

GT PCBA Testing:

TEST UWC RX Carrier Wave Off

Test failed of 6 pcs in factory.

Test results between Finland tester and China factory tester are as follow:

| Numeric value | High limit | Low limit | Test operation | Operator | Station name |
|------------------|------------|-----------|----------------|----------|--------------|
| 11.2352941176471 | | 20 | PCBA Test | operator | VAAW9644 |
| 6.76470588235294 | | 13 | PCBA Test | operator | VAAW9644 |
| 23.625 | | 20 | PCBA Test | operator | VAAW9644 |
| 14.3125 | | 13 | PCBA Test | operator | VAAW9644 |
| 23.2941176470588 | | 20 | PCBA Test | operator | VAAW9644 |
| 14.5882352941177 | | 13 | PCBA Test | operator | VAAW9644 |
| 23.7647058823529 | | 20 | PCBA Test | operator | VAAW9644 |
| 14.0588235294118 | | 13 | PCBA Test | operator | VAAW9644 |
| 23.5625 | | 20 | PCBA Test | operator | VAAW9644 |
| 14 | | 13 | PCBA Test | operator | VAAW9644 |
| 26.25 | | 20 | PCBA Test | operator | P-1000674466 |
| 15.75 | | 13 | PCBA Test | operator | P-1000674466 |

Amplitude: FIN = 23.5 CHN=26.25 +12.8%

Noise: FIN 14 CHN = 15.75 +12.5%

There is some difference between testers but is not the root cause for the failures.

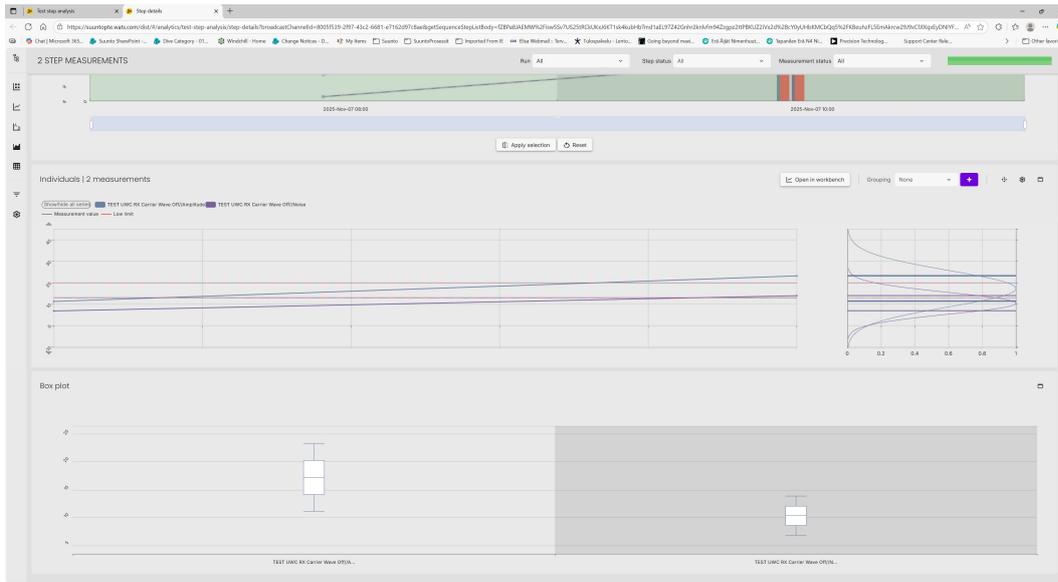
Testing of individual cards indicate that the noise is coming from the circuit.

Cards failing this test will fail also in range tests:

| Amplitude | Noise | Amlitude | Noise | Range as a product |
|-----------|-------|----------|-------|--------------------|
| 25 | 14 | 30 | 17 | 145 cm |
| 25 | 15 | 28 | 15 | 150 cm |
| 21 | 12 | 29 | 14 | 150 cm |

Previously replacing the U44 OPA8235 has been the solution and is also tested this time

2523D00021 OK card -> failed after U44 swapped from failed card



Ok GT pcba from where the OPA2835 was swapped from 2539D00778

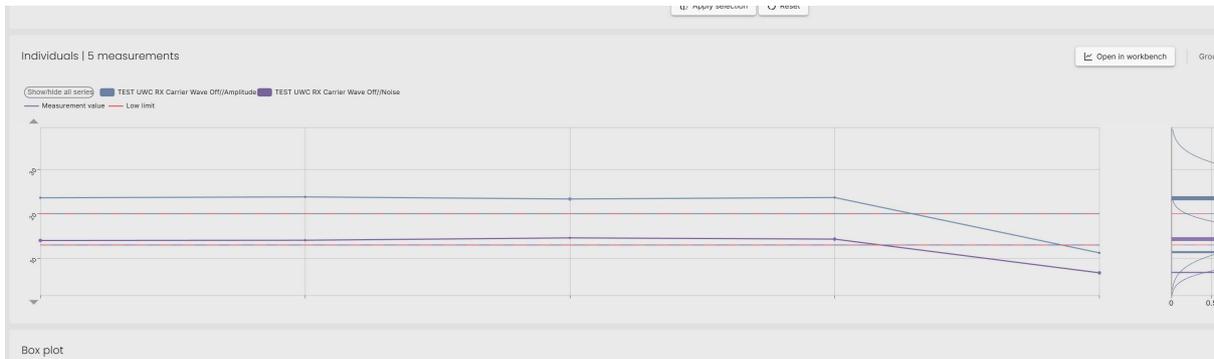
Step details

4 measurements

Drag a column header and drop it here to group by that column.

| Step name | Measurement name | Serial number | Measurement status | Part number | Revision | UTC Start date/time | Numeric value | High limit | Low limit | Test |
|------------------------------|------------------|---------------|--------------------|-------------|----------|----------------------|-----------------|------------|-----------|--------|
| TEST UWC RX Carrier Wave Off | Amplitude | 2523D00021 | X Failed | 100034252 | C1 | 2025-Nov-07 10:51:37 | 23.764705882353 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2523D00021 | X Failed | 100034252 | C1 | 2025-Nov-07 10:51:37 | 13.841194705882 | | | 13 PCB |
| TEST UWC RX Carrier Wave Off | Amplitude | 2523D00021 | ✓ Passed | 100034252 | C1 | 2025-Nov-07 08:51:04 | 11.25 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2523D00021 | ✓ Passed | 100034252 | C1 | 2025-Nov-07 08:51:04 | 6.8125 | | | 13 PCB |

2539D00778 failed card -> ok after I44 swapped from ok card



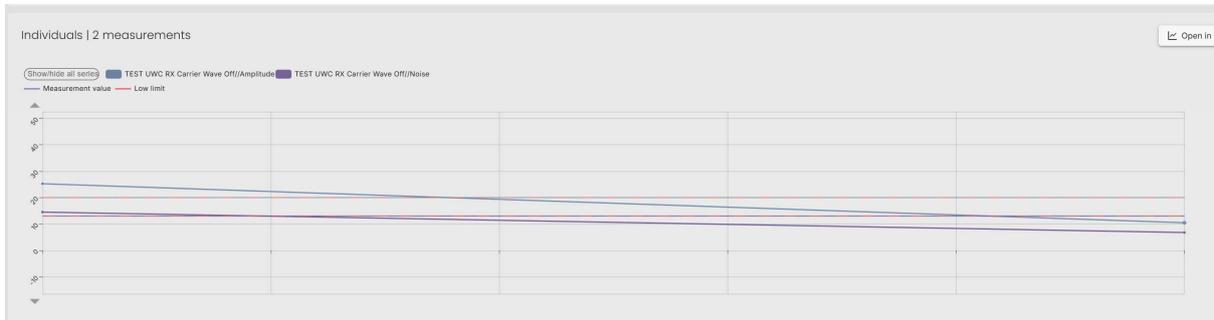
Card 2539D00778 after replaced with OPA2835 from card 2523D00021

10 measurements

Drag a column header and drop it here to group by that column.

| Step name | Measurement name | Serial number | Measurement status | Part number | Revision | UTC Start date/time | Numeric value | High limit | Low limit | Test |
|------------------------------|------------------|---------------|--------------------|-------------|----------|----------------------|------------------|------------|-----------|--------|
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00778 | ✓ Passed | 100034252 | D1 | 2025-Nov-07 10:57:14 | 11.255294176471 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00778 | ✓ Passed | 100034252 | D1 | 2025-Nov-07 10:57:14 | 6.76470588235294 | | | 13 PCB |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-07 10:20:03 | 23.625 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-07 10:20:03 | 14.3125 | | | 13 PCB |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-07 10:11:46 | 23.284176470588 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-07 10:11:46 | 14.568235294177 | | | 13 PCB |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-06 11:02:57 | 23.7647058823529 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-06 11:02:57 | 14.058823529418 | | | 13 PCB |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-05 14:44:57 | 23.5625 | | | 20 PCB |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00778 | X Failed | 100034252 | D1 | 2025-Nov-05 14:44:57 | 14 | | | 13 PCB |

2539D00003 failed card -> ok after U44 swapped



Card 2539D00003 after replaced with new OPA2835

Step details

2 STEP MEASUREMENTS

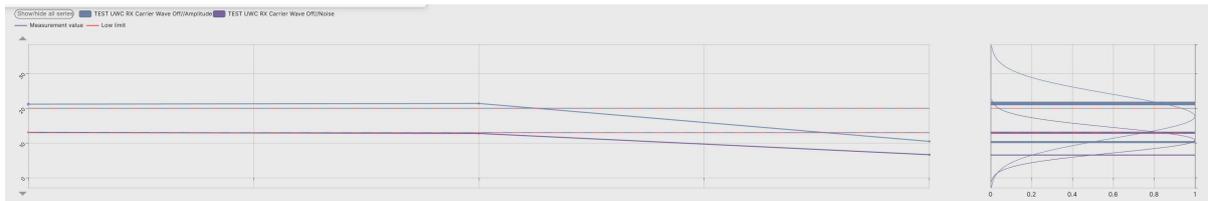
Run: All | Step status: All | Measurement status: All

4 measurements

| Step name | Measurement name | Serial number | Measurement status | Part number | Revision | UTC Start date/time | Numeric value | High limit | Low limit |
|------------------------------|------------------|---------------|--------------------|-------------|----------|----------------------|------------------|------------|-----------|
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00003 | Passed | 100034252 | 01 | 2025-Nov-07 13:09:18 | 10.4705882352941 | 20 | P |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00003 | Passed | 100034252 | 01 | 2025-Nov-07 13:09:18 | 6.76470588235294 | 13 | P |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00003 | Failed | 100034252 | 01 | 2025-Nov-06 10:57:30 | 25.25 | 20 | P |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00003 | Failed | 100034252 | 01 | 2025-Nov-06 10:57:30 | 14.5 | 13 | P |

Noise value change by replacing the OPA2835 U44

2539D00141 failed card -> ok after U44 swapped



Card 2539D00141 after replaced with new OPA2835

6 measurements

Drag a column header and drop it here to group by that column.

| Step name | Measurement name | Serial number | Measurement status | Part number | Revision | UTC Start date/time | Numeric value | High limit | Low limit | Test op |
|------------------------------|------------------|---------------|--------------------|-------------|----------|----------------------|------------------|------------|-----------|---------|
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00141 | ✓ Passed | 100034252 | D1 | 2025-Nov-07 13:05:13 | 10.4705882352941 | 20 | PCBA T | |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00141 | ✓ Passed | 100034252 | D1 | 2025-Nov-07 13:05:13 | 6.64705882352941 | 13 | PCBA T | |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00141 | ✗ Failed | 100034252 | D1 | 2025-Nov-08 10:51:44 | 21.375 | 20 | PCBA T | |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00141 | ✓ Passed | 100034252 | D1 | 2025-Nov-08 10:51:44 | 12.75 | 13 | PCBA T | |
| TEST UWC RX Carrier Wave Off | Amplitude | 2539D00141 | ✗ Failed | 100034252 | D1 | 2025-Nov-05 14:35:26 | 21.1764705882353 | 20 | PCBA T | |
| TEST UWC RX Carrier Wave Off | Noise | 2539D00141 | ✗ Failed | 100034252 | D1 | 2025-Nov-05 14:35:26 | 13.0588235294118 | 13 | PCBA T | |

Noise value change by replacing the OPA2835 U44

Conclusion and repair guide:

1. Replacing failed unit U44 from ok unit caused the failure to follow the U44 chip (1pcs).
2. Replacing U44 will get failed card to pass the test (2 pcs)
3. TEST UWC RX carrier wave off – test Amplitude and Noise failures are caused by U44 chip noise.
4. To rework, replace U44 :
190000385 IC OPA 31MHZ QFN10 OPA2835IRUNR TI
5. Retest the card.