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## TX POWER SERVICE

### Abstract:

This service exposes a device's current transmit power level when in a connection.

## Revision History

Revision	Date(yy-mm-dd)	Comments
D09r01	2010-05-05	First draft of Tx Power service
D09r02	2010-05-17	Minor corrections
D09r03	2010-05-18	Additional changes to align with other service documents
D09r04	2010-11-05	Updated following approval of Proximity UCRDD
D09r05	2010-11-08	Corrections, plus updates following comments from TB, JH.
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D09r08	2010-11-24	Updated to match revised template from GPA WG
D09r09	2010-11-25	Proposed update from Frank, but with Word irregularities
D09r10	2010-11-25	Comments from Steven Wenham, plus resolutions agreed on PUID WG call
D09r11	2010-11-25	Further corrections
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D10r01	2011-01-24	Draft v1.0 created
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D10r03	2011-03-08	Updated security statement in section3.
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# 1 Introduction

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The Tx Power service uses the Tx Power Level characteristic (as defined in [2]) to expose the current transmit power level of a device when in a connection.

## 1.1 Conformance

If a device claims conformance to this service, all capabilities indicated as mandatory for this service shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated. All mandatory capabilities, and optional and conditional capabilities for which support is indicated, are subject to verification as part of the *Bluetooth* qualification program.

## 1.2 Service Dependency

This service has no dependencies on other GATT-based services.

## 1.3 *Bluetooth* Specification Release Compatibility

This service is compatible with any *Bluetooth* Core Specification host [2] that includes the Generic Attribute Profile (GATT).

## 1.4 GATT Sub-Procedure Requirements

Additional GATT sub-procedure requirements beyond those required by the GATT are listed in Table 1.1:

GATT Sub-Procedure	Requirement
Notification	C1
Read Characteristic Descriptors	C2
Write Characteristic Descriptors	C3

Table 1.1: GATT Sub-Procedure Requirements

C1 = Mandatory if one or more Tx Power Level characteristics supports notification

C2 = Mandatory if more than one Tx Power Level characteristic is exposed

C3 = Mandatory if Notification is claimed

## 1.5 Transport Dependencies

This service shall operate over LE transport only.

## 1.6 Error Codes

This service defines no Attribute Protocol Application Error Codes.

## **2 Service Declaration**

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### **2.1 Declaration**

The Tx Power service shall be instantiated as a «Primary Service». The service UUID shall be set to «Tx Power».

The UUID value assigned to «Tx Power» is defined in [\[3\]](#).

There shall only be one instance of the Tx Power service on a device.

### 3 Service Characteristics

Characteristic	Ref.	Mandatory / Optional
Tx Power Level	3.1	M

Table 3.1: Service characteristics

The characteristic in [Table 3.1](#) shall comply with the properties in [Table 3.2](#).

	Broadcast	Read	Write without Response	Write	Notify	Indicate	Signed Write	Reliable Write	Writable Auxiliaries
Tx Power Level	X	M	X	X	X	X	X	X	X

Table 3.2: Characteristic properties

Requirements marked with ‘M’ are mandatory, ‘O’ are optional and ‘X’ are excluded (not permitted).

This service does not impose any security requirements.

There shall be exactly one instance of the Tx Power Level characteristic.

#### 3.1 Tx Power Level

The Tx Power Level characteristic represents the current transmit power.

##### 3.1.1 Characteristic Behavior

The Tx Power Level characteristic returns the current transmit power level when read using the GATT Characteristic Read Value procedure.

## **4 Service Behaviors**

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No behavior is defined beyond exposing the static characteristic as described above.



## 5 Acronyms and Abbreviations

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Abbreviation or Acronym	Meaning
GATT	Generic Attribute Profile
LE	Low Energy
UUID	Universally Unique Identifier
Tx	Transmit

*Table 5.1: Abbreviations and Acronyms*

## 6 References

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- [2] *Bluetooth v4.0 Core Specification*
- [3] Characteristic and Descriptor descriptions are accessible via the [Bluetooth SIG Assigned Numbers](#) web page.