

Prüfbericht-Nr.: Test report no.:	CN233FWW 002	Auftrags-Nr.: Order no.:	168403102	Seite 1 von 22 Page 1 of 22
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2022-12-15	
Auftraggeber: Client:	DATAMARS SA Via Industria 16, 6814 Lamone, Switzerland			
Prüfgegenstand: Test item:	Activetag Edge Gateway			
Bezeichnung / Typ-Nr.: Identification / Type no.:	GW2-Ethernet/WiFi(Part Number: 880 0004-658)			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019			
Wareneingangsdatum: Date of sample receipt:	2022-12-20	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no.:	A003389847-002			
Prüfzeitraum: Testing period:	2022-12-20 – 2023-02-15			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	 Jonat han Li		genehmigt von: authorized by:	 Winnie Hou
Datum: Date:	2024-06-30		Ausstellungsdatum: Issue date:	2024-06-30
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / Other:	FCC ID: NDX-GW2 IC: 4678A-GW2 HVIN: GW2			
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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Anmerkungen
Remarks

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 115:2021, 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 115:2021, 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>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.8 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Wi-Fi 802.11 b/g/n

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069, CAB identifier: CN0078

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2023-10-10
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2023-10-10
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2023-10-10
DC power supply	Keysight	E3642A	MY61276100	2023-10-10
Wireless Connectivity Tester	R&S	CMW270	102505	2023-10-10
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2023-10-10
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2023-10-10
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	Y LX23JMF	N/A
OSP	R&S	OSP 150	101017	2023-11-21
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2023-08-02
Signal Analyzer	R&S	FSV 40	101439	2023-08-01
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2023-08-01
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-08-02
Amplifier	R&S	SCU-18F	180070	2023-08-02
Amplifier	R&S	SCU40A	100475	2023-08-02
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2023-08-06

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Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	±4.17 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±4.17 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is an Activetag Edge Gateway, which supports 2.4GHz Wi-Fi 802.11 b/g/n wireless technologies.

For details, refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Product Name:	Activetag Edge Gateway
Model No.:	GW2-Ethernet/WiFi(Part Number: 880 0004-658)
Trademark:	N/A
FCC ID:	NDX-GW2
HVIN:	GW2
IC:	4678A-GW2
Operating Voltage:	AC120V/60Hz
Testing Voltage:	AC120V/60Hz
Operating Temperature Range:	-15 °C ~ 50 °C
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number:	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Type:	Integral Antenna
Antenna Gain of 2.4GHz Wi-Fi:	2.2dBi

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	/
02	2417	/
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447

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09	2452	2452
10	2457	/
11	2462	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2437 MHz and highest channel: 2452 MHz for 802.11n(HT40)

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wi-Fi 802.11 b/g/n wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all test were performed on model GW2-LTE/Ethernet/WiFi.

4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

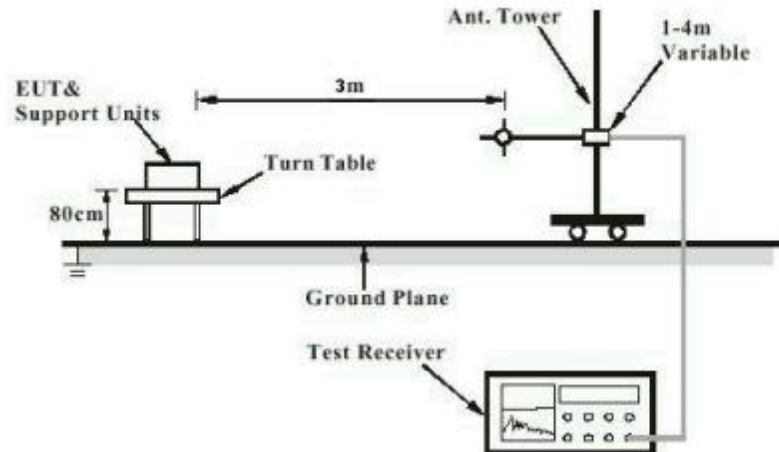


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

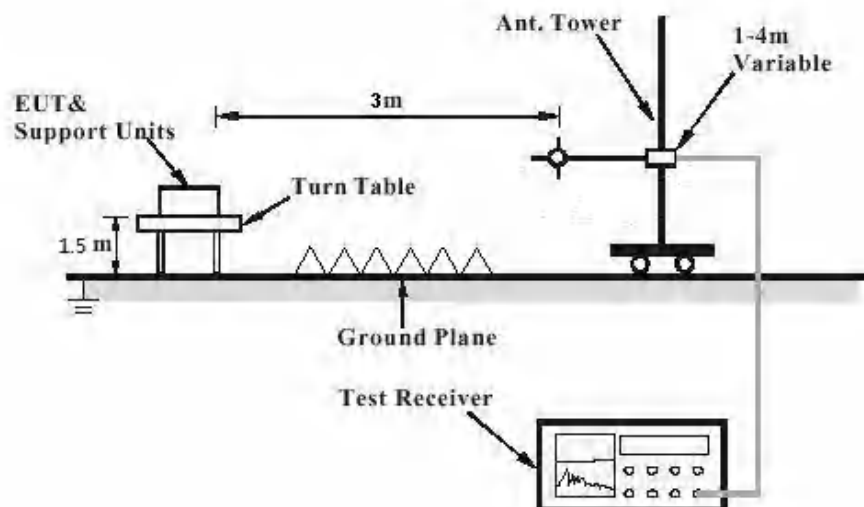


Diagram of Measurement Configuration for Mains Conduction Measurement

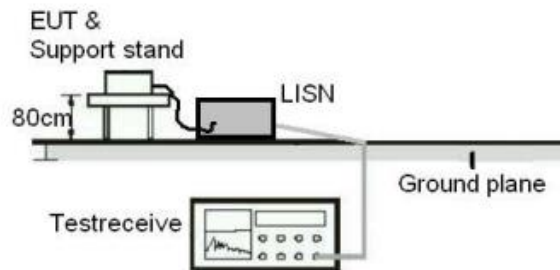
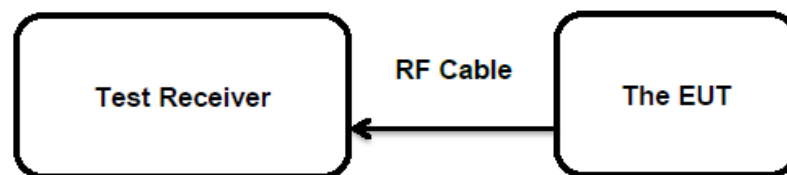


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 6.8
the use of antennas with directional gains that do not
exceed 6 dBi

According to the manufacturer declared, the EUT have an Integral antennas, the directional gain of antenna is 2.2dBi Max, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

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5.1.2 Maximum Peak Conducted Output Power

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(b)(3) RSS-247 Clause 5.4(d)
Basic standard	: ANSI C63.10: 2013
Limits	: 1.0 Watts
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2022-12-20 – 2023-02-15
Input voltage	: AC120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 23.5 °C
Relative humidity	: 64 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(e)
RSS-247 Clause 5.2(b)
Basic standard : ANSI C63.10: 2013
Limits : < 8 dBm / 3kHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 2022-12-20 – 2023-02-15
Input voltage : AC120V/60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 23.5 °C
Relative humidity : 64 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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5.1.4 6dB Bandwidth

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(2)
RSS-247 Clause 5.2(a)
Basic standard : ANSI C63.10: 2013
Limits : > 500 KHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 2022-12-20 – 2023-02-15
Input voltage : AC120V/60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 23.5 °C
Relative humidity : 64 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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5.1.5 99% Bandwidth

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(a)
RSS-Gen clause 6.7
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2022-12-20 – 2023-02-15
Input voltage : AC120V/60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 23.5 °C
Relative humidity : 64 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2022-12-20 – 2023-02-15
Input voltage	: AC120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 23.5 °C
Relative humidity	: 64 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

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5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3 & 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2022-12-20 – 2023-02-15
Input voltage	: AC120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. All configurations tested, only worst-case mode data reported.

For the measurement records, refer to the appendix B.

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5.1.8 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	: Shielded Room

Test Setup

Date of testing	: Refer to test result
Input voltage	: AC120V/60Hz
Operation mode	: A
Earthing	: Not connected
Ambient temperature	: 22 °C
Relative humidity	: 64 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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Appendix B: Test Results

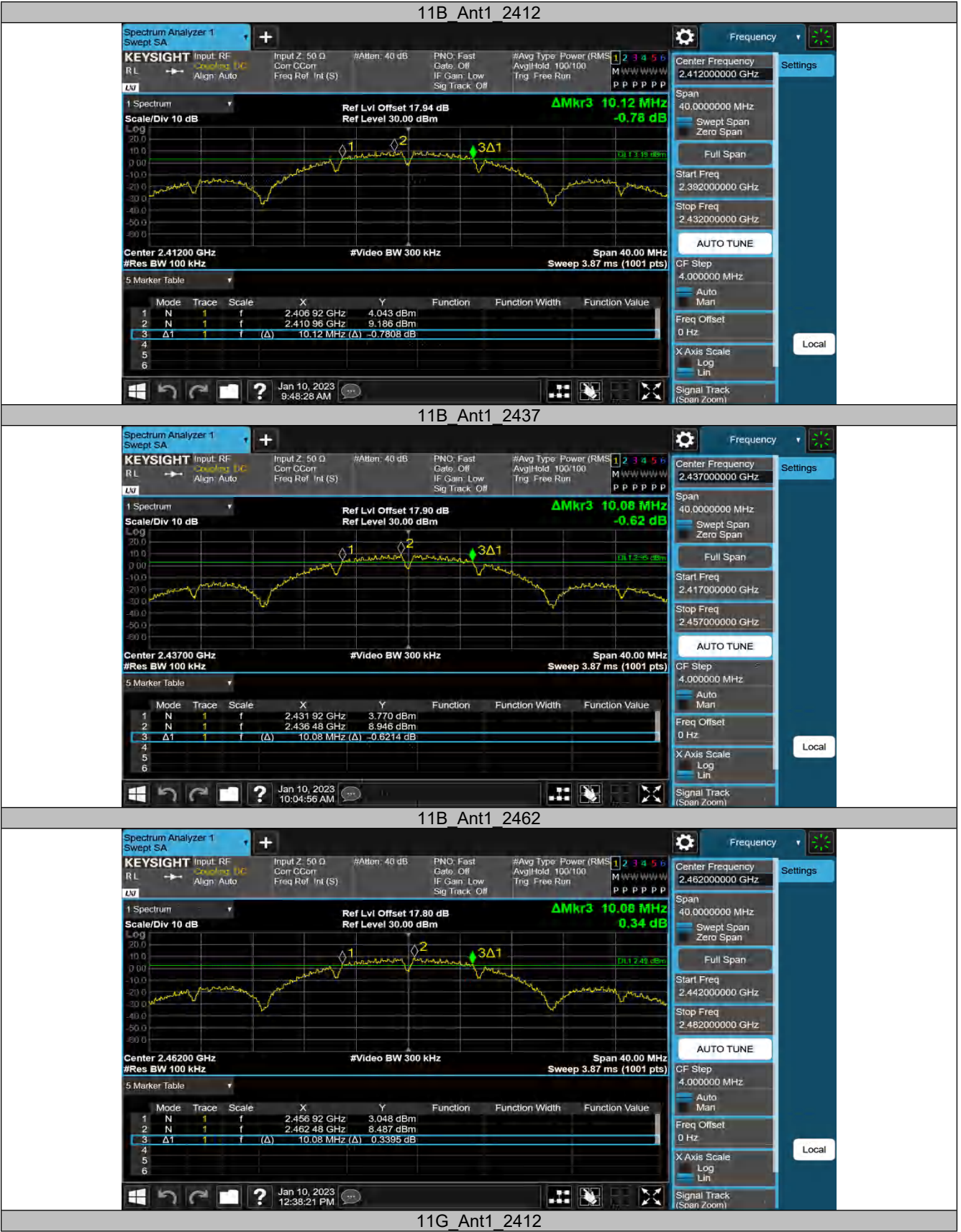
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1.1 DTS Bandwidth

1.1.1 Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.120	2406.920	2417.040	0.5	PASS
		2437	10.080	2431.920	2442.000	0.5	PASS
		2462	10.080	2456.920	2467.000	0.5	PASS
11G	Ant1	2412	14.800	2404.720	2419.520	0.5	PASS
		2437	15.080	2429.480	2444.560	0.5	PASS
		2462	15.080	2454.440	2469.520	0.5	PASS
11N20SISO	Ant1	2412	15.120	2404.400	2419.520	0.5	PASS
		2437	15.080	2429.440	2444.520	0.5	PASS
		2462	15.080	2454.400	2469.480	0.5	PASS
11N40SISO	Ant1	2422	34.960	2404.480	2439.440	0.5	PASS
		2437	35.120	2419.400	2454.520	0.5	PASS
		2452	35.120	2434.400	2469.520	0.5	PASS

1.1.2 Test Graphs



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11G_Ant1_2462



11N20SISO_Ant1_2412

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11N20SISO Ant1 2462



11N40SISO Ant1 2422

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11N40SISO Ant1 2437



11N40SISO Ant1 2452

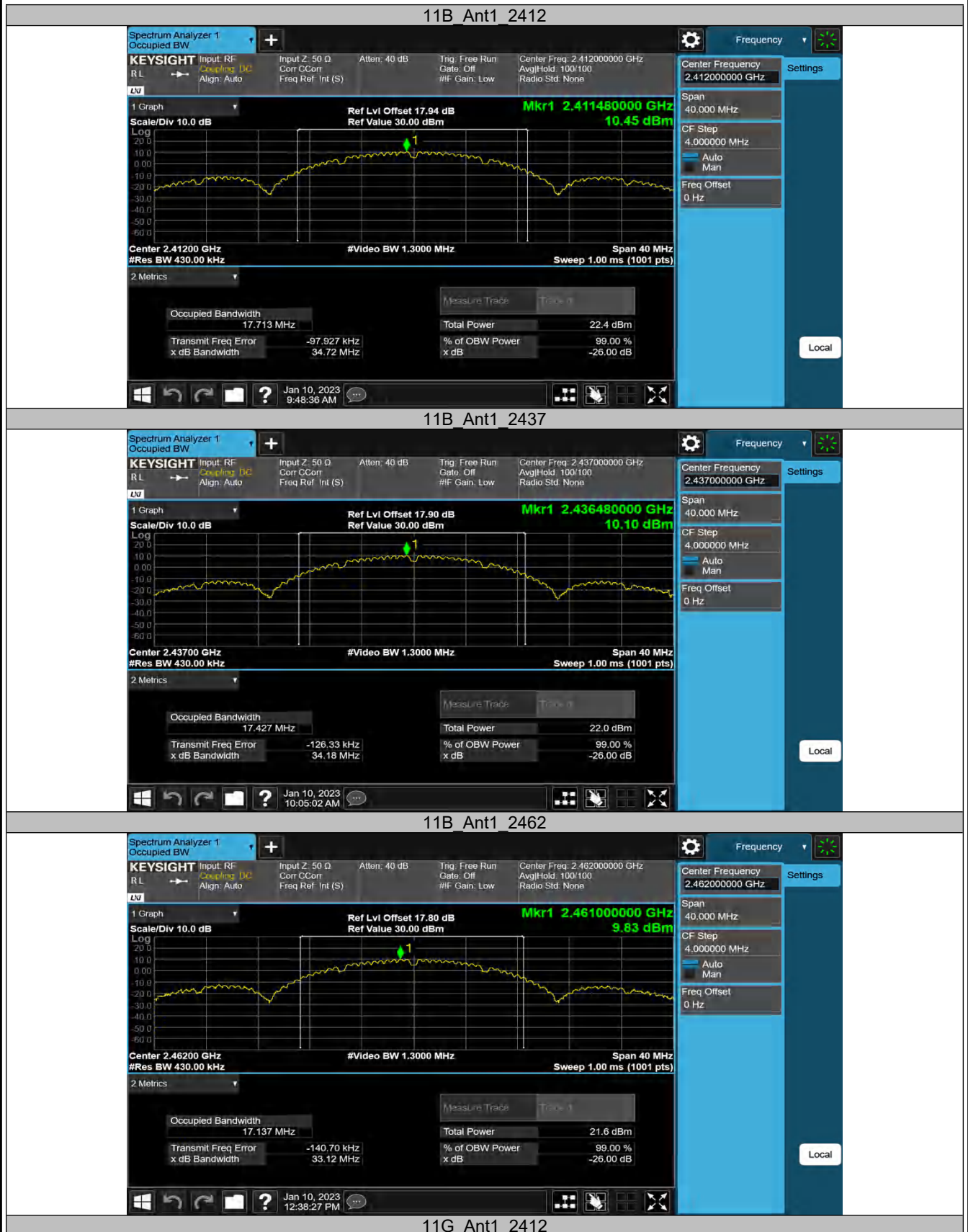


1.2 Occupied Channel Bandwidth

1.2.1 Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	17.713	2403.0456	2420.7586	---	---
		2437	17.427	2428.1602	2445.5872	---	---
		2462	17.137	2453.2908	2470.4278	---	---
11G	Ant1	2412	17.881	2403.0256	2420.9066	---	---
		2437	17.837	2428.0248	2445.8618	---	---
		2462	17.592	2453.1022	2470.6942	---	---
11N20SISO	Ant1	2412	19.098	2402.4174	2421.5154	---	---
		2437	18.810	2427.5950	2446.4050	---	---
		2462	18.517	2452.6809	2471.1979	---	---
11N40SISO	Ant1	2422	37.034	2403.2957	2440.3297	---	---
		2437	36.935	2418.3597	2455.2947	---	---
		2452	36.926	2433.3588	2470.2848	---	---

1.2.2 Test Graphs



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11N20SISO Ant1_2462



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11N40SISO Ant1 2437



11N40SISO Ant1 2452



1.3 Maximum conducted output power

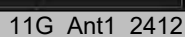
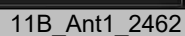
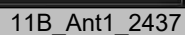
1.3.1 Test Result PK

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	20.77	≤30.00	PASS
		2437	20.63	≤30.00	PASS
		2462	20.65	≤30.00	PASS
11G	Ant1	2412	22.43	≤30.00	PASS
		2437	22.68	≤30.00	PASS
		2462	22.23	≤30.00	PASS
11N20SISO	Ant1	2412	20.55	≤30.00	PASS
		2437	22.42	≤30.00	PASS
		2462	20.80	≤30.00	PASS
11N40SISO	Ant1	2422	18.98	≤30.00	PASS
		2437	22.36	≤30.00	PASS
		2452	19.41	≤30.00	PASS

1.3.2 Test Result AV

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B-CDD	Ant1	2412	17.64	≤30.00	PASS
		2437	17.43	≤30.00	PASS
		2462	17.42	≤30.00	PASS
11G-CDD	Ant1	2412	14.71	≤30.00	PASS
		2437	15.08	≤30.00	PASS
		2462	14.75	≤30.00	PASS
11N20MIMO	Ant1	2412	13.36	≤30.00	PASS
		2437	15.20	≤30.00	PASS
		2462	13.59	≤30.00	PASS
11N40MIMO	Ant1	2422	11.79	≤30.00	PASS
		2437	14.64	≤30.00	PASS
		2452	12.17	≤30.00	PASS

11B_Ant1_2412

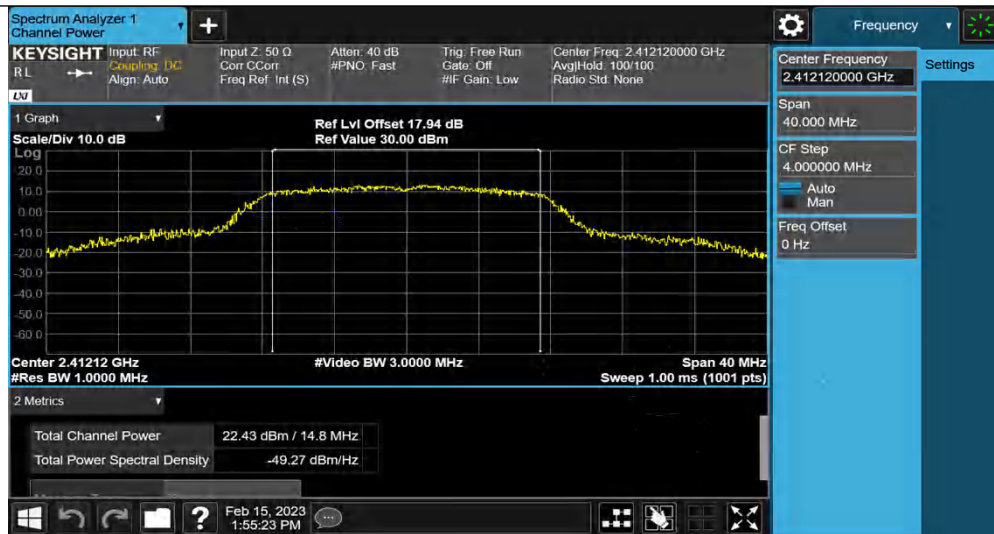


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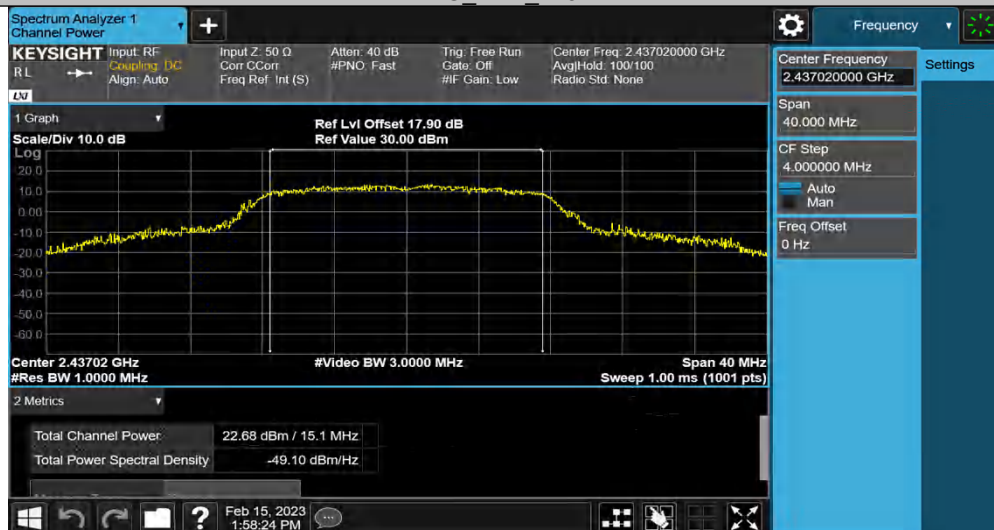
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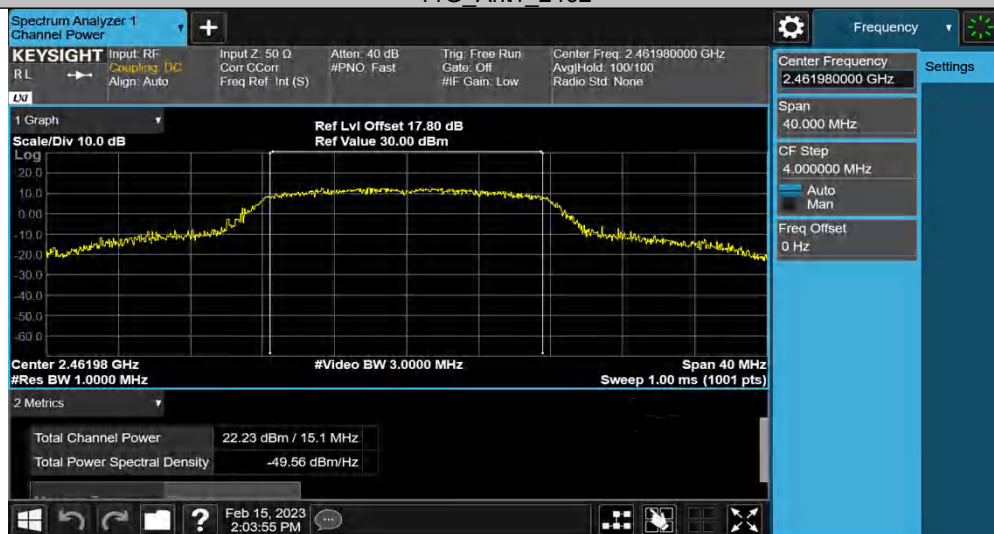
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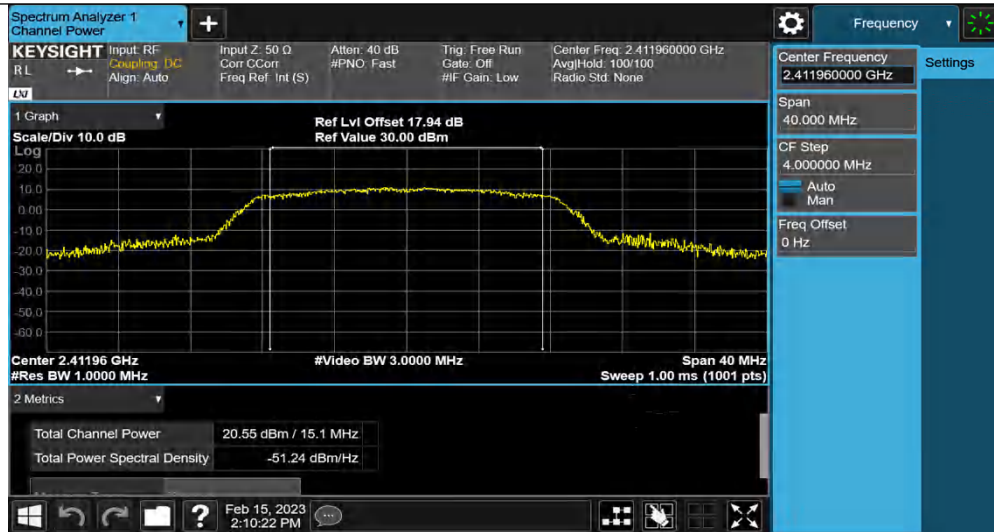
11G_Ant1_2437



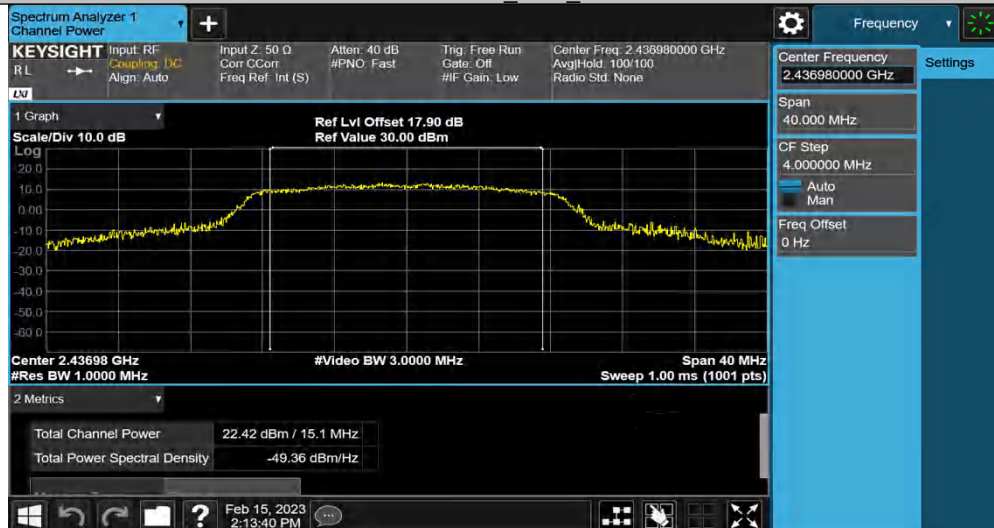
11G_Ant1_2462



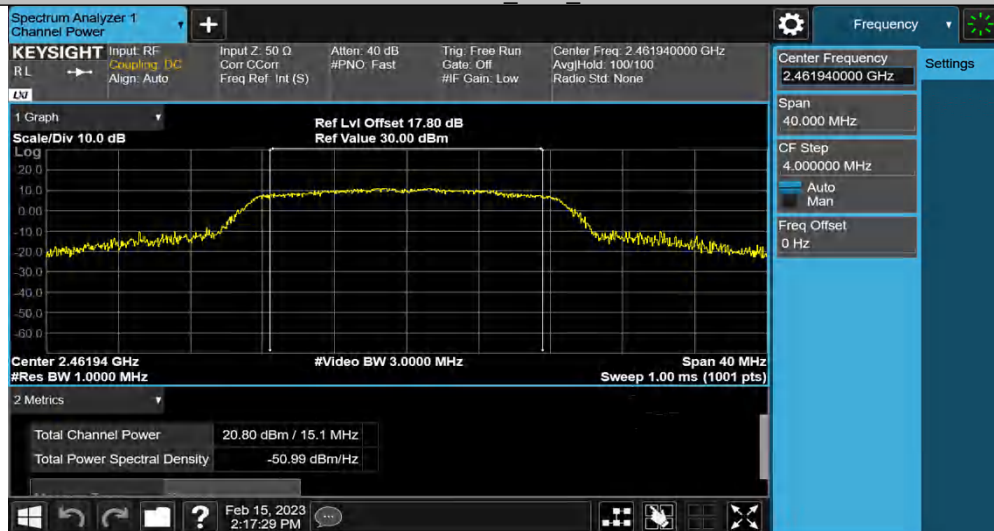
11N20SISO_Ant1_2412



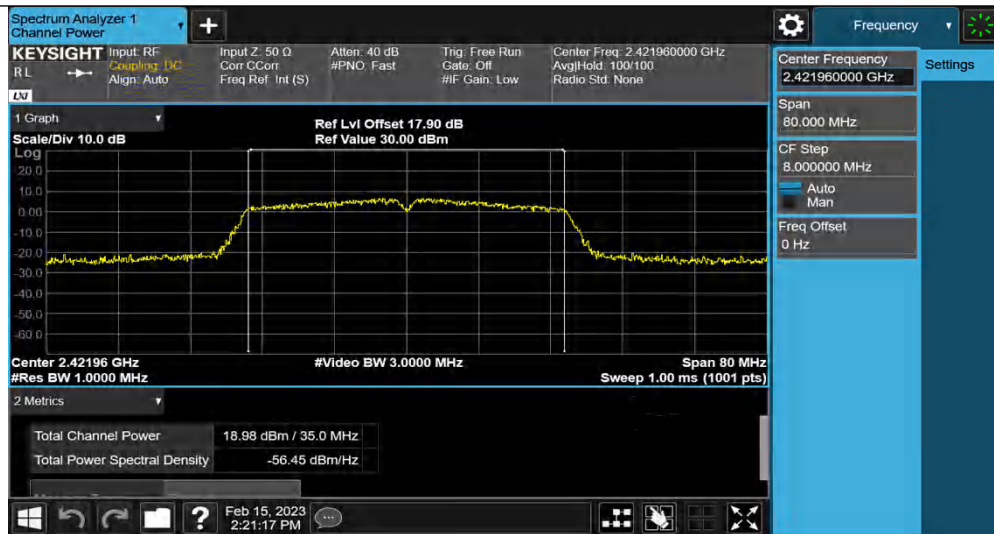
11N20SISO Ant1_2437



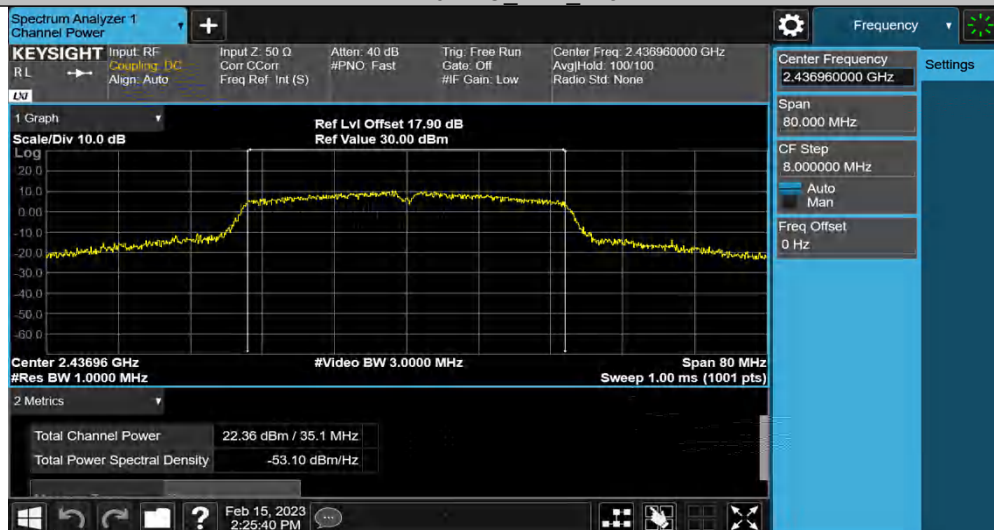
11N20SISO Ant1_2462



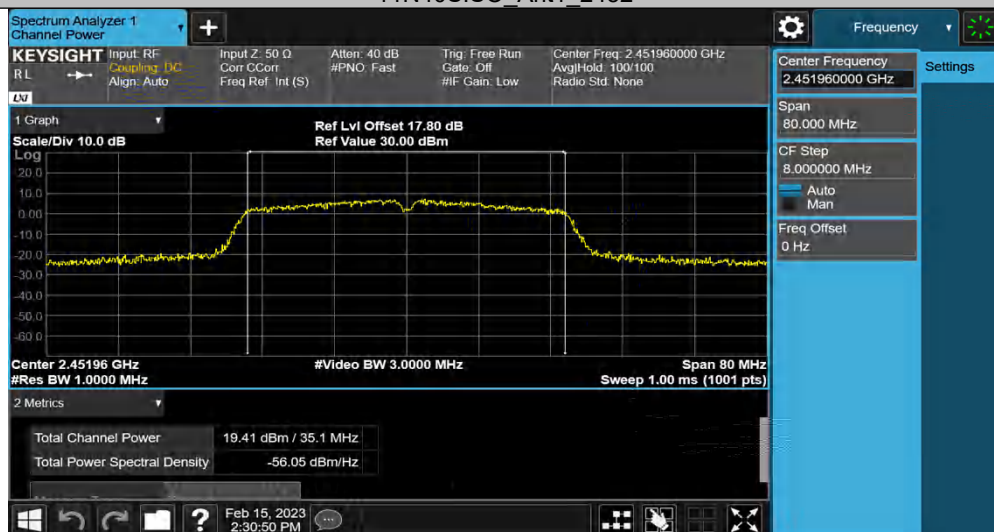
11N40SISO Ant1_2422



11N40SISO Ant1 2437



11N40SISO Ant1 2452



1.4 Maximum power spectral density

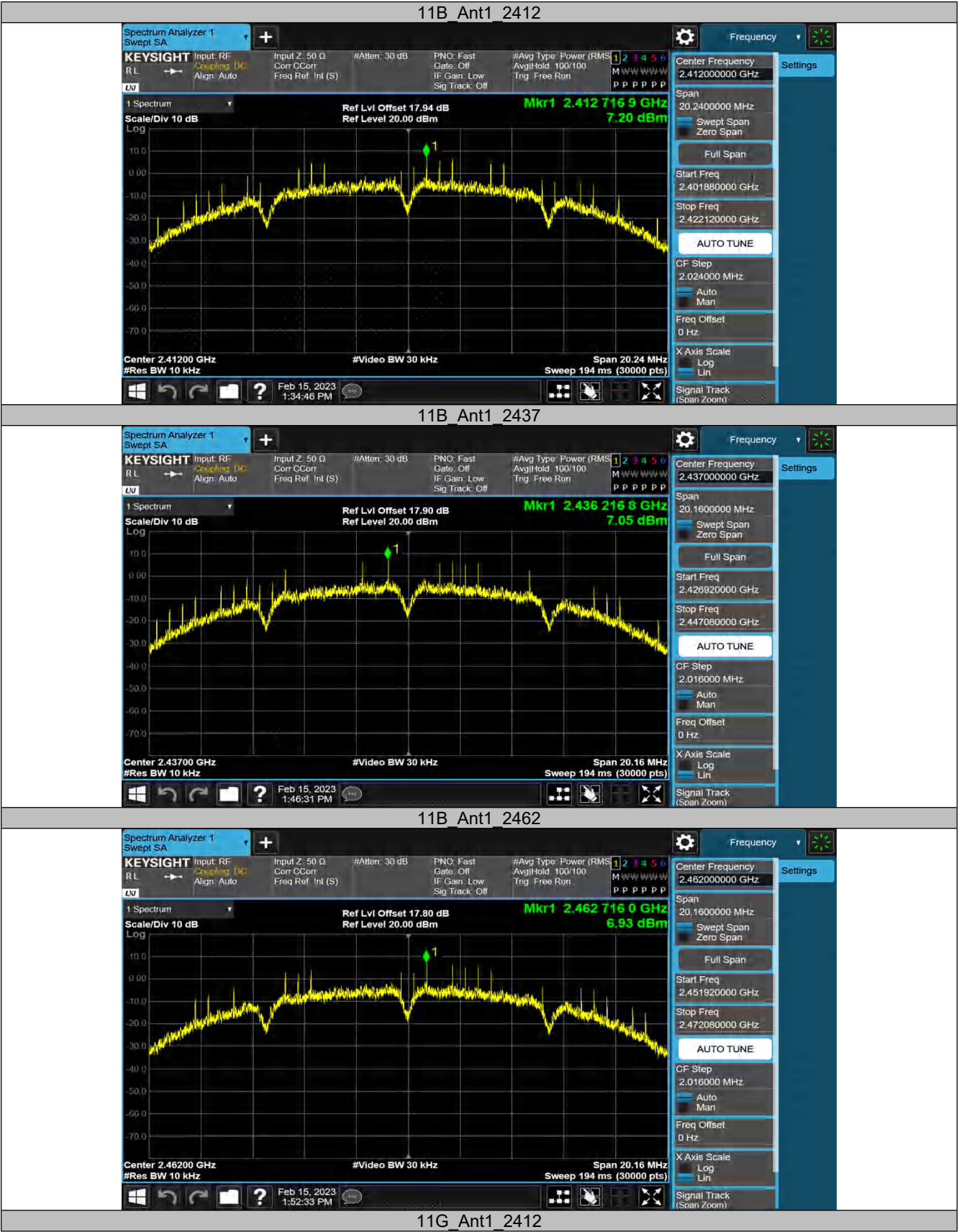
1.4.1 Test Result PK

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	7.2	≤8.00	PASS
		2437	7.05	≤8.00	PASS
		2462	6.93	≤8.00	PASS
11G	Ant1	2412	-4.11	≤8.00	PASS
		2437	-3.36	≤8.00	PASS
		2462	-4.47	≤8.00	PASS
11N20SISO	Ant1	2412	-6.25	≤8.00	PASS
		2437	-3.88	≤8.00	PASS
		2462	-5.5	≤8.00	PASS
11N40SISO	Ant1	2422	-9.64	≤8.00	PASS
		2437	-6.32	≤8.00	PASS
		2452	-10.26	≤8.00	PASS

1.4.2 Test Result AV

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B-CDD	Ant1	2412	-7.66	≤8.00	PASS
		2437	-8.75	≤8.00	PASS
		2462	-8.69	≤8.00	PASS
11G-CDD	Ant1	2412	-12.19	≤8.00	PASS
		2437	-11.41	≤8.00	PASS
		2462	-12.31	≤8.00	PASS
11N20MIMO	Ant1	2412	-13.84	≤8.00	PASS
		2437	-11.65	≤8.00	PASS
		2462	-13.26	≤8.00	PASS
11N40MIMO	Ant1	2422	-17.84	≤8.00	PASS
		2437	-15.34	≤8.00	PASS
		2452	-17.53	≤8.00	PASS

1.4.3 Test Graphs PK

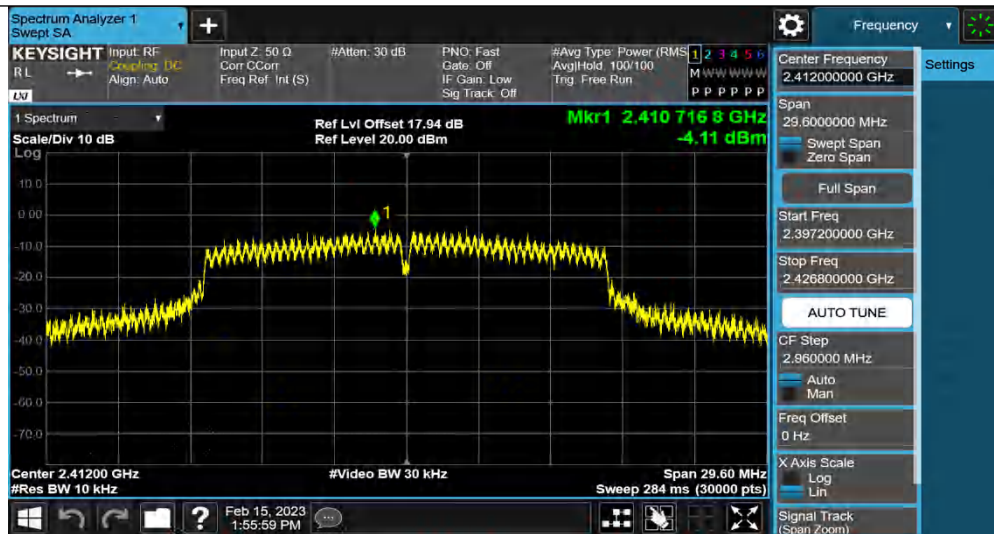


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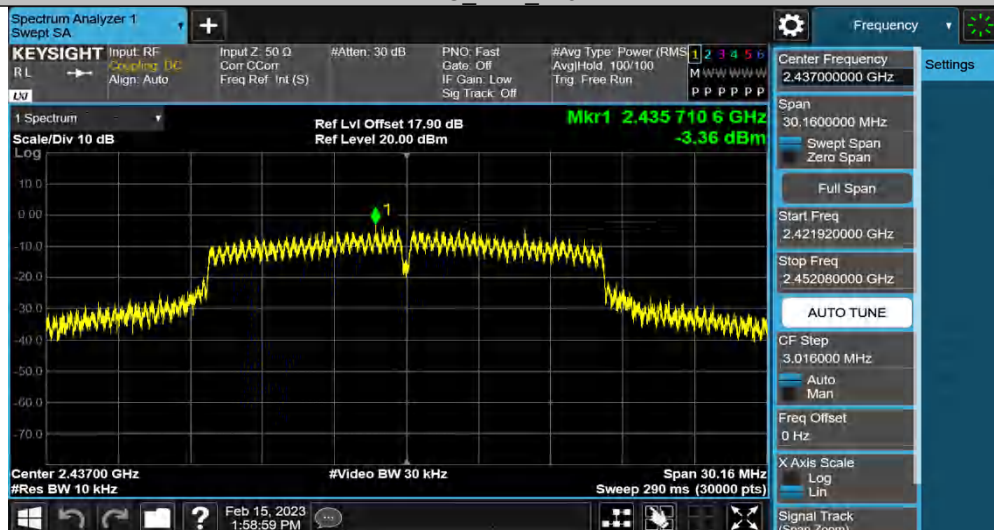


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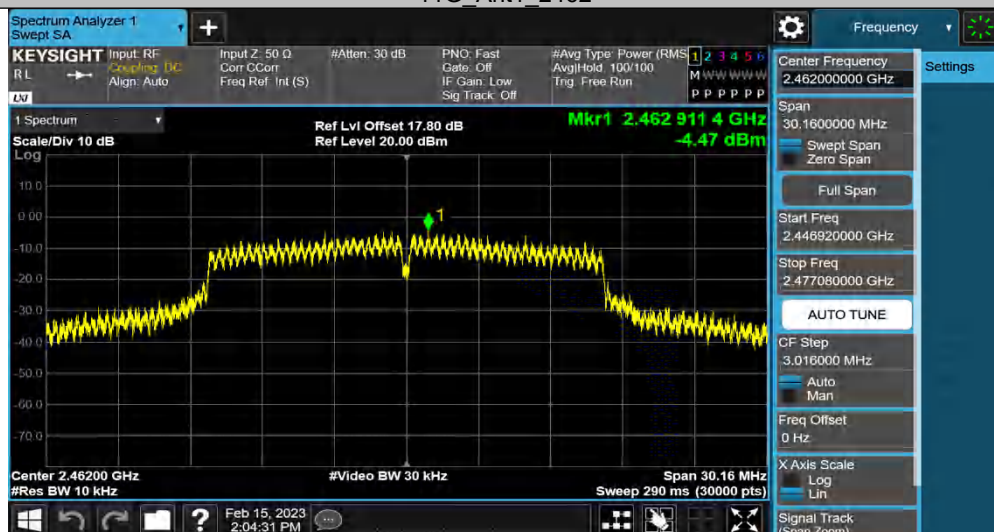
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11G_Ant1_2437



11G_Ant1_2462

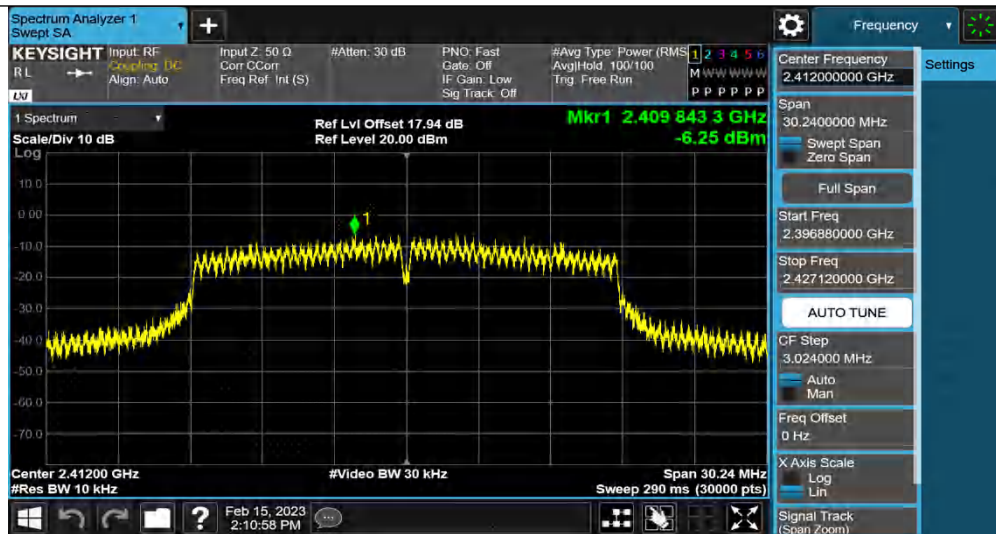


11N20SISO_Ant1_2412

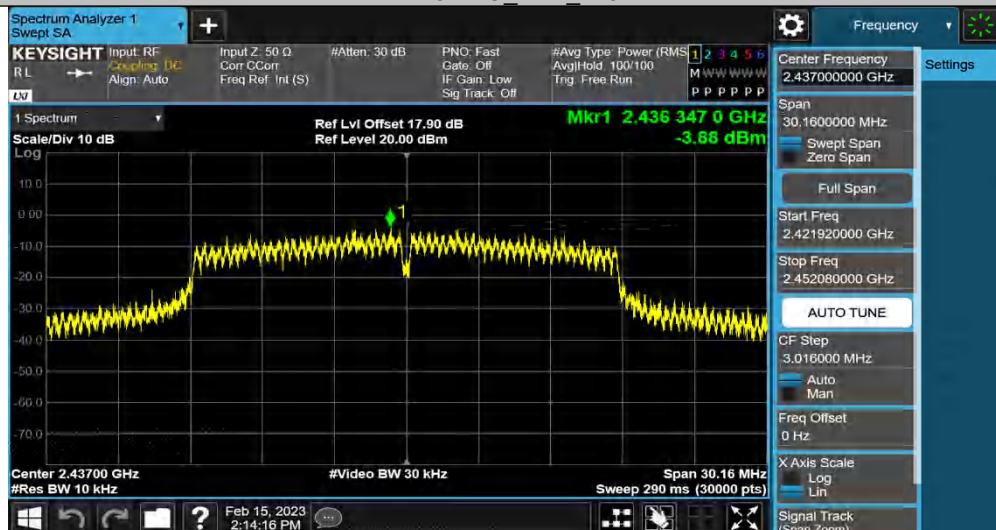
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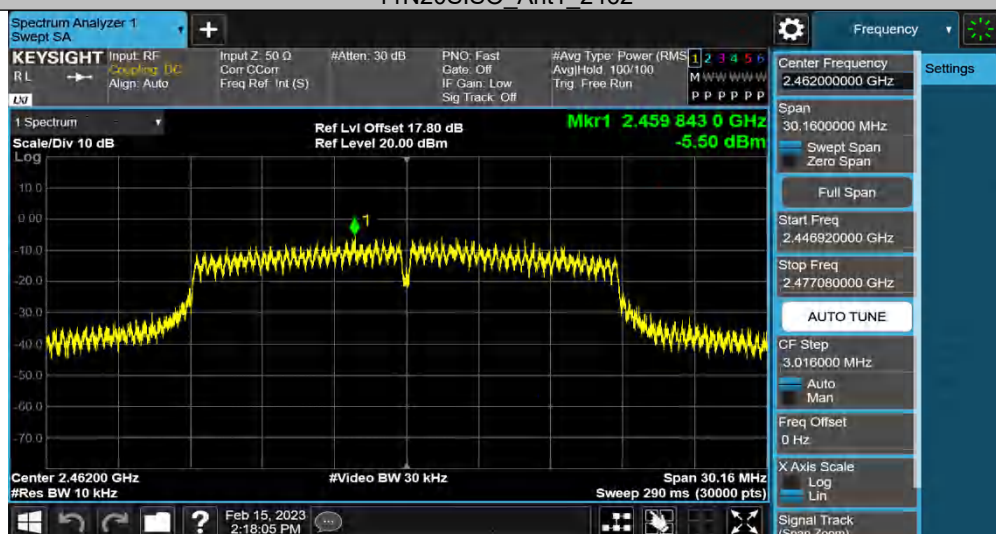
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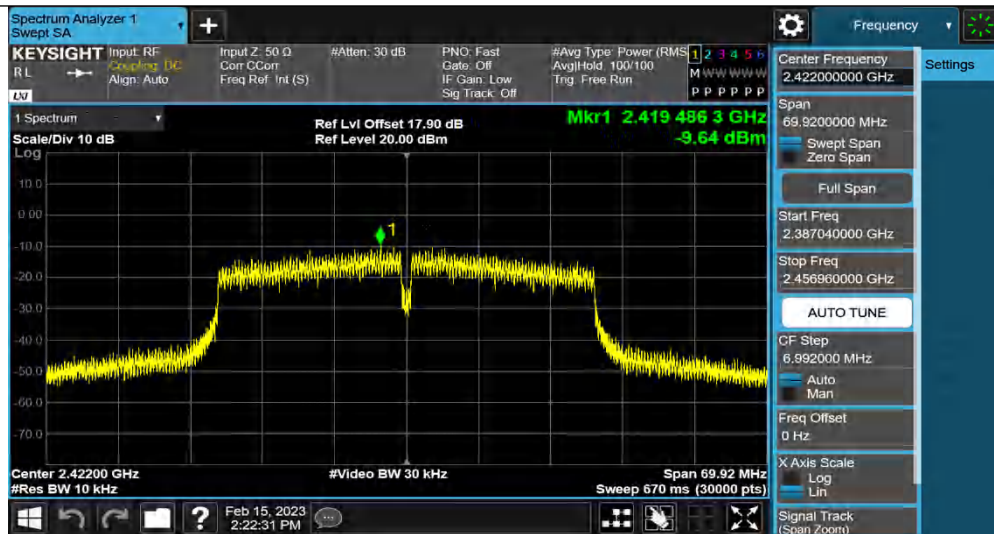
11N20SISO Ant1_2437



11N20SISO Ant1_2462



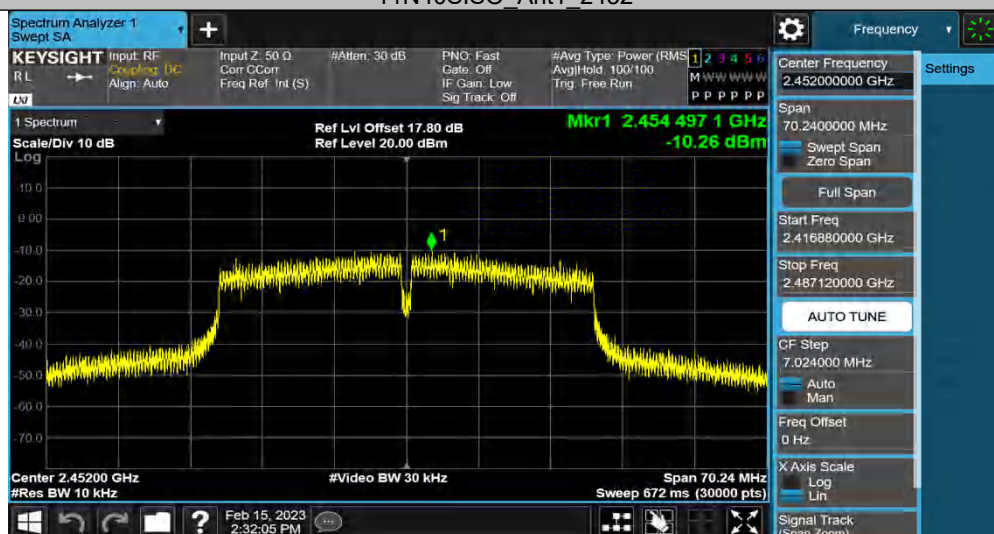
11N40SISO Ant1_2422



11N40SISO Ant1_2437



11N40SISO Ant1_2452



1.4.4 Test Graphs AV

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11B-CDD Ant1 2437



11B-CDD Ant1 2462

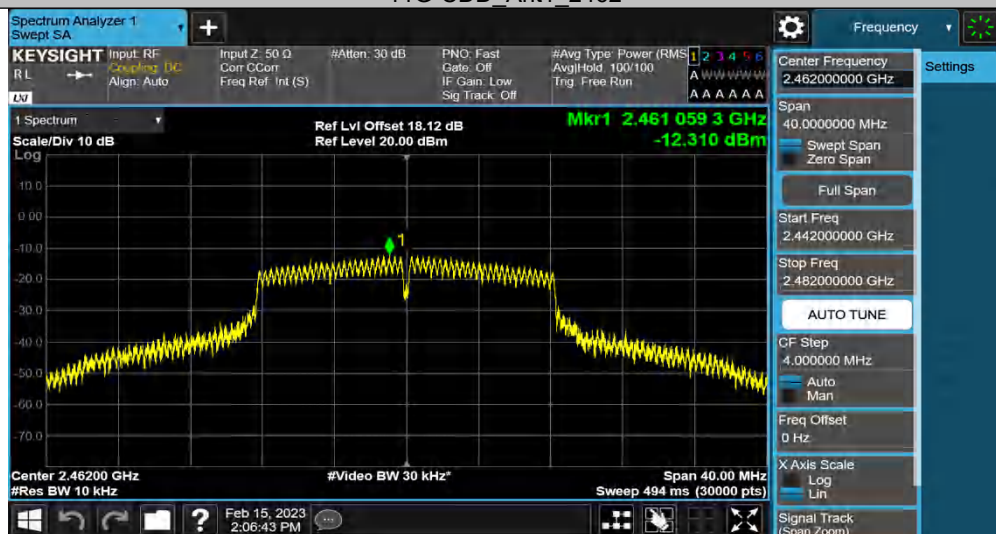
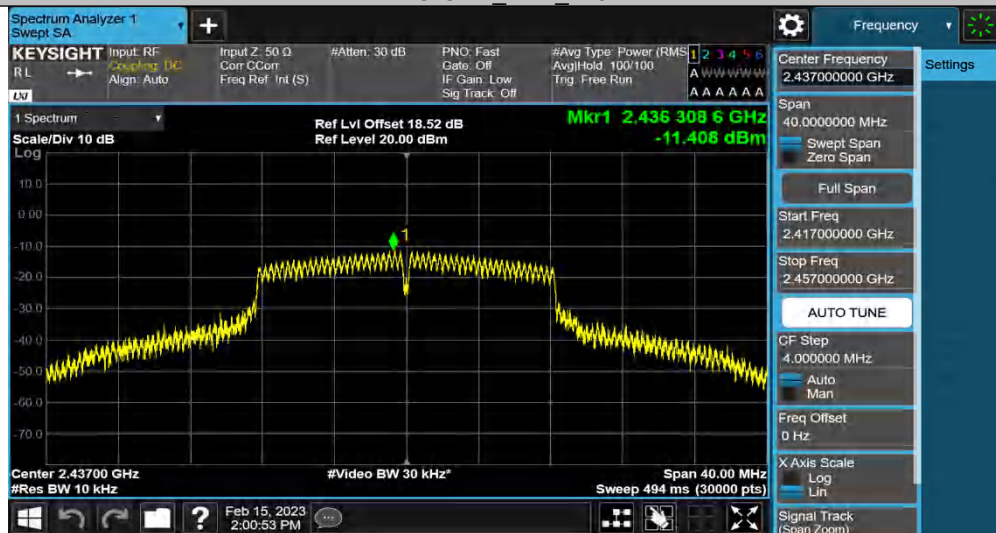
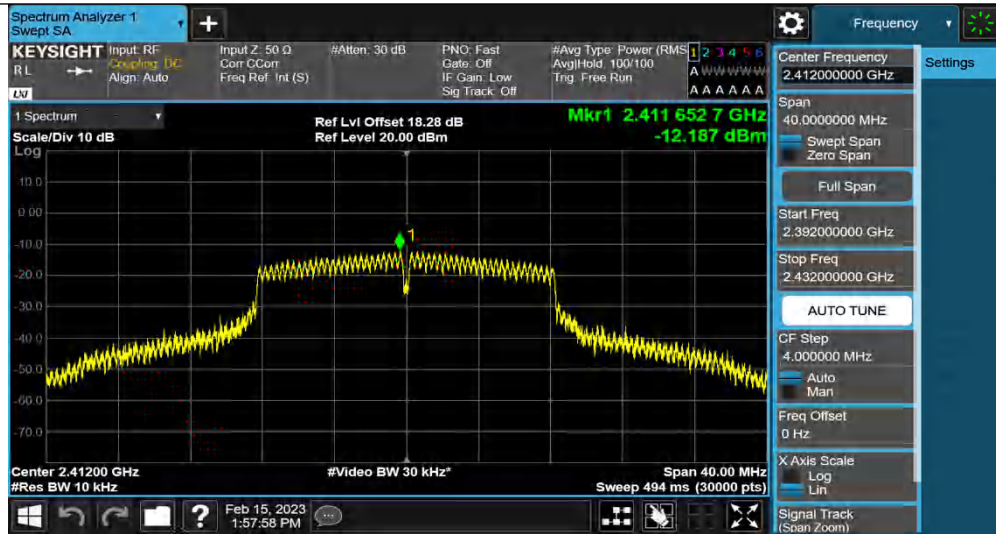


11G-CDD Ant1 2412

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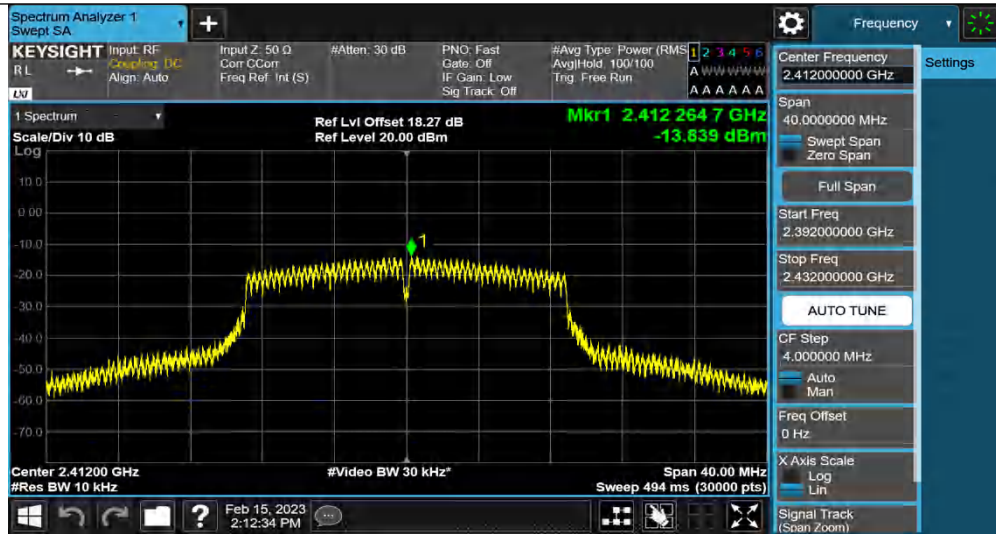


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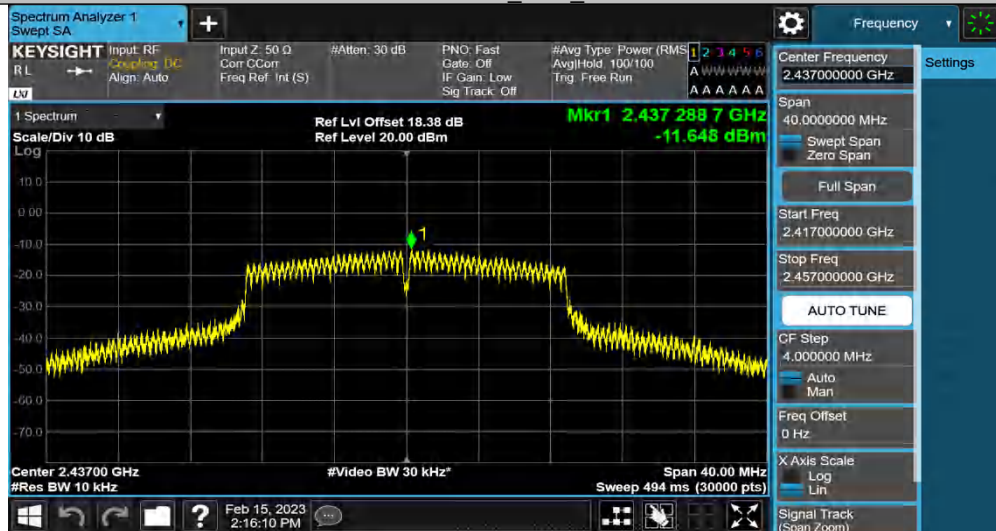
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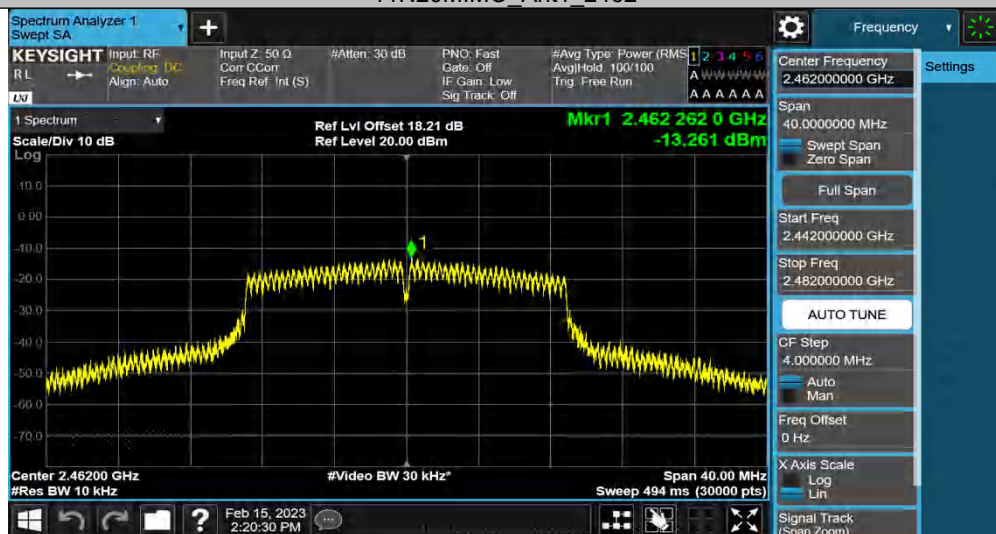
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11N20MIMO Ant1 2437



11N20MIMO Ant1 2462



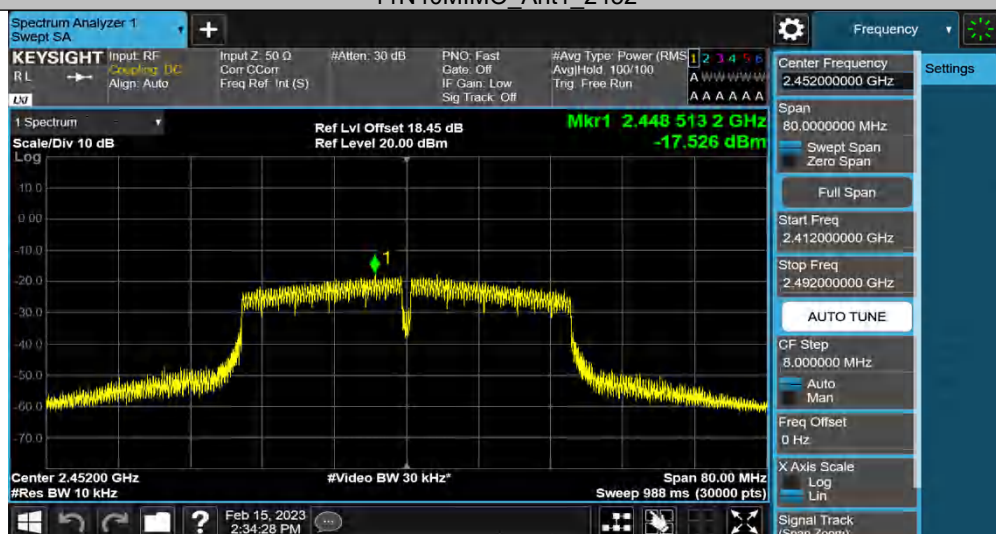
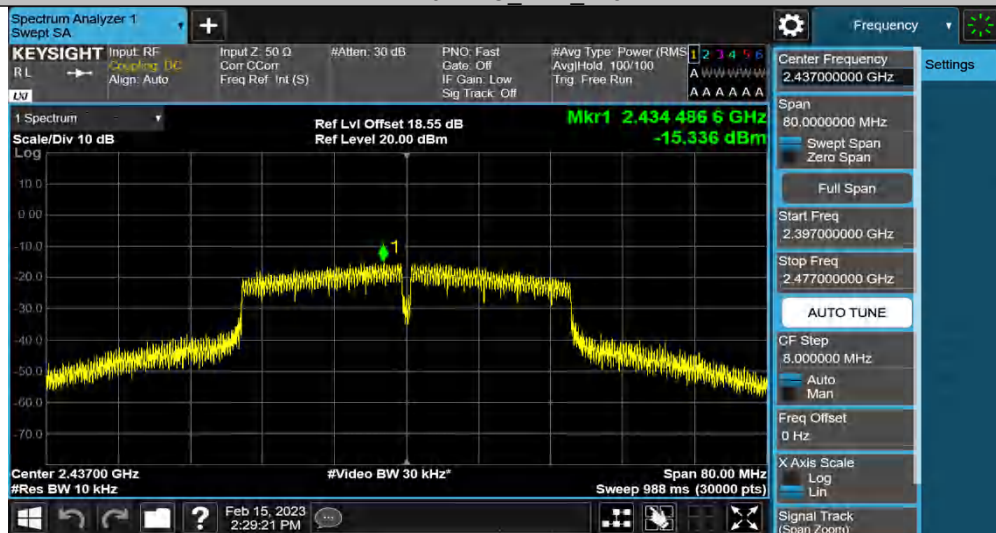
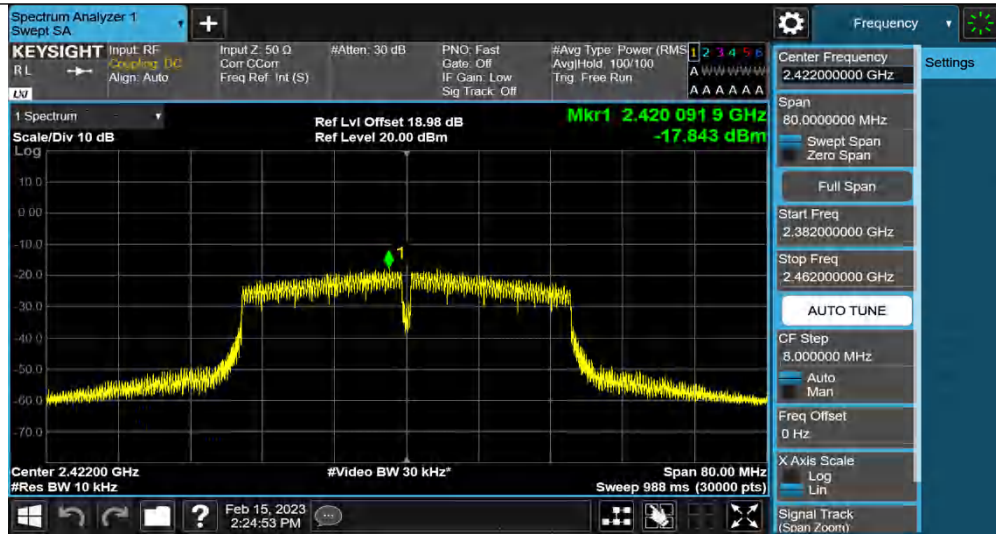
11N40MIMO Ant1 2422

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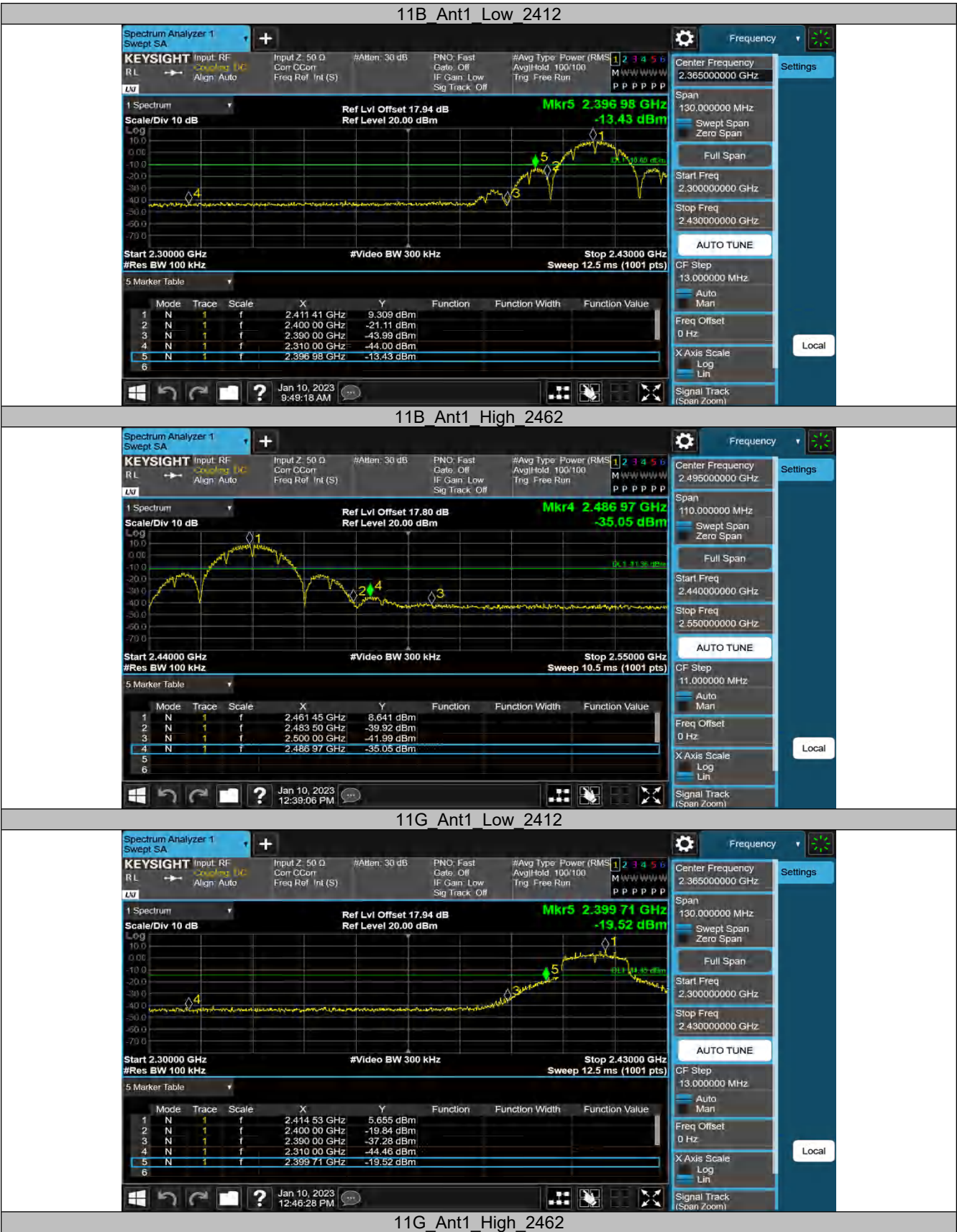


1.5 Band edge measurements

1.5.1 Test Result

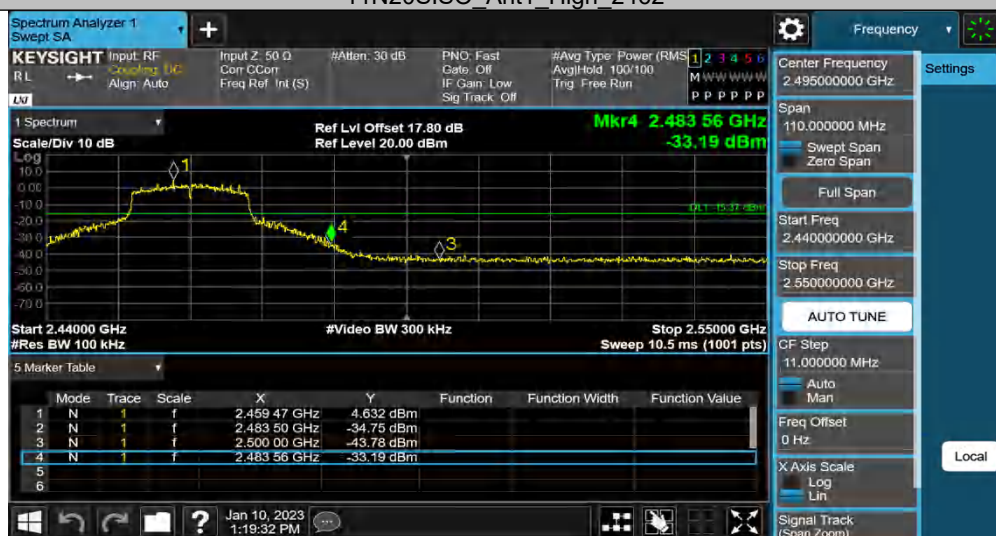
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	9.31	-13.43	≤-10.69	PASS
		High	2462	8.64	-35.05	≤-11.36	PASS
11G	Ant1	Low	2412	5.66	-19.52	≤-14.35	PASS
		High	2462	4.03	-36.6	≤-15.97	PASS
11N20SISO	Ant1	Low	2412	5.03	-19.56	≤-14.97	PASS
		High	2462	4.63	-33.19	≤-15.37	PASS
11N40SISO	Ant1	Low	2422	3.26	-20.28	≤-16.75	PASS
		High	2452	2.90	-25.89	≤-17.1	PASS

1.5.2 Test Graphs



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11N40SISO Ant1 High 2452

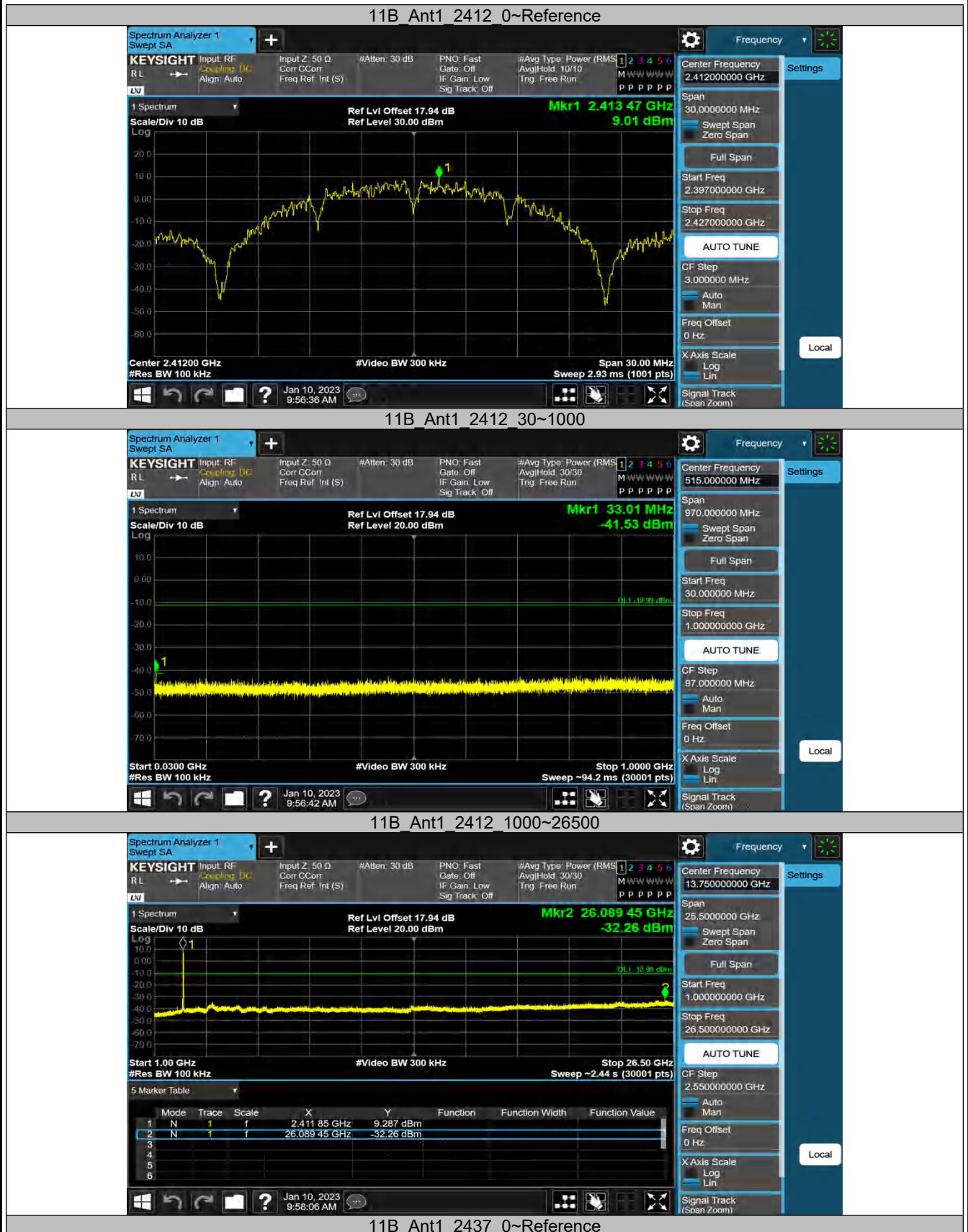


1.6 Conducted Spurious Emission

1.6.1 Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	9.01	9.01	---	PASS
			30~1000	9.01	-41.53	≤-10.99	PASS
			1000~26500	9.01	-32.26	≤-10.99	PASS
		2437	Reference	8.32	8.32	---	PASS
			30~1000	8.32	-42.16	≤-11.68	PASS
			1000~26500	8.32	-32.84	≤-11.68	PASS
		2462	Reference	8.13	8.13	---	PASS
			30~1000	8.13	-42.58	≤-11.87	PASS
			1000~26500	8.13	-33	≤-11.87	PASS
11G	Ant1	2412	Reference	4.18	4.18	---	PASS
			30~1000	4.18	-41.6	≤-15.82	PASS
			1000~26500	4.18	-33.02	≤-15.82	PASS
		2437	Reference	4.77	4.77	---	PASS
			30~1000	4.77	-42.04	≤-15.23	PASS
			1000~26500	4.77	-33.48	≤-15.23	PASS
		2462	Reference	4.39	4.39	---	PASS
			30~1000	4.39	-42.4	≤-15.61	PASS
			1000~26500	4.39	-32.73	≤-15.61	PASS
11N20SISO	Ant1	2412	Reference	2.57	2.57	---	PASS
			30~1000	2.57	-42.14	≤-17.43	PASS
			1000~26500	2.57	-33.01	≤-17.43	PASS
		2437	Reference	2.78	2.78	---	PASS
			30~1000	2.78	-42.13	≤-17.22	PASS
			1000~26500	2.78	-32.86	≤-17.22	PASS
		2462	Reference	1.60	1.60	---	PASS
			30~1000	1.60	-41.9	≤-18.4	PASS
			1000~26500	1.60	-33.14	≤-18.4	PASS
11N40SISO	Ant1	2422	Reference	0.38	0.38	---	PASS
			30~1000	0.38	-33.81	≤-19.62	PASS
			1000~26500	0.38	-32.11	≤-19.62	PASS
		2437	Reference	1.93	1.93	---	PASS
			30~1000	1.93	-41.47	≤-18.07	PASS
			1000~26500	1.93	-33.35	≤-18.07	PASS
		2452	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-35.98	≤-17.16	PASS
			1000~26500	2.84	-33.29	≤-17.16	PASS

1.6.2 Test Graphs



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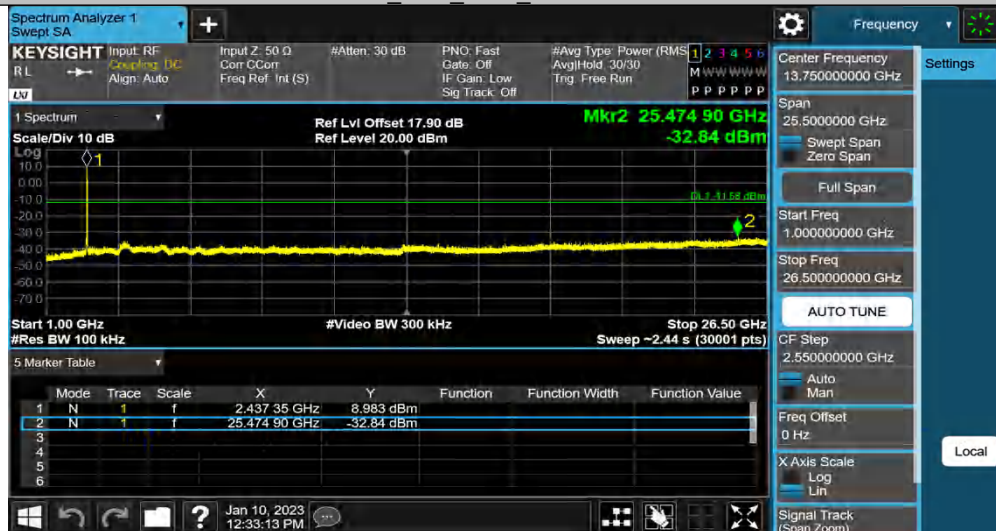
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11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference

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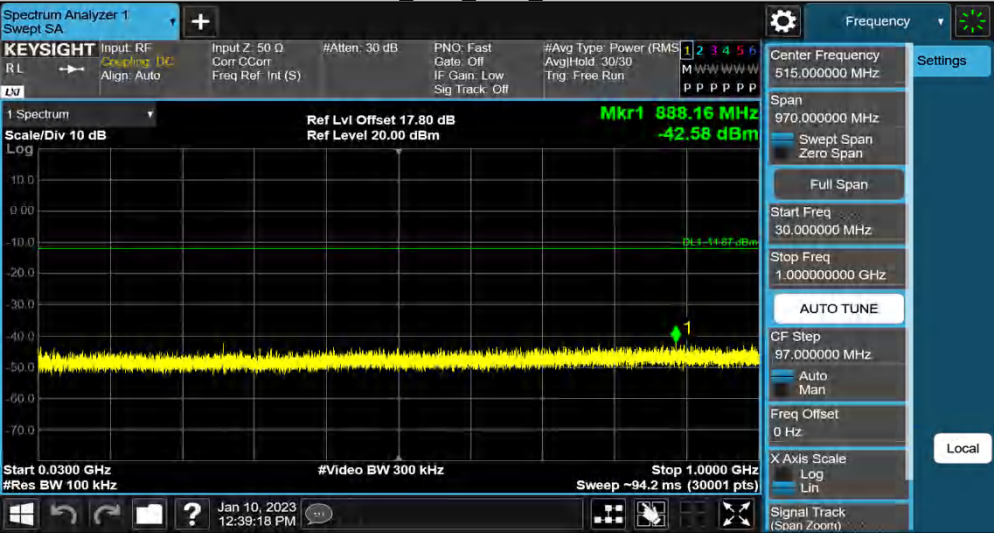


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11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference

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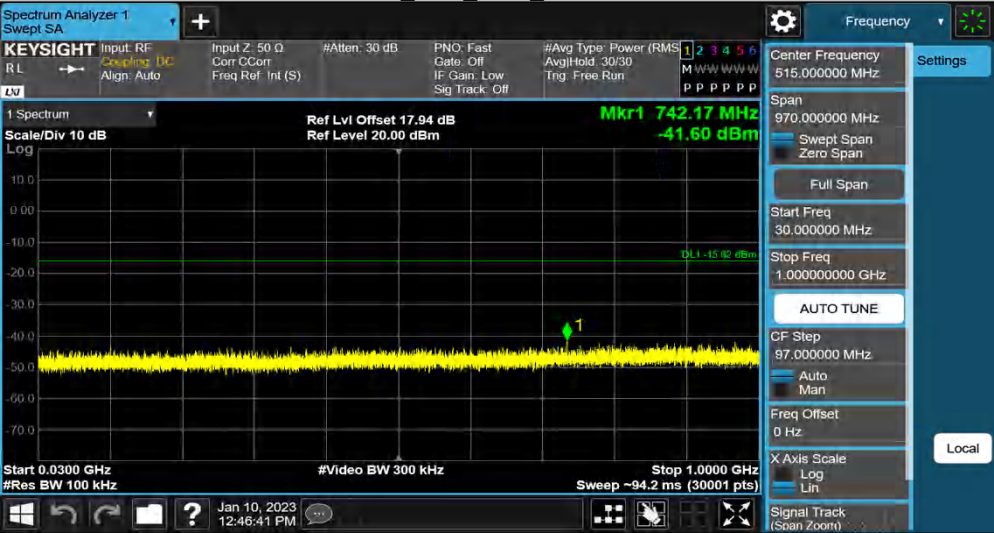


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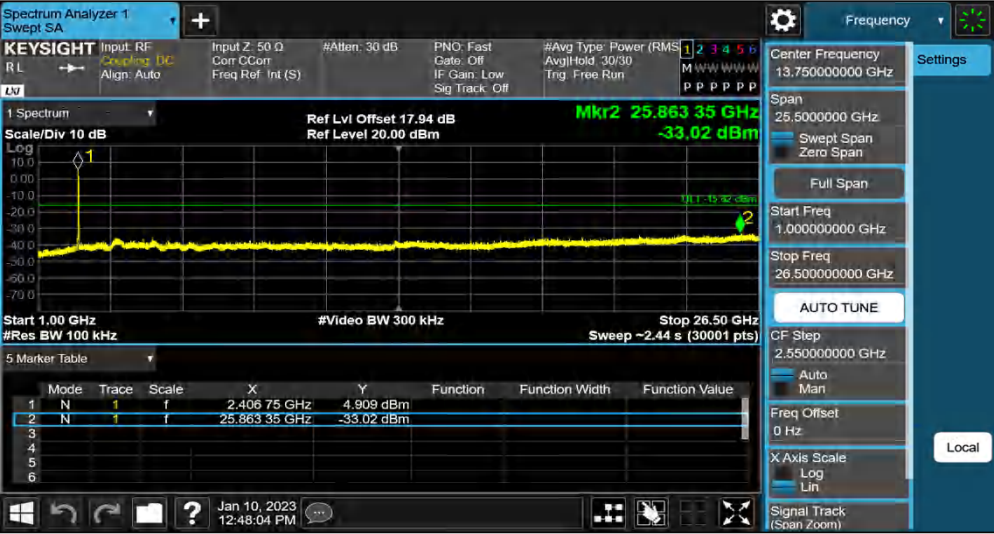
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11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

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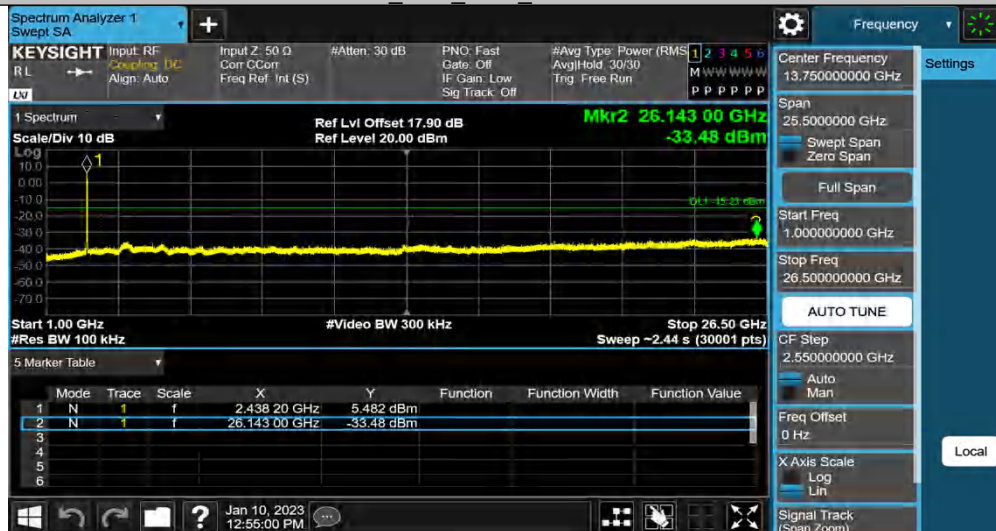
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11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500



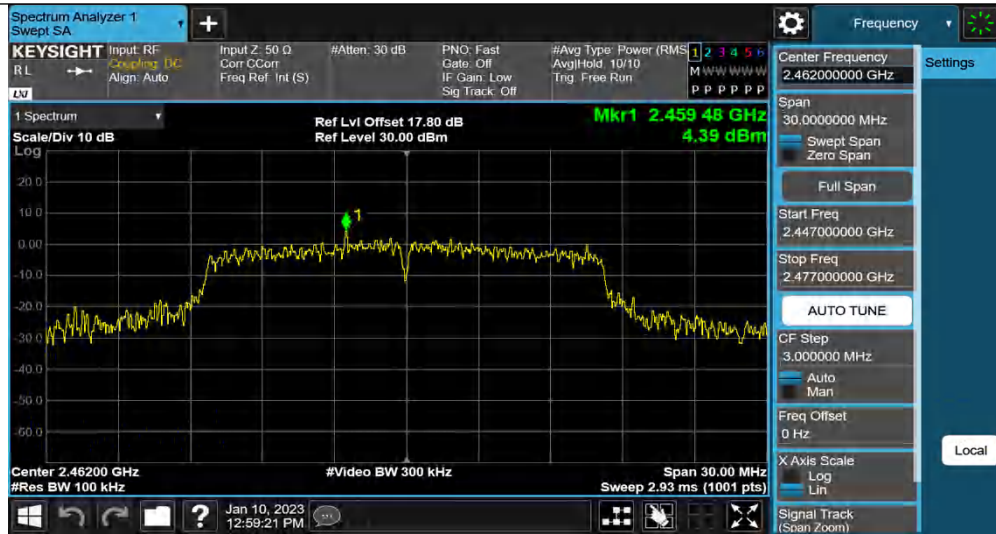
11G_Ant1_2462_0~Reference

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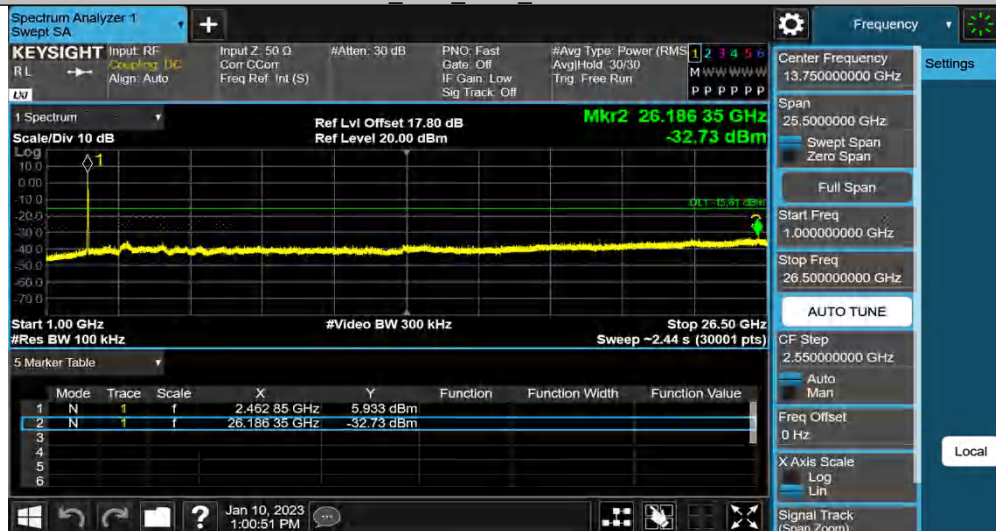
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11G Ant1_2462_30~1000



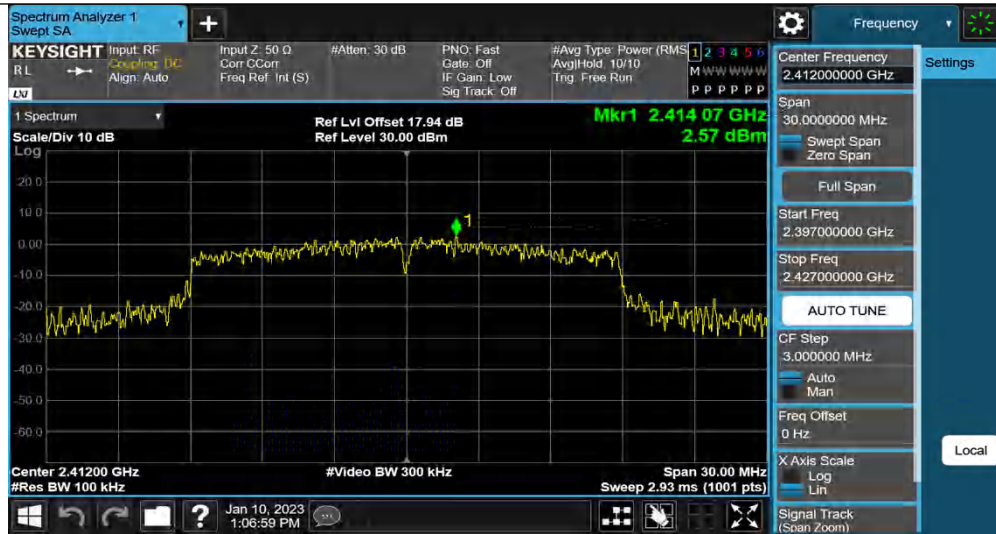
11G Ant1_2462_1000~26500



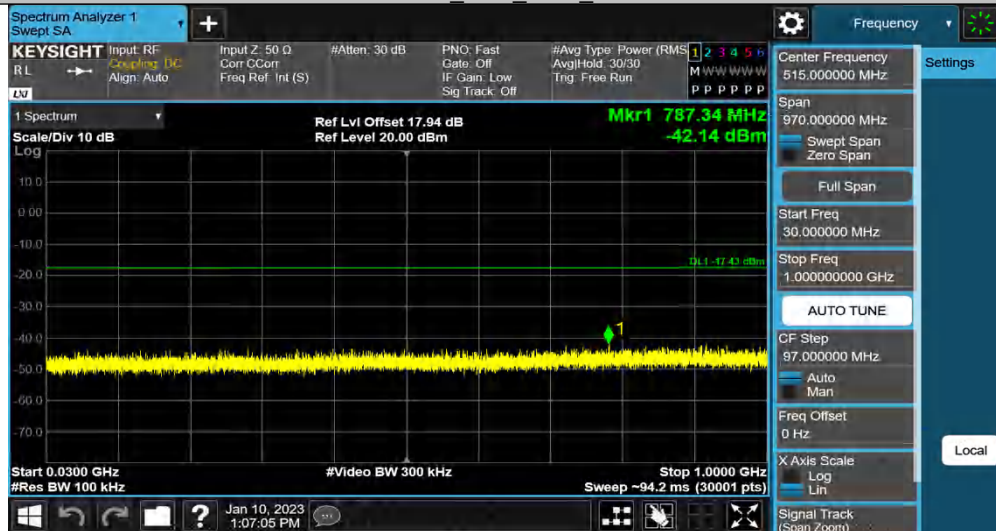
11N20SISO_Ant1_2412_0~Reference

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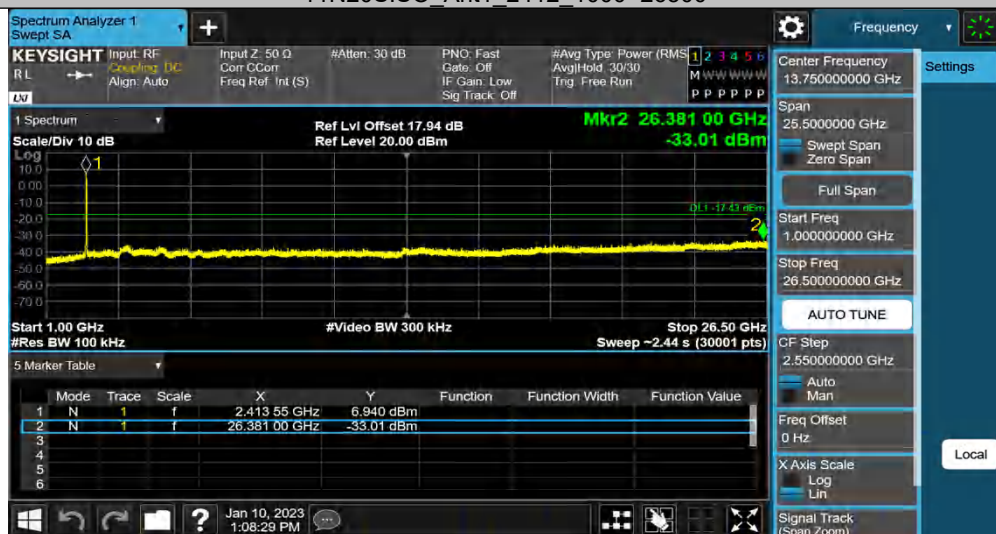
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11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



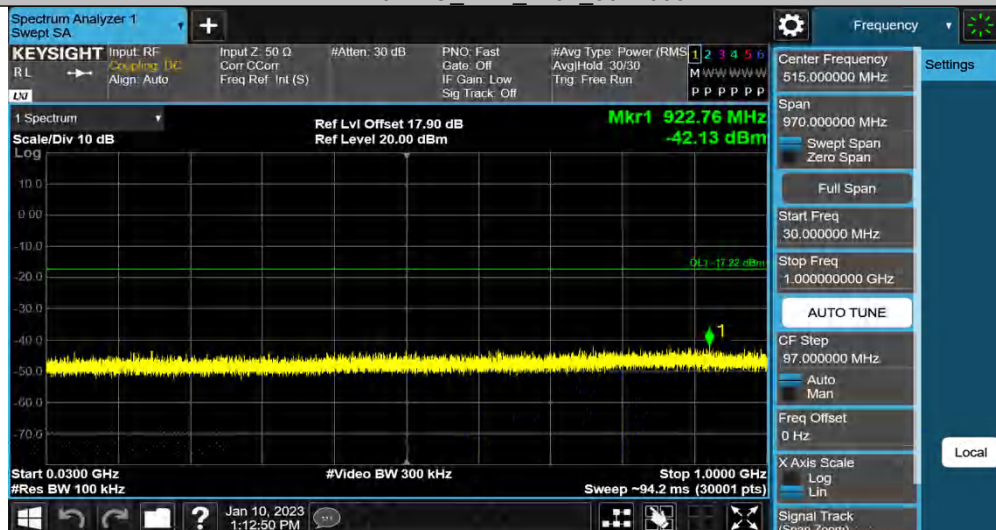
11N20SISO_Ant1_2437_0~Reference

Appendix B

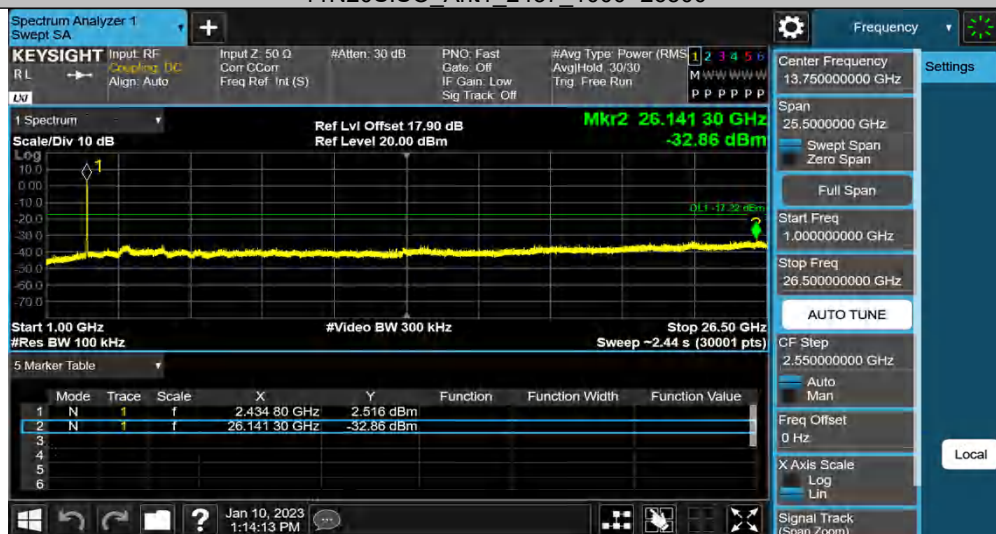
CN233FVW 002



11N20SISO_Ant1_2437_30~1000



11N20SISO_Ant1_2437_1000~26500



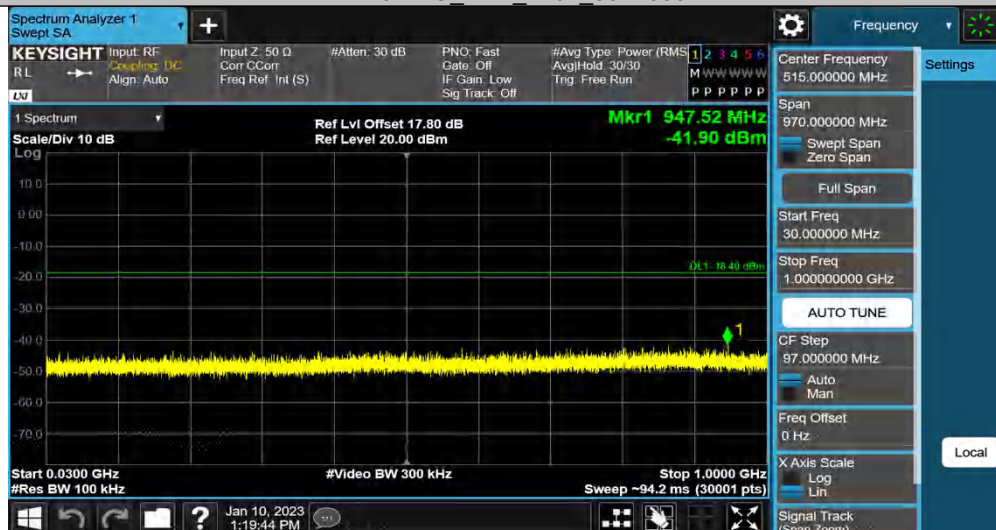
11N20SISO_Ant1_2462_0~Reference

Appendix B

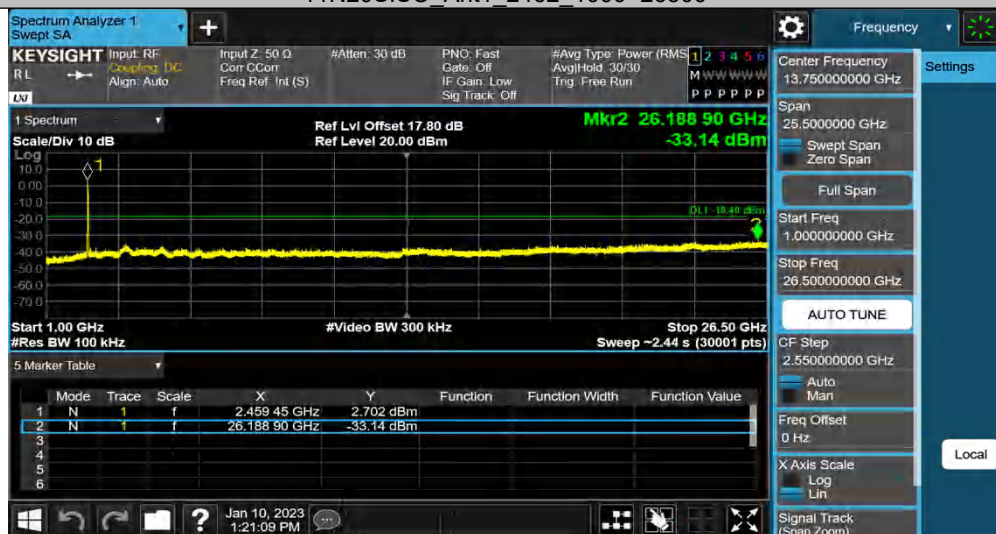
CN233FVW 002



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



11N40SISO_Ant1_2422_0~Reference

Appendix B

CN233FVW 002

Prüfbericht - Produkte
Test Report - Products

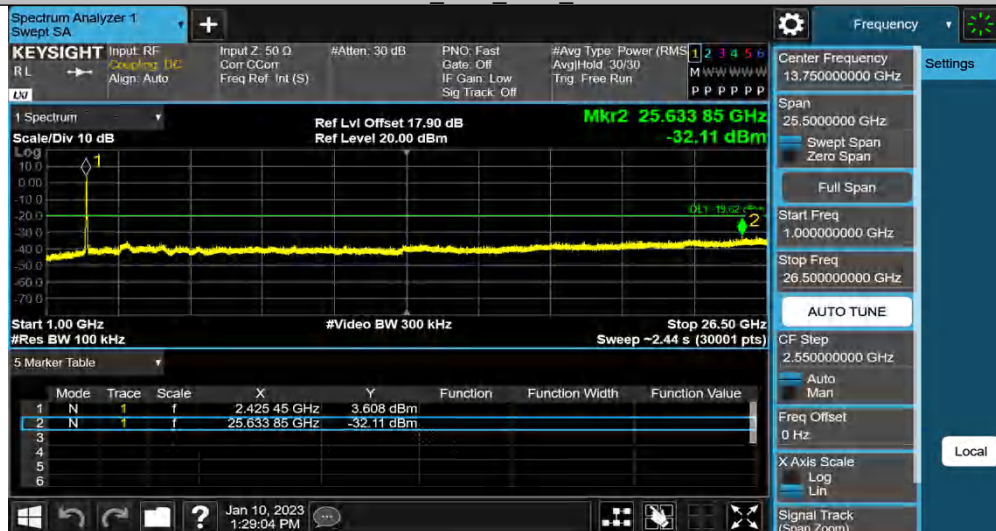
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11N40SISO_Ant1_2422_30~1000



11N40SISO_Ant1_2422_1000~26500



11N40SISO_Ant1_2437_0~Reference

Appendix B

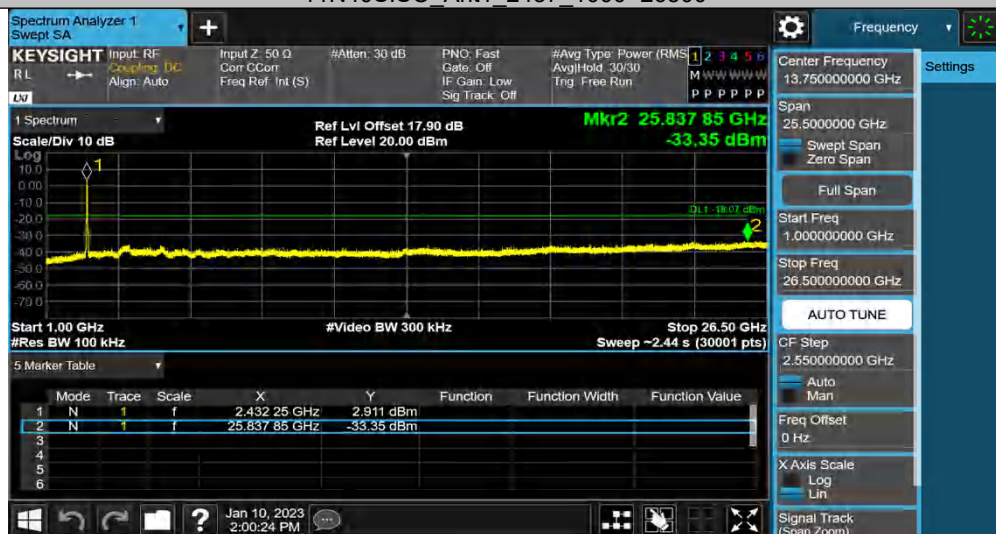
CN233FVW 002



11N40SISO_Ant1_2437_30~1000



11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference

Appendix B

CN233FVW 002

Prüfbericht - Produkte
Test Report - Products

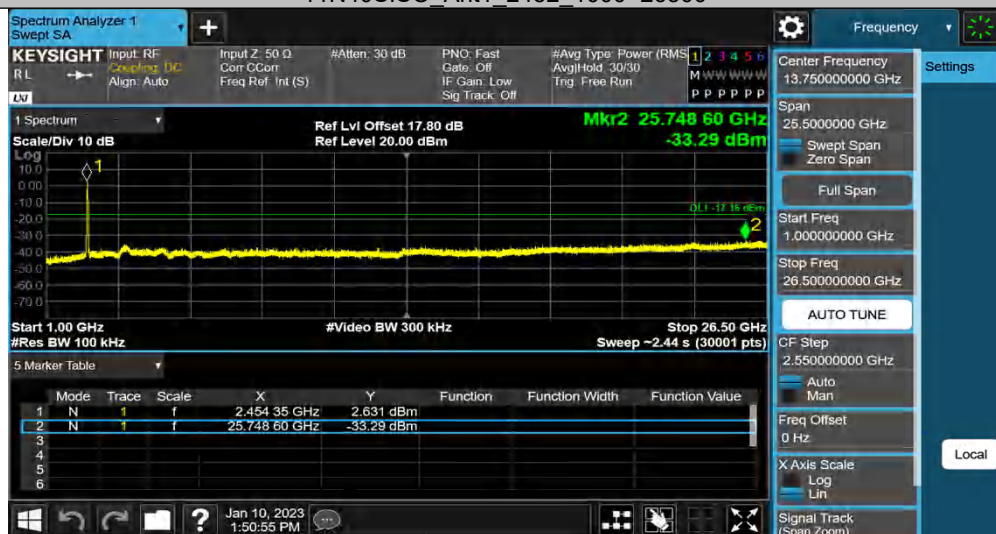
Page 42 of 75



11N40SISO_Ant1 2452 30~1000



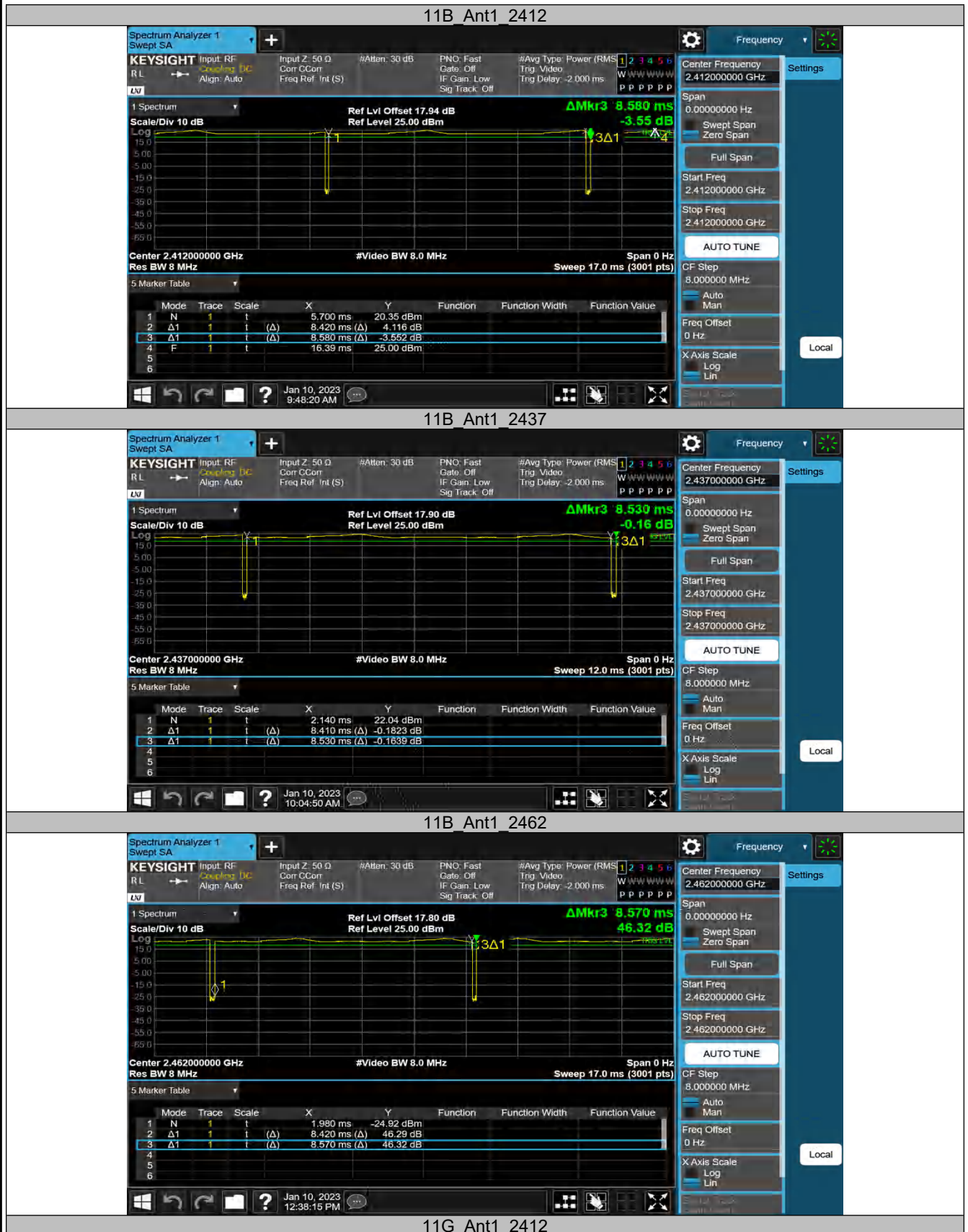
11N40SISO_Ant1 2452 1000~26500



1.7 Duty Cycle

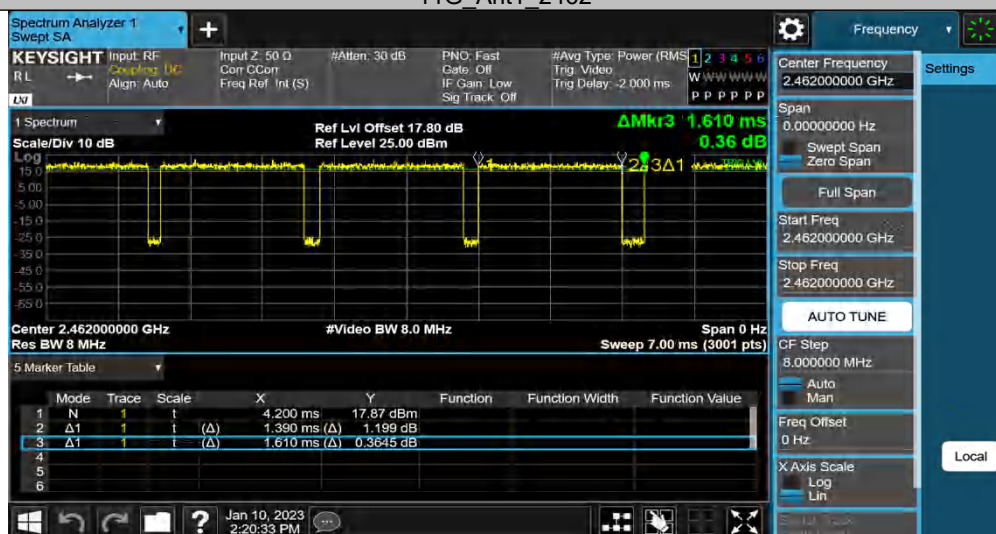
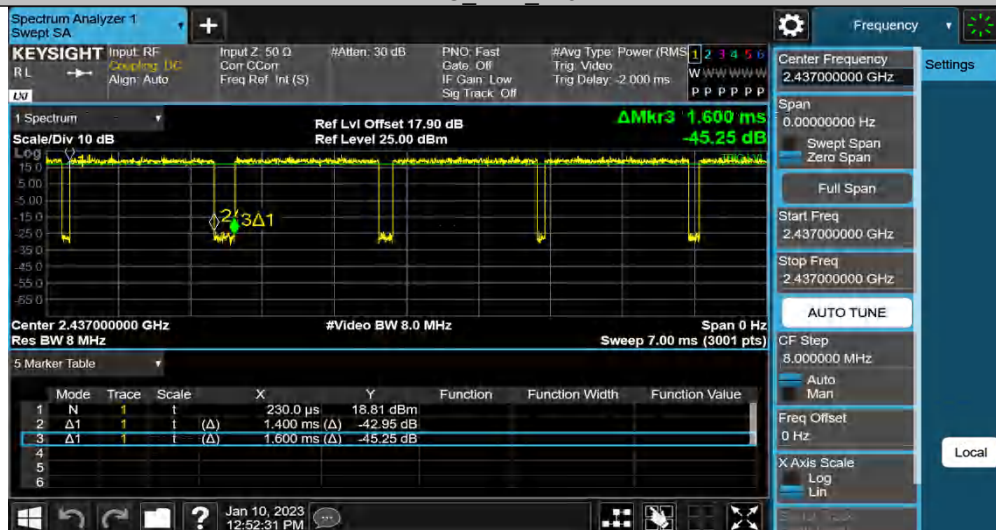
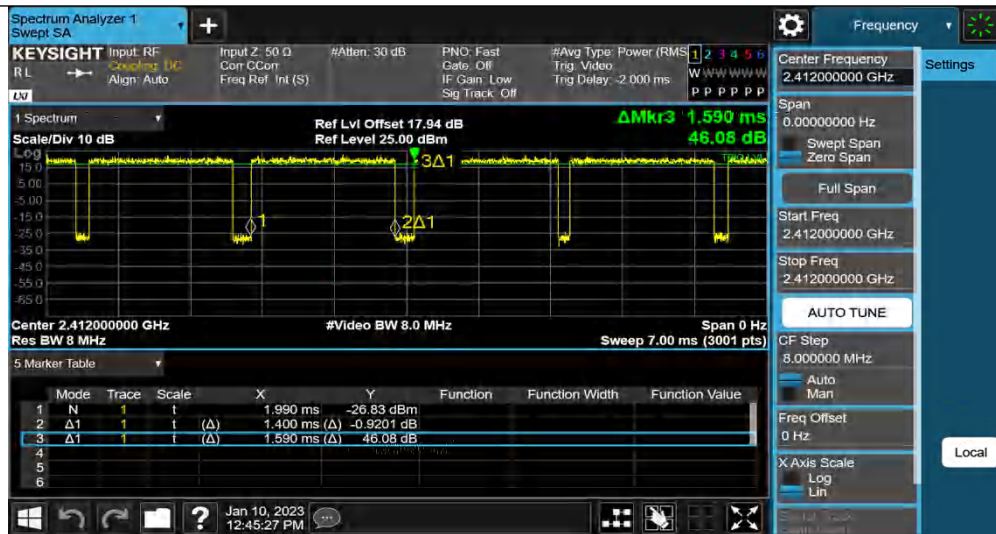
1.7.1 Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	8.42	8.58	98.14	---	---
		2437	8.41	8.53	98.59	---	---
		2462	8.42	8.57	98.25	---	---
11G	Ant1	2412	1.40	1.59	88.05	---	---
		2437	1.40	1.60	87.50	---	---
		2462	1.39	1.61	86.34	---	---
11N20SISO	Ant1	2412	1.30	1.50	86.67	---	---
		2437	1.29	1.47	87.76	---	---
		2462	1.30	1.50	86.67	---	---
11N40SISO	Ant1	2422	0.63	0.78	80.77	---	---
		2437	0.63	0.76	82.89	---	---
		2452	0.64	0.81	79.01	---	---

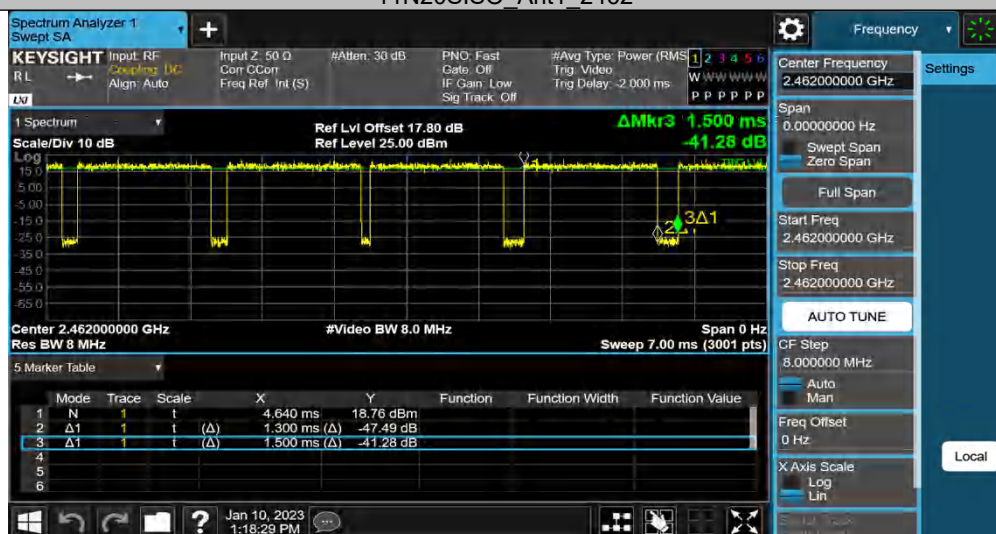
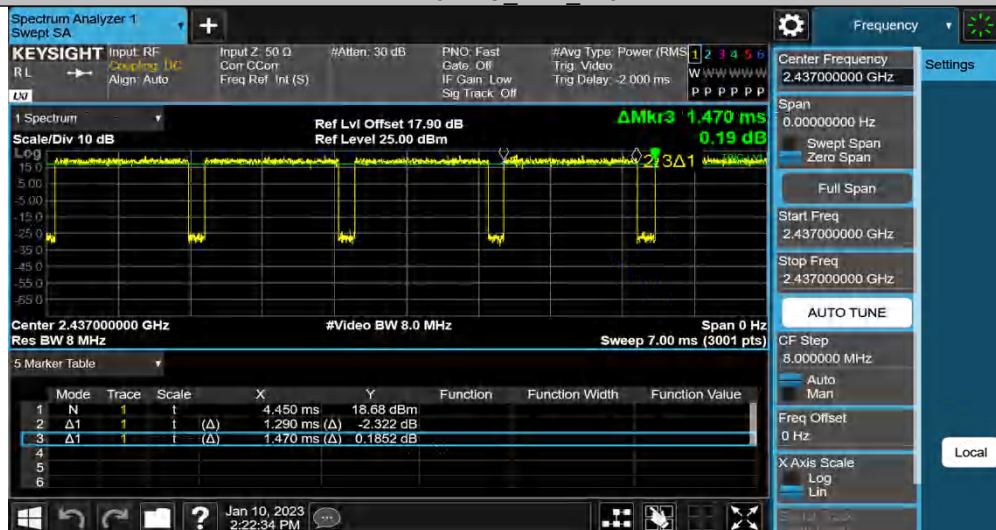
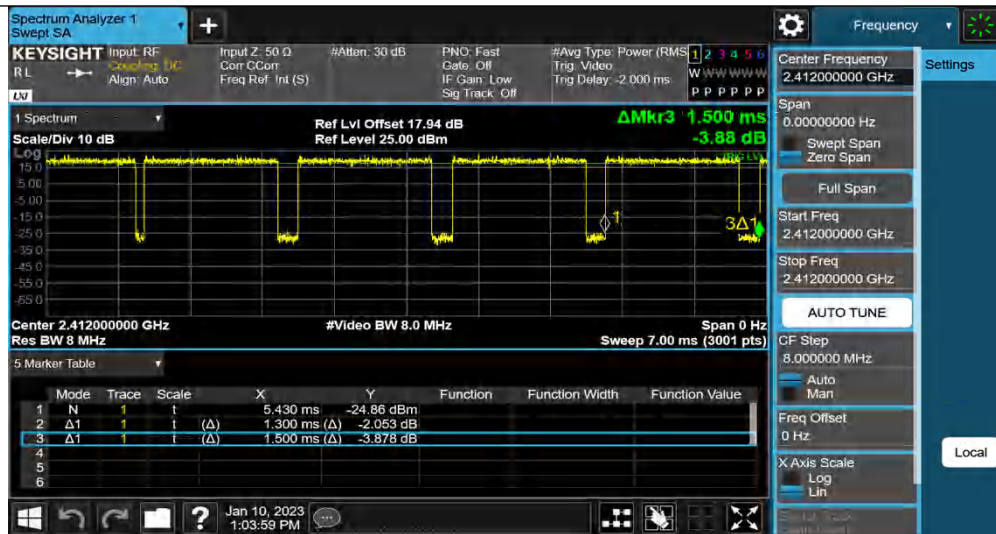


Appendix B

CN233FVW 002

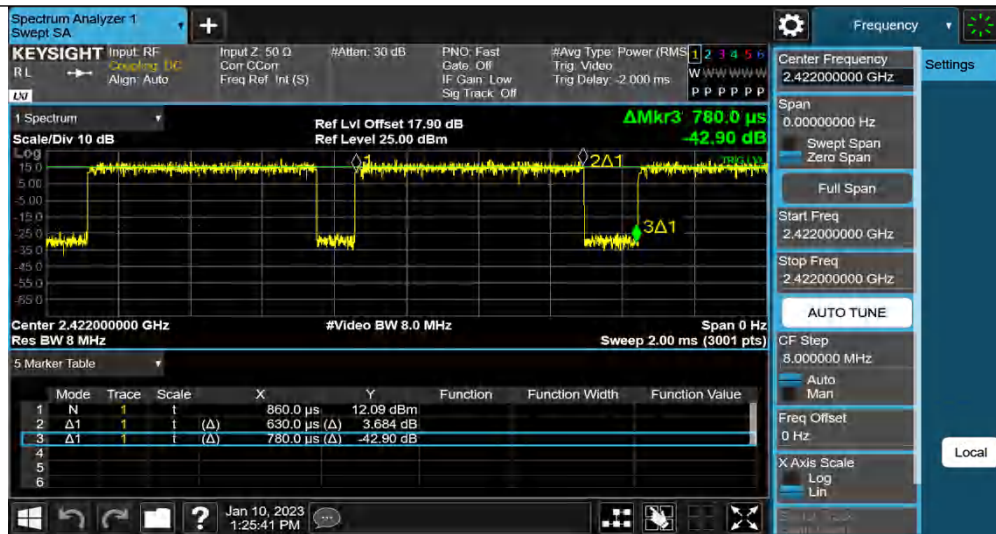


Appendix B CN233FVW 002

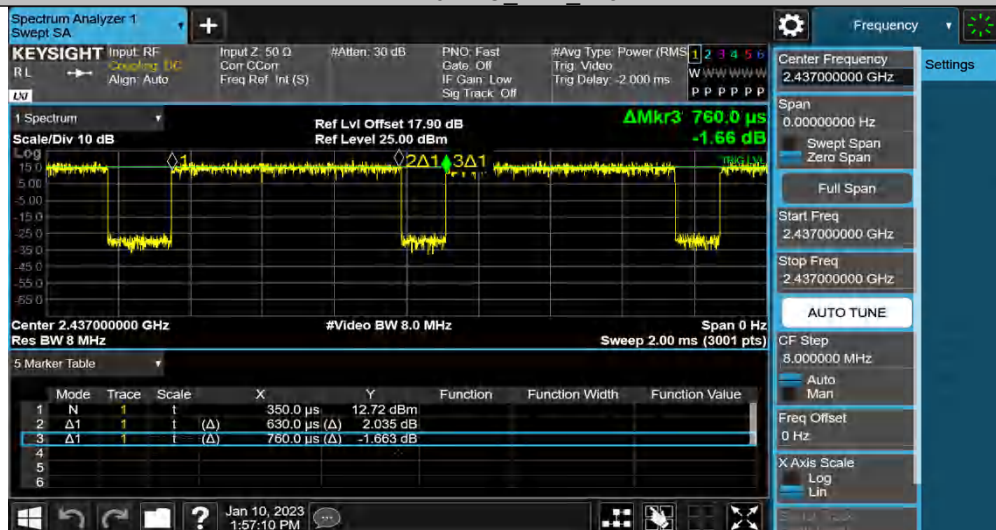


Appendix B

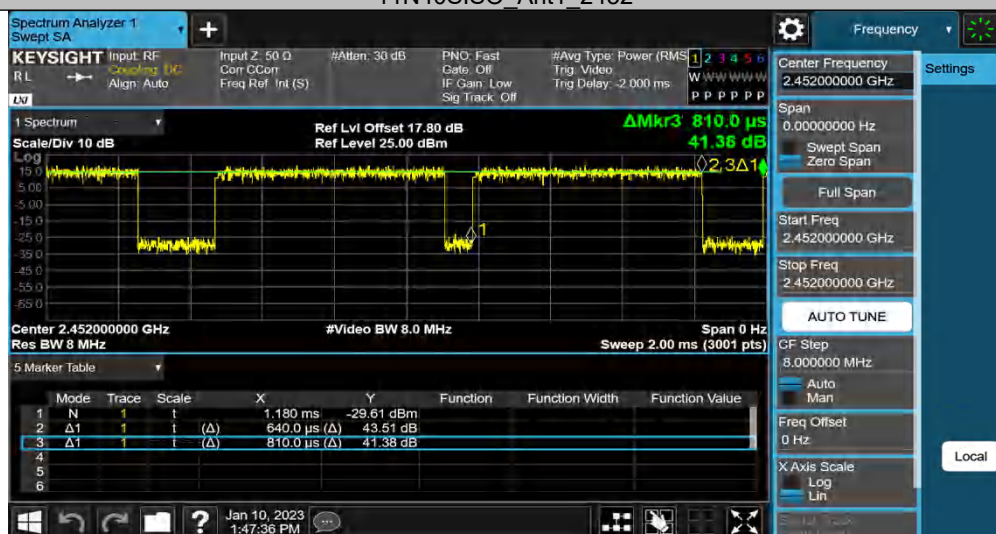
CN233FVW 002



11N40SISO Ant1 2437



11N40SISO Ant1 2452



1.8 Radiated Spurious Emissions

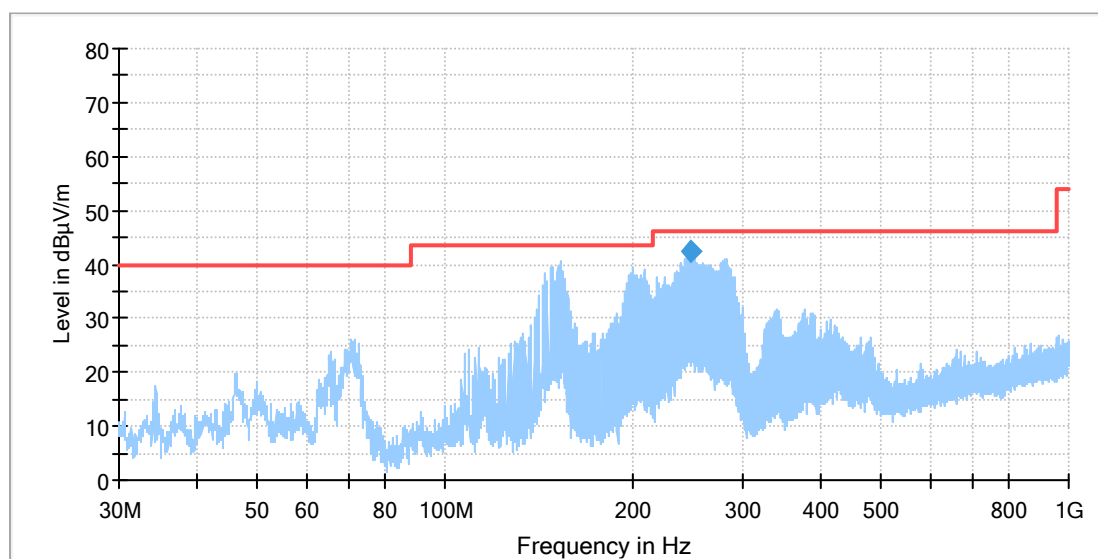
Note: 1. Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported. 2. This testing was carried out on different modulations, but only the worst case was presented in this report.

30MHz - 1GHz (Worst case)

Test Report

EUT Information

EUT Name:	Activetag Edge Gateway
Model:	GW2-LTE/Ethernet/WiFi
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168403102/A003389847-002
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.967692	19.80	40.00	20.20	100.0	H	38.0	-19.0
71.821923	26.18	40.00	13.82	100.0	H	0.0	-22.7
153.115385	40.47	43.50	3.03	100.0	H	251.0	-22.4
199.936539	39.54	43.50	3.96	100.0	H	71.0	-19.3
340.250769	31.78	46.00	14.22	100.0	H	143.0	-15.4
662.141539	24.22	46.00	21.78	100.0	H	251.0	-9.1

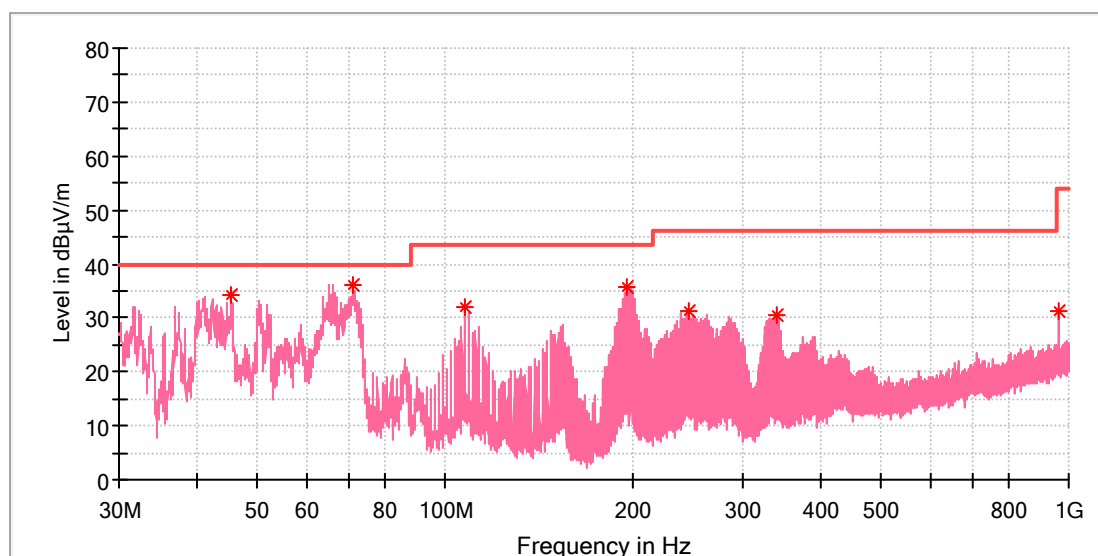
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
248.064962	42.28	46.00	3.72	105.0	H	294.0	-17.8

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch6
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.445385	34.40	40.00	5.60	100.0	V	26.0	-19.1
71.038462	36.22	40.00	3.78	100.0	V	200.0	-22.5
107.749231	32.00	43.50	11.50	100.0	V	90.0	-19.3
195.646154	35.79	43.50	7.71	100.0	V	200.0	-19.5
246.608462	31.36	46.00	14.64	100.0	V	83.0	-17.8
340.250769	30.42	46.00	15.58	100.0	V	252.0	-15.4
966.684231	31.37	54.00	22.63	100.0	V	270.0	-4.6

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

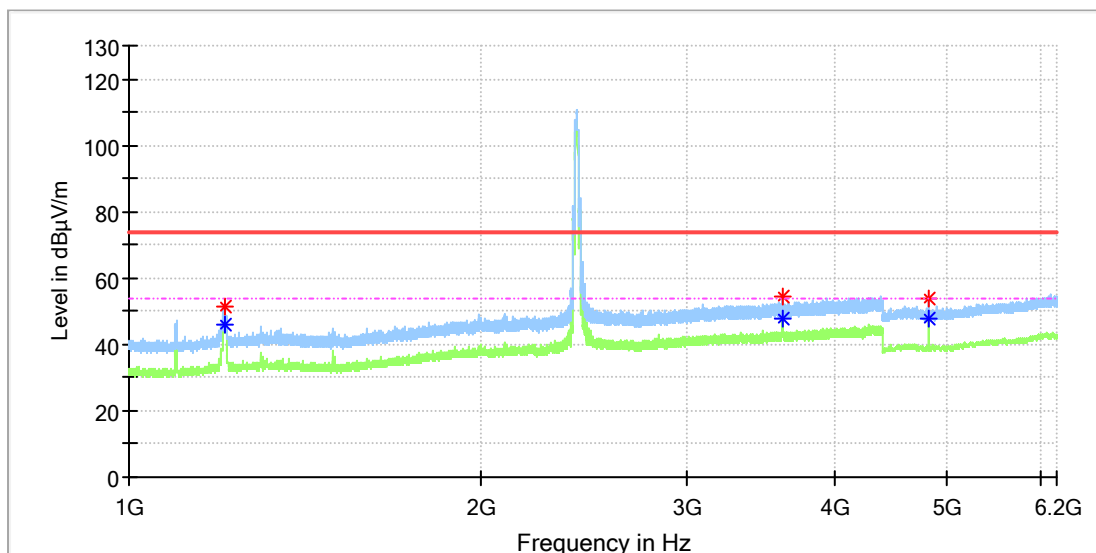
1GHz - 18GHz

Note: The highest waveform in the figure is Wi-Fi Fundamental.

Test Report

EUT Information

EUT Name:	Activetag Edge Gateway
Model:	GW2-LTE/Ethernet/WiFi
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168403102/A003389847-002
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1206.890000	---	45.91	54.00	8.09	100.0	H	353.0	1.2
1207.060000	51.10	---	74.00	22.90	100.0	H	353.0	1.2
3613.410000	54.17	---	74.00	19.83	100.0	H	68.0	9.4
3620.550000	---	47.77	54.00	6.23	100.0	H	58.0	9.4
4823.500000	53.54	---	74.00	20.46	100.0	H	74.0	11.8
4823.500000	---	48.02	54.00	5.98	100.0	H	74.0	11.8

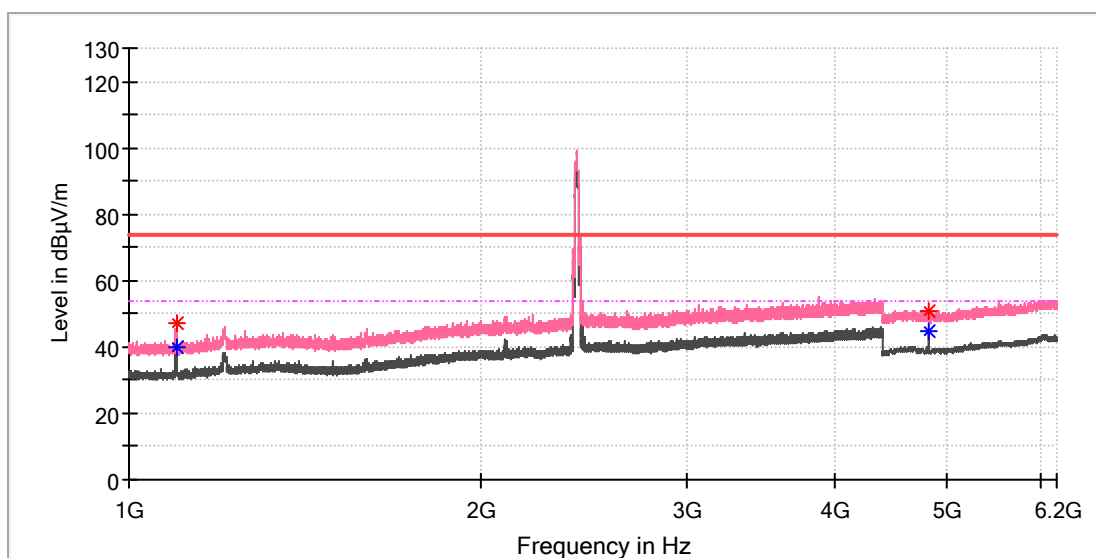
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch1
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1097.410000	47.25	---	74.00	26.75	100.0	V	253.0	-0.2
1099.280000	---	40.16	54.00	13.84	100.0	V	243.0	-0.2
4823.500000	51.09	---	74.00	22.91	100.0	V	217.0	11.8
4824.000000	---	44.65	54.00	9.35	100.0	V	69.0	11.8

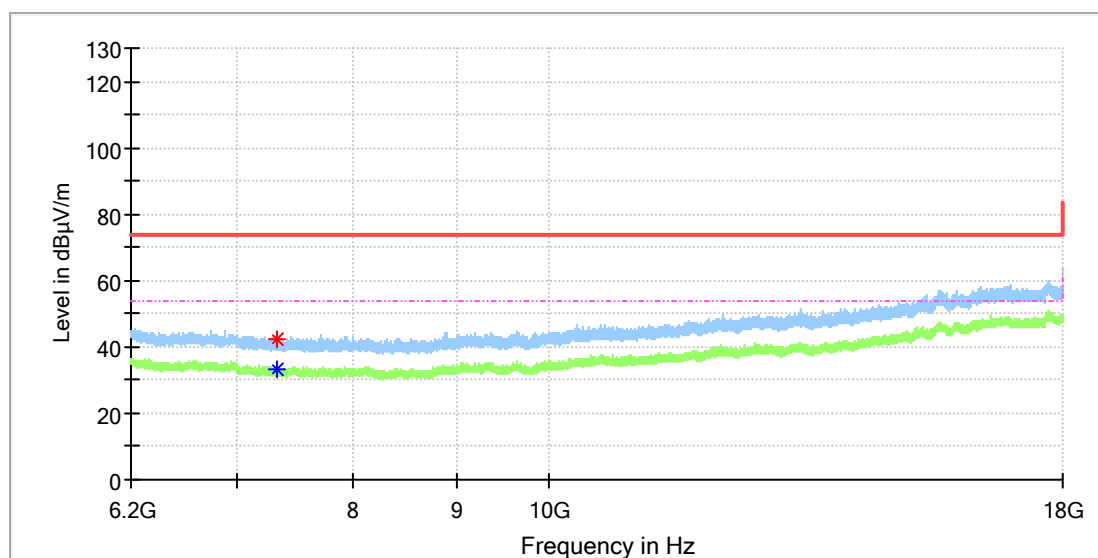
Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch6
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7321.491667	42.56	---	74.00	31.44	100.0	H	41.0	8.2
7327.391667	---	33.47	54.00	20.53	100.0	H	259.0	8.1

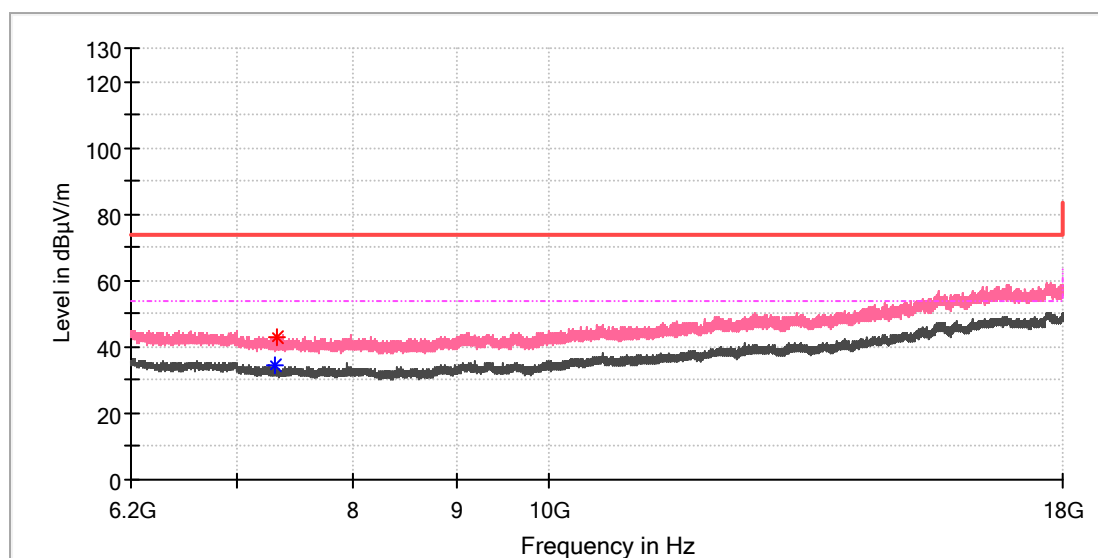
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

UT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch6
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7308.708333	---	34.22	54.00	19.78	100.0	V	149.0	8.2
7333.783333	42.83	---	74.00	31.17	100.0	V	281.0	8.1

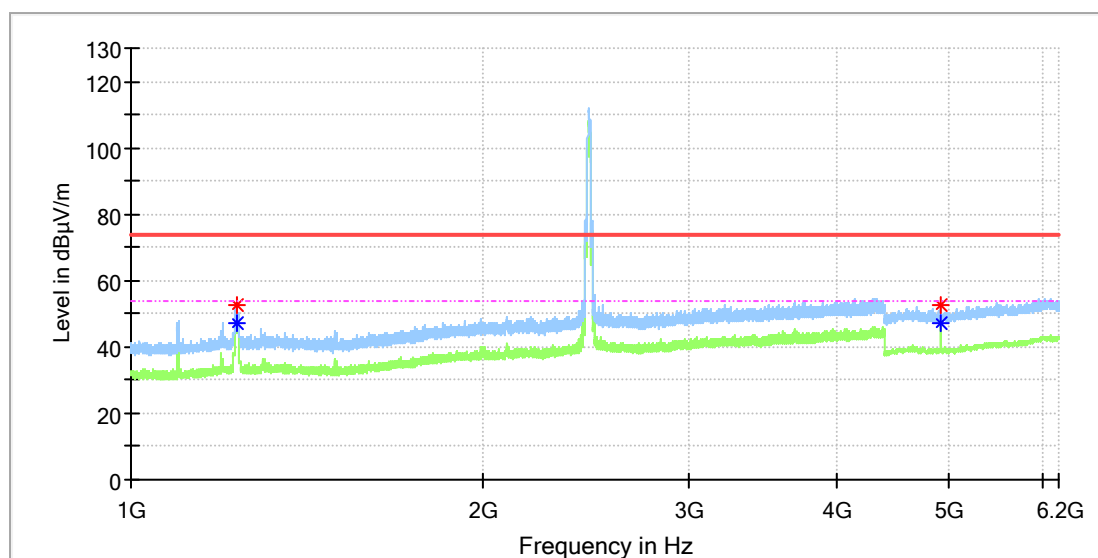
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1230.010000	---	46.97	54.00	7.03	100.0	H	350.0	1.6
1231.880000	52.42	---	74.00	21.58	100.0	H	53.0	1.6
4923.500000	52.40	---	74.00	21.60	100.0	H	154.0	11.8
4924.000000	---	47.19	54.00	6.81	100.0	H	154.0	11.8

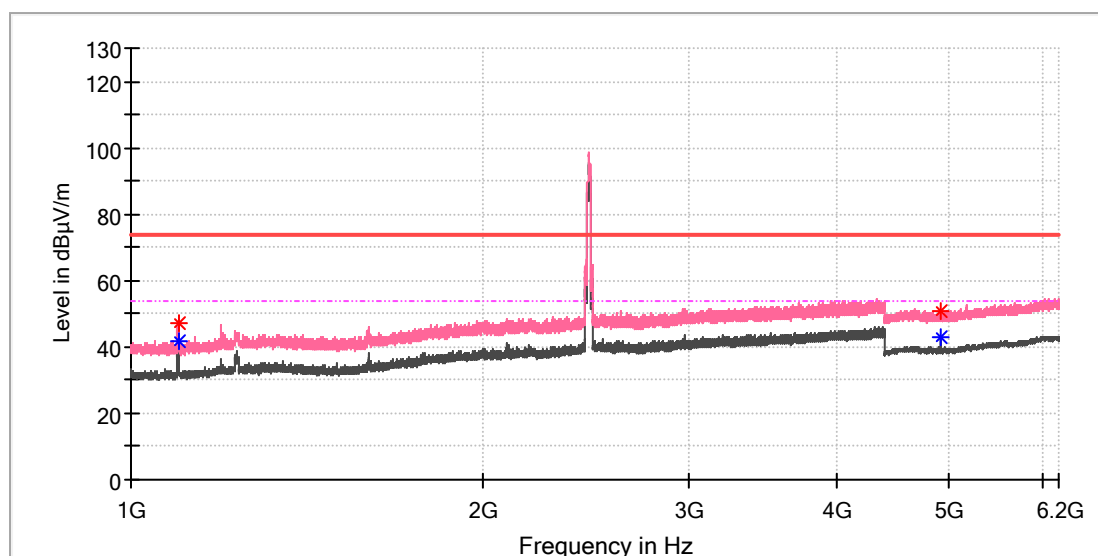
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1098.940000	---	41.72	54.00	12.28	100.0	V	260.0	-0.2
1099.450000	47.05	---	74.00	26.95	100.0	V	251.0	-0.2
4910.000000	50.56	---	74.00	23.44	100.0	V	104.0	11.8
4924.000000	---	42.91	54.00	11.09	100.0	V	37.0	11.8

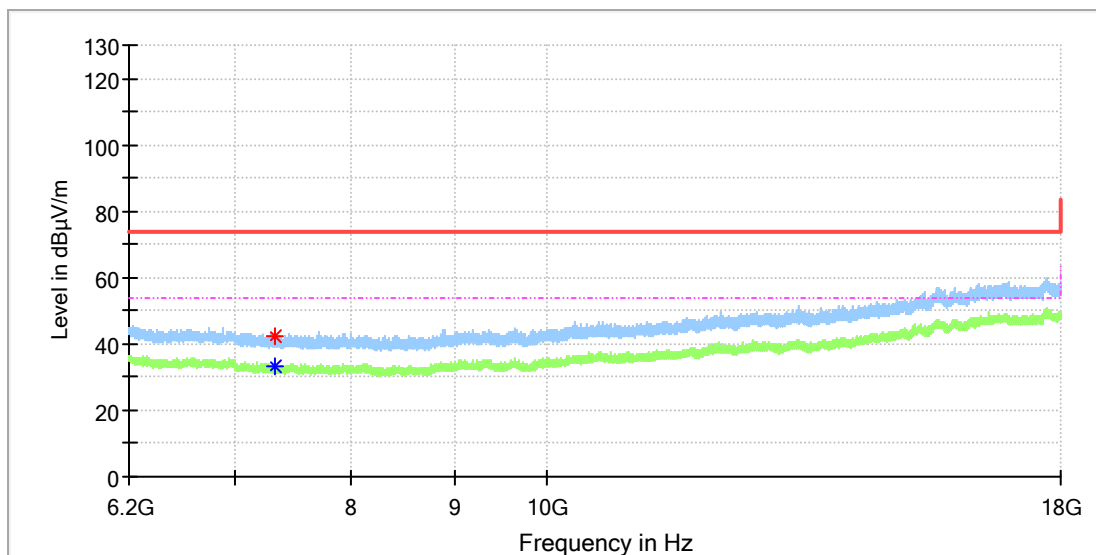
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch6
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7321.491667	42.56	---	74.00	31.44	100.0	H	41.0	8.2
7327.391667	---	33.47	54.00	20.53	100.0	H	259.0	8.1

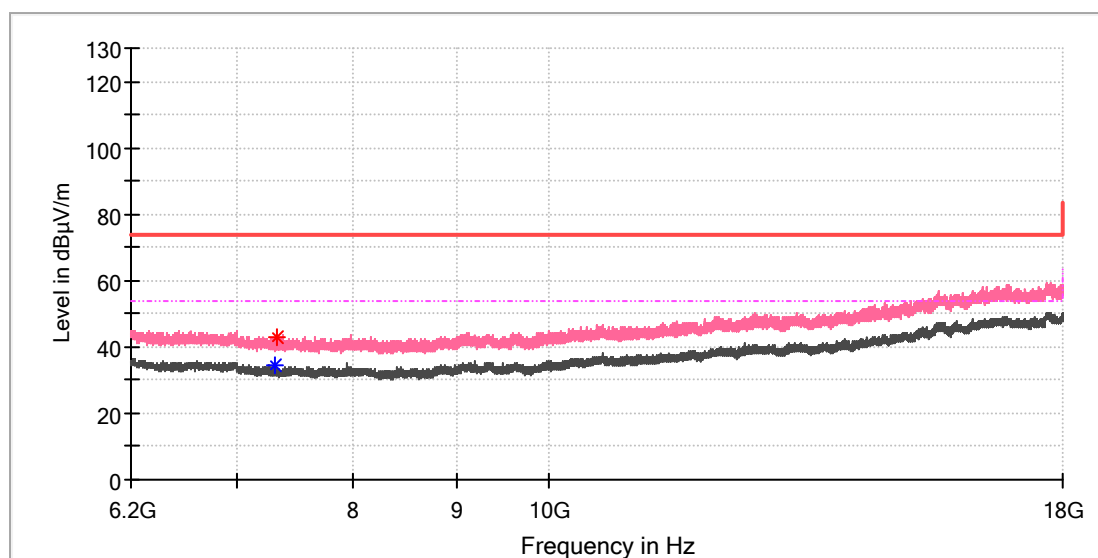
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch6
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7308.708333	---	34.22	54.00	19.78	100.0	V	149.0	8.2
7333.783333	42.83	---	74.00	31.17	100.0	V	281.0	8.1

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

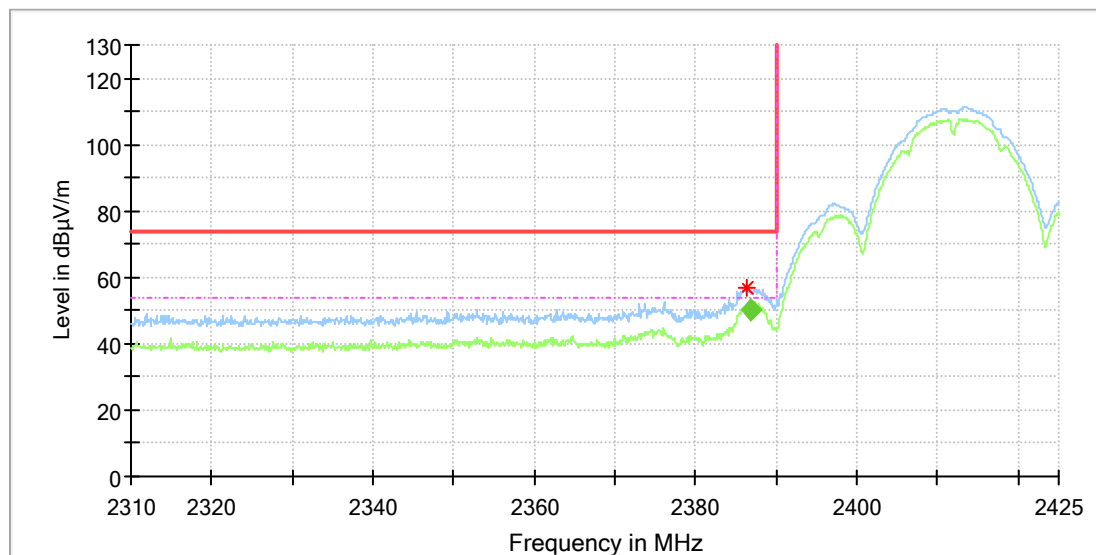
1.9 Radiated Emissions in Restricted Bands

Wi-Fi 802.11 b mode, 1 Mbps

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch1
 Order No/Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2386.400000	56.67	---	74.00	17.33	100.0	H	111.0	7.0

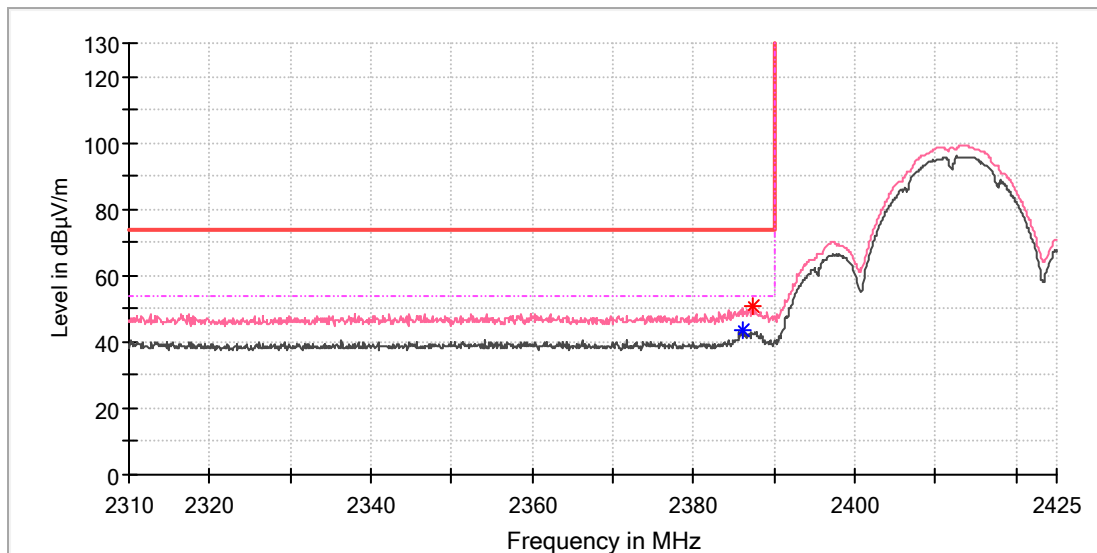
Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2386.920050	50.03	54.00	3.97	100.0	H	116.0	7.0

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch1
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2386.200000	---	43.26	54.00	10.74	100.0	V	183.0	7.0
2387.300000	50.62	---	74.00	23.38	100.0	V	183.0	7.0

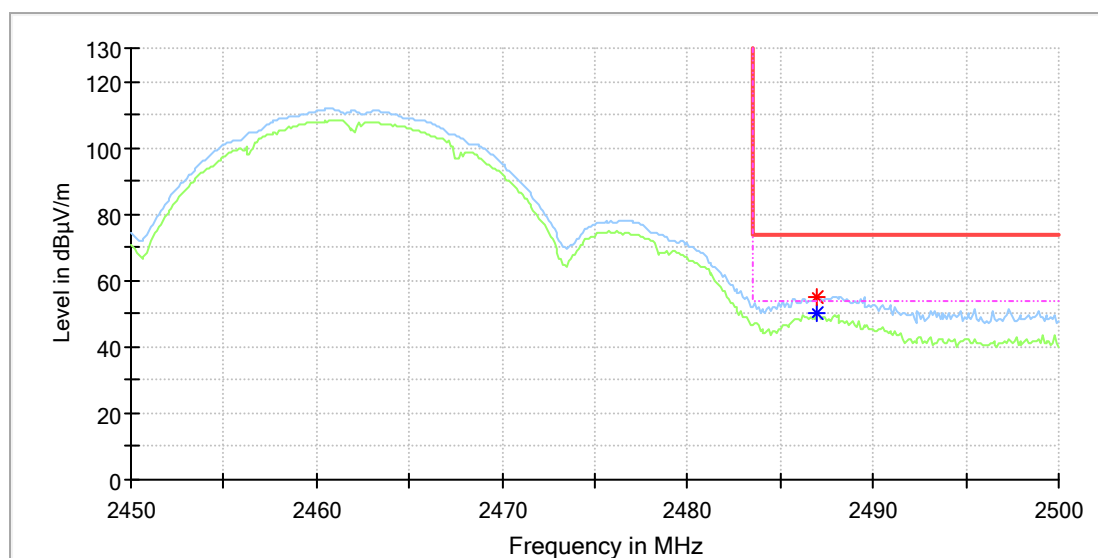
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2487.000000	54.88	---	74.00	19.12	100.0	H	121.0	7.4
2487.000000	---	50.24	54.00	3.76	100.0	H	121.0	7.4

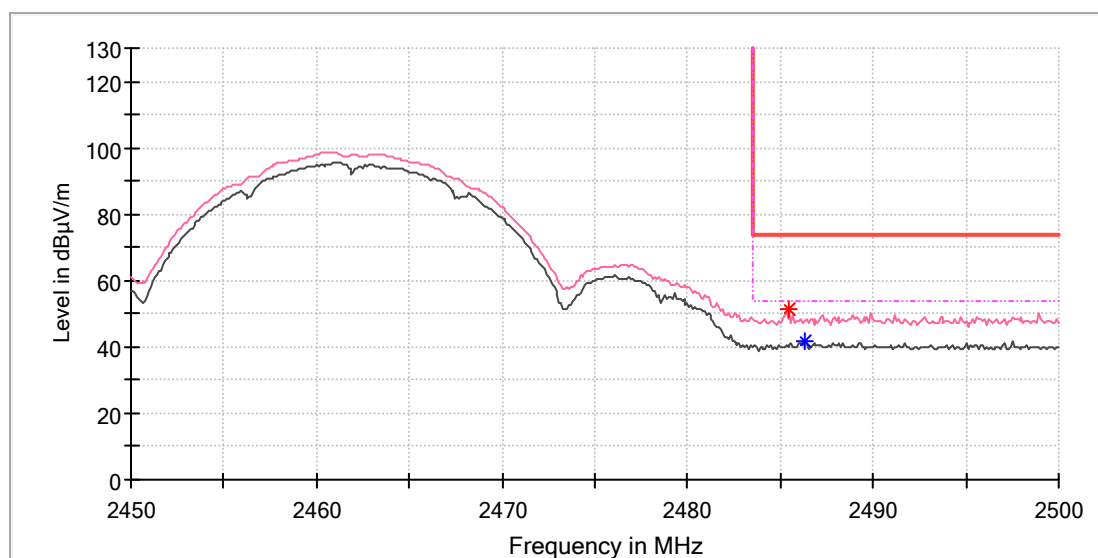
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11b_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.500000	51.57	---	74.00	22.43	100.0	V	24.0	7.4
2486.300000	---	42.01	54.00	11.99	100.0	V	86.0	7.4

Final_Result

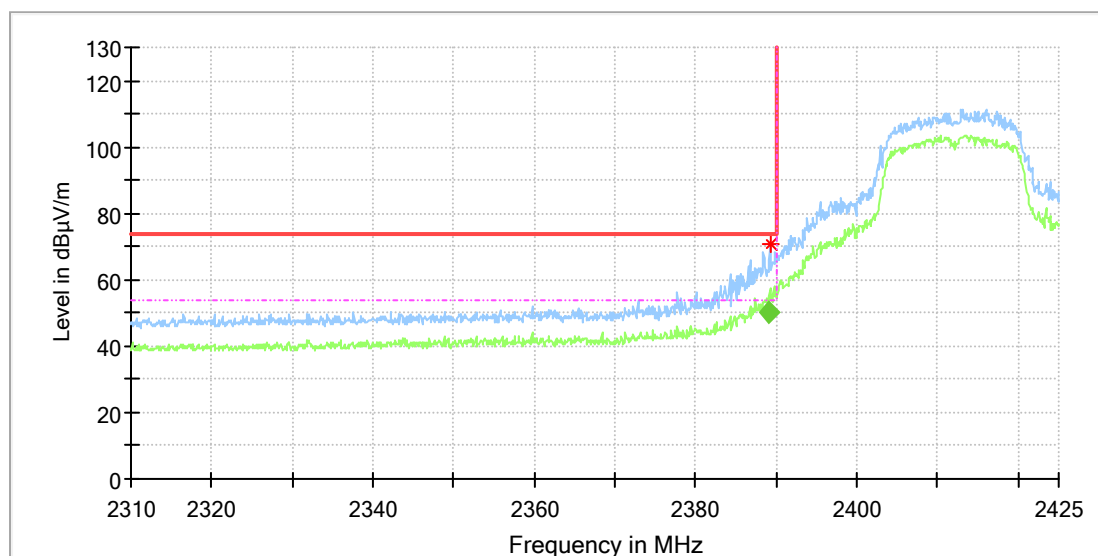
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Wi-Fi 802.11 g mode, 6 Mbps

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
Model: GW2-LTE/Ethernet/WiFi
Test Mode: WIFI 2.4G_11g_Ch1
Order No/Sample No: 168403102/A003389847-002
Test Voltage:: 120V/60Hz
Remark: Temp 22 Humi:52%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.200000	70.63	---	74.00	3.37	100.0	H	114.0	7.0

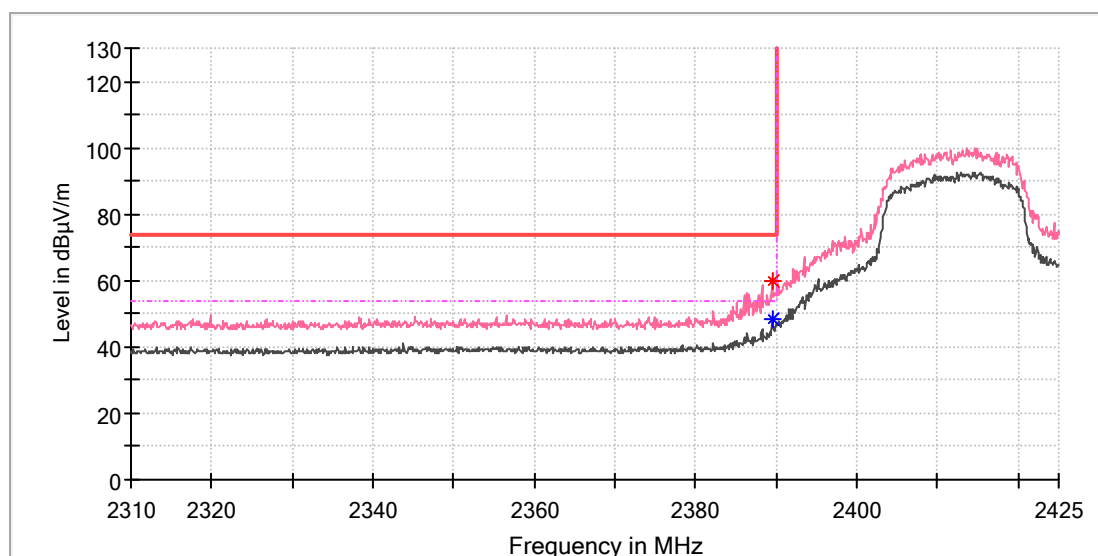
Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.052450	50.13	54.00	3.87	100.0	H	113.0	7.0

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11g_Ch1
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.500000	59.69	---	74.00	14.31	100.0	V	164.0	7.0
2389.500000	---	48.35	54.00	5.65	100.0	V	164.0	7.0

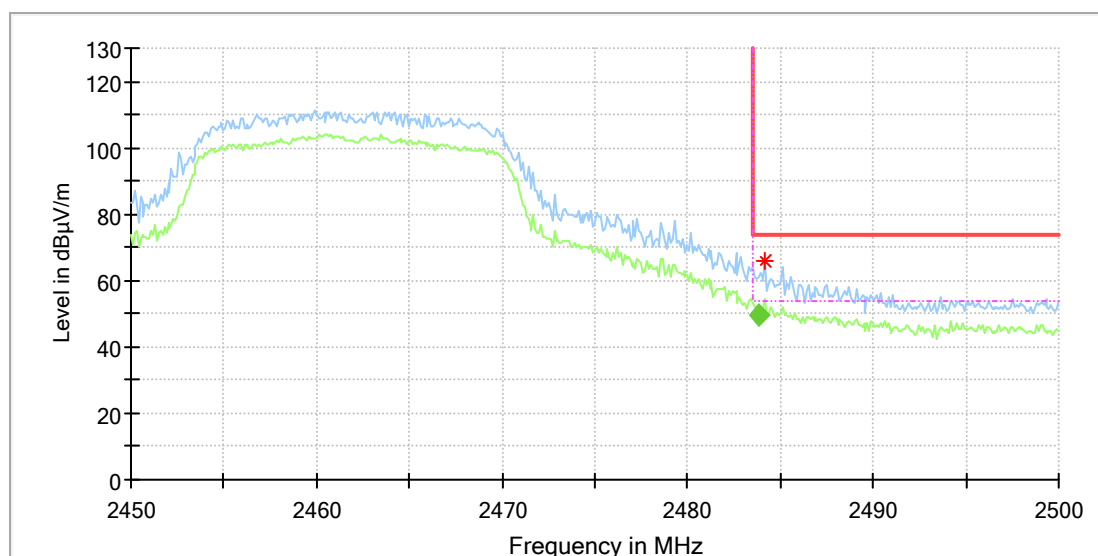
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11g_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.200000	66.08	---	74.00	7.92	100.0	H	128.0	7.4

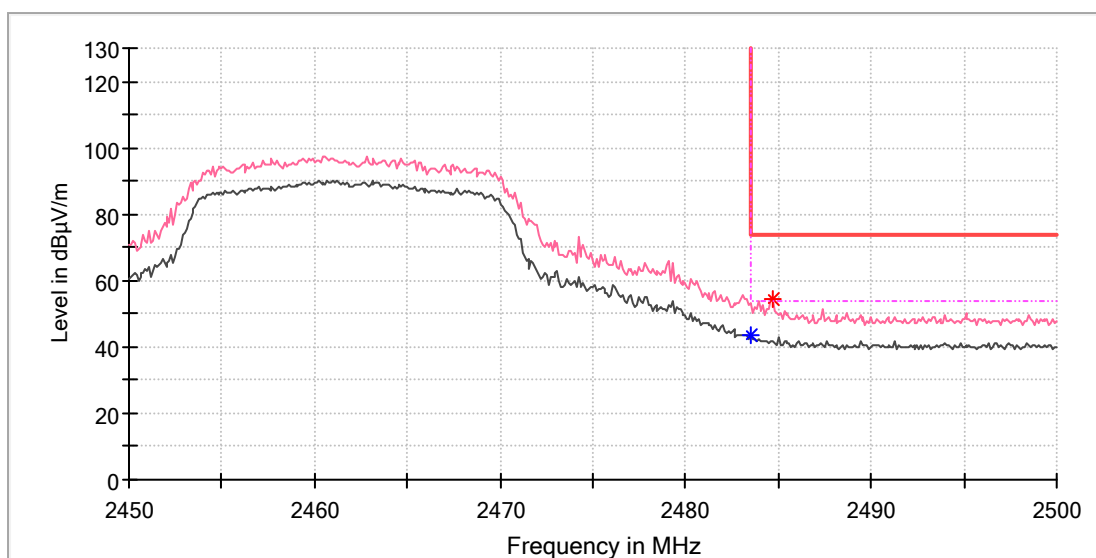
Final_Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.796900	50.34	54.00	3.66	105.0	H	123.0	7.4

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11g_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.500000	---	43.25	54.00	10.75	100.0	V	168.0	7.4
2484.700000	54.72	---	74.00	19.28	100.0	V	168.0	7.4

Final_Result

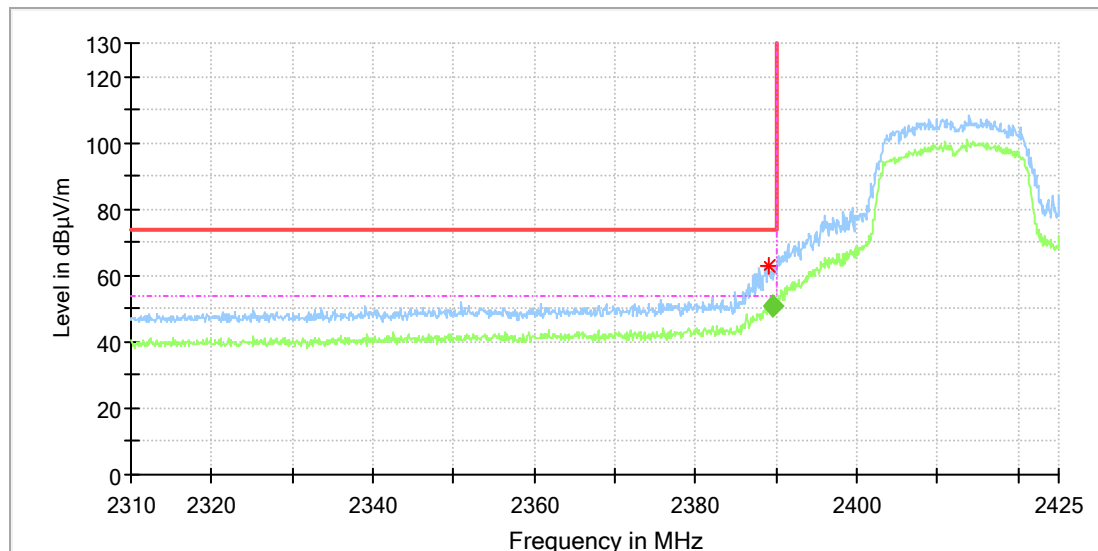
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Wi-Fi 802.11 n(HT20) mode, MCS0

Test Report

EUT Information

EUT Name:	Activetag Edge Gateway
Model:	GW2-LTE/Ethernet/WiFi
Test Mode:	WIFI 2.4G_11n20_Ch1
Order No/Sample No:	168403102/A003389847-002
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.000000	62.96	---	74.00	11.04	100.0	H	117.0	7.0

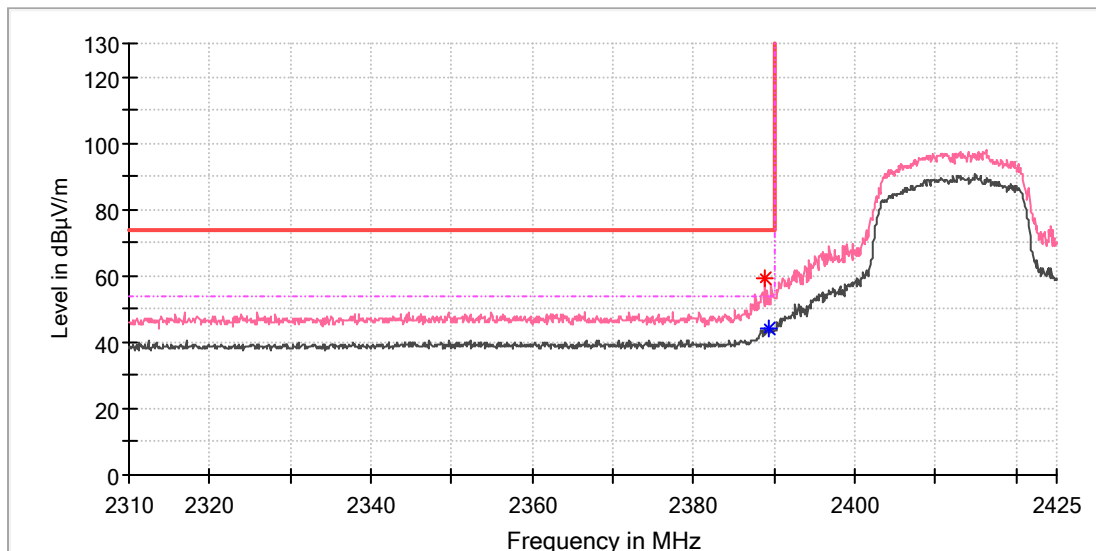
Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.576350	50.99	54.00	3.01	100.0	H	125.0	7.0

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
Model: GW2-LTE/Ethernet/WiFi
Test Mode: WIFI 2.4G_11n20_Ch1
Order No/Sample No: 168403102/A003389847-002
Test Voltage:: 120V/60Hz
Remark: Temp 22 Humi:52%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.800000	59.05	---	74.00	14.95	100.0	V	83.0	7.0
2389.300000	---	44.14	54.00	9.86	100.0	V	220.0	7.0

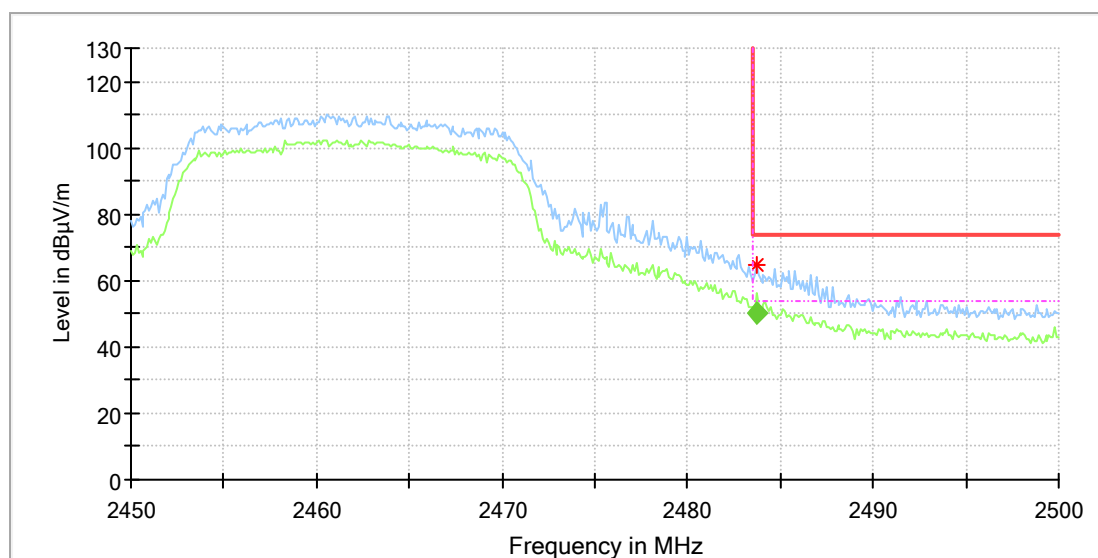
Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11n20_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.700000	64.47	---	74.00	9.53	100.0	H	121.0	7.4

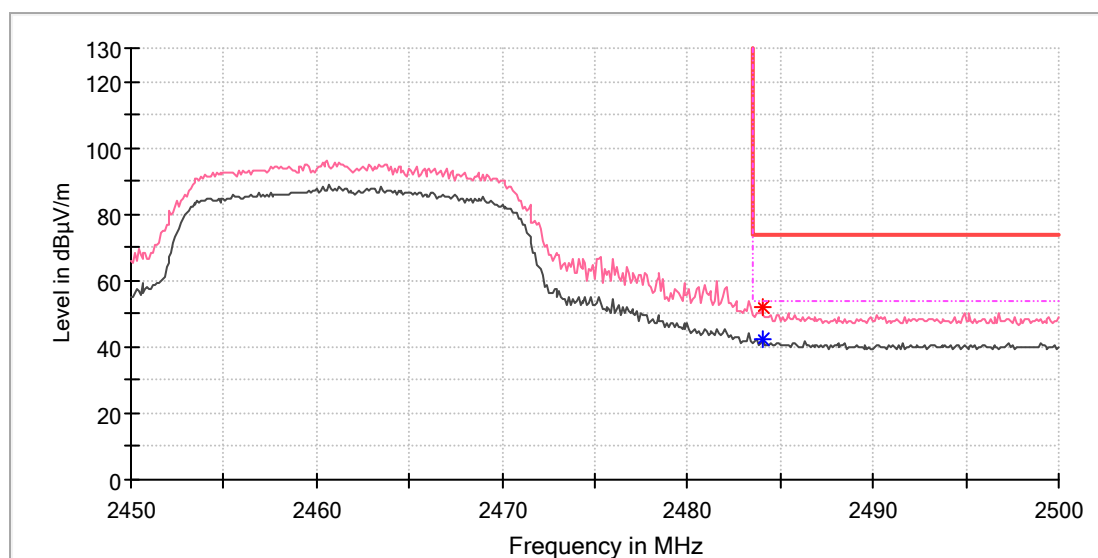
Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.720250	50.44	54.00	3.56	100.0	H	120.0	7.4

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11n20_Ch11
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.000000	51.94	---	74.00	22.06	100.0	V	63.0	7.4
2484.100000	---	42.22	54.00	11.78	100.0	V	343.0	7.4

Final_Result

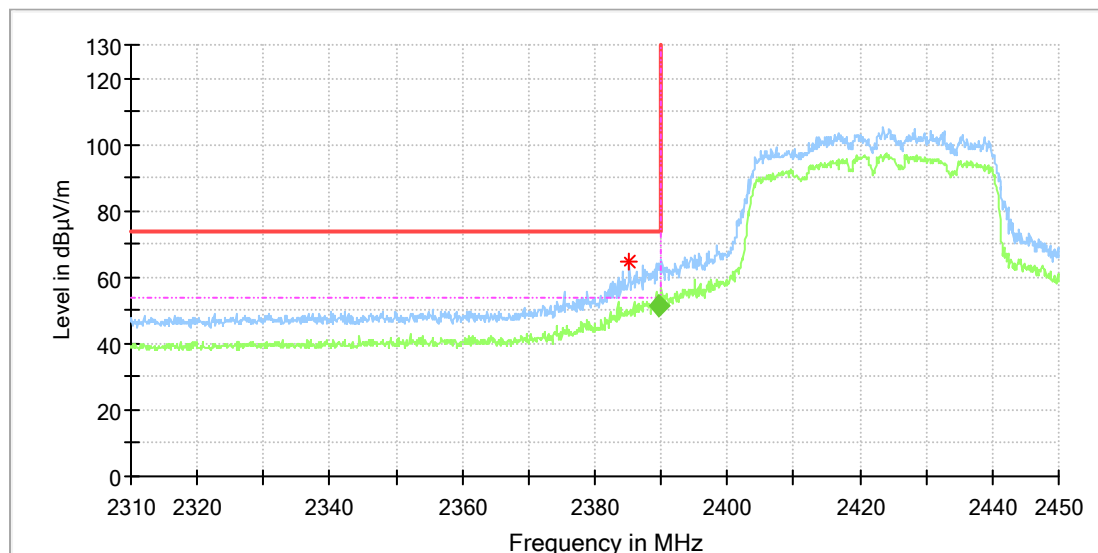
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Wi-Fi 802.11 n(HT40) mode, MCS0

Test Report

EUT Information

EUT Name:	Activetag Edge Gateway
Model:	GW2-LTE/Ethernet/WiFi
Test Mode:	WIFI 2.4G_11n40_Ch3
Order No/Sample No:	168403102/A003389847-002
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.200000	64.98	---	74.00	9.02	100.0	H	122.0	7.0

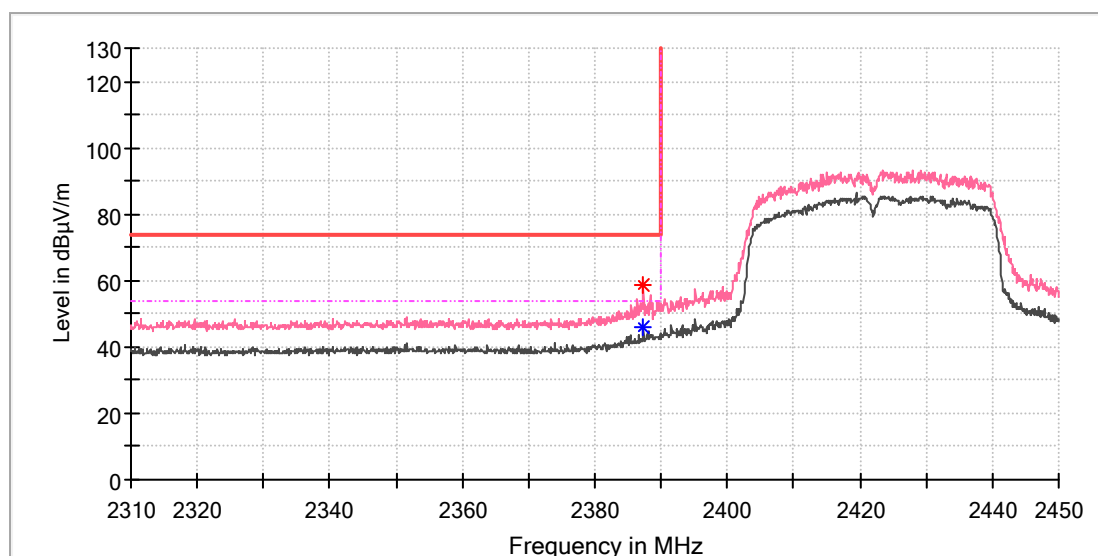
Final_Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.726950	50.96	54.00	3.04	100.0	H	120.0	7.0

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11n40_Ch3
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2387.300000	58.55	---	74.00	15.45	100.0	V	71.0	7.0
2387.300000	---	45.90	54.00	8.10	100.0	V	71.0	7.0

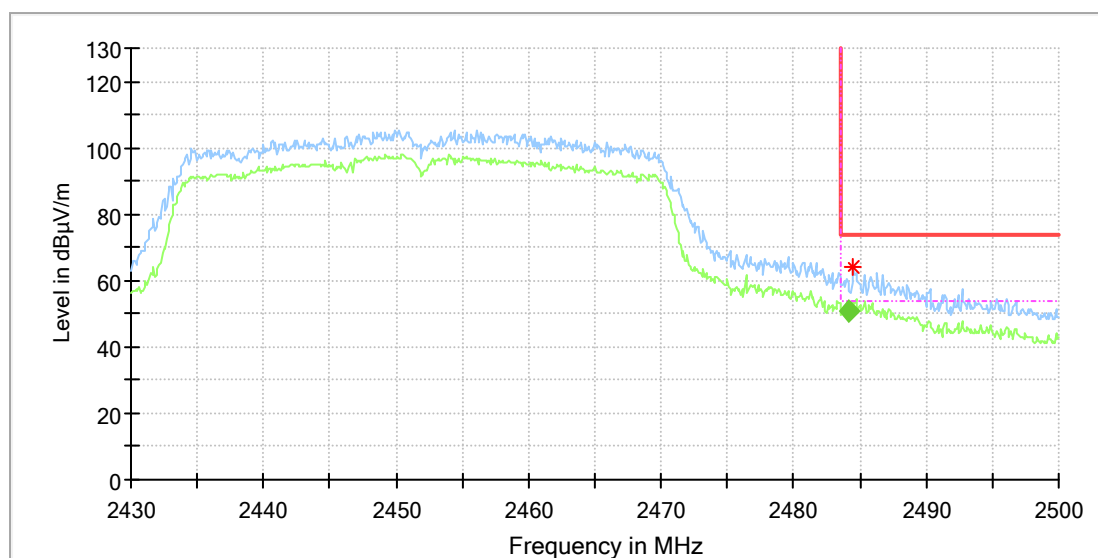
Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: GW2-LTE/Ethernet/WiFi
 Test Mode: WIFI 2.4G_11n40_Ch9
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.500000	64.03	---	74.00	9.97	100.0	H	119.0	7.4

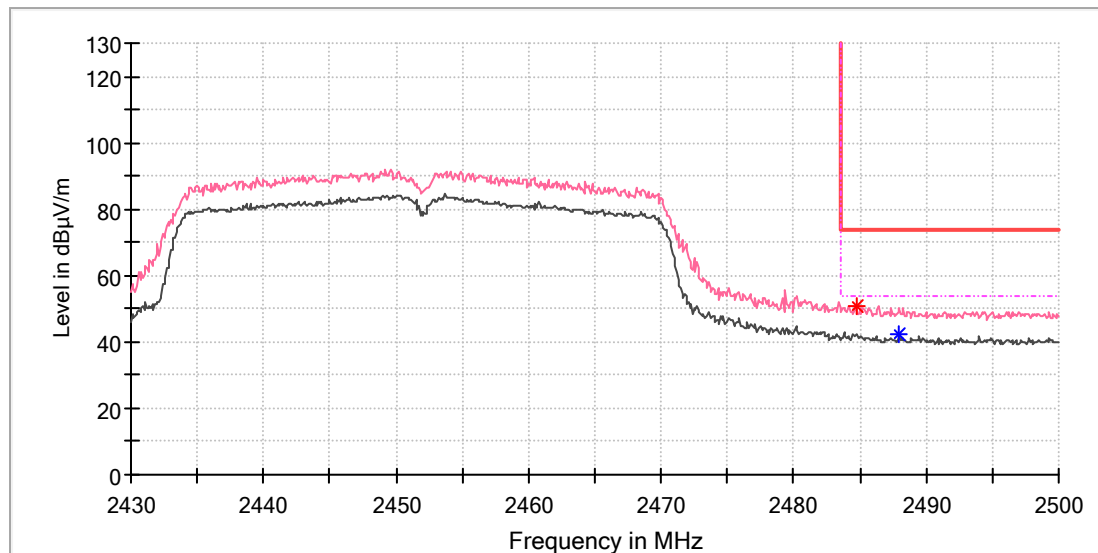
Final_Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.211750	50.64	54.00	3.36	100.0	H	123.0	7.4

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
 Model: NA
 Test Mode: WIFI 2.4G_11n40_Ch9
 Order No./Sample No: 168403102/A003389847-002
 Test Voltage:: 120V/60Hz
 Remark: Temp 22 Humi:52%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.700000	50.90	---	74.00	23.10	100.0	V	173.0	7.4
2488.000000	---	42.62	54.00	11.38	100.0	V	236.0	7.4

Final_Result

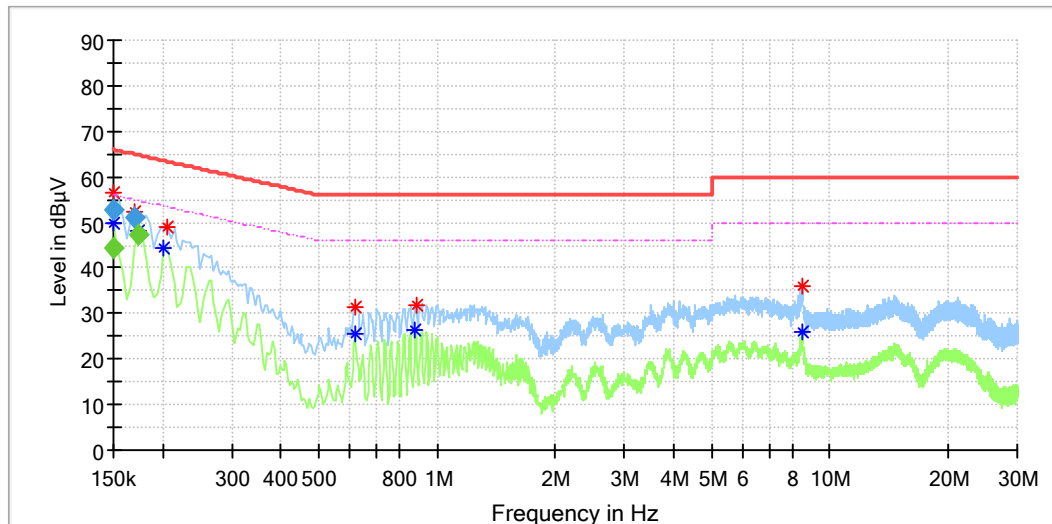
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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1.10 Test Results of Conducted Emission on AC Mains

Test Report

EUT Information

EUT Name: Activetag Edge Gateway
Order Number: 168403102
Model: GW2-LTE/Ethernet/WiFi
Test Mode: Normal operational mode(FRLC+WiFi operating)
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15.207
Test By:/Review By: Dawn Shen/Gary Chen
Tem./Hum./Pressure: 23.2°C/50.6%/101kPa
Remark: SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150000	56.31	---	65.78	9.47	L1	9.9
0.150000	---	49.88	56.00	6.12	L1	9.9
0.169500	52.24	---	64.96	12.72	L1	9.9
0.173500	---	48.25	54.77	6.52	L1	9.9
0.202000	---	44.19	53.53	9.34	L1	9.9
0.206000	48.84	---	63.37	14.53	L1	9.9
0.618000	---	25.44	46.00	20.56	L1	10.0
0.618000	31.56	---	56.00	24.44	L1	10.0
0.882000	---	26.28	46.00	19.72	L1	10.0
0.886000	32.02	---	56.00	23.98	L1	10.0
8.478000	35.82	---	60.00	24.18	L1	10.3
8.490000	---	26.06	50.00	23.94	L1	10.3

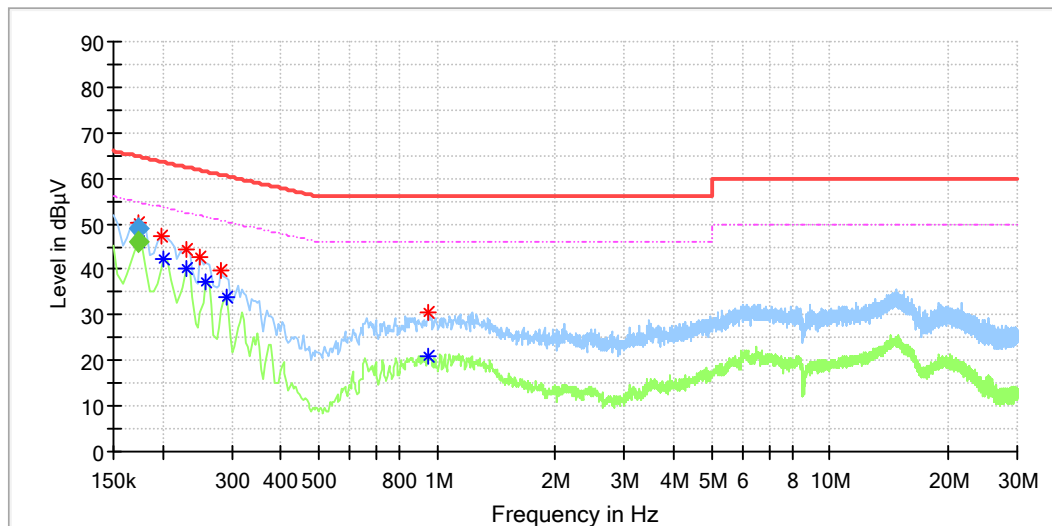
Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	44.38	56.00	11.62	1000.0	9.000	L1	9.9
0.150000	52.65	---	66.00	13.35	1000.0	9.000	L1	9.9
0.169500	51.09	---	64.99	13.89	1000.0	9.000	L1	9.9
0.173500	---	47.50	54.79	7.29	1000.0	9.000	L1	9.9

Test Report

EUT Information

EUT Name:	Activetag Edge Gateway
Order Number:	168403102
Model:	GW2-LTE/Ethernet/WiFi
Test Mode:	Normal operational mode(FRLC+WIFI operating)
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15.207
Test By:/Review By:	Dawn Shen/Gary Chen
Tem./Hum./Pressure:	23.2°C/50.6%/101kPa
Remark:	SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.173500	50.44	---	64.77	14.33	N	9.8
0.173500	---	45.95	54.77	8.82	N	9.8
0.198000	47.47	---	63.69	16.22	N	9.8
0.202000	---	42.28	53.53	11.25	N	9.8
0.230000	---	40.29	52.45	12.16	N	9.8
0.230000	44.27	---	62.45	18.18	N	9.8
0.250000	42.73	---	61.76	19.03	N	9.8
0.258000	---	37.09	51.50	14.40	N	9.8
0.282000	39.79	---	60.76	20.97	N	9.8
0.290000	---	33.73	50.52	16.79	N	9.8
0.946000	---	21.13	46.00	24.87	N	9.8
0.950000	30.57	---	56.00	25.43	N	9.8

Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.173500	---	45.94	54.79	8.86	1000.0	9.000	N	9.8
0.173500	49.02	---	64.79	15.77	1000.0	9.000	N	9.8

-----END OF REPORT-----