Software Design Specification

Z-Wave Plus v2 Device Type Test Specification

Description:	Z-Wave Plus v2 Device Type Test Specification
Written By:	Z-Wave Alliance
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Reviewed By:	AWG
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Approved by:
Z-Wave Alliance Board of Directors

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<table>
<tr><td colspan="5" align="center">REVISION RECORD</td></tr>
<tr><td>Doc. Rev</td><td>Date</td><td>By</td><td>Pages affected</td><td>Brief description of changes</td></tr>
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1   Introduction

1.1   Purpose

This document describes the list of tests to perform in order to verify compliance with the Z-Wave Plus v2 Device Type Specification.

2   Test Specification

2.1   Z-Wave Long Range QR Code

This test verify that Z-Wave Long Range nodes' QR Code complies with the associated requirements

2.1.1   References

This test verifies the following requirements:

- DT:00.11.002E.1

2.1.2   Pre-requisites

The DUT supports to be included with Z-Wave Long Range.

2.1.3   Test procedure

Test Procedure		
Step	**Action**	**Result verification**
1	Identify where the DUT's QR Code is located and scan it.	None
2	Parse the scanned digits with an appropriate tool	Verify that the TLV type 5 (type/critical field set to 10 / 0x0A) is present Verify that the value of the TLV matches the supported protocols Bit 0 is set to 1 if Z-Wave is supported Bit 1 is set to 1 is Z-Wave Long Range is supported.

2.2   Z-Wave Long Range requested keys during inclusion

This test verify that Z-Wave Long Range nodes comply with the inclusion requirements

2.2.1   References

This test verifies the following requirements:

- DT:00.11.002F.1

2.2.2   Pre-requisites

The DUT supports to be included with Z-Wave Long Range.

2.2.3   Test procedure

Test Procedure		
Step	Step	Step
1	Scan the DUT's QR code in the PC Controller and configure it to make a Long Range SmartStart Inclusion	None
2	Observe the SmartStart inclusion in the Zniffer and identify the S2 Bootstrapping	Verify that the KEX Report only requested S2 Security Classes that require Authentication.

2.3   Documentation for Z-Wave Long Range

This test verify that Z-Wave Long Range nodes comply with the documentation requirements

2.3.1   References

This test verifies the following requirements:

- DT:00.31.0017.1
- DT:00.31.0018.1

2.3.2   Pre-requisites

The DUT supports to be included or to include others with Z-Wave Long Range.

2.3.3   Test procedure

Test Procedure		
Step	Step	Step
1	Open the product documentation and find the section where it describes the Z-Wave Long Range capabilities	Verify if it indicates if the DUT can be included or can include other nodes using Z-Wave Long Range
2	If the DUT can include other nodes using Z-Wave Long Range	Verify that it indicates how to change the bootstrapping mode to use Z-Wave Long Range for its SmartStart Provisioning List entries.

2.4   Z-Wave Long Range Controller requirements

This test verify that Z-Wave Long Range controller nodes comply with the inclusion requirements

2.4.1   References

This test verifies the following requirements:

- DT:00.11.0030.1
- DT:00.11.0031.1

2.4.2   Pre-requisites

The DUT supports to include other nodes with Z-Wave Long Range.

2.4.3   Test procedure

<table>
<tr><th colspan="3">Test Procedure</th></tr>
<tr><th>Step</th><th>Step</th><th>Step</th></tr>
<tr>
<td>1</td>
<td>Scan the QR Code of a Z-Wave Long Range supporting node to the DUT's provisioning list

Alternatively, add a DSK manually if the DUT does not support QR Code scanning</td>
<td>Verify that the DUT allows to set the bootstrapping mode to "Z-Wave Long Range SmartStart inclusion"</td>
</tr>
<tr>
<td>2</td>
<td>If the DUT allows to change the granted keys, try to select S2 Unauthenticated / S0 as part of the granted keys</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Power up the supporting node

Observe the Z-Wave Long Range SmartStart inclusion and S2 Bootstrapping</td>
<td>Verify that the DUT only grants Authenticated Security Classes during S2 bootstrapping.</td>
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2.5 Firmware Update and QR Code validity

There is no defined test for verifying the QR Code validity after a firmware update. It is practically not possible to trace possible firmware update paths.

If a test involves a firmware update and a tester observes a behavior not following the guidelines, the tester should inform the manufacturer.

2.5.1 References

This applies for the following requirements:

- DT:00.11.0032.1
- DT:00.13.0005.1
- DT:00.11.0033.1
- DT:00.12.0005.1

2.5.2 Pre-requisites

None.

2.5.3 Test procedure

None.

3   References

[1]   IETF RFC 2119, Key words for use in RFC's to Indicate Requirement Levels,
         http://tools.ietf.org/pdf/rfc2119.pdf

[2]   Z-Wave Alliance, Z-Wave Plus v2 Device Type Specification.

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