

Prüfbericht-Nr.: Test report no.:	IN269WJU 001	Auftrags-Nr.: Order no.:	147163601 010	Seite 1 von 51 Page 1 of 51
Kunden-Referenz-Nr.: Client reference no.:	1039889	Auftragsdatum: Order date:	2026-02-05	
Auftraggeber: Client:	Bosch Global Software Technologies Private Limited MS/PAC, Ban601, Post Box No 3000 Hosur Road, Aduodi Bengaluru 560030 India			
Prüfgegenstand: Test item:	iTraMS Gen2E HF			
Bezeichnung / Typ-Nr.: Identification / Type no.:	CU-403-1011-01 CU-403-1011-02			
Auftrags-Inhalt: Order content:	Testing and issue of Test Report with Grant Certificate			
Prüfgrundlage: Test specification:	FCC Part15 SubpartC 15.247; 15.205; 15.209			
Wareneingangsdatum: Date of sample receipt:	2026-03-17			
Prüfmuster-Nr.: Test sample no:	A004227783-001, 003 A004227783-007, 009			
Prüfzeitraum: Testing period:	2026-04-01 - 2026-04-30			
Ort der Prüfung: Place of testing:	Wireless laboratory, Bangalore			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (India) Pvt.Ltd., 27/B, 2nd Cross, Electronic City Phase1 Bangalore -560 100, India FCC Test site registration number: 496599 ISED Test site registration number: 27711			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	genehmigt von: authorized by:			
Datum: Date: 2026-08-07	Ausstellungsdatum: Issue date: 2026-08-07			
Stellung / Position: Darshan D Senior Engineer	Stellung / Position: Yogesh V Assistant Manager			
Sonstiges / Other:	FCC ID: 2AVVT-CU4031011 IC: 25763-CU4031011			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

TEST SUMMARY

Test Item	FCC Clause	Result
Maximum conducted output power	15.247 (b)(3)	Pass
Maximum Power Spectral Density	15.247(e)	N/T
DTS Bandwidth & Occupied Channel Bandwidth	15.247(a)(2)	N/T
Emissions in non-restricted frequency bands	15.247 (d)	N/T
Spurious Radiated Emissions and Restricted Bands of Operation	15.209 / 15.205	Pass
AC Power lines Conducted emission	15.207	Pass

N/T: Not Tested – These test cases have not been executed, as the product incorporates the certified RF module: **Wi-Fi & Bluetooth Module** of **Quectel** wireless Solutions Co., Ltd. This module has been tested at **TA Technology (Shanghai)Co.,Ltd.** under **FCC ID:XMR202303AF20**. Therefore, the mentioned test cases are excluded, and relevant details can be found in the module's test reports of R2212A1318-R3V1 corresponding to the respective FCC ID.

Product Category: Electronics Testing

Test Discipline: EMC Test Facility

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REVISION HISTORY OF THIS REPORT

Report Number	Version	Description	Issue date
IN269WJU 001	01	Initial issue of report	2026-08-07

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1 GENERAL REMARKS

1.1 Attachments

All attachments are part of this test report and are issued in separate document

1. Test Setup photos
2. EUT External Photos
3. EUT Internal Photos
4. Maximum Permissible Exposure Information

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2 TEST SITES

2.1 Testing Facilities

1. TÜV Rheinland (India) Pvt.Ltd.,
27/B, 2nd Cross,
ElectronicCityPhase1
Bangalore – 560 100,
India
2. TUV Rheinland (India) Pvt.Ltd.,
108, Beside ISBR Business School,
Electronic city Phase I
Bangalore - 560 100,
India

2.2 List of Test and Measurement Instruments

Table 1: List of test and measurement instruments

Equipment	Manufacturer	Model Name	Serial Number	Firmware Versions	Calibration Due Date	Periodicity	Test Facility
EMI Receiver	Rohde & Schwarz	ESW 44	101773	1.72 SP5	16.02.2027	Yearly	Radiated Spurious Emission
Active loop antenna	Frankonia	LAX-10	LAX-10-800	-	17.11.2026	Yearly	
Balun & Biconical Antenna	Schwarzbeck Mess-Elektronik	BBA 9106+VHBB 9124	9124-1117	-	11.04.2026	Yearly	
Log Periodic Antenna	Schwarzbeck Mess-Elektronik	VUSLP 9111B	9111B-324	-	26.05.2026	Yearly	
Horn Antenna	Schwarzbeck	BBHA 9120D	01944	-	11.11.2026	Yearly	
Double-Ridged Waveguide Horn Antenna	ETS	116706	00107323	-	16.05.2026	Yearly	
EMI Test Receiver	Rohde & Schwarz	ESW44	101732	1.72.SP1	20.11.2026	Yearly	Antenna – Port Conducted
10dB Attenuator	Rohde & Schwarz	NA	NA		10.10.2026		
Spectrum Analyzer	Agilent	E4407B	US41192772	-	16.01.2027	Yearly	

Table 2: Instrument application Software versions

SL. No.	Test Type	Application software	Version
1	Radiated spurious emission measurement in FAC	EMC 32	10.60.20
2	Radiated spurious emission measurement in 10mtr SAC	BAT EMC	3.20.0.17

3 GENERAL PRODUCT INFORMATION

3.1 Product Function and Intended Use

iTraMS is a platform for TCU or CCU that is an onboard system that controls wireless tracking, diagnostics and communication to/from the vehicle; these systems can be used for fleet management and vehicle tracking, among many others. This CCU has the following connectivity solutions:

1. Wireless Connectivity :

- Cellular – LTE
- WLAN
- Wi-Fi
- GNSS

2. Wireless Connectivity :

- CAN
- Ethernet
- USB

3.2 Ratings and System Details of Equipment under Test

Table 3: Ratings and System Details as declared by Client*

Radio Protocol		Wi-Fi
Operating Frequency Range		2412MHz to 2462MHz
No. of Channels		11 (Refer Table 6)
Channel Spacing		5MHz
Measured Power (dBm)		17.17dBm@2437MHz_b-mode_1Mbps
Modulation		802.11b: DSSS, 802.11g/n: OFDM,
Number of antennas		1
Antenna Gain		Refer table 4
Antenna Type		Internal
Supply Voltage to Product		12V DC 200ma approx.
Environmental conditions	Storage	-40°C to 80°C
	Operating	-40°C to 70°C
EUT Dimension(L x W x H)		190 X 95 X 42 mm

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Antenna Details:

Antenna Type	Channel Frequency (MHz)	Antenna Gain (dBi)
Wi-Fi FPC Antenna	2400	3.3
	2450	3.1
	2500	3.1
	5150	2.5
	5500	2.6
	5850	2.9

Table 4: Wi-Fi FPC Antenna Gain

***Disclaimer:** The information/data is supplied by the client and the same is considered to arrive at the final value. Any changes made apart from the specified specification, can directly impact on the tests results. Refer the products user manual for more details.

3.3 Measurement Uncertainty:

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$

Table 5: Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±0.67 dB
Power Spectral Density, conducted	±0.85 dB
Unwanted Emissions, conducted	±2.58 dB
All emissions, radiated	±3.67 dB

4 TEST SET-UP AND OPERATION MODE

4.1 Principle of Configuration Selection

Transmission was enabled with highest possible duty cycle transmission on low, mid and high channel.

4.2 Test Operation and Test Software

Hardware Name:

UI Software Version: 02.004.00

Firmware Version:

4.3 Special Accessories and Auxiliary Equipment

- None

4.4 Countermeasures to achieve EMC Compliance

- None

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4.5 List of frequencies

Frequency Band (MHz)	Channel No.	Channel Frequency (MHz)
2412 – 2462	1	2412
	2	2417
	3	2422
	4	2427
	5	2432
	6	2437
	7	2442
	8	2447
	9	2452
	10	2457
	11	2462

Table 6: List of Wi-Fi center Frequencies

Channel used for Wi-Fi 2.4GHz testing

Protocol: WLAN 802.11b

Channel Low : 2412 MHz
Channel Mid : 2437 MHz
Channel High : 2462 MHz

Protocol: WLAN 802.11g

Channel Low : 2412 MHz
Channel Mid : 2437 MHz
Channel High : 2462 MHz

Protocol: WLAN 802.11n_20MHz

Channel Low : 2412 MHz
Channel Mid : 2437 MHz
Channel High : 2462 MHz

Protocol: WLAN 802.11n_40MHz

Channel Low : 2422 MHz
Channel Mid : 2437 MHz
Channel High : 2452 MHz

4.6 TUV Sample Identification

TUV Sample Identification number: A004227783-001 Radiated test Sample
A004227783-003 Conducted test Sample

5 Operational Description

The iTraMS Gen2E CCU has a NAD (Network Access Device) module AG35 and a microcontroller RH850, which are connected over SPI to enable telematics functionality.

The AG35 NAD module comes from Quectel and is a North America specific variant. It functions only with North America regional LTE bands. It also contains embedded GNSS supporting GPS/GLONASS/Beidou/Galileo/QZSS and supports location-based telematics features such as tracking and geofencing. The internal antenna HW variant has dedicated LTE & GNSS antennas on the PCB.

The RH850 microcontroller comes from Renesas and collects vehicle data over the CAN network. It enables telematics related features on vehicle parameters such as engine performance.

The CCU also has an on-board accelerometer & gyro sensor, SMI230 from Bosch, which enables inertial monitoring

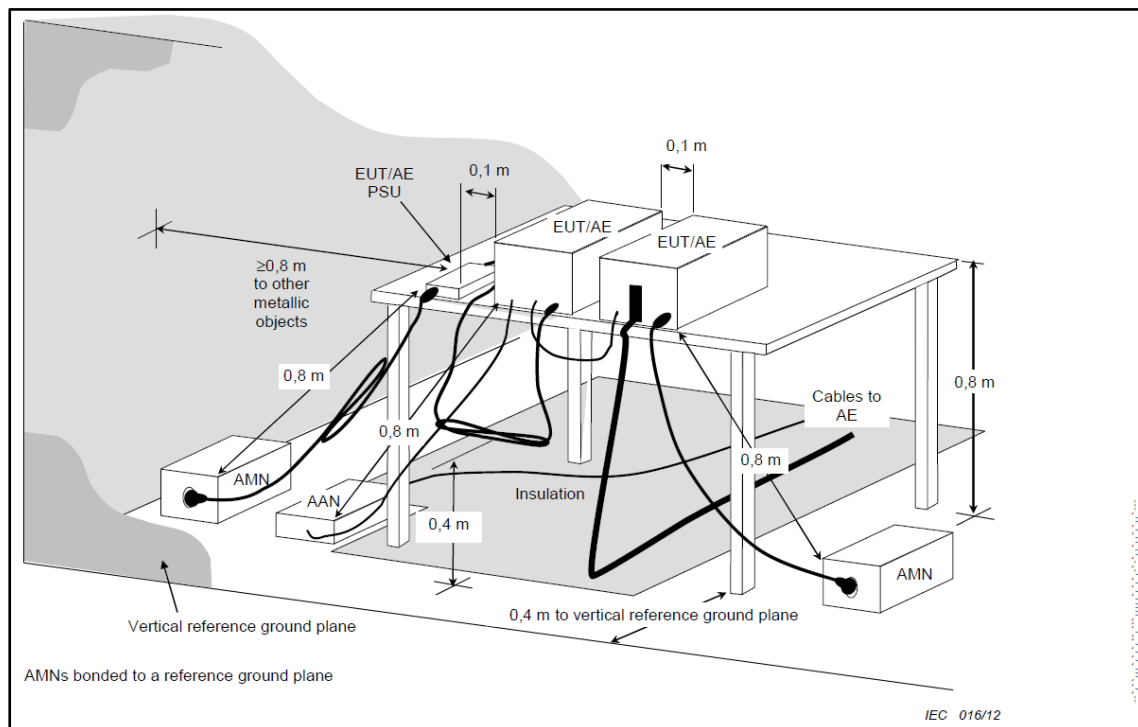
6 TEST METHODOLOGY

6.1 AC Power lines Conducted emission

Measured levels of ac powerline conducted emission across the 50Ω LISN port (to which the EUT is connected). All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer.

The device is placed on the test table, raised 80cm above the reference ground plane. The vertical conducting plane is located 40cm to the rear of the device. AC Conducted emission measurement is made over frequency range from 150 kHz to 30MHz, this measurement was performed an AC adaptor 110V AC 60Hz supply

6.1.1 Test Setup Configuration



6.2 Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2020. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1 GHz & 1.5 m height for above 1 GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000 MHz was performed by horn antenna, the measurement below 30 MHz was performed by loop antenna, Measurement from 30 MHz to 200 MHz was performed by Balloon and Biconical Antenna, and measurement from 200 MHz to 1 GHz was performed by Log-Periodic Antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded

6.2.1 Test Setup Configuration

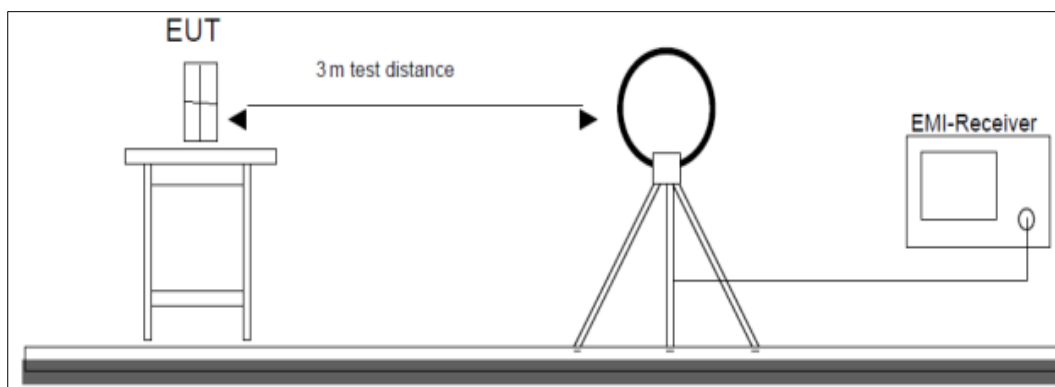


Figure 1: Frequency Range 9 kHz- 30 MHz

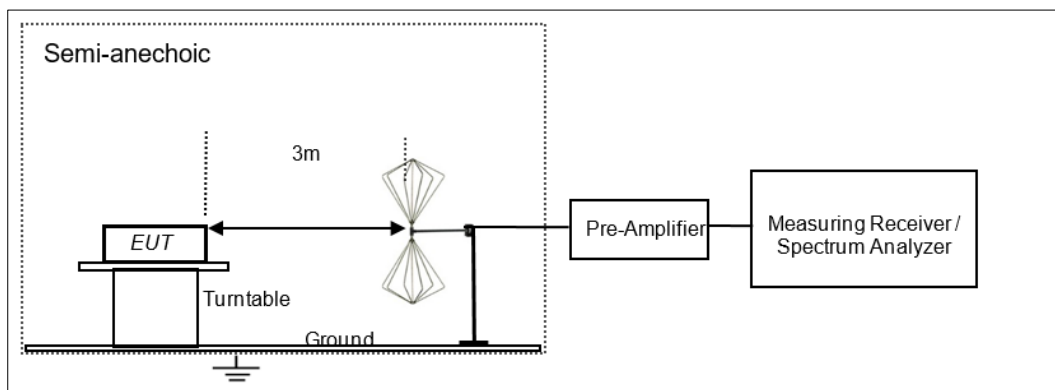


Figure 2: Frequency Range 30 MHz – 200 MHz

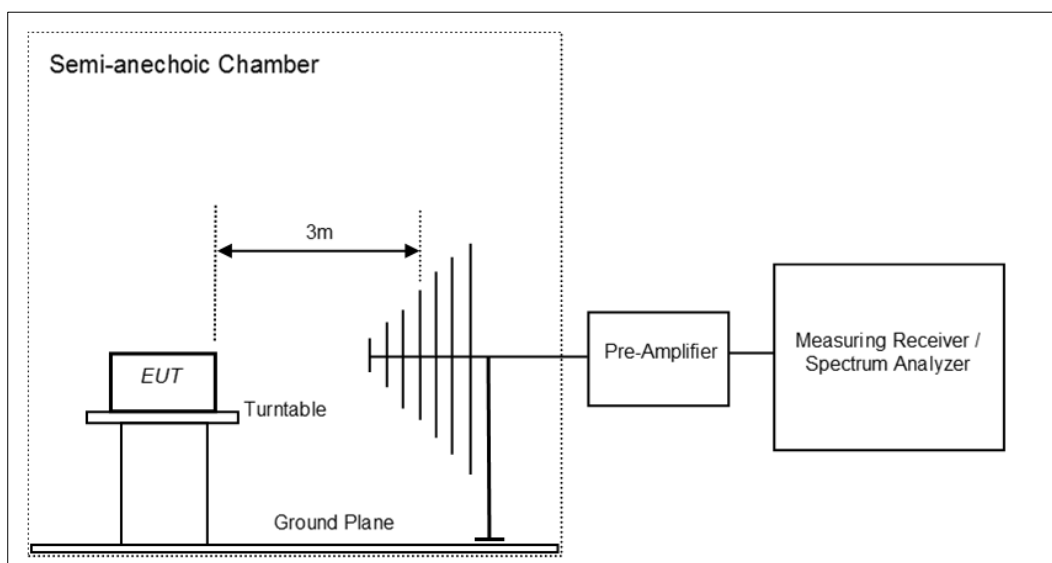


Figure 3: Frequency Range 200 MHz - 1GHz

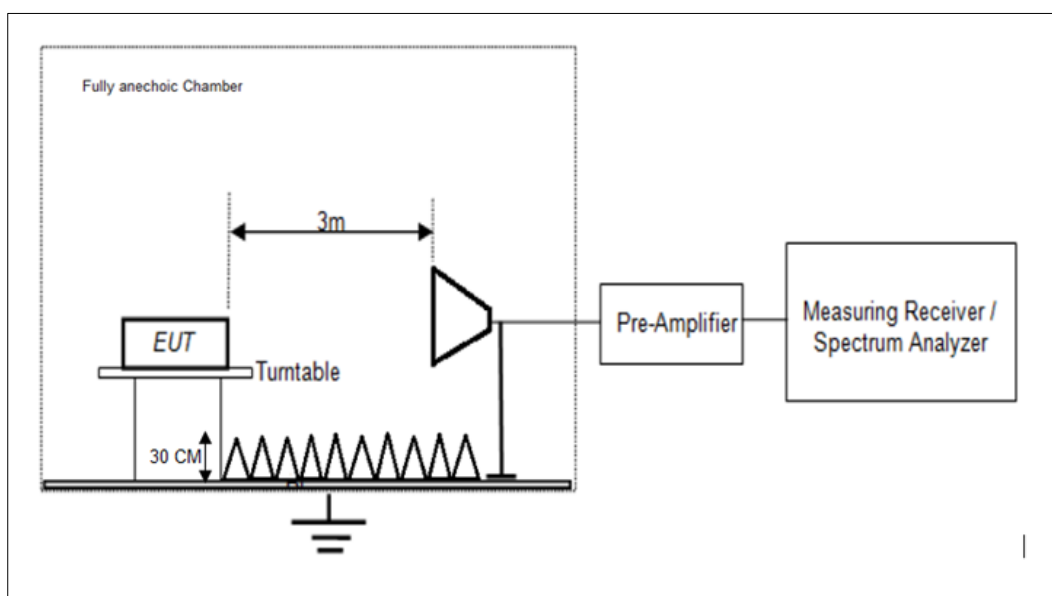


Figure 4: Frequency Range above 1 GHz

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7 TEST RESULTS FOR WI-FI

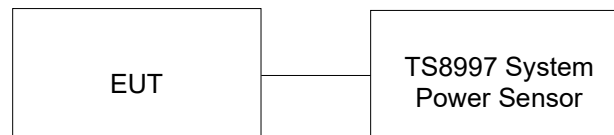
7.1 Maximum Average Conducted Output Power

Result

Pass

Test Specification	FCC part 15 Subpart C 15.247 (b)(3)
Test Method	Subclause 11.9.2.3.2 of ANSI C63.10-2020
Detector	Average (Gated RMS)
Port of testing	Antenna port
Requirement	Power $\leq$ 1 W (30 dBm)

Test Method



Test Condition

Normal Test Condition:

Temperature (Norm) = + 22.3 °C Voltage = 110VAC/60Hz through mains Relative humidity: 62%

Test results:

Note:

All the losses are included during measurement and final values are mentioned in the test report.

Bandwidth	Mode	Data rate	Measured Frequency (MHz)	Measured Average Power (dBm)	FCC Limit (dBm)
20MHz	b	1Mbps	2412	13.32	30
			2437	17.17	30
			2462	15.19	30
	g	6Mbps	2412	12.25	30
			2437	14.26	30
			2462	14.01	30
	n	MCS0	2412	11.97	30
			2437	15.22	30
			2462	13.71	30
40MHz	n	MCS0	2422	10.64	30
			2437	13.00	30
			2452	13.23	30

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7.2 Spurious Radiated Emissions & Restricted Bands of Operation

Result

Pass

Test Specification	FCC part 15 Subpart C 15.247 (d) / (15.209 & 15.205)
Test Method	ANSI C63.10.2020
Measurement Location	Semi Anechoic Chamber 30MHz - 1 GHz Fully Anechoic Chamber 1 GHz - 40GHz
Measurement Bandwidth	100 kHz for frequency range < 1GHz 1 MHz for Frequency range >1GHz
Detector	Refer remarks below
Measuring Distance	3 m
Requirement	As per the limits mentioned in the below table
Test setup	Refer Clause 7 TEST METHODOLOGY

Table 7: Transmitter limits for Radiated emission

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.00	3

Remark: * The limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds to 128.51 – 93.80, 73.80 – 62.96 and 69.54.00 dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

Test Conditions:

Temperature (Norm) = + 22.5 °C Voltage = 110VAC/60Hz through AC mains/Internal Battery

Relative humidity = 62 %

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Test results:

Note: All the losses are included during measurement and final values are mentioned in the test report. Refer Clause 7 TEST METHODOLOGY for more details

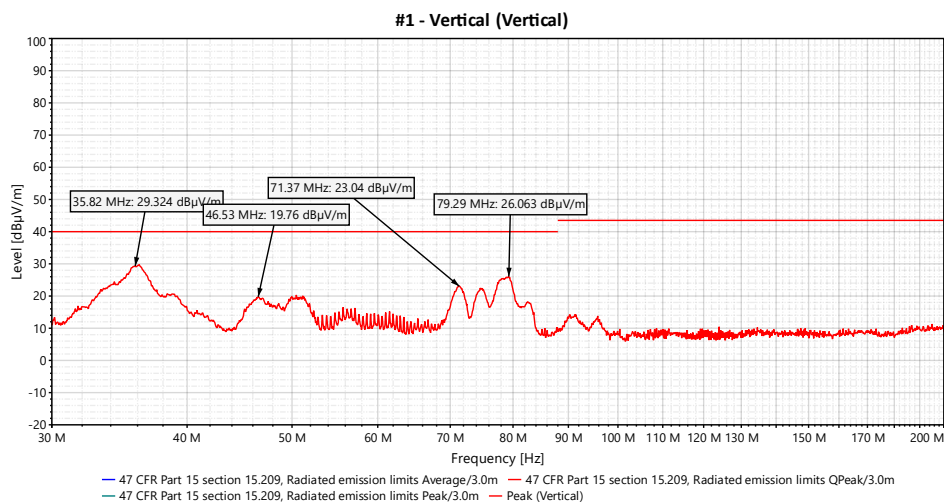
Test results for frequency range 9kHz – 30MHz

No emissions found in frequency range 9 kHz to 30 MHz, and measured levels are below 20dB from the limit line, hence not reported.

Table 8: Test results for frequency range 30MHz – 1GHz

Antenna Polarization	Measured Frequency (MHz)	Spurious Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Vertical	35.82	29.32	40.00	-10.68
	46.53	19.76	40.00	-20.24
	71.37	23.04	40.00	-16.96
	79.29	26.06	40.00	-13.94
	278.75	17.99	46.00	-28.01
	506.24	17.99	46.00	-28.01
	535.82	30.41	46.00	-15.59
	696.74	22.37	46.00	-23.63
Horizontal	35.97	17.53	40.00	-22.47
	77.25	5.16	40.00	-34.84
	119.82	8.67	43.50	-34.83
	165.81	9.42	43.50	-34.08
	278.27	23.82	46.00	-22.18
	537.71	29.21	46.00	-16.79
	699.23	19.41	46.00	-26.59
	900.23	31.71	46.00	-14.29

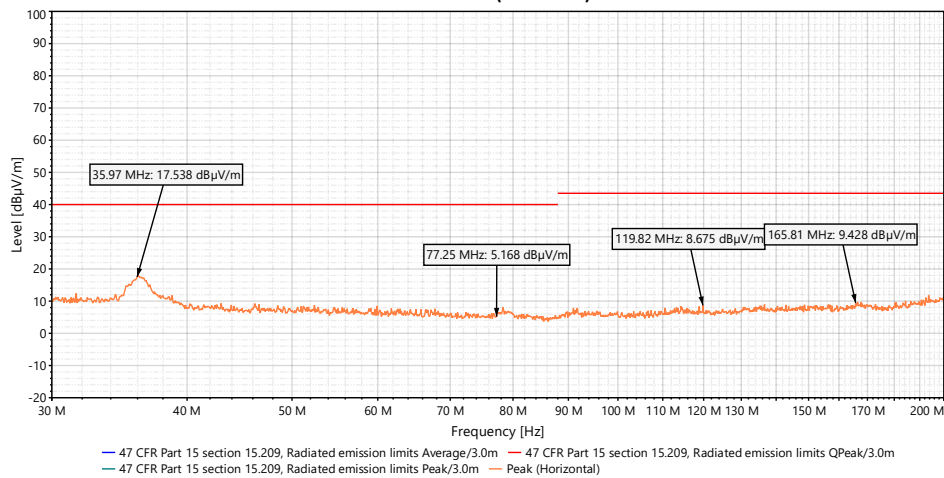
Test Plots:



Channel Frequency 30MHz – 200MHz

Polarization Vertical

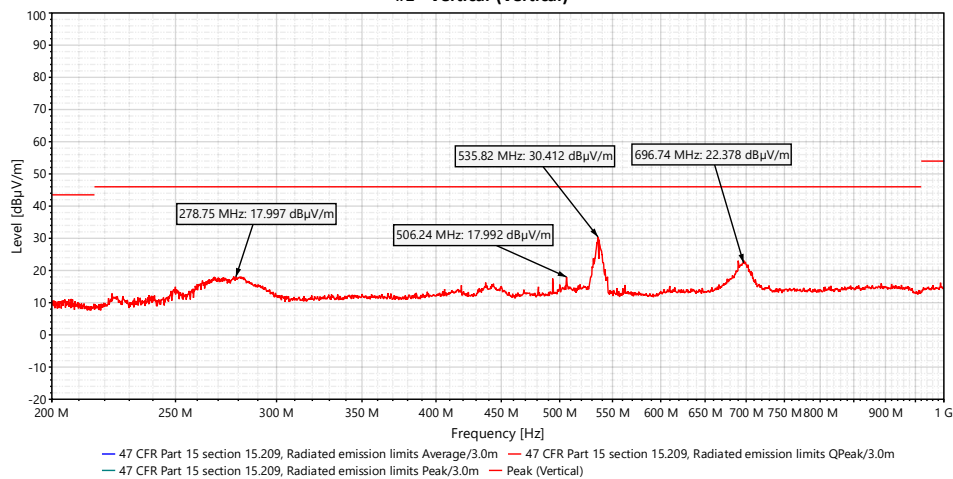
#2 - Horizontal (Horizontal)



Channel Frequency 30MHz – 200MHz

Polarization Horizontal

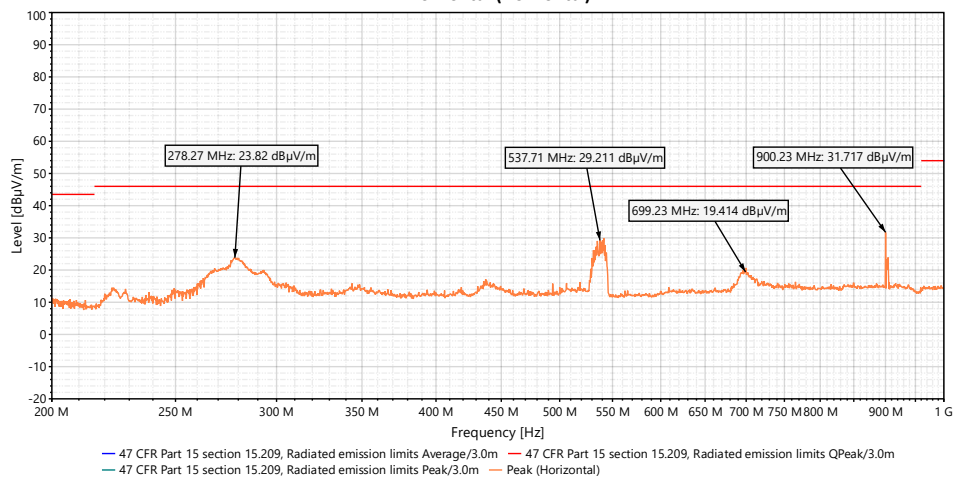
#1 - Vertical (Vertical)



Channel Frequency 200MHz – 1GHz

Polarization Vertical

#2 - Horizontal (Horizontal)



Channel Frequency 200MHz – 1GHz

Polarization Horizontal

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Test results for the frequencies in the range 1 GHz to 26 GHz

Modulation: 802.11b

Data Rate: 1Mbps

Channel Frequency (MHz)	Measured Frequency (MHz)	Antenna Polarization	Measured Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2412	2412(Pk)	Vertical	98.49	-	-
	2412(Av)		96.08	-	-
	2390(Pk)		40.01	74.00*	-33.99
	2390(Av)		27.63	54.00*	-26.37
	4824(Pk)		48.58	74.00	-25.42
	4824(Av)		43.27	54.00	-10.73
	7236(Pk)		47.22	74.00	-26.78
	7236(Av)		35.31	54.00	-18.69
	2412(Pk)	Horizontal	95.82	-	-
	2412(Av)		93.38	-	-
	2390(Pk)		38.43	74.00*	-35.57
	2390(Av)		26.32	54.00*	-27.68
	4824(Pk)		44.05	74.00	-29.95
	4824(Av)		33.30	54.00	-20.70
	7236(Pk)		47.18	74.00	-26.82
	7236(Av)		35.17	54.00	-18.83
2437	2437(Pk)	Vertical	101.94	-	-
	2437(Av)		99.51	-	-
	4874(Pk)		54.94	74.00	-19.06
	4874(Av)		52.65	54.00	-1.35
	7311(Pk)		47.83	74.00	-26.17
	7311(Av)		35.46	54.00	-18.54
	2437(Pk)	Horizontal	99.96	-	-
	2437(Av)		97.54	-	-
	4874(Pk)		47.23	74.00	-26.77
	4874(Av)		42.34	54.00	-11.66
	7311(Pk)		47.26	74.00	-26.74
	7311(Av)		35.28	54.00	-18.72
2462	2462(Pk)	Vertical	98.61	-	-
	2462(Av)		96.04	-	-
	2483.5(Pk)		41.84	74.00*	-32.16
	2483.5(Av)		29.54	54.00*	-24.46
	4924(Pk)		48.15	74.00	-25.85
	4924(Av)		44.04	54.00	-9.96
	7386(Pk)		47.20	74.00	-26.80
	7386(Av)		35.52	54.00	-18.48
	2462(Pk)	Horizontal	96.24	-	-
	2462(Av)		93.77	-	-
	2483.5(Pk)		40.25	74.00*	-33.75
	2483.5(Av)		28.33	54.00*	-25.67
	4924(Pk)		45.24	74.00	-28.76
	4924(Av)		38.63	54.00	-15.37
	7386(Pk)		48.12	74.00	-25.88
	7386(Av)		35.32	54.00	-18.68

* : Indicate restricted band of operation §15.205
Pk: Peak Detector; Av: Average Detector

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Modulation: 802.11g

Data Rate: 6Mbps

Channel Frequency (MHz)	Measured Frequency (MHz)	Antenna Polarization	Measured Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2412	2412(Pk)	Vertical	99.54	-	-
	2412(Av)		90.31	-	-
	2390(Pk)		43.63	74.00	-30.37
	2390(Av)		30.30	54.00	-23.70
	4824(Pk)		46.10	74.00	-27.90
	4824(Av)		33.97	54.00	-20.03
	7236(Pk)		47.07	74.00	-26.93
	7236(Av)		35.34	54.00	-18.66
	2412(Pk)	Horizontal	94.45	-	-
	2412(Av)		86.39	-	-
	2390(Pk)		40.51	74.00	-33.49
	2390(Av)		28.75	54.00	-25.25
	4824(Pk)		43.80	74.00	-30.20
	4824(Av)		30.99	54.00	-23.01
	7236(Pk)		47.40	74.00	-26.60
	7236(Av)		35.19	54.00	-18.81
2437	2437(Pk)	Vertical	98.38	-	-
	2437(Av)		88.42	-	-
	4874(Pk)		50.60	74.00	-23.40
	4874(Av)		37.79	54.00	-16.21
	7311(Pk)		48.40	74.00	-25.60
	7311(Av)		35.45	54.00	-18.55
	2437(Pk)	Horizontal	99.21	-	-
	2437(Av)		89.65	-	-
	4874(Pk)		41.85	74.00	-32.15
	4874(Av)		30.07	54.00	-23.93
	7311(Pk)		47.73	74.00	-26.27
	7311(Av)		35.34	54.00	-18.66
2462	2462(Pk)	Vertical	99.19	-	-
	2462(Av)		89.55	-	-
	2483.5(Pk)		47.53	74.00	-26.47
	2483.5(Av)		34.02	54.00	-19.98
	4924(Pk)		46.37	74.00	-27.63
	4924(Av)		33.36	54.00	-20.64
	7386(Pk)		48.05	74.00	-25.95
	7386(Av)		35.47	54.00	-18.53
	2462(Pk)	Horizontal	96.85	-	-
	2462(Av)		87.08	-	-
	2483.5(Pk)		45.87	74.00	-28.13
	2483.5(Av)		33.00	54.00	-21.00
	4924(Pk)		41.54	74.00	-32.46
	4924(Av)		29.94	54.00	-24.06
	7386(Pk)		47.31	74.00	-26.69
	7386(Av)		35.32	54.00	-18.68

* : Indicate restricted band of operation §15.205
Pk: Peak Detector; Av: Average Detector

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Modulation: 802.11n_HT – 20MHz

Data Rate: MCS0

Channel Frequency (MHz)	Measured Frequency (MHz)	Antenna Polarization	Measured Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2412	2412(Pk)	Vertical	99.50	-	-
	2412(Av)		89.96	-	-
	2390(Pk)		45.29	74.00	-28.71
	2390(Av)		31.09	54.00	-22.91
	4824(Pk)		48.39	74.00	-25.61
	4824(Av)		33.66	54.00	-20.34
	7236(Pk)		47.83	74.00	-26.17
	7236(Av)		35.35	54.00	-18.65
	2412(Pk)	Horizontal	96.45	-	-
	2412(Av)		87.28	-	-
	2390(Pk)		42.74	74.00	-31.26
	2390(Av)		29.53	54.00	-24.47
	4824(Pk)		42.04	74.00	-31.96
	4824(Av)		29.42	54.00	-24.58
	7236(Pk)		47.40	74.00	-26.60
	7236(Av)		35.13	54.00	-18.87
2437	2437(Pk)	Vertical	102.32	-	-
	2437(Av)		92.76	-	-
	4874(Pk)		51.80	74.00	-22.20
	4874(Av)		37.28	54.00	-16.72
	7311(Pk)		47.97	74.00	-26.03
	7311(Av)		35.39	54.00	-18.61
	2437(Pk)	Horizontal	100.27	-	-
	2437(Av)		90.46	-	-
	4874(Pk)		43.98	74.00	-30.02
	4874(Av)		30.83	54.00	-23.17
	7311(Pk)		47.25	74.00	-26.75
	7311(Av)		35.25	54.00	-18.75
2462	2462(Pk)	Vertical	99.13	-	-
	2462(Av)		89.17	-	-
	2483.5(Pk)		48.65	74.00	-25.35
	2483.5(Av)		34.95	54.00	-19.05
	4924(Pk)		47.07	74.00	-26.93
	4924(Av)		32.75	54.00	-21.25
	7386(Pk)		47.46	74.00	-26.54
	7386(Av)		35.46	54.00	-18.54
	2462(Pk)	Horizontal	96.46	-	-
	2462(Av)		86.25	-	-
	2483.5(Pk)		46.13	74.00	-27.87
	2483.5(Av)		32.77	54.00	-21.23
	4924(Pk)		41.17	74.00	-32.83
	4924(Av)		30.09	54.00	-23.91
	7386(Pk)		48.12	74.00	-25.88
	7386(Av)		35.30	54.00	-18.70

* : Indicate restricted band of operation §15.205

Pk: Peak Detector; Av: Average Detector

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Modulation: 802.11n_HT - 40MHz

Data Rate: MCS0

Channel Frequency (MHz)	Measured Frequency (MHz)	Antenna Polarization	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2422	2422(Pk)	Vertical	95.40	-	-
	2422(Av)		85.00	-	-
	2390(Pk)		49.16	74.00	-24.84
	2390(Av)		33.00	54.00	-21.00
	4844(Pk)		42.91	74.00	-31.09
	4844(Av)		32.39	54.00	-21.61
	7266(Pk)		47.46	74.00	-26.54
	7266(Av)		35.40	54.00	-18.60
	2422(Pk)	Horizontal	92.40	-	-
	2422(Av)		82.19	-	-
	2390(Pk)		46.95	74.00	-27.05
	2390(Av)		30.83	54.00	-23.17
	4844(Pk)		41.67	74.00	-32.33
	4844(Av)		29.37	54.00	-24.63
	7266(Pk)		47.42	74.00	-26.58
	7266(Av)		35.26	54.00	-18.74
2437	2437(Pk)	Vertical	96.95	-	-
	2437(Av)		86.01	-	-
	4874(Pk)		46.23	74.00	-27.77
	4874(Av)		34.31	54.00	-19.69
	7311(Pk)		47.73	74.00	-26.27
	7311(Av)		35.42	54.00	-18.58
	2437(Pk)	Horizontal	95.15	-	-
	2437(Av)		84.15	-	-
	4874(Pk)		41.77	74.00	-32.23
	4874(Av)		30.28	54.00	-23.72
	7311(Pk)		47.37	74.00	-26.63
	7311(Av)		35.28	54.00	-18.72
2452	2452(Pk)	Vertical	97.52	-	-
	2452(Av)		87.56	-	-
	2483.5(Pk)		53.24	74.00	-20.76
	2483.5(Av)		34.39	54.00	-19.61
	4904(Pk)		46.49	74.00	-27.51
	4904(Av)		33.45	54.00	-20.55
	7356(Pk)		48.56	74.00	-25.44
	7356(Av)		35.58	54.00	-18.42
	2452(Pk)	Horizontal	95.76	-	-
	2452(Av)		85.22	-	-
	2483.5(Pk)		50.57	74.00	-23.43
	2483.5(Av)		33.15	54.00	-20.85
	4904(Pk)		40.94	74.00	-33.06
	4904(Av)		29.24	54.00	-24.76
	7356(Pk)		48.05	74.00	-25.95
	7356(Av)		35.39	54.00	-18.61

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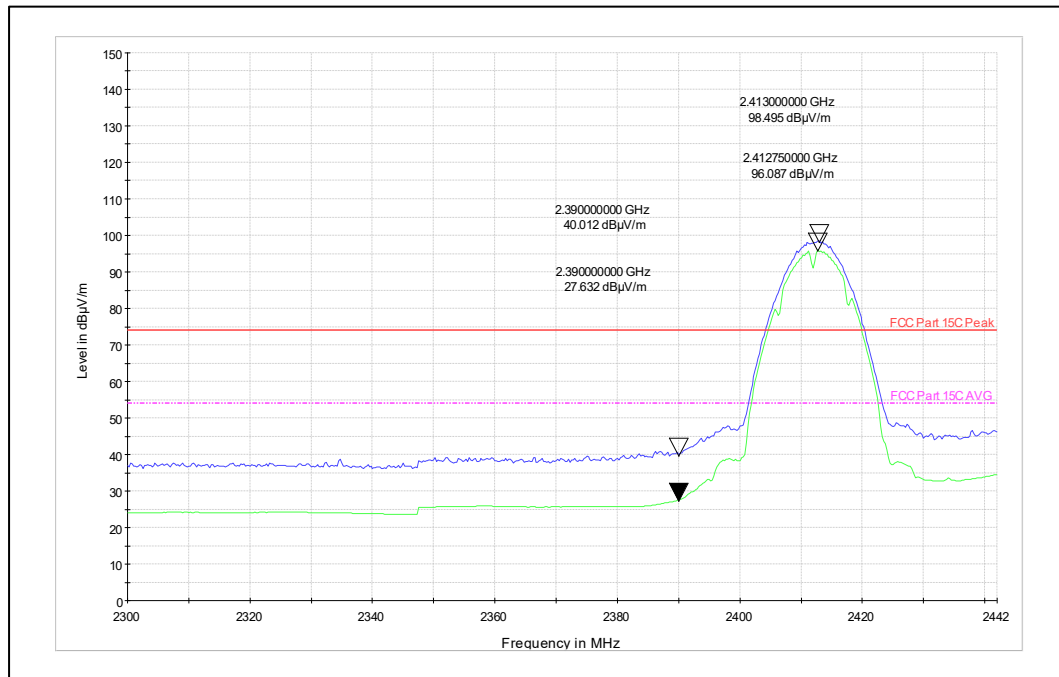
Test Plots:

Restricted Bands of Operation

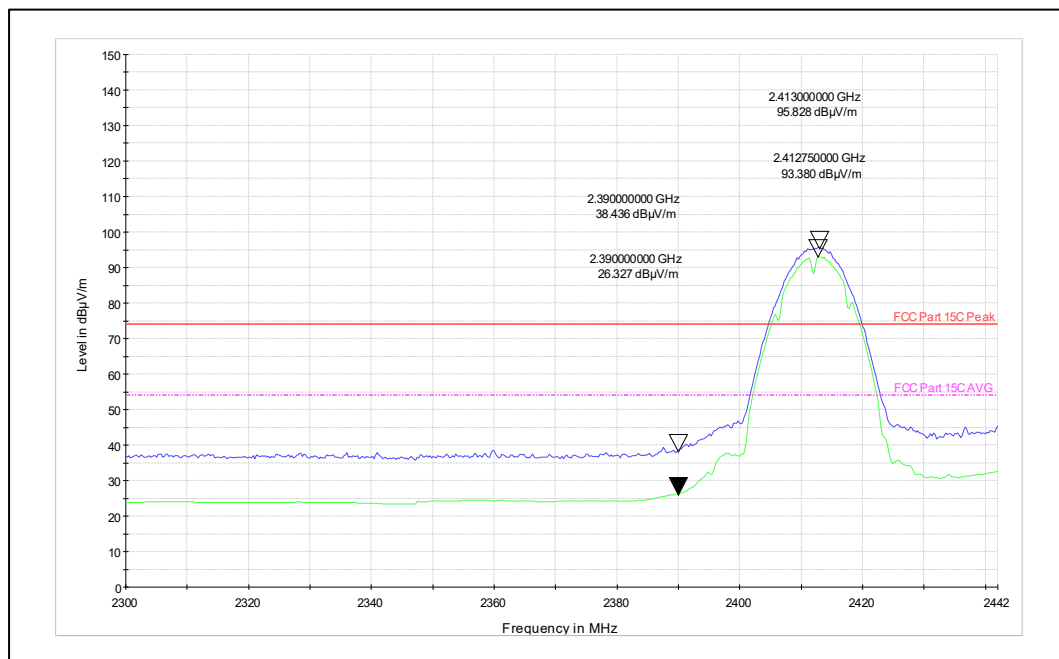
Modulation: 802.11b

Data Rate: 1Mbps

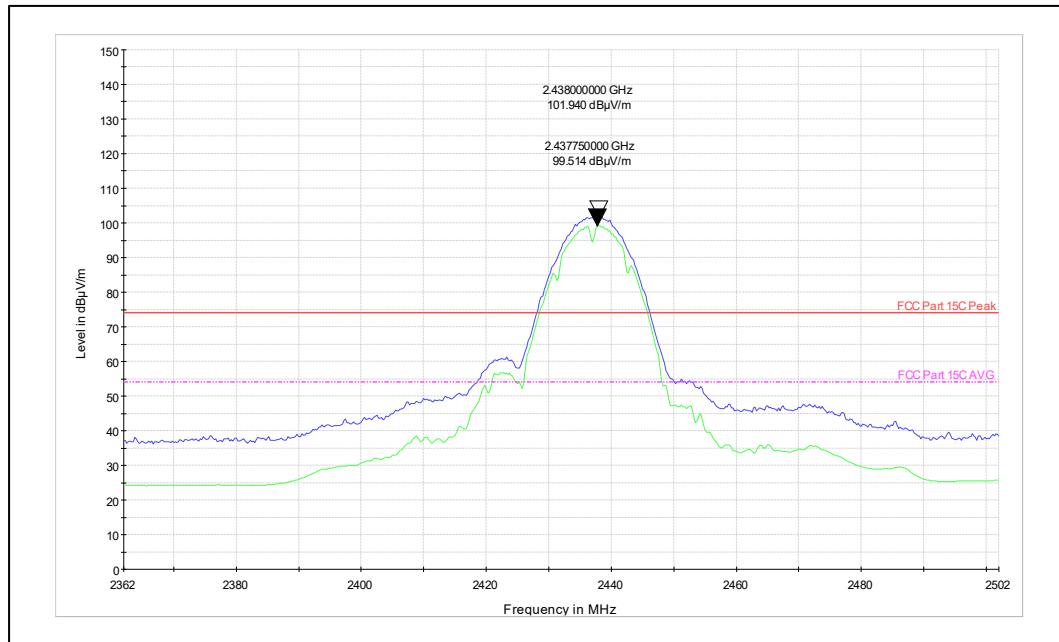
Channel Frequency: 2412MHz_Vertical Polarization



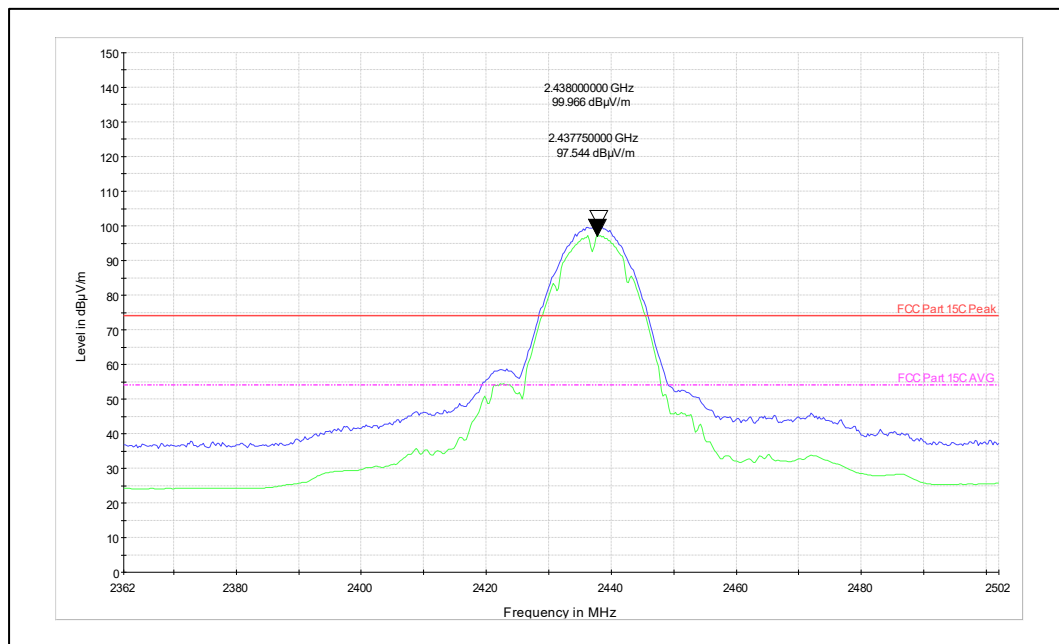
Channel Frequency: 2412MHz_Horizontal Polarization



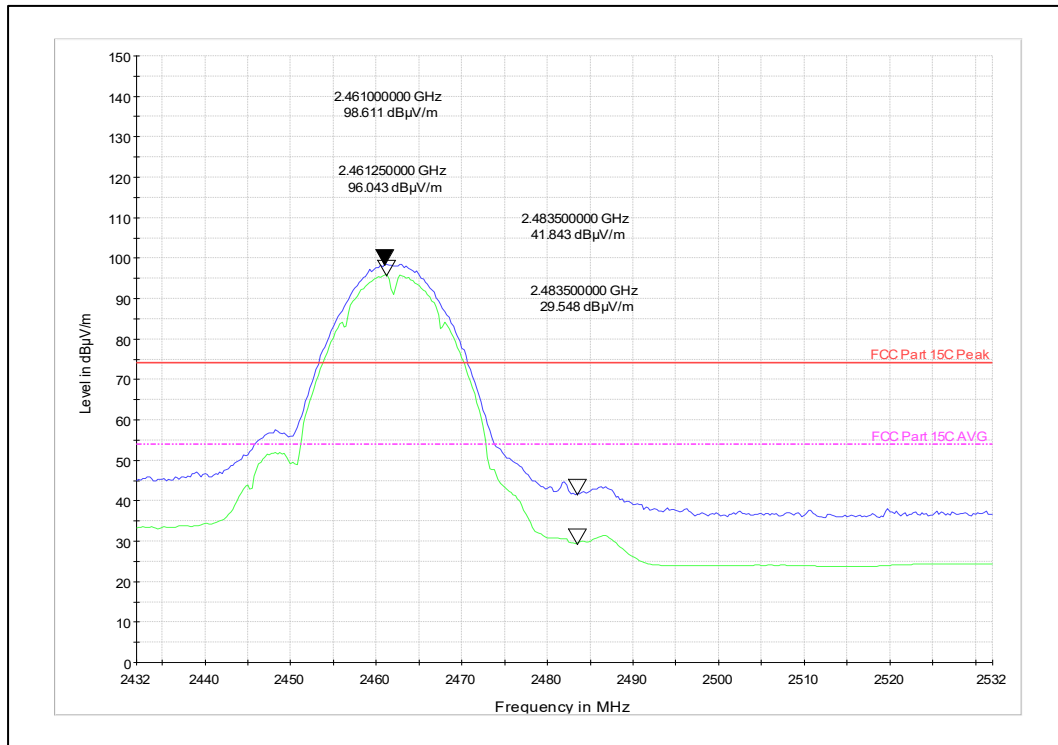
Channel Frequency: 2437MHz_Vertical Polarization



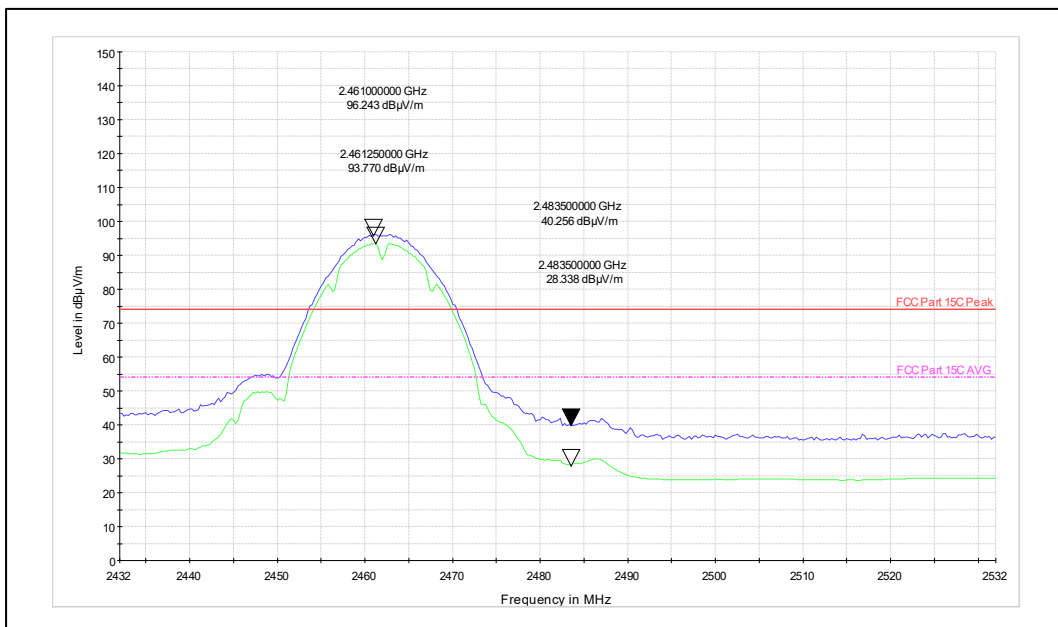
Channel Frequency: 2437MHz_Horizontal Polarization



Channel Frequency: 2462MHz_Vertical Polarization



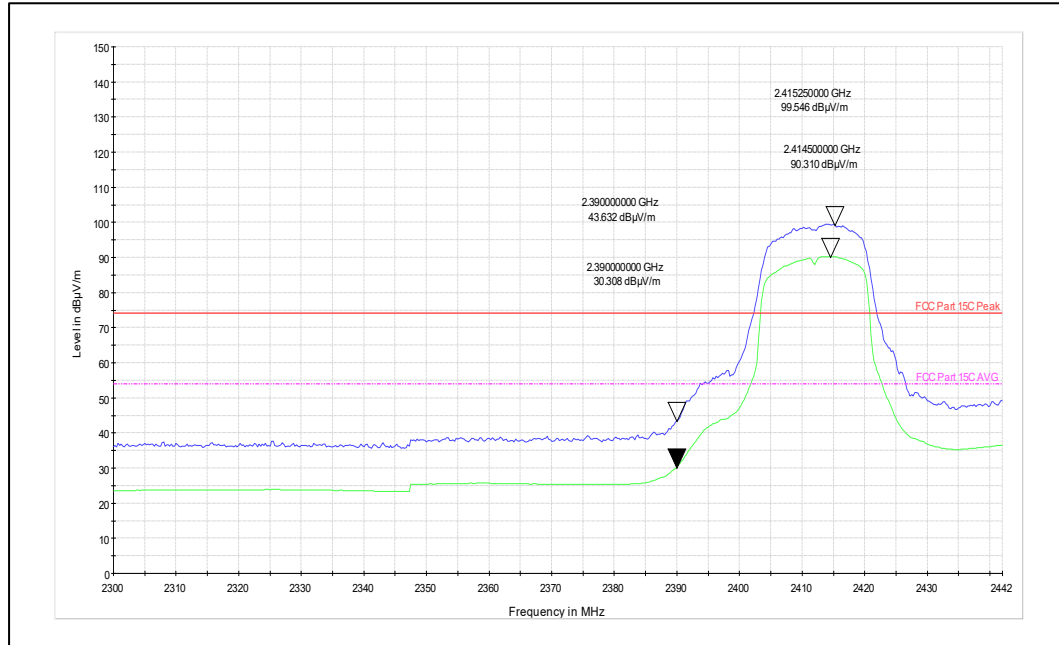
Channel Frequency: 2462MHz_Horizontal Polarization



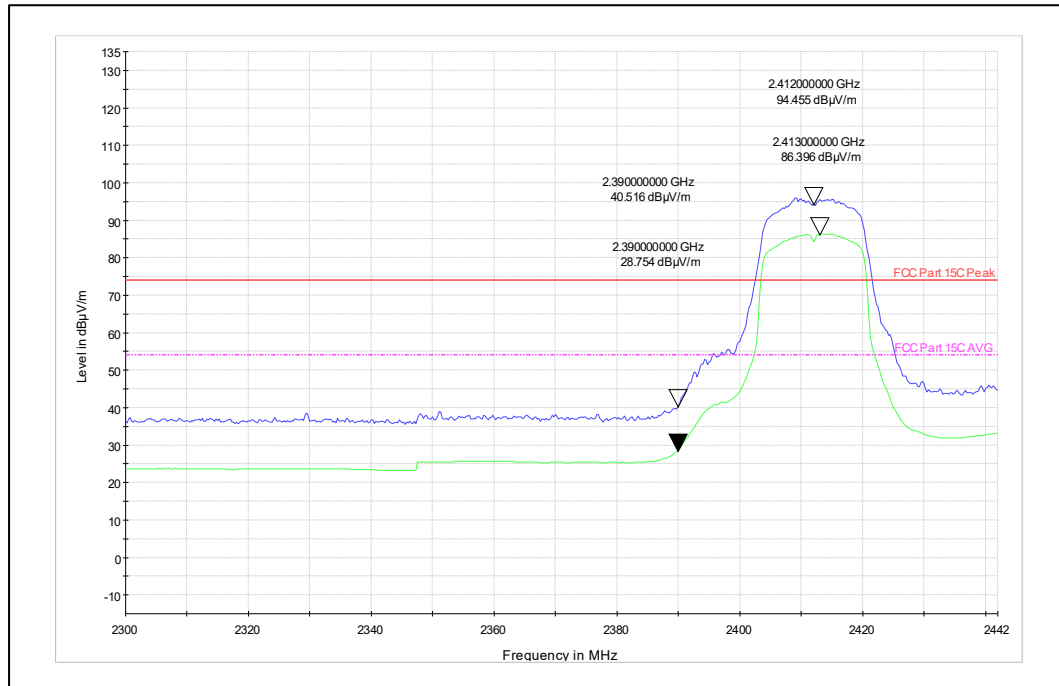
Modulation: 802.11g

Data Rate: 6Mbps

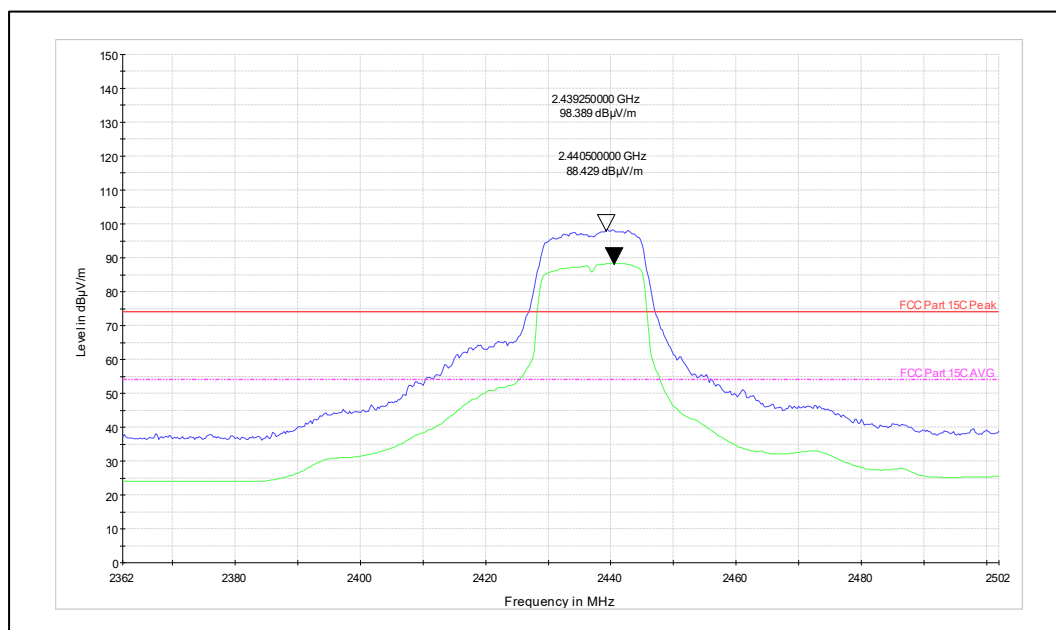
Channel Frequency: 2412MHz_Vertical Polarization



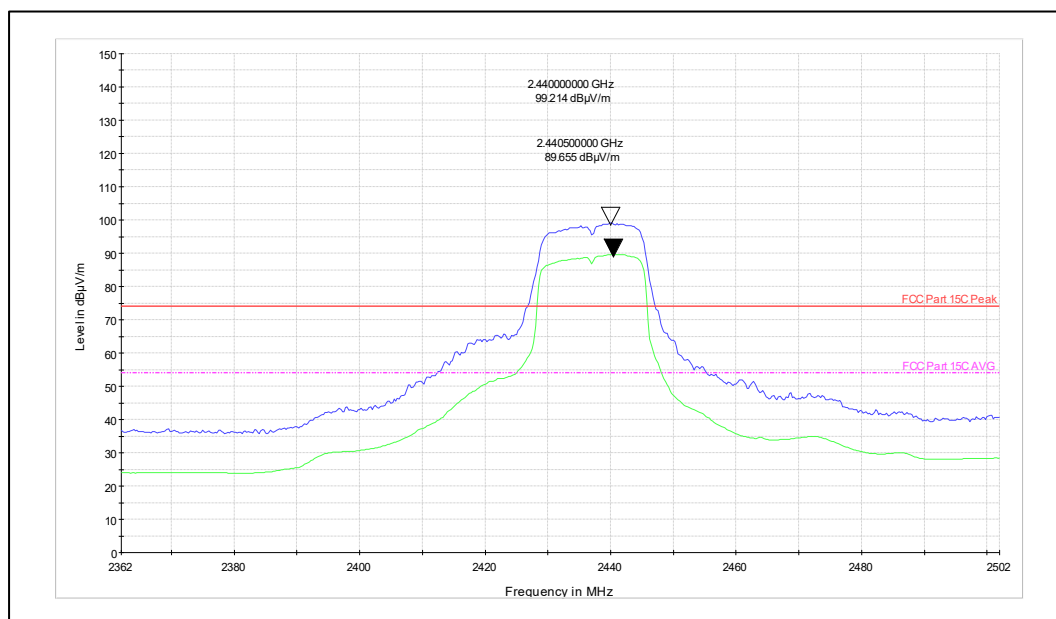
Channel Frequency: 2412MHz_Horizontal Polarization



Channel Frequency: 2437MHz_Vertical Polarization



Channel Frequency: 2437MHz_Horizontal Polarization

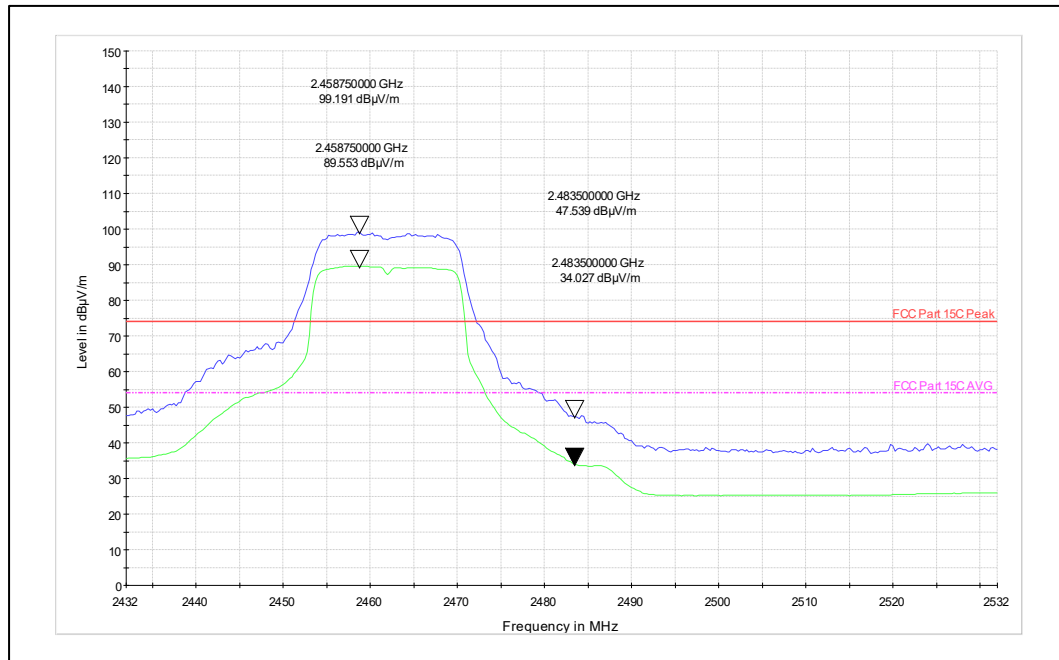


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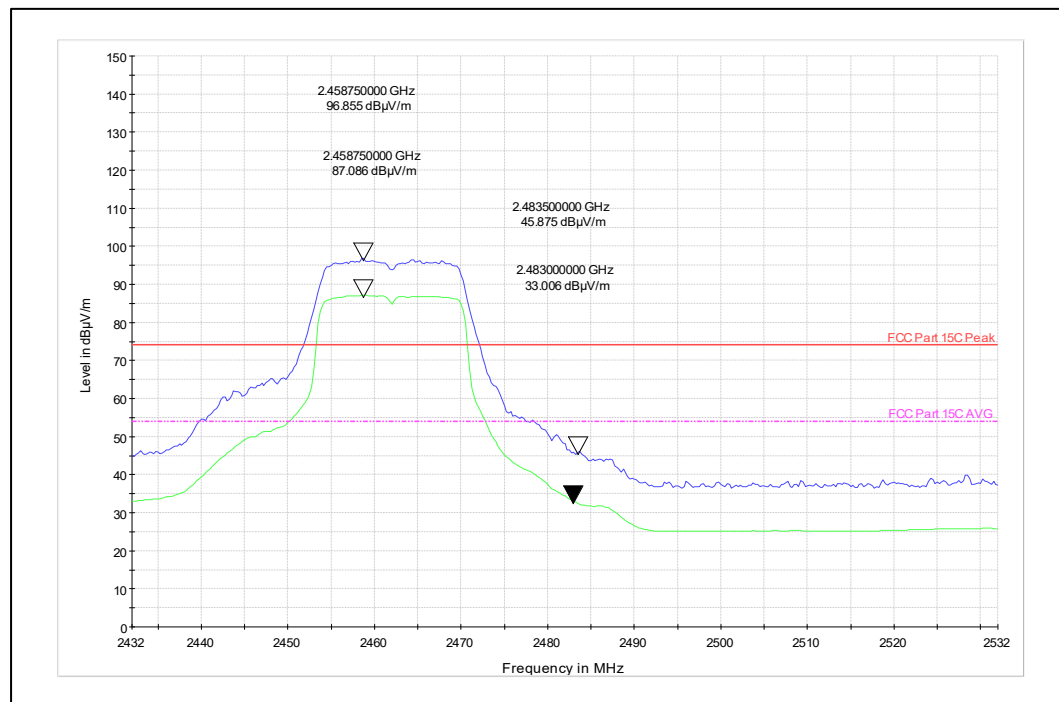
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Channel Frequency: 2462MHz_Vertical Polarization



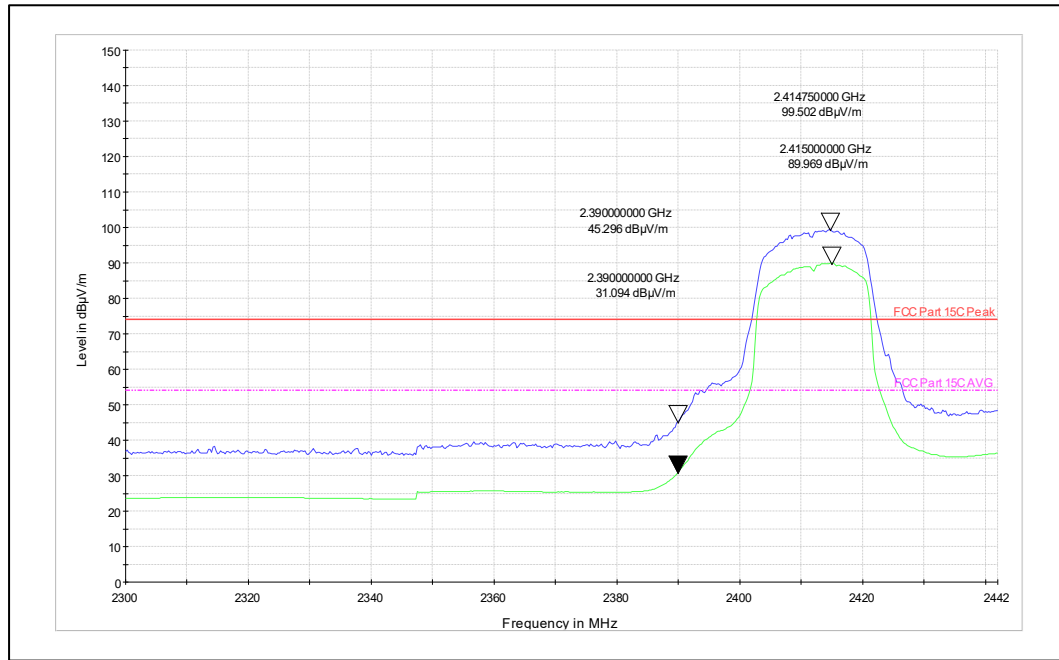
Channel Frequency: 2462MHz_Horizontal Polarization



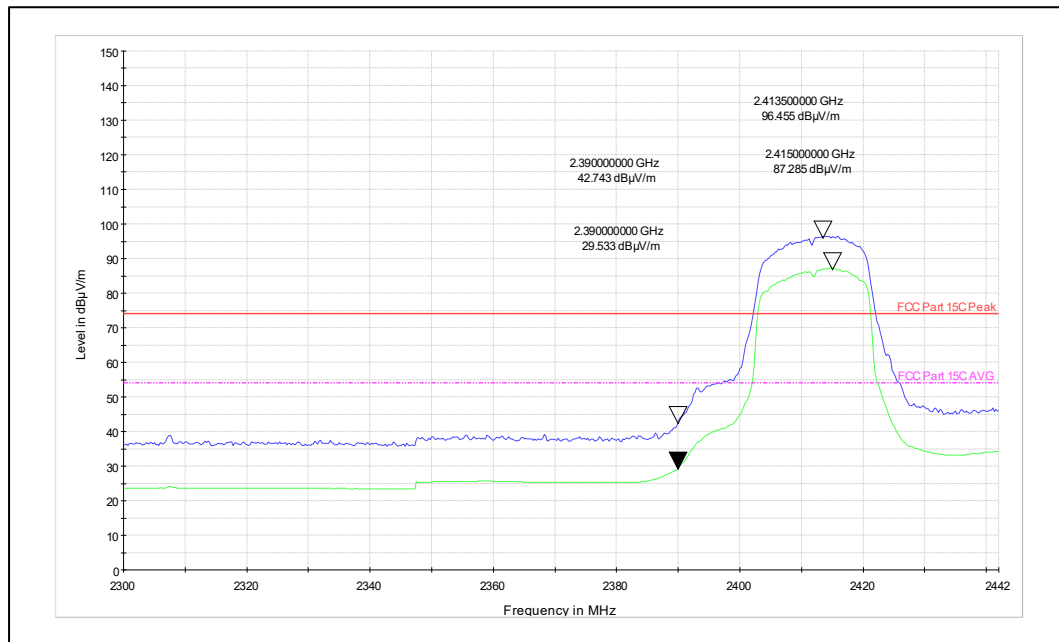
Modulation: 802.11n_HT 20MHz

Data Rate: MCS0

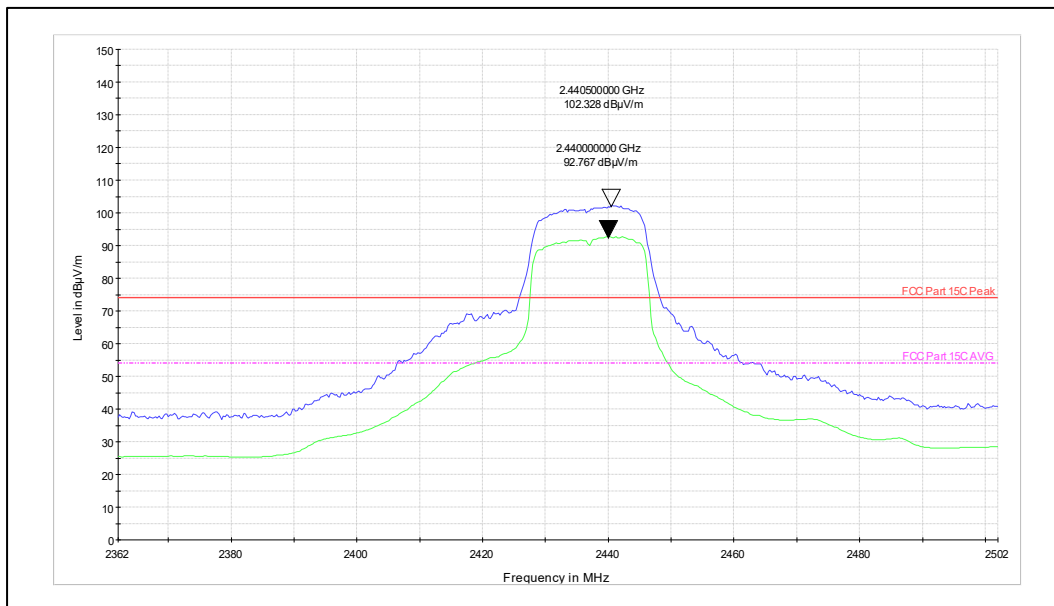
Channel Frequency: 2412MHz_Vertical Polarization



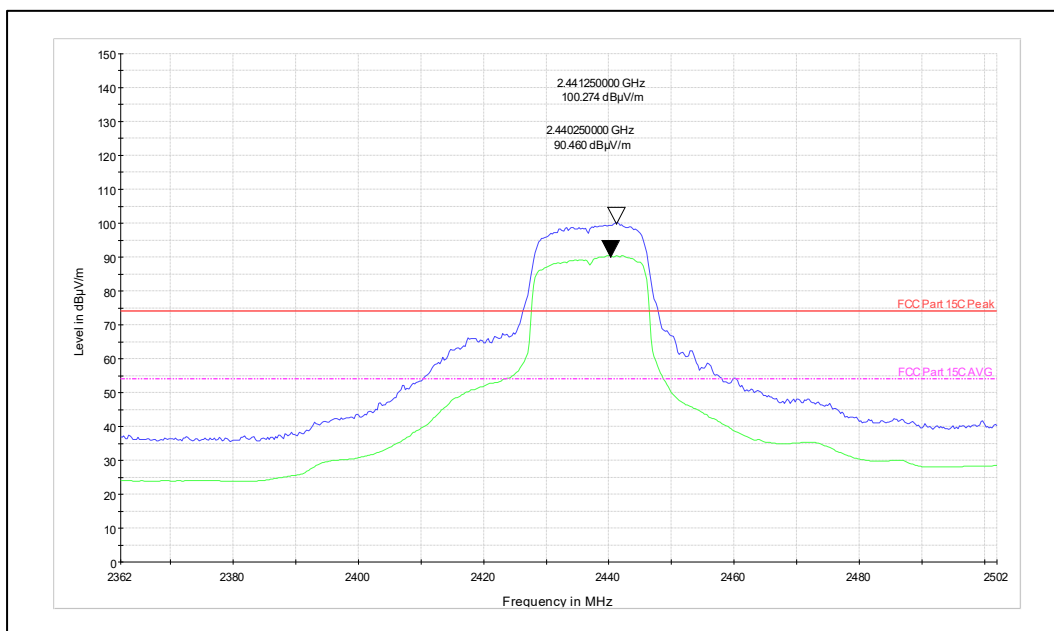
Channel Frequency: 2412MHz_Horizontal Polarization



Channel Frequency: 2437MHz_Vertical Polarization



Channel Frequency: 2437MHz_Horizontal Polarization

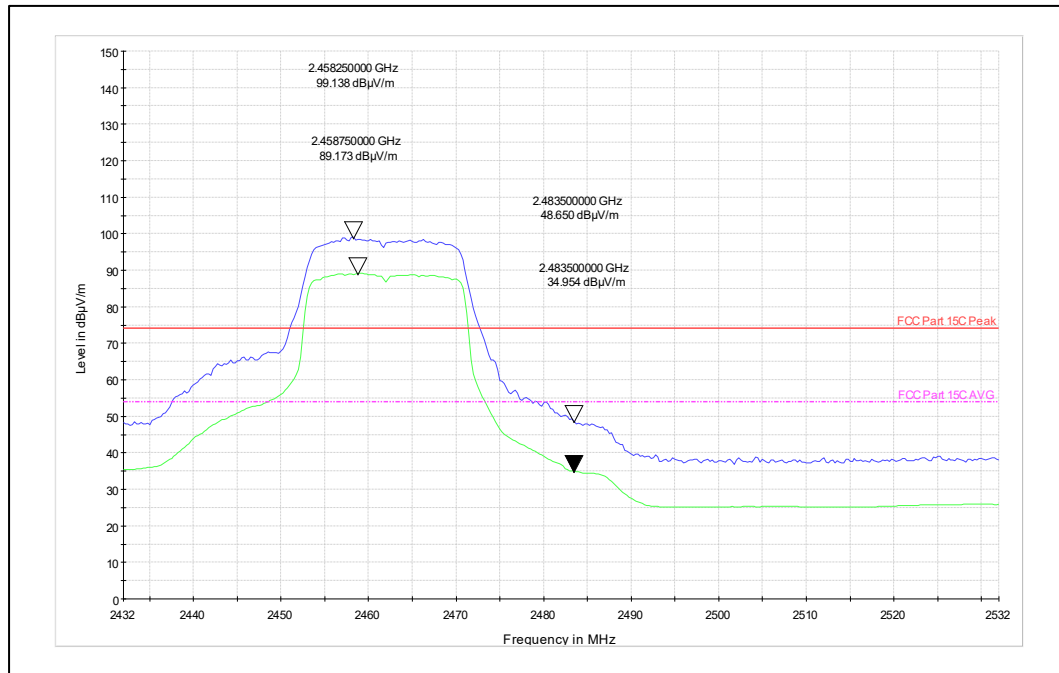


Prüfbericht - Nr.:
Test Report No.:

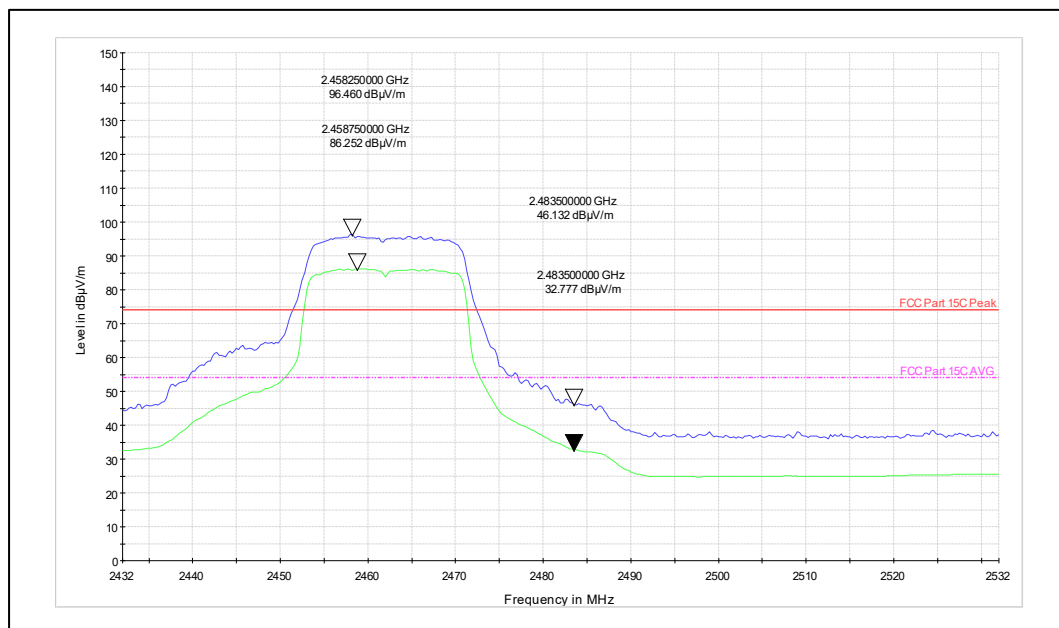
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Channel Frequency: 2462MHz_Vertical Polarization



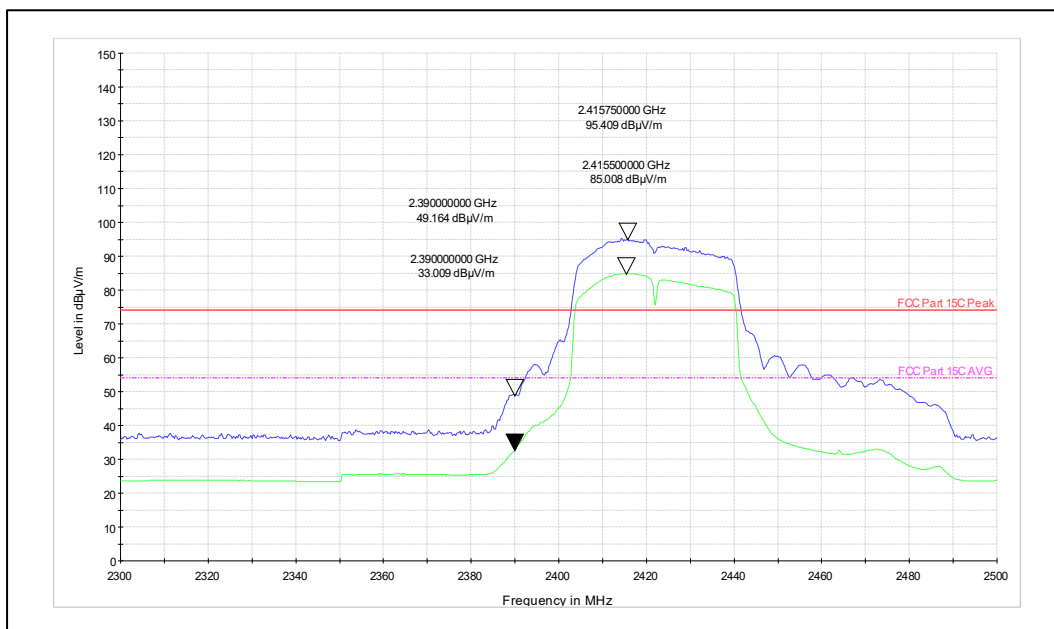
Channel Frequency: 2462MHz_Horizontal Polarization



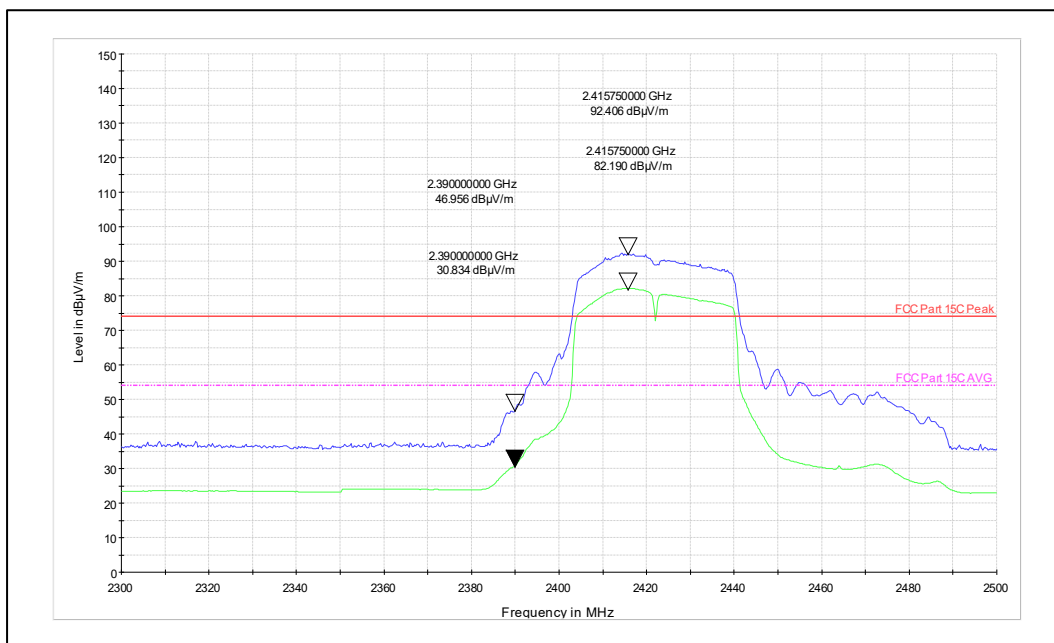
Modulation: 802.11n_HT 40MHz

Data Rate: MCS0

Channel Frequency: 2422MHz_Vertical Polarization



Channel Frequency: 2422MHz_Horizontal Polarization

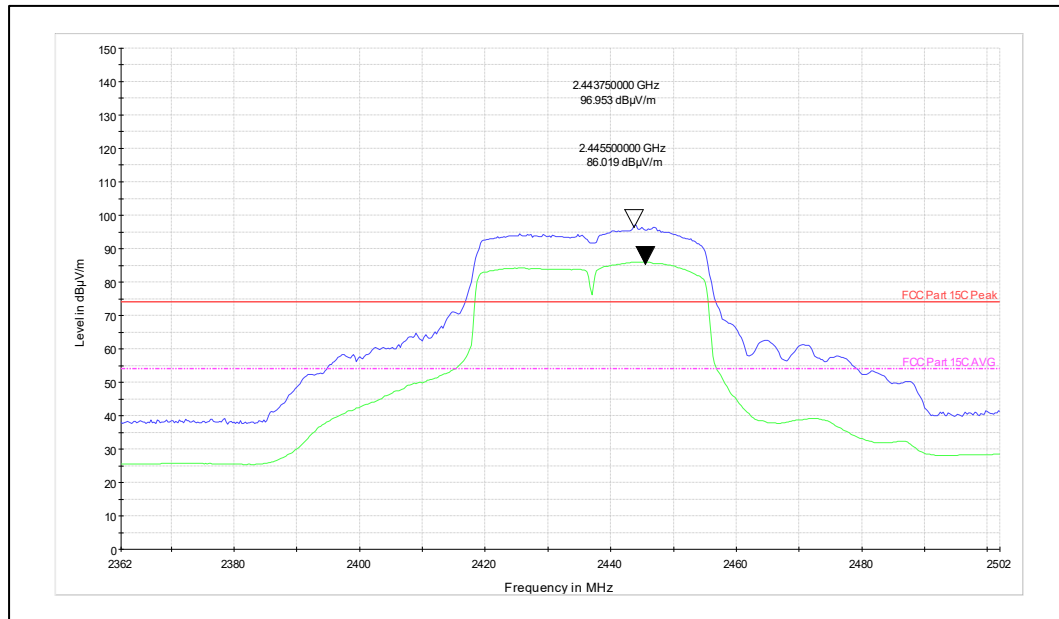


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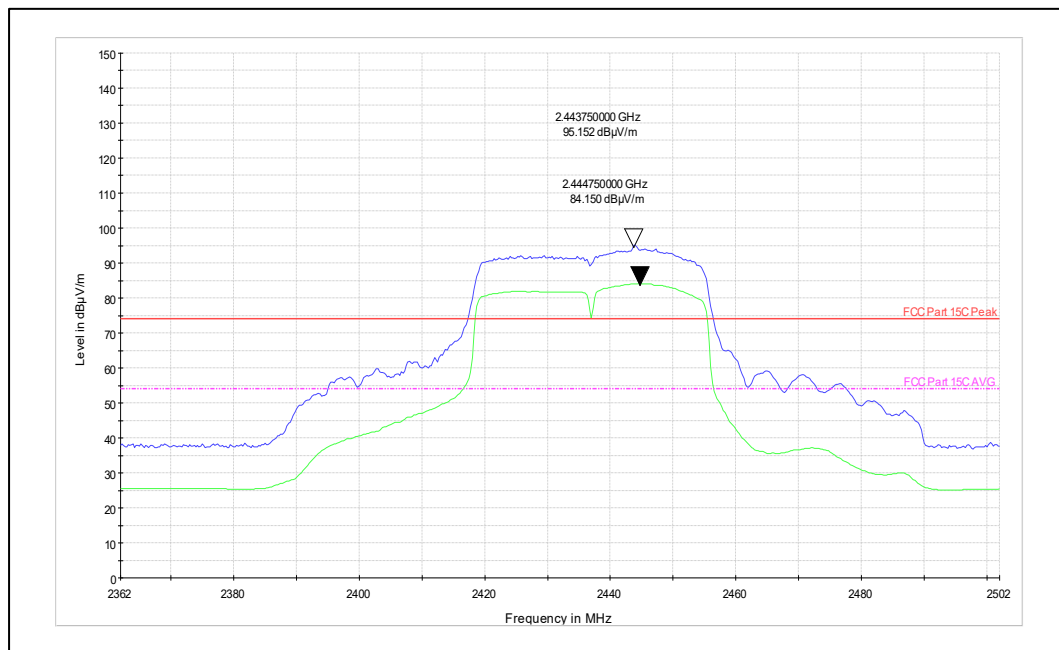
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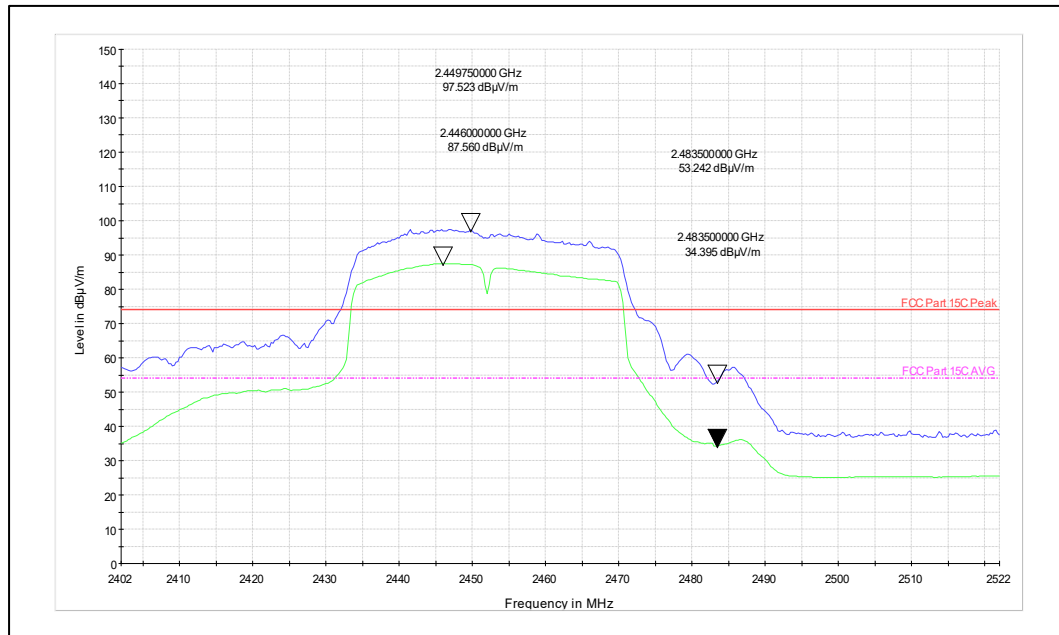
Channel Frequency: 2437MHz_Vertical Polarization



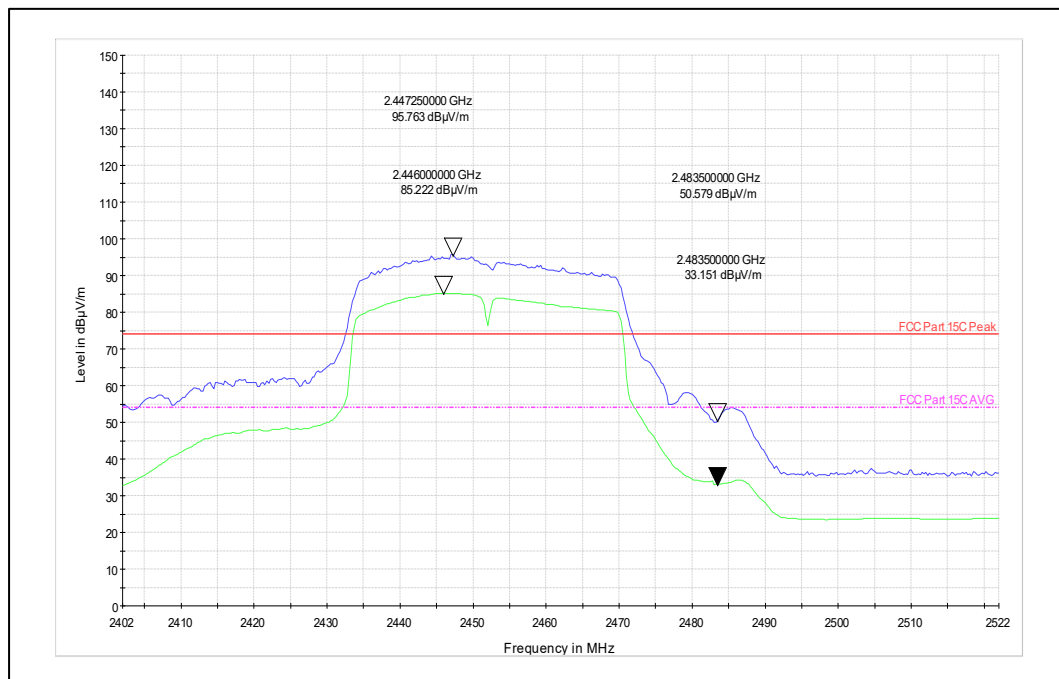
Channel Frequency: 2437MHz_Horizontal Polarization



Channel Frequency: 2452MHz_Vertical Polarization



Channel Frequency: 2452MHz_Horizontal Polarization



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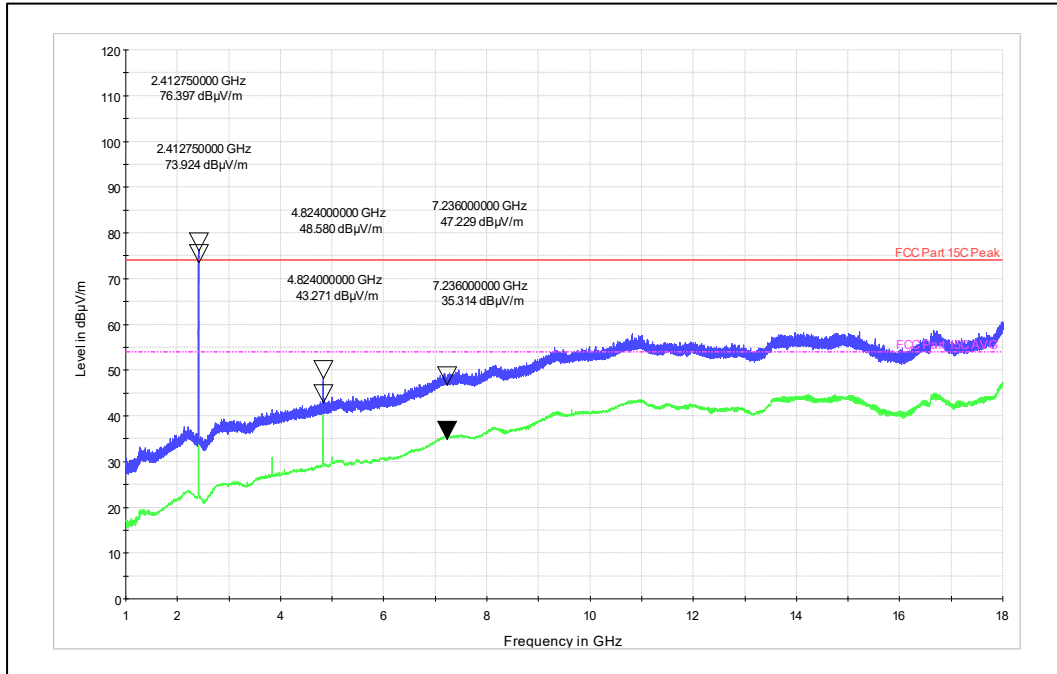
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Test Case: Spurious Radaited emission

Modulation: 802.11b

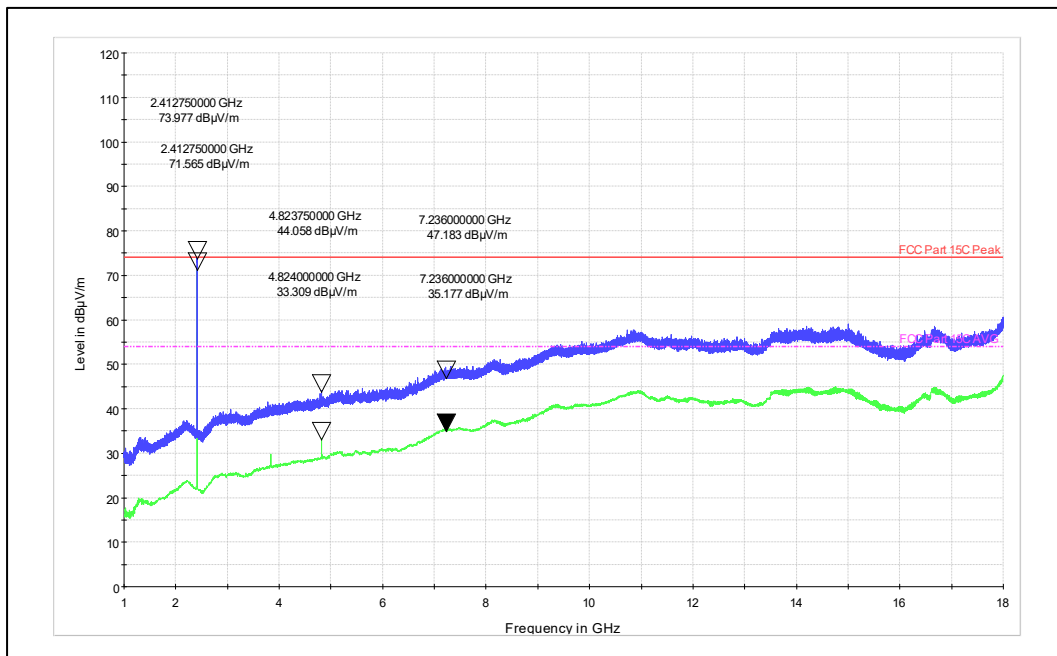
Data Rate: 1Mbps

Channel Frequency: 2412MHz



Frequency: 1GHz to 18GHz

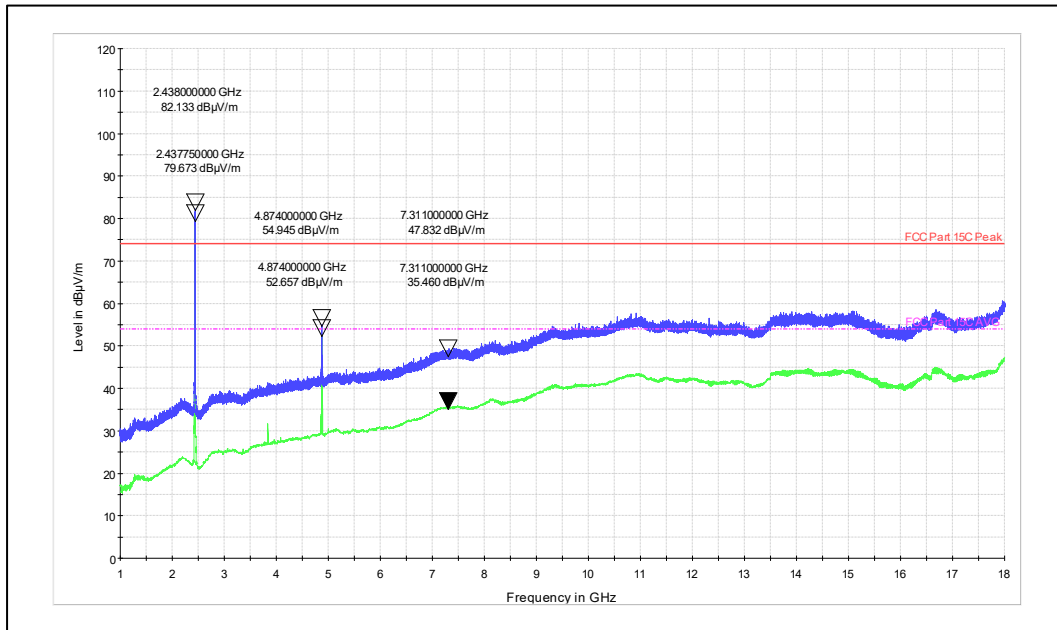
Polarization: Vertical



Frequency: 1GHz to 18GHz

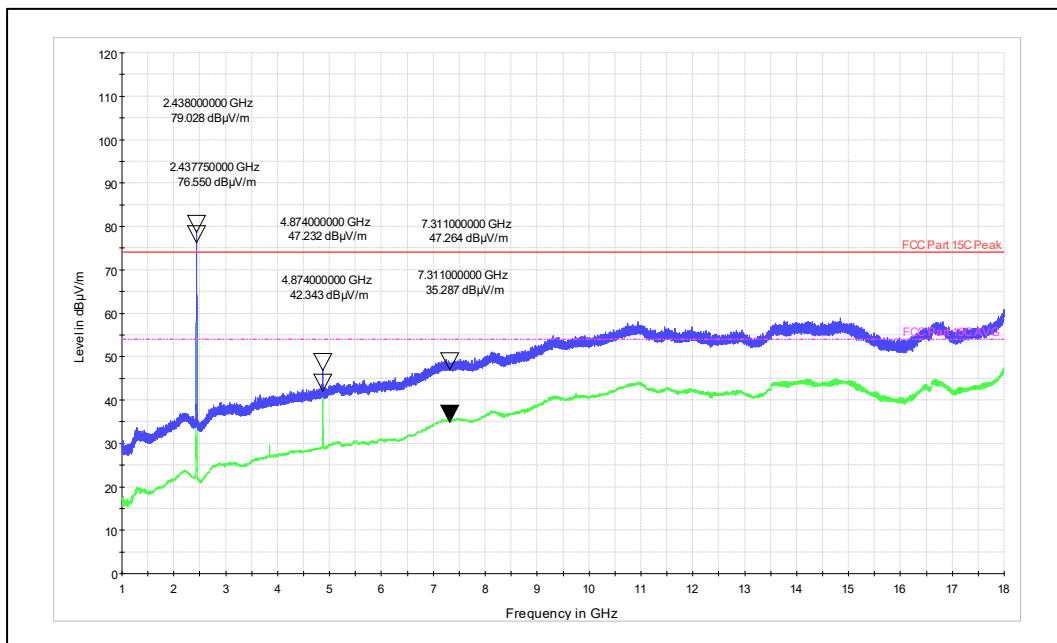
Polarization: Horizontal

Channel Frequency: 2437MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

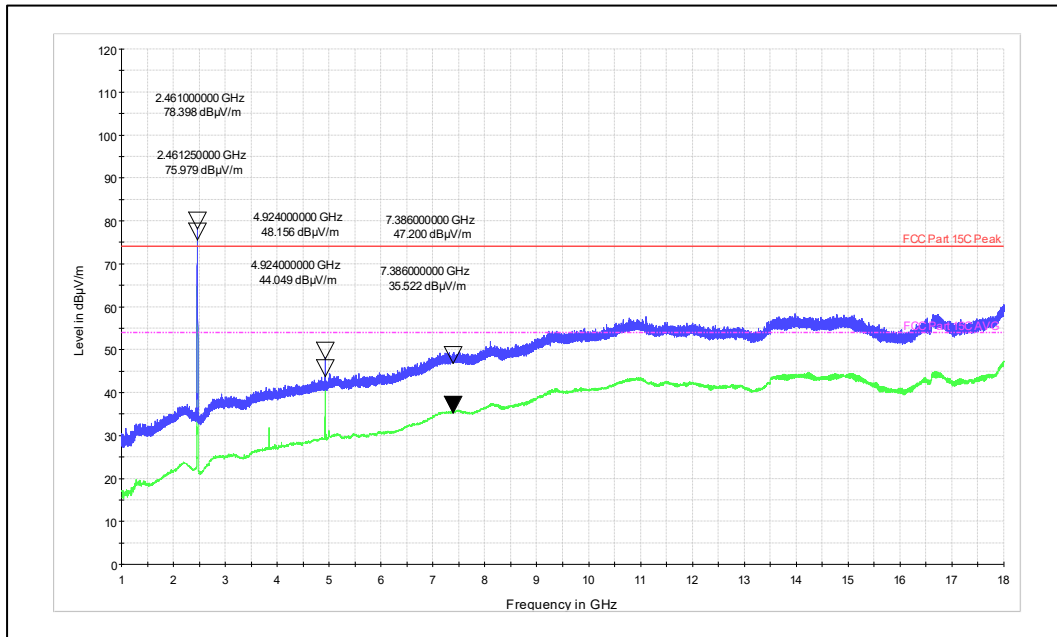
Polarization: Horizontal

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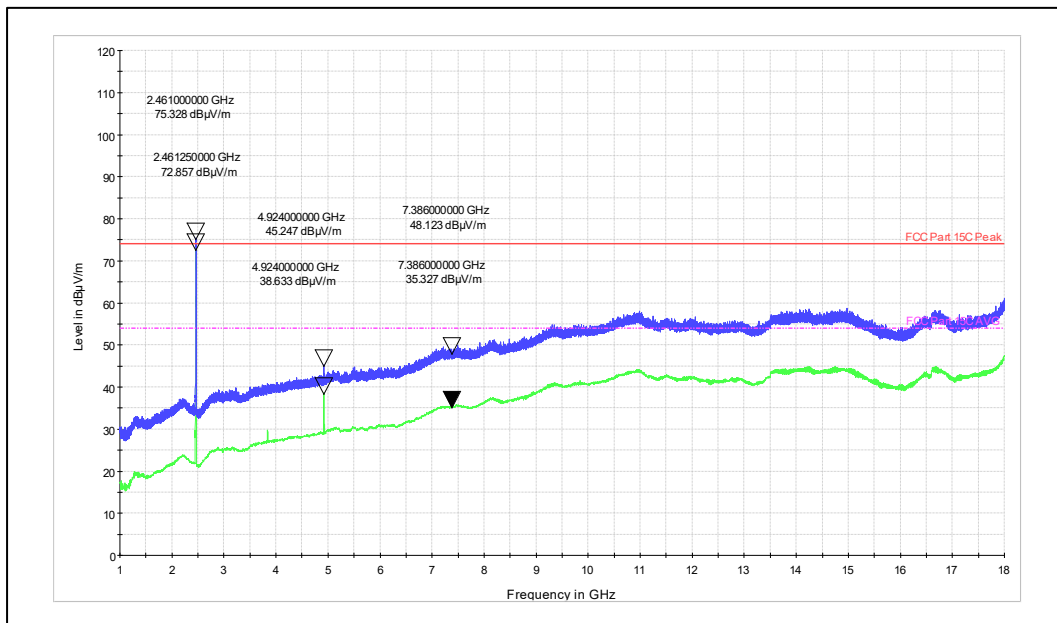
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Channel Frequency: 2462MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

Polarization: Horizontal

Prüfbericht - Nr.:
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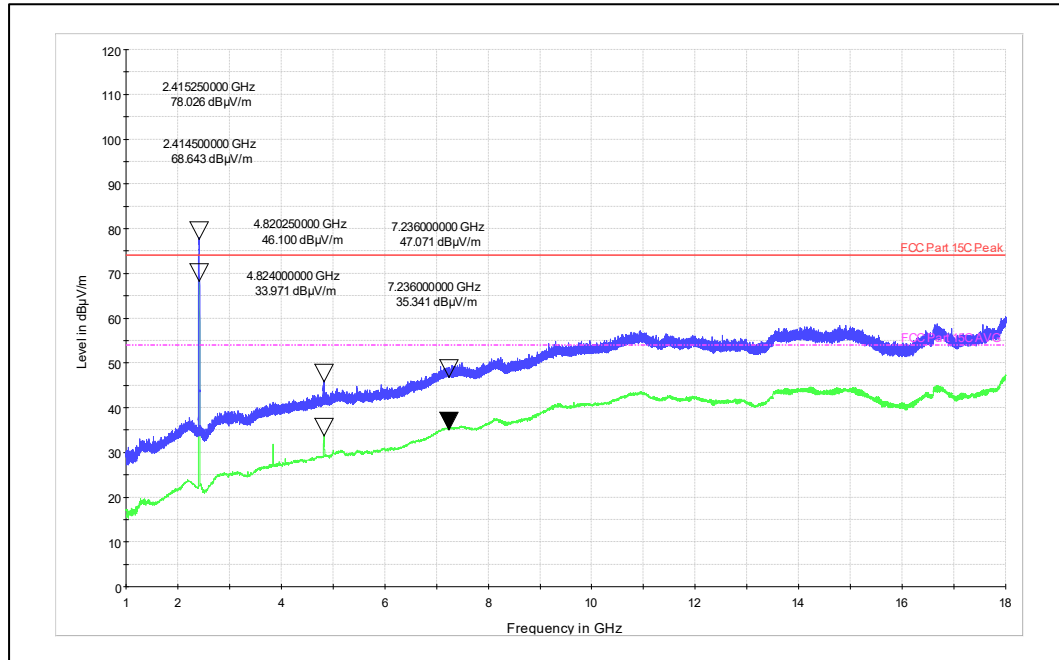
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Modulation: 802.11g

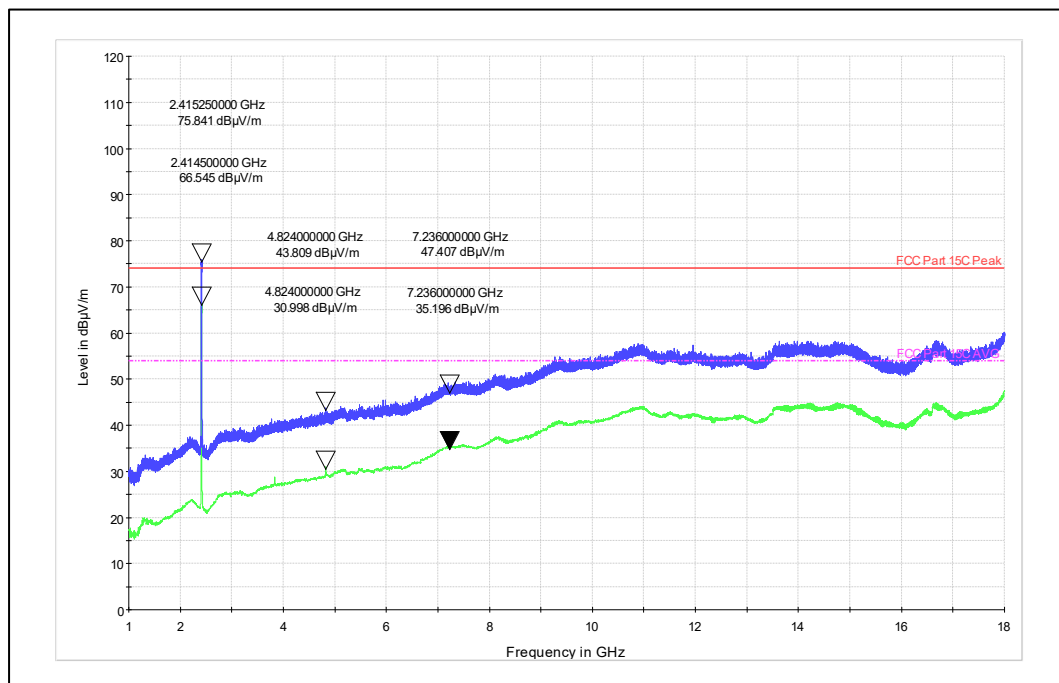
Data Rate: 6Mbps

Channel Frequency: 2412MHz



Frequency: 1GHz to 18GHz

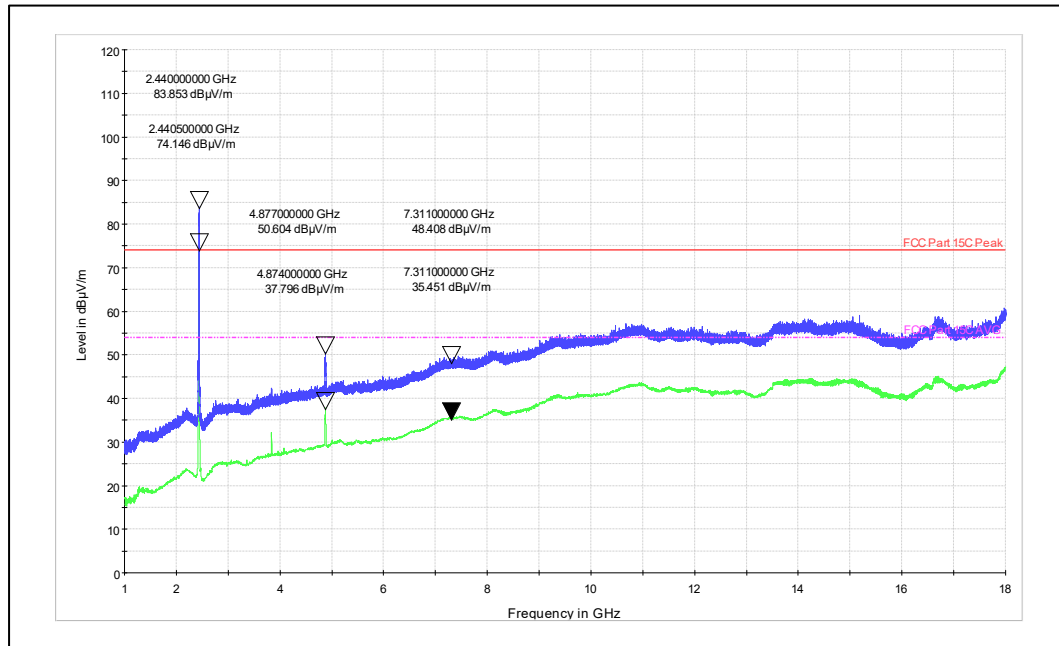
Polarization: Vertical



Frequency: 1GHz to 18GHz

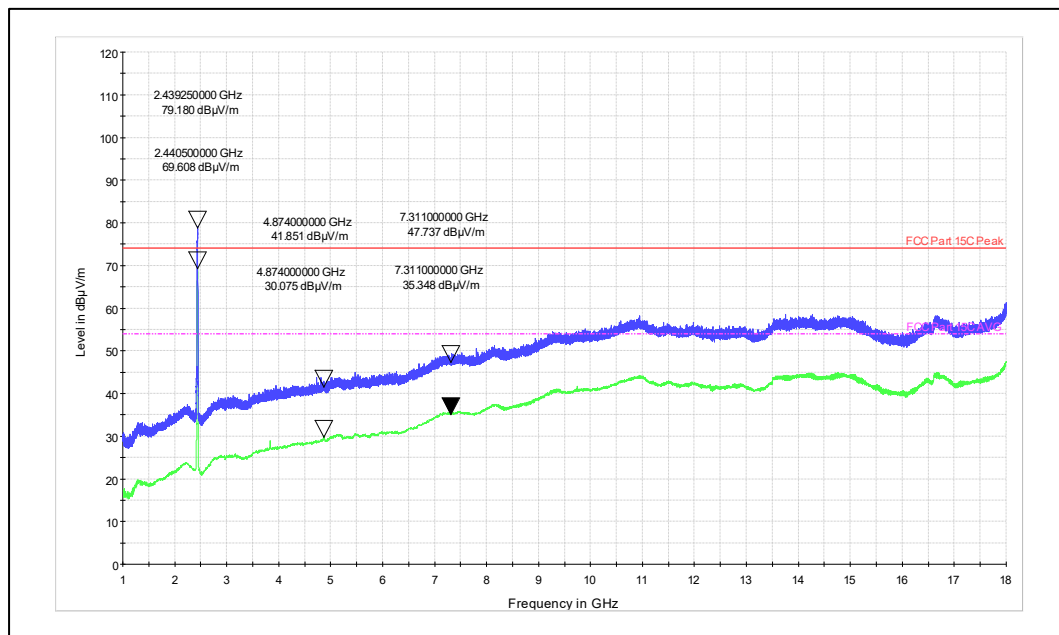
Polarization: Horizontal

Channel Frequency: 2437MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

Polarization: Horizontal

Prüfbericht - Nr.:

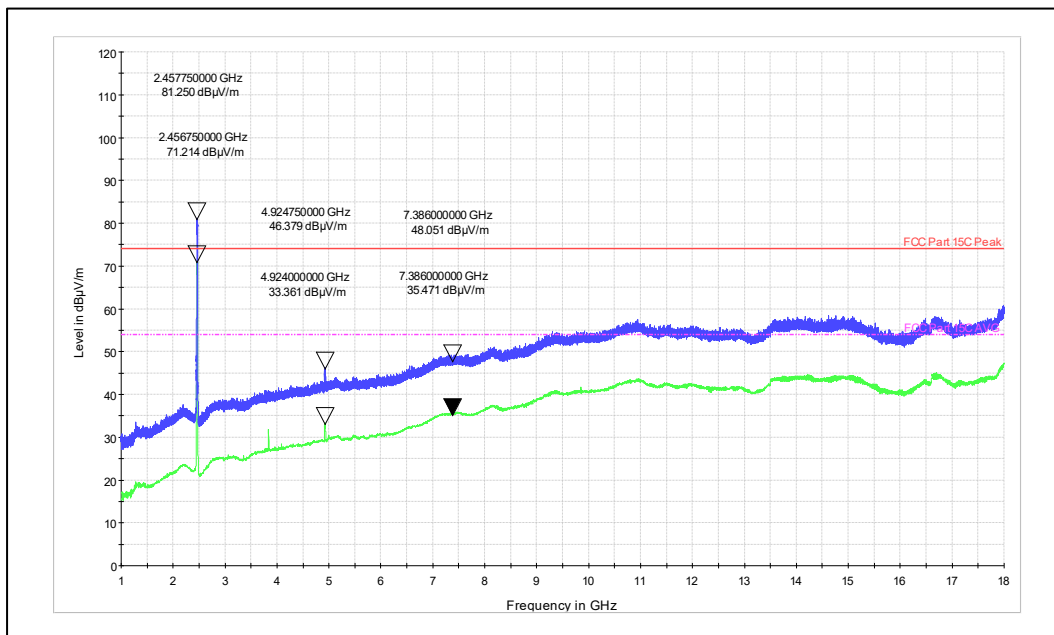
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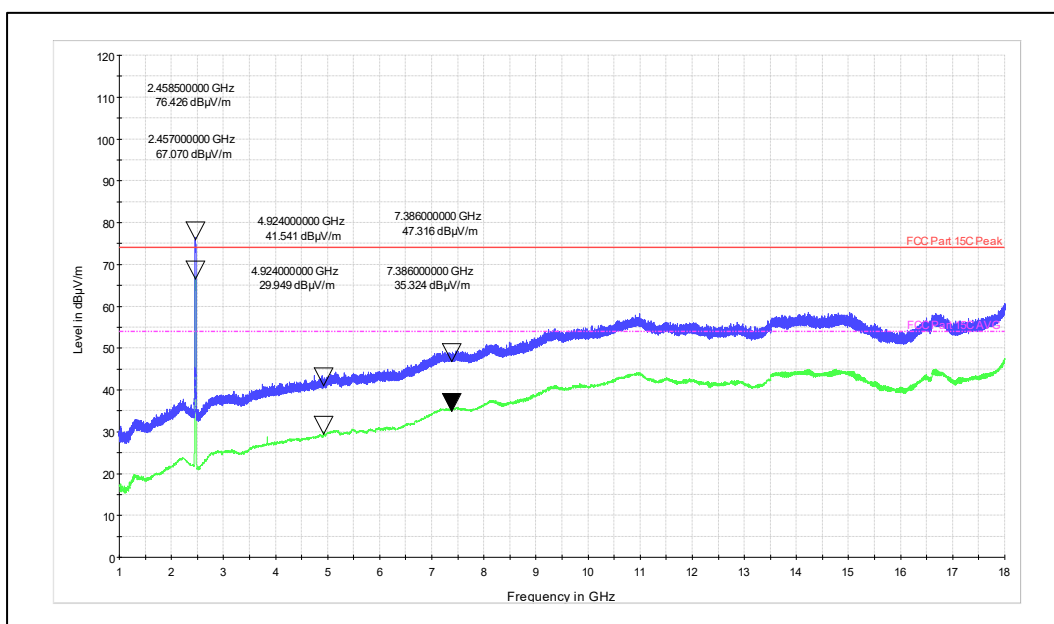
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Channel Frequency: 2462MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

Polarization: Horizontal

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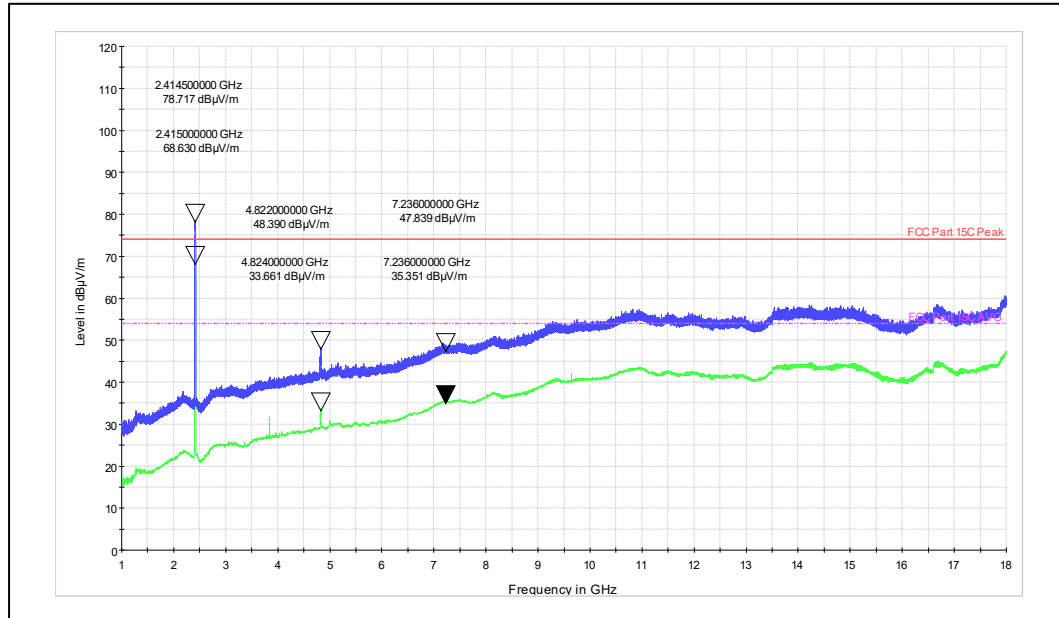
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Modulation: 802.11n_HT – 20MHz

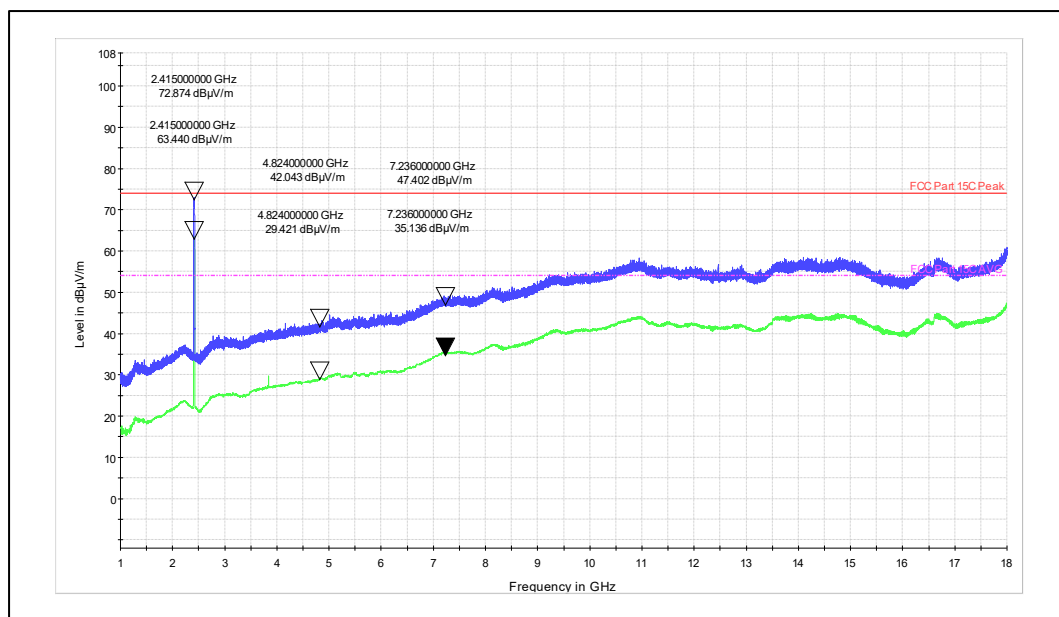
Data Rate: MCS0

Channel Frequency: 2412MHz



Frequency: 1GHz to 18GHz

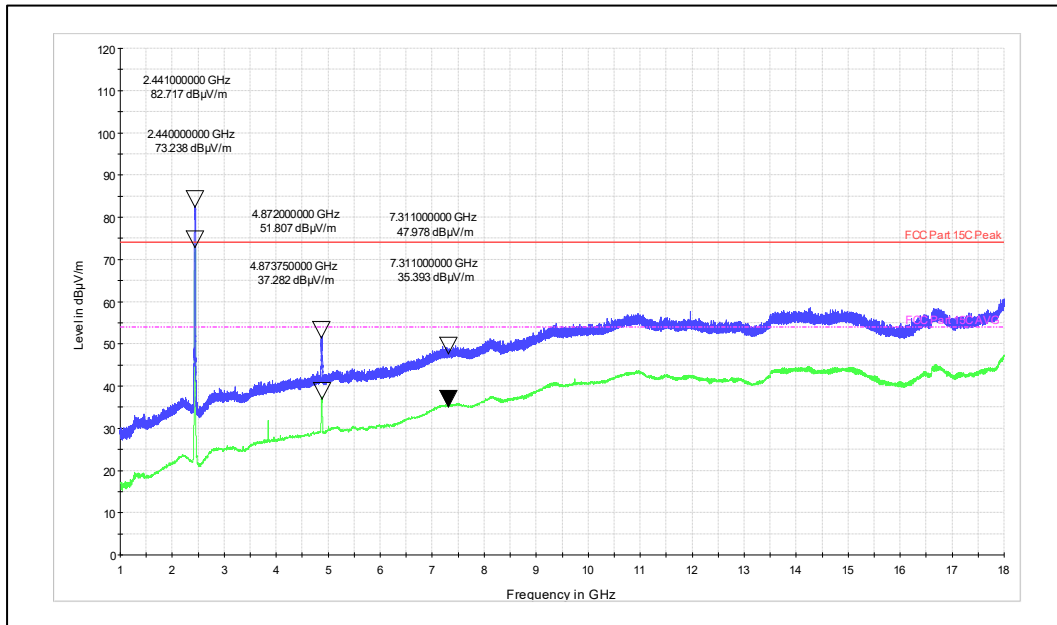
Polarization: Vertical



Frequency: 1GHz to 18GHz

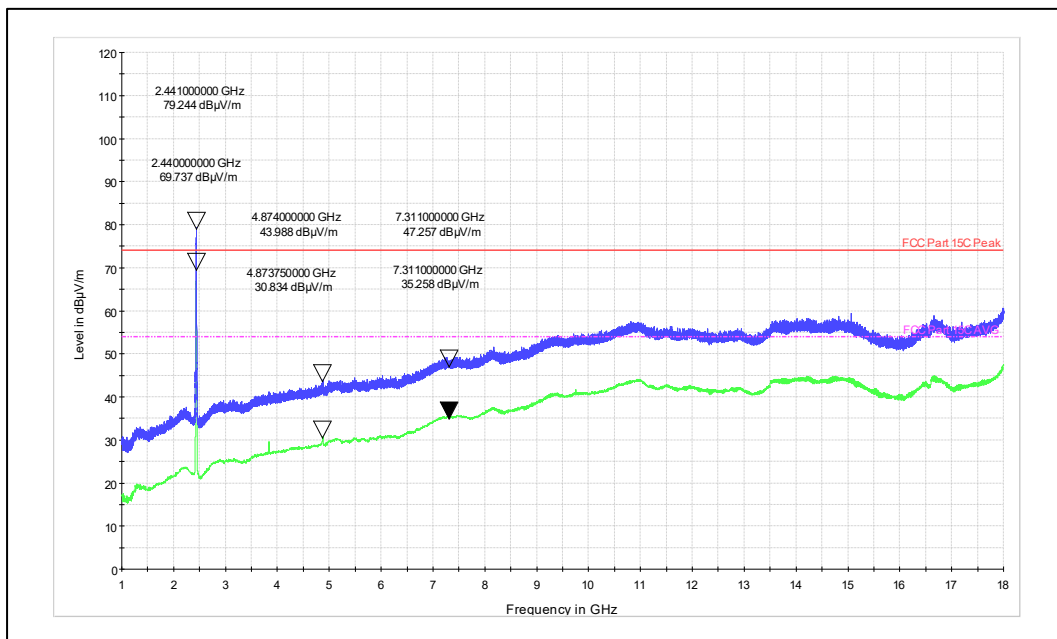
Polarization: Horizontal

Channel Frequency: 2437MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

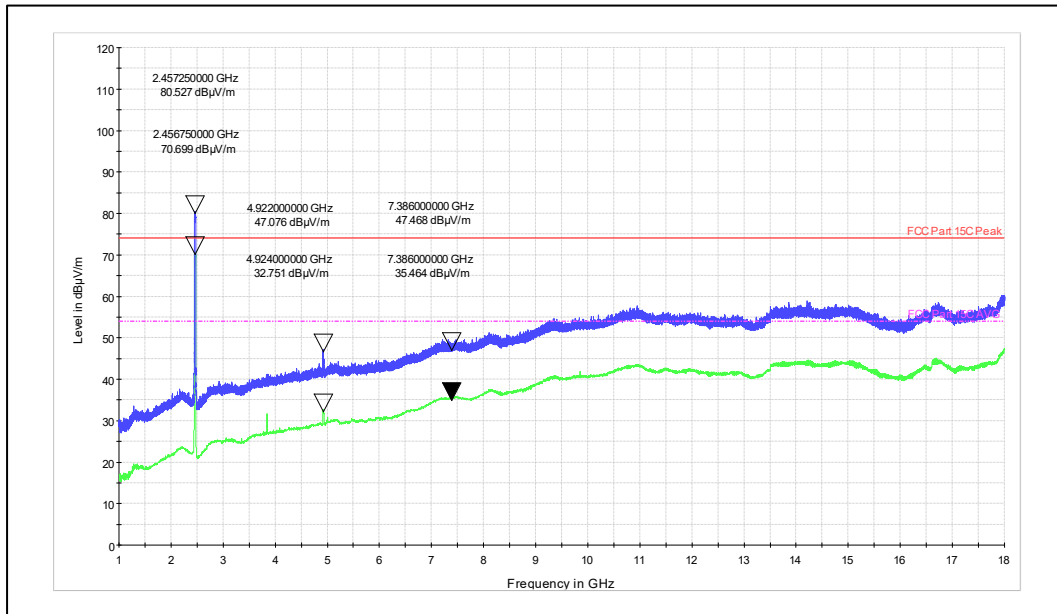
Polarization: Horizontal

Prüfbericht - Nr.:
Test Report No.:

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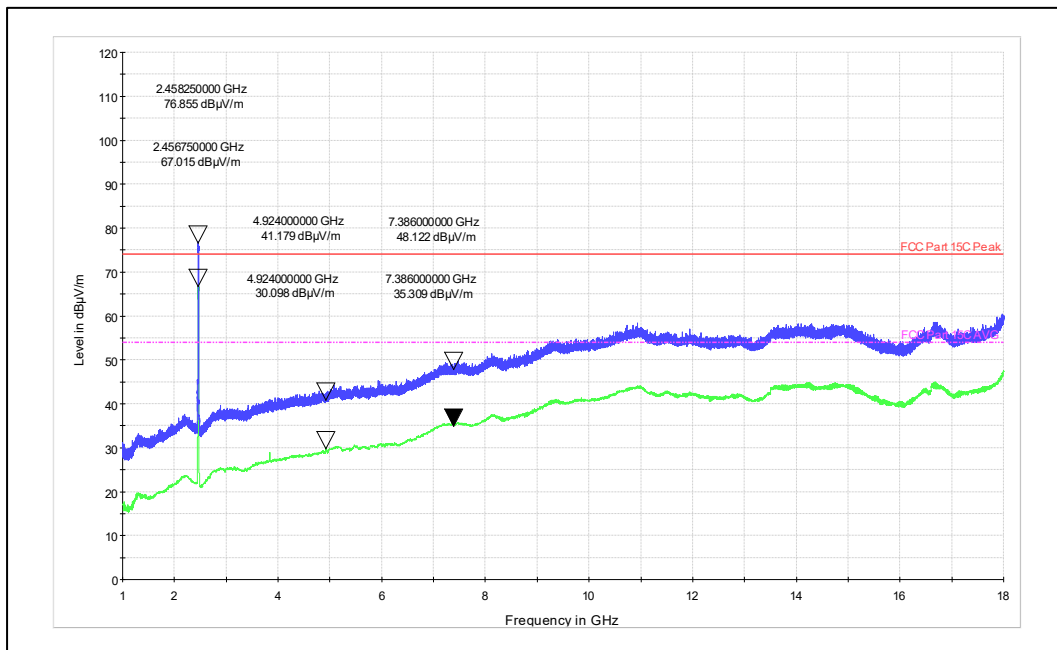
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Channel Frequency: 2462MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

Polarization: Horizontal

Prüfbericht - Nr.:
Test Report No.:

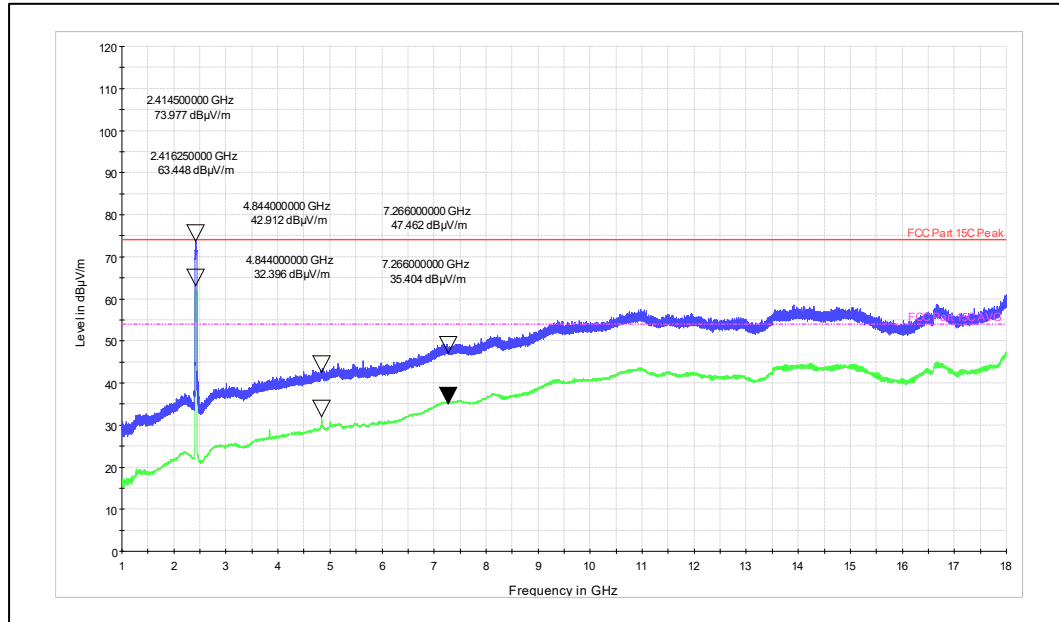
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Modulation: 802.11n_HT- 40MHz

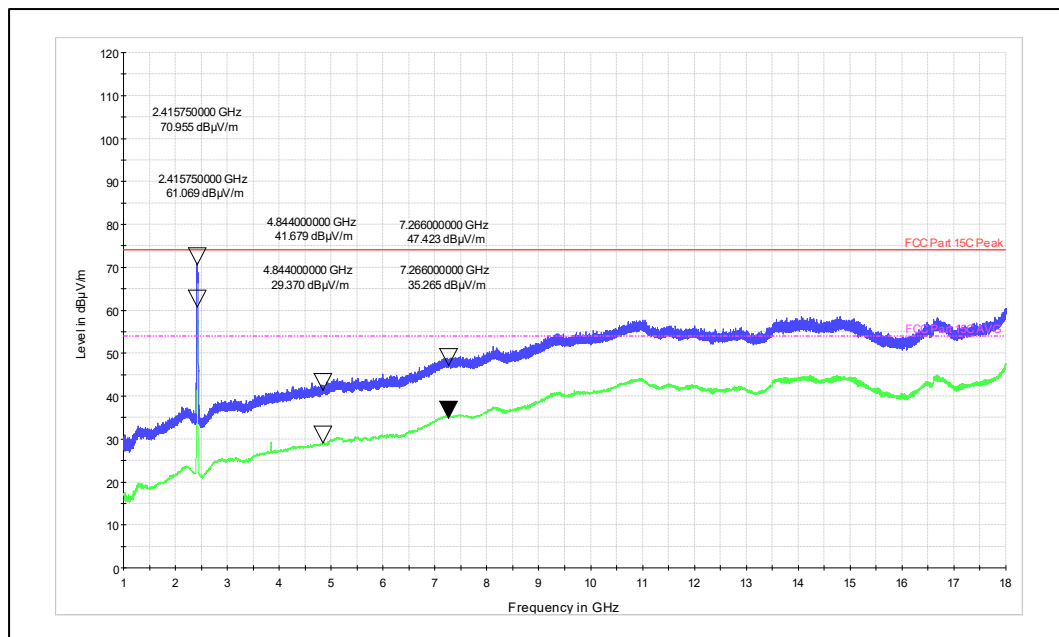
Data Rate: MCS0

Channel Frequency: 2422MHz



Frequency: 1GHz to 18GHz

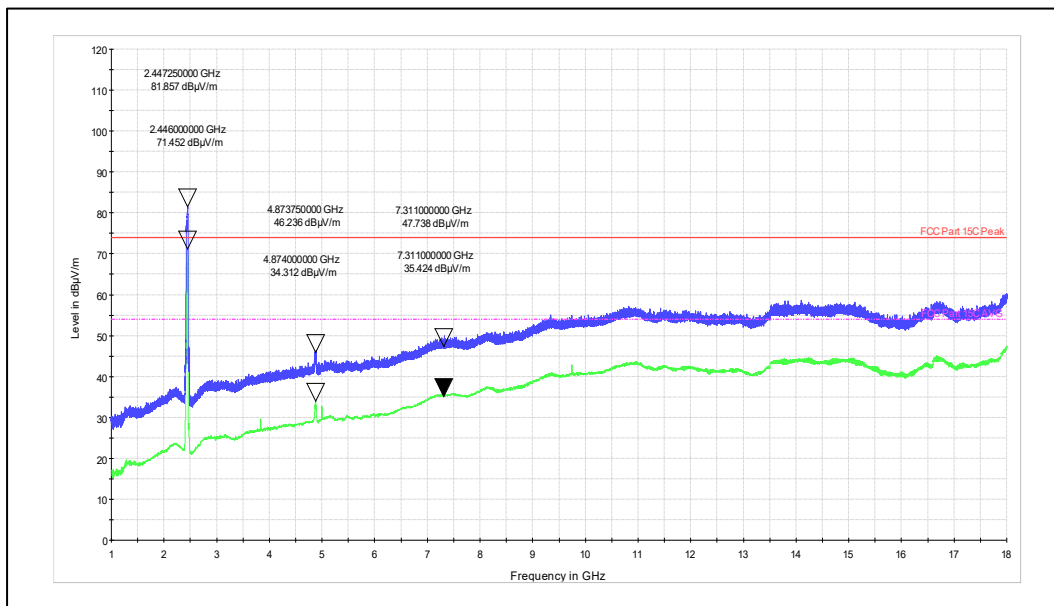
Polarization: Vertical



Frequency: 1GHz to 18GHz

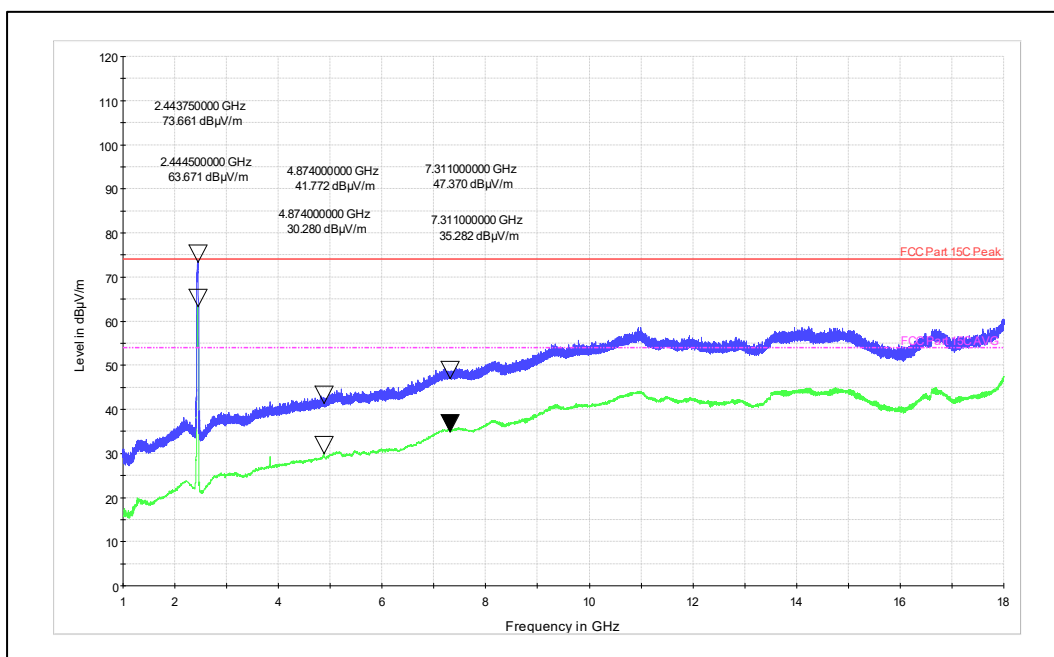
Polarization: Horizontal

Channel Frequency: 2437MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

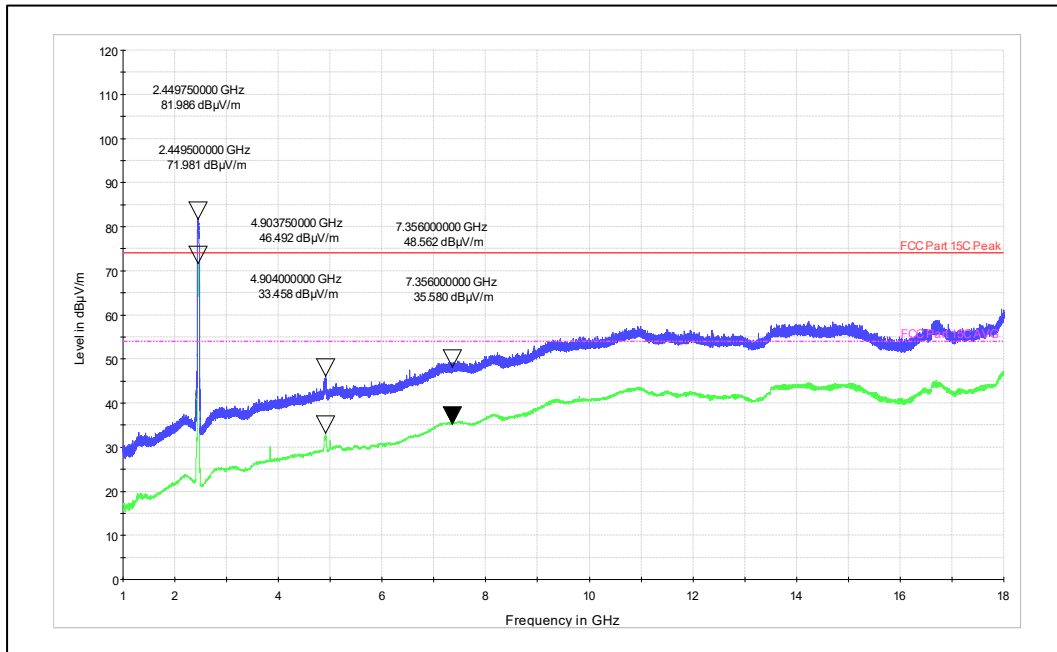
Polarization: Horizontal

Prüfbericht - Nr.:
Test Report No.:

IN269WJU 001

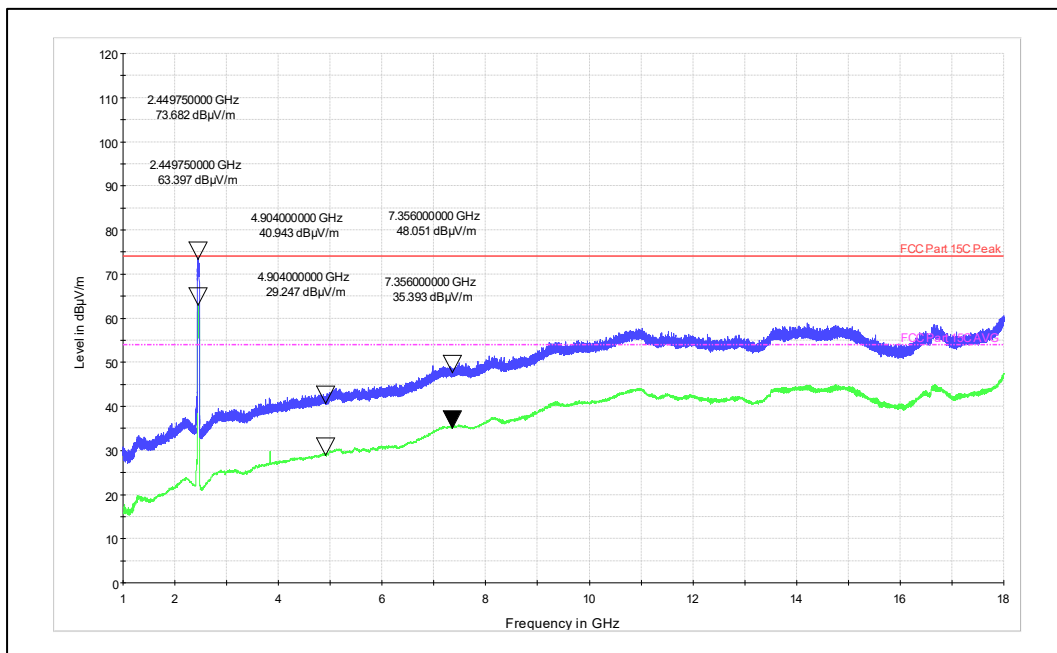
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Channel Frequency: 2452MHz



Frequency: 1GHz to 18GHz

Polarization: Vertical



Frequency: 1GHz to 18GHz

Polarization: Horizontal

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Simultaneous Operations:

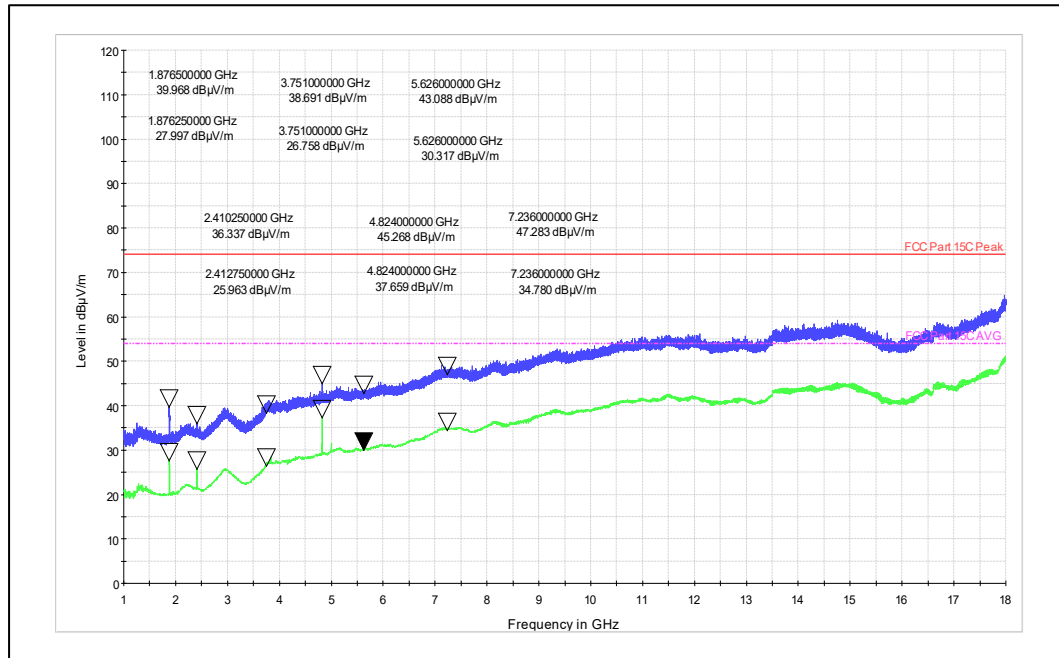
Above 1GHz Test results for Internal Antenna:

Combination of Wi-Fi 2.4GHz and LTE (Band-2):

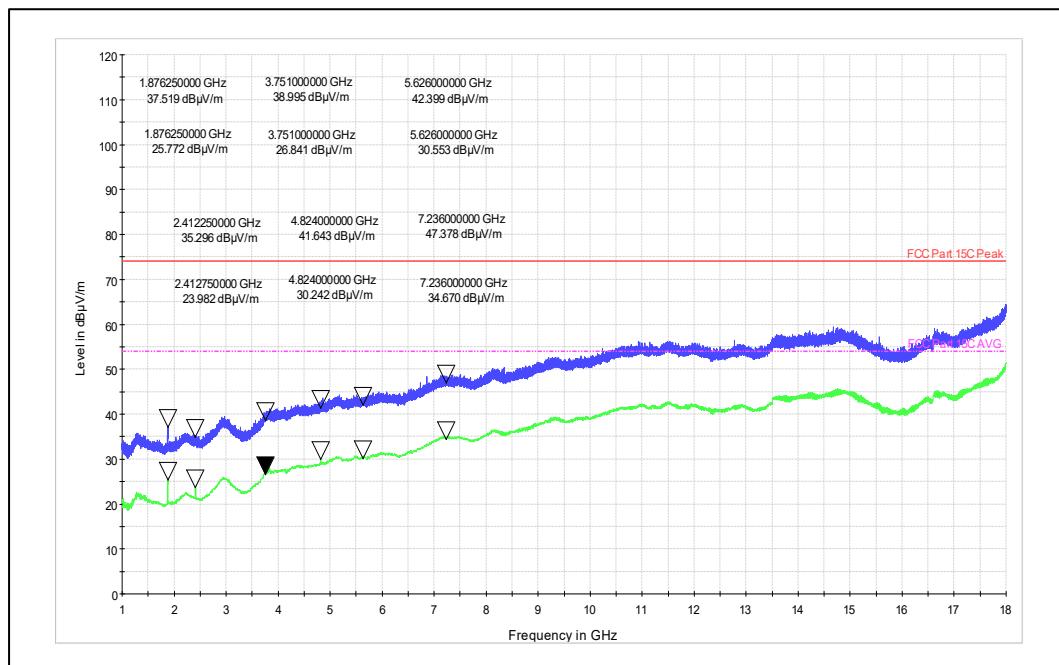
Frequency Bands	Channel Frequency (MHz)	Antenna Polarization	Measured Frequency (MHz)	Emission (dBm)	Limit (dBm)	Margin (dB)
Wi-Fi 2.4GHz b_mode-1Mbps	2412	Vertical	4824(Pk)	45.26	74.00	-28.74
			4824(Av)	37.65	54.00	-16.35
			7236(Pk)	47.28	74.00	-26.72
			7236(Av)	34.78	54.00	-19.22
		Horizontal	4824(Pk)	41.64	74.00	-32.36
			4824(Av)	30.24	54.00	-23.76
			7236(Pk)	47.37	74.00	-26.63
			7236(Av)	34.67	54.00	-19.33
LTE Band -2	1880	Vertical	3751(Pk)	38.69	74.00	-35.31
			3751(Av)	26.75	54.00	-27.25
			5626(Pk)	43.08	74.00	-30.92
			5626(Av)	30.31	54.00	-23.69
		Horizontal	3751(Pk)	38.99	74.00	-35.01
			3751(Av)	26.84	54.00	-27.16
			5626(Pk)	42.39	74.00	-31.61
			5626(Av)	30.55	54.00	-23.45

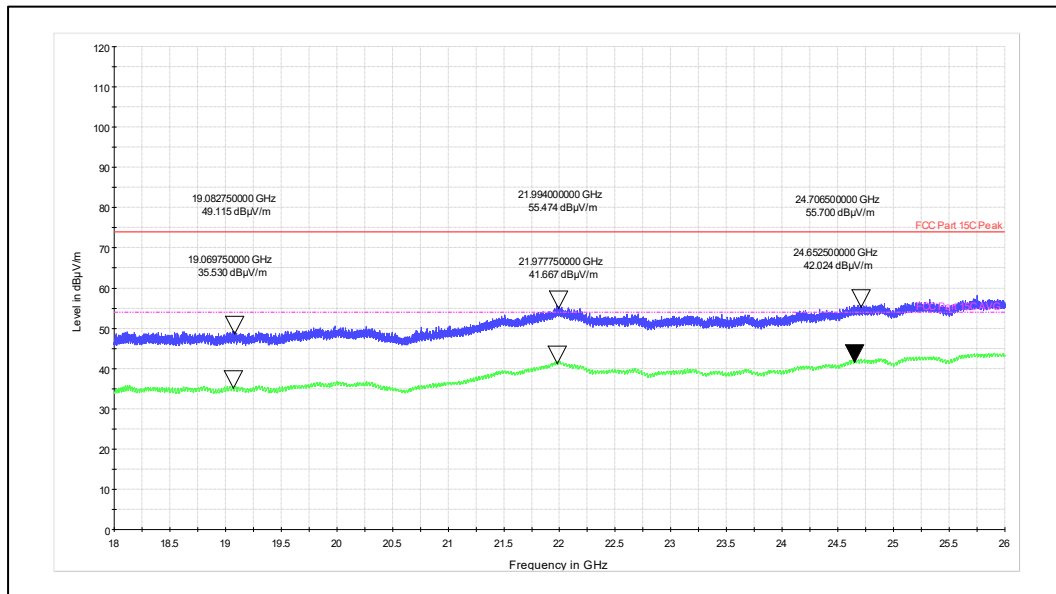
Test Plots:

WiFi-2.4GHz_Ch-2412MHz_Band 2_Channel-1880MHz-QPSK-CB10MHz_Vertical Polarization



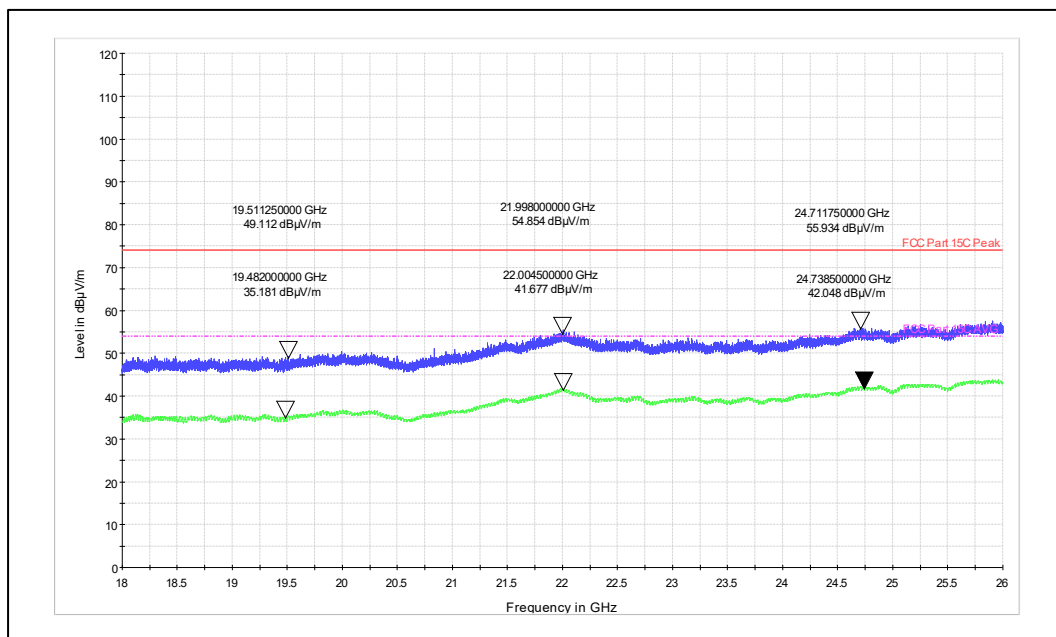
WiFi-2.4GHz_Ch-2412MHz_Band 2_Channel-1880MHz-QPSK-CB10MHz_Horizontal Polarization





Frequency: 18GHz to 26GHz

Polarization: Vertical



Frequency: 18GHz to 26GHz

Polarization: Horizontal

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End of test report