Phone Alert Status Service (PASS)

Bluetooth® Test Specification

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Abstract

This document defines test structures and procedures for conformance test of products implementing the Phone Alert Status Service Specification.
Revision History

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<td>Adopted by the Bluetooth SIG Board of Directors</td>
</tr>
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<td>2014-04-11</td>
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<td>2014-06-01</td>
<td>Added Pass/Fail Verdict Conventions according to applicable test specification template.</td>
</tr>
<tr>
<td>1.0.1</td>
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<td>TCRL 2014-1 Publication</td>
</tr>
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<td>2016-05-26</td>
<td>Converted to new Test Case ID conventions as defined in TSTO v4.1.</td>
</tr>
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1 Scope

This Bluetooth document contains the Test Suite Structure (TSS) and Test Cases (TC) to test the Bluetooth Phone Alert Status Service Specification.

The objective of this test specification is to provide a basis for interoperability tests for Bluetooth devices giving a high probability of air interface interoperability between different manufacturers' Bluetooth devices.
2 References, Definitions, and Abbreviations

2.1 References
This Bluetooth document incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

[1] Bluetooth Test Strategy and Terminology Overview
[2] Bluetooth Core Specification, Version 4.0 or later
[3] Phone Alert Status Service Specification v1.0

2.2 Definitions
For the purpose of this Bluetooth document, the definitions from [1] and [2] apply.

2.3 Abbreviations
For the purpose of this Bluetooth document, the definitions from [1] and [2] apply.
3 Test Suite Structure (TSS)

3.1 Overview

The Phone Alert Status Service requires the presence of GAP, SM and GATT. This is illustrated in Figure 3.1.

![Figure 3.1: Phone Alert Status Service Test Model](image)

3.2 Test Strategy

The test objectives are to verify functionality of the Phone Alert Status Service within a Bluetooth Host and enable interoperability between Bluetooth Hosts on different devices. The testing approach is to cover mandatory and optional requirements in the service specification and to match these to the support of the IUT as described in the ICS Proforma.

The basis for the test approach is the general concepts and conformance testing principles defined in ISO/IEC 9646-1 and ISO/IEC 9646-2; both are part of the OSI Conformance Testing Methodology and Framework (CTMF).

The conformance test equipment shall provide an implementation of the Radio Controller and the parts of the Host needed to perform the test cases defined in the Phone Alert Status Service test specification. For some test cases, it is necessary to stimulate the IUT from an Upper Tester. In practice, this could be implemented as a special test interface, an MMI, or another interface supported by the IUT.

The Phone Alert Status Service test suite contains Valid Behavior (BV) tests complemented with Invalid Behavior (BI) tests where required. The test coverage mirrored in the test suite structure is the result of a process that started with catalogued specification requirements that were logically grouped and assessed for testability enabling coverage in defined test purposes.
The test suite structure is a tree with the first level representing the protocol groups and is listed in section 3.3.

3.3 Test Groups
The following test groups have been defined.

3.3.1 Service Definition
Verify the service definition.

3.3.2 Characteristic Declaration
Verify the presence and contents of characteristic declarations.

3.3.3 Characteristic Read
Verify characteristics that support reading can be read. Verify the format and value of characteristic values.

3.3.4 Characteristic Write
Verify characteristics which support writing can be written.

3.3.5 Service Procedures
Verify the operation of additional procedures defined in the service specification.
4 Test Cases

4.1 Introduction

4.1.1 Test Case Identification Conventions

Test cases shall be assigned unique identifiers per the conventions in [1]. The convention used here is <spec abbreviation>/<IUT role>/<class>/<xx>-<nn>-<y>.

Test group abbreviations for class, feature, function, sub-function or capability (as applicable to this test specification) are defined in Table 4.1.

<table>
<thead>
<tr>
<th>Identifier Abbreviation</th>
<th>Class Identifier &lt;class&gt;</th>
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<tbody>
<tr>
<td>PASS</td>
<td>Phone Alert Status Service</td>
</tr>
<tr>
<td>SR</td>
<td>Server Role</td>
</tr>
<tr>
<td>SD</td>
<td>Service Definition</td>
</tr>
<tr>
<td>DEC</td>
<td>Characteristic Declaration</td>
</tr>
<tr>
<td>CDD</td>
<td>Characteristic Descriptor Declaration</td>
</tr>
<tr>
<td>CCC</td>
<td>Client Characteristic Configuration</td>
</tr>
<tr>
<td>CR</td>
<td>Characteristic Read</td>
</tr>
<tr>
<td>CW</td>
<td>Characteristic Write</td>
</tr>
<tr>
<td>SP</td>
<td>Service Procedures</td>
</tr>
</tbody>
</table>

Table 4.1: Phone Alert Status Service TC Class Naming Convention

4.1.2 Conformance

When conformance is claimed, all capabilities indicated as mandatory for this Specification 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 certification program.

The Bluetooth Qualification Program may employ tests to verify implementation robustness. The level of implementation robustness that is verified varies from one Specification to another and may be revised for cause based on interoperability issues found in the market.

Such tests may verify:

- That claimed capabilities may be used in any order and any number of repetitions that is not excluded by the Specification, OR
- That capabilities enabled by the implementations are sustained over durations expected by the use case, OR
- That the implementation gracefully handles any quantity of data expected by the use case, OR
• That in cases where more than one valid interpretation of the Specification exist, the implementation complies with at least one interpretation and gracefully handles other interpretations OR

• That the implementation is immune to attempted security exploits.

A single execution of each of the required tests is required in order to constitute a pass verdict. However, it is noted that in order to provide a foundation for interoperability, it is necessary that a qualified implementation consistently and repeatedly pass any of the applicable tests.

In any case, where a member finds an issue with the Test Plan Generator, the Test Case as described in the Test Specification, or with the Test System utilized, the Member is required to notify the responsible party via an errata request such that the issue may be addressed.

4.1.3 Pass/Fail Verdict Conventions

Each test case has an Expected Outcome section, which outlines all the detailed pass criteria conditions that shall be met by the IUT to merit a Pass Verdict.

The convention in this test specification is that, unless there are a specific set of fail conditions outlined in the test case, the IUT fails the test case as soon as one of the pass criteria conditions cannot be met and in case this occurs the outcome of the test shall be the Fail Verdict.

4.2 Setup Preambles

The procedures defined in this section are provided for information, as they are used by test equipment in achieving the initial conditions in certain tests.

4.2.1 ATT Bearer on LE Transport

Follow the preamble procedure described in [5] section 4.2.1.2.

4.3 Service Definition

Verify the service definition.

4.3.1 PASS/SR/SD/BV-01-C [Service Definition]

• Test Purpose

Verify that the IUT has one instantiation of the Phone Alert Status service as a primary service.

• Reference

[3] 2

• Initial Condition
Establish an ATT Bearer connection between the Lower Tester and IUT as described in section 4.2.1.

- Test Procedure

1. Discover all primary services by executing the test procedure of GATT test case GATT/SR/GAD/BV-01-C, Discover All Primary Services, in [4] or primary services by service UUID by executing the test procedure of GATT test case GATT/SR/GAD/BV-02-C, Discover Primary Services by Service UUID - from server, in [4] with the service UUID set to «Phone Alert Status Service».

- Expected Outcome

**Pass verdict**

One attribute handle range with the service UUID set to «Phone Alert Status Service» is returned, containing the starting handle and the ending handle of the service definition.

### 4.4 Characteristic Declaration

- Test Purpose

Verify the presence of and contents of the characteristic declaration specified by the service.

- Reference

[3]

- Initial Condition

The handle range of the service has been previously discovered by the Lower Tester in test case PASS/SR/SD/BV-01-C [Service Definition].

Establish an ATT Bearer connection between the Lower Tester and IUT as described in section 4.2.1.

- Test Procedure

The following test procedure applies to the test cases listed in Table 4.2:

1. Discover all characteristics of the service by executing the test procedure of GATT test case GATT/SR/GAD/BV-04-C, Discover All Characteristics of a Service - from server, in [4].

2. Discovered characteristic that is listed in Table 4.2.

- Expected Outcome

The following pass and fail verdicts apply to the test cases listed in Table 4.2:

**Pass verdict**
The characteristic is discovered and the characteristic properties field of the attribute value of the characteristic declaration ([2] Section 3.3.1.1) meets the requirements of the service as shown in Table 4.2.

### Characteristic Declaration Test Cases

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4.1</td>
<td>0x12 ([3] Table 3.2)</td>
</tr>
<tr>
<td>4.4.2</td>
<td>0x12 ([3] Table 3.2)</td>
</tr>
<tr>
<td>4.4.3</td>
<td>0x04 ([3] Table 3.2)</td>
</tr>
</tbody>
</table>

Table 4.2: Characteristic Declaration Test Cases

### 4.5 Characteristic Descriptor

- **Test Purpose**
  
  Verify the presence of and contents of Client Configuration characteristic descriptors specified by the service.

- **Reference**
  
  [3] 3.1.2

- **Initial Condition**
  
  The following Initial Condition applies to this test case listed in Table 4.3:

  Establish an ATT Bearer connection between the Lower Tester and IUT as described in section 4.2.1.

  The handle range of the characteristic has been previously discovered by the Lower Tester during the test procedure in Section 4.4 or is known to the Lower Tester by other means.

- **Test Procedure**
  
  The following test procedure applies to the test cases listed in Table 4.3:

  1. Discover all characteristic descriptors of the characteristic by executing the test procedure of GATT test case GATT/SR/GAD/BV-06-C, Discover All Characteristic Descriptors - from server, in [4] using the handle range of the characteristic. The IUT returns one or more handle-UUID pairs.
2. If the UUID in a handle-UUID pair is for a Client Configuration characteristic, read the Client Configuration characteristic by executing the test procedure of GATT test case GATT/SR/GAR/BV-06-C, Read Characteristic Descriptors - from server server, in [4].

![Diagram showing ATT Bearer established over selected transport. ATT_Find_Information_Response has been executed]

- Expected Outcome

The following pass and fail verdicts apply to the test cases listed in Table 4.3:

**Pass verdict**

The Client Configuration characteristic is discovered, the Client Configuration characteristic is read, and the value of the Client Configuration characteristic meets the requirements of the service as shown in Table 4.3.

**Characteristic Descriptor Test Cases**

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>[4.5.1] PASS/SR/CDD/BV-01-C [Alert Status - Client Characteristic Configuration Descriptor]</td>
<td>[3] 3.1.2.1 Value is 0x0000 or 0x0001</td>
</tr>
<tr>
<td>[4.5.2] PASS/SR/CDD/BV-02-C [Ringer Settings - Client Characteristic Configuration Descriptor]</td>
<td>[3] 3.2.2.1 Value is 0x0000 or 0x0001</td>
</tr>
</tbody>
</table>

*Table 4.3: Characteristic Descriptor Test Cases*

### 4.6 Configure Notification

- **Test Purpose**

  Enable and disable the characteristic notification.

- **Reference**

  [3] 3.1
• Initial Condition

Establish an ATT Bearer connection between the Lower Tester and IUT as described in section 4.2.1 and L2CAP channel.

The handle of the characteristic value referenced in the test cases below has been previously discovered by the Lower Tester during the test procedure in Section 4.4 or is known to the Lower Tester by other means.

If the IUT requires a bonding procedure then perform a bonding procedure.

If IUT permissions for the characteristic require a specific security mode or security level, establish a connection meeting those requirements.

The handle of the client characteristic configuration descriptor referenced in the test cases below has been previously discovered by the Lower Tester during the test procedure in Section 4.5 or is known to the Lower Tester by other means.

• Test Procedure

The following test procedure applies to the test cases listed in the table below:

1. If the test case is not for notification, disable notification by writing value 0x0000 to the client characteristic configuration descriptor of the characteristic using the test procedure of GATT test case GATT/SR/GAW/BV-08-C, Write Characteristic Descriptors – from Server, in [4].

2. If the test case is for notification, enable notification by writing value 0x0001 to the client characteristic configuration descriptor of the characteristic.

3. Repeat steps 1, 2 for each instance of the characteristic

• Expected Outcome

The following pass and fail verdicts apply to the test cases listed in Table 4.4:

Pass verdict
The characteristic descriptor is successfully written and the value returned when read is consistent with the value written.
### Characteristic Notification Test Cases

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Value Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.1 PASS/SR/CCC/BV-01-C [Configure Notification – Alert Status]</td>
<td>0x0000 (disable)</td>
</tr>
<tr>
<td>4.6.2 PASS/SR/CCC/BV-02-C [Configure Notification – Alert Status]</td>
<td>0x0001 (enable)</td>
</tr>
<tr>
<td>4.6.3 PASS/SR/CCC/BV-03-C [Configure Notification – Ringer Setting]</td>
<td>0x0000 (disable)</td>
</tr>
<tr>
<td>4.6.4 PASS/SR/CCC/BV-04-C [Configure Notification – Ringer Setting]</td>
<td>0x0001 (enable)</td>
</tr>
</tbody>
</table>

*Table 4.4: Characteristic Notification Test Cases*

### 4.7 Characteristic Read

- **Test Purpose**
  
  Read using the GATT Read Characteristic Value sub-procedure and verify characteristic value.

- **Reference**
  
  [3] 3.2

- **Initial Condition**

  The handle of each characteristic value referenced in the test cases below has been previously discovered by the Lower Tester during the test procedure in Section 4.4 or is known to the Lower Tester by other means.

  If the IUT requires a bonding procedure then perform a bonding procedure.

  Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

  If IUT permissions for the characteristic require a specific security mode or security level, establish a connection meeting those requirements.

- **Test Procedure**

  The following test procedure applies to the test cases listed in Table 4.5:

  1. Read the characteristic value by executing the test procedure of GATT test case GATT/SR/GAR/ BV-01-C, Read Characteristic Value - from Server, in [4].

- **Expected Outcome**
The following pass and fail verdicts apply to the test cases listed in Table 4.5:

**Pass verdict**

The characteristic is successfully read and the characteristic value meets the requirements of the service as shown in Table 4.5.

**Characteristic Read Value Test Cases**

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Value Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7.1 PASS/SR/CR/BV-01-C [Characteristic Read – Alert Status]</td>
<td>One octet ([3] 3.1)</td>
</tr>
<tr>
<td>4.7.2 PASS/SR/CR/BV-02-C [Characteristic Read – Ringer Setting]</td>
<td>One octet ([3] 3.2)</td>
</tr>
</tbody>
</table>

*Table 4.5: Characteristic Read Value Test Cases*

### 4.8 Characteristic Write Without Response

- **Test Purpose**
  
  This test group contains test cases to verify characteristics which support writing can be written.

#### 4.8.1 PASS/SR/CW/BV-01-C [Ringer Control Point]

- **Test Purpose**

  Write characteristic value.

- **Reference**

  [3] 2.5.2.1

- **Initial Condition**

  The handle of each characteristic value referenced in the test cases below has been previously discovered by the Lower Tester during the test procedure in Section 4.4 or is known to the Lower Tester by other means.

  If the IUT requires a bonding procedure then perform a bonding procedure.

  Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

  If IUT permissions for the characteristic require a specific security mode or security level, establish a connection meeting those requirements.

- **Test Procedure**
Select a value that is valid for the Ringer Control Point characteristic. Write the Ringer Control Point characteristic value by executing the test procedure of GATT test case GATT/SR/GAW/BV-01-C, Write Without Response - to Server, in [4].

- Expected Outcome

Pass verdict
Upper tester verifies that the characteristic value is successfully written.

4.9 Service Procedures

- Test Purpose

This test group contains test cases to verify the operation of additional procedures defined in the service specification.

4.9.1 PASS/SR/SP/BV-01-C [Alert Status characteristic - Alert Status shows current status of the server]

- Test Purpose

Verify that the Alert Status characteristic on the IUT returns the status of the server.

- Reference

[3] 4.1

- Initial Condition

If the IUT requires a bonding procedure then perform a bonding procedure.
Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

- Test Procedure

1. No Alert
   a) The Upper Tester changes the All Alert status of the IUT to no alerts.
   b) The Lower Tester reads the Alert Status characteristic.
2. Ringing
   a) The Upper Tester changes the alert status of the IUT to “Ringer State is active”.
   b) The Lower Tester reads the Alert Status characteristic.
3. Displaying
   a) The Upper Tester changes the alert status of the IUT to “Display State is active”.
   b) The Lower Tester reads the Alert Status characteristic.
4. Vibrating
   a) The Upper Tester changes the alert status of the IUT to “Vibrating State is active”.
   b) The Lower Tester reads the Alert Status characteristic.

• Expected Outcome

Pass verdict
The value of Alert Status characteristic in the IUT can be read as following:
1. No Alert:
   The bits of the Ringer State, Display Alert State and Vibrator State values in the Alert Status characteristic value are all “0 – Not-Active”.
2. Ringing:
   The bit of the Ringer State in the Alert Status characteristic value is “1 - Active”.
3. Displaying:
   The bit of the Display Alert State in the Alert Status characteristic value is “1 - Active”.
4. Vibrating:
   The bit of the Vibrator State in the Alert Status characteristic value is “1 - Active”.

4.9.2 PASS/SR/SP/BV-02-C [Alert Status characteristic - The server notifies the current alert status]
• Test Purpose
Verify that the IUT notifies its alert status when the status changes.

• Reference
[3] 4.1

• Initial Condition
Perform a bonding procedure if it is required by the IUT.
The Client Characteristic Configuration for the Alert Status characteristic is set to “Notify”.
Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

• Test Procedure
1. No Alert:
The Upper Tester changes the alert status of the IUT from "Some Alerting status" to "Non Alert status".
2. Ringing:
   The Upper Tester changes the alert status of the IUT from "Non-Alerting status" to "Ringing status".

3. Displaying:
   The Upper Tester changes the alert status of the IUT from "Ringing status" to "Displaying Alert status".

4. Vibrating:
   The Upper Tester changes the alert status of the IUT from "Displaying Alert status" to "Vibrating status".

- Expected Outcome

Pass verdict
The value of Alert Status characteristic in the IUT can be read as following:

1. No Alert:
   The bits of the Ringer State, Display Alert State and Vibrator State values in the Alert Status characteristic value are all "0 - Not-Active".

2. Ringing:
   The bit of the Ringer State in the Alert Status characteristic value is "1 - Active".

3. Displaying:
   The bit of the Display Alert State in the Alert Status characteristic value is "1 - Active".

4. Vibrating:
   The bit of the Vibrator State in the Alert Status characteristic value is "1 - Active".

4.9.3 PASS/SR/SP/BV-04-C [Ringer Setting characteristic – Show the current status]

- Test Purpose

Verify that the IUT shows the current status of Ringer mode.

- Reference

[3] 4.1

- Initial Condition

Perform a bonding procedure if it is required by the IUT.

Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

- Test Procedure

1. The Upper Tester changes the Ringer mode of the Server to "Ringer Active mode".
2. The Lower Tester reads the Ringer Setting characteristic.
3. The Upper Tester changes the Ringer mode of the Server to "Silent mode".

4. The Lower Tester reads the Ringer Setting characteristic.

• Expected Outcome

Pass verdict
The value of the Ringer Setting of the IUT matches its mode.

4.9.4 PASS/SR/SP/BV-05-C [Ringer Setting characteristic – Notify the change for Ringer Setting]

• Test Purpose

Verify that the IUT notifies its Ringer Setting characteristic when the mode of the IUT changes.

• Reference

[3] 4.1

• Initial Condition

Perform a bonding procedure if it is required by the IUT.
Client Characteristic Configuration for the Ringer Setting characteristic is set to “Notify”.
Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

• Test Procedure

1. Silent mode to Ringer enable mode
   Upper Tester changes the mode of the IUT from Silent mode to Ringer enable mode.

2. Ringer enable mode to Silent mode
   Upper Tester changes the mode of the IUT from Ringer enable mode to Silent mode.

• Expected Outcome

Pass verdict
The IUT notifies the Ringer Setting value that shows correct mode.

4.9.5 PASS/SR/SP/BV-06-C [Ringer Control Point characteristic – Receive the Set Silent Mode command]

• Test Purpose

Verify that the IUT receives the value written in the Ringer Control Point and changes its ringer state or ringer setting for the Set Silent Mode command.
• Reference

[3] 4.1

• Initial Condition

Perform a bonding procedure if it is required by the IUT.

Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

Client Characteristic Configuration for the Ringer Setting characteristic is set to “Notify”.

Change the ringer setting of the IUT to the “Normal mode”.

• Test Procedure

The Lower Tester writes “0x01” to the Ringer Control Point.

• Expected Outcome

Pass verdict

The mode of the IUT changes to Silent mode and the IUT notifies the Ringer Setting characteristic value that shows “Ringer silent”.

4.9.6 PASS/SR/SP/BV-07-C [Ringer Control Point characteristic – Receive the Cancel Silent Mode command]

• Test Purpose

Verify that the IUT receives the value written in the Ringer Control Point and changes its ringer state or ringer setting for the Cancel Silent Mode command.

• Reference

[3] 4.1

• Initial Condition

Perform a bonding procedure if it is required by the IUT.

Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

Client Characteristic Configuration for the Ringer Setting characteristic is set to “Notify”.

Change the ringer setting of the IUT to the “Silent mode”.

• Test Procedure

The Lower Tester writes “0x03” to the Ringer Control Point.

• Expected Outcome
Pass verdict
The Ringer status of the IUT changes to the “Ringer enabled mode”, and the IUT notifies the Ringer Setting characteristic value that shows “Ringer normal”.

4.9.7 PASS/SR/SP/BV-08-C [Ringer Control Point characteristic – Receive the Mute Once command]

• Test Purpose
Verify that the IUT receives the value written in the Ringer Control Point and changes its ringer state or ringer setting for the Mute Once command.

• Reference
[3] 4.1

• Initial Condition
Perform a bonding procedure if it is required by the IUT.
Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.
Client Characteristic Configuration for the Alert Status characteristic is set to “Notify”.
Change the alert status of the IUT to the “Ringer Active”.

• Test Procedure
The Lower Tester writes “0x02” to the Ringer Control Point.

• Expected Outcome
Pass verdict
The Ringer status of the IUT changes to the Non-active state, and the IUT notifies the Alert Status characteristic value that shows “Ringer is Not Active”.

4.9.8 PASS/SR/SP/BV-01-C [Ringer Control Point characteristic – Receive the unsupported command]

• Test Purpose
Verify that the IUT does nothing even if the value written in the Ringer Control Point is not supported.

• Reference
[3] 4

• Initial Condition
Perform a bonding procedure if it is required by the IUT.
Establish an ATT Bearer connection between the Lower Tester and IUT as described in Section 4.2.1.

Client Characteristic Configuration for the Alert Status characteristic is set to “Notify”.
Client Characteristic Configuration for the Ringer Setting characteristic is set to “Notify”.

• Test Procedure

The Lower Tester writes any invalid values or invalid length of the commands into the Ringer Control Point Characteristic in the IUT.

• Expected Outcome

Pass verdict

The Ringer status of the IUT never changes.
5 Test Case Mapping

The Test Case Mapping Table (TCMT) maps test cases to specific capabilities in the ICS.

The columns for the TCMT are defined as follows:

Item: contains an y/x reference, where y corresponds to the table number and x corresponds to the feature number as defined in the ICS Proforma Phone Alert Status Service (PASS) [4]. If the item is defined with Protocol, Profile or Service abbreviation before y/x, the table and feature number referenced are defined in the abbreviated ICS proforma document.

Feature: recommended to be the primary feature defined in the ICS being tested or may be the test case name.

Test Case(s): the applicable test case identifiers required for Bluetooth Qualification if the corresponding y/x references defined in the Item column are supported.

Test Case Applicable: may be used to note if a test is required based on the supported features.

For purpose and structure of the ICS/IXIT proforma and instructions for completing the ICS/IXIT proforma refer to the Bluetooth ICS and IXIT proforma document.
<table>
<thead>
<tr>
<th>Item</th>
<th>Feature</th>
<th>Test Case(s)</th>
<th>Test Case Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS 2/1</td>
<td>Phone Alert Status service</td>
<td>PASS/SR/SD/BV-01-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/2</td>
<td>Alert Status characteristic</td>
<td>PASS/SR/DEC/BV-01-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/3</td>
<td>Ringer Setting characteristic</td>
<td>PASS/SR/DEC/BV-02-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/4</td>
<td>Alert Control Point characteristic</td>
<td>PASS/SR/DEC/BV-03-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/5</td>
<td>Read Alert status</td>
<td>PASS/SR/CR/BV-01-C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PASS/SR/SP/BV-01-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/6</td>
<td>Read Ringer setting</td>
<td>PASS/SR/CR/BV-02-C</td>
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<td></td>
<td></td>
<td>PASS/SR/SP/BV-04-C</td>
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<td>PAS 2/7</td>
<td>Write Alert Control Point characteristic</td>
<td>PASS/SR/CW/BV-01-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/8</td>
<td>Notify Alert Status characteristic</td>
<td>PASS/SR/CDD/BV-01-C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PASS/SR/CCC/BV-01-C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PASS/SR/CCC/BV-02-C</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>PASS/SR/SP/BV-02-C</td>
<td></td>
</tr>
<tr>
<td>PAS 2/9</td>
<td>Notify Ringer Setting characteristic</td>
<td>PASS/SR/CDD/BV-02-C</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>PASS/SR/CCC/BV-03-C</td>
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</tr>
<tr>
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<td></td>
<td>PASS/SR/CCC/BV-04-C</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>PASS/SR/SP/BV-05-C</td>
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</tr>
<tr>
<td>PAS 2/10</td>
<td>Alert Control Point Command Set Silent Mode</td>
<td>PASS/SR/SP/BV-06-C</td>
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<tr>
<td>PAS 2/11</td>
<td>Alert Control Point Command Cancel Silent Mode</td>
<td>PASS/SR/SP/BV-07-C</td>
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<tr>
<td>PAS 2/12</td>
<td>Alert Control Point Command Mute Once</td>
<td>PASS/SR/SP/BV-08-C</td>
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</tr>
<tr>
<td>PAS 2/13</td>
<td>Receive Invalid commands</td>
<td>PASS/SR/SP/BI-01-C</td>
<td></td>
</tr>
</tbody>
</table>

**Table 5.1: Test Case Mapping**