



**Technical Report to the FCC and ISED Regarding  
Gentex Corporation - Homelink® VI**

**Model: UAHL6D  
FCC ID: NZLUAHL6D  
ISED: 4112A-UAHL6D**

**Emission Designator: 1M05L1D  
3/17/2025**

A report concerning approval for Gentex Corporation Homelink® model UAHL6D  
Please issue grant immediately upon review.

Measurements Made by:

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Report Approved by:

Jason Vargo  
Laboratory Manager I  
Gentex Corporation



**Test Report Revision**

REV Number	Date	Author	Description
1.0	2/27/2025	Patricia Szeszulski	Initial Release
2.0	3/17/2025	Patricia Szeszulski	Updated per reviewer's feedback

Results relate only to the items tested as received.

Compliance has been evaluated based on the Lab Manual section 7.6.2. The decision rule used regarding measurement uncertainty was to determine results solely on whether the measured values met the defined acceptance criteria without factoring in measurement uncertainty values.

Lab Project ID#: EMC2024-10645      Test ID: Test-117305, 117307  
FCC Report Form for 15.247 Bluetooth LE – 3m  
Revision: 11/26/2024    Approved By: Jason Vargo  
Uncontrolled copy if printed unless stamped as a Lab Controlled Document

Model: UAHL6D  
Date: 3/17/2025  
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## **1. General Information**

### **1.1. Product Description**

The Gentex Corporation HomeLink® HLVPI Universal Garage Door Opener is a low-power transceiver OEM device that is installed into the automotive rearview mirror. The installation is provided by trained technicians during the course of the manufacture of the automobile. It is powered by the 12 Volt system of the automobile.

This Universal Garage Door Opener has the capability to

1. Learn the frequency and bit code format of the user's existing garage door remote control devices
2. Transmit and receive frequency hopping spread spectrum in the 902 to 928 MHz band using an internal antenna as per Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15.247
3. Transmit and receive frequency digital transmission system in the 2402 to 2480MHz band using an internal antenna as per Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15.247.

The unit is designed for the periodic operation of a control signal, which typically activates a garage door opener receiver.

The unit is supplied to the automobile manufacturer without harness. For testing purposes, a typical assembly and 2-conductor cable harness were used to power to the unit.

The three-button HomeLink® unit replaces up to three hand-held transmitters. In addition to the typical operation of the garage door, the unit will learn the radio frequency codes of other transmitter types to activate entry door locks, estate gates, security systems, and home or office lighting.

The antenna system is an integral part of the unit. It cannot be altered nor replaced by the user. The service of this system is only available from the Automobile Manufacturer's Dealerships and Gentex Corporation.

### **1.2. Related Grants**

This device will have functionality that is covered under 47 CFR 15.247, 15.231, and 15B and ISED Canada RSS-210 and RSS-247. The device will have a FCC ID # of NZLUAHL6D and an ISED ID # of 4112A-UAHL6D under both rule parts. Separate reports were submitted for functionality covered under 47 CFR 15.247, 15.231, and 15B and ISED Canada RSS-210 and RSS-247.

### **1.3. Test Methodology**

Radiated Emissions testing was performed according to ANSI C63.10:2013. The power source for this product is a 12V automotive vehicle battery.

Conducted measurements were performed using a power supply.

Measurements were performed per FCC OET KDB 558074.

The unit is supplied to the automobile manufacturer without harness. For testing purposes, a 2-conductor cable harness was used to interface to the unit. The unit ground is provided through the negative terminal of the harness.



## 1.4. Test Facility

The 3-meter semi-anechoic chamber where these measurements were taken, is located on the grounds of Gentex Corporation's Corporate Labs, in the city of Zeeland, county of Ottawa, state of Michigan, United States of America.

For radiated measurements above 1 GHz, RF absorbing material is placed between the antenna and EUT in accordance with ANSI C63.4:2014 Section 5.5 and chamber manufacturer's instructions.

The 3m chamber has been added to our A2LA scope of accreditation on 05/20/2016 and includes accreditation to ANSI C63.4:2014 and ANSI C63.10:2013. The report filed with ISED, dated February 11, 2015, was accepted via a letter dated February 11, 2015. Our 3m chamber is registered with the ISED under Site# 4112A-2 and FCC under registration number 357351.

Corporate Mailing/Shipping Address

Gentex Corporation  
600 N. Centennial Street  
Zeeland, MI 49464

Site Address

Gentex Corporation  
380 Riley Street  
Zeeland, MI 49423

## 1.5. Accreditation

The Gentex Corporate EMC Lab is accredited to ISO/IEC 17025 by the American Association for Laboratory Accreditation (A2LA). Our laboratory scope and accreditation certificate #[2529.01](#) are available from their web site [www.a2la.org](http://www.a2la.org). Our scope of accreditation covers ANSI C63.4:2014, ANSI C63.10:2013, and Radiated Emissions at 3m, FCC 47 CFR Part 15, ISED RSS-210, and ISED RSS-247.

## 2. Product Labeling

### 2.1. Identifiers

The FCC Identifier assigned is FCC ID: NZLUAHL6D. The ISED certification number is 4112A-UAHL6D. These identifiers will be labeled on the product housing.

The label will be placed on the exterior of the HL housing using laser etching that will permanently affix the label.

Because of the small size of the device and because the installation is inside a portion of the automobile, the following statements will appear in the user's manual. Refer to attachment "Users Manual.pdf" for the entire text of the user's manual.

"This device complies with FCC rules Part 15 and with ISED RSS-247. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference,
- (2) This device must accept any interference that may be received including interference that may cause undesired operation.

WARNING: The transmitter has been tested and complies with FCC and ISED rules. Changes or modifications not expressly approved by the party responsible for the compliance could void the user's authority to operate the device."

The term "ISED:" before the certification/registration number only signifies that ISED technical specifications were met.



ISED: 4112A-UAHL6D

FCC ID: NZLUAHL6D

MODEL: UAHL6D

## 2.2. Label Drawing and Location on Product

The label drawing and location of the label on the assembly is included in the "Label Location.pdf" attachment.

## 3. Test Configuration

Radiated Emission measurements presented in the report were made in accordance with ANSI C63.10:2013. The EUT was placed on a 1 x 1.5m non-metallic table elevated 80cm above a conducting ground plane for measurements below 1GHz and elevated to 1.5m for measurements above 1GHz. The harness was run down the edge of the test table to a power supply beneath the turntable

For radiated measurements above 1 GHz, RF absorbing material is placed between the antenna and EUT in accordance with ANSI C63.4:2014 Section 5.5 and chamber manufacturer's instructions.

For conducted measurements, a non-metallic table approximately 80cm x 90cm, 85cm above the floor was used.

## 4. Powerline Conducted Emissions Measurements

Powerline Conducted Measurements are not required for this product as the part is powered via 12V battery.



## 5. Emissions Data

**5.1. Date(s) Tested:** 2/11/2025-2/14/2025, 3/7/2025, 3/17/2025

**5.2. Test Method Deviations:** None

**5.3. Temperature and Humidity conditions**

	Measured Value	Unit
Temperature	22.8-24.4	°C
Humidity	45-50.8	%R.H.

## 5.4. Summary of Results (Part 15.247)

Measurement		Margin (dB)	Frequency (MHz)
Worst Case Spurious Emission	52.14 dBuV/m	1.86	17360 MHz
Maximum Peak Conducted Output Power	6.88 dBm	23.12	-
Minimum 6dB Bandwidth	690 kHz	190 kHz	-
Maximum 99% bandwidth	1050 kHz	-	-
Maximum Power Spectral Density	3.83 dBm	4.17	-

- **DTS (6dB) Bandwidth:** Per FCC 15.247(a)(2) and RSS-247 paragraph 5.2 (a), the minimum 6dB bandwidth shall be at least 500kHz for all systems using digital modulation techniques.

- **Band Edge Measurement Requirement:** Per section 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

- **Measurement Uncertainty:** The standard uncertainty of measurement has been determined in accordance with the ISO Guide to the Expression of Uncertainty in Measurements. The estimation of measurement uncertainty reported is the expanded uncertainty for a coverage factor of  $k=2.26$  and confidence interval of approximately 95%.

Expanded Uncertainty  $U_{(k=2.26)}$  is as follows:

- Radiated Emissions – Bicon (30-250 MHz): 4.1 dB
- Radiated Emissions – LPA (250-1000 MHz): 5.0 dB
- Radiated Emissions – DRWG (26.5 GHz): 4.2 dB
- Conducted Emissions: 1.04 dB
- Frequency: 0.007 ppm



## 5.5. Test Equipment Setup and Procedure

### 5.5.1. Sample(s) Used for Measurements

Sample ID(s):	905-5292-152265-1 & 905-5292-152264-1
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### 5.5.2. Test Equipment

Equipment used			
ID / Serial #	Manufacturer	Description	Cal / PM Due Date
6595	Rohde and Schwarz	EMI Receiver (Firmware Version: 3.66 SP1)	11/19/2025
CF GCL	Megaphase/Pasternack	3m Chamber Port and Cables	4/30/2025
8893	Com-Power	AH-118 Horn	4/22/2027
H6192	EMCO	3148 Log Periodic RX	5/13/2026
7257	ETS-Lindgren	Model 3116C 10-40GHz	5/10/2025
Tower 2	ETS-Lindgren	2171B Boresight Tower	VBV
PJ2246	ETS-Lindgren	Shielded Enclosure	6/30/2025
71.87	Omega	iBTHX-W Virtual	9/24/2025
HL5 Transceiver-GCL	Gentex	Default Receiver	VBV
6539	Stanley	Tape Measure	6/19/2026
2039	87V	Multimeter	6/27/2025
S/N:419726	AIM TTI	PL303-P	VBV
S/N:2053240	Miteq	AMF-4D-00501800-24-10P	12/31/2025
SW30	Gentex	3m Chamber Software	3/31/2025
SW48	Gentex	Gentex Emissions Measurement Software	3/31/2025
CBL146	Megaphase	Cable	10/31/2025
CBL 149	Megaphase	cable	10/31/2025
FLT009	Mini-Circuits	ZHFG-K4000+, 4500 MHz High Pass Filter, DC - 18 GHz	1/31/2026
S/N:2069595	Miteq	AMF-4F-18002650-20-10p	10/31/2025
CBL 119	Megaphase	KB18-N1S1-36	4/30/2025
AT55	Pasternack	7094-10	1/31/2026
AT56	Pasternack	7094-10	1/31/2026



## Test Equipment Setup and Procedure

### EMI Receiver Settings Emissions:

Detector Function : Peak  
Resolution Bandwidth :100kHz (below 1GHz)  
:1MHz (above 1GHz)  
Video Bandwidth: :300kHz (below 1GHz)  
:3MHz (above 1GHz)

### EMI Receiver (in Spectrum Analyzer mode) Settings Occupied Bandwidth:

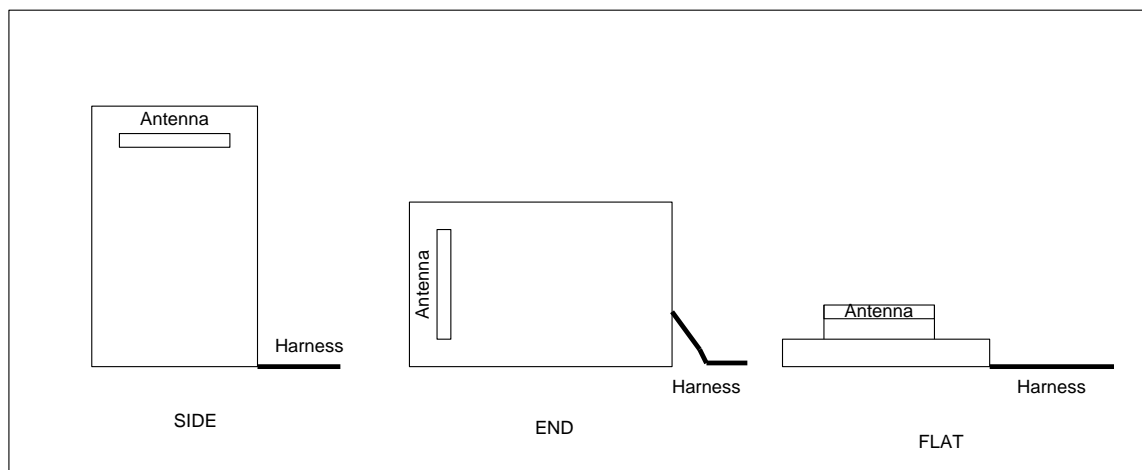
Detector : Peak  
Resolution Bandwidth :1 MHz (to determine peak level)  
:10 kHz (to determine occupied bandwidth)  
Video Bandwidth :3 MHz (to determine peak level)  
:30 kHz (to determine occupied bandwidth)

### Spectrum Analyzer Settings for Conducted measurements:

Detector Function : Peak  
Resolution Bandwidth :120kHz (below 1GHz)  
:1MHz (above 1GHz)  
Video Bandwidth: :300kHz (below 1GHz)  
:3MHz (above 1GHz)

For the testing, the EUT was placed at the center of a non-conducting table 80cm above the ground plane pursuant to ANSI C63.10:2013 for stand-alone equipment. The 2-conductor harness was routed down the edge of the test table to a power supply beneath the turntable.

Equipment is placed in one of the three orthogonal orientations, End, side, and flat. These orientations are described below in figure 6.2.3.



**Figure 6.2.3 EUT Orthogonal Orientations**

While in the prescribed orientation, the vertical antenna positioner sweeps in elevation from 1 to 4m in height until the operator finds the peak. The 3m turntable is then rotated



through 360 degrees until a peak is found. The table is stopped at the peak location and the peak in elevation re-verified. Procedure is repeated for applicable orientations/measurement antenna polarizations. Radiated testing was performed in the in-vehicle position only.

## 5.6. Measured Data – See Appendix A

## 6. Formulas and Sample Calculations

### 6.1. Calculation of ISED Limits from RSS-247 and 47 CFR Part 15.247

The Peak Tx Spurious Emissions limit for the fundamental is given by:  
Limit dBuV/m = 1W ERP = 127.38 dBuV/m, which is the fundamental limit.

The Rx Spurious Emissions limit for the fundamental is given by:  
Limit dBuV/m =  $20 \cdot \log(200 \mu\text{V/m}) = 46.0 \text{ dBuV/m}$

The Rx Spurious Emissions limit for the harmonics is given by:  
Limit dBuV/m =  $20 \cdot \log(500 \mu\text{V/m}) = 54.0 \text{ dBuV/m}$

## 7. Antenna Gain'

Antenna Gain was calculated by taking the maximum EIRP and subtracting the peak conducted output power in dBm at a given frequency. EIRP was calculated from the Max Field strength values at 3m using equation 1 below. Max field strength values in dBuV/m were taken from the fundamental emission measurements in section A.1 and conducted output power values in dBuV were taken from section A.3. Measurement settings can also be referenced in those sections.

$$1. \text{ EIRP (dBm)} = \text{Power Received (dBuV/m)} + 20 \cdot \log(d \text{ in meters}) - 104.77$$

Frequency (MHz)	Max Field Strength at 3m (dBuV)	Max Field Strength Converted to ERP (dBm)	Conducted Output Power (dBm)	Antenna Gain (dBi)
2402	96.46	1.232425094	6.88	-5.647574906
2440	98.48	3.252425094	6.84	-3.587574906
2480	99.04	3.812425094	6.85	-3.037574906

\*Cable corrections were taken into account using the measurement receiver.

## 8. Power Targets

Frequency (MHz)	Memory Map Value (decimal)
2402-2480	80



## Appendix A

### A. Radiated Measurements

#### 1. TX Measurements

**Measurement Settings:**

Measurement Frequency: Below 1GHz

Span: 500kHz or greater

RBW: 100/120kHz

VBW: 300kHz or 3 x RBW

Sweep Time: 25ms

Attenuation: Auto

Measurement Frequency: Above 1GHz

Span: 500kHz or greater

RBW: 1MHz

VBW: 3MHz or 3 x RBW

Sweep Time: 25ms

Attenuation: Auto

This measurement is a radiated measurement performed with a receiver. Prior to measurement the EUT is placed into a continuous transmit mode with 100% duty cycle via a communications board attached to the EUT.



**i. DUT Transmitting at 2402MHz (Fundamental)**

**Peak/Average Measurement - 2402MHz**

Frequency (MHz)	Orientation (Flat/End/Side)	Measurement Polarization (H/V)	Peak Measurement (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Average Measurement (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)
2402	Side	V	96.46	127.3	30.84	95.54	-	-
4804	Side	H	40.56	74.0	33.44	27.95	54.0	26.05
7206	Side	H	44.23	74.0	29.77	32.68	54.0	21.32
9608	Side	V	46.47	74.0	27.53	34.69	54.0	19.31
12010	Side	H	51.27	74.0	22.73	45.22	54.0	<b>8.78</b>
14412	Side	H	60.59	74.0	<b>13.41</b>	45.21	54.0	8.79
16814	Side	H	56.01	74.0	17.99	44.83	54.0	9.17
19216	Side	V	44.13	74.0	29.87	31.46	54.0	22.54
21618	Side	H	41.4	74.0	32.60	30.4	54.0	23.60
24020	Side	H	44.73	74.0	29.27	32.54	54.0	21.46

**ii. DUT Transmitting at 2440MHz (Fundamental)**

**Peak/Average Measurement - 2440MHz**

Frequency (MHz)	Orientation (Flat/End/Side)	Measurement Polarization (H/V)	Peak Measurement (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Average Measurement (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)
2440	Side	V	98.48	127.3	28.82	97.37	-	-
4880	Side	H	49.76	74.0	24.24	37.3	54.0	16.70
7320	Side	H	53.23	74.0	20.77	41.23	54.0	12.77
9760	Side	H	56.12	74.0	17.88	44.03	54.0	9.97
12200	Side	H	59.26	74.0	14.74	47.52	54.0	6.48
14640	Side	H	60.77	74.0	<b>13.23</b>	47.52	54.0	6.48
17080	Side	H	59.2	74.0	14.80	47.88	54.0	<b>6.12</b>
19520	Side	H	45.32	74.0	28.68	32.41	54.0	21.59
21960	Side	H	43.26	74.0	30.74	31.47	54.0	22.53
24400	Side	H	44.74	74.0	29.26	33.25	54.0	20.75



### iii. DUT Transmitting at 2480MHz (Fundamental)

#### Peak/Average Measurement - 2480MHz

Frequency (MHz)	Orientation (Flat/End/Side)	Measurement Polarization (H/V)	Peak Measurement (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Average Measurement (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)
2480	Side	V	99.04	127.3	28.26	98.3	-	-
4960	Side	H	49.07	74.0	24.93	37.16	54.0	16.84
7440	Side	H	54.9	74.0	19.10	41.9	54.0	12.10
9920	Side	H	57.13	74.0	16.87	44.86	54.0	9.14
12400	Side	H	58.364	74.0	15.64	44.83	54.0	9.17
14880	Side	V	61.02	74.0	<b>12.98</b>	49.2	54.0	4.80
17360	Side	V	60.23	74.0	13.77	52.14	54.0	<b>1.86</b>
19840	Side	V	45.32	74.0	28.68	33.54	54.0	20.46
22320	Side	H	43.25	74.0	30.75	32.56	54.0	21.44
24800	Side	V	46.22	74.0	27.78	34.74	54.0	19.26



## 2. Restricted Band-Edge Measurement

### Measurement Settings:

RBW:1MHz

VBW: 3x RBW

Sweep time: No faster than Coupled (auto) time

Detector: Peak and Average

Trace: Max Hold

Per section 15.205 only spurious emissions are permitted in the frequency bands 2310-2390MHz and 2483.5-2500MHz and shall not exceed the limits shown in 15.209.

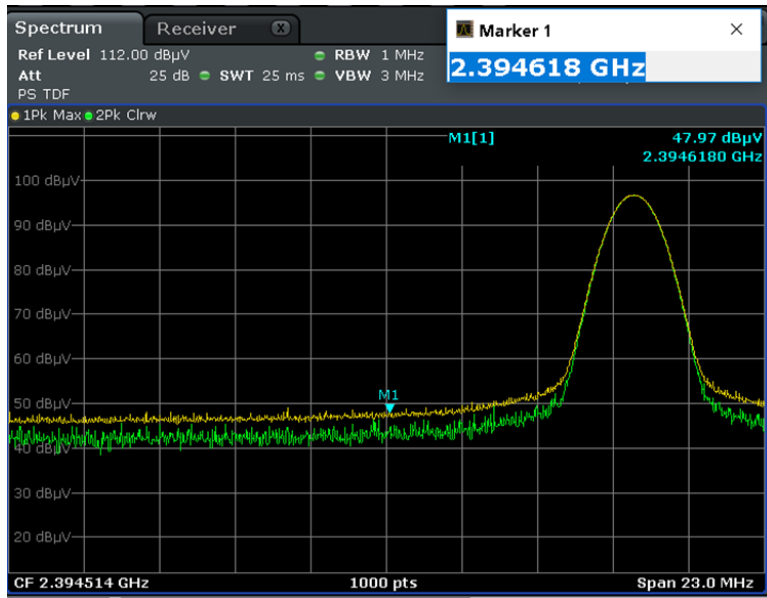
This measurement is a conducted measurement performed with a receiver. Prior to measurement the EUT is placed into a continuous transmit mode via a communications board attached to the EUT.

The restricted band edge measurement was performed with the transmitter set separately at 2402MHz and 2480MHz. For each of the measurements the emissions were below the limit

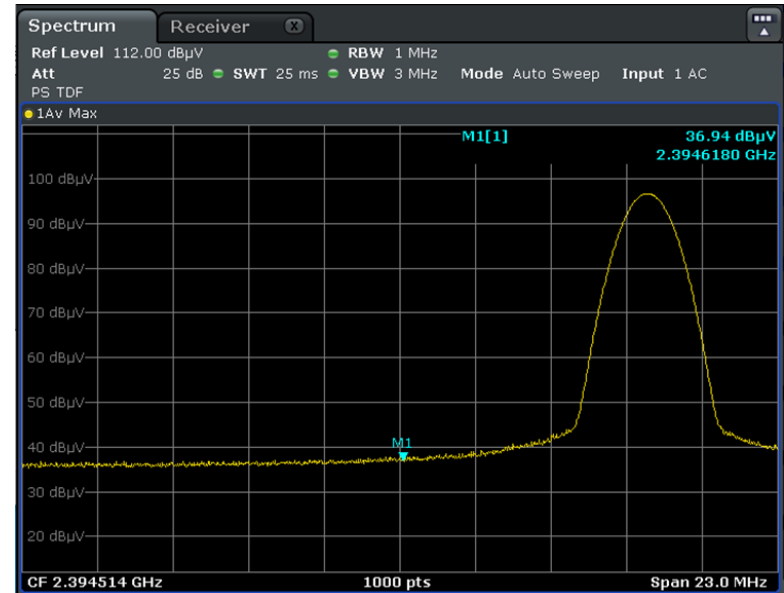
Measurement Frequency	Antenna Polarization	Measurement (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
2394.6	Horizontal	47.97	74	26.03	Peak
2394.5	Horizontal	36.94	54	17.06	Average
2394.6	Vertical	47.88	74	26.12	Peak
2394.6	Vertical	37.84	54	16.16	Average
2483.5	Horizontal	51.42	74	22.58	Peak
2483.5	Horizontal	42.44	54	11.56	Average
2483.5	Vertical	53.7	74	20.3	Peak
2483.5	Vertical	42.53	54	11.47	Average



2402 MHz Peak Horizontal

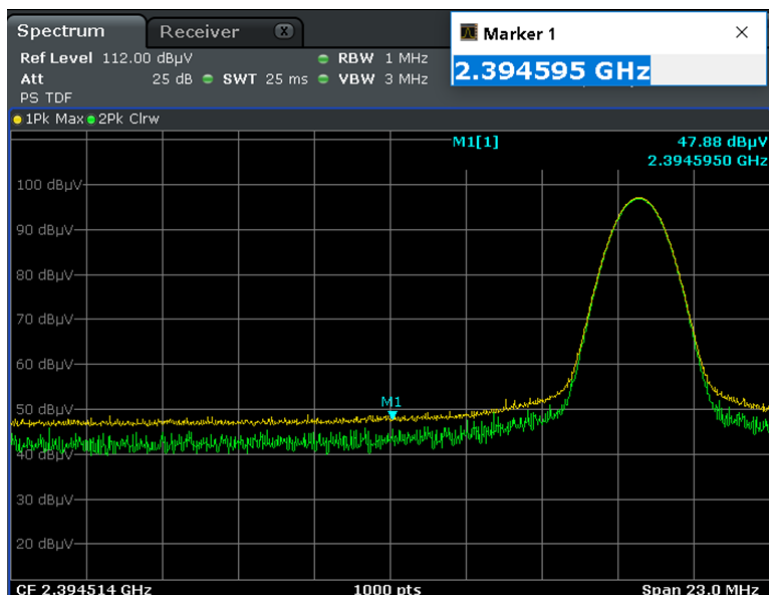


2402 MHz Average Horizontal

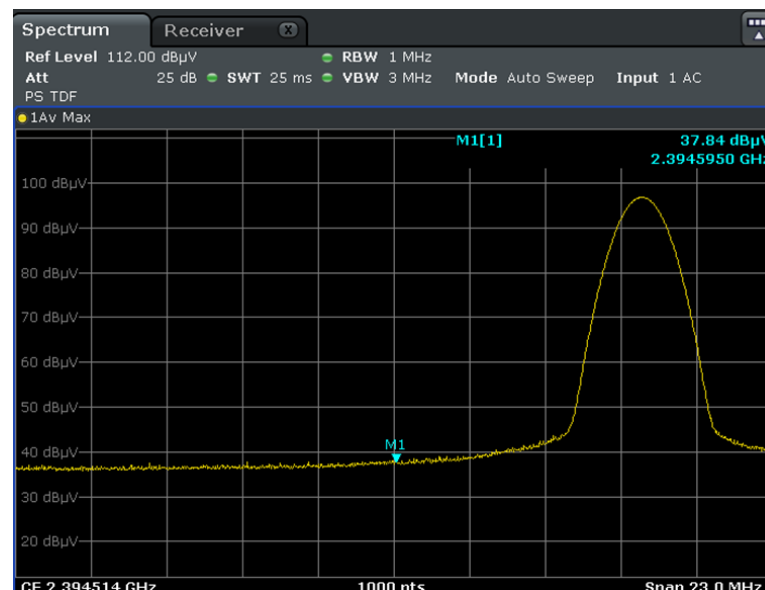




**2402 MHz Peak Vertical**

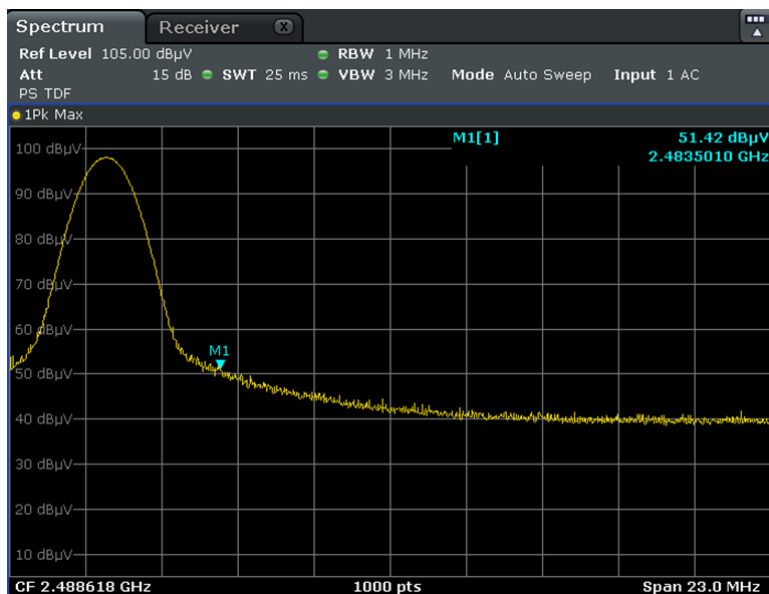


**2402 MHz Average Vertical**

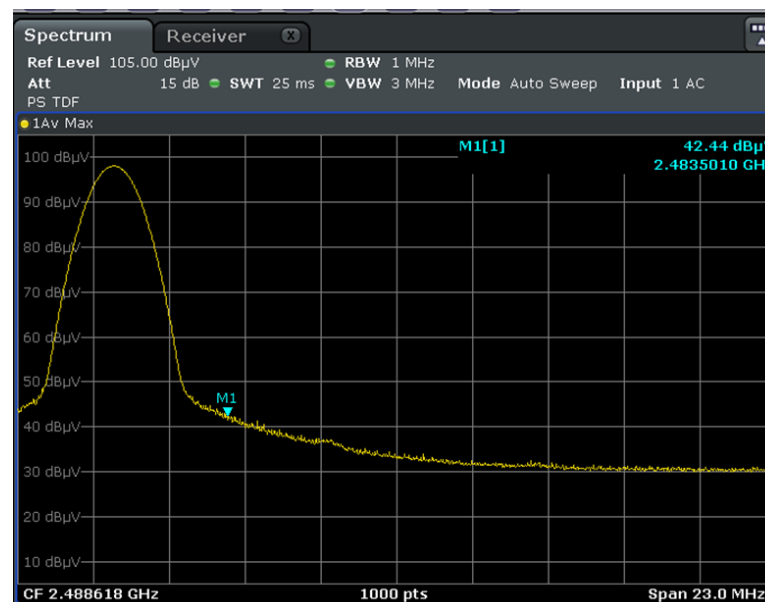




## 2480 MHz Peak Horizontal

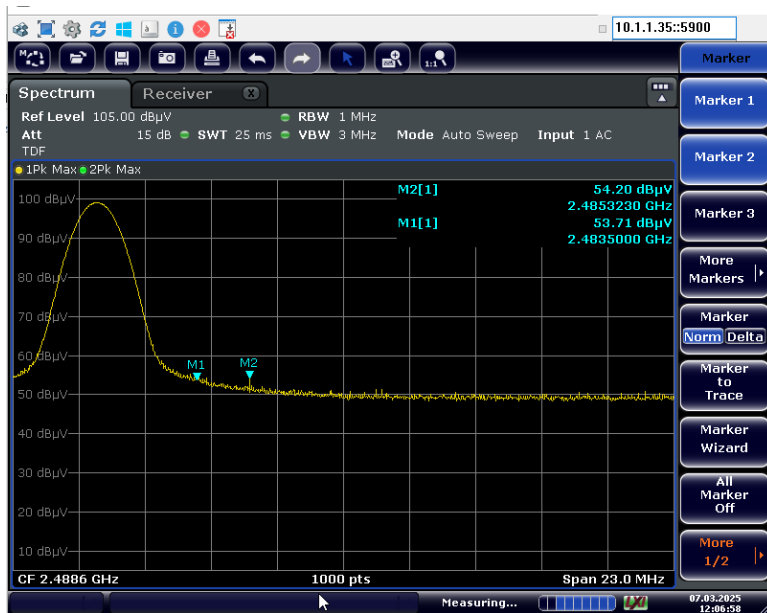


## 2480 MHz Average Horizontal

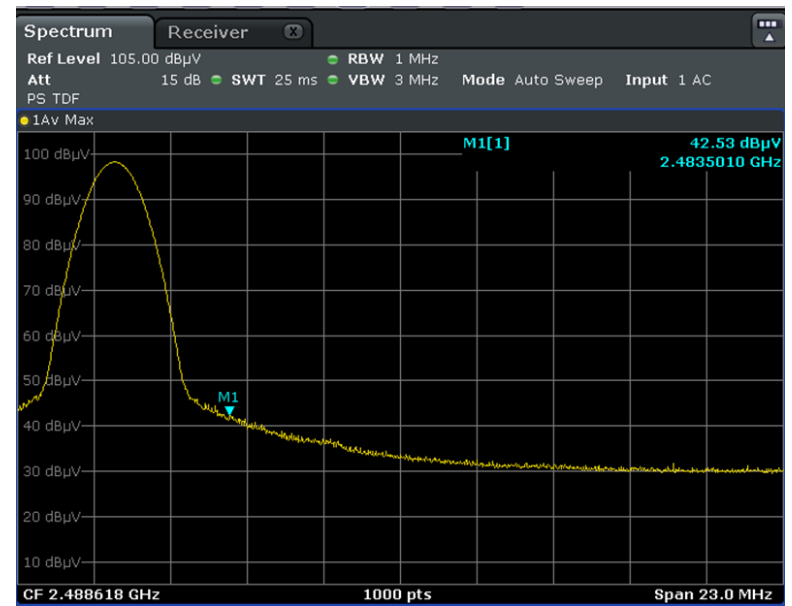




### 2480 MHz Peak Vertical



### 2480 MHz Average Vertical





## **B. Conducted Emissions**

### **1. 99% Bandwidth**

**Measurement Settings:**

Frequency Span: 2-5 times the OBW

RBW: 1 to 5% of the OBW

VBW: 3 times the RBW

Detector: Peak

Trace Max Hold

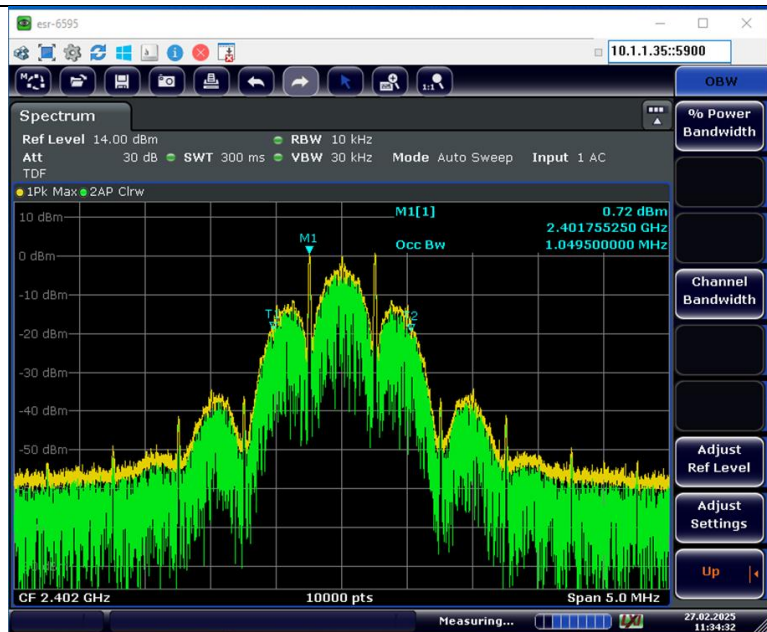
This Measurements is a conducted measurement. Prior to the measurement the EUT is placed into a continuous transmit mode via a communications board attached to the EUT.

In the measurement of the 99% bandwidth, the transmit frequency was set to the low, middle, and high channels of operation.

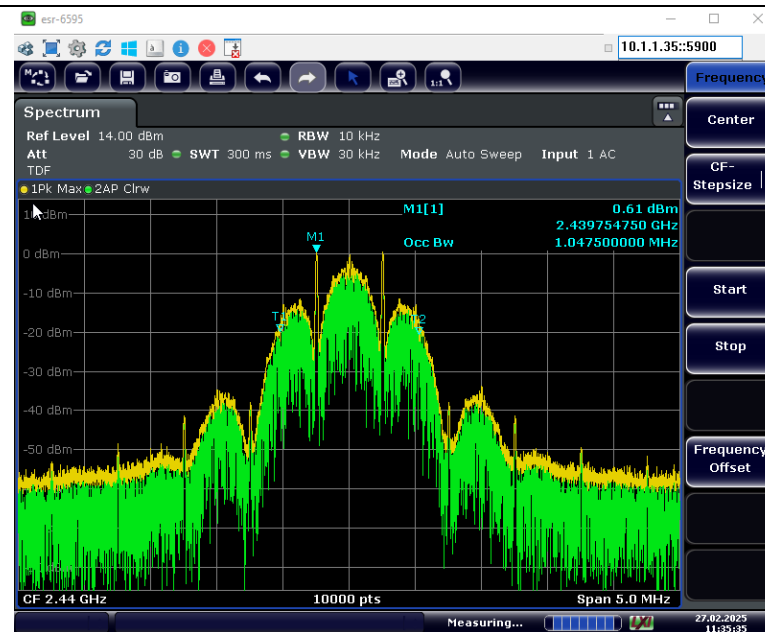
<b>Channel</b>	<b>99% BW (kHz)</b>
<b>Low</b>	1049
<b>Mid</b>	1048
<b>High</b>	1050



## 2402 MHz

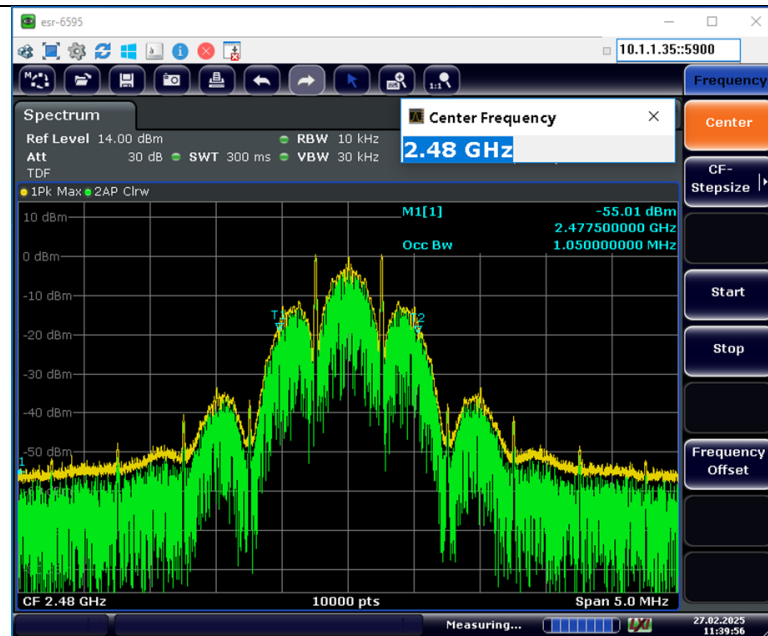


## 2440 MHz





## 2480 MHz





## 2. 6dB Bandwidth

### Measurement Settings:

RBW: in the range of 1 to 5% of the OBW but not less than 100kHz

VBW: Equal to or greater than 3 times the RBW

Span: Greater than the DTS bandwidth

Sweep time: No faster than the coupled (auto) time

Detector: Peak

Trace mode: Max Hold

**6dB Bandwidth Requirement:** Per 15.247(a)(2), systems using digital modulation may operate in the 2400-2483.5 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz

This measurement is a conducted measurement performed with the receiver per test method ANSI C63.10 section 11.8. Prior to measurement the EUT is placed into a continuous transmit mode via a communication board attached to the EUT.

In the measurement of the 6dB bandwidth, the transmit frequency was set to low, middle, and high channels of operation.

Channel #	Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)	Margin
0	2402	690	>500	190
19	2440	680	>500	180
39	2480	675	>500	175



## 2402 MHz



## 2440 MHz





**2480 MHz**





### 3. Peak Output Power

**Measurement Settings:**

RBW: Greater than the worst case DTS occupied bandwidth

VBW: Equal to or greater than 3 times the RBW

Span: Equal to or greater than 3 times the RBW

Sweep time no faster than coupled (auto) time

Detector: Peak

**Peak Output Power Requirement:** Per 15.247(b)(3) The maximum Peak Conducted Output Power of the intentional radiator shall not exceed the 1W (30dBm) for systems using digital modulation in the 2400-2483.5MHz

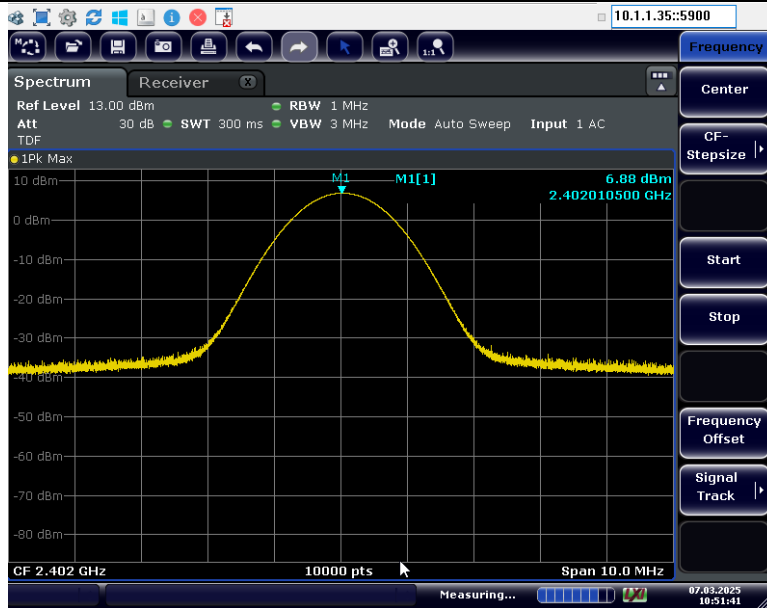
This measurement is a conducted measurement performed with the receiver per test method ANSI C63.10 section 11.9. Prior to measurement the EUT is placed into a continuous transmit mode via a communications board attached to the EUT.

In the measurement of the Peak Output Power, the transmit frequency was set to low, middle, and high channels of operation.

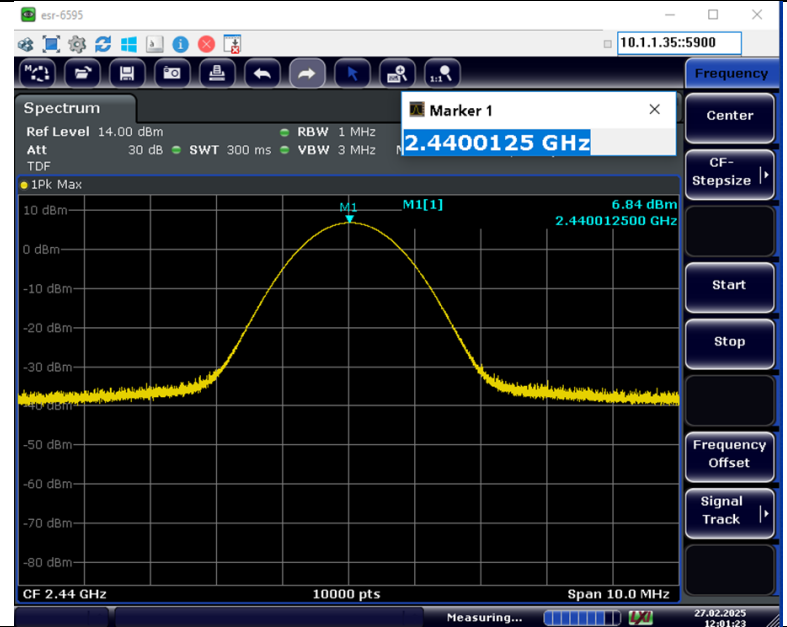
Channel #	Frequency (MHz)	Power Output (dBm)	Limit (dBm)	Margin
0	2402	6.88	30	23.12
19	2440	6.84	30	23.16
39	2480	6.85	30	23.15



**2402 MHz**

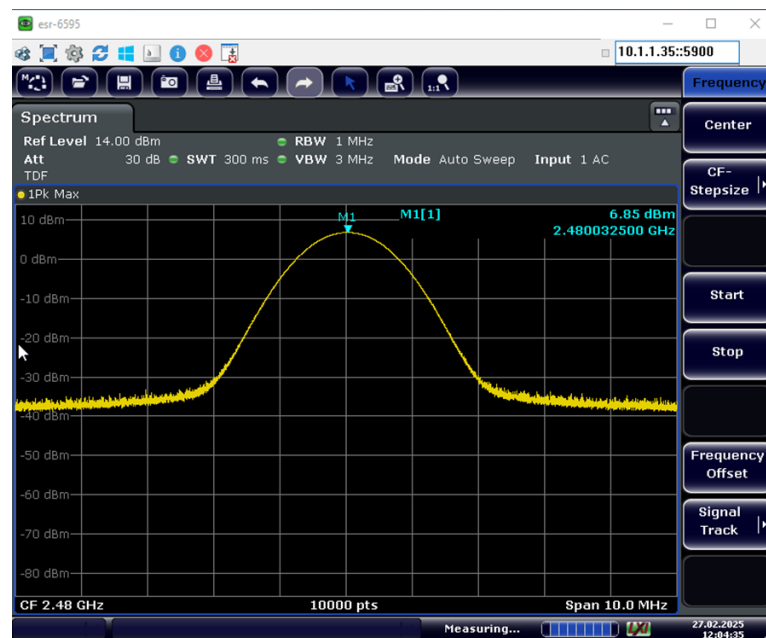


**2440 MHz**





**2480 MHz**





#### 4. Power Spectral Density

**Measurement Settings:**

Span: Greater than 1.5 times the DTS bandwidth

RBW: set to between 3kHz and 100kHz

VBW: Equal to or greater than 3 times the RBW

Sweep time: No faster than the coupled (auto) time

Detector: Peak

Trace mode: Max hold

**Power Spectral Density requirement:** Per 15.247(e) for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission. The same method of determining the conducted output power shall be used to determine the power spectral density.

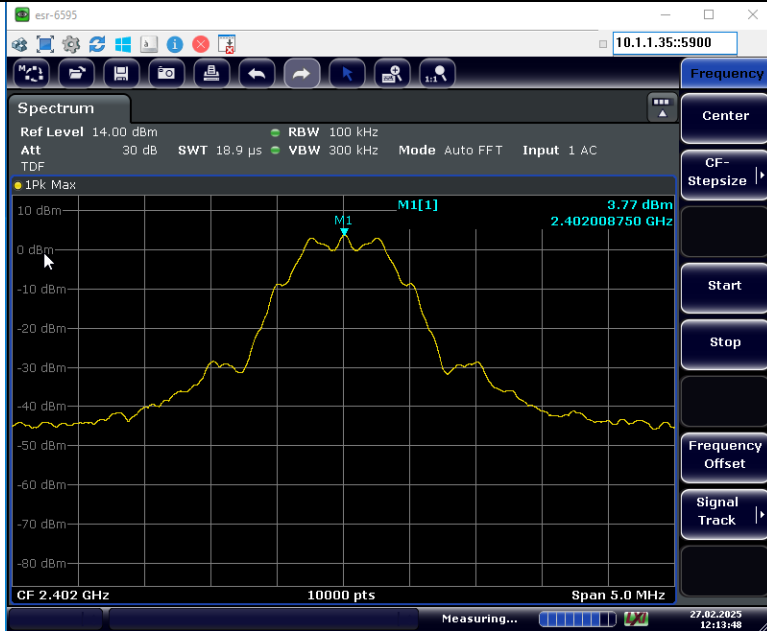
This measurement is a conducted measurement performed with the receiver per test method ANSI C63.10 section 11.10. Prior to measurement the EUT is placed into a continuous transmit mode via communications board attached to the EUT.

In the measurement of the power spectral density, the transmit frequency was set to low, middle, and high channels of operation.

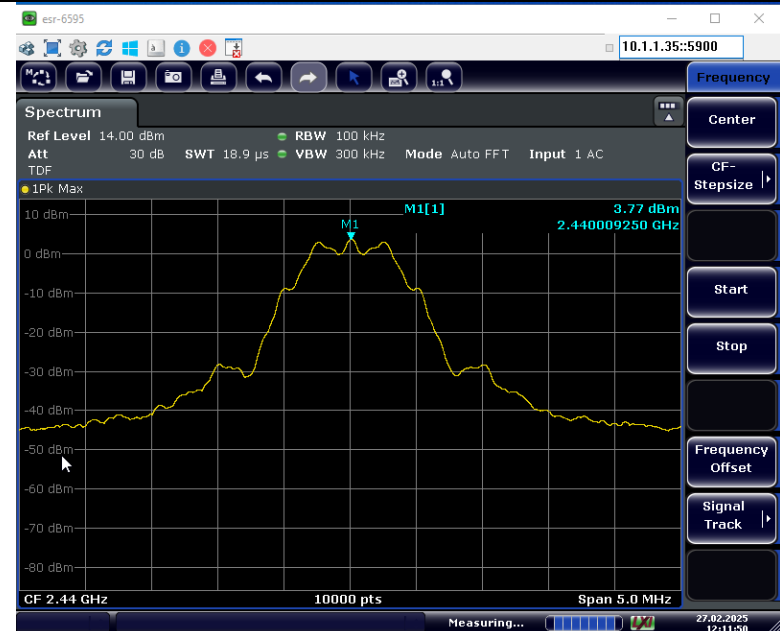
Channel #	Frequency (MHz)	Measurement PPSP (dBm)	Limit (dBm)	Margin
0	2402	3.77	8	4.23
19	2440	3.77	8	4.23
39	2480	3.83	8	4.17



## 2402 MHz



## 2440MHz





**2480 MHz**





## 5. Conducted Emissions Sweep – 30MHz to 25GHz

Sweep 1: Peak - 100 kHz

Segment: 1

Start Frequency: 30 MHz

End Frequency: 1000 MHz

Band: Band 1

Detector: Peak

Sweep Mode: FFT

Attenuator: 5 dB

Pre-Amp: On

Max Hold Trace Mode: Off

Bandwidth Filter: EMI (6dB)

RBW: 100 kHz

Step Size: AUTO (25 kHz)

Dwell Time: 10ms

Notch Filter (2.4 - 2.5 GHz): Disabled

Notch Filter (5.725 - 5.875 GHz): Disabled

Sweep 1: Peak - 100 kHz

Segment: 2

Start Frequency: 1000 MHz

End Frequency: 4000 MHz

Band: Band 2

Detector: Peak

Sweep Mode: FFT

Attenuator: 10 dB

Pre-Amp: On

Max Hold Trace Mode: Off

Bandwidth Filter: EMI (6dB)

RBW: 100 kHz

Step Size: AUTO (25 kHz)

Dwell Time: 10ms

Notch Filter (2.4 - 2.5 GHz): Disabled

Notch Filter (5.725 - 5.875 GHz): Disabled

Sweep 1: Peak - 100 kHz

Segment: 3

Start Frequency: 4000 MHz

End Frequency: 18000 MHz

Band: Band 3

Detector: Peak

Sweep Mode: FFT

Attenuator: 5 dB

Pre-Amp: On

Max Hold Trace Mode: Off

Bandwidth Filter: EMI (6dB)

RBW: 100 kHz

Step Size: AUTO (25 kHz)

Dwell Time: 10ms

Notch Filter (2.4 - 2.5 GHz): Disabled

Notch Filter (5.725 - 5.875 GHz): Disabled

Sweep 1: Peak - 100 kHz

Segment: 4

Start Frequency: 18000 MHz

End Frequency: 26000 MHz

Band: Band 4

Detector: Peak

Sweep Mode: FFT

Attenuator: 5 dB

Pre-Amp: On

Max Hold Trace Mode: Off

Bandwidth Filter: EMI (6dB)

RBW: 100 kHz

Step Size: AUTO (25 kHz)

Dwell Time: 10ms

Notch Filter (2.4 - 2.5 GHz): Disabled

Notch Filter (5.725 - 5.875 GHz): Disabled



Per section 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

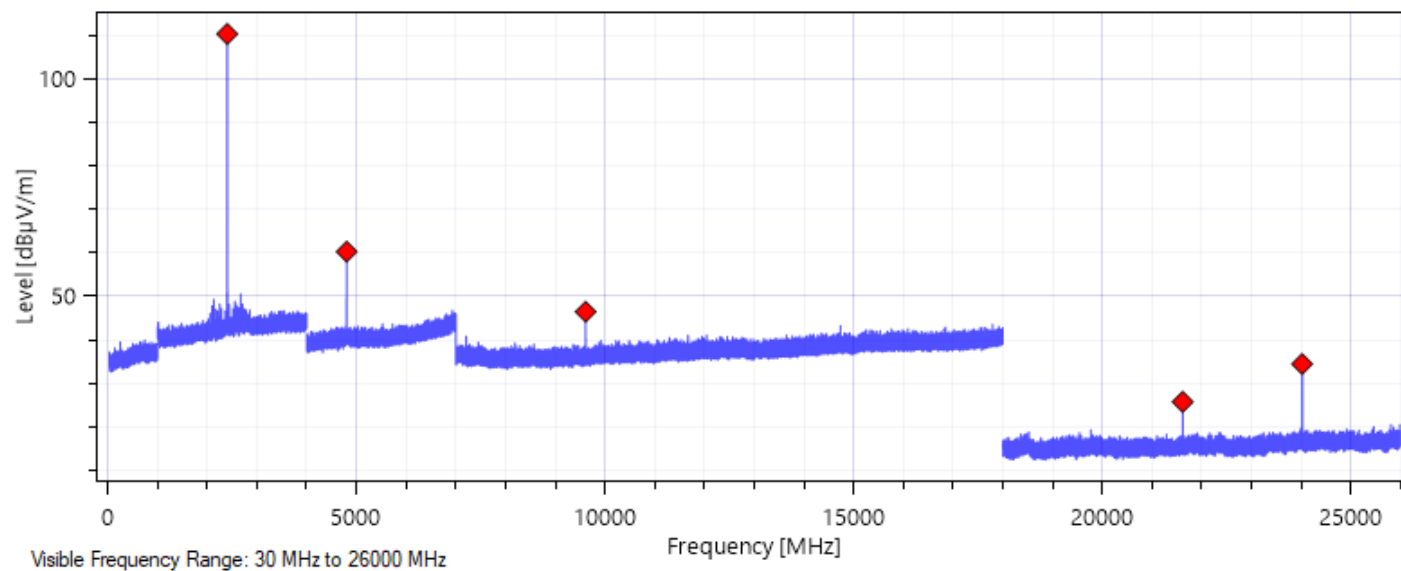
This measurement is a conducted measurement performed with a receiver. Prior to measurement the EUT is placed into a continuous transmit mode via a communications board attached to the EUT.

The band edge measurement was performed with the transmitter set separately at the low, mid, and high channel of operation. For each of the measurements the emissions were greater than 20 dB below the peak of the signal.

Channel	Worst-Case Delta (dB)	Limit (dB)	Margin
Low	50.125	20	30.1
Mid	50.71		30.7
High	51.084		31.1



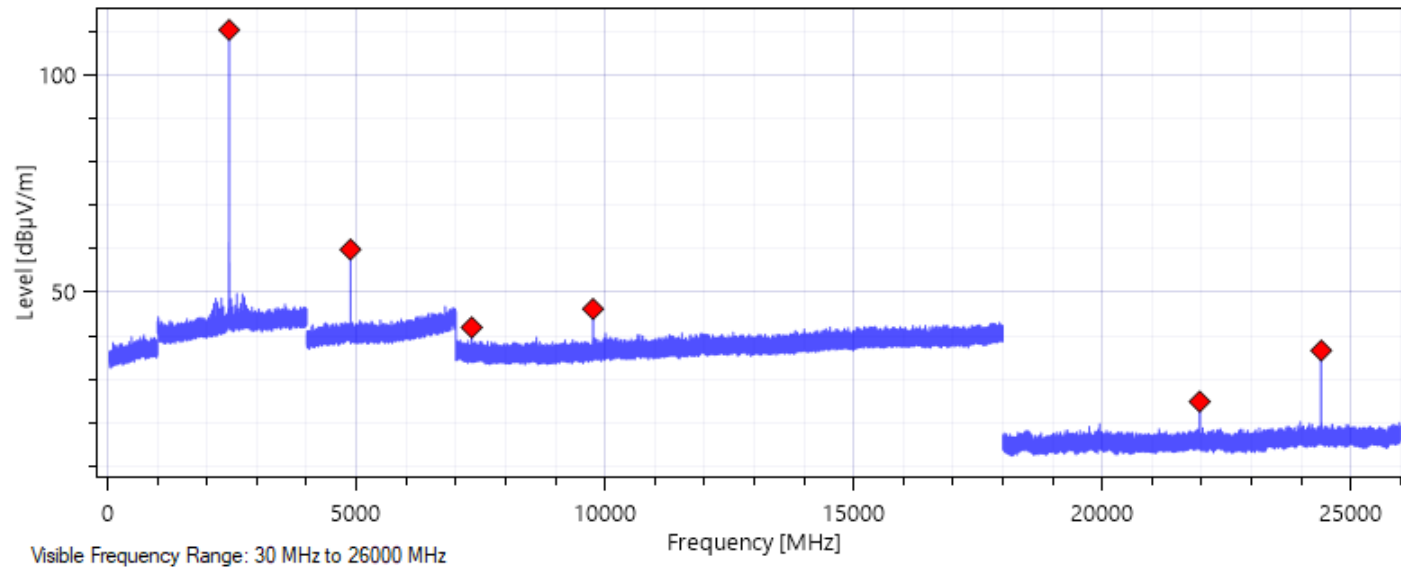
**2402 Conducted Sweep**



Frequency (MHz)	Level (dBμV/m)
2,402.000000	110.431
4,803.525000	60.306
9,609.025000	46.485
21,615.750000	25.743
24,017.500000	34.461



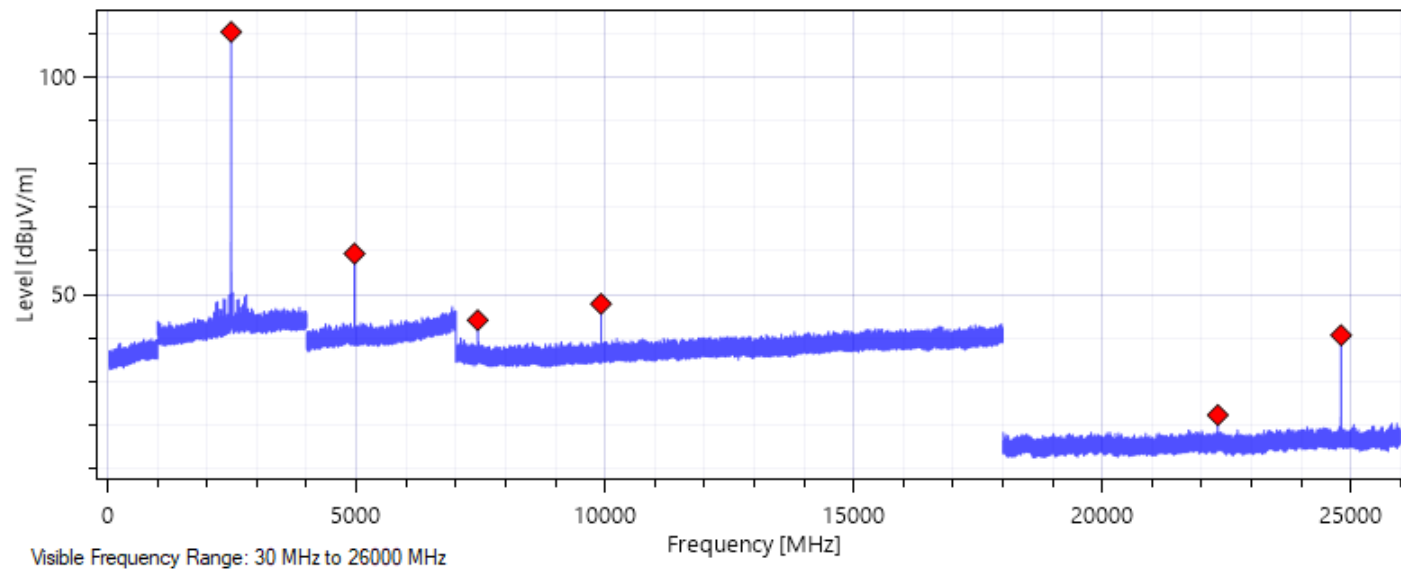
**2440 Conducted Sweep**



Frequency (MHz)	Level (dBμV/m)
2,440.000000	110.637
4,879.525000	59.927
7,319.275000	41.939
9,759.050000	46.202
21,957.825000	24.829
24,402.575000	36.606



**2480 Conducted Sweep**



Frequency (MHz)	Level (dBµV/m)
2,480.000000	110.496
4,960.500000	59.412
7,439.275000	44.086
9,919.025000	47.860
22,322.300000	22.256
24,802.525000	40.634