





**FCC PART 15.236**  
**ISED C RSS-210, ISSUE 11, JUNE 2024**  
**TEST REPORT**

For

**Lectrosonics, Inc.**

581 Laser Rd. NE  
Rio Rancho, NM 87124, USA

**FCC ID: DBZDSSMB**  
**IC: 8024A-DSSMB**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Digital Wireless Microphone Transmitter
<b>Prepared By:</b> Arturo Reyes RF Test Engineer	
<b>Report Number:</b> R2411182-236	
<b>Report Date:</b> 2024-12-31	
<b>Reviewed By:</b> Steven Lianto EMC & RF Lead	
Bay Area Compliance Laboratories Corp. 1274 Anvilwood Avenue, Sunnyvale, CA 94089, USA Tel: (408) 732-9162 Fax: (408) 732-9164	



**Note:** This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by A2LA\*, NIST, or any agency of the Federal Government.

\* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "\*" (Rev.2)

## TABLE OF CONTENTS

<b>1. GENERAL DESCRIPTION .....</b>	<b>5</b>
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....	5
1.2 MECHANICAL DESCRIPTION OF EUT .....	5
1.3 OBJECTIVE .....	5
1.4 RELATED SUBMITTAL(S)/GRANT(S).....	5
1.5 TEST METHODOLOGY .....	5
1.6 MEASUREMENT UNCERTAINTY.....	6
1.7 TEST FACILITY REGISTRATIONS .....	6
1.8 TEST FACILITY ACCREDITATIONS.....	7
<b>2. EUT TEST CONFIGURATION.....</b>	<b>9</b>
2.1 JUSTIFICATION.....	9
2.2 EUT EXERCISE SOFTWARE.....	9
2.3 SPECIAL EQUIPMENT .....	9
2.4 EQUIPMENT MODIFICATIONS .....	9
2.5 LOCAL SUPPORT EQUIPMENT.....	10
2.6 REMOTE SUPPORT EQUIPMENT .....	10
2.7 POWER SUPPLY AND LINE FILTERS.....	10
2.8 INTERFACE PORTS AND CABLES .....	10
<b>3. SUMMARY OF TEST RESULTS.....</b>	<b>11</b>
<b>4. FCC §15.236 (D) &amp; RSS-210 SECTION G.2 – RF OUTPUT POWER .....</b>	<b>12</b>
4.1 APPLICABLE STANDARDS .....	12
4.2 TEST PROCEDURE .....	12
4.3 TEST SETUP BLOCK DIAGRAM.....	13
4.4 TEST EQUIPMENT LIST AND DETAILS .....	13
4.5 TEST ENVIRONMENTAL CONDITIONS.....	13
4.6 TEST RESULTS .....	14
<b>5. FCC §2.1049, FCC §15.236 (F)(1)(II), FCC §15.236 (G)(2), RSS-210 SECTION G.2 &amp; G.3 &amp; ETSI EN 300 422-1 (4.2.4.2.2) – OCCUPIED BANDWIDTH &amp; EMISSION MASK.....</b>	<b>15</b>
5.1 APPLICABLE STANDARDS .....	15
5.2 TEST PROCEDURE .....	16
5.3 TEST SETUP BLOCK DIAGRAM.....	17
5.4 TEST EQUIPMENT LIST AND DETAILS .....	17
5.5 TEST ENVIRONMENTAL CONDITIONS.....	17
5.6 TEST RESULTS .....	18
5.7 OCCUPIED BANDWIDTH PLOTS .....	19
5.8 EMISSION MASK PLOTS .....	26
<b>6. FCC §15.236 (G)(4), RSS-210 SECTION G.5 &amp; ETSI EN 300 422-1 (4.2.4.1.2) – SPURIOUS EMISSIONS AT ANTENNA PORT .....</b>	<b>40</b>
6.1 APPLICABLE STANDARDS .....	40
6.2 TEST PROCEDURE .....	41
6.3 TEST SETUP BLOCK DIAGRAM.....	41
6.4 TEST EQUIPMENT LIST AND DETAILS .....	41
6.5 TEST ENVIRONMENTAL CONDITIONS.....	41
6.6 TEST RESULTS .....	41
6.7 SPURIOUS EMISSIONS AT ANTENNA PORT TEST PLOTS.....	42
<b>7. FCC §15.205, FCC §15.209, FCC §15.236 (G)(4), RSS-210 SECTION G.5 &amp; ETSI EN 300 422-1 (4.2.4.1.2) – FIELD STRENGTH OF SPURIOUS RADIATION.....</b>	<b>56</b>
7.1 APPLICABLE STANDARDS .....	56
7.2 TEST PROCEDURE .....	58
7.3 TEST SETUP DIAGRAM (SUBSTITUTION) .....	58
7.4 TEST SETUP DIAGRAM (VASONA).....	59

7.5 TEST EQUIPMENT LIST AND DETAILS .....60

7.6 TEST ENVIRONMENTAL CONDITIONS.....60

7.7 TEST RESULTS (SUBSTITUTION).....61

7.8 TEST RESULTS (VASONA) .....63

**8. FCC §2.1055, FCC §15.236 (F)(1)(III), RSS-210 SECTION G.2 & G.2 – FREQUENCY STABILITY .....78**

8.1 APPLICABLE STANDARDS .....78

8.2 TEST PROCEDURE .....79

8.3 TEST SETUP DIAGRAM.....80

8.4 TEST EQUIPMENT LIST AND DETAILS .....80

8.5 TEST ENVIRONMENTAL CONDITIONS.....80

8.6 TEST RESULTS .....81

8.7 FREQUENCY STABILITY TEST PLOTS .....87

**9. ANNEX A (NORMATIVE) – EUT TEST SETUP PHOTOGRAPHS.....164**

**10. ANNEX B (NORMATIVE) – EUT EXTERNAL PHOTOGRAPHS.....165**

**11. ANNEX C (NORMATIVE) – EUT INTERNAL PHOTOGRAPHS.....166**

**12. ANNEX D (NORMATIVE) – A2LA ELECTRICAL TESTING CERTIFICATE.....167**

**DOCUMENT REVISION HISTORY**

<b>Revision Number</b>	<b>Report Number</b>	<b>Description of Revision</b>	<b>Date of Revision</b>
0	R2411182-236	Original Report	2024-12-31

## **1. General Description**

---

### **1.1 Product Description for Equipment Under Test (EUT)**

This test report has been compiled on behalf of *Lectrosonics, Inc.* and their product model: *DSSM-B1C1* (FCC ID: DBZDSSMB, IC: 8024A-DSSMB), which henceforth is referred to as the EUT. The EUT is a Digital Wireless Microphone Transmitter. The EUT operates in the frequency range: 537.600 – 607.950 MHz, 614.050 – 615.950 MHz, and 653.050 – 662.950 MHz.

### **1.2 Mechanical Description of EUT**

The EUT measures approximately: 6.6 cm (L) x 4.9 cm (W) x 1.7 cm (H), and weighs approximately 0.1 kg.

*The data gathered are from the typical production sample provided by the Lectrosonics, Inc. with serial number 106.*

### **1.3 Objective**

The following test report was prepared on behalf of *Lectrosonics, Inc.* in accordance with Part 15.236 of the Federal Communications Commission rules and RSS-210 Issue 11.

The objective was to determine compliance with Part 15.236 of the FCC Rules, and RSS-210 Issue 11, limits for RF output power, Operating Bandwidth & Emission Mask, Field strength at Spurious Emissions, and Frequency Stability.

### **1.4 Related Submittal(s)/Grant(s)**

None

### **1.5 Test Methodology**

All measurements contained in this report were conducted in accordance with ANSI/TIA-603-E-2016, FCC KDB 971168 D01 Power Meas License Digital Systems v03r01, KDB 206256 D01v02 and ETSI EN 300 422-1 v2.2.1 (2021-11) Wireless Microphones; Audio PMSE up to 3 GHz; Part 1: Audio PMSE Equipment up to 3 GHz; Harmonised Standard for access to radio spectrum.

All tests were performed at Bay Area Compliance Laboratories Corp.

## 1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Parameter	Measurement uncertainty
Occupied Channel Bandwidth	±5%
RF output power, conducted	±0.57 dB
Power Spectral Density, conducted	±1.48 dB
Unwanted Emissions, conducted	±1.57 dB
All emissions, radiated	±4.0 dB
AC power line Conducted Emission	±2.0 dB
Temperature	±2°C
Humidity	±5%
DC and low frequency voltages	±1.0%
Time	±2%
Duty Cycle	±3%

## 1.7 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Innovation, Science and Economic development Canada under Registration Numbers: 3062A.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Appendix B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0428.

## 1.8 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

**A- An independent, 3<sup>rd</sup>-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:20127 by A2LA (Test Laboratory Accreditation Certificate Number 3297.02),** in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (\*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2017 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report..

BACL's ISO/IEC 17025:2017 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices, Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

**B- A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body**

- - For the USA (Federal Communications Commission):

- 1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
- 2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
- 3- All Telephone Terminal Equipment within FCC Scope C.

- For the Canada (Innovation, Science and Economic development Canada - ISED):

- 1- All Scope 1-Licence-Exempt Radio Frequency Devices;
- 2- All Scope 2-Licensed Personal Mobile Radio Services;
- 3- All Scope 3-Licensed General Mobile & Fixed Radio Services;
- 4- All Scope 4-Licensed Maritime & Aviation Radio Services;
- 5- All Scope 5-Licensed Fixed Microwave Radio Services
- 6- All Broadcasting Technical Standards (BETS) in the Category I Equipment Standards List.

For Singapore (Infocomm Media Development Authority - IMDA):

- 1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IMDA MRA Recognition Scheme: 2011, Annex 2
2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IMDA MRA Recognition Scheme: 2011, Annex 2

- For the Hong Kong Special Administrative Region:

- 1 All Radio Equipment, per KHCA 10XX-series Specifications;
- 2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
- 3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.

- For Japan:

- 1 MIC Telecommunication Business Law (Terminal Equipment):
  - All Scope A1 - Terminal Equipment for the Purpose of Calls;
  - All Scope A2 - Other Terminal Equipment
- 2 Radio Law (Radio Equipment):
  - All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
  - All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
  - All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

**C- A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.01) to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:**

- 1 Electronics and Office Equipment:
  - for Telephony (ver. 3.0)
  - for Audio/Video (ver. 3.0)
  - for Battery Charging Systems (ver. 1.1)
  - for Set-top Boxes & Cable Boxes (ver. 4.1)
  - for Televisions (ver. 6.1)
  - for Computers (ver. 6.0)
  - for Displays (ver. 6.0)
  - for Imaging Equipment (ver. 2.0)
  - for Computer Servers (ver. 2.0)
- 2 Commercial Food Service Equipment
  - for Commercial Dishwashers (ver. 2.0)
  - for Commercial Ice Machines (ver. 2.0)
  - for Commercial Ovens (ver. 2.1)
  - for Commercial Refrigerators and Freezers
- 3 Lighting Products
  - For Decorative Light Strings (ver. 1.5)
  - For Luminaires (including sub-components) and Lamps (ver. 1.2)
  - For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
  - For Integral LED Lamps (ver. 1.4)
- 4 Heating, Ventilation, and AC Products
  - for Residential Ceiling Fans (ver. 3.0)
  - for Residential Ventilating Fans (ver. 3.2)
- 5 Other
  - For Water Coolers (ver. 3.0)

**D. A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:**

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISEDC) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
  - o BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
  - o NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
  - o EMC Directive 2014/30/EU US-EU EMC & Telecom MRA CAB (NB)
  - o Radio Equipment (RE) Directive 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
  - o Low Voltage Directive (LVD) 2014/35/EU
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA) APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Media Development Authority - IMDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter
- USA:
  - o ENERGY STAR Recognized Test Laboratory – US EPA
  - o Telecommunications Certification Body (TCB) – US FCC;
  - o Nationally Recognized Test Laboratory (NRTL) – US OSHA
- Vietnam: APEC Tel MRA -Phase I;



## 2. EUT Test Configuration

### 2.1 Justification

The EUT was configured for testing according to ANSI/TIA-603-E-2016, ANSI C63.26-2015, KDB 971168 D01 v03r01, and ETSI EN 300 422-1 v2.2.1 (2021-11).

### 2.2 EUT Exercise Software

EUT configurations were managed via an integrated menu within the device. Options to change the frequency and power were displayed on the screen of the EUT.

Mode	Channel	Frequency (MHz)	Power Setting
D2	Low	537.600	50mW
	Middle	572.775	
	High	607.950	
	Low	614.050	20mW
	High	615.950	
	Low	653.050	
	High	662.950	
HDM	Low	537.600	4mW
	Middle	572.775	
	High	607.950	
	Low	614.050	
	High	615.950	
	Low	653.050	
	High	662.950	

### 2.3 Special Equipment

No special equipment was used during testing.

### 2.4 Equipment Modifications

No modifications were made to the EUT during testing.

**2.5 Local Support Equipment**

None

**2.6 Remote Support Equipment**

None

**2.7 Power Supply and Line Filters**

Manufacturer	Description	Model	Serial Number
Lectrosonics, Inc.	Lithium Ion Battery Pack	LB-50	-

**2.8 Interface Ports and Cables**

None

### 3. Summary of Test Results

FCC & ISEDC Rules	Descriptions of Test	Result (s)
FCC 2.1093 ISEDC RSS-102	RF Exposure	Compliant <sup>1</sup>
FCC §15.236 (d) RSS-210 Section G.2	RF Output Power	Compliant
FCC §2.1049 FCC §15.236 (f)(1)(ii) FCC §15.236 (g)(2) RSS-210 Section G.2 & G.3 ETSI EN 300 422-1 (4.2.4.2.2)	Operating Bandwidth & Emission Mask	Compliant
FCC §15.236 (g)(4) RSS-210 Section G.5 ETSI EN 300 422-1 (4.2.4.1.2)	Spurious Emissions at the Antenna Port	Compliant
FCC §15.205, FCC §15.209 FCC §15.236 (g)(4) RSS-210 Section G.5 ETSI EN 300 422-1 (4.2.4.1.2)	Field Strength of Spurious Emissions	Compliant
FCC §2.1055 FCC §15.236 (f)(1)(iii) RSS-210 Section G.2 & G.4	Frequency Stability	Compliant

Note<sup>1</sup>: Please refer to SAR test report for test results.

*BACL is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report. Information provided by the customer, e.g., antenna gain, can affect the validity of results.*

## 4. FCC §15.236 (d) & RSS-210 Section G.2 – RF Output Power

### 4.1 Applicable Standards

According to FCC§15.236 (d):

The maximum radiated power shall not exceed the following values:

- 1) In the bands allocated and assigned for broadcast television:
  - i. Wireless microphones: 50 mW EIRP.
  - ii. Wireless multichannel audio systems with a bandwidth up to 1 MHz: 50 mW EIRP.
  - iii. Wireless multichannel audio systems with a bandwidth greater than 1 MHz: 100 mW EIRP.
- 2) In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP.

According to RSS-210 Section G.2:

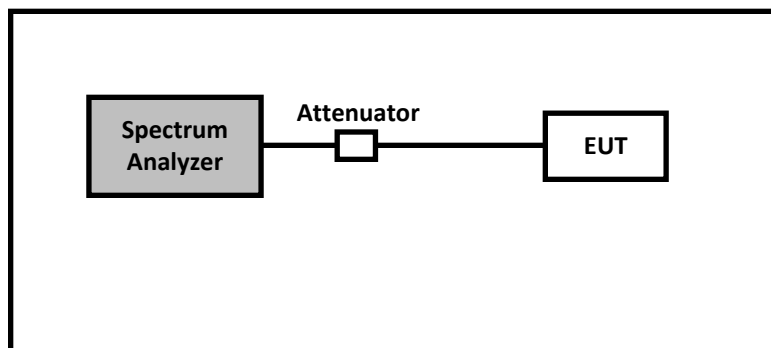
The transmit power shall be measured in terms of average value over any period of continuous transmission. The frequency bands, e.i.r.p., authorized bandwidth and frequency stability limits for devices are provided in table G1 for wireless microphones and table G2 for WMAS.

Table G1: Specifications for wireless microphones			
Frequency bands (MHz)	e.i.r.p. (mW)	Authorized bandwidth (kHz)	Frequency stability (± ppm)
54-72 76-88 174-216	≤ 50	≤ 200	≤ 50
470-608	≤ 250	≤ 200	≤ 50
614-616 653-663	≤ 20	≤ 200	≤ 50

### 4.2 Test Procedure

Please refer to KDB 971168 D01 v03r01 Section 5.

### 4.3 Test Setup Block Diagram



### 4.4 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
-	-	10dB Attenuator	-	-	Each time <sup>1</sup>	Each time <sup>1</sup>
-	-	RF Cable	-	-	Each time <sup>1</sup>	Each time <sup>1</sup>

Note<sup>1</sup>: cable and attenuator included in the test set-up were checked each time before testing.

**Statement of Traceability:** *BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 “A2LA Policy on Metrological Traceability”.*

### 4.5 Test Environmental Conditions

<b>Temperature:</b>	17 °C
<b>Relative Humidity:</b>	51.3 %
<b>ATM Pressure:</b>	101.5 kPa

*The testing was performed by Arturo Reyes on 2024-12-04 at RF test site.*

#### 4.6 Test Results

Mode	Channel	Frequency (MHz)	Conducted Output Power (dBm)	EIRP (dBm)	EIRP (mW)	EIRP Limit (mW)	Result
D2	Low	537.600	13.97	16.12	40.93	< 50	Pass
	Middle	572.775	13.96	16.11	40.83	< 50	Pass
	High	607.950	14.00	16.15	41.21	< 50	Pass
	Low	614.050	9.98	12.13	16.33	< 20	Pass
	High	615.950	10.06	12.21	16.63	< 20	Pass
	Low	653.050	10.10	12.25	16.79	< 20	Pass
	High	662.950	10.17	12.32	17.06	< 20	Pass
HDM	Low	537.600	6.22	8.37	6.87	< 50	Pass
	Middle	572.775	6.21	8.36	6.85	< 50	Pass
	High	607.950	6.13	8.28	6.73	< 50	Pass
	Low	614.050	6.05	8.20	6.61	< 20	Pass
	High	615.950	6.22	8.37	6.87	< 20	Pass
	Low	653.050	6.29	8.44	6.98	< 20	Pass
	High	662.950	6.29	8.44	6.98	< 20	Pass

Note 1: EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

Note 2: Antenna Gain declared by customer = 2.15 dBi

## 5. FCC §2.1049, FCC §15.236 (f)(1)(ii), FCC §15.236 (g)(2), RSS-210 Section G.2 & G.3 & ETSI EN 300 422-1 (4.2.4.2.2) – Occupied Bandwidth & Emission Mask

### 5.1 Applicable Standards

According to FCC §15.236 (f)(1)(ii):

One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

According to FCC §15.236 (g)(2):

Emissions within the band from  $2.5 \times B$  below to  $2.5 \times B$  above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 2 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

According to RSS-210 Section G.2:

The transmit power shall be measured in terms of average value over any period of continuous transmission. The frequency bands, e.i.r.p., authorized bandwidth and frequency stability limits for devices are provided in table G1 for wireless microphones and table G2 for WMAS.

Table G1: Specifications for wireless microphones			
Frequency bands (MHz)	e.i.r.p. (mW)	Authorized bandwidth (kHz)	Frequency stability ( $\pm$ ppm)
54-72 76-88 174-216	$\leq 50$	$\leq 200$	$\leq 50$
470-608	$\leq 250$	$\leq 200$	$\leq 50$
614-616 653-663	$\leq 20$	$\leq 200$	$\leq 50$

According to RSS-210 Section G.3:

The occupied bandwidth for wireless microphones shall not exceed the authorized bandwidth specified in tables G1 and G2, above.

WMAS shall have a bandwidth less than 6 megahertz and shall have a mode of operation capable of operating with at least three (3) audio channels per megahertz.

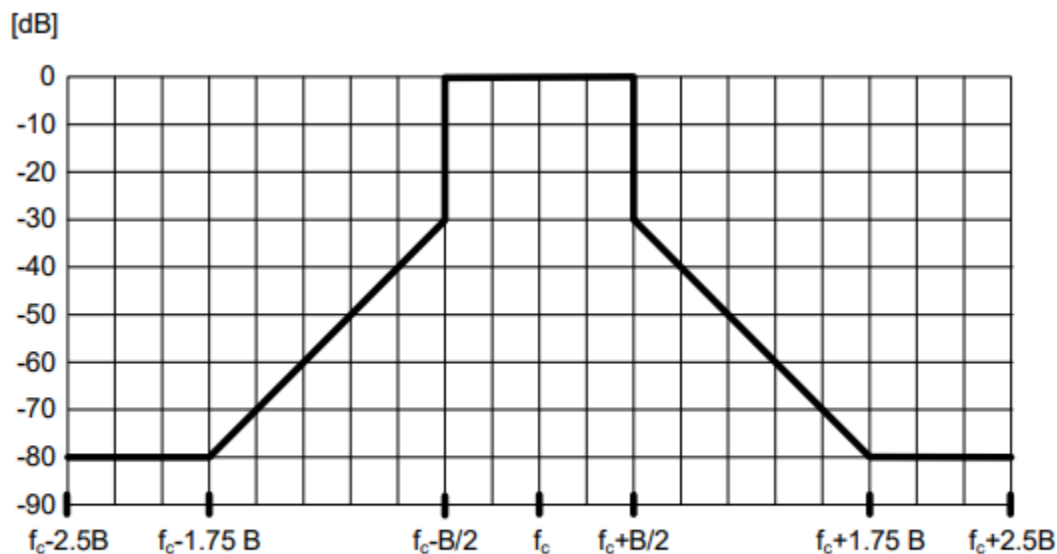
For WMAS operating in the TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz and 470-608 MHz), the 6 megahertz (or less) channel shall fall entirely within a single TV channel.

According to ETSI EN 300 422-1 V2.2.1 (2021-11) Section 4.2.4.2.2:

The following limits are applicable, where B is the Declared Channel Bandwidth.

The mean Power Density, measured with 1 kHz measurement bandwidth and RMS detector, of the transmitter unwanted emissions shall not exceed the limits of the masks provided in figure 1 for equipment employing analogue modulation and figure 2 for equipment employing digital modulation, but excluding WMAS.

The limits in figures 1 and 2 are relative to the transmitter RF output power according to clauses 4.2.1 and 5.4.1.



**Figure 2: Transmit spectral power mask for equipment employing digital modulation, except WMAS, RBW = 1 kHz**

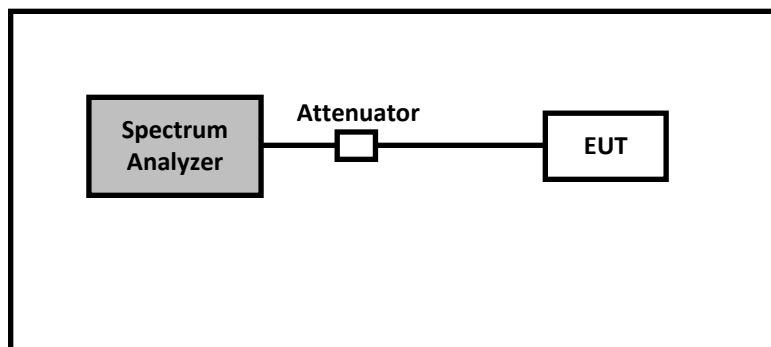
## 5.2 Test Procedure

For OBW measurement, please refer to KDB 971168 D01 v03r01 Section 4.

For Emission mask measurement, please refer to ETSI EN 300 422-1 V2.2.1 (2021-11) Section 5.4.3.



### 5.3 Test Setup Block Diagram



### 5.4 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250238	2024-06-14	1 year
912	Rohde & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2024-07-25	1 year
-	-	10dB Attenuator	-	-	Each time <sup>1</sup>	Each time <sup>1</sup>
-	-	RF Cable	-	-	Each time <sup>1</sup>	Each time <sup>1</sup>

Note<sup>1</sup>: cable and attenuator included in the test set-up were checked each time before testing.

**Statement of Traceability:** *BACL Corp.* attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 “A2LA Policy on Metrological Traceability”.

### 5.5 Test Environmental Conditions

<b>Temperature:</b>	17 to 19 °C
<b>Relative Humidity:</b>	47.2 to 51.7 %
<b>ATM Pressure:</b>	101.2 to 101.7 kPa

The testing was performed by Arturo Reyes from 2024-12-04 to 2024-12-20 at RF test site.

## 5.6 Test Results

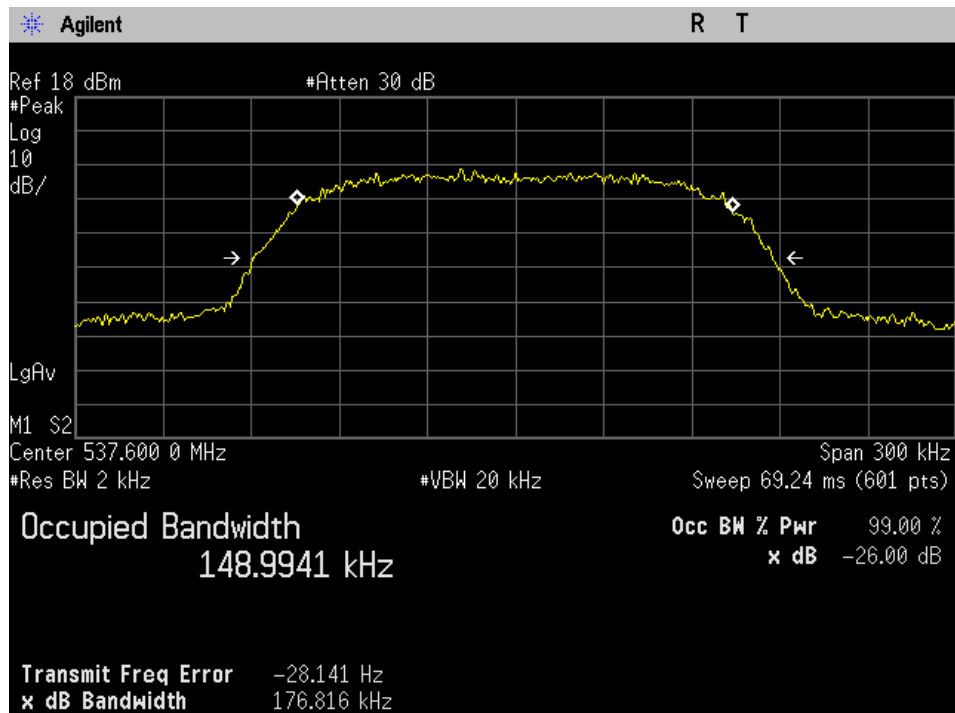
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	99% Occupied Bandwidth Limit (kHz)	Result
D2	Low	537.600	148.9941	< 200	Pass
	Middle	572.775	149.3390	< 200	Pass
	High	607.950	148.1652	< 200	Pass
	Low	614.050	148.8921	< 200	Pass
	High	615.950	148.9830	< 200	Pass
	Low	653.050	148.3186	< 200	Pass
	High	662.950	148.8786	< 200	Pass
HDM	Low	537.600	99.8642	< 200	Pass
	Middle	572.775	99.0416	< 200	Pass
	High	607.950	99.9615	< 200	Pass
	Low	614.050	99.4299	< 200	Pass
	High	615.950	99.7406	< 200	Pass
	Low	653.050	99.3499	< 200	Pass
	High	662.950	99.9596	< 200	Pass

Emission Mask Test Result: Pass

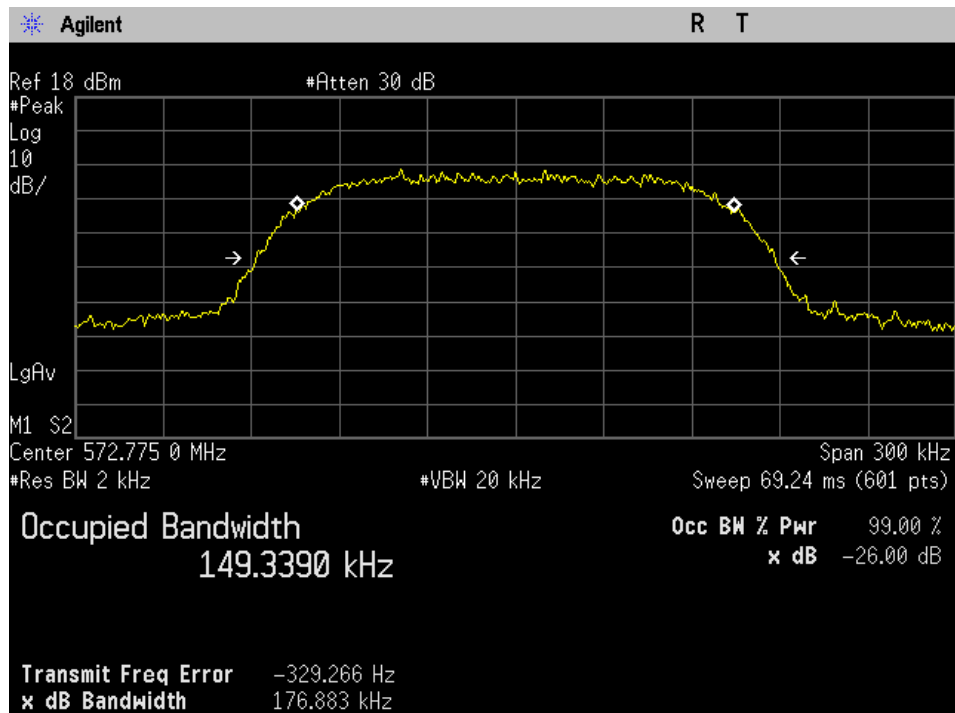
Please refer to Section 5.7 & 5.8 for detailed Occupied Bandwidth and Emission Mask plots, respectively.

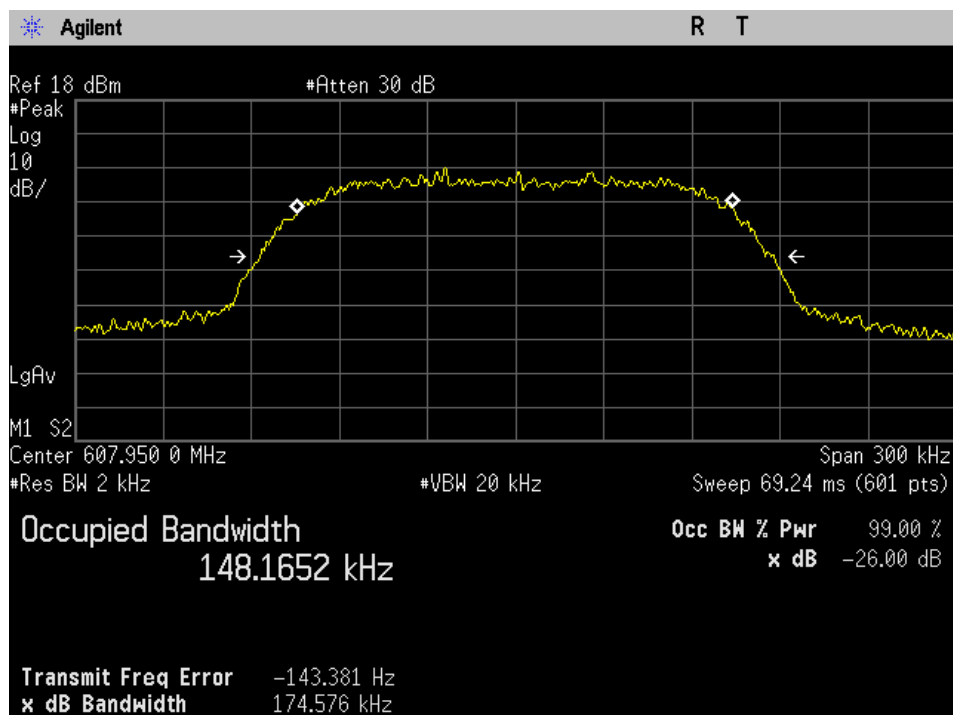
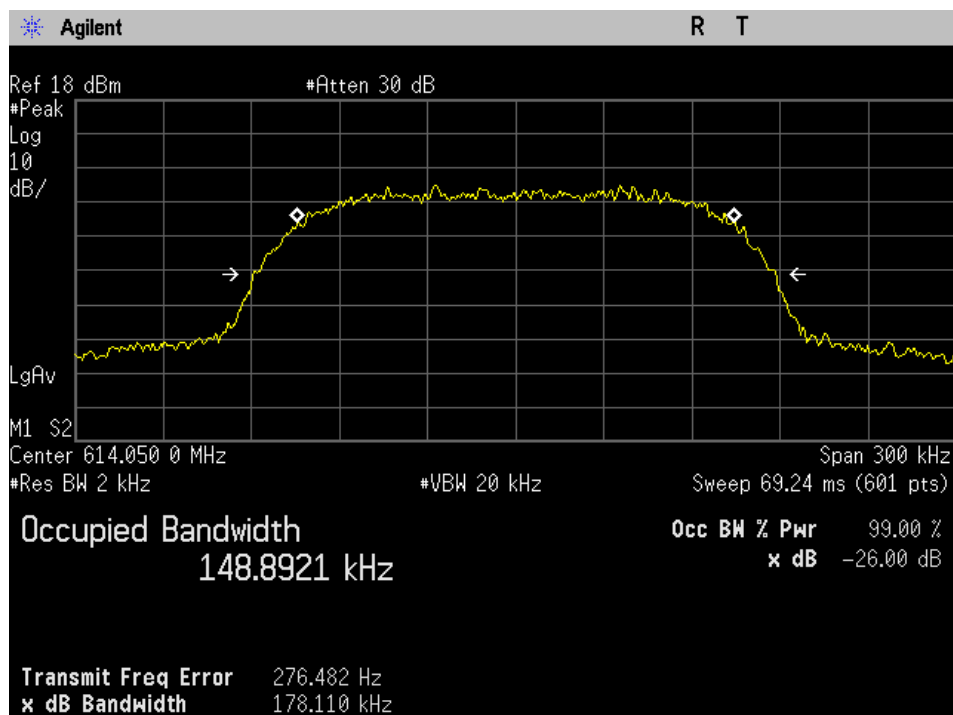
## 5.7 Occupied Bandwidth Plots

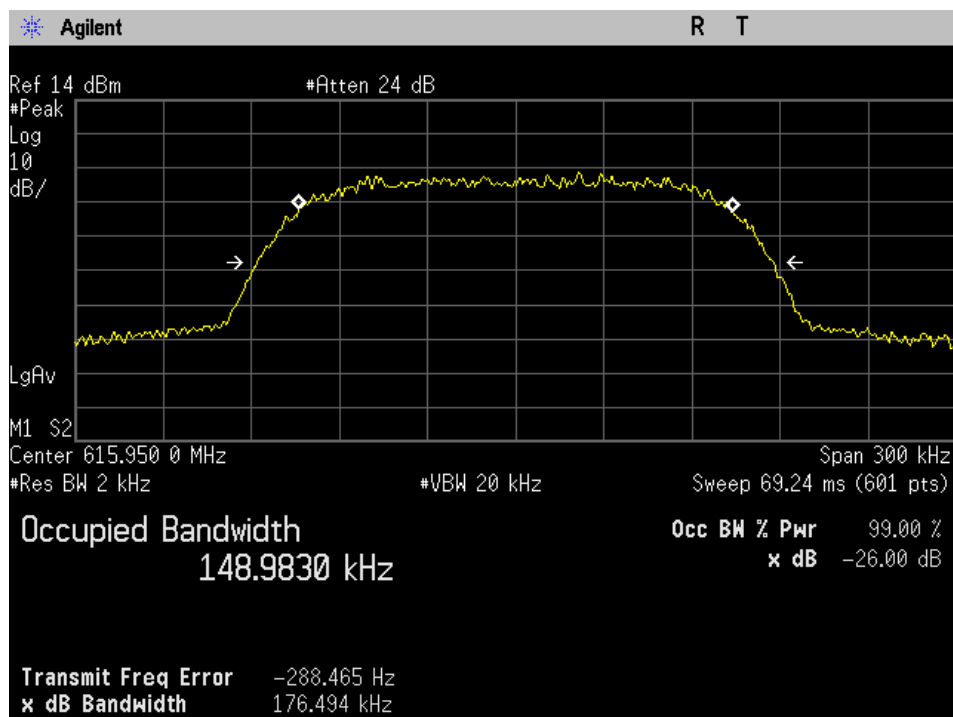
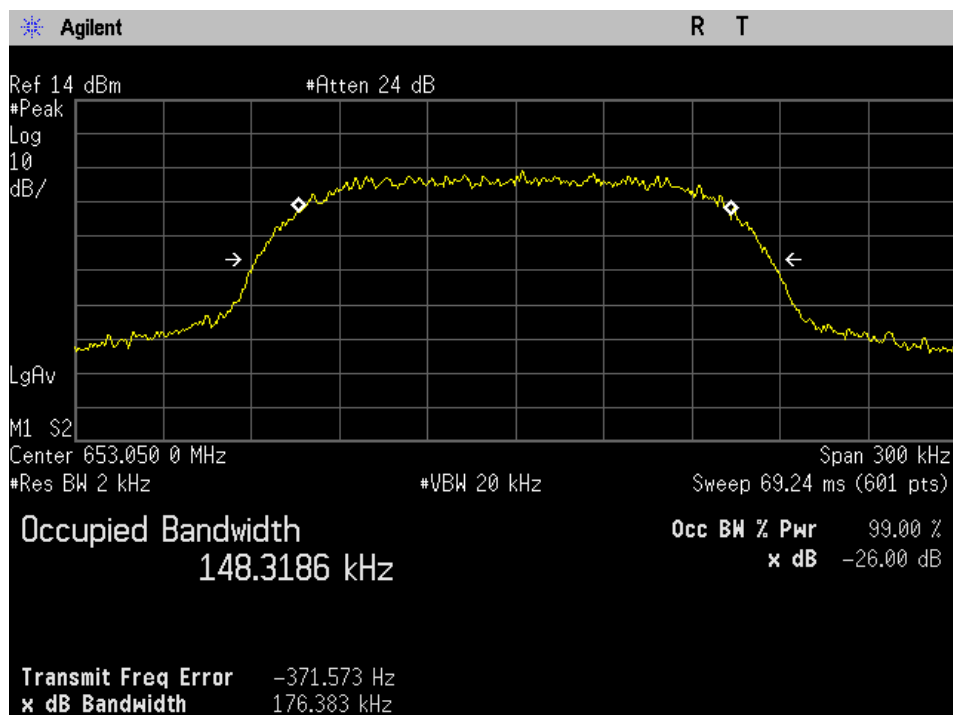
D2 mode: 537.600 MHz, 99% OBW

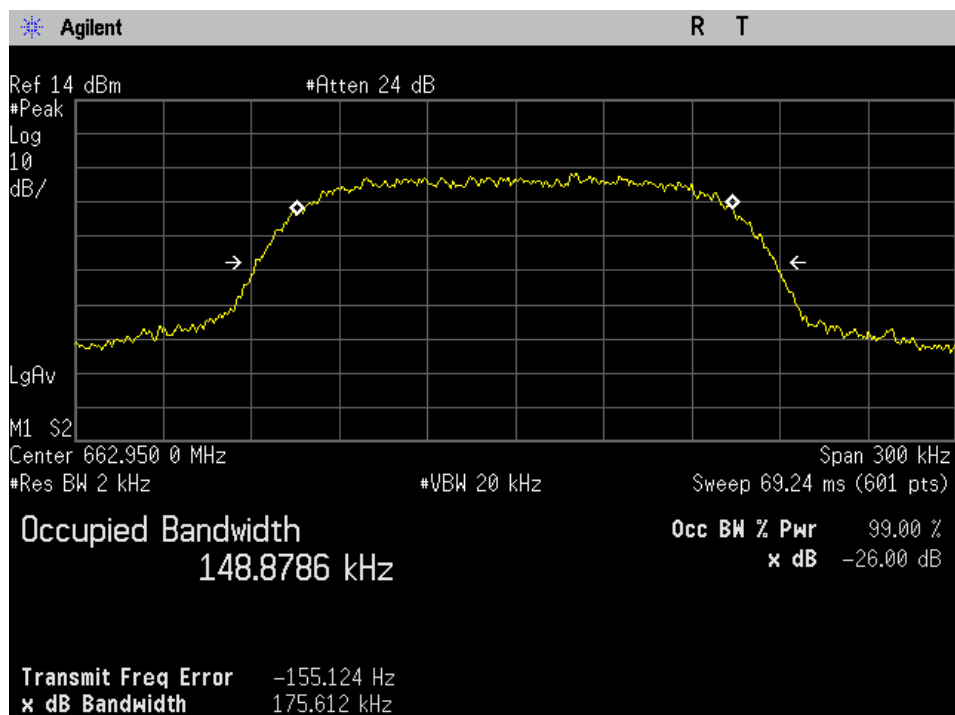
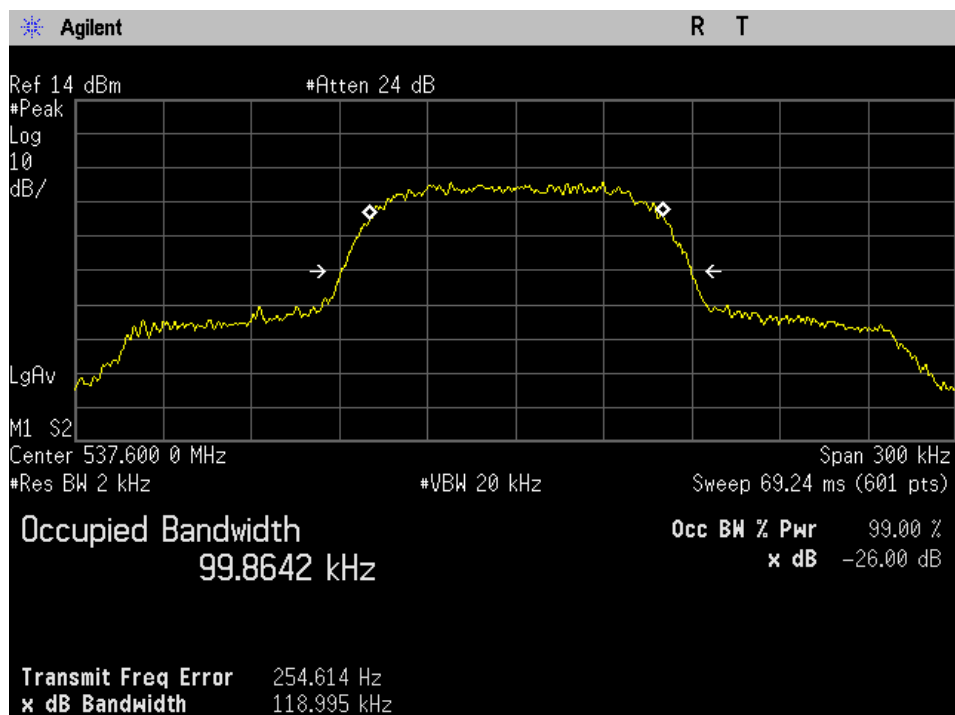


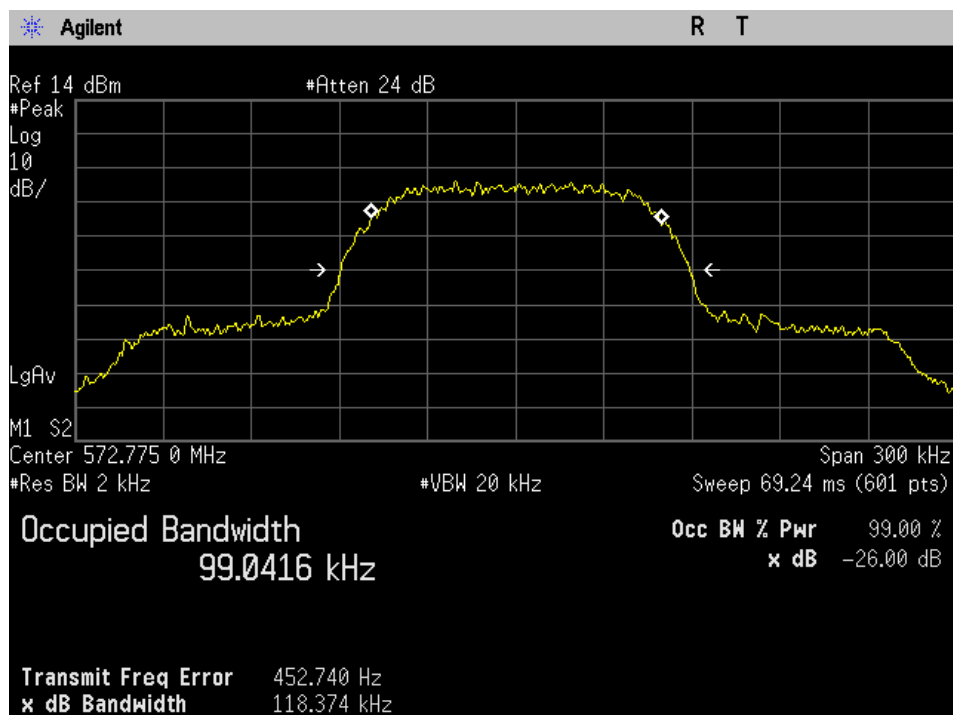
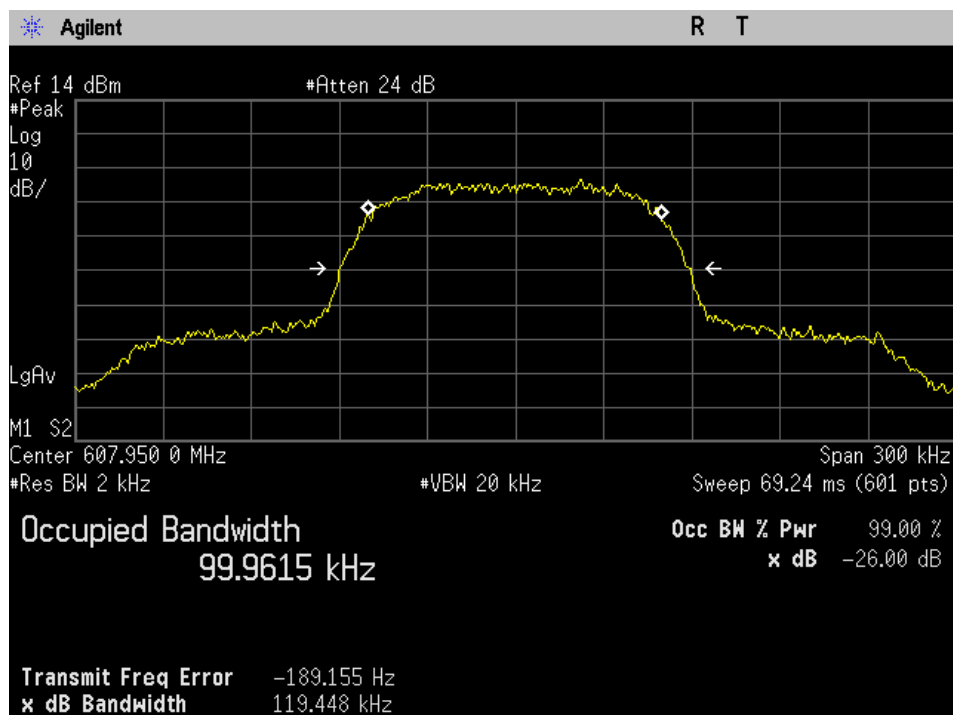
D2 mode: 572.775 MHz, 99% OBW

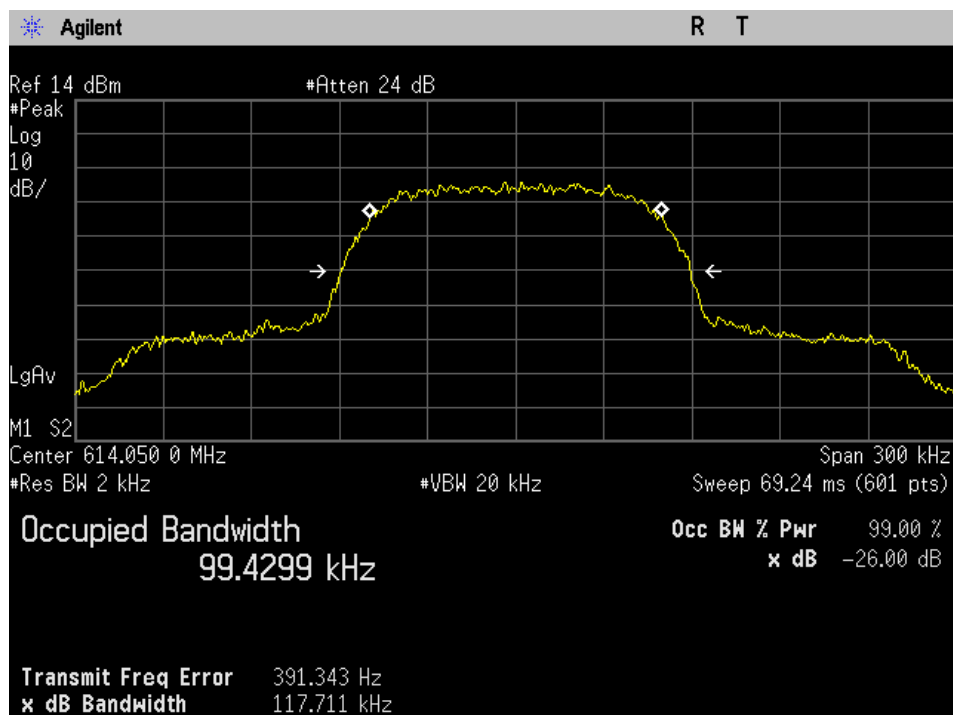
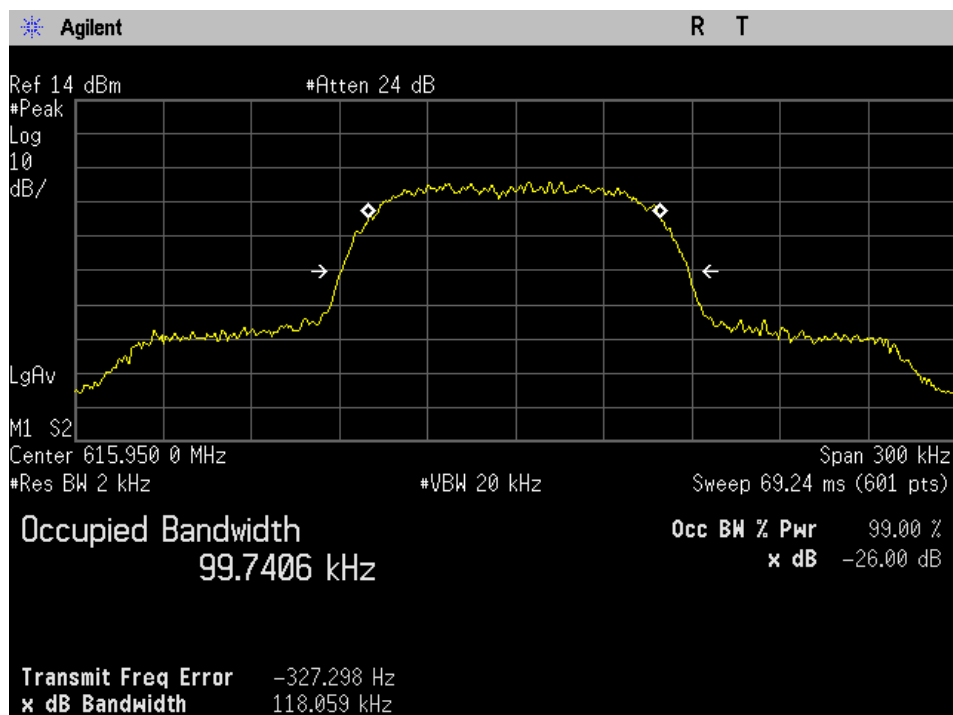


**D2 mode: 607.950 MHz, 99% OBW****D2 mode: 614.050 MHz, 99% OBW**

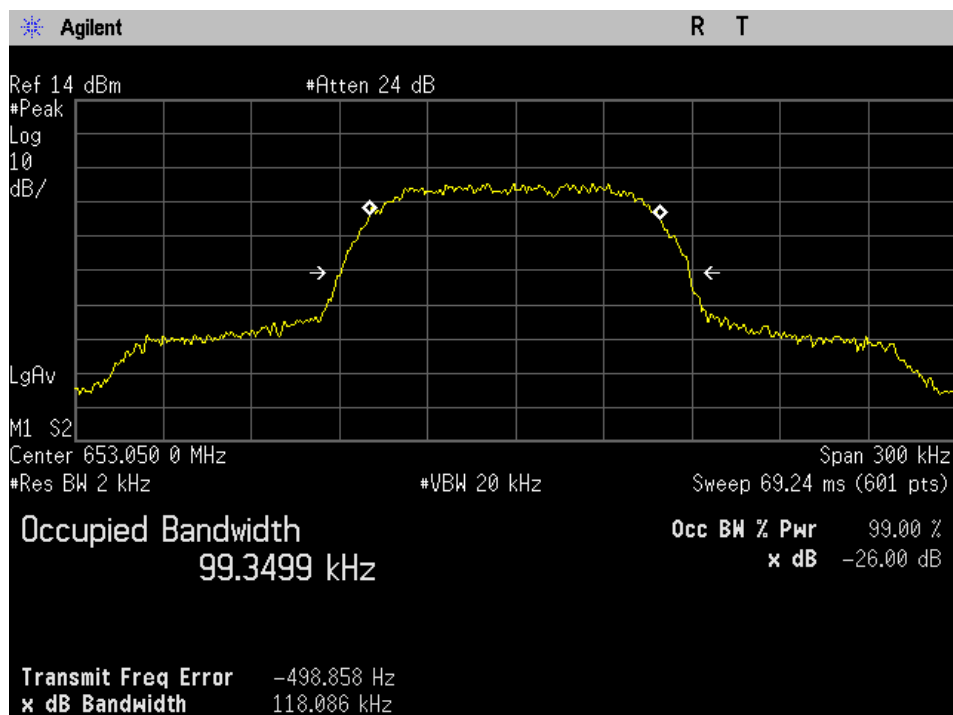
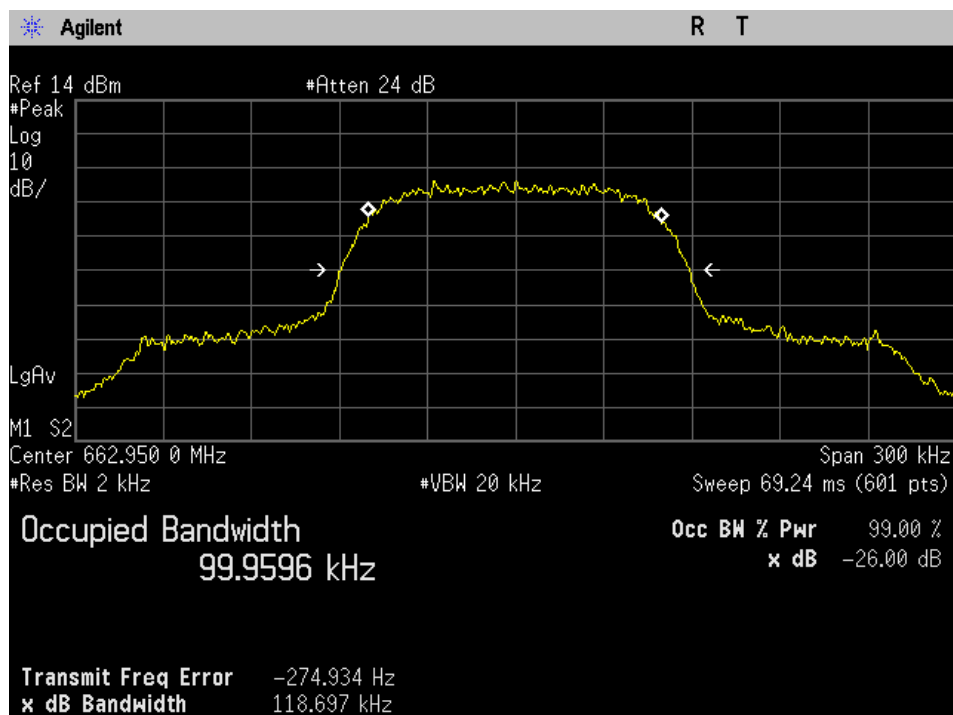
**D2 mode: 615.950 MHz, 99% OBW****D2 mode: 653.050 MHz, 99% OBW**

**D2 mode: 662.950 MHz, 99% OBW****HDM mode: 537.600 MHz, 99% OBW**

**HDM mode: 572.775 MHz, 99% OBW****HDM mode: 607.950 MHz, 99% OBW**

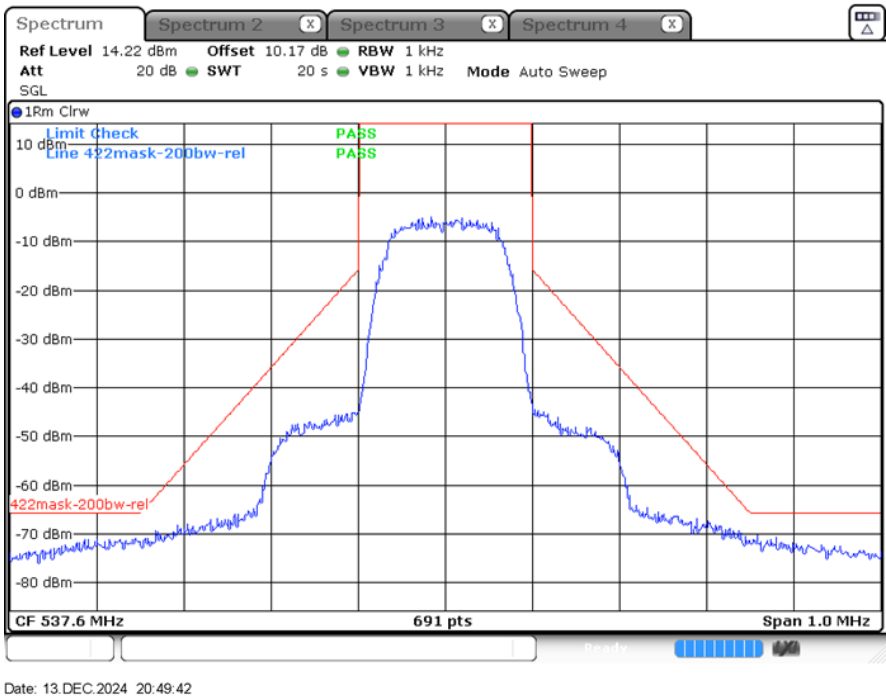
**HDM mode: 614.050 MHz, 99% OBW****HDM mode: 615.950 MHz, 99% OBW**



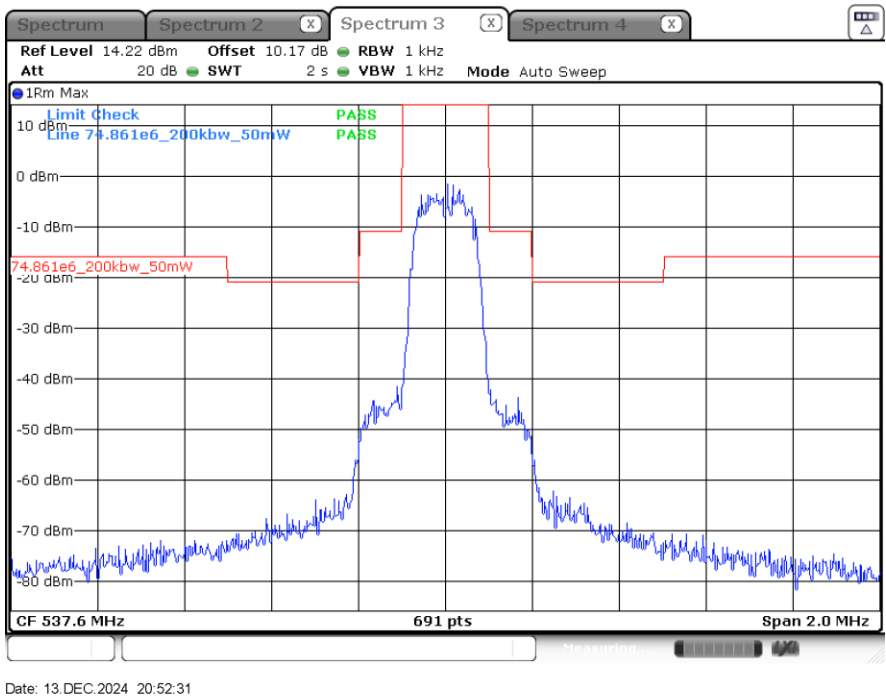
**HDM mode: 653.050 MHz, 99% OBW****HDM mode: 662.950 MHz, 99% OBW**

5.8 Emission Mask Plots

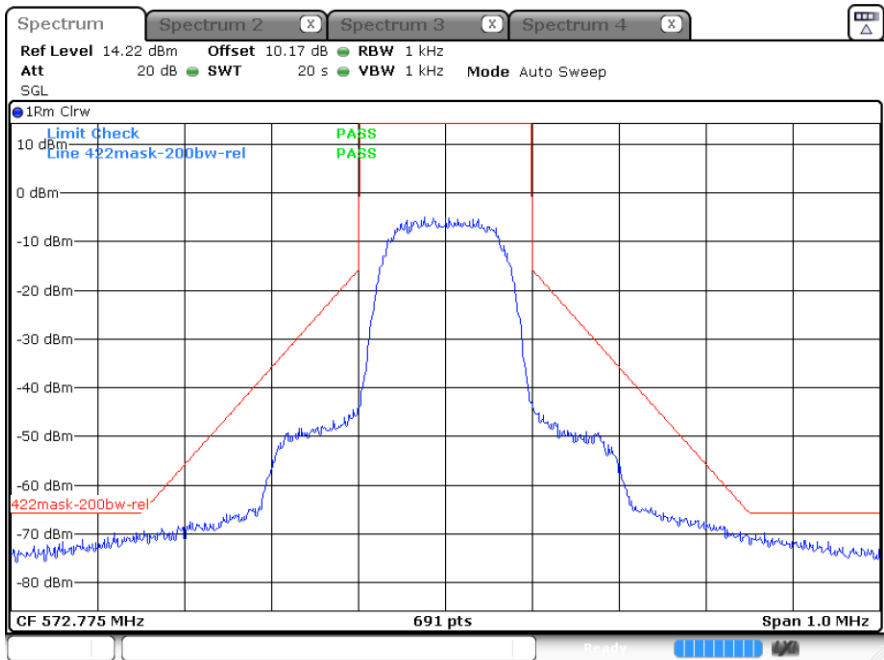
D2 mode: 537.600 MHz, Emission Mask (1)



D2 mode: 537.600 MHz, Emission Mask (2)

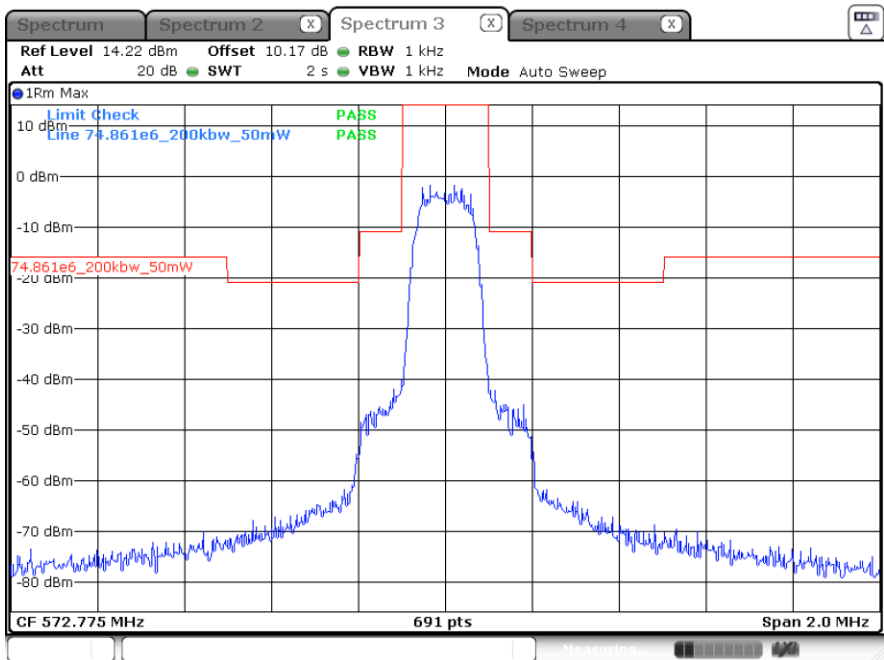


D2 mode: 572.775 MHz, Emission Mask (1)



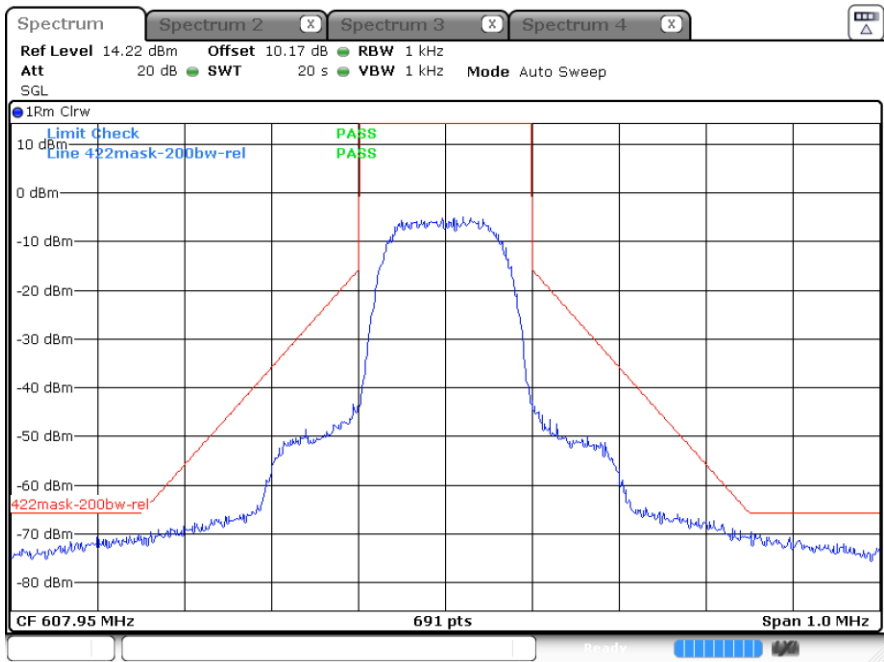
Date: 13.DEC.2024 20:55:45

D2 mode: 572.775 MHz, Emission Mask (2)



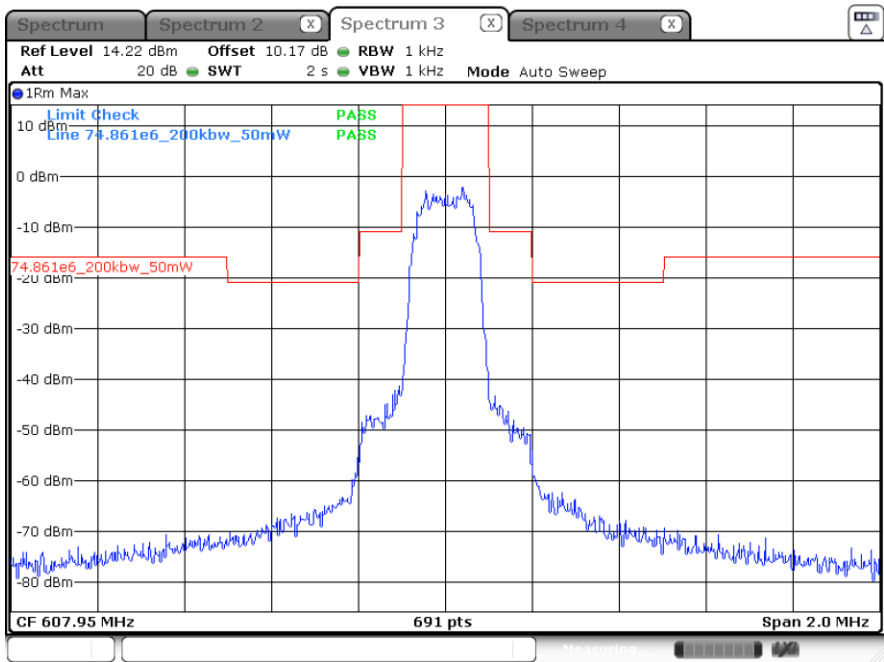
Date: 13.DEC.2024 20:54:08

D2 mode: 607.950 MHz, Emission Mask (1)



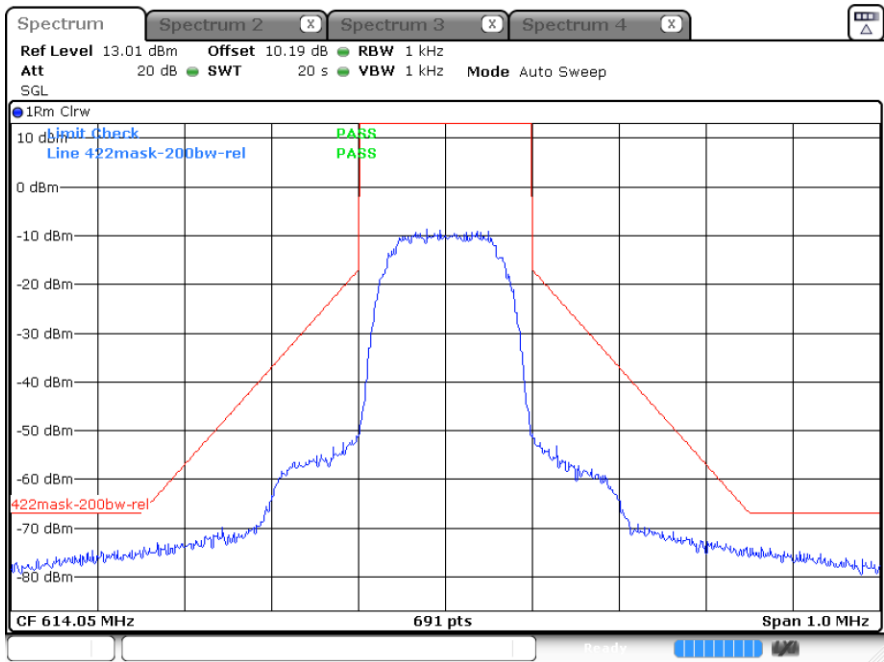
Date: 13.DEC.2024 21:02:11

D2 mode: 607.950 MHz, Emission Mask (2)



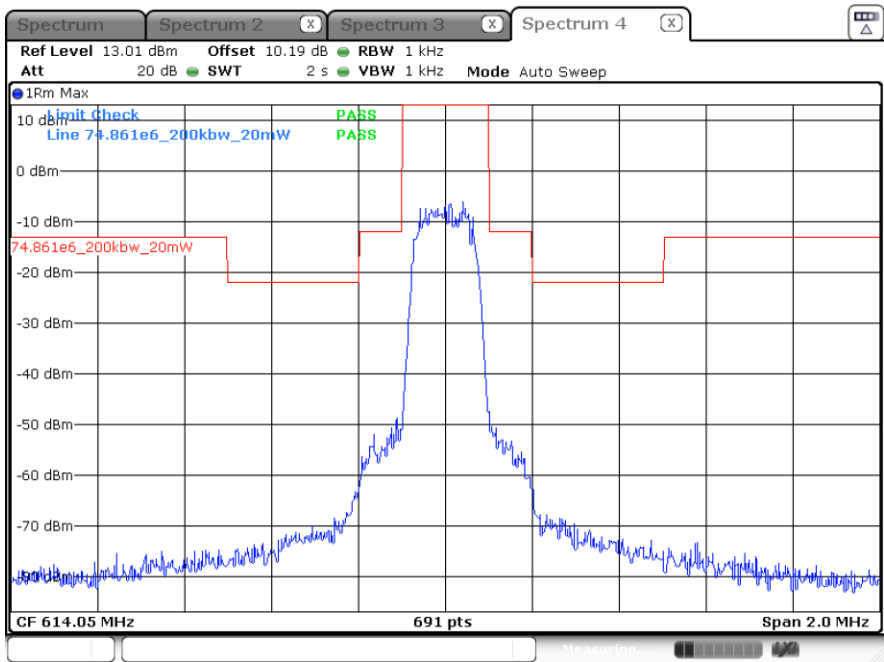
Date: 13.DEC.2024 21:03:22

D2 mode: 614.050 MHz, Emission Mask (1)



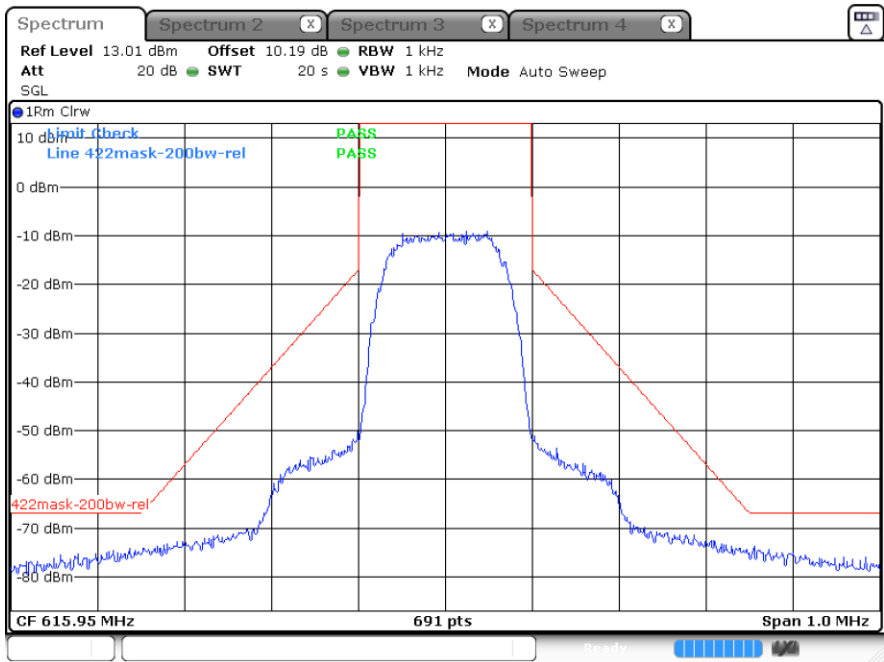
Date: 13.DEC.2024 20:26:12

D2 mode: 614.050 MHz, Emission Mask (2)



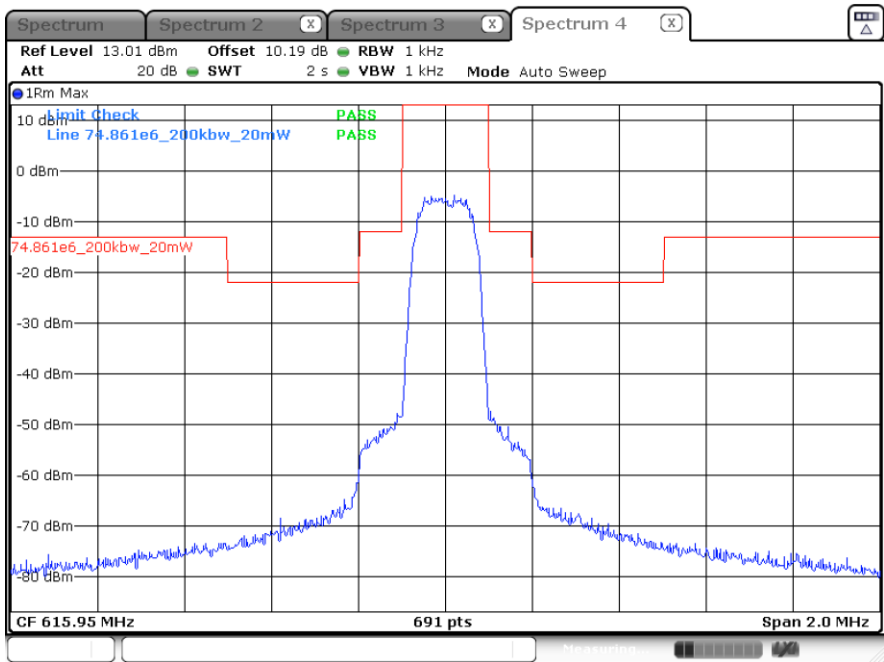
Date: 13.DEC.2024 20:24:39

D2 mode: 615.950 MHz, Emission Mask (1)

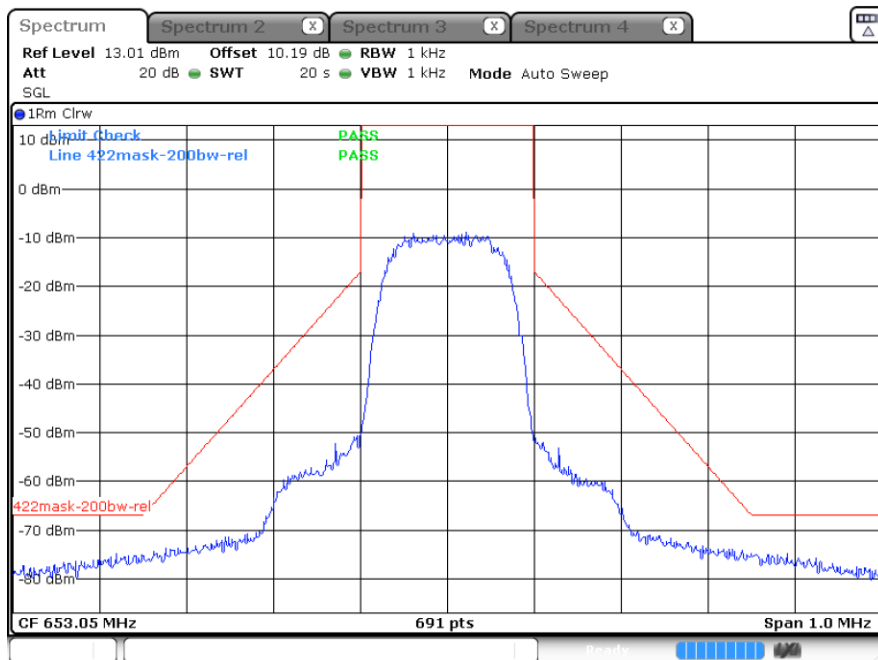


Date: 20 DEC 2024 20:41:18

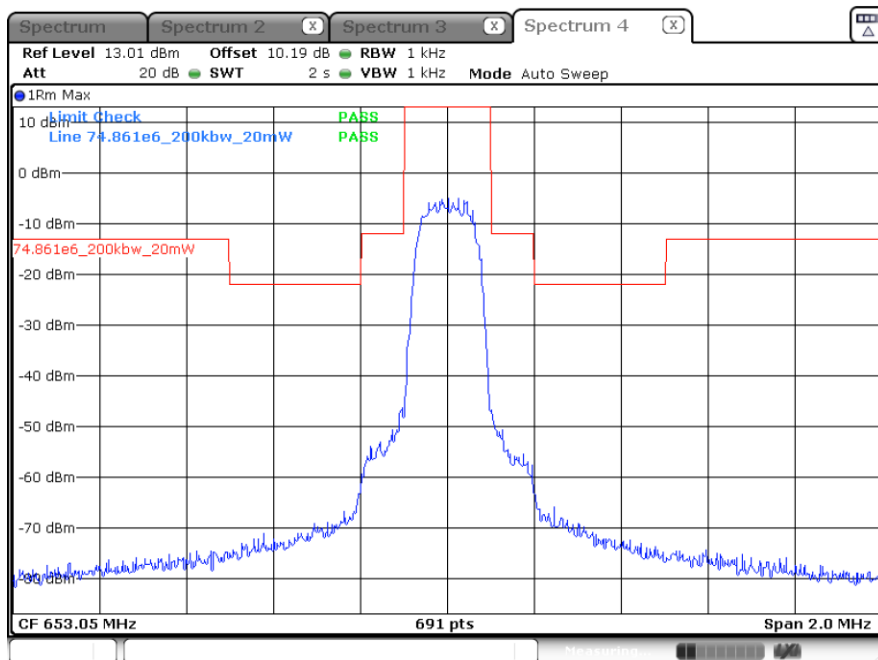
D2 mode: 615.950 MHz, Emission Mask (2)



Date: 20 DEC 2024 20:35:40

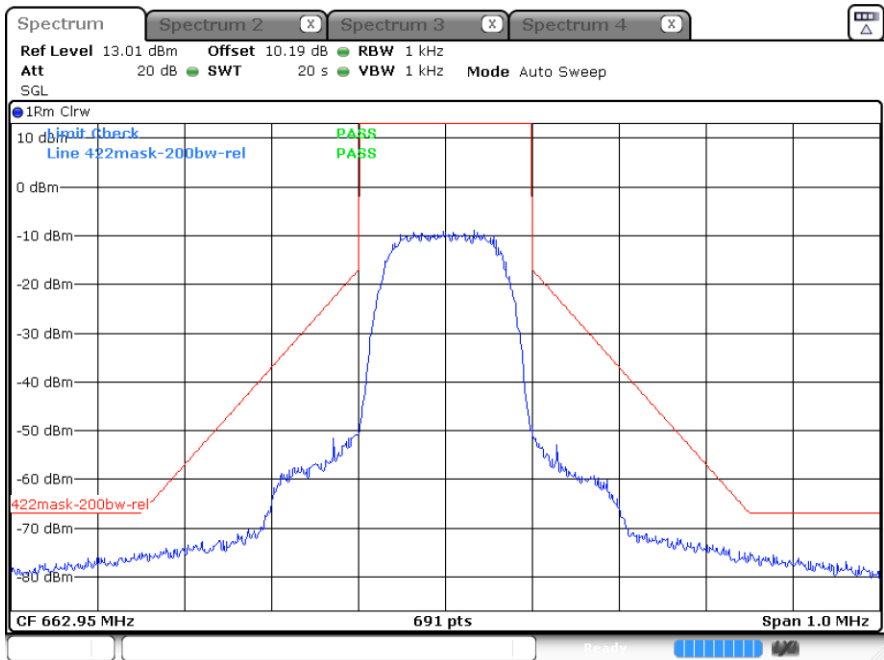
**D2 mode: 653.050 MHz, Emission Mask (1)**

Date: 13.DEC.2024 20:36:58

**D2 mode: 653.050 MHz, Emission Mask (2)**

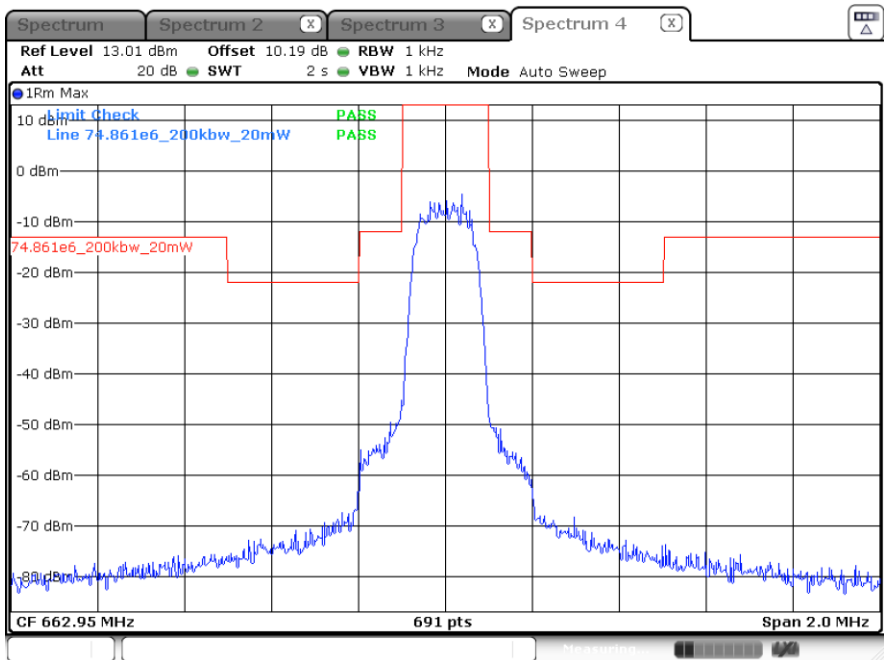
Date: 13.DEC.2024 18:59:12

D2 mode: 662.950 MHz, Emission Mask (1)



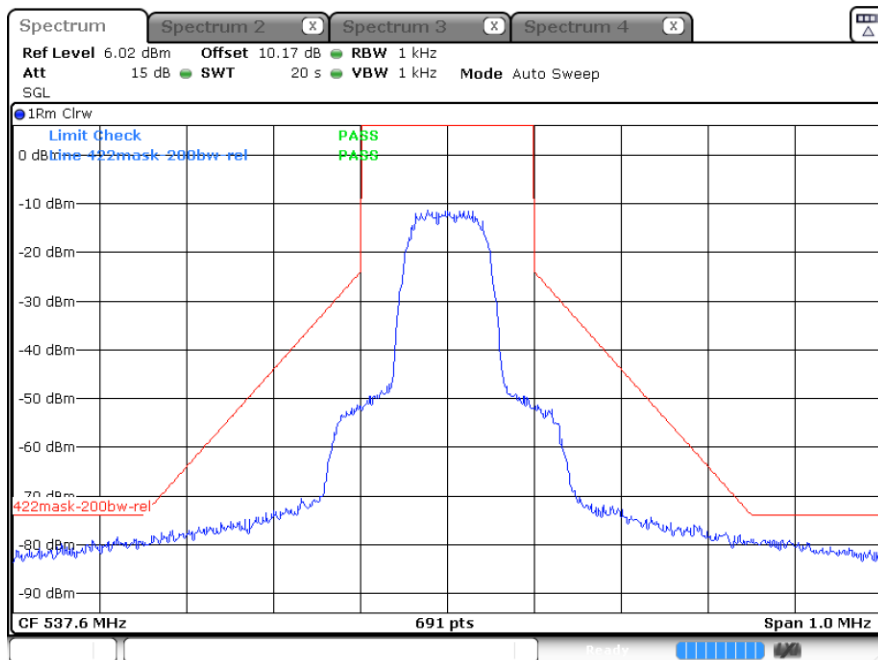
Date: 13.DEC.2024 18:56:26

D2 mode: 662.950 MHz, Emission Mask (2)

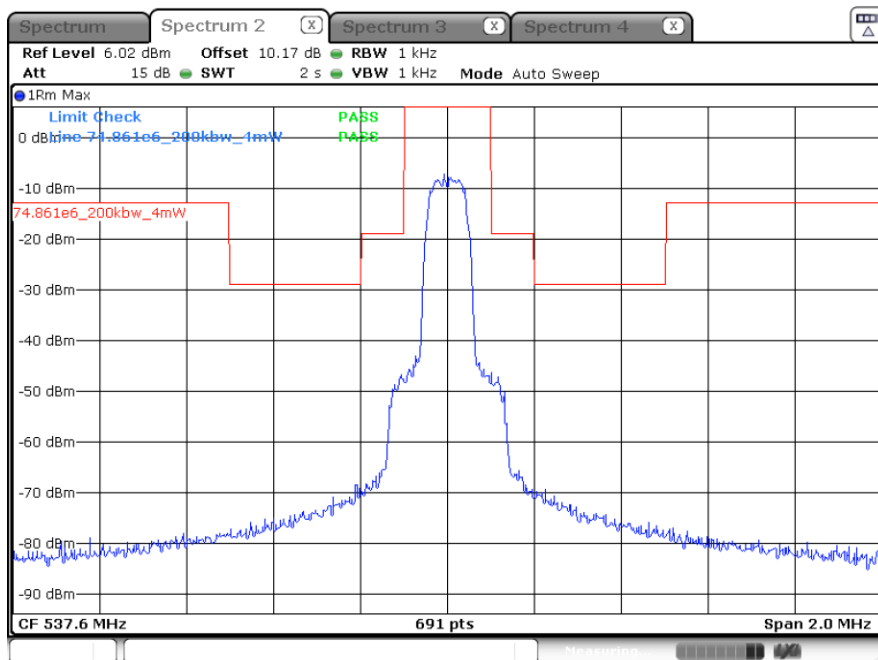


Date: 13.DEC.2024 18:56:50



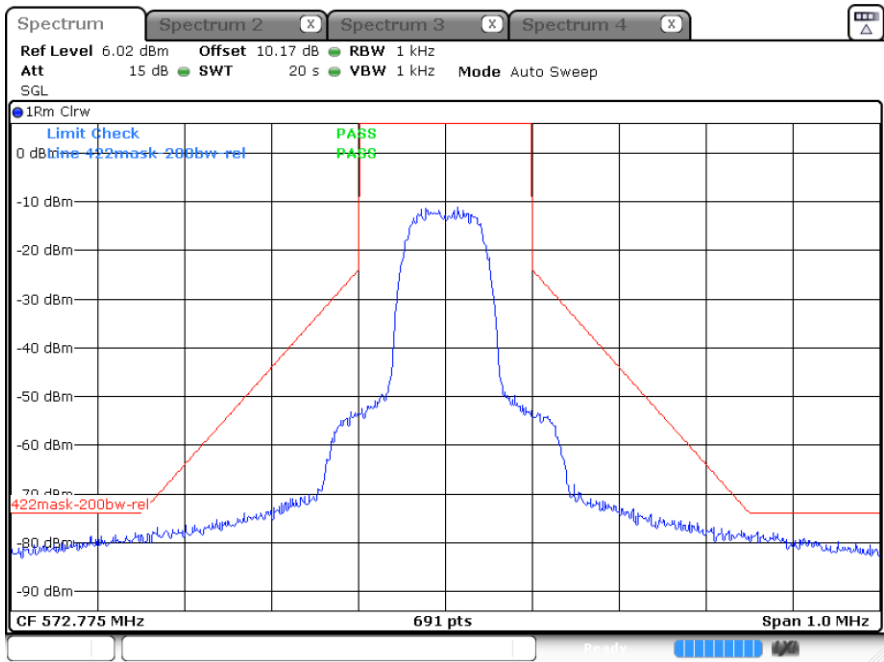
**HDM mode: 537.600 MHz, Emission Mask (1)**

Date: 13.DEC.2024 20:47:18

**HDM mode: 537.600 MHz, Emission Mask (2)**

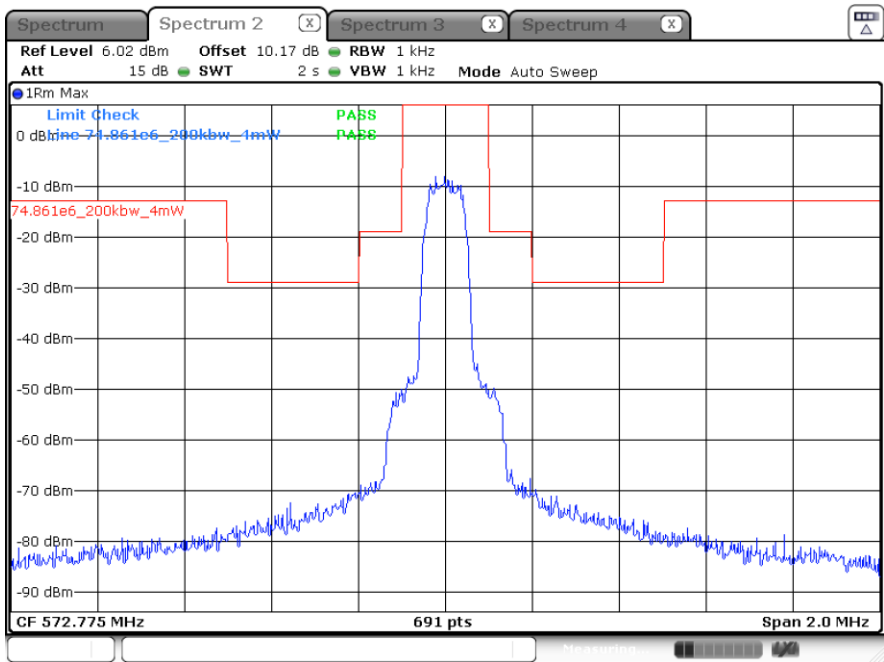
Date: 13.DEC.2024 20:45:17

HDM mode: 572.775 MHz, Emission Mask (1)



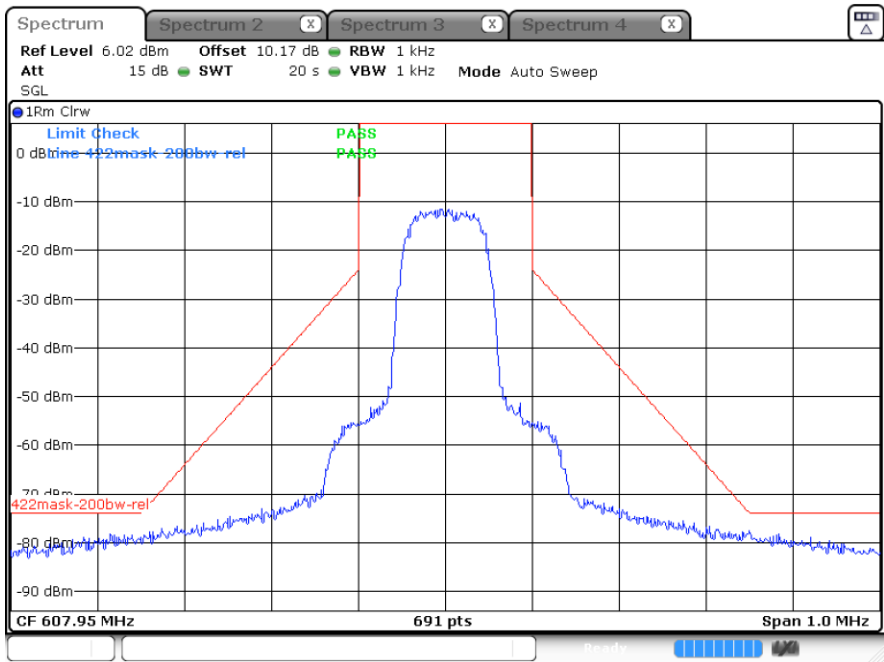
Date: 13.DEC.2024 20:57:00

HDM mode: 572.775 MHz, Emission Mask (2)



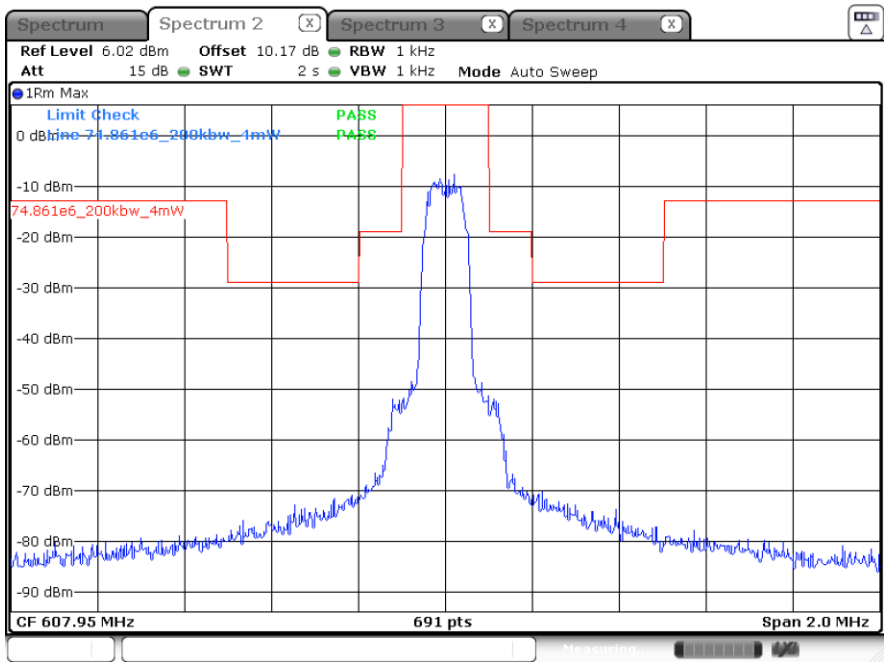
Date: 13.DEC.2024 20:58:11

HDM mode: 607.950 MHz, Emission Mask (1)



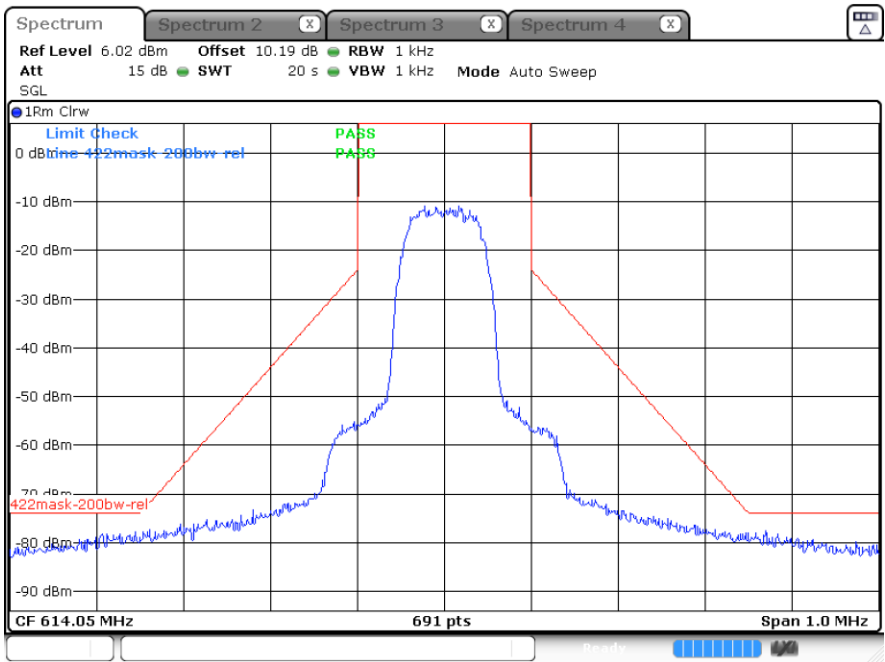
Date: 13.DEC.2024 21:01:10

HDM mode: 607.950 MHz, Emission Mask (2)



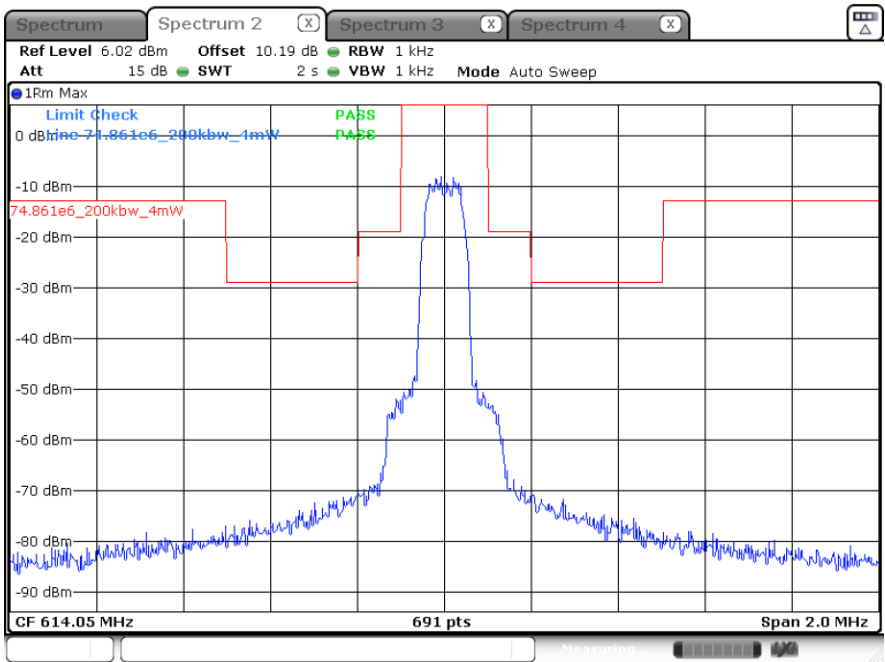
Date: 13.DEC.2024 20:59:50

HDM mode: 614.050 MHz, Emission Mask (1)



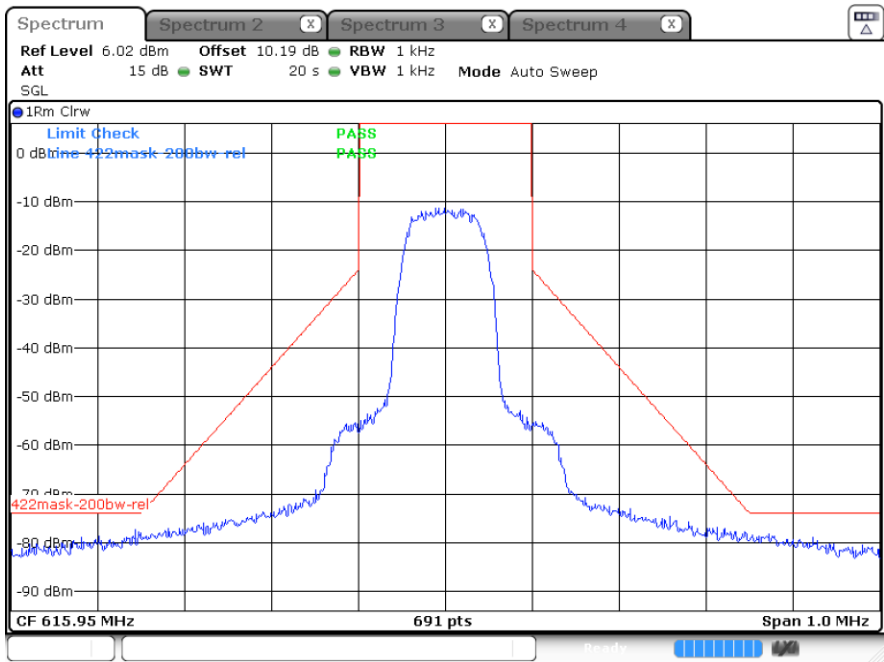
Date: 13.DEC.2024 20:32:21

HDM mode: 614.050 MHz, Emission Mask (2)



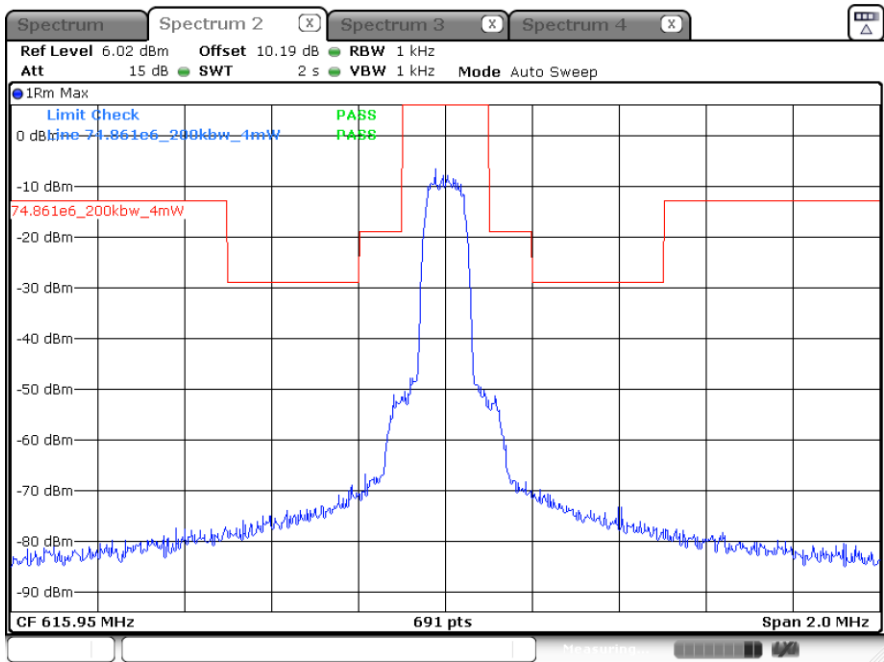
Date: 13.DEC.2024 20:33:07

HDM mode: 615.950 MHz, Emission Mask (1)



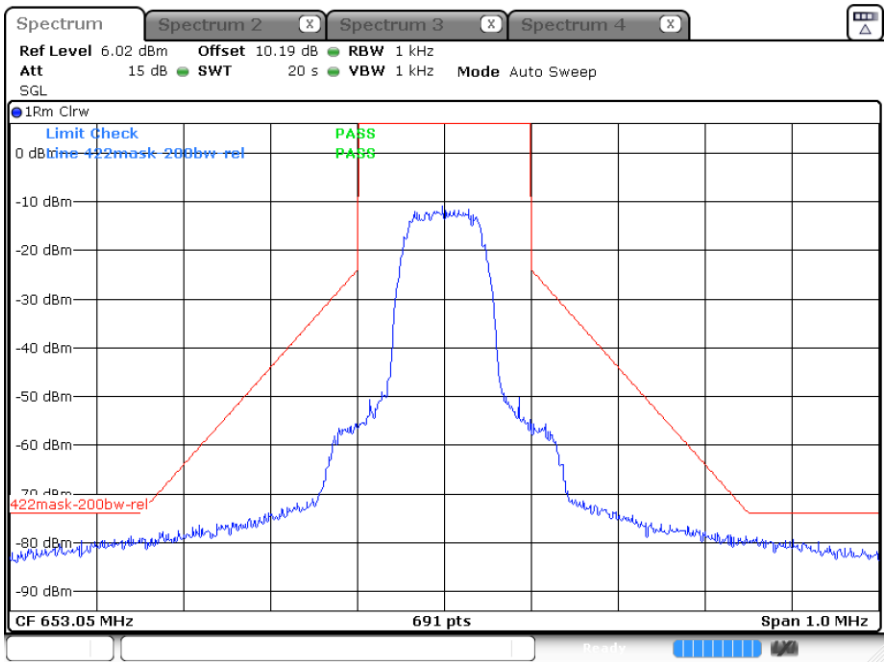
Date: 20 DEC 2024 20:40:18

HDM mode: 615.950 MHz, Emission Mask (2)



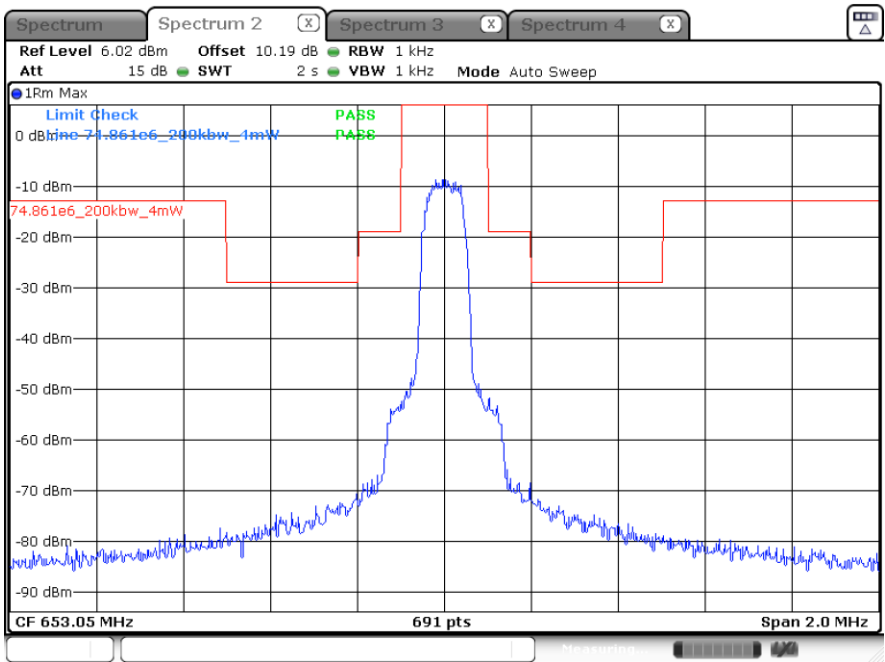
Date: 20 DEC 2024 20:39:20

HDM mode: 653.050 MHz, Emission Mask (1)



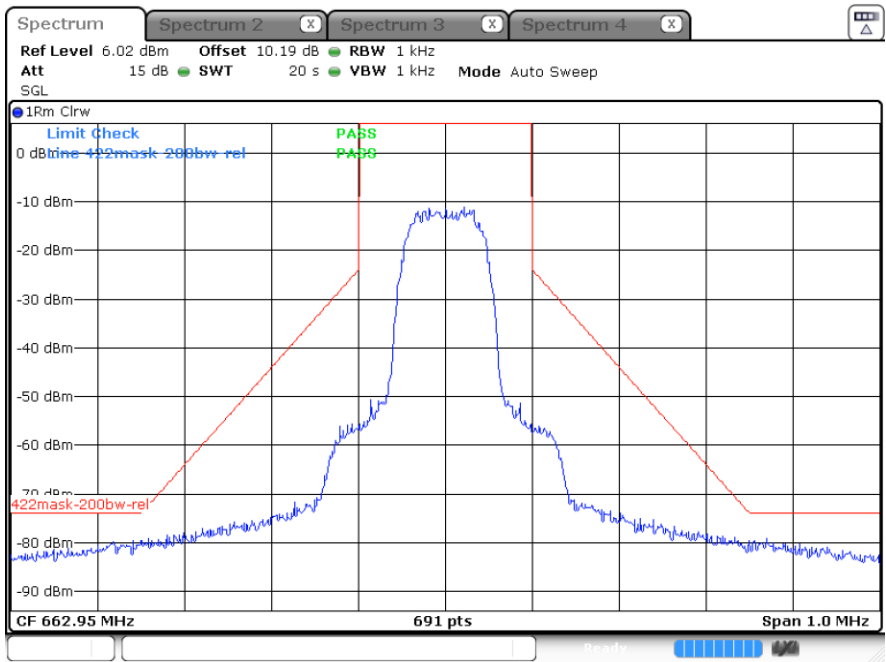
Date: 13.DEC.2024 20:37:58

HDM mode: 653.050 MHz, Emission Mask (2)



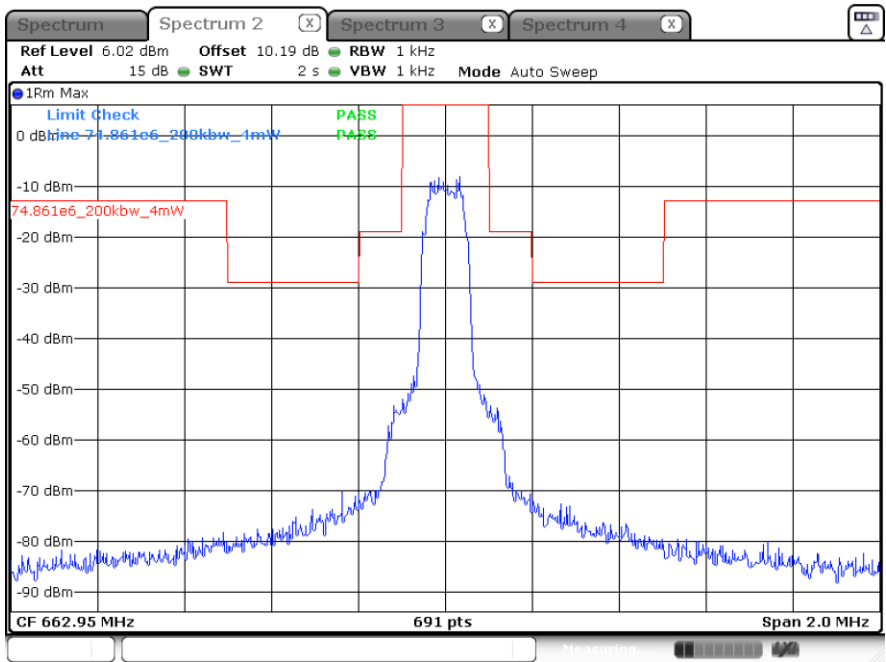
Date: 13.DEC.2024 20:40:15

HDM mode: 662.950 MHz, Emission Mask (1)



Date: 13 DEC 2024 18:51:52

HDM mode: 662.950 MHz, Emission Mask (2)



Date: 13 DEC 2024 20:41:20

## 6. FCC §15.236 (g)(4), RSS-210 Section G.5 & ETSI EN 300 422-1 (4.2.4.1.2) – Spurious Emissions at Antenna Port

### 6.1 Applicable Standards

According to FCC §15.236 (g)(4):

Emissions outside of the emission masks listed in paragraphs (g)(1) through (g)(3) shall comply with the limits specified in section 4.2.4.1.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

According to RSS-210 Section G.5:

The transmitter unwanted emissions shall meet and be measured according to the requirements in sections 4.2.4.1.2 and 4.2.4.2.2 of ETSI EN 300 422-1.

According to ETSI EN 300 422-1 V2.2.1 (2021-11) Section 4.2.4.1.2:

The level of transmitter unwanted emissions in the spurious domain shall not exceed the limits given in table 4.

**Table 4: Transmitter unwanted emission limits  
(from ERC Recommendation 74-01 [2])**

Frequency range	Maximum power	RBW
9 kHz - 150 kHz	-36 dBm	1 kHz
150 kHz - 30 MHz	-36 dBm	10 kHz
30 MHz - 1 GHz	-36 dBm	$F_c + 2,5 B \leq f \leq f_c + 4 B$ : 1 kHz $F_c + 4 B < f \leq f_c + 10 B$ : 10 kHz $f > f_c + 10 B$ : 100 kHz $f < f_c - 10 B$ : 100 kHz $f_c - 10 B \leq f < f_c - 4 B$ : 10 kHz $f_c - 4 B \leq f \leq f_c - 2,5 B$ : 1 kHz
except:		
47 MHz - 74 MHz 87,5 MHz - 118 MHz	-54 dBm	100 kHz
174 MHz - 230 MHz 470 MHz - 862 MHz	-54 dBm	$F_c + 2,5 B \leq f \leq f_c + 4 B$ : 1 kHz $F_c + 4 B < f \leq f_c + 10 B$ : 10 kHz $f > f_c + 10 B$ : 100 kHz $f < f_c - 10 B$ : 100 kHz $f_c - 10 B \leq f < f_c - 4 B$ : 10 kHz $f_c - 4 B \leq f \leq f_c - 2,5 B$ : 1 kHz
$1 \text{ GHz} < f \leq F_{\text{upper}}$	-30 dBm	$F_c + 2,5 B \leq f \leq f_c + 10 B$ : 30 kHz $F_c + 10 B < f \leq f_c + 12 B$ : 300 kHz $f > f_c + 12 B$ : 1 MHz $f < f_c - 12 B$ : 1 MHz $f_c - 12 B \leq f < f_c - 10 B$ : 300 kHz $f_c - 10 B \leq f \leq f_c - 2,5 B$ : 30 kHz

with B being the Declared Channel Bandwidth.