

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 1 of 69

Applicant : Shanghai BroadMobi Communication Technology Co., Ltd.
Address of Applicant : 15F, Building 9, No.99 Tianzhou Rd.,Xuhui District,
Shanghai, P.R.China

Product Name : LTE MIFI
Model No. : R800C
Sample No. : E20100021-01#01
E20100021-01#02
FCC ID : 2AON8R800C

Standards : FCC CFR47 Part 15, Subpart C

Date of Receipt : 2020-11-07
Date of Test : 2020-11-10 ~ 2020-12-03
Date of Issue : 2020-12-04

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

Prepared by: Jennifer Zhou
(Jennifer Zhou)

Reviewed by: Oliver Xiang
(Oliver Xiang)

Approved by: Guoyou Chi
(Authorized signatory Guoyou Chi)

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 2 of 69

Revision Record			
Version	Date	Revisions	Revised By
1.0	2020-1-21	Original	--

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 3 of 69

Contents

1	GENERAL INFORMATION	4
1.1	TESTING LABORATORY	4
1.2	DETAILS OF APPLICATION	4
1.3	DETAILS OF EUT	4
1.4	TEST METHODOLOGY	5
2	TEST CONDITION	6
2.1	TEST FACILITY	6
2.2	ENVIRONMENTAL CONDITIONS	6
2.3	EQUIPMENT LIST	6
2.4	MEASUREMENT UNCERTAINTY	6
3	TEST SET-UP AND OPERATION MODES	7
3.1	DETAILS OF TEST MODE	7
3.2	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	8
3.3	SUPPORT SOFTWARE	9
3.4	TEST SETUP DIAGRAM	8
4	TEST RESULTS	9
4.1	TRANSMITTER REQUIREMENT & TEST SUITES	10
4.1.1	<i>Antenna Requirement</i>	10
4.1.2	<i>Peak Output Power</i>	11
4.1.3	<i>6dB Bandwidth and 99% Bandwidth</i>	13
4.1.4	<i>Power Spectral Density</i>	15
4.1.5	<i>Conducted Spurious Emission & Authorized-band band-edge</i>	18
4.1.6	<i>Spurious Emission</i>	65
4.1.7	<i>Band Edge (Restricted-band band-edge)</i>	66
4.2	MAINS EMISSIONS	67
4.2.1	<i>Conducted Emission on AC Mains</i>	67

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 4 of 69

1 General Information

1.1 Testing Laboratory

Company Name	ICAS Testing Technology Service (Shanghai) Co., Ltd.
Address	No.1298 Pingan Rd, Minhang District, Shanghai, China
Telephone	0086 21-51682999
Fax	0086 21-54711112
Homepage	www.icasiso.com

1.2 Details of Application

Company Name	Shanghai BroadMobi Communication Technology Co., Ltd
Address	15F, Building 9, No.99 Tianzhou Rd.,Xuhui District, Shanghai, P.R.China
Contact Person	Yu rong
Telephone	60913308-857
Email	yurong@broadmobi.com

1.3 Details of EUT

Product Name	LTE MIFI
Brand Name	Broadmobi
Model No.	R800C
FCC ID	2AON8R800C
Network and Wireless connectivity	WLAN 802.11b/g/n(HT20/HT40)
Mode of Operation	WLAN 802.11b/g/n(HT20/HT40)
Frequency Range	2400MHz ~ 2483.5MHz
Channel Separation	5 MHz
Modulation Type	DSSS, OFDM
Antenna Type	Internal Antenna
Antenna0 Gain	0.95dBi
Antenna1 Gain	1.41dBi
Extreme Temperature Range	0℃~ +35℃
Test Voltage	DC 3.80V

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 5 of 69

1.4 Test Methodology

47 CFR Part 15, Subpart C	Miscellaneous Wireless Communications Services
KDB Publication 558074 D01 v05r02	15.247 Meas Guidance.
KDB Publication 662911 D01 v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Note(s):

All test items were verified and recorded according to the standards and without any addition/deviation/exclusion during the test.

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 6 of 69

2 Test Condition

2.1 Test Facility

2.2 Environmental conditions

Temperature (°C)	18-25
Humidity (%RH)	40-65
Barometric Pressure (mbar)	960-1060

2.3 Equipment List

Name of Equipment	Manufacturer	Model	Serial No.	Cal. Due Date
Spectrum Analyzer	Keysight	N9020B	MY59260184	2021-08-18
Spectrum Analyzer	Rohde & Schwarz	FSV40N	101450	2021-06-08
EMI Test Receiver	Rohde & Schwarz	ESPI3	100173	2021-06-08
EMI Test Receiver	Rohde & Schwarz	ESR 7	101911	2021-06-08
V-network	SCHWARZBECK	NSLK 8127	8127-902	2021-02-20
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	100687	2021-08-18
Broadband Antenna	SCHWARZBECK	VULB9163	9163-1037	2021-06-08
Horn Antenna-18G	SCHWARZBECK	BBHA9120D	9120D-1775	2021-06-08
Loop Antenna	SCHWARZBECK	FMZB 1513	N/A	2021-03-19
Horn Antenna-40G	YINGLIAN	LB-180400-KF	N/A	2021-07-26
EMC chamber 9*6*6 (L*W*H)	CHANGNING	966	N/A	2021-06-08
Shielded Enclosure 8*5*4 (L*W*H)	CHANGNING	854	N/A	2021-06-08
Test Software	BL	BL410_E	N/A	N/A

2.4 Measurement Uncertainty

Parameter	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	± 1.5 dB
	> 1GHz	± 1.5 dB
Radiated Emission	30 MHz – 1 GHz	± 3 dB
	> 1GHz	± 3 dB

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 7 of 69

3 Test Set-up and Operation Modes

3.1 Details of Test Mode

Using test software was control EUT work in continuous transmitter and receiver mode. Select test channel as below:

For 802.11b/g/n (HT20/HT40)

Channel	Frequency	Remark
CH1	2412MHz	2412MHz
CH6	2437MHz	2437MHz
CH11	2462MHz	2462MHz

Through Pre-scan under all rate at lowest channel, the data rate as below table described is the worst case, so we choose these data rate for test.

Type	Data rate (For Chain 0)	Data rate (For Chain 1)
802.11b	11Mbps	11Mbps
802.11g	18Mbps	18Mbps
802.11n(HT20)	MCS2	MCS2
802.11n(HT40)	MCS2	MCS2

The basic operation modes are:

A. On

1. WLAN mode

a. Transmitting

i. Low Channel

ii. Middle Channel

iii. High Channel

b. Receiving

B. Standby

C. Off

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

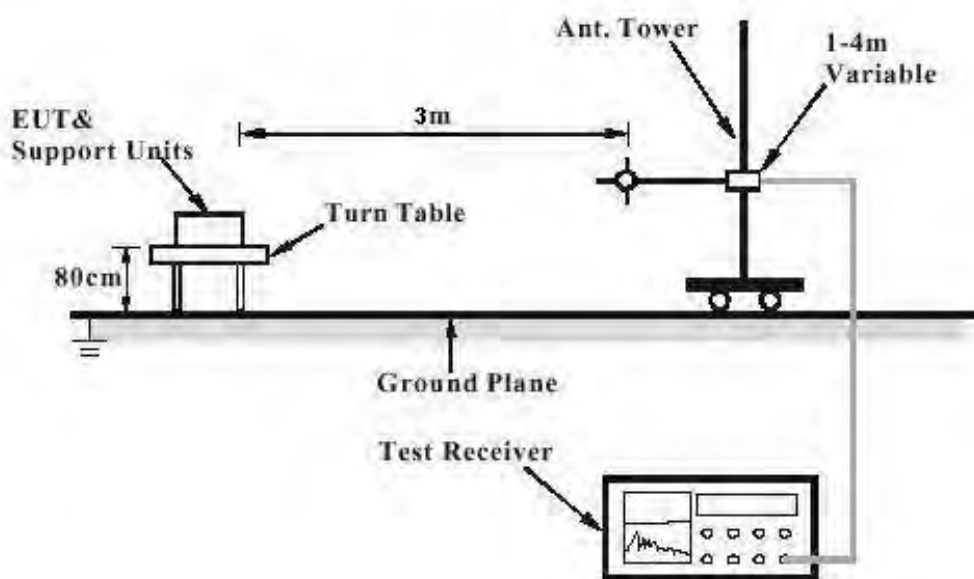
Page 8 of 69

3.2 Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	TP00083A	N/A

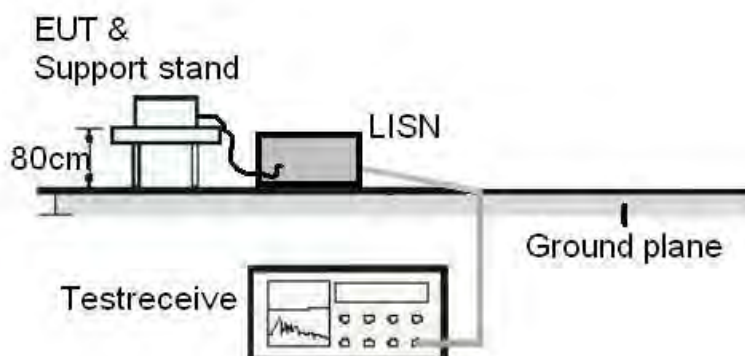
3.3 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



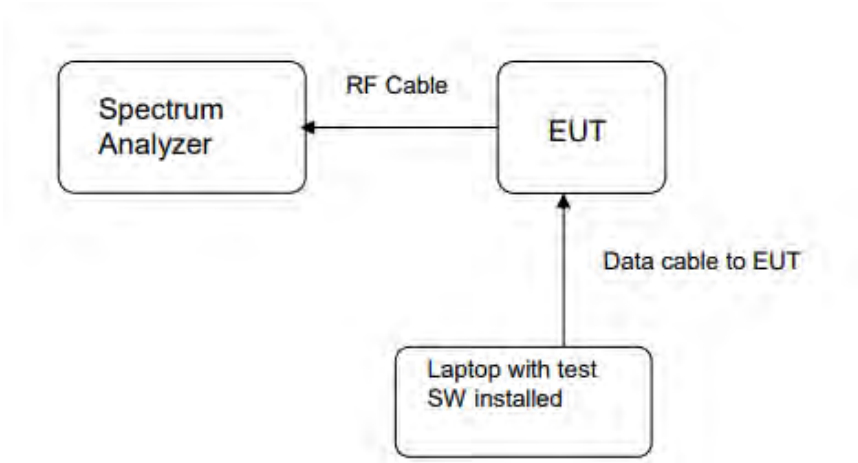
Note: Measurements above 1GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Conduction Measurement



TEST REPORT

Diagram of Measurement Equipment Configuration for Transmitter Measurement



3.4 Support Software

Description	Manufacturer	Software Name
Software	Qualcomm	QRCT

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 10 of 69

4 Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

RESULT:

PASS

Test standard : FCC Part 15.247(b)(4), Part 15.203

Requirement : The use of approved antennas only with directional gains that do not exceed 6 dBi

According to the manufacturer declaration, the EUT has an antenna with a max gain of 1.41 dBi. The antenna is an internal antenna with no possibility of replacement with a non-approved antenna by the end-user.

Therefore, the EUT is considered to comply with this provision.

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 11 of 69

4.1.2 Peak Output Power

RESULT:

PASS

Test standard : FCC Part 15.247(b)(3)

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/Middle/High

Operation Mode : A.1.a

Ambient temperature : 25C

Relative humidity : 52%

Table 1: Peak Output Power

Table 1: Peak Output Power						
Test Mode	Test Channel (MHz)	Measured Peak Power				Limit (W)
		Chain 0		Chain 1		
		(dBm)	(mW)	(dBm)	(mW)	
802.11b	2412	14.35	27.23	14.43	27.73	< 1
	2437	16.15	41.21	15.15	32.73	
	2462	15.16	32.81	14.83	30.41	
802.11g	2412	11.48	14.06	11.57	14.35	
	2437	13.12	20.51	12.56	18.03	
	2462	12.14	16.37	12.36	17.22	
802.11n(HT20)	2412	10.46	11.12	10.92	12.36	
	2437	12.04	16.00	11.63	14.55	
	2462	11.01	12.62	11.42	13.87	
802.11n(HT40)	2422	10.79	11.99	10.98	12.53	
	2437	11.47	14.03	11.36	13.68	
	2452	11.51	14.16	11.31	13.52	

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 12 of 69

Test Mode	Test Channel (MHz)	Measured Peak Power				Limit (W)
		MIMO Chain 0		MIMO Chain 1		
		(dBm)	(mW)	(dBm)	(mW)	
802.11b	2412	13.60	22.91	14.07	25.53	< 1
	2437	15.22	33.27	14.38	27.42	
	2462	14.10	25.70	14.19	26.24	
802.11g	2412	10.81	12.05	11.35	13.65	
	2437	12.62	18.28	12.11	16.26	
	2462	11.54	14.26	11.92	15.56	
802.11n(HT20)	2412	10.05	10.12	10.06	10.14	
	2437	11.59	14.42	10.78	11.97	
	2462	10.57	11.40	10.64	11.59	
802.11n(HT40)	2422	10.29	10.69	10.27	10.64	
	2437	10.91	12.33	10.63	11.56	
	2452	10.92	12.36	10.59	11.46	

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		MIMO		
		(dBm)	(mW)	
802.11b	2412	16.85	48.44	< 1
	2437	17.83	60.69	
	2462	17.16	51.94	
802.11g	2412	14.10	25.7	
	2437	15.38	34.54	
	2462	14.75	29.82	
802.11n(HT20)	2412	13.07	20.26	
	2437	14.21	26.39	
	2462	13.62	22.99	
802.11n(HT40)	2422	13.29	21.33	
	2437	13.78	23.89	
	2452	13.77	23.82	

Note :

2.4G MIMO gain is $1.41\text{dBi} + 10\log(2) = 4.42\text{dBi}$ (1.40dBi is MAX gain of 2.4G)

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 13 of 69

4.1.3 6dB Bandwidth and 99% Bandwidth

RESULT:

PASS

Test standard : FCC Part 15.247(a)(2)

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/Middle/High

Operation Mode : A.1.a

Ambient temperature : 25°C

Relative humidity : 52%

Notes

Test plots please refer to the annex document "WIFI2.4G 6dB EXHIBIT A of SHE20100021-02CE Chain 0".

Test plots please refer to the annex document "WIFI2.4G 6dB EXHIBIT A of SHE20100021-02CE Chain 1".

Test plots please refer to the annex document "WIFI2.4G 99% Bandwidth EXHIBIT A of SHE20100021-02CE Chain 0".

Test plots please refer to the annex document "WIFI2.4G 99% Bandwidth EXHIBIT A of SHE20100021-02CE Chain 1".

Table 2: Chain 0 6dB Bandwidth and 99% Bandwidth

Test Mode	Test Channel (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)
802.11b	2412	7.522	12.965	0.5
	2437	7.093	12.702	
	2462	7.558	12.946	
802.11g	2412	16.078	16.657	
	2437	16.346	16.650	
	2462	16.398	16.712	
802.11n(HT20)	2412	15.943	17.810	
	2437	16.938	17.770	
	2462	16.969	17.816	
802.11n(HT40)	2422	35.951	36.260	
	2437	35.189	36.028	
	2452	35.305	36.196	

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 14 of 69

Table 3: Chain 1 6dB Bandwidth and 99% Bandwidth

Test Mode	Test Channel (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)
802.11b	2412	7.518	13.039	0.5
	2437	7.180	12.925	
	2462	7.158	12.943	
802.11g	2412	16.450	16.708	
	2437	15.937	16.665	
	2462	16.312	16.715	
802.11n(HT20)	2412	16.905	17.824	
	2437	16.817	17.807	
	2462	17.639	17.830	
802.11n(HT40)	2422	35.463	36.117	
	2437	35.072	36.102	
	2452	35.424	36.183	

Note:

The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 15 of 69

4.1.4 Power Spectral Density

RESULT:

PASS

Test standard : FCC Part 15.247(e)

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/Middle/High

Operation Mode : A.1.a

Ambient temperature : 25C

Relative humidity : 52%

Notes

Test plots please refer to the annex document "WIFI2.4G PSD EXHIBIT A of SHE20100021-02CE Chain 0".

Test plots please refer to the annex document "WIFI2.4G PSD EXHIBIT A of SHE20100021-02CE Chain 1".

Test plots please refer to the annex document "WIFI2.4G PSD EXHIBIT A of SHE20100021-02CE MIMO Chain0".

Test plots please refer to the annex document "WIFI2.4G PSD EXHIBIT A of SHE20100021-02CE MIMO Chain1".

Table 4: Chain 0 Power Spectral Density

Test Mode	Test Channel (MHz)	Measured Result (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	2412	-10.01	8
	2437	-7.99	
	2462	-9.32	
802.11g	2412	-16.64	
	2437	-14.59	
	2462	-15.57	
802.11n(HT20)	2412	-16.88	
	2437	-15.61	
	2462	-16.48	
802.11n(HT40)	2422	-18.42	
	2437	-18.04	
	2452	-17.74	

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 16 of 69

Table 5: Chain 1 Power Spectral Density

Test Mode	Test Channel (MHz)	Measured Result (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	2412	-10.17	8
	2437	-9.24	
	2462	-9.60	
802.11g	2412	-15.56	
	2437	-15.85	
	2462	-15.27	
802.11n(HT20)	2412	-17.30	
	2437	-16.68	
	2462	-15.99	
802.11n(HT40)	2422	-18.37	
	2437	-17.74	
	2452	-18.75	

Table 6: MIMO Chain 0 Power Spectral Density

Test Mode	Test Channel (MHz)	Measured Result (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	2412	-10.67	8
	2437	-8.79	
	2462	-10.02	
802.11g	2412	-16.77	
	2437	-14.51	
	2462	-16.73	
802.11n(HT20)	2412	-17.89	
	2437	-15.82	
	2462	-16.85	
802.11n(HT40)	2422	-18.63	
	2437	-18.59	
	2452	-18.87	

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 17 of 69

Table 7: MIMO Chain 1 Power Spectral Density

Test Mode	Test Channel (MHz)	Measured Result (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	2412	-10.73	8
	2437	-9.89	
	2462	-10.07	
802.11g	2412	-16.03	
	2437	-16.32	
	2462	-15.49	
802.11n(HT20)	2412	-16.72	
	2437	-16.89	
	2462	-16.97	
802.11n(HT40)	2422	-16.40	
	2437	-17.39	
	2452	-18.39	

Table 8: MIMO Power Spectral Density

Test Mode	Test Channel (MHz)	Measured Result (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	2412	-7.70	8
	2437	-6.29	
	2462	-7.03	
802.11g	2412	-13.37	
	2437	-12.29	
	2462	-13.10	
802.11n(HT20)	2412	-14.20	
	2437	-13.28	
	2462	-13.87	
802.11n(HT40)	2422	-14.32	
	2437	-14.95	
	2452	-15.53	

Note:

The all chains were tested respectively, but only the worst configuration shown here.

MIMO PSD= Chain1+Chain2 (mw)

2.4G MIMO gain is 1.41dBi + 10log(2) =4.42dBi (1.40dBi is MAX gain of 2.4G)

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 18 of 69

4.1.5 Conducted Spurious Emission & Authorized-band band-edge

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/Middle/High for spurious, Low/High for Band Edge

Operation Mode : A.1.a

Ambient temperature : 25C

Relative humidity : 52%

For details refer to following test plot.

Note:

The all chains were tested respectively, but only the worst configuration shown here.

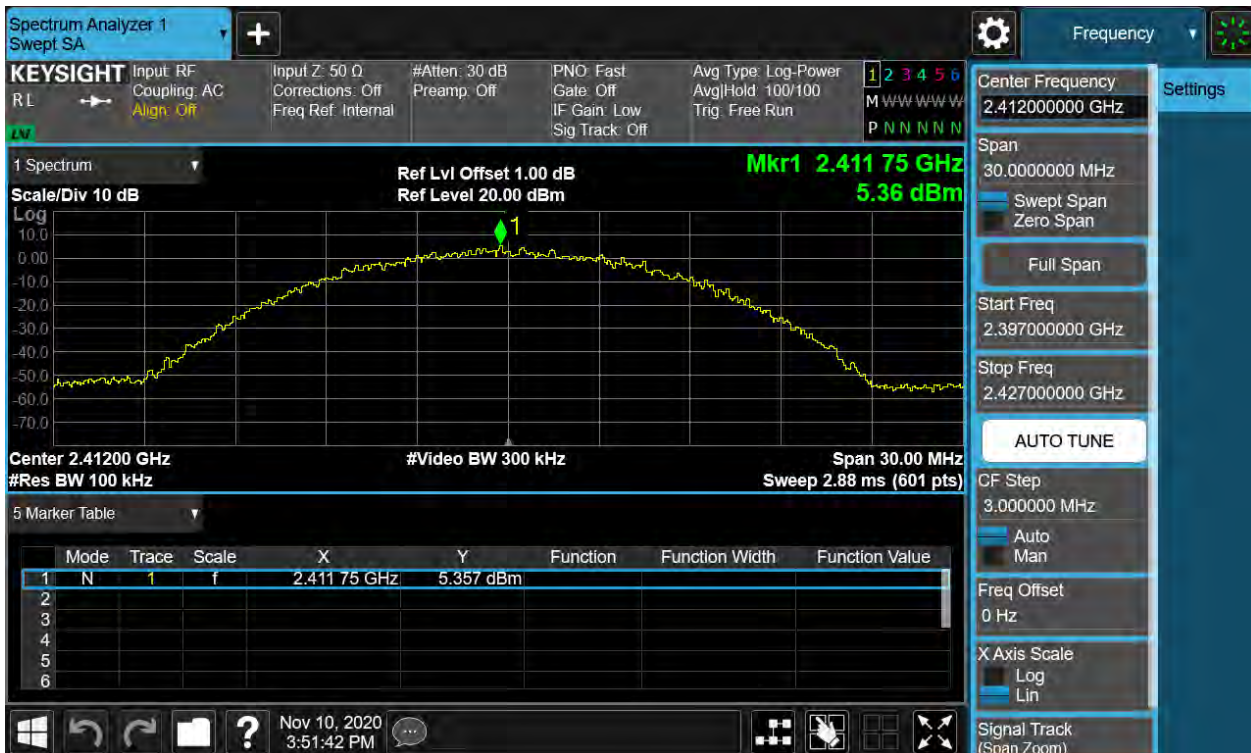
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 19 of 69

Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2412MHz Carrier Level



Band Edge

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 20 of 69



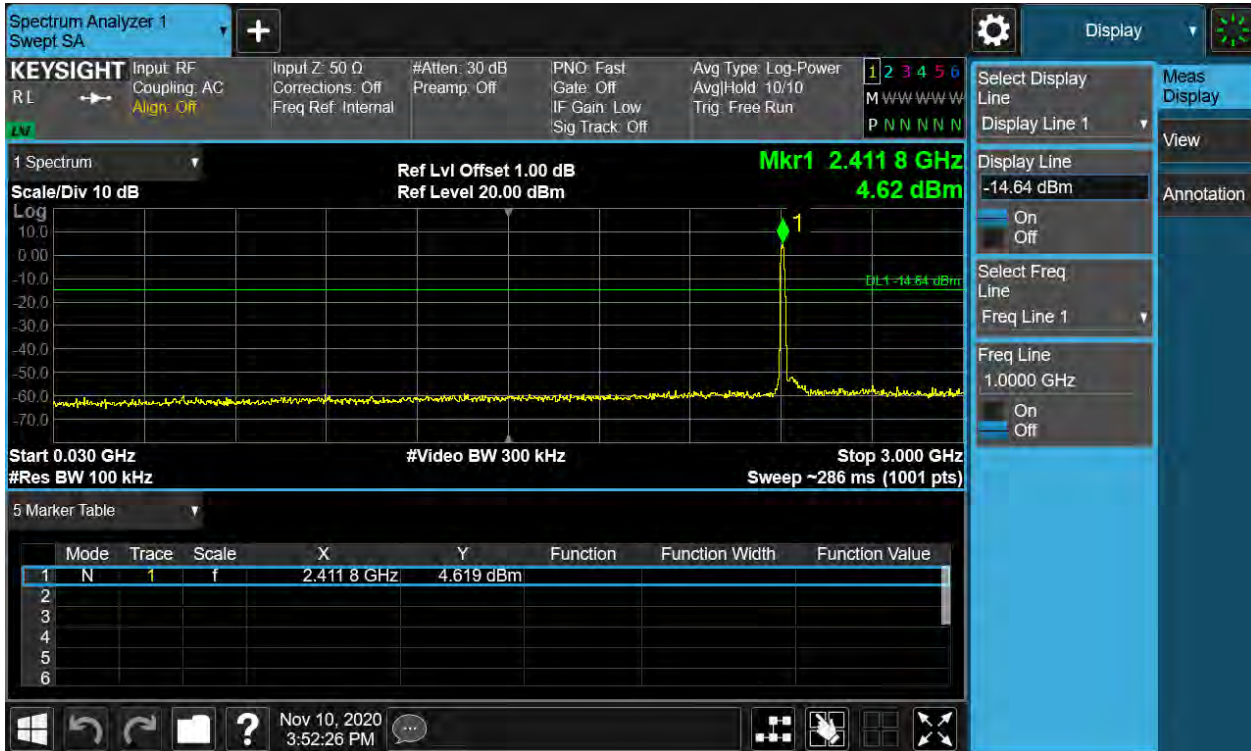
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 21 of 69

Conducted spurious emissions 30MHz-25GHz



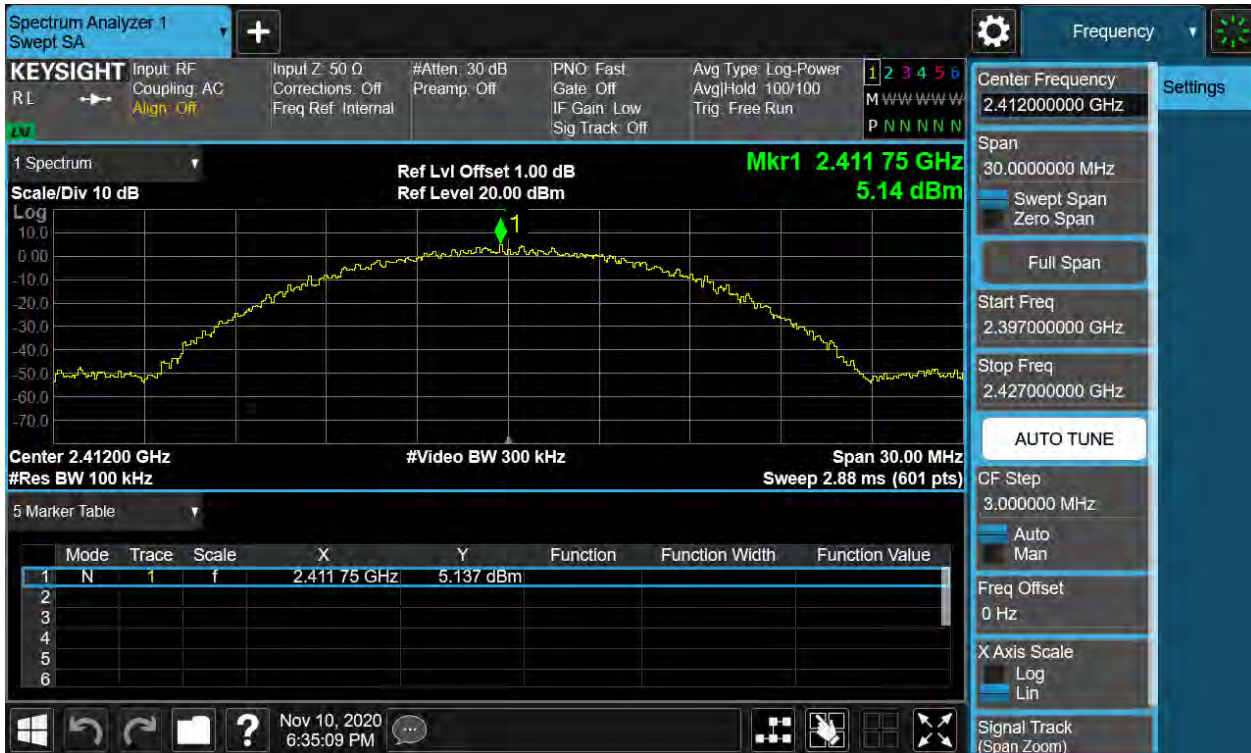
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 22 of 69

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2412MHz Carrier Level



Band Edge



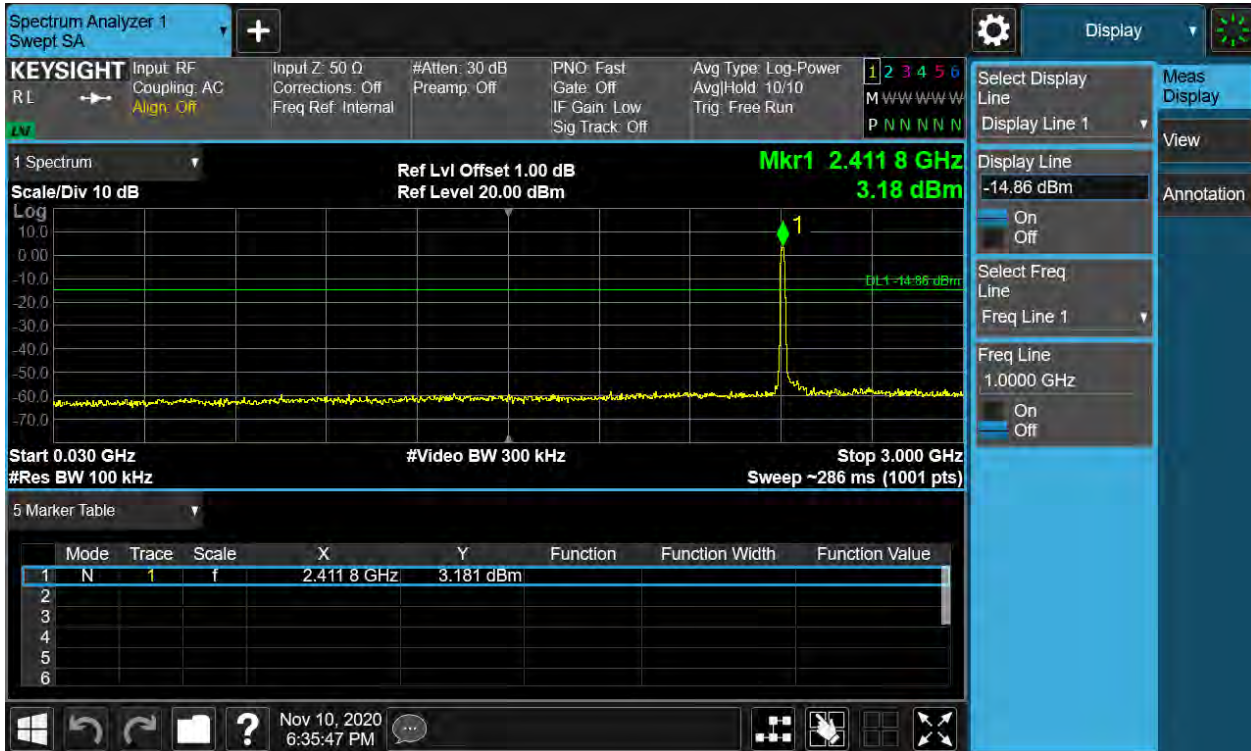
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 23 of 69

Conducted spurious emissions 30MHz-25GHz



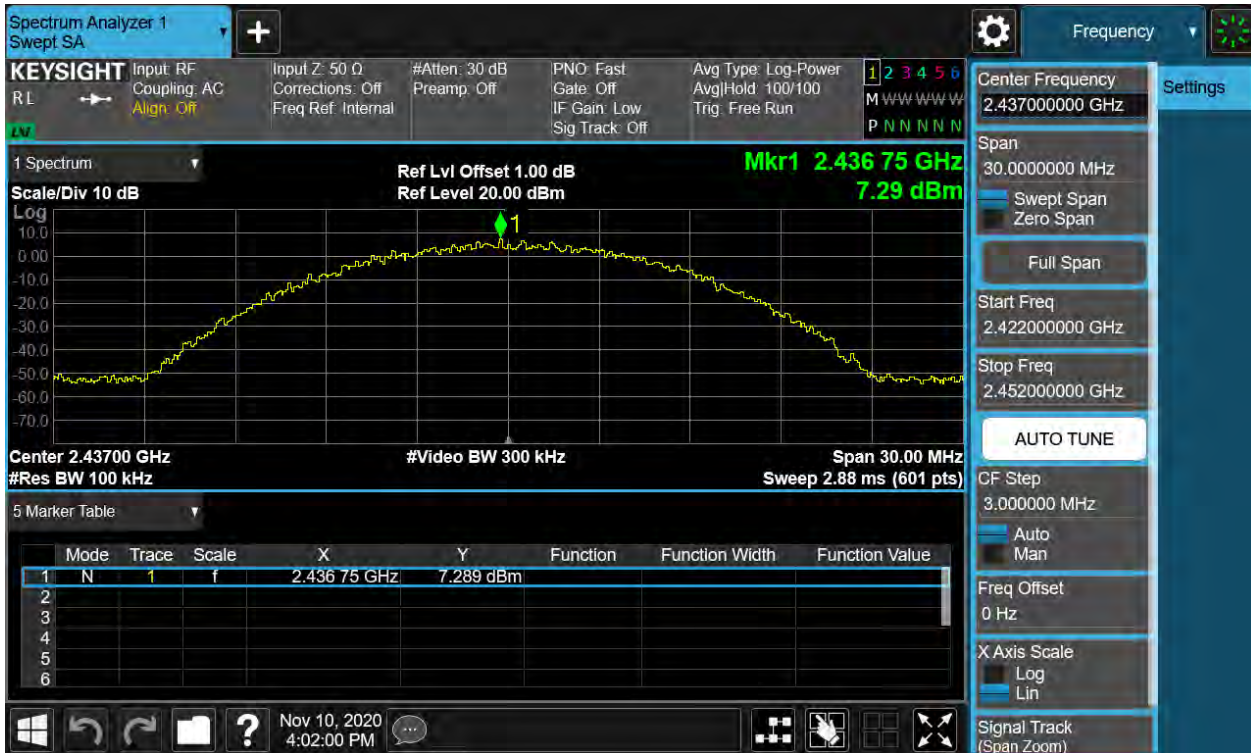
TEST REPORT

Report No.: SHE20100021-02CE

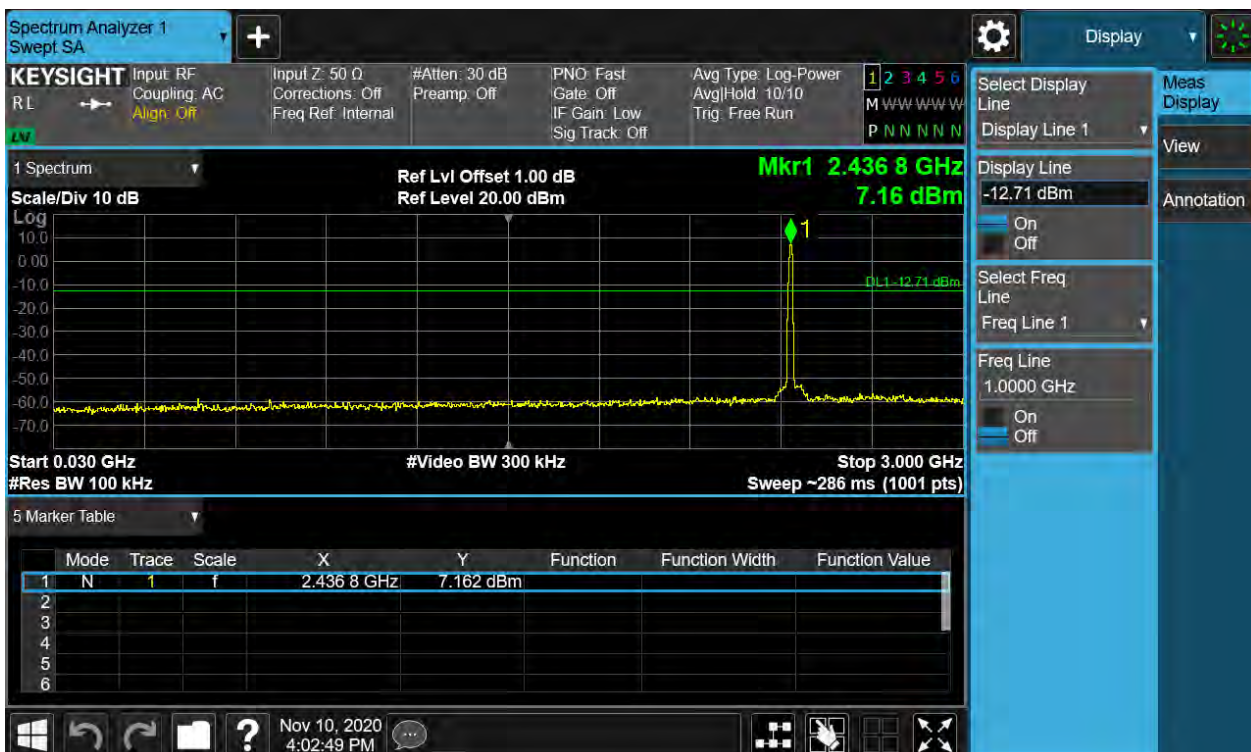
Date: 2020-12-04

Page 24 of 69

Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 25 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2437MHz Carrier Level



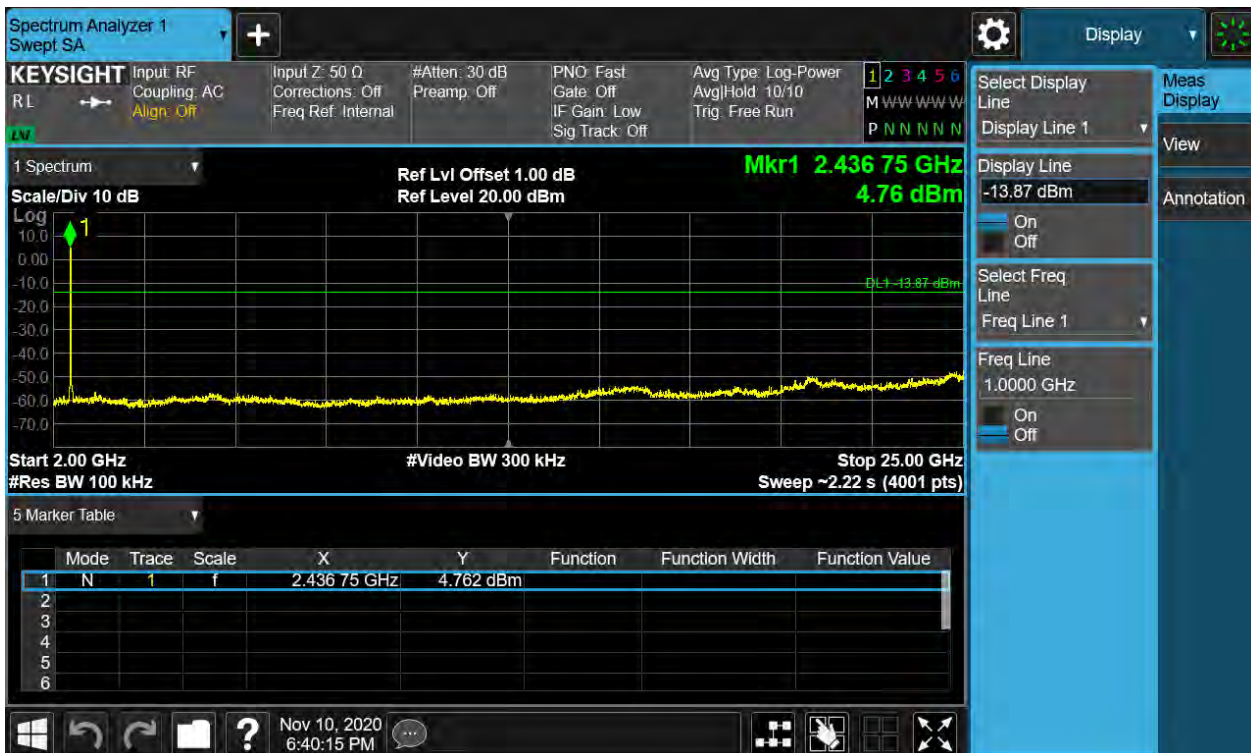
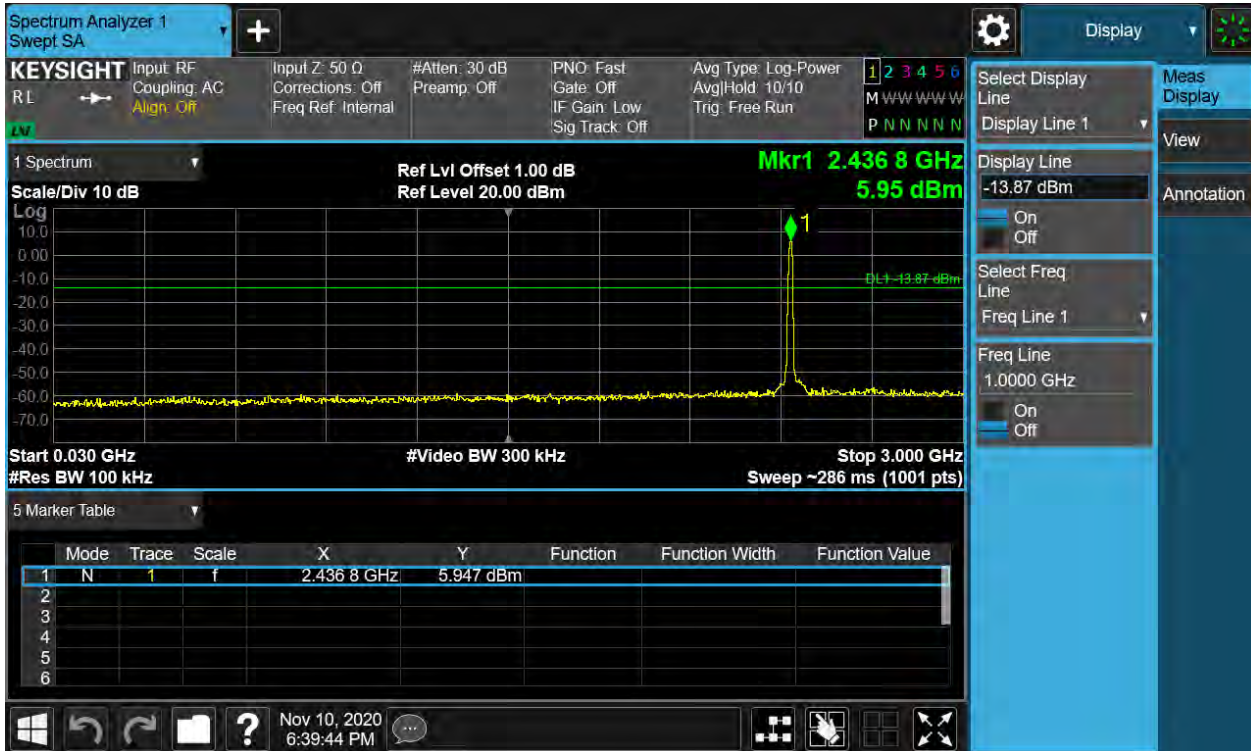
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 26 of 69

Conducted spurious emissions 30MHz-25GHz



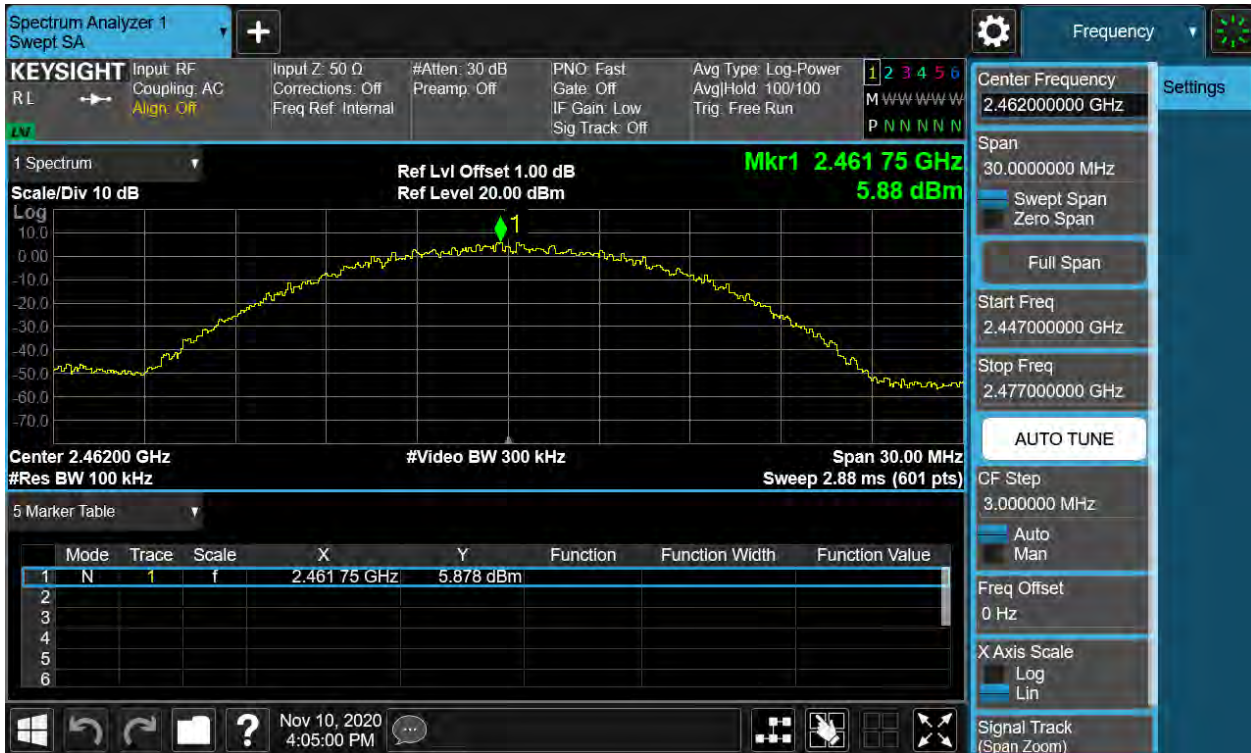
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 27 of 69

Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2462MHz Carrier Level



Band Edge



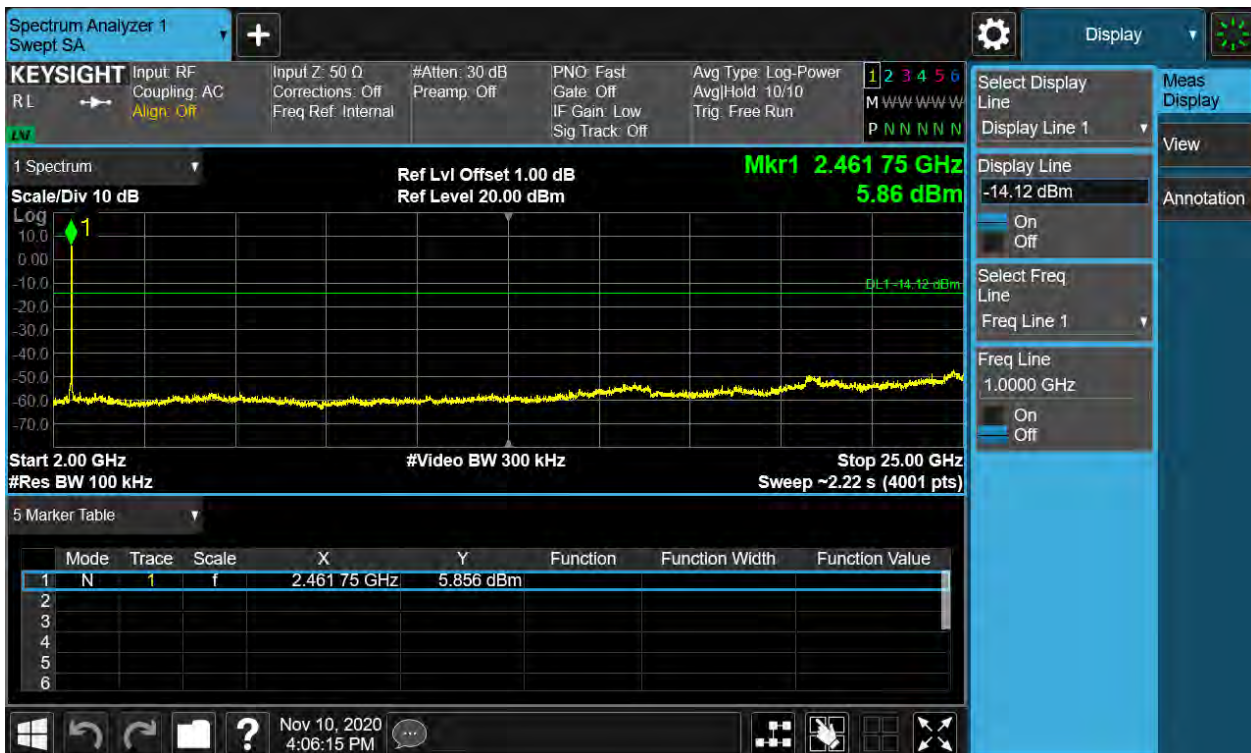
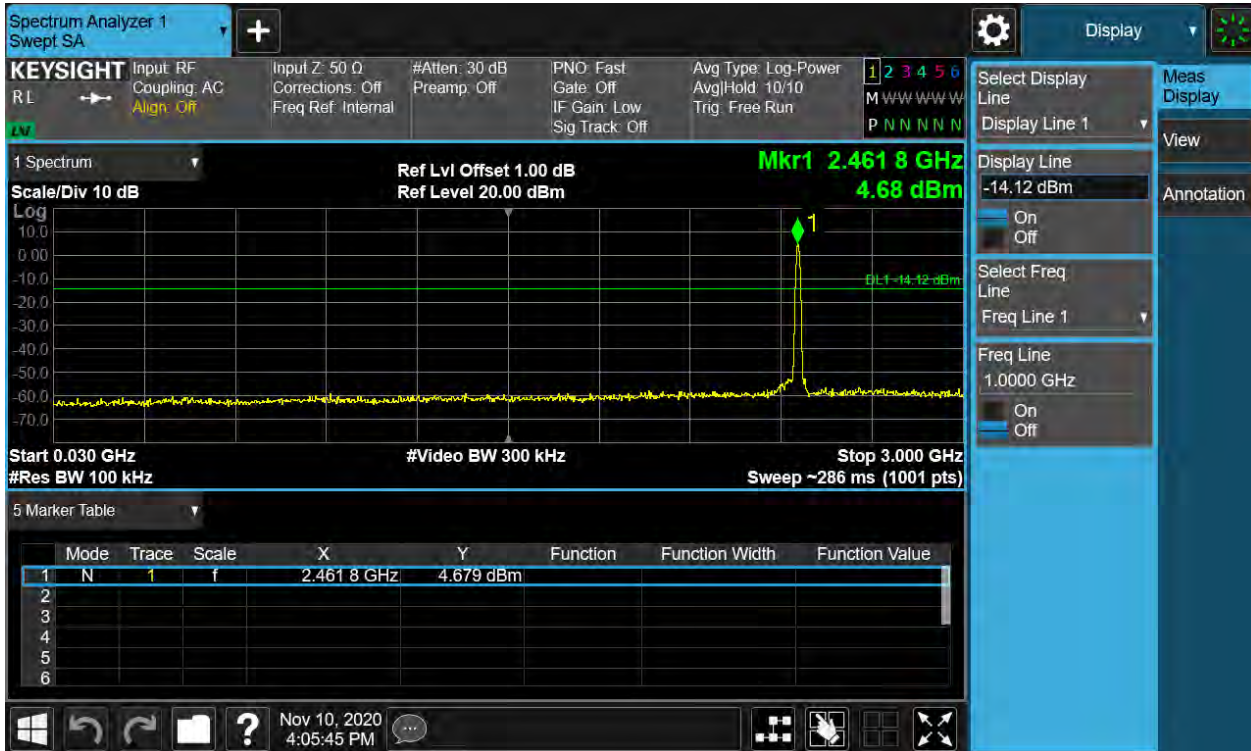
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 28 of 69

Conducted spurious emissions 30MHz-25GHz



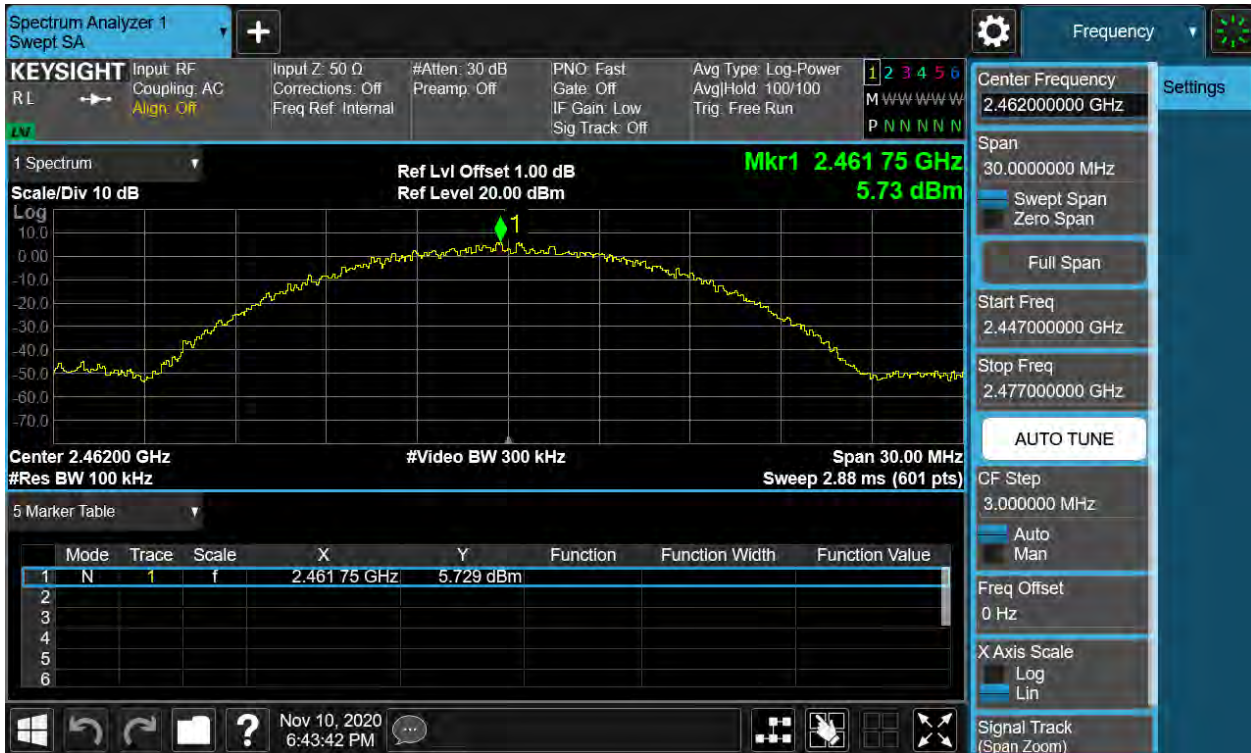
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 29 of 69

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2462MHz Carrier Level



Band Edge



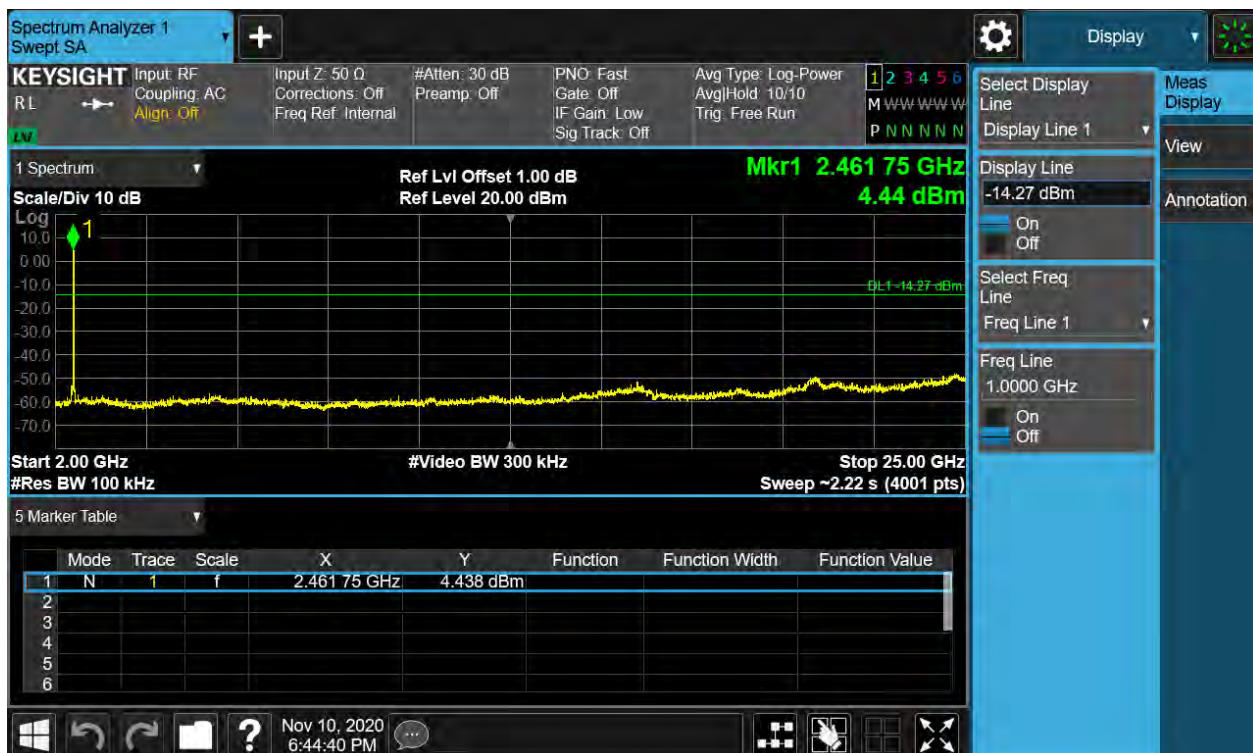
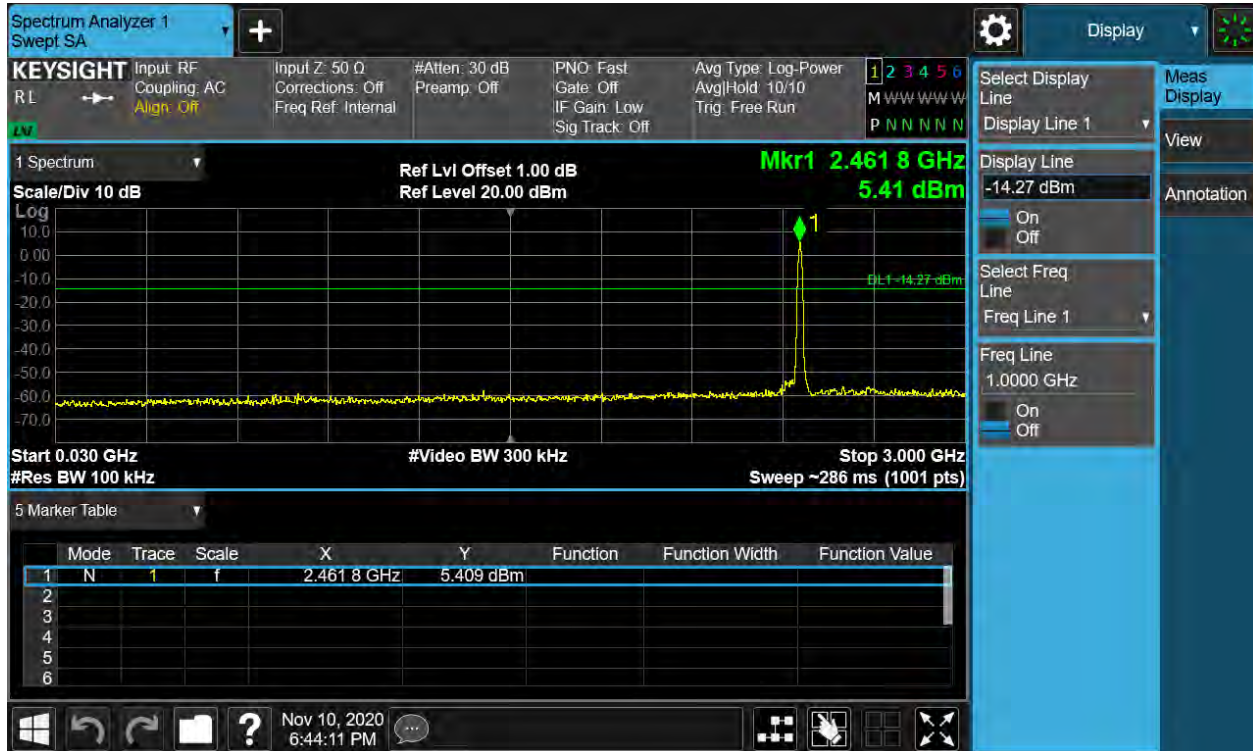
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 30 of 69

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 31 of 69

Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2412MHz Carrier Level



Band Edge



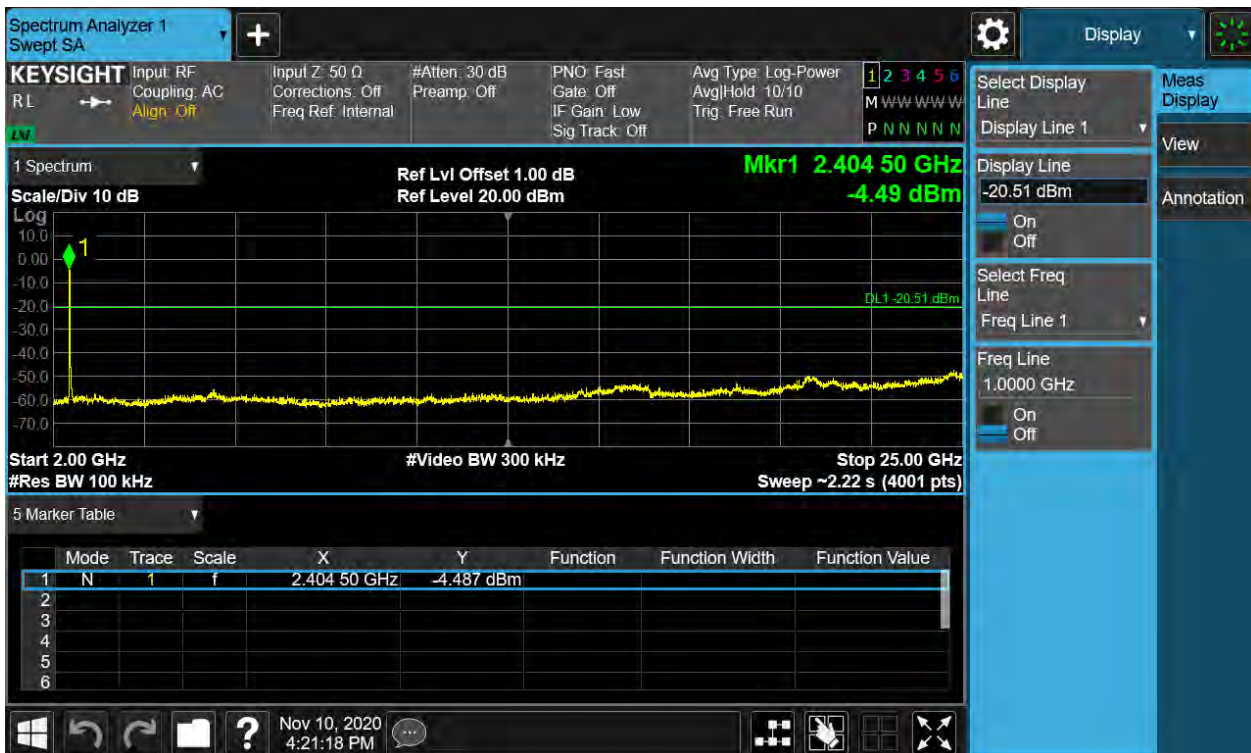
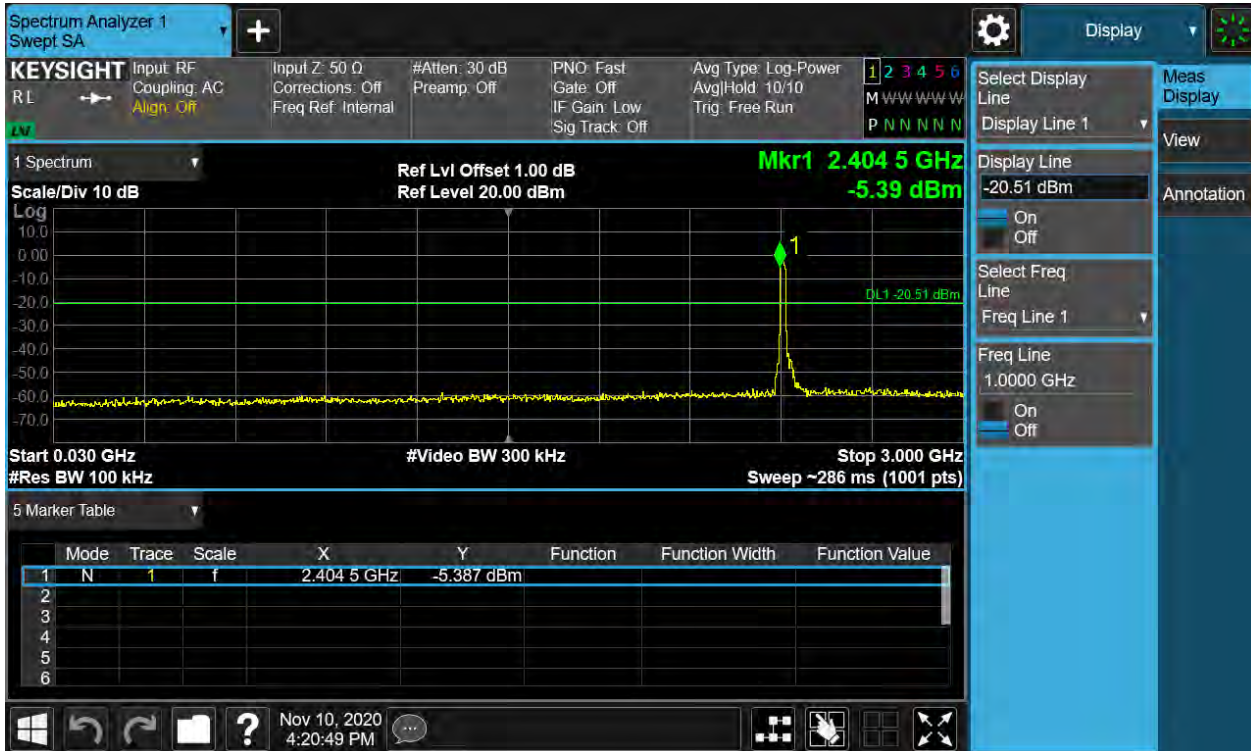
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 32 of 69

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 33 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

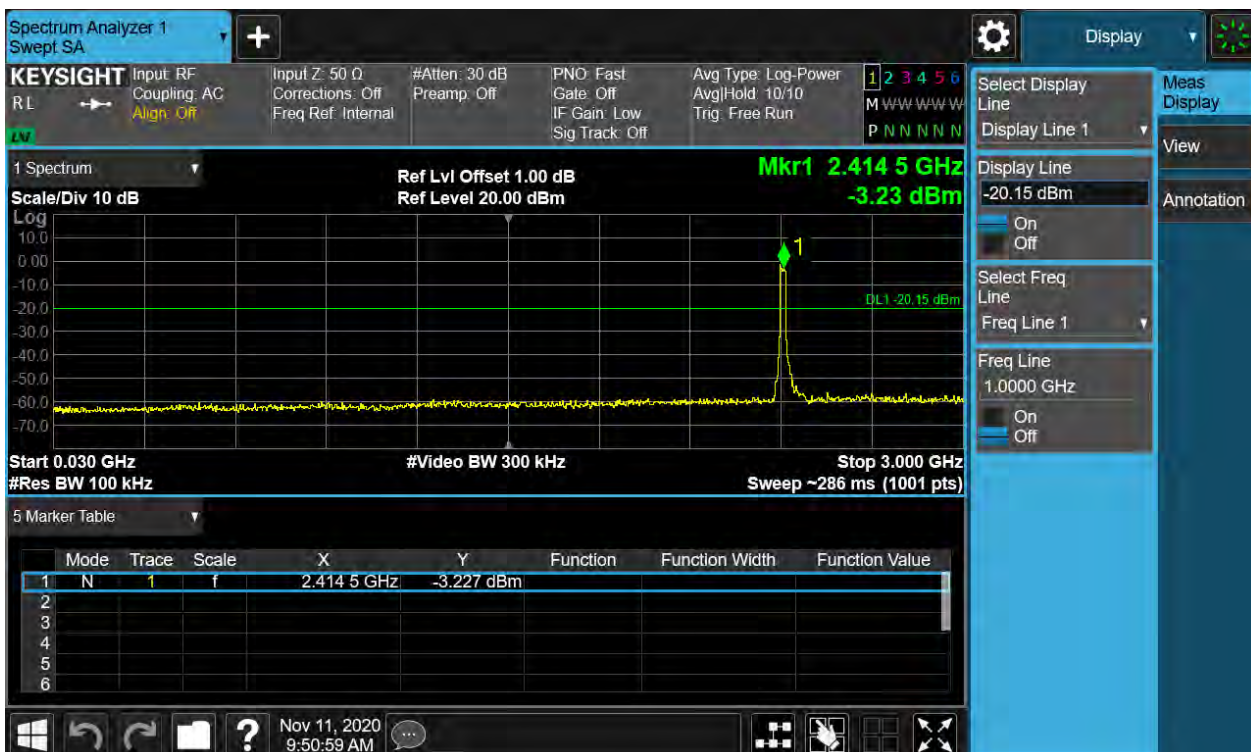
Date: 2020-12-04

Page 34 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 35 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2437MHz Carrier Level



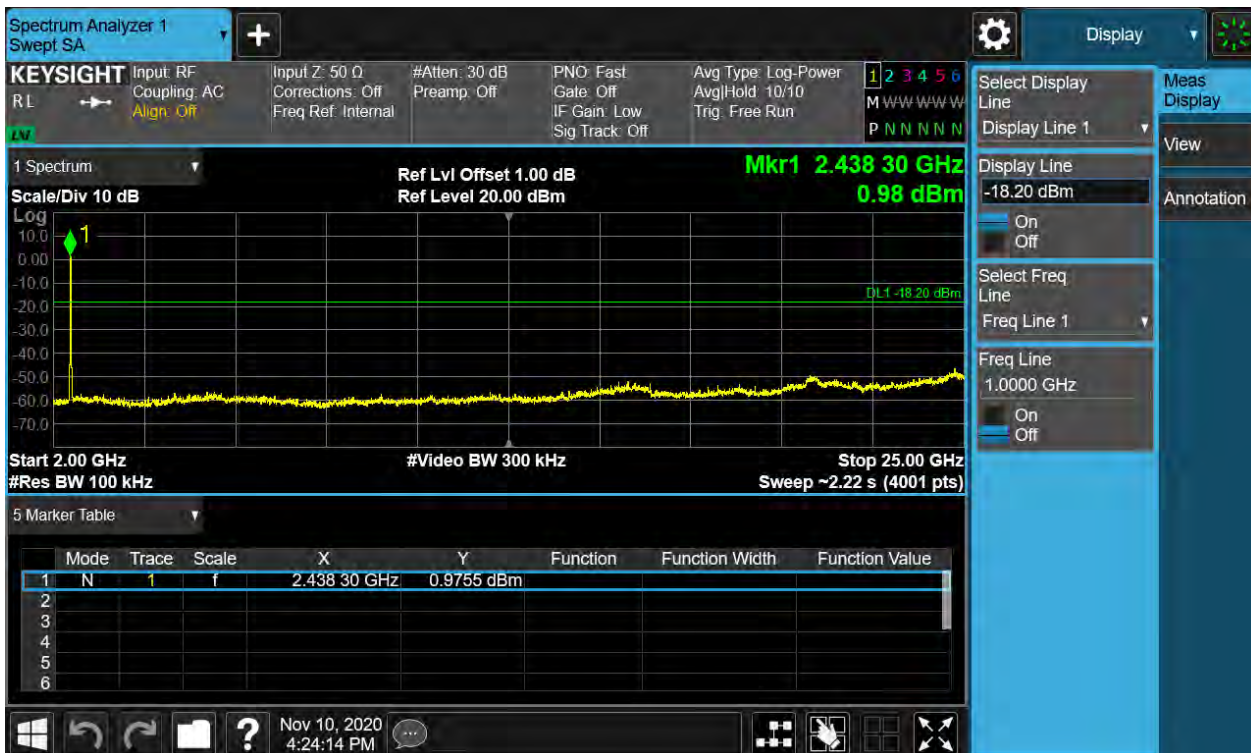
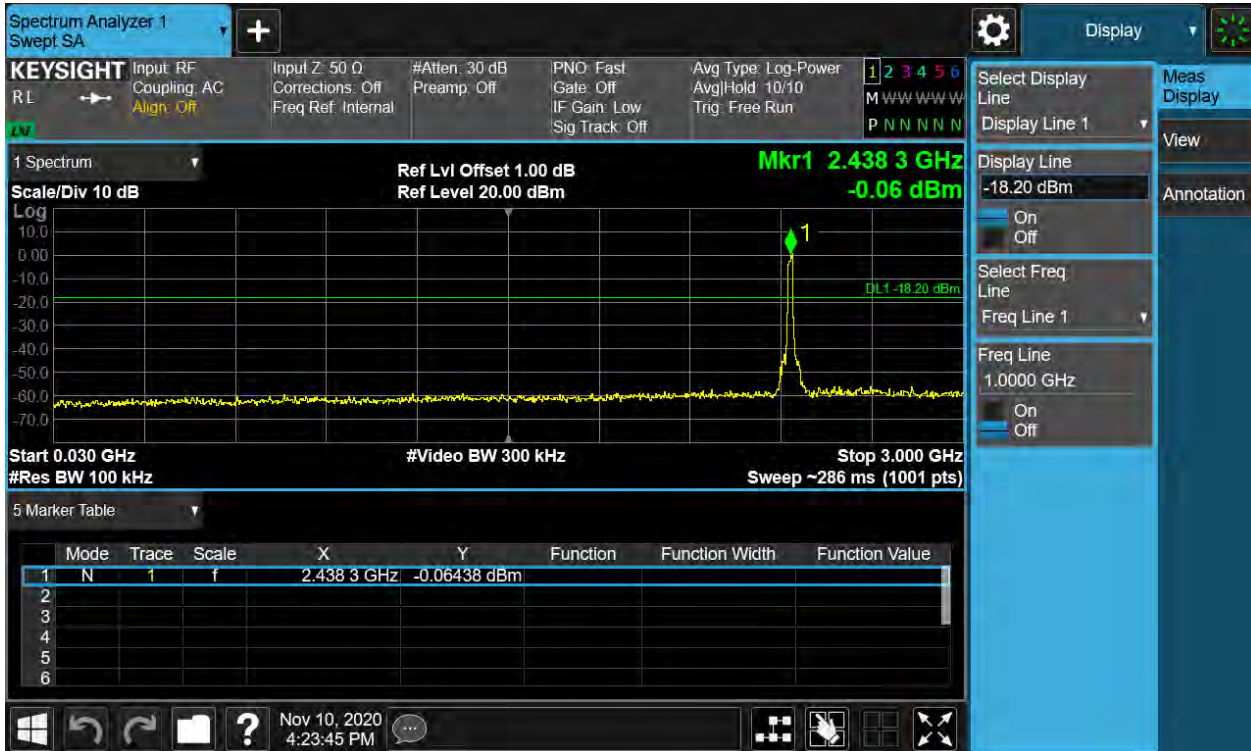
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 36 of 69

Conducted spurious emissions 30MHz-25GHz



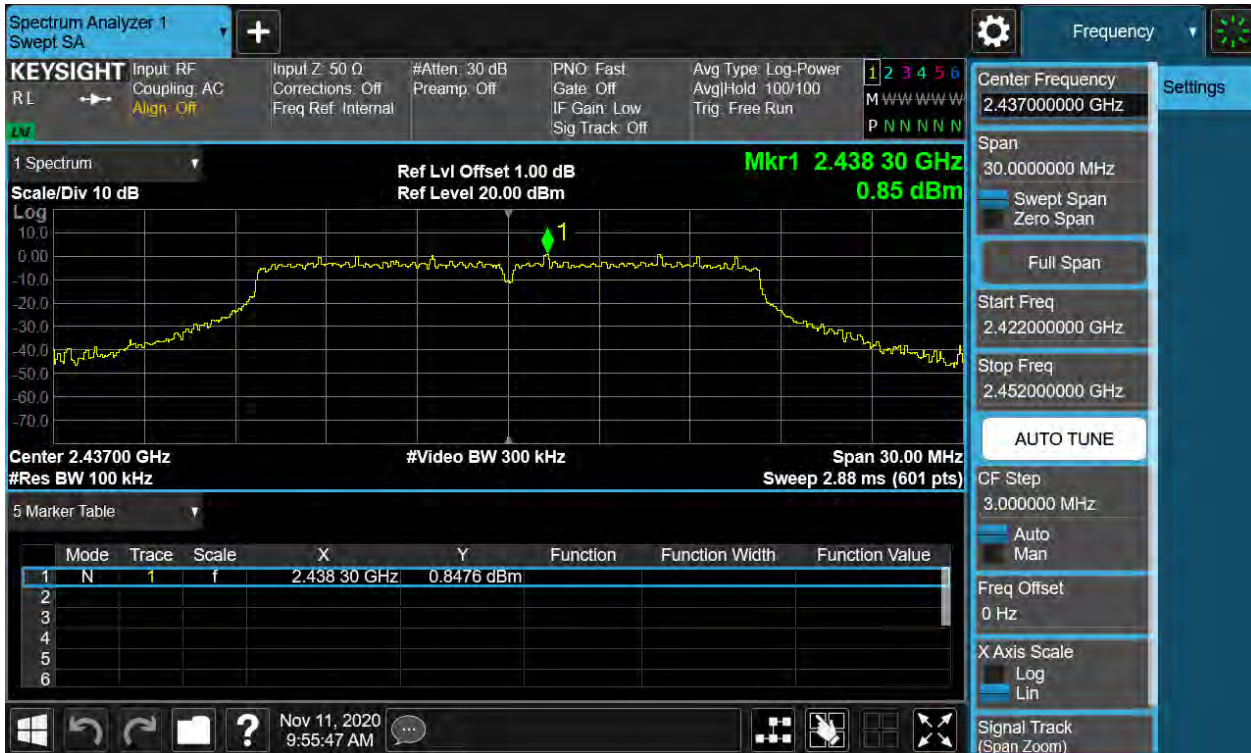
TEST REPORT

Report No.: SHE20100021-02CE

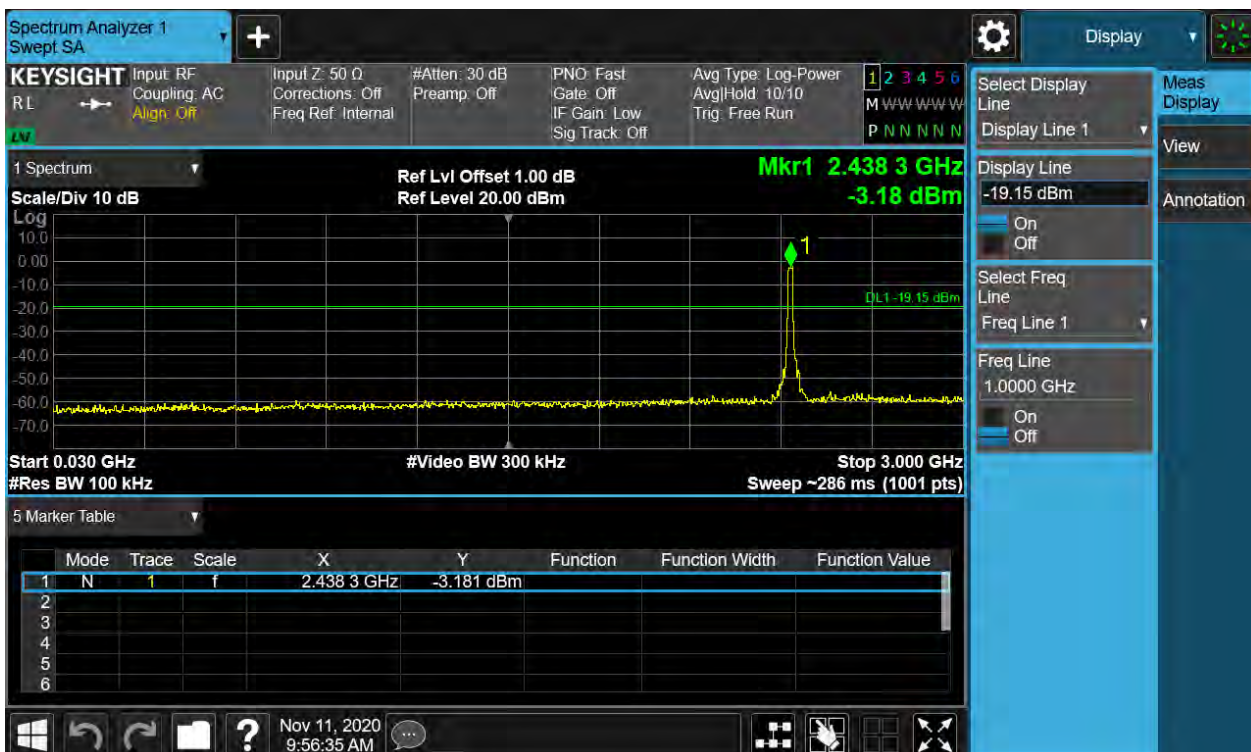
Date: 2020-12-04

Page 37 of 69

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 38 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2462MHz Carrier Level



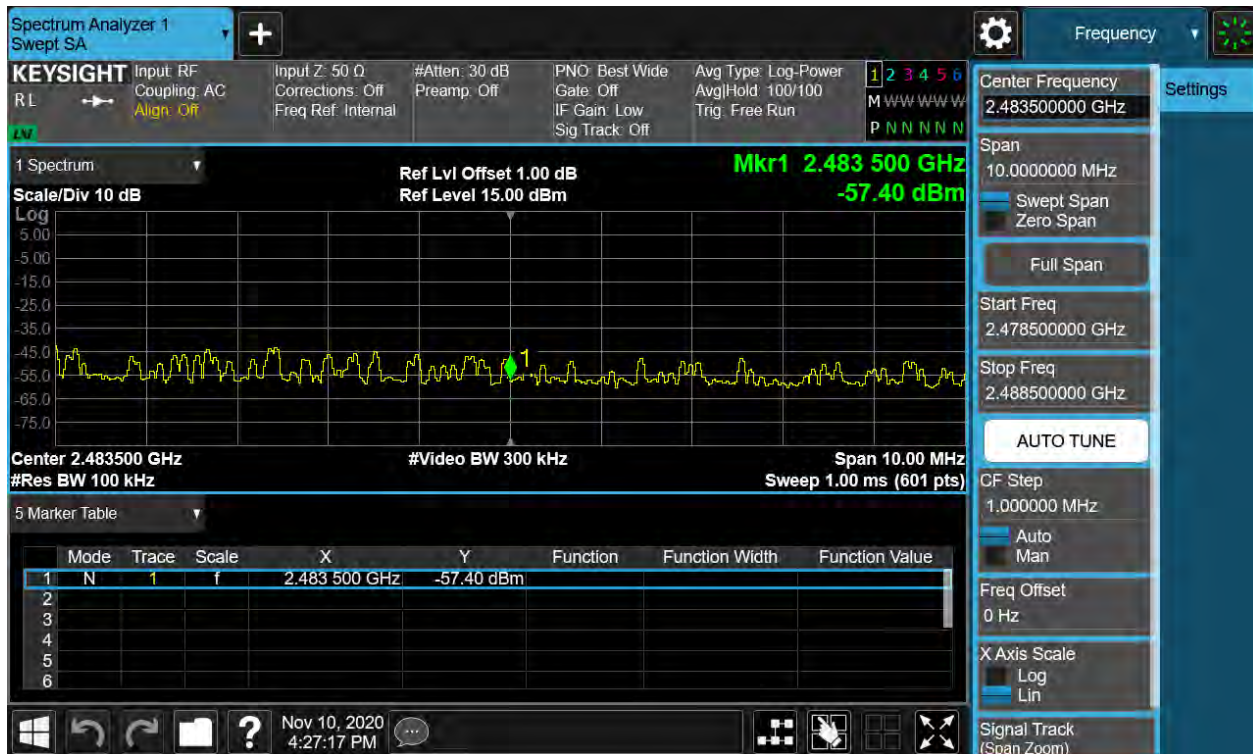
TEST REPORT

Report No.: SHE20100021-02CE

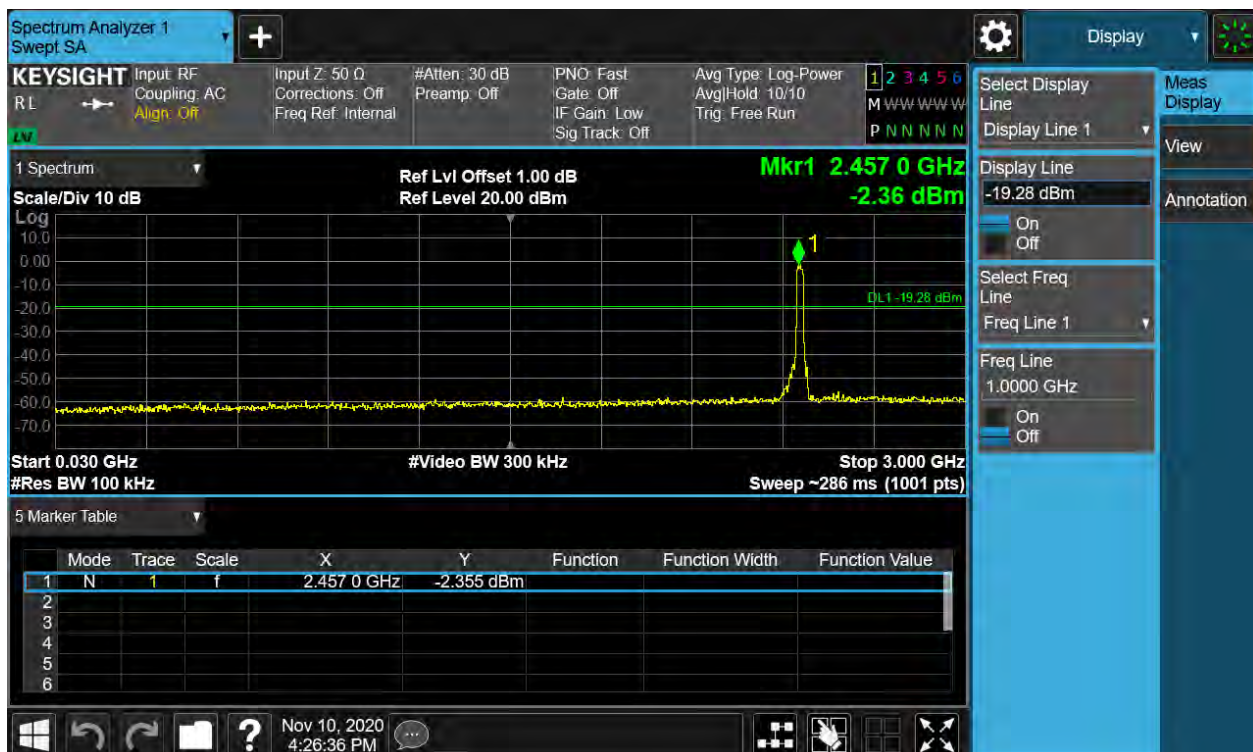
Date: 2020-12-04

Page 39 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 40 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2462MHz Carrier Level



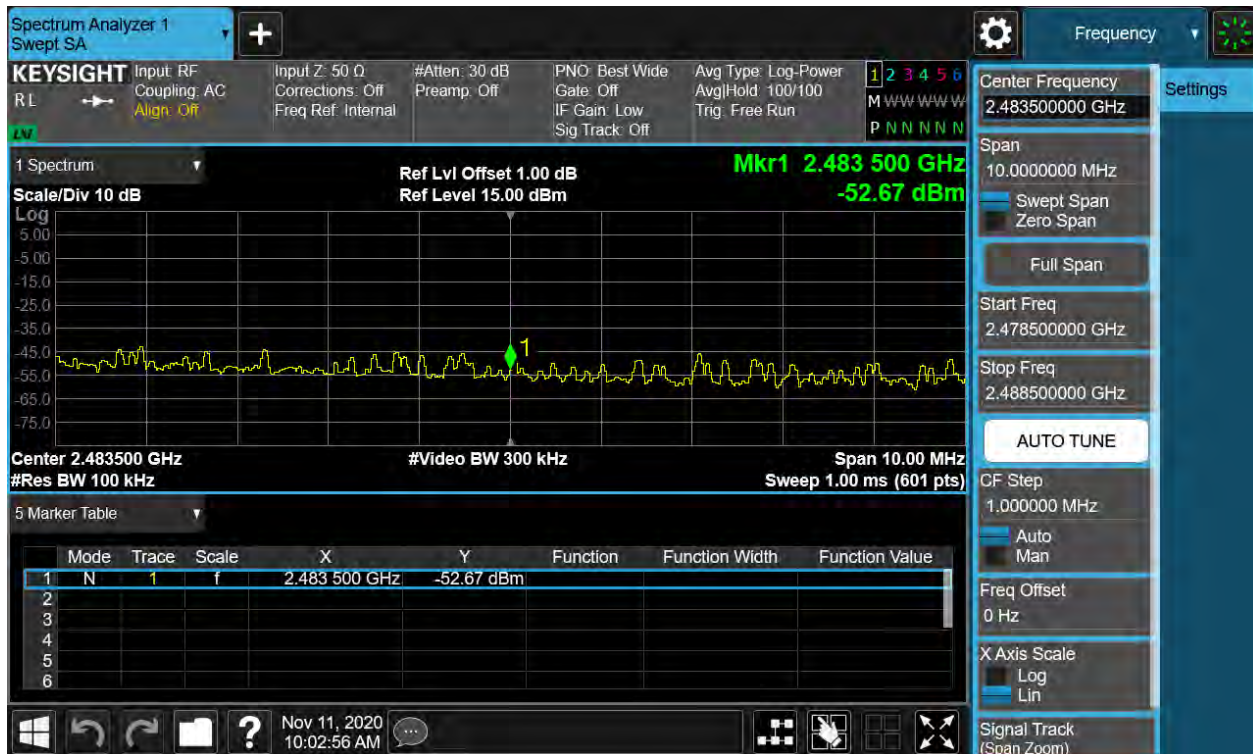
TEST REPORT

Report No.: SHE20100021-02CE

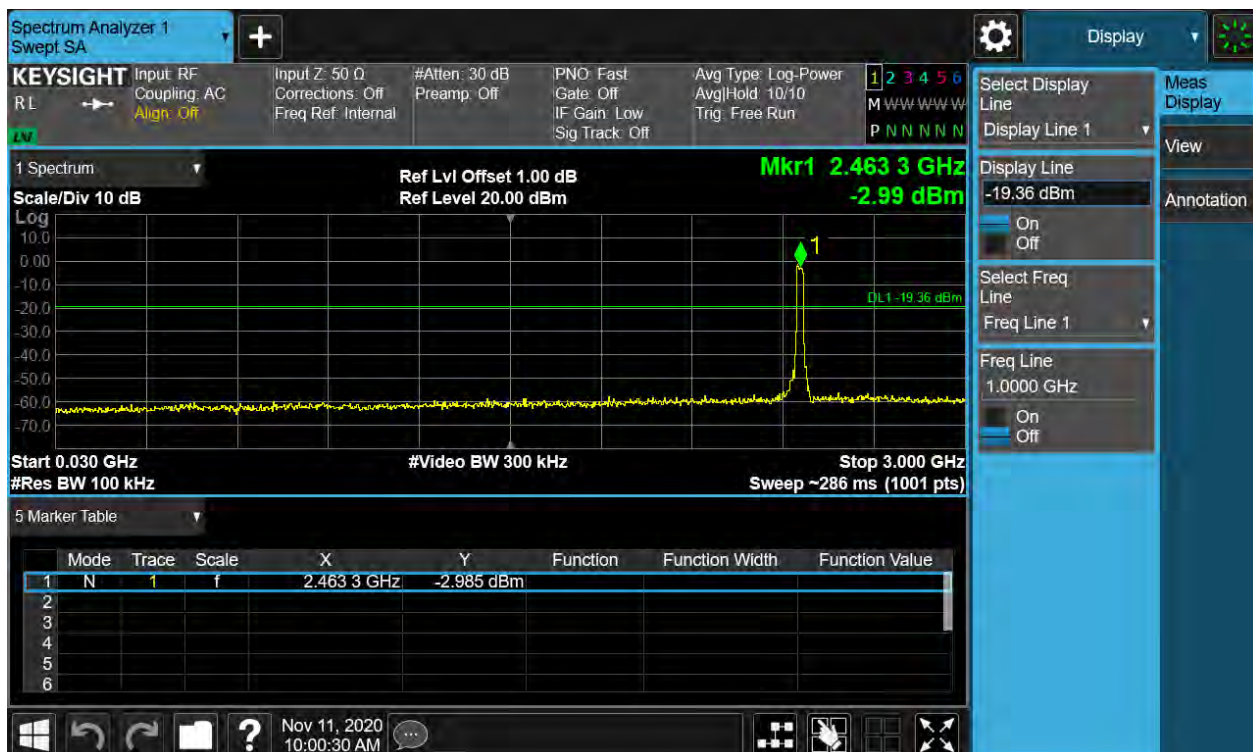
Date: 2020-12-04

Page 41 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 42 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

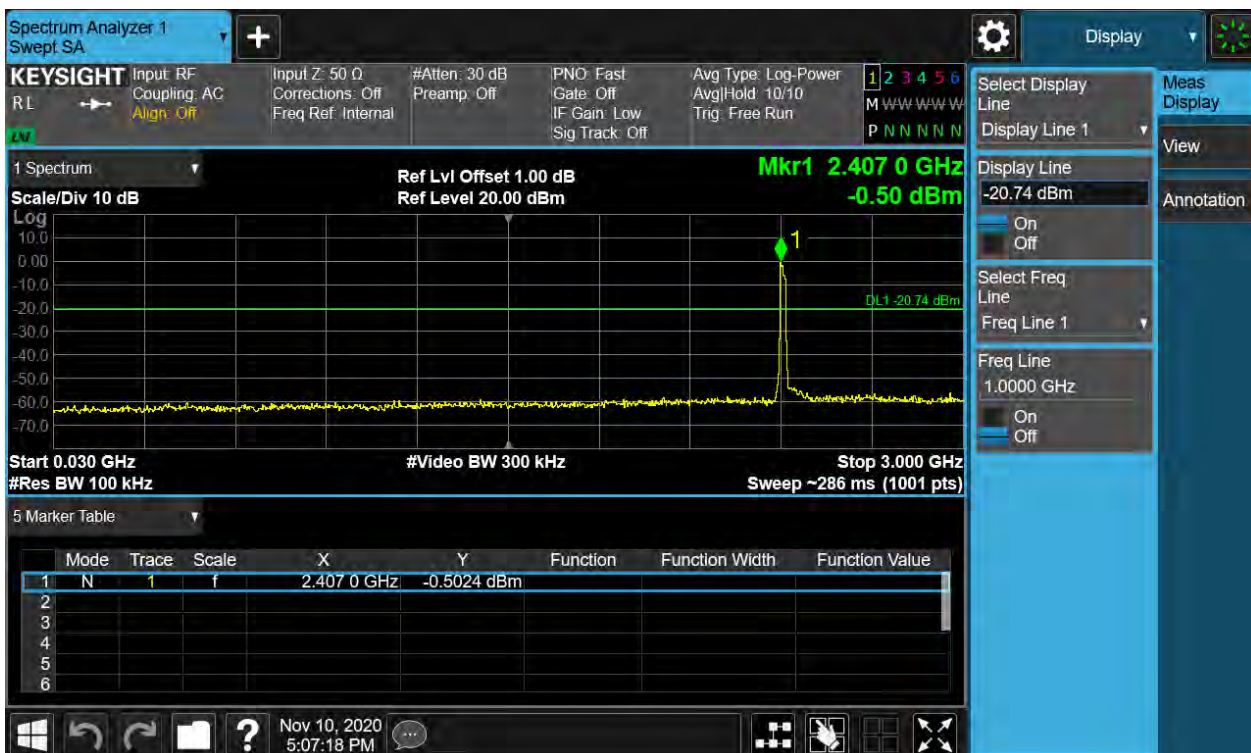
Date: 2020-12-04

Page 43 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 44 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

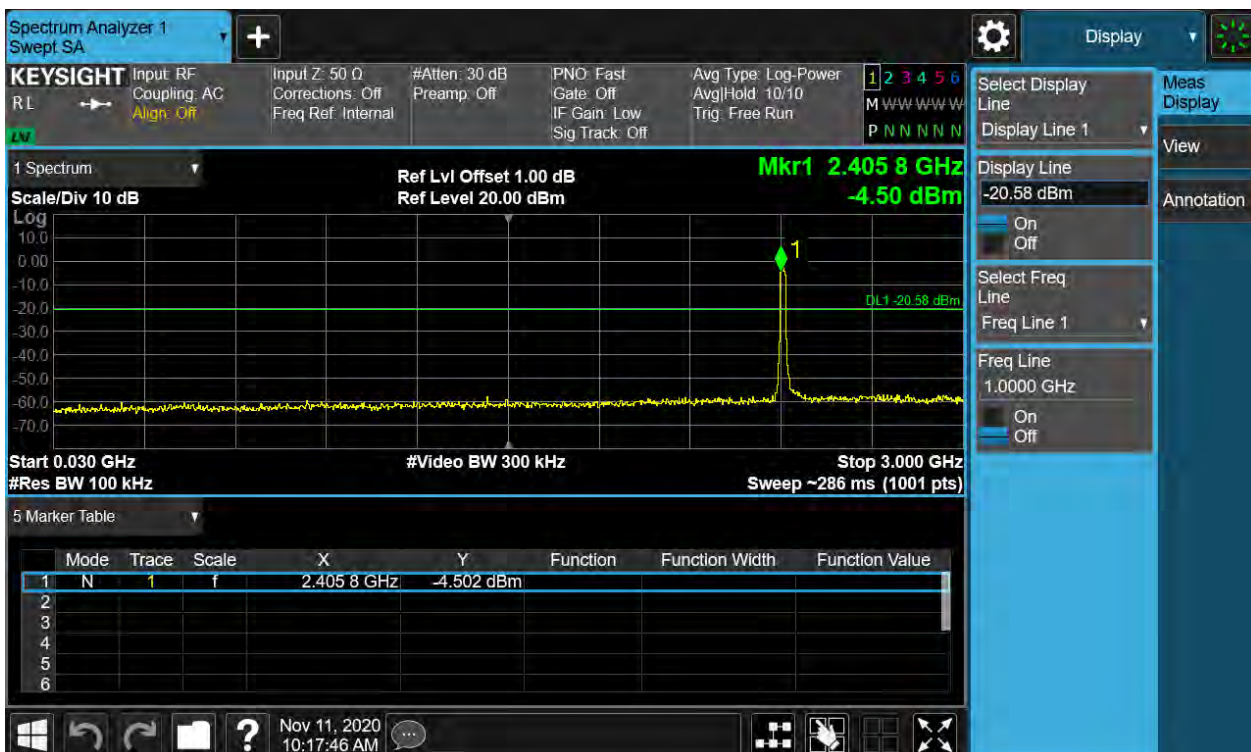
Date: 2020-12-04

Page 45 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 46 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2437MHz Carrier Level



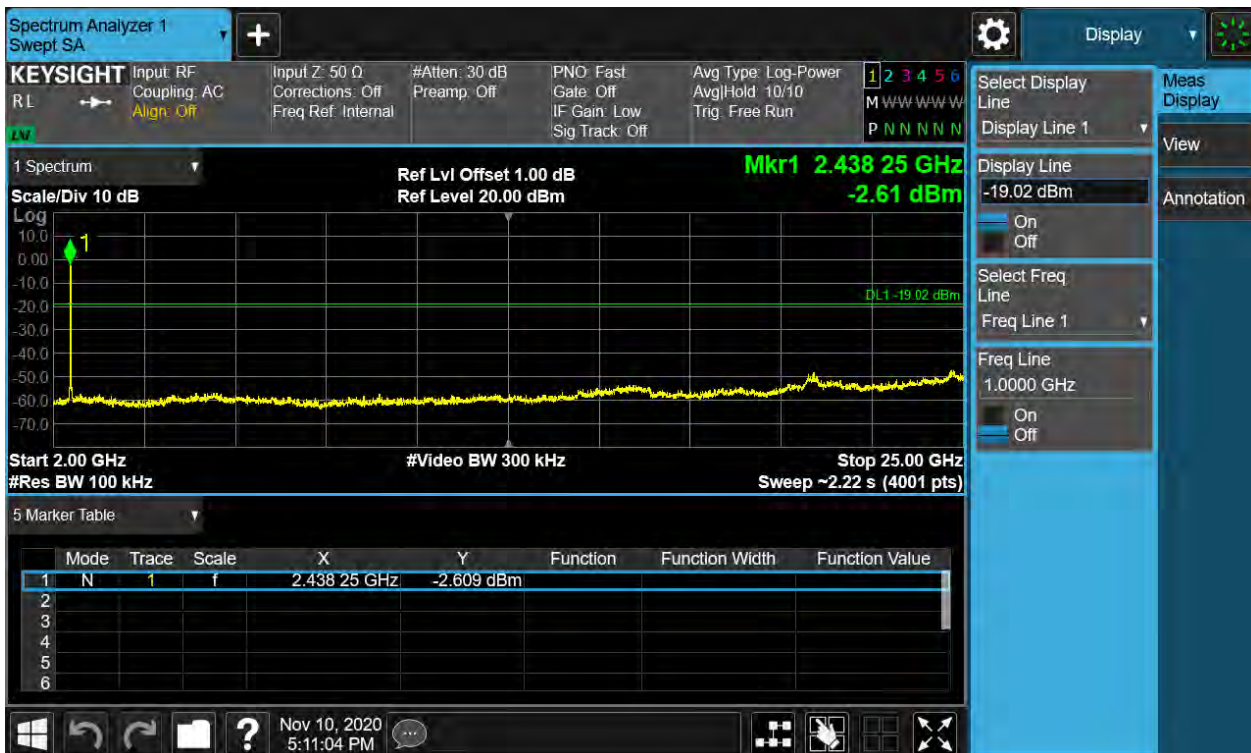
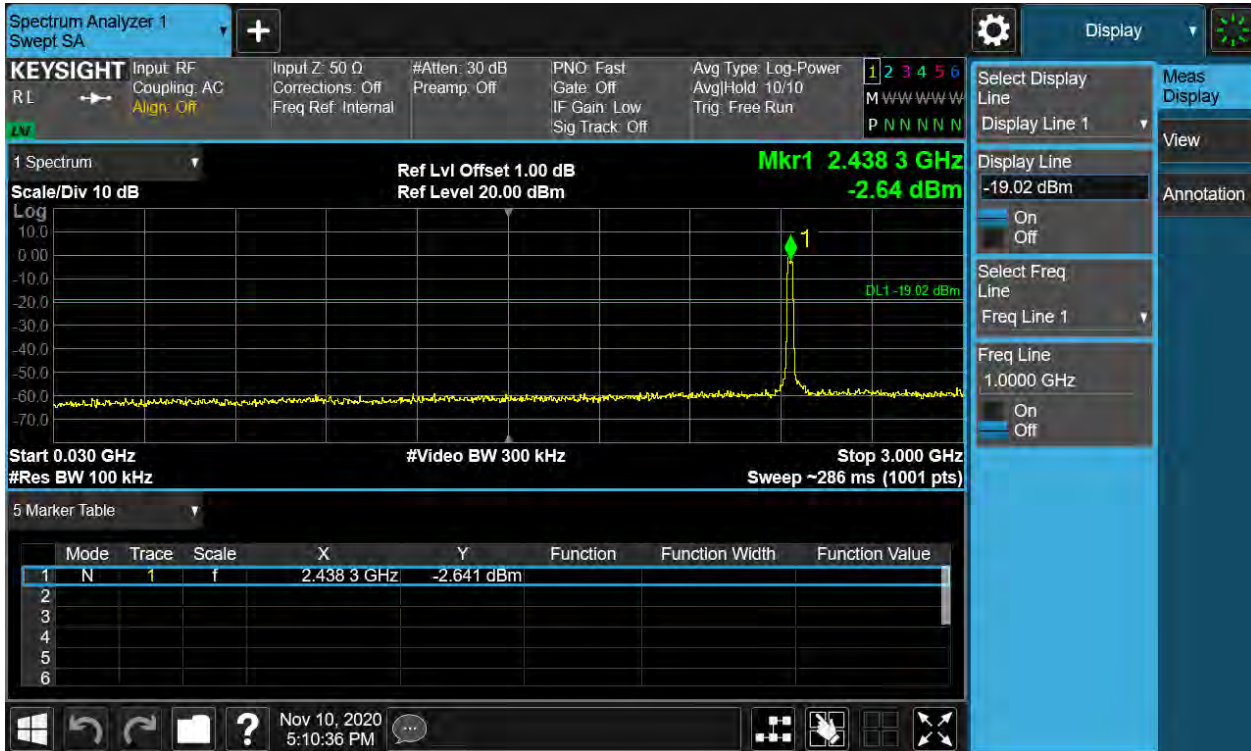
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 47 of 69

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

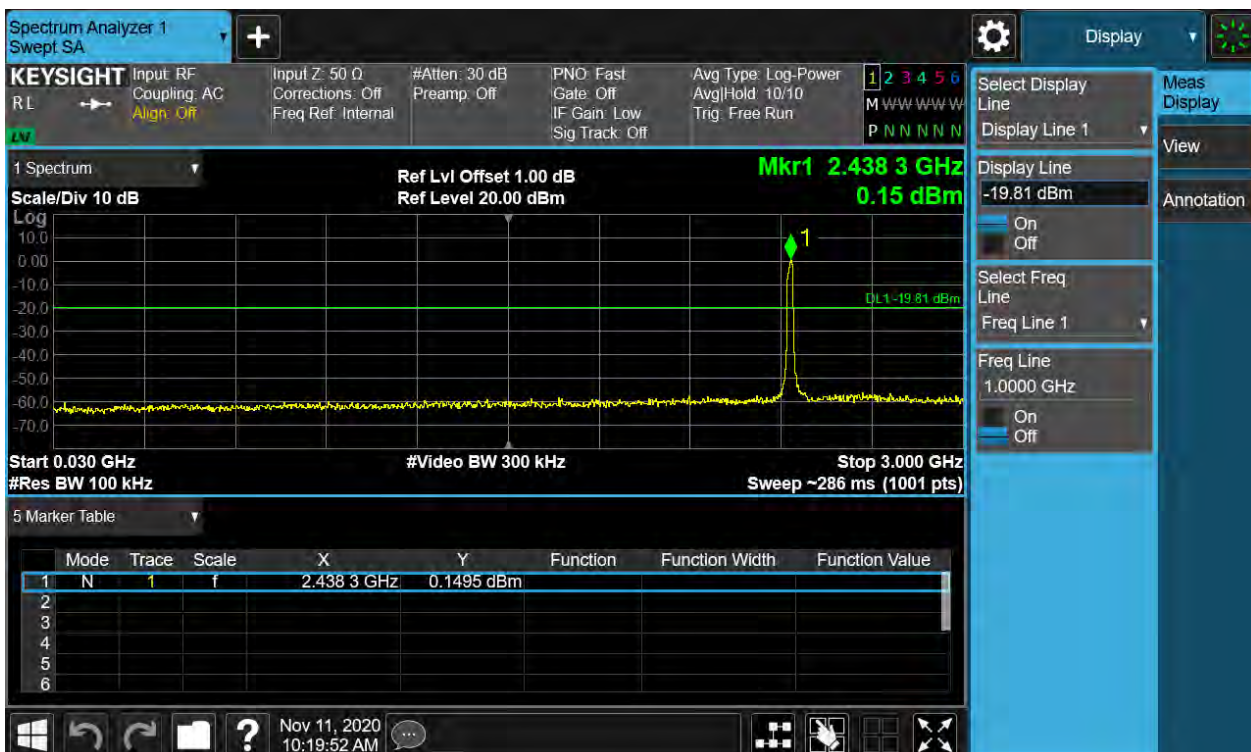
Date: 2020-12-04

Page 48 of 69

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 49 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

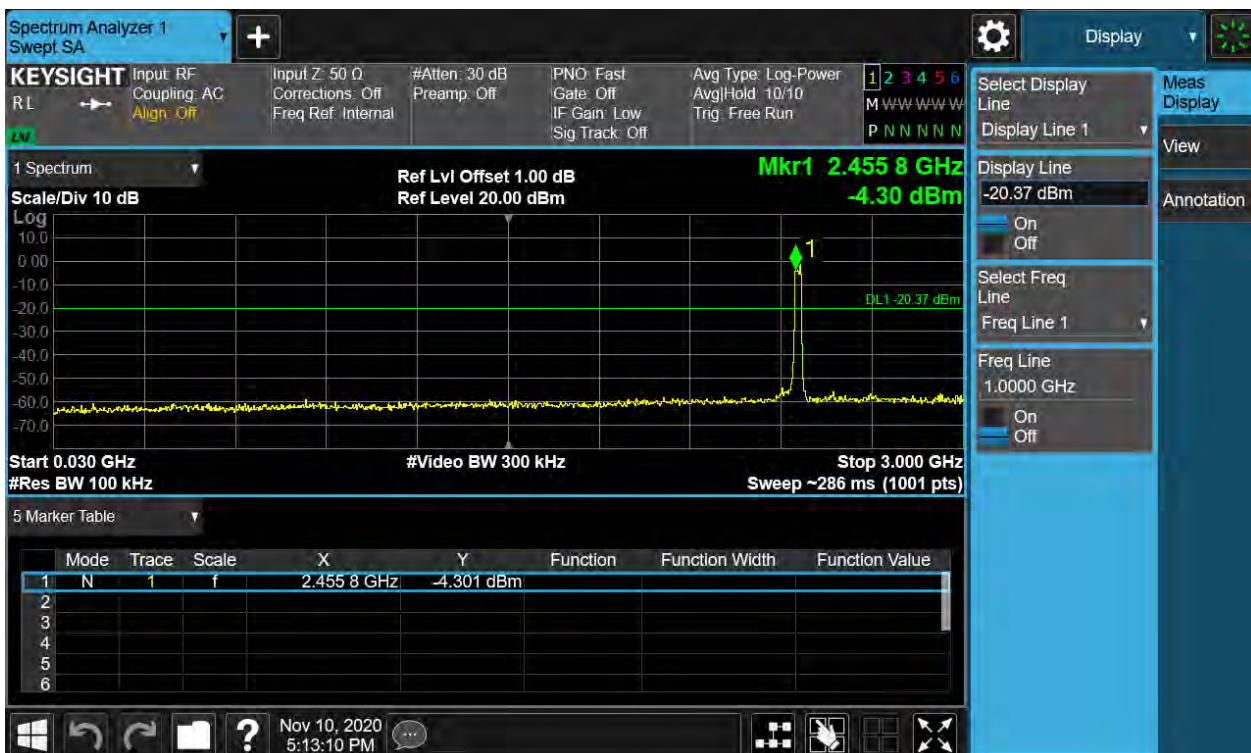
Date: 2020-12-04

Page 50 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 51 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2462MHz Carrier Level



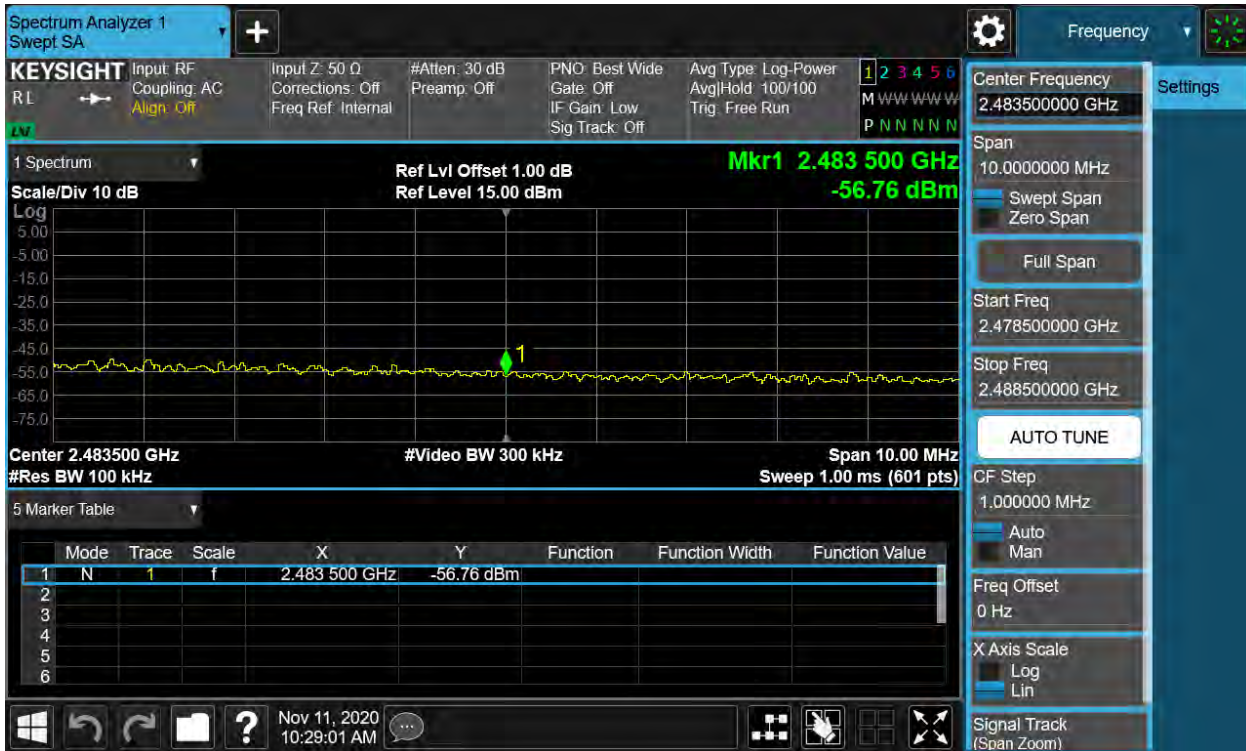
TEST REPORT

Report No.: SHE20100021-02CE

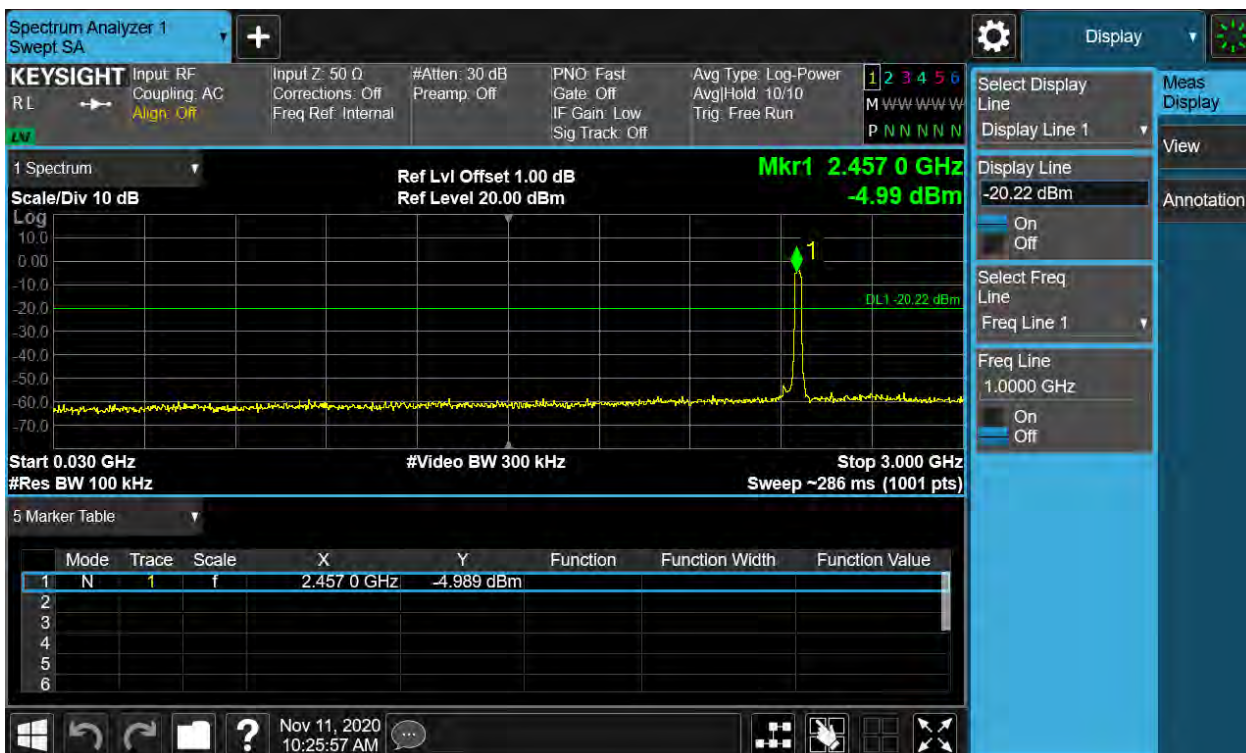
Date: 2020-12-04

Page 52 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

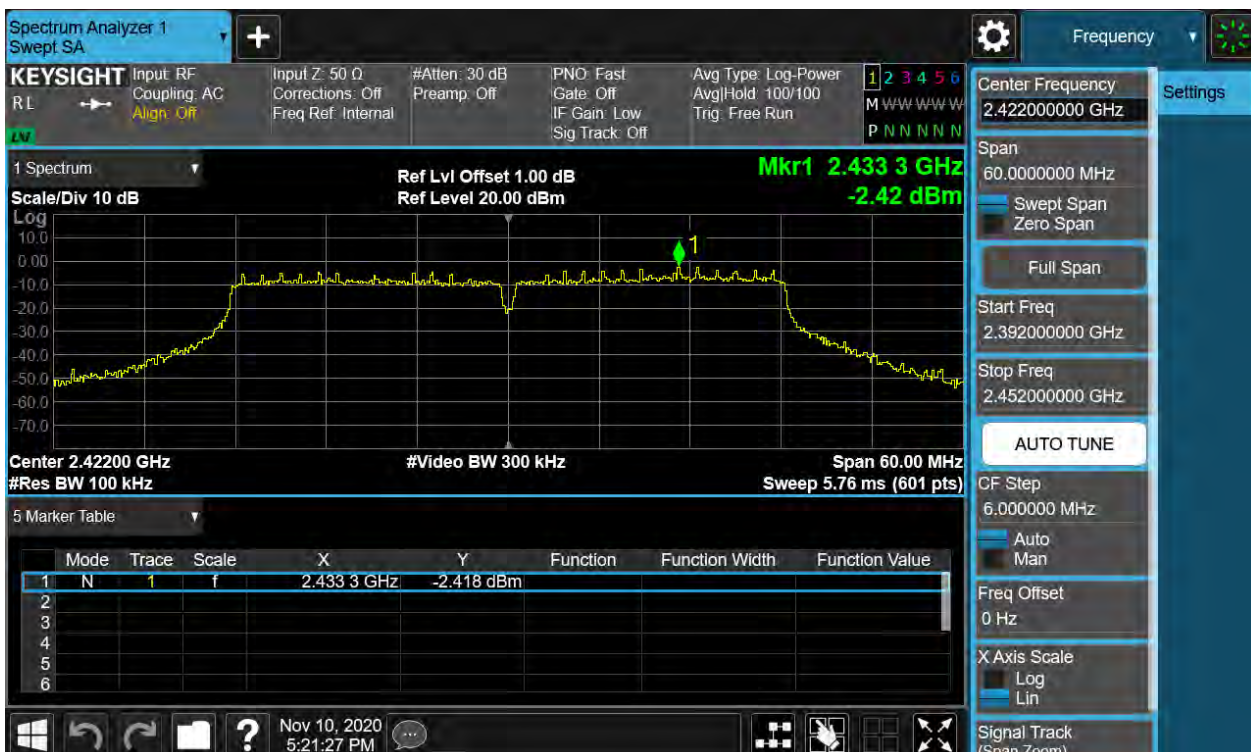
Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 53 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2422MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

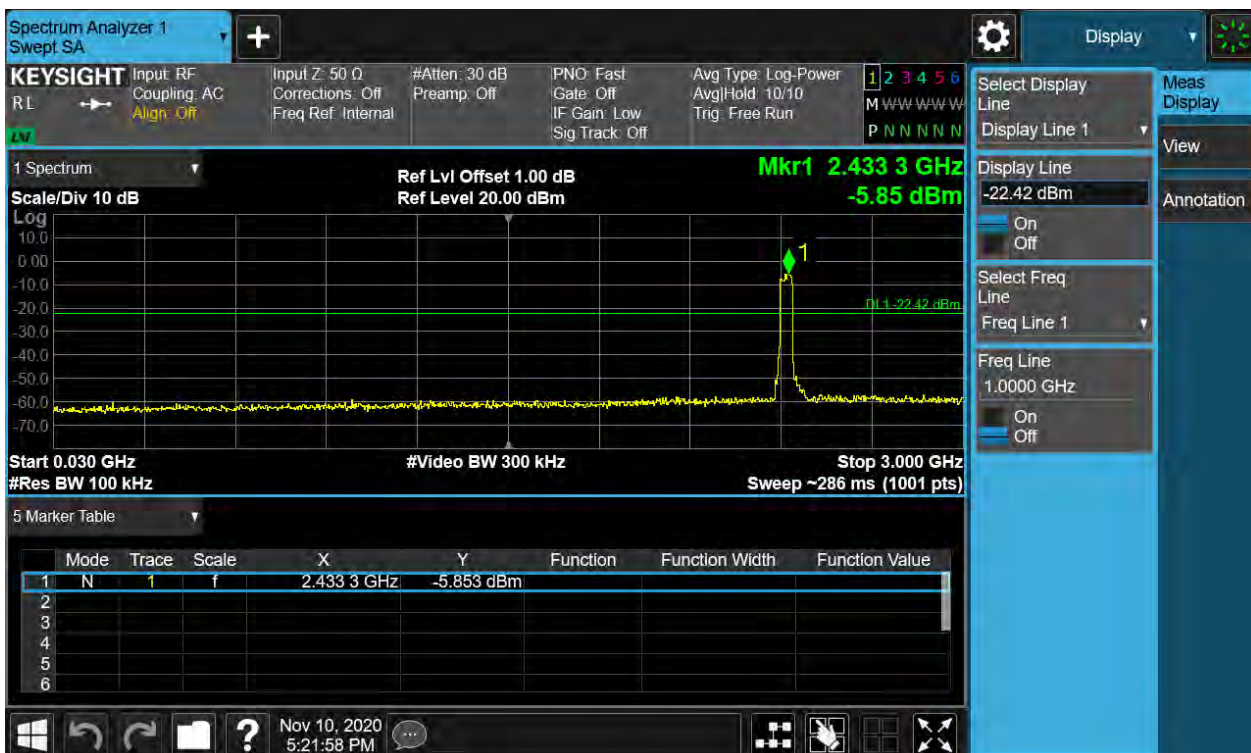
Date: 2020-12-04

Page 54 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 55 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2422MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

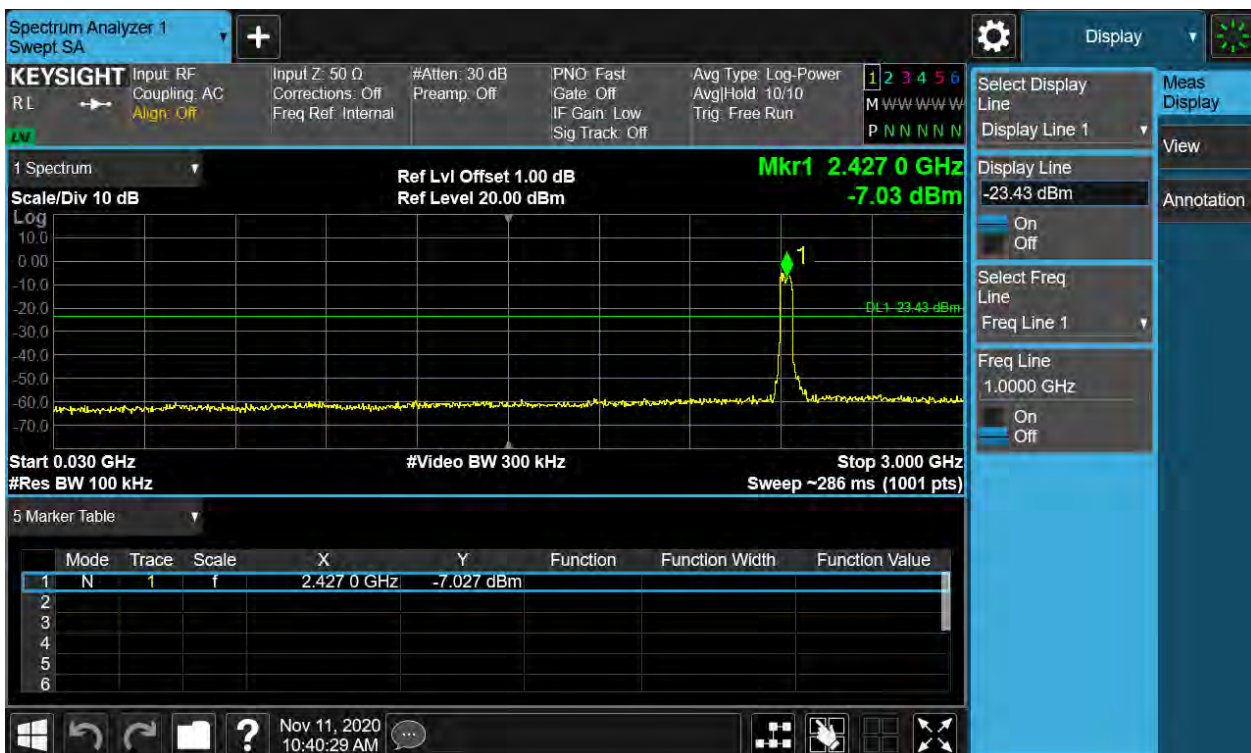
Date: 2020-12-04

Page 56 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

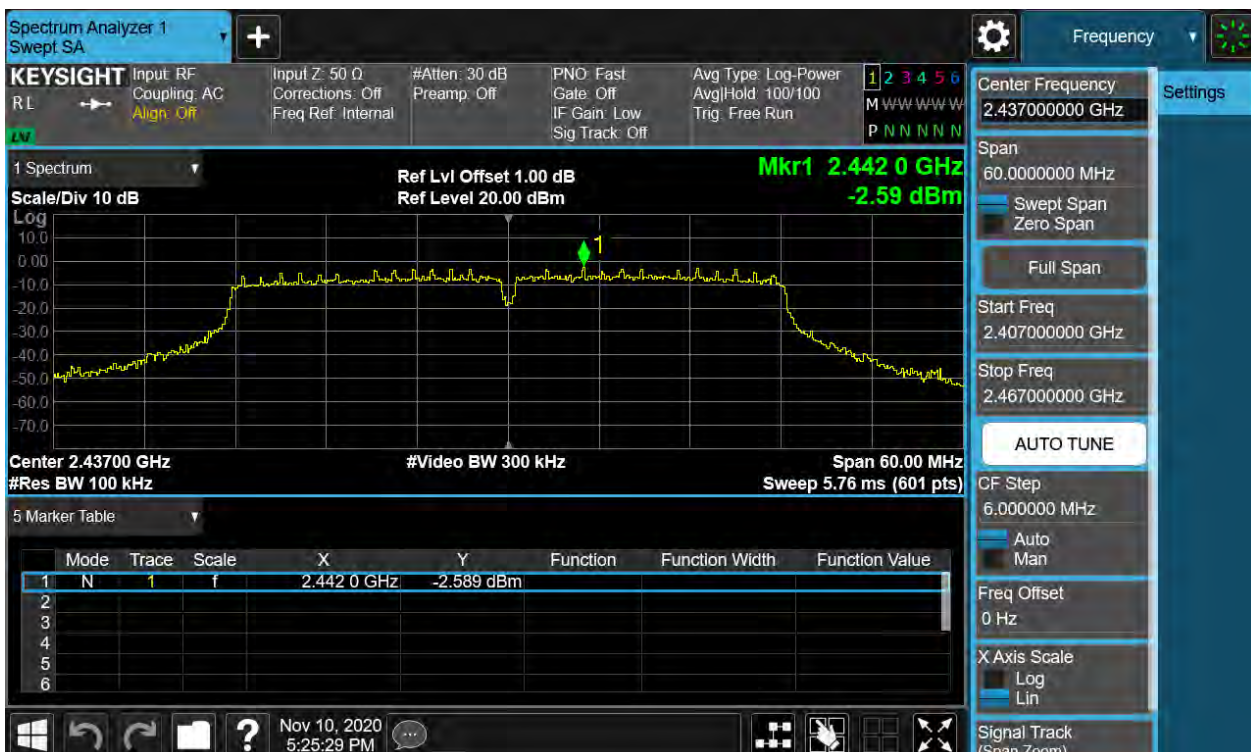
Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 57 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2437MHz Carrier Level



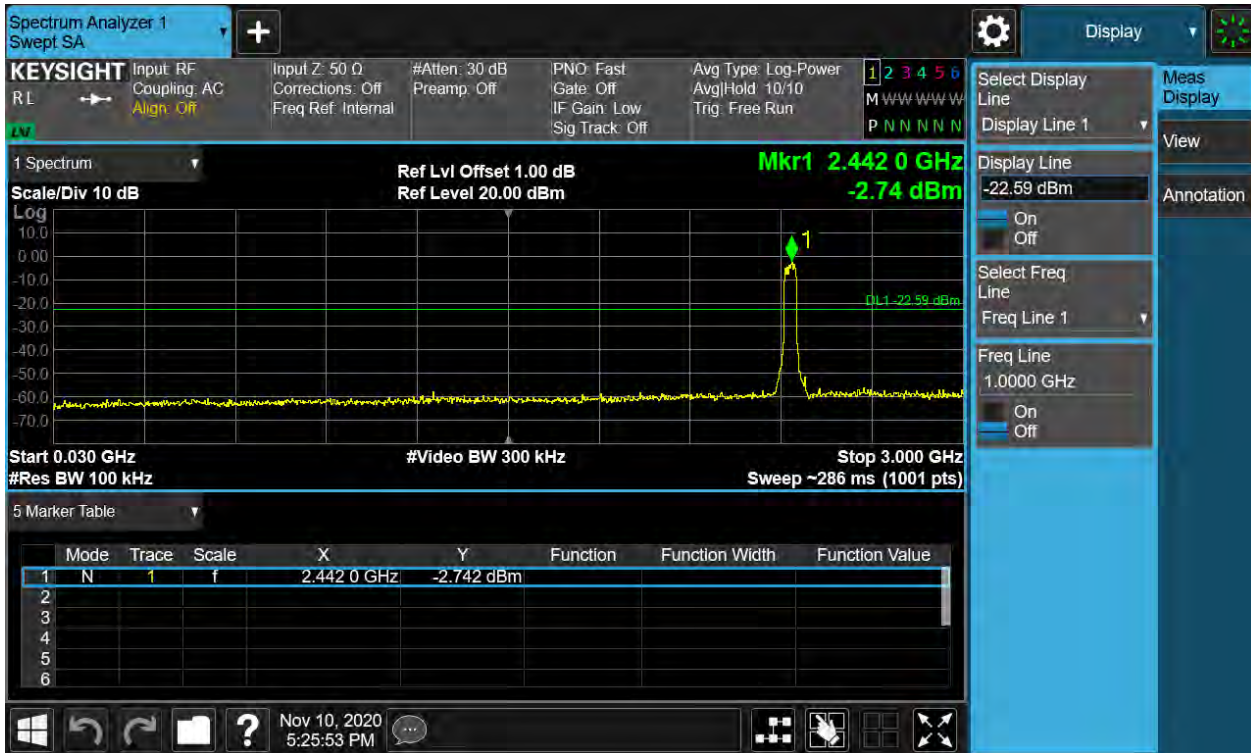
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 58 of 69

Conducted spurious emissions 30MHz-25GHz



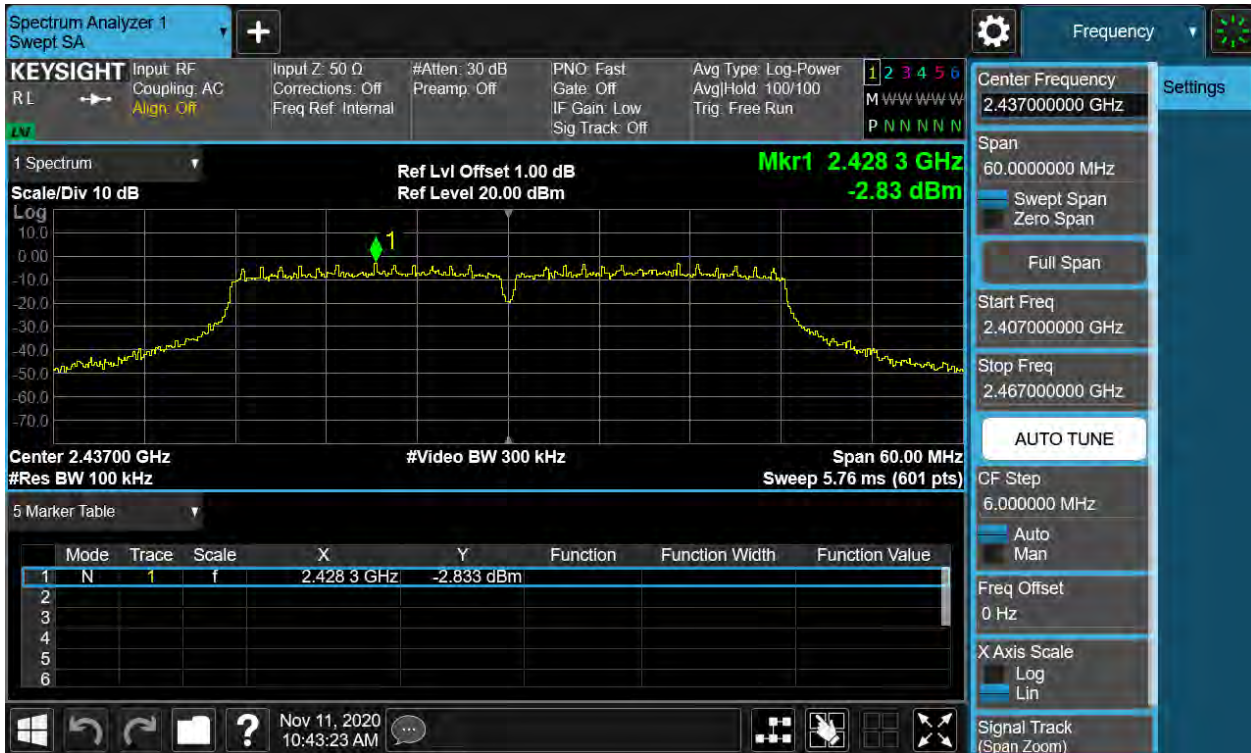
TEST REPORT

Report No.: SHE20100021-02CE

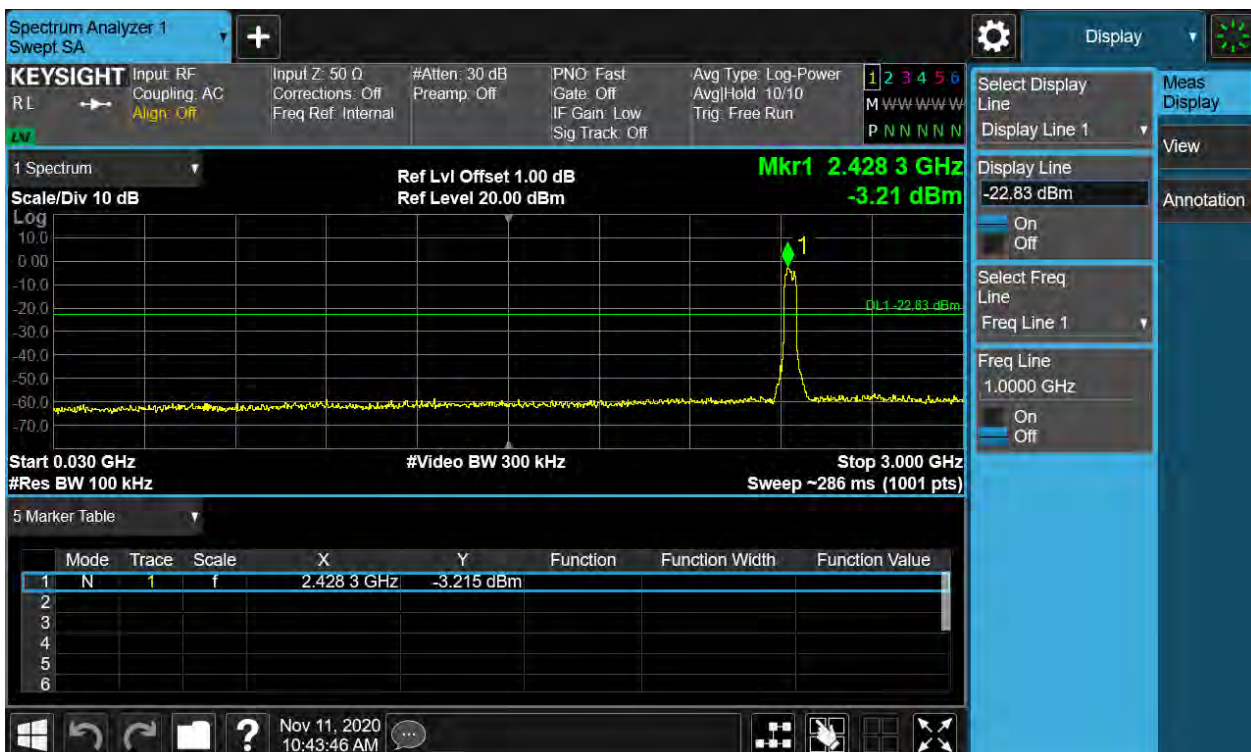
Date: 2020-12-04

Page 59 of 69

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

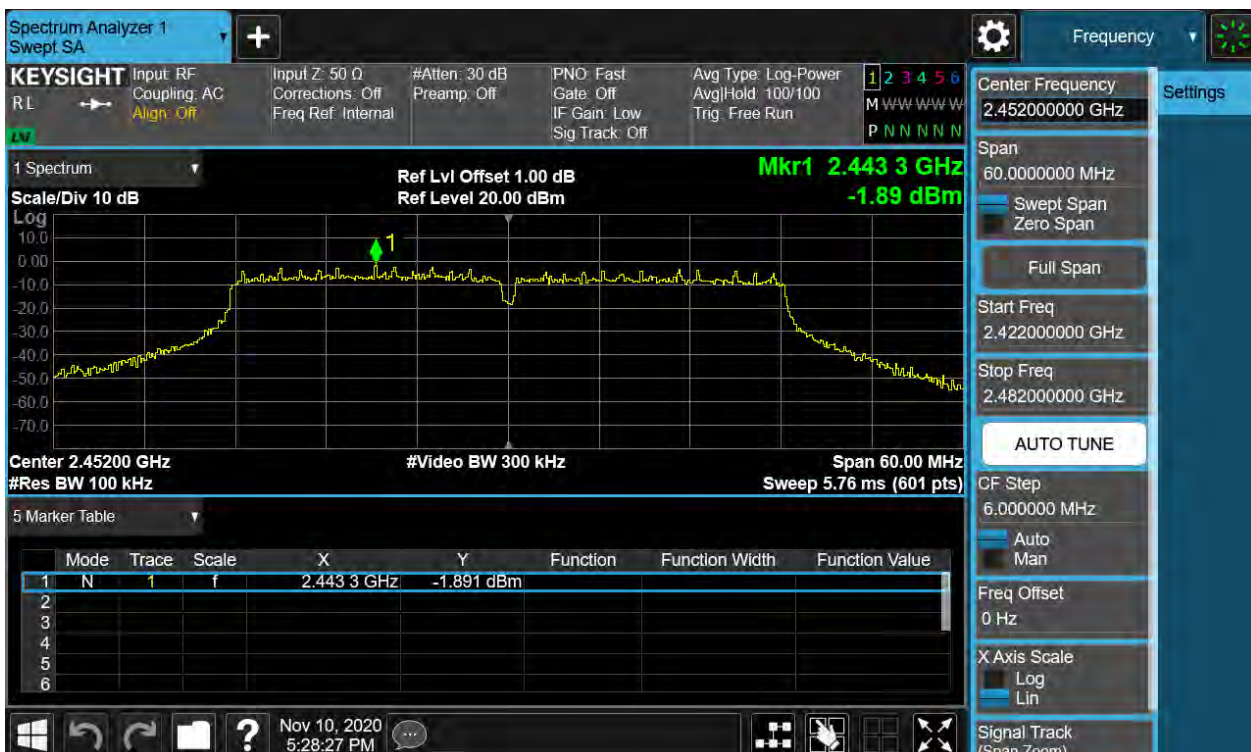
Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 60 of 69



Chain 0 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2452MHz Carrier Level



TEST REPORT

Report No.: SHE20100021-02CE

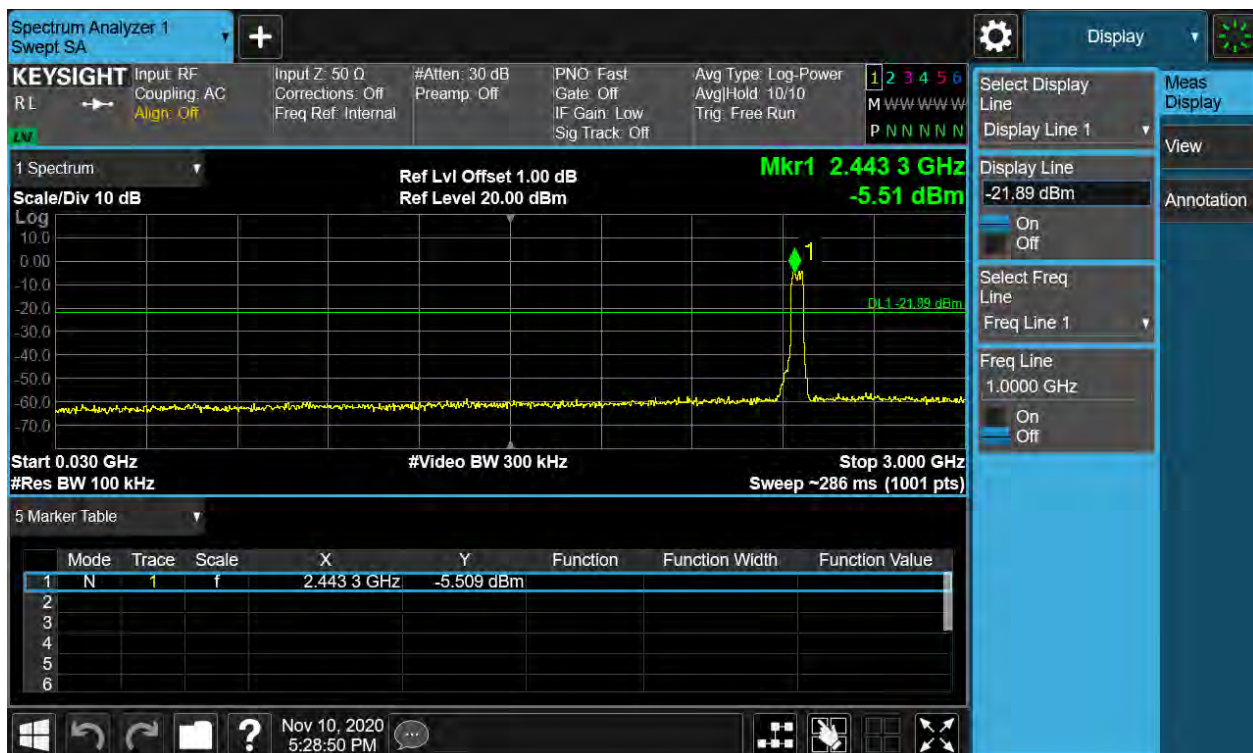
Date: 2020-12-04

Page 61 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 62 of 69



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2452MHz Carrier Level



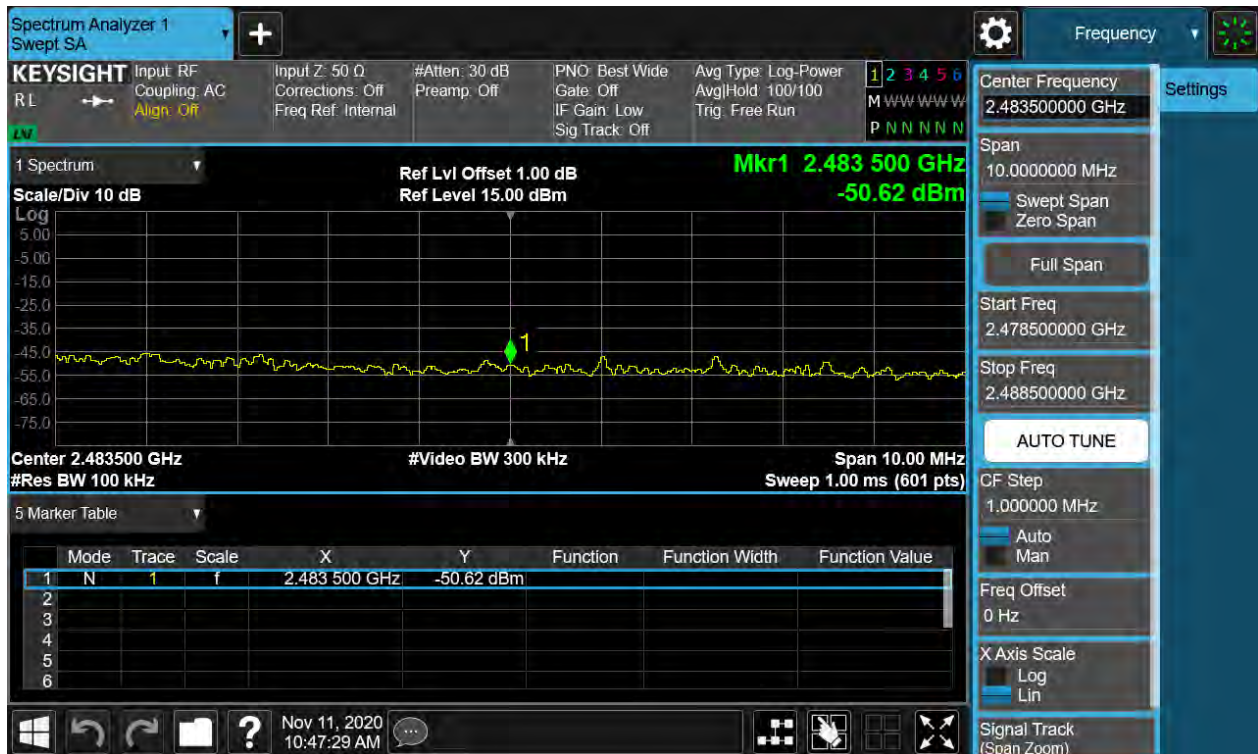
TEST REPORT

Report No.: SHE20100021-02CE

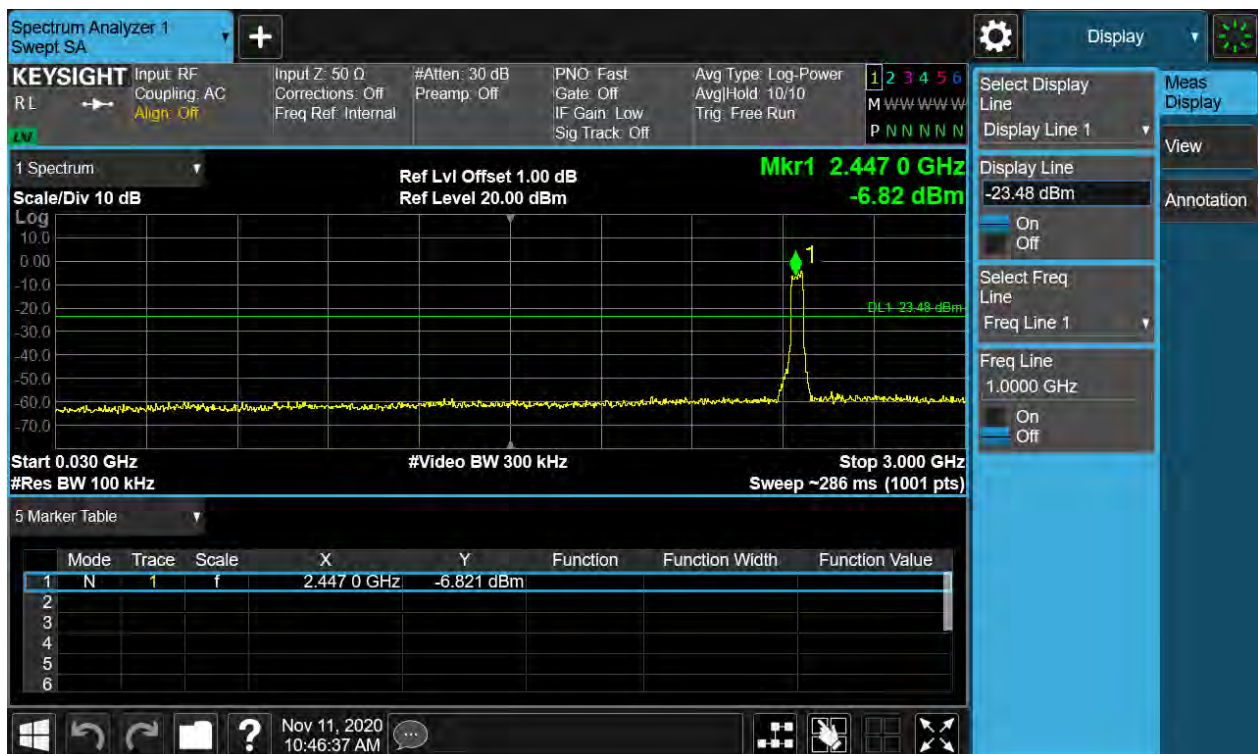
Date: 2020-12-04

Page 63 of 69

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 64 of 69



TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 65 of 69

4.1.6 Spurious Emission

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.205, 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/Middle/High

Operation Mode : A

Ambient temperature : 25C

Relative humidity : 52%

Notes:

1. Test plots please refer to the annex document

"WIFI2.4G-TX EXHIBIT A of SHE20100021-02CE FCC mimo".

2. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.

3. The spurious above 18GHz is noise only and 20dB below the limit. The value has no need to be reported.

4. The EUT is working in the Normal link mode below 1 GHz.

5. The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 66 of 69

4.1.7 Band Edge (Restricted-band band-edge)

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.205, 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/Middle/High

Operation Mode : A.1

Ambient temperature : 25C

Relative humidity : 52%

Note:

1. Test plots please refer to the annex document

"WIFI2.4G-TX EXHIBIT A of SHE20100021-02CE FCC mimo".

2. The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 67 of 69

4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT:

PASS

Test standard : FCC Part 15.207(a)

Requirement : ANSI C63.10-2013

Kind of test site : Shielded room

Test setup

Input Voltage : AC 120V, 60Hz; AC 240V, 50Hz

Operation Mode : A

Earthing : Not Connected

Ambient temperature : 25°C

Relative humidity : 52%

For details refer to following test plot.

TEST REPORT

Report No.: SHE20100021-02CE

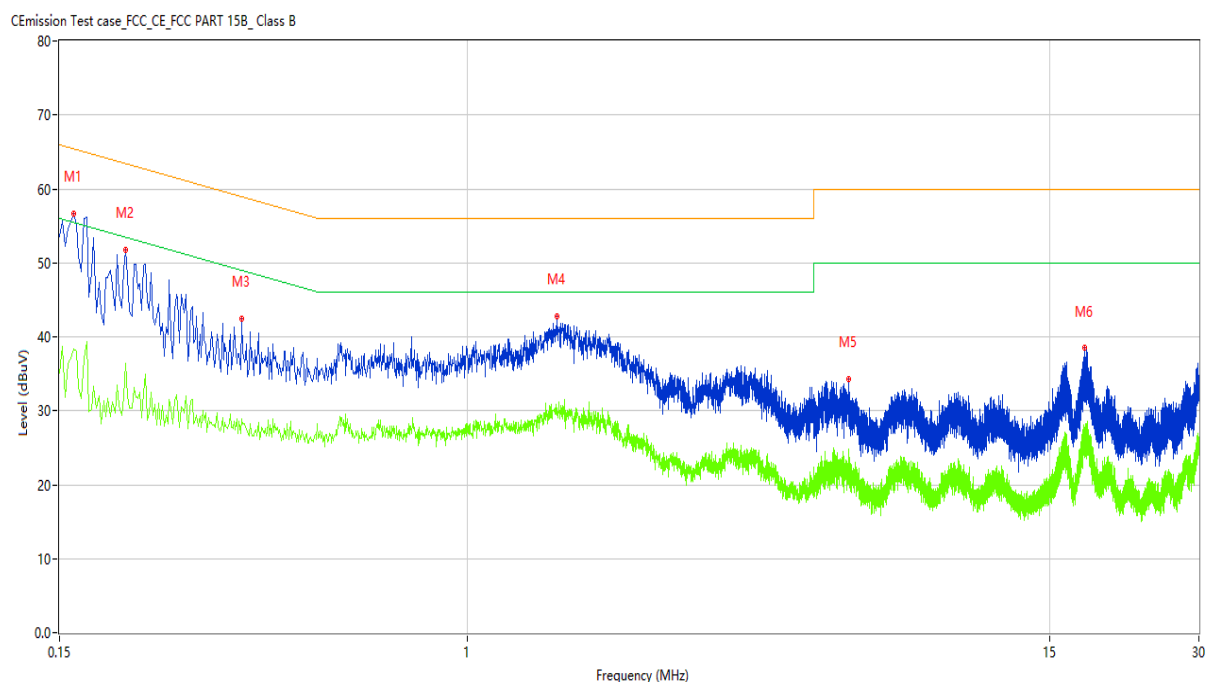
Date: 2020-12-04

Page 68 of 69

Note:

The all configurations were tested respectively, but only the worst configuration shown here.

Figure 1: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	57.66	10.15	65.46	-7.80	Peak	L	Pass
1*	0.160	53.58	10.15	65.46	-11.88	QP	L	Pass
1**	0.160	38.43	10.15	55.46	-17.03	AV	L	Pass
2	0.204	52.02	10.15	63.45	-11.43	Peak	L	Pass
2*	0.204	47.60	10.15	63.45	-15.85	QP	L	Pass
2**	0.204	36.39	10.15	53.45	-17.06	AV	L	Pass
3	0.350	40.93	10.14	58.96	-18.03	Peak	L	Pass
3*	0.350	32.63	10.14	58.96	-26.33	QP	L	Pass
3**	0.350	28.94	10.14	48.96	-20.02	AV	L	Pass
4	1.514	40.48	10.16	56.00	-15.52	Peak	L	Pass
4*	1.514	37.22	10.16	56.00	-18.78	QP	L	Pass
4**	1.514	29.36	10.16	46.00	-16.64	AV	L	Pass
5	5.896	32.38	10.28	60.00	-27.62	Peak	L	Pass
5*	5.896	24.82	10.28	60.00	-35.18	QP	L	Pass
5**	5.896	22.36	10.28	50.00	-27.64	AV	L	Pass
6	17.644	37.26	10.47	60.00	-22.74	Peak	L	Pass
6*	17.644	30.96	10.47	60.00	-29.04	QP	L	Pass
6**	17.644	26.40	10.47	50.00	-23.60	AV	L	Pass

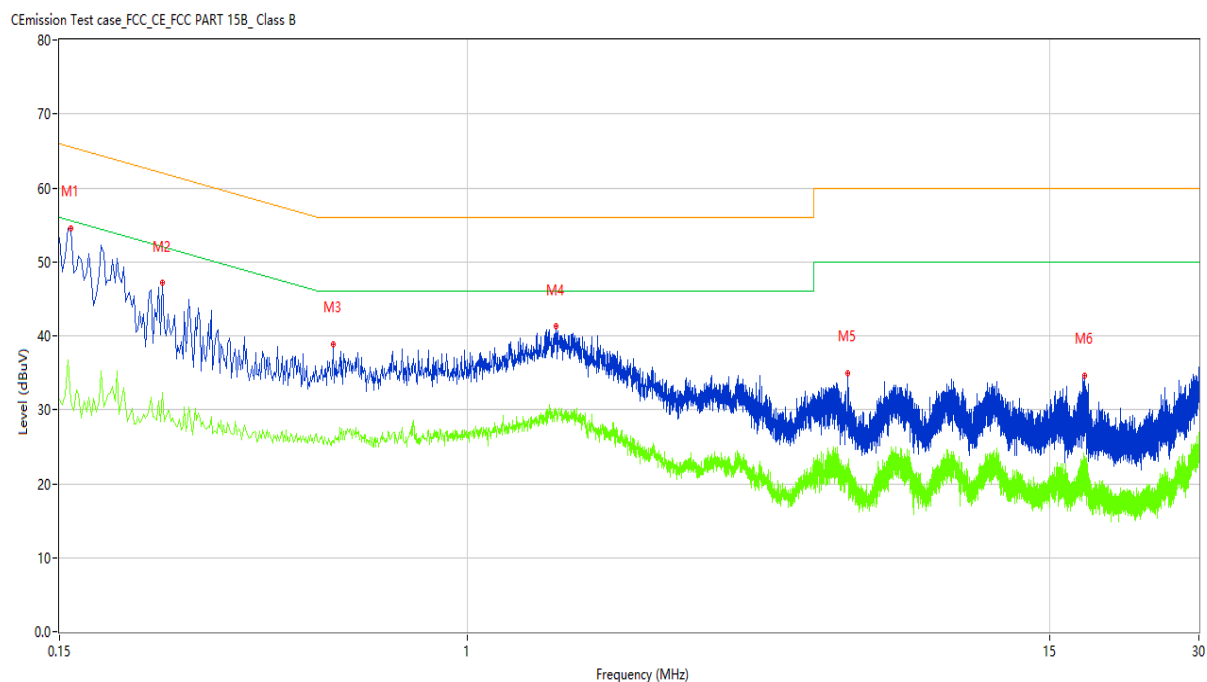
TEST REPORT

Report No.: SHE20100021-02CE

Date: 2020-12-04

Page 69 of 69

Figure 2: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	57.69	10.15	65.57	-7.88	Peak	N	Pass
1*	0.158	52.03	10.15	65.57	-13.54	QP	N	Pass
1**	0.158	31.22	10.15	55.57	-24.35	AV	N	Pass
2	0.242	47.85	10.14	62.03	-14.18	Peak	N	Pass
2*	0.242	41.91	10.14	62.03	-20.12	QP	N	Pass
2**	0.242	32.38	10.14	52.03	-19.65	AV	N	Pass
3	0.536	32.83	10.15	56.00	-23.17	Peak	N	Pass
3*	0.536	25.38	10.15	56.00	-30.62	QP	N	Pass
3**	0.536	25.74	10.15	46.00	-20.26	AV	N	Pass
4	1.510	39.83	10.16	56.00	-16.17	Peak	N	Pass
4*	1.510	35.92	10.16	56.00	-20.08	QP	N	Pass
4**	1.510	30.05	10.16	46.00	-15.95	AV	N	Pass
5	5.864	32.69	10.28	60.00	-27.31	Peak	N	Pass
5*	5.864	25.96	10.28	60.00	-34.04	QP	N	Pass
5**	5.864	21.70	10.28	50.00	-28.30	AV	N	Pass
6	17.650	33.80	10.47	60.00	-26.20	Peak	N	Pass
6*	17.650	26.26	10.47	60.00	-33.74	QP	N	Pass
6**	17.650	23.32	10.47	50.00	-26.68	AV	N	Pass

End of the report