Human Interface Device v1.1 or later (HID11)

Bluetooth® Implementation Conformance Statement (ICS) Proforma

- **Revision:** HID11.ICS.p15
- **Revision Date:** 2025-11-04
- **Prepared By:** BTI
- **Prepared during TCRL:** TCRL.pkg101

Contents

1   General principles

1.1   Implementation Under Test (IUT) identification

Using the Bluetooth SIG qualification tool, the implementer is expected to declare details about what will be implemented.

1.2   Enforcement of inter-layer dependencies

This ICS includes one or more tables with inter-layer dependencies (ILDs). ILDs are used for specification requirements that are dependent on other supporting specifications. ILDs can refer to an individual ICS item in a separate layer (individual ILD), or it can refer to the full layer (full-layer ILD).

ILDs residing in an X2Core layer will be enforced from the Bluetooth SIG qualification tool in the following conditions, depending on where the referred ILD is residing:

Referred ILD resides in	Individual ILD	Full-layer ILD
Controller layer	Core-Complete configuration, or Referred layer is supported	N/A
Lower HCI layer	HCI is supported	N/A
Upper HCI layer	Core-Host configuration, or UHCI is supported	N/A
Host layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	N/A
X2Core layer	Core-Host configuration, or Core-Complete configuration, or Referred layer is supported	Core-Host configuration, or Core-Complete configuration

Table 1.1: Enforcement of an ILD within the Bluetooth SIG qualification tool

2 ICS declarations

2.1 Version

Table 0: X.Y Versions

Item	Version	Reference	Status
1	HID v1.1	[1]	C.1, C.2

C.1:   Mandatory.

C.2:   Can only be supported with an active X.Y.Z version after Deprecation or Withdrawal. Deprecated 2021-02-01. Withdrawn 2024-02-01.

Table 0a: X.Y.Z Versions

Item	Version	Reference	Status
1	HID v1.1.1	[3]	C.1
2	HID v1.1.2	[4]	C.1

C.1:   Mandatory to support one and only one.

2.2 Core Configuration

Table 0b: Core Configuration Requirements

Item	Core Configuration	Reference	Status
1	Profile supported over BR/EDR	[1] 1.3	C.1, C.3
2	Profile supported over LE	[1] 1.3	C.2

C.1:   Excluded for this Profile IF CORE 41/2 "LE Core Configuration".

C.2:   Excluded for this Profile.

C.3:   Mandatory for this Profile.

2.3 Roles

Table 1: Role Requirements

Item	Role	Reference	Status
1	General HID Host, Report protocol	[1] 2.1.2	C.1, C.2
2	Limited HID Host, Report protocol	[1] 2.1.2	C.3, C.2
3	Limited HID Host, Boot protocol	[1] 2.1.2	C.2
4	HID Device Role	[1] 2.1.2	C.2

C.1:   Excluded IF HID11 1/2 "Limited HID Host, Report protocol", otherwise Optional.

C.2:   Mandatory to support at least one.

C.3:   Excluded IF HID11 1/1 "General HID Host, Report protocol", otherwise Optional.

2.4 HID Host Role

2.4.1 Application Procedures

Table 2: Application Procedures

Prerequisite: HID11 1/1 "General HID Host, Report protocol" OR HID11 1/2 "Limited HID Host, Report protocol" OR HID11 1/3 "Limited HID Host, Boot protocol"

Item	Capability	Reference	Status
1	Host initiated HID connection establishment	[1] 5.2.2	C.1
2	Device initiated HID connection establishment	[1] 5.2.2	O
3	Terminate HID connection	[1] 5.2.2	C.2
4	Accept Termination of HID connection	[1] 5.2.2	M
5	Support for virtual cables	[1] 4.5	C.3
6	Device initiated reconnection	[1] 5.4.2	C.2
7	Host initiated reconnection	[1] 5.4.2	C.2
8	Support for entering Suspend mode	[1] 3.1.2.2	O
9	Support for exiting Suspend mode	[1] 3.1.2.2	C.4
10	Disconnect HID Devices when entering Suspend mode	[1] 3.1.2.2	O
11	Host provides a user interface to support device discovery, pairing and display of a PIN	[1] 5.4.3.4.3	O

C.1: Mandatory IF HID11 1/1 "General HID Host, Report protocol" OR HID11 1/3 "Limited HID Host, Boot protocol", otherwise Optional.

C.2: Mandatory IF HID11 1/1 "General HID Host, Report protocol", otherwise Optional.

C.3: Mandatory IF HID11 1/1 "General HID Host, Report protocol" OR HID11 2/6 "Device initiated reconnection" OR HID11 2/7 "Host initiated reconnection", otherwise Optional.

C.4: Mandatory IF HID11 2/8 "Support for entering Suspend mode", otherwise Excluded.

2.4.2 HID Protocol Procedures

2.4.2.1 Report Protocol Transfers for General Hosts

Table 3: Report Protocol Transfers for General Hosts

Prerequisite: HID11 1/1 "General HID Host, Report protocol"

Item	Capability	Reference	Status
1	Report Protocol Device to Host reports on Control channel (Get_Report)	[1] 3.2	M
2	Report Protocol Device to Host reports on Interrupt channel	[1] 3.2	M
3	Report Protocol Host to Device reports on Control channel (Set_Report) for Output reports	[1] 3.2	O
4	Report Protocol Host to Device reports on Interrupt channel	[1] 3.2	M
5	Report Protocol Host to Device reports on Control channel (Set_Report) for feature reports	[1] 3.2	M

2.4.2.2 Report Protocol Transfers for Limited Hosts

Table 4: Report Protocol Transfers for Limited Hosts

Prerequisite: HID11 1/2 "Limited HID Host, Report protocol"

Item	Capability	Reference	Status
1	Report Protocol Device to Host reports on Control channel (Get_Report)	[1] 3.2	C.1
2	Report Protocol Device to Host reports on Interrupt channel	[1] 3.2	C.1
3	Report Protocol Host to Device reports on Control channel (Set_Report) for Output reports	[1] 3.2	C.1
4	Report Protocol Host to Device reports on Interrupt channel	[1] 3.2	C.1
5	Report Protocol Host to Device reports on Control channel (Set_Report) for feature reports	[1] 3.2	C.1

C.1:   Mandatory to support at least one.

2.4.2.3 Boot Protocol Transfers

Table 5: Boot Protocol Transfers

Prerequisite: HID11 1/3 "Limited HID Host, Boot protocol"

Item	Capability	Reference	Status
1	Boot Protocol Device to Host reports on Control channel	[1] 3.3	O
2	Boot Protocol Device to Host reports on Interrupt channel	[1] 3.3	M
3	Boot Protocol Host to Device reports on Control channel (Set_Report)	[1] 3.3	O
4	Boot Protocol Host to Device reports on Interrupt channel	[1] 3.3	O

2.4.2.4 HID Control Commands

Table 6: HID Control Commands

Prerequisite: HID11 1/1 "General HID Host, Report protocol" OR HID11 1/2 "Limited HID Host, Report protocol" OR HID11 1/3 "Limited HID Host, Boot protocol"

Item	Capability	Reference	Status
1	Set_Protocol command	[1] 3.1.2.6	C.1
2	Get_Protocol command	[1] 3.1.2.5	O
3	Set_Report command	[1] 3.1.2.4	C.2
4	Get_Report command	[1] 3.1.2.3	C.3
5	HID_CONTROL SUSPEND	[1] 3.1.2.2	O

Item	Capability	Reference	Status
6	HID_CONTROL EXIT_SUSPEND	[1] 3.1.2.2	C.4
7	Receiving HID_CONTROL VC_UNPLUG	[1] 3.1.2.2	C.5
8	Sending HID_CONTROL VC_UNPLUG	[1] 3.1.2.2	O

C.1: Mandatory IF HID11 1/3 "Limited HID Host, Boot protocol", otherwise Optional.

C.2: Mandatory IF HID11 3/3 "Report Protocol Host to Device reports on Control channel (Set_Report) for Output reports" OR HID11 3/5 "Report Protocol Host to Device reports on Control channel (Set_Report) for feature reports" OR HID11 4/3 "Report Protocol Host to Device reports on Control channel (Set_Report) for Output reports" OR HID11 4/5 "Report Protocol Host to Device reports on Control channel (Set_Report) for feature reports" OR HID11 5/3 "Boot Protocol Host to Device reports on Control channel (Set_Report)", otherwise Optional.

C.3: Mandatory IF HID11 3/1 "Report Protocol Device to Host reports on Control channel (Get_Report)" OR HID11 4/1 "Report Protocol Device to Host reports on Control channel (Get_Report)" OR HID11 5/1 "Boot Protocol Device to Host reports on Control channel", otherwise Optional.

C.4: Mandatory IF HID11 6/5 "HID_CONTROL SUSPEND", otherwise Optional.

C.5: Mandatory IF HID11 2/5 "Support for virtual cables", otherwise Optional.

2.4.3 Link Manager Procedures

Table 7: Link Manager Procedures

Prerequisite: HID11 1/1 "General HID Host, Report protocol" OR HID11 1/2 "Limited HID Host, Report protocol" OR HID11 1/3 "Limited HID Host, Boot protocol"

Item	Capability	Reference	Status
1	Require MITM protection during pairing	[1] 5.4.3	O
2	Security Mode 4 with Just Works	[1] 5.4.3	C.1, C.4
3	Security Mode 4 with Numeric Comparison	[1] 5.4.3	C.1
4	Security Mode 4 with Passkey Entry	[1] 5.4.3	C.1
5	Security Mode 4 with Out of Band	[1] 5.4.3	C.1
6	Security Mode 3 with pre-v2.1 HID Device	[1] 5.4.3.4.3	C.2
7	Security Mode 2 with pre-v2.1 HID Device, pairing before L2CAP channels established	[1] 5.4.3.4.3	C.2
8	Security Mode 2 with pre-v2.1 HID Device, pairing after L2CAP channels established	[1] 5.4.3.4.3	C.2
9	Security Mode 1 with pre-v2.1 HID Device	[1] 5.4.3.4.3	O
10	Sniff mode	[1] 5.1.8.1, 5.1.12	C.3
11	Sniff Subrating	[1] 5.1.8.5, 5.1.12	O
12	Role switch	[1] 5.1.12, 5.4.2	O

C.1: Mandatory to support at least one.

C.2: Mandatory to support at least one IF HID11 2/11 "Host provides a user interface to support device discovery, pairing and display of a PIN", otherwise Optional.

C.3: Mandatory IF HID11 1/1 "General HID Host, Report protocol" OR HID11 1/3 "Limited HID Host, Boot protocol", otherwise Optional.

C.4: Excluded IF HID11 7/1 "Require MITM protection during pairing", otherwise Optional.

2.5   HID Device Role

Table 8: HID Device Roles

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Pointing HID	[1] 5.3.4.3	C.1
2	Keyboard HID	[1] 5.3.4.3	C.1
3	Other HID (not pointing device nor keyboard device)	[1] 5.3.4.3	C.1

C.1:   Mandatory to support at least one.

2.5.1   Application Procedures

Table 9: Application Procedures

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Accept HID connection	[1] 5.2.2	M
2	Terminate HID connection	[1] 5.2.2	O
3	Accept Termination of HID connection	[1] 5.2.2	M
4	Support for virtual cables	[1] 4.5	O
5	Device initiated reconnection	[1] 5.4.2	C.1
6	Host initiated reconnection	[1] 5.4.2	C.1
7	One or more output reports declared in report descriptor	[1] 2.1.1	C.2, C.3
8	One or more input reports declared in report descriptor	[1] 2.1.1	C.2, C.4
9	One or more feature reports declared in report descriptor	[1] 2.1.1	C.2
10	Support for multiple virtual cables	[1] 4.5.3	O
11	Support for Suspend mode	[1] 3.1.2.2	O
12	Disconnect from HID Host when entering Suspend mode	[1] 3.1.2.2	O

C.1:   Mandatory to support at least one IF HID11 9/4 "Support for virtual cables", otherwise Optional.

C.2:   Mandatory to support at least one.

C.3:   Mandatory IF HID11 8/2 "Keyboard HID", otherwise Optional.

C.4:   Mandatory IF HID11 8/1 "Pointing HID" OR HID11 8/2 "Keyboard HID", otherwise Optional.

2.5.2   HID Protocol Procedures

2.5.2.1   Report Protocol Transfers

Table 10: Report Protocol Transfers

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Report Protocol Device to Host reports on Control channel	[1] 3.2	M
2	Report Protocol Device to Host reports on Interrupt channel	[1] 3.2	C.1
3	Report Protocol Host to Device reports on Control channel	[1] 3.2	C.2
4	Report Protocol Host to Device reports on Interrupt channel	[1] 3.2	C.3

C.1:   Optional IF HID11 9/8 "One or more input reports declared in report descriptor", otherwise Excluded.

C.2:   Mandatory IF HID11 9/7 "One or more output reports declared in report descriptor" OR HID11 9/9 "One or more feature reports declared in report descriptor", otherwise Optional IF HID11 9/8 "One or more input reports declared in report descriptor", otherwise Excluded.

C.3:   Mandatory IF HID11 9/7 "One or more output reports declared in report descriptor", otherwise Excluded.

2.5.2.2   Boot Protocol Transfers

Table 11: Boot Protocol Transfers

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Boot Protocol Device to Host reports on Control channel	[1] 3.3	O
2	Boot Protocol Device to Host reports on Interrupt channel	[1] 3.3	C.1
3	Boot Protocol Host to Device reports on Control channel	[1] 3.3	O
4	Boot Protocol Host to Device reports on Interrupt channel	[1] 3.3	C.2

C.1:   Mandatory IF HID11 8/1 "Pointing HID" OR HID11 8/2 "Keyboard HID", otherwise Optional.

C.2:   Mandatory IF HID11 8/2 "Keyboard HID", otherwise Optional.

2.5.2.3   HID Control Commands

Table 12: HID Control Commands

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Set_Protocol command	[1] 3.1.2.6	C.1, C.5
2	Get_Protocol command	[1] 3.1.2.5	C.1, C.5
3	Set_Report command	[1] 3.1.2.4	C.2

Item	Capability	Reference	Status
4	Get_Report command	[1] 3.1.2.3	M
5	HID_CONTROL SUSPEND	[1] 3.1.2.2	C.3
6	HID_CONTROL EXIT_SUSPEND	[1] 3.1.2.2	C.3
7	Receiving HID_CONTROL VC_UNPLUG	[1] 3.1.2.2	C.4
8	Sending HID_CONTROL VC_UNPLUG	[1] 3.1.2.2	O

C.1:   Mandatory IF HID11 8/1 "Pointing HID" OR HID11 8/2 "Keyboard HID", otherwise Optional.

C.2:   Mandatory IF HID11 9/7 "One or more output reports declared in report descriptor" OR HID11 9/9 "One or more feature reports declared in report descriptor", otherwise Optional.

C.3:   Mandatory IF HID11 9/11 "Support for Suspend mode", otherwise Optional.

C.4:   Mandatory IF HID11 9/4 "Support for virtual cables", otherwise Optional.

C.5:   Mandatory to support none or all.

2.5.3   Link Manager Procedures

Table 13: Link Manager Procedures

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status
1	Require MITM protection during pairing	[1] 5.4.3	O
2	Security Mode 4 with Just Works	[1] 5.4.3	C.1, C.6
3	Security Mode 4 with Numeric Comparison	[1] 5.4.3	C.1
4	Security Mode 4 with Passkey Entry	[1] 5.4.3	C.1
5	Security Mode 4 with Out of Band	[1] 5.4.3	C.1
6	Security Mode 3 with pre-v2.1 HID Device	[1] 5.4.3.3.3	C.5
7	Security Mode 2 with pre-v2.1 HID Device, pairing before L2CAP channels established	[1] 5.4.3.3.3	C.5
8	Security Mode 2 with pre-v2.1 HID Device, pairing after L2CAP channels established	[1] 5.4.3.3.3	C.5
9	Security Mode 1 with pre-v2.1 HID Device	[1] 5.4.3.3.3	O
10	Sniff mode	[1] 5.1.8.1	C.2
11	Request Sniff intervals or Sniff Subrating Maximum Latencies greater than 1 second	[1] 5.3.4.13	O
12	Sniff Subrating	[1] 5.1.8.5, 5.1.12	O
13	Role switch	[1] 5.1.12, 5.4.2	C.3
14	HIDReconnectInitiate in SDP has value of TRUE	[1] 5.3.4.6	C.4

C.1:   Mandatory to support at least one.

C.2:   Mandatory IF HID Device remains connected for more than 30 s.

C.3:   Mandatory IF HID11 13/4 "Security Mode 4 with Passkey Entry", otherwise Optional.

C.4:   Mandatory IF HID11 8/1 "Pointing HID" OR HID11 8/2 "Keyboard HID", otherwise Optional.

C.5:   Mandatory to support at least one IF HID11 8/2 "Keyboard HID", otherwise Optional.

C.6:   Excluded IF HID11 13/1 "Require MITM protection during pairing", otherwise Optional.

2.5.4 Profile Dependencies

Table 14: Profile Dependencies

Prerequisite: HID11 1/4 "HID Device Role"

Item	Capability	Reference	Status	Inter-Layer Dependency
1–2	No longer used	N/A	N/A	N/A
3	Implements Bluetooth Device Identification Profile v1.3 or later	[1] 1.3	M	[2] DID 0/2

3   References

[1]   Human Interface Device Specification, Version 1.1 or later

[2]   ICS Proforma for Device Identification Profile (DID)

[3]   Human Interface Device Specification, Version 1.1.1

[4]   Human Interface Device Specification, Version 1.1.2

4 Revision history and acknowledgments

Revision History

Publication Number	Revision Number	Date	Comments
0	1.0	2003-04-06	Removed mandatory HOLD mode for devices in accordance with HID Profile Specification 1.0 Final release for use with 1.0 Profile Specification
1	1.0.1	2005-01-19	Incorporate review comments for release.
	1.0.2r1	2005-06-20	Incorporate TSE 799 to accommodate boot mode hosts
2	1.0.2	2005-09-27	Accept changes. Prepare for publication.
	1.0.3r0	2006-12-01	TSE 1797: Change Table 3.3.2.3 (Table 5 after TSE 1979 is implemented) TSE 1856: Update C.1. for Table 3.3.2.3 (5) and 3.4.2.3 (13) TSE 1979: Number tables consecutively
3	1.0.3	2007-01-10	Prepare for publication.
	1.0.4r0	2008-02	TSE 2308: Change Table 1 description and footnote TSE 2468: Add prerequisites to Tables 2,4, 6, and 7
4	1.0.4	2008-04	Prepare for publication.
	1.0.5r0	2008-07-29	TSE: 2648: Aligned table numbers with TPG; Aligned Table 1 items with TPG Table 1. Removed duplicate table 17, moved Tables 8 and 9 to end.
	1.0.5r1-4	2008-08-09 – 11-20	Further edits based on feedback in TSE 2648 comments. TSE 2582: Additions to Tables 2, 5, 9, and 12 TSE 2562: TP/HCE/BV-02-I optional Removed 15 and 16.
5	1.0.5	2008-12-04	Prepare for publication.
	1.1.0 r0-r15	2010-07-20 – 2011-02-01	Major update to support the HID Profile Specification rev 1.1 (Alma) and the HID Profile Test Specification rev 1.1 Re-organized sections 3.4.2.1 & 3.4.2.2. Renumbered table items. Accepted all previous changes. Re-organized table 6 and table 12. Removed unreferenced items from table 2, 3 and 8. Removed Identification HID device type since all devices will have security support anyway. Removed unreferenced PICS questions. Separated PICS items for sending vs. receiving of HID_CONTROL VC_UNPLUG Minor changes to reflect that either Set_Report or asynchronous reports are required for General Hosts, but not both. Fixes to reflect Set_Report required now only for General Hosts when sending feature reports, and that only async reports are required for input and output reports.

Publication Number	Revision Number	Date	Comments
			Additional edits to clarify General Host requirements related to Set_Report.
			Addressed further BTI comments. Added PICS entries for external dependencies.
6	1.1.0	2012-02-21	Adopted by the Bluetooth SIG Board of Directors
	1.1.1r1	2013-05-01	TSE 5048: Added Table 0 for versioning.
7	1.1.1	2013-07-02	Prepare for Publication
	1.1.2r00	2014-05-01	TSE 5501: Added C.5 to Table 13. Updated 13/6, 13/7, and 13/8 Status from Mandatory to C.5.
8	1.1.2	2014-07-07	TCRL 2014-1 Publication
	1.1.3r00	2015-04-29	TSE 5932: Revised conditionals in Table 10 to reflect Spec accurately.
	1.1.3r01	2015-06-01	Review by Alicia Courtney. Converted to current document template.
9	1.1.3	2015-07-14	Prepared for TCRL 2015-1 publication
	1.1.1.0r00	2015-10-28	Updated version numbering to align with Specification version change from 1.1 to 1.1.1 for ESR09. With the specification taking a third identifying number, the ICS version identifier moves to the fourth number and starts again at 0.
	1.1.1.0r01	2015-11-02	Added item 1/4 for new Specification version 1.1.1 (ESR09).
	1.1.1.0r02	2015-11-24	Added Table 0a for minor versions.
10	1.1.1.0	2015-12-22	Prepared for TCRL 2015-2 publication
	1.1.1.1r00	2017-07-25	TSE 9114: Added "otherwise Optional" to C.1 of Table 9.
	1.1.1.1r01	2017-09-21	Template Update.
11	1.1.1.1	2017-11-28	Approved by BTI. Prepared for TCRL 2017-2 publication.
	1.1.1.1ed2 r00	2021-01-15	TSE 15981 (rating 1): Updates for deprecations. Items 14/1 and 14/2 are removed as they are no longer needed after the 2.1 Core deprecations.
	1.1.1.1 edition 2	2021-02-01	Approved by BTI on 2021-01-15. Prepared for edition 2 publication.
	p12r00–r04	2021-09-20 – 2021-12-08	TSE 17437 (rating 1): Updated Table 0 to align with the current ICS template. Changed the document name and cover page.
			TSE 17684 (rating 1): Updated deprecation and withdrawal information and made template-related and consistency checker editorials.
			TSE 17715 (rating 1): Updated conditionals for Table 1 to clarify roles; updated status of item 2 accordingly.
			Performed template-related fixes. Updated copyright page to align with v2 of the DNMD.
12	p12	2022-01-25	Approved by BTI on 2021-12-19. Prepared for TCRL 2021-2 publication.

Publication Number	Revision Number	Date	Comments
	p12ed2r00–r03	2023-02-07 – 2023-02-23	TSE 22360 (rating 1): Updated to the latest ICS conventions, and updated the Withdrawal date for HID 1.1 from 2023-02-01 to 2024-02-01 Deleted draft revision history comment prior to p0.
	p12 edition 2	2023-02-27	Approved by BTI on 2023-02-23. Prepared for edition 2 publication.
	p13r00	2024-10-11	TSE 25424 (rating 2): Per E23181, added prerequisite HID11 1/4 "HID Device Role" to Table 14.
13	p13	2025-02-18	Approved by BTI on 2024-12-25. Prepared for TCRL 2025-1 publication.
	p14r00	2025-02-27	TSE 27006 (rating 2): For Table 0, updated 0/1 Status value and conditional C.1 and added C.2. Added "Core Configuration" section and Table 0b.
14	p14	2025-07-08	Approved by BTI on 2025-05-30. Prepared for TCRL pkg100 publication.
	p15r00	2025-08-11	TSE 27990 (rating 2): Updated the versions tables to add HID v1.1.2. Updated the references list.
15	p15	2025-11-04	Approved by BTI on 2025-09-24. Prepared for TCRL pkg101 publication.