



Wiliot Gateway Certificate Passed!

Summary

Run Info:

Run date: 28/10/2025, 12:56:45

Tests duration: 00:43:11

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	00:13:11
UplinkTest	PASSED	00:04:36
DownlinkTest	PASSED	00:03:14
StressTest	INFO	00:21:25

ConnectionTest

PASSED

Test duration: 00:13:11

Phase	Result	Duration
ConnectionStage	PASSED	00:11:20
InterferenceAnalysisStage	WARNING	00:01:50

ConnectionStage

PASSED

Stage run time: 0:11:20.570986

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": "4.5.9", "location": {}, "config": {"autoRebootNoServer": {"integerValue": "720"}, "accessControlList": {"aclValue": {}}, "clockUpdateInterval": {"integerValue": "1440"}, "periodicGatewayInfo": {"integerValue": "60"}, "inputEvents": {"boolValue": false}, "receiveWhileUpdating": {"boolValue": true}, "locationLostTime": {"integerValue": "0"}, "gnssMaxAccuracy": {"integerValue": "0"}, "networkPolicy": {"integerValue": "0"}, "movMinDistance": {"integerValue": "0"}, "modemWhenLowPower": {"boolValue": false}, "wiliotServer": {"stringValue": "custom"}, "workWithoutPowerMode": {"stringValue": "turn_off"}, "movMinDuration": {"integerValue": "0"}, "temperatureInterval": {"integerValue": "0"}, "bridgeDetection": {"integerValue": "0"}, "autoRebootNoRx": {"integerValue": "0"}, "idleReportInterval": {"integerValue": "60"}, "movementDetection": {"stringValue": "automatic"}, "geoLocationRefreshTime": {"integerValue": "1440"}, "bluetoothRxChannels": {"integerValue": "4"}, "useStaticLocation": {"boolValue": false}, "movAboveSpeed": {"integerValue": "0"}, "movStoppedDuration": {"integerValue": "0"}, "autoReboot": {"integerValue": "0"}, "extendedGeoLocation": {"boolValue": false}, "bluetoothAdvertise": {"boolValue": false}, "bridgeResetInterval": {"integerValue": "0"}, "bridgeResetAutomatic": {"boolValue": false}, "gnssPrettyTrail": {"boolValue": false}, "gwPingInterval": {"integerValue": "0"}}
```

Capability set: downlinkSupported - True

Capability set: bridgeOtaUpgradeSupported - True

InterferenceAnalysisStage

WARNING

Stage run time: 0:01:50.454631

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

Channel 37 (2402 MHz) Ambient Interference (bad CRC percentage) is: 44%.

Good CRC packets = 1459, bad CRC packets: 1124

Channel 38 (2426 MHz) Ambient Interference (bad CRC percentage) is: 44%.

Good CRC packets = 1535, bad CRC packets: 1218

Channel 39 (2480 MHz) Ambient Interference (bad CRC percentage) is: 60%.

Good CRC packets = 981, bad CRC packets: 1495

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: 0:00:20.422845

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/20251028_125645/UplinkTest/ManagementPacketStage.csv

DataPacketStage

PASSED

Stage run time: 0:00:37.105162

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

Timestamp 1761649885210 is too far off the accepted range 1761649885360-1761649897625 for payload:

C6FC00003F2231EFEB14B9934C50729E7F8D11C68E772EFB2F91F7EBC1

Timestamp 1761649885990 is too far off the accepted range 1761649886132-1761649897712 for payload:

C6FC00003F87EC4A7DBC23E41D9CF2D3D1755C22BB620482ACABE28480

Additional errors (11) are suppressed to avoid clutter

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/UplinkTest/DataPacketStage.csv

SensorPacketStage

PASSED

Stage run time: 0:00:17.565904

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

Timestamp 1761649932660 is too far off the accepted range 1761649932700-1761649944400 for payload:

90FCA1016417913C42FD38AF3F23AC0201060303E1FF060000FA0EAB04

Timestamp 1761649932910 is too far off the accepted range 1761649932910-1761649944610 for payload:

90FCA10164157D358A0E39AF3F23AC0201060303E1FF0600007EE3A33F

Additional errors (7) are suppressed to avoid clutter

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/UplinkTest/SensorPacketStage.csv

SequentialSequenceldStage

PASSED

Stage run time: 0:00:00.000117

This stage validates expected sequenceld in all packets.

GeolocationStage

INFO

Stage run time: 0:00:00.578334

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

Number of unique locations received: 1

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/UplinkTest/GeolocationStage.csv

ACLStage

PASSED

Stage run time: 0:02:28.318301

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/20251028_125645/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: 0:01:28.671303

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: 0.2499999999999999 | Slope: 0.00500000000000000044

Channel 38: Pass

- Total 9 MQTT payloads sent
- Total 62 BLE Packets received by sniffer (including duplicates)
- R Value: 0.1377551020408163 | Slope: 0.00500000000000000044

Channel 39: Pass

- Total 9 MQTT payloads sent
- Total 64 BLE Packets received by sniffer (including duplicates)
- R Value: 0.38709677419354827 | Slope: 0.0066666666666666673

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/SanityStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/SanityStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/SanityStage.html

CorrelationStage

PASSED

Stage run time: 0:01:44.503114

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 112 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9595206168286959 | Slope: 0.008916666666666666

Channel 38: Pass

- Total 15 MQTT payloads sent
- Total 107 BLE Packets received by sniffer (including duplicates)
- R Value: 0.983321441312879 | Slope: 0.00875

Channel 39: Pass

- Total 15 MQTT payloads sent
- Total 111 BLE Packets received by sniffer (including duplicates)
- R Value: 0.9373828271466067 | Slope: 0.008333333333333335

Sent data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/CorrelationStage_sent.csv

Sniffed data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/CorrelationStage_sniffed.csv

Graph saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/DownlinkTest/CorrelationStage.html

StressTest

INFO

Test duration: 00:21:25

Phase	Result	Duration
StressTestStage	INFO	00:20:50

StressTestStage

INFO

Stage run time: 0:20:50.727991

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 918
Test - 40 packets per second. Actual packet per second - 39.8667
Number of packets sent 1196
Number of packets received 1090
Test - 60 packets per second. Actual packet per second - 59.6
Number of packets sent 1788
Number of packets received 1632
Test - 80 packets per second. Actual packet per second - 79.1667
Number of packets sent 2375
Number of packets received 2202
Test - 100 packets per second. Actual packet per second - 98.4
Number of packets sent 2952
Number of packets received 2716
Test - 120 packets per second. Actual packet per second - 118.033
Number of packets sent 3541
Number of packets received 2777
Test - 140 packets per second. Actual packet per second - 137.333
Number of packets sent 4120
Number of packets received 2838
Test - 160 packets per second. Actual packet per second - 156.233
Number of packets sent 4687
Number of packets received 2693
Test - 180 packets per second. Actual packet per second - 172.8
Number of packets sent 5184
Number of packets received 2752
Test - 200 packets per second. Actual packet per second - 172.267
Number of packets sent 5168
Number of packets received 2777
Test - 220 packets per second. Actual packet per second - 172
Number of packets sent 5160
Number of packets received 2760
Test - 250 packets per second. Actual packet per second - 172.733
Number of packets sent 5182
Number of packets received 2847
Test - 285 packets per second. Actual packet per second - 171.333
Number of packets sent 5140
Number of packets received 2817
Test - 333 packets per second. Actual packet per second - 171.567
Number of packets sent 5147
Number of packets received 2778

Timestamps errors during PPS 40:

Timestamp 1761650442420 is too far off the accepted range 1761650442530-1761650454055 for payload:
C6FC00003F061ACC2CEBF3D3B12CC846AF19A4C8C664B3D8D6C7D41214
Timestamp 1761650442440 is too far off the accepted range 1761650442555-1761650454080 for payload:
C6FC00003FEBF43E7239BD437F10BD0B4D9793C25FB330CC684B0A0B32
Additional errors (203) are suppressed to avoid clutter

Timestamps errors during PPS 60:

Timestamp 1761650539000 is too far off the accepted range 1761650539012-1761650550529 for payload:
C6FC00003F68EC81239969B108AC330B15716EF9EC13CCABF394BAACA9
Timestamp 1761650539780 is too far off the accepted range 1761650539797-1761650551314 for payload:
C6FC00003FFE49C1B071EED9C0B09A2506B7BA1237448F16FC9F3652C2
Additional errors (107) are suppressed to avoid clutter

Timestamps errors during PPS 80:

Timestamp 1761650625010 is too far off the accepted range 1761650625018-1761650636531 for payload:
C6FC00003FA90F0FB1DE946669DA517EDB0B714C2F0EFEB8D671BC5DDB
Timestamp 1761650625010 is too far off the accepted range 1761650625031-1761650636544 for payload:
C6FC00003F6DBB1EAC4F8EADC4069873E932D49F86A402749102CC7BF8
Additional errors (73) are suppressed to avoid clutter

Timestamps errors during PPS 285:

Timestamp 1761651442710 is too far off the accepted range 1761651442710-1761651454214 for payload:
C6FC00003FFAA1E65C89DB08158367F9A64EC68B474C618E668DE8D652
Timestamp 1761651442720 is too far off the accepted range 1761651442722-1761651454226 for payload:
C6FC00003FEF2DE1381044AFF43408C7A9EB8C9A2B38E56F2045BB79A4
Additional errors (22) are suppressed to avoid clutter

Stage data saved - /home/oren/.local/share/wiliot/gw-certificate/20251028_125645/StressTest/StressTestStage.cs
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