



Wiliot Gateway Certificate Passed!

Summary

Run Info:

Run date: 17/12/2025, 14:16:05

Tests duration: 00:33:25

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	00:03:25
UplinkTest	PASSED	00:04:36
DownlinkTest	PASSED	00:03:14
StressTest	INFO	00:21:25

ConnectionTest

PASSED

Test duration: 00:03:25

Phase	Result	Duration
ConnectionStage	PASSED	00:01:34
InterferenceAnalysisStage	INFO	00:01:50

ConnectionStage

PASSED

Stage run time: 0:01:34.983951

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": "4.5.13", "location": {}, "config": {"autoRebootNoServer": {"integerValue": "720"}, "accessControlList": {"aclValue": {}}, "clockUpdateInterval": {"integerValue": "1440"}, "transmitManagementPackets": {"boolValue": false}, "periodicGatewayInfo": {"integerValue": "60"}, "dynPacer_Pacer1": {"integerValue": "0"}, "inputEvents": {"boolValue": false}, "dynPacer_PacerStopped": {"integerValue": "0"}, "useExpiredLocations": {"boolValue": true}, "locationLostTime": {"integerValue": "0"}, "gnssMaxAccuracy": {"integerValue": "0"}, "locationSharing": {"boolValue": false}, "movMinDistance": {"integerValue": "0"}, "modemWhenLowPower": {"boolValue": false}, "williotServer": {"stringValue": "custom"}, "workWithoutPowerMode": {"stringValue": "turn_off"}, "movMinDuration": {"integerValue": "0"}, "networkPolicy": {"integerValue": "0"}, "temperatureInterval": {"integerValue": "0"}, "bridgeDetection": {"integerValue": "0"}, "dynPacer_Pacer2": {"integerValue": "0"}, "autoRebootNoRx": {"integerValue": "0"}, "idleReportInterval": {"integerValue": "60"}, "movementDetection": {"stringValue": "always_on"}, "geoLocationRefreshTime": {"integerValue": "1440"}, "bluetoothRxChannels": {"integerValue": "4"}, "useStaticLocation": {"boolValue": false}, "movAboveSpeed": {"integerValue": "0"}, "dynPacer_Pacer3": {"integerValue": "0"}, "dynPacer": {"stringValue": "disabled"}, "movStoppedDuration": {"integerValue": "0"}, "autoReboot": {"integerValue": "0"}, "dynPacer_Value2": {"integerValue": "0"}, "extendedGeoLocation": {"boolValue": false}, "bluetoothAdvertise": {"boolValue": false}, "dynPacer_Value1": {"integerValue": "0"}, "bridgeResetInterval": {"integerValue": "0"}, "bridgeResetAutomatic": {"boolValue": false}, "gnssAGPS": {"boolValue": false}, "gnssPrettyTrail": {"boolValue": false}, "gwPingInterval": {"integerValue": "0"}}
```

Capability set: downlinkSupported - True

Capability set: bridgeOtaUpgradeSupported - True

InterferenceAnalysisStage

INFO

Stage run time: 0:01:50.457160

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

Channel 37 (2402 MHz) Ambient Interference (bad CRC percentage) is: 34%.

Good CRC packets = 2062, bad CRC packets: 1050

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

Good CRC packets = 1855, bad CRC packets: 1153

Channel 39 (2480 MHz) Ambient Interference (bad CRC percentage) is: 42%.

Good CRC packets = 1541, bad CRC packets: 1122

UplinkTest

PASSED

Test duration: 00:04:36

Phase	Result	Duration
ManagementPacketStage	PASSED	00:00:20
DataPacketStage	PASSED	00:00:37
SensorPacketStage	PASSED	00:00:17
SequentialSequenceIdStage	PASSED	00:00:00
GeolocationStage	INFO	00:00:00
ACLStage	PASSED	00:02:28

ManagementPacketStage

PASSED

Stage run time: 0:00:20.422911

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/20251217_141605/UplinkTest/ManagementPacketStage.csv

DataPacketStage

PASSED

Stage run time: 0:00:37.109187

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: 35

Number of total packets received: 35

Number of duplicates out of total: 0

Packets not received:

pkt_id duplication time_delay

F2BB35AF 3 20

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/UplinkTest/DataPacketStage.csv

SensorPacketStage

PASSED

Stage run time: 0:00:17.577867

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: 12

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/UplinkTest/SensorPacketStage.csv

SequentialSequenceldStage

PASSED

Stage run time: 0:00:00.000143

This stage validates expected sequenceld in all packets.

GeolocationStage

INFO

Stage run time: 0:00:00.609061

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

Number of unique locations received: 15

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/UplinkTest/GeolocationStage.csv

ACLStage

PASSED

Stage run time: 0:02:28.324666

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/20251217_141605/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: 0:01:28.715254

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 63 BLE Packets received by sniffer (including duplicates)
- R Value: 0.05555555555555569 | Slope: 0.003333333333333339

Channel 38: Pass

- Total 9 MQTT payloads sent
- Total 65 BLE Packets received by sniffer (including duplicates)
- R Value: 0.18749999999999999 | Slope: 0.003333333333333339

Channel 39: Pass

- Total 9 MQTT payloads sent
- Total 59 BLE Packets received by sniffer (including duplicates)
- R Value: 0.26086956521739113 | Slope: 0.006666666666666673

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/SanityStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/SanityStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/SanityStage.html

CorrelationStage

PASSED

Stage run time: 0:01:44.479766

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 119 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9619768894440974 | Slope: 0.009250000000000001

Channel 38: Pass

- Total 15 MQTT payloads sent
- Total 114 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9453781512605042 | Slope: 0.007500000000000001

Channel 39: Pass

- Total 15 MQTT payloads sent
- Total 120 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9834027777777777 | Slope: 0.009916666666666667

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/CorrelationStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/CorrelationStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/DownlinkTest/CorrelationStage.html

StressTest

INFO

Test duration: 00:21:25

Phase	Result	Duration
StressTestStage	INFO	00:20:50

StressTestStage

INFO

Stage run time: 0:20:50.824540

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 791
Test - 40 packets per second. Actual packet per second - 39.8667
Number of packets sent 1196
Number of packets received 990
Test - 60 packets per second. Actual packet per second - 59.5667
Number of packets sent 1787
Number of packets received 1552
Test - 80 packets per second. Actual packet per second - 79.2
Number of packets sent 2376
Number of packets received 2185
Test - 100 packets per second. Actual packet per second - 98.3667
Number of packets sent 2951
Number of packets received 2593
Test - 120 packets per second. Actual packet per second - 118.067
Number of packets sent 3542
Number of packets received 2569
Test - 140 packets per second. Actual packet per second - 137.467
Number of packets sent 4124
Number of packets received 2607
Test - 160 packets per second. Actual packet per second - 157.2
Number of packets sent 4716
Number of packets received 3439
Test - 180 packets per second. Actual packet per second - 171.633
Number of packets sent 5149
Number of packets received 2711
Test - 200 packets per second. Actual packet per second - 170.967
Number of packets sent 5129
Number of packets received 2769
Test - 222 packets per second. Actual packet per second - 171.667
Number of packets sent 5150
Number of packets received 2963
Test - 250 packets per second. Actual packet per second - 171.333
Number of packets sent 5140
Number of packets received 2642
Test - 285 packets per second. Actual packet per second - 170.767
Number of packets sent 5123
Number of packets received 2681
Test - 333 packets per second. Actual packet per second - 171.267
Number of packets sent 5138
Number of packets received 2628

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251217_141605/StressTest/StressTestStage.csv