

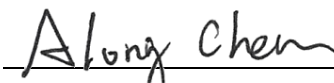
FCC Test Report

FCC ID : HDC-17600070F1
Equipment : WiFi 6 2.5G Router
(Refer to item 1.1.1 for more details)
Model No. : SDG-8612
(Refer to item 1.1.1 for more details)
Brand Name : Adtran
Applicant : Adtran
Address : 901 Explorer Boulevard, Huntsville, Alabama,
United States, 35806-2807
Standard : 47 CFR FCC Part 15.247
Received Date : Apr. 18, 2023
Tested Date : Apr. 19 ~ May 17, 2023

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager

Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	8
1.3	Test Setup Chart	9
1.4	The Equipment List	13
1.5	Test Standards	14
1.6	Reference Guidance	14
1.7	Deviation from Test Standard and Measurement Procedure.....	14
1.8	Measurement Uncertainty	14
2	TEST CONFIGURATION.....	15
2.1	Testing Facility	15
2.2	The Worst Test Modes and Channel Details	15
3	TRANSMITTER TEST RESULTS	16
3.1	6dB and Occupied Bandwidth	16
3.2	Conducted Output Power	17
3.3	Power Spectral Density	18
3.4	Unwanted Emissions into Restricted Frequency Bands	19
3.5	Emissions in Non-Restricted Frequency Bands.....	21
3.6	AC Power Line Conducted Emissions	22
4	TEST LABORATORY INFORMATION	23
Appendix A. 6dB and Occupied Bandwidth		
Appendix B. Conducted Output Power		
Appendix C. Power Spectral Density		
Appendix D. Unwanted Emissions into Restricted Frequency Bands		
Appendix E. Emissions in Non-Restricted Frequency Bands		
Appendix F. AC Power Line Conducted Emissions		

Release Record

Report No.	Version	Description	Issued Date
FR341804AC	Rev. 01	Initial issue	Jun. 02, 2023

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emission	[dBuV]: 0.428MHz 44.21 (Margin -3.08dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 2390.00MHz 53.79 (Margin -0.21dB) - AV	Pass
15.247(b)(3)	Conducted Output Power	Max Power [dBm]: Non-beamforming mode 28.61 Beamforming mode 25.87	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Adtran	SDG-8612	WiFi 6 2.5G Router	2.5G RJ45 WAN port
	SDG-8614	WiFi 6 SFP Router	2.5G SFP WAN port

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
2400-2483.5	b	2412-2462	1-11 [11]	4	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	4	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	4	MCS 0-31
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	4	MCS 0-31
2400-2483.5	ax (HE20)	2412-2462	1-11 [11]	4	MCS 0-11
2400-2483.5	ax (HE40)	2422-2452	3-9 [7]	4	MCS 0-11

Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.
 Note 2: DBPSK, DQPSK, CCK modulation
 BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM modulation.
 Note 3: 802.11ax supports beamforming function.

1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	Antenna_LB1	PIFA	UFL	3.698	--	--	--	--
2	Antenna_LB2	PIFA	UFL	4.22	--	--	--	--
3	Antenna_LB3	PIFA	UFL	3.516	--	--	--	--
4	Antenna_LB4	PIFA	UFL	4.661	--	--	--	--
5	Antenna_5G1	PIFA	UFL	--	3.664	3.749	2.763	2.649
6	Antenna_5G2	PIFA	UFL	--	2.81	3.951	3.35	3.759
7	Antenna_5G3	PIFA	UFL	--	3.587	3.956	4.111	3.986
8	Antenna_5G4	PIFA	UFL	--	4.053	4.053	4.12	4.789

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	15Vdc from AC adapter
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1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter	Brand: LUCENT TRANS Model: 1A78 I/P: 100-240Vac, 50/60Hz, 1.2A O/P: 15V=3.0A, 45.0W Power Line: USB 1.8m non-shielded without core
2	RJ45 cable	2m non-shielded without core

1.1.6 Channel List

Frequency band (MHz)		2400~2483.5	
802.11 b / g / n HT20 / ax HE20		802.11n HT40 / ax HE40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447	---	---
9	2452	---	---
10	2457	---	---
11	2462	---	---

1.1.7 Test Tool and Duty Cycle

Test Tool	Non-beamforming: QATool_Dbg, Version: 0.0.2.88 Beamforming: Putty, Version: 0.60.0.0				
Duty Cycle and Duty Factor	Mode	Non-beamforming		Beamforming	
		Duty cycle (%)	Duty factor (dB)	Duty cycle (%)	Duty factor (dB)
	11b	100.00%	0.00	---	---
	11g	98.57%	0.06	---	---
	ax HE20	98.08%	0.08	95.83%	0.19
ax HE40	95.59%	0.20	90.77%	0.42	

1.1.8 Power Index of Test Tool

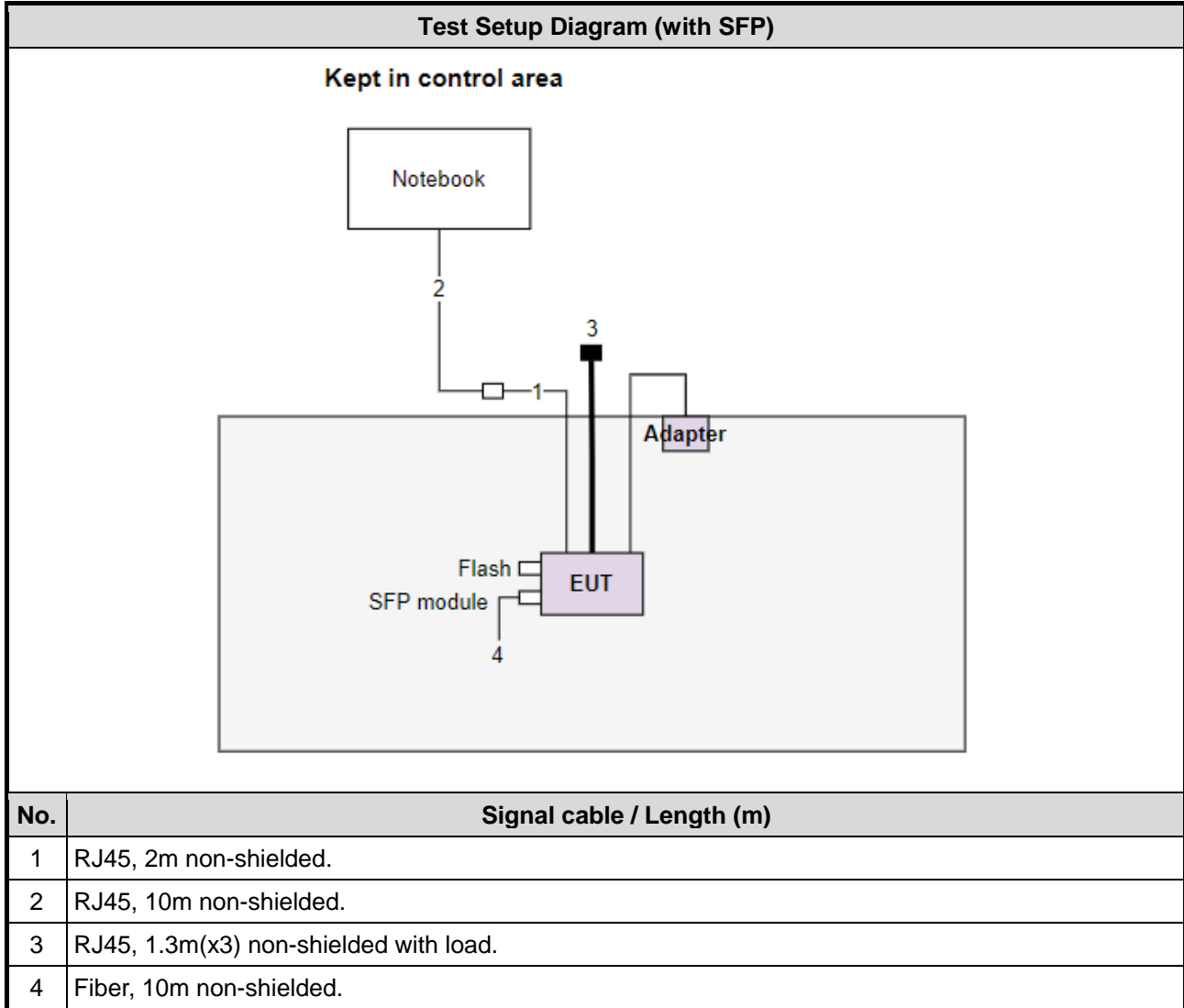
Modulation Mode	Test Frequency (MHz)	Power Index	
		Non-beamforming	Beamforming
11b	2412	17.5	---
11b	2437	21.5	---
11b	2462	18	---
11g	2412	17	---
11g	2437	21	---
11g	2462	17.5	---
ax HE20	2412	17.5	34
ax HE20	2437	21	41
ax HE20	2462	17.5	32
ax HE40	2422	15.5	30
ax HE40	2437	17	31
ax HE40	2452	15.5	29

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
With SFP					
1	Laptop	DELL	Latitude 5400	DoC	---
2	USB 3.0 Flash	Transcend	JetFlash 700	---	---
3	SFP module	---	LTE3680M-BH2 0-RA	---	Provided by applicant.
4	RJ 45 Load	ICC	---	---	---
5	Laptop	DELL	Latitude E5470	DoC	For Beamforming mode only.
6	BF Client	Gemtek	WRM-381AX	---	For Beamforming mode only.
Without SFP					
1	Laptop	DELL	Latitude 5400	DoC	---
2	Laptop	DELL	Latitude E5470	DoC	---
3	USB 3.0 Flash	Transcend	JetFlash 700	---	Provided by applicant.
4	RJ 45 Load	ICC	---	---	---
5	Laptop	DELL	Latitude E5470	DoC	For Beamforming mode only.
6	BF Client	Gemtek	WRM-381AX	---	For Beamforming mode only.

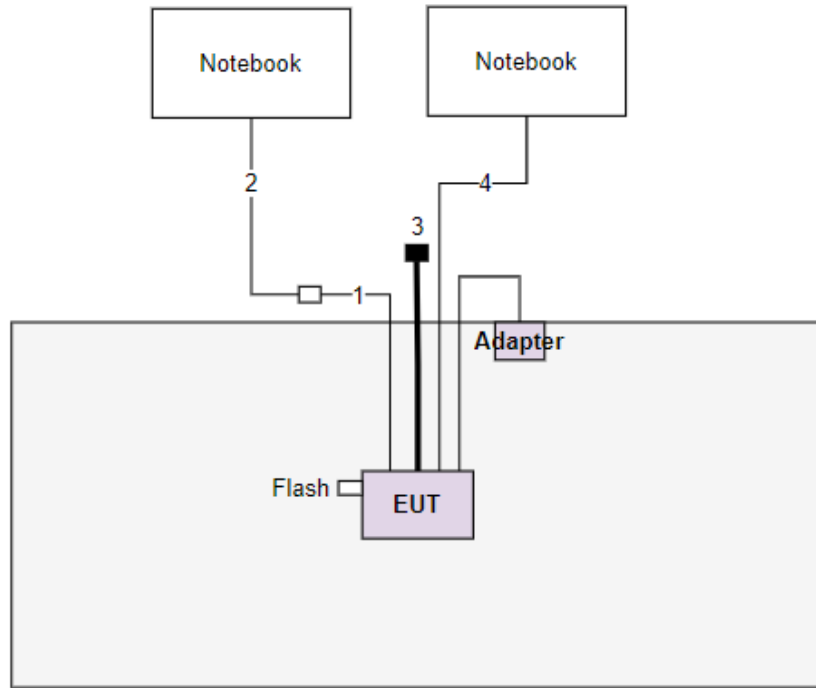
1.3 Test Setup Chart

Non-beamforming mode



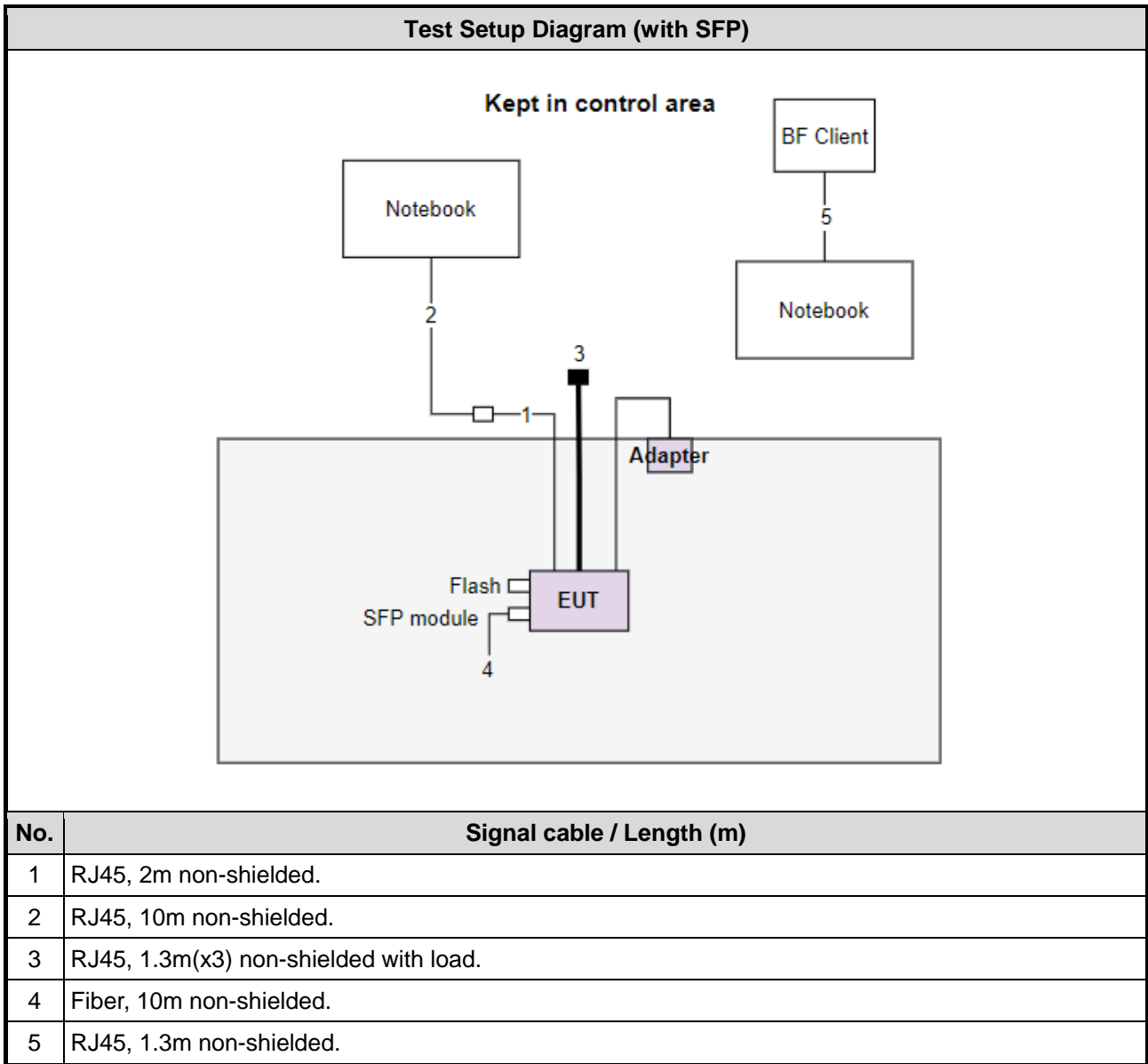
Test Setup Diagram (without SFP)

Kept in control area

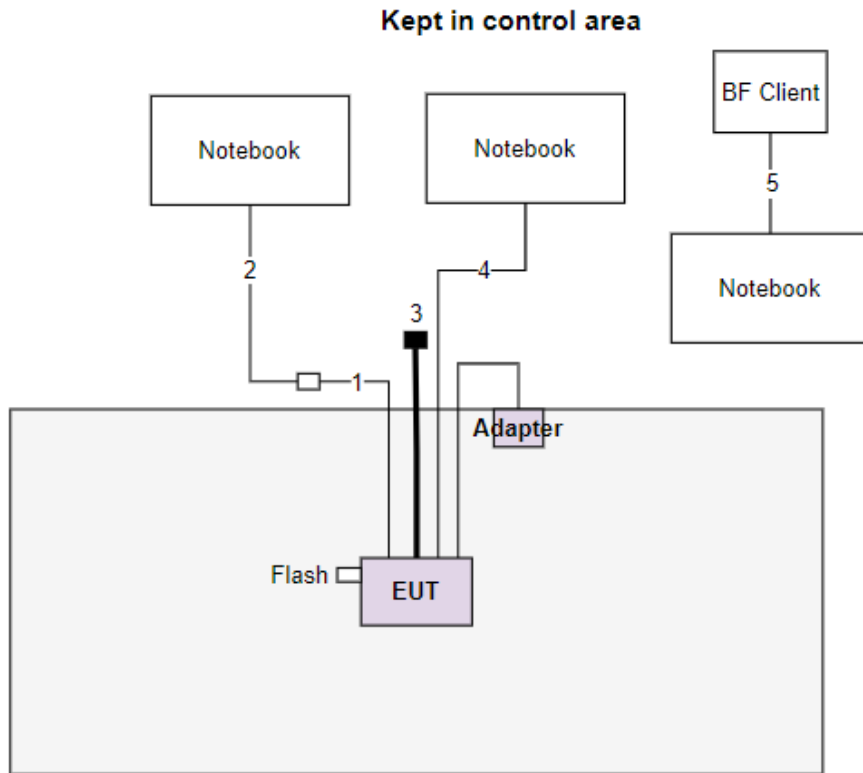


No.	Signal cable / Length (m)
1	RJ45, 2m non-shielded.
2	RJ45, 10m non-shielded.
3	RJ45, 1.3m(x3) non-shielded with load.
4	RJ45, 10m non-shielded.

Beamforming mode



Test Setup Diagram (without SFP)



No.	Signal cable / Length (m)
1	RJ45, 2m non-shielded.
2	RJ45, 10m non-shielded.
3	RJ45, 1.3m(x3) non-shielded with load.
4	RJ45, 10m non-shielded.
5	RJ45, 1.3m non-shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	May 04, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Feb. 17, 2023	Feb. 16, 2024
LISN	R&S	ENV216	101295	Jan. 31, 2023	Jan. 30, 2024
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan .03, 2023	Jan .02, 2024
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 17, 2022	Oct. 16, 2023
50 ohm terminal (Support Unit)	NA	50	01	May 10, 2022	May 09, 2023
Measurement Software	AUDIX	e3	6.120210k	NA	NA

Note: Calibration Interval of instruments listed above is one year.

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Apr. 19 ~ May 17, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 03, 2023	Mar. 02, 2024
Spectrum Analyzer	R&S	FSV40	101498	Nov. 21, 2022	Nov. 20, 2023
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 01, 2022	Oct. 31, 2023
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 03, 2022	Aug. 02, 2023
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Nov. 25, 2022	Nov. 24, 2023
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 27, 2022	Oct. 26, 2023
Preamplifier	EMC	EMC02325	980225	Jun. 28, 2022	Jun. 27, 2023
Preamplifier	EMC	EMC118A45SE	980898	Jul. 16, 2022	Jul. 15, 2023
Preamplifier	EMC	EMC184045SE	980903	Jul. 16, 2022	Jul. 15, 2023
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 04, 2022	Oct. 03, 2023
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 04, 2022	Oct. 03, 2023
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 04, 2022	Oct. 03, 2023
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 04, 2022	Oct. 03, 2023
RF Cable	EMC	EMC104-35M-35M-8000	210920	Oct. 04, 2022	Oct. 03, 2023
RF Cable	EMC	EMC104-35M-35M-3000	210922	Oct. 04, 2022	Oct. 03, 2023
Measurement Software	AUDIX	e3	6.120210g	NA	NA

Note: Calibration Interval of instruments listed above is one year.

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	May 02 ~ May 17, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101910	Apr. 14, 2023	Apr. 13, 2024
Power Meter	Anritsu	ML2495A	1241002	Nov. 23, 2022	Nov. 22, 2023
Power Sensor	Anritsu	MA2411B	1207366	Nov. 23, 2022	Nov. 22, 2023
Measurement Software	Sporton	SENSE-15247_DTS	V5.11	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 15.247
ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Unwanted Emission ≤ 1GHz	±3.41 dB
Unwanted Emission > 1GHz	±4.59 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, 03CH01-WS, TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Non-beamforming mode				
AC Power Line Conducted Emission	11b	2437	1 Mbps	1, 2
Unwanted Emissions ≤ 1GHz	11b	2437	1 Mbps	1, 2
Unwanted Emissions >1GHz Conducted Output Power 6dB bandwidth Power spectral density	11b 11g ax HE20 ax HE40	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462 2422 / 2437 / 2452	1 Mbps 6 Mbps MCS 0 MCS 0	2
Beamforming mode				
AC Power Line Conducted Emission	ax HE20	2437	MCS 0	1, 2
Unwanted Emissions ≤1GHz	ax HE20	2437	MCS 0	1, 2
Unwanted Emissions >1GHz Conducted Output Power 6dB bandwidth Power spectral density	ax HE20 ax HE40	2412 / 2437 / 2462 2422 / 2437 / 2452	MCS 0 MCS 0	2
NOTE:				
1. Test configurations are listed as follows:				
1) Test configuration 1: Without SFP, model: SDG-8612				
2) Test configuration 2: With SFP, model: SDG-8614				

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

The minimum 6dB bandwidth shall be at least 500 kHz.

3.1.2 Test Procedures

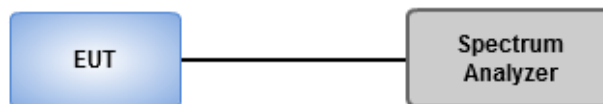
6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

1. Set resolution bandwidth (RBW) = 1% ~ 5 % of OBW, Video bandwidth = 3 x RBW
2. Detector = Sample, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	24°C / 63-65%	Tested By	Brad Wu
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Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of Conducted Output Power

Conducted power shall not exceed 1Watt.

Antenna gain $\leq 6\text{dBi}$, no any corresponding reduction is in output power limit.

Antenna gain $> 6\text{dBi}$

Non Fixed, point to point operations.

The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB

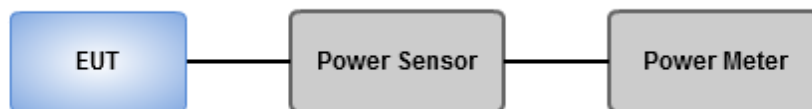
Fixed, point to point operations

Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point Operations, maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Test Procedures

A broadband RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

3.2.3 Test Setup



3.2.4 Test Results

Ambient Condition	24°C / 63-65%	Tested By	Brad Wu
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Refer to Appendix B.

3.3 Power Spectral Density

3.3.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

3.3.2 Test Procedures

Peak PSD

1. Set the RBW = 3 kHz, VBW = 10 kHz.
2. Detector = Peak, Sweep time = auto couple.
3. Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

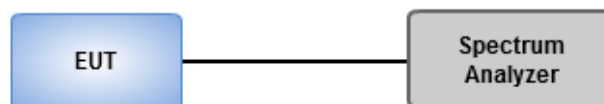
Average PSD, duty cycle \geq 98%

1. Set the RBW = 30 kHz, VBW = 100 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Sweep time = auto couple.
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. Use the peak marker function to determine the maximum amplitude level.

Average PSD, duty cycle $<$ 98%

1. Set the RBW = 30 kHz, VBW = 100 kHz. Detector = RMS.
2. Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).
3. Perform the measurement over a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add $10 \log (1/x)$, where x is the duty cycle.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	24°C / 63-65%	Tested By	Brad Wu
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Refer to Appendix C.

3.4 Unwanted Emissions into Restricted Frequency Bands

3.4.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.4.2 Test Procedures

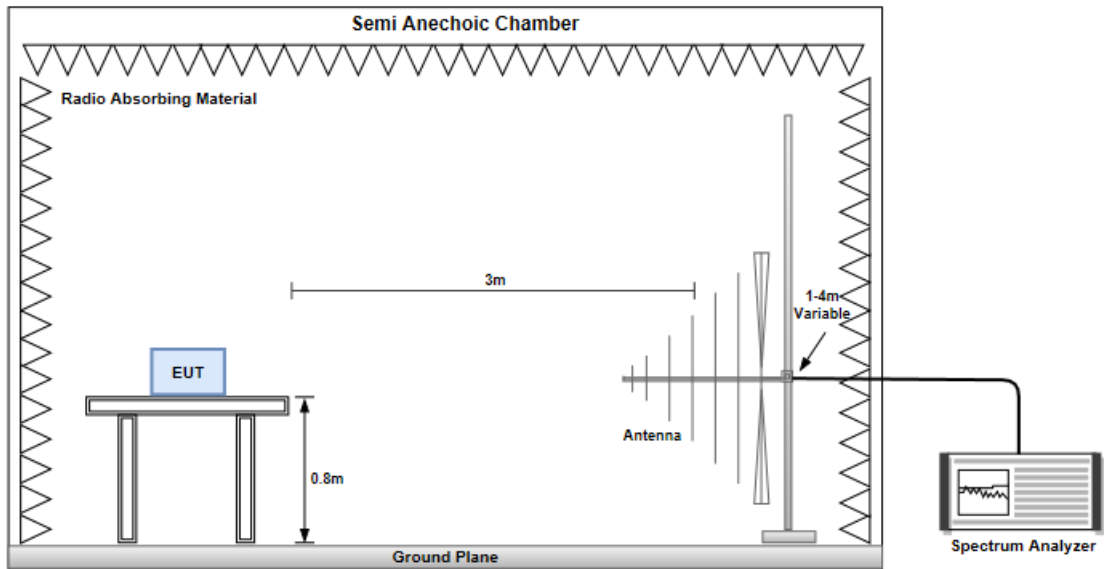
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

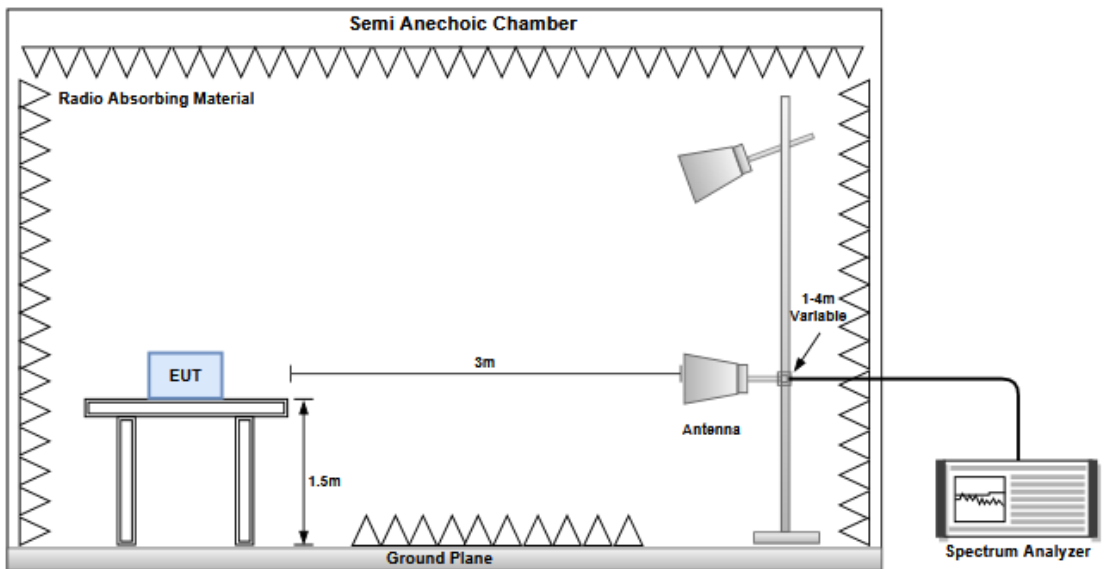
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Emissions in Non-Restricted Frequency Bands

3.5.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.5.2 Test Procedures

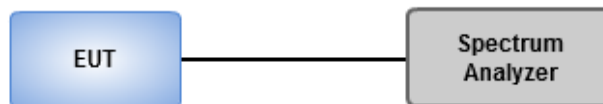
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	24°C / 63-65%	Tested By	Brad Wu
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Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

3.6.1 Limit of AC Power Line Conducted Emissions

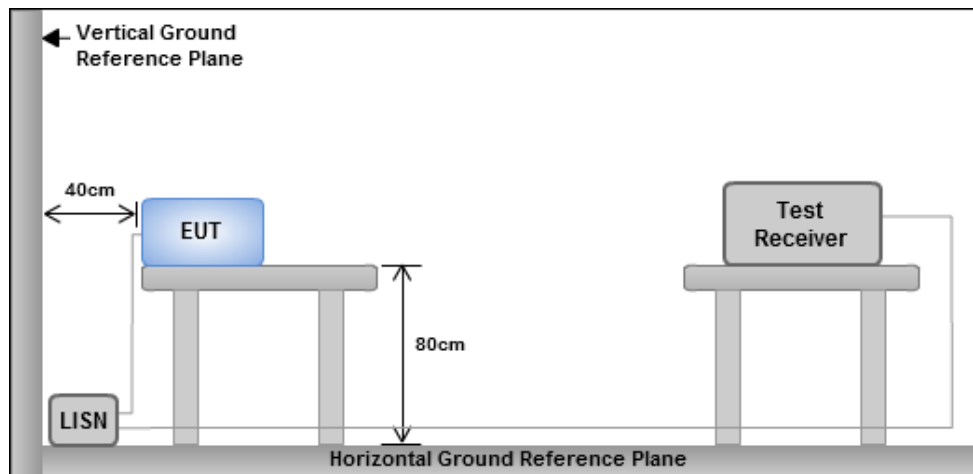
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.6.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

3.6.3 Test Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.6.4 Test Results

Refer to Appendix F.

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

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No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
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Kwei Shan Site II

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If you have any suggestion, please feel free to contact us as below information.

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==END==



Non-beamforming mode

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_4TX	8.075M	13.463M	13M5G1D	7.55M	12.609M
802.11g_Nss1,(6Mbps)_4TX	16.325M	17.195M	17M2D1D	15.375M	16.646M
802.11ax HEW20_Nss1,(MCS0)_4TX	18.825M	19.065M	19M1D1D	17.8M	18.891M
802.11ax HEW40_Nss1,(MCS0)_4TX	36.95M	37.731M	37M7D1D	34.4M	37.631M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	8.05M	12.609M	7.55M	12.609M	7.975M	12.624M	8.025M	12.639M
2437MHz	Pass	500k	8.025M	13.028M	8.025M	13.163M	8.05M	13.463M	8M	13.013M
2462MHz	Pass	500k	8.05M	12.639M	8.025M	12.669M	8.075M	12.624M	8.05M	12.729M
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	16.3M	16.646M	16.25M	16.69M	16.3M	16.668M	16.3M	16.734M
2437MHz	Pass	500k	16.275M	17.041M	16.275M	16.954M	15.925M	17.195M	16.05M	16.844M
2462MHz	Pass	500k	16.3M	16.646M	16.075M	16.668M	16.325M	16.646M	15.375M	16.69M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.475M	18.891M	18.825M	18.891M	18.675M	18.891M	18.7M	18.916M
2437MHz	Pass	500k	18.825M	19.065M	18.775M	19.065M	18.05M	19.065M	18.3M	19.065M
2462MHz	Pass	500k	18.325M	19.015M	17.8M	18.991M	18.325M	18.991M	18M	18.991M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35M	37.631M	35M	37.631M	36.95M	37.631M	36.25M	37.681M
2437MHz	Pass	500k	35.7M	37.631M	34.4M	37.681M	35.05M	37.731M	35.65M	37.731M
2452MHz	Pass	500k	35.25M	37.681M	36M	37.631M	35.1M	37.631M	35.45M	37.681M

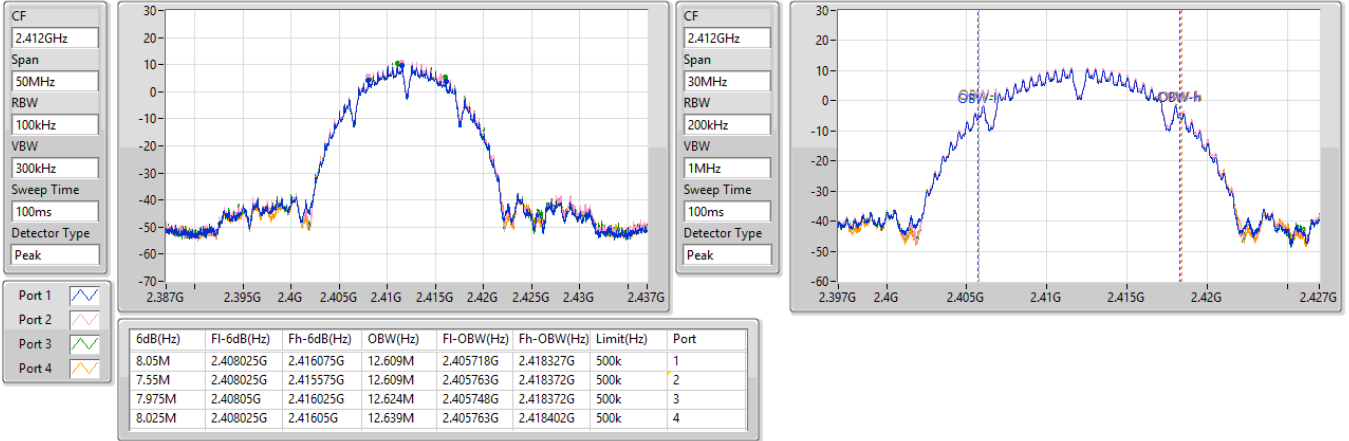
Port X-N dB = Port X 6dB down bandwidth;
 Port X-OBW = Port X 99% occupied bandwidth



2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_4TX

EBW

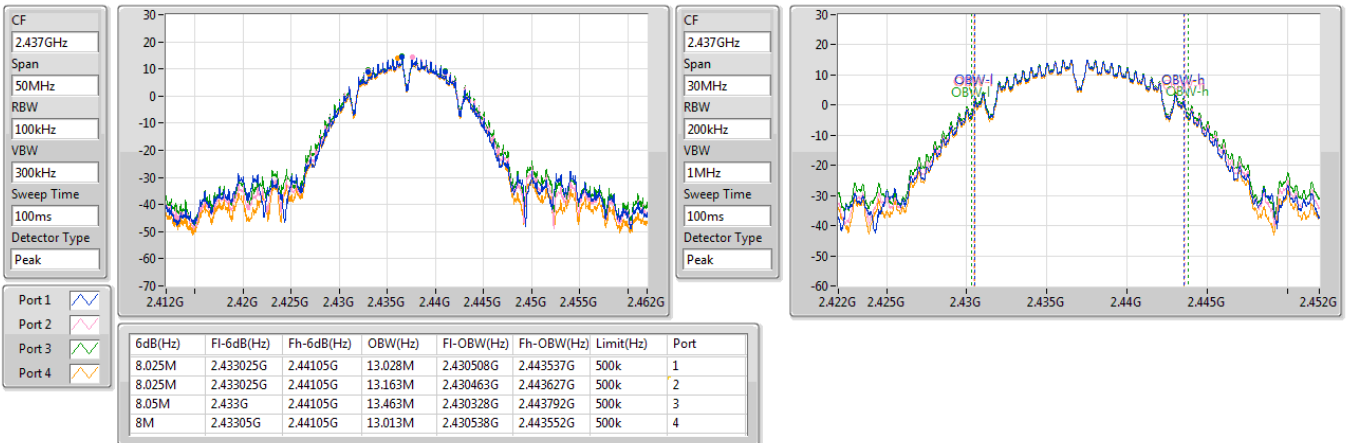
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2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_4TX

EBW

2437MHz

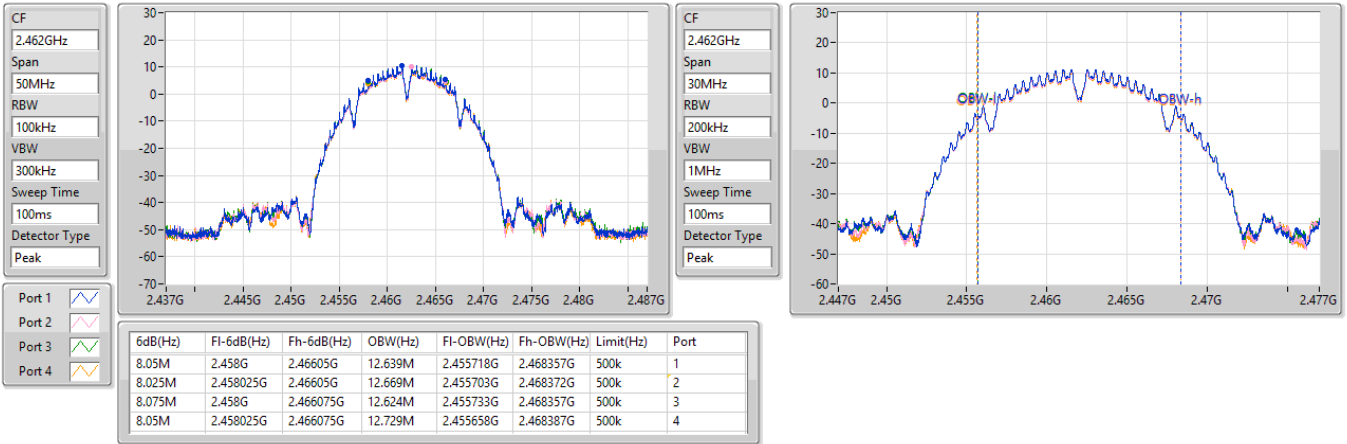




2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_4TX

EBW

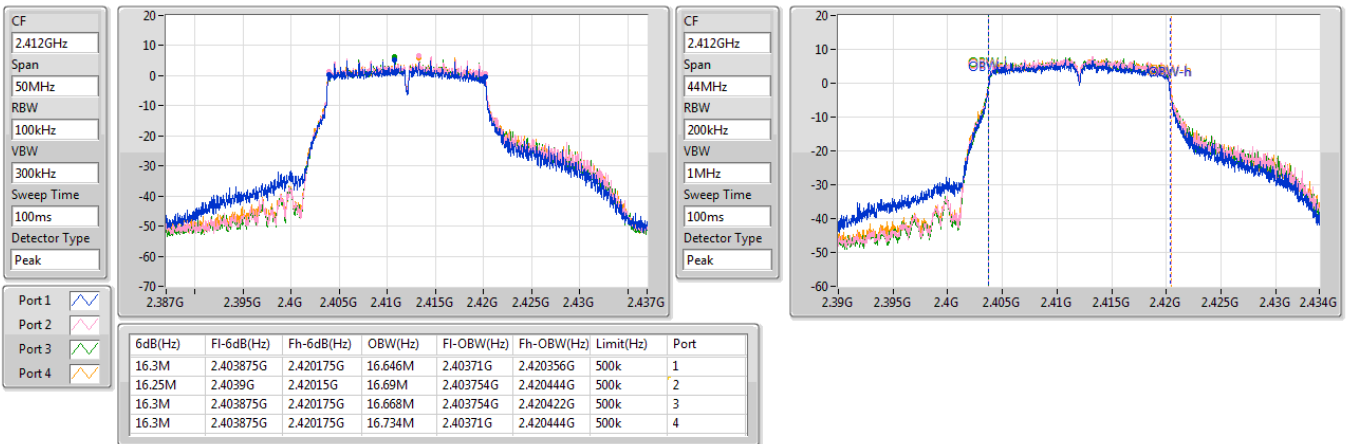
2462MHz



2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_4TX

EBW

2412MHz

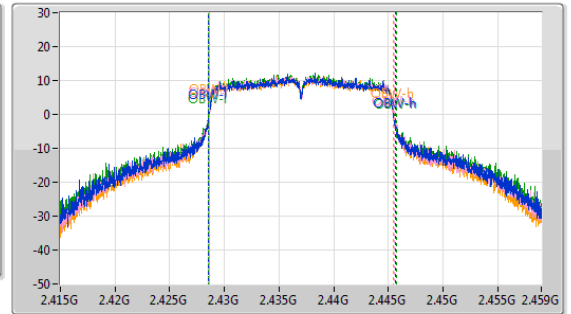
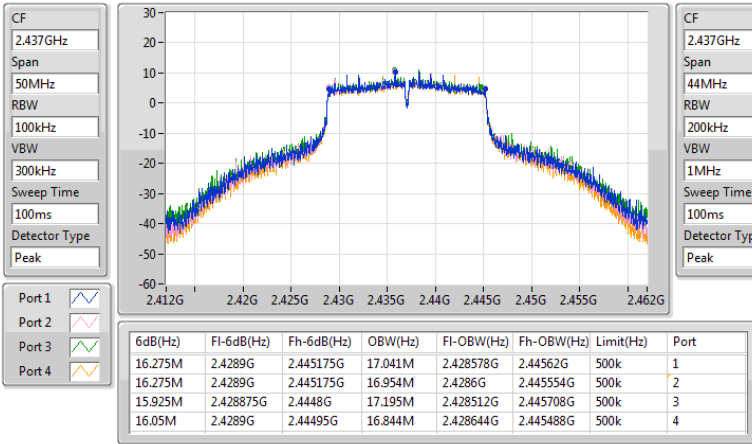




2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_4TX

EBW

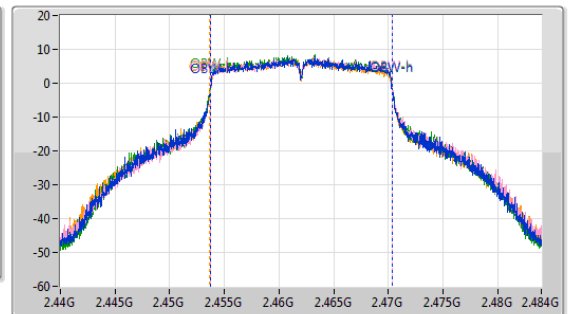
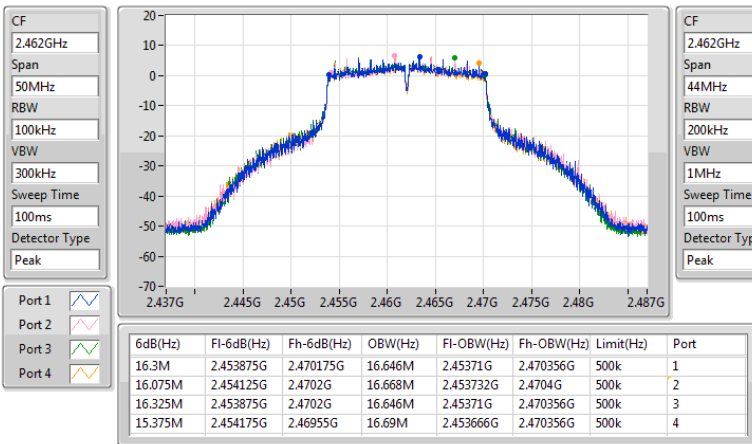
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2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_4TX

EBW

2462MHz

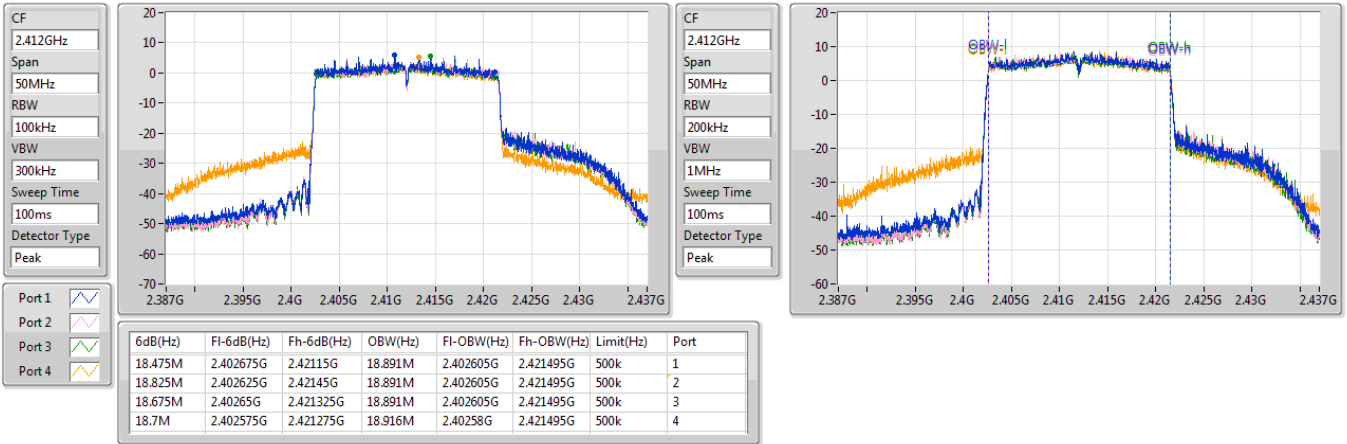




2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

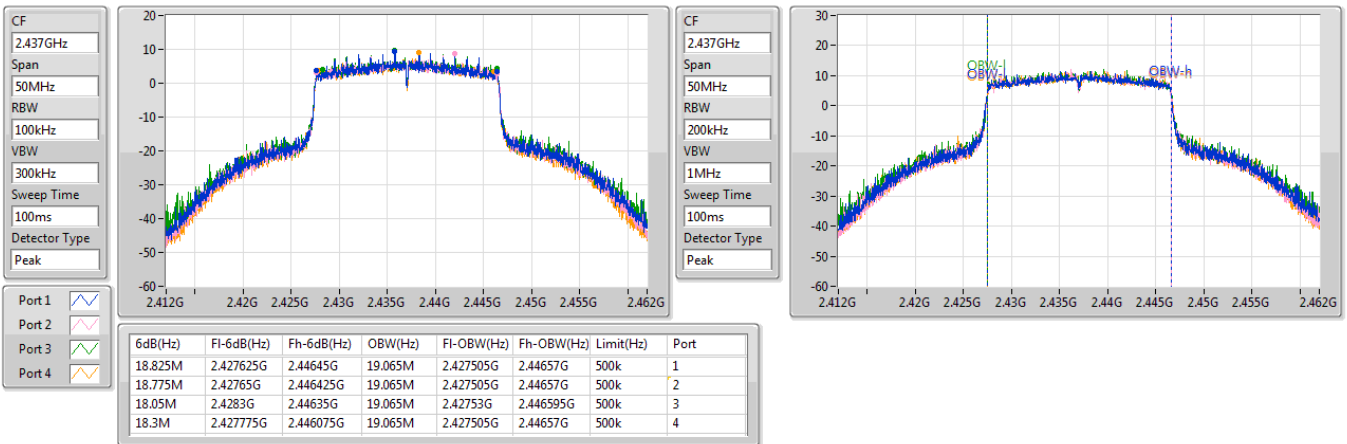
2412MHz



2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

2437MHz



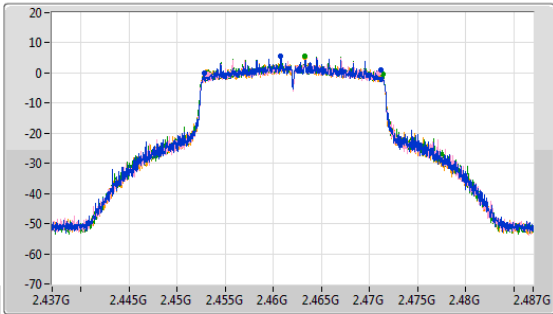


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_4TX

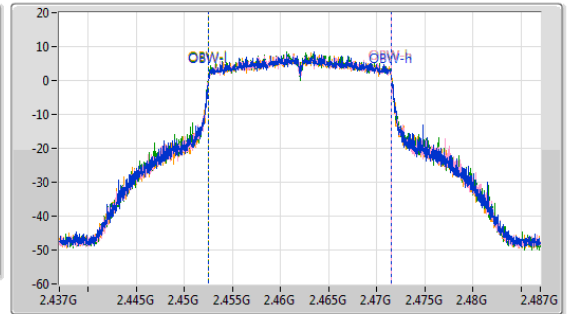
EBW

2462MHz

CF: 2.462GHz
 Span: 50MHz
 RBW: 100kHz
 VBW: 300kHz
 Sweep Time: 100ms
 Detector Type: Peak



CF: 2.462GHz
 Span: 50MHz
 RBW: 200kHz
 VBW: 1MHz
 Sweep Time: 100ms
 Detector Type: Peak



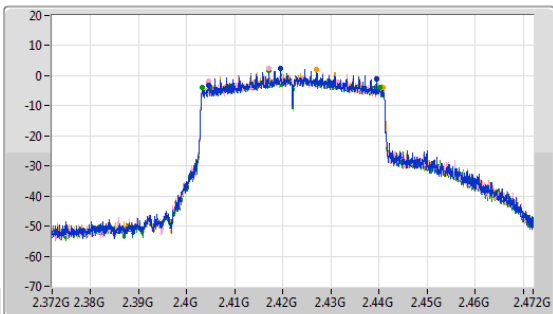
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
18.325M	2.452825G	2.47115G	19.015M	2.45253G	2.471545G	500k	1
17.8M	2.4532G	2.471G	18.991M	2.45253G	2.47152G	500k	2
18.325M	2.4531G	2.471425G	18.991M	2.45253G	2.47152G	500k	3
18M	2.453025G	2.471025G	18.991M	2.45253G	2.47152G	500k	4

2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_4TX

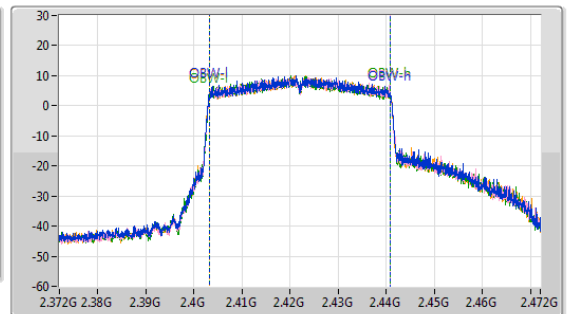
EBW

2422MHz

CF: 2.422GHz
 Span: 100MHz
 RBW: 100kHz
 VBW: 300kHz
 Sweep Time: 100ms
 Detector Type: Peak



CF: 2.422GHz
 Span: 100MHz
 RBW: 500kHz
 VBW: 2MHz
 Sweep Time: 100ms
 Detector Type: Peak



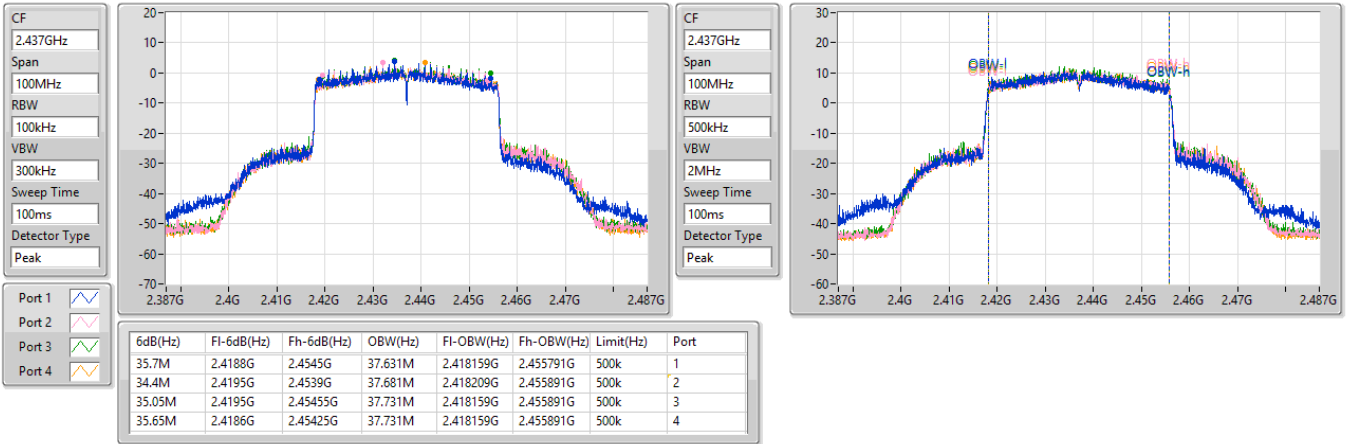
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35M	2.4045G	2.4395G	37.631M	2.403259G	2.440891G	500k	1
35M	2.40455G	2.43955G	37.631M	2.403259G	2.440891G	500k	2
36.95M	2.40325G	2.4402G	37.631M	2.403259G	2.440891G	500k	3
36.25M	2.4045G	2.44075G	37.681M	2.403209G	2.440891G	500k	4



2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

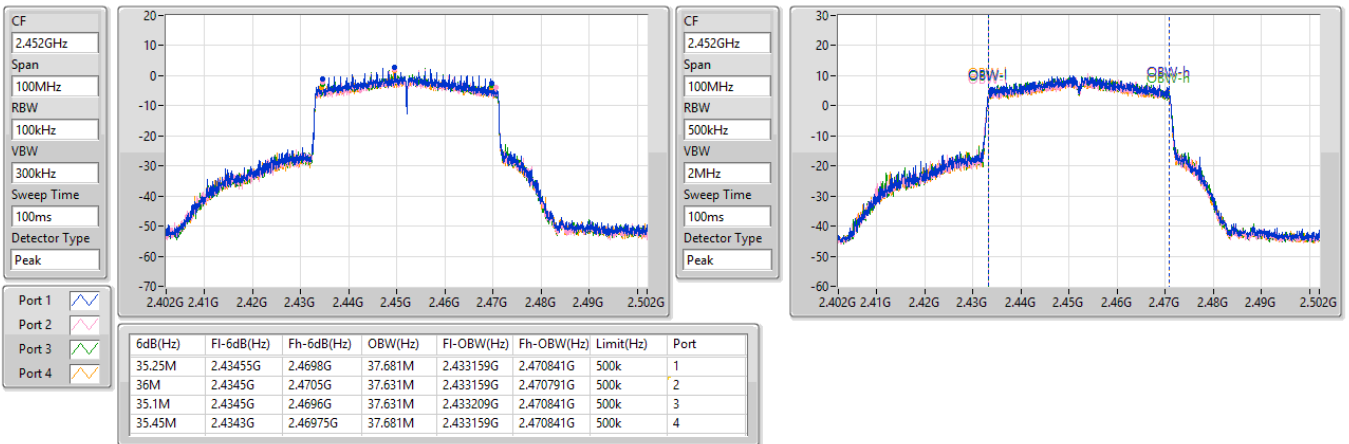
2437MHz



2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

2452MHz





Beamforming mode

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	18.95M	19.215M	19M2D1D	18.4M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	37.95M	37.931M	37M9D1D	35.95M	37.631M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.875M	18.941M	18.95M	18.916M	18.925M	18.891M	18.8M	18.916M
2437MHz	Pass	500k	18.7M	19.115M	18.925M	19.09M	18.85M	19.215M	18.6M	19.065M
2462MHz	Pass	500k	18.65M	19.04M	18.4M	19.09M	18.85M	19.065M	18.775M	19.04M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35.95M	37.631M	37.55M	37.831M	37.8M	37.881M	37.45M	37.781M
2437MHz	Pass	500k	37.6M	37.781M	37.6M	37.931M	37.95M	37.931M	36.85M	37.781M
2452MHz	Pass	500k	37.9M	37.831M	37.65M	37.881M	37.95M	37.781M	37.85M	37.881M

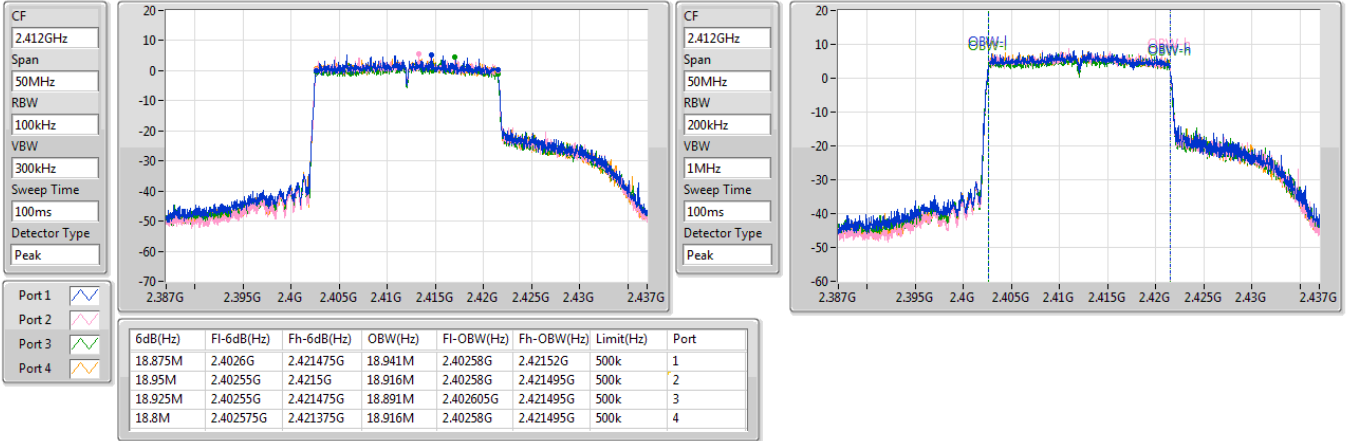
Port X-N dB = Port X 6dB down bandwidth;
 Port X-OBW = Port X 99% occupied bandwidth



2.4-2.4835GHz_802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

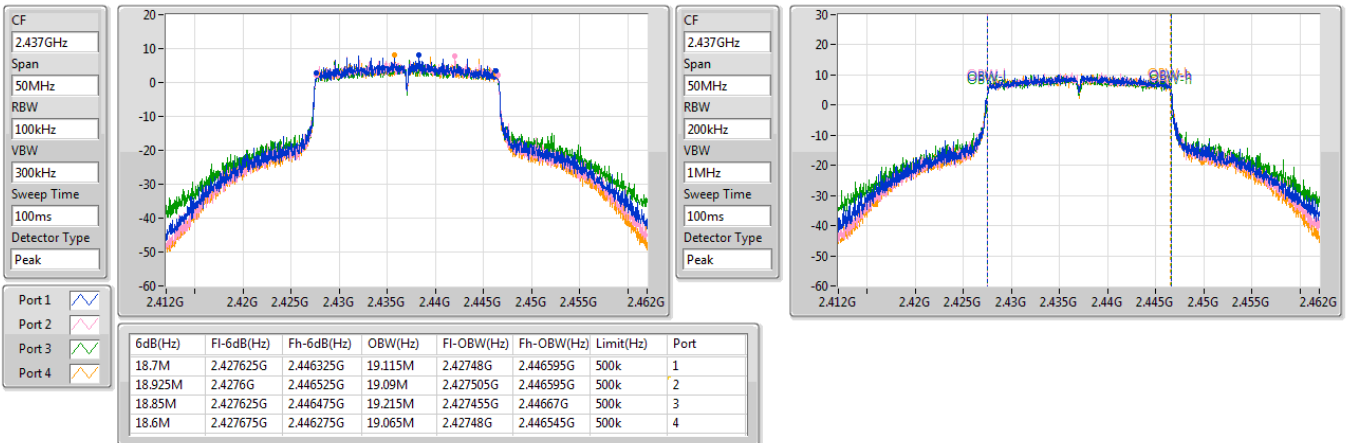
2412MHz



2.4-2.4835GHz_802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

2437MHz

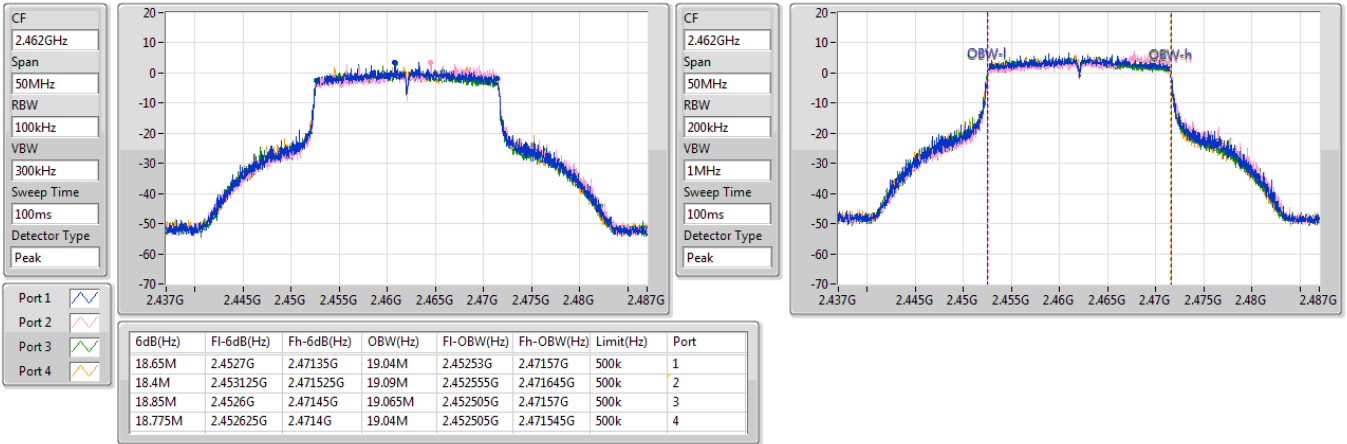




2.4-2.4835GHz_802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

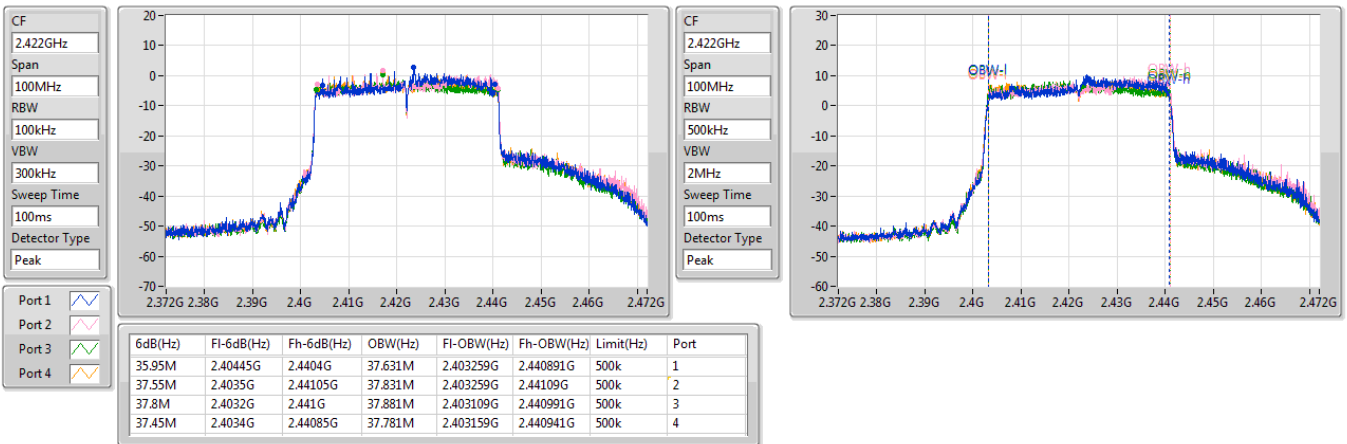
2462MHz



2.4-2.4835GHz_802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

2422MHz

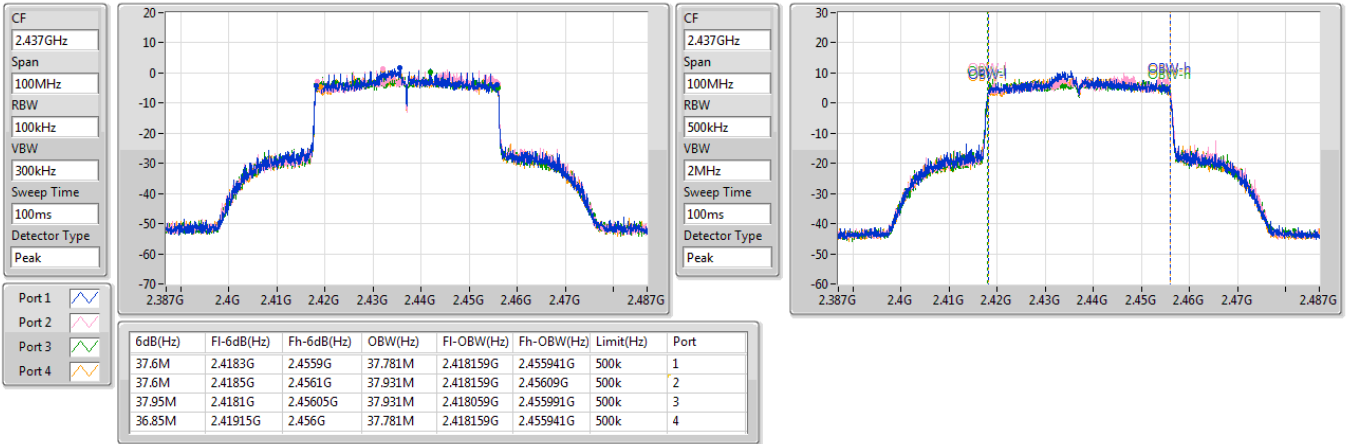




2.4-2.4835GHz_802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

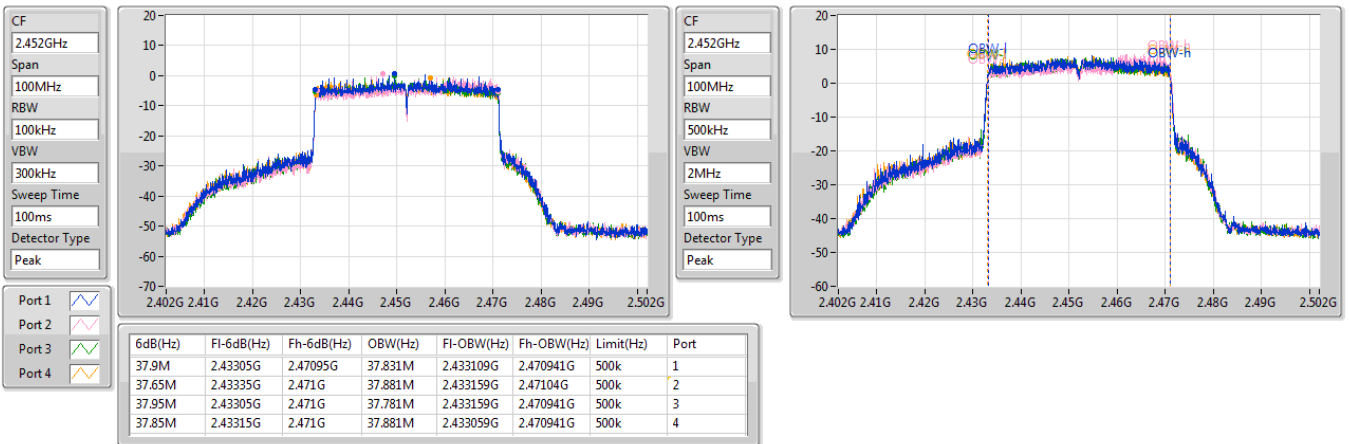
2437MHz



2.4-2.4835GHz_802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

2452MHz





Non-beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_4TX	28.61	0.72611
802.11g_Nss1,(6Mbps)_4TX	27.34	0.54200
802.11ax HEW20_Nss1,(MCS0)_4TX	26.39	0.43551
802.11ax HEW40_Nss1,(MCS0)_4TX	23.34	0.21577

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	4.661	18.67	18.66	18.89	18.95	24.82	30.00	29.48	36.00
2437MHz	Pass	4.661	22.14	22.96	22.68	22.54	28.61	30.00	33.27	36.00
2462MHz	Pass	4.661	18.36	18.89	18.66	18.61	24.65	30.00	29.31	36.00
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	4.661	17.64	17.31	17.58	17.62	23.56	30.00	28.22	36.00
2437MHz	Pass	4.661	21.04	21.52	21.31	21.41	27.34	30.00	32.00	36.00
2462MHz	Pass	4.661	17.34	17.68	17.49	17.58	23.54	30.00	28.20	36.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	4.661	17.13	17.03	17.37	17.41	23.26	30.00	27.92	36.00
2437MHz	Pass	4.661	20.16	20.58	20.26	20.45	26.39	30.00	31.05	36.00
2462MHz	Pass	4.661	16.41	16.88	16.45	16.64	22.62	30.00	27.28	36.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	4.661	15.81	15.69	15.85	16.02	21.86	30.00	26.52	36.00
2437MHz	Pass	4.661	17.07	17.61	17.29	17.31	23.34	30.00	28.00	36.00
2452MHz	Pass	4.661	15.32	15.72	15.51	15.52	21.54	30.00	26.20	36.00

DG = Directional Gain; Port X = Port X output power



Beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	25.87	0.38637
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	21.38	0.13740

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	10.056	16.75	16.64	16.61	16.52	22.65	25.94	32.71	36.00
2437MHz	Pass	10.056	20.68	19.83	19.35	19.41	25.87	25.94	35.93	36.00
2462MHz	Pass	10.056	15.11	15.05	15.31	14.65	21.06	25.94	31.12	36.00
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	10.056	15.28	15.16	15.25	15.52	21.33	25.94	31.39	36.00
2437MHz	Pass	10.056	15.48	15.32	15.29	15.36	21.38	25.94	31.44	36.00
2452MHz	Pass	10.056	14.06	14.32	14.61	14.03	20.28	25.94	30.34	36.00

DG = Directional Gain; Port X = Port X output power
Note : Conducted average output power is for reference

Remark:

Directional gain = $10 \times \log((10^{3.698/20} + 10^{4.22/20} + 10^{3.516/20} + 10^{4.661/20})^2 / 4) = 10.056 \text{ dBi} > 6 \text{ dBi}$, so the limit shall be reduced to 30 dBm – (10.056dBi – 6dBi) = 25.94 dBm



Non-beamforming mode

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_4TX	-3.09
802.11g_Nss1,(6Mbps)_4TX	-5.52
802.11ax HEW20_Nss1,(MCS0)_4TX	-7.42
802.11ax HEW40_Nss1,(MCS0)_4TX	-12.03

RBW = 3kHz;

Result

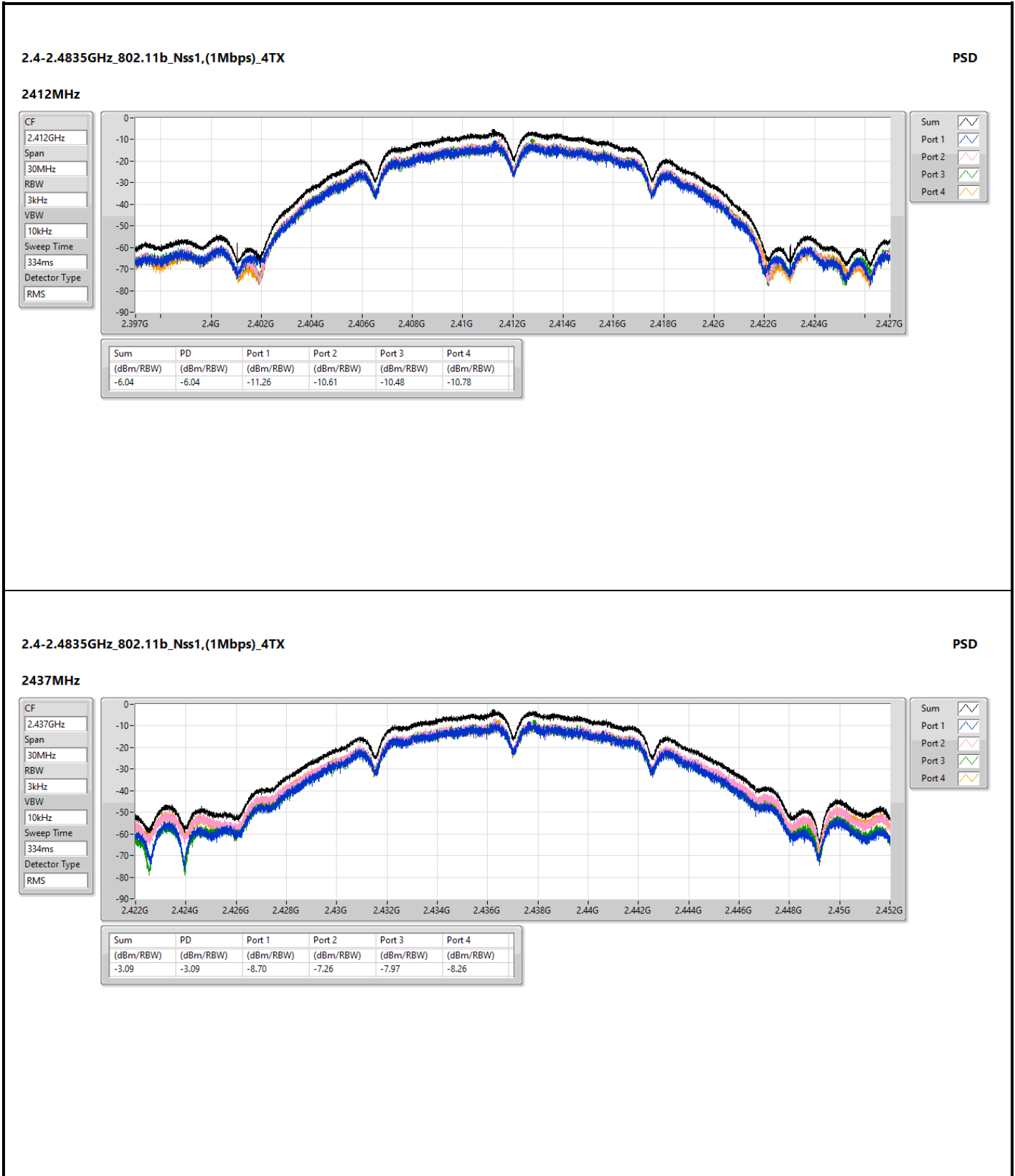
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	10.056	-11.26	-10.61	-10.48	-10.78	-6.04	3.94
2437MHz	Pass	10.056	-8.70	-7.26	-7.97	-8.26	-3.09	3.94
2462MHz	Pass	10.056	-10.38	-10.97	-10.23	-11.23	-5.43	3.94
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	10.056	-14.33	-14.33	-14.34	-14.50	-9.28	3.94
2437MHz	Pass	10.056	-10.96	-10.25	-10.13	-10.82	-5.52	3.94
2462MHz	Pass	10.056	-14.39	-14.56	-13.94	-13.90	-9.24	3.94
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	10.056	-15.54	-15.86	-16.26	-16.49	-11.01	3.94
2437MHz	Pass	10.056	-12.20	-13.27	-12.33	-13.70	-7.42	3.94
2462MHz	Pass	10.056	-15.69	-16.95	-15.81	-16.78	-10.73	3.94
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	10.056	-19.10	-18.63	-19.66	-19.25	-13.64	3.94
2437MHz	Pass	10.056	-17.38	-17.86	-16.96	-17.95	-12.03	3.94
2452MHz	Pass	10.056	-18.92	-18.66	-19.26	-19.56	-13.91	3.94

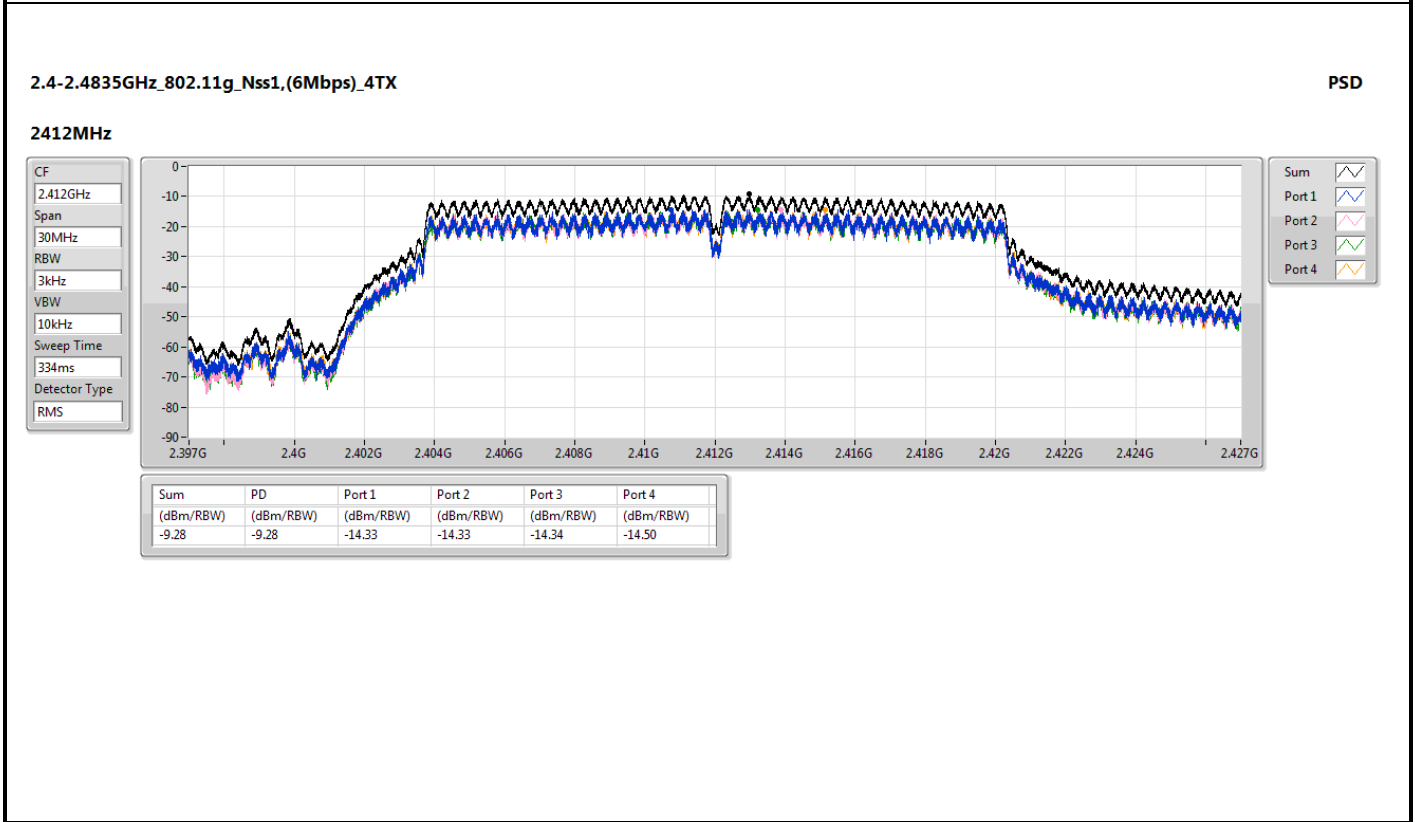
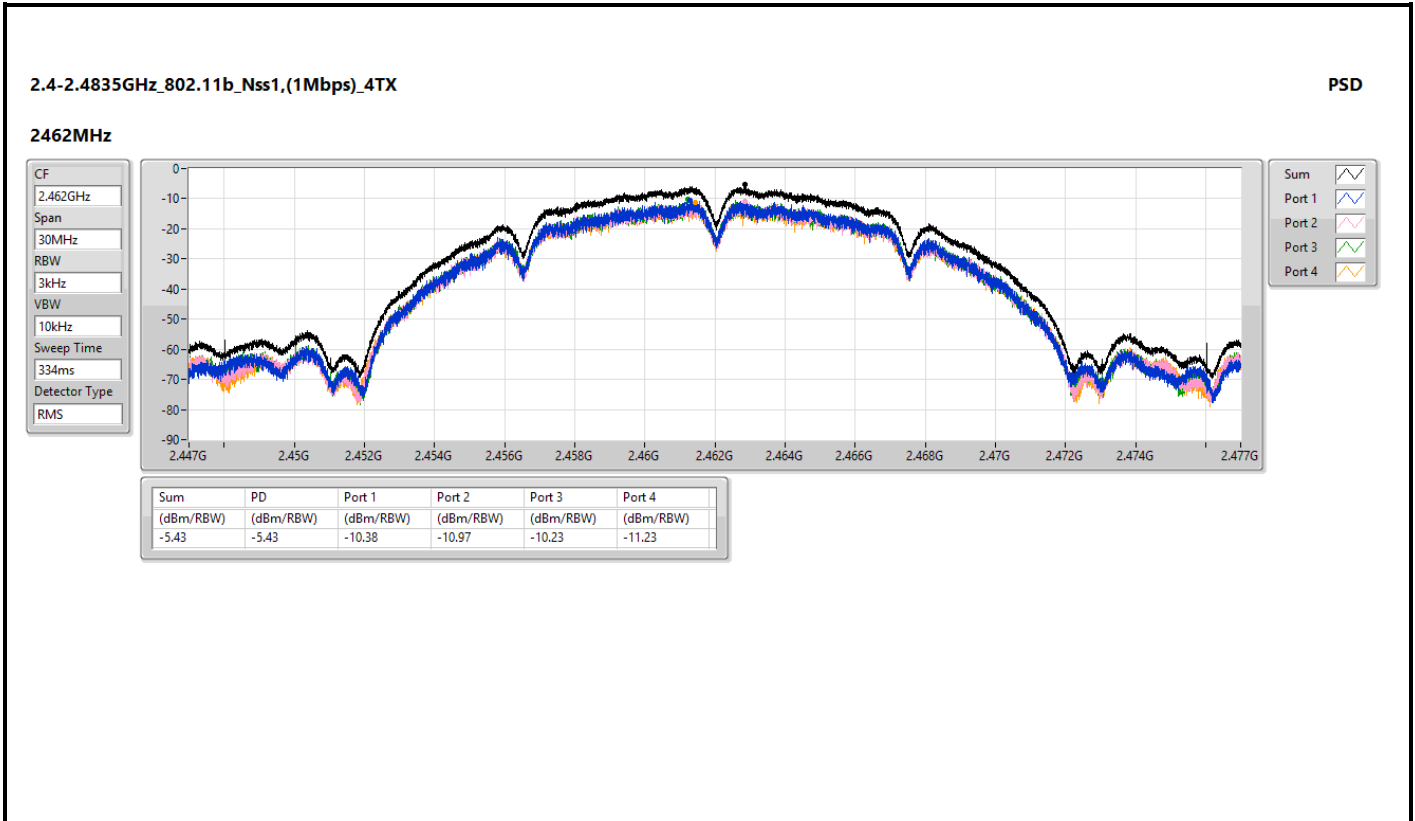
DG = Directional Gain; RBW = 3kHz;

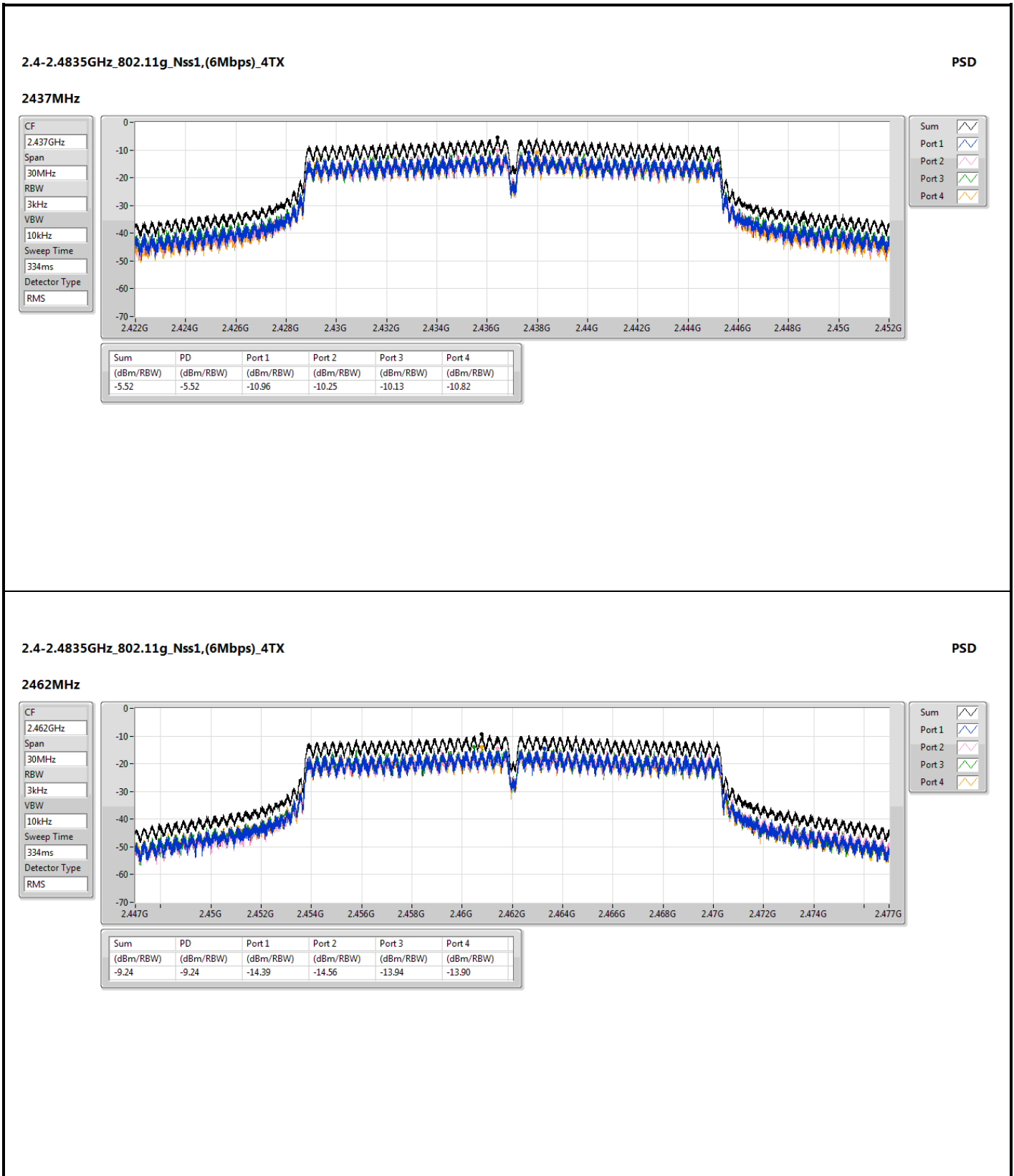
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

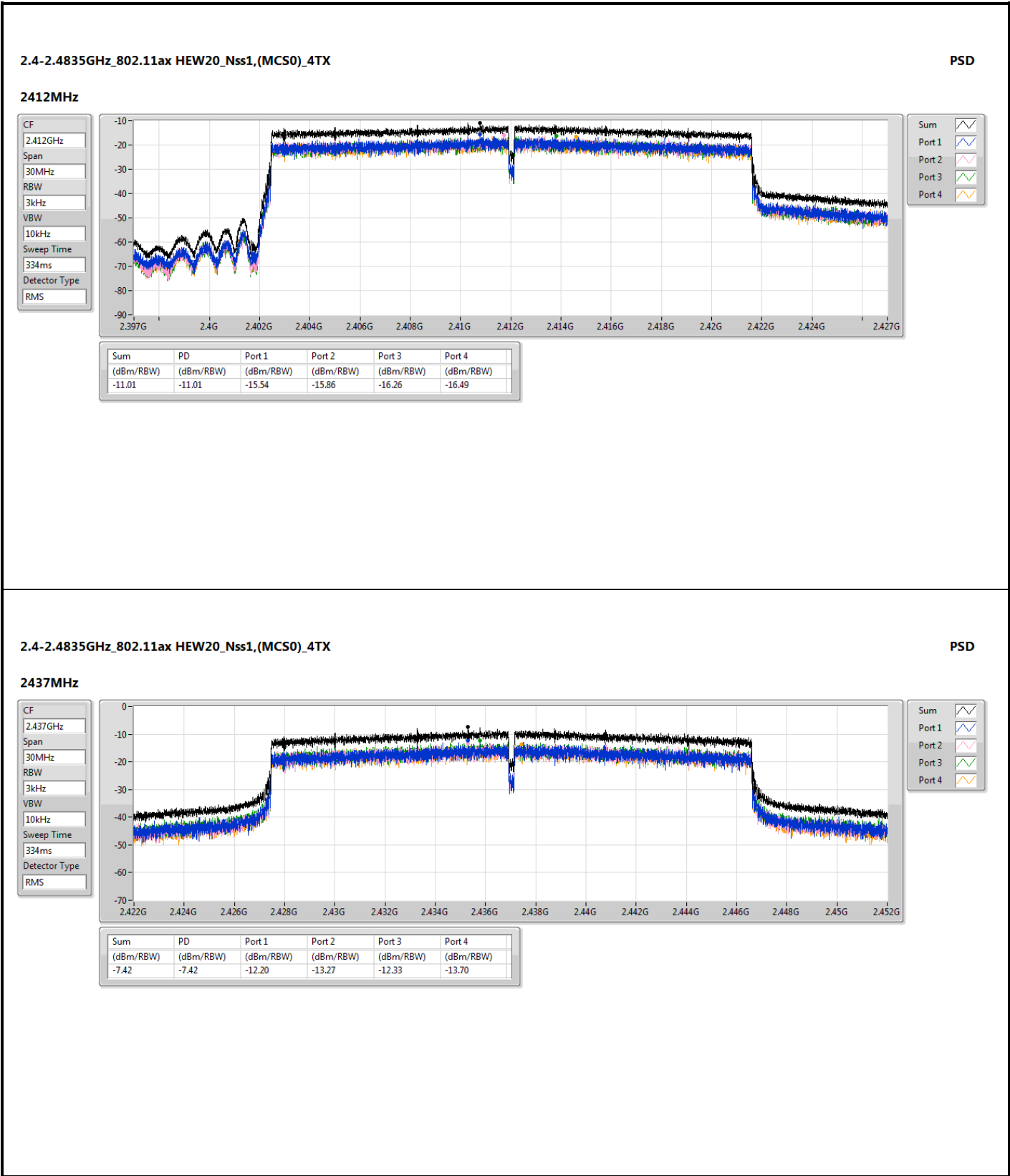
Remark:

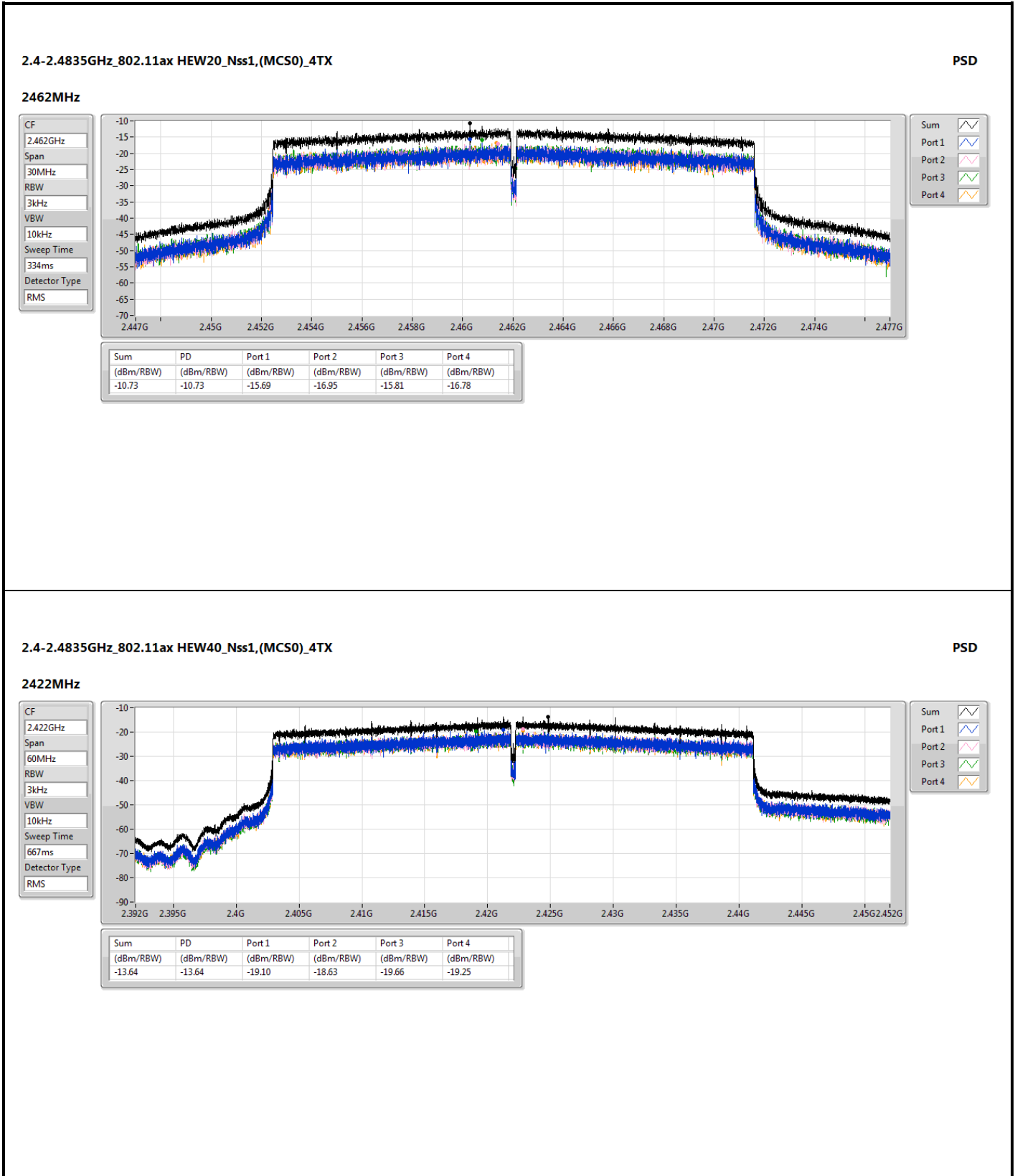
Directional gain = $10 \times \log((10^{3.698/20} + 10^{4.22/20} + 10^{3.516/20} + 10^{4.661/20})^2/4) = 10.056 \text{ dBi} > 6\text{dBi}$, so the limit shall be reduced to 8 dBm – (10.056dBi – 6dBi) = 3.94 dBm

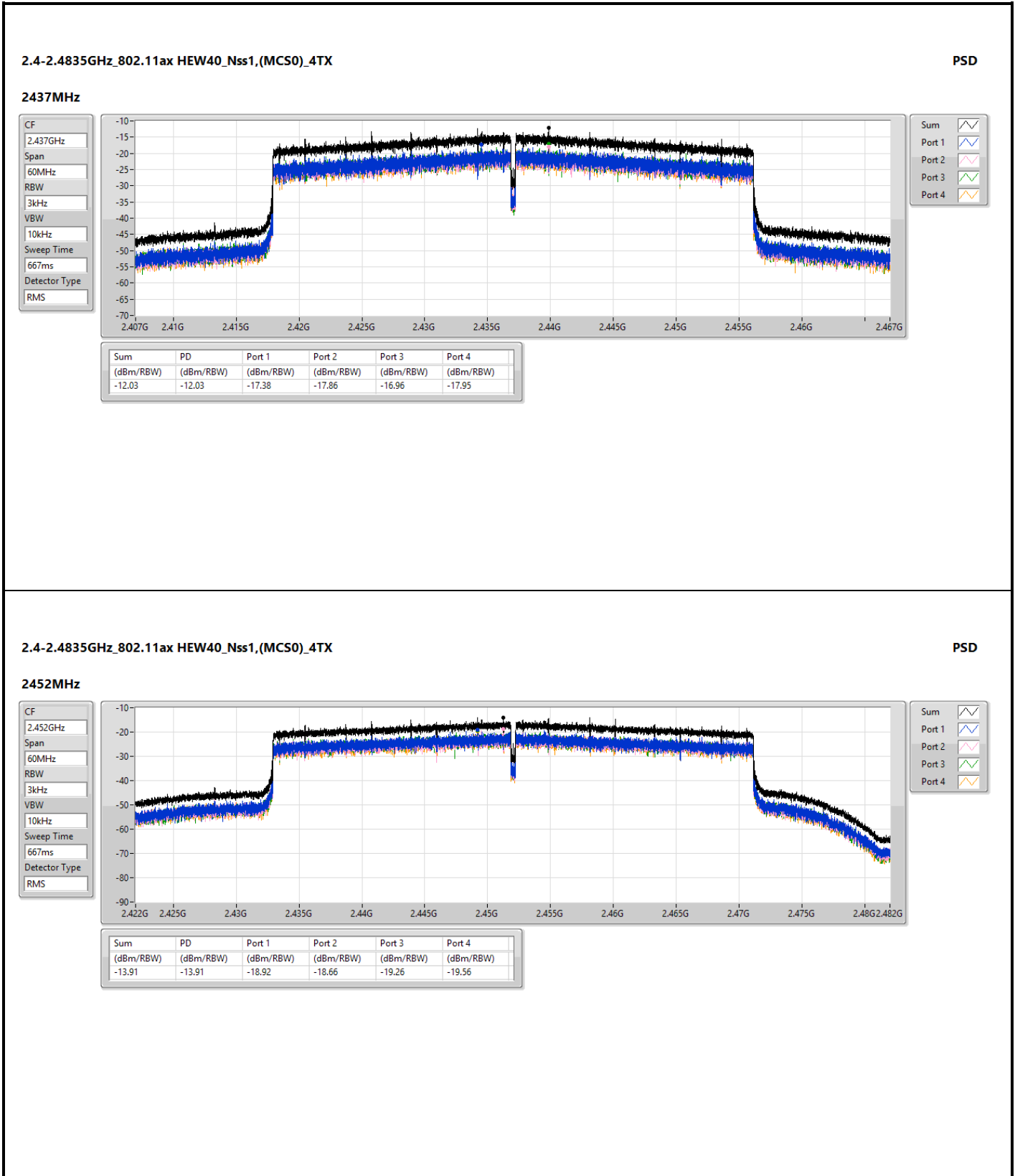














Beamforming mode

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-9.42
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-14.47

RBW = 3kHz;

Result

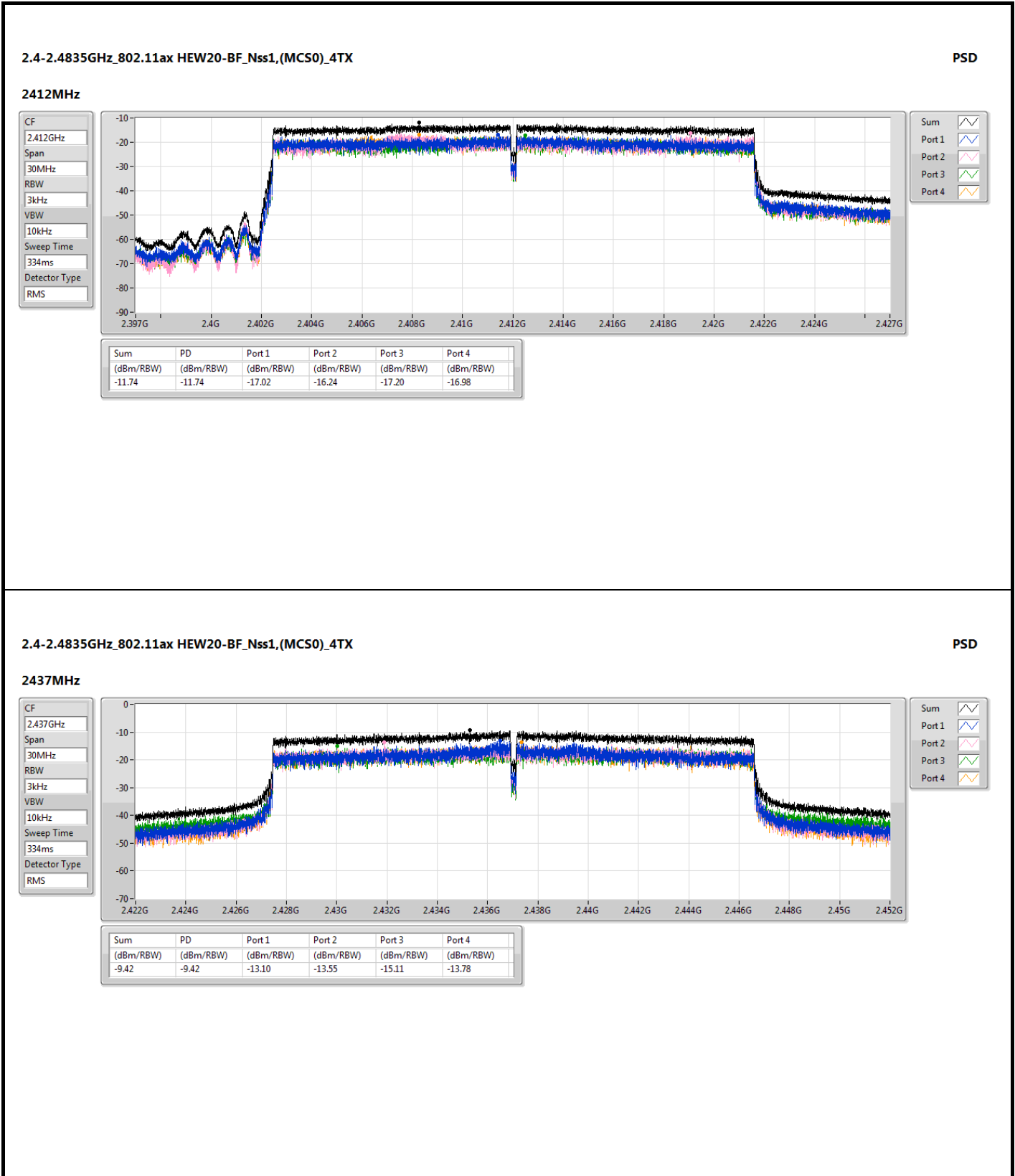
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	10.056	-17.02	-16.24	-17.20	-16.98	-11.74	3.94
2437MHz	Pass	10.056	-13.10	-13.55	-15.11	-13.78	-9.42	3.94
2462MHz	Pass	10.056	-18.14	-18.83	-19.02	-17.74	-14.21	3.94
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	10.056	-18.24	-20.52	-20.18	-19.89	-14.47	3.94
2437MHz	Pass	10.056	-19.26	-19.77	-19.98	-21.28	-15.60	3.94
2452MHz	Pass	10.056	-21.92	-20.03	-21.70	-21.36	-16.12	3.94

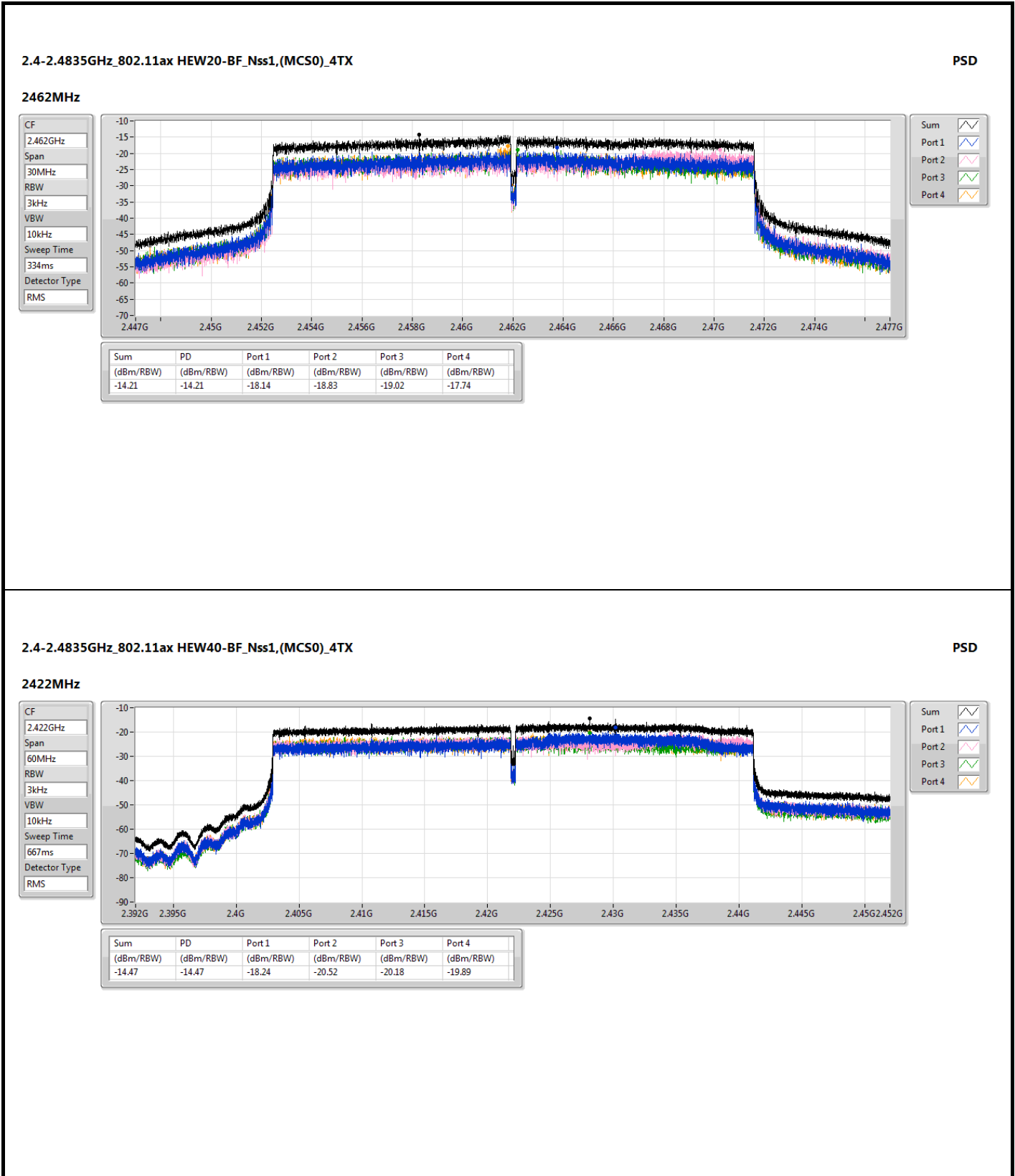
DG = Directional Gain; RBW = 3kHz;

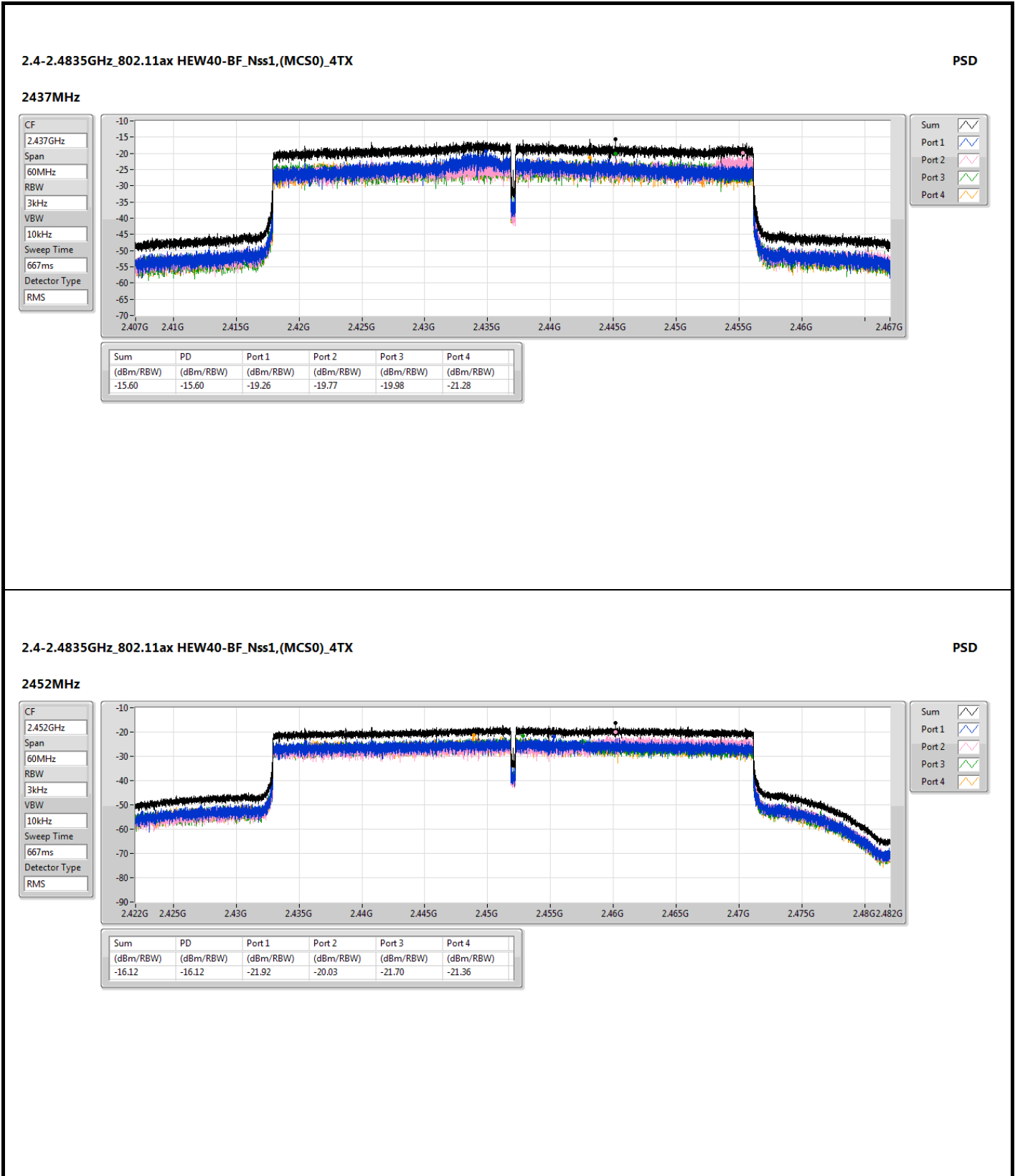
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

Remark:

Directional gain = 10 x log((10^{3.698/20}+10^{4.22/20}+10^{3.516/20}+10^{4.661/20})²/4) = 10.056 dBi > 6dBi, so the limit shall be reduced to 8 dBm – (10.056dBi – 6dBi) = 3.94 dBm









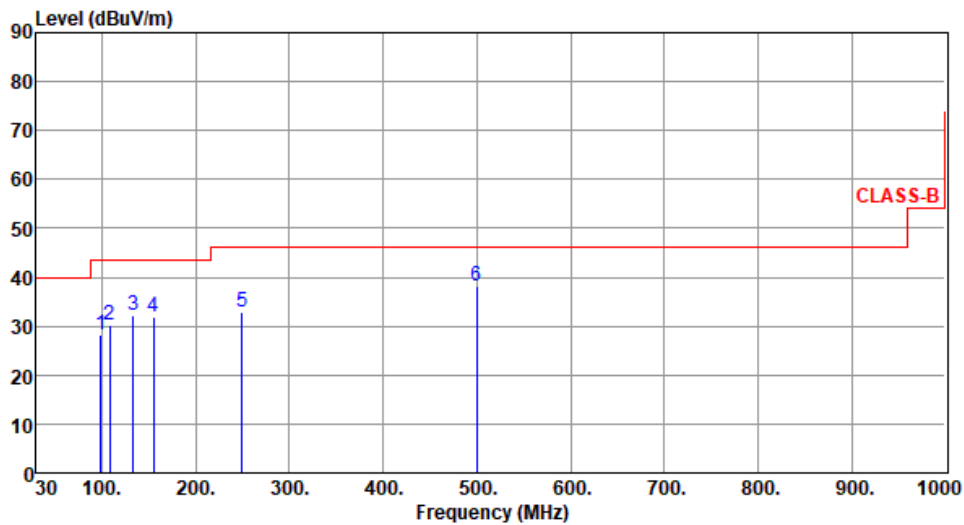
Non-beamforming mode

Test configuration 1: Without SFP, model: SDG-8612

Unwanted Emissions (Below 1GHz)

Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By :Sean Yu Temperature(°C):23 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	98.87	28.18	43.50	-15.32	41.66	-13.48	Peak	---	---
2	108.57	30.15	43.50	-13.35	42.16	-12.01	Peak	---	---
3	133.79	32.27	43.50	-11.23	42.21	-9.94	Peak	---	---
4	155.13	31.99	43.50	-11.51	40.77	-8.78	Peak	---	---
5	249.22	32.73	46.00	-13.27	42.82	-10.09	Peak	---	---
6	499.48	38.25	46.00	-7.75	41.47	-3.22	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

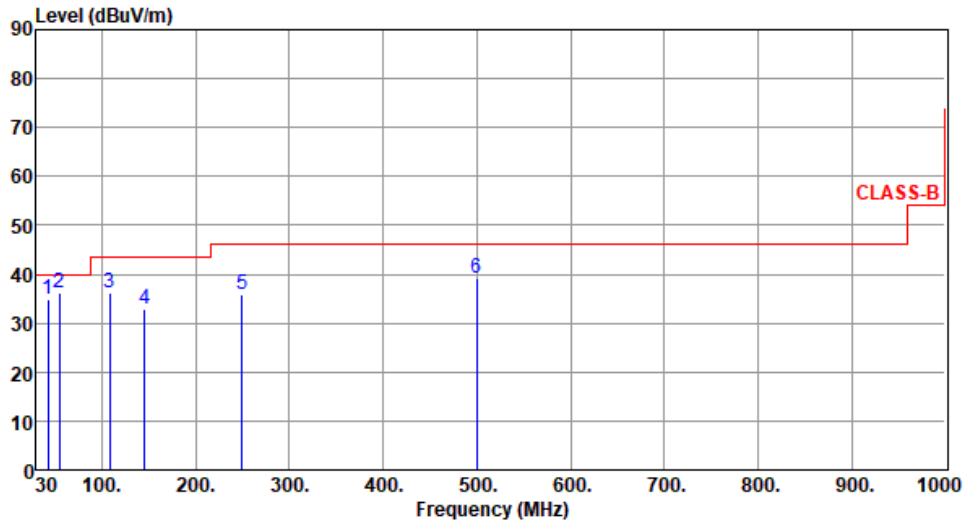
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 23 Humidity(%): 66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	42.61	34.87	40.00	-5.13	43.21	-8.34	Peak	---	---
2	54.25	36.11	40.00	-3.89	44.51	-8.40	Peak	---	---
3	108.57	36.31	43.50	-7.19	48.32	-12.01	Peak	---	---
4	145.43	33.00	43.50	-10.50	42.07	-9.07	Peak	---	---
5	249.22	35.76	46.00	-10.24	45.85	-10.09	Peak	---	---
6	499.48	39.06	46.00	-6.94	42.28	-3.22	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Test configuration 2: With SFP, model: SDG-8614

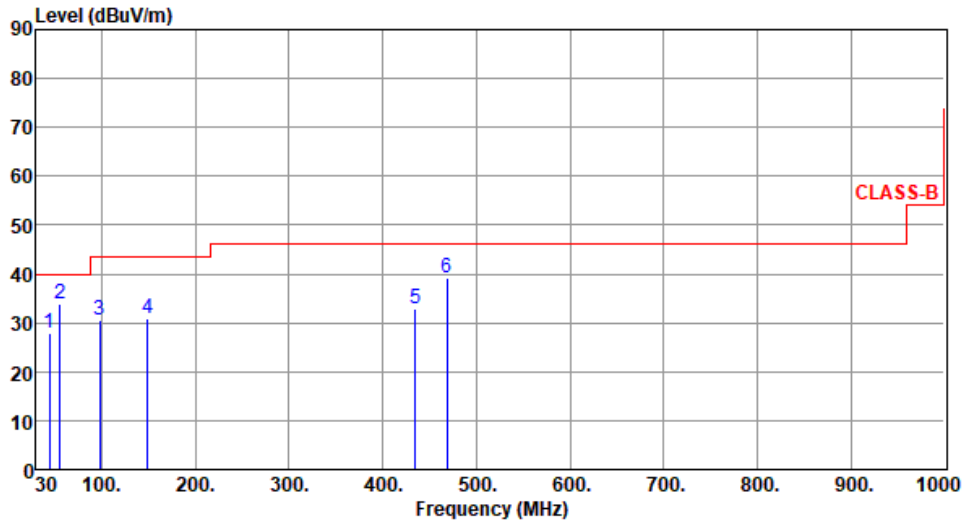
Unwanted Emissions (Below 1GHz)

Modulation	11b	Test Freq. (MHz)	2437						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 24 Humidity(%): 62									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	149.31	31.56	43.50	-11.94	40.49	-8.93	Peak	---	---
2	191.99	29.44	43.50	-14.06	40.94	-11.50	Peak	---	---
3	249.22	27.29	46.00	-18.71	37.38	-10.09	Peak	---	---
4	292.87	31.96	46.00	-14.04	40.31	-8.35	Peak	---	---
5	371.44	31.26	46.00	-14.74	37.65	-6.39	Peak	---	---
6	468.44	35.68	46.00	-10.32	39.52	-3.84	Peak	---	---
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m). Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.									



Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 24 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	44.27	27.91	40.00	-12.09	36.47	-8.56	QP	100	15
2	55.22	33.74	40.00	-6.26	42.43	-8.69	Peak	---	---
3	97.90	30.65	43.50	-12.85	44.31	-13.66	Peak	---	---
4	149.31	30.82	43.50	-12.68	39.75	-8.93	Peak	---	---
5	434.49	32.83	46.00	-13.17	37.41	-4.58	Peak	---	---
6	468.44	39.20	46.00	-6.80	43.04	-3.84	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Unwanted Emission (Above 1GHz) for 11b

Modulation	11b		Test Freq. (MHz)	2412
Polarization	Horizontal			
Test By : Sean Yu		Temperature(°C): 26		Humidity(%): 62

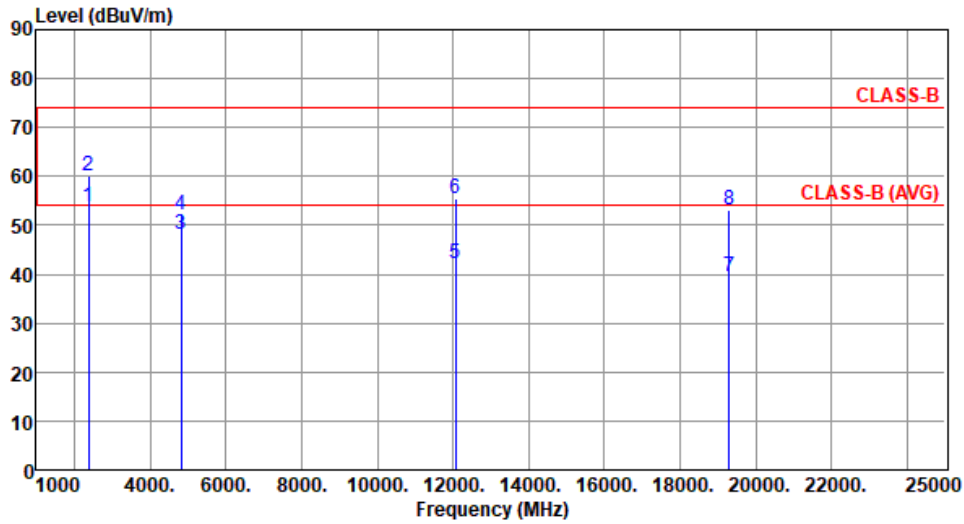
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	47.59	54.00	-6.41	52.24	-4.65	Average	173	158
2	2390.00	55.77	74.00	-18.23	60.42	-4.65	Peak	173	158
3	4824.00	46.30	54.00	-7.70	46.83	-0.53	Average	286	254
4	4824.00	50.69	74.00	-23.31	51.22	-0.53	Peak	286	254
5	12060.00	42.01	54.00	-11.99	35.64	6.37	Average	100	101
6	12060.00	55.04	74.00	-18.96	48.67	6.37	Peak	100	101
7	19296.00	39.79	54.00	-14.21	38.78	1.01	Average	100	214
8	19296.00	53.64	74.00	-20.36	52.63	1.01	Peak	100	214

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	53.79	54.00	-0.21	58.44	-4.65	Average	130	211
2	2390.00	60.12	74.00	-13.88	64.77	-4.65	Peak	130	211
3	4824.00	48.26	54.00	-5.74	48.79	-0.53	Average	358	264
4	4824.00	52.12	74.00	-21.88	52.65	-0.53	Peak	358	264
5	12060.00	42.30	54.00	-11.70	35.93	6.37	Average	100	221
6	12060.00	55.49	74.00	-18.51	49.12	6.37	Peak	100	221
7	19296.00	39.66	54.00	-14.34	38.65	1.01	Average	100	108
8	19296.00	53.08	74.00	-20.92	52.07	1.01	Peak	100	108

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11b	Test Freq. (MHz)	2437						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	46.50	54.00	-7.50	51.15	-4.65	Average	100	193
2	2390.00	51.48	74.00	-22.52	56.13	-4.65	Peak	100	193
3	2483.50	47.97	54.00	-6.03	52.86	-4.89	Average	100	193
4	2483.50	51.36	74.00	-22.64	56.25	-4.89	Peak	100	193
5	4874.00	50.86	54.00	-3.14	51.40	-0.54	Average	268	260
6	4874.00	53.30	74.00	-20.70	53.84	-0.54	Peak	268	260
7	7311.00	37.77	54.00	-16.23	32.55	5.22	Average	100	108
8	7311.00	49.77	74.00	-24.23	44.55	5.22	Peak	100	108
9	19496.00	50.52	54.00	-3.48	49.33	1.19	Average	100	117
10	19496.00	55.76	74.00	-18.24	54.57	1.19	Peak	100	117

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

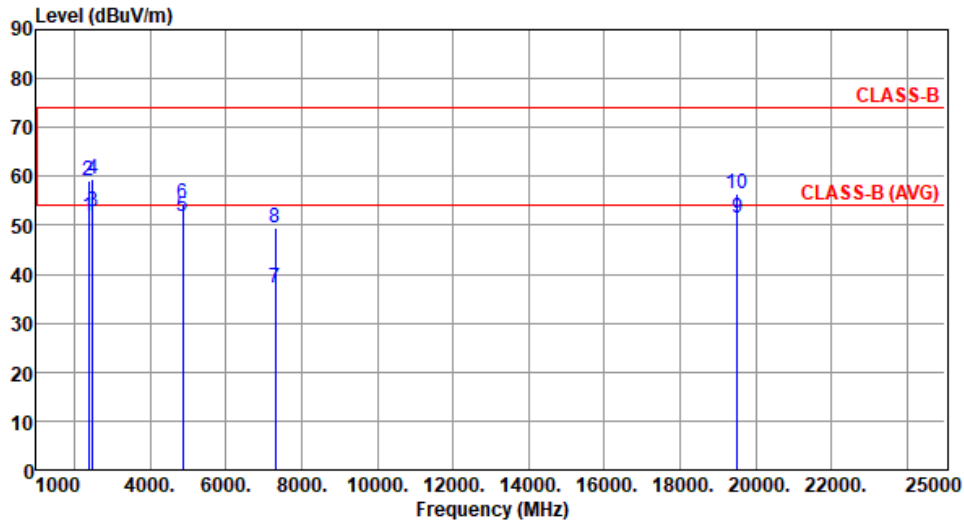
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	51.68	54.00	-2.32	56.33	-4.65	Average	175	205
2	2390.00	59.10	74.00	-14.90	63.75	-4.65	Peak	175	205
3	2483.50	52.72	54.00	-1.28	57.61	-4.89	Average	102	200
4	2483.50	59.33	74.00	-14.67	64.22	-4.89	Peak	102	200
5	4874.00	51.70	54.00	-2.30	52.24	-0.54	Average	363	277
6	4874.00	54.33	74.00	-19.67	54.87	-0.54	Peak	363	277
7	7311.00	37.06	54.00	-16.94	31.84	5.22	Average	100	162
8	7311.00	49.32	74.00	-24.68	44.10	5.22	Peak	100	162
9	19496.00	51.42	54.00	-2.58	50.23	1.19	Average	267	197
10	19496.00	56.50	74.00	-17.50	55.31	1.19	Peak	267	197

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

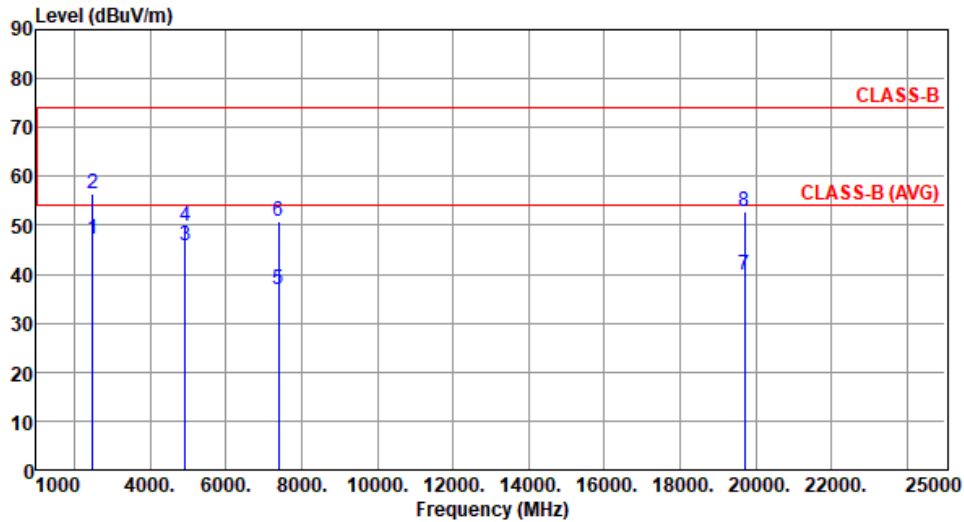
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	47.29	54.00	-6.71	52.18	-4.89	Average	155	105
2	2483.50	56.33	74.00	-17.67	61.22	-4.89	Peak	155	105
3	4924.00	45.82	54.00	-8.18	46.33	-0.51	Average	267	258
4	4924.00	49.76	74.00	-24.24	50.27	-0.51	Peak	267	258
5	7386.00	36.93	54.00	-17.07	31.86	5.07	Average	100	188
6	7386.00	50.70	74.00	-23.30	45.63	5.07	Peak	100	188
7	19696.00	39.91	54.00	-14.09	38.65	1.26	Average	100	218
8	19696.00	52.92	74.00	-21.08	51.66	1.26	Peak	100	218

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)

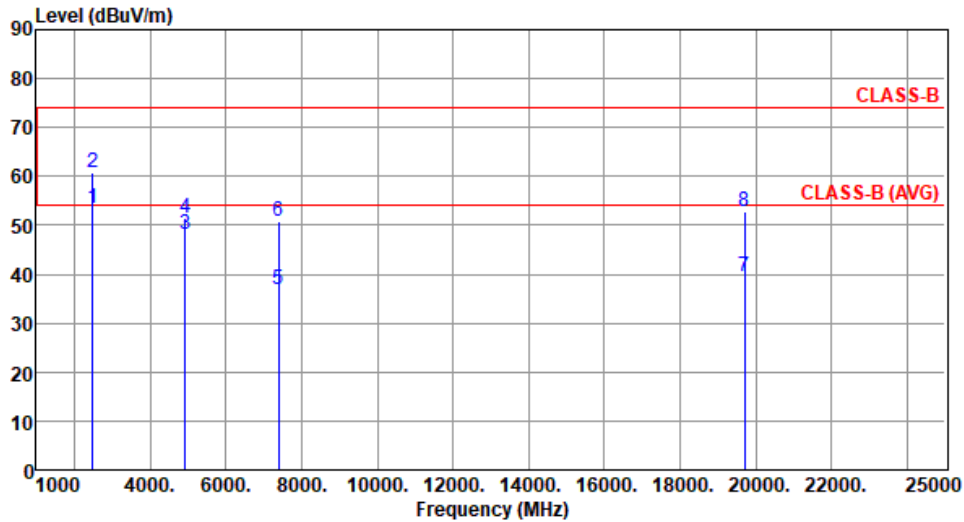
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



Modulation	11b	Test Freq. (MHz)	2462
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	53.58	54.00	-0.42	58.47	-4.89	Average	204	121
2	2483.50	60.63	74.00	-13.37	65.52	-4.89	Peak	204	121
3	4924.00	48.16	54.00	-5.84	48.67	-0.51	Average	377	278
4	4924.00	51.32	74.00	-22.68	51.83	-0.51	Peak	377	278
5	7386.00	36.95	54.00	-17.05	31.88	5.07	Average	100	105
6	7386.00	50.70	74.00	-23.30	45.63	5.07	Peak	100	105
7	19696.00	39.50	54.00	-14.50	38.24	1.26	Average	100	208
8	19696.00	52.87	74.00	-21.13	51.61	1.26	Peak	100	208

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



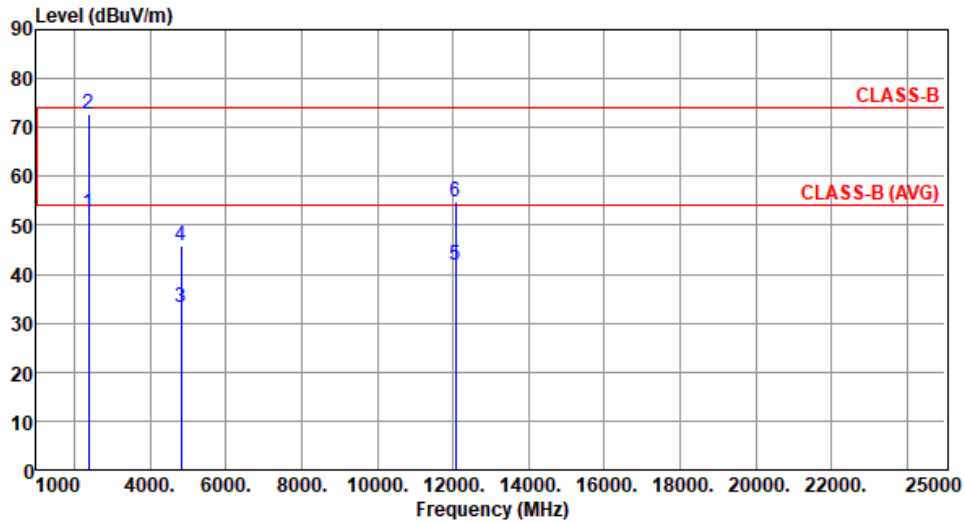
Unwanted Emissions (Above 1GHz) for 11g

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	48.03	54.00	-5.97	52.68	-4.65	Average	100	197
2	2390.00	66.19	74.00	-7.81	70.84	-4.65	Peak	100	197
3	4824.00	33.44	54.00	-20.56	33.97	-0.53	Average	100	285
4	4824.00	47.22	74.00	-26.78	47.75	-0.53	Peak	100	285
5	12060.00	41.95	54.00	-12.05	35.58	6.37	Average	100	331
6	12060.00	54.99	74.00	-19.01	48.62	6.37	Peak	100	331
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									



Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.48	54.00	-1.52	57.13	-4.65	Average	112	197
2	2390.00	72.61	74.00	-1.39	77.26	-4.65	Peak	112	197
3	4824.00	33.20	54.00	-20.80	33.73	-0.53	Average	100	173
4	4824.00	45.95	74.00	-28.05	46.48	-0.53	Peak	100	173
5	12060.00	41.90	54.00	-12.10	35.53	6.37	Average	100	57
6	12060.00	54.84	74.00	-19.16	48.47	6.37	Peak	100	57

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

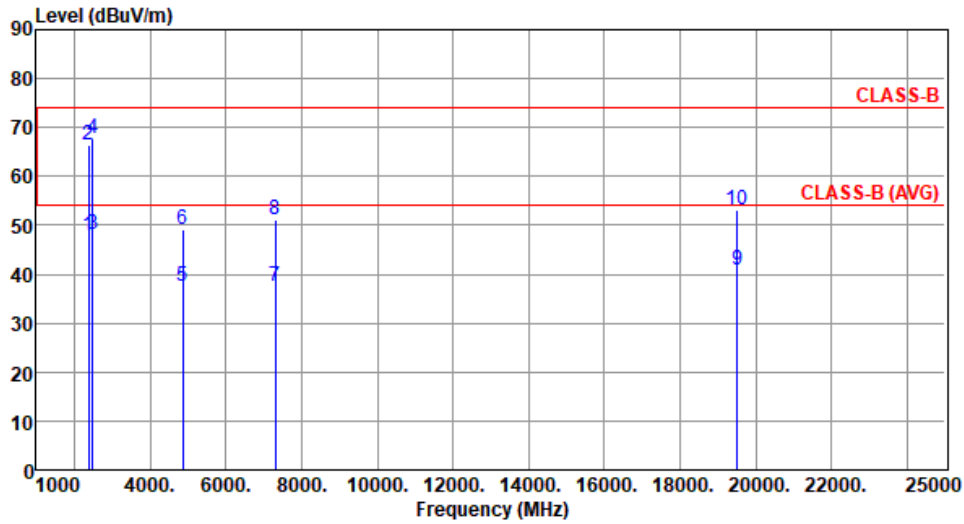
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	47.79	54.00	-6.21	52.44	-4.65	Average	100	193
2	2390.00	66.33	74.00	-7.67	70.98	-4.65	Peak	100	193
3	2483.50	48.28	54.00	-5.72	53.17	-4.89	Average	100	193
4	2483.50	67.87	74.00	-6.13	72.76	-4.89	Peak	100	193
5	4874.00	37.56	54.00	-16.44	38.10	-0.54	Average	255	260
6	4874.00	49.02	74.00	-24.98	49.56	-0.54	Peak	255	260
7	7311.00	37.47	54.00	-16.53	32.25	5.22	Average	100	179
8	7311.00	51.09	74.00	-22.91	45.87	5.22	Peak	100	179
9	19496.00	40.93	54.00	-13.07	39.74	1.19	Average	100	155
10	19496.00	53.08	74.00	-20.92	51.89	1.19	Peak	100	155

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

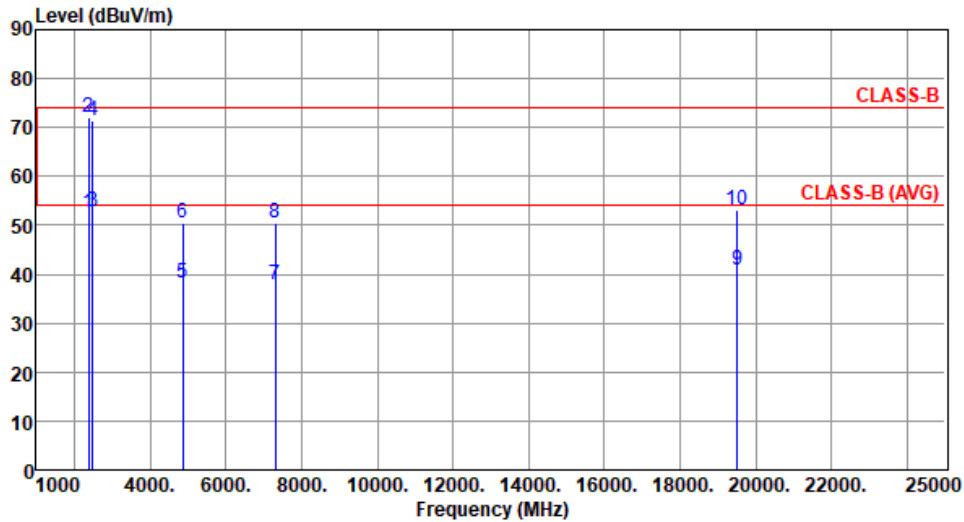
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.50	54.00	-1.50	57.15	-4.65	Average	128	202
2	2390.00	71.98	74.00	-2.02	76.63	-4.65	Peak	128	202
3	2483.50	52.96	54.00	-1.04	57.85	-4.89	Average	100	204
4	2483.50	71.54	74.00	-2.46	76.43	-4.89	Peak	100	204
5	4874.00	38.09	54.00	-15.91	38.63	-0.54	Average	361	278
6	4874.00	50.60	74.00	-23.40	51.14	-0.54	Peak	361	278
7	7311.00	37.80	54.00	-16.20	32.58	5.22	Average	100	128
8	7311.00	50.40	74.00	-23.60	45.18	5.22	Peak	100	128
9	19496.00	40.89	54.00	-13.11	39.70	1.19	Average	100	173
10	19496.00	53.15	74.00	-20.85	51.96	1.19	Peak	100	173

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)

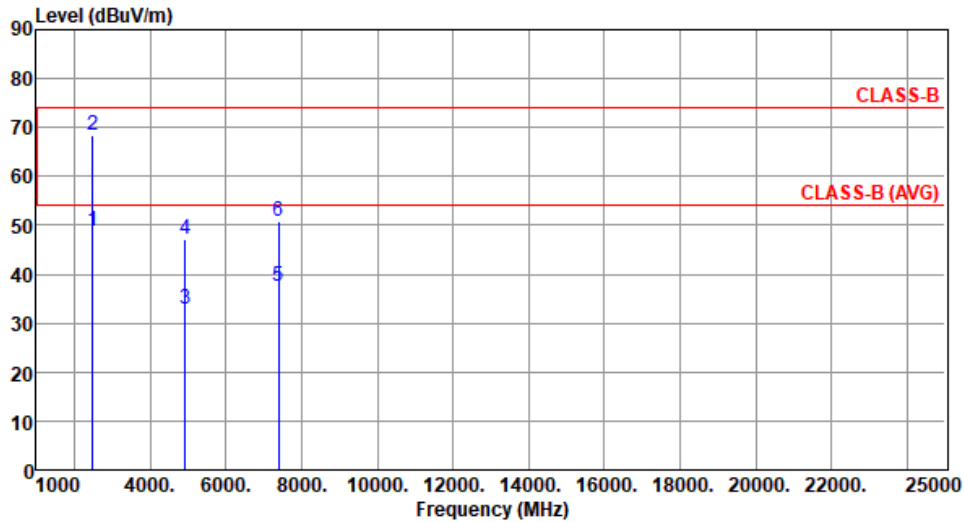
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	48.73	54.00	-5.27	53.62	-4.89	Average	100	189
2	2483.50	68.29	74.00	-5.71	73.18	-4.89	Peak	100	189
3	4924.00	32.91	54.00	-21.09	33.42	-0.51	Average	100	273
4	4924.00	47.03	74.00	-26.97	47.54	-0.51	Peak	100	273
5	7386.00	37.37	54.00	-16.63	32.30	5.07	Average	100	108
6	7386.00	50.85	74.00	-23.15	45.78	5.07	Peak	100	108

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	11g	Test Freq. (MHz)	2462																																																																												
Polarization	Vertical																																																																														
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62																																																																															
<p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent limits: CLASS-B at approximately 74 dBuV/m and CLASS-B (AVG) at approximately 54 dBuV/m. Six vertical blue lines represent emission peaks labeled 1 through 6. Peak 1 is at 2483.50 MHz (52.82 dBuV/m), peak 2 is at 2483.50 MHz (73.00 dBuV/m), peak 3 is at 4924.00 MHz (32.95 dBuV/m), peak 4 is at 4924.00 MHz (45.87 dBuV/m), peak 5 is at 7386.00 MHz (37.50 dBuV/m), and peak 6 is at 7386.00 MHz (50.89 dBuV/m).</p>																																																																															
	<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB/m</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2483.50</td> <td>52.82</td> <td>54.00</td> <td>-1.18</td> <td>57.71</td> <td>-4.89</td> <td>Average</td> <td>136</td> <td>225</td> </tr> <tr> <td>2</td> <td>2483.50</td> <td>73.00</td> <td>74.00</td> <td>-1.00</td> <td>77.89</td> <td>-4.89</td> <td>Peak</td> <td>136</td> <td>225</td> </tr> <tr> <td>3</td> <td>4924.00</td> <td>32.95</td> <td>54.00</td> <td>-21.05</td> <td>33.46</td> <td>-0.51</td> <td>Average</td> <td>100</td> <td>208</td> </tr> <tr> <td>4</td> <td>4924.00</td> <td>45.87</td> <td>74.00</td> <td>-28.13</td> <td>46.38</td> <td>-0.51</td> <td>Peak</td> <td>100</td> <td>208</td> </tr> <tr> <td>5</td> <td>7386.00</td> <td>37.50</td> <td>54.00</td> <td>-16.50</td> <td>32.43</td> <td>5.07</td> <td>Average</td> <td>100</td> <td>148</td> </tr> <tr> <td>6</td> <td>7386.00</td> <td>50.89</td> <td>74.00</td> <td>-23.11</td> <td>45.82</td> <td>5.07</td> <td>Peak</td> <td>100</td> <td>148</td> </tr> </tbody> </table>		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg	1	2483.50	52.82	54.00	-1.18	57.71	-4.89	Average	136	225	2	2483.50	73.00	74.00	-1.00	77.89	-4.89	Peak	136	225	3	4924.00	32.95	54.00	-21.05	33.46	-0.51	Average	100	208	4	4924.00	45.87	74.00	-28.13	46.38	-0.51	Peak	100	208	5	7386.00	37.50	54.00	-16.50	32.43	5.07	Average	100	148	6	7386.00	50.89	74.00	-23.11	45.82	5.07	Peak	100	148								
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg																																																																						
1	2483.50	52.82	54.00	-1.18	57.71	-4.89	Average	136	225																																																																						
2	2483.50	73.00	74.00	-1.00	77.89	-4.89	Peak	136	225																																																																						
3	4924.00	32.95	54.00	-21.05	33.46	-0.51	Average	100	208																																																																						
4	4924.00	45.87	74.00	-28.13	46.38	-0.51	Peak	100	208																																																																						
5	7386.00	37.50	54.00	-16.50	32.43	5.07	Average	100	148																																																																						
6	7386.00	50.89	74.00	-23.11	45.82	5.07	Peak	100	148																																																																						
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).																																																																															



Unwanted Emissions (Above 1GHz) for ax HE20

Modulation	ax HE20		Test Freq. (MHz)	2412	
Polarization	Horizontal				
Test By : Sean Yu		Temperature(°C): 25		Humidity(%): 62	

The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent the CLASS-B limit (at ~75 dBuV/m) and CLASS-B (AVG) limit (at ~55 dBuV/m). Six peaks are labeled: 1 (at ~2390 MHz, ~48 dBuV/m), 2 (at ~2390 MHz, ~69 dBuV/m), 3 (at ~4824 MHz, ~32 dBuV/m), 4 (at ~4824 MHz, ~45 dBuV/m), 5 (at ~12060 MHz, ~42 dBuV/m), and 6 (at ~12060 MHz, ~55 dBuV/m).

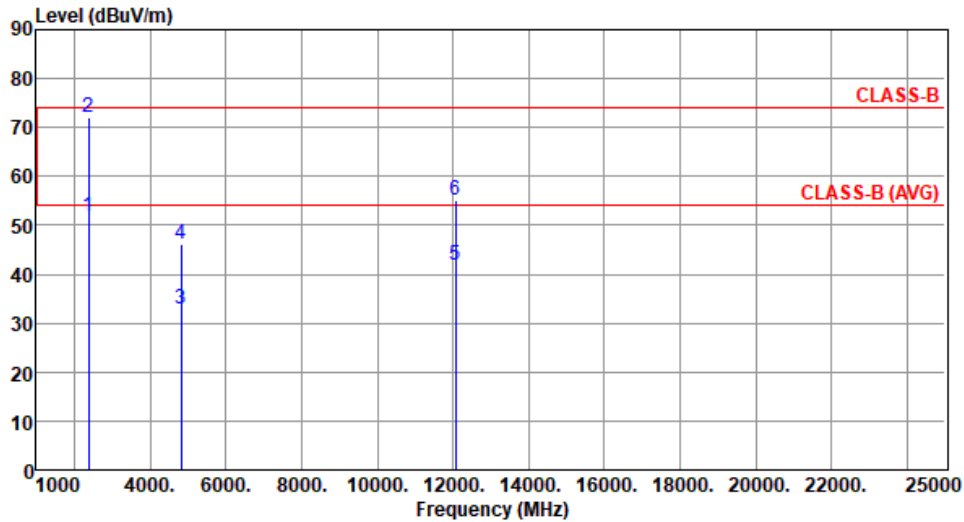
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	48.02	54.00	-5.98	52.67	-4.65	Average	100	195
2	2390.00	69.22	74.00	-4.78	73.87	-4.65	Peak	100	195
3	4824.00	32.13	54.00	-21.87	32.66	-0.53	Average	100	183
4	4824.00	45.94	74.00	-28.06	46.47	-0.53	Peak	100	183
5	12060.00	41.95	54.00	-12.05	35.58	6.37	Average	100	143
6	12060.00	54.99	74.00	-19.01	48.62	6.37	Peak	100	143

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2412
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	51.68	54.00	-2.32	56.33	-4.65	Average	179	226
2	2390.00	72.19	74.00	-1.81	76.84	-4.65	Peak	179	226
3	4824.00	32.96	54.00	-21.04	33.49	-0.53	Average	100	258
4	4824.00	46.20	74.00	-27.80	46.73	-0.53	Peak	100	258
5	12060.00	41.91	54.00	-12.09	35.54	6.37	Average	100	317
6	12060.00	55.01	74.00	-18.99	48.64	6.37	Peak	100	317

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

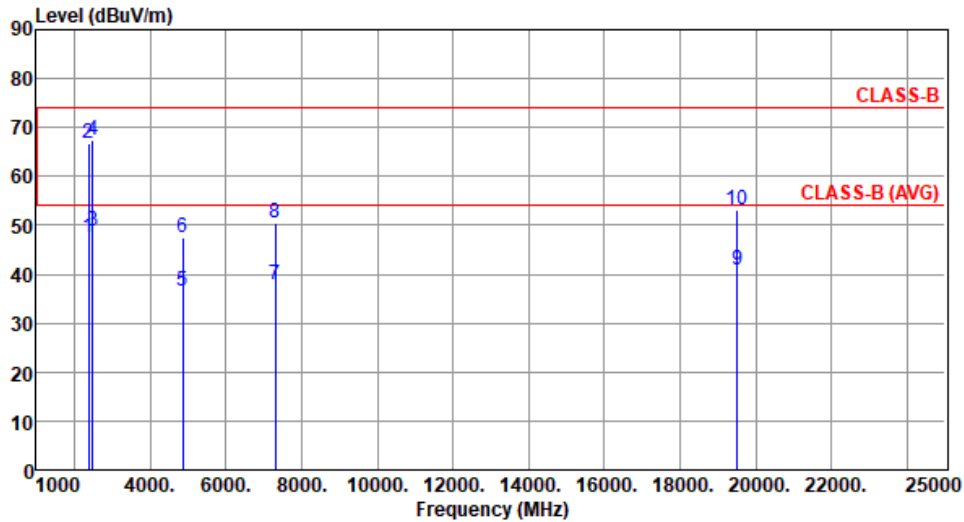
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	47.52	54.00	-6.48	52.17	-4.65	Average	100	194
2	2390.00	66.63	74.00	-7.37	71.28	-4.65	Peak	100	194
3	2483.50	48.67	54.00	-5.33	53.56	-4.89	Average	100	194
4	2483.50	67.56	74.00	-6.44	72.45	-4.89	Peak	100	194
5	4874.00	36.69	54.00	-17.31	37.23	-0.54	Average	258	259
6	4874.00	47.58	74.00	-26.42	48.12	-0.54	Peak	258	259
7	7311.00	37.73	54.00	-16.27	32.51	5.22	Average	100	227
8	7311.00	50.45	74.00	-23.55	45.23	5.22	Peak	100	227
9	19496.00	40.83	54.00	-13.17	39.64	1.19	Average	100	118
10	19496.00	53.11	74.00	-20.89	51.92	1.19	Peak	100	118

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)

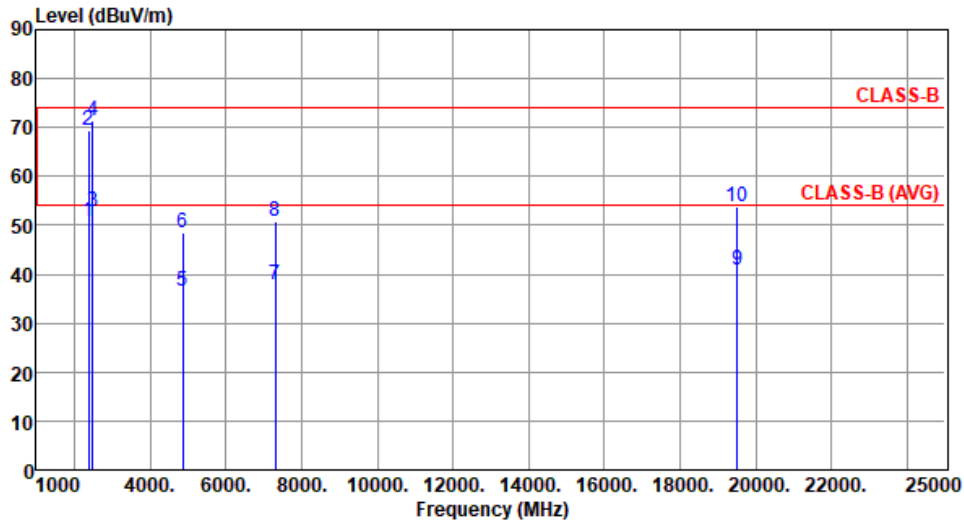
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	50.80	54.00	-3.20	55.45	-4.65	Average	178	224
2	2390.00	69.25	74.00	-4.75	73.90	-4.65	Peak	178	224
3	2483.50	52.79	54.00	-1.21	57.68	-4.89	Average	127	223
4	2483.50	71.45	74.00	-2.55	76.34	-4.89	Peak	127	223
5	4874.00	36.68	54.00	-17.32	37.22	-0.54	Average	360	274
6	4874.00	48.44	74.00	-25.56	48.98	-0.54	Peak	360	274
7	7311.00	37.70	54.00	-16.30	32.48	5.22	Average	100	221
8	7311.00	50.76	74.00	-23.24	45.54	5.22	Peak	100	221
9	19496.00	40.84	54.00	-13.16	39.65	1.19	Average	100	258
10	19496.00	53.84	74.00	-20.16	52.65	1.19	Peak	100	258

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

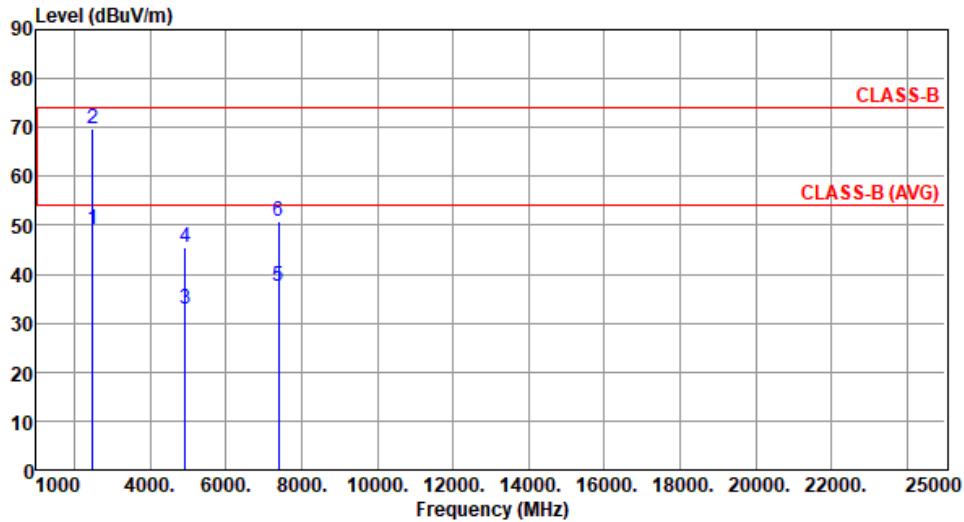
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2462
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	49.29	54.00	-4.71	54.18	-4.89	Average	100	198
2	2483.50	69.69	74.00	-4.31	74.58	-4.89	Peak	100	198
3	4924.00	32.94	54.00	-21.06	33.45	-0.51	Average	100	223
4	4924.00	45.61	74.00	-28.39	46.12	-0.51	Peak	100	223
5	7386.00	37.39	54.00	-16.61	32.32	5.07	Average	100	176
6	7386.00	50.95	74.00	-23.05	45.88	5.07	Peak	100	176

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

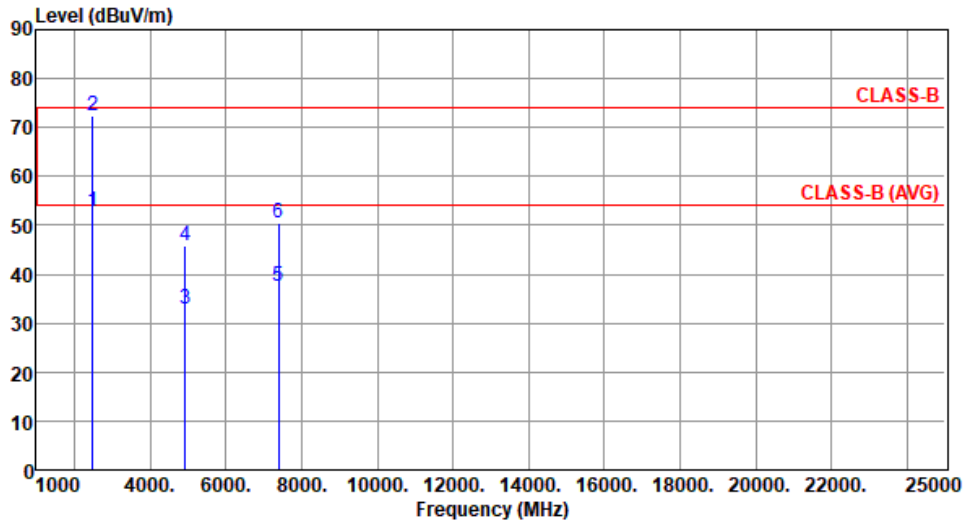
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2462
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	52.79	54.00	-1.21	57.68	-4.89	Average	119	200
2	2483.50	72.38	74.00	-1.62	77.27	-4.89	Peak	119	200
3	4924.00	33.00	54.00	-21.00	33.51	-0.51	Average	100	291
4	4924.00	45.83	74.00	-28.17	46.34	-0.51	Peak	100	291
5	7386.00	37.37	54.00	-16.63	32.30	5.07	Average	100	151
6	7386.00	50.49	74.00	-23.51	45.42	5.07	Peak	100	151

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Unwanted Emissions (Above 1GHz) for ax HE40

Modulation	ax HE40		Test Freq. (MHz)	2422	
Polarization	Horizontal				
Test By : Sean Yu		Temperature(°C): 25		Humidity(%): 62	

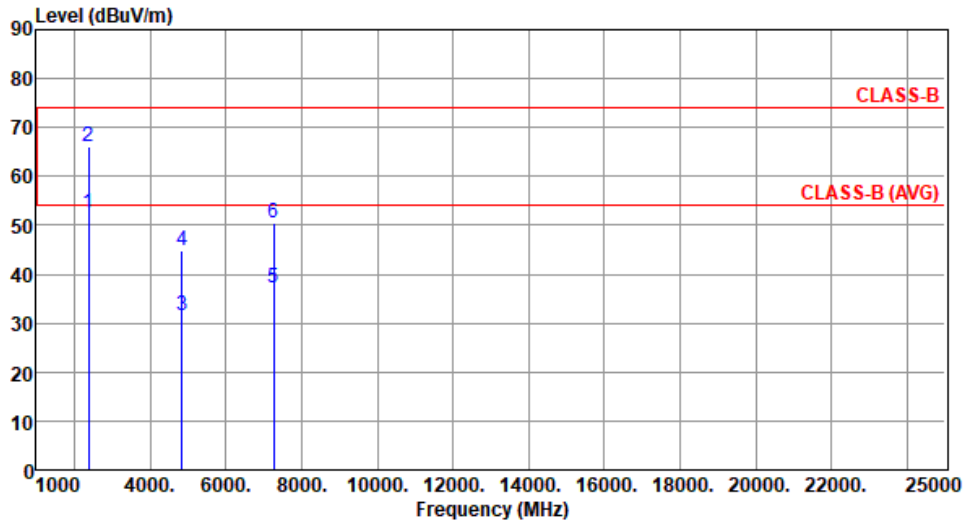
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	49.73	54.00	-4.27	54.38	-4.65	Average	100	201
2	2390.00	63.01	74.00	-10.99	67.66	-4.65	Peak	100	201
3	4844.00	31.87	54.00	-22.13	32.40	-0.53	Average	100	153
4	4844.00	45.13	74.00	-28.87	45.66	-0.53	Peak	100	153
5	7266.00	37.31	54.00	-16.69	32.16	5.15	Average	100	45
6	7266.00	50.28	74.00	-23.72	45.13	5.15	Peak	100	45

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2422
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.56	54.00	-1.44	57.21	-4.65	Average	140	229
2	2390.00	66.20	74.00	-7.80	70.85	-4.65	Peak	140	229
3	4844.00	31.67	54.00	-22.33	32.20	-0.53	Average	100	209
4	4844.00	44.74	74.00	-29.26	45.27	-0.53	Peak	100	209
5	7266.00	37.36	54.00	-16.64	32.21	5.15	Average	100	177
6	7266.00	50.48	74.00	-23.52	45.33	5.15	Peak	100	177

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

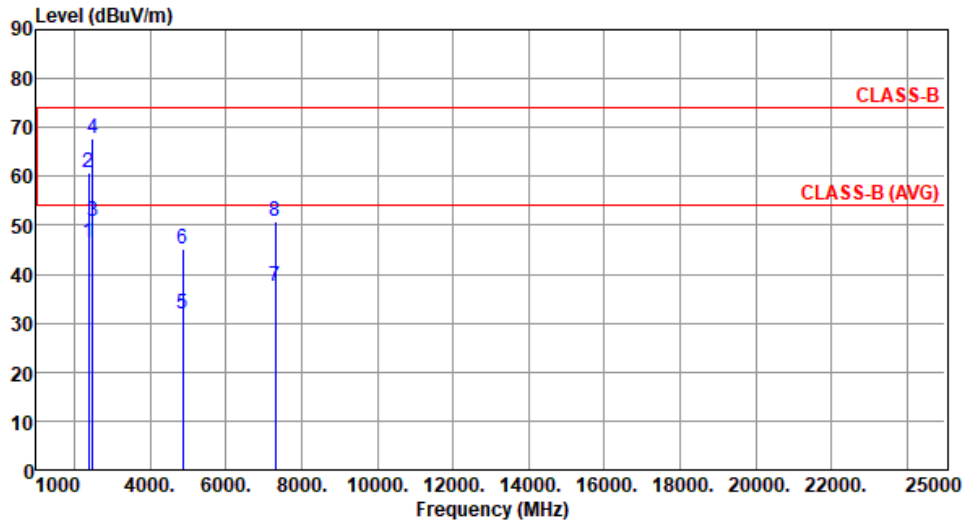
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	46.37	54.00	-7.63	51.02	-4.65	Average	227	128
2	2390.00	60.82	74.00	-13.18	65.47	-4.65	Peak	227	128
3	2483.50	50.68	54.00	-3.32	55.57	-4.89	Average	227	128
4	2483.50	67.80	74.00	-6.20	72.69	-4.89	Peak	227	128
5	4874.00	31.79	54.00	-22.21	32.33	-0.54	Average	100	116
6	4874.00	45.10	74.00	-28.90	45.64	-0.54	Peak	100	116
7	7311.00	37.49	54.00	-16.51	32.27	5.22	Average	100	158
8	7311.00	50.81	74.00	-23.19	45.59	5.22	Peak	100	158

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

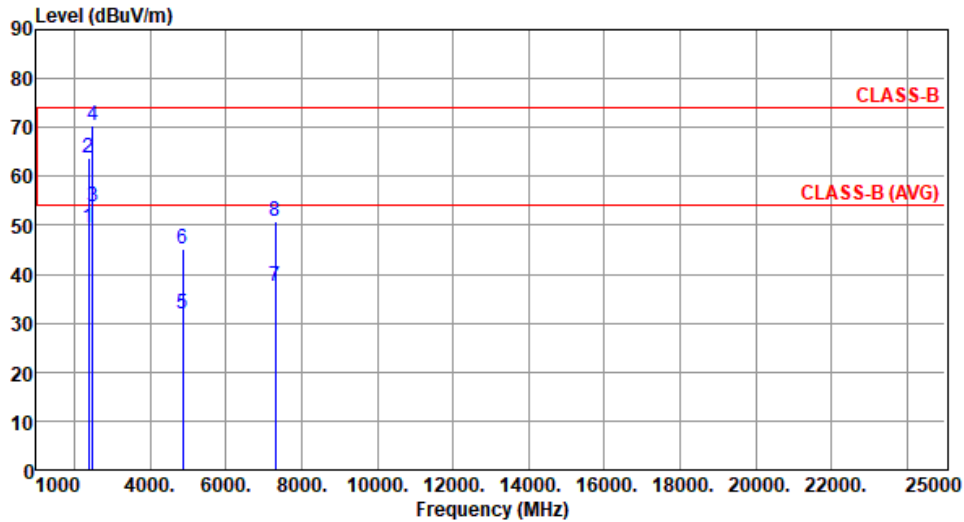
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	49.58	54.00	-4.42	54.23	-4.65	Average	132	205
2	2390.00	63.90	74.00	-10.10	68.55	-4.65	Peak	132	205
3	2483.50	53.75	54.00	-0.25	58.64	-4.89	Average	132	205
4	2483.50	70.29	74.00	-3.71	75.18	-4.89	Peak	132	205
5	4874.00	31.87	54.00	-22.13	32.41	-0.54	Average	100	279
6	4874.00	45.04	74.00	-28.96	45.58	-0.54	Peak	100	279
7	7311.00	37.48	54.00	-16.52	32.26	5.22	Average	100	108
8	7311.00	50.73	74.00	-23.27	45.51	5.22	Peak	100	108

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

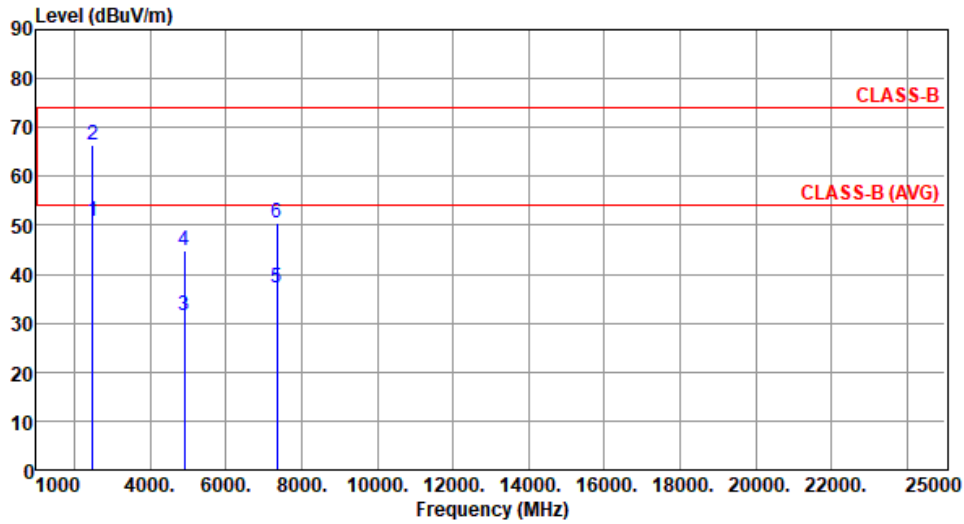
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2452
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	50.74	54.00	-3.26	55.63	-4.89	Average	227	168
2	2483.50	66.33	74.00	-7.67	71.22	-4.89	Peak	227	168
3	4904.00	31.67	54.00	-22.33	32.21	-0.54	Average	100	104
4	4904.00	44.97	74.00	-29.03	45.51	-0.54	Peak	100	104
5	7356.00	37.29	54.00	-16.71	32.20	5.09	Average	100	183
6	7356.00	50.56	74.00	-23.44	45.47	5.09	Peak	100	183

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

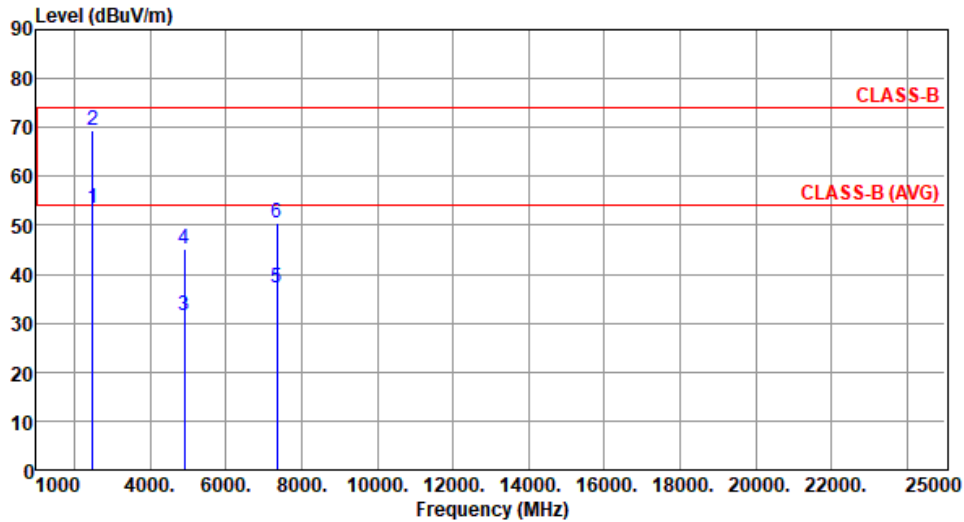
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2452
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 26 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	53.52	54.00	-0.48	58.41	-4.89	Average	153	200
2	2483.50	69.33	74.00	-4.67	74.22	-4.89	Peak	153	200
3	4904.00	31.72	54.00	-22.28	32.26	-0.54	Average	100	117
4	4904.00	45.10	74.00	-28.90	45.64	-0.54	Peak	100	117
5	7356.00	37.34	54.00	-16.66	32.25	5.09	Average	100	106
6	7356.00	50.36	74.00	-23.64	45.27	5.09	Peak	100	106

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



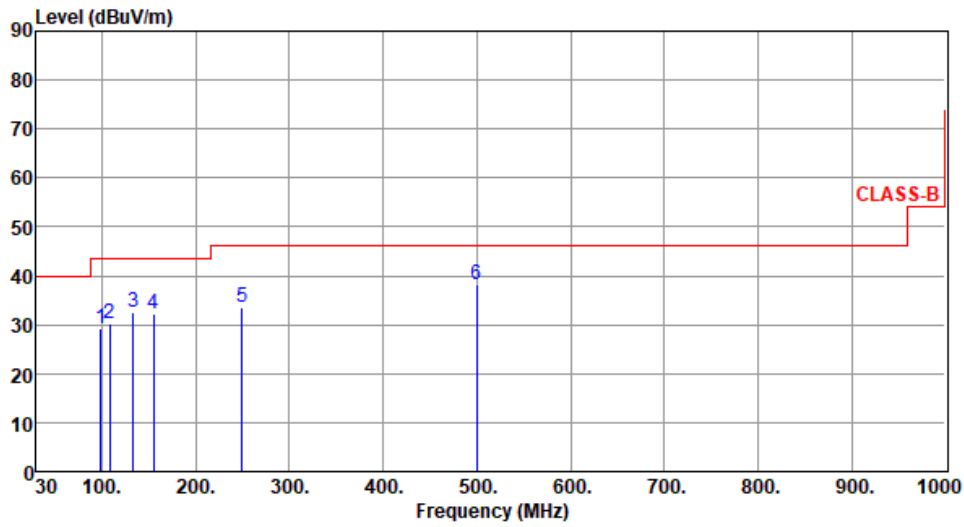
Beamforming mode

Test configuration 1: Without SFP, model: SDG-8612

Unwanted Emissions (Below 1GHz)

Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 23 Humidity(%): 66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	98.64	29.27	43.50	-14.23	42.79	-13.52	Peak	---	---
2	108.64	30.27	43.50	-13.23	42.25	-11.98	Peak	---	---
3	133.56	32.58	43.50	-10.92	42.57	-9.99	Peak	---	---
4	155.27	32.18	43.50	-11.32	40.98	-8.80	Peak	---	---
5	249.55	33.66	46.00	-12.34	43.74	-10.08	Peak	---	---
6	499.64	38.13	46.00	-7.87	41.35	-3.22	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

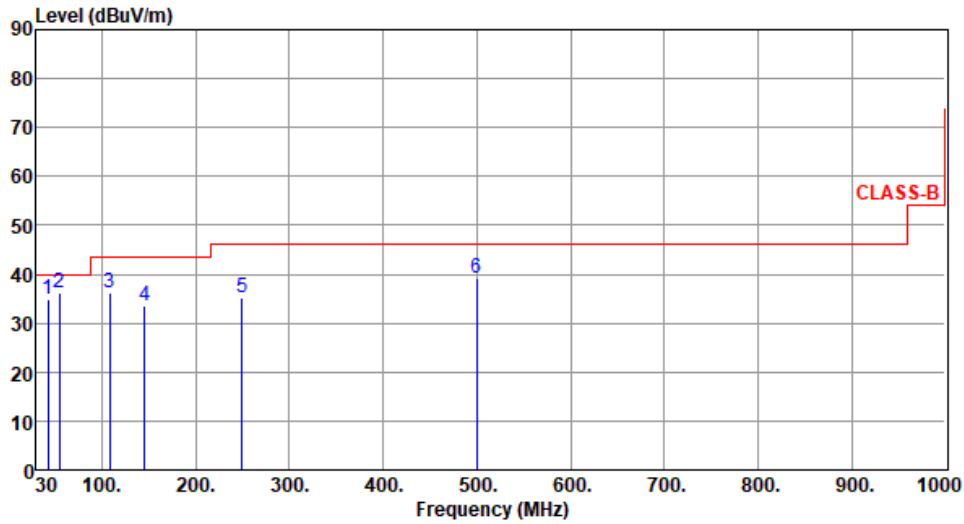
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 23 Humidity(%): 66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	42.58	34.77	40.00	-5.23	43.12	-8.35	Peak	---	---
2	54.66	36.21	40.00	-3.79	44.77	-8.56	Peak	---	---
3	108.64	36.27	43.50	-7.23	48.25	-11.98	Peak	---	---
4	145.63	33.51	43.50	-9.99	42.58	-9.07	Peak	---	---
5	249.54	35.27	46.00	-10.73	45.35	-10.08	Peak	---	---
6	499.68	39.22	46.00	-6.78	42.44	-3.22	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Test configuration 2: With SFP, model: SDG-8614

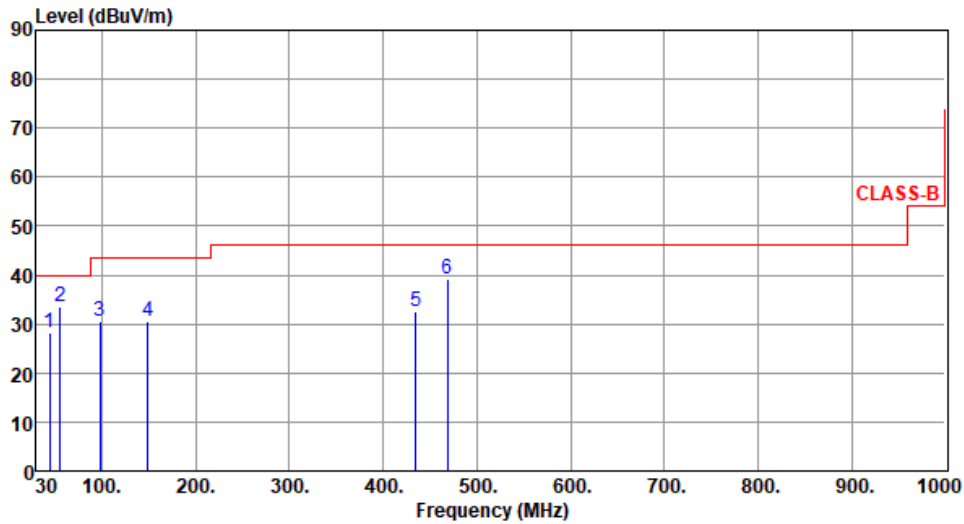
Modulation	ax HE20	Test Freq. (MHz)	2437						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 24 Humidity(%): 62									
<p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (30 to 1000). A red step function represents the CLASS-B emission limit, starting at 40 dBuV/m, stepping up to 45 dBuV/m at 100 MHz, and then to 55 dBuV/m at 950 MHz. Six blue vertical lines represent emission peaks, labeled 1 through 6, with their respective frequencies and levels indicated in the table below.</p>									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	149.27	31.66	43.50	-11.84	40.59	-8.93	Peak	---	---
2	191.58	30.11	43.50	-13.39	41.65	-11.54	Peak	---	---
3	249.47	27.66	46.00	-18.34	37.74	-10.08	Peak	---	---
4	292.48	31.66	46.00	-14.34	40.03	-8.37	Peak	---	---
5	371.55	31.82	46.00	-14.18	38.21	-6.39	Peak	---	---
6	468.51	35.44	46.00	-10.56	39.28	-3.84	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 24 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	44.53	28.22	40.00	-11.78	36.68	-8.46	QP	100	16
2	55.43	33.56	40.00	-6.44	42.23	-8.67	Peak	---	---
3	97.68	30.55	43.50	-12.95	44.23	-13.68	Peak	---	---
4	149.22	30.64	43.50	-12.86	39.58	-8.94	Peak	---	---
5	434.57	32.59	46.00	-13.41	37.17	-4.58	Peak	---	---
6	468.52	39.11	46.00	-6.89	42.95	-3.84	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Unwanted Emissions (Above 1GHz) for ax HE20

Modulation	ax HE20		Test Freq. (MHz)	2412	
Polarization	Horizontal				
Test By : Sean Yu		Temperature(°C): 25		Humidity(%): 61	

The graph displays emission levels across a frequency range from 1000 to 25000 MHz. Two horizontal red lines represent the CLASS-B limit at approximately 75 dBuV/m and the CLASS-B (AVG) limit at approximately 55 dBuV/m. Six vertical blue lines indicate specific emission peaks, labeled 2, 3, 4, 5, and 6. Peak 2 is at 2390 MHz, peak 3 at 4824 MHz, peak 4 at 4824 MHz, peak 5 at 12060 MHz, and peak 6 at 12060 MHz.

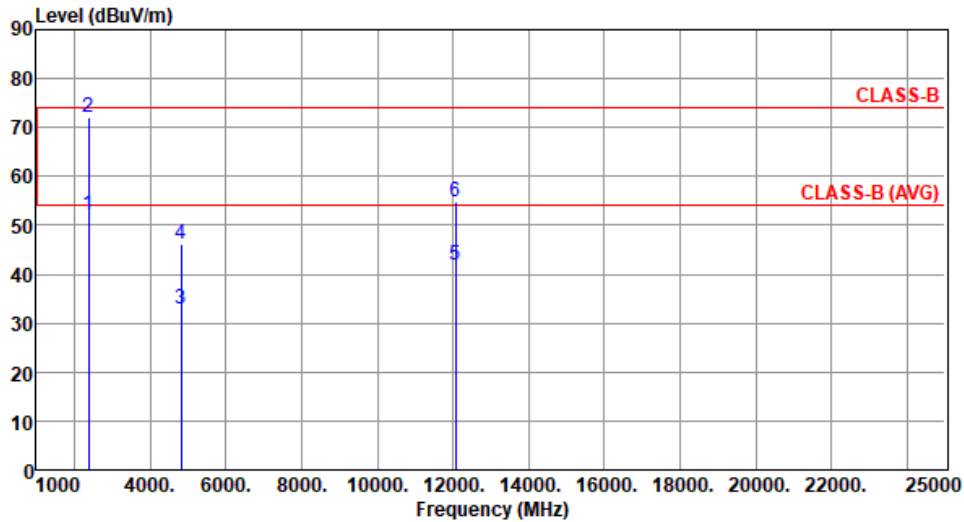
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	46.35	54.00	-7.65	51.00	-4.65	Average	100	209
2	2390.00	66.58	74.00	-7.42	71.23	-4.65	Peak	100	209
3	4824.00	32.96	54.00	-21.04	33.49	-0.53	Average	161	56
4	4824.00	46.28	74.00	-27.72	46.81	-0.53	Peak	161	56
5	12060.00	41.96	54.00	-12.04	35.59	6.37	Average	100	25
6	12060.00	54.98	74.00	-19.02	48.61	6.37	Peak	100	25

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2412
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.16	54.00	-1.84	56.81	-4.65	Average	122	215
2	2390.00	72.08	74.00	-1.92	76.73	-4.65	Peak	122	215
3	4824.00	32.88	54.00	-21.12	33.41	-0.53	Average	100	45
4	4824.00	46.14	74.00	-27.86	46.67	-0.53	Peak	100	45
5	12060.00	41.85	54.00	-12.15	35.48	6.37	Average	100	321
6	12060.00	54.92	74.00	-19.08	48.55	6.37	Peak	100	321

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



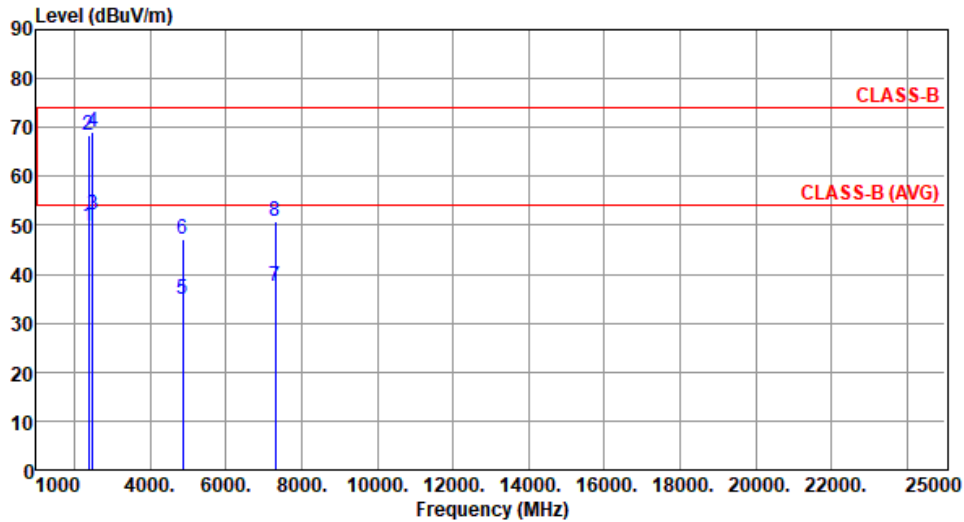
Modulation	ax HE20	Test Freq. (MHz)	2437						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	44.10	54.00	-9.90	48.75	-4.65	Average	100	205
2	2390.00	62.83	74.00	-11.17	67.48	-4.65	Peak	100	205
3	2483.50	46.13	54.00	-7.87	51.02	-4.89	Average	100	205
4	2483.50	63.74	74.00	-10.26	68.63	-4.89	Peak	100	205
5	4874.00	35.49	54.00	-18.51	36.03	-0.54	Average	167	52
6	4874.00	48.32	74.00	-25.68	48.86	-0.54	Peak	167	52
7	7311.00	37.48	54.00	-16.52	32.26	5.22	Average	100	128
8	7311.00	50.58	74.00	-23.42	45.36	5.22	Peak	100	128

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2437
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	49.93	54.00	-4.07	54.58	-4.65	Average	116	216
2	2390.00	68.27	74.00	-5.73	72.92	-4.65	Peak	116	216
3	2483.50	52.03	54.00	-1.97	56.92	-4.89	Average	116	216
4	2483.50	69.23	74.00	-4.77	74.12	-4.89	Peak	116	216
5	4874.00	34.75	54.00	-19.25	35.29	-0.54	Average	100	41
6	4874.00	47.13	74.00	-26.87	47.67	-0.54	Peak	100	41
7	7311.00	37.66	54.00	-16.34	32.44	5.22	Average	100	218
8	7311.00	50.80	74.00	-23.20	45.58	5.22	Peak	100	218

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

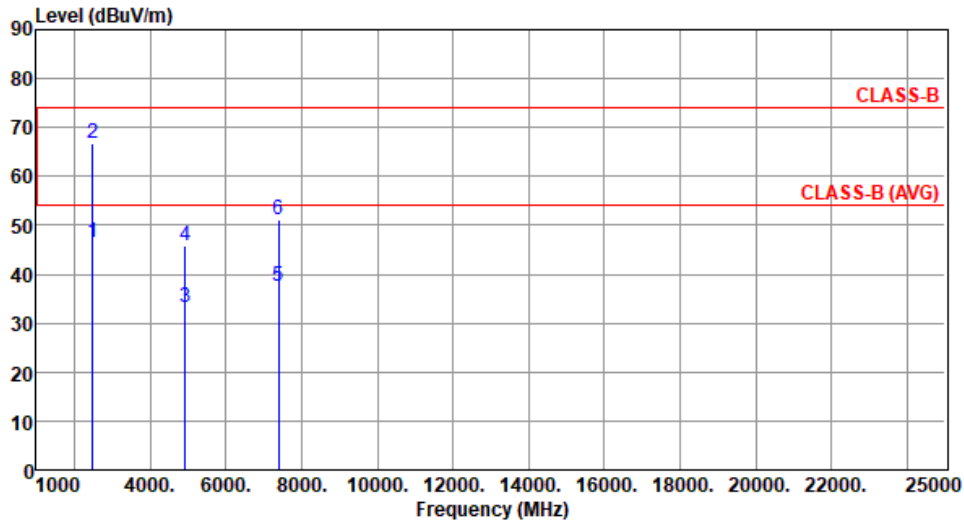
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2462
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	46.58	54.00	-7.42	51.47	-4.89	Average	100	212
2	2483.50	66.65	74.00	-7.35	71.54	-4.89	Peak	100	212
3	4924.00	33.05	54.00	-20.95	33.56	-0.51	Average	100	225
4	4924.00	45.69	74.00	-28.31	46.20	-0.51	Peak	100	225
5	7386.00	37.42	54.00	-16.58	32.35	5.07	Average	100	181
6	7386.00	50.98	74.00	-23.02	45.91	5.07	Peak	100	181

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

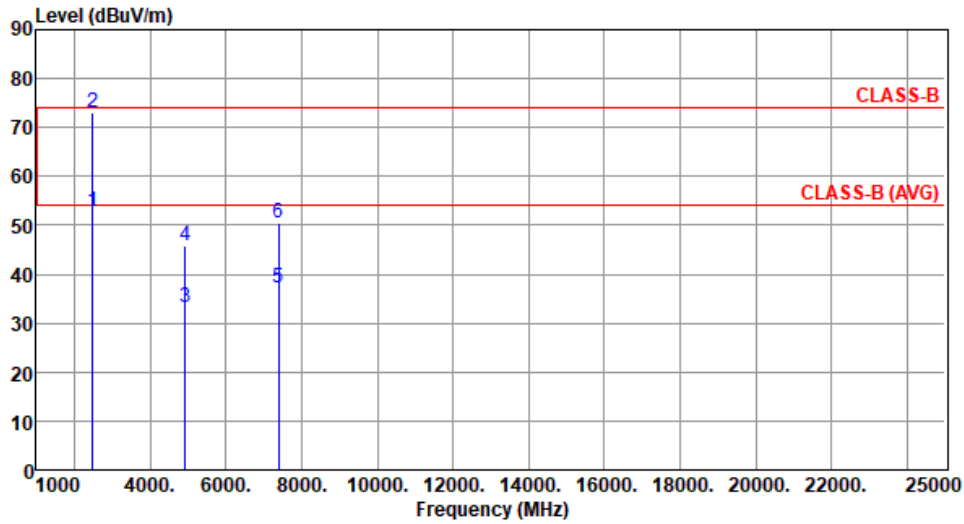
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE20	Test Freq. (MHz)	2462
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	52.74	54.00	-1.26	57.63	-4.89	Average	113	216
2	2483.50	73.15	74.00	-0.85	78.04	-4.89	Peak	113	216
3	4924.00	33.18	54.00	-20.82	33.69	-0.51	Average	100	298
4	4924.00	45.92	74.00	-28.08	46.43	-0.51	Peak	100	298
5	7386.00	37.29	54.00	-16.71	32.22	5.07	Average	100	162
6	7386.00	50.35	74.00	-23.65	45.28	5.07	Peak	100	162

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Unwanted Emissions (Above 1GHz) for ax HE40

Modulation	ax HE40	Test Freq. (MHz)	2422
Polarization	Horizontal		
Test By : Sean Yu		Temperature(°C): 25	Humidity(%): 61

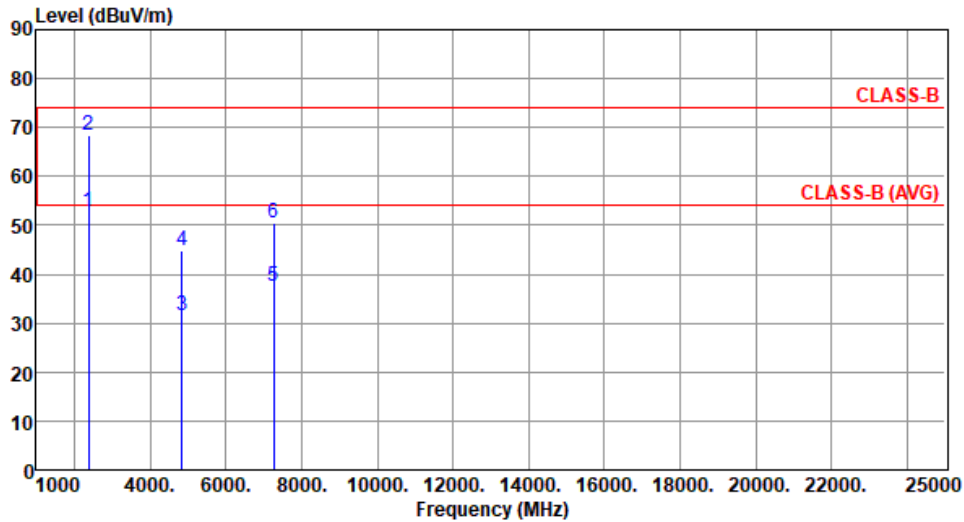
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	45.65	54.00	-8.35	50.30	-4.65	Average	100	202
2	2390.00	61.41	74.00	-12.59	66.06	-4.65	Peak	100	202
3	4844.00	31.92	54.00	-22.08	32.45	-0.53	Average	100	125
4	4844.00	45.24	74.00	-28.76	45.77	-0.53	Peak	100	125
5	7266.00	37.45	54.00	-16.55	32.30	5.15	Average	100	62
6	7266.00	50.31	74.00	-23.69	45.16	5.15	Peak	100	62

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2422
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.82	54.00	-1.18	57.47	-4.65	Average	120	188
2	2390.00	68.53	74.00	-5.47	73.18	-4.65	Peak	120	188
3	4844.00	31.65	54.00	-22.35	32.18	-0.53	Average	100	212
4	4844.00	44.78	74.00	-29.22	45.31	-0.53	Peak	100	212
5	7266.00	37.42	54.00	-16.58	32.27	5.15	Average	100	185
6	7266.00	50.51	74.00	-23.49	45.36	5.15	Peak	100	185

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

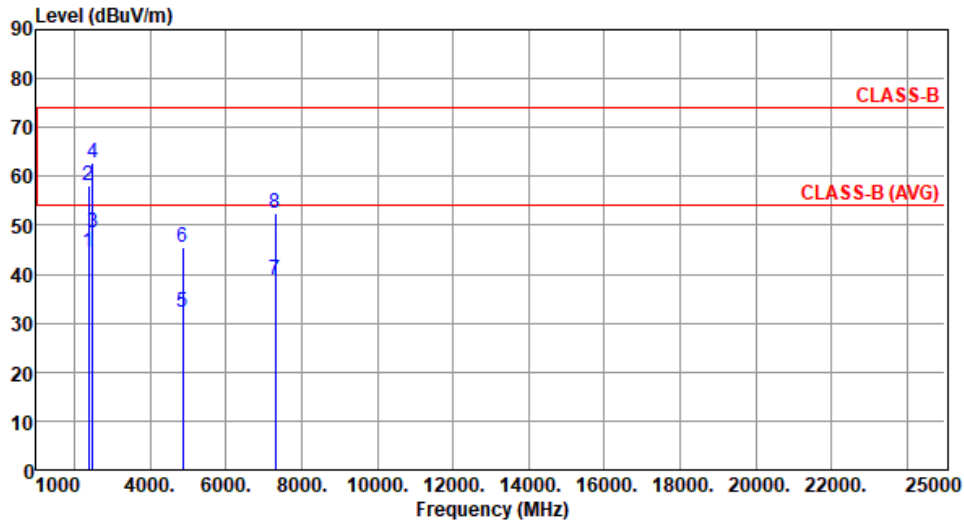
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2437
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	44.60	54.00	-9.40	49.25	-4.65	Average	100	204
2	2390.00	58.05	74.00	-15.95	62.70	-4.65	Peak	100	204
3	2483.50	48.63	54.00	-5.37	53.52	-4.89	Average	100	204
4	2483.50	62.72	74.00	-11.28	67.61	-4.89	Peak	100	204
5	4874.00	32.37	54.00	-21.63	32.91	-0.54	Average	100	218
6	4874.00	45.36	74.00	-28.64	45.90	-0.54	Peak	100	218
7	7311.00	38.85	54.00	-15.15	33.63	5.22	Average	100	165
8	7311.00	52.39	74.00	-21.61	47.17	5.22	Peak	100	165

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

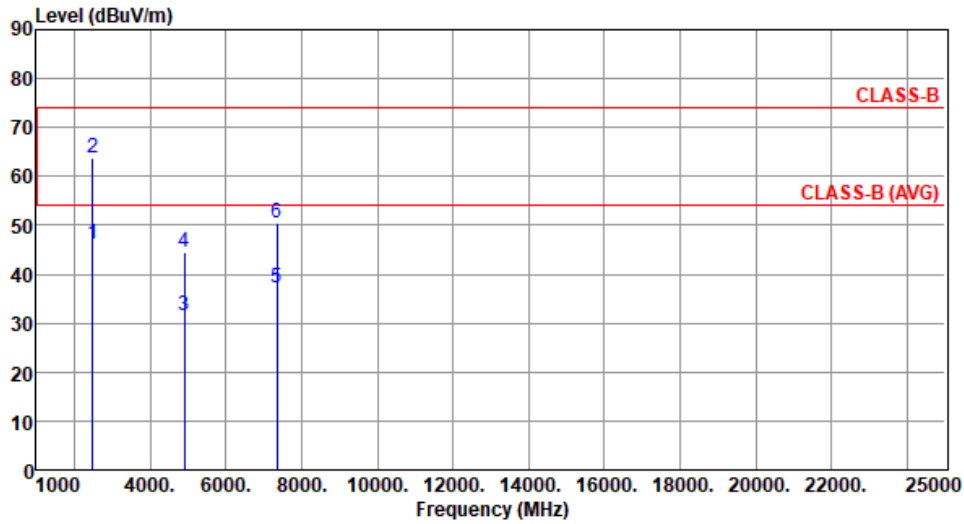


Modulation	ax HE40	Test Freq. (MHz)	2437																																																																																																																																																																
Polarization	Vertical																																																																																																																																																																		
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61																																																																																																																																																																			
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Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).																																																																																																																																																																			



Modulation	ax HE40	Test Freq. (MHz)	2452
Polarization	Horizontal		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	46.05	54.00	-7.95	50.94	-4.89	Average	100	209
2	2483.50	63.89	74.00	-10.11	68.78	-4.89	Peak	100	209
3	4904.00	31.58	54.00	-22.42	32.12	-0.54	Average	100	136
4	4904.00	44.65	74.00	-29.35	45.19	-0.54	Peak	100	136
5	7356.00	37.21	54.00	-16.79	32.12	5.09	Average	100	162
6	7356.00	50.39	74.00	-23.61	45.30	5.09	Peak	100	162

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

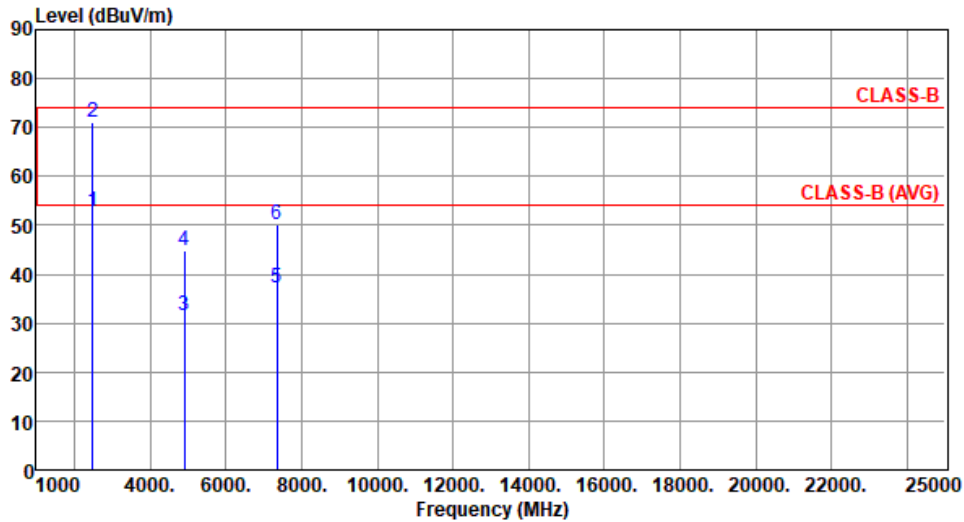
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Modulation	ax HE40	Test Freq. (MHz)	2452
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	52.90	54.00	-1.10	57.79	-4.89	Average	112	192
2	2483.50	70.94	74.00	-3.06	75.83	-4.89	Peak	112	192
3	4904.00	31.68	54.00	-22.32	32.22	-0.54	Average	100	95
4	4904.00	44.82	74.00	-29.18	45.36	-0.54	Peak	100	95
5	7356.00	37.26	54.00	-16.74	32.17	5.09	Average	100	101
6	7356.00	50.24	74.00	-23.76	45.15	5.09	Peak	100	101

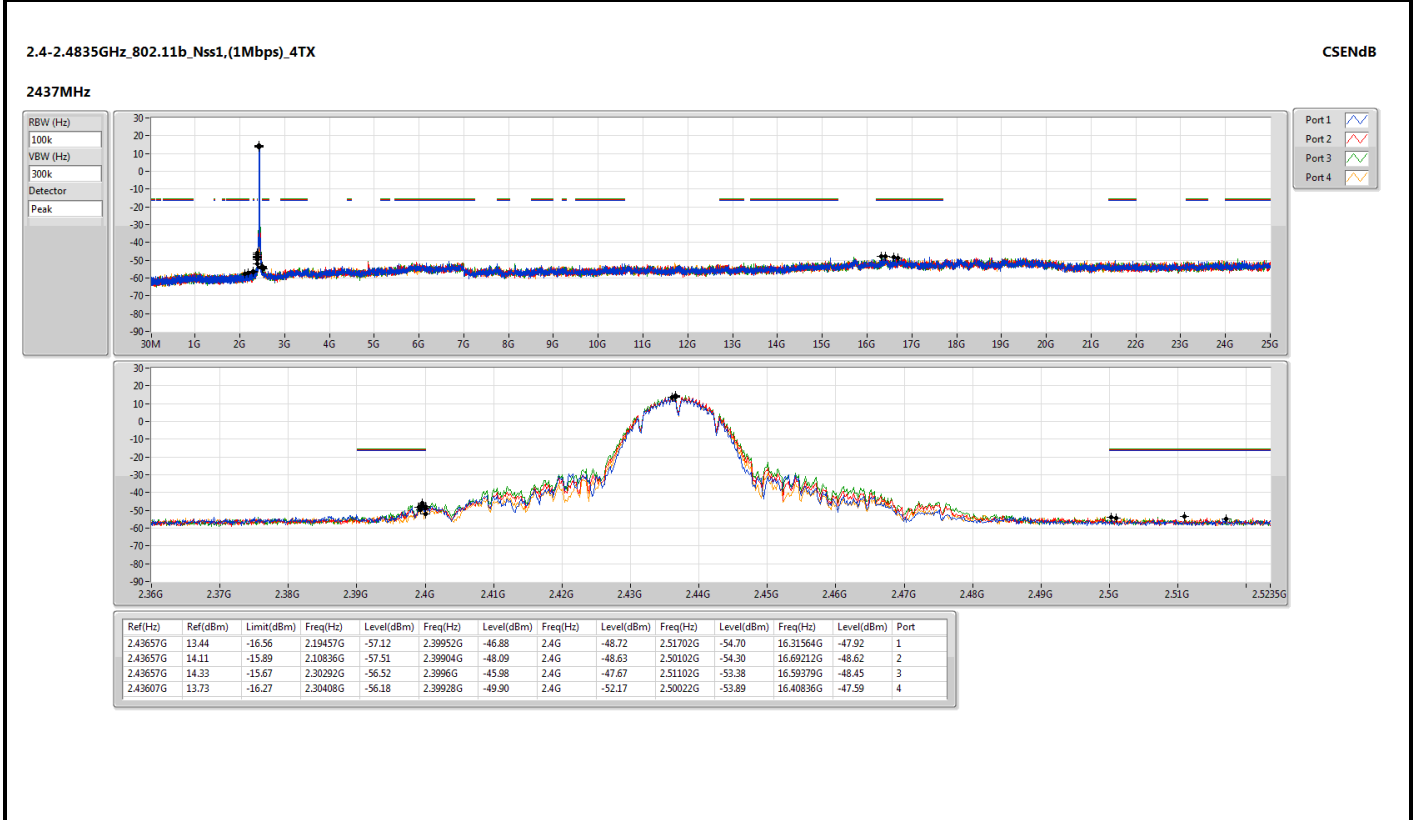
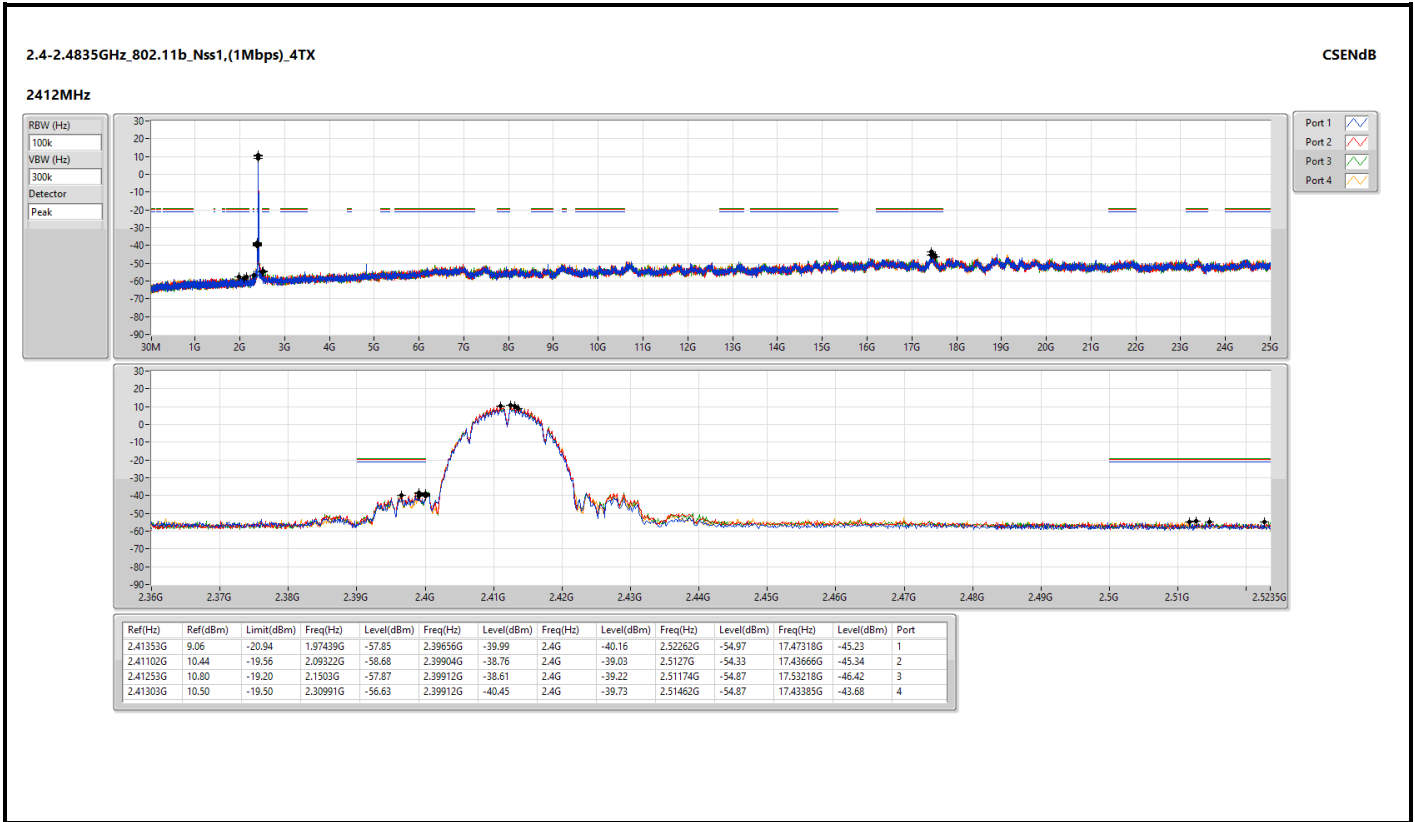
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

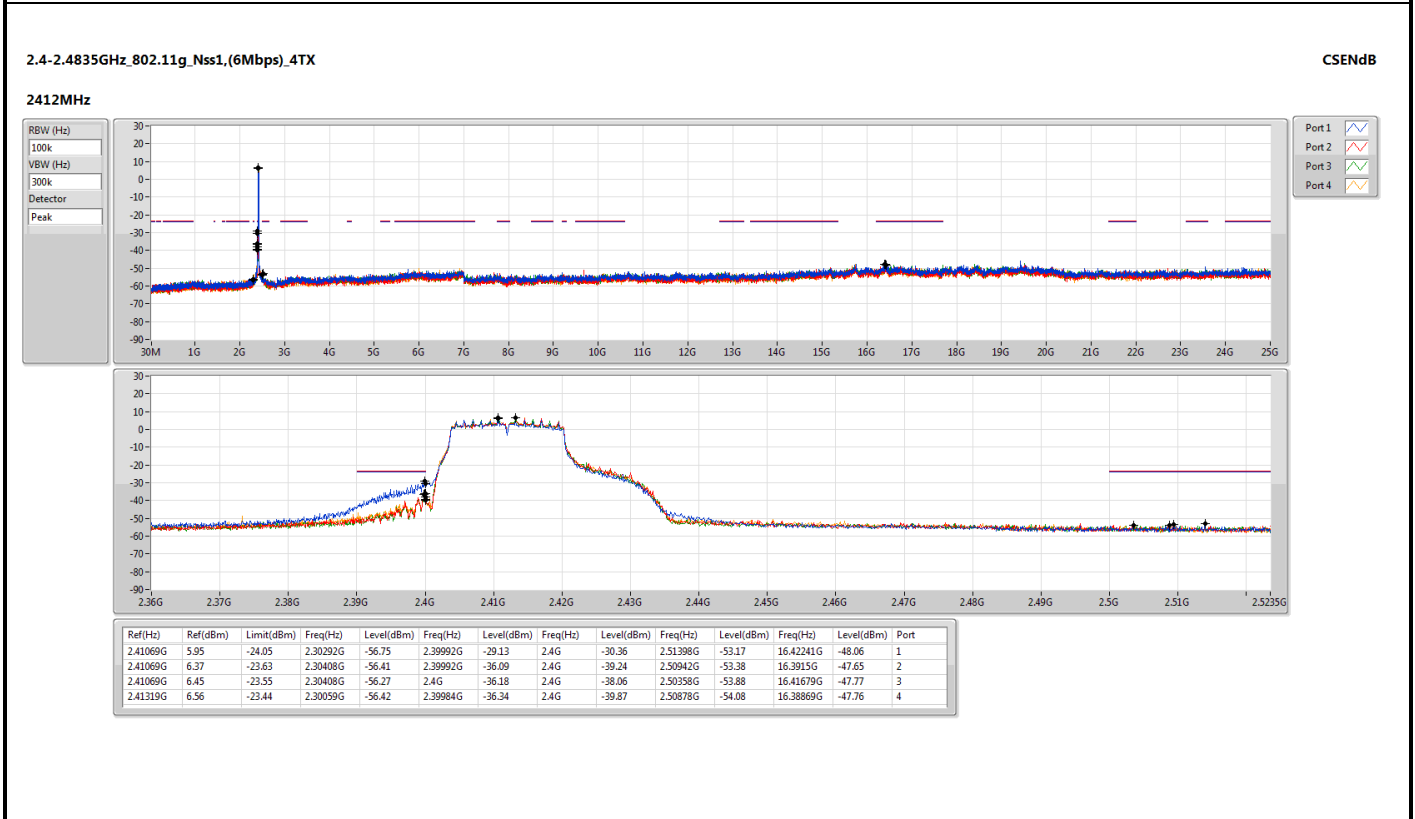
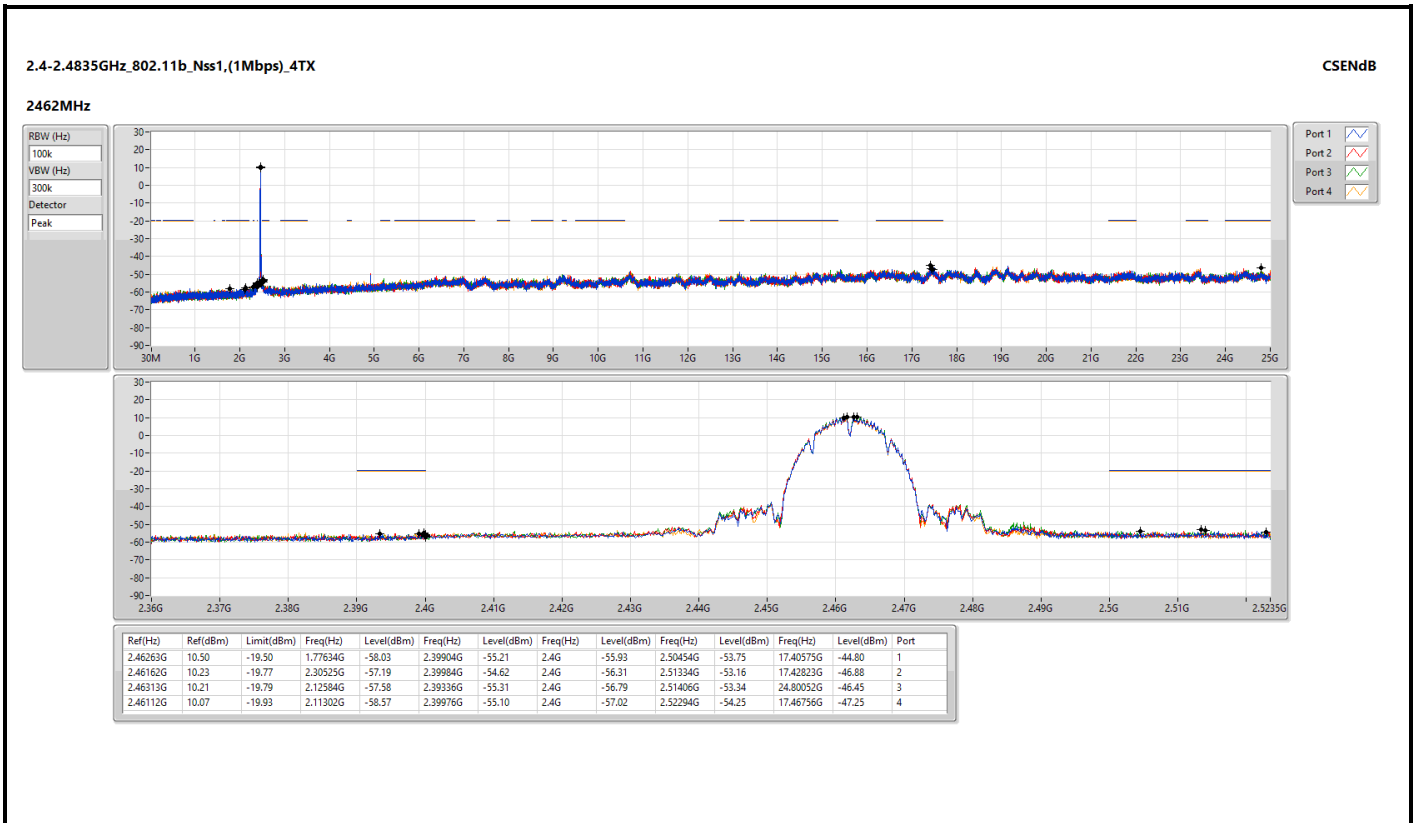
*Factor includes antenna factor , cable loss and amplifier gain

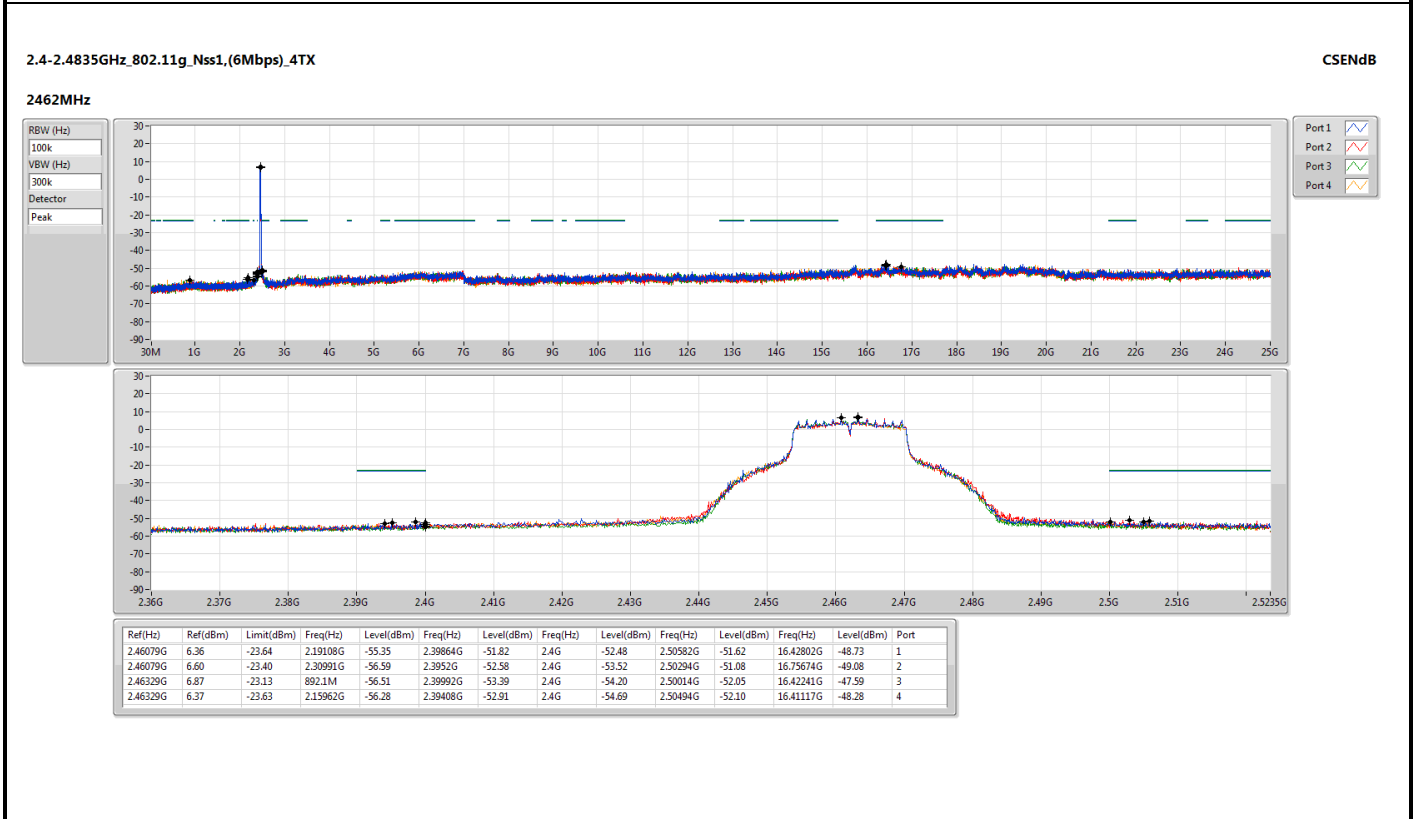
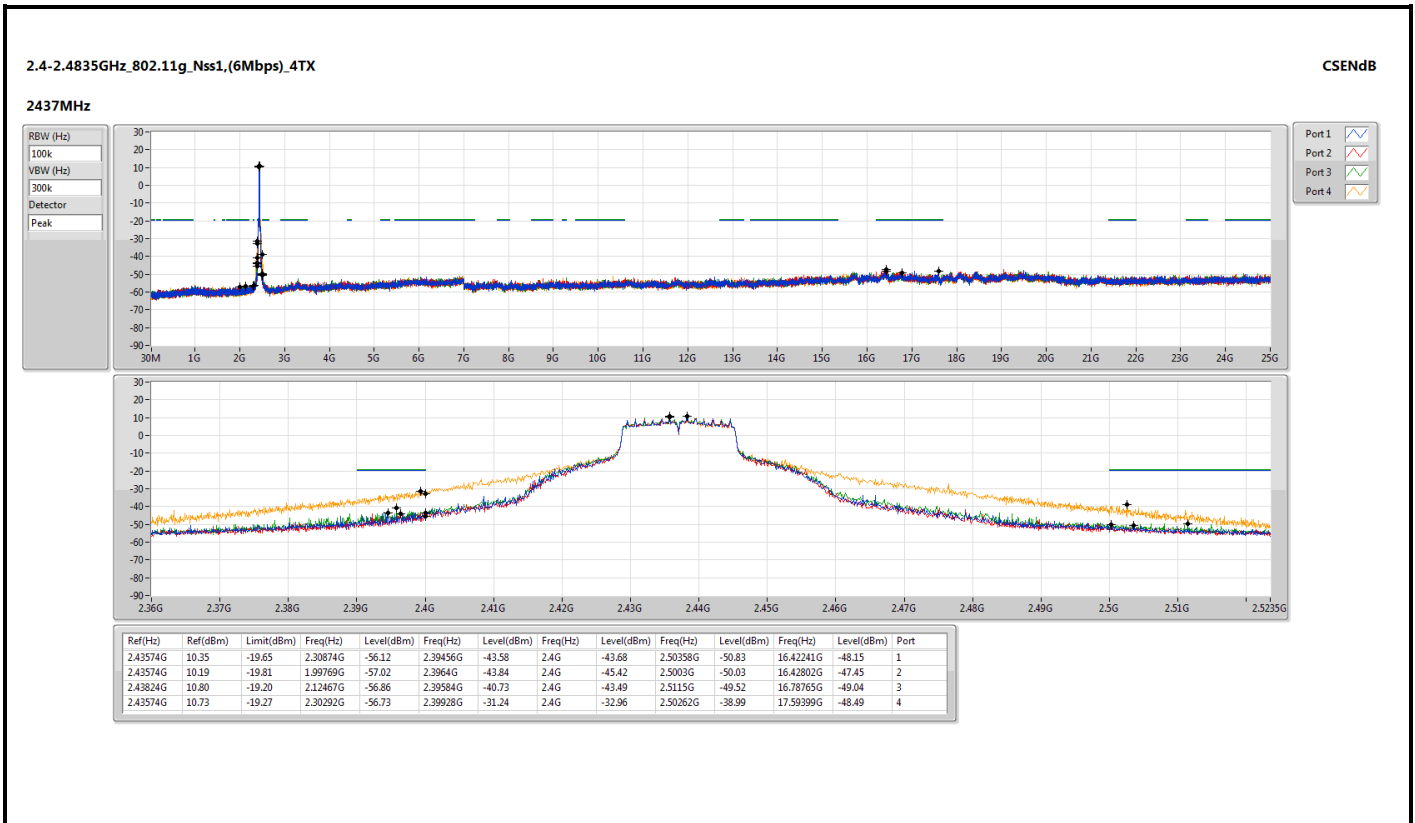
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

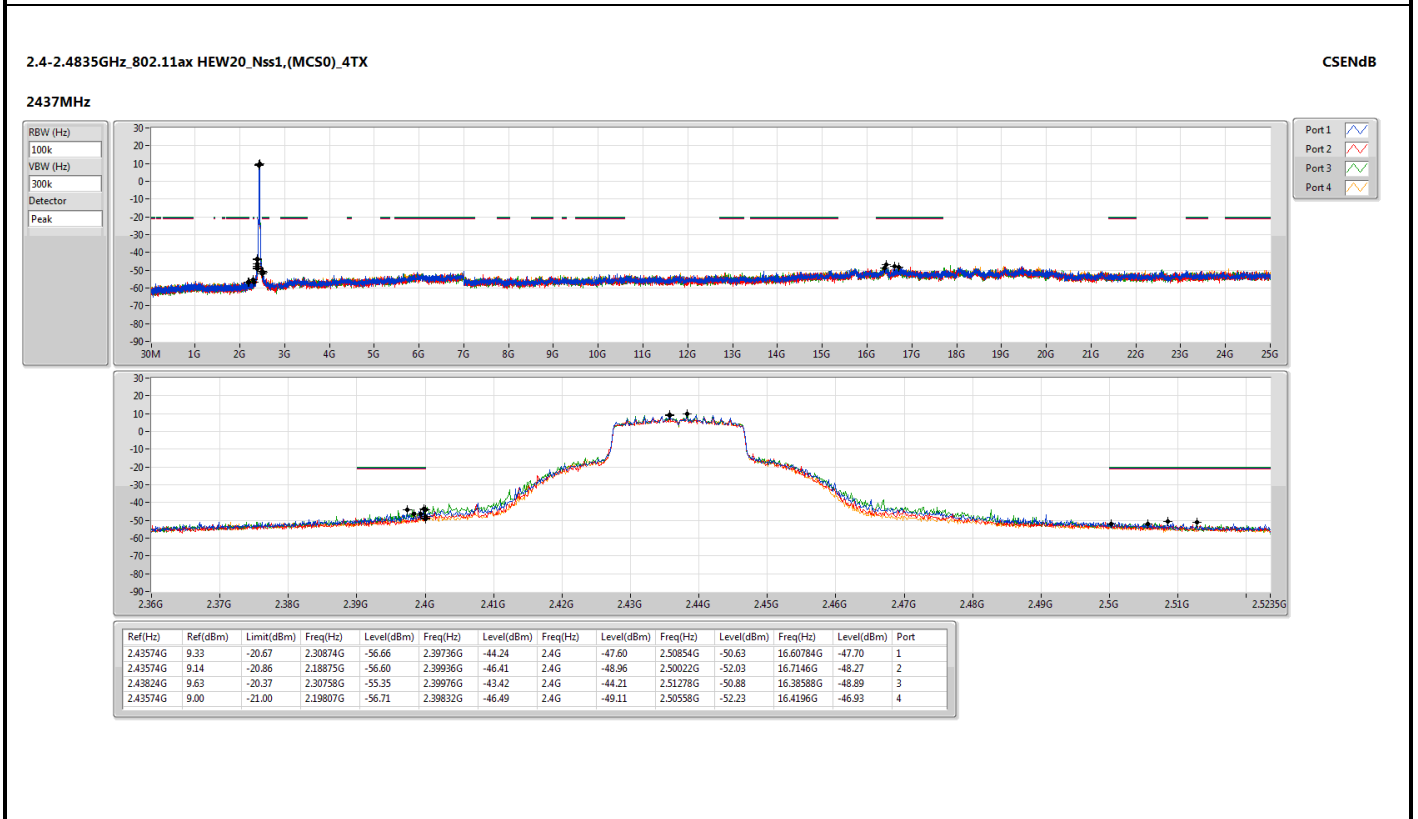
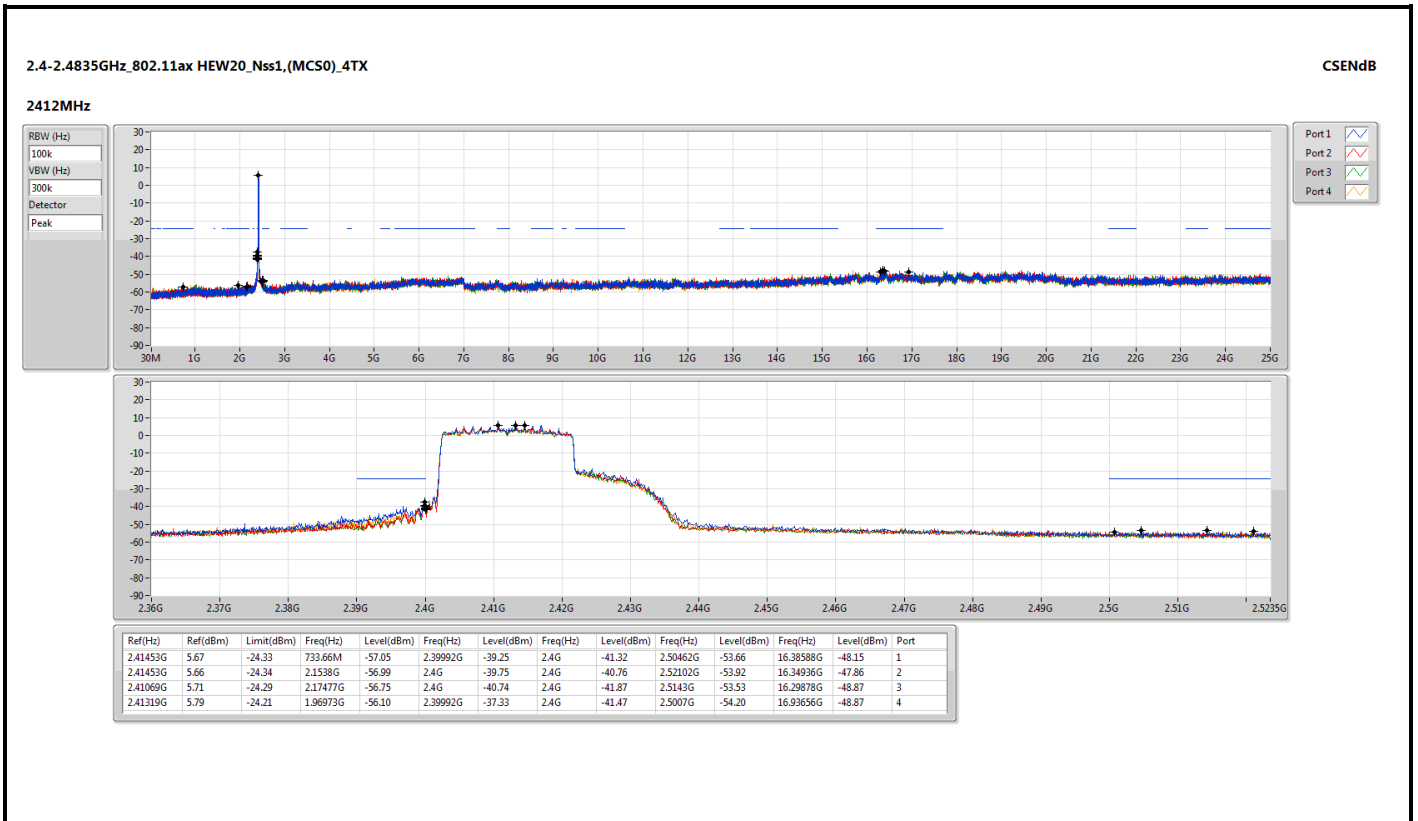


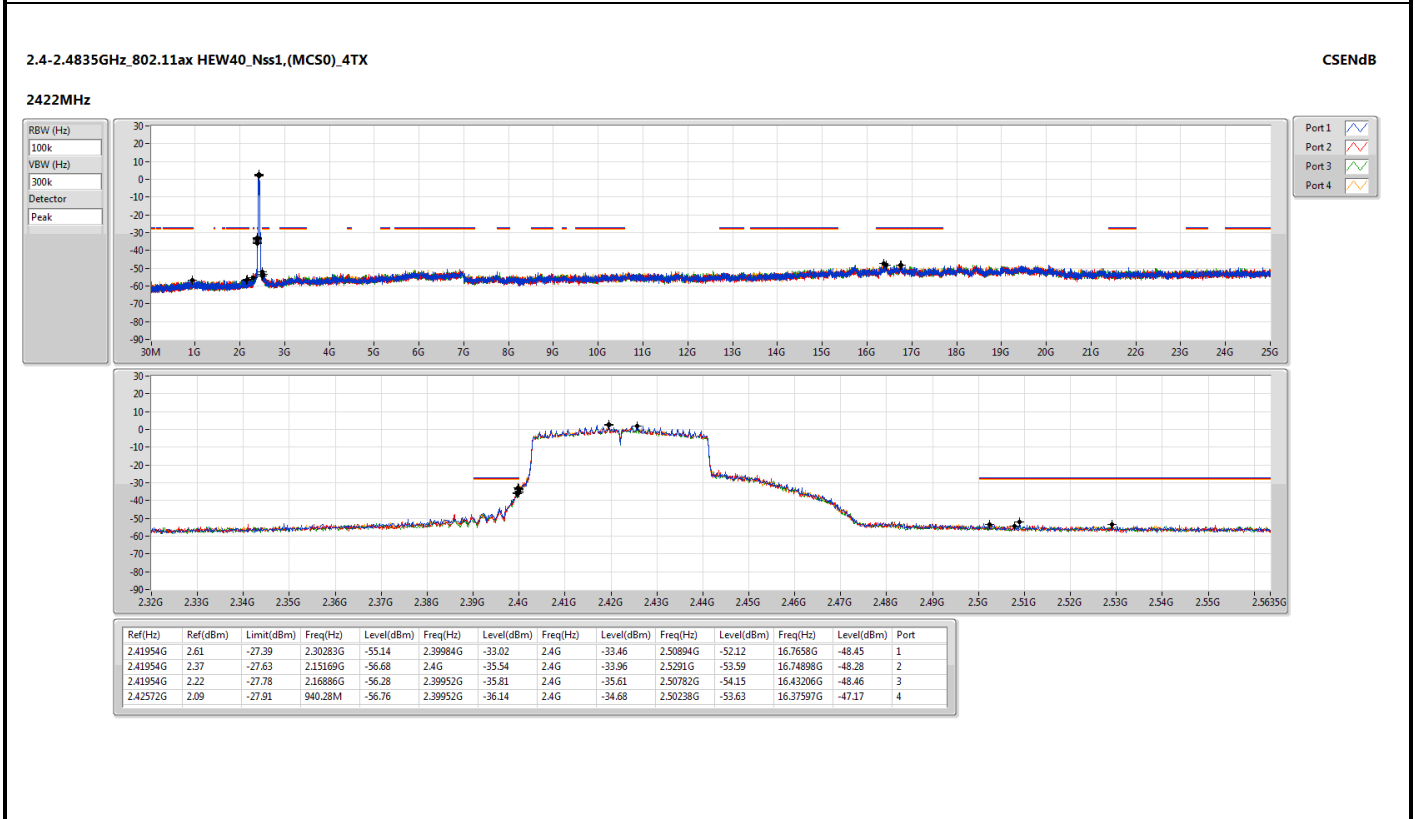
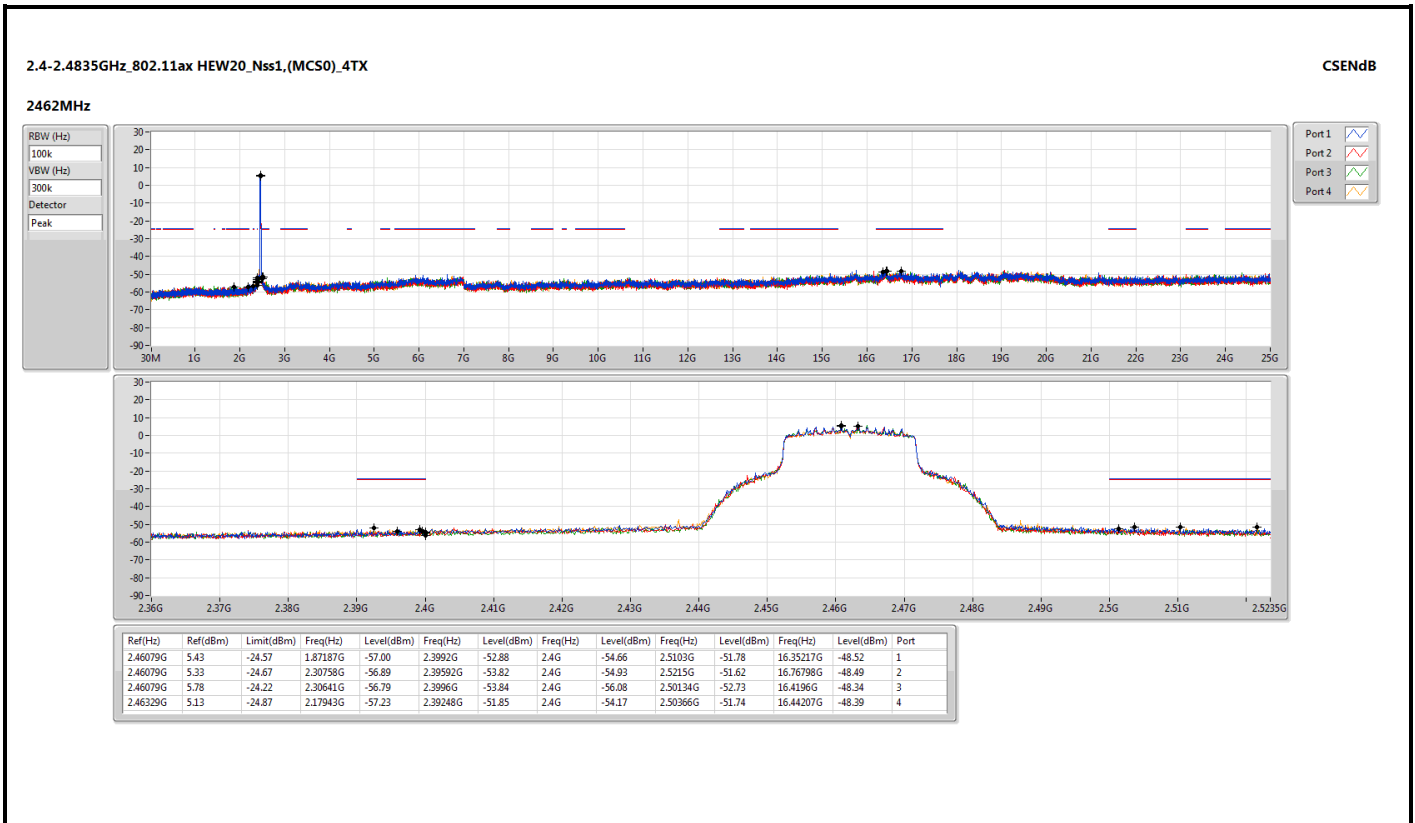
Non-beamforming mode

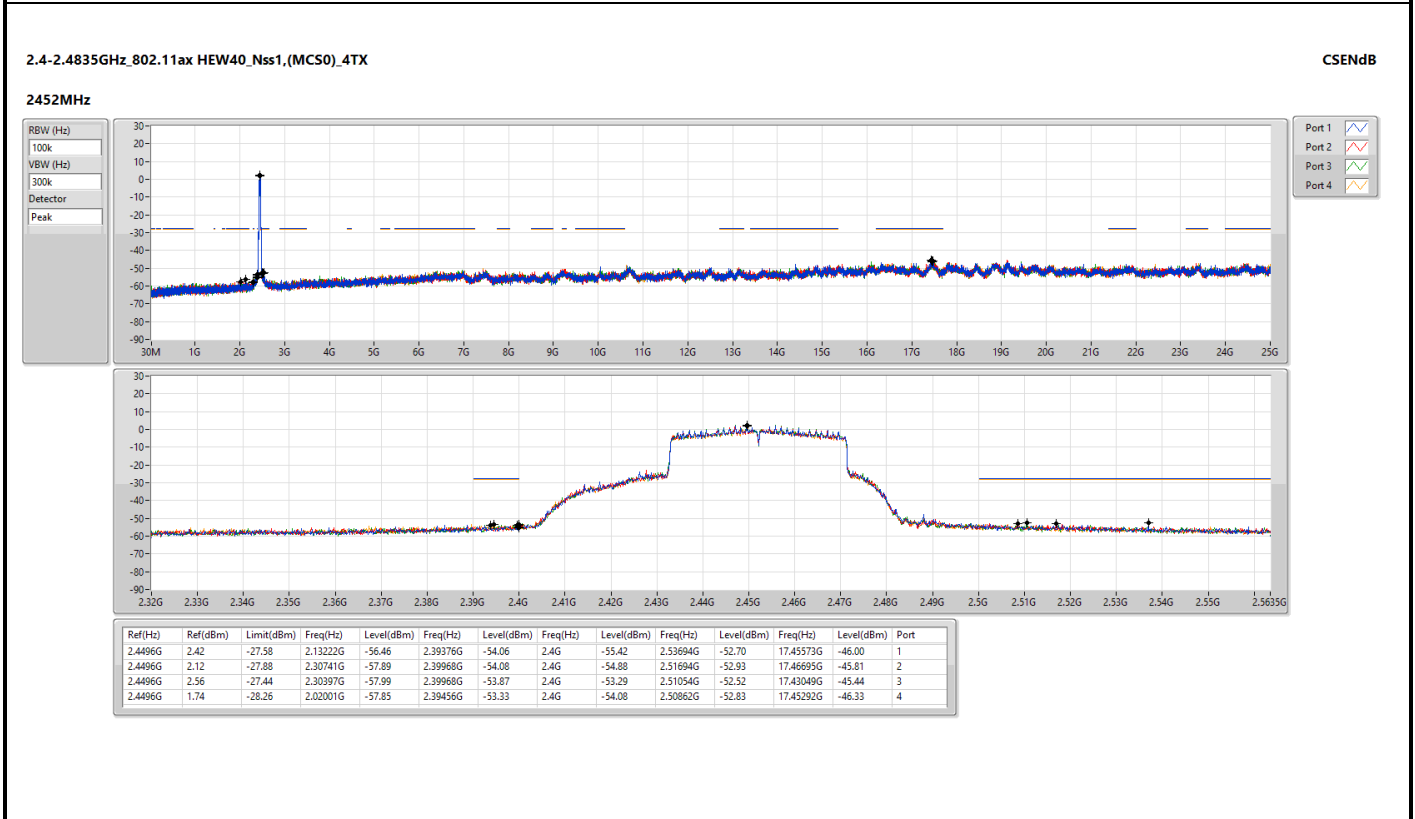
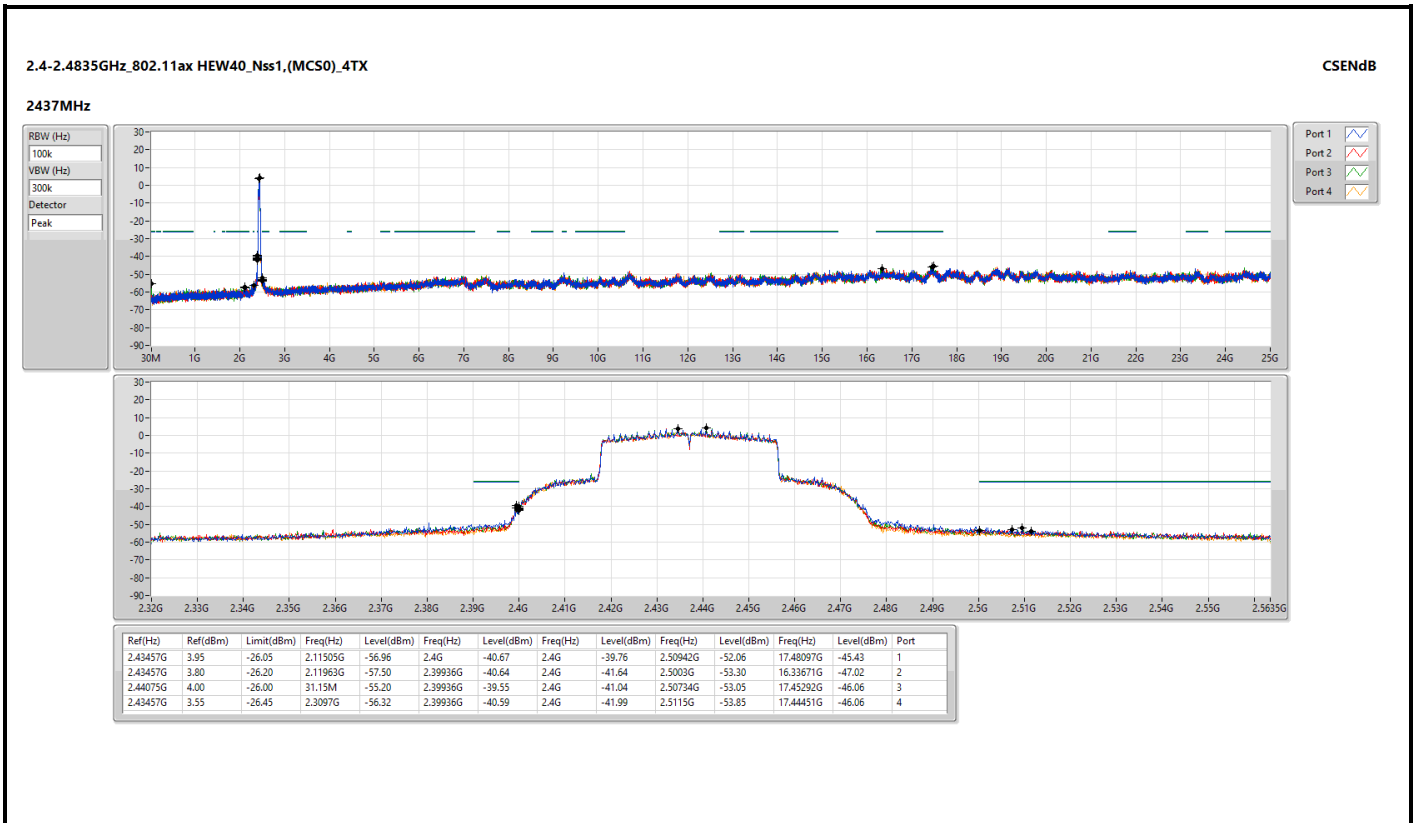






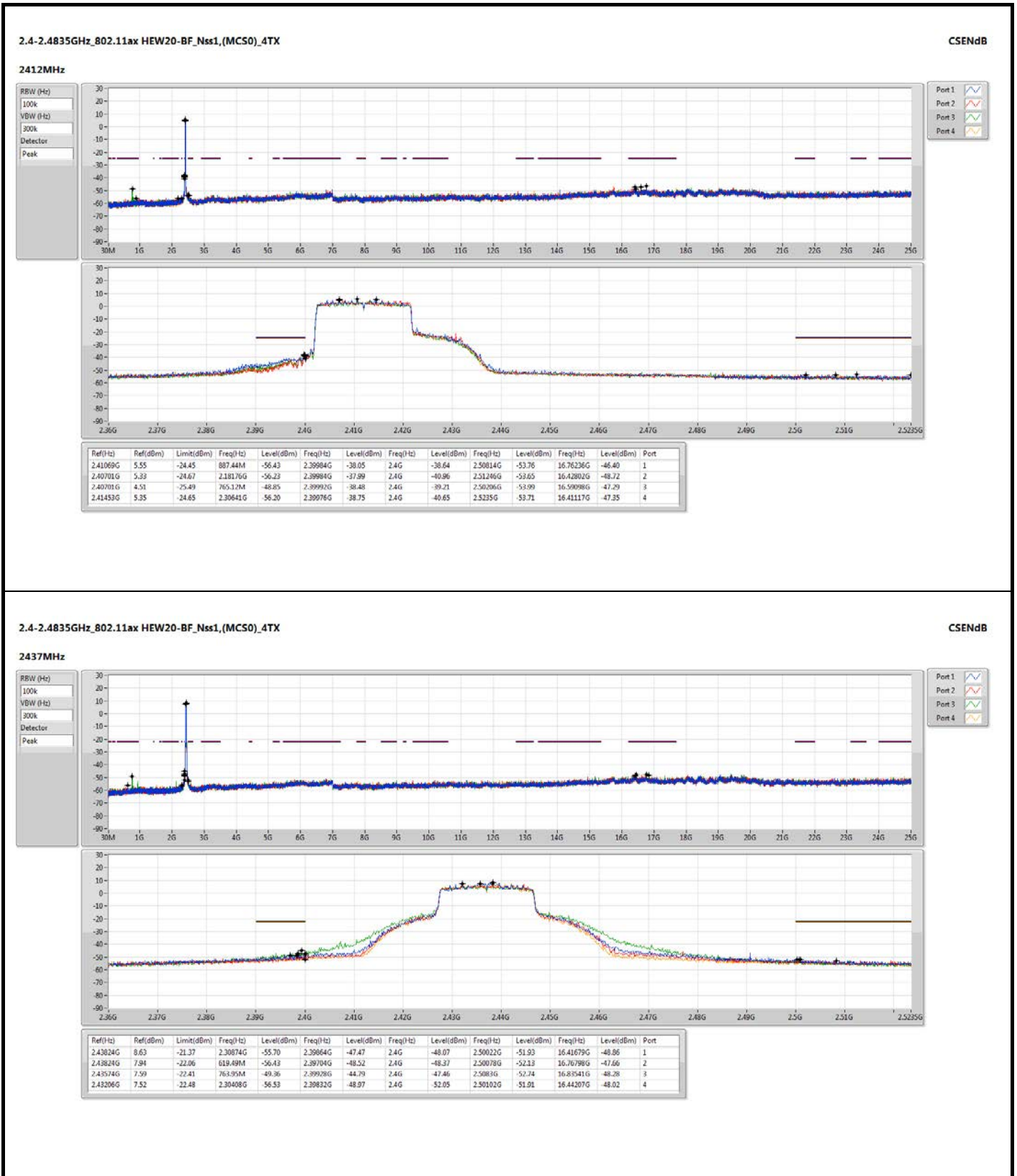


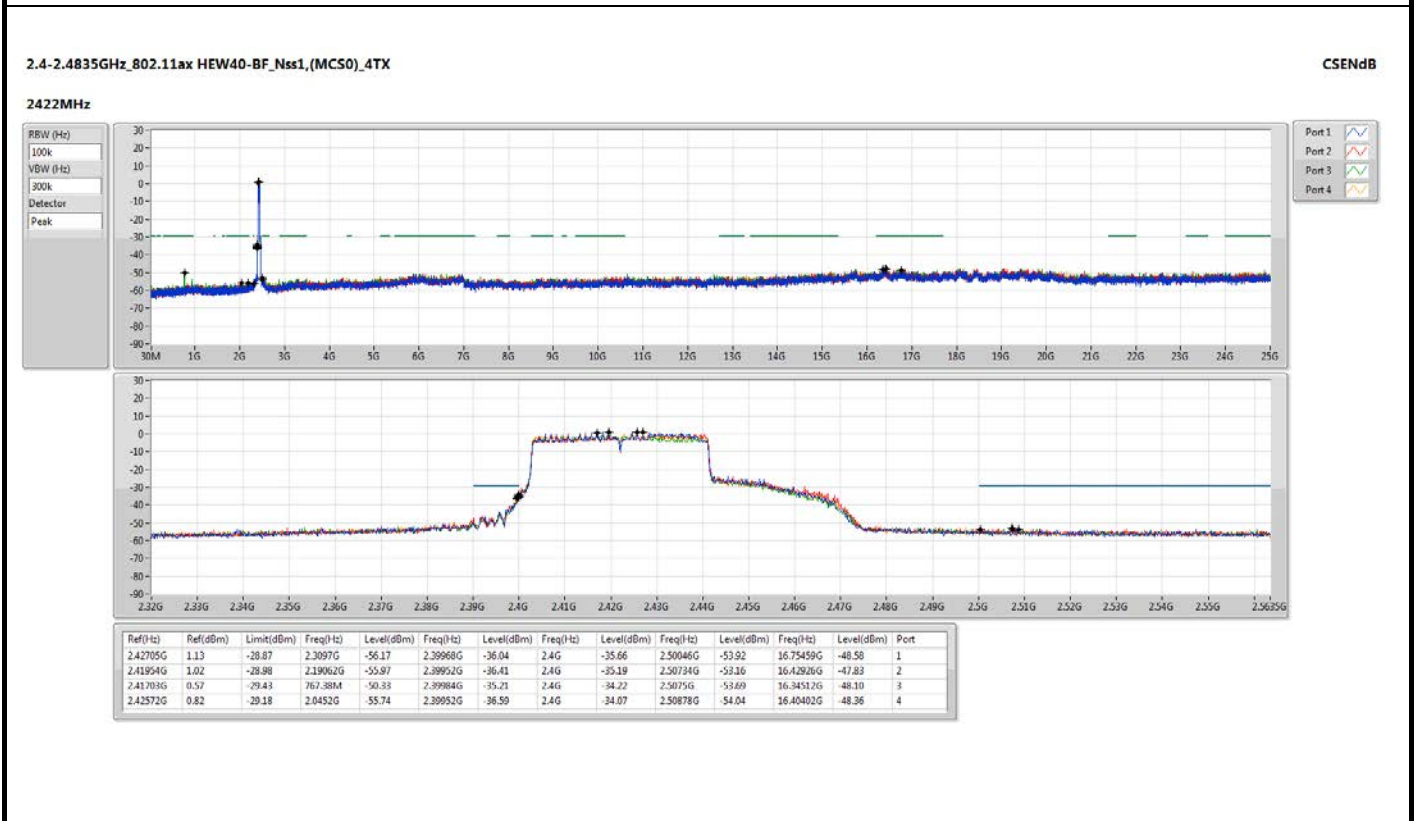
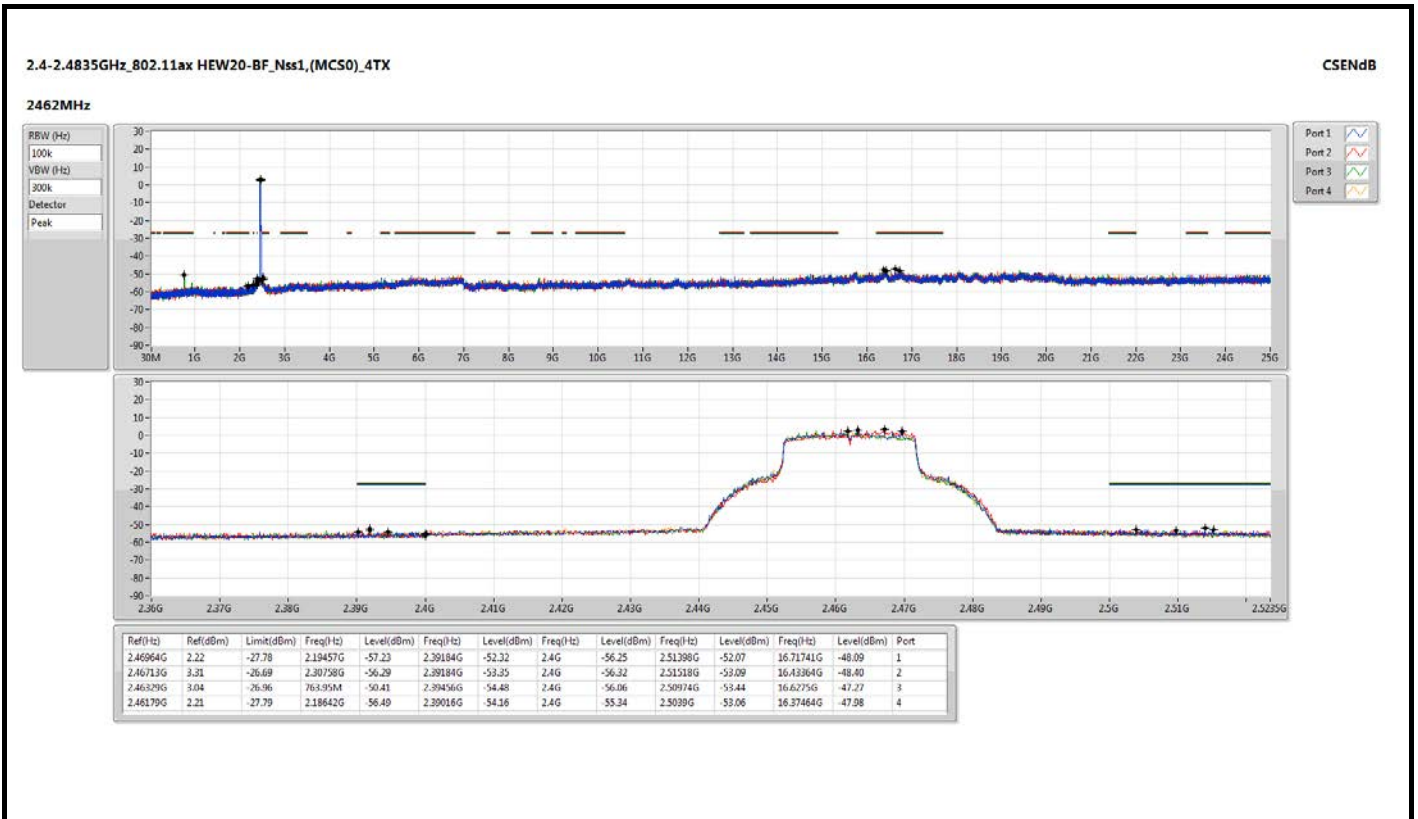


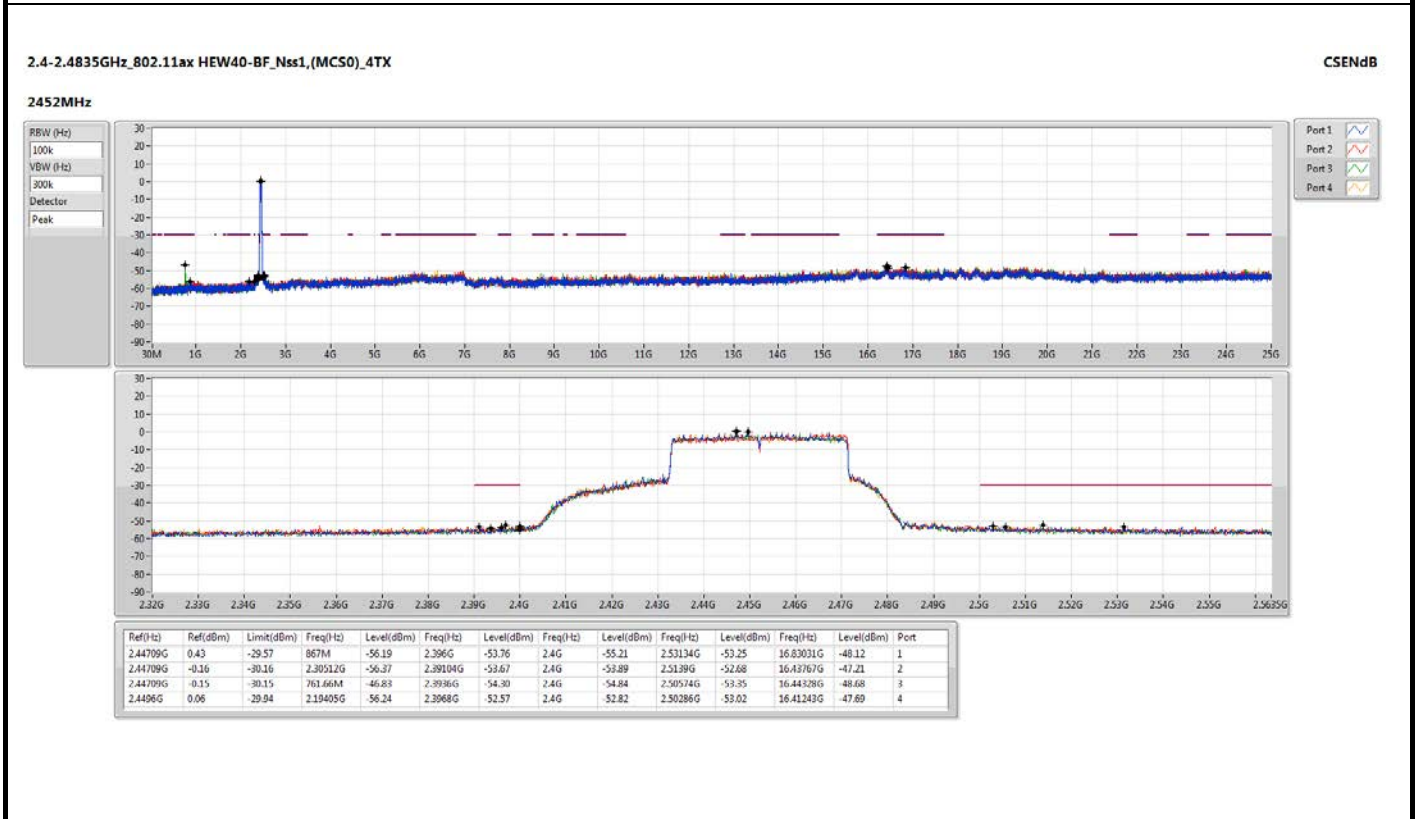
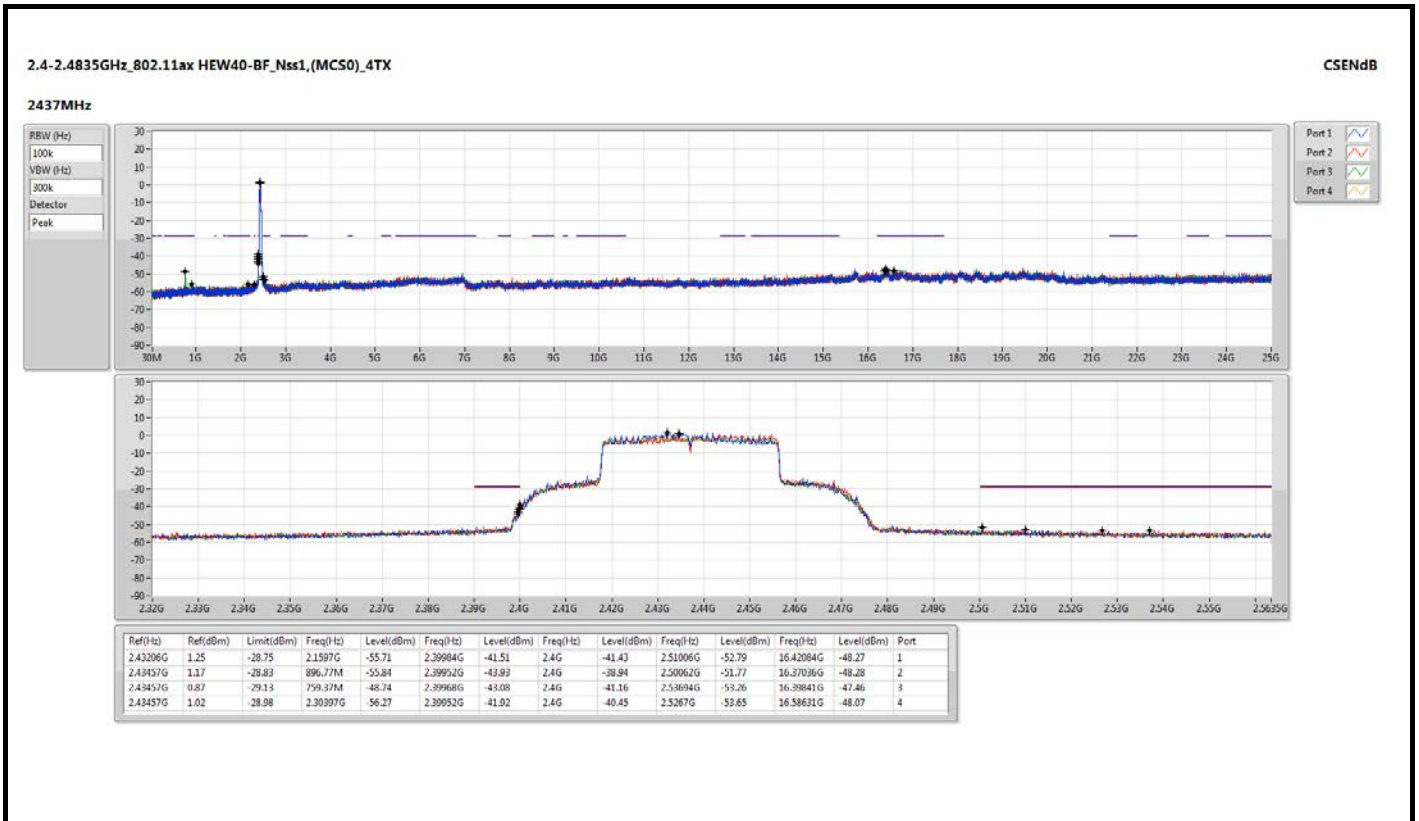




Beamforming mode







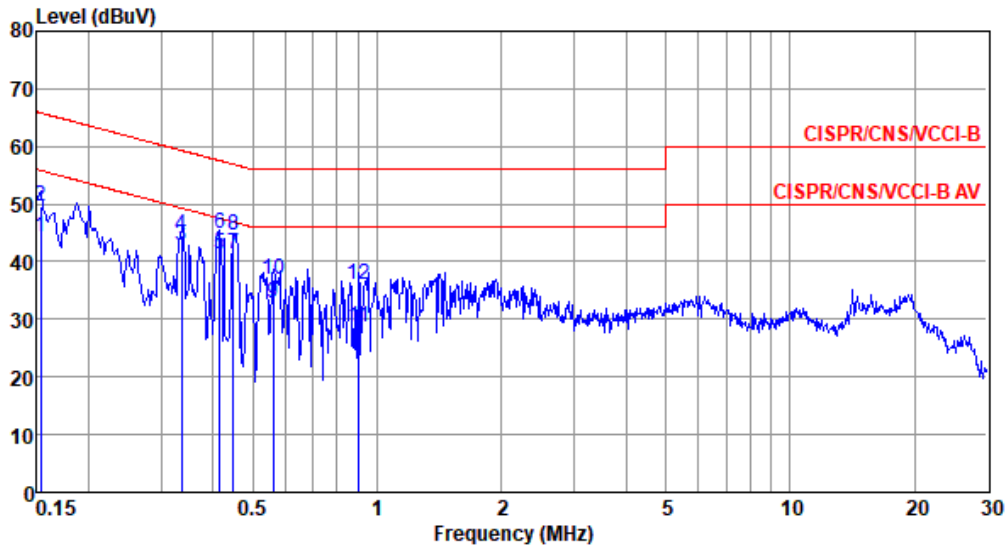


Non-beamforming mode

Test configuration 1: Without SFP, model: SDG-8612

Modulation Mode	11b	Test Freq. (MHz)	2437
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



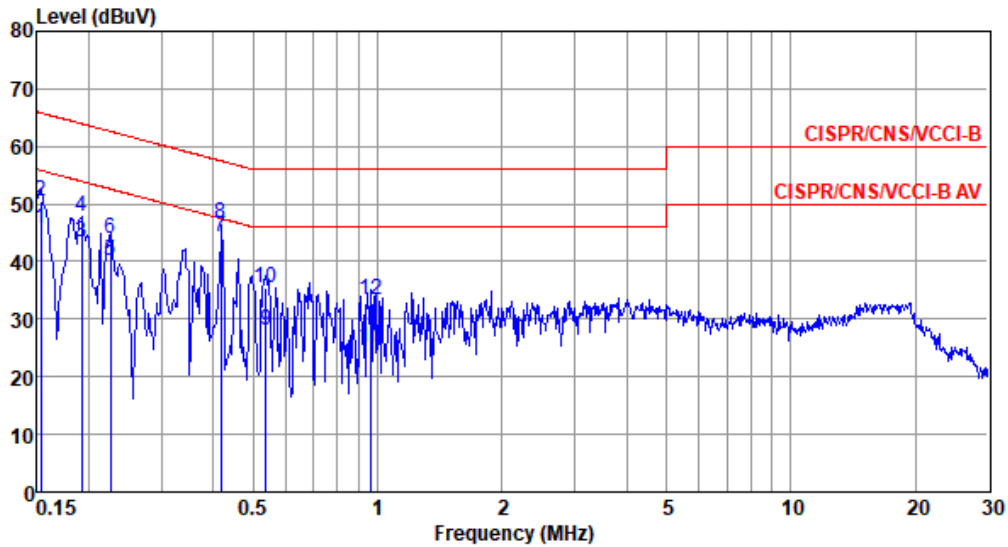
	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.153	44.40	55.82	-11.42	34.57	9.59	0.06	0.18	Average
2	0.153	49.68	65.82	-16.14	39.85	9.59	0.06	0.18	QP
3	0.336	42.77	49.31	-6.54	32.85	9.59	0.06	0.27	Average
4	0.336	44.50	59.31	-14.81	34.58	9.59	0.06	0.27	QP
5	0.415	41.47	47.55	-6.08	31.52	9.59	0.06	0.30	Average
6	0.415	44.78	57.55	-12.77	34.83	9.59	0.06	0.30	QP
7*	0.449	41.42	46.89	-5.47	31.46	9.59	0.07	0.30	Average
8	0.449	44.53	56.89	-12.36	34.57	9.59	0.07	0.30	QP
9	0.561	32.73	46.00	-13.27	22.75	9.59	0.08	0.31	Average
10	0.561	36.96	56.00	-19.04	26.98	9.59	0.08	0.31	QP
11	0.904	28.66	46.00	-17.34	18.63	9.60	0.10	0.33	Average
12	0.904	35.98	56.00	-20.02	25.95	9.60	0.10	0.33	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).



Modulation Mode	11b	Test Freq. (MHz)	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.153	45.88	55.82	-9.94	36.04	9.60	0.06	0.18	Average
2	0.153	50.40	65.82	-15.42	40.56	9.60	0.06	0.18	QP
3	0.192	43.25	53.93	-10.68	33.40	9.60	0.06	0.19	Average
4	0.192	47.92	63.93	-16.01	38.07	9.60	0.06	0.19	QP
5	0.226	40.07	52.61	-12.54	30.20	9.60	0.06	0.21	Average
6	0.226	44.06	62.61	-18.55	34.19	9.60	0.06	0.21	QP
7*	0.417	44.15	47.51	-3.36	34.19	9.60	0.06	0.30	Average
8	0.417	46.72	57.51	-10.79	36.76	9.60	0.06	0.30	QP
9	0.538	28.02	46.00	-17.98	18.03	9.60	0.08	0.31	Average
10	0.538	35.53	56.00	-20.47	25.54	9.60	0.08	0.31	QP
11	0.958	24.97	46.00	-21.03	14.93	9.60	0.11	0.33	Average
12	0.958	33.36	56.00	-22.64	23.32	9.60	0.11	0.33	QP

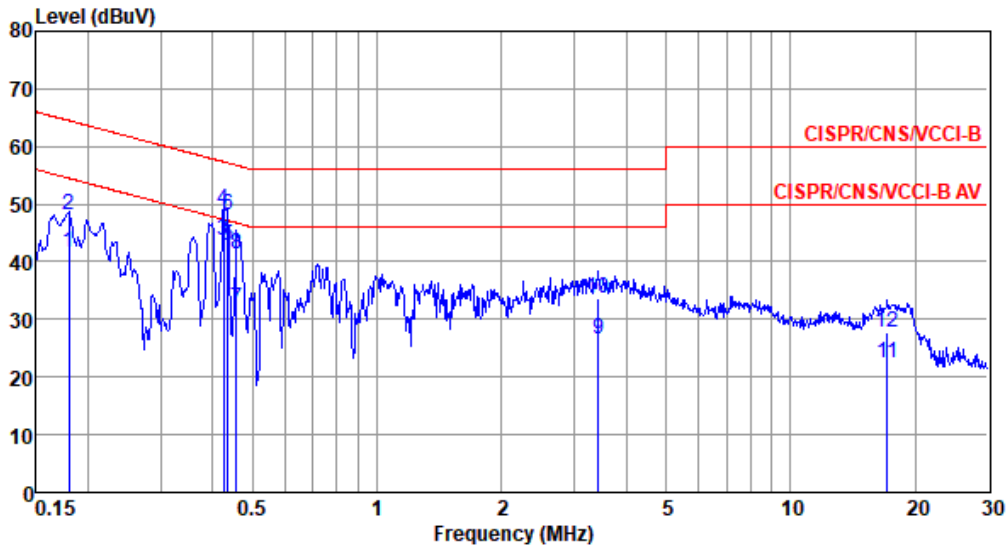
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



Test configuration 2: With SFP, model: SDG-8614

Modulation Mode	11b	Test Freq. (MHz)	2437
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



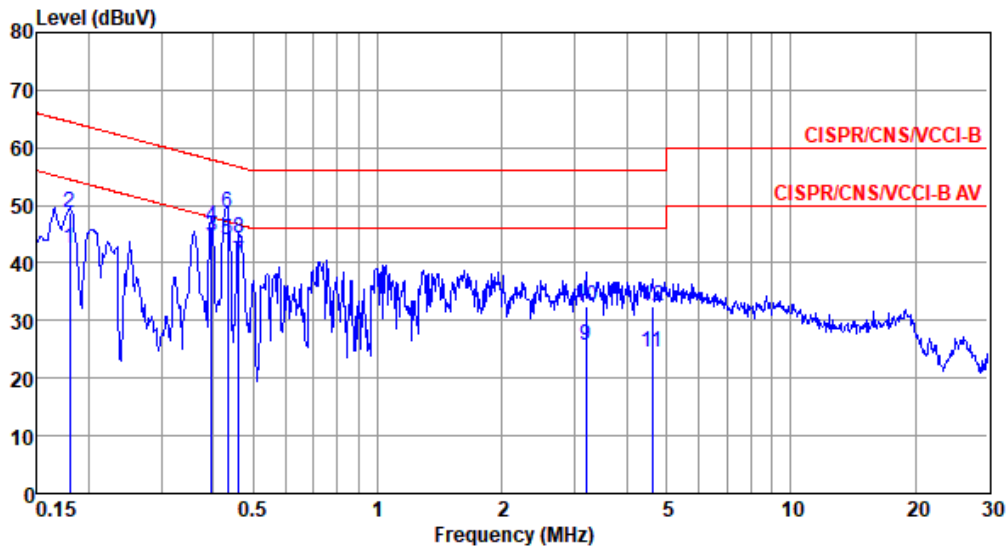
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.180	41.65	54.50	-12.85	31.81	9.59	0.06	0.19	Average
2	0.180	48.22	64.50	-16.28	38.38	9.59	0.06	0.19	QP
3*	0.426	43.56	47.33	-3.77	33.61	9.59	0.06	0.30	Average
4	0.426	48.99	57.33	-8.34	39.04	9.59	0.06	0.30	QP
5	0.435	42.84	47.15	-4.31	32.89	9.59	0.06	0.30	Average
6	0.435	48.12	57.15	-9.03	38.17	9.59	0.06	0.30	QP
7	0.456	31.73	46.76	-15.03	21.77	9.59	0.07	0.30	Average
8	0.456	41.39	56.76	-15.37	31.43	9.59	0.07	0.30	QP
9	3.436	26.69	46.00	-19.31	16.49	9.62	0.17	0.41	Average
10	3.436	33.52	56.00	-22.48	23.32	9.62	0.17	0.41	QP
11	17.109	22.47	50.00	-27.53	11.90	9.60	0.47	0.50	Average
12	17.109	27.73	60.00	-32.27	17.16	9.60	0.47	0.50	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).



Modulation Mode	11b	Test Freq. (MHz)	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.180	42.59	54.50	-11.91	32.74	9.60	0.06	0.19	Average
2	0.180	48.83	64.50	-15.67	38.98	9.60	0.06	0.19	QP
3	0.396	44.50	47.95	-3.45	34.54	9.60	0.06	0.30	Average
4	0.396	46.39	57.95	-11.56	36.43	9.60	0.06	0.30	QP
5*	0.433	44.00	47.20	-3.20	34.04	9.60	0.06	0.30	Average
6	0.433	48.80	57.20	-8.40	38.84	9.60	0.06	0.30	QP
7	0.461	40.09	46.67	-6.58	30.12	9.60	0.07	0.30	Average
8	0.461	44.27	56.67	-12.40	34.30	9.60	0.07	0.30	QP
9	3.190	25.68	46.00	-20.32	15.50	9.62	0.16	0.40	Average
10	3.190	32.56	56.00	-23.44	22.38	9.62	0.16	0.40	QP
11	4.622	24.40	46.00	-21.60	14.14	9.63	0.21	0.42	Average
12	4.622	32.35	56.00	-23.65	22.09	9.63	0.21	0.42	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) - Limit Line (dBuV).

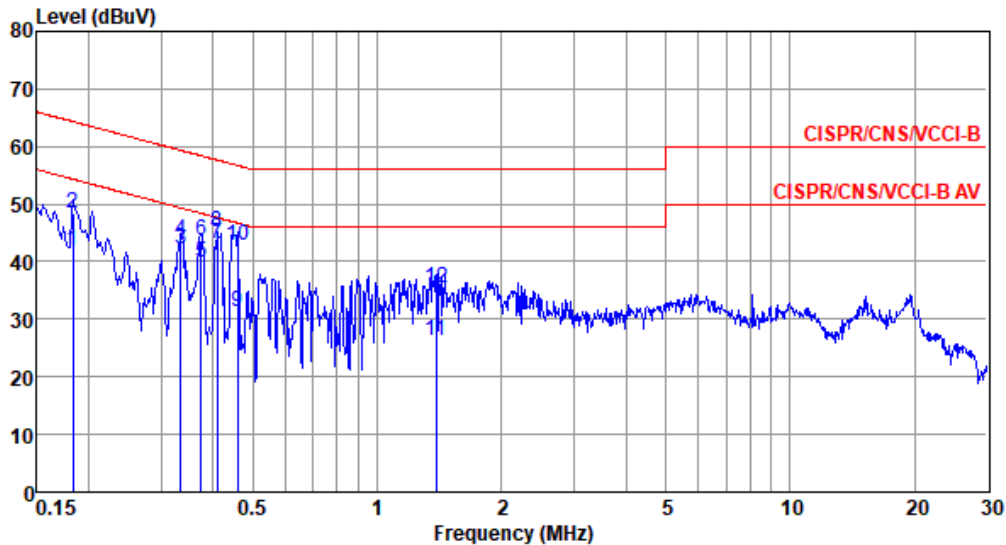


Beamforming mode

Test configuration 1: Without SFP, model: SDG-8612

Modulation Mode	ax HE20	Test Freq. (MHz)	2437
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



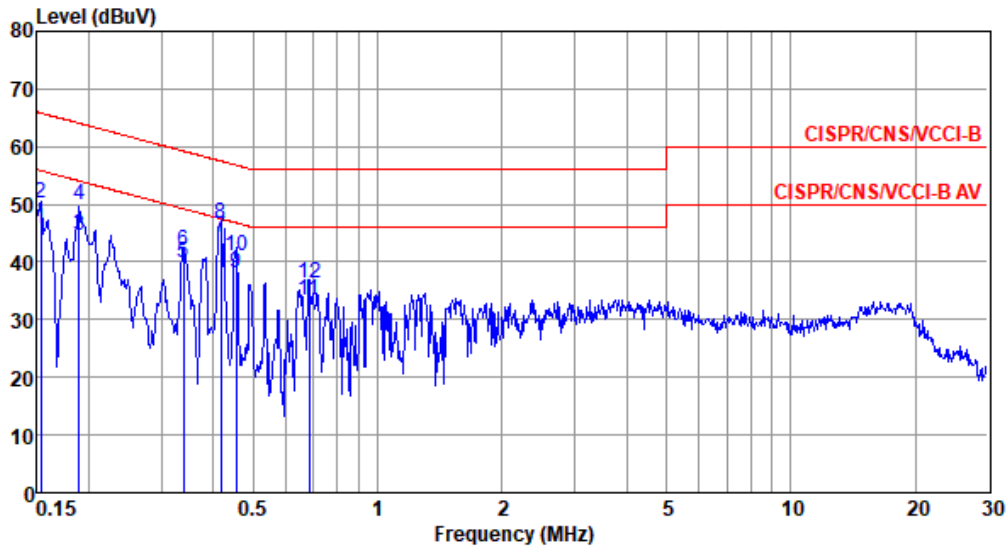
	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.183	42.04	54.33	-12.29	32.20	9.59	0.06	0.19	Average
2	0.183	48.50	64.33	-15.83	38.66	9.59	0.06	0.19	QP
3	0.334	42.10	49.35	-7.25	32.18	9.59	0.06	0.27	Average
4	0.334	43.84	59.35	-15.51	33.92	9.59	0.06	0.27	QP
5	0.375	39.72	48.39	-8.67	29.78	9.59	0.06	0.29	Average
6	0.375	43.69	58.39	-14.70	33.75	9.59	0.06	0.29	QP
7*	0.410	43.02	47.64	-4.62	33.07	9.59	0.06	0.30	Average
8	0.410	45.23	57.64	-12.41	35.28	9.59	0.06	0.30	QP
9	0.459	31.31	46.71	-15.40	21.35	9.59	0.07	0.30	Average
10	0.459	42.73	56.71	-13.98	32.77	9.59	0.07	0.30	QP
11	1.388	26.24	46.00	-19.76	16.18	9.60	0.12	0.34	Average
12	1.388	35.45	56.00	-20.55	25.39	9.60	0.12	0.34	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).



Modulation Mode	ax HE20	Test Freq. (MHz)	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.153	45.67	55.82	-10.15	35.83	9.60	0.06	0.18	Average
2	0.153	50.13	65.82	-15.69	40.29	9.60	0.06	0.18	QP
3	0.189	44.47	54.06	-9.59	34.62	9.60	0.06	0.19	Average
4	0.189	49.85	64.06	-14.21	40.00	9.60	0.06	0.19	QP
5	0.339	39.79	49.22	-9.43	29.86	9.60	0.06	0.27	Average
6	0.339	42.02	59.22	-17.20	32.09	9.60	0.06	0.27	QP
7*	0.417	44.21	47.51	-3.30	34.25	9.60	0.06	0.30	Average
8	0.417	46.67	57.51	-10.84	36.71	9.60	0.06	0.30	QP
9	0.454	37.97	46.80	-8.83	28.00	9.60	0.07	0.30	Average
10	0.454	41.15	56.80	-15.65	31.18	9.60	0.07	0.30	QP
11	0.683	33.40	46.00	-12.60	23.39	9.60	0.09	0.32	Average
12	0.683	36.24	56.00	-19.76	26.23	9.60	0.09	0.32	QP

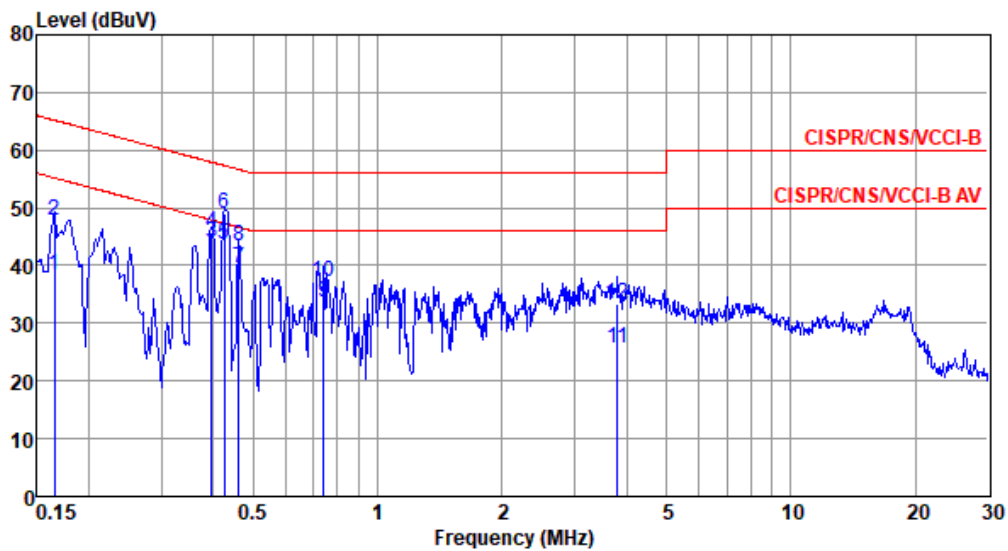
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) - Limit Line (dBuV).



Test configuration 2: With SFP, model: SDG-8614

Modulation Mode	ax HE20	Test Freq. (MHz)	2437
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.165	38.48	55.21	-16.73	28.65	9.59	0.06	0.18	Average
2	0.165	47.68	65.21	-17.53	37.85	9.59	0.06	0.18	QP
3	0.396	44.11	47.95	-3.84	34.16	9.59	0.06	0.30	Average
4	0.396	45.84	57.95	-12.11	35.89	9.59	0.06	0.30	QP
5*	0.426	43.80	47.33	-3.53	33.85	9.59	0.06	0.30	Average
6	0.426	49.01	57.33	-8.32	39.06	9.59	0.06	0.30	QP
7	0.461	39.42	46.67	-7.25	29.46	9.59	0.07	0.30	Average
8	0.461	43.33	56.67	-13.34	33.37	9.59	0.07	0.30	QP
9	0.739	33.58	46.00	-12.42	23.57	9.60	0.09	0.32	Average
10	0.739	37.29	56.00	-18.71	27.28	9.60	0.09	0.32	QP
11	3.799	25.66	46.00	-20.34	15.44	9.62	0.18	0.42	Average
12	3.799	33.38	56.00	-22.62	23.16	9.62	0.18	0.42	QP

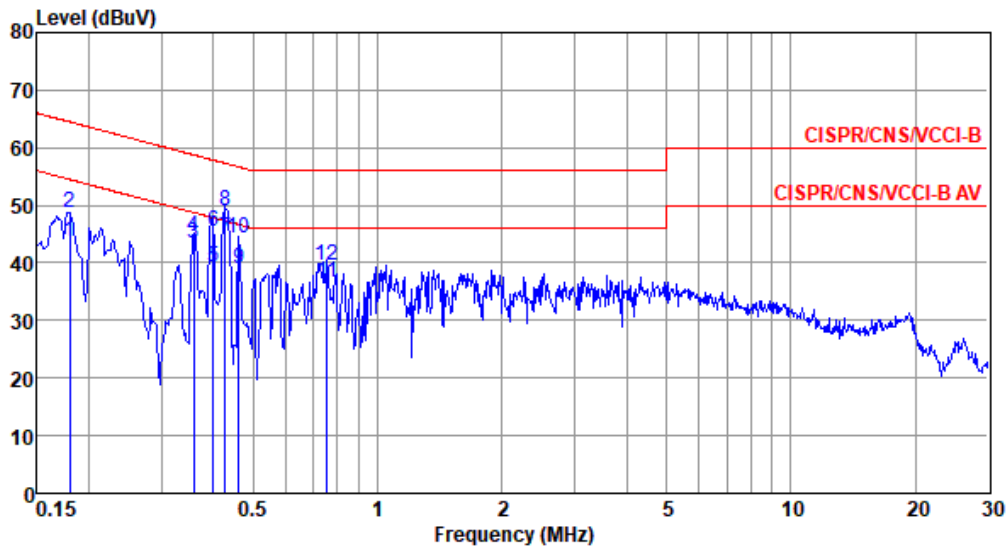
Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).



Modulation Mode	ax HE20	Test Freq. (MHz)	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 62%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.180	43.63	54.50	-10.87	33.78	9.60	0.06	0.19	Average
2	0.180	48.63	64.50	-15.87	38.78	9.60	0.06	0.19	QP
3	0.360	43.41	48.74	-5.33	33.47	9.60	0.06	0.28	Average
4	0.360	44.45	58.74	-14.29	34.51	9.60	0.06	0.28	QP
5	0.400	39.27	47.86	-8.59	29.31	9.60	0.06	0.30	Average
6	0.400	45.51	57.86	-12.35	35.55	9.60	0.06	0.30	QP
7*	0.428	44.21	47.29	-3.08	34.25	9.60	0.06	0.30	Average
8	0.428	49.12	57.29	-8.17	39.16	9.60	0.06	0.30	QP
9	0.461	39.06	46.67	-7.61	29.09	9.60	0.07	0.30	Average
10	0.461	44.26	56.67	-12.41	34.29	9.60	0.07	0.30	QP
11	0.755	36.56	46.00	-9.44	26.55	9.60	0.09	0.32	Average
12	0.755	39.63	56.00	-16.37	29.62	9.60	0.09	0.32	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).