# Radio Test Report-2.4G WIFI
# ETSI EN 300 328 V2.2.2 (2019-07)

## Client Information:

Applicant: DOKE COMMUNICATION (HK) LIMITED

Applicant add.: RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI HK CHINA

## Product Information:

Product Name: Tablet

Model No.: Tab 70 WiFi

Serial Model: N/A

Brand Name: Blackview

Report No.: AIT23071307CW3

## Prepared By:

**Dongguan Yaxu (AiT) Technology Limited**

No.22, Jinqianling Third Street, Jitigang, Huangjiang,Dongguan, Guangdong, China

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Date of Receipt: July 13, 2023 Date of Test: July 13, 2023~July 26, 2023

Date of Issue: July 27, 2023 Test Result: Pass

This device has been tested and found to comply with the stated standard(s), which is (are) required by the council directive of 2014/53/EU and indicated in the test report and are applicable only to the tested sample identified in the report.



**Reviewed by:** Simba Huang
Simba huang

**Approved by:** Seal.Chen
Seal.chen

# 1 Contents

# 2 Test Summary

## 2.1 Compliance with ETSI EN 300 328 V2.2.2 (2019-07)

| No. | Description of Test Item | Basic Standard | Results |
|---|---|---|---|
| **Transmitter Parameters** | | | |
| 1 | RF Output Power | EN300328 clause 4.3.2.2 | Pass |
| 2 | Power Spectral Density | EN300328 clause 4.3.2.3 | Pass |
| 3 | Duty cycle, Tx-Sequence, Tx-gap | EN300328 clause 4.3.2.4 | N/A |
| 4 | Medium Utilization (MU) factor | EN300328 clause 4.3.2.5 | N/A |
| 5 | Adaptivity | EN300328 clause 4.3.2.6 | Pass |
| 6 | Occupied Channel Bandwidth | EN300328 clause 4.3.2.7 | Pass |
| 7 | Transmitter unwanted emission in the OOB domain | EN300328 clause 4.3.2.8 | Pass |
| 8 | Transmitter unwanted emissions in the spurious domain | EN300328 clause 4.3.2.9 | Pass |
| 9 | Geo-location capability | EN 300 328 Clause 4.3.2.12 | N/A |
| **Receiver Parameters** | | | |
| 10 | Receiver spurious emissions | EN300328 clause 4.3.2.10 | Pass |
| 11 | Receiver Blocking | EN300328 clause 4.3.2.11 | Pass |

# 3 Test Facility

**The test facility is recognized, certified or accredited by the following organizations:**

**.CNAS- Registration No: L6177**

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2017 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on April 18, 2022

**FCC-Registration No.: 703111 Designation Number: CN1313**

Dongguan Yaxu (AiT) technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

**IC —Registration No.: 6819A CAB identifier: CN0122**

The 3m Semi-anechoic chamber of Dongguan Yaxu (AiT) technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6819A

**A2LA-Lab Cert. No.: 6317.01**

Dongguan Yaxu (AiT) technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## 3.1 Deviation from Standard

None

## 3.2 Abnormalities from Standard Conditions

None

# 4 General Information

## 4.1 General Description of EUT

| | |
|---|---|
| Manufacturer: | Shenzhen DOKE Electronic Co.,Ltd |
| Manufacturer Address: | 801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China. |
| EUT Name: | Tablet |
| Model No: | Tab 70 WiFi |
| Serial Model： | N/A |
| Brand Name: | Blackview |
| Operation Frequency: | 802.11b/g/n/ax (20MHz): 2412~2472MHz,802.11n/ax (40MHz):2422~2462MHz |
| Modulation Type: | IEEE 802.11b :DSSS (DBPSK, DQPSK, CCK)<br>IEEE 802.11g/n/ax: OFDM(64QAM, 16QAM, QPSK, BPSK) |
| Receiver categories | 802.11b,802.11g/n/ax20:1,n/ax40:2 |
| Adaptive/non-adaptive | Adaptive equipment |
| Antenna Designation | FPC Antenna |
| Antenna Gain: | -3.3dBi |
| H/W No.: | R863T-RK3562-V1.0 |
| S/W No.: | Tab_70_WiFi_EEA_R863T_V1.0_20230713V01 |
| Adapter: | Adapter: QZ-01000EA00<br>INPUT:100-240V 50/60Hz 0.3A Max<br>OUTPUT:5V2A(10.0W) |
| Battery: | 3.8V 6580mAh |
| Model difference: | N/A |
| Note: | |
| 1. | For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. |

| Description of Channel: | | | | | |
|---|---|---|---|---|---|
| 802.11b/g/n/ax(20MHz) | | | | | |
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01 | 2412 | 06 | 2437 | 11 | 2462 |
| 02 | 2417 | 07 | 2442 | 12 | 2467 |
| 03 | 2422 | 08 | 2447 | 13 | 2472 |
| 04 | 2427 | 09 | 2452 | | |
| 05 | 2432 | 10 | 2457 | | |
| 802.11n/ax(40MHz) | | | | | |
| 03 | 2422 | 06 | 2437 | 09 | 2452 |
| 04 | 2427 | 07 | 2442 | 10 | 2457 |
| 05 | 2432 | 08 | 2447 | 11 | 2462 |

## 4.2 Description of Test setup

EUT was tested in normal configuration (Please See following Block diagrams)

| 1. Block diagram of EUT configuration (TX Mode) |
|---|
|   |

## 4.3 EUT Peripheral List

| No. | Equipment | Manufacturer | Model No. | Serial No. | signal cable | Remark |
|---|---|---|---|---|---|---|
| 1 | Adapter | Guangdong Quanzhi Technology Co., Ltd. | QZ-01000EA00 | N/A | N/A | N/A |

## 4.4 Test Peripheral List

| No. | Equipment | Manufacturer | EMC Compliance | Model No. | Serial No. | Power cord | signal cable |
|---|---|---|---|---|---|---|---|
| 1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

## 4.5 Equipments List for All Test Items

| No | Test Equipment | Manufacturer | Model No | Serial No | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSV40 | 101470 | 2022.09.02 | 2023.09.01 |
| 2 | EMI Measuring Receiver | R&S | ESR | 101160 | 2022.09.02 | 2023.09.01 |
| 3 | Low Noise Pre Amplifier | HP | HP8447E | AiT-F01319 | 2022.09.02 | 2023.09.01 |
| 4 | Low Noise Pre Amplifier | Tsj | MLA-0120-A02-34 | 2648A04738 | 2022.09.02 | 2023.09.01 |
| 5 | Passive Loop | ETS | 6512 | 00165355 | 2022.09.04 | 2024.09.03 |
| 6 | TRILOG Super Broadband test Antenna | SCHWARZBECK | VULB9160 | 9160-3206 | 2021.08.29 | 2024.08.28 |
| 7 | Broadband Horn Antenna | SCHWARZBECK | BBHA9120D | 452 | 2021.08.29 | 2024.08.28 |
| 8 | SHF-EHF Horn Antenna 15-40GHz | SCHWARZBECK | BBHA9170 | BBHA9170367d | 2020.11.24 | 2023.11.23 |
| 9 | EMI Test Receiver | R&S | ESCI | 100124 | 2022.09.02 | 2023.09.01 |
| 10 | LISN | Kyoritsu | KNW-242 | 8-837-4 | 2022.09.02 | 2023.09.01 |
| 11 | LISN | R&S | ESH3-Z2 | 0357.8810.54-101161-S2 | 2022.09.02 | 2023.09.01 |
| 12 | Pro.Temp&Humi.chamber | MENTEK | MHP-150-1C | MAA08112501 | 2022.09.02 | 2023.09.01 |
| 13 | RF Automatic Test system | MW | MW100-RFCB | 21033016 | 2022.09.02 | 2023.09.01 |
| 14 | Signal Generator | Agilent | N5182A | MY50143009 | 2022.09.02 | 2023.09.01 |
| 15 | Wideband Radio communication tester | R&S | CMW500 | 1201.0002K50 | 2022.09.02 | 2023.09.01 |
| 16 | RF Automatic Test system | MW | MW100-RFCB | 21033016 | 2022.09.02 | 2023.09.01 |
| 17 | DC power supply | ZHAOXIN | RXN-305D-2 | 28070002559 | N/A | N/A |
| 18 | RE Software | EZ | EZ-EMC_RE | Ver.AIT-03A | N/A | N/A |
| 19 | CE Software | EZ | EZ-EMC_CE | Ver.AIT-03A | N/A | N/A |
| 20 | RF Software | MW | MTS 8310 | 2.0.0.0 | N/A | N/A |

## 4.6 Test conditions

### 4.6.1 Normal conditions

| | | |
|---|---|---|
| Ambient: | Temperature: | +15°C to +35°C |
| | Relative humidity: | 20% to 75% |
| | Press: | 1010 mbar |
| Power supply: | AC | AC 230V for adapter |
| | DC | 3.8V |

### 4.6.2 Extreme conditions

| | | |
|---|---|---|
| Ambient: | Temperature: | -20 °C to +40 °C<br>(Which declared by manufacture ) |
| Power supply: | DC | 3.4-4.2V |

## 4.7 Measurement Uncertainty

| No. | Item | Uncertainty |
|---|---|---|
| 1 | Conducted Emission Test | 1.20dB |
| 2 | Radiated Emission Test | 3.75dB |
| 3 | RF power,conducted | 0.16dB |
| 4 | RF power density,conducted | 0.24dB |
| 5 | Spurious emissions,conducted | 0.21dB |
| 6 | All emissions,radiated(<1G) | 4.68dB |
| 7 | All emissions,radiated(>1G) | 4.89dB |

# 5 Transmitter Requirements

## 5.1 RF Output Power

### 5.1.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.1.2.3)

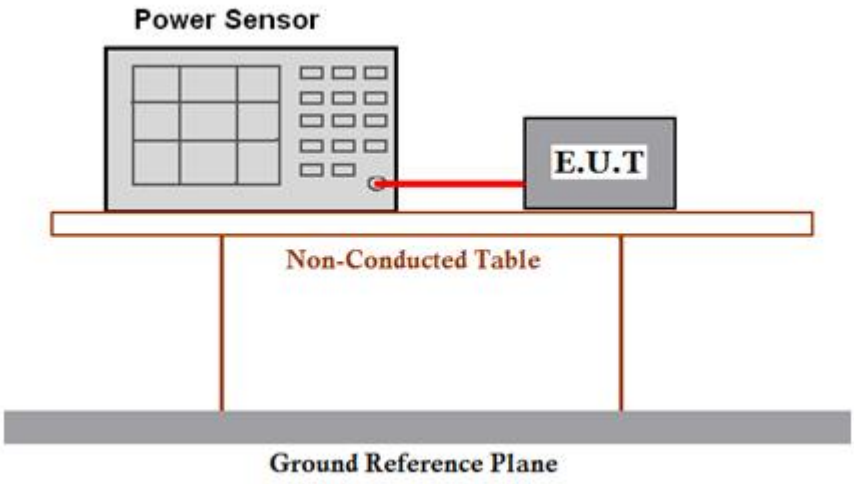
| RF OUTPUT POWER | |
|---|---|
| Condition | Limit |
| ☐ Non-adaptive wide band modulations systems | Equal to or less than the value declared by the supplier.<br>This declared value shall be equal to or less than 20 dBm. |
| ☒ Adaptive wide band modulations systems | ≤20dBm |

### 5.1.2 Test procedure

1. Refer to chapter 5.4.2.2 of ETSI EN EN 300 328 V2.2.2(2019-07)
2.

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

### 5.1.3 Test Setup



### 5.1.4 Test result

802.11b

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH01 | CH07 | CH13 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 15.11 | 14.40 | 13.43 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 15.10 | 14.35 | 13.37 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 15.06 | 14.36 | 13.40 |
| Max e.i.r.p Power | | | | **15.11** | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 16 Burst power.

802.11g

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH01 | CH07 | CH13 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 14.67 | 14.37 | 14.09 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 14.63 | 14.35 | 14.05 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 14.66 | 14.32 | 14.06 |
| Max e.i.r.p Power | | | | 14.67 | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 15 Burst power.

802.11n-HT20

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH01 | CH07 | CH13 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 13.87 | 13.99 | 13.43 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 13.84 | 13.97 | 13.40 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 13.86 | 13.95 | 13.41 |
| Max e.i.r.p Power | | | | **13.99** | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 16 Burst power.

802.11n-HT40

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH03 | CH07 | CH11 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 13.20 | 13.19 | 13.05 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 13.14 | 13.15 | 13.00 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 13.18 | 13.16 | 13.04 |
| Max e.i.r.p Power | | | | **13.20** | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 16 Burst power.

802.11ax-HE20

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH01 | CH07 | CH13 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 13.88 | 13.70 | 13.28 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 13.84 | 13.63 | 13.24 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 13.87 | 13.65 | 13.27 |
| Max e.i.r.p Power | | | | **13.88** | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 16 Burst power.

802.11ax-HE40

| TEST CONDITIONS | | | | Total e.i.r.p ( dBm ) | | |
|---|---|---|---|---|---|---|
| | | | | CH03 | CH07 | CH11 |
| T nom (°C) | 25.00 | V nom (V) | 3.8 | 13.03 | 13.14 | 12.95 |
| T min (°C) | -20.00 | V nom (V) | 3.8 | 12.98 | 13.09 | 12.94 |
| T max (°C) | 40.00 | V nom (V) | 3.8 | 13.01 | 13.11 | 12.92 |
| Max e.i.r.p Power | | | | **13.14** | | |
| Limits | | | | 20dBm | | |
| **Result** | | | | **Complies** | | |

Note：Power measurement，actual measurement for 16 Burst power.

## 5.2 Power Spectral Density

### 5.2.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.3.3)

| RF OUTPUT POWER | |
|---|---|
| Condition | Limit |
| For equipment using wide band modulations other than FHSS | ≤10 dBm/MHz |

### 5.2.2 Test procedure

Refer to chapter 5.4.3.2 of ETSI EN EN 300 328 V2.2.2 (2019-07)

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

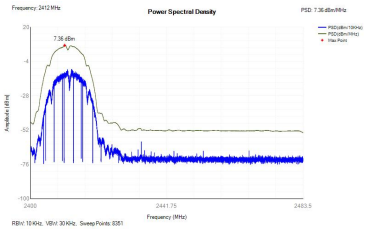
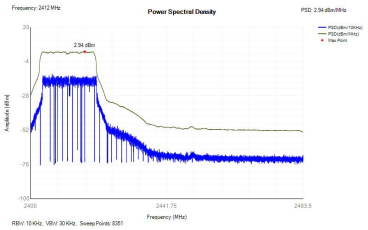
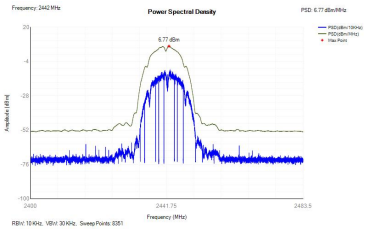
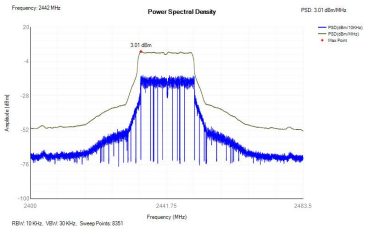
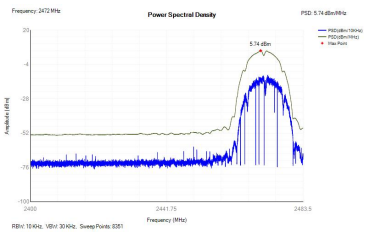
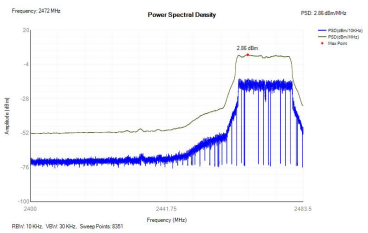
The setting of the Spectrum Analyzer

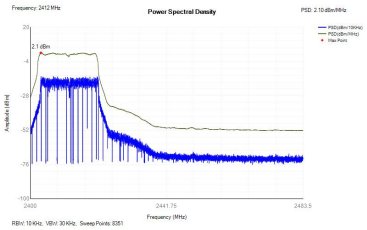
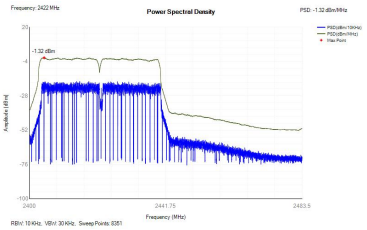
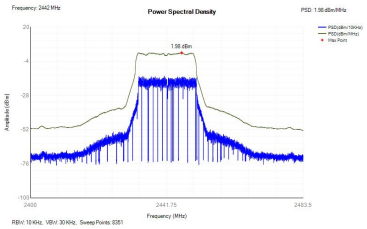
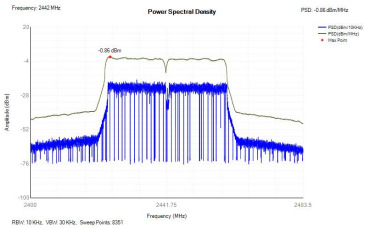
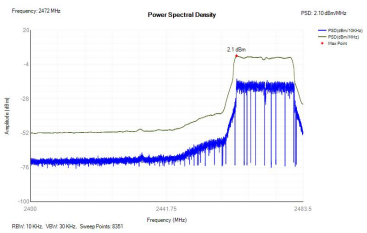
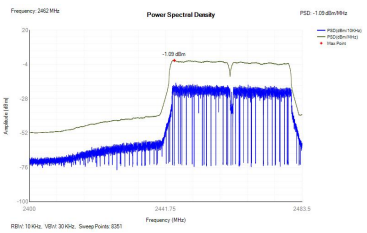
| | |
|---|---|
| Start Frequency | 2400MHz |
| Stop Frequency | 2483.5MHz |
| Detector | RMS |
| Sweep Point | > 8 350; for spectrum analysers not supporting this number of sweep points, the frequency band may be segmented |
| Sweep time | For non-continuous transmissions: 2 × Channel Occupancy Time × number of sweep points For continuous transmissions: 10 s; the sweep time may be increased further until a value where the sweep time has no further impact anymore on the RMS value of the signal. |
| RBW / VBW | 10KHz / 30KHz |

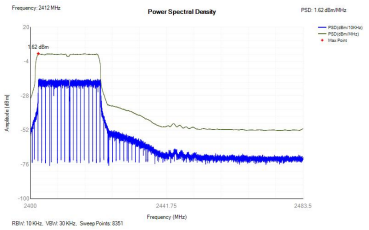
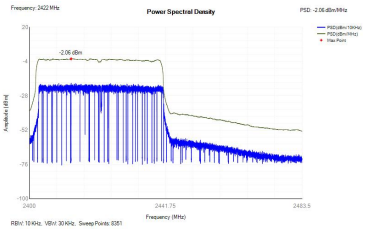
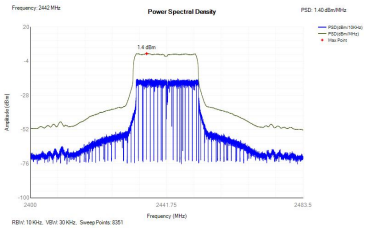
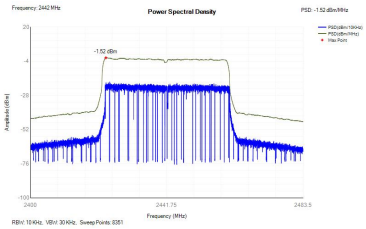
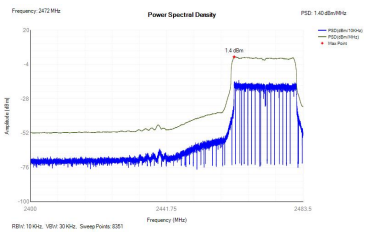
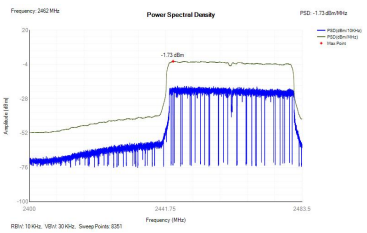
### 5.2.3 Test Setup

### 5.2.4 Test result

| Mode | Frequency (MHz) | Max PSD (dBm/MHz) | Limit (dBm/MHz) | Verdict |
|---|---|---|---|---|
| b | 2412 | 7.36 | 10 | Pass |
| b | 2442 | 6.77 | 10 | Pass |
| b | 2472 | 5.74 | 10 | Pass |
| g | 2412 | 2.94 | 10 | Pass |
| g | 2442 | 3.01 | 10 | Pass |
| g | 2472 | 2.86 | 10 | Pass |
| n20 | 2412 | 2.1 | 10 | Pass |
| n20 | 2442 | 1.98 | 10 | Pass |
| n20 | 2472 | 2.1 | 10 | Pass |
| n40 | 2422 | -1.32 | 10 | Pass |
| n40 | 2442 | -0.86 | 10 | Pass |
| n40 | 2462 | -1.09 | 10 | Pass |
| ax20 | 2412 | 1.62 | 10 | Pass |
| ax20 | 2442 | 1.4 | 10 | Pass |
| ax20 | 2472 | 1.4 | 10 | Pass |
| ax40 | 2422 | -2.06 | 10 | Pass |
| ax40 | 2442 | -1.52 | 10 | Pass |
| ax40 | 2462 | -1.73 | 10 | Pass |

| Test Plot | |
|---|---|
| (802.11b) PSD plot on channel 1 | (802.11g) PSD plot on channel 1 |
|  |  |
| (802.11b) PSD plot on channel 7 | (802.11g) PSD plot on channel 7 |
|  |  |
| (802.11b) PSD plot on channel 13 | (802.11g) PSD plot on channel 13 |
|  |  |

| Test Plot | |
|---|---|
| (802.11n20) PSD plot on channel 1 | (802.11n40) PSD plot on channel 3 |
|  |  |
| (802.11n20) PSD plot on channel 7 | (802.11n40) PSD plot on channel 7 |
|  |  |
| (802.11n20) PSD plot on channel 13 | (802.11n40) PSD plot on channel 11 |
|  |  |

| Test Plot | |
|---|---|
| (802.11ax20) PSD plot on channel 1 | (802.11ax40) PSD plot on channel 3 |
|  |  |
| (802.11ax20) PSD plot on channel 7 | (802.11ax40) PSD plot on channel 7 |
|  |  |
| (802.11ax20) PSD plot on channel 13 | (802.11ax40) PSD plot on channel 11 |
|  |  |

## 5.3 Occupied Channel Bandwidth

### 5.3.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.7.3)

| OCCUPIED CHANNEL BANDWIDTH | | |
|---|---|---|
| Condition | | Limit |
| All types of equipment | | Shall fall completely within the band 2400 to 2483.5 MHz |
| Additional requirement | For non-adaptive using wide band modulations other than FHSS system and E.I.R.P >10 dBm | Less than 20 MHz |
| | For non-adaptive frequency hopping system and E.I.R.P >10 dBm | Less than 5 MHz |

### 5.3.2 Test procedure

Refer to chapter 5.4.7.2 of ETSI EN 300 328 V2.2.2 (2019-07)

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

The setting of the Spectrum Analyzer

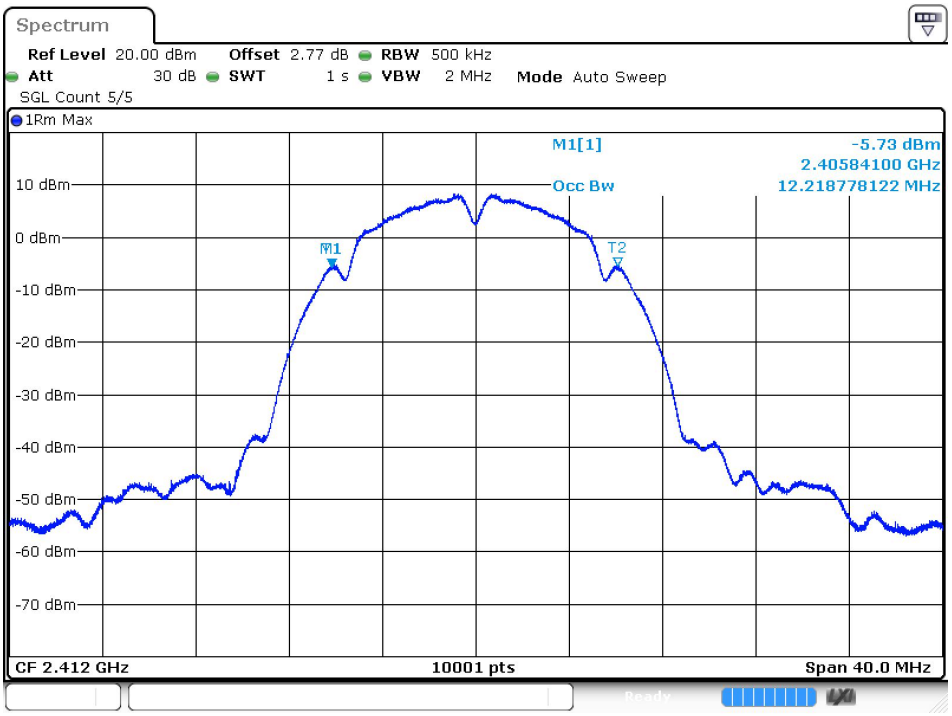
| | |
|---|---|
| Center Frequency | The centre frequency of the channel under test |
| Frequency Span | 2 × Nominal Channel Bandwidth |
| Detector | RMS |
| RBW | ~ 1 % of the span without going below 1 % |
| VBW | 3 × RBW |
| Trace | Max hold |
| Sweep time | 1s |

### 5.3.3 Test Setup

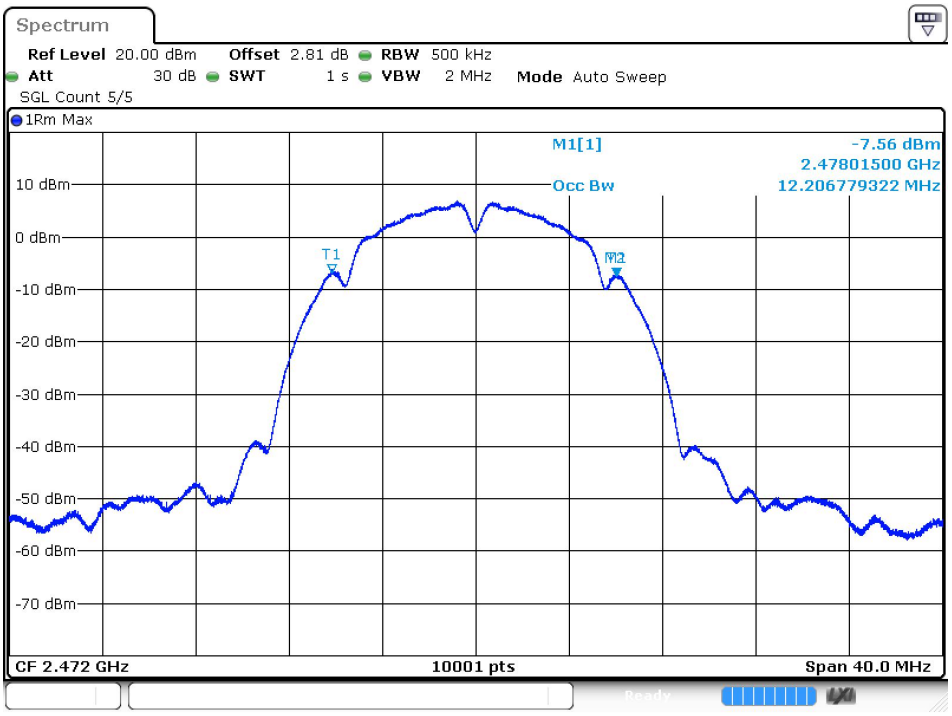
### 5.3.4 Test result

| Mode | Frequency (MHz) | Center Frequency (MHz) | OBW (MHz) | Lower Edge (MHz) | Upper Edge (MHz) | Limit OBW (MHz) | Verdict |
|---|---|---|---|---|---|---|---|
| b | 2412 | 2411.95 | 12.219 | 2405.841 | 2418.059 | 2400 - 2483.5MHz | Pass |
| b | 2472 | 2471.912 | 12.207 | 2465.809 | 2478.015 | 2400 - 2483.5MHz | Pass |
| g | 2412 | 2411.956 | 16.83 | 2403.541 | 2420.371 | 2400 - 2483.5MHz | Pass |
| g | 2472 | 2471.938 | 16.834 | 2463.521 | 2480.355 | 2400 - 2483.5MHz | Pass |
| n20 | 2412 | 2411.958 | 17.994 | 2402.961 | 2420.955 | 2400 - 2483.5MHz | Pass |
| n20 | 2472 | 2471.936 | 18.006 | 2462.933 | 2480.939 | 2400 - 2483.5MHz | Pass |
| n40 | 2422 | 2421.916 | 36.628 | 2403.602 | 2440.23 | 2400 - 2483.5MHz | Pass |
| n40 | 2462 | 2461.9 | 36.628 | 2443.586 | 2480.214 | 2400 - 2483.5MHz | Pass |
| ax20 | 2412 | 2411.96 | 19.182 | 2402.369 | 2421.551 | 2400 - 2483.5MHz | Pass |
| ax20 | 2472 | 2471.946 | 19.194 | 2462.349 | 2481.543 | 2400 - 2483.5MHz | Pass |
| ax40 | 2422 | 2421.92 | 38.092 | 2402.874 | 2440.966 | 2400 - 2483.5MHz | Pass |
| ax40 | 2462 | 2461.904 | 38.092 | 2442.858 | 2480.95 | 2400 - 2483.5MHz | Pass |

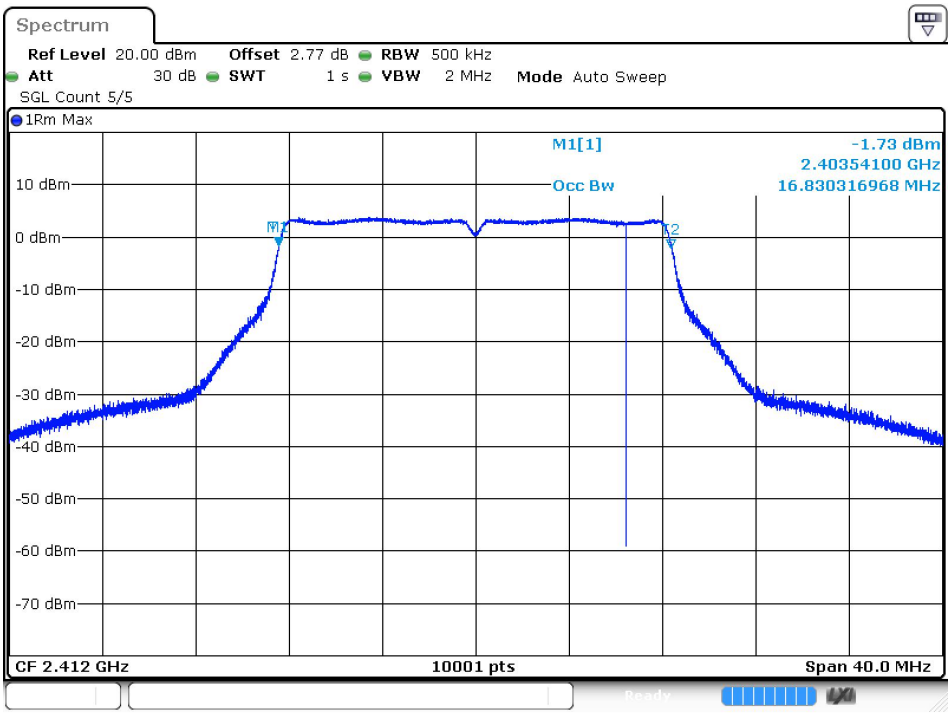
| Mode: | 802.11b | Channel: | Lowest |
|---|---|---|---|



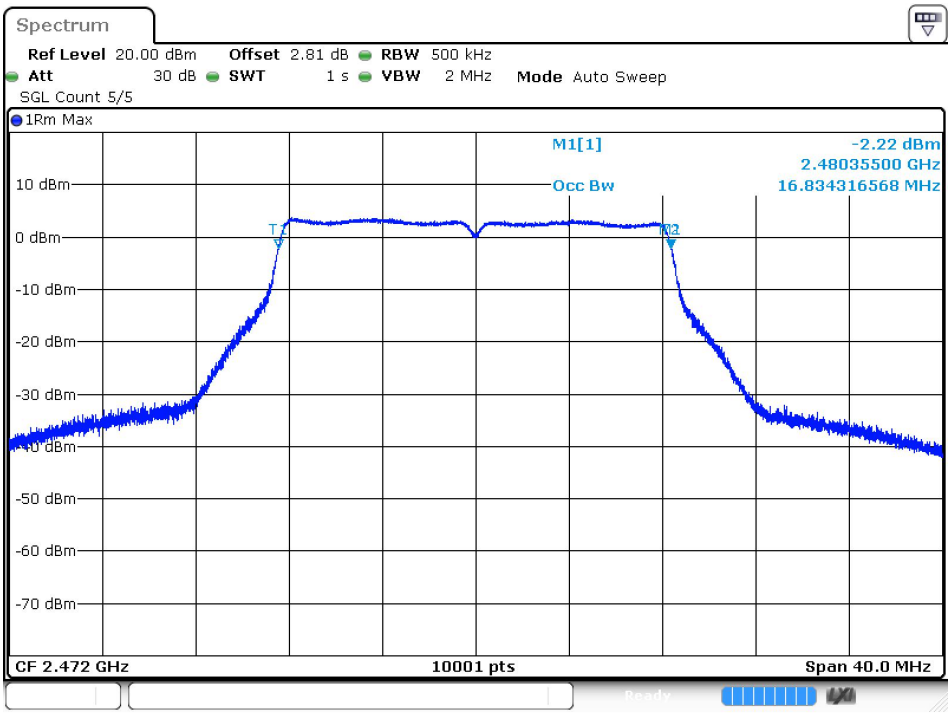

| Mode: | 802.11b | Channel: | Highest |
|---|---|---|---|



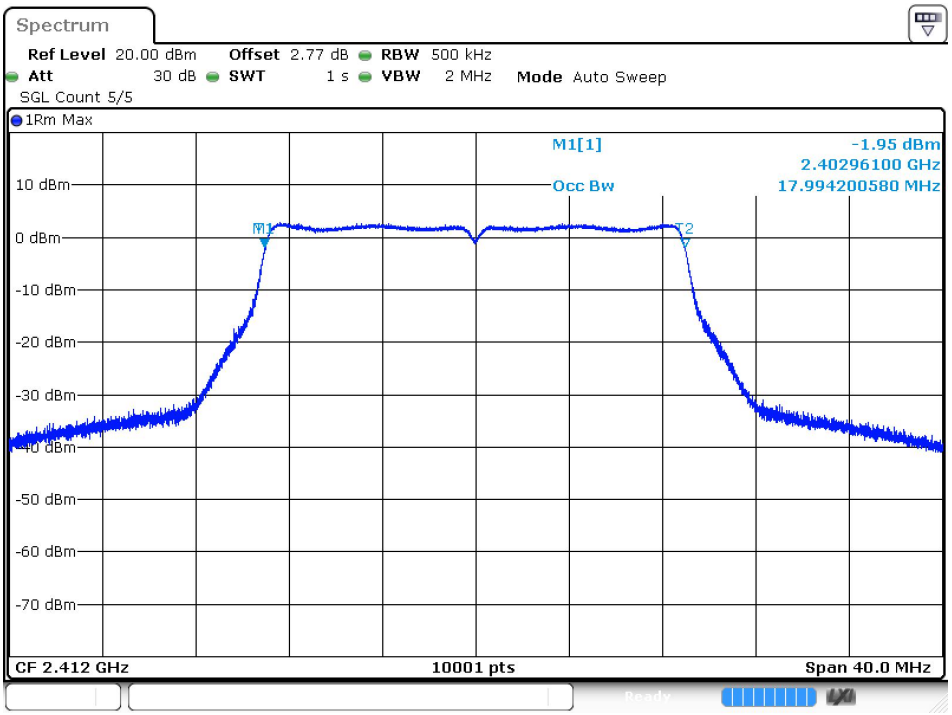
| Mode: | 802.11g | Channel: | Lowest |
|---|---|---|---|



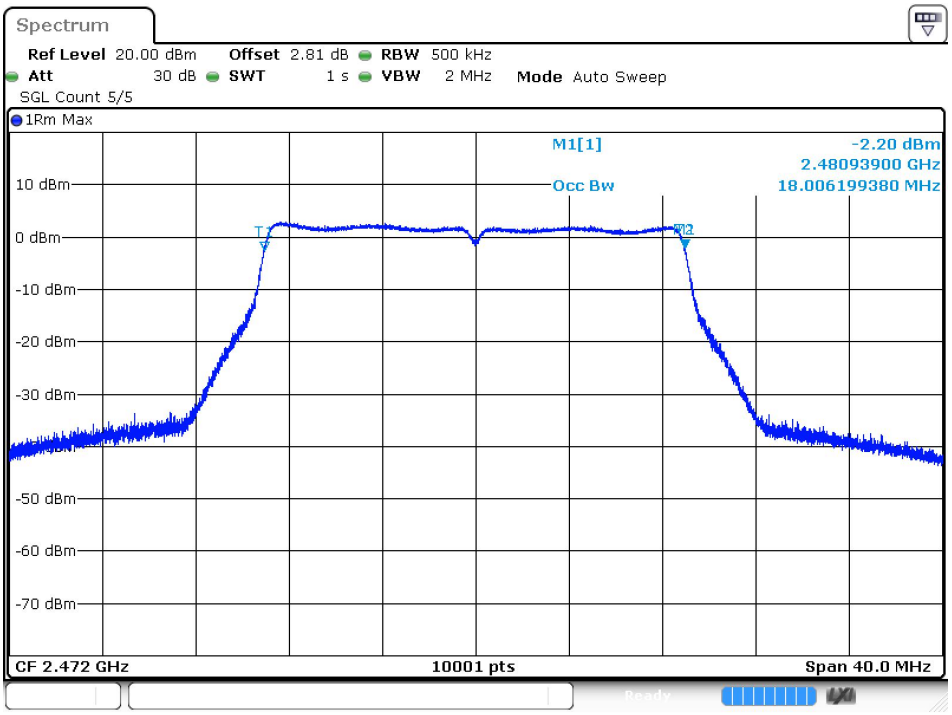

| Mode: | 802.11g | Channel: | Highest |
|---|---|---|---|



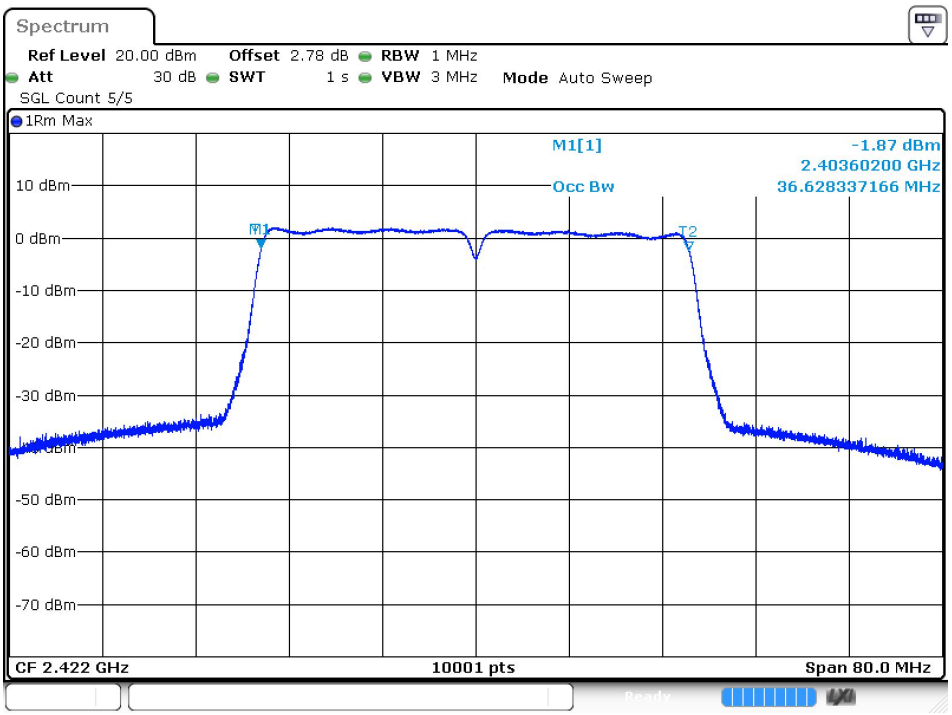
| Mode: | 802.11n(HT20) | Channel: | Lowest |
|---|---|---|---|



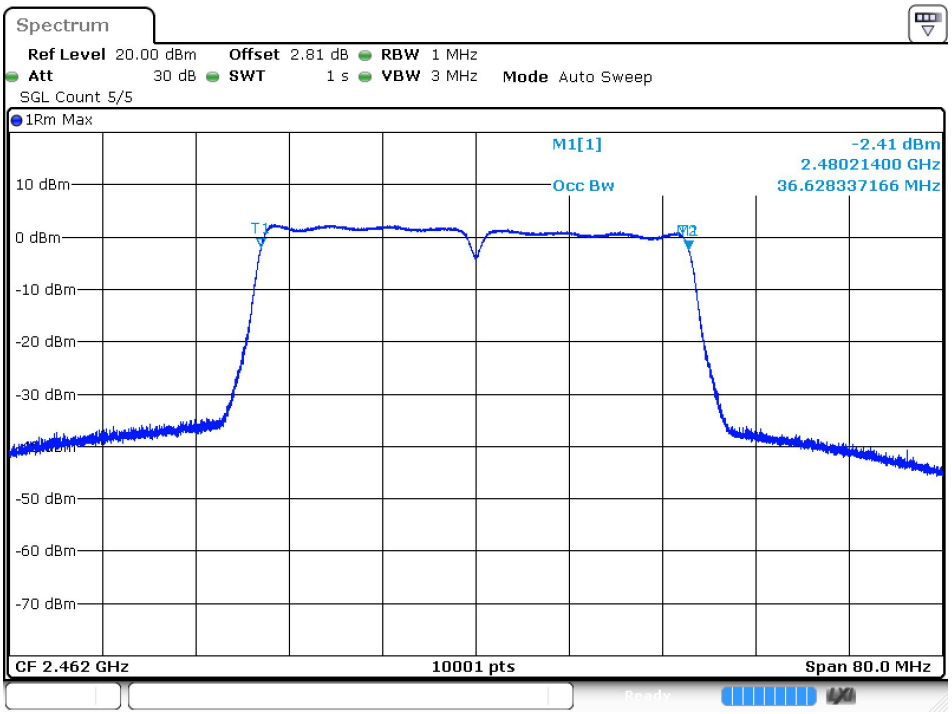

| Mode: | 802.11n(HT20) | Channel: | Highest |
|---|---|---|---|



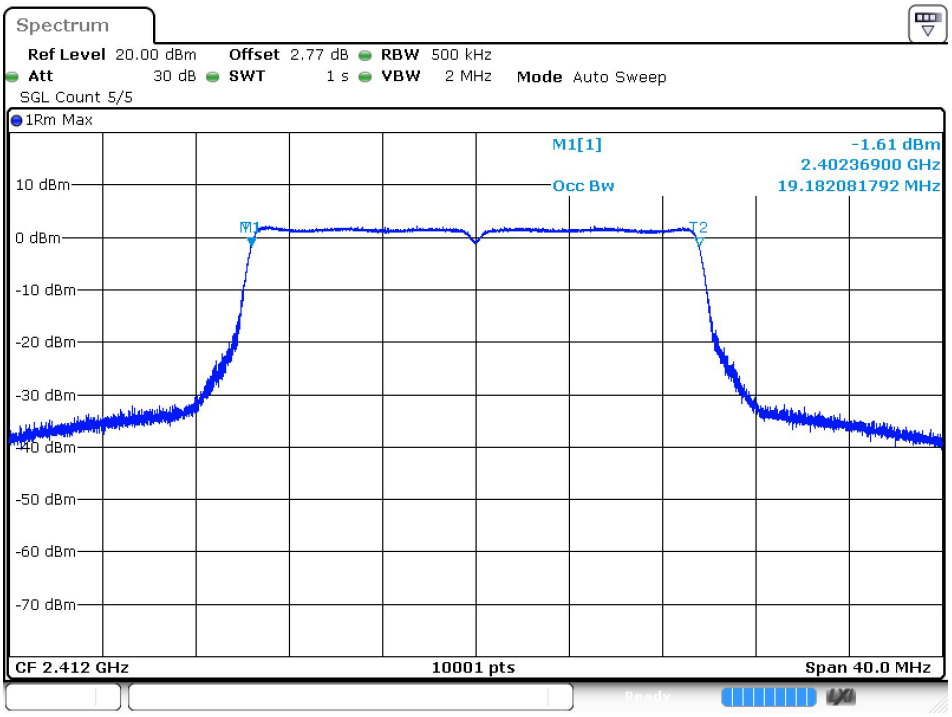
| Mode: | 802.11n(HT40) | Channel: | Lowest |
|---|---|---|---|



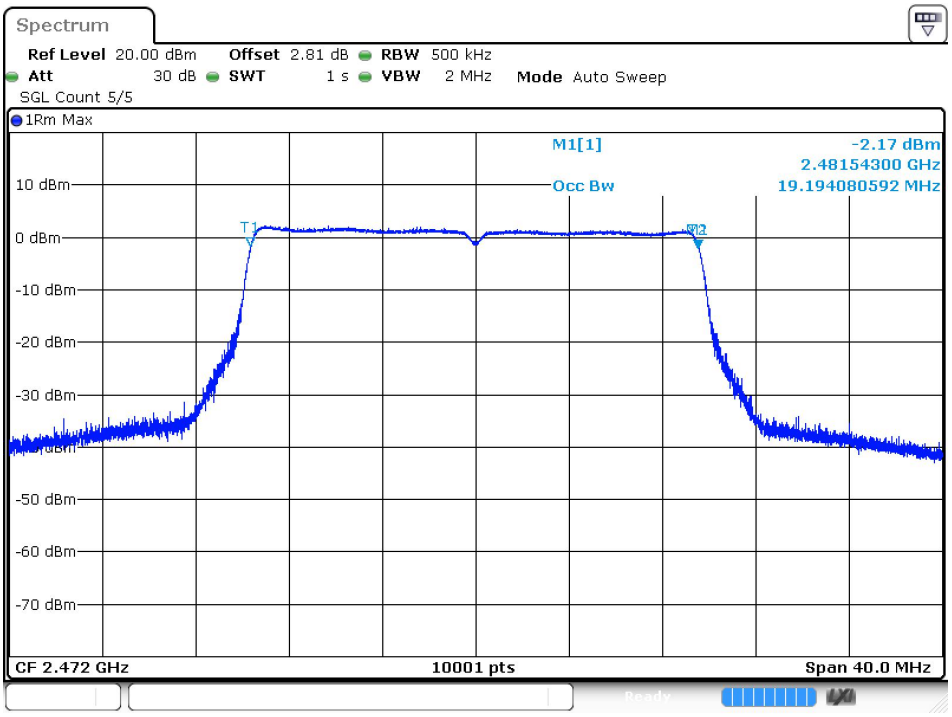

| Mode: | 802.11n(HT40) | Channel: | Highest |
|---|---|---|---|



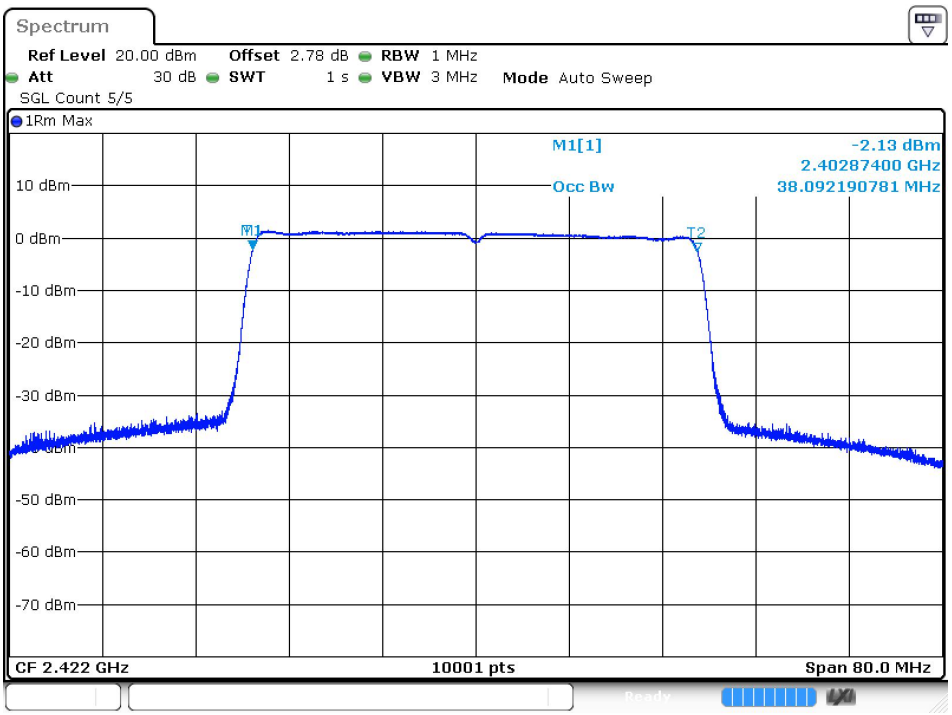
| Mode: | 802.11ax(HT20) | Channel: | Lowest |
|---|---|---|---|



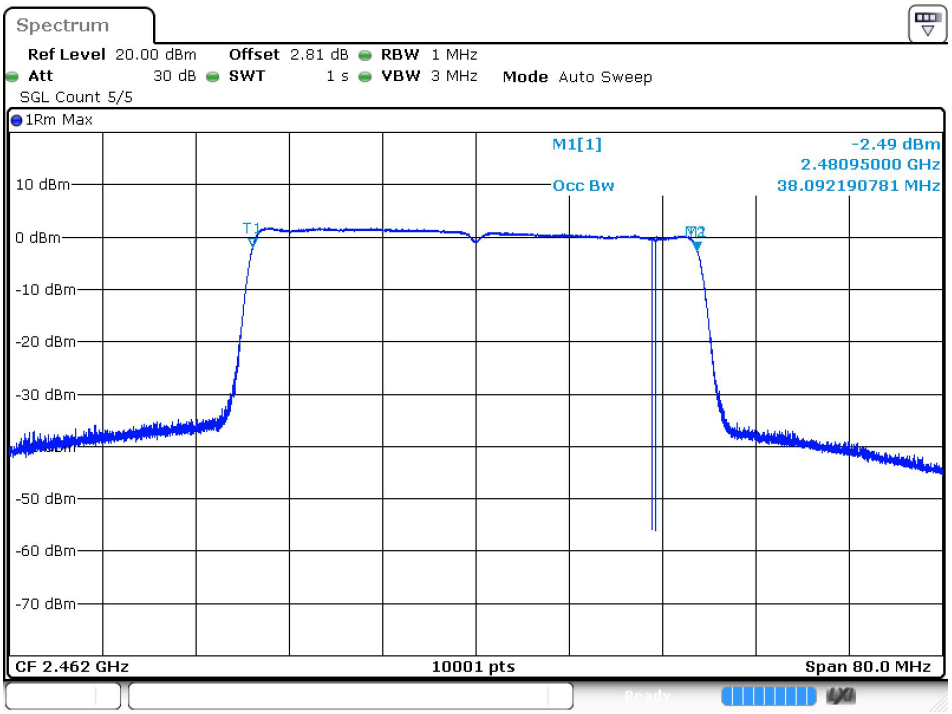

| Mode: | 802.11ax(HT20) | Channel: | Highest |
|---|---|---|---|



| Mode: | 802.11ax(HT40) | Channel: | Lowest |
|---|---|---|---|



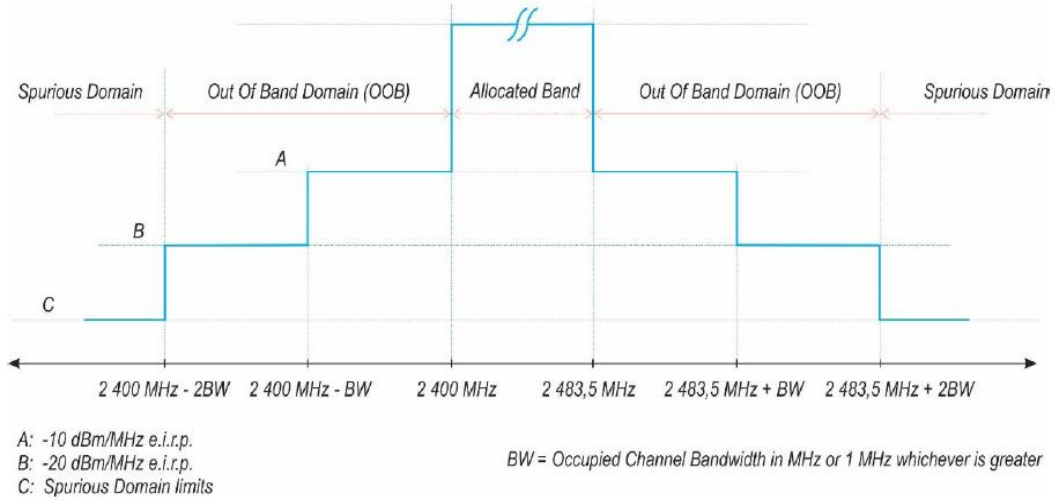

| Mode: | 802.11ax(HT40) | Channel: | Highest |
|---|---|---|---|



## 5.4 Transmitter unwanted emissions in the OOB domain

### 5.4.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.8.3)

| Transmitter unwanted emissions in the OOB domain | |
|---|---|
| Condition | Limit |
| Under all test conditions | The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in below figure. |




### 5.4.2 Test procedure

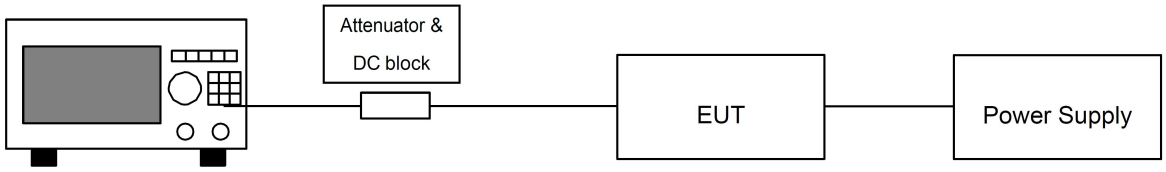
Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.8.2

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

The setting of the Spectrum Analyzer

| | |
|---|---|
| Span | 0Hz |
| Filter Mode | Channel Filter |
| Trace Mode | Max Hold |
| Trigger Mode | Video trigger; in case video triggering is not possible, an external trigger source may be used |
| Detector | RMS |
| Sweep Point / Sweep Mode | Sweep Time [s] / (1 µs) or 5 000 whichever is greater/ Continuous |
| RBW / VBW | 1MHz / 3MHz |

### 5.4.3 Test Setup

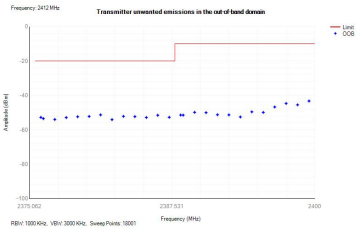
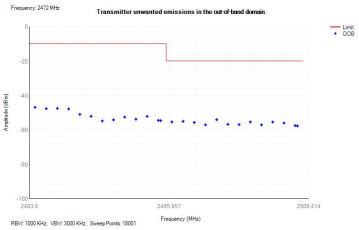
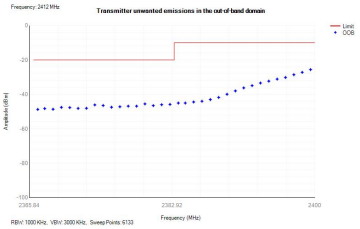
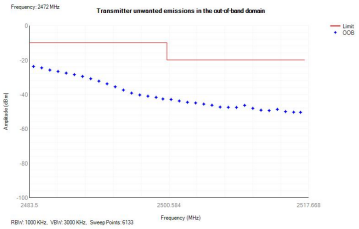


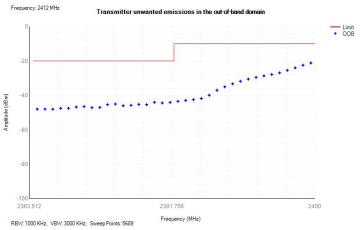
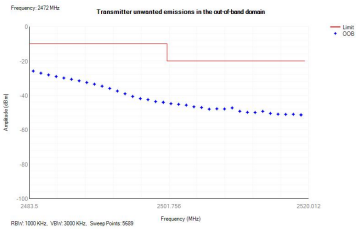
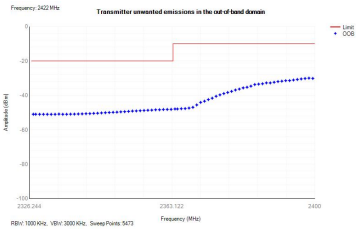
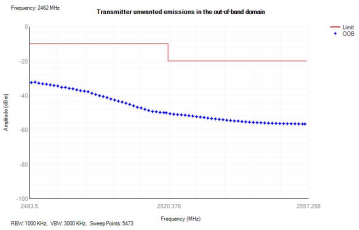

Spectrum Analyser

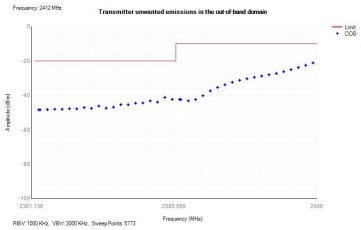
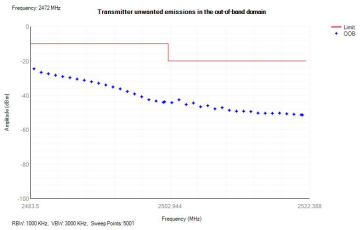
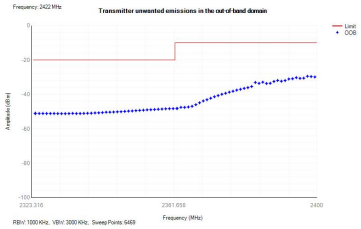
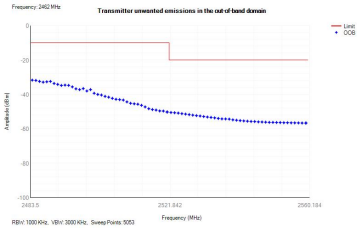
### 5.4.4 Test result

**Measurement Data:**

Test plots at normal condition are followed:

| Test Condition: | | | | Normal condition | | | |
|---|---|---|---|---|---|---|---|
| Mode: | 802.11b | Channel: | Lowest | Mode: | 802.11b | Channel: | Highest |
|  | | | |  | | | |
| | | | | | | | |
| Mode: | 802.11g | Channel: | Lowest | Mode: | 802.11g | Channel: | Highest |
|  | | | |  | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mode: | 802.11n(HT20) | Channel: | Lowest | Mode: | 802.11n(HT20) | Channel: | Highest |
|  | | | |  | | | |
| | | | | | | | |
| Mode: | 802.11n(HT40) | Channel: | Lowest | Mode: | 802.11n(HT40) | Channel: | Highest |
|  | | | |  | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mode: | 802.11ax(HT20) | Channel: | Lowest | Mode: | 802.11ax(HT20) | Channel: | Highest |
|  | | | |  | | | |
| | | | | | | | |
| Mode: | 802.11ax(HT40) | Channel: | Lowest | Mode: | 802.11ax(HT40) | Channel: | Highest |
|  | | | |  | | | |

## 5.5 Adaptivity (Channel access mechanism)

### 5.5.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.6)

| Requirement | Operational Mode | | | |
|---|---|---|---|---|
| | ☐ Non-LBT based Detect and Avoid | ☐ LBT based Detect and Avoid | | |
| | | ☐ Frame Based Equipment | ☐ Load Based Equipment (CCA using 'energy detect') | ☐ Load Based Equipment (CCA not using any of the mechanisms referenced as note 2) |
| Minimum Clear Channel Assessment (CCA) Time | NA | not less than 18 us (see note 1) | (see note 2) | not less than 18 us (see note 1) |
| Maximum Channel Occupancy (COT) Time | ＜40 ms | 1ms to 10 ms | (see note 2) | (13/32)*q ms (see note 3) |
| Minimum Idle Period | 5 % minimum of 100 μs | 5% of COT | (see note 2) | NA |
| Extended CCA check | NA | NA | (see note 2) | R*CCA (see note 4) |
| Short Control Signalling Transmissions | Maximum duty cycle of 10% within an observation period of 50 ms (see note 5) | | | |

Note 1: The CCA time used by the equipment shall be declared by the supplier.
Note 2: Load Based Equipment may implement an LBT based spectrum sharing mechanism based on the Clear Channel Assessment (CCA) mode using energy detect as described in IEEE 802.11™-2012 [i.3], clause 9, clause 10, clause 16, clause 17, clause 19 and clause 20, or in IEEE 802.15.4™-2011 [i.4], clause 4, clause 5 and clause 8 providing the equipment complies with the conformance requirements referred to in clause 4.3.2.6.3.4.
Note 3: q is selected by the manufacturer in the range [4…32]
Note 4: The value of R shall be randomly selected in the range [1…q]
Note 5: Adaptive equipment may or may not have Short Control Signaling Transmissions.

.

The detection threshold shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the detection threshold level (TL) shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly. This threshold level (TL) may be corrected for the (receive)antenna assembly gain (G); however, beamforming gain (Y) shall not be taken into account. For power levels less than 20 dBm e.i.r.p., the detection threshold level may be relaxed to:

**$TL = -70\ dBm/MHz + 10 \times \log_{10}(100\ mW / Pout)$ (Pout in mW e.i.r.p.)**

**Table 9: Unwanted Signal parameters**

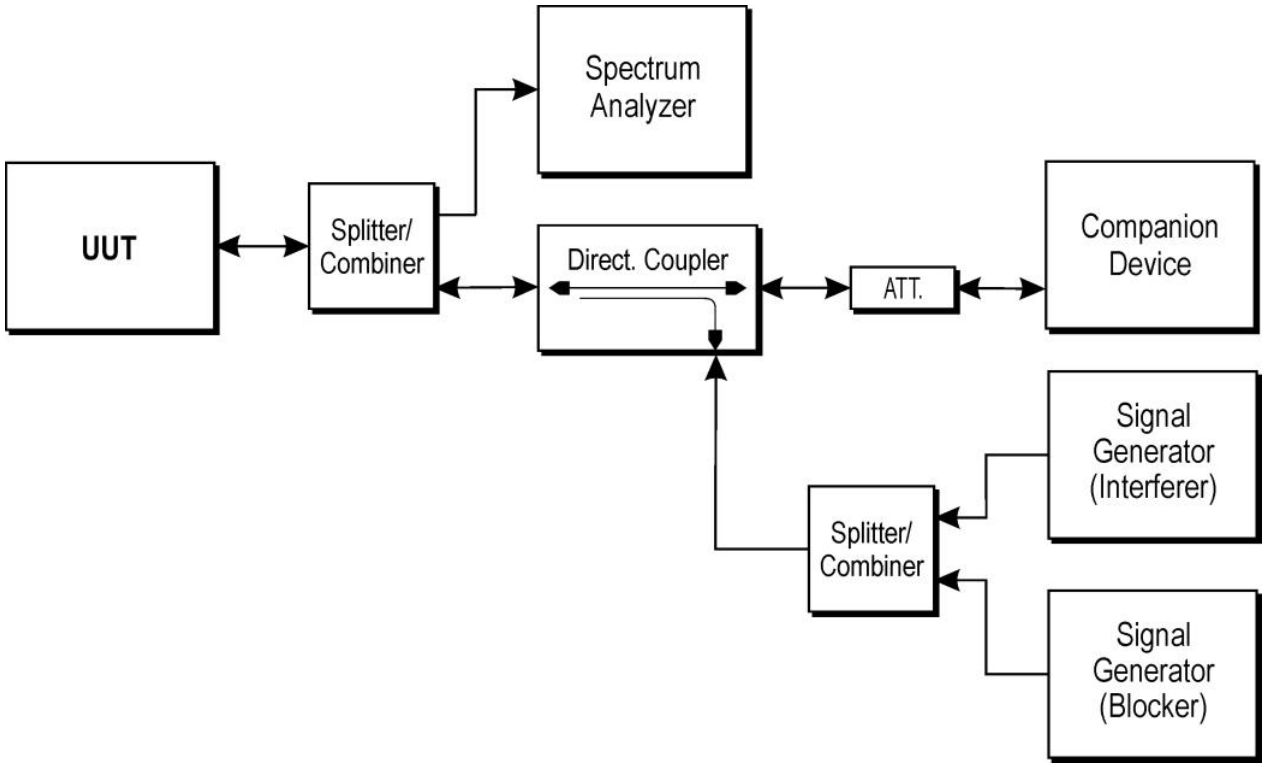
| Wanted signal mean power from companion device (dBm) | Unwanted signal frequency (MHz) | Unwanted CW signal power (dBm) |
|---|---|---|
| -30/ sufficient to maintain the link(see note 2) | 2395 or 2488,5 (see note 1) | -35 (see note 2) |
| NOTE 1: The highest frequency shall be used for testing operating channels within the range 2 400 MHz to 2 442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483,5 MHz. See clause 5.4.6.1.<br>NOTE 2: A typical value which can be used in most cases is -50 dBm/MHz.<br>NOTE 3: The level specified is the level in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain. | | |

## 5.5.2 Test procedure

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.6.2

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

## 5.5.3 TEST SETUP



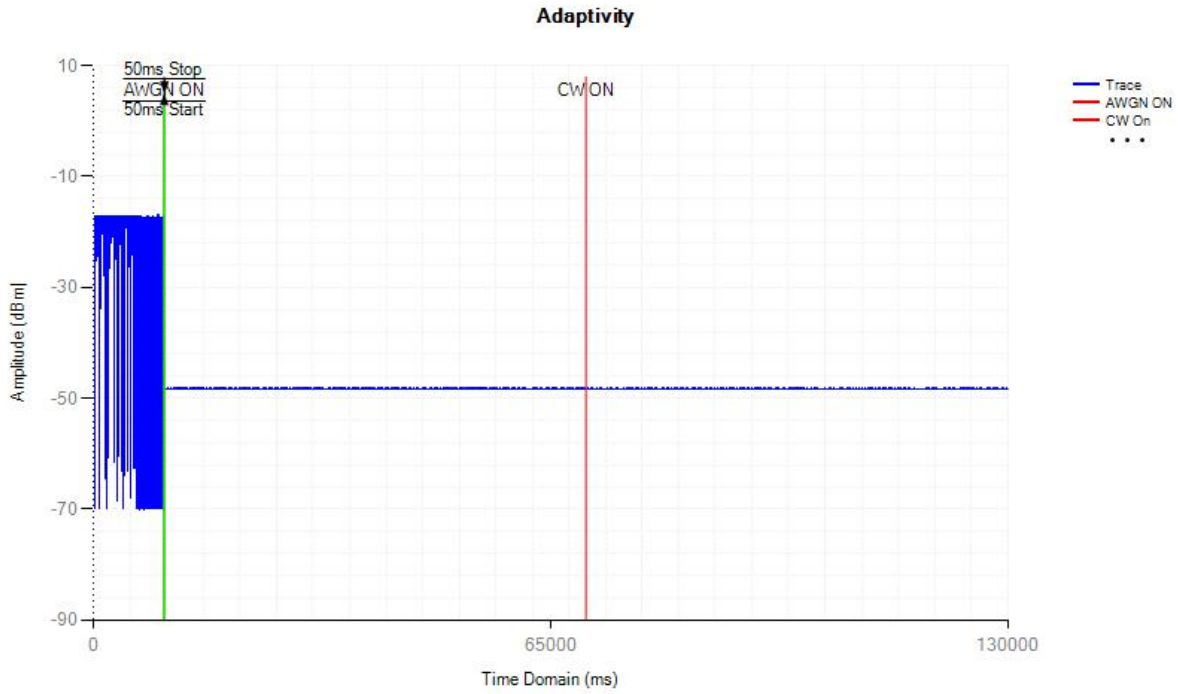
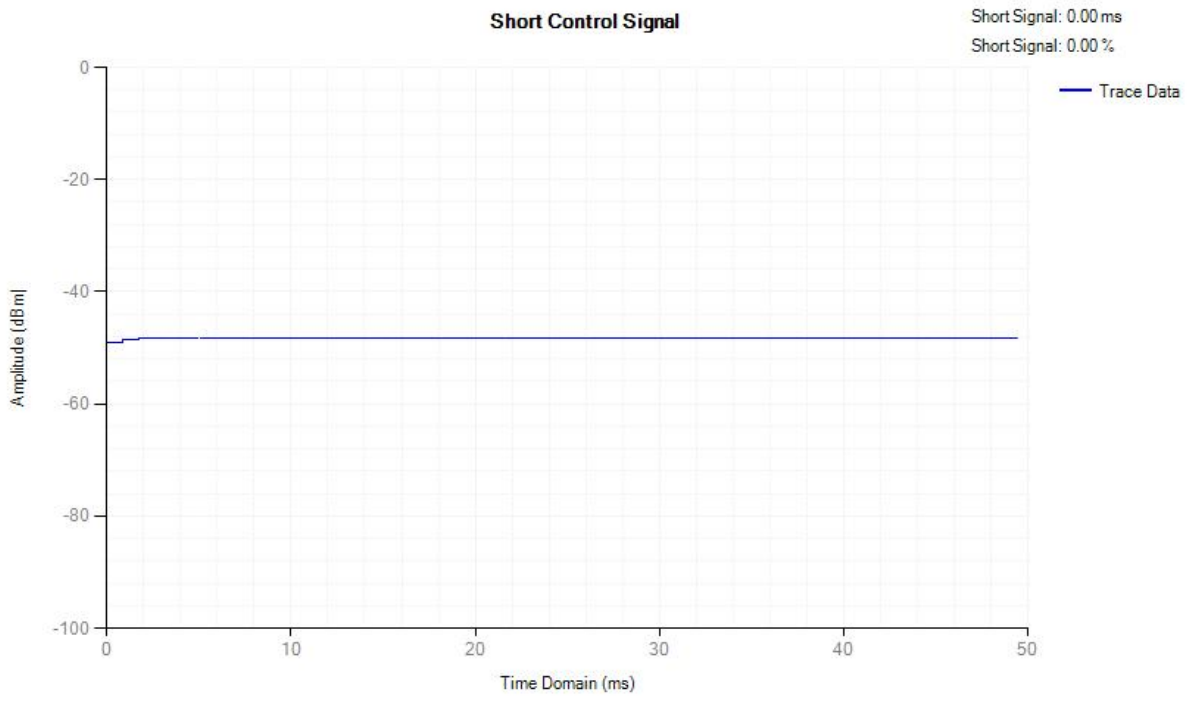
### 5.5.4 List of Measurements

| UUT operational Mode | | |
|---|---|---|
| Frame Based Equipment | Load Based Equipment (CCA using 'energy detect') | Load Based Equipment (CCA not using any of the mechanisms referenced) |
| | V | |

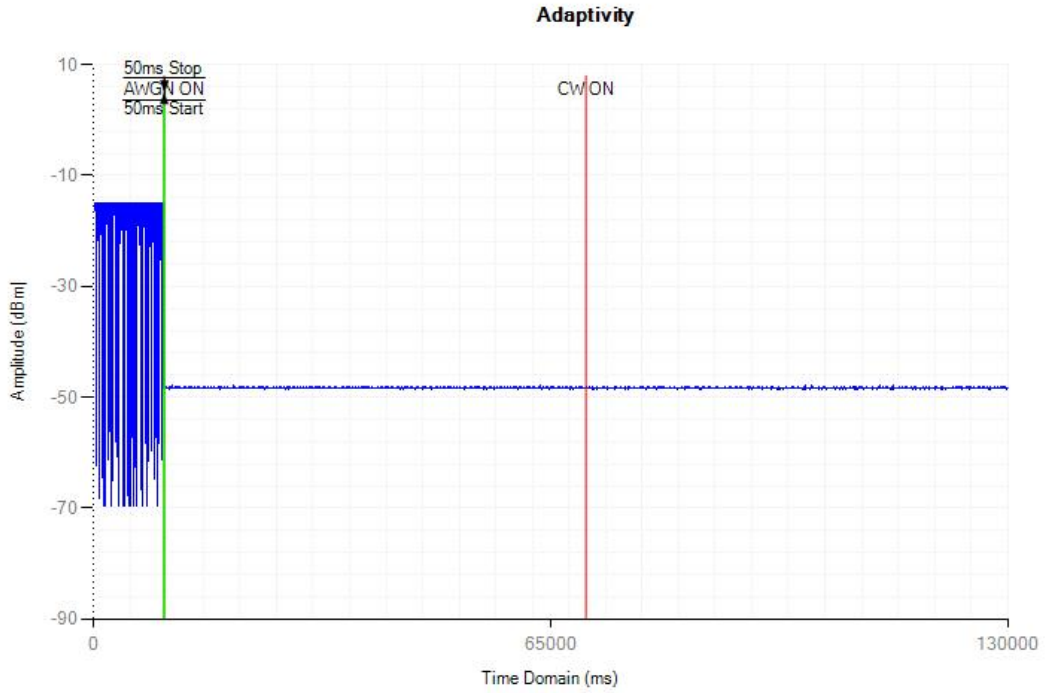
| Clause | Test Parameter | Remarks | PASS/FAIL |
|---|---|---|---|
| 4.3.2.5.2.2.1 | Adaptive (Frame Based Equipment) | Not Applicable | N/A |
| 4.3.2.5.2.2.2 | Adaptive (Load Based Equipment) | Applicable | PASS |
| 4.3.2.5.3 | Short Control Signaling Transmissions | Applicable | PASS |

### 5.5.5 Test result

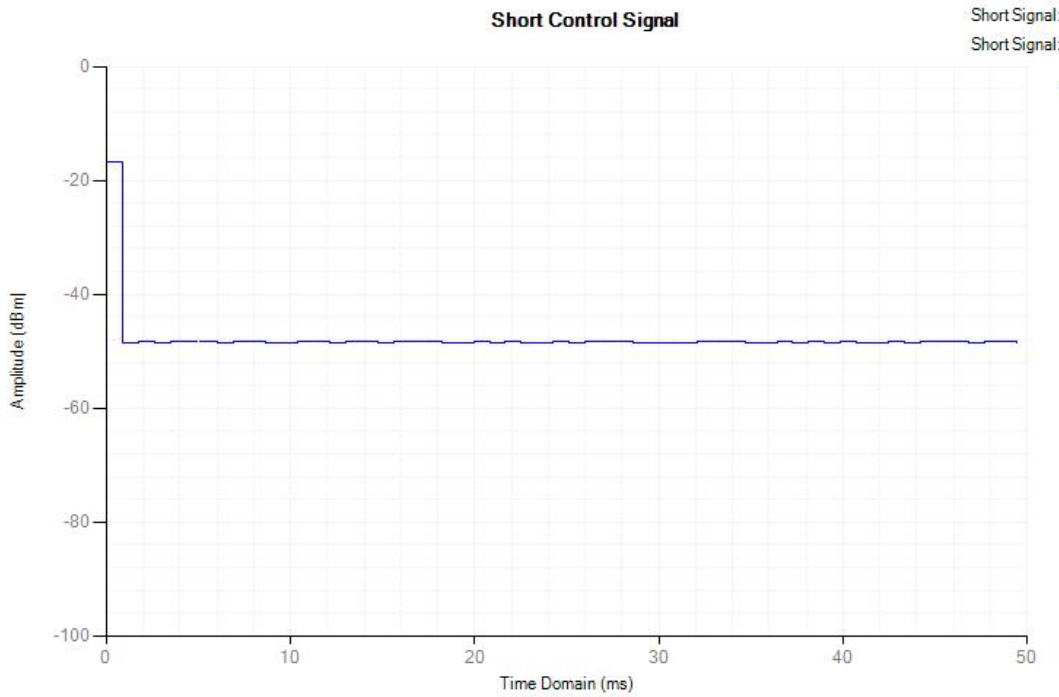
| Mode | Frequency (MHz) | AWGN Level (dBm) | CW Level (dBm) | Short Control Width (ms) | Short Control Ratio(%) | Limit (%) | Verdict |
|---|---|---|---|---|---|---|---|
| b | 2412 | -60 | -35 | 0 | 0 | <=10 | Pass |
| b | 2472 | -60 | -35 | 0.87 | 1.74 | <=10 | Pass |
| g | 2412 | -60 | -35 | 0 | 0 | <=10 | Pass |
| g | 2472 | -60 | -35 | 0 | 0 | <=10 | Pass |
| n20 | 2412 | -60 | -35 | 2.6 | 5.2 | <=10 | Pass |
| n20 | 2472 | -60 | -35 | 0 | 0 | <=10 | Pass |
| n40 | 2422 | -60 | -35 | 0 | 0 | <=10 | Pass |
| n40 | 2462 | -60 | -35 | 0 | 0 | <=10 | Pass |
| ax20 | 2412 | -60 | -35 | 0 | 0 | <=10 | Pass |
| ax20 | 2472 | -60 | -35 | 0 | 0 | <=10 | Pass |
| ax40 | 2422 | -60 | -35 | 0 | 0 | <=10 | Pass |
| ax40 | 2462 | -60 | -35 | 0 | 0 | <=10 | Pass |

| Test Graphs |
| --- |
| Adaptivity b 2412MHz |
|  |
| Control Signal b 2412MHz |
|  |

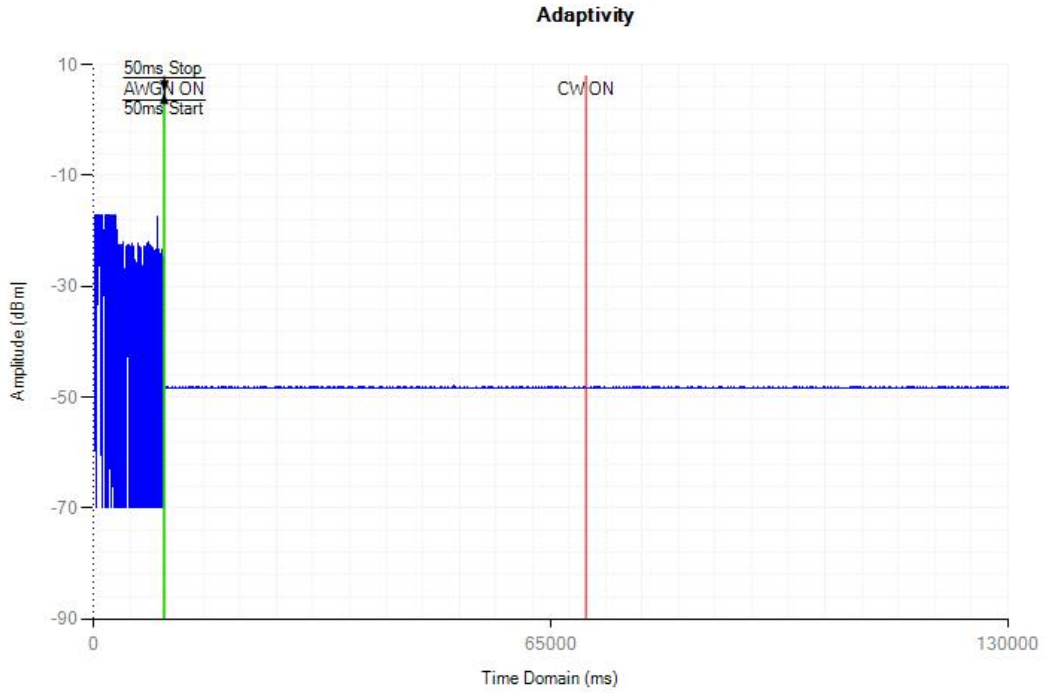
Adaptivity b 2472MHz



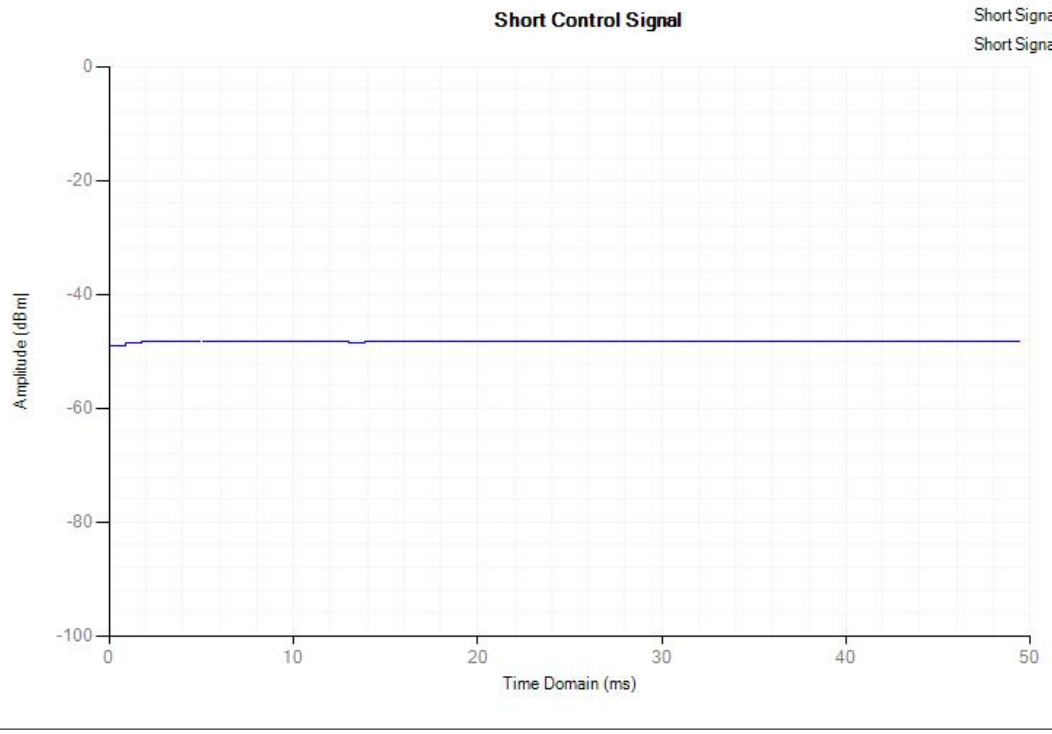

Control Signal b 2472MHz



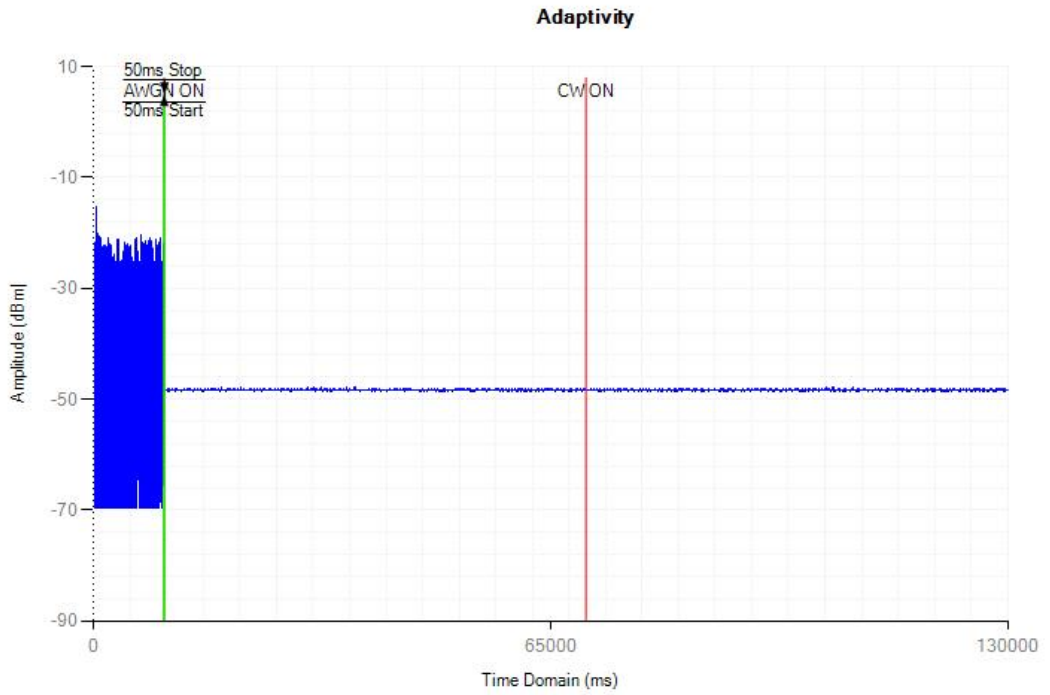
Adaptivity g 2412MHz



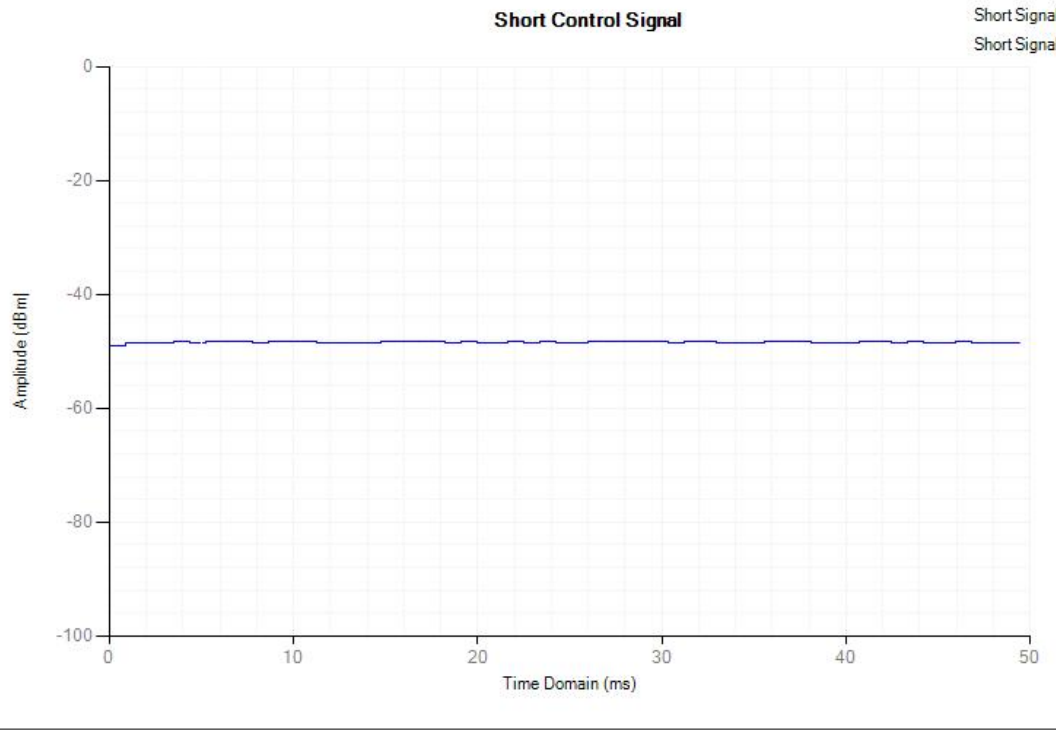

Control Signal g 2412MHz



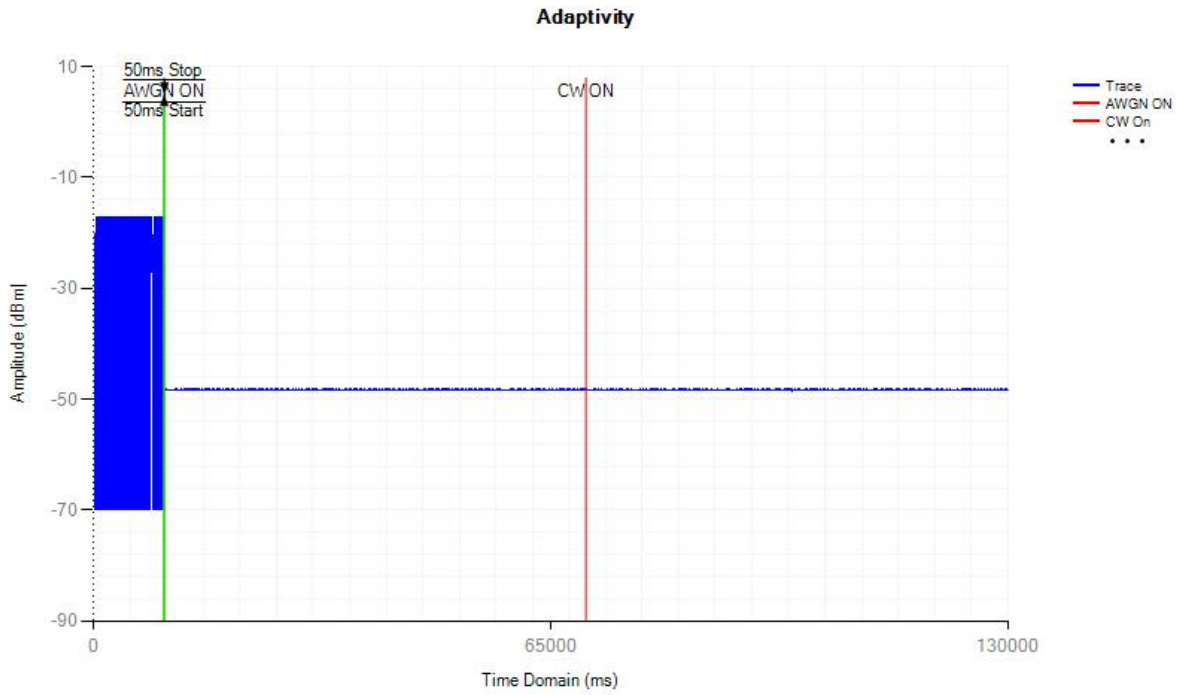
Adaptivity g 2472MHz



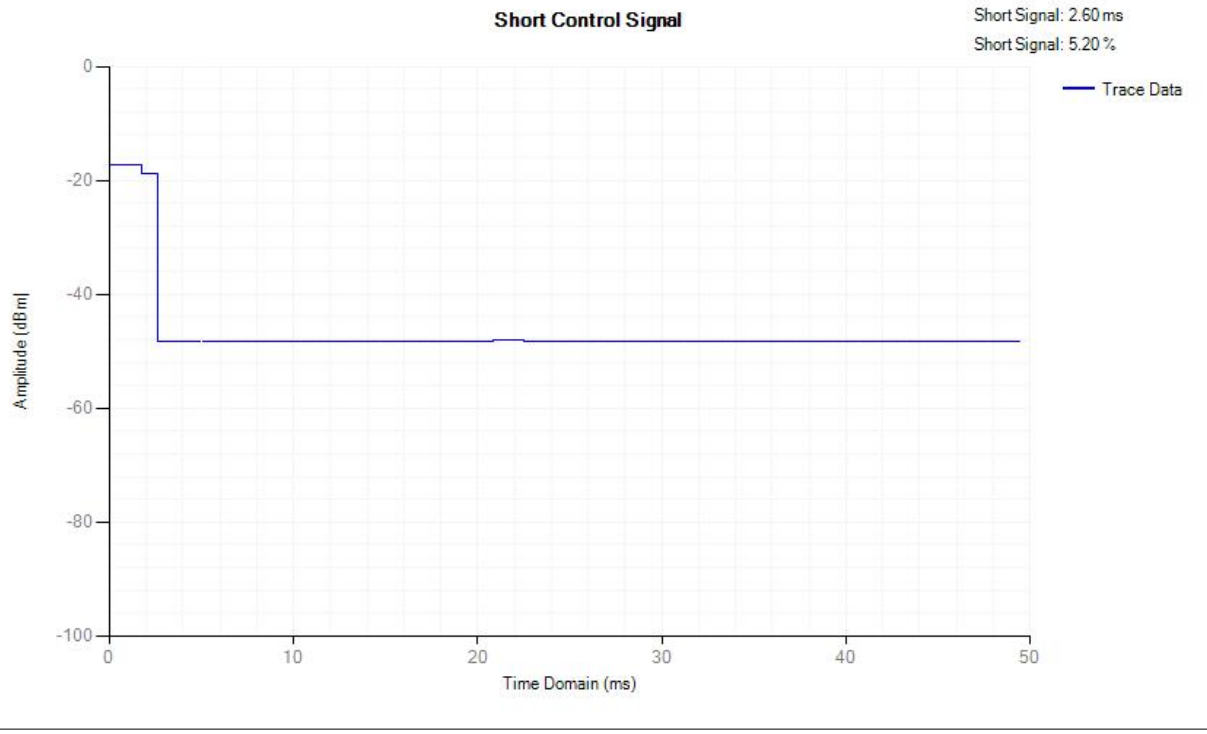

Control Signal g 2472MHz



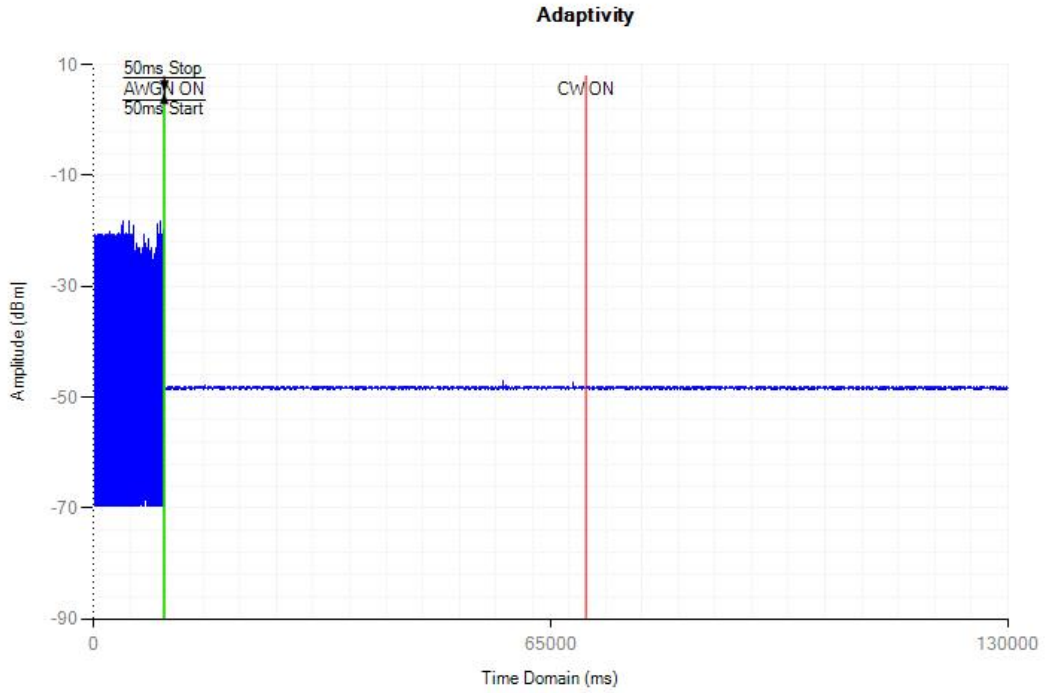
Adaptivity n20 2412MHz



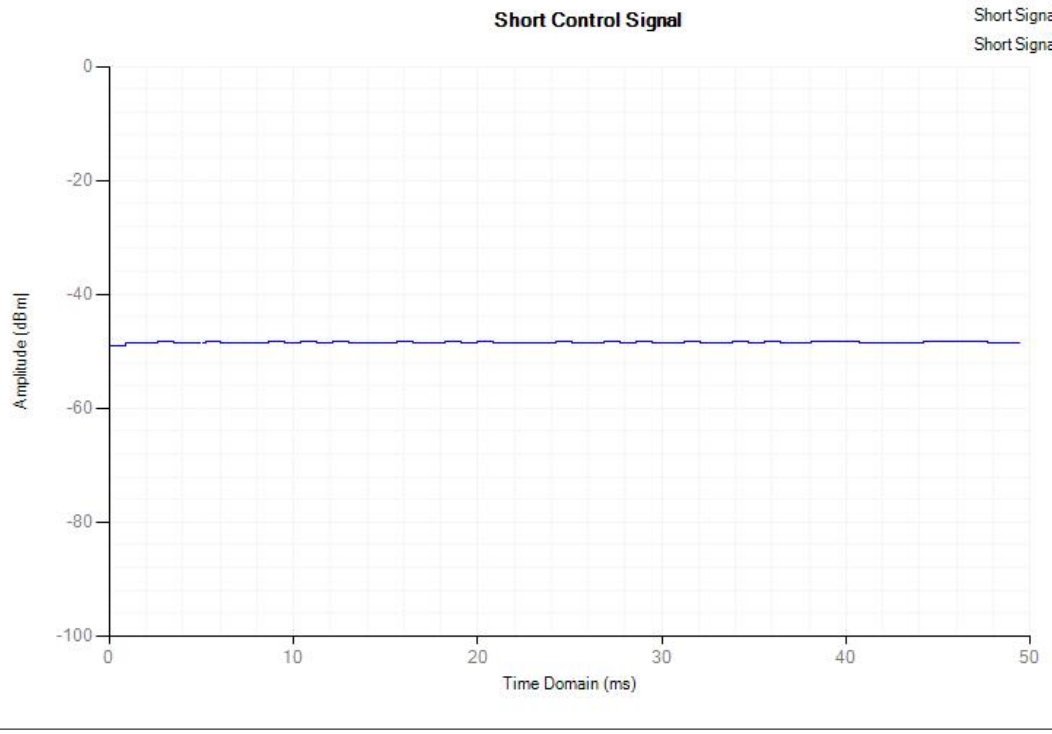

Control Signal n20 2412MHz

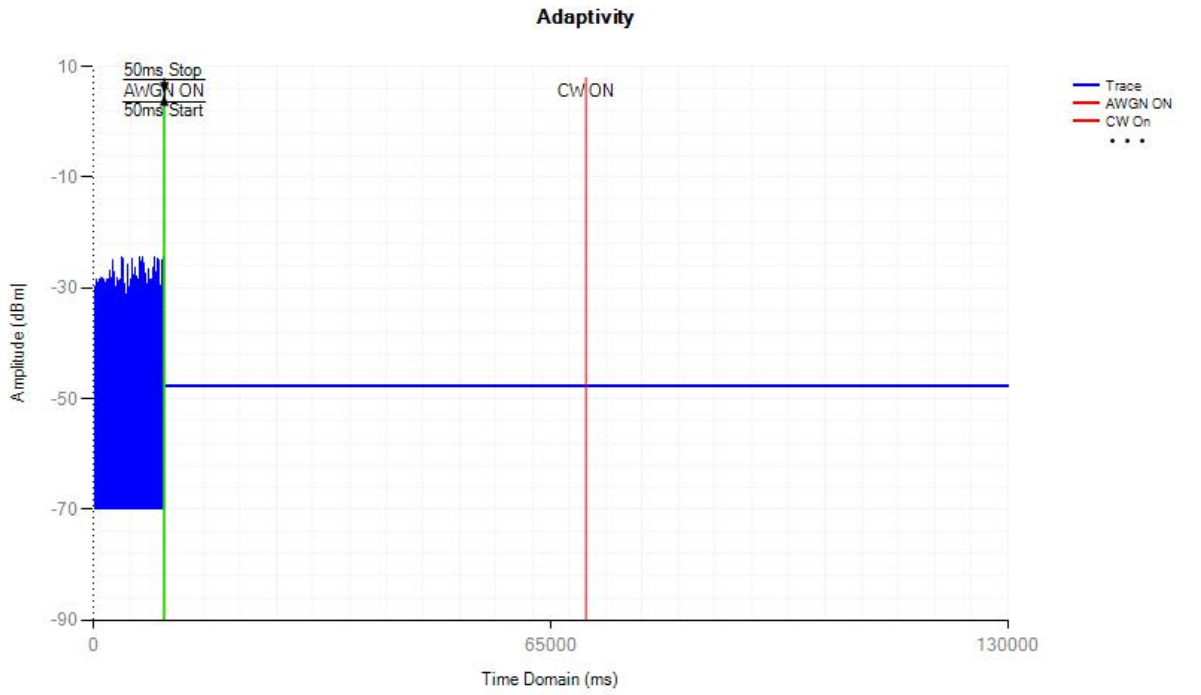


Adaptivity n20 2472MHz




Control Signal n20 2472MHz



| Adaptivity n40 2422MHz |
| --- |
|  |
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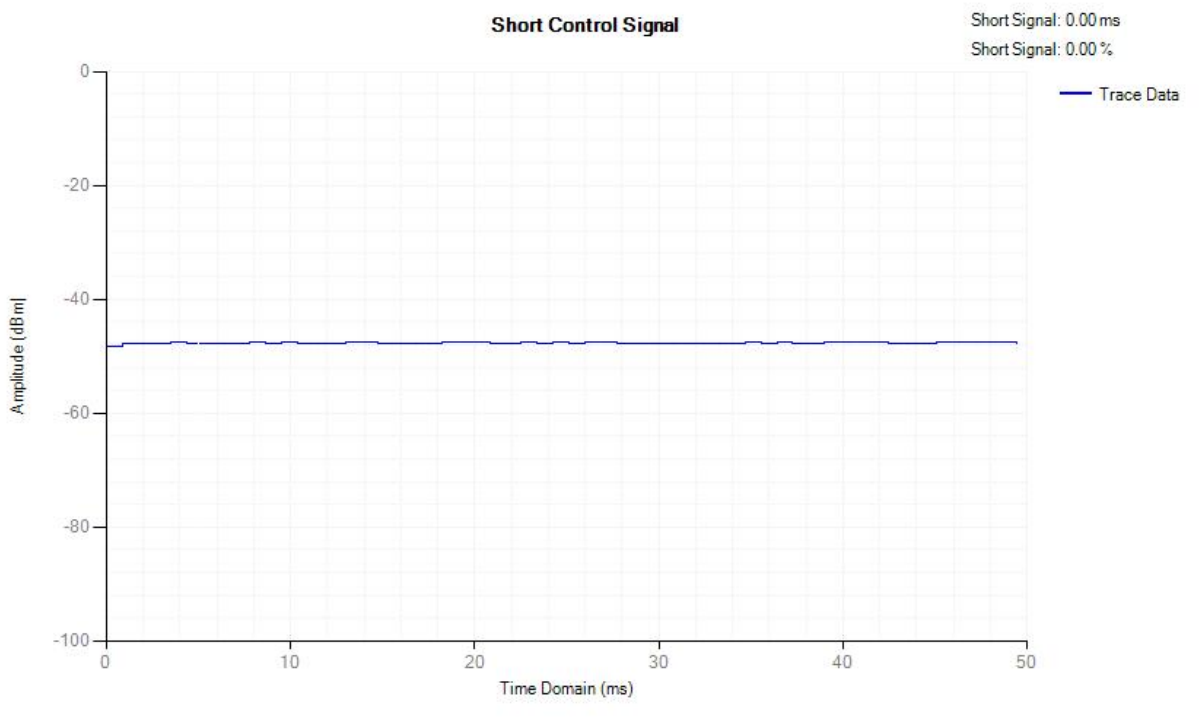
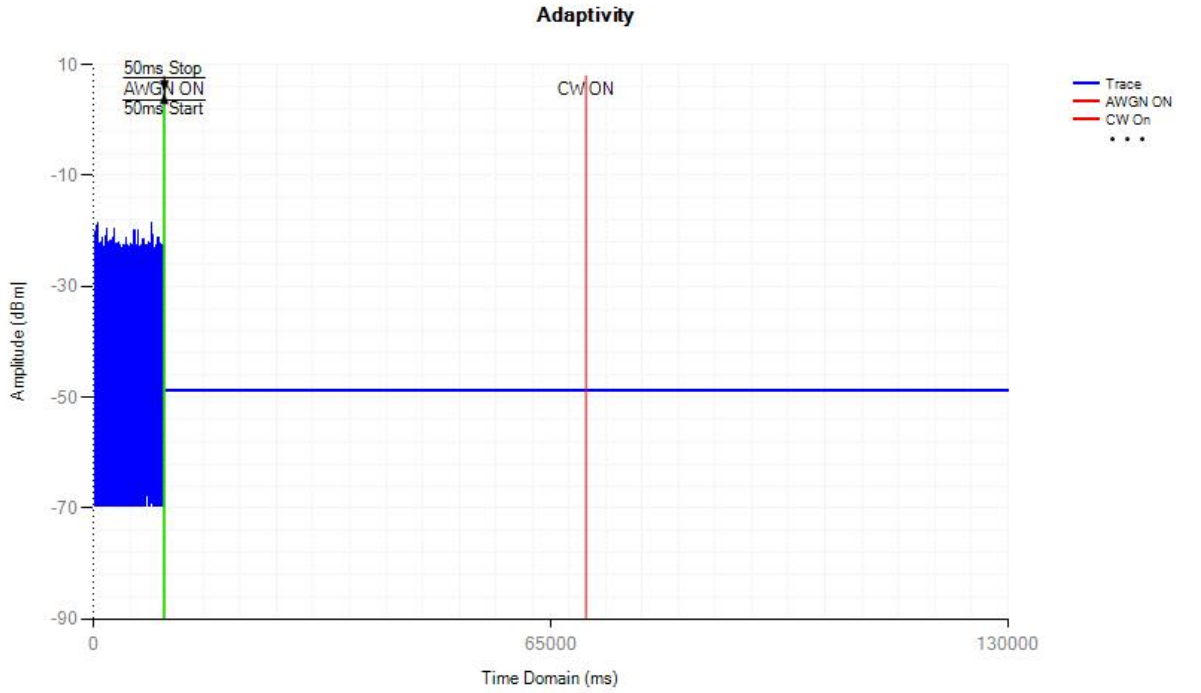
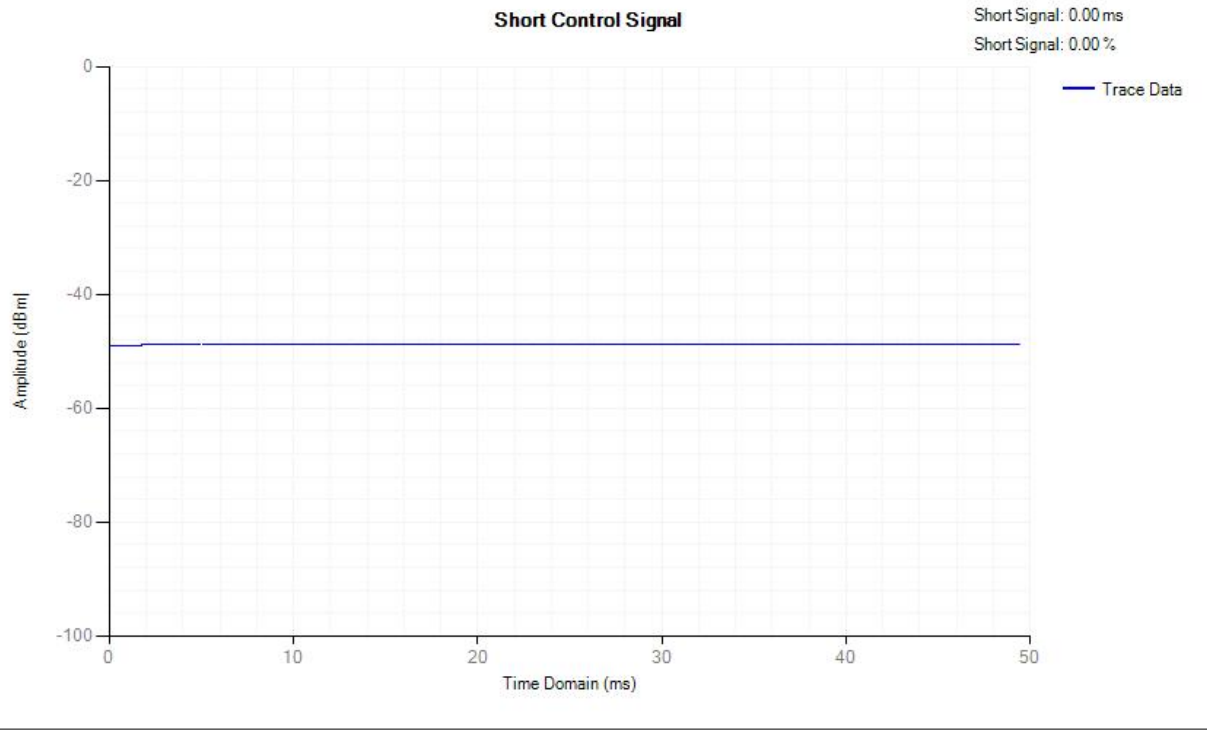
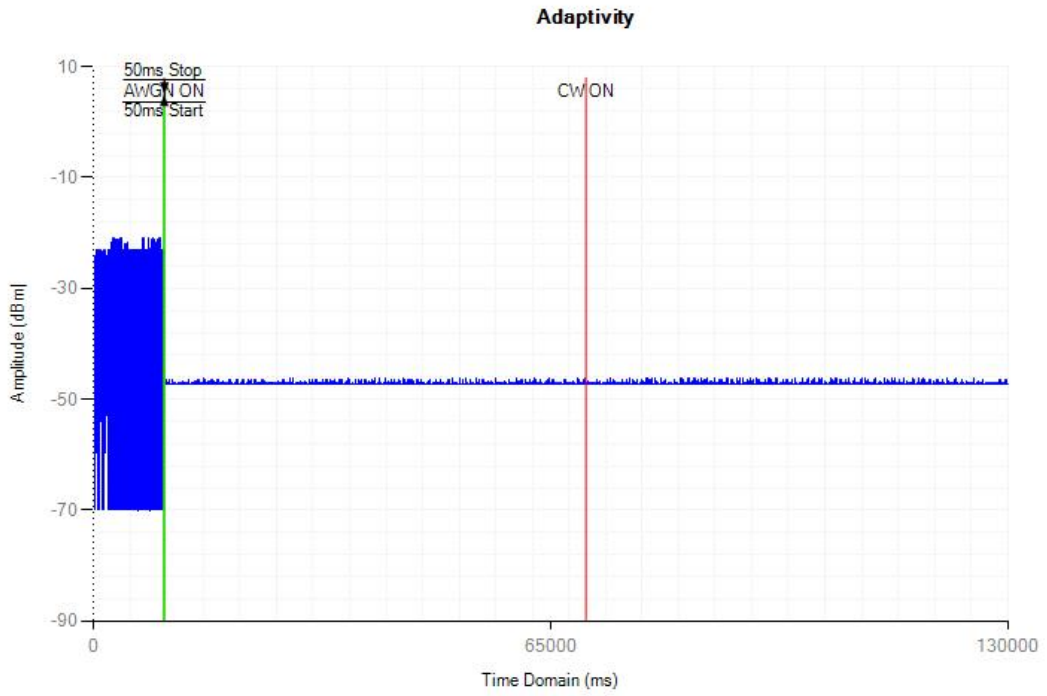
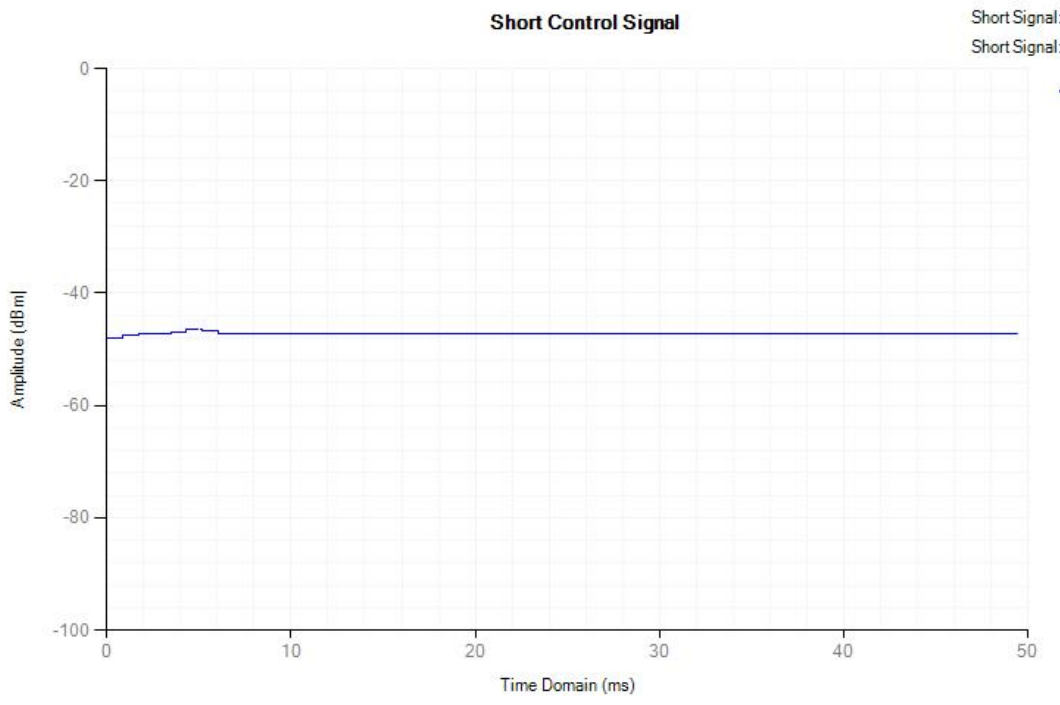
|  |

| Adaptivity n40 2462MHz |
| --- |
|  |
| Control Signal n40 2462MHz |
|  |

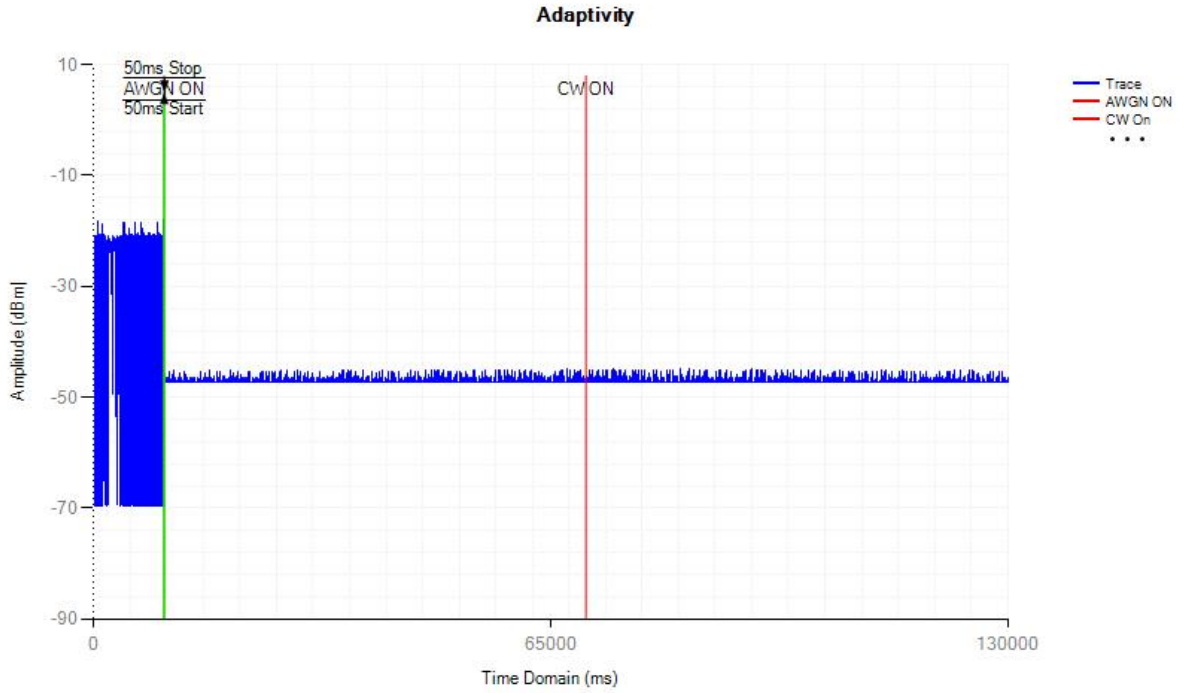
Adaptivity ax20 2412MHz



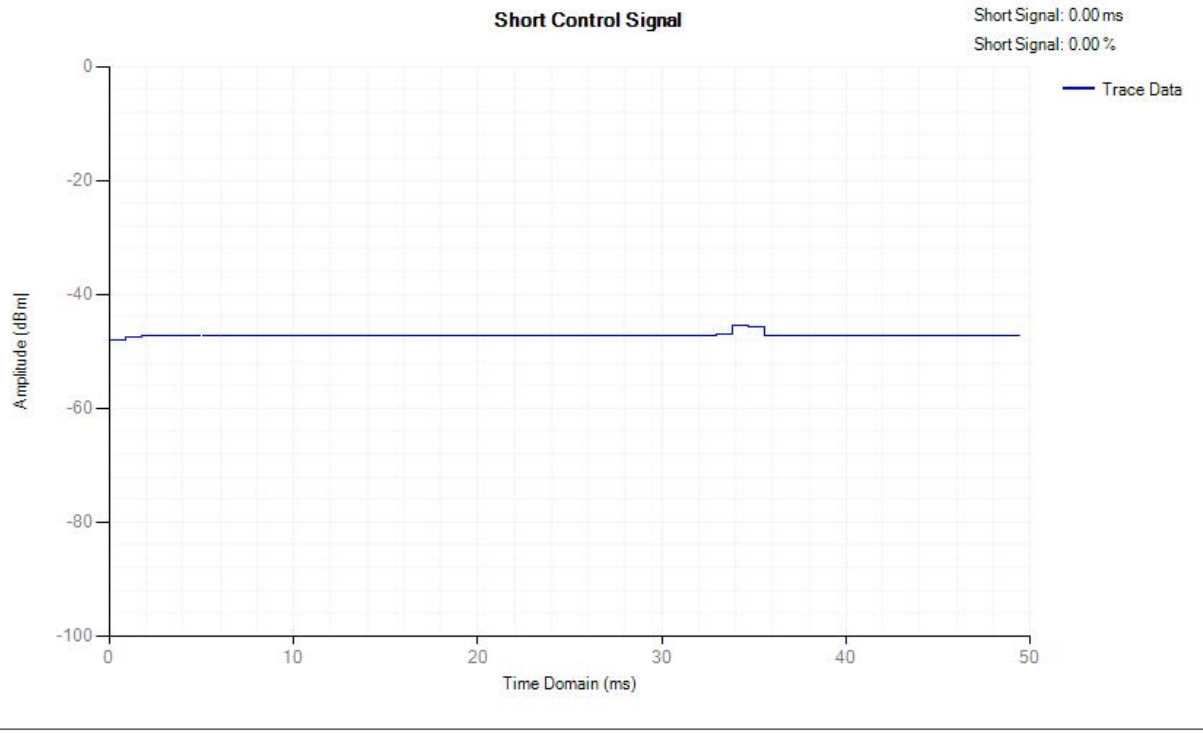

Control Signal ax20 2412MHz



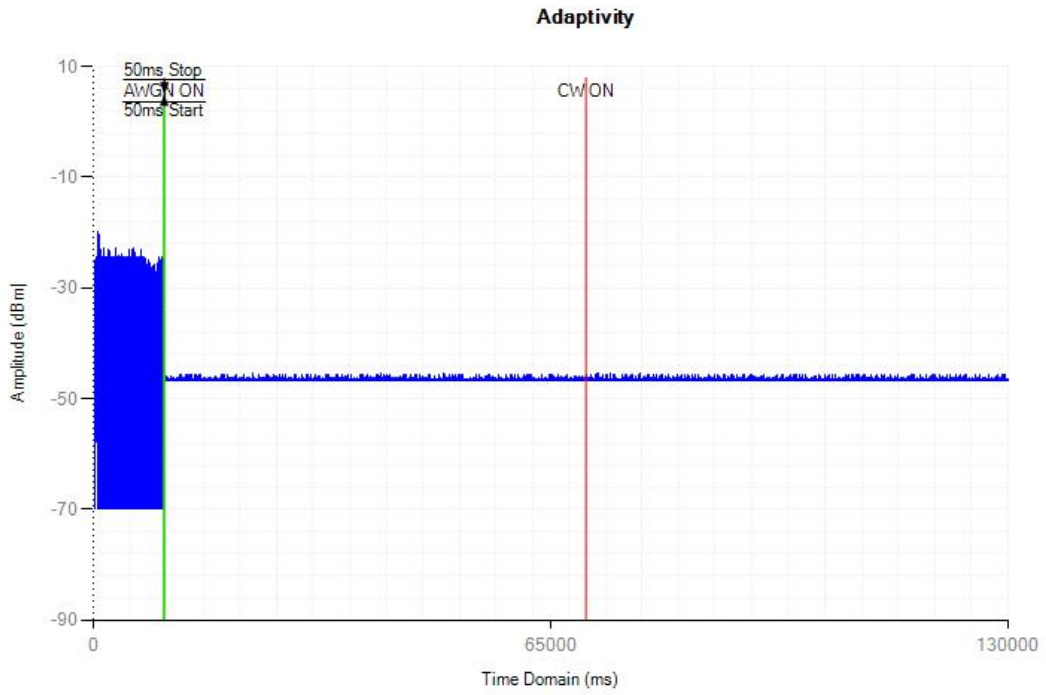
Adaptivity ax20 2472MHz



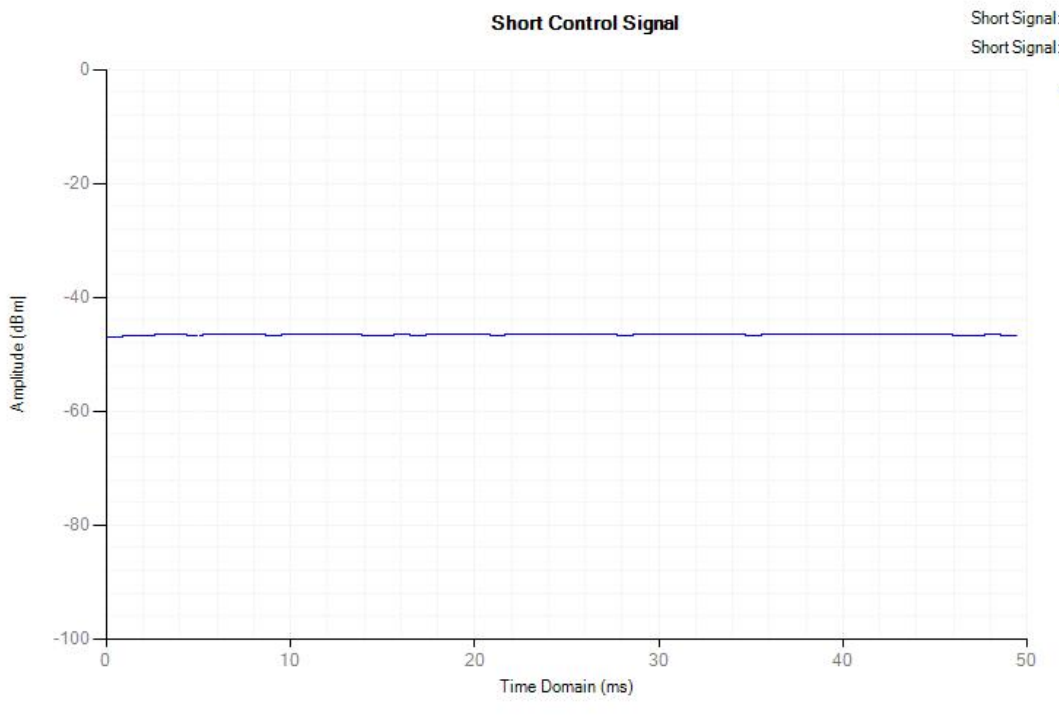

Control Signal ax20 2472MHz

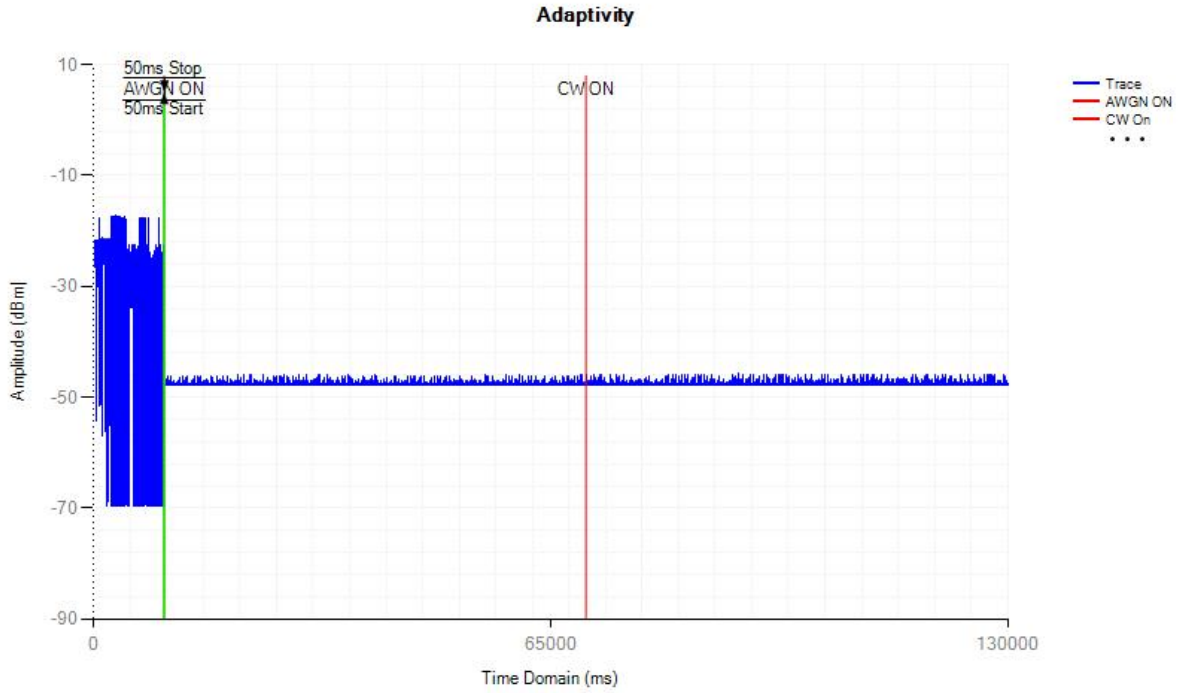


Adaptivity ax40 2422MHz

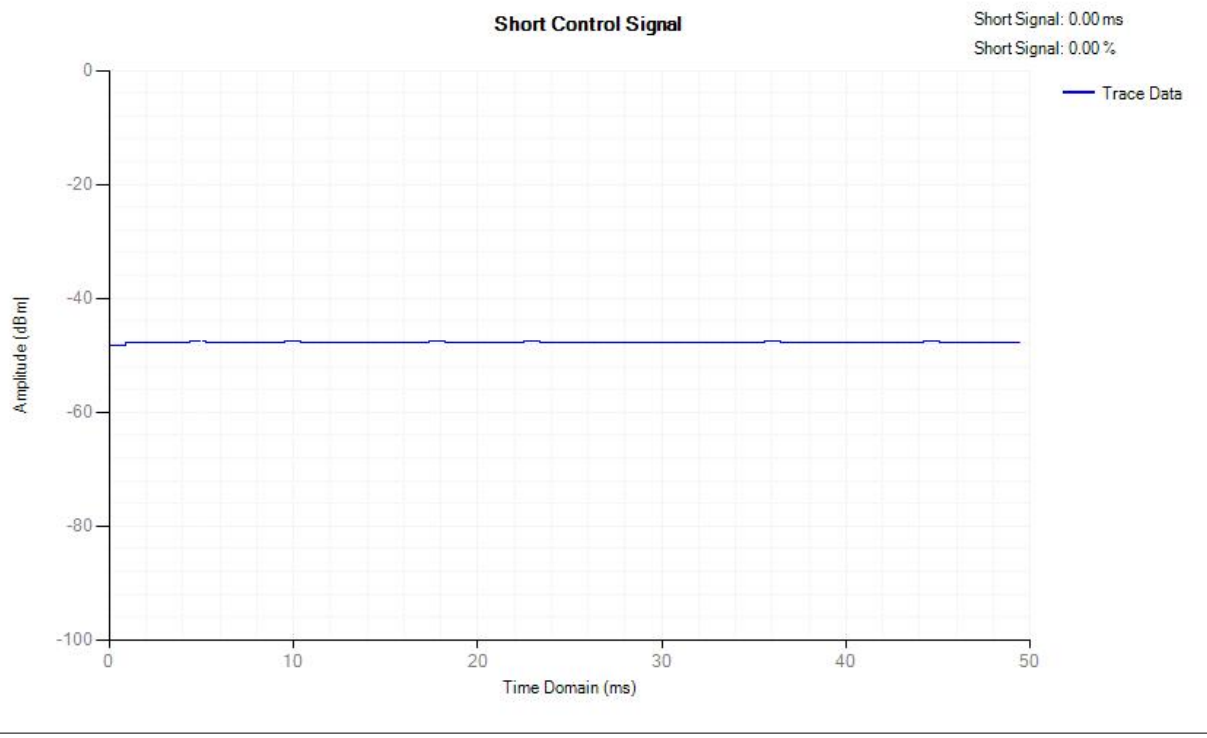



Control Signal ax40 2422MHz



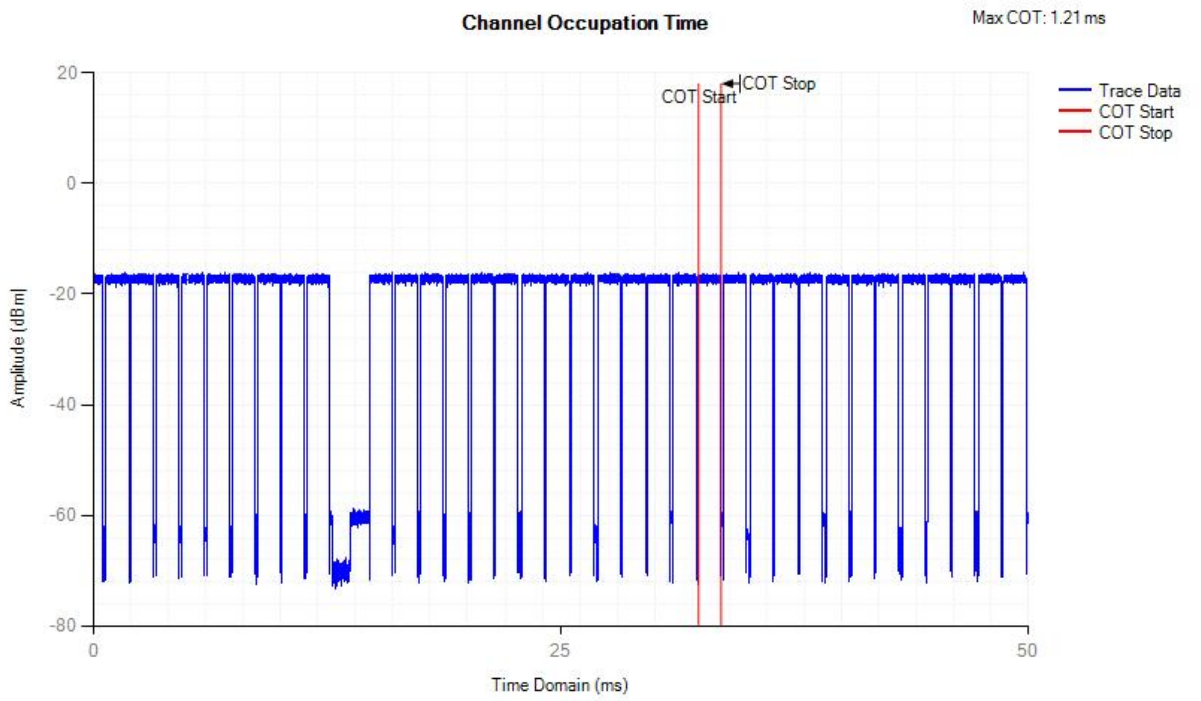
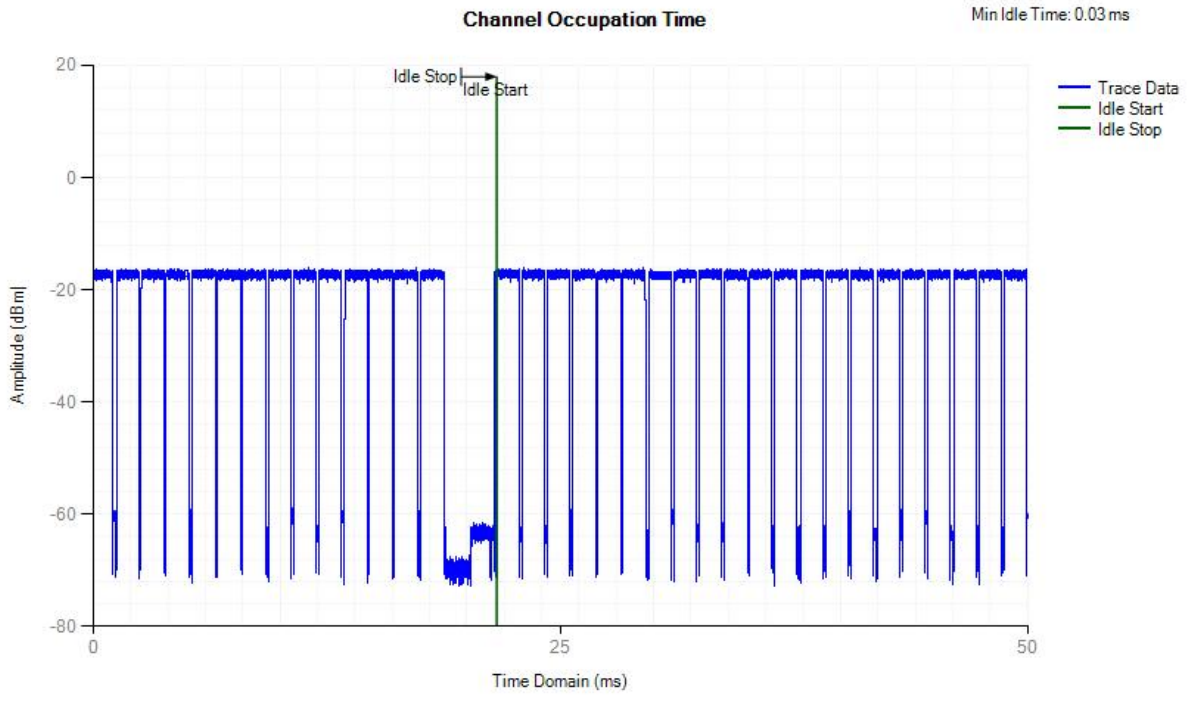
| Adaptivity ax40 2462MHz |
| --- |
|  |



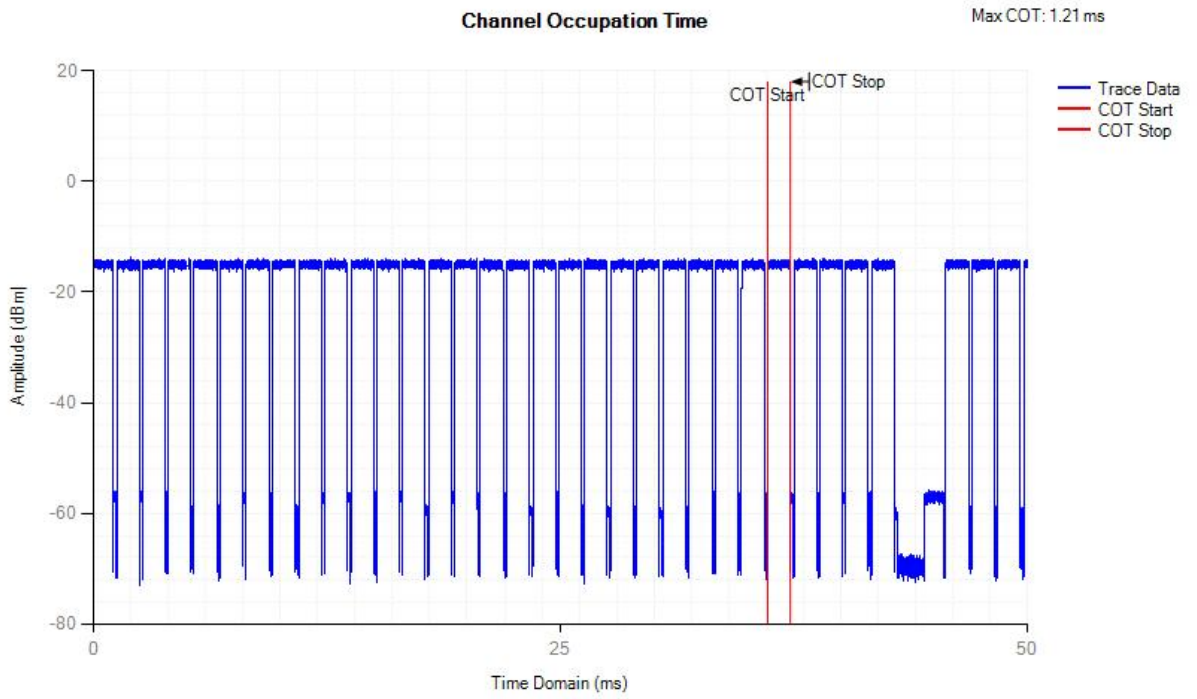
| Control Signal ax40 2462MHz |
| --- |
|  |

Adaptivity COT

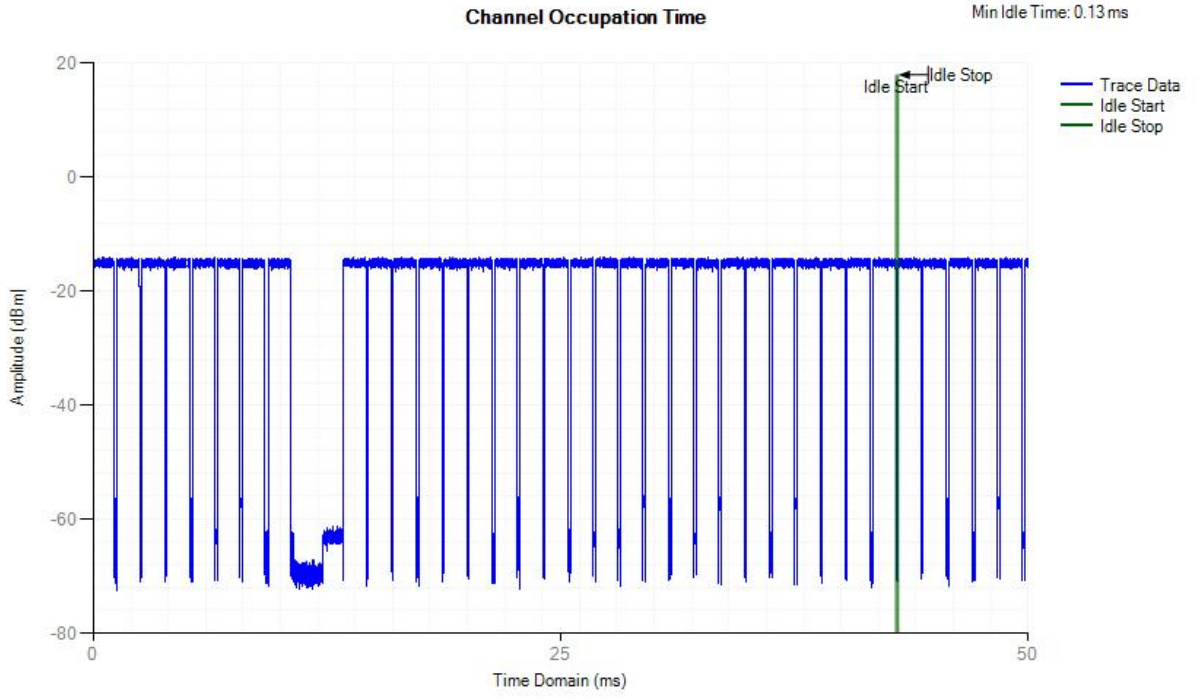
| Mode | Frequency (MHz) | Max COT (ms) | Limit COT (ms) | Min Idle Time (ms) | Limit Idle Time (ms) | Verdict |
|---|---|---|---|---|---|---|
| b | 2412 | 1.21 | <=13 | 0.032 | >0.018 | Pass |
| b | 2472 | 1.21 | <=13 | 0.128 | >0.018 | Pass |
| g | 2412 | 12.375 | <=13 | 0.06 | >0.018 | Pass |
| g | 2472 | 12.757 | <=13 | 0.06 | >0.018 | Pass |
| n20 | 2412 | 1.062 | <=13 | 0.065 | >0.018 | Pass |
| n20 | 2472 | 4.195 | <=13 | 0.077 | >0.018 | Pass |
| n40 | 2422 | 0.438 | <=13 | 0.077 | >0.018 | Pass |
| n40 | 2462 | 0.343 | <=13 | 0.077 | >0.018 | Pass |
| ax20 | 2412 | 5.308 | <=13 | 0.065 | >0.018 | Pass |
| ax20 | 2472 | 0.61 | <=13 | 0.065 | >0.018 | Pass |
| ax40 | 2422 | 1.01 | <=13 | 0.065 | >0.018 | Pass |
| ax40 | 2462 | 1.263 | <=13 | 0.087 | >0.018 | Pass |

| Test Graphs |
| --- |
| COT b 2412MHz |
|  |
| Idle b 2412MHz |
|  |

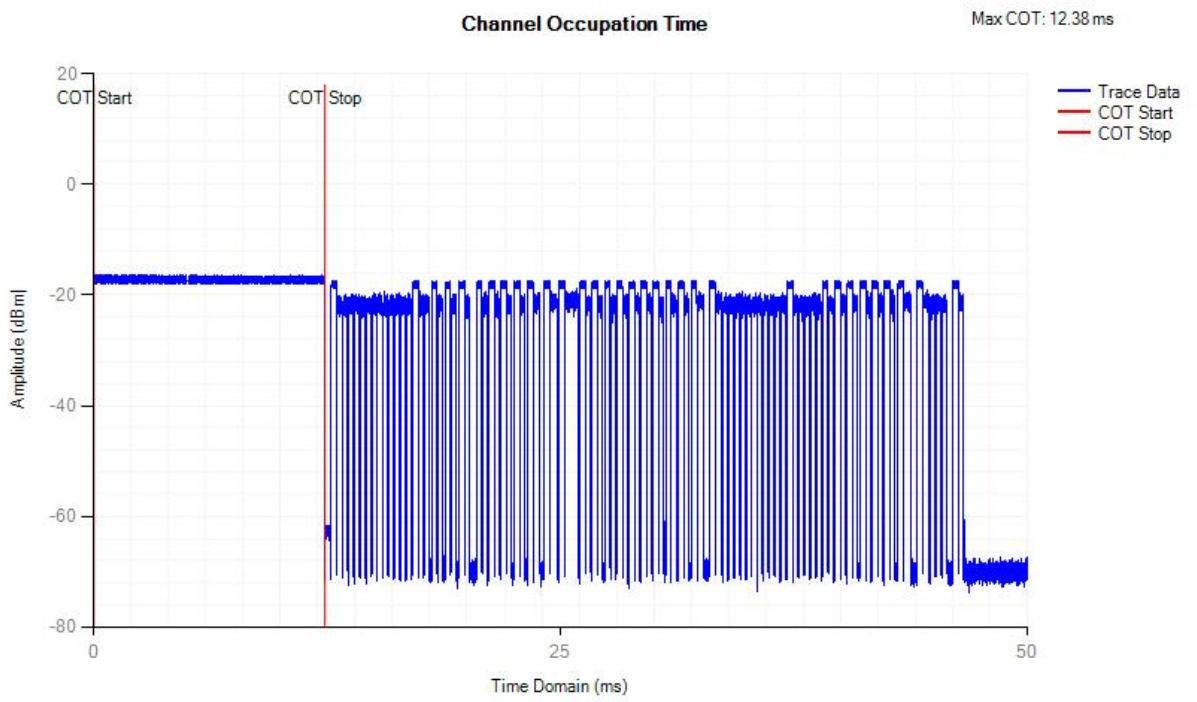
COT b 2472MHz



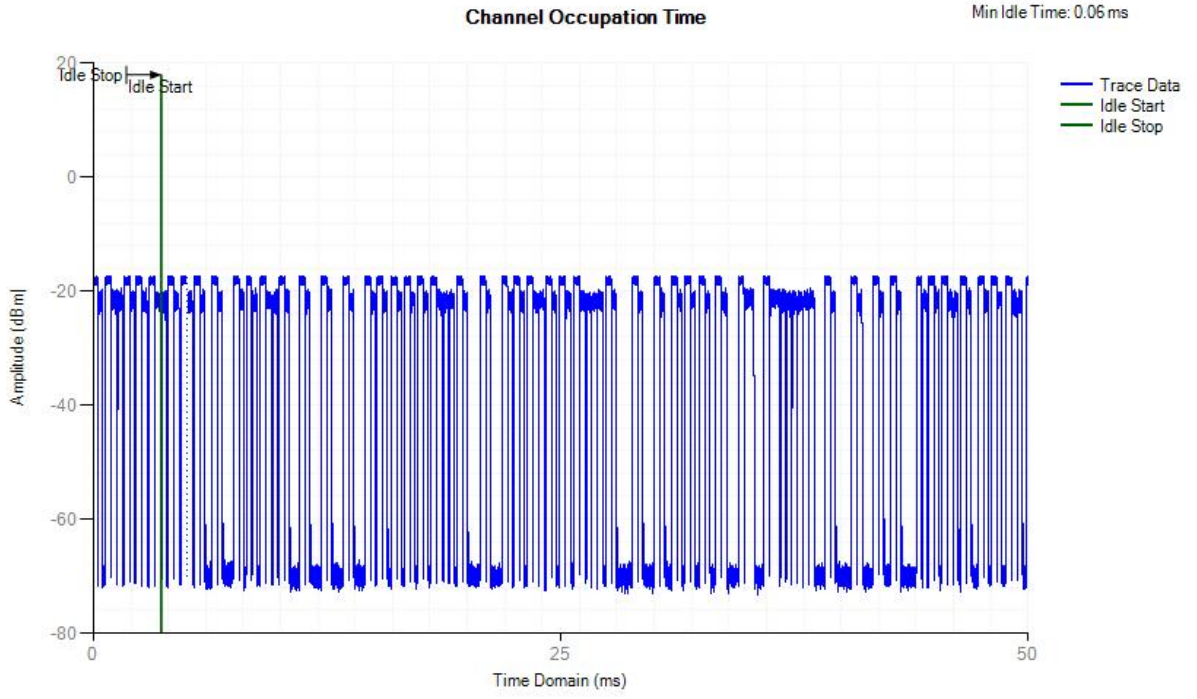

Idle b 2472MHz



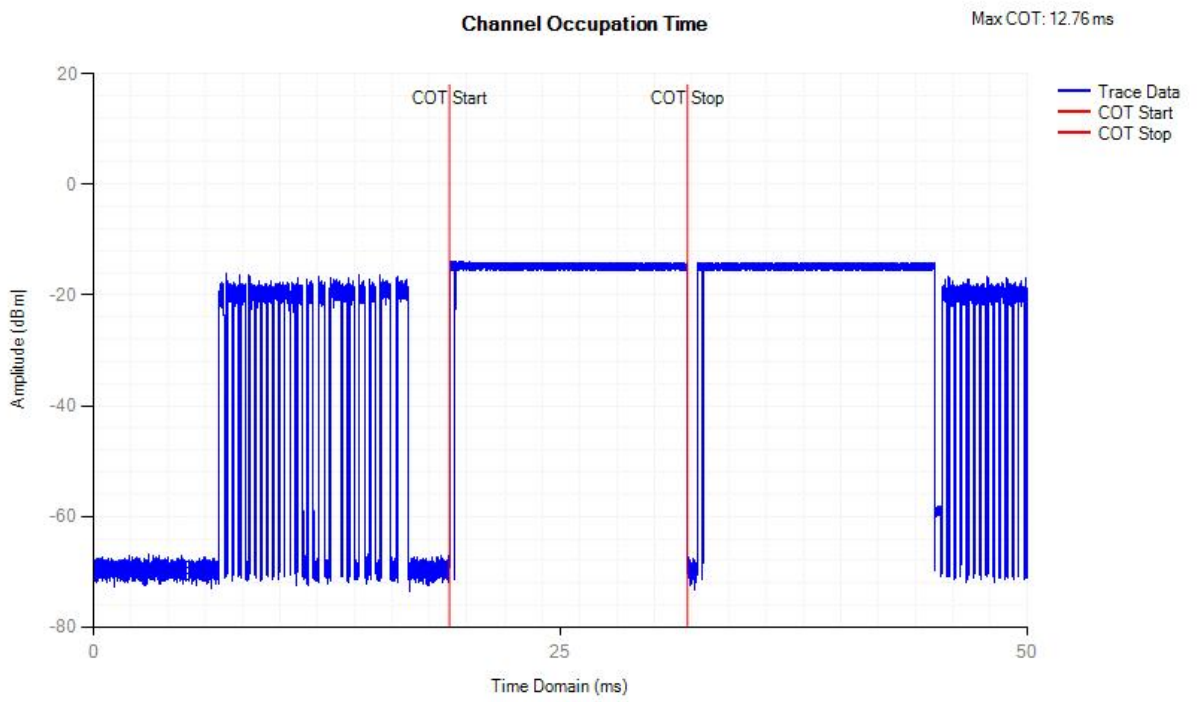
COT g 2412MHz



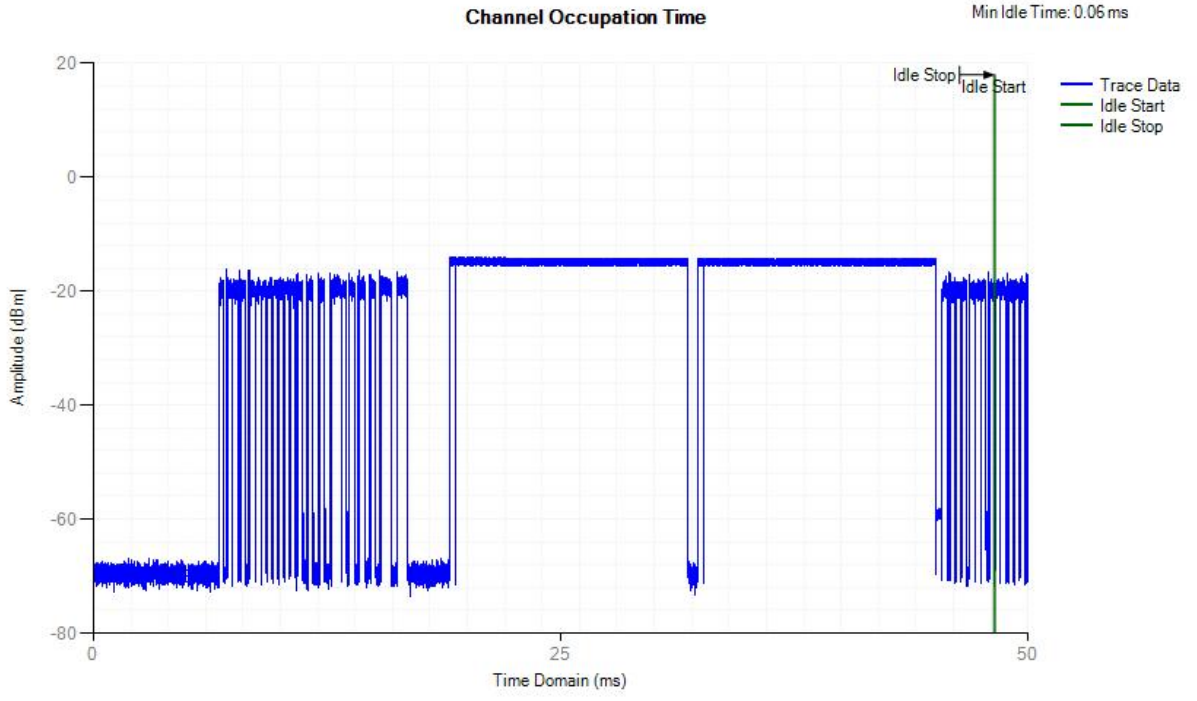

Idle g 2412MHz



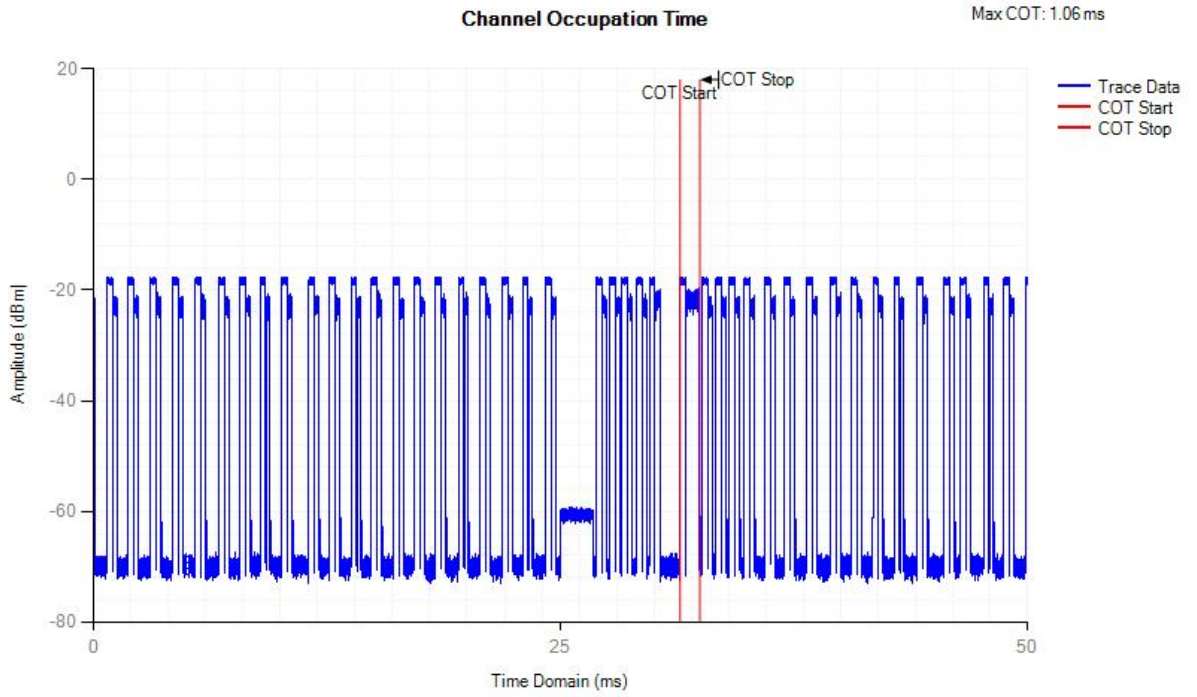
COT g 2472MHz



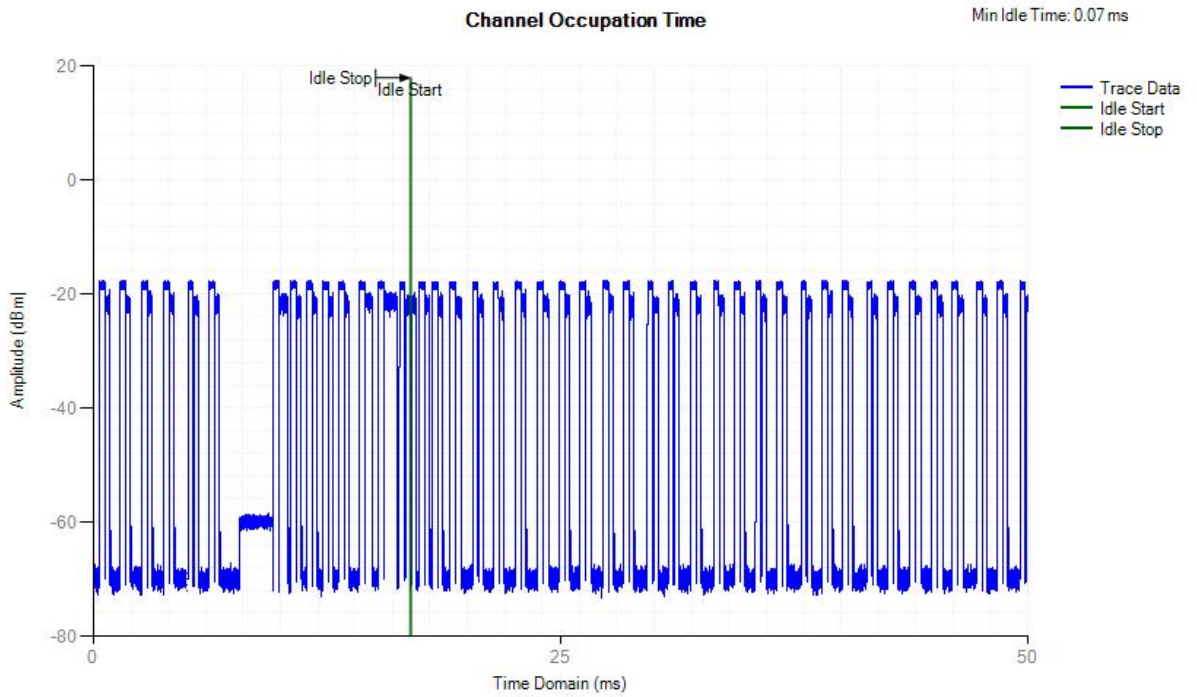

Idle g 2472MHz



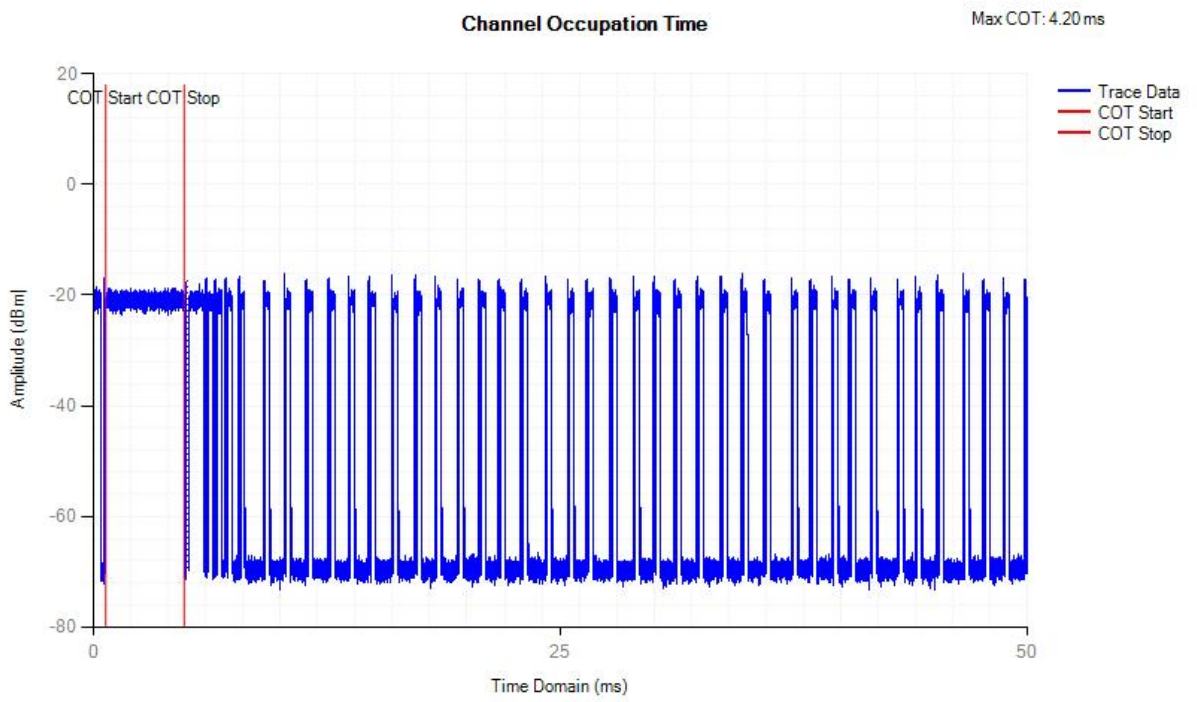
COT n20 2412MHz



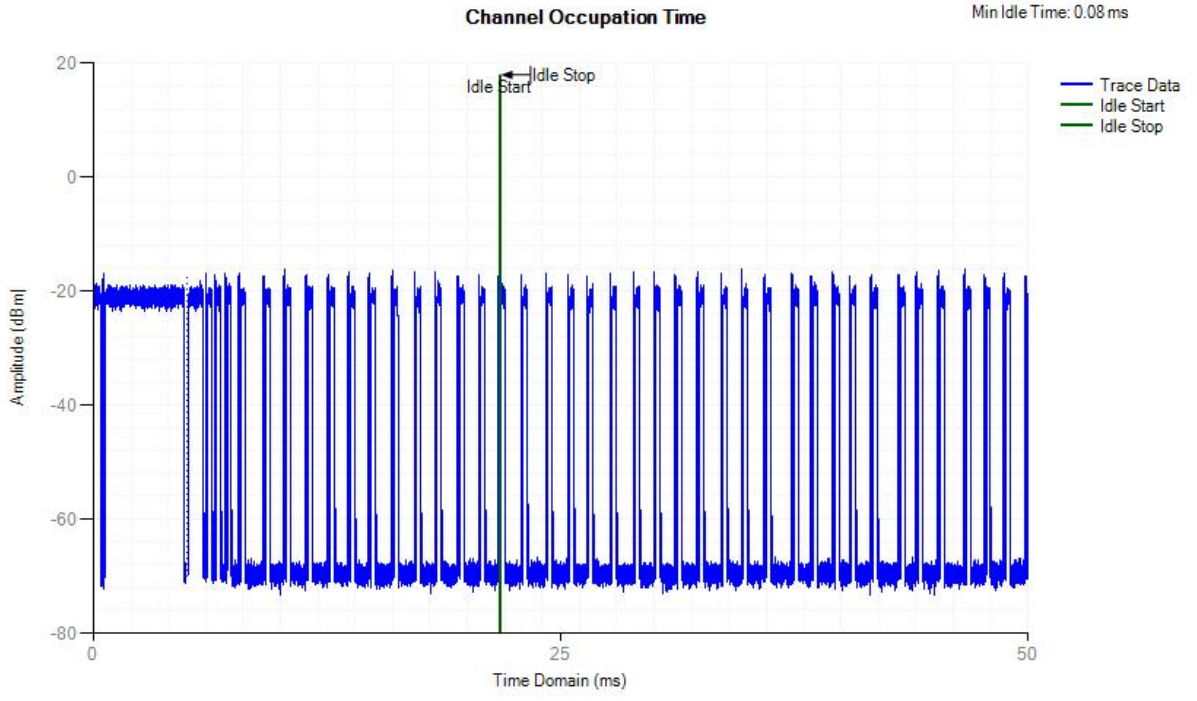

Idle n20 2412MHz



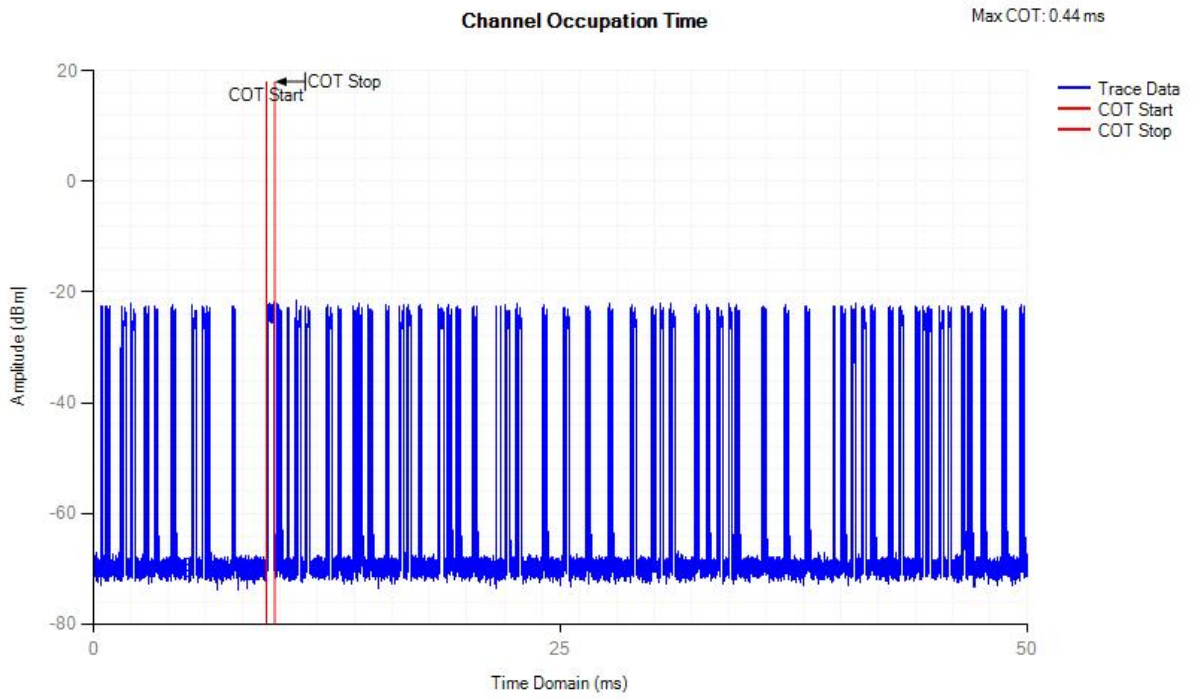
COT n20 2472MHz



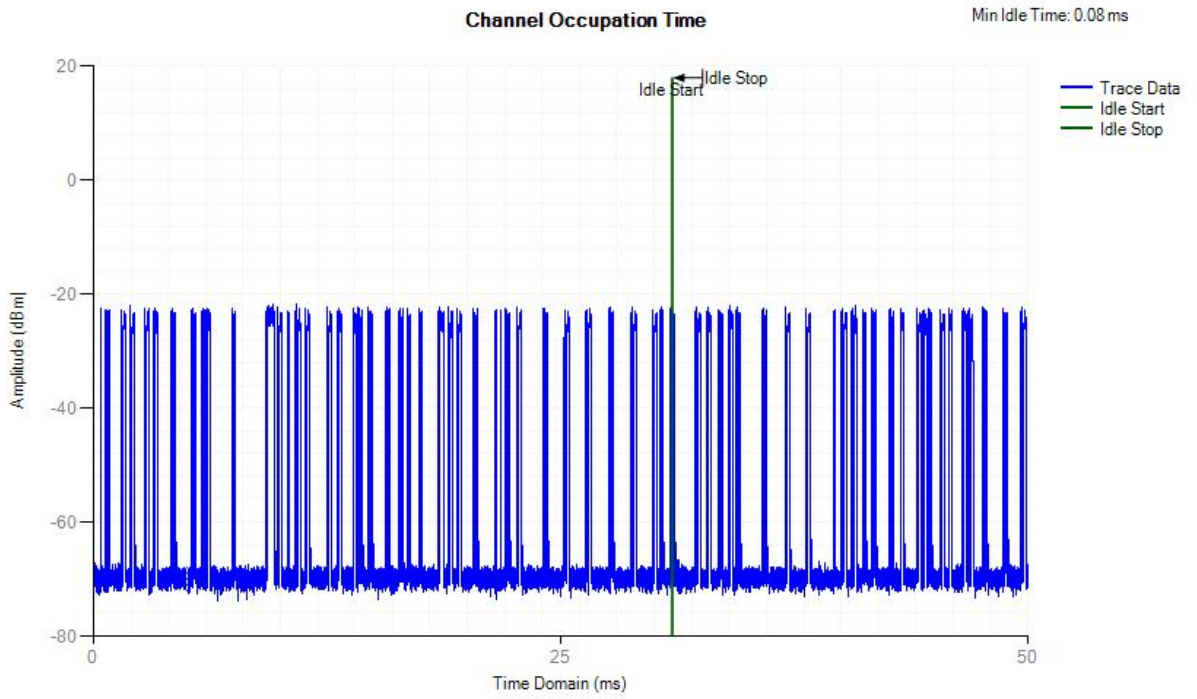

Idle n20 2472MHz

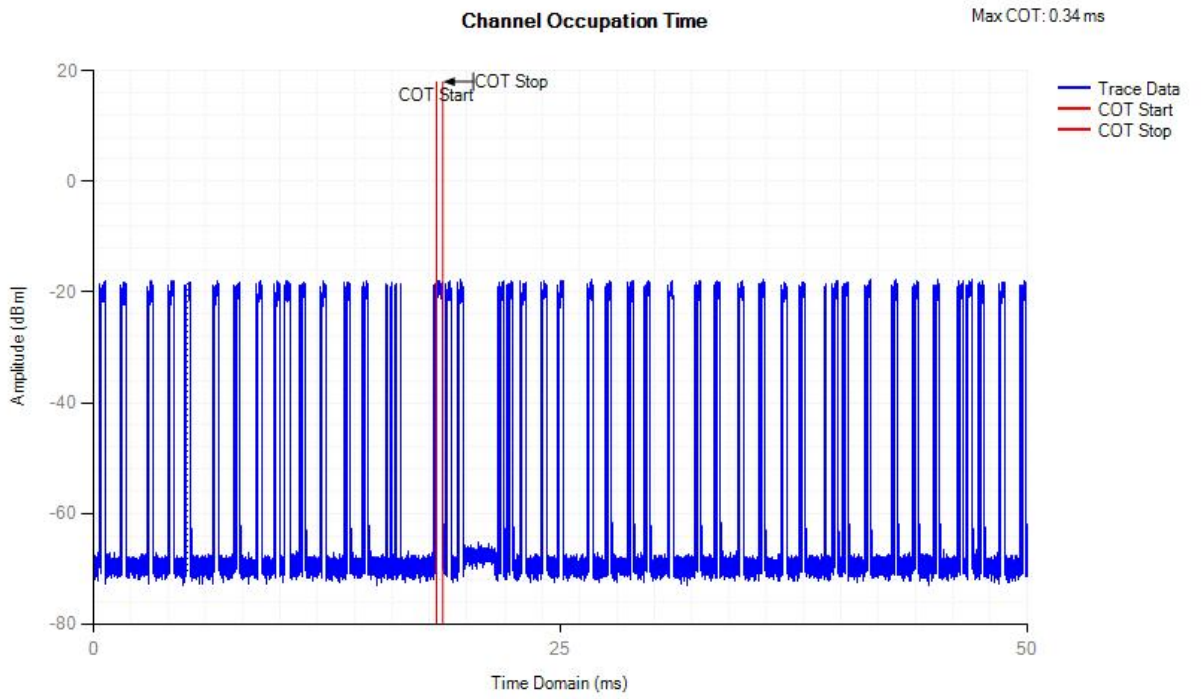
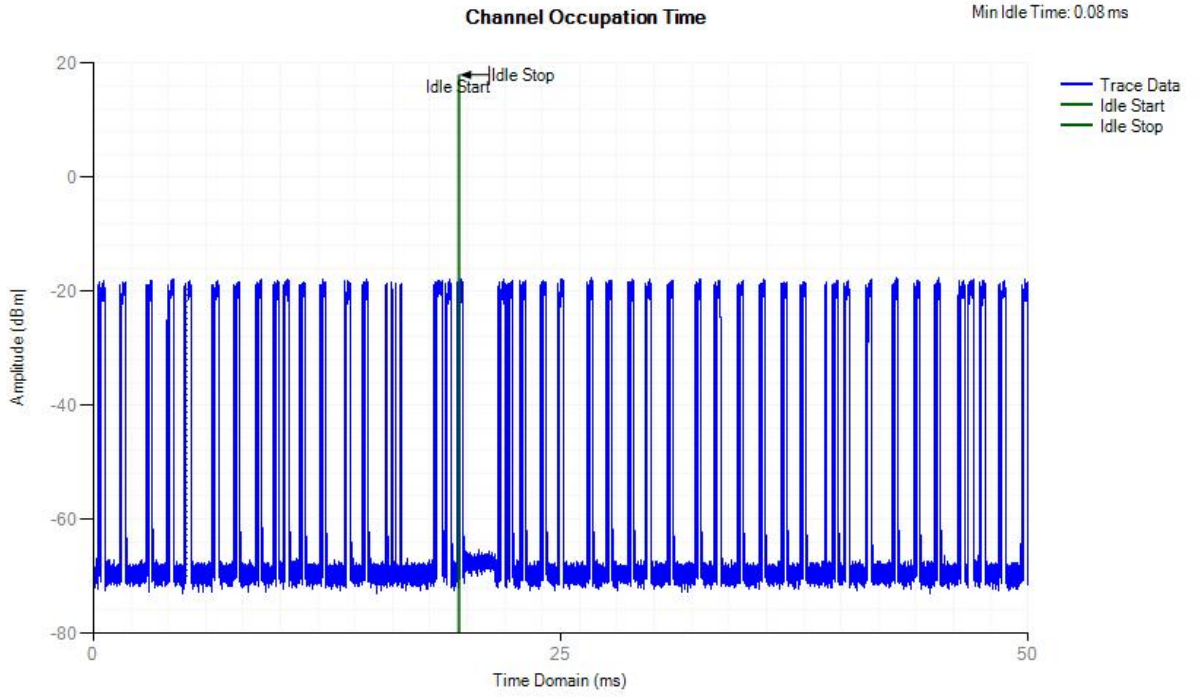


COT n40 2422MHz

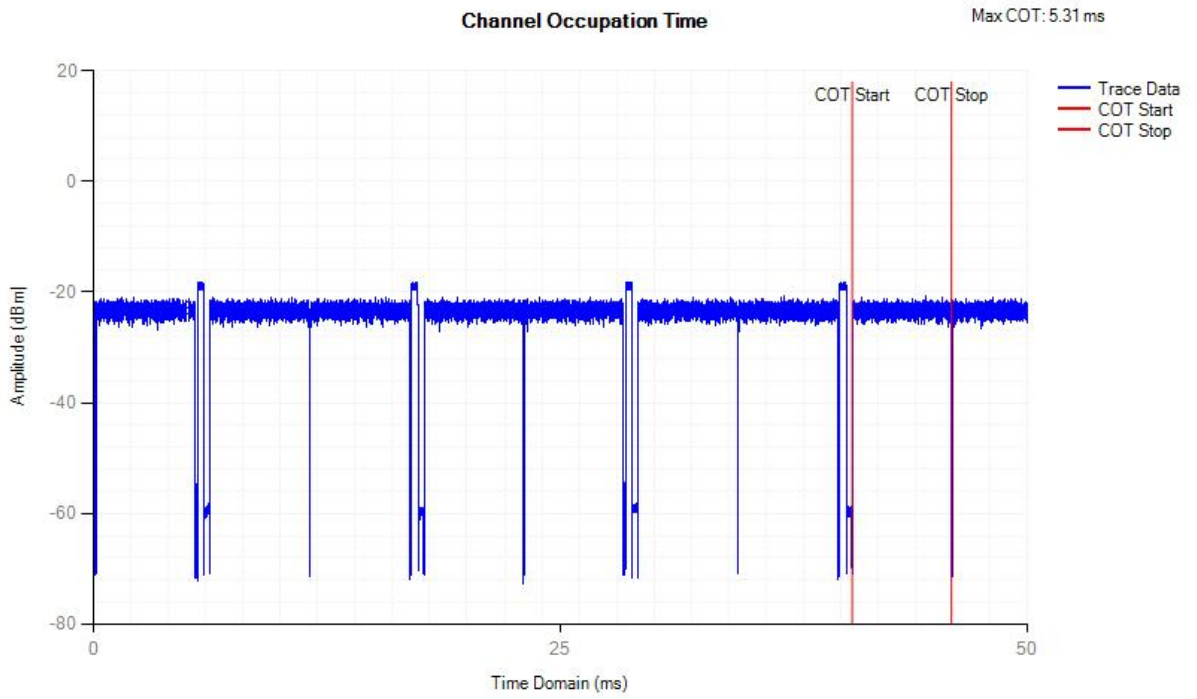



Idle n40 2422MHz

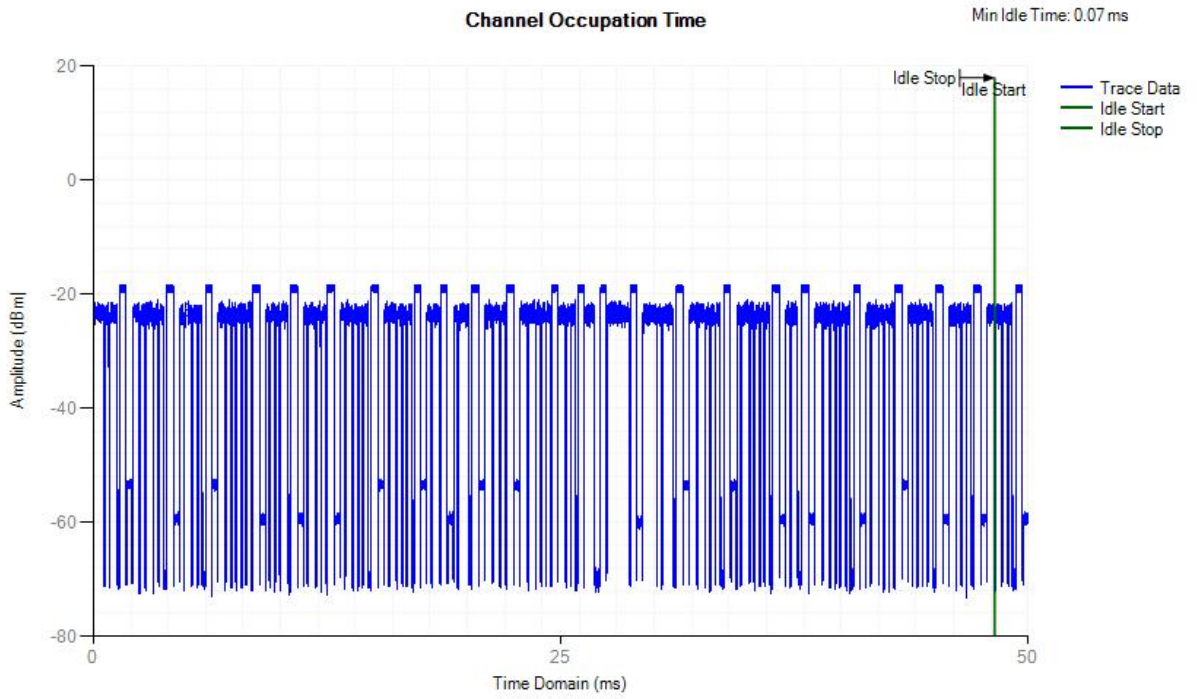


| COT n40 2462MHz |
| --- |
|  |
| Idle n40 2462MHz |
|  |

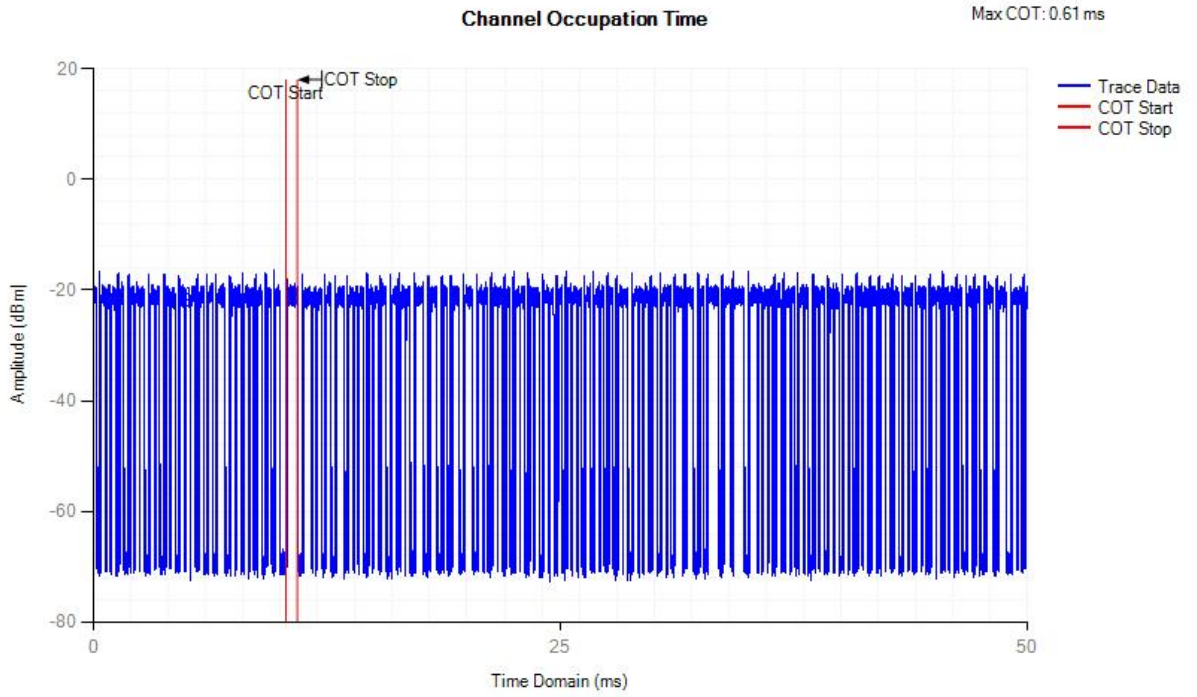
COT ax20 2412MHz



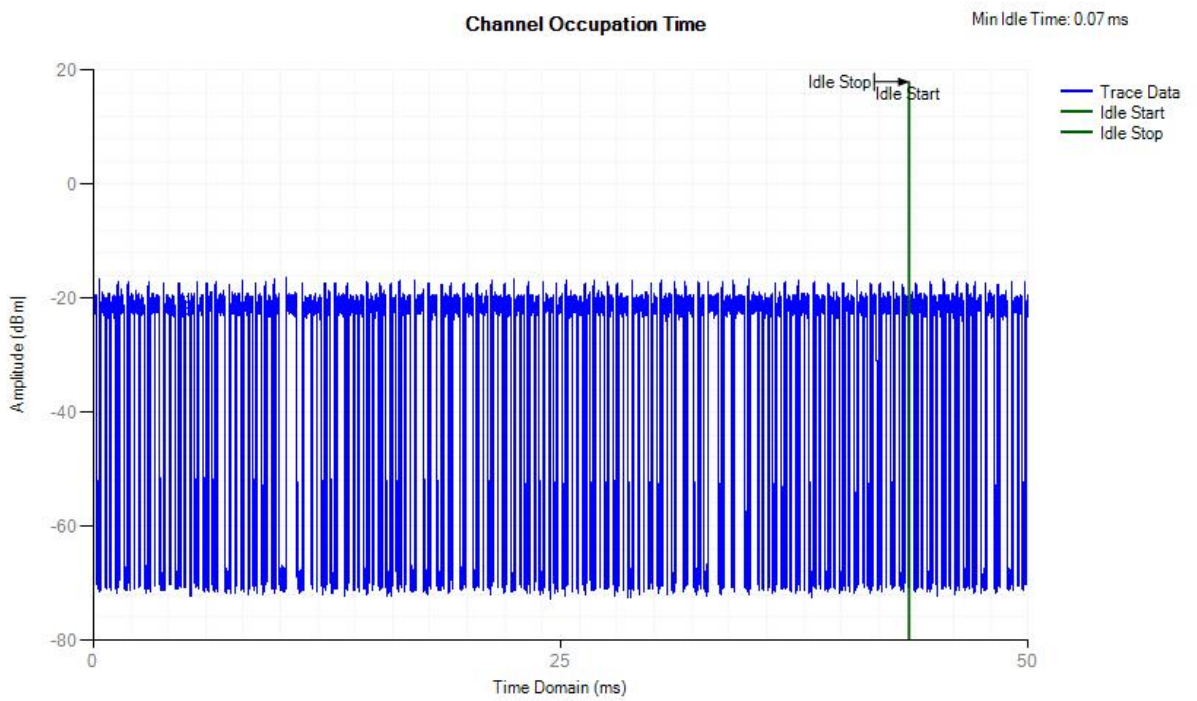

Idle ax20 2412MHz



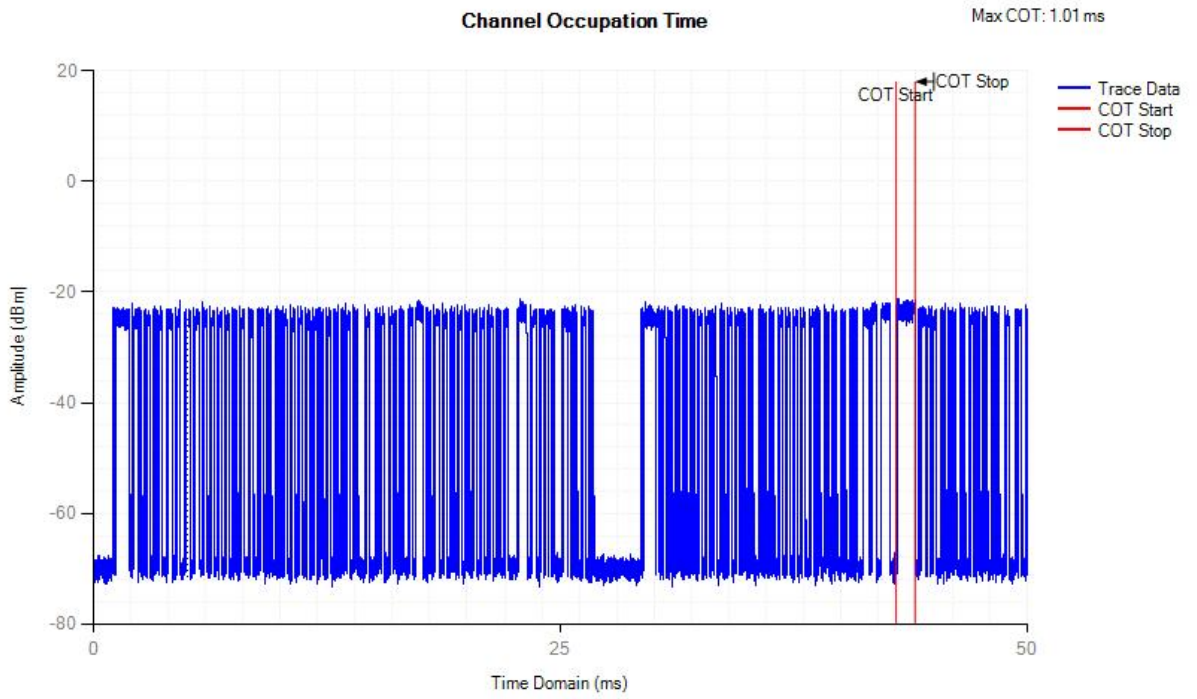
COT ax20 2472MHz



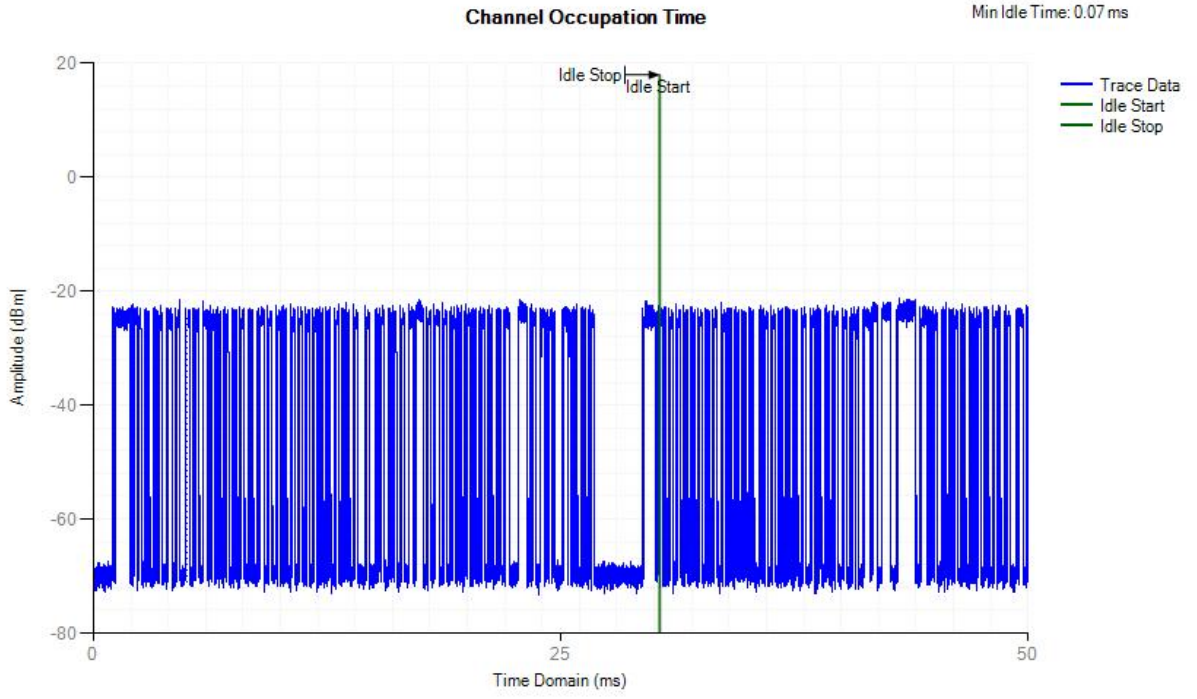

Idle ax20 2472MHz



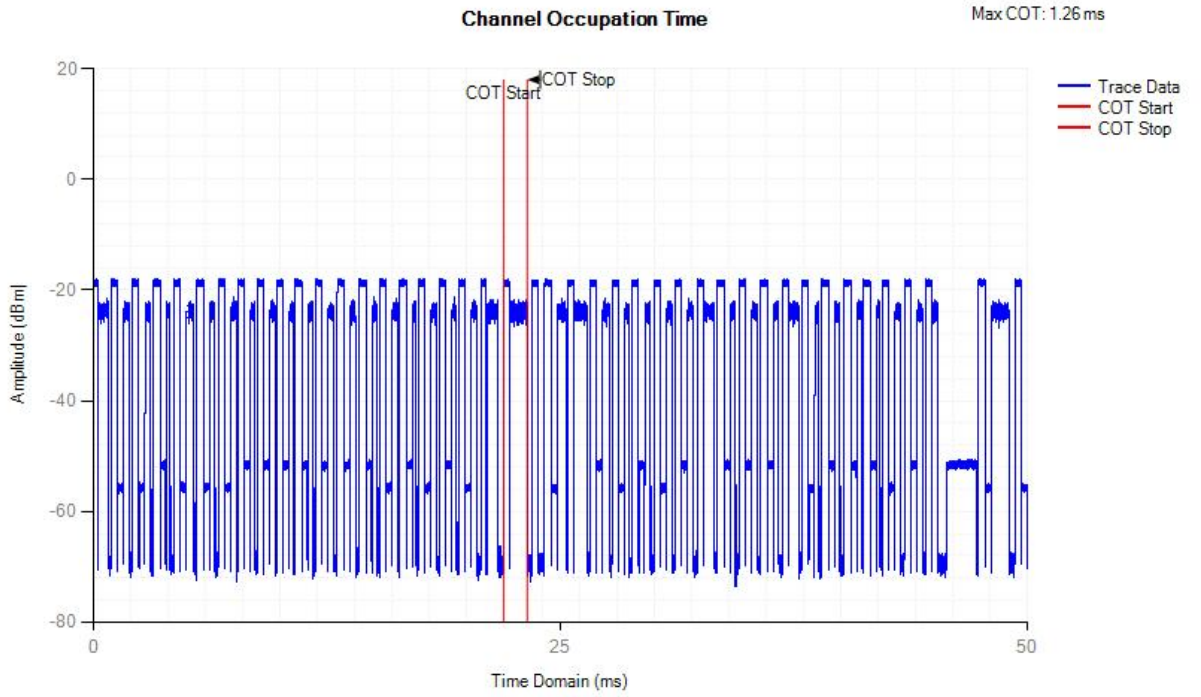
COT ax40 2422MHz



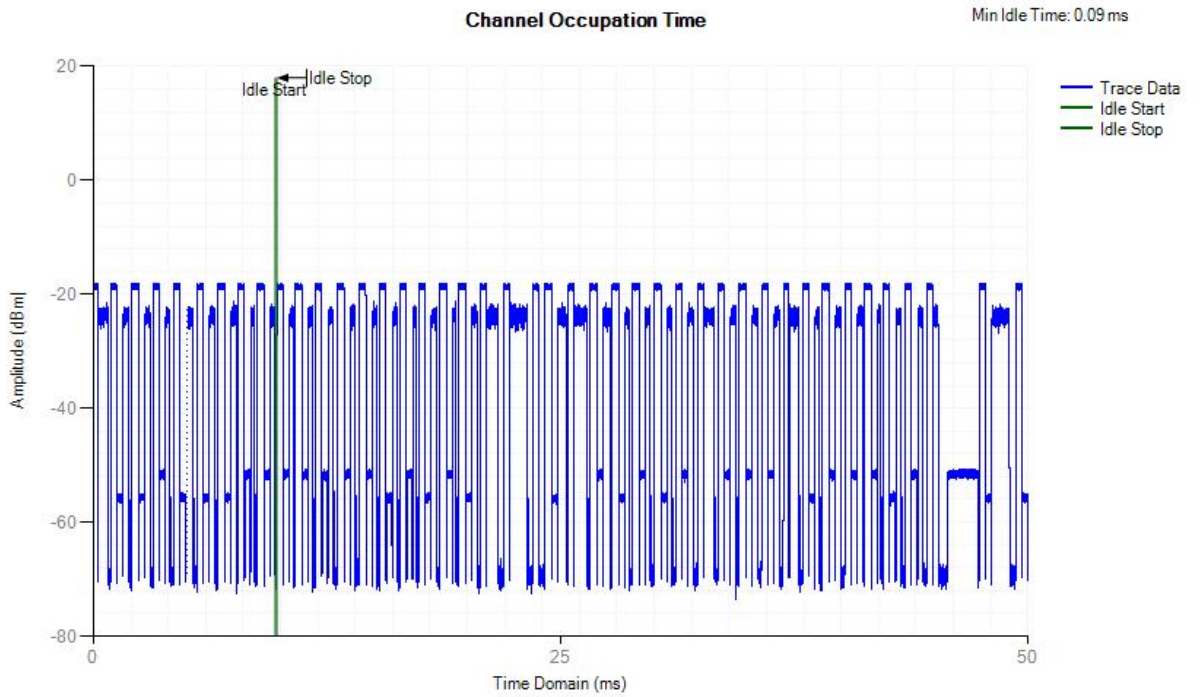

Idle ax40 2422MHz



COT ax40 2462MHz




Idle ax40 2462MHz




Note:

During the test, the signal observed on the channel being investigated is the Short Control Signalling Transmissions.

## 5.6 Transmitter unwanted emissions in the spurious domain

### 5.6.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.9.3)

| TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN | | |
|---|---|---|
| Frequency Range | Maximum Power Limit (E.R.P.(≤1 GHz) E.I.R.P.(> 1 GHz)) | Bandwidth |
| 30 MHz to 47 MHz | -36dBm | 100 kHz |
| 47 MHz to 74 MHz | -54dBm | 100 kHz |
| 74 MHz to 87.5 MHz | -36dBm | 100 kHz |
| 87.5 MHz to 118 MHz | -54dBm | 100 kHz |
| 118 MHz to 174 MHz | -36dBm | 100 kHz |
| 174 MHz to 230 MHz | -54dBm | 100 kHz |
| 230 MHz to 470 MHz | -36dBm | 100 kHz |
| 470 MHz to 694 MHz | -54dBm | 100 kHz |
| 694MHz to 1 GHz | -36dBm | 100 kHz |
| 1 GHz ~ 12.75 GHz | -30dBm | 1 MHz |

### 5.6.2 Test procedure

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.9

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☒ Radiated measurement |

The setting of the Spectrum Analyzer

| | |
|---|---|
| RBW | 100K(＜1GHz) / 1M(＞1GHz) |
| VBW | 300K(＜1GHz) / 3M(＞1GHz) |

### 5.6.3 TEST SETUP

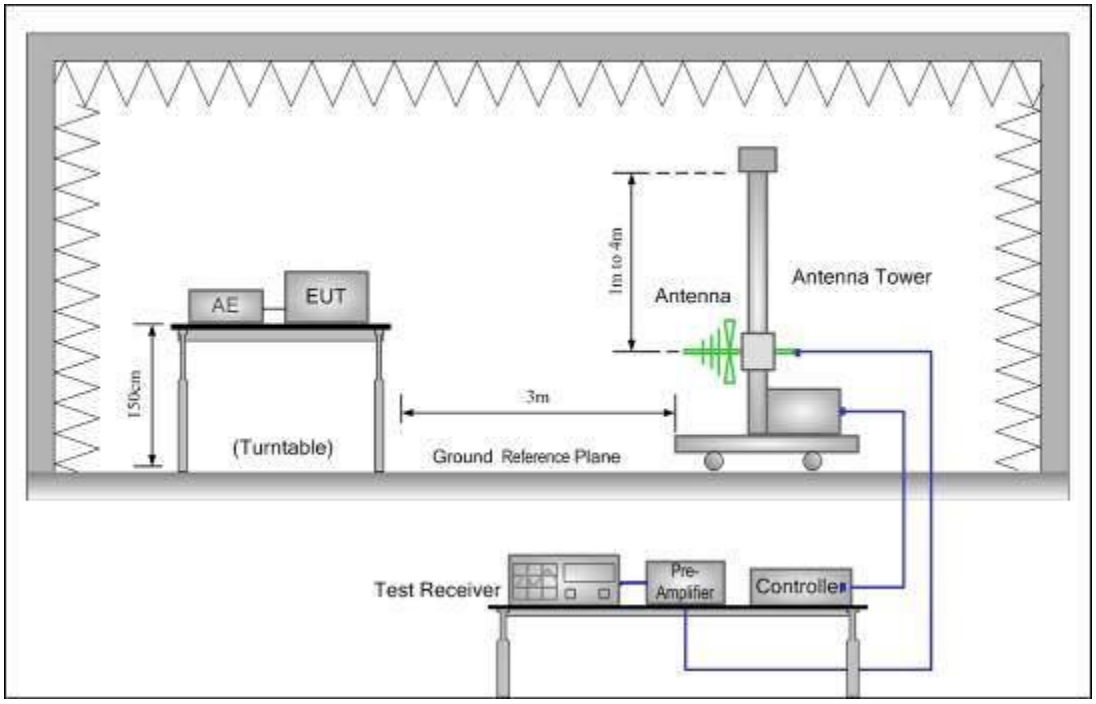



Figure 1. 30MHz to 1GHz

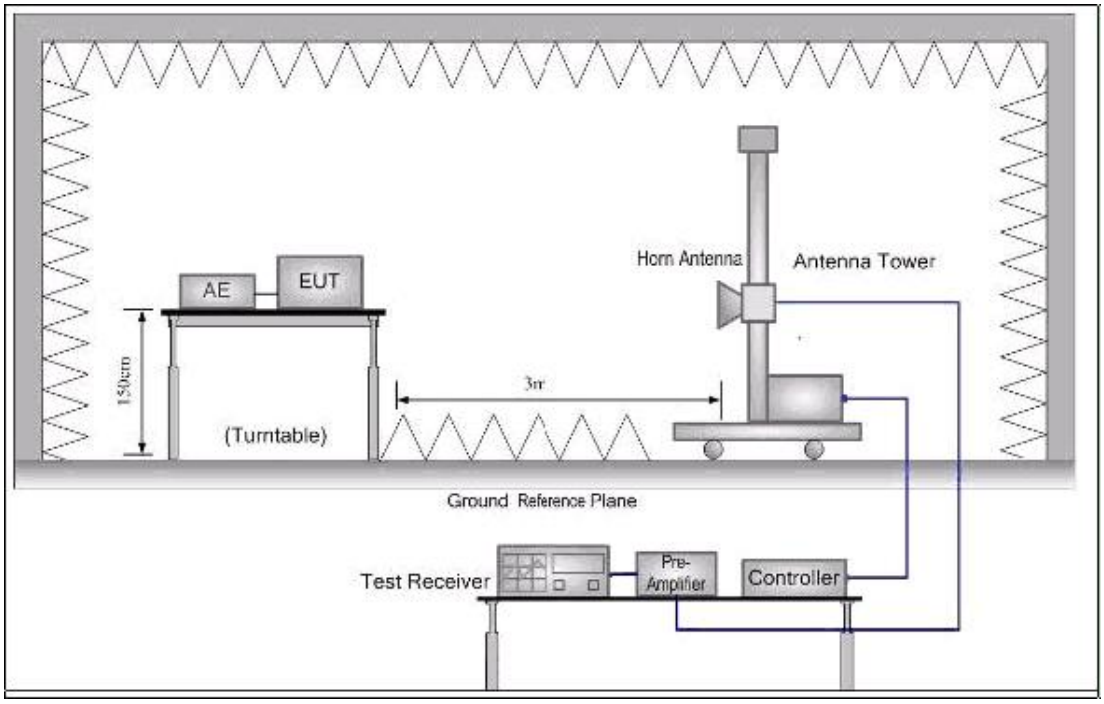



Figure 2. Above 1GHz

### 5.6.4 Radiated Test result

**802.11b lowest (2412 MHz)**

| below 1 GHz | | | | |
|---|---|---|---|---|
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 82.5584 | Vertical | -63.42 | -36.00 | -27.42 |
| 151.5212 | Vertical | -69.92 | -36.00 | -33.92 |
| 367.2707 | Vertical | -67.94 | -36.00 | -31.94 |
| 110.5429 | Horizontal | -61.28 | -54.00 | -7.28 |
| 294.6087 | Horizontal | -65.74 | -36.00 | -29.74 |
| 386.2848 | Horizontal | -68.55 | -36.00 | -32.55 |
| **Above 1 GHz** | | | | |
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 1500.826 | Vertical | -40.42 | -30.00 | -10.42 |
| 2569.940 | Vertical | -46.07 | -30.00 | -16.07 |
| 4866.613 | Vertical | -47.59 | -30.00 | -17.59 |
| 1547.204 | Horizontal | -39.18 | -30.00 | -9.18 |
| 2980.151 | Horizontal | -44.02 | -30.00 | -14.02 |
| 4865.650 | Horizontal | -47.61 | -30.00 | -17.61 |

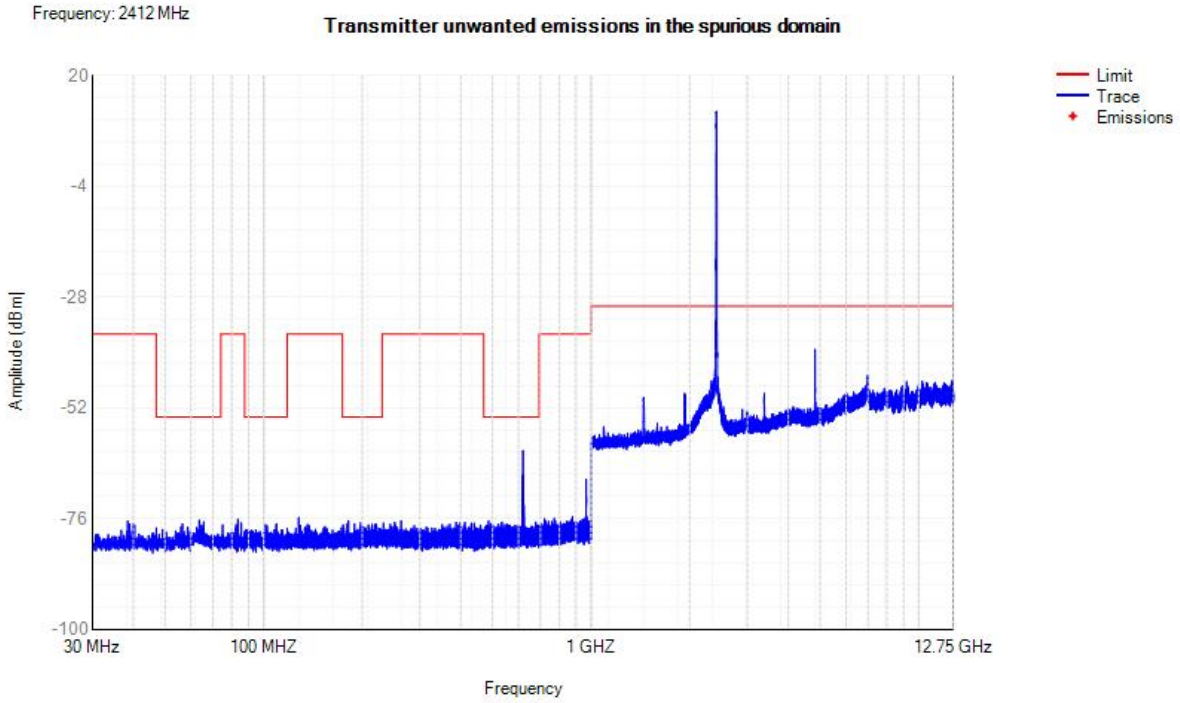
**802.11b highest CH (2472 MHz)**

| below 1 GHz | | | | |
|---|---|---|---|---|
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 34.5343 | Vertical | -69.42 | -36.00 | -33.42 |
| 249.6085 | Vertical | -66.65 | -36.00 | -30.65 |
| 616.6968 | Vertical | -62.95 | -54.00 | -8.95 |
| 86.1092 | Horizontal | -64.34 | -36.00 | -28.34 |
| 282.5764 | Horizontal | -66.14 | -36.00 | -30.14 |
| 699.8785 | Horizontal | -62.28 | -36.00 | -26.28 |
| **Above 1 GHz** | | | | |
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 1300.224 | Vertical | -46.42 | -30.00 | -16.42 |
| 2896.897 | Vertical | -44.44 | -30.00 | -14.44 |
| 5116.039 | Vertical | -42.60 | -30.00 | -12.60 |
| 1936.364 | Horizontal | -42.24 | -30.00 | -12.24 |
| 2940.043 | Horizontal | -44.22 | -30.00 | -14.22 |
| 5179.244 | Horizontal | -41.34 | -30.00 | -11.34 |

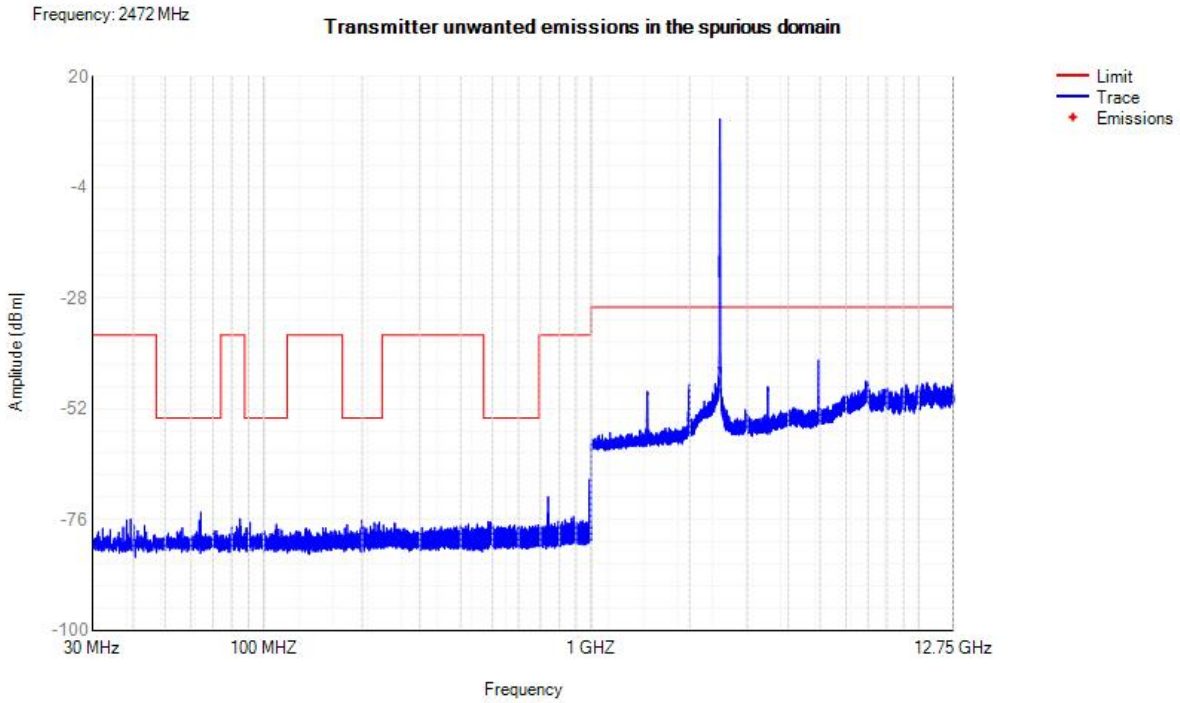
Note: All the modes had been tested, but only the worst data recorded in the report.

### 5.6.5 Conducted Test result

802.11b-Low CH




802.11b-High CH



## 5.7 Receiver spurious emissions

### 5.7.1 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.10.3)

**Spurious emission limits for receivers**

| Frequency range | Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz) | Bandwidth |
|---|---|---|
| 30 MHz to 1 GHz | -57 dBm | 100KHz |
| 1 GHz to 12,75 GHz | -47 dBm | 1MHz |

### 5.7.2 Test procedure

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.10

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☒ Radiated measurement |

The setting of the Spectrum Analyzer

| | |
|---|---|
| RBW | 100K(＜1GHz) / 1M(＞1GHz) |
| VBW | 300K(＜1GHz) / 3M(＞1GHz) |

### 5.7.3 Test Setup

Radiated measurement:

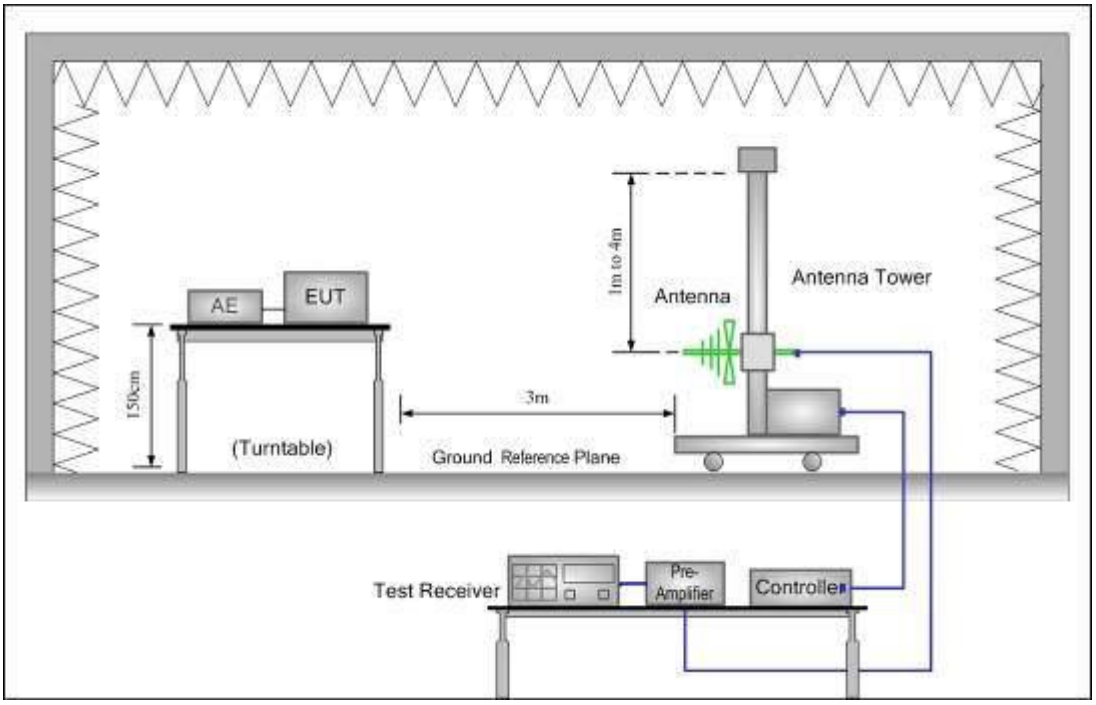



Figure 1. 30MHz to 1GHz

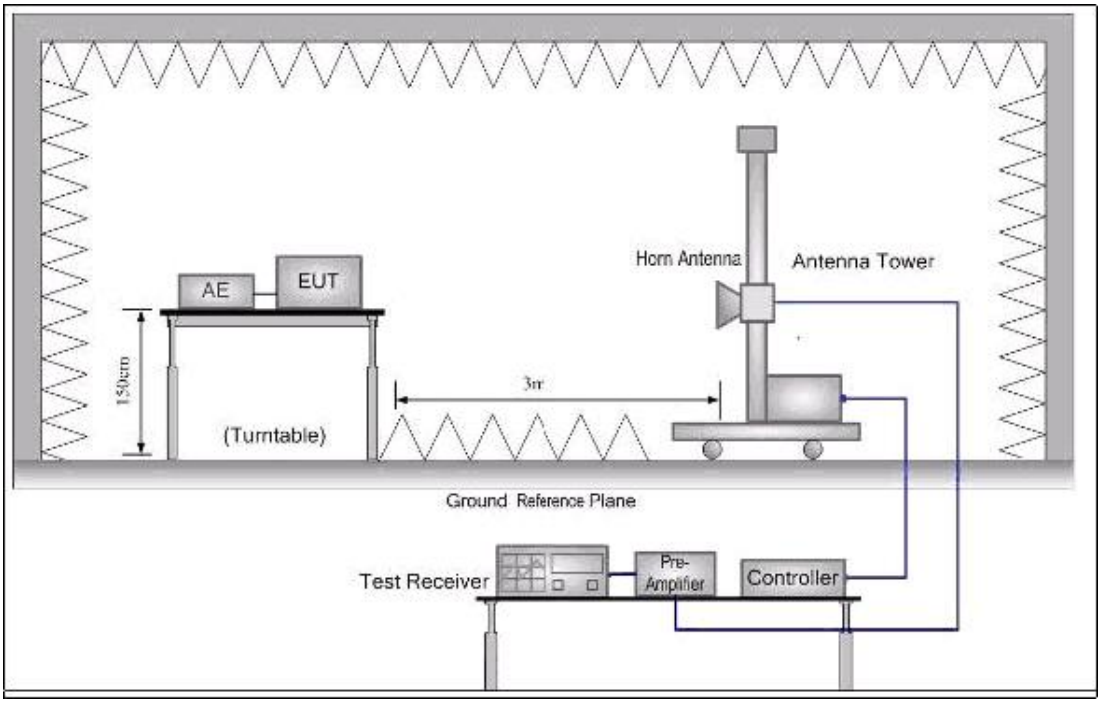
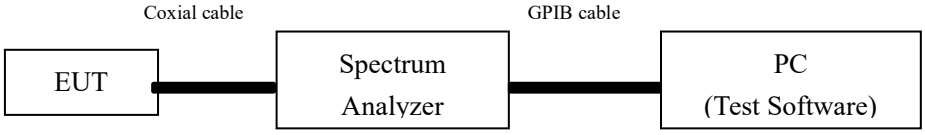



Figure 2. Above 1GHz

Conducted measurement:




1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration ).
2. Testing was performed when the equipment was in a receive-only mode.
3. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
4. The test setup has been constructed as the normal use condition. Controlling software has been activated to set the EUT on specific status.

## 5.7.4 Test result(Radiated measurement)

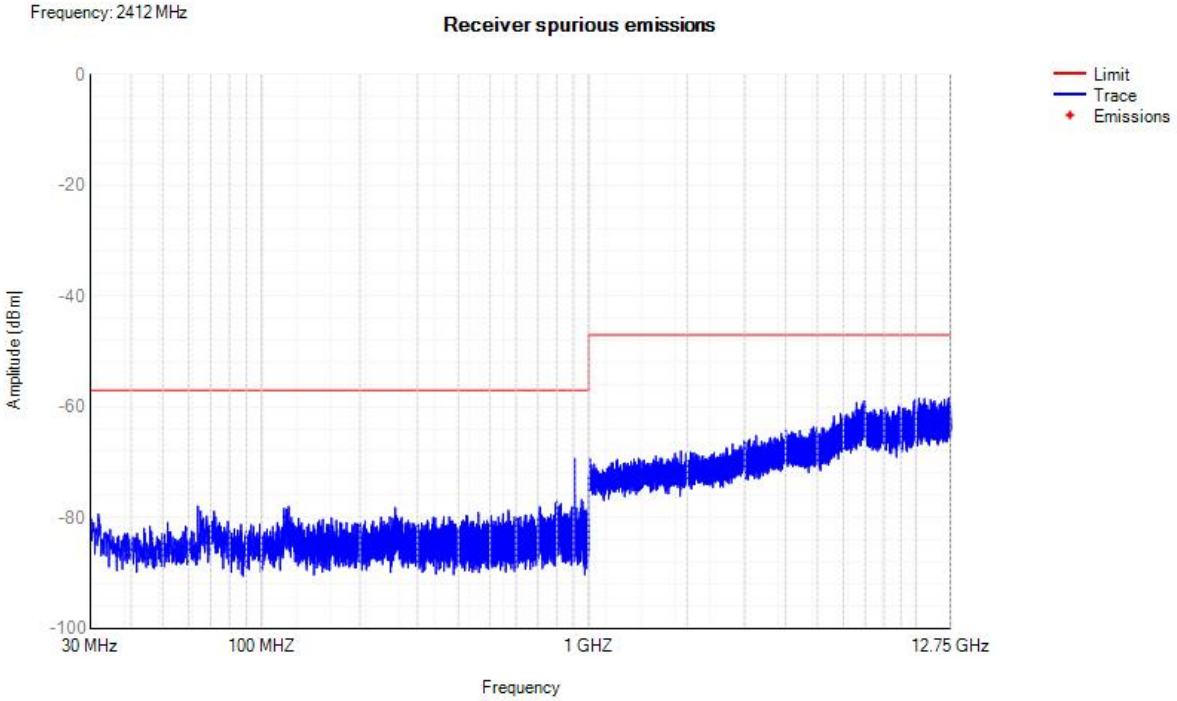
**802.11b low CH (2412 MHz)**

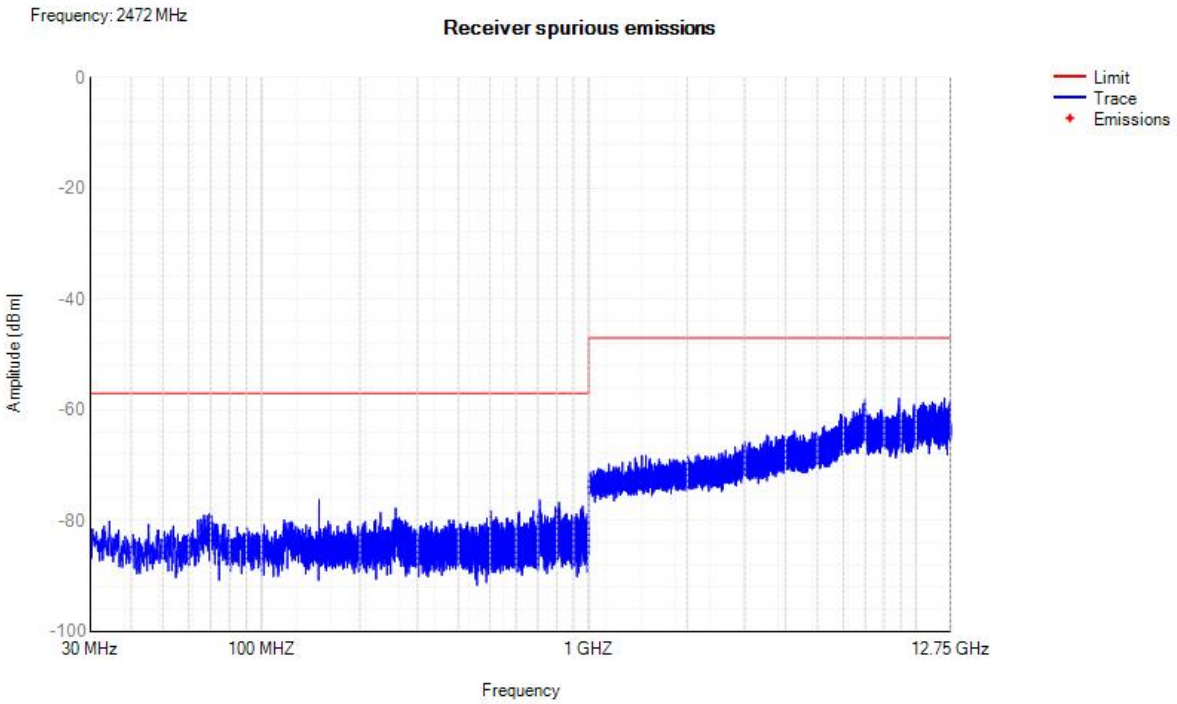
| below 1 GHz | | | | |
|---|---|---|---|---|
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 64.944 | Vertical | -72.02 | -57.00 | -15.02 |
| 207.131 | Vertical | -67.28 | -57.00 | -10.28 |
| 518.002 | Vertical | -67.17 | -57.00 | -10.17 |
| 86.375 | Horizontal | -71.81 | -57.00 | -14.81 |
| 330.991 | Horizontal | -68.60 | -57.00 | -11.60 |
| 549.845 | Horizontal | -65.75 | -57.00 | -8.75 |
| **Above 1 GHz** | | | | |
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 2060.454 | Vertical | -55.62 | -47.00 | -8.62 |
| 3378.367 | Vertical | -52.14 | -47.00 | -5.14 |
| 4899.671 | Vertical | -57.93 | -47.00 | -10.93 |
| 1943.016 | Horizontal | -55.20 | -47.00 | -8.20 |
| 3113.016 | Horizontal | -54.79 | -47.00 | -7.79 |
| 5041.587 | Horizontal | -55.09 | -47.00 | -8.09 |

**802.11b High CH (2472 MHz)**

| below 1 GHz | | | | |
|---|---|---|---|---|
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit of** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 42.371 | Vertical | -73.43 | -57.00 | -16.43 |
| 413.834 | Vertical | -68.26 | -57.00 | -11.26 |
| 431.864 | Vertical | -64.35 | -57.00 | -7.35 |
| 105.372 | Horizontal | -70.63 | -57.00 | -13.63 |
| 179.879 | Horizontal | -71.04 | -57.00 | -14.04 |
| 578.962 | Horizontal | -67.82 | -57.00 | -10.82 |
| **Above 1 GHz** | | | | |
| **Maximum Frequency** | **Spurious Emission polarization and Level** | | **Limit** | **Over Limit** |
| **MHz** | **polarization** | **dBm** | **dBm** | **dB** |
| 1496.143 | Vertical | -58.44 | -47.00 | -11.44 |
| 3182.641 | Vertical | -54.09 | -47.00 | -7.09 |
| 5182.177 | Vertical | -52.28 | -47.00 | -5.28 |
| 2417.922 | Horizontal | -52.83 | -47.00 | -5.83 |
| 2626.573 | Horizontal | -59.65 | -47.00 | -12.65 |
| 4835.059 | Horizontal | -59.22 | -47.00 | -12.22 |

## Test result(Conducted measurement)



## 5.8 Receiver Blocking

### 5.8.1 Performance Criteria

The minimum performance criterion shall be a PER less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment (see clause 5.4.1.t)).

### 5.8.2 Limit(ETSI EN 300 328 V2.2.2 (2019-07) Clause 4.3.2.11.4)

While maintaining the minimum performance criteria as defined in clause 4.3.1.12.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table 6, table 7 or table 8.

**Receiver Category 1**

Table 6: Receiver Blocking parameters for Receiver Category 1 equipment

| Wanted signal mean power from companion device (dBm) (see notes 1 and 4) | Blocking signal frequency (MHz) | Blocking signal power (dBm) (see note 4) | Type of blocking signal |
|---|---|---|---|
| (-133 dBm + 10 × log10(OCBW)) or -68 dBm whichever is less (see note 2) | 2 380<br>2 504 | -34 | CW |
| (-139 dBm + 10 × log10(OCBW)) or -74 dBm whichever is less (see note 3) | 2 300<br>2 330<br>2 360<br>2 524<br>2 584<br>2 674 | | |

NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

**Receiver Category 2**

Table 7: Receiver Blocking parameters receiver Category 2 equipment

| Wanted signal mean power from companion device (dBm) (see notes 1 and 3) | Blocking signal frequency (MHz) | Blocking signal power (dBm) (see note 3) | Type of blocking signal |
|---|---|---|---|
| (-139 dBm + 10 × log10(OCBW) + 10 dB) or (-74 dBm + 10 dB) whichever is less (see note 2) | 2 380<br>2 504<br>2 300<br>2 584 | -34 | CW |
| NOTE 1: OCBW is in Hz.<br>NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.<br>NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2. | | | |

**Receiver Category 3**

Table 8: Receiver Blocking parameters receiver Category 3 equipment

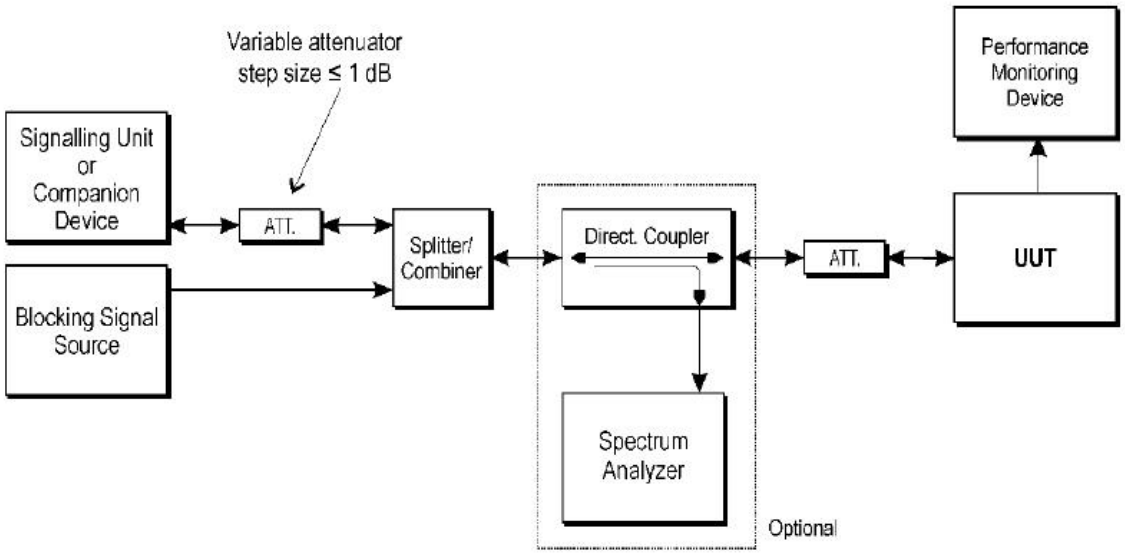
| Wanted signal mean power from companion device (dBm) (see notes 1 and 3) | Blocking signal frequency (MHz) | Blocking signal power (dBm) (see note 3) | Type of blocking Signal |
|---|---|---|---|
| (-139 dBm + 10 × log10(OCBW) + 20 dB) or (-74 dBm + 20 dB) whichever is less (see note 2) | 2 380<br>2 504<br>2 300<br>2 584 | -34 | CW |
| NOTE 1: OCBW is in Hz.<br>NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to Pmin + 30 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.<br>NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2. | | | |

### 5.8.3 Test procedure

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.11.2

| Measurement | |
|---|---|
| ☒ Conducted measurement | ☐ Radiated measurement |

### 5.8.4 Test Setup



### 5.8.5 Test result

Note: The power more than 10dBm, belong to category 1.

**802.11b**

**Receiver category 1**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 4.6 | ≤10% |
| | High | 2 504 | | 3.6 | |
| -74dB | low low | 2 300 | | 3.8 | ≤10% |
| | | 2 330 | | 3.4 | |
| | | 2 360 | | 4.6 | |
| | High | 2 524 | | 3.6 | ≤10% |
| | | 2 584 | | 3.4 | |
| | | 2 674 | | 3.8 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

**802.11g**

**Receiver category 1**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 3.7 | ≤10% |
| | High | 2 504 | | 3.4 | |
| -74dB | low low | 2 300 | | 3.5 | ≤10% |
| | | 2 330 | | 3.3 | |
| | | 2 360 | | 3.5 | |
| | High | 2 524 | | 3.2 | ≤10% |
| | | 2 584 | | 3.8 | |
| | | 2 674 | | 3.8 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

**802.11n20**

**Receiver category 1**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 3.4 | ≤10% |
| | High | 2 504 | | 3.4 | |
| -74dB | low low | 2 300 | | 4.0 | ≤10% |
| | | 2 330 | | 3.3 | |
| | | 2 360 | | 3.5 | |
| | High | 2 524 | | 3.5 | ≤10% |
| | | 2 584 | | 3.4 | |
| | | 2 674 | | 4.3 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

**802.11n40**

**Receiver category 2**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 3.9 | ≤10% |
| | High | 2 504 | | 3.4 | |
| | low | 2 300 | | 3.8 | ≤10% |
| | High | 2 584 | | 3.3 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

**802.11ax20**

**Receiver category 1**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 3.5 | ≤10% |
| | High | 2 504 | | 3.4 | |
| -74dB | low low | 2 300 | | 3.9 | ≤10% |
| | | 2 330 | | 3.5 | |
| | | 2 360 | | 3.6 | |
| | High | 2 524 | | 3.3 | ≤10% |
| | | 2 584 | | 3.4 | |
| | | 2 674 | | 4.2 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

**802.11ax40**

**Receiver category 2**

| Wanted signal mean power from companion device (dBm)Note(1) | Test Channel | Blocking signal Frequency (MHz) | Blocking signal power (dBm) | PER% Note(2) | PER Limit % |
|---|---|---|---|---|---|
| -68 dB | low | 2 380 | -34 | 3.7 | ≤10% |
| | High | 2 504 | | 3.5 | |
| | low | 2 300 | | 3.6 | ≤10% |
| | High | 2 584 | | 3.2 | |

NOTE 1: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

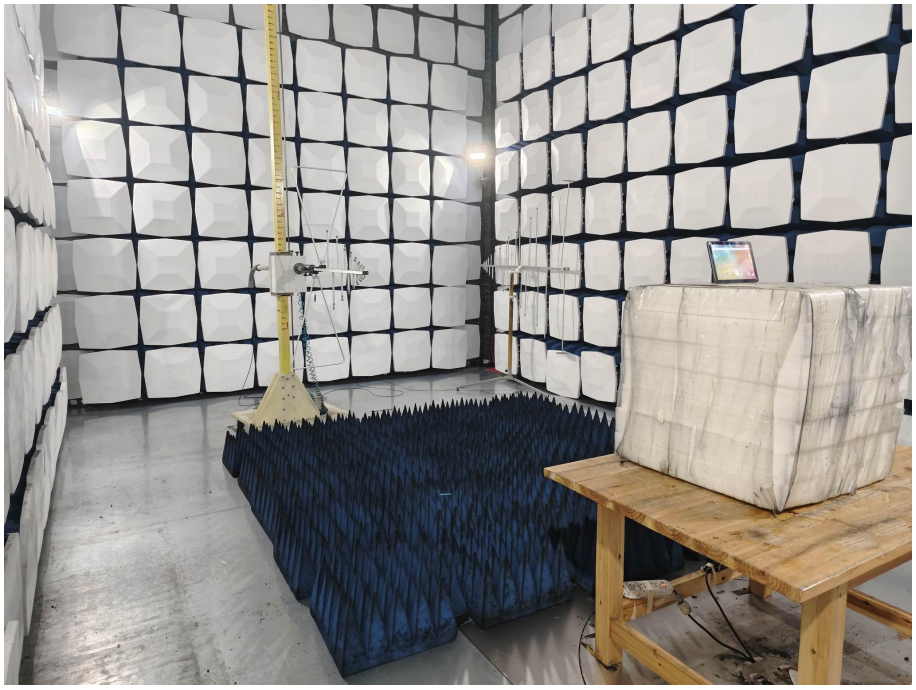
NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

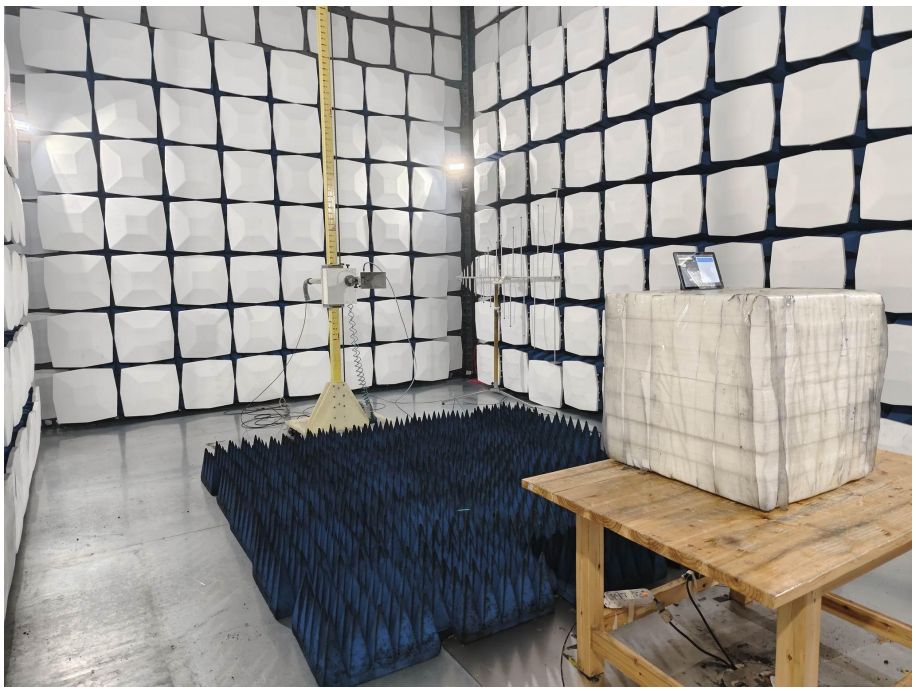
NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Note: The above results were obtained from laboratory tests.

# 6 Test Setup photograph

**Spurious Emission Test Setup**





**** End of report ****