Test Descriptions for OSDP Verified

Contents

Introduction

This document combines the individual test descriptions into one document, for convenience. It includes all three sections (050 060 070 of the test cases. The numbers refer to chapters in the spec (5 6 or 7.)

Test Group 050

Test 050-01-01 Physical Interface

PD

Determine the device supports RS-485 communications at designated speed(s) and address(es).

ACU

Determine the device supports RS-485 communications at designated speed(s) and address(es).

Purpose

RS-485 2-wire is the communication protocol specified int the standard and all devices in this test case MUST support this.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

Plug DUT into RS-485 test jig and make sure it works. Requires choosing a speed at which to test.

confirm initial set-up
confirm interview form complete
set up at designated address/speed
connect DUT
confirm at least 8 poll/ack sequences completed

Development status

1.31-Build-4

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-01-02 TCP Interface

Criteria: (optional) support TCP as implemented in the reference implementation including "kick-not-poll" processing.
Recommended processing: n/a
Confirm only one reply per command; presence of busy; later processing if busy.

PD

The PD shall send a single reply message to each message addressed to it within the specified maximum REPLY_DELAY, as defined in subclause 5.7.

ACU

Only the ACU may spontaneously send a message. Each message sent by the ACU is addressed to one and only one PD. The “broadcast message”, as described in Table 1, assumes that there is only one PD connected to the ACU.

Purpose

Confirm that the DUT supports the “interrogation/reply” mode and appropriate channel access.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Use OSDP trace to confirm presence of busy, one reply per command.
Operator action:

Set up DUT and run a selection of commands, collecting a trace
Run trace analyzer
Confirm analyzer does not report response anomalies.

ACU Test

Use OSDP trace to confirm presence of busy, one reply per command.
Operator action:

Set up DUT and run a selection of commands, collecting a trace
Run trace analyzer
Confirm analyzer does not report response anomalies.

Development status

1.31-Build-4

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-02-01 Signaling

Confirm communication capabilities supported match the capabilities in the device (form) application.

PD

The PD MUST support at least one speed and address.

ACU

The ACU MUST support at least one speed and address.

Purpose

Determine settings for RS-485 serial communications.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Use speed(s) from form

confirm testbed is running at that speed
connect DUT
confirm at least 8 poll/ack sequences completed

ACU Test

Use speed(s) from form

confirm testbed is running at that speed
connect DUT
confirm at least 8 poll/ack sequences completed

Development status

1.31-Build-4

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-03-01 Character Encoding

Data encoding shall be compliant with UTF-8. (ISO/IEC 10646:2012)

PD

MUST support use of all possible 8-bit patterns.

ACU

MUST support use of all possible 8-bit patterns.

Purpose

Confirm the device can support all 8-bit patterns.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Use OSDP trace to confirm character coverage.

- Exercise DUT through full test set, collecting a trace
- Confirm successful operation
- Run trace analyzer
- Report character coverage

ACU Test

Use OSDP trace to confirm character coverage.

- Exercise DUT through full test set, collecting a trace
- Confirm successful operation
- Run trace analyzer
- Report character coverage

Development status

1.31-Build-4

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-04-01 Channel Access

Confirm only one reply per command; presence of busy; later processing if busy.

PD

The PD shall send a single reply message to each message addressed to it within the specified maximum REPLY_DELAY, as defined in subclause 5.7.

ACU

Only the ACU may spontaneously send a message. Each message sent by the ACU is addressed to one and only one PD. The “broadcast message”, as described in Table 1, assumes that there is only one PD connected to the ACU.

Purpose

Confirm that the DUT supports the “interrogation/reply” mode and appropriate channel access.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Use OSDP trace to confirm presence of one reply per command.

Operator action:

Set up DUT and run a selection of commands, collecting a trace

Run trace analyzer

Confirm analyzer does not report response anomalies.

ACU Test

Use OSDP trace to confirm presence of busy, one reply per command.

Operator action:

Set up DUT and run a selection of commands, collecting a trace

Run trace analyzer

Confirm analyzer does not report response anomalies.

Development status

1.31-Build-4

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-04-02 Support Busy Retry

Determine proper use of the BUSY response code 0x79 and the proper processing of the BUSY response resulting in a retry sending of the message that received a BUSY response.

PD

If the PD is unable to accept the command for processing due to temporary unavailability of a resource required to process the command, then the PD shall send the osdp_BUSY reply as defined in subclause 7.19.

ACU

ACU may process the osdp_BUSY response and retry the previous command.

Purpose

Used by PD to let ACU know that it is already processing a command and allows the PD to determine next step, such as a retry, after its latest command received as an osdp_BUSY .

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Required
Secure Channel (ACU)	Optional
BIO Match (PD)	Required
BIO Match (ACU)	Optional
BIO Read (PD)	Required
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Optional
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Optional

Test action

PD Test

ACU Test

When the ACU receives the osdp_BUSY reply, it may, at its discretion, choose to re-send the same command as it would if the command delivery timed out. If the ACU elects to re-send the command that caused the osdp_BUSY reply, it may do so right away, or at its option may service other PDs before re-sending the command. If, on the other hand, the ACU elects to abandon the command that received the BUSY reply, the PD shall recognize this condition (new sequence number) and shall process the new command.

Development status

Available in libosdp-conformance 1.31.1 Build 4

Test Results

JSON tags

test	050-04-2
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-04-03 Resend Busy

Determine proper use of the BUSY response code 0x79 and the proper processing of the BUSY response in the case where the BUSY response is resent to inform the ACU that the PD is still busy processing.

PD

If the PD is unable to accept the command for processing due to temporary unavailability of a resource required to process the command, then the PD shall send the osdp_BUSY reply as defined in subclause 7.19. In this case the command is resent if the PD remains temporarily unavailable and informs the ACU of it state

ACU

ACU may process the osdp_BUSY response and determine whether to retry the previous command.

Purpose

Used by PD to let ACU know that it is still processing a command and allows the ACU to determine next step, such as a retry, after its latest command again received an osdp_BUSY.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Required
Secure Channel (ACU)	Optional
BIO Match (PD)	Required
BIO Match (ACU)	Optional
BIO Read (PD)	Required
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Optional
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Optional

Test action

PD Test

The PD is in a state where it issues an osdp_BUSY reply and it maintains communication with the ACU until it can complete the process underway and continue with processing commands.

ACU Test

When the ACU receives the osdp_BUSY reply, it may, at its discretion, choose to re-send the same command as it would if the command delivery timed out. If the ACU elects to re-send the command that caused the osdp_BUSY reply, it may do so right away, or at its option may service other PDs before re-sending the command.

Development status

Available in libosdp-conformance 1.3.1-Build-4

Test Results

JSON tags

test	050-04-2
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-04-04 New After Busy

Determine proper use of the BUSY response code 0x79 and the proper processing of the BUSY response in the case where the BUSY response is met with a new command

PD

If the PD is unable to accept the command for processing due to temporary unavailability of a resource required to process the command, then the PD may send the osdp_BUSY reply as defined in subclause 7.19. In this case the BUSY response if met with a new command.

ACU

ACU may process the osdp_BUSY response and determine the need to process a new command.

Purpose

Used by PD to let ACU know that it is still processing a command and allows the ACU to determine next step, such as a new command, after its latest command received an osdp_BUSY.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Required
Secure Channel (ACU)	Optional
BIO Match (PD)	Required
BIO Match (ACU)	Optional
BIO Read (PD)	Required
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Optional
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Optional

Test action

PD Test

The PD is in a state where it issues an osdp_BUSY reply, the ACU sends a new command, and the PD maintains communication with the PD until it can complete the process underway and continue with processing commands.

ACU Test

When the ACU receives the osdp_BUSY reply, it may, at its discretion, choose to the same command as it would if the command delivery timed out. If, on the other hand, the ACU elects to abandon the command that received the BUSY reply, the PD shall recognize this condition (new sequence number) and shall process the new command.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

test	050-04-2
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-05-01 Multi-byte Data Encoding

Messages are constructed using a character stream model, meaning that all data shall be packed without any "alignment pad" characters.

Numeric data types that require more than 1 byte are stored with the least significant byte first ("little-endian" format).

PD

PD MUST use multi-byte data encoding when necessary for message processing.

ACU

ACU MUST use multi-byte data encoding when necessary for message processing.

Purpose

Encoding method to support character stream model.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Monitor communications to determine proper message processing between the PD and the ACU, check results log for coverage.

ACU Test

Monitor communications to determine proper message processing between the PD and the ACU, check results log for coverage.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

test	050-05-1
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-06-01 Packet Size Limits ACU to PD

The implementation of the standard message set requires all devices to be able to accept packets up to 128 bytes long and be able to tolerate messages addressed to other devices having a total length not exceeding 1440 bytes.

If the packet was meant for another device, there should be no adverse condition created in the PD with the limitation. If the PD receives a packet specifically addressed to it which is greater than its reported RX buffer size, it will constitute a protocol error and respond with a NAK code 0x02.

PD

PD MUST use multi-byte data encoding when necessary for message processing.

ACU

ACU MUST use multi-byte data encoding when necessary for message processing.

Purpose

This protocol's primary purpose is to support communication to simple devices on a shared (multi-dropped) channel. This provides a method to process different message sizes in particular large packets (more than 128 bytes, though in general large packets should be avoided.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	PD Only
Secure Channel (PD)	Required
Secure Channel (ACU)	PD Only
BIO Match (PD)	Required
BIO Match (ACU)	PD Only
BIO Read (PD)	Required
BIO Read (ACU)	PD Only
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	PD Only
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	PD Only

Test action

PD Test

Monitor communications to determine proper message processing between the PD and the ACU within the limits determined by the PD capabilities and the package size limits it expresses.

ACU Test

Monitor communications to determine proper message processing between the PD and the ACU within the limits determined by the PD capabilities and the package size limits it expresses.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

test	050-06-1
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-06-02 Packet Size Limits PD to ACU

The implementation of the standard message set requires all devices to be able to accept packets up to 128 bytes long and be able to tolerate messages addressed to other devices having a total length not exceeding 1440 bytes.

If the packet was meant for another device, there should be no adverse condition created in the PD with the limitation. If the PD receives a packet specifically addressed to it which is greater than its reported RX buffer size, it will constitute a protocol error and respond with a NAK code 0x02.

PD

PD MUST use multi-byte data encoding when necessary for message processing.

ACU

ACU MUST use multi-byte data encoding when necessary for message processing.

Purpose

This protocol's primary purpose is to support communication to simple devices on a shared (multi-dropped) channel. This provides a method to process different message sizes in particular large packets (more than 128 bytes, though in general large packets should be avoided.

Criteria

Basic OSDP (PD)	ACU Only
Basic OSDP (ACU)	Required
Secure Channel (PD)	ACU Only
Secure Channel (ACU)	Required
BIO Match (PD)	ACU Only
BIO Match (ACU)	Required
BIO Read (PD)	ACU Only
BIO Read (ACU)	Required
Extended Packet Mode (PD)	ACU Only
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	ACU Only
Extended Read/Write (ACU)	Required

Test action

PD Test

Monitor communications to determine proper message processing between the PD and the ACU within the limits determined by the PD capabilities and the package size limits it expresses.

ACU Test

Monitor communications to determine proper message processing between the PD and the ACU within the limits determined by the PD capabilities and the package size limits it expresses.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

test	050-06-1
test-status	1 for pass, 0 for fail

Revision History

New as 2.4.2

Test 050-07-01 Timing

Confirm command (poll) response time is under 200 milliseconds.

PD

The PD REPLY_DELAY must not exceed 200 milliseconds.

ACU

The ACU MUST support POLL and process the response.

Purpose

Used to determine ability to maintain supervision via a frequent POLL command.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Use OSDP trace log analyzer to confirm timing.

Set up DUT in idle poll/ack configuration, collecting a trace
Run trace analyzer
Confirm analyzer does not report response time of 200ms exceeded.

ACU Test

Use OSDP trace log analyzer to confirm timing.

Set up DUT in idle poll/ack configuration, collecting a trace
Run trace analyzer
Confirm analyzer does not report response time of 200ms exceeded.

Development status

Available in [libosdp-conformance 1.31.1-Build-4]

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History
Updated as 2.4.2

Test 050-08-01 Message Synchronization

General procedure for a PD to pass message traffic and perform message synchronization.

PD

The PD MUST maintain synchronization as described in section 5.8. The nominal value of the inter-character timeout shall be 20 milliseconds. This parameter may need to be adjusted for special channel timing considerations.

ACU

The ACU MUST maintain synchronization as described in section 5.8. The nominal value of the inter-character timeout shall be 20 milliseconds. This parameter may need to be adjusted for special channel timing considerations.

Purpose

Used to maintain PD and ACU synchronization

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Plug PD into RS-485 test jig and make sure it works. Requires choosing a speed at which to test.
Assumes proper inter-character timing if the testing works.
Use a logic analyzer for further verification.

ACU Test

Plug ACU into RS-485 test jig and make sure it works. Requires choosing a speed at which to test.
Assumes proper inter-character timing if the testing works.
Use a logic analyzer for further verification.

Development status

n/a

Test Results

JSON tags

test	n/a
test-status	n/a

Revision History

Updated as 2.4.2

Test 050-09-01 Packet Format

Description

PD

PD's must only send responses that follow the structure as defined in Table 1 – Packet Format in the OSDP standard documentation.

ACU

ACU's must only send commands that follow the structure as defined in Table 1 – Packet Format in the OSDP standard documentation.

Purpose

All messages, regardless of origin, shall follow the structure as defined in Table 1 – Packet Format in the OSDP standard documentation.

Commented [JH1]: Should the table be included?

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Send responses and verify that the packet format is correct

ACU Test

Send commands and verify that the packet format is correct

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-01
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-02 Process Sequence Zero

Description

PD

PD's must discard the last reply and process the current command when sequence zero is sent. The PD must reply using sequence zero when receiving a sequence zero command. The PD may respond with sequence zero to indicate that the ACU must reset the sequence including any secure channel session that is currently active.

ACU

ACU's must only send sequence zero only for communication startup, at boot time or after a communications loss. Normal communications cycle through sequence numbers one through three.

Purpose

Sequence zero should be used only for communication startup, at boot time or after a communications loss. Zero forces the PD to discard its last reply and to accept and process the current command.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Send a poll or command from the ACU with sequence zero. Check that PD response with a sequence zero.

ACU Test

- Fail if sequence is not restarted with zero for communication startup, at boot time or after a communications loss
- Fail if after receiving a sequence zero, the next command sent is not sent with sequence one
- Fail if after receiving a sequence zero response, the secure channel session is not cleared and restarted.

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-02
test-status	1 for pass, 0 for fail

Commented [JH2]: Do we need to add tests?

Revision History

Refreshed for 2.1.

Test 050-09-03 SOM – Start of Message

Description

PD

PD's must at the start of every response packet have the SOM value of 0x53.

ACU

ACU's must at the start of every command packet have the SOM value of 0x53.

Purpose

The constant SOM value is 0x53, begins each message header. This character is used for synchronization.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every response packet starts with SOM value

ACU Test

- Verify that every command packet starts with SOM value

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-03
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-04 ADDR - Address

Description

PD

PD's must reply to commands directed to its address by setting the most significant bit (0x80).

ACU

ACU's must only send addresses by setting the seven least significant bits.

Purpose

Address field indicates PD address 0x00-0x7E inclusive or special configuration address 0x7F. The seven least significant bits of the character byte contains the address value. The PD reply sets the most significant bit (0x80)

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every response packet has the most significant bit set with the correct address in the other seven least significant bits.
- The most significant bit must be set to 1.

ACU Test

- Verify that every command packet contains the address in the seven least significant bits.
- The most significant bit must be set to 0.

Development status

Available in libosdp-conformance 1.28-1?

Test Results

JSON tags

test	
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-05 Config Address Usage

Description

PD

A PD must not accept any command on the configuration address (0x7F, decimal 127) except for osdp_ID, osdp_CAP, and osdp_COMSET.

ACU

An ACU must not send any command on 0x7F except osdp_ID, osdp_CAP, or osdp_COMSET.

Purpose

Avoid situations where the identity of the PD is not precisely known and where multiple PD's might attempt to answer simultaneously.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Send (i.e properly enqueue) an osdp_LED command, with proper CRC, using sequence 0, on address 7F. Example packet (PD's actual address does not matter)

```
537f160004690000000303010 21e00011e0002000dbd
```

The expected results is one of:

- The packet is ignored
- The PD responds with a NAK (generic or no detail or bad command parameters.

The PD is expected to NOT respond to the required action.

ACU Test

Exercise the ACU with specific coverage for it's workflow around device initialization and monitor the data trace for usage of address 0x7F.

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

Test	050-09-05
test-status	1 for pass, 0 for fail

Revision History

Typo corrected in 2.5.1
Released in 2.5.0
Refreshed for 2.3

Test 050-09-06 LEN - Length

Description

PD

PD's must properly calculate the length value and include it in the reply message.

ACU

ACU's must properly calculate the length value and include it in the command message.

Purpose

The value the two-character length field is the total number of characters contained in the message, including the SOM through the CKSUM or CRC characters.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every response packet has the correct length

ACU Test

- Verify that every command packet has the correct length

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-06
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-07 CTRL - Control

Description

PD

PD's must contain a message control character byte it in the reply message.

ACU

ACU's must contain a message control character byte it in the command message.

Purpose

One character byte value that contains message control information data. Refer to table 2 in the OSDP documentation for details on the bit value in the character byte.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every response packet has a message control information block

ACU Test

- Verify that every command packet has a message control information block

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-07
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-08 SCB – Security Control Block

Description

PD

PD's must contain a proper security control block if the SCB flag is set in the reply message control information character byte.

ACU

ACU's must contain a proper security control block if the SCB flag is set in the command message control information character byte.

Purpose

A multibyte character that facilitates the implementation of data security with the OSDP framework. By itself, the SCB does not define or define the nature of the security methods used. Rather, the SCB is available to support the use of various security methods as OSDP device capabilities and client security requirements change.

Criteria

Basic OSDP (PD)	Optional
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every response packet has a security control block when the SCB flag is set in the message control information character byte.

ACU Test

- Verify that every command packet has a security control block when the SCB flag set in the message control information character byte.

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-08
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-09 CMND / REPLY

Description

PD

PD's must read in the byte value of the command code number that is sent by the ACU. The list of commands can be found in appendix A.1 in the OSDP standards document.

ACU

ACU's must read in the byte value of the reply code number that is sent by the PD. The list of commands can be found in appendix A.2 in the OSDP standards document.

Purpose

A single byte code that identifies the type of command or reply of the packet.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every command packet received is processed properly depending on the command code.

ACU Test

- Verify that every reply packet received is processed properly depending on the command code.

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-09
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-10 Valid Command / Reply

Description

PD

PD's must only send reply code in the valid range for its replies. The list of replies can be found in appendix A.2 in the OSDP standards document.

ACU

ACU's must only send command code in the valid range for its commands. The list of replies can be found in appendix A.1 in the OSDP standards document.

Purpose

A single byte code that identifies the type of command or reply of the packet.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Verify that every reply packet sent has a reply code in the valid range.

ACU Test

- Verify that every command packet sent has a command code in the valid range.

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-10
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-11 CHECKSUM

Description

PD

PDs have the option of processing packets with a checksum byte. Upon receiving a command with a checksum, the PD must either reply with a checksum or a NAK if not supported. If the PD supports checksum, it must reject any command message that doesn't have the proper checksum calculation.

ACU

ACU's may send commands with a checksum byte. If the ACU sends a command with checksum, it must reject any reply messages that doesn't have the proper checksum calculation.

Purpose

A single byte checksum that provides error detection. The checksum value is the 8 least significant bits of the 2's compliment value of the sum of all the previous characters of the message.

Criteria

Basic OSDP (PD)	Optional
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Optional
Secure Channel (ACU)	Optional
BIO Match (PD)	Optional
BIO Match (ACU)	Optional
BIO Read (PD)	Optional
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Optional
Extended Packet Mode (ACU)	Optional
Extended Read/Write (PD)	Optional
Extended Read/Write (ACU)	Optional

Test action

PD Test

- Verify that every reply packet has a valid checksum when a command is sent with checksum byte. This test is only done with PDs that support this functionality.
- Verify that the PD replies with a NAK 0x01 if checksum is not supported or checksum sent in the command message is no correct.

ACU Test

- Verify that every command packet has a valid checksum when a command is sent with checksum byte. This test is only done with ACUs that support this functionality.
- Verify the ACU properly handles NAK 0x01 replies

Development status

Available in libosdp-conformance 1.28-1

Test Results

JSON tags

test	050-09-11
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.1.

Test 050-09-12 SOM Sent

Description

Test the Start of Message SOM constant value 0x53 and its use for synchronization and that all messages MUST begin with 0x53 and anything before that is ignored.

PD

Determine PD responses all begin with SOM.

ACU

Determine ACU responses all begin with SOM.

Purpose

ACUs and PDs MUST have and use the message synchronization value as specified in the standard to determine the start of messages and ignore anything before the SOM.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

- Connect PD to test harness and capture trace
- Determine SOM is used correctly across tests executed by Sequencer

ACU Test

- Connect ACU to test harness and capture trace
- Determine SOM is used correctly across tests executed by Sequencer

Development status

tbd

Test Results

JSON tags

test	050-09-12
test-status	1 for pass, 0 for fail

Revision History

New in 2.4.2

Test 050-09-13 Config Address Test

Description

Use of special address to determine configuration

PD

Address 0x7F is reserved as a special "BROADCAST" address that each PD will accept and respond to, just as if it matched its communication address.

ACU

Used by ACU to determine PDs on network.

Purpose

Provides a means to support ACU communications with PDs with unknown communication address.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Required
Secure Channel (ACU)	Optional
BIO Match (PD)	Required
BIO Match (ACU)	Optional
BIO Read (PD)	Required
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Optional
Extended Packet Mode (ACU)	Optional
Extended Read/Write (PD)	Optional
Extended Read/Write (ACU)	Optional

Test action

PD Test

The reply message will use 0x7F plus the reply flag (0x7F+0x80=0xFF) in its address field. Since each PD will respond to 0x7F, the use of the broadcast address should be limited to controlled (single PD) configurations.

ACU Test

n/a

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

test	050-09-12
test-status	1 for pass, 0 for fail

Revision History

New in 2.4.2

Test 050-09-14 Rogue SCS Poll

Once a custom SCBK is set only a matching key is allowed to send an osdp_CHLNG command.

PD

The PD MUST only accept the correct SCBK value once it is set with a custom value.

ACU

N/A

Purpose

Confirm implementation doesn't allow unauthorized ACU from attempting to create a SC session.

Criteria

Basic OSDP (PD)	Optional
Basic OSDP (ACU)	PD Only
Secure Channel (PD)	Required
Secure Channel (ACU)	PD Only
BIO Match (PD)	Required
BIO Match (ACU)	PD Only
BIO Read (PD)	Required
BIO Read (ACU)	PD Only
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	PD Only
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	PD Only

Test action

PD Test

- Configure PD with a custom SC key.
    - Use conformance tool to send a rogue SCS poll
    - Check that a NAK with code 0x05 is sent as a response.

ACU Test

N/A

Development status

Available in [libosdp-conformance 1.31.1-Build-4]

Test Results

JSON tags

test	050-09-14
test-status	1 for pass, 0 for fail

Revision History

Updated as 2.4.2

Test 050-09-15 Command/Response Use of CRC

All commands and responses are expected to use a cyclic redundancy check - CRC (not checksum.)

PD

The PD MUST maintain synchronization as described in section 5.8

ACU

The ACU MUST maintain synchronization as described in section 5.8

Purpose

Confirm implementation uses compatible CRC calculation.

Criteria

Basic OSDP (PD)	Optional
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Configure test stand for CRC operation and confirm DUT matches.

PD test: Confirm ACU uses CRC not checksum

ACU Test

Configure test stand for CRC operation and confirm DUT matches.

ACU test: Confirm ACU sends and can receive CRC

Recommended processing:

Use CRC always, never use checksum (as its legacy and not secure).

Development status

Available in [libosdp-conformance 1.31.1-Build-4]

Test Results

JSON tags

test	050-09-15
test-status	1 for pass, 0 for fail

Revision History

Updated as 2.4.2

Test 050-09-16 Bad CRC in Response

Confirm error check logic.

Description

Check to confirm ACU can detect a bad CRC in an OSDP response from a PD.

PD

PD's must respond to ***only*** the designated set of directives (on their address or on the config address) in the clear even if in secure channel (paired or not.)

ACU

If there is an active secure channel session or if the PD is responding with "NAK – Encryption required" then an ACU may use configuration and secure channel setup commands in the clear. This means only osdp_ID, osdp_CAP, osdp_COMSET and osdp_CHLNG are valid while secure channel is expected by the PD or in use at the ACU. An ACU with an active valid secure channel session with a PD is expected to use encrypted communications for ID, CAP, or COMSET.

Purpose

Confirm cleartext commands use is limited.

Criteria

Basic OSDP (PD)	ACU Only
Basic OSDP (ACU)	Required
Secure Channel (PD)	ACU Only
Secure Channel (ACU)	Required
BIO Match (PD)	ACU Only
BIO Match (ACU)	Required
BIO Read (PD)	ACU Only
BIO Read (ACU)	Required
Extended Packet Mode (PD)	ACU Only
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	ACU Only
Extended Read/Write (ACU)	Required

Test action

Use test stand to cause a malformed response to be returned to an ACU DUT.

Recommended processing:

ACU MUST, at least, not accept the packet. It may resend the last command if it wishes. ACU is recommended to be instrumented so telemetry reflects the condition has happened.

PD Test

PD test: n/a

ACU Test

Via test stand activate conformance test 050-09-16

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

Test	050-09-18
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.3

Test 050-09-17 Bad CRC in Command

Confirm error check logic.

Description

Check to confirm PD can detect a bad CRC in an OSDP command from an ACU.

PD

PD must not accept the packet. PD is expected to send a NAK. PD is expected to be prepared to handle retransmission of the command. Sequence number must not advance. Secure channel session must not advance MAC (the frame was bad, no the secure channel 'stream'.)

ACU

n/a

Purpose

Confirm error check logic

Criteria

Basic OSDP (PD)	ACU Only
Basic OSDP (ACU)	Required
Secure Channel (PD)	ACU Only
Secure Channel (ACU)	Required
BIO Match (PD)	ACU Only
BIO Match (ACU)	Required
BIO Read (PD)	ACU Only
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Test action: Use test stand to cause a malformed command to be sent to a PD DUT.
Operator action:

PD test: via test stand activate conformance test 050-09-17

ACU Test

n/a

Development status

Not yet available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

Test	050-09-18
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.4.2

Test 050-09-18 Config commands in cleartext

Description

Determine that configuration commands are processed at all times in cleartext.

PD

PD's must respond to ***only*** the designated set of directives (on their address or on the config address) in the clear even if in secure channel (paired or not.)

ACU

If there is an active secure channel session or if the PD is responding with "NAK – Encryption required" then an ACU may use configuration and secure channel setup commands in the clear. This means only osdp_ID, osdp_CAP, osdp_COMSET and osdp_CHLNG are valid while secure channel is expected by the PD or in use at the ACU. An ACU with an active valid secure channel session with a PD is expected to use encrypted communications for ID, CAP, or COMSET.

Purpose

Confirm cleartext commands use is limited.

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Send a cleartext poll and confirm it gets NAK'd. Send a cleartext ID command and confirm a PDID response is received.

ACU Test

Fail if invalid cleartext communications is detected.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

Test	050-09-18
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.4.2

Test 050-09-19 Valid Sequence Number

Description

PD

PD's MUST use proper sequence number set by the ACU

ACU

ACU MUST solely be able set/increment/reset the proper sequence number.

Purpose

Used to maintain synchronization between PD and ACU sequence numbers

Criteria

Basic OSDP (PD)	Required
Basic OSDP (ACU)	Required
Secure Channel (PD)	Required
Secure Channel (ACU)	Required
BIO Match (PD)	Required
BIO Match (ACU)	Required
BIO Read (PD)	Required
BIO Read (ACU)	Required
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Required
Extended Read/Write (ACU)	Required

Test action

PD Test

Confirm proper sequence number used in response.

ACU Test

Confirm properly set sequence numbers.

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

Test	050-09-19
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.4.2

Test 050-10-01 Large Data Arrays

Description

PD

Multi-part message fields added to certain commands and responses

ACU

Multi-part message fields added to certain commands and responses

Purpose

Use to support special commands and manufacturer specific commands

Criteria

Basic OSDP (PD)	Optional
Basic OSDP (ACU)	Optional
Secure Channel (PD)	Optional
Secure Channel (ACU)	Optional
BIO Match (PD)	Optional
BIO Match (ACU)	Optional
BIO Read (PD)	Optional
BIO Read (ACU)	Optional
Extended Packet Mode (PD)	Required
Extended Packet Mode (ACU)	Required
Extended Read/Write (PD)	Optional
Extended Read/Write (ACU)	Optional

Test action

PD Test

Determine if capability is supported and supported properly. Monitor message stream to see processing of large array.

ACU Test

Multi-part message fields added to certain commands and responses

Development status

Available in libosdp-conformance 1.31.1-Build-4

Test Results

JSON tags

Test	050-10-01
test-status	1 for pass, 0 for fail

Revision History

Refreshed for 2.4.2