**DEKRA Testing and Certification, S.A.U.**
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29507456

ISED CABid: ES1909

Test Report No:
NIE: 69534RRF.008

# Test Report
## USA FCC Part 15.407, 15.209
## CANADA RSS-247, RSS-Gen

| | |
|---|---|
| (*) Identification of item tested | Automotive Infotainment System |
| (*) Trademark | Mercedes-Benz |
| (*) Model and /or type reference | NTG6NQ ENTRY/MID |
| Other identification of the product | HW version: D10<br>SW version: E875.014<br>FCC ID: T8GNTG6NQEM<br>IC: 6434A-NTG6NQEM |
| (*) Features | FM, AM, DAB, USB, Bluetooth, WLAN (2,4 / 5 GHz), GNSS. |
| Applicant | HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH<br>BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY |
| Test method requested, standard | USA FCC Part 15.407 (10-1-20) Edition: Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements.<br>USA FCC Part 15.209 (10-1-20) Edition: Radiated emission limits; general requirements.<br>CANADA RSS-247 Issue 2 (February 2017).<br>CANADA RSS-Gen Issue 5 Amendment 2 (February 2021).<br>Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.<br>ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices. |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Rafael López<br>EMC Consumer & RF Lab. Manager<br>2022.01.20 11:29:41 +01'00' |
| Date of issue | 2022-01-20 |
| Report template No | FDT08_23<br>(*) "Data provided by the client" |

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# Competences and guarantees

DEKRA Testing and Certification is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

DEKRA Testing and Certification is an ISED-recognized accredited testing laboratory, CABid: ES1909, with the appropriate scope of accreditation that covers the performed tests in this report.

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# Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification internal document PODT000.

# Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

2. The sample of the model NTG6NQ ENTRY/MID is an automotive head unit to be installed in cars with the following features: FM, AM, DAB, USB, Bluetooth, WLAN and GNSS.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of result.

# Usage of samples

Samples undergoing test have been selected by: The client.

- Sample S/01 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 69534B /042 | Automotive infotainment System | NTG6N ENTRY/MID | HBM580M96F8P73 | 2021-11-15 |
| 69534B /076 | Harness | -- | -- | 2021-11-15 |

Auxiliary elements used with the Sample S/01:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 69534B /086 | USB to Ethernet Adapter | UE300 | -- | 2021-11-15 |
| 69534B /095 | Ethernet Cable | -- | -- | 2021-11-15 |

Sample S/01 has undergone the following test(s): The Conducted tests indicated in the Appendixes A, B, C.

- Sample S/02 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 69534/041 | Automotive Infotainment System | NTG6NQ ENTRY/MID | HBM580M96DRU3M | 2021/11/15 |
| 69534/074 | Harness | --- | --- | 2021/11/15 |
| 68534/102 | BT/WLAN antenna | --- | --- | 2021/11/15 |
| 69534/105 | BT/WLAN antenna | --- | --- | 2021/11/15 |

Auxiliary elements used with the Sample S/02:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 69534/084 | USB to Ethernet adapter | UE300 | --- | 2021/11/15 |
| 69534/092 | Ethernet cable | --- | --- | 2021/11/15 |
| 69534/112 | SMA adapter | --- | --- | 2021/11/15 |

Sample S/02 has undergone the following test(s): The Radiated tests indicated in the Appendixes B, C.

# Test sample description

| | | | | | |
|---|---|---|---|---|---|
| Ports…… : | Port name and description | Cable | | | |
| | | Specified max length [m] | Attached during test | Shielded | Coupled to patient(3) |
| | Car Connector A and B | >3m | ☒ | ☐ | ☐ |
| | Display Connector CID/PIP / RVC | >3m | ☒ | ☒ | ☐ |
| | USB, Eth. Connector | <3m, >3m | ☒ | ☒ | ☐ |
| | BT / WLAN-Antenna | >3m | ☒ | ☒ | ☐ |
| | FM/AM, TV/SDARS Antenna | >3m | ☒ | ☒ | ☐ |
| | GPS Antenna | >3m | ☒ | ☒ | ☐ |
| Supplementary information to the ports…… : | For EMC-Testing all cables should be connected to the connectors | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rated power supply .....: | Voltage and Frequency | | Reference poles | | | | |
| | | | L1 | L2 | L3 | N | PE |
| | ☐ | AC: | ☐ | ☐ | ☐ | ☐ | ☐ |
| | ☒ | DC: 12V Car battery / attenuator (9,5-15,5V normal operation) | | | | | |

| | |
|---|---|
| Rated Power .....: | 9,5-15,5V normal operation |
| Clock frequencies.....: | see schematics |
| Other parameters .....: | FCC ID: T8GNTG6NQEM / IC: 6434A-NTG6NQEM |
| Software version .....: | E875.014 |
| Hardware version .....: | D10 / Serial Product |
| Dimensions in cm (W x H x D) ....: | 182 x 78 x 160 mm |

| | | |
|---|---|---|
| Mounting position .....: | ☐ | Table top equipment |
| | ☐ | Wall/Ceiling mounted equipment |
| | ☐ | Floor standing equipment |
| | ☐ | Hand-held equipment |
| | ☒ | Other: n/a - automotive headunit |

| | | | |
|---|---|---|---|
| Modules/parts.....: | Module/parts of test item | Type | Manufacturer |
| | -- | | |
| Accessories (not part of the test item) .....: | Description | Type | Manufacturer |
| | Display (vehicle touch display) | A247 905 69 | DAIMLER original |
| | CAN-Box | - | HBAS |
| | Cable harness | - | HBAS |
| | BT/WLAN-Antenna | A247 905 83 | Hirschmann |
| Documents as provided by the applicant.....: | Description | File name | Issue date |
| | Technical Description | | |
| | -- | | |

(3) Only for Medical Equipment

# Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH

BECKER-GOERING-STR. 16, 76307 KARLSBAD, GERMANY

# Testing period and place

| | |
|---|---|
| **Test Location** | DEKRA Testing and Certification S.A.U. |
| **Date (start)** | 2021-12-02 |
| **Date (finish)** | 2021-12-10 |

# Document history

| Report number | Date | Description |
|---|---|---|
| 69534RRF.008 | 2022-01-20 | First release. |

# Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 20 %<br>Max. = 75 % |

In the semianechoic chamber, the following limits were not exceeded during the test.

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 20 %<br>Max. = 75 % |

In the chamber for conducted measurements, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 20 %<br>Max. = 75 % |

# Remarks and comments

The tests have been performed by the technical personnel: José Manuel Jiménez, Javier Miguel Nadales Lisbona, Antonio Ruiz and Rafael Fernandez Martin.

Used instrumentation:

Radiated Measurements

| | | Last Calibration | Due Calibration |
|---|---|---|---|
| 1. | Semianechoic Absorber Lined Chamber FRANKONIA SAC-3 | N/A | N/A |
| 2. | Shielded Room FRANKONIA | N/A | N/A |
| 3. | Biconical/Log Antenna 30 MHz - 6 GHz ETS LINDGREN 3142E | 2021/09 | 2024/09 |
| 4. | RF Preamplifier 40 dB, 10 MHz - 6 GHz BONN ELEKTRONIK BLNA 0160-01N | N/A | N/A |
| 5. | EMI Test Receiver 20Hz-26.5GHz ROHDE AND SCHWARZ ESU26 | 2020/05 | 2022/05 |
| 6. | DC Power Supply 150V/22A, AGILENT TECHNOLOGIES N8740A | N/A | N/A |
| 7. | Digital Multimeter FLUKE 175 | 2021/11 | 2022/11 |
| 8. | Horn Antenna 1-18 GHz SCHWARZBECK MESS- ELEKTRONIK BBHA 9120 D | 2021/07 | 2024/07 |
| 9. | Horn Antenna 18-40 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9170 | 2020/05 | 2023/05 |
| 10. | Preamplifier 30 dB 500MHz-18GHz SCHWARZBECK BBV 9718 C | 2021/06 | 2022/06 |
| 11. | Pre-Amplifier G>30dB 17-40GHz BONN ELEKTRONIK BLMA 1840-4A | 2021/09 | 2022/09 |
| 12. | EMI Test Receiver 2Hz-44GHz ROHDE AND SCHWARZ ESW44 | 2021/09 | 2023/09 |
| 13. | Digital Multimeter FLUKE 179 | 2021/10 | 2022/10 |
| 14. | DC Power Supply, 30V/5A KEYSIGHT TECHNOLOGIES U8002A | N/A | N/A |

Conducted Measurements:

| | | Last Calibration | Due Calibration |
|---|---|---|---|
| 1. | Shielded Room ETS LINDGREN S101 | N/A | N/A |
| 2. | Signal and Spectrum Analyzer 10 Hz - 40 GHz ROHDE AND SCHWARZ FSV40 | 2021/02 | 2023/02 |
| 3. | Extension for Open Switch Unit up to 40 GHz ROHDE AND SCHWARZ OSP-B157Wx | N/A | N/A |
| 4. | Open Switch Unit up to 7.5GHz ROHDE AND SCHWARZ OSP-B157W8 PLUS | 2021/08 | 2023/08 |
| 5. | DC Power Supply 40V/40A Rohde & Schwarz NGPE40 | N/A | N/A |
| 6. | Digital Multimeter FLUKE 175 | 2021/11 | 2022/11 |

# Testing verdicts

| | |
|---|---|
| Not applicable: | N/A |
| Pass: | P |
| Fail: | F |
| Not measured: | N/M |

# Summary

## A. Common requirements for all bands

| FCC PART 15 PARAGRAPH / RSS-247 | | |
|---|---|---|
| **Test case** | **Verdict** | **Remark** |
| Duty Cycle | P | |
| 99% Occupied Bandwidth | P | |
| 26 dB Emission Bandwidth (EBW) | P | |
| Supplementary information and remarks:<br>None. | | |

## B. U-NII-1 Band: 5.15 - 5.25 GHz

| FCC PART 15 PARAGRAPH / RSS-247 | | | |
|---|---|---|---|
| **Requirement – Test case** | | **Verdict** | **Remark** |
| FCC 15.407 (a)(1)(iv) | Transmitter Maximum conducted Output Power | P | |
| RSS-247 6.2.1.1 | Transmitter Maximum Equivalent Isotropically Radiated Power EIRP | P | |
| FCC 15.407 (a)(1)(iv) | Transmitter Maximum Power Spectral Density | P | |
| RSS-247 6.2.1.1 | Transmitter EIRP Spectral Density | P | |
| FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2 | Transmitter Out of Band Radiated Emissions | P | |
| FCC 15.407 (b)(1) / RSS-247 6.2.1.2 | Transmitter Band Edge Radiated Emissions | P | |
| Supplementary information and remarks:<br>None. | | | |

## C. U-NII-3 Band: 5.725 - 5.85 GHz

| FCC PART 15 PARAGRAPH / RSS-247 | | | |
|---|---|---|---|
| Requirement – Test case | | Verdict | Remark |
| FCC 15.407 (a)(3) / RSS-247 6.2.4.1 | Transmitter Maximum conducted Output Power | P | |
| FCC 15.407 (e) / RSS-247 6.2.4.1 | 6 dB bandwidth. | P | |
| FCC 15.407 (a)(3) / RSS-247 6.2.4.1 | Transmitter Maximum Power Spectral Density | P | |
| FCC 15.407 (b)(4)(6) / RSS-247 6.2.4.2 | Transmitter Out of Band Radiated Emissions | P | |
| FCC 15.407 (b)(4) / RSS-247 6.2.4.2 | Transmitter Band Edge Radiated Emissions | P | |
| Supplementary information and remarks:<br>None. | | | |

# **Appendix A:** Test Common requirements for all bands

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# TEST CONDITIONS

(*) Declared by the Client.

POWER SUPPLY (V):

V nonimal: 12 Vdc.

Type of Power Supply: DC External (Car Battery).

ANTENNA:

Type of Antenna: External.

Maximum Declared Antenna Gain: +0.9 dBi (antenna gain plus antenna cable loss).

TEST FREQUENCIES (*):

Band U-NII-1: TEST FREQUENCIES:

| | | |
|---|---|---|
| Technology Tested: | WLAN (IEEE 802.11 a,n,ac) / U-NII-1 | |
| Modes: | 802.11a20: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps | |
| | 802.11n HT20: MCS0 to MCS7 | |
| | 802.11n HT40: MCS0 to MCS7 | |
| | 802.11ac VHT20: MCS0 to MCS9 | |
| | 802.11ac VHT40: MCS0 to MCS9 | |
| | 802.11ac VHT80: MCS0 to MCS9 | |
| Setting of cores / ports: | One port. | |
| Beamforming: | No. | |
| Frequency Range: | 5150 MHz to 5250 MHz | |
| Channel Spacing: | 20 MHz | |
| Transmit Channels | Channel | Channel Frequency (MHz) |
| | Low: 36 | 5180 |
| | Middle: 40 | 5200 |
| | High: 48 | 5240 |
| Channel Spacing: | 40 MHz | |
| Transmit Channels | Channel | Channel Frequency (MHz) |
| | Low: 38 | 5190 |
| | High: 46 | 5230 |
| Channel Spacing: | 80 MHz | |
| Transmit Channels | Middle: 42 | 5210 |

Band U-NII-3:

| | | |
|---|---|---|
| Technology Tested: | WLAN (IEEE 802.11 a/n/ac): U-NII-3 band | |
| Modes: | 802.11a: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps | |
| | 802.11n HT20: MCS0 to MCS7 | |
| | 802.11n HT40: MCS0 to MCS7 | |
| | 802.11ac VHT20: MCS0 to MCS8 | |
| | 802.11ac VHT40: MCS0 to MCS9 | |
| | 802.11ac VHT80: MCS0 to MCS9 | |
| Setting of cores / ports: | One port. | |
| Beamforming: | No | |
| Frequency Range: | 5725 MHz to 5850 MHz | |
| Channel Spacing: | 20 MHz | |
| Transmit Channels | Channel | Channel Frequency (MHz) |
| | Low: 149 | 5745 |
| | Middle: 157 | 5785 |
| | High: 165 | 5825 |
| Channel Spacing: | 40 MHz | |
| Transmit Channels | Channel | Channel Frequency (MHz) |
| | Low: 151 | 5755 |
| | High: 159 | 5795 |
| Channel Spacing: | 80 MHz | |
| Transmit Channels | Middle: 155 | 5775 |

POWER SETTINGS (*):

**U-NII-1. FCC:**

**WLAN1**

| Channel | Frequency | 11a | 11n | 11ac |
|---|---|---|---|---|
| 36 | 5180 MHz | 16 | 16 | 16 |
| 40 | 5200 MHz | 16 | 16 | 16 |
| 44 | 5220 MHz | 16 | 16 | 16 |
| 48 | 5240 MHz | 16 | 16 | 16 |
| 38 | 5190 MHz | | 16 | 16 |
| 46 | 5230 MHz | | 16 | 16 |
| 42 | 5210 MHz | | | 16 |

**U-NII-1. IC:**

**WLAN1**

| Channel | Frequency | 11a | 11n | 11ac |
|---|---|---|---|---|
| 36 | 5180 MHz | 12 | 12 | 12 |
| 40 | 5200 MHz | 12 | 12 | 12 |
| 44 | 5220 MHz | 12 | 12 | 12 |
| 48 | 5240 MHz | 12 | 12 | 12 |
| 38 | 5190 MHz | | 12 | 12 |
| 46 | 5230 MHz | | 12 | 12 |
| 42 | 5210 MHz | | | 12 |

**U-NII-3. FCC and IC:**

**WLAN1**

| Channel | Frequency | 11a | 11n | 11ac |
|---|---|---|---|---|
| 149 | 5745 MHz | 16 | 16 | 16 |
| 157 | 5785 MHz | 16 | 16 | 16 |
| 165 | 5825 MHz | 17 | 17 | 17 |
| 151 | 5755 MHz | | 16 | 16 |
| 159 | 5795 MHz | | 16 | 16 |
| 155 | 5775 MHz | | | 16 |

# Transmitter Duty Cycle

SPECIFICATION:

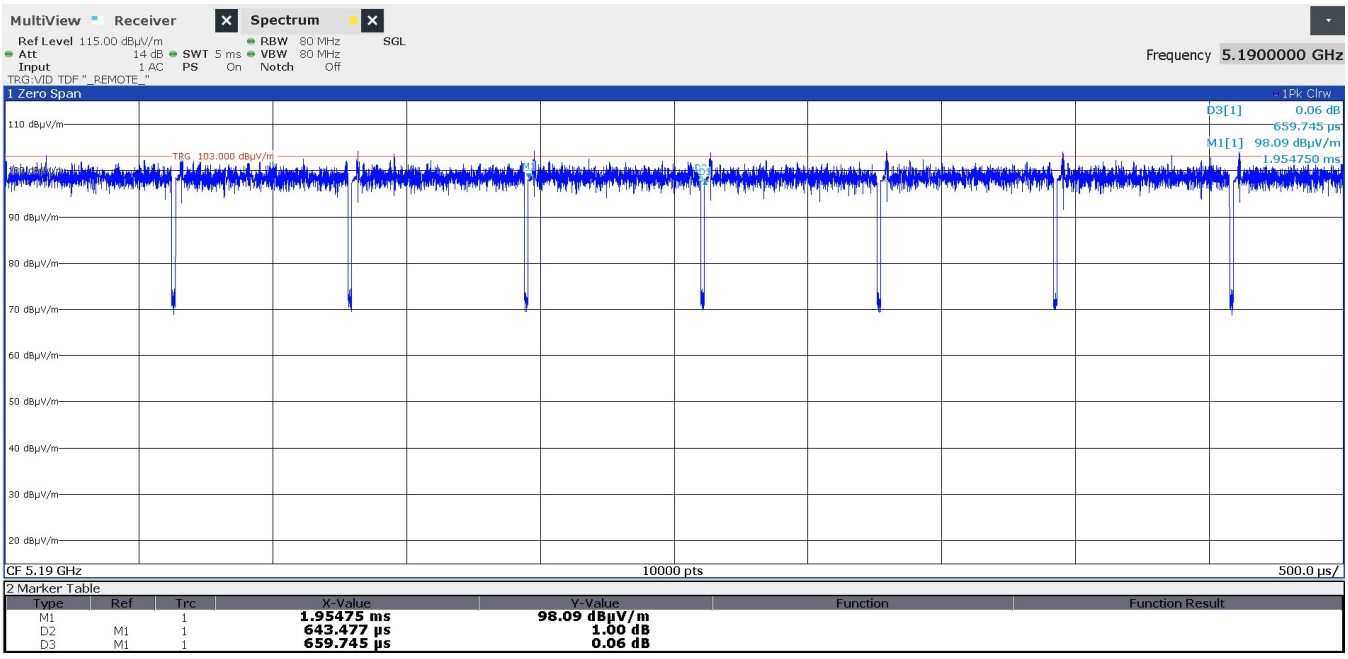
Unless otherwise specified, e.g. §15.255(b) and §15.256(l)(5), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

RESULTS:

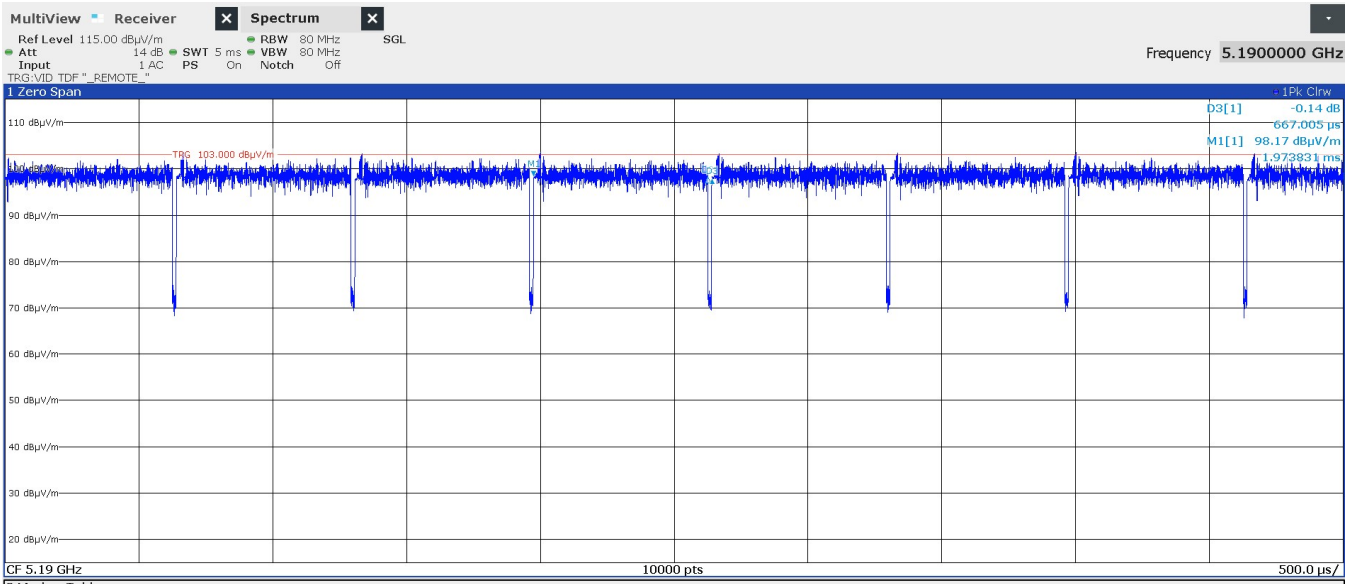
The results below are for data rates with a duty cycle less than 98%. The results for all rest of modes having a value > 98%.

| Mode | Sub-band U-NII-1 & Sub-band U-NII-3 | | |
|---|---|---|---|
| | Pulse Duration (ms) | Period (ms) | Duty Cycle Correction (dB) |
| 802.11n40 | 0.643477 | 0.10843 | 0.10843 |
| 802.11ac40 | 0.651021 | 0.10534 | 0.10534 |
| 802.11ac80 | 0.32326 | 0.21025 | 0.21025 |

**Mode 802.11 n40:**



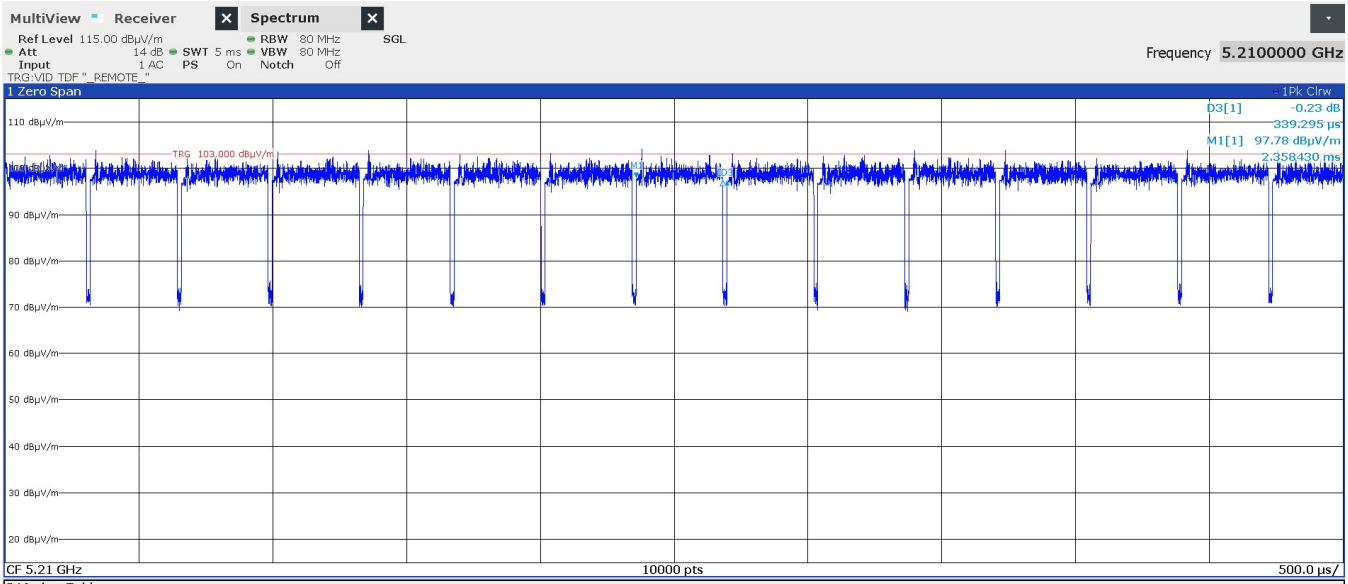
## Mode 802.11 ac40:




2 Marker Table

| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.973831 ms | 98.17 dBµV/m | | |
| D2 | M1 | 1 | 651.021 µs | 0.16 dB | | |
| D3 | M1 | 1 | 667.005 µs | -0.14 dB | | |

## Mode 802.11 ac80:




2 Marker Table

| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.35843 ms | 97.78 dBµV/m | | |
| D2 | M1 | 1 | 323.26 µs | -0.25 dB | | |
| D3 | M1 | 1 | 339.295 µs | -0.23 dB | | |

# Transmitter 99% Occupied Bandwidth

SPECIFICATION:

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “x dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

**U-NII-1 (5150-5250 MHz) / U-NII-3 (5725-5850 MHz):**

- 802.11a20: 6 Mbit/s / SISO
- 802.11n HT20: MCS0 / SISO
- 802.11ac VHT20: MCS0 / SISO
- 802.11n HT40: MCS0 / SISO
- 802.11ac VHT40: MCS0 / SISO
- 802.11ac VHT80: MCS0x1 / SISO

## RESULTS:

### FCC power setting

**Mode 802.11 a20:**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 16.60 | 16.60 | 16.70 |
| Measurement uncertainty (%) | <± 2.00 | | |

**Mode 802.11 n20 (HT20):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.60 | 17.60 | 17.60 |
| Measurement uncertainty (%) | <± 2.00 | | |

**Mode 802.11 ac20 (VHT20):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.70 | 17.60 | 17.70 |
| Measurement uncertainty (%) | <± 2.00 | | |

**Mode 802.11 n40 (HT40):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|---|---|---|
| 99% Occupied Bandwidth (MHz) | 36.25 | 36.50 |
| Measurement uncertainty (%) | <± 2.00 | |

**Mode 802.11 ac40 (VHT40):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|---|---|---|
| 99% Occupied Bandwidth (MHz) | 36.25 | 36.25 |
| Measurement uncertainty (%) | <± 2.00 | |

**Mode 802.11 ac80 (VHT80):**

**U-NII-1 (5150-5250 MHz)**

| Channel | Single Channel 42 (5210 MHz) |
|---|---|
| 99% Occupied Bandwidth (MHz) | 76.50 |
| Measurement uncertainty (%) | <± 2.00 |

**IC power setting**

**Mode 802.11 a20:**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 16.796 | 16.804 | 16.804 |
| Measurement uncertainty (kHz) | <±36.95 | | |

**Mode 802.11 n20 (HT20):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.704 | 17.704 | 17.724 |
| Measurement uncertainty (kHz) | <±36.95 | | |

**Mode 802.11 ac20 (VHT20):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 44 (5220 MHz) | High Channel 48 (5240 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.692 | 17.700 | 17.700 |
| Measurement uncertainty (kHz) | <±36.95 | | |

**Mode 802.11 n40 (HT40):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|---|---|---|
| 99% Occupied Bandwidth (MHz) | 36.184 | 36.200 |
| Measurement uncertainty (kHz) | <±62.36 | |

**Mode 802.11 ac40 (VHT40):**

**U-NII-1 (5150-5250 MHz)**

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|---|---|---|
| 99% Occupied Bandwidth (MHz) | 36.200 | 36.208 |
| Measurement uncertainty (kHz) | <±62.36 | |

**Mode 802.11 ac80 (VHT80):**

**U-NII-1 (5150-5250 MHz)**

| Channel | Single Channel 42 (5210 MHz) |
|---|---|
| 99% Occupied Bandwidth (MHz) | 76.304 |
| Measurement uncertainty (kHz) | <±124.71 |

**FCC and IC power setting**

**Mode 802.11 a20:**

**U-NII-3 (5725-5850 MHz)**

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 16.70 | 16.60 | 16.70 |
| Measurement uncertainty (%) | <± 2.00 | | |

**Mode 802.11 n20 (HT20):**

**U-NII-3 (5725-5850 MHz)**

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.70 | 17.60 | 17.60 |
| Measurement uncertainty (%) | <± 2.00 | | |

**Mode 802.11 ac20 (VHT20):**

**U-NII-3 (5725-5850 MHz)**

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|---|---|---|---|
| 99% Occupied Bandwidth (MHz) | 17.70 | 17.60 | 17.60 |
| Measurement uncertainty (%) | <± 2.00 | | |