

# Pulse Oximeter Service (PLXS)

## **Bluetooth® Implementation Conformance Statement (ICS) Proforma**

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# 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 Versions

**Table 0: X.Y Versions**

Item	Version	Reference	Status
1	PLXS v1.0	<a href="#">[1]</a>	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 2023-02-01. Withdrawn 2025-02-01.

**Table 0a: X.Y.Z Versions**

Item	Version	Reference	Status
1	PLXS v1.0.1	<a href="#">[3]</a>	C.1

C.1: Mandatory IF PLXS 0/1 “PLXS v1.0”, otherwise Excluded.

### 2.2 Transports

**Table 1: Transport Requirements**

Item	Transport	Reference	Status
1	Service supported over BR/EDR	<a href="#">[1]</a> 1.5	C.1, C.3
2	Service supported over LE	<a href="#">[1]</a> 1.5	C.2, C.3

C.1: Excluded for this Service IF CORE 41/2 “LE Core Configuration”.

C.2: Excluded for this Service IF CORE 41/1 “BR/EDR Core Configuration”.

C.3: Mandatory to support at least one.

### 2.3 Service and feature requirements

**Table 2: Feature Requirements**

Item	Capability	Reference	Status
1	Measurement Status Support	<a href="#">[1]</a> 3.3.1.1	O
2	Device and Sensor Status Support	<a href="#">[1]</a> 3.3.1.1	O
3	Measurement Storage for Spot-check Measurement Support	<a href="#">[1]</a> 3.3.1.1	O
4	Timestamp for Spot-check measurements is supported	<a href="#">[1]</a> 3.3.1.1	C.1
5	SpO2PR-Fast Metric Supported	<a href="#">[1]</a> 3.3.1.1	O
6	SpO2PR-Slow Metric Supported	<a href="#">[1]</a> 3.3.1.1	O
7	Pulse Amplitude Index Supported	<a href="#">[1]</a> 3.3.1.1	O
8	Multiple Bond Supported	<a href="#">[1]</a> 3.3.1.1	O
9	Indications for changes of supported features	<a href="#">[3]</a> 3, 3.3.1	M

C.1: Mandatory IF PLXS 2/3 “Measurement Storage for Spot-check Measurement Support”, otherwise Optional.

**Table 3: Service Requirements**

Item	Capability	Reference	Status
1	Pulse Oximeter Service	[1] 2	M
2	PLX Spot-check Measurement Characteristic	[1] 3.1	C.1
3	Flags field (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.1	C.2
4	SpO2PR-Spot-Check field (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.2	C.2
5	Timestamp field (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.3	C.3
6	Measurement Status field (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.4	C.4
7	Device and Sensor Status field (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.5	C.11
8	Pulse Amplitude Index (PLX Spot-check Measurement Characteristic)	[1] 3.1.1.6	C.6
9	PLX Continuous Measurement Characteristic	[1] 3.2	C.1
10	Flags field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.1	C.7
11	SpO2PR-Normal field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.2	C.7
12	SpO2PR-Fast field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.3	C.8
13	SpO2PR-Slow field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.4	C.9
14	Measurement Status field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.5	C.4
15	Device and Sensor Status field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.6	C.12
16	Pulse Amplitude Index field (PLX Continuous Measurement Characteristic)	[1] 3.2.1.7	C.6
17	PLX Features Characteristic	[1] 3.3	M
18	Supported Features field (PLX Features Characteristic)	[1] 3.3.1.1	M
19	Measurement Status field (PLX Features Characteristic)	[1] 3.3.1.2	C.4
20	Device and Sensor Status field (PLX Features Characteristic)	[1] 3.3.1.3	C.5
21	Record Access Control Point (RACP) Characteristic	[1] 3.4	C.3
22	Report Stored Records Op Code	[1] 3.4.4	C.10
23	Delete Stored Records Op Code	[1] 3.4.5	O
24	Abort Operation Op Code	[1] 3.4.6	O
25	Report Number of Stored Records Op Code	[1] 3.4.7	O
26	Number of Stored Records Response Op Code	[1] 3.4.7	O
27	Response Code Op Code (RACP)	[1] 3.4.4–3.4.8	C.10

C.1: Mandatory to support at least one.

C.2: Mandatory IF PLXS 3/2 “PLX Spot-check Measurement Characteristic”, otherwise Excluded.

C.3: Mandatory IF PLXS 2/3 “Measurement Storage for Spot-check Measurement Support”, otherwise Optional.



- C.4: Mandatory IF PLXS 2/1 “Measurement Status Support”, otherwise Excluded.
- C.5: Mandatory IF PLXS 2/2 “Device and Sensor Status Support”, otherwise Excluded.
- C.6: Mandatory IF PLXS 2/7 “Pulse Amplitude Index Supported”, otherwise Excluded.
- C.7: Mandatory IF PLXS 3/9 “PLX Continuous Measurement Characteristic”, otherwise Excluded.
- C.8: Mandatory IF PLXS 2/5 “SpO2PR-Fast Metric Supported”, otherwise Excluded.
- C.9: Mandatory IF PLXS 2/6 “SpO2PR-Slow Metric Supported”, otherwise Excluded.
- C.10: Mandatory IF PLXS 3/21 “Record Access Control Point (RACP) Characteristic”, otherwise Excluded.
- C.11: Mandatory IF PLXS 2/2 “Device and Sensor Status Support” AND PLXS 3/2 “PLX Spot-check Measurement Characteristic”, otherwise Excluded.
- C.12: Mandatory IF PLXS 2/2 “Device and Sensor Status Support” AND PLXS 3/9 “PLX Continuous Measurement Characteristic”, otherwise Excluded.

**Table 3a: Indications for changes of supported features**

*Prerequisite: PLXS 2/9 “Indications for changes of supported features”*

Item	Capability	Reference	Status
1	Changeable PLX Features	[3] 3	O
2	PLX Features characteristic indication	[3] 3, 3.3.1	C.1

- C.1: Mandatory IF PLXS 3a/1 “Changeable PLX Features”, otherwise Excluded.

**Table 4: Report Stored Records Filter Parameters**

*Prerequisite: PLXS 3/22 “Report Stored Records Op Code”*

Item	Feature	Reference	Status
1	All Records Operator	[1] 3.4.4	M

**Table 5: Delete Stored Records Filter Parameters**

*Prerequisite: PLXS 3/23 “Delete Stored Records Op Code”*

Item	Feature	Reference	Status
1	All Records Operator	[1] 3.4.5	O

**Table 6: Abort Operation Filter Parameters**

*Prerequisite: PLXS 3/24 “Abort Operation Op Code”*

Item	Feature	Reference	Status
1	Null Operator	[1] 3.4.6	O

**Table 7: Report Number of Stored Records Filter Parameters***Prerequisite: PLXS 3/25 “Report Number of Stored Records Op Code”*

Item	Feature	Reference	Status
1	All Records Operator	[1] 3.4.7	O

**Table 8: Number of Stored Records Response Filter Parameters***Prerequisite: PLXS 3/26 “Number of Stored Records Response Op Code”*

Item	Feature	Reference	Status
1	Null Operator	[1] 3.4.7	M

**Table 9: Response Code Filter Parameters***Prerequisite: PLXS 3/27 “Response Code Op Code (RACP)”*

Item	Feature	Reference	Status
1	Null Operator	[1] 3.4.4–7	M

## 2.4 GATT requirements

**Table 10: GATT Requirements**

Item	Feature	Reference	Status	Inter-Layer Dependency
1	No longer used	N/A	N/A	N/A
2	GATT Server over LE	[1] 1.5	C.4	[2] GATT 1a/3
3	GATT Server over BR/EDR	[1] 1.5	C.5	[2] GATT 1a/4
4	Read Characteristic Value	[1] 1.4	M	[2] GATT 4/8
5	Write Characteristic Value	[1] 1.4	C.1	[2] GATT 4/14
6	Single Notification	[1] 1.4	C.2	[2] GATT 4/17
7	Indications	[1] 1.4	C.3	[2] GATT 4/18
8	Read Characteristic Descriptors	[1] 1.4	M	[2] GATT 4/19
9	Write Characteristic Descriptors	[1] 1.4	M	[2] GATT 4/21

- C.1: Mandatory IF PLXS 2/3 “Measurement Storage for Spot-check Measurement Support”, otherwise not defined.
- C.2: Mandatory IF PLXS 3/9 “PLX Continuous Measurement Characteristic”, otherwise not defined.
- C.3: Mandatory IF PLXS 3/2 “PLX Spot-check Measurement Characteristic” OR PLXS 3a/2 “PLX Features characteristic indication”, otherwise not defined.
- C.4: Mandatory IF PLXS 1/2 “Service supported over LE”, otherwise not defined.
- C.5: Mandatory IF PLXS 1/1 “Service supported over BR/EDR”, otherwise not defined.



## 2.5 SDP requirements

**Table 11: SDP Requirements**

*Prerequisite: PLXS 1/1 "Service supported over BR/EDR"*

Item	Feature	Reference	Status
1	SDP record present for PLXS	[1] 4	M
2–3	No longer used	N/A	N/A

**Table 12: No longer used**

## 3 References

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- [1] Pulse Oximeter Service Specification, Version 1.0 or later
- [2] ICS Proforma for Generic Attribute Profile (GATT)
- [3] Pulse Oximeter Service Specification, Version 1.0.1

## 4 Revision history and acknowledgments

### Revision History

Publication Number	Revision Number	Date	Comments
0	1.0.0	2015-07-21	Prepared for publication
	1.0.1r00	2017-09-14	TSE 9789: Revised conditional status for table 3 items 7 and 15 and adds new conditionals in Table 3.
1	1.0.1	2017-11-28	Approved by BTI. Prepared for TCRL 2017-2 publication.
	p2r00–r06	2021-02-21 – 2021-12-23	TSE 16765 (rating 4): Updated C.1 in Table 0. Added new Table 0a, Table 3a, Table 12, and new item PLXS 2/9 and C.2. Added reference for PLXS Specification v1.0.1 (E16248). Removed reference to Bluetooth Core Specification, as it is not used. Performed editorial work, including updating to the latest ICS template and aligning the copyright page with v2 of the DNMD.
2	p2	2022-01-25	Approved by BTI on 2022-01-06. Prepared for TCRL 2021-2 publication.
	p3r00–r01	2023-10-06 – 2023-12-06	TSE 23676 (rating 2): Resolved GAP, GATT, and SDP inter-layer dependencies. In Table 0, added new conditional C.1 and updated the existing C.1 (now C.2). In Table 0a, updated the reference for Item 1 and conditional C.1. Updated C.1 for Table 1. In Table 2, updated the Reference and Status values for Item 9, updated C.1, and deleted C.2. In Table 3, updated C.1–C.12. In Table 3a, updated C.1. In Table 10, marked Item 1 as no longer used; updated the Feature and ILD values for Item 2; updated the Feature, Status, and ILD values for Item 3; updated C.1–C.4; and added C.5. In Table 11, updated the prerequisite, deleted the ILD column, updated the Feature value for Item 1, and marked Items 2 and 3 as no longer used. Marked Table 12 as no longer used. Editorial edits to align with the latest ICS template, including updates to table titles and references. Deleted draft revision history comments prior to p0.
3	p3	2024-07-01	Approved by BTI on 2024-04-21. Prepared for TCRL 2024-1 publication.
	p3ed2r00–r01	2025-07-10 – 2025-07-15	TSE 27335 (rating 1): Updated the language in C.2 of Table 0. Updated the Status for PLXS 1/1 and PLXS 1/2, added conditions C.1 and C.2, and renumbered the previous C.1 as C.3. Updated the Feature in PLXS 10/6.
	p3 edition 2	2025-08-05	Approved by BTI on 2025-08-05. Prepared for edition 2 publication.

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