_ENABLE 1
- #define HCI\_LEN\_LE\_SET\_RES\_PRIV\_ADDR\_TO 2
- #define HCI\_LEN\_LE\_READ\_MAX\_DATA\_LEN 0
- #define HCI\_LEN\_LE\_READ\_PHY 2
- #define HCI\_LEN\_LE\_SET\_DEF\_PHY 3
- #define HCI\_LEN\_LE\_SET\_PHY 7
- #define HCI\_LEN\_LE\_ENHANCED\_RECEIVER\_TEST 3
- #define HCI\_LEN\_LE\_ENHANCED\_TRANSMITTER\_TEST 4
- #define HCI LEN LE SET ADV SET RAND ADDR 7
- #define HCI\_LEN\_LE\_SET\_EXT\_ADV\_PARAM 25
- #define HCI\_LEN\_LE\_SET\_EXT\_ADV\_DATA(len) (4 + (len))
- #define HCI\_LEN\_LE\_SET\_EXT\_SCAN\_RESP\_DATA(len) (4 + (len))

#define HCI\_LEN\_LE\_EXT\_ADV\_ENABLE(numSets) (2 + (4 \* (numSets))) #define HCI LEN LE READ MAX ADV DATA LEN 0 #define HCI\_LEN\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS 0 #define HCI LEN LE REMOVE ADV SET 1 • #define HCI LEN LE CLEAR ADV SETS 0 #define HCI LEN LE SET PER ADV PARAM 7 • #define HCI LEN LE SET PER ADV DATA(len) (3 + (len)) #define HCI LEN LE SET PER ADV ENABLE 2 #define HCI LEN LE SET EXT SCAN PARAM(numPhys) (3 + (5 \* (numPhys))) #define HCI\_LEN\_LE\_SET\_EXT\_SCAN\_ENABLE 6 #define HCI\_LEN\_LE\_EXT\_CREATE\_CONN(numPhys) (10 + (16 \* (numPhys))) • #define HCI\_LEN\_LE\_PER\_ADV\_CREATE\_SYNC 14 • #define HCI\_LEN\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0 • #define HCI\_LEN\_LE\_PER\_ADV\_TERMINATE\_SYNC 2 • #define HCI\_LEN\_LE\_ADD\_DEV\_PER\_ADV\_LIST 8 • #define HCI\_LEN\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST 8 #define HCI\_LEN\_LE\_CLEAR\_PER\_ADV\_LIST 0 #define HCI LEN LE READ PER ADV LIST SIZE 0 • #define HCI LEN LE READ TX POWER 0 • #define HCI LEN LE READ RF PATH COMP 0 • #define HCI LEN LE WRITE RF PATH COMP 4 • #define HCI\_LEN\_LE\_SET\_PRIVACY\_MODE 8 #define HCI\_LEN\_LE\_SET\_CONN\_CTE\_RX\_PARAMS(spLen) (5 + (spLen)) • #define HCI LEN LE SET CONN CTE TX PARAMS(spLen) (4 + (spLen)) • #define HCI LEN LE CONN CTE REQ ENABLE 7 #define HCI LEN LE CONN CTE RSP ENABLE 3 #define HCI LEN LE READ ANTENNA INFO 0 #define HCI LEN LE SET PER ADV RCV ENABLE 3 #define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_TRANSFER 6 #define HCI\_LEN\_LE\_PER\_ADV\_SET\_INFO\_TRANSFER 5 • #define HCI\_LEN\_LE\_SET\_PAST\_PARAM 8 • #define HCI\_LEN\_LE\_SET\_DEFAULT\_PAST\_PARAM 6 #define HCI\_LEN\_LE\_GENERATE\_DHKEY\_V2 65 #define HCI\_LEN\_LE\_SET\_CIG\_PARAMS(numCis) (15 + (9 \* (numCis))) #define HCI\_LEN\_LE\_CREATE\_CIS(numCis) (1 + (4 \* (numCis))) #define HCI LEN LE REMOVE CIG 1 #define HCI LEN LE ACCEPT CIS REQ 2 #define HCI LEN LE REJECT CIS REQ 3 #define HCI LEN LE REQUEST PEER SCA 2 #define HCI LEN LE CREATE BIS (15 + HCI BC LEN) • #define HCI LEN LE TERMINATE BIG 2 #define HCI LEN LE BIG CREATE SYNC(numBis) (8 + HCI BC LEN + (numBis)) • #define HCI LEN LE BIG TERMINATE SYNC 1 • #define HCI LEN LE SETUP ISO DATA PATH(ccLen) (13 + (ccLen)) #define HCI LEN LE REMOVE ISO DATA PATH 3 #define HCI LEN LE ISO TX TEST 3 • #define HCI LEN LE ISO RX TEST 3 #define HCI\_LEN\_LE\_ISO\_READ\_TEST\_COUNTERS 2 • #define HCI\_LEN\_LE\_ISO\_TEST\_END 2 • #define HCI\_LEN\_LE\_SET\_HOST\_FEATURE 2 • #define HCI\_LEN\_LE\_DISABLE\_SLAVELATENCY 3 #define HCI\_LEN\_LE\_OVERRULE\_REMOTE\_MAX\_RX\_OCTETS\_AND\_TIME 6

#### **Events**

#define HCI DISCONNECT CMPL EVT 0x05

#define HCI\_LEN\_LE\_SET\_TRANSMIT\_POWER 1
 #define HCI\_LEN\_LE\_SET\_EVENT\_NOTIFICATION\_BIT 1
 #define HCI\_LEN\_LE\_RESET\_EVENT\_NOTIFICATION\_BIT 1

- #define HCI ENC CHANGE EVT 0x08
- #define HCI\_READ\_REMOTE\_VER\_INFO\_CMPL\_EVT 0x0C
- #define **HCI\_CMD\_CMPL\_EVT** 0x0E
- #define HCI\_CMD\_STATUS\_EVT 0x0F

- #define HCI HW ERROR EVT 0x10
- #define HCI NUM CMPL PKTS EVT 0x13
- #define HCI DATA BUF OVERFLOW EVT 0x1A
- #define HCI ENC KEY REFRESH CMPL EVT 0x30
- #define HCI LE META EVT 0x3E
- #define HCI\_AUTH\_PAYLOAD\_TIMEOUT\_EVT 0x57
- #define HCI VENDOR SPEC EVT 0xFF

#### **LE Subevents**

- #define HCI LE CONN CMPL EVT 0x01
- #define HCI\_LE\_ADV\_REPORT\_EVT 0x02
- #define HCI\_LE\_CONN\_UPDATE\_CMPL\_EVT 0x03
- #define HCI LE READ REMOTE FEAT CMPL EVT 0x04
- #define HCI\_LE\_LTK\_REQ\_EVT 0x05
- #define HCI\_LE\_REM\_CONN\_PARAM\_REQ\_EVT 0x06
- #define HCI\_LE\_DATA\_LEN\_CHANGE\_EVT 0x07
- #define HCI LE READ LOCAL P256 PUB KEY CMPL EVT 0x08
- #define HCI\_LE\_GENERATE\_DHKEY\_CMPL\_EVT 0x09
- #define HCI LE ENHANCED CONN CMPL EVT 0x0A
- #define HCI LE DIRECT ADV REPORT EVT 0x0B
- #define HCI\_LE\_PHY\_UPDATE\_CMPL\_EVT 0x0C
- #define HCI LE EXT ADV REPORT EVT 0x0D
- #define HCI\_LE\_PER\_ADV\_SYNC\_EST\_EVT 0x0E
- #define HCI LE PER ADV REPORT EVT 0x0F
- #define HCI LE PER ADV SYNC LOST EVT 0x10
- #define HCI LE SCAN TIMEOUT EVT 0x11
- #define HCI LE ADV SET TERM EVT 0x12
- #define HCI LE SCAN REQ RCVD EVT 0x13
- #define HCI LE CH SEL ALGO EVT 0x14
- #define HCI\_LE\_CONNLESS\_IQ\_REPORT\_EVT 0x15
- #define HCI\_LE\_CONN\_IQ\_REPORT\_EVT 0x16
- #define HCI\_LE\_CTE\_REQ\_FAILED\_EVT 0x17
- #define HCI\_LE\_PER\_SYNC\_TRSF\_RCVD\_EVT 0x18
- #define HCI\_LE\_CIS\_EST\_EVT 0x19
- #define HCI\_LE\_CIS\_REQ\_EVT 0x1A
- #define HCI\_LE\_CREATE\_BIG\_CMPL\_EVT 0x1B
- #define HCI\_LE\_TERMINATE\_BIG\_CMPL\_EVT 0x1C
- #define HCI LE BIG SYNC EST EVT 0x1D
- #define HCI\_LE\_BIG\_SYNC\_LOST\_EVT 0x1E
- #define HCI\_LE\_REQ\_PEER\_SCA\_CMPLT\_EVT\_0x1F
- #define HCI\_LE\_PATH\_LOSS\_REPORT\_EVT 0x20
- #define HCI\_LE\_POWER\_REPORT\_EVT 0x21
- #define HCI\_LE\_BIG\_INFO\_ADV\_REPORT\_EVT 0x22

#### **Event parameter lengths**

- #define HCI LEN DISCONNECT CMPL 4
- #define HCI LEN READ REMOTE VER INFO CMPL 8
- #define HCI\_LEN\_CMD\_CMPL 3
- #define HCI LEN CMD STATUS 4
- #define HCI\_LEN\_HW\_ERR 1
- #define HCI\_LEN\_NUM\_CMPL\_PKTS(numHdls) (1 + (4 \* numHdls))
- #define HCI\_LEN\_ENC\_CHANGE 4
- #define HCI\_LEN\_ENC\_KEY\_REFRESH\_CMPL 3
- #define HCI\_LEN\_LE\_CONN\_CMPL 19
- #define HCI\_LEN\_LE\_ADV\_RPT\_MIN 12
- #define HCI\_LEN\_LE\_CONN\_UPDATE\_CMPL 10
- #define HCI\_LEN\_LE\_READ\_REMOTE\_FEAT\_CMPL 12
- #define HCI LEN LE LTK REQ 13
- #define HCI\_LEN\_LE\_REM\_CONN\_PARAM\_REQ 11
- #define HCI\_LEN\_LE\_DATA\_LEN\_CHANGE 11

- #define HCI LEN LE READ PUB KEY CMPL 66
- #define HCI LEN LE GEN DHKEY CMPL 34
- #define HCI\_LEN\_LE\_ENHANCED\_CONN\_CMPL 31
- #define HCI LEN LE DIRECT ADV REPORT 18
- #define HCI\_LEN\_AUTH\_PAYLOAD\_TIMEOUT 2
- #define HCI\_LEN\_LE\_PHY\_UPDATE\_CMPL 6
- #define HCI LEN LE CH SEL ALGO 4
- #define HCI LEN LE PHY UPDATE CMPL 6
- #define HCI LEN LE EXT ADV REPORT MIN 26
- #define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_EST 16
- #define HCI\_LEN\_LE\_PER\_ADV\_REPORT 8
- #define HCI\_LEN\_LE\_PER\_ADV\_SYNC\_LOST 3
- #define HCI\_LEN\_LE\_SCAN\_TIMEOUT 1
- #define HCI\_LEN\_LE\_ADV\_SET\_TERM 6
- #define HCI\_LEN\_LE\_SCAN\_REQ\_RCVD 9
- #define HCI\_LEN\_LE\_PER\_SYNC\_TRSF\_RCVT 20
- #define HCI\_LEN\_LE\_CIS\_EST 29
- #define HCI LEN LE CIS REQ 7
- #define HCI LEN LE PEER SCA CMPL 5
- #define HCI\_LEN\_LE\_CREATE\_BIG\_CMPL(numBis) (19 + (2 \* numBis))
- #define HCI\_LEN\_LE\_TERMINATE\_BIG\_CMPL 3
- #define HCI\_LEN\_LE\_BIG\_SYNC\_EST(numBis) (15 + (2 \* numBis))
- #define HCI LEN LE BIG SYNC LOST 3
- #define HCI LEN LE POWER REPORT 9
- #define HCI LEN LE PATH LOSS ZONE 5
- #define HCI LEN LE BIG INFO ADV REPORT 20

#### Supported commands

- #define HCI\_SUP\_DISCONNECT 0x20
- #define HCI SUP READ REMOTE VER INFO 0x80
- #define HCI SUP SET EVENT MASK 0x40
- #define HCI\_SUP\_RESET 0x80
- #define HCI SUP READ TX PWR LVL 0x04
- #define HCI\_SUP\_READ\_LOCAL\_VER\_INFO 0x08
- #define HCI\_SUP\_READ\_LOCAL\_SUP\_FEAT 0x20
- #define HCI\_SUP\_READ\_BD\_ADDR 0x02
- #define HCI\_SUP\_READ\_RSSI 0x20
- #define HCI\_SUP\_SET\_EVENT\_MASK\_PAGE2 0x04
- #define HCI\_SUP\_LE\_SET\_EVENT\_MASK 0x01
- #define HCI SUP LE READ BUF SIZE 0x02
- #define HCI\_SUP\_LE\_READ\_LOCAL\_SUP\_FEAT 0x04
- #define HCI\_SUP\_LE\_SET\_RAND\_ADDR 0x10
- #define HCI\_SUP\_LE\_SET\_ADV\_PARAM 0x20
- #define HCI\_SUP\_LE\_READ\_ADV\_TX\_POWER 0x40
- #define HCI\_SUP\_LE\_SET\_ADV\_DATA 0x80
- #define HCI SUP LE SET SCAN RESP DATA 0x01
- #define HCI\_SUP\_LE\_SET\_ADV\_ENABLE 0x02
- #define HCI SUP LE SET SCAN PARAM 0x04
- #define HCI SUP LE SET SCAN ENABLE 0x08
- #define HCI\_SUP\_LE\_CREATE\_CONN 0x10
- #define HCI\_SUP\_LE\_CREATE\_CONN\_CANCEL 0x20
- #define HCI\_SUP\_LE\_READ\_WHITE\_LIST\_SIZE 0x40
- #define HCI\_SUP\_LE\_CLEAR\_WHITE\_LIST 0x80
- #define HCI\_SUP\_LE\_ADD\_DEV\_WHITE\_LIST 0x01
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_WHITE\_LIST 0x02
- #define HCI\_SUP\_LE\_CONN\_UPDATE 0x04
- #define HCI\_SUP\_LE\_SET\_HOST\_CHAN\_CLASS 0x08
- #define HCI\_SUP\_LE\_READ\_CHAN\_MAP 0x10
- #define HCI SUP LE READ REMOTE FEAT 0x20
- #define HCI\_SUP\_LE\_ENCRYPT 0x40
- #define HCI\_SUP\_LE\_RAND 0x80
- #define HCI\_SUP\_LE\_START\_ENCRYPTION 0x01

- #define HCI SUP LE LTK REQ REPL 0x02
- #define HCI SUP LE LTK REQ NEG REPL 0x04
- #define HCI\_SUP\_LE\_READ\_SUP\_STATES 0x08
- #define HCI SUP LE RECEIVER TEST 0x10
- #define HCI SUP LE TRANSMITTER TEST 0x20
- #define HCI SUP LE TEST END 0x40
- #define HCI SUP READ AUTH PAYLOAD TO 0x10
- #define HCI SUP WRITE AUTH PAYLOAD TO 0x20
- #define HCI\_SUP\_LE\_REM\_CONN\_PARAM\_REQ\_REPL\_0x10
- #define HCI SUP LE REM CONN PARAM REQ NEG REPL 0x20
- #define HCI\_SUP\_LE\_SET\_DATA\_LEN 0x40
- #define HCI\_SUP\_LE\_READ\_DEF\_DATA\_LEN 0x80
- #define HCI\_SUP\_LE\_WRITE\_DEF\_DATA\_LEN 0x01
- #define HCI\_SUP\_LE\_READ\_LOCAL\_P256\_PUB\_KEY 0x02
- #define HCI\_SUP\_LE\_GENERATE\_DHKEY 0x04
- #define HCI\_SUP\_LE\_ADD\_DEV\_RES\_LIST\_EVT 0x08
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_RES\_LIST 0x10
- #define HCI\_SUP\_LE\_CLEAR\_RES\_LIST 0x20
- #define HCI\_SUP\_LE\_READ\_RES\_LIST\_SIZE 0x40
- #define HCI SUP LE READ PEER RES ADDR 0x80
- #define HCI\_SUP\_LE\_READ\_LOCAL\_RES\_ADDR 0x01
- #define HCI\_SUP\_LE\_SET\_ADDR\_RES\_ENABLE 0x02
  #define HCI\_SUP\_LE\_SET\_RES\_PRIV\_ADDR\_TO 0x04
- #define HCI\_SUP\_LE\_READ\_MAX\_DATA\_LEN 0x08
- #define HCI\_SUP\_LE\_READ\_PHY 0x10
- #define HCI SUP LE SET DEF PHY 0x20
- #define HCI SUP LE SET PHY 0x40
- #define HCI\_SUP\_LE\_ENHANCED\_RECEIVER\_TEST\_0x80
- #define HCI SUP LE ENHANCED TRANSMITTER TEST 0x01
- #define HCI SUP LE SET ADV SET RAND ADDR 0x02
- #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_PARAM 0x04
- #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_DATA 0x08
- #define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_RESP\_DATA 0x10
- #define HCI\_SUP\_LE\_SET\_EXT\_ADV\_ENABLE 0x20
- #define HCI\_SUP\_LE\_READ\_MAX\_ADV\_DATA\_LEN 0x40
- #define HCI\_SUP\_LE\_READ\_NUM\_OF\_SUP\_ADV\_SETS 0x80
- #define HCI\_SUP\_LE\_REMOVE\_ADV\_SET 0x01
- #define HCI\_SUP\_LE\_CLEAR\_ADV\_SETS 0x02
- #define HCI\_SUP\_LE\_SET\_PER\_ADV\_PARAM 0x04
- #define HCI SUP LE SET PER ADV DATA 0x08
- #define HCI\_SUP\_LE\_SET\_PER\_ADV\_ENABLE 0x10
- #define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_PARAM 0x20
- #define HCI\_SUP\_LE\_SET\_EXT\_SCAN\_ENABLE 0x40
- #define HCI\_SUP\_LE\_EXT\_CREATE\_CONN 0x80
- #define HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC 0x01
- #define HCI\_SUP\_LE\_PER\_ADV\_CREATE\_SYNC\_CANCEL 0x02
   #define HCI\_SUP\_LE\_PER\_ADV\_TERMINATE\_SYNC\_0x04
- #define HCI SUP LE ADD DEV PER ADV LIST 0x08
- #define HCI\_SUP\_LE\_REMOVE\_DEV\_PER\_ADV\_LIST\_0x10
- #define HCI SUP LE CLEAR PER ADV LIST 0x20
- #define HCI SUP LE READ PER ADV LIST SIZE 0x40
- #define HCI\_SUP\_LE\_READ\_TX\_POWER 0x80
- #define HCI\_SUP\_LE\_READ\_RF\_PATH\_COMP 0x01
- #define HCI\_SUP\_LE\_WRITE\_RF\_PATH\_COMP 0x02
- #define HCI\_SUP\_LE\_SET\_PRIVACY\_MODE 0x04
- #define HCI\_SUP\_LE\_RECEIVER\_TEST\_V3 0x08
- #define HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V3 0x10
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_PARAMS 0x20
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_CTE\_TX\_ENABLE 0x40
- #define HCI\_SUP\_LE\_SET\_CONNLESS\_IQ\_SAMP\_ENABLE 0x80
- #define HCI\_SUP\_LE\_SET\_CONN\_CTE\_RX\_PARAMS 0x01
- #define HCI\_SUP\_LE\_SET\_CONN\_CTE\_TX\_PARAMS 0x02
- #define HCI\_SUP\_LE\_CONN\_CTE\_REQ\_ENABLE 0x04
- #define HCI\_SUP\_LE\_CONN\_CTE\_RSP\_ENABLE 0x08

- #define HCI SUP LE READ ANTENNA INFO 0x10
- #define HCI\_SUP\_LE\_SET\_PER\_ADV\_RCV\_ENABLE 0x20
- #define HCI SUP LE PER ADV SYNC TRANSFER 0x40
- #define HCI SUP LE PER ADV SET INFO TRANSFER 0x80
- #define HCI\_SUP\_LE\_SET\_PAST\_PARAM 0x01
- #define HCI SUP LE SET DEFAULT PAST PARAM 0x02
- #define HCI\_SUP\_LE\_GENERATE\_DHKEY\_V2 0x04
- #define HCI\_SUP\_LE\_MODIFY\_SLEEP\_CLK\_ACCURACY 0x10
- #define HCI\_SUP\_LE\_READ\_BUF\_SIZE\_V2 0x20
- #define HCI\_SUP\_LE\_READ\_ISO\_TX\_SYNC 0x40
- #define HCI\_SUP\_LE\_SET\_CIG\_PARAM 0x80
  #define HCI\_SUP\_LE\_SET\_CIG\_PARAM\_TEST 0x01
  #define HCI\_SUP\_LE\_CREATE\_CIS 0x02
- #define HCI\_SUP\_LE\_REMOVE\_CIG 0x04
- #define HCI SUP LE ACCEPT CIS REQ 0x08
- #define HCI SUP LE REJECT CIS REQ 0x10
- #define HCI SUP LE CREATE BIG 0x20
- #define HCI SUP LE CREATE BIG TEST 0x40
- #define HCI SUP LE TERMINATE BIG 0x80
- #define HCI\_SUP\_LE\_BIG\_CREATE\_SYNC 0x01
- #define HCI\_SUP\_LE\_BIG\_TERMINATE\_SYNC 0x02
- #define HCI\_SUP\_LE\_REQ\_PEER\_SCA 0x04
- #define HCI\_SUP\_LE\_SETUP\_ISO\_DATA\_PATH 0x08
- #define HCI\_SUP\_LE\_REMOVE\_ISO\_DATA\_PATH 0x10
- #define HCI\_SUP\_LE\_ISO\_TRANSMIT\_TEST 0x20
- #define HCI SUP LE ISO RECEIVE TEST 0x40
- #define HCI\_SUP\_LE\_ISO\_READ\_TEST\_COUNTERS 0x80
- #define HCI SUP LE ISO TEST END 0x01
- #define HCI SUP LE SET HOST FEATURE 0x02
- #define HCI\_SUP\_LE\_READ\_ISO\_LINK\_QUALITY 0x04
- #define HCI SUP LE ENH READ TX POWER LEVEL 0x08
- #define HCI SUP LE READ REMOTE TX POWER LEVEL 0x01
- #define HCI SUP LE SET PATH LOSS REPORT PARAM 0x02
- #define HCI\_SUP\_LE\_SET\_PATH\_LOSS\_REPORT\_ENABLE 0x04
- #define HCI\_SUP\_LE\_SET\_TX\_POWER\_REPORT\_ENABLE 0x08
- #define HCI\_SUP\_LE\_TRANSMITTER\_TEST\_V4 0x01
- #define HCI\_SUP\_READ\_LOCAL\_SUP\_CODECS\_V2 0x02
- #define HCI\_SUP\_READ\_LOCAL\_SUP\_CODEC\_CAP 0x04
  #define HCI\_SUP\_READ\_LOCAL\_SUP\_CTR\_DLY 0x08
- #define HCI SUP CONFIG DATA PATH 0x10
- #define HCI SUP CMD LEN 64

## **Event mask**

- #define HCI\_EVT\_MASK\_DISCONNECT\_CMPL 0x10
- #define HCI\_EVT\_MASK\_ENC\_CHANGE 0x80
- #define HCI\_EVT\_MASK\_READ\_REMOTE\_VER\_INFO\_CMPL 0x08
- #define HCI\_EVT\_MASK\_HW\_ERROR 0x80
- #define HCI\_EVT\_MASK\_DATA\_BUF\_OVERFLOW 0x02
- #define HCI\_EVT\_MASK\_ENC\_KEY\_REFRESH\_CMPL 0x80
- #define HCI\_EVT\_MASK\_LE\_META 0x20

## Event mask page 2

#define HCI EVT MASK AUTH PAYLOAD TIMEOUT 0x80

#### LE event mask

- #define HCI\_EVT\_MASK\_LE\_CONN\_CMPL\_EVT\_0x01
- #define HCI\_EVT\_MASK\_LE\_ADV\_REPORT\_EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_CONN\_UPDATE\_CMPL\_EVT 0x04
- #define HCI\_EVT\_MASK\_LE\_READ\_REMOTE\_FEAT\_CMPL\_EVT 0x08

- #define HCI EVT MASK LE LTK REQ EVT 0x10
- #define HCI EVT MASK LE REMOTE CONN PARAM REQ EVT 0x20
- #define HCI\_EVT\_MASK\_LE\_DATA\_LEN\_CHANGE\_EVT 0x40
- #define HCI EVT MASK LE READ LOCAL P256 PUB KEY CMPL 0x80
- #define HCI EVT MASK LE GENERATE DHKEY CMPL 0x01
- #define HCI EVT MASK LE ENHANCED CONN CMPL EVT 0x02
- #define HCI EVT MASK LE DIRECT ADV REPORT EVT 0x04
- #define HCI EVT MASK LE PHY UPDATE CMPL EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_EXT\_ADV\_REPORT\_EVT 0x10
- #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_EST\_EVT 0x20
- #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_REPORT\_EVT 0x40
- #define HCI\_EVT\_MASK\_LE\_PER\_ADV\_SYNC\_LOST\_EVT 0x80
- #define HCI\_EVT\_MASK\_LE\_SCAN\_TIMEOUT\_EVT 0x01#define HCI\_EVT\_MASK\_LE\_ADV\_SET\_TERM\_EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_SCAN\_REQ\_RCVD\_EVT 0x04
- #define HCI\_EVT\_MASK\_LE\_CH\_SEL\_ALGO\_EVT 0x08
- #define HCI\_EVT\_MASK\_LE\_CONNLESS\_IQ\_REPORT\_EVT 0x10
- #define HCI EVT MASK LE CONN IQ REPORT EVT 0x20
- #define HCI EVT MASK LE CTE REQ FAILED EVT 0x40
- #define HCI\_EVT\_MASK\_LE\_PER\_SYNC\_TRSF\_RCVT\_EVT 0x80
- #define HCI\_EVT\_MASK\_LE\_CIS\_EST\_EVT 0x01
- #define HCI\_EVT\_MASK\_LE\_CIS\_REQ\_EVT 0x02
- #define HCI\_EVT\_MASK\_LE\_CREATE\_BIG\_CMPL\_EVT 0x04
- #define HCI EVT MASK LE TERMINATE BIG CMPL EVT 0x08
- #define HCI EVT MASK LE BIG SYNC EST EVT 0x10
- #define HCI\_EVT\_MASK\_LE\_BIG\_SYNC\_LOST\_EVT\_0x20
- #define HCI EVT MASK LE PEER SCA CMPL EVT 0x40
- #define HCI EVT MASK LE PATH LOSS REPORT EVT 0x80
- #define HCI\_EVT\_MASK\_LE\_TX\_POWER\_REPORT\_EVT 0x01
- #define HCI EVT MASK LE BIG INFO ADV RPT EVT 0x02

## LE supported features

- #define HCI\_LE\_SUP\_FEAT\_ENCRYPTION 0x0000000000000001

- #define HCI\_LE\_SUP\_FEAT\_LE\_PING 0x00000000000000010

- #define HCI\_LE\_SUP\_FEAT\_LE\_2M\_PHY 0x00000000000000100

- #define HCI LE SUP FEAT LE EXT ADV 0x0000000000001000

- #define HCI LE SUP FEAT MIN NUN USED CHAN 0x0000000000010000
- #define HCI\_LE\_SUP\_FEAT\_CONN\_CTE\_RSP 0x000000000000040000
- #define HCI\_LE\_SUP\_FEAT\_CONNLESS\_CTE\_RECV 0x0000000000100000
- #define HCI\_LE\_SUP\_FEAT\_ANTENNA\_SWITCH\_AOA 0x00000000000400000
- #define HCI\_LE\_SUP\_FEAT\_PAST\_SENDER 0x000000001000000
- #define HCI\_LE\_SUP\_FEAT\_SCA\_UPDATE 0x0000000004000000
- #define HCI\_LE\_SUP\_FEAT\_REMOTE\_PUB\_KEY\_VALIDATION 0x0000000008000000
- #define HCI\_LE\_SUP\_FEAT\_CIS\_MASTER 0x000000010000000

- #define HCI LE SUP FEAT ISO BROADCASTER 0x0000000040000000
- #define HCI\_LE\_SUP\_FEAT\_ISO\_SYNC\_RECEIVER 0x0000000080000000
- #define HCI LE SUP FEAT ISO HOST SUPPORT 0x000000100000000
- #define HCI\_LE\_SUP\_FEAT\_POWER\_CONTROL REQUEST 0x000000002000000000
- #define HCI LE SUP FEAT POWER CHANGE IND 0x0000000400000000
- #define HCI LE SUP FEAT PATH LOSS MONITOR 0x0000000800000000

#### LE feature bit positon in FeatureSet stored in the Controller

• #define HCI LE FEAT BIT ISO HOST SUPPORT 32

#### **Advertising command parameters**

- #define HCI\_ADV\_MIN\_INTERVAL 0x0020
- #define HCI\_ADV\_MAX\_INTERVAL 0x4000
- #define HCI\_ADV\_DIRECTED\_MAX\_DURATION 0x0500
- #define HCI ADV TYPE CONN UNDIRECT 0x00
- #define HCI\_ADV\_TYPE\_CONN\_DIRECT 0x01
- #define HCI\_ADV\_TYPE\_DISC\_UNDIRECT 0x02
- #define HCI\_ADV\_TYPE\_NONCONN\_UNDIRECT 0x03
- #define HCI\_ADV\_TYPE\_CONN\_DIRECT\_LO\_DUTY 0x04
- #define HCI\_ADV\_CHAN\_37 0x01
- #define HCI\_ADV\_CHAN\_38 0x02
- #define HCI ADV CHAN 39 0x04
- #define HCI\_ADV\_FILT\_NONE 0x00
- #define HCI ADV FILT SCAN 0x01
- #define HCI ADV FILT CONN 0x02
- #define HCI\_ADV\_FILT\_ALL 0x03

## Scan command parameters

- #define HCI SCAN TYPE PASSIVE 0
- #define HCI SCAN TYPE ACTIVE 1
- #define HCI SCAN INTERVAL MIN 0x0004
- #define HCI\_SCAN\_INTERVAL\_MAX 0x4000
- #define HCI SCAN INTERVAL DEFAULT 0x0010
- #define HCI SCAN WINDOW MIN 0x0004
- #define HCI\_SCAN\_WINDOW\_MAX 0x4000
- #define HCI SCAN WINDOW DEFAULT 0x0010

#### **Connection command parameters**

- #define HCI\_CONN\_INTERVAL\_MIN 0x0006
- #define HCI\_CONN\_INTERVAL\_MAX 0x0C80
- #define HCI CONN LATENCY MAX 0x01F3
- #define HCI\_SUP\_TIMEOUT\_MIN 0x000A
- #define HCI\_SUP\_TIMEOUT\_MAX 0x0C80

## Misc command parameters

- #define HCI\_ROLE\_MASTER 0
- #define HCI ROLE SLAVE 1
- #define HCI\_READ\_TX\_PWR\_CURRENT 0
- #define HCI\_READ\_TX\_PWR\_MAX 1
- #define HCI\_TX\_PWR\_MIN -30
- #define HCI\_TX\_PWR\_MAX 20
- #define HCI\_TX\_PWR\_NO\_PREFERENCE 127
- #define HCI\_VERSION 6
- #define HCI\_RSSI\_MIN -127
- #define HCI RSSI MAX 20

- #define HCI\_ADDR\_TYPE\_PUBLIC 0
- #define HCI\_ADDR\_TYPE\_RANDOM 1
- #define HCI\_ADDR\_TYPE\_PUBLIC\_IDENTITY 2
- #define HCI\_ADDR\_TYPE\_RANDOM\_IDENTITY 3
- #define HCI ADDR TYPE ANONYMOUS 0xFF
- #define HCI\_FILT\_NONE 0
- #define HCI FILT WHITE LIST 1
- #define HCI\_FILT\_RES\_INIT\_2
- #define HCI\_FILT\_WHITE\_LIST\_RES\_INIT 3
- #define HCI\_FILT\_PER\_ADV\_PARAM 0
- #define HCI\_FILT\_PER\_ADV\_LIST 1
- #define HCI\_ROLE\_MASTER 0
- #define HCI ROLE SLAVE 1
- #define HCI PRIV MODE NETWORK 0x00
- #define HCI PRIV MODE DEVICE 0x01

#### Connection event parameters

- #define HCI\_CLOCK\_500PPM 0x00
- #define HCI CLOCK 250PPM 0x01
- #define HCI CLOCK 150PPM 0x02
- #define HCI CLOCK 100PPM 0x03
- #define HCI CLOCK 75PPM 0x04
- #define HCI CLOCK 50PPM 0x05
- #define HCI\_CLOCK\_30PPM 0x06
- #define HCI CLOCK 20PPM 0x07

#### Advertising report event parameters

- #define HCI\_ADV\_CONN\_UNDIRECT 0x00
- #define HCI\_ADV\_CONN\_DIRECT 0x01
- #define HCI\_ADV\_DISC\_UNDIRECT 0x02
- #define HCI\_ADV\_NONCONN\_UNDIRECT\_0x03
- #define HCI\_ADV\_SCAN\_RESPONSE 0x04

#### **Extended advertising data operations**

- #define HCI ADV DATA OP FRAG INTER 0x00
- #define HCI\_ADV\_DATA\_OP\_FRAG\_FIRST 0x01
- #define HCI ADV DATA OP FRAG LAST 0x02
- #define HCI ADV DATA OP COMP FRAG 0x03
- #define HCI\_ADV\_DATA\_OP\_UNCHANGED\_DATA 0x04

#### Advertising data fragment preference

- #define HCI\_ADV\_DATA\_FRAG\_PREF\_FRAG 0x00
- #define HCI\_ADV\_DATA\_FRAG\_PREF\_NO\_FRAG 0x01

#### Number of advertising sets

#define HCI\_ADV\_NUM\_SETS\_ALL\_DISABLE 0x00

## Maximum number of scanning or initiating PHYs

• #define HCI\_MAX\_NUM\_PHYS 3

## **Advertising PHY values**

- #define HCI\_ADV\_PHY\_LE\_1M 0x01
- #define HCI ADV PHY LE 2M 0x02
- #define HCI\_ADV\_PHY\_LE\_CODED 0x03

#### Scanner PHY value bits

- #define HCI SCAN PHY LE 1M BIT (1<<0)
- #define HCI SCAN PHY LE 2M BIT (1<<1)</li>
- #define HCI SCAN PHY LE CODED BIT (1<<2)</li>

#### Initiator PHY value bits

- #define HCI\_INIT\_PHY\_LE\_1M\_BIT (1<<0)</li>
- #define HCI\_INIT\_PHY\_LE\_2M\_BIT (1<<1)
- #define HCI\_INIT\_PHY\_LE\_CODED\_BIT (1<<2)</li>

#### Transmitter PHY value bits

- #define HCI\_TRANS\_PHY\_LE\_1M\_BIT (1<<0)</li>
- #define HCI\_TRANS\_PHY\_LE\_2M\_BIT (1<<1)</li>
- #define HCI\_TRABS\_PHY\_LE\_CODED\_BIT (1<<2)

#### Advertising event properties type bits

- #define HCI ADV PROP CONN ADV BIT (1<<0)</li>
- #define HCI\_ADV\_PROP\_SCAN\_ADV\_BIT (1<<1)</li>
- #define HCI\_ADV\_PROP\_DIRECT\_ADV\_BIT (1<<2)</li>
- #define HCI ADV PROP CONN DIRECT ADV BIT (1<<3)</li>
- #define HCI\_ADV\_PROP\_USE\_LEG\_PDU\_BIT (1<<4)
- #define HCI\_ADV\_PROP\_OMIT\_ADV\_ADDR\_BIT (1<<5)</li>
- #define HCI\_ADV\_PROP\_INC\_TX\_PWR\_BIT (1<<6)</li>

#### Advertising event properties for legacy PDUs

- #define HCI\_ADV\_PROP\_LEG\_CONN\_UNDIRECT 0x13
- #define HCI ADV PROP LEG CONN DIRECT 0x1D
- #define HCI\_ADV\_PROP\_LEG\_SCAN\_UNDIRECT 0x12
- #define HCI\_ADV\_PROP\_LEG\_NONCONN\_UNDIRECT 0x10
- #define HCI\_ADV\_PROP\_LEG\_CONN\_DIRECT\_LO\_DUTY 0x15

#### Extended advertising report event type bits

- #define HCI\_ADV\_RPT\_CONN\_ADV\_BIT (1<<0)
- #define HCI ADV RPT SCAN ADV BIT (1<<1)</li>
- #define HCI ADV RPT DIRECT ADV BIT (1<<2)
- #define HCI\_ADV\_RPT\_SCAN\_RSP\_BIT (1<<3)</li>
- #define HCI\_ADV\_RPT\_LEG\_ADV\_BIT (1<<4)</li>
- #define HCI\_ADV\_RPT\_DATA\_STATUS\_BITS (3<<5)</li>

## Advertising report event types for legacy PDUs

- #define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT 0x13
- #define HCI\_ADV\_RPT\_LEG\_CONN\_DIRECT 0x15
- #define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT 0x12
- #define HCI\_ADV\_RPT\_LEG\_NONCONN\_UNDIRECT 0x10
- #define HCI\_ADV\_RPT\_LEG\_CONN\_UNDIRECT\_SCAN\_RSP 0x1B
- #define HCI\_ADV\_RPT\_LEG\_SCAN\_UNDIRECT\_SCAN\_RSP 0x1A

## Advertising report data status

- #define HCI ADV RPT DATA CMPL 0x00
- #define HCI ADV RPT DATA INCMPL MORE 0x01
- #define HCI\_ADV\_RPT\_DATA\_INCMPL\_TRUNC 0x02

#### Extended advertising report event primary PHY values

- #define HCI ADV RPT PHY PRIM LE 1M 0x01
- #define HCI ADV RPT PHY PRIM LE CODED 0x03

## Extended advertising report event seconday PHY values

- #define HCI\_ADV\_RPT\_PHY\_SEC\_NONE 0x00
- #define HCI ADV RPT PHY SEC LE 1M 0x01
- #define HCI ADV RPT PHY SEC LE 2M 0x02
- #define HCI ADV RPT PHY SEC LE CODED 0x03

#### Channel selection algorithm used

- #define HCI CH SEL ALGO 1 0x00
- #define HCI CH SEL ALGO 20x01

# **KeyType parameters**

- #define HCI\_PRIVATE\_KEY\_GENERATED\_0x00
- #define HCI PRIVATE KEY DEBUG 0x01

## Minimum number of used channels

• #define HCI MIN NUM OF USED CHAN 8

#### Synchronization timeout for the periodic advertising

- #define HCI\_SYNC\_MIN\_TIMEOUT 0x000A
- #define HCI\_SYNC\_MAX\_TIMEOUT 0x4000

#### Maximum synchronization skip

• #define HCI\_SYNC\_MAX\_SKIP 0x01F3

# Maximum synchronization handle

• #define HCI\_SYNC\_MAX\_HANDLE 0x0EFF

## Periodic sync transfer receive mode

- #define HCI SYNC TRSF MODE OFF 0x00
- #define HCI\_SYNC\_TRSF\_MODE\_REP\_DISABLED 0x01,
- #define HCI\_SYNC\_TRSF\_MODE\_REP\_ENABLED 0x02,

## Periodic advertising create sync options bits

- #define HCI\_OPTIONS\_FILT\_POLICY\_BIT (1<<0)</li>
- #define HCI\_OPTIONS\_INIT\_RPT\_ENABLE\_BIT (1<<1)</li>

## **PHY types**

- #define HCI PHY NONE 0x00
- #define HCI PHY LE 1M BIT (1<<0)</li>
- #define HCI\_PHY\_LE\_2M\_BIT (1<<1)</li>
- #define HCI PHY LE CODED BIT (1<<2)

## All PHYs preference

- #define HCI\_ALL\_PHY\_ALL\_PREFERENCES 0x00
- #define HCI\_ALL\_PHY\_TX\_PREFERENCE\_BIT (1<<0)
- #define HCI ALL PHY RX PREFERENCE BIT (1<<1)

## **PHY options**

- #define HCI PHY OPTIONS NONE 0x00
- #define HCI PHY OPTIONS S2 PREFERRED 0x01
- #define HCI\_PHY\_OPTIONS\_S8\_PREFERRED 0x02

#### **CTE Slot Durations**

- #define HCI CTE SLOT DURATION NONE 0x00
- #define HCI\_CTE\_SLOT\_DURATION\_1\_US\_0x01
- #define HCI\_CTE\_SLOT\_DURATION\_2\_US 0x02

## **Permitted CTE Type bits**

- #define HCI CTE TYPE PERMIT AOA RSP BIT (1<<0)</li>
- #define HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_1\_US\_BIT (1<<1)</li>
- #define HCI\_CTE\_TYPE\_PERMIT\_AOD\_RSP\_2\_US\_BIT (1 << 2)

## **Requested CTE Types**

- #define HCI CTE TYPE REQ AOA 0x00
- #define HCI CTE TYPE REQ AOD 1 US 0x01
- #define HCI\_CTE\_TYPE\_REQ\_AOD\_2\_US 0x02

## Bluetooth core specification versions

- #define HCI\_VER\_BT\_CORE\_SPEC\_4\_0 0x06
- #define HCI\_VER\_BT\_CORE\_SPEC\_4\_1 0x07
- #define HCI\_VER\_BT\_CORE\_SPEC\_4\_2 0x08
- #define HCI\_VER\_BT\_CORE\_SPEC\_5\_0 0x09
- #define HCI\_VER\_BT\_CORE\_SPEC\_5\_1 0x0A
- #define HCI\_VER\_BT\_CORE\_SPEC\_5\_2 0x0B

## Parameter lengths

- #define HCI EVT MASK LEN 8
- #define HCI EVT MASK PAGE 2 LEN 8
- #define HCI\_LE\_EVT\_MASK\_LEN 8
- #define HCI\_FEAT\_LEN 8
- #define HCI\_ADV\_DATA\_LEN 31
- #define HCI\_SCAN\_DATA\_LEN 31
- #define HCI\_EXT\_ADV\_DATA\_LEN 251
- #define HCI\_EXT\_ADV\_CONN\_DATA\_LEN 191
- #define HCI\_PER\_ADV\_DATA\_LEN 252
- #define HCI\_EXT\_ADV\_RPT\_DATA\_LEN 229

- #define HCI\_PER\_ADV\_RPT\_DATA\_LEN 247
- #define HCI\_CHAN\_MAP\_LEN 5
- #define HCI\_KEY\_LEN 16
- #define HCI ENCRYPT DATA LEN 16
- #define HCI RAND LEN 8
- #define HCI LE STATES LEN 8
- #define HCI P256 KEY LEN 64
- #define HCI\_DH\_KEY\_LEN 32
- #define HCI\_BC\_LEN 16
- #define HCI\_EXT\_ADV\_RPT\_DATA\_LEN\_OFFSET 23
- #define HCI\_PER\_ADV\_RPT\_DATA\_LEN\_OFFSET 6

## **Number of Antenna IDs in Switching Pattern**

- #define HCI\_MIN\_NUM\_ANTENNA\_IDS 2
- #define HCI MAX NUM ANTENNA IDS 75

### **IQ Report Sample Counts**

- #define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MIN 9
- #define HCI\_IQ\_RPT\_SAMPLE\_CNT\_MAX 82
- #define HCI CONN IQ RPT SAMPLE CNT OFFSET 12

#### **CIS Count**

#define HCI\_MAX\_CIS\_COUNT 0x10

#### **BIS Count**

• #define HCI\_MAX\_BIS\_COUNT 0x10

#### CIG IDs

- #define HCI MIN CIG ID 0x00
- #define HCI\_MAX\_CIG\_ID 0xEF

## **CIS IDs**

- #define HCI MIN CIS ID 0x00
- #define HCI\_MAX\_CIS\_ID 0xEF

## **Packing Scheme**

- #define HCI PACKING SEQUENTIAL 0x00
- #define HCI\_PACKING\_INTERLEAVED 0x01

## **Framing**

- #define HCI\_FRAMING\_UNFRAMED 0x00
- #define HCI\_FRAMING\_FRAMED 0x01

## Slave Clock Accuracy

- #define HCI\_MIN\_SCA 0x00
- #define HCI\_MAX\_SCA 0x07

#### **SDU Size**

- #define HCI MIN SDU SIZE 0x0000
- #define HCI\_MAX\_SDU\_SIZE 0x0FFF

#### **SDU Interval**

- #define HCI\_MIN\_SDU\_INTERV 0x0000FF
- #define HCI\_MAX\_SDU\_INTERV 0x0FFFFF
- #define HCI\_DEFAULT\_SDU\_INTERV 0x004E20

### **CIS Transport Latency**

- #define HCI\_MIN\_CIS\_TRANS\_LAT 0x0005
- #define HCI MAX CIS TRANS LAT 0x0FA0
- #define HCI DEFAULT CIS TRANS LAT 0x0028

#### **CIS Flush Time**

- #define HCI MIN CIS FT 0x01
- #define HCI MAX CIS FT 0xFF

## **CIS Burst Number**

- #define HCI MIN CIS BN 0x00
- #define HCI MAX CIS BN 0x0F

## **CIS Retransmission Number**

- #define HCI MIN CIS RTN 0x00
- #define HCI MAX CIS RTN 0x0F

#### ISO Data Path Direction

- #define HCI\_ISO\_DATA\_DIR\_INPUT 0
- #define HCI\_ISO\_DATA\_DIR\_OUTPUT 1

#### ISO Data Path Direction Bit

- #define HCI\_ISO\_DATA\_PATH\_INPUT\_BIT (1<<HCI\_ISO\_DATA\_DIR\_INPUT)
- #define HCI\_ISO\_DATA\_PATH\_OUTPUT\_BIT (1<<HCI\_ISO\_DATA\_DIR\_OUTPUT)</li>

## ISO Data Path ID

- #define HCI\_ISO\_DATA\_PATH\_HCI 0x00
- #define HCI\_ISO\_DATA\_PATH\_VS 0x01
- #define HCI\_ISO\_DATA\_PATH\_DISABLED 0xFF

## ISO test packet payload type

- #define HCI\_ISO\_ISO\_PLD\_TYPE\_ZERO\_LEN 0x00
- #define HCI\_ISO\_ISO\_PLD\_TYPE\_VAR\_LEN 0x01
- #define HCI\_ISO\_ISO\_PLD\_TYPE\_MAX\_LEN 0x02

## **Maximum number of codecs**

• #define HCI\_MAX\_CODEC 5

#### Maximum length of codec-specific capability data

• #define HCI CODEC CAP DATA LEN 4

#### Codec transport types

- #define HCI\_CODEC\_TRANS\_CIS\_BIT (1<<2)
- #define HCI\_CODEC\_TRANS\_BIS\_BIT (1<<3)

#### **ISO Header Packet Boundary**

- #define HCI\_ISO\_HDR\_PB\_START\_FRAG 0x00
- #define HCI\_ISO\_HDR\_PB\_CONT\_FRAG 0x01
- #define HCI\_ISO\_HDR\_PB\_COMP\_FRAG 0x02
- #define HCI\_ISO\_HDR\_PB\_END\_FRAG 0x03

#### ISOAL Segmentation Header Start/Continuation Bit

- #define HCI\_ISOAL\_SEG\_HDR\_SC\_START 0x00
- #define HCI ISOAL SEG HDR SC CONT 0x01

## **Company ID**

- #define HCI\_ID\_PACKETCRAFT 0x07E8
- #define HCI\_ID\_GREENPEAK 0x0453

Greenpeak company ID.

## **Manufacturer location in Local version**

#define HCI\_LOCAL\_VER\_MANUFACTURER\_POS 4

#### **Coding Format Assigned Numbers**

- #define HCI ID LC3 0x01
- #define HCI\_ID\_VS 0xFF
- #define HCI CODEC TRANSPORT CIS 0x02
- #define HCI CODEC TRANSPORT BIS 0x03

#### 3.8.1 Detailed Description

HCI constants and definitions from the Bluetooth specification.

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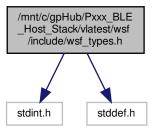
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```

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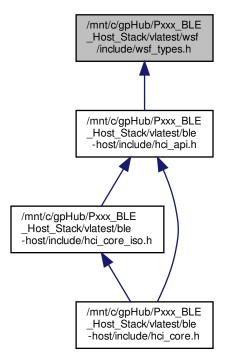
# 3.9 /mnt/c/gpHub/Pxxx\_BLE\_Host\_Stack/vlatest/wsf/include/wsf\_types.h File Reference

Platform-independent data types.

```
#include <stdint.h>
#include <stddef.h>
Include dependency graph for wsf_types.h:
```



This graph shows which files directly or indirectly include this file:



## **Macros**

# Integer Data Types

- #define bool\_t uint8\_t
- #define FALSE 0
- #define TRUE (!FALSE)
- #define **UINT64\_C**(x) x##ULL
- #define **UINT32\_C**(x) x##UL
- #define **UINT8 C**(x) (x)

## 3.9.1 Detailed Description

Platform-independent data types.

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