



Wiliot Gateway Certificate Passed!

Summary

Run Info:

Run date: 06/07/2025, 07:45:53

Tests duration: 00:32:06

Certificate version: 4.4.3

Certification Kit Info:

BLE simulator mac: 7E895C63A4D8

BLE simulator version: 4.4.93

Tested Device Info:

Tested gateway ID: ERM865235053431512

PASSED	INCONCLUSIVE	FAILED	TOTAL
4	0	0	4

Name	Result	Duration
ConnectionTest	PASSED	00:06:12
UplinkTest	PASSED	00:02:51
DownlinkTest	PASSED	00:03:14
StressTest	INFO	00:19:04

ConnectionTest

PASSED

Test duration: 00:06:12

Phase	Result	Duration
ConnectionStage	PASSED	00:04:21
InterferenceAnalysisStage	INFO	00:01:50

ConnectionStage

PASSED

Stage run time: 0:04:21.789536

This stage awaits the gateway to establish MQTT connection and upload it's configurations via the 'status' topic as it's first message.

Protobuf serialization detected

GW Status packet received:

```
{"gatewayId": "ERM865235053431512", "gatewayType": "erm", "downlinkSupported": true, "bridgeOtaUpgradeSupported": true, "apiVersion": 205, "bleSwVersion": "2.0.0", "interfaceSwVersion": "4.5.0", "config": {"autoRebootNoServer": {"integerValue": "720"}, "gnssAlwaysOn": {"boolValue": false}, "accessControlList": {"aclValue": {}}, "clockUpdateInterval": {"integerValue": "1440"}, "periodicGatewayInfo": {"integerValue": "0"}, "inputEvents": {"boolValue": false}, "receiveWhileUpdating": {"boolValue": true}, "locationLostTime": {"integerValue": "0"}, "gnssMaxAccuracy": {"integerValue": "0"}, "transmitPixels": {"boolValue": false}, "networkPolicy": {"integerValue": "0"}, "movMinDistance": {"integerValue": "0"}, "movMinDuration": {"integerValue": "0"}, "wiliotServer": {"stringValue": "custom"}, "workWithoutPowerMode": {"stringValue": "turn_off"}, "temperatureInterval": {"integerValue": "0"}, "bridgeDetection": {"integerValue": "0"}, "enableScanning": {"boolValue": true}, "autoRebootNoRx": {"integerValue": "0"}, "idleReportInterval": {"integerValue": "60"}, "movementDetection": {"stringValue": "always_on"}, "geoLocationRefreshTime": {"integerValue": "1440"}, "bluetoothRxChannels": {"integerValue": "4"}, "pixelLimit": {"integerValue": "0"}, "movAboveSpeed": {"integerValue": "0"}, "movStoppedDuration": {"integerValue": "0"}, "bluetoothAlwaysOn": {"boolValue": false}, "autoReboot": {"integerValue": "0"}, "extendedGeoLocation": {"boolValue": false}, "bluetoothAdvertise": {"boolValue": false}, "bridgeResetInterval": {"integerValue": "0"}, "protocolVersion": {"integerValue": "2"}, "bridgeResetAutomatic": {"boolValue": false}, "gnssPrettyTrail": {"boolValue": false}, "gwPingInterval": {"integerValue": "0"}}}
```

Capability set: downlinkSupported - True

Capability set: bridgeOtaUpgradeSupported - True

InterferenceAnalysisStage

INFO

Stage run time: 0:01:50.449131

This stage analyze BLE interference level (Bad CRC %).

Channel 37 (2402 MHz) Ambient Interference (bad CRC percentage) is: 15%.

Good CRC packets = 2652, bad CRC packets: 468

Channel 38 (2426 MHz) Ambient Interference (bad CRC percentage) is: 14%.

Good CRC packets = 2673, bad CRC packets: 430

Channel 39 (2480 MHz) Ambient Interference (bad CRC percentage) is: 12%.

Good CRC packets = 2738, bad CRC packets: 368

UplinkTest

PASSED

Test duration: 00:02:51

Phase	Result	Duration
ManagementPacketStage	PASSED	00:00:10
DataPacketStage	PASSED	00:00:27
SensorPacketStage	PASSED	00:00:07
SequentialSequenceIdStage	PASSED	00:00:00
GeolocationStage	INFO	00:00:00
ACLStage	PASSED	00:01:13

ManagementPacketStage

PASSED

Stage run time: 0:00:10.424672

This stage simulates management advertisements from a single bridge. Expects the gateway to scan & upload them.

Number of unique packets sent: 2

Number of unique packets received: 2

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/UplinkTest/ManagementPacketStage.csv

DataPacketStage

PASSED

Stage run time: 0:00:27.112147

This stage simulates advertisements from three bridges. Expects the gateway to scan & upload them.

Number of unique packets sent: 36

Number of unique packets received: 36

Number of total packets received: 36

Number of duplicates out of total: 0

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/UplinkTest/DataPacketStage.csv

SensorPacketStage

PASSED

Stage run time: 0:00:07.568556

This stage simulates sensor packets advertisements. Expects the gateway to scan & upload them.

Number of sensor packets sent: 12

Number of sensor packets received correctly: 2

Packets not received:

pkt_id duplication time_delay

7EE3A33F 5 20

E16ED8EA 5 20

996ED8EE 5 20

157A359C 5 20

6612745B 5 20

F9F78C1A 5 20

A674F7B9 5 20

045DA6C2 5 20

7E063773 5 20

8C26781C 5 20

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/UplinkTest/SensorPacketStage.csv

SequentialSequenceldStage

PASSED

Stage run time: 0:00:00.000406

This stage validates expected sequenceld in all packets.

GeolocationStage

INFO

Stage run time: 0:00:00.482634

This stage checks if lat/lng were uploaded under 'location' (optional JSON key) in the uploaded data messages.

Number of unique locations received: 2

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/UplinkTest/GeolocationStage.csv

ACLStage

PASSED

Stage run time: 0:01:13.325956

This stage configures the gateway's Access Control List and simulate bridges. Expects 100% discard rate.

Total packets advertised: 16

Packets received / should've received: 8 / 8

Packets discarded / should've discarded: 8 / 8

Failed to discard: 0

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/UplinkTest/ACLStage.csv

DownlinkTest

PASSED

Test duration: 00:03:14

Phase	Result	Duration
SanityStage	PASSED	00:01:28
CorrelationStage	PASSED	00:01:44

SanityStage

PASSED

Stage run time: 0:01:28.581628

This stage verifies that the gateway advertises requested packets. These are requested via Advertisement actions published to the 'update' topic (MQTT).

Channel 37: Pass

- Total 9 MQTT payloads sent
- Total 68 BLE Packets received by sniffer (including duplicates)
- R Value: 0.122727272727268 | Slope: 0.005000000000000006

Channel 38: Pass

- Total 9 MQTT payloads sent
- Total 68 BLE Packets received by sniffer (including duplicates)
- R Value: 0.016304347826086696 | Slope: 0.0016666666666666722

Channel 39: Pass

- Total 9 MQTT payloads sent
- Total 69 BLE Packets received by sniffer (including duplicates)
- R Value: 0.340277777777777 | Slope: 0.011666666666666674

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/SanityStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/SanityStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/SanityStage.html

CorrelationStage

PASSED

Stage run time: 0:01:44.450310

This stage checks how consistently the gateway advertises packets. Expects a consistently increasing packets count with increasing 'txMaxDuration'.

Channel 37: Pass

- Total 15 MQTT payloads sent
- Total 116 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9234853760445683 | Slope: 0.008583333333333333

Channel 38: Pass

- Total 15 MQTT payloads sent
- Total 122 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9452608982826949 | Slope: 0.008916666666666666

Channel 39: Pass

- Total 15 MQTT payloads sent
- Total 115 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9758064516129032 | Slope: 0.009166666666666667

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/CorrelationStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/CorrelationStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/DownlinkTest/CorrelationStage.html

StressTest

INFO

Test duration: 00:19:04

Phase	Result	Duration
StressTestStage	INFO	00:18:30

StressTestStage

INFO

Stage run time: 0:18:30.412978

This stage attempts different PPS (packets per second) rates to examine the gateway limit (actual PPS may vary per OS).

Test - 20 packets per second. Actual packet per second - 19.98
Number of packets sent 999
Number of packets received 320
Test - 40 packets per second. Actual packet per second - 39.9
Number of packets sent 1197
Number of packets received 185
Test - 60 packets per second. Actual packet per second - 59.8333
Number of packets sent 1795
Number of packets received 347
Test - 80 packets per second. Actual packet per second - 79.6
Number of packets sent 2388
Number of packets received 301
Test - 100 packets per second. Actual packet per second - 99.3667
Number of packets sent 2981
Number of packets received 321
Test - 120 packets per second. Actual packet per second - 118.9
Number of packets sent 3567
Number of packets received 301
Test - 140 packets per second. Actual packet per second - 138.867
Number of packets sent 4166
Number of packets received 234
Test - 160 packets per second. Actual packet per second - 158.5
Number of packets sent 4755
Number of packets received 182
Test - 180 packets per second. Actual packet per second - 173.4
Number of packets sent 5202
Number of packets received 232
Test - 200 packets per second. Actual packet per second - 173.167
Number of packets sent 5195
Number of packets received 193
Test - 220 packets per second. Actual packet per second - 173.533
Number of packets sent 5206
Number of packets received 198
Test - 250 packets per second. Actual packet per second - 173.8
Number of packets sent 5214
Number of packets received 174
Test - 285 packets per second. Actual packet per second - 173.567
Number of packets sent 5207
Number of packets received 216
Test - 333 packets per second. Actual packet per second - 173.467
Number of packets sent 5204
Number of packets received 185

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20250706_074553/StressTest/StressTestStage.csv