[Send Config]
[Personalize DUT]
[Start Session] [Hide Controls]

DevEUI:

0101010101010101

Device Address:

01010101

Application Key:

2b7e151628aed2a6abf7158809cf4f3c

FUN_05
FUN_06
SEC_01
SEC_02

Alerts:

Ready to start: make launch_test_session   [Hide]

Tests details:

Results summary of the tests.

td_lorawan_act_01 PASS

td_lorawan_sec_01 PASS

td_lorawan_sec_02 PASS

td_lorawan_deactivate PASS

TEST VERDICT: PASS

[Hide]

TD_LORAWAN_DEACTIVATE: Step information

Completed Step: S1ActOkToDeactivate

Next step: No next step.

Received from DUT:

tmst: 1409943956, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101801000E0551080F74FEF (Size: 15 bytes)

PHY payload:

4001010101801000E0551080F74FEF

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101801000E05510

MAC payload information

FHDR: 01010101801000

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 16 (0010)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 5510

===

MIC: 80F74FEF

===

Decrypted FRMPayload: 000B

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 00

Hide

TEST CASE: td_lorawan_deactivate

Step 1: S1ActOkToDeactivate

Verifies TAOK and deactivates Test Mode.

- Reception from DUT: TAOK message with the downlink counter.

- TAS sends: Test Mode deactivation (payload 0x00).

Test ID: TD_LoRaWAN_DEACTIVATE

Objective: Deactivates test mode.

References: LoRaWAN Specification v1.0.2.

Pre-test conditions: The DUT is in Test Mode.

Hide

TD_LORAWAN_SEC_02: Step information

Completed Step: S2WaitOkFinal

Next step: No next step.

Received from DUT:

tmst: 1404944092, freq: 868.3, DR: SF8BW125

PHYPayload: 4001010101800F00E0F0771D1A0C00 (Size: 15 bytes)

PHY payload:

4001010101800F00E0F0771D1A0C00

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800F00E0F077

MAC payload information

FHDR: 01010101800F00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 15 (000F)

----FOpts: None

FPort: 224

Encrypted FRMPayload: F077

==

MIC: 1D1A0C00

==

Decrypted FRMPayload: 000B

(Key FF7E151628AED2A6ABF7158809CF4F3C)

[Hide]

TD_LORAWAN_SEC_02: Step information

Completed Step: S1ActokToWrongMIC

Next step: S2WaitOkFinal

Received from DUT:

tmst: 1399944228, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800E00E001624124B5B2 (Size: 15 bytes)

PHY payload:

4001010101800E00E001624124B5B2

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800E00E00162

MAC payload information

FHDR: 01010101800E00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 14 (000E)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 0162

===

MIC: 4124B5B2

===

Decrypted FRMPayload: 000B

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04FCB3F966507B55BA901F1371

Additional information: Modified MIC: 112511F3 ->FFFFFFFF

Hide

TEST CASE: td_lorawan_sec_02

Step 2: S2WaitOkFinal

Check that the last PING was ignored.

- Reception from DUT: TAOK message.

- TAS sends: None.

Step 1: S1ActokToWrongMIC

Wait an ACT OK from the DUT to send a PING with wrong MIC.

- Reception from DUT: TAOK message with the downlink counter.

- TAS sends: PING message with wrong MIC.

Test ID: TD_LoRaWAN_

Objective: Test if a message with a wrong MIC is ignored as expected.

References: LoRaWAN Specification v1.0.2.

Pre-test conditions: The DUT is in Test Mode.

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S3PongFinal

Next step: No next step.

Received from DUT:

tmst: 1394964852, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101800D00E0BB8ED091B3B30B2EF55B9F96BDA9 (Size: 23 bytes)

PHY payload:

4001010101800D00E0BB8ED091B3B30B2EF55B9F96BDA9

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800D00E0BB8ED091B3B30B2EF55B

MAC payload information

FHDR: 01010101800D00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 13 (000D)

----FOpts: None

FPort: 224

Encrypted FRMPayload: BB8ED091B3B30B2EF55B

===

MIC: 9F96BDA9

===

Decrypted FRMPayload: 0465E379BA4B192D7394

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S3PongFinal

Received from DUT:

tmst: 1389964988, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101800C00E0B8A0334843D548454D0B619DD281 (Size: 23 bytes)

PHY payload:

4001010101800C00E0B8A0334843D548454D0B619DD281

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800C00E0B8A0334843D548454D0B

MAC payload information

FHDR: 01010101800C00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 12 (000C)

----FOpts: None

FPort: 224

Encrypted FRMPayload: B8A0334843D548454D0B

===

MIC: 619DD281

===

Decrypted FRMPayload: 04A2597709AAE4E32212

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 0464E278B94A182C7293

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1384975372, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800B00E098575CBB6BE24B59D84E078FA282F34D060F30 (Size: 28 bytes)

PHY payload:

4001010101800B00E098575CBB6BE24B59D84E078FA282F34D060F30

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800B00E098575CBB6BE24B59D84E078FA282F3

MAC payload information

FHDR: 01010101800B00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 11 (000B)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 98575CBB6BE24B59D84E078FA282F3

===

MIC: 4D060F30

==

Decrypted FRMPayload: 046AD85442ADBC3D437008FFE93DE7

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04A1587608A9E3E22111

[Hide]

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1379965268, freq: 868.3, DR: SF8BW125

PHYPayload: 4001010101800A00E069FD9C6E6D59C9665EC9E88DA286EC753C (Size: 26 bytes)

PHY payload:

4001010101800A00E069FD9C6E6D59C9665EC9E88DA286EC753C

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800A00E069FD9C6E6D59C9665EC9E88DA2

MAC payload information

FHDR: 01010101800A00

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 10 (000A)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 69FD9C6E6D59C9665EC9E88DA2

==

MIC: 86EC753C

==

Decrypted FRMPayload: 04158BC22F76D69A361F865649

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 0469D75341ACBB3C426F07FEE83CE6

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1374975652, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101800900E046D5A7362D39F25B48A37FFEC99B1B762E38CB4B (Size: 29 bytes)

PHY payload:

4001010101800900E046D5A7362D39F25B48A37FFEC99B1B762E38CB4B

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800900E046D5A7362D39F25B48A37FFEC99B1B76

MAC payload information

FHDR: 01010101800900

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 9 (0009)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 46D5A7362D39F25B48A37FFEC99B1B76

===

MIC: 2E38CB4B

===

Decrypted FRMPayload: 046DAF0920B6BD022E27D88EF2E7EB6E

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04148AC12E75D599351E855548

Hide

tmst: 1369955316, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101800800E00A8F8F4BC48C37B25BCD9B (Size: 20 bytes)

PHY payload:

4001010101800800E00A8F8F4BC48C37B25BCD9B

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800800E00A8F8F4BC48C37

MAC payload information

FHDR: 01010101800800

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 8 (0008)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 0A8F8F4BC48C37

===

MIC: B25BCD9B

===

Decrypted FRMPayload: 045259BC811679

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 046CAE081FB5BC012D26D78DF1E6EA6D

[Hide]

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1364965684, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800700E0B50F3317E82CFC89E393D0E417D6B7 (Size: 24 bytes)

PHY payload:

4001010101800700E0B50F3317E82CFC89E393D0E417D6B7

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800700E0B50F3317E82CFC89E393D0

MAC payload information

FHDR: 01010101800700

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 7 (0007)

----FOpts: None

FPort: 224

Encrypted FRMPayload: B50F3317E82CFC89E393D0

===

MIC: E417D6B7

===

Decrypted FRMPayload: 04DBADD6FF16F62B46724D

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 045158BB801578

[Hide]

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1359955588, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800600E0F6CF667A6C52F0DBDC65 (Size: 19 bytes)

PHY payload:

4001010101800600E0F6CF667A6C52F0DBDC65

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800600E0F6CF667A6C52

MAC payload information

FHDR: 01010101800600

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 6 (0006)

----FOpts: None

FPort: 224

Encrypted FRMPayload: F6CF667A6C52

==

MIC: F0DBDC65

==

Decrypted FRMPayload: 0477FAF8E981

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04DAACD5FE15F52A45714C

<kbd>Hide</kbd>

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1354945492, freq: 868.3, DR: SF8BW125

PHYPayload: 4001010101800500E0A423C6B054CC8C5E68 (Size: 18 bytes)

PHY payload:

4001010101800500E0A423C6B054CC8C5E68

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800500E0A423C6B054

MAC payload information

FHDR: 01010101800500

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 5 (0005)

----FOpts: None

FPort: 224

Encrypted FRMPayload: A423C6B054

==

MIC: CC8C5E68

==

Decrypted FRMPayload: 04FE2C3C05

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 0476F9F7E880

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1349976356, freq: 868.1, DR: SF8BW125

PHYPayload: 4001010101800400E004F8C24DBC0F1B6248A3BA1A6F43B729B797C3134A (Size: 30 bytes)

PHY payload:

4001010101800400E004F8C24DBC0F1B6248A3BA1A6F43B729B797C3134A

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800400E004F8C24DBC0F1B6248A3BA1A6F43B729B7

MAC payload information

FHDR: 01010101800400

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 4 (0004)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 04F8C24DBC0F1B6248A3BA1A6F43B729B7

==

MIC: 97C3134A

==

Decrypted FRMPayload: 04F9C6AA3CC938DF32D2EC303AA1F066B8

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04FD2B3B04

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S2RepeatedPingPong

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1344945772, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800300E04EFDE2798B98BAC2 (Size: 17 bytes)

PHY payload:

4001010101800300E04EFDE2798B98BAC2

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800300E04EFDE279

MAC payload information

FHDR: 01010101800300

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 3 (0003)

----FOpts: None

FPort: 224

Encrypted FRMPayload: 4EFDE279

===

MIC: 8B98BAC2

===

Decrypted FRMPayload: 04A17E77

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04F8C5A93BC837DE31D1EB2F39A0EF65B7

Hide

TD_LORAWAN_SEC_01: Step information

Completed Step: S1ActokToPing

Next step: S2RepeatedPingPong

Received from DUT:

tmst: 1339945916, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800200E0E0C27B735131 (Size: 15 bytes)

PHY payload:

4001010101800200E0E0C27B735131

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800200E0E0C2

MAC payload information

FHDR: 01010101800200

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 2 (0002)

----FOpts: None

FPort: 224

Encrypted FRMPayload: E0C2

==

MIC: 7B735131

==

Decrypted FRMPayload: 0000

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 04A07D76

[Hide]

TEST CASE: td_lorawan_sec_01

Step 3: S3PongFinal.

Verifies the last PONG message, if it is correct the test case result is PASS.

- Reception from DUT: PONG message (response of a previously sent PING).

- TAS sends: None.

Step : _

Initiates 10 PING PONG exchanges to check the cryptography implementation.

- Reception from DUT: PONG message (response of a previously sent PING).

- TAS sends: PING message.

Step 1: S1ActokToPing

Wait an ACT OK from the DUT to initate a PING PONG exchange.

- Reception from DUT: TAOK message with the downlink counter.

- TAS sends: PING message.

Test ID: TD_LoRaWAN_SEC_01

Objective: Test the encryption of the LoRaWAN data messages by the exchange of PING PONG echo messages.

References: LoRaWAN Specification v1.0.2.

Pre-test conditions: The DUT is in Test Mode.

Hide

TD_LORAWAN_ACT_01: Step information

Completed Step: S2ActokFinalStep

Next step: No next step.

Received from DUT:

tmst: 1334946052, freq: 868.5, DR: SF8BW125

PHYPayload: 4001010101800100E0FD51D4B7BBEA (Size: 15 bytes)

PHY payload:

4001010101800100E0FD51D4B7BBEA

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 01010101800100E0FD51

MAC payload information

FHDR: 01010101800100

----DevAddr: 01010101

----FCtrl: 10000000

--------ADR: 1

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 1 (0001)

----FOpts: None

FPort: 224

Encrypted FRMPayload: FD51

===

MIC: D4B7BBEA

===

Decrypted FRMPayload: 0000

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Hide

TD_LORAWAN_ACT_01: Step information

Completed Step: S1DataToActivate

Next step: S2ActokFinalStep

Received from DUT:

tmst: 1333739500, freq: 868.5, DR: SF8BW125

PHYPayload: 40010101010000000164A3BB6E8FA72BBC111A6E183DC041807843AFEE1 (Size: 29 bytes)

PHY payload:

40010101010000000164A3BB6E8FA72BBC111A6E183DC041807843AFEE1

MHDR bits: 01000000 (UNCONFIRMED_UP)

MACPayload: 0101010100000000164A3BB6E8FA72BBC111A6E183DC041807

MAC payload information

FHDR: 01010101000000

----DevAddr: 01010101

----FCtrl: 00000000

--------ADR: 0

--------ACK: 0

--------ADRACKReq (Only for UL): 0

--------FPending (Only for DL): None

--------FOptsLen: 0

----FCnt: 0 (0000)

----FOpts: None

FPort: 22

Encrypted FRMPayload: 4A3BB6E8FA72BBC111A6E183DC041807

===

MIC: 843AFEE1

===

Decrypted FRMPayload: 00000000000000FE3E090D0503AB0000

(Key FF7E151628AED2A6ABF7158809CF4F3C)

Sending to DUT: 01010101

Hide

TEST CASE: td_lorawan_act_01

Step 2: S2ActokFinalStep

The test is expecting a Test Activation Ok message with the current downlink counter

- Reception from DUT: TAOK message with the downlink counter.

- TAS sends: none

Step 1: S1DataToActivate

Wait any data from the DUT to activate Test Mode.

- Reception from DUT: DATA packet.

- TAS sends: Test Mode activation message to the DUT (DL packet with payload 0x01010101 sent to port 224). The payload is encrypted with the AppSKey.

Test ID: TD_LoRaWAN_ACT_01

Objective: Check that the node can join using ABP and enter Test Mode Activation.

References: LoRaWAN Specification v1.0.2.

Pre-test conditions:

The end device has a pre-configured DevAddr, NwkSKey and AppSKey.

The Test Application Server has the end device registered in its device list

and knows its NwkSkey, AppSKey and DevAddr.

[Hide]

Device Personalization Information.

DevAddr: ('01010101',) DevEUI: ('0101010101010101',) AppKey: ('2B7E151628AED2A6ABF7158809CF4F3C',) AppSKey: ('FF7E151628AED2A6ABF7158809CF4F3C',) NwkSKey: 007E151628AED2A6ABF7158809CF4F3C

[Hide]

Test Cases to be execcuted.

TCs list: td_lorawan_act_01 td_lorawan_sec_01 td_lorawan_sec_02 td_lorawan_deactivate

[Hide]

Agent configuration tutorial.

1-Configure the Packet Forwarder on the LoRa Gateway.: e.g. Agent UDP port (default 1700) and the host IP on gateway's local.conf file

2-Set AMQP Broker URL: e.g.: export AMQP_URL=amqp://guest:guest@localhost:5672/

3-Set Packet Forwarder UDP PORT (LoRa Gateway UDP Port): e.g.: export AGENT_PORT=1700

4-Start Agent Service: make start_agent

[Hide]