Testing Laboratory 1190

FCC Test Report

FCC ID	:	SWX-RM2W
Equipment	:	rocket M2
Brand Name	:	UBIQUITI
Model Name	:	RocketM2
Applicant	:	Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA
Manufacturer	:	Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA
Standard	:	47 CFR FCC Part 15.247

The product was received on Mar. 20, 2018, and testing was started from May 07, 2018 and completed on Jun. 08, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

HISTORY OF THIS TEST REPORT 3

SUMMARY OF TEST RESULT 4

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Testing Applied Standards 7
1.3 Testing Location Information 7
1.4 Measurement Uncertainty 7

2 TEST CONFIGURATION OF EUT 8

2.1 Test Condition 8
2.2 Test Channel Mode 8
2.3 The Worst Case Measurement Configuration 8
2.4 Support Equipment 9
2.5 Test Setup Diagram 10

3 TRANSMITTER TEST RESULT 12

3.1 AC Power-line Conducted Emissions 12
3.2 DTS Bandwidth 13
3.3 Maximum Conducted Output Power 14
3.4 Power Spectral Density 16
3.5 Emissions in Non-restricted Frequency Bands 17
3.6 Emissions in Restricted Frequency Bands 18

4 TEST EQUIPMENT AND CALIBRATION DATA 22

APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS

APPENDIX B. TEST RESULTS OF DTS BANDWIDTH

APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER

APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY

APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS

APPENDIX G. TEST PHOTOS

PHOTOGRAPHS OF EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FR712408-04AC	01	Initial issue of report	Jun. 15, 2018

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]: 30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]: 8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: > 30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Reviewed by: Jeremy Lin

Report Producer: Jackson Tsai

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (5M, 8M, 10M, 20M)	2412-2462	1-11 [11]
2400-2483.5	n (30M)	2417-2457	2-10 [9]
2400-2483.5	n (40M)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b 5M	5	2TX
2.4-2.4835GHz	802.11b 8M	8	2TX
2.4-2.4835GHz	802.11b 10M	10	2TX
2.4-2.4835GHz	802.11b 20M	20	2TX
2.4-2.4835GHz	802.11g 5M	5	2TX
2.4-2.4835GHz	802.11g 8M	8	2TX
2.4-2.4835GHz	802.11g 10M	10	2TX
2.4-2.4835GHz	802.11g 20M	20	2TX
2.4-2.4835GHz	802.11n 5M	5	2TX
2.4-2.4835GHz	802.11n 8M	8	2TX
2.4-2.4835GHz	802.11n 10M	10	2TX
2.4-2.4835GHz	802.11n 20M	20	2TX
2.4-2.4835GHz	802.11n 30M	30	2TX
2.4-2.4835GHz	802.11n 40M	40	2TX

Note:
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g and 11n use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Dipole Antenna	Reversed-SMA	4
2	2	-	-	Dipole Antenna	Reversed-SMA	4

Note 1: The EUT has two antennas.

For 2.4 GHz function:

For IEEE 802.11b/g/n mode (2TX/2RX)
Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From PoE			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
Beamforming Function	☐	With beamforming	☒	Without beamforming

Type of EUT		
☒	Stand-alone	
☐	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	…
☐	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	…
☐	Other:	

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b 5M_Nss1,(1Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11b 8M_Nss1,(1Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11b 10M_Nss1,(1Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11b 20M_Nss1,(1Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g 5M_Nss1,(6Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g 8M_Nss1,(6Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g 10M_Nss1,(6Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g 20M_Nss1,(6Mbps)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 5M_Nss1,(MCS0)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 8M_Nss1,(MCS0)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 10M_Nss1,(MCS0) 2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 20M_Nss1,(MCS0)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 30M_Nss1,(MCS0)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n 40M_Nss1,(MCS0)_2TX	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 558074 D01 v04
- KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Tim	24.5°C / 64%	04/Jun/2018
Radiated	03CH02-HY	Streak	21.5°C / 61%	08/Jun/2018
AC Conduction	CO04-HY	Kevin	20°C / 53%	07/May/2018

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 ℃	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	DoS

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	AC mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	AC mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT		V	

2.4 Support Equipment

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE	UBNT	GP-A240-050G	-

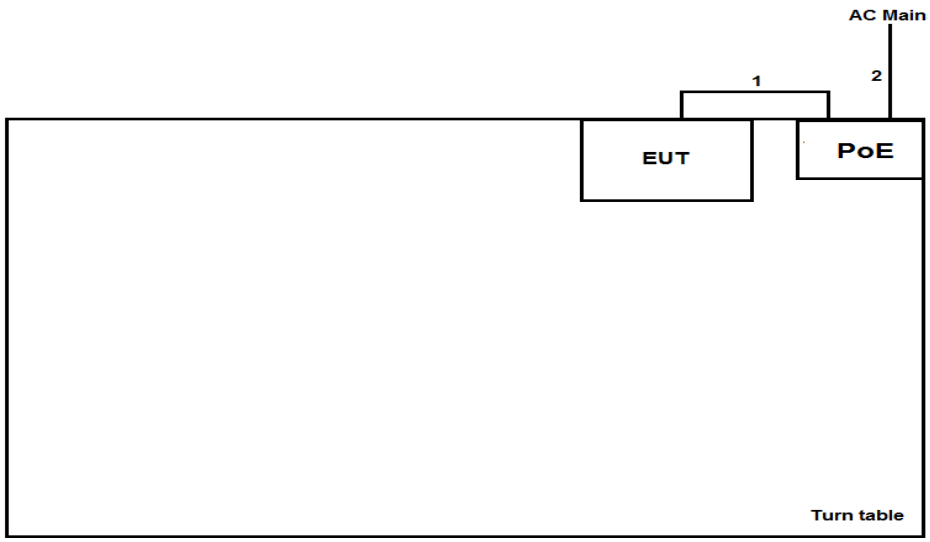
Note: Support equipment No.1 was provided by customer.

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE	UBNT	GP-A240-050G	-

Note: Support equipment No.1 was provided by customer.

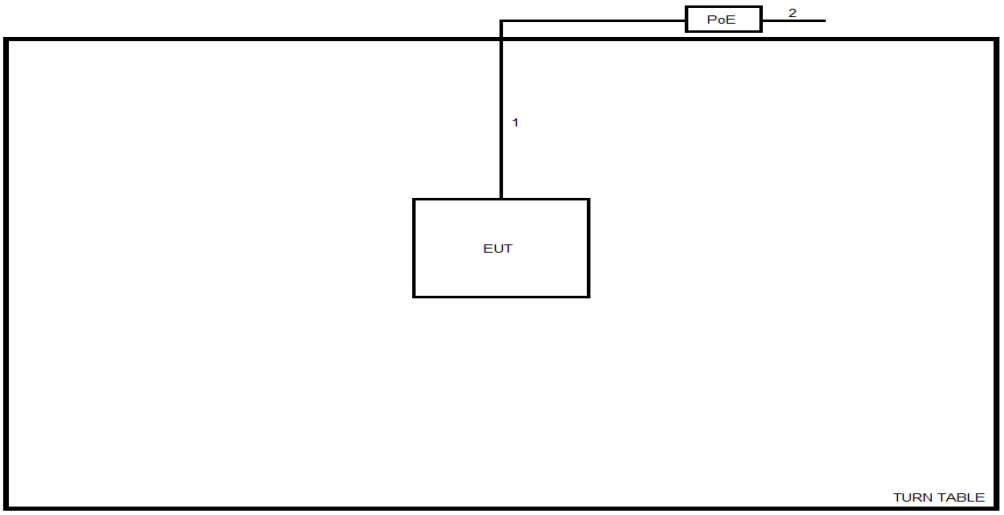
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	RJ45 Cable	No	1.45m	-
2	AC Power line	No	1.8m	-

Test Setup Diagram – Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	RJ45 Cable	No	10 m	-
2	AC Power line	No	1.8m	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line 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.		

3.1.2 Measuring Instruments

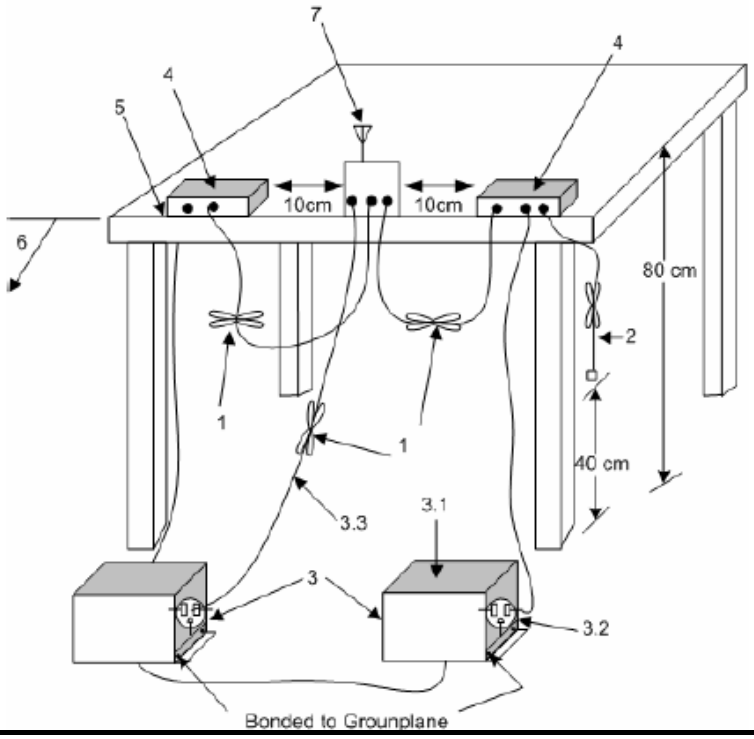
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
▪ 6 dB bandwidth ≥ 500 kHz.

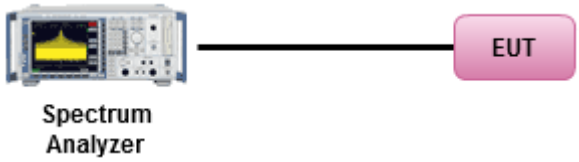
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
	☒ Refer as KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
	☐ Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
	☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit		
	▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)	
	▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)$ dBm	
	▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm	
	▪ Smart antenna system (SAS):	
		- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3 + 8$dB dBm
e.i.r.p. Power Limit:		
▪ 2400-2483.5 MHz Band		
	▪ Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)	
	▪ Point-to-point systems (P2P): $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX}])$ dBm	
	▪ Smart antenna system (SAS)	
		- Single beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		- Overlap beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		- Aggregate power on all beams: $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.		

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
	☐ Refer as KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
	☐ Refer as KDB 558074, clause 9.1.2 Option 2 (integrated band power method)
	☐ Refer as KDB 558074, clause 9.1.3 Option 3 (peak power meter for VBW ≥ DTS BW)
▪ Maximum Average Conducted Output Power	
	Duty cycle ≥ 98%
	☐ Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	Duty cycle < 98%
	☐ Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
	☒ Refer as KDB 558074, clause 9.2.3.1 Method AVGPM (using an RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
▪ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

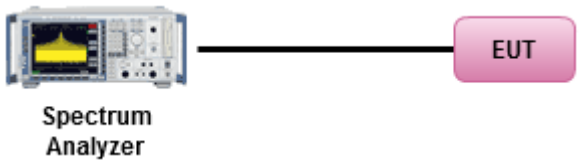
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).		
	☒ Refer as KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).	
▪ For conducted measurement.		
	▪ If The EUT supports multiple transmit chains using options given below:	
		▪ Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.5.2 Measuring Instruments

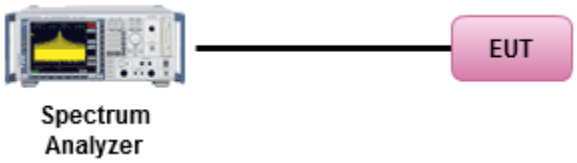
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
▪ Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

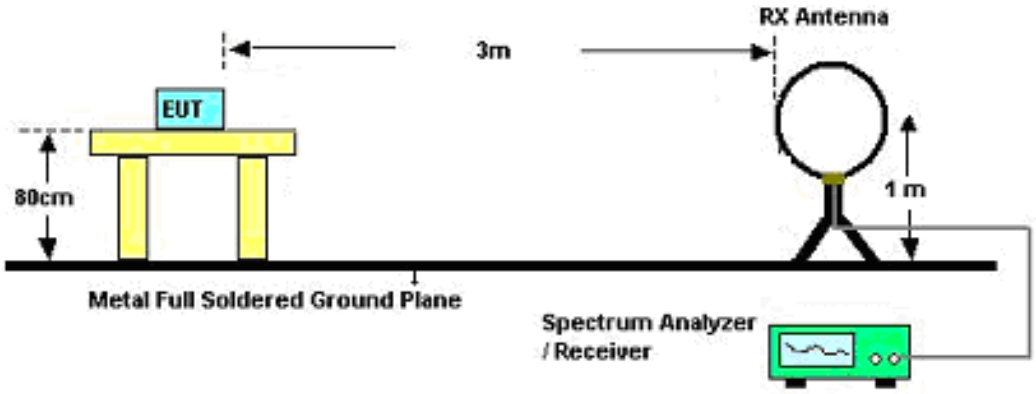
3.6.3 Test Procedures

Test Method		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.	
		☒ Refer as KDB 558074, clause 12.2.5.3 (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW≥1/T.
		☒ Refer as KDB 558074, clause 12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:		
	▪ Refer as KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.	
	▪ Refer as KDB 558074, clause 13.2 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.	
	▪ Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).	
▪ For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2.		
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB	
	▪ For KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.	

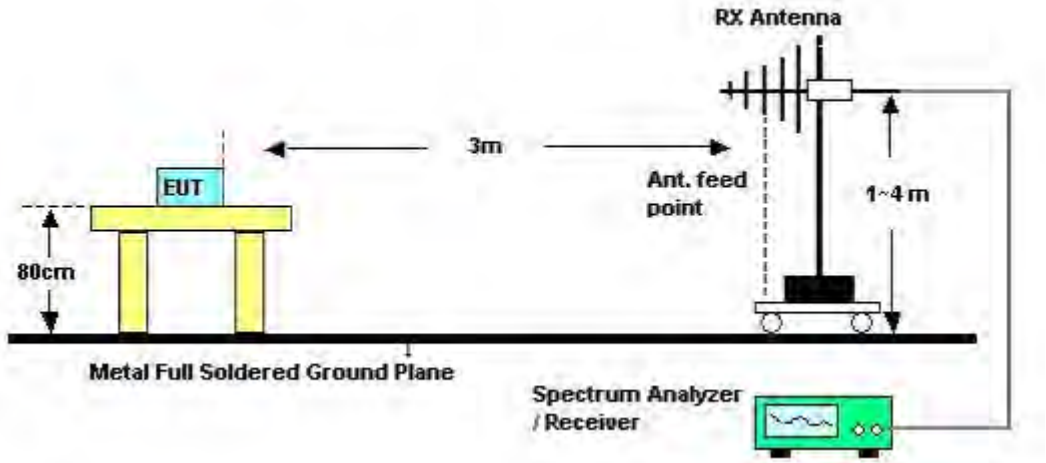
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

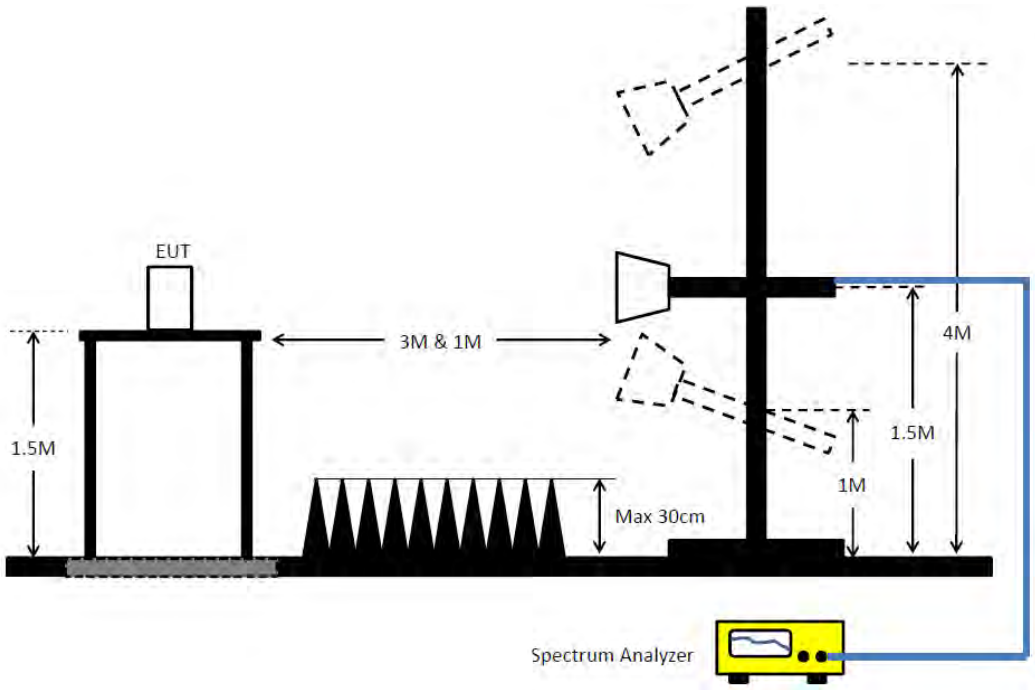
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESCS30	838251/003	9 kHz ~ 2.75 GHz	13/Jun/2017	12/Jun/2018
LISN	R&S	ENV216	101295	9 kHz ~ 30 MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9 kHz ~ 30 MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47 Hz ~ 63 Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018

NCR : Non-Calibration Require

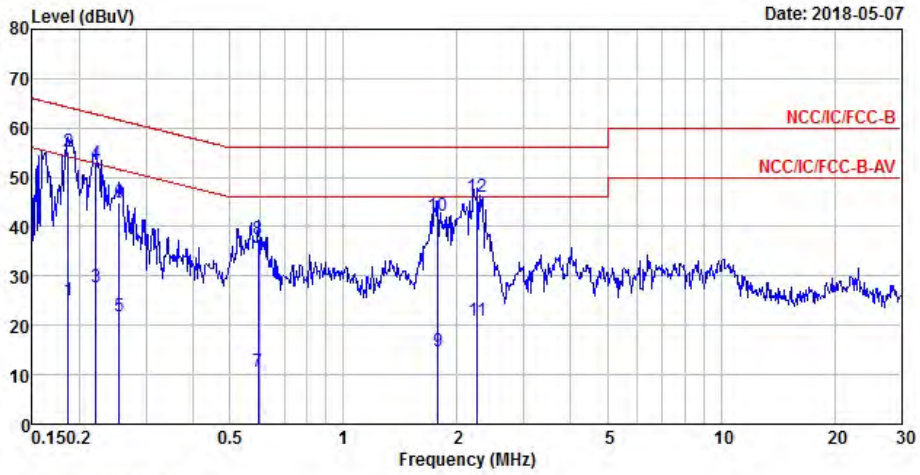
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30 MHz ~ 1 GHz 3m	20/Oct/2017	19/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1 GHz ~ 18 GHz 3m	27/Oct/2017	26/Oct/2018
Amplifier	Agilent	8447D	2944A11149	100 kHz ~ 1.3 GHz	29Jun/2017	28/Jun/2018
Microwave Preamplifier	Agilent	8449B	3008A02373	1 GHz ~ 26.5 GHz	28/Sep/2017	27/Sep/2018
Spectrum Analyzer	Rohde & Schwarz	FSP40	100593	9 kHz – 40 GHz	12/Dec/2017	11/Dec/2018
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100354	9 kHz ~ 2.75 GHz	08/Dec/2017	07/Dec/2018
RF Cable-R03m	Jye Bao	RG142	CB017	9 kHz ~ 1 GHz	19/Jan/2018	18/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1 GHz ~ 40 GHz	19/Jan/2018	18/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	2723	30 MHz ~ 1 GHz	09/Sep/2017	08/Sep/2018
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18 GHz ~ 40 GHz	06/Feb/2018	05/Feb/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA 9120 D 1543	1 GHz ~ 18 GHz	11/May/ 2018	10/May/2019
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18 GHz ~ 40 GHz	31/Aug/2017	30/Aug/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz – 30 MHz	29/Mar/2018	28/Mar/2019

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101515	9 kHz ~ 40 GHz	08/Dec/2017	07/Dec/2018
Power Sensor	Anritsu	MA2411B	0917017	300 MHz ~ 40 GHz	05/Feb/2018	04/Feb/2019
Power Meter	Anritsu	ML2495A	0949003	300 MHz ~ 40 GHz	05/Feb/2018	04/Feb/2019
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30M Hz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30M Hz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30M Hz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
RF Cable-1m	HUBER+SUHNER	SUCOFLEX_104	MY37332/4	30M Hz ~ 26.5 GHz	26/Jan/2018	25/Jan/2019
RF Cable-1m	HUBER+SUHNER	SUCOFLEX_104	MY37333/4	30M Hz ~ 26.5 GHz	26/Jan/2018	25/Jan/2019
Signal Generator	R&S	SMR40	100116	10 MHz ~ 40 GHz	27/Jul/2017	26/Jul/2018

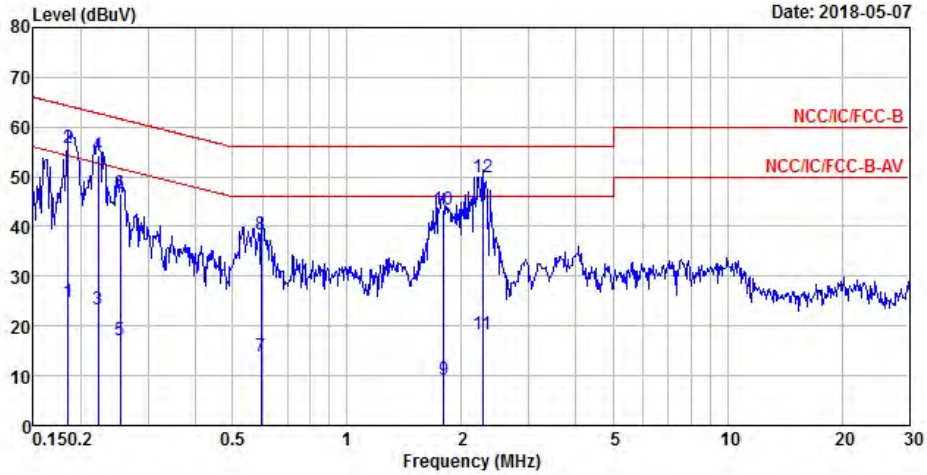
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	AC Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19	24.95	-29.25	54.20	15.32	9.62	0.01	Average
2 MAX	0.19	55.07	-9.13	64.20	45.44	9.62	0.01	QP
3	0.22	27.81	-24.98	52.79	18.18	9.62	0.01	Average
4	0.22	52.95	-9.84	62.79	43.32	9.62	0.01	QP
5	0.25	21.70	-29.90	51.60	12.05	9.62	0.03	Average
6	0.25	44.85	-16.75	61.60	35.20	9.62	0.03	QP
7	0.59	10.53	-35.47	46.00	0.86	9.61	0.06	Average
8	0.59	37.57	-18.43	56.00	27.90	9.61	0.06	QP
9	1.78	14.71	-31.29	46.00	5.08	9.63	0.00	Average
10	1.78	42.21	-13.79	56.00	32.58	9.63	0.00	QP
11	2.26	20.94	-25.06	46.00	11.29	9.63	0.02	Average
12	2.26	45.91	-10.09	56.00	36.26	9.63	0.02	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	AC Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19	24.87	-29.37	54.24	15.24	9.62	0.01	Average
2	0.19	55.75	-8.49	64.24	46.12	9.62	0.01	QP
3	0.22	23.40	-29.34	52.74	13.77	9.62	0.01	Average
4	0.22	54.37	-8.37	62.74	44.74	9.62	0.01	QP
5	0.25	17.12	-34.52	51.64	7.47	9.62	0.03	Average
6	0.25	46.63	-15.01	61.64	36.98	9.62	0.03	QP
7	0.59	13.76	-32.24	46.00	4.09	9.61	0.06	Average
8	0.59	38.35	-17.65	56.00	28.68	9.61	0.06	QP
9	1.80	9.17	-36.83	46.00	-0.45	9.62	0.00	Average
10	1.80	43.28	-12.72	56.00	33.66	9.62	0.00	QP
11	2.27	18.22	-27.78	46.00	8.58	9.62	0.02	Average
12 MAX	2.27	49.82	-6.18	56.00	40.18	9.62	0.02	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b 5M_ Nss1,(1Mbps)_2TX	2.575M	3.536M	3M54G1D	2.575M	3.492M
802.11b 8M_Nss1,(1Mbps)_2TX	4.06M	5.567M	5M57G1D	4.04M	5.537M
802.11b 10M_Nss1,(1Mbps)_2TX	5.075M	6.972M	6M97G1D	5.063M	6.934M
802.11b 20M_Nss1,(1Mbps)_2TX	10.075M	14.093M	14M1G1D	10.025M	13.918M
802.11g 5M_Nss1,(6Mbps)_2TX	4.131M	4.385M	4M39D1D	4.094M	4.117M
802.11g 8M_Nss1,(6Mbps)_2TX	6.55M	6.907M	6M91D1D	6.52M	6.547M
802.11g 10M_Nss1,(6Mbps)_2TX	8.225M	8.671M	8M67D1D	8.2M	8.208M
802.11g 20M_Nss1,(6Mbps)_2TX	16.55M	16.567M	16M6D1D	16.45M	16.467M
802.11n HT5_Nss1,(MCS0)_2TX	4.45M	4.966M	4M97D1D	4.413M	4.435M
802.11n HT8_Nss1,(MCS0)_2TX	7.05M	7.296M	7M30D1D	7.01M	7.026M
802.11n HT10_Nss1,(MCS0)_2TX	8.85M	9.008M	9M01D1D	8.825M	8.808M
802.11n HT20_Nss1,(MCS0)_2TX	17.75M	17.841M	17M8D1D	17.675M	17.716M
802.11n HT30_Nss1,(MCS0)_2TX	26.663M	26.687M	26M7D1D	26.513M	26.612M
802.11n HT40_Nss1,(MCS0)_2TX	36.55M	36.582M	36M6D1D	36.45M	36.432M

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)
802.11b 5M_ Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	2.575M	3.492M	2.575M	3.511M
2437MHz	Pass	500k	2.575M	3.517M	2.575M	3.536M
2462MHz	Pass	500k	2.575M	3.504M	2.575M	3.517M
802.11b 8M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	4.04M	5.557M	4.05M	5.547M
2437MHz	Pass	500k	4.06M	5.567M	4.05M	5.567M
2462MHz	Pass	500k	4.06M	5.537M	4.05M	5.567M
802.11b 10M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	5.063M	6.934M	5.063M	6.959M
2437MHz	Pass	500k	5.075M	6.959M	5.075M	6.972M
2462MHz	Pass	500k	5.063M	6.959M	5.063M	6.972M
802.11b 20M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	10.05M	13.918M	10.05M	13.918M
2437MHz	Pass	500k	10.075M	13.993M	10.075M	14.093M
2462MHz	Pass	500k	10.025M	13.918M	10.025M	13.993M
802.11g 5M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	4.113M	4.117M	4.119M	4.129M
2437MHz	Pass	500k	4.131M	4.385M	4.113M	4.229M
2462MHz	Pass	500k	4.094M	4.129M	4.113M	4.129M
802.11g 8M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	6.53M	6.547M	6.53M	6.557M
2437MHz	Pass	500k	6.53M	6.907M	6.52M	6.707M
2462MHz	Pass	500k	6.55M	6.567M	6.53M	6.567M

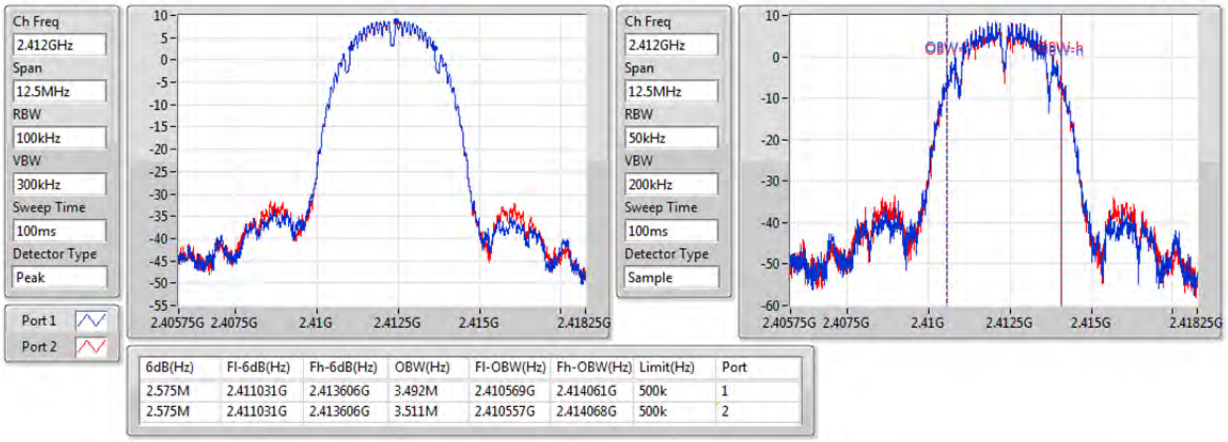
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11g 10M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	8.2M	8.221M	8.225M	8.221M
2437MHz	Pass	500k	8.225M	8.671M	8.213M	8.646M
2462MHz	Pass	500k	8.225M	8.208M	8.213M	8.233M
802.11g 20M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.525M	16.542M	16.55M	16.542M
2437MHz	Pass	500k	16.475M	16.567M	16.55M	16.467M
2462MHz	Pass	500k	16.45M	16.542M	16.5M	16.542M
802.11n HT5_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	4.45M	4.435M	4.431M	4.435M
2437MHz	Pass	500k	4.431M	4.966M	4.413M	4.716M
2462MHz	Pass	500k	4.438M	4.435M	4.438M	4.442M
802.11n HT8_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	7.01M	7.026M	7.03M	7.036M
2437MHz	Pass	500k	7.03M	7.296M	7.03M	7.166M
2462MHz	Pass	500k	7.02M	7.036M	7.05M	7.036M
802.11n HT10_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	8.85M	8.821M	8.838M	8.821M
2437MHz	Pass	500k	8.838M	9.008M	8.825M	8.933M
2462MHz	Pass	500k	8.825M	8.808M	8.85M	8.821M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.725M	17.766M	17.675M	17.716M
2437MHz	Pass	500k	17.675M	17.841M	17.75M	17.766M
2462MHz	Pass	500k	17.725M	17.716M	17.725M	17.766M
802.11n HT30_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2417MHz	Pass	500k	26.625M	26.649M	26.663M	26.687M
2437MHz	Pass	500k	26.663M	26.687M	26.663M	26.687M
2457MHz	Pass	500k	26.588M	26.612M	26.513M	26.649M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.55M	36.432M	36.55M	36.582M
2437MHz	Pass	500k	36.5M	36.582M	36.5M	36.532M
2452MHz	Pass	500k	36.45M	36.432M	36.55M	36.582M

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

802.11b 5M_Nss1,(1Mbps)_2TX — EBW

2412MHz

01/06/2018

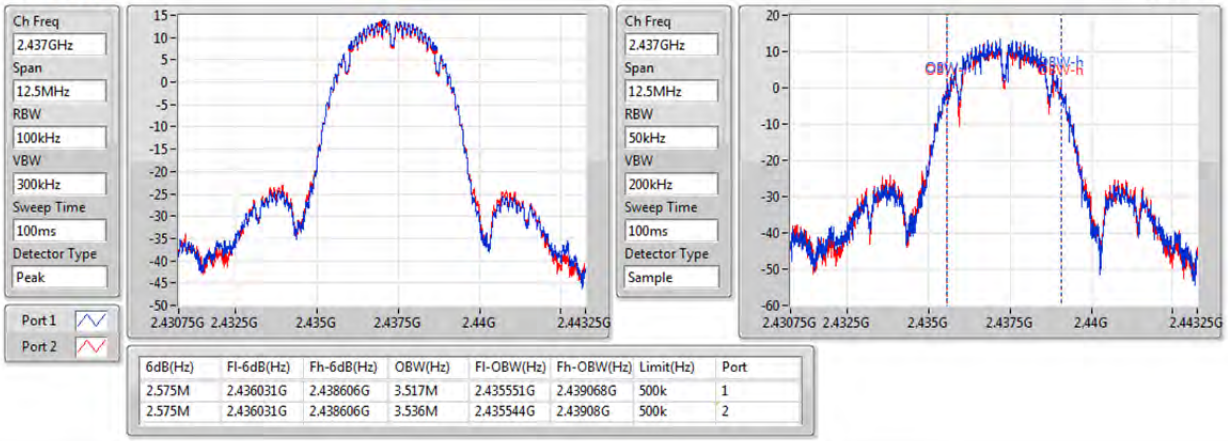


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
2.575M	2.411031G	2.413606G	3.492M	2.410569G	2.414061G	500k	1
2.575M	2.411031G	2.413606G	3.511M	2.410557G	2.414068G	500k	2

802.11b 5M_Nss1,(1Mbps)_2TX — EBW

2437MHz

01/06/2018

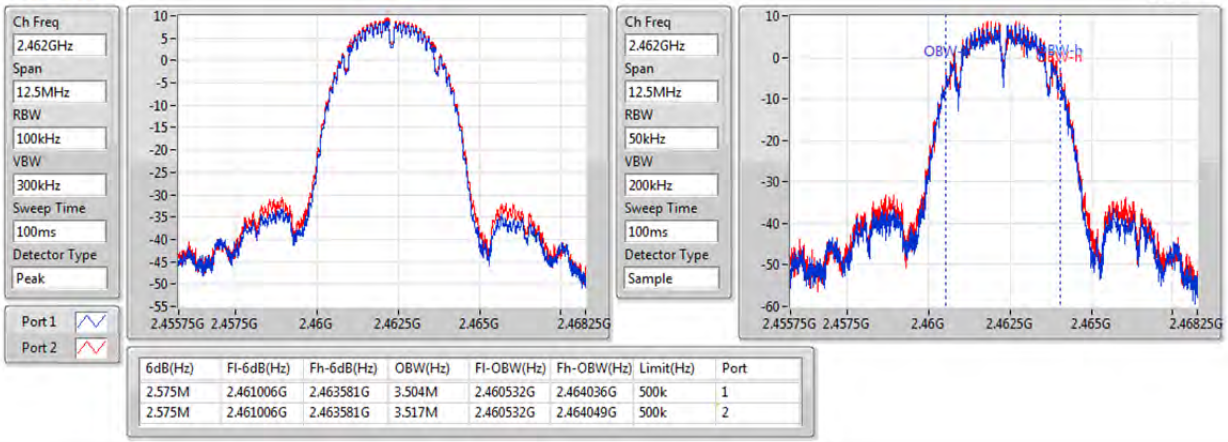


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
2.575M	2.436031G	2.438606G	3.517M	2.435551G	2.439068G	500k	1
2.575M	2.436031G	2.438606G	3.536M	2.435544G	2.43908G	500k	2

802.11b 5M_Nss1,(1Mbps)_2TX — EBW

2462MHz

01/06/2018

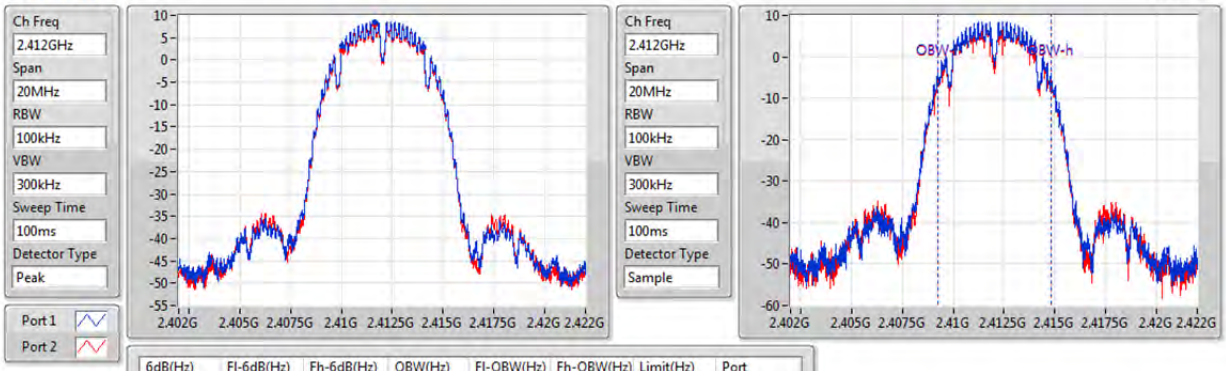


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
2.575M	2.461006G	2.463581G	3.504M	2.460532G	2.464036G	500k	1
2.575M	2.461006G	2.463581G	3.517M	2.460532G	2.464049G	500k	2

802.11b 8M_Nss1,(1Mbps)_2TX EBW

2412MHz

01/06/2018

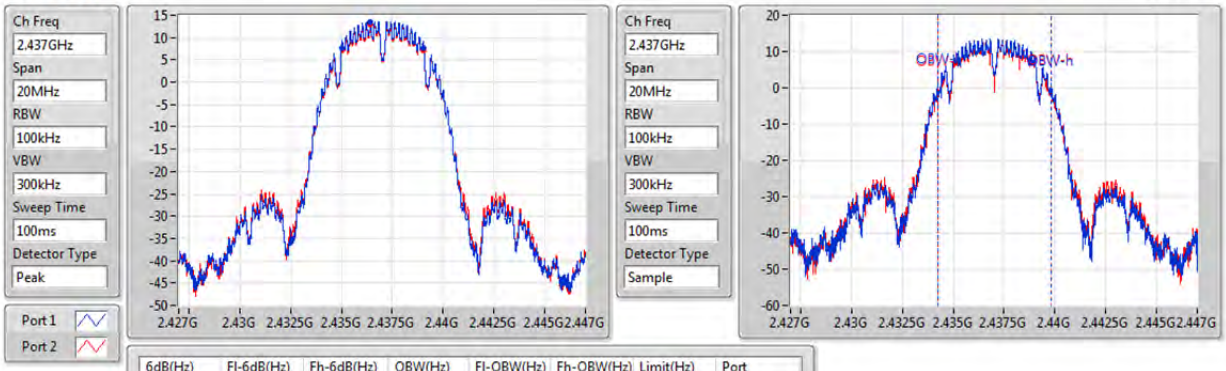


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.04M	2.41001G	2.41405G	5.557M	2.409241G	2.414799G	500k	1
4.05M	2.41G	2.41405G	5.547M	2.409251G	2.414799G	500k	2

802.11b 8M_Nss1,(1Mbps)_2TX EBW

2437MHz

01/06/2018

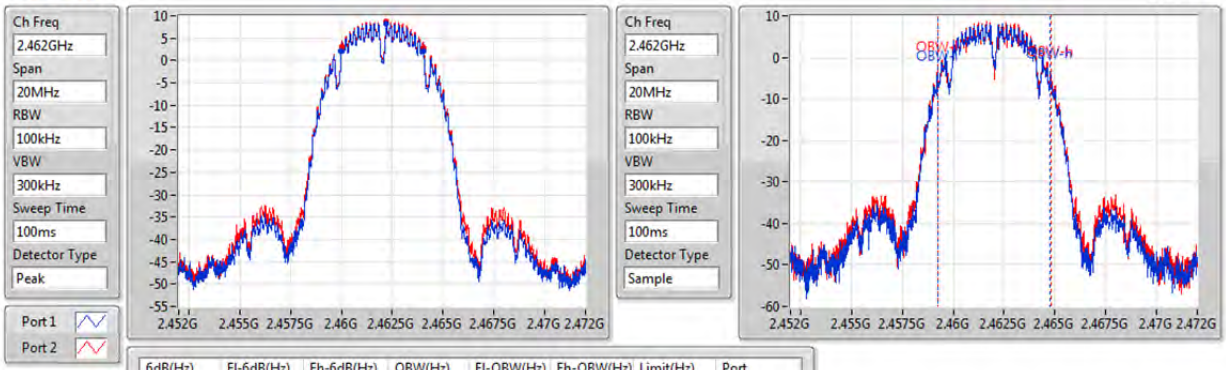


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.06M	2.435G	2.43906G	5.567M	2.434241G	2.439809G	500k	1
4.05M	2.43501G	2.43906G	5.567M	2.434241G	2.439809G	500k	2

802.11b 8M_Nss1,(1Mbps)_2TX EBW

2462MHz

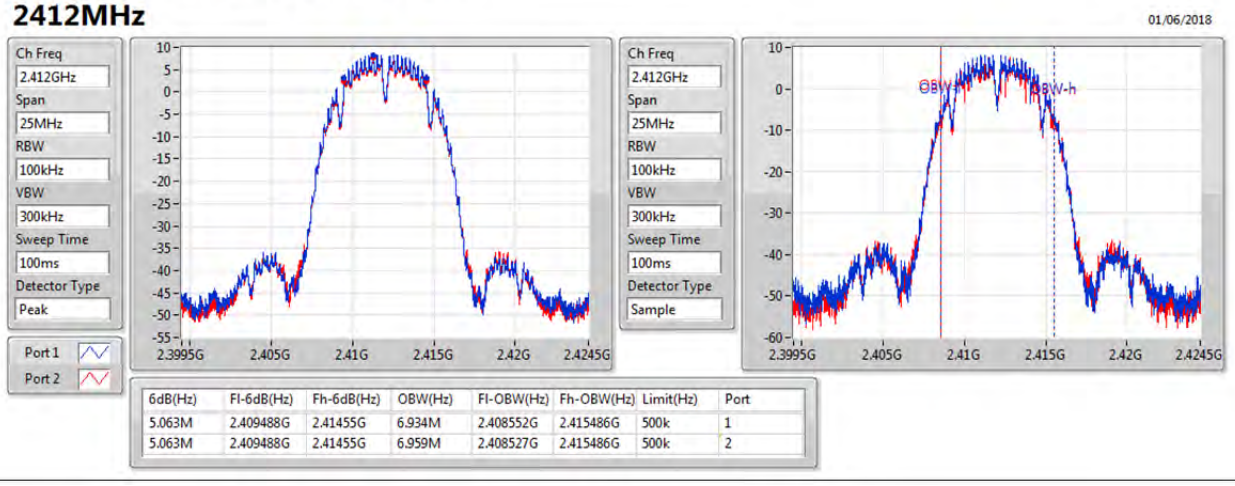
01/06/2018



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.06M	2.45999G	2.46405G	5.537M	2.459241G	2.464779G	500k	1
4.05M	2.46G	2.46405G	5.567M	2.459231G	2.464799G	500k	2

802.11b 10M_Nss1,(1Mbps)_2TX EBW

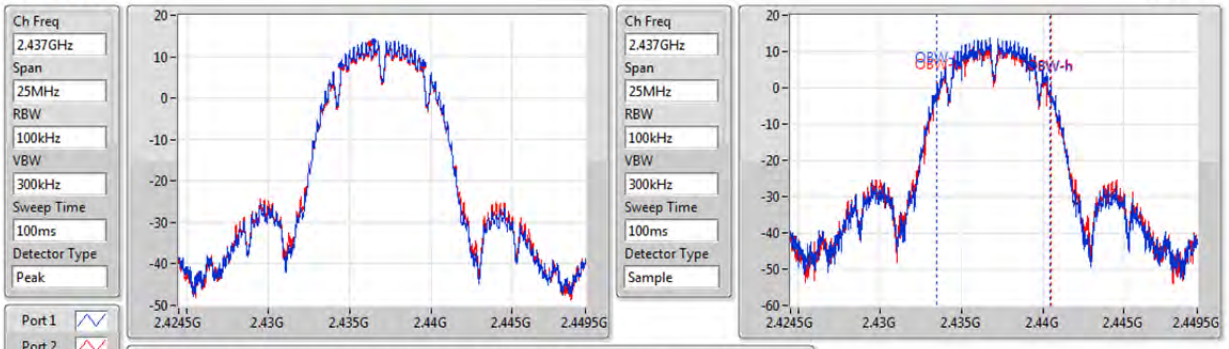
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
5.063M	2.409488G	2.41455G	6.934M	2.408552G	2.415486G	500k	1
5.063M	2.409488G	2.41455G	6.959M	2.408527G	2.415486G	500k	2

802.11b 10M_Nss1,(1Mbps)_2TX EBW

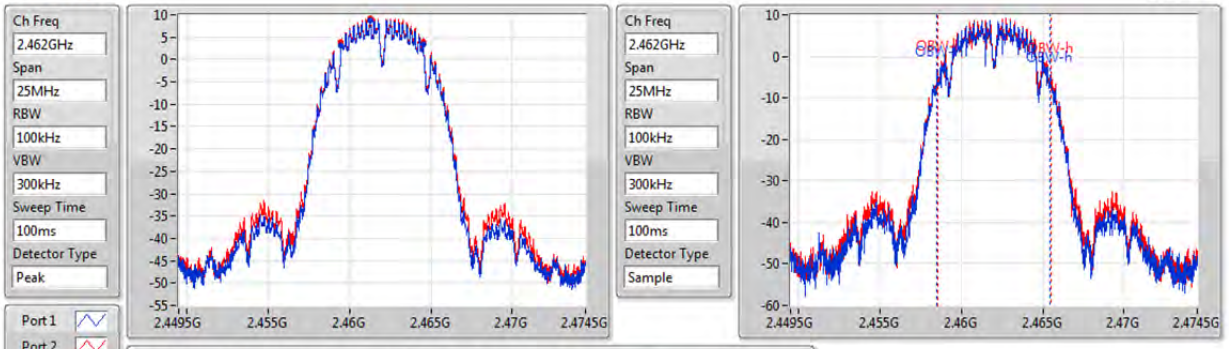
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
5.075M	2.434475G	2.43955G	6.959M	2.433514G	2.440473G	500k	1
5.075M	2.434475G	2.43955G	6.972M	2.433514G	2.440486G	500k	2

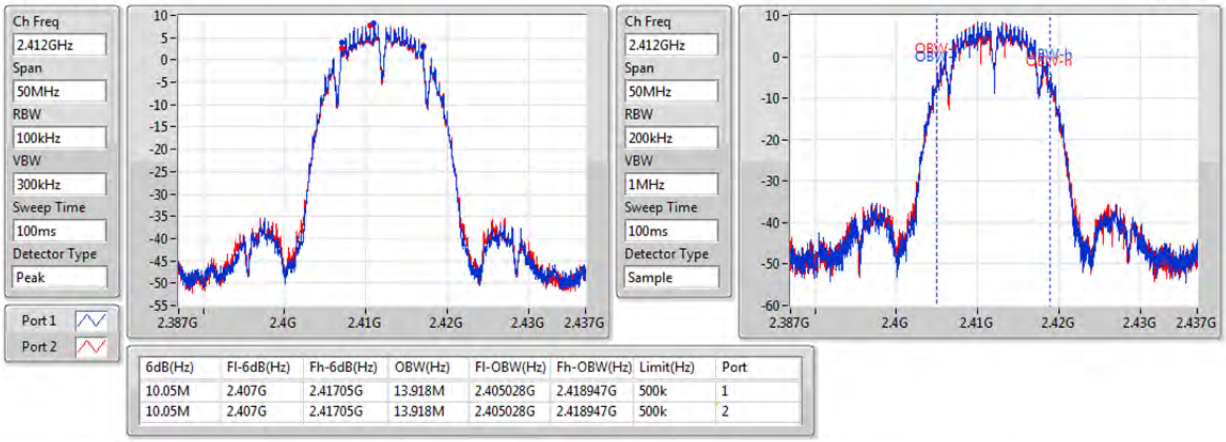
802.11b 10M_Nss1,(1Mbps)_2TX EBW

2462MHz



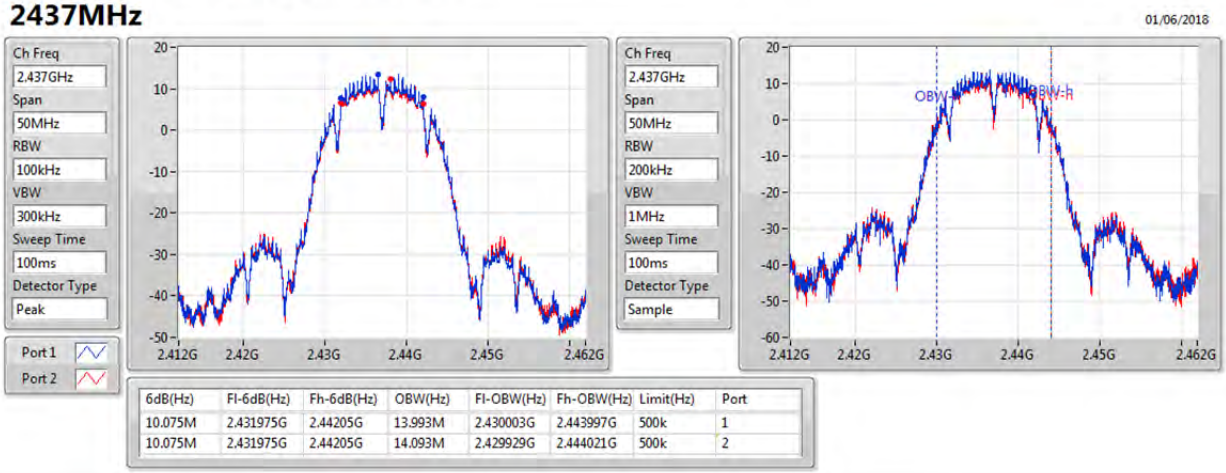
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
5.063M	2.459488G	2.46455G	6.959M	2.458514G	2.465473G	500k	1
5.063M	2.459488G	2.46455G	6.972M	2.458527G	2.465498G	500k	2

802.11b 20M_Nss1,(1Mbps)_2TX
EBW
2412MHz



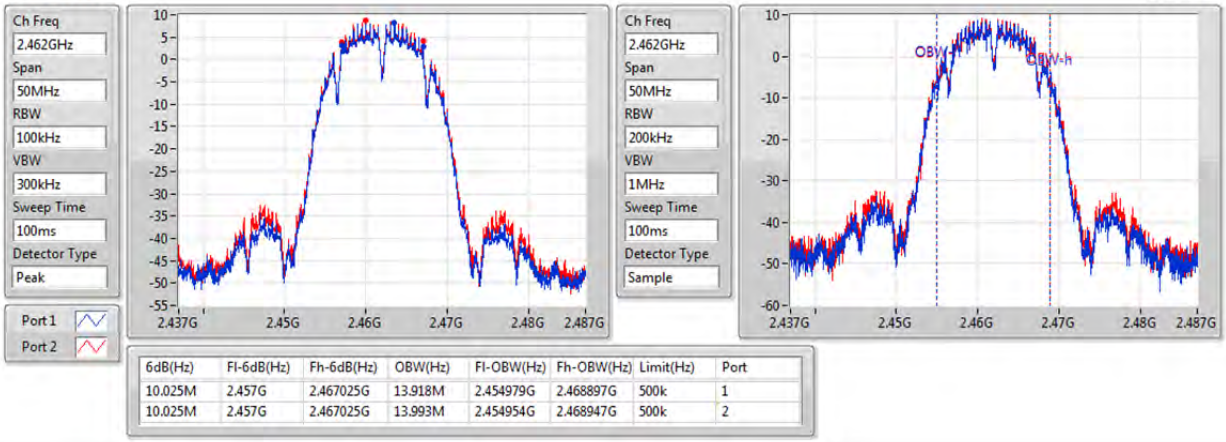
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.05M	2.407G	2.41705G	13.918M	2.405028G	2.418947G	500k	1
10.05M	2.407G	2.41705G	13.918M	2.405028G	2.418947G	500k	2

802.11b 20M_Nss1,(1Mbps)_2TX
EBW
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.075M	2.431975G	2.44205G	13.993M	2.430003G	2.443997G	500k	1
10.075M	2.431975G	2.44205G	14.093M	2.429929G	2.444021G	500k	2

802.11b 20M_Nss1,(1Mbps)_2TX
EBW
2462MHz

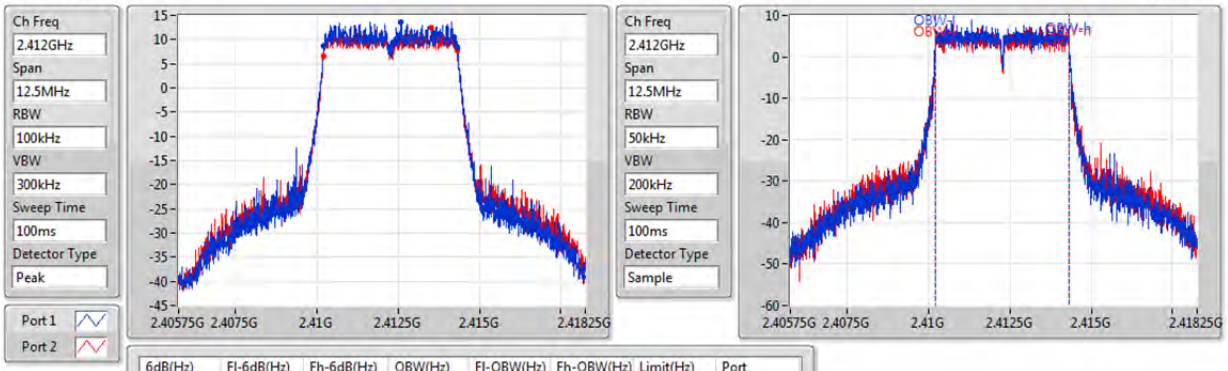


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.025M	2.457G	2.467025G	13.918M	2.454979G	2.468897G	500k	1
10.025M	2.457G	2.467025G	13.993M	2.454954G	2.468947G	500k	2

802.11g 5M_Nss1,(6Mbps)_2TX — EBW

2412MHz

01/06/2018

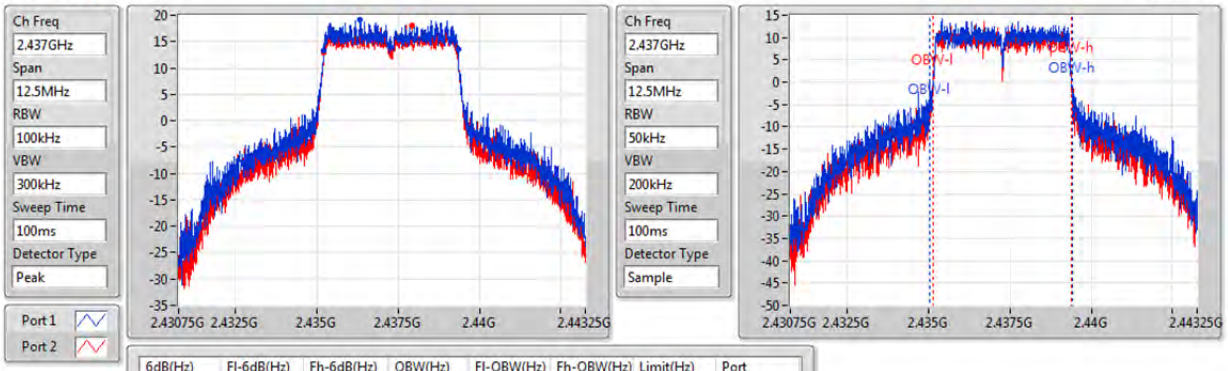


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.113M	2.410213G	2.414325G	4.117M	2.410207G	2.414324G	500k	1
4.119M	2.410206G	2.414325G	4.129M	2.410201G	2.41433G	500k	2

802.11g 5M_Nss1,(6Mbps)_2TX — EBW

2437MHz

01/06/2018

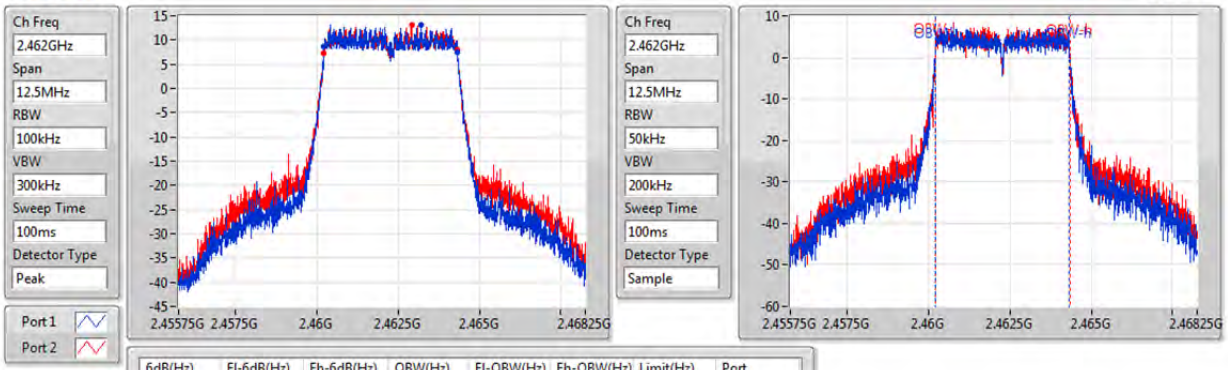


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.131M	2.435213G	2.439344G	4.385M	2.435045G	2.43943G	500k	1
4.113M	2.435213G	2.439325G	4.229M	2.435151G	2.43938G	500k	2

802.11g 5M_Nss1,(6Mbps)_2TX — EBW

2462MHz

01/06/2018

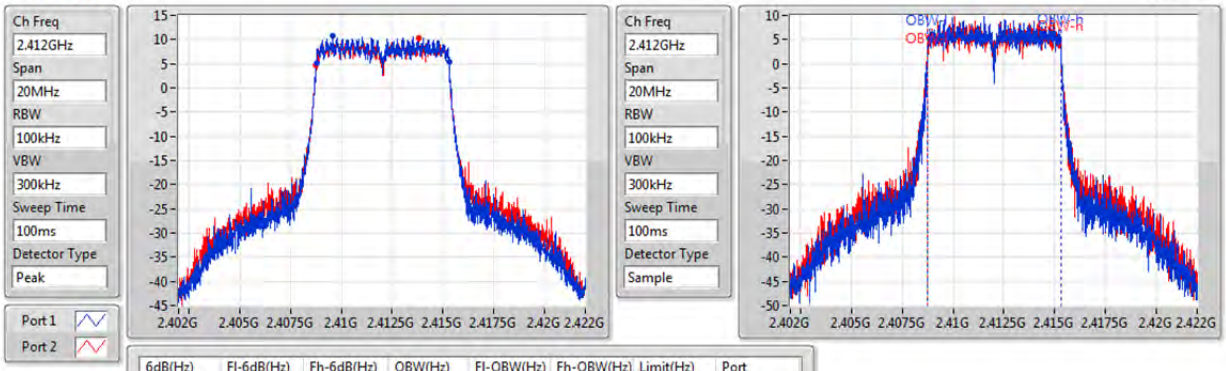


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.094M	2.460219G	2.464313G	4.129M	2.460201G	2.46433G	500k	1
4.113M	2.460213G	2.464325G	4.129M	2.460207G	2.464336G	500k	2

802.11g 8M_Nss1,(6Mbps)_2TX — EBW

2412MHz

01/06/2018

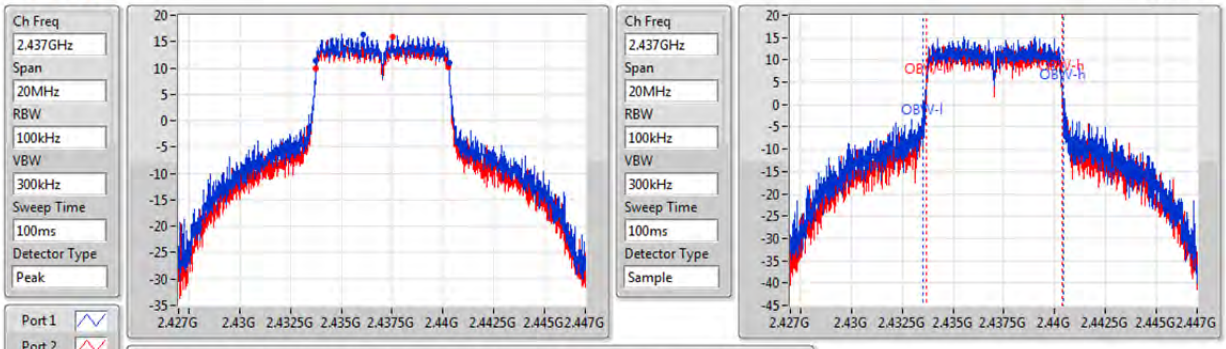


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6.53M	2.40877G	2.4153G	6.547M	2.408752G	2.415298G	500k	1
6.53M	2.40876G	2.41529G	6.557M	2.408742G	2.415298G	500k	2

802.11g 8M_Nss1,(6Mbps)_2TX — EBW

2437MHz

01/06/2018

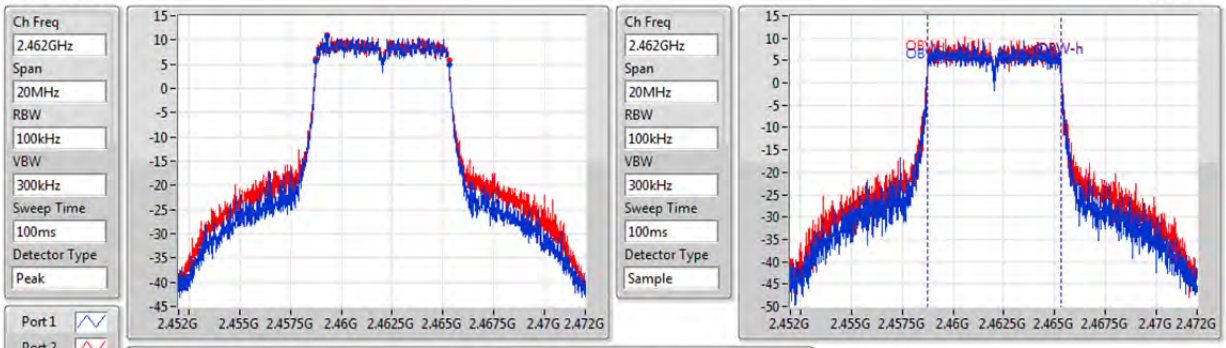


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6.53M	2.43376G	2.44029G	6.907M	2.433502G	2.440408G	500k	1
6.52M	2.43376G	2.44028G	6.707M	2.433662G	2.440368G	500k	2

802.11g 8M_Nss1,(6Mbps)_2TX — EBW

2462MHz

01/06/2018

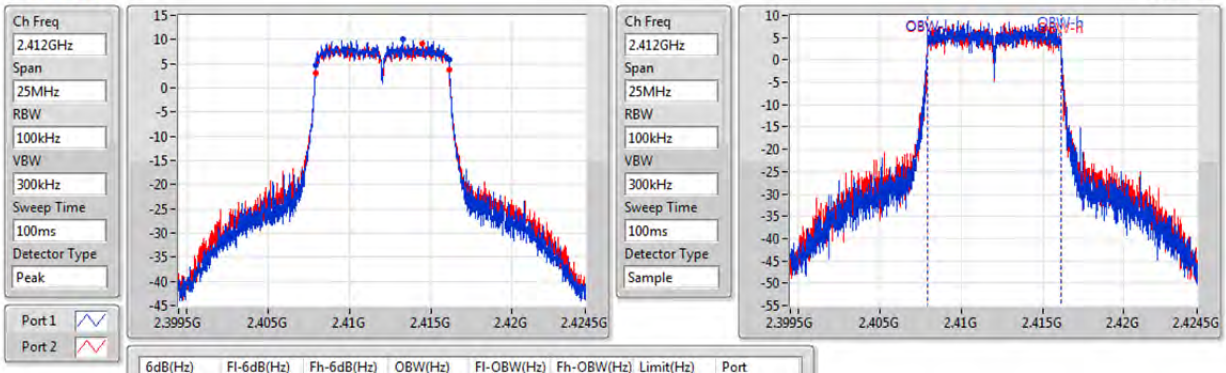


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6.55M	2.45875G	2.4653G	6.567M	2.458732G	2.465298G	500k	1
6.53M	2.45876G	2.46529G	6.567M	2.458742G	2.465308G	500k	2

802.11g 10M_Nss1,(6Mbps)_2TX **EBW**

2412MHz

01/06/2018

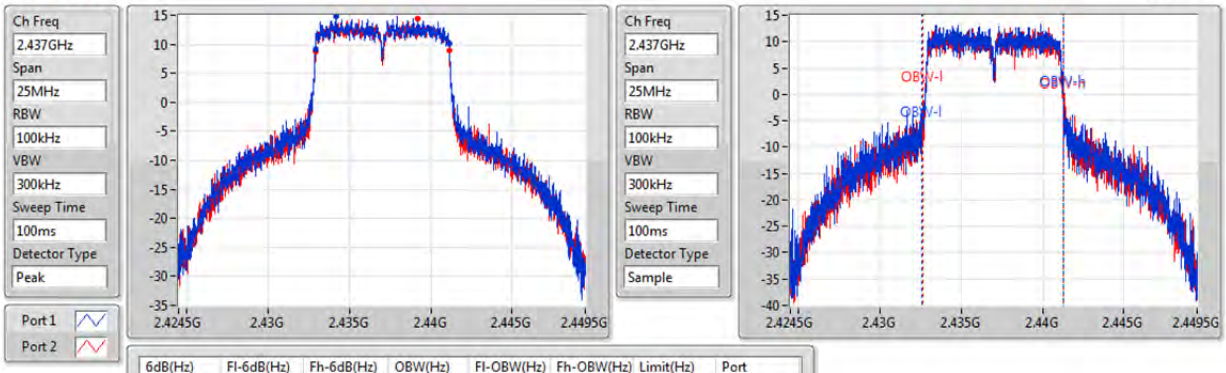


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.2M	2.407925G	2.416125G	8.221M	2.407915G	2.416135G	500k	1
8.225M	2.407913G	2.416138G	8.221M	2.407915G	2.416135G	500k	2

802.11g 10M_Nss1,(6Mbps)_2TX **EBW**

2437MHz

01/06/2018

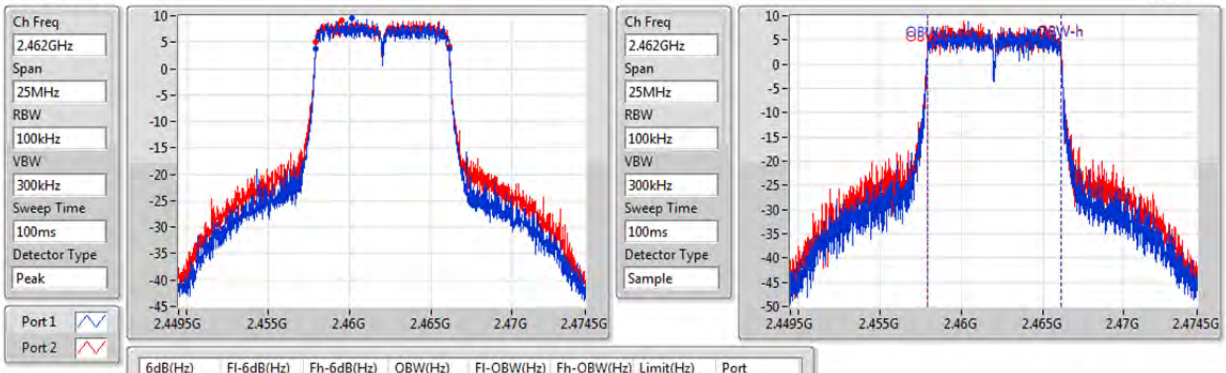


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.225M	2.432913G	2.441138G	8.671M	2.43259G	2.44126G	500k	1
8.213M	2.432913G	2.441125G	8.646M	2.432652G	2.441298G	500k	2

802.11g 10M_Nss1,(6Mbps)_2TX **EBW**

2462MHz

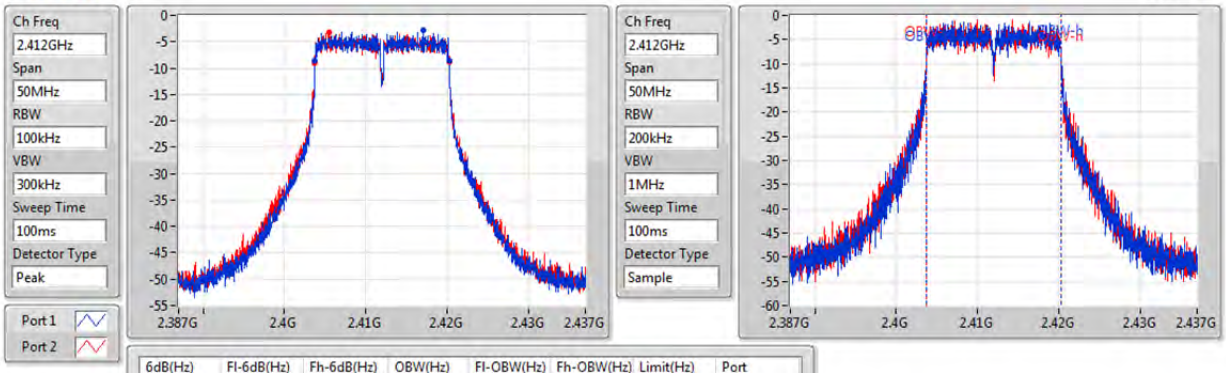
01/06/2018



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.225M	2.457913G	2.466138G	8.208M	2.457915G	2.466123G	500k	1
8.213M	2.457925G	2.466138G	8.233M	2.457902G	2.466135G	500k	2

802.11g 20M_Nss1,(6Mbps)_2TX
EBW
2412MHz

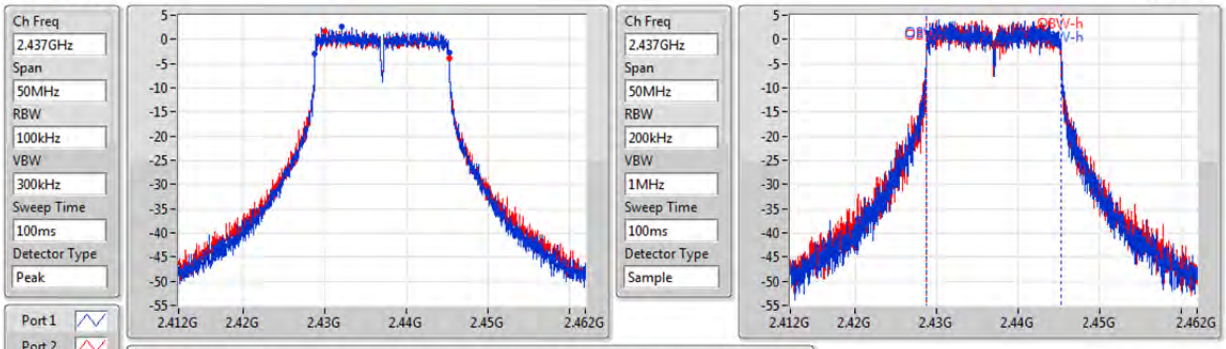
01/06/2018



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.525M	2.403775G	2.4203G	16.542M	2.403754G	2.420296G	500k	1
16.55M	2.403725G	2.420275G	16.542M	2.403729G	2.420271G	500k	2

802.11g 20M_Nss1,(6Mbps)_2TX
EBW
2437MHz

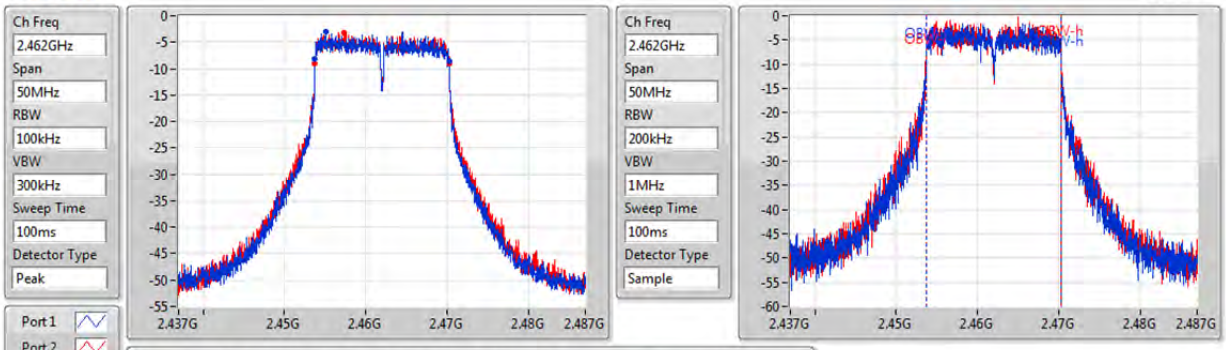
01/06/2018



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.475M	2.42875G	2.445225G	16.567M	2.428704G	2.445271G	500k	1
16.55M	2.42875G	2.4453G	16.467M	2.428754G	2.445221G	500k	2

802.11g 20M_Nss1,(6Mbps)_2TX
EBW
2462MHz

01/06/2018

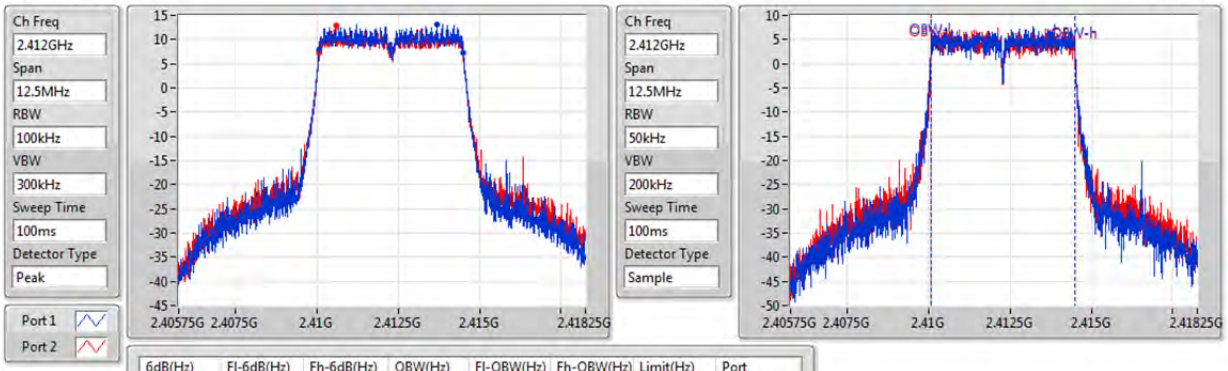


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.45M	2.453775G	2.470225G	16.542M	2.453704G	2.470246G	500k	1
16.5M	2.45375G	2.47025G	16.542M	2.453704G	2.470246G	500k	2

802.11n HT5_Nss1,(MCS0)_2TX — EBW

2412MHz

01/06/2018

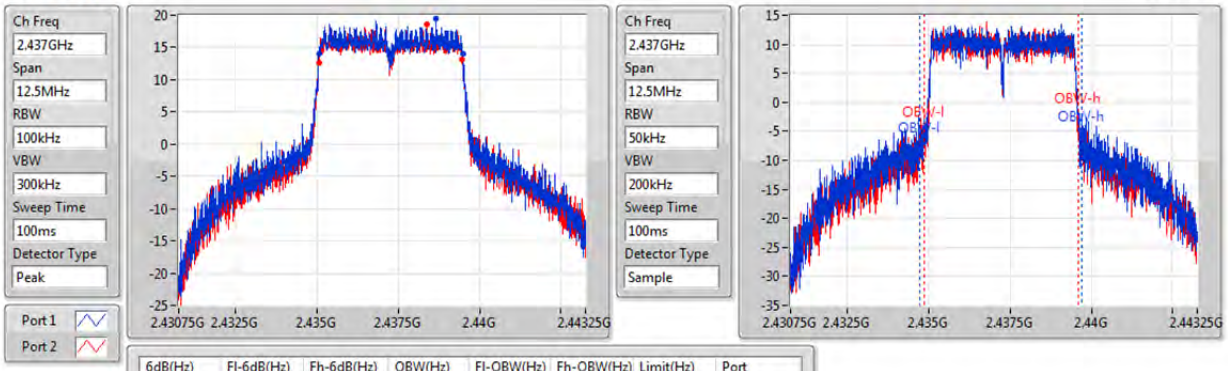


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.45M	2.410056G	2.414506G	4.435M	2.410063G	2.414499G	500k	1
4.431M	2.410063G	2.414494G	4.435M	2.410057G	2.414493G	500k	2

802.11n HT5_Nss1,(MCS0)_2TX — EBW

2437MHz

01/06/2018

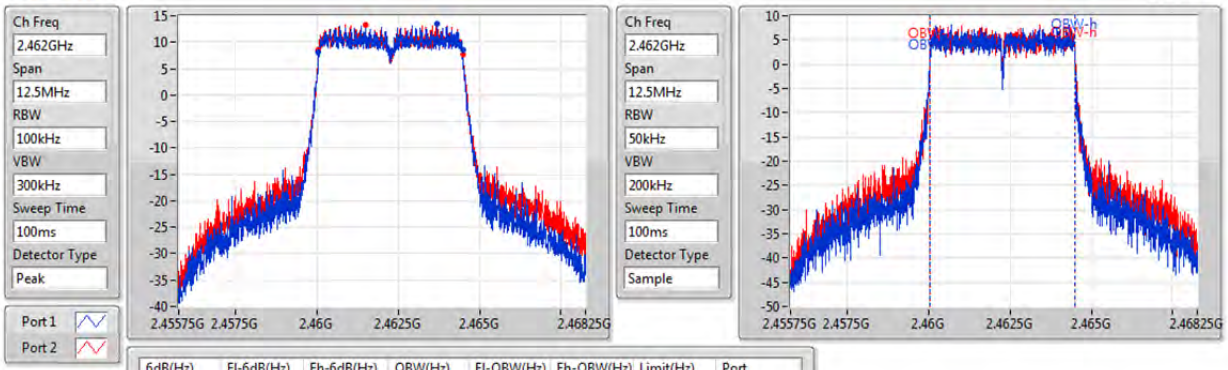


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.431M	2.435056G	2.439488G	4.966M	2.434726G	2.439692G	500k	1
4.413M	2.435056G	2.439469G	4.716M	2.434864G	2.43958G	500k	2

802.11n HT5_Nss1,(MCS0)_2TX — EBW

2462MHz

01/06/2018

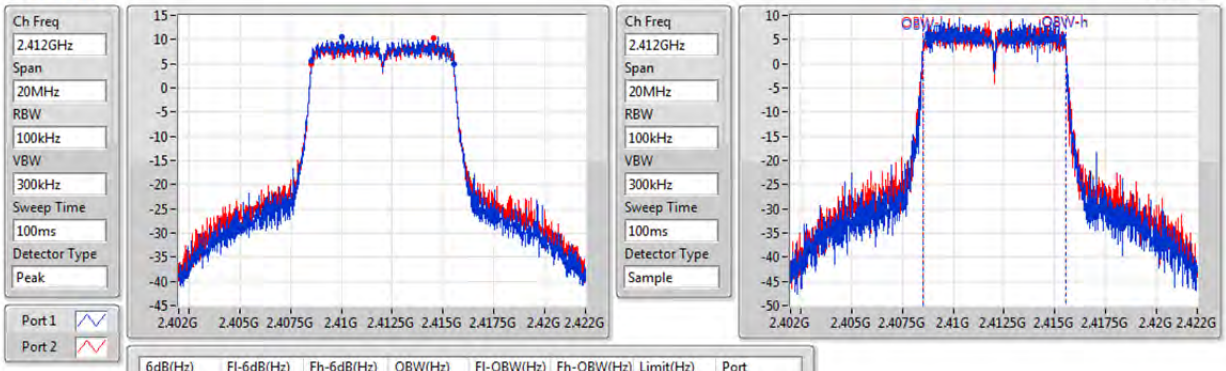


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.438M	2.460044G	2.464481G	4.435M	2.460045G	2.46448G	500k	1
4.438M	2.46005G	2.464488G	4.442M	2.460045G	2.464486G	500k	2

802.11n HT8_Nss1,(MCS0)_2TX — EBW

2412MHz

01/06/2018

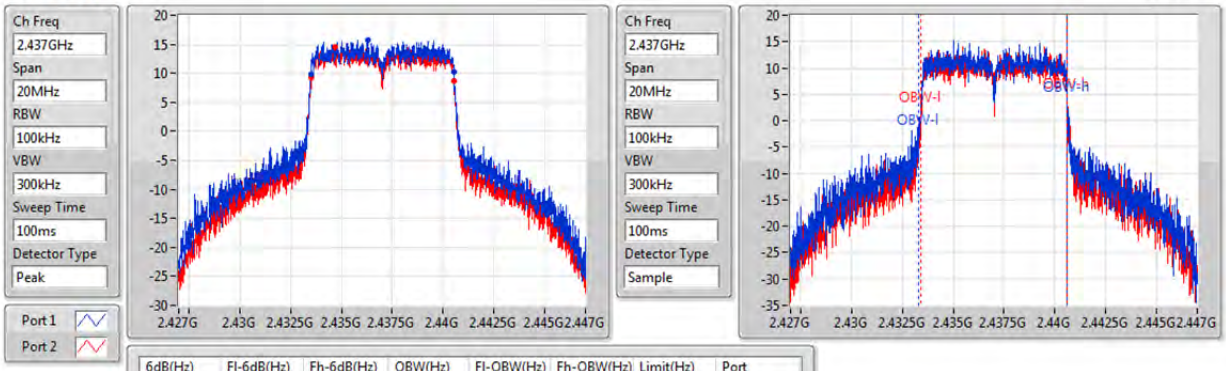


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.01M	2.40852G	2.41553G	7.026M	2.408512G	2.415538G	500k	1
7.03M	2.40851G	2.41554G	7.036M	2.408502G	2.415538G	500k	2

802.11n HT8_Nss1,(MCS0)_2TX — EBW

2437MHz

01/06/2018

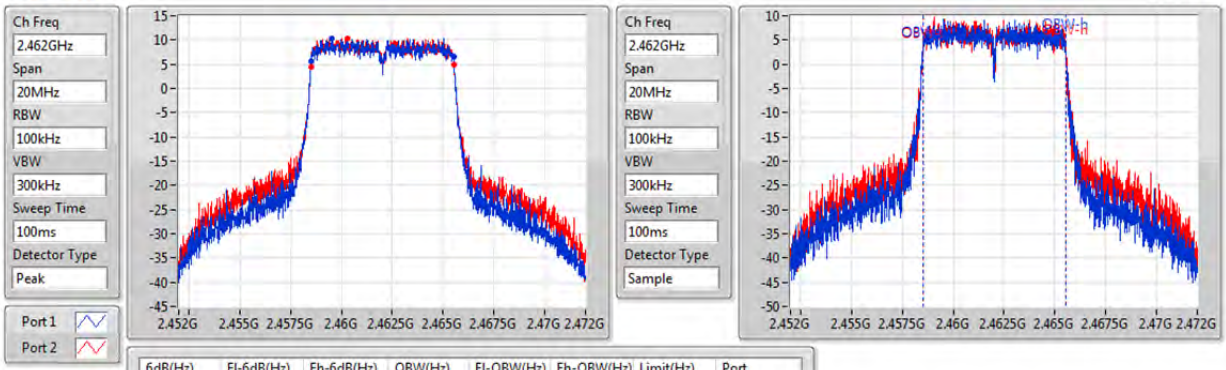


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.03M	2.4335G	2.44053G	7.296M	2.433322G	2.440618G	500k	1
7.03M	2.43351G	2.44054G	7.166M	2.433432G	2.440598G	500k	2

802.11n HT8_Nss1,(MCS0)_2TX — EBW

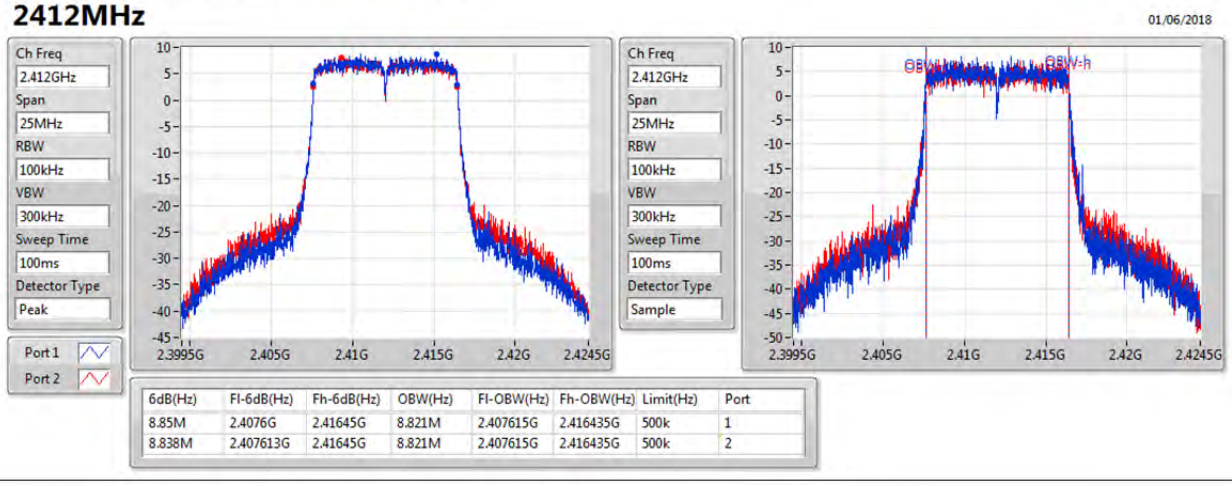
2462MHz

01/06/2018



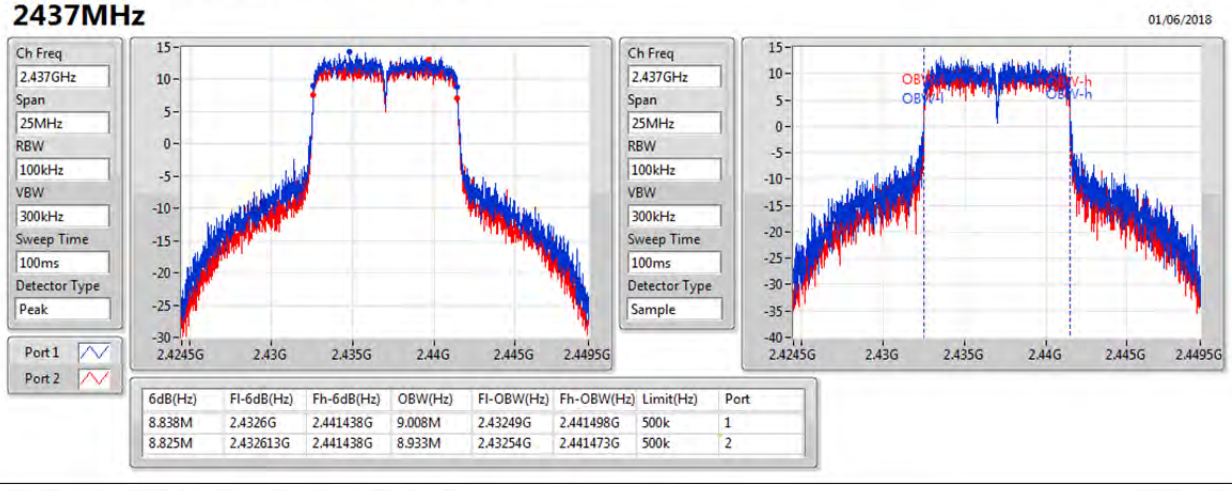
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.02M	2.45851G	2.46553G	7.036M	2.458502G	2.465538G	500k	1
7.05M	2.4585G	2.46555G	7.036M	2.458502G	2.465538G	500k	2

802.11n HT10_Nss1,(MCS0)_2TX
EBW
2412MHz



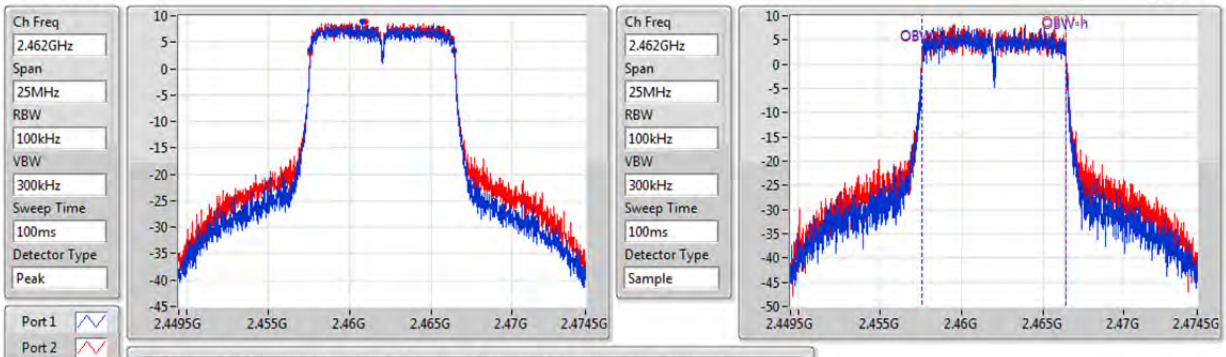
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.85M	2.4076G	2.41645G	8.821M	2.407615G	2.416435G	500k	1
8.838M	2.407613G	2.41645G	8.821M	2.407615G	2.416435G	500k	2

802.11n HT10_Nss1,(MCS0)_2TX
EBW
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.838M	2.4326G	2.441438G	9.008M	2.43249G	2.441498G	500k	1
8.825M	2.432613G	2.441438G	8.933M	2.43254G	2.441473G	500k	2

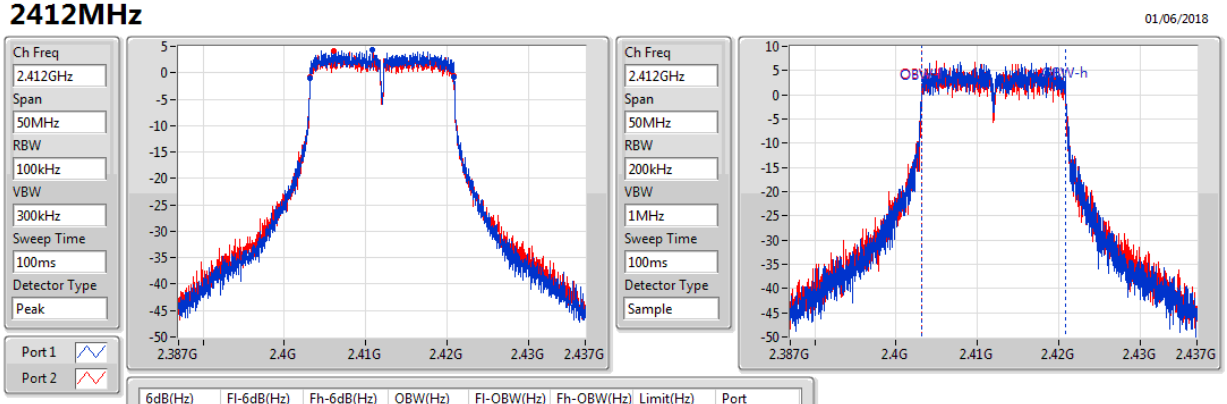
802.11n HT10_Nss1,(MCS0)_2TX
EBW
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.825M	2.457613G	2.466438G	8.808M	2.457602G	2.46641G	500k	1
8.85M	2.4576G	2.46645G	8.821M	2.457602G	2.466423G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

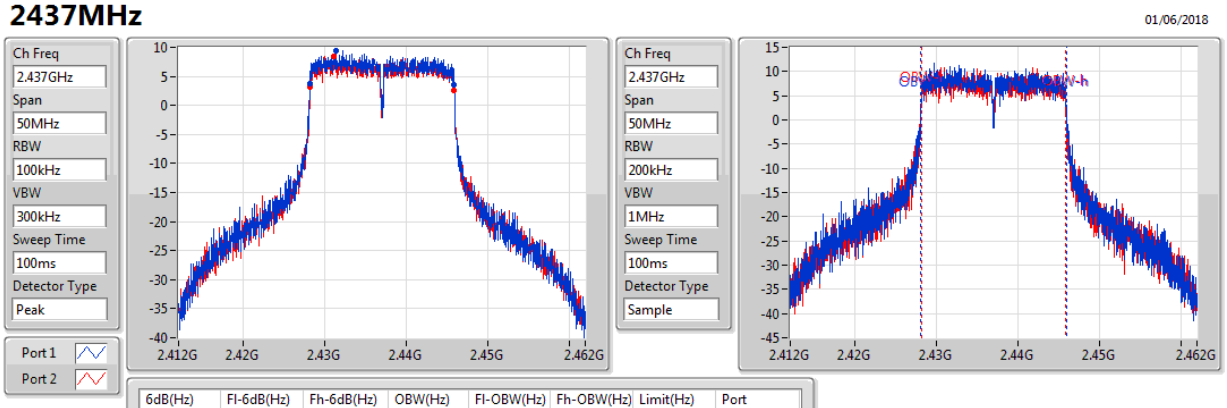
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.725M	2.403125G	2.42085G	17.766M	2.403104G	2.420871G	500k	1
17.675M	2.403175G	2.42085G	17.716M	2.403154G	2.420871G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

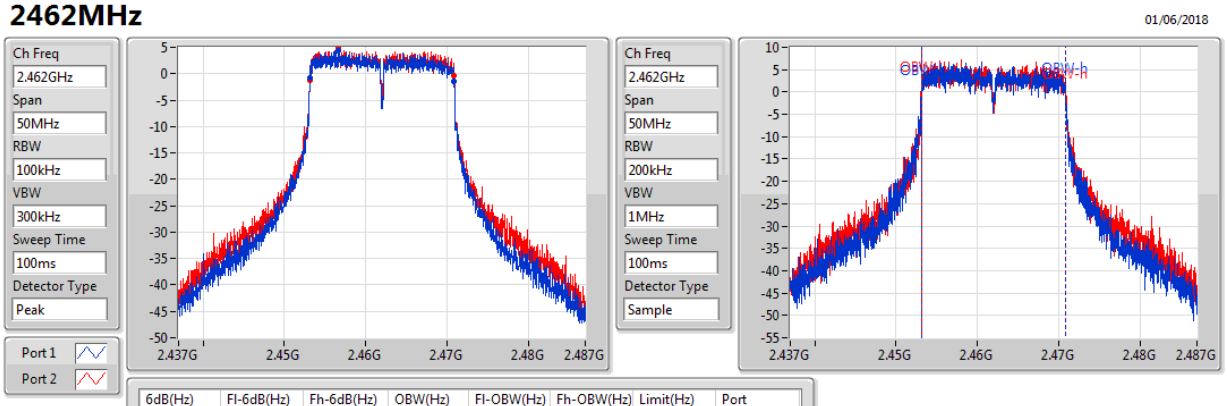
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.675M	2.428175G	2.44585G	17.841M	2.428079G	2.445921G	500k	1
17.75M	2.42815G	2.4459G	17.766M	2.428104G	2.445871G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

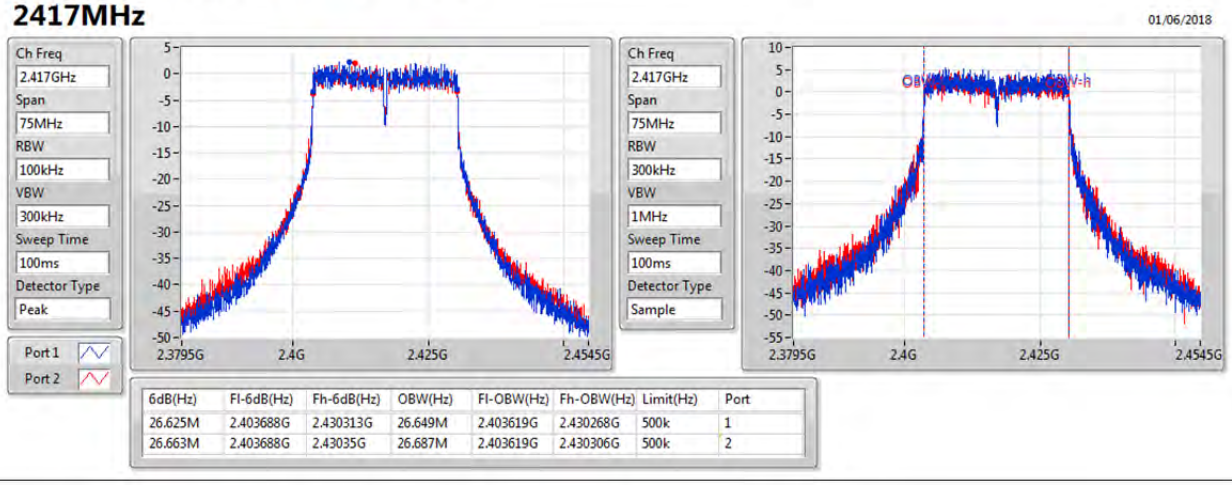
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.725M	2.453125G	2.47085G	17.716M	2.453104G	2.470821G	500k	1
17.725M	2.453125G	2.47085G	17.766M	2.453104G	2.470871G	500k	2

802.11n HT30_Nss1,(MCS0)_2TX EBW

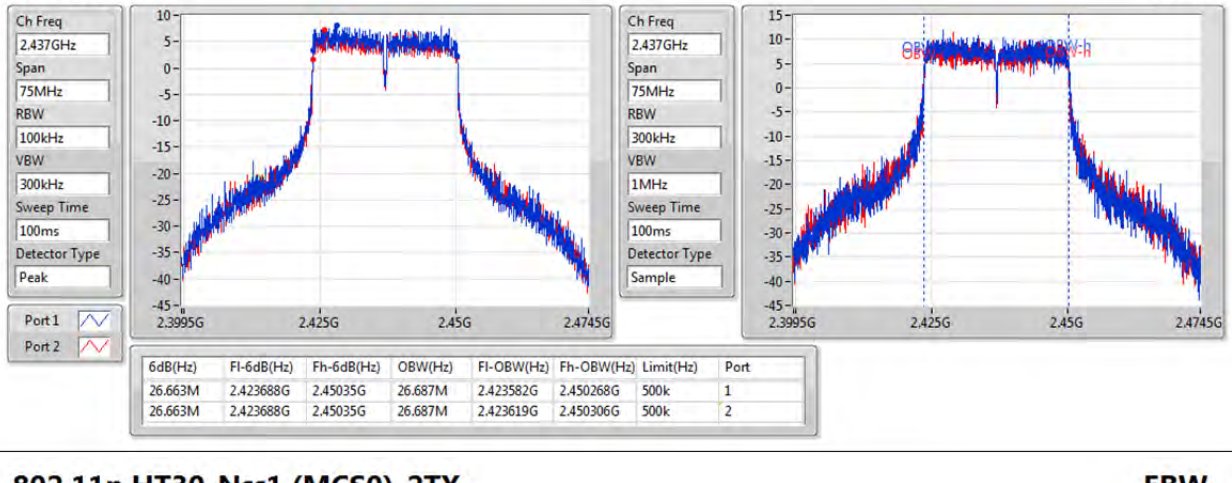
2417MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26.625M	2.403688G	2.430313G	26.649M	2.403619G	2.430268G	500k	1
26.663M	2.403688G	2.43035G	26.687M	2.403619G	2.430306G	500k	2

802.11n HT30_Nss1,(MCS0)_2TX EBW

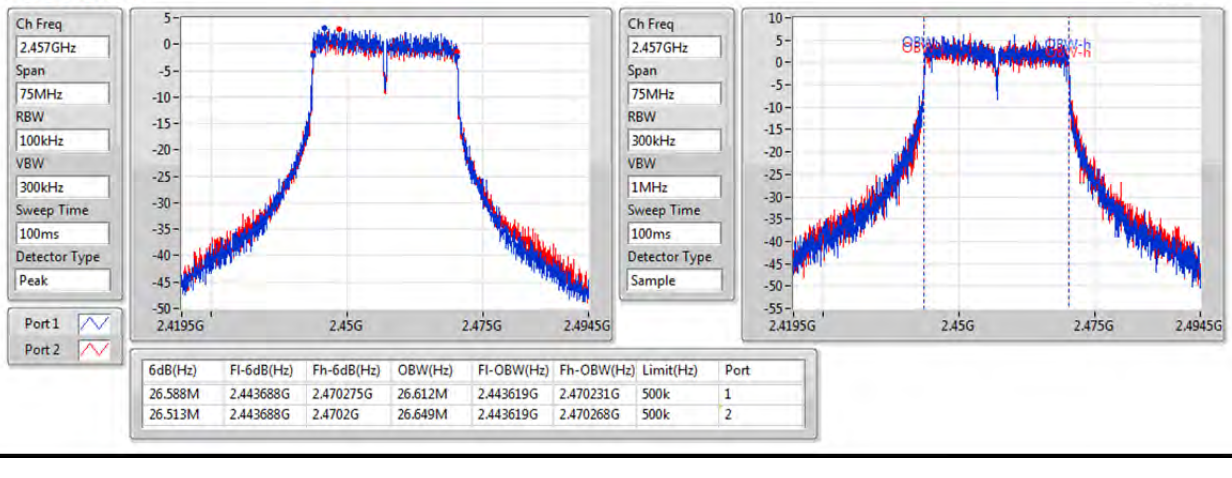
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26.663M	2.423688G	2.45035G	26.687M	2.423582G	2.450268G	500k	1
26.663M	2.423688G	2.45035G	26.687M	2.423619G	2.450306G	500k	2

802.11n HT30_Nss1,(MCS0)_2TX EBW

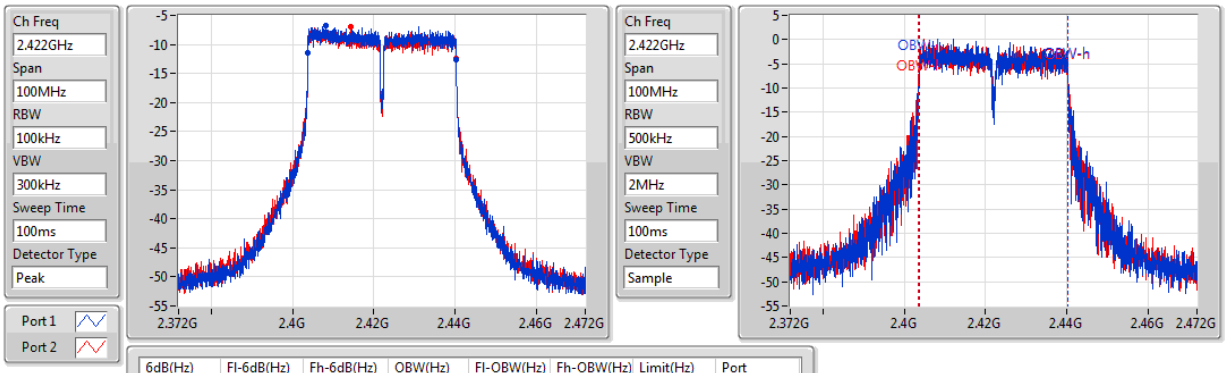
2457MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26.588M	2.443688G	2.470275G	26.612M	2.443619G	2.470231G	500k	1
26.513M	2.443688G	2.4702G	26.649M	2.443619G	2.470268G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

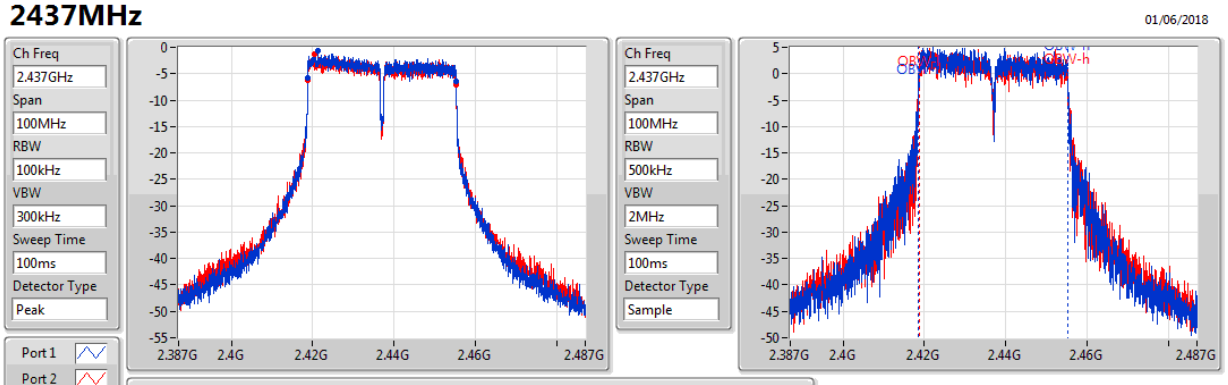
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.55M	2.40375G	2.4403G	36.432M	2.403759G	2.440191G	500k	1
36.55M	2.40375G	2.4403G	36.582M	2.403609G	2.440191G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

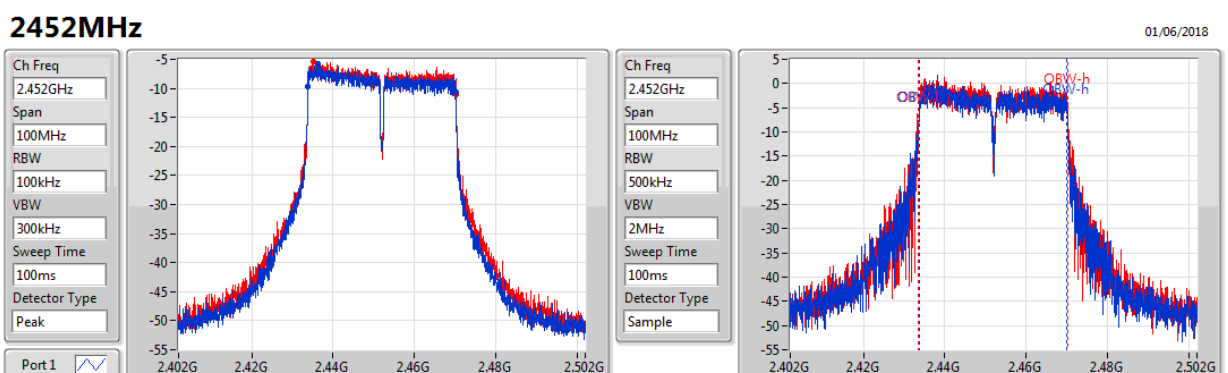
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.5M	2.41875G	2.45525G	36.582M	2.418609G	2.455191G	500k	1
36.5M	2.41875G	2.45525G	36.532M	2.418709G	2.455241G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.45M	2.43375G	2.4702G	36.432M	2.433659G	2.470091G	500k	1
36.55M	2.43375G	2.4703G	36.582M	2.433559G	2.470141G	500k	2

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b 5M_ Nss1,(1Mbps)_2TX	25.73	0.37411
802.11b 8M_Nss1,(1Mbps)_2TX	25.40	0.34674
802.11b 10M_Nss1,(1Mbps)_2TX	25.36	0.34356
802.11b 20M_Nss1,(1Mbps)_2TX	25.51	0.35563
802.11g 5M_Nss1,(6Mbps)_2TX	28.21	0.66222
802.11g 8M_Nss1,(6Mbps)_2TX	28.27	0.67143
802.11g 10M_Nss1,(6Mbps)_2TX	28.42	0.69502
802.11g 20M_Nss1,(6Mbps)_2TX	18.77	0.07534
802.11n HT5_Nss1,(MCS0)_2TX	28.48	0.70469
802.11n HT8_Nss1,(MCS0)_2TX	28.47	0.70307
802.11n HT10_Nss1,(MCS0)_2TX	28.25	0.66834
802.11n HT20_Nss1,(MCS0)_2TX	26.50	0.44668
802.11n HT30_Nss1,(MCS0)_2TX	25.28	0.33729
802.11n HT40_Nss1,(MCS0)_2TX	18.49	0.07063

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b 5M_ Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	17.98	17.58	20.79	30.00
2417MHz_TnomVnom	Pass	4.00	21.57	20.88	24.25	30.00
2422MHz_TnomVnom	Pass	4.00	23.08	22.31	25.72	30.00
2437MHz_TnomVnom	Pass	4.00	23.11	22.29	25.73	30.00
2452MHz_TnomVnom	Pass	4.00	22.88	22.48	25.69	30.00
2457MHz_TnomVnom	Pass	4.00	21.85	21.24	24.57	30.00
2462MHz_TnomVnom	Pass	4.00	17.76	17.73	20.76	30.00
802.11b 8M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	17.85	17.26	20.58	30.00
2417MHz_TnomVnom	Pass	4.00	22.40	22.13	25.28	30.00
2437MHz_TnomVnom	Pass	4.00	22.59	22.18	25.40	30.00
2457MHz_TnomVnom	Pass	4.00	22.35	22.03	25.20	30.00
2462MHz_TnomVnom	Pass	4.00	17.32	17.39	20.37	30.00
802.11b 10M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	17.93	17.30	20.64	30.00
2417MHz_TnomVnom	Pass	4.00	19.25	19.02	22.15	30.00
2422MHz_TnomVnom	Pass	4.00	20.39	20.11	23.26	30.00
2427MHz_TnomVnom	Pass	4.00	21.65	21.40	24.54	30.00
2432MHz_TnomVnom	Pass	4.00	22.40	22.21	25.32	30.00
2437MHz_TnomVnom	Pass	4.00	22.45	22.24	25.36	30.00
2447MHz_TnomVnom	Pass	4.00	22.54	22.02	25.30	30.00
2452MHz_TnomVnom	Pass	4.00	20.42	20.31	23.38	30.00
2457MHz_TnomVnom	Pass	4.00	19.32	19.55	22.45	30.00
2462MHz_TnomVnom	Pass	4.00	17.24	17.30	20.28	30.00
802.11b 20M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
2412MHz_TnomVnom	Pass	4.00	17.60	17.17	20.40	30.00
2417MHz_TnomVnom	Pass	4.00	18.62	18.42	21.53	30.00
2422MHz_TnomVnom	Pass	4.00	20.55	20.12	23.35	30.00
2427MHz_TnomVnom	Pass	4.00	21.38	21.27	24.34	30.00
2432MHz_TnomVnom	Pass	4.00	22.58	22.24	25.42	30.00
2437MHz_TnomVnom	Pass	4.00	22.77	22.22	25.51	30.00
2442MHz_TnomVnom	Pass	4.00	22.22	22.31	25.28	30.00
2447MHz_TnomVnom	Pass	4.00	21.63	21.45	24.55	30.00
2452MHz_TnomVnom	Pass	4.00	20.67	20.82	23.76	30.00
2457MHz_TnomVnom	Pass	4.00	18.47	18.26	21.38	30.00
2462MHz_TnomVnom	Pass	4.00	17.17	17.24	20.22	30.00
802.11g 5M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.64	20.09	23.38	30.00
2417MHz_TnomVnom	Pass	4.00	21.05	20.79	23.93	30.00
2422MHz_TnomVnom	Pass	4.00	21.79	21.84	24.83	30.00
2427MHz_TnomVnom	Pass	4.00	22.57	22.69	25.64	30.00
2432MHz_TnomVnom	Pass	4.00	23.68	23.93	26.82	30.00
2437MHz_TnomVnom	Pass	4.00	24.86	25.51	28.21	30.00
2447MHz_TnomVnom	Pass	4.00	24.82	25.46	28.16	30.00
2452MHz_TnomVnom	Pass	4.00	22.58	22.74	25.67	30.00
2457MHz_TnomVnom	Pass	4.00	21.51	21.62	24.58	30.00
2462MHz_TnomVnom	Pass	4.00	20.01	20.26	23.15	30.00
802.11g 8M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.72	20.12	23.44	30.00
2417MHz_TnomVnom	Pass	4.00	21.57	21.37	24.48	30.00
2422MHz_TnomVnom	Pass	4.00	22.47	22.29	25.39	30.00
2427MHz_TnomVnom	Pass	4.00	23.58	23.62	26.61	30.00
2432MHz_TnomVnom	Pass	4.00	24.12	24.58	27.37	30.00
2437MHz_TnomVnom	Pass	4.00	24.96	25.54	28.27	30.00
2442MHz_TnomVnom	Pass	4.00	24.85	25.39	28.14	30.00
2447MHz_TnomVnom	Pass	4.00	24.06	24.48	27.29	30.00
2452MHz_TnomVnom	Pass	4.00	23.37	23.67	26.53	30.00
2457MHz_TnomVnom	Pass	4.00	22.41	22.73	25.58	30.00
2462MHz_TnomVnom	Pass	4.00	20.06	20.31	23.20	30.00
802.11g 10M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.53	19.97	23.27	30.00
2417MHz_TnomVnom	Pass	4.00	21.45	21.31	24.39	30.00
2422MHz_TnomVnom	Pass	4.00	22.26	22.07	25.18	30.00
2427MHz_TnomVnom	Pass	4.00	23.32	22.96	26.15	30.00
2432MHz_TnomVnom	Pass	4.00	24.23	24.28	27.27	30.00
2437MHz_TnomVnom	Pass	4.00	25.31	25.50	28.42	30.00
2442MHz_TnomVnom	Pass	4.00	24.85	24.79	27.83	30.00
2447MHz_TnomVnom	Pass	4.00	23.81	23.78	26.81	30.00
2452MHz_TnomVnom	Pass	4.00	22.75	22.53	25.65	30.00
2457MHz_TnomVnom	Pass	4.00	21.80	21.96	24.89	30.00

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
2462MHz_TnomVnom	Pass	4.00	20.08	20.42	23.26	30.00
802.11g 20M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	10.90	10.45	13.69	30.00
2417MHz_TnomVnom	Pass	4.00	15.45	15.85	18.66	30.00
2437MHz_TnomVnom	Pass	4.00	15.61	15.90	18.77	30.00
2457MHz_TnomVnom	Pass	4.00	15.66	15.82	18.75	30.00
2462MHz_TnomVnom	Pass	4.00	11.06	10.56	13.83	30.00
802.11n HT5_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.61	20.10	23.37	30.00
2417MHz_TnomVnom	Pass	4.00	21.63	21.38	24.52	30.00
2422MHz_TnomVnom	Pass	4.00	22.57	22.13	25.37	30.00
2427MHz_TnomVnom	Pass	4.00	23.75	23.50	26.64	30.00
2432MHz_TnomVnom	Pass	4.00	24.69	24.41	27.56	30.00
2437MHz_TnomVnom	Pass	4.00	25.65	25.28	28.48	30.00
2442MHz_TnomVnom	Pass	4.00	24.37	24.58	27.49	30.00
2447MHz_TnomVnom	Pass	4.00	23.88	23.68	26.79	30.00
2452MHz_TnomVnom	Pass	4.00	22.51	22.64	25.59	30.00
2457MHz_TnomVnom	Pass	4.00	21.45	21.33	24.40	30.00
2462MHz_TnomVnom	Pass	4.00	20.17	20.46	23.33	30.00
802.11n HT8_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.55	19.99	23.29	30.00
2417MHz_TnomVnom	Pass	4.00	21.36	21.07	24.23	30.00
2422MHz_TnomVnom	Pass	4.00	22.53	22.28	25.42	30.00
2427MHz_TnomVnom	Pass	4.00	23.48	23.22	26.36	30.00
2432MHz_TnomVnom	Pass	4.00	24.85	24.51	27.69	30.00
2437MHz_TnomVnom	Pass	4.00	25.65	25.27	28.47	30.00
2442MHz_TnomVnom	Pass	4.00	24.89	24.55	27.73	30.00
2447MHz_TnomVnom	Pass	4.00	23.27	23.69	26.50	30.00
2452MHz_TnomVnom	Pass	4.00	22.17	22.10	25.15	30.00
2457MHz_TnomVnom	Pass	4.00	21.75	21.47	24.62	30.00
2462MHz_TnomVnom	Pass	4.00	20.42	20.69	23.57	30.00
802.11n HT10_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	20.50	19.95	23.24	30.00
2417MHz_TnomVnom	Pass	4.00	21.36	21.09	24.24	30.00
2422MHz_TnomVnom	Pass	4.00	21.96	21.79	24.89	30.00
2427MHz_TnomVnom	Pass	4.00	22.84	22.58	25.72	30.00
2432MHz_TnomVnom	Pass	4.00	24.05	23.74	26.91	30.00
2437MHz_TnomVnom	Pass	4.00	25.43	25.05	28.25	30.00
2442MHz_TnomVnom	Pass	4.00	24.56	24.24	27.41	30.00
2447MHz_TnomVnom	Pass	4.00	23.36	23.13	26.26	30.00
2452MHz_TnomVnom	Pass	4.00	22.65	22.38	25.53	30.00
2457MHz_TnomVnom	Pass	4.00	21.56	21.30	24.44	30.00
2462MHz_TnomVnom	Pass	4.00	20.23	20.47	23.36	30.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.00	18.44	18.21	21.34	30.00

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
2417MHz_TnomVnom	Pass	4.00	19.62	19.39	22.52	30.00
2422MHz_TnomVnom	Pass	4.00	20.36	20.28	23.33	30.00
2427MHz_TnomVnom	Pass	4.00	21.61	21.34	24.49	30.00
2432MHz_TnomVnom	Pass	4.00	22.33	22.00	25.18	30.00
2437MHz_TnomVnom	Pass	4.00	23.71	23.25	26.50	30.00
2442MHz_TnomVnom	Pass	4.00	22.58	22.41	25.51	30.00
2447MHz_TnomVnom	Pass	4.00	21.78	21.55	24.68	30.00
2452MHz_TnomVnom	Pass	4.00	20.57	20.42	23.51	30.00
2457MHz_TnomVnom	Pass	4.00	19.64	19.58	22.62	30.00
2462MHz_TnomVnom	Pass	4.00	18.29	18.44	21.38	30.00
802.11n HT30_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2417MHz_TnomVnom	Pass	4.00	14.11	13.48	16.82	30.00
2422MHz_TnomVnom	Pass	4.00	16.75	16.31	19.55	30.00
2427MHz_TnomVnom	Pass	4.00	19.85	19.49	22.68	30.00
2432MHz_TnomVnom	Pass	4.00	21.63	21.25	24.45	30.00
2437MHz_TnomVnom	Pass	4.00	22.51	22.01	25.28	30.00
2442MHz_TnomVnom	Pass	4.00	21.89	21.40	24.66	30.00
2447MHz_TnomVnom	Pass	4.00	19.38	18.96	22.19	30.00
2452MHz_TnomVnom	Pass	4.00	16.95	16.74	19.86	30.00
2457MHz_TnomVnom	Pass	4.00	13.75	13.28	16.53	30.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	4.00	10.75	10.37	13.57	30.00
2427MHz_TnomVnom	Pass	4.00	13.52	13.38	16.46	30.00
2432MHz_TnomVnom	Pass	4.00	15.12	14.98	18.06	30.00
2437MHz_TnomVnom	Pass	4.00	15.50	15.45	18.49	30.00
2442MHz_TnomVnom	Pass	4.00	15.05	14.82	17.95	30.00
2447MHz_TnomVnom	Pass	4.00	13.95	13.74	16.86	30.00
2452MHz_TnomVnom	Pass	4.00	10.18	10.68	13.45	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b 5M_ Nss1,(1Mbps)_2TX	5.36
802.11b 8M_Nss1,(1Mbps)_2TX	3.98
802.11b 10M_Nss1,(1Mbps)_2TX	2.69
802.11b 20M_Nss1,(1Mbps)_2TX	-0.77
802.11g 5M_Nss1,(6Mbps)_2TX	6.21
802.11g 8M_Nss1,(6Mbps)_2TX	4.88
802.11g 10M_Nss1,(6Mbps)_2TX	4.19
802.11g 20M_Nss1,(6Mbps)_2TX	-9.14
802.11n HT5_Nss1,(MCS0)_2TX	6.25
802.11n HT8_Nss1,(MCS0)_2TX	5.19
802.11n HT10_Nss1,(MCS0)_2TX	3.85
802.11n HT20_Nss1,(MCS0)_2TX	-1.55
802.11n HT30_Nss1,(MCS0)_2TX	-3.65
802.11n HT40_Nss1,(MCS0)_2TX	-11.67

RBW=3kHz.

Result

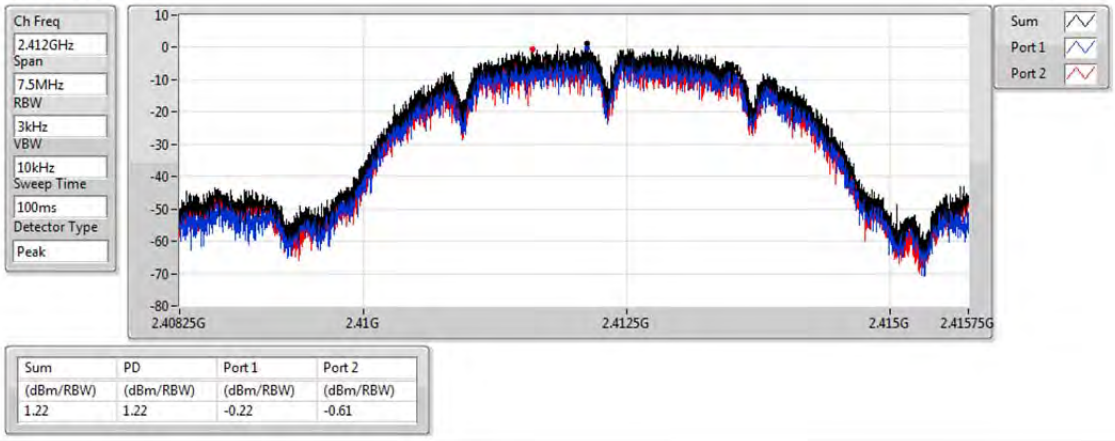
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b 5M_ Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-0.22	-0.61	1.22	6.99
2437MHz	Pass	7.01	3.58	3.80	5.36	6.99
2462MHz	Pass	7.01	-1.14	-1.00	0.66	6.99
802.11b 8M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-2.52	-3.17	-1.07	6.99
2437MHz	Pass	7.01	2.46	1.68	3.98	6.99
2462MHz	Pass	7.01	-3.00	-3.19	-1.56	6.99
802.11b 10M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-4.43	-5.48	-3.28	6.99
2437MHz	Pass	7.01	0.94	0.66	2.69	6.99
2462MHz	Pass	7.01	-3.85	-2.37	-1.59	6.99
802.11b 20M_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-7.50	-6.53	-5.04	6.99
2437MHz	Pass	7.01	-1.86	-2.87	-0.77	6.99
2462MHz	Pass	7.01	-6.28	-6.80	-5.16	6.99
802.11g 5M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	0.05	-0.19	1.25	6.99
2437MHz	Pass	7.01	5.28	3.95	6.21	6.99
2462MHz	Pass	7.01	0.34	0.45	2.55	6.99
802.11g 8M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-1.89	-2.26	-0.49	6.99
2437MHz	Pass	7.01	3.42	2.85	4.88	6.99
2462MHz	Pass	7.01	0.06	-1.54	0.69	6.99
802.11g 10M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
2412MHz	Pass	7.01	-2.42	-2.88	-0.65	6.99
2437MHz	Pass	7.01	2.24	2.06	4.19	6.99
2462MHz	Pass	7.01	-2.05	-3.03	-0.73	6.99
802.11g 20M_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-14.65	-14.35	-13.07	6.99
2437MHz	Pass	7.01	-10.10	-10.66	-9.14	6.99
2462MHz	Pass	7.01	-16.16	-14.40	-13.62	6.99
802.11n HT5_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-1.07	0.05	0.66	6.99
2437MHz	Pass	7.01	4.58	4.77	6.25	6.99
2462MHz	Pass	7.01	-0.91	0.51	1.73	6.99
802.11n HT8_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-1.51	-3.11	-1.18	6.99
2437MHz	Pass	7.01	4.09	1.64	5.19	6.99
2462MHz	Pass	7.01	-1.77	-2.18	-0.12	6.99
802.11n HT10_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-1.86	-3.90	-1.02	6.99
2437MHz	Pass	7.01	2.38	1.02	3.85	6.99
2462MHz	Pass	7.01	-2.36	-2.00	-1.08	6.99
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.01	-7.35	-8.64	-5.79	6.99
2437MHz	Pass	7.01	-3.49	-3.38	-1.55	6.99
2462MHz	Pass	7.01	-8.24	-7.43	-6.04	6.99
802.11n HT30_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2417MHz	Pass	7.01	-13.39	-13.55	-11.94	6.99
2437MHz	Pass	7.01	-4.52	-5.37	-3.65	6.99
2457MHz	Pass	7.01	-13.56	-12.65	-11.88	6.99
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	7.01	-19.09	-19.89	-16.83	6.99
2437MHz	Pass	7.01	-12.48	-13.47	-11.67	6.99
2452MHz	Pass	7.01	-18.21	-17.55	-16.78	6.99

DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11b 5M_Nss1,(1Mbps)_2TX **PSD**

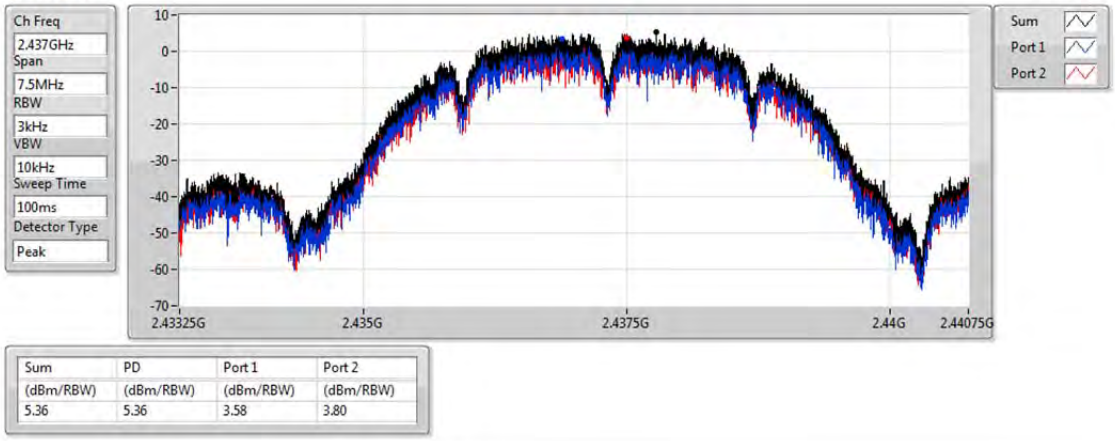
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.22	1.22	-0.22	-0.61

802.11b 5M_Nss1,(1Mbps)_2TX **PSD**

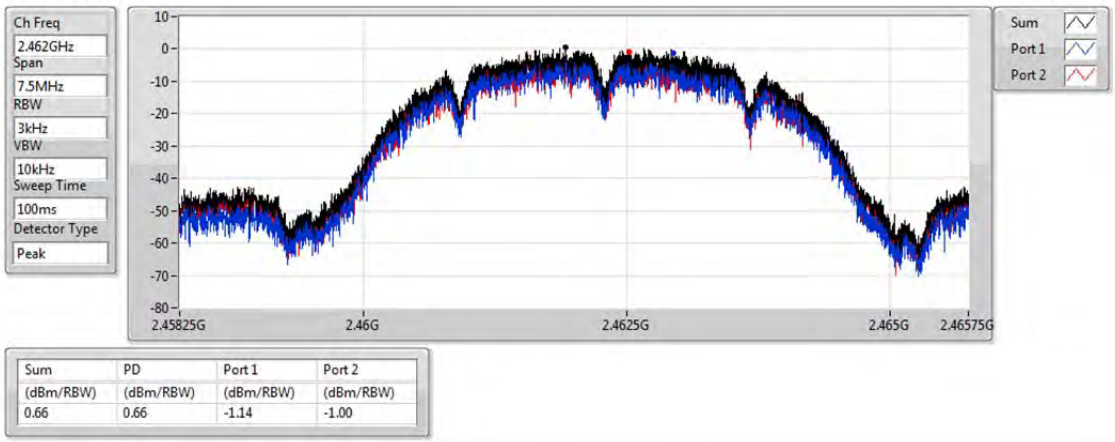
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.36	5.36	3.58	3.80

802.11b 5M_Nss1,(1Mbps)_2TX **PSD**

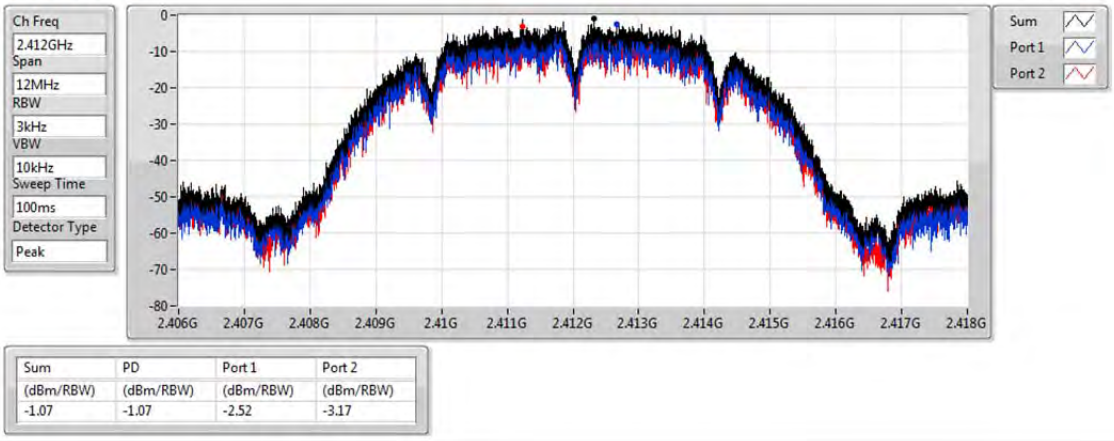
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.66	0.66	-1.14	-1.00

802.11b 8M_Nss1,(1Mbps)_2TX PSD

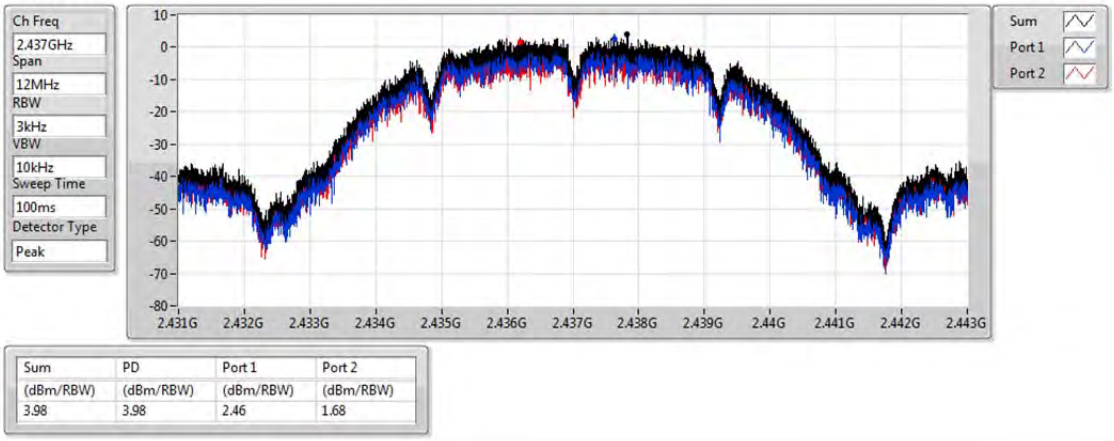
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.07	-1.07	-2.52	-3.17

802.11b 8M_Nss1,(1Mbps)_2TX PSD

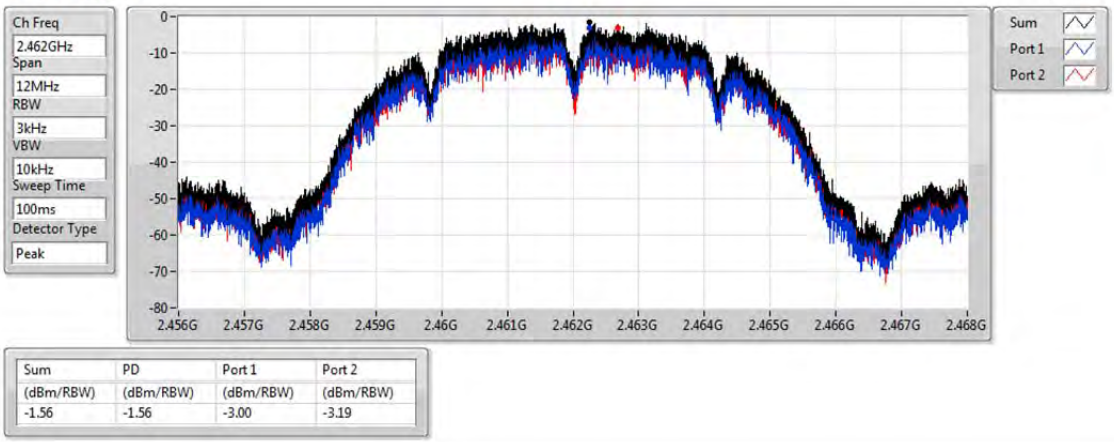
2437MHz



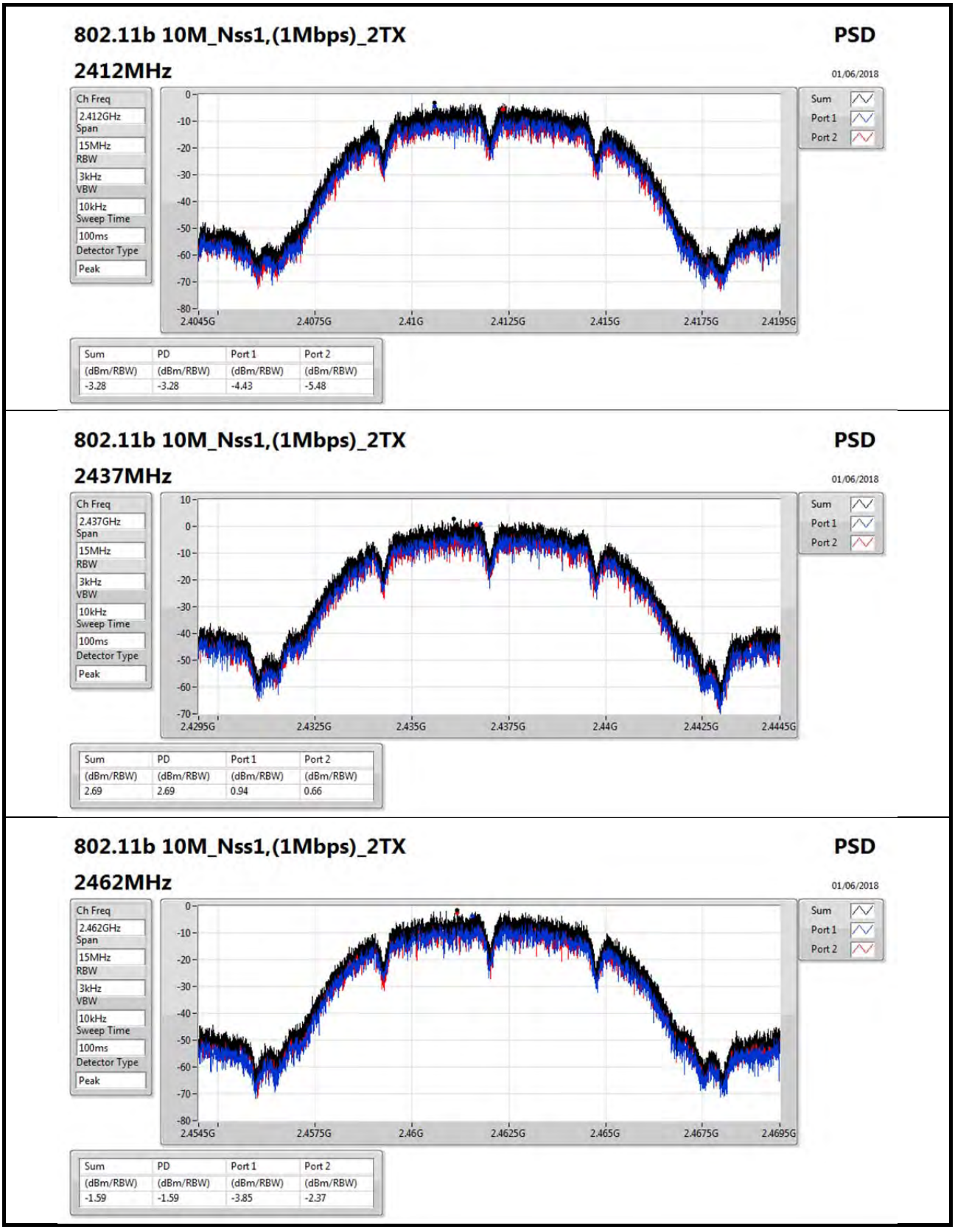
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.98	3.98	2.46	1.68

802.11b 8M_Nss1,(1Mbps)_2TX PSD

2462MHz

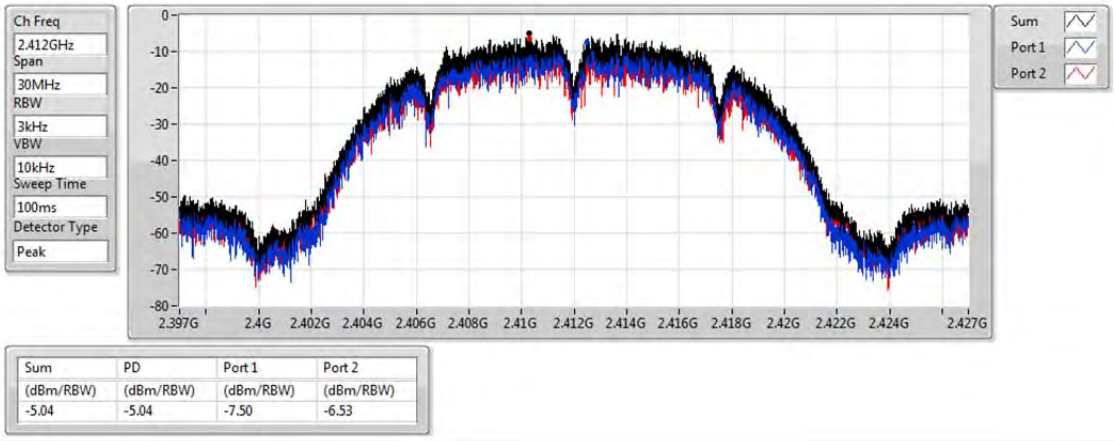


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.56	-1.56	-3.00	-3.19


802.11b 10M_Nss1,(1Mbps)_2TX
PSD
2412MHz
01/06/2018
Ch Freq
2.412GHz
Span
15MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
0
-10
-20
-30
-40
-50
-60
-70
-80
2.4045G
2.4075G
2.41G
2.4125G
2.415G
2.4175G
2.4195G
Sum (dBm/RBW) -3.28
PD (dBm/RBW) -3.28
Port 1 (dBm/RBW) -4.43
Port 2 (dBm/RBW) -5.48
802.11b 10M_Nss1,(1Mbps)_2TX
PSD
2437MHz
01/06/2018
Ch Freq
2.437GHz
Span
15MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
10
0
-10
-20
-30
-40
-50
-60
-70
2.4295G
2.4325G
2.435G
2.4375G
2.44G
2.4425G
2.4445G
Sum (dBm/RBW) 2.69
PD (dBm/RBW) 2.69
Port 1 (dBm/RBW) 0.94
Port 2 (dBm/RBW) 0.66
802.11b 10M_Nss1,(1Mbps)_2TX
PSD
2462MHz
01/06/2018
Ch Freq
2.462GHz
Span
15MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
0
-10
-20
-30
-40
-50
-60
-70
-80
2.4545G
2.4575G
2.46G
2.4625G
2.465G
2.4675G
2.4695G
Sum (dBm/RBW) -1.59
PD (dBm/RBW) -1.59
Port 1 (dBm/RBW) -3.85
Port 2 (dBm/RBW) -2.37

802.11b 20M_Nss1,(1Mbps)_2TX **PSD**

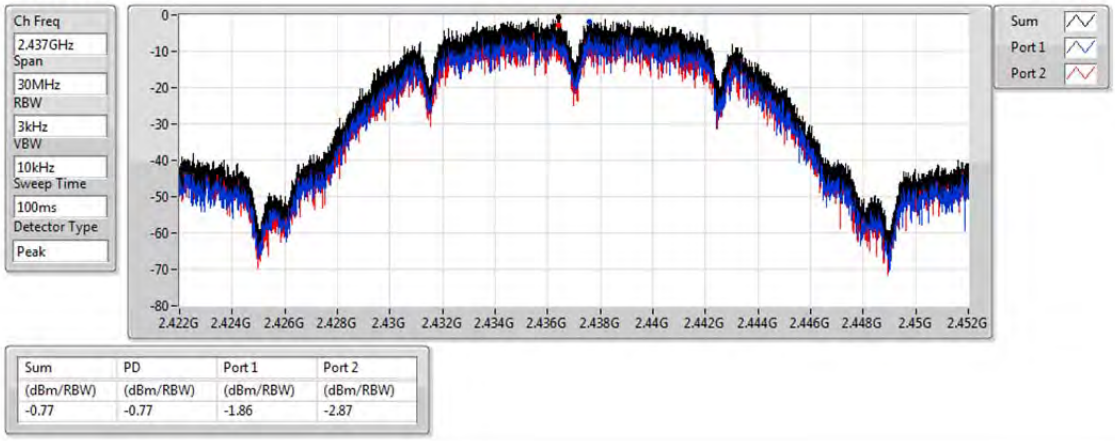
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.04	-5.04	-7.50	-6.53

802.11b 20M_Nss1,(1Mbps)_2TX **PSD**

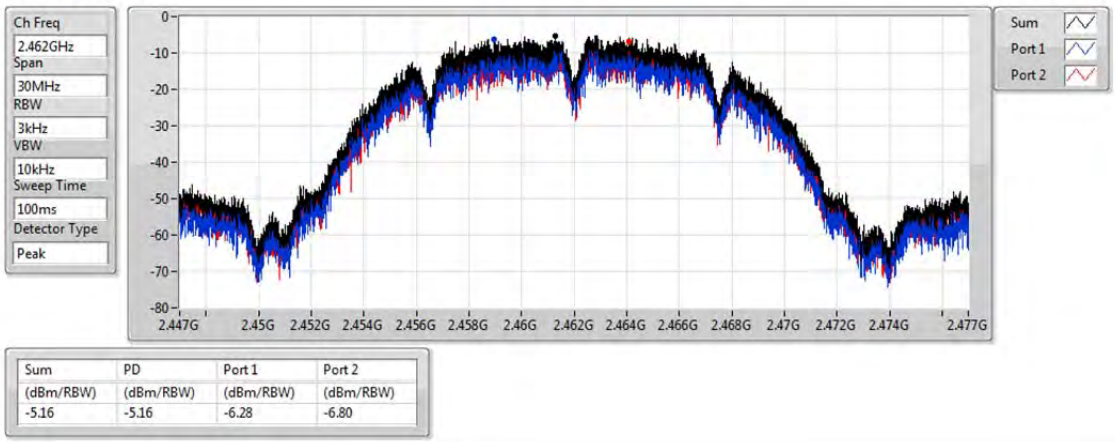
2437MHz



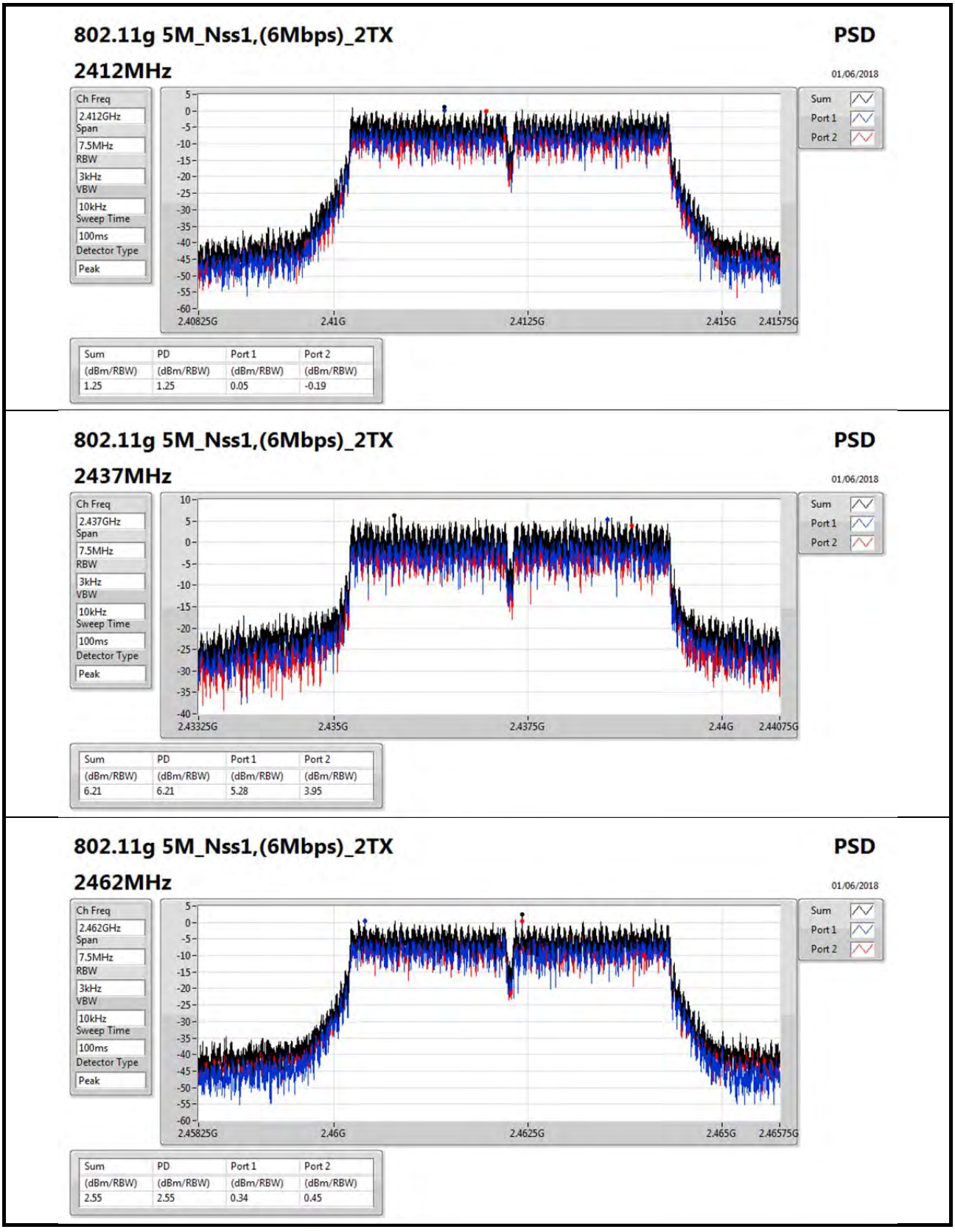
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.77	-0.77	-1.86	-2.87

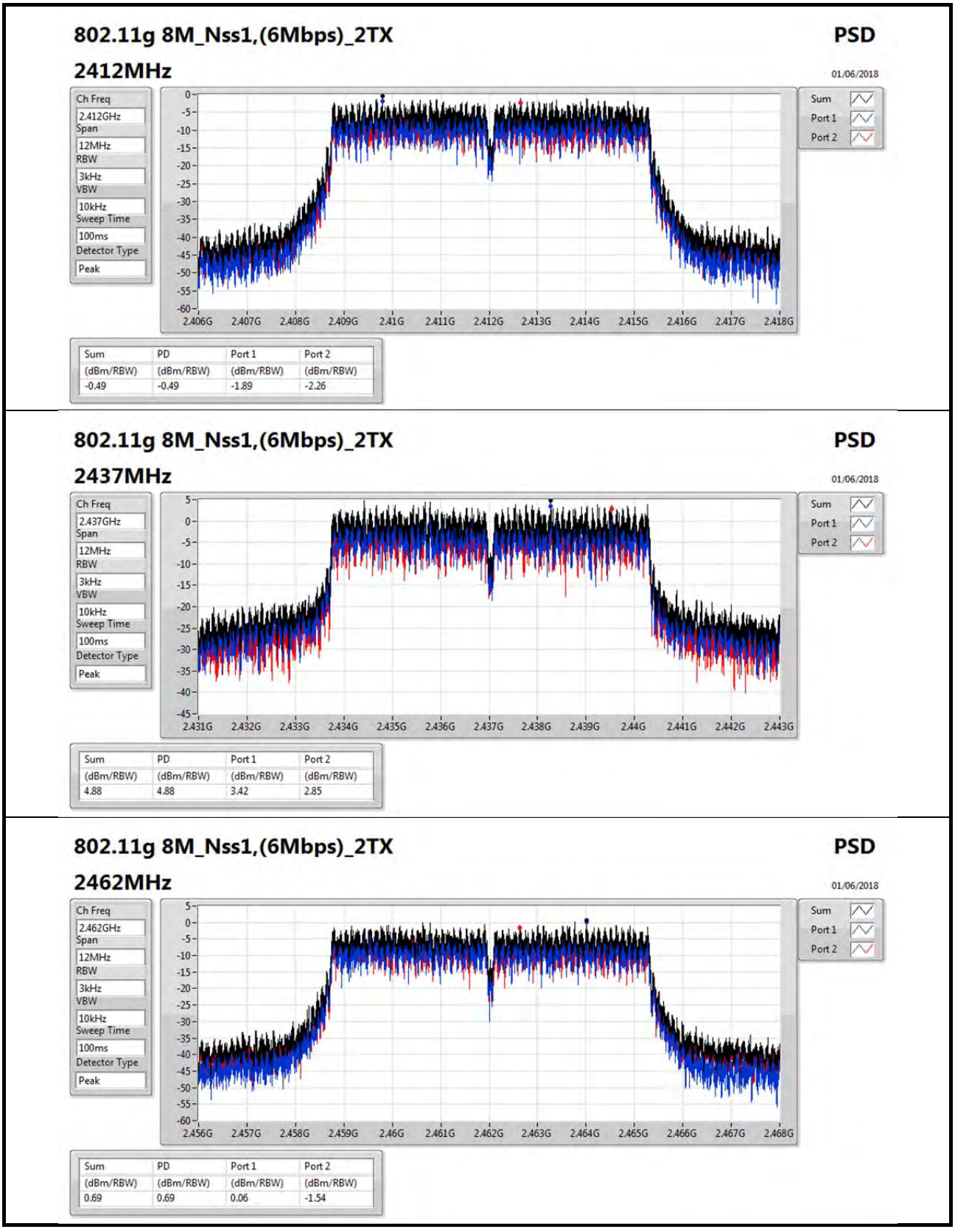
802.11b 20M_Nss1,(1Mbps)_2TX **PSD**

2462MHz



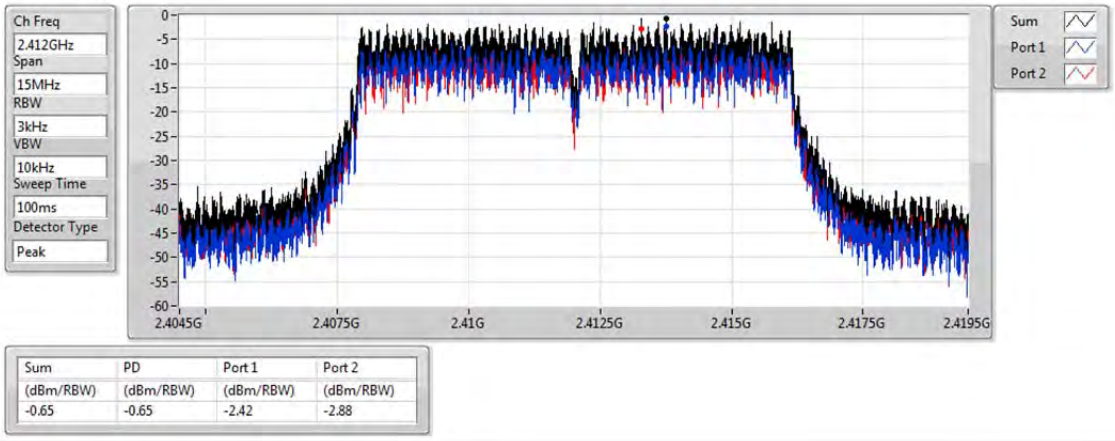
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.16	-5.16	-6.28	-6.80


802.11g 5M_Nss1,(6Mbps)_2TX
PSD
2412MHz
01/06/2018
Ch Freq
2.412GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
2.40825G
2.41G
2.4125G
2.415G
2.41575G
Sum (dBm/RBW) 1.25
PD (dBm/RBW) 1.25
Port 1 (dBm/RBW) 0.05
Port 2 (dBm/RBW) -0.19
802.11g 5M_Nss1,(6Mbps)_2TX
PSD
2437MHz
01/06/2018
Ch Freq
2.437GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
2.43325G
2.435G
2.4375G
2.44G
2.44075G
Sum (dBm/RBW) 6.21
PD (dBm/RBW) 6.21
Port 1 (dBm/RBW) 5.28
Port 2 (dBm/RBW) 3.95
802.11g 5M_Nss1,(6Mbps)_2TX
PSD
2462MHz
01/06/2018
Ch Freq
2.462GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
2.45825G
2.46G
2.4625G
2.465G
2.46575G
Sum (dBm/RBW) 2.55
PD (dBm/RBW) 2.55
Port 1 (dBm/RBW) 0.34
Port 2 (dBm/RBW) 0.45


802.11g 8M_Nss1,(6Mbps)_2TX
PSD
2412MHz
01/06/2018
Ch Freq
2.412GHz
Span
12MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60
2.406G 2.407G 2.408G 2.409G 2.41G 2.411G 2.412G 2.413G 2.414G 2.415G 2.416G 2.417G 2.418G
Sum (dBm/RBW) -0.49
PD (dBm/RBW) -0.49
Port 1 (dBm/RBW) -1.89
Port 2 (dBm/RBW) -2.26
802.11g 8M_Nss1,(6Mbps)_2TX
PSD
2437MHz
01/06/2018
Ch Freq
2.437GHz
Span
12MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45
2.431G 2.432G 2.433G 2.434G 2.435G 2.436G 2.437G 2.438G 2.439G 2.44G 2.441G 2.442G 2.443G
Sum (dBm/RBW) 4.88
PD (dBm/RBW) 4.88
Port 1 (dBm/RBW) 3.42
Port 2 (dBm/RBW) 2.85
802.11g 8M_Nss1,(6Mbps)_2TX
PSD
2462MHz
01/06/2018
Ch Freq
2.462GHz
Span
12MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60
2.456G 2.457G 2.458G 2.459G 2.46G 2.461G 2.462G 2.463G 2.464G 2.465G 2.466G 2.467G 2.468G
Sum (dBm/RBW) 0.69
PD (dBm/RBW) 0.69
Port 1 (dBm/RBW) 0.06
Port 2 (dBm/RBW) -1.54

802.11g 10M_Nss1,(6Mbps)_2TX PSD

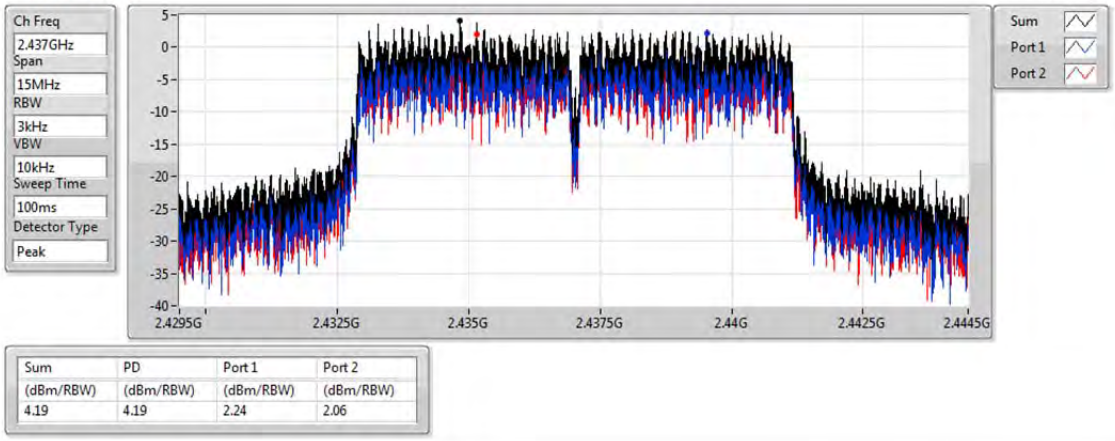
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.65	-0.65	-2.42	-2.88

802.11g 10M_Nss1,(6Mbps)_2TX PSD

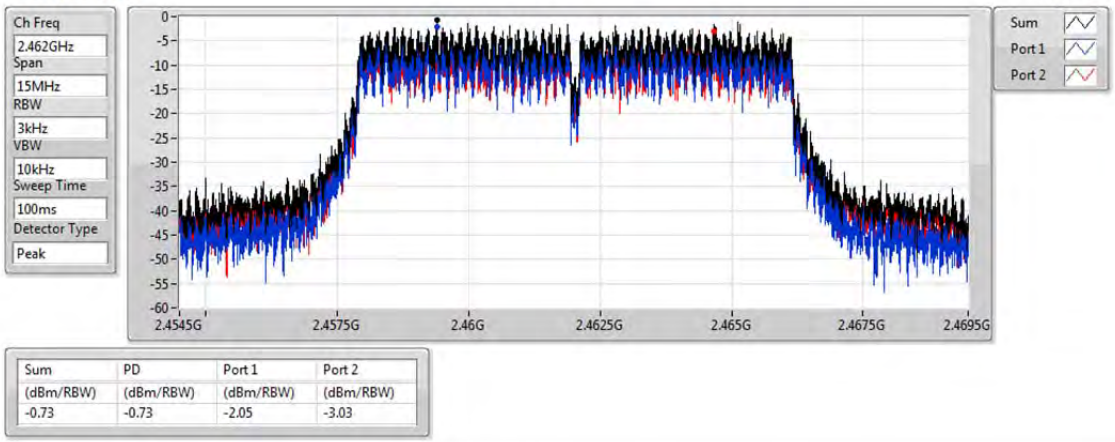
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.19	4.19	2.24	2.06

802.11g 10M_Nss1,(6Mbps)_2TX PSD

2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.73	-0.73	-2.05	-3.03

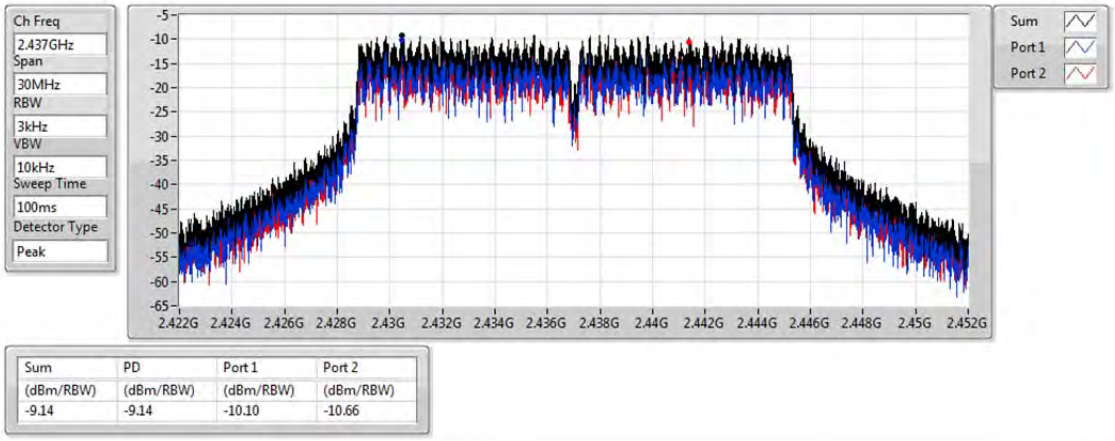
802.11g 20M_Nss1,(6Mbps)_2TX PSD

2412MHz

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.07	-13.07	-14.65	-14.35

802.11g 20M_Nss1,(6Mbps)_2TX PSD

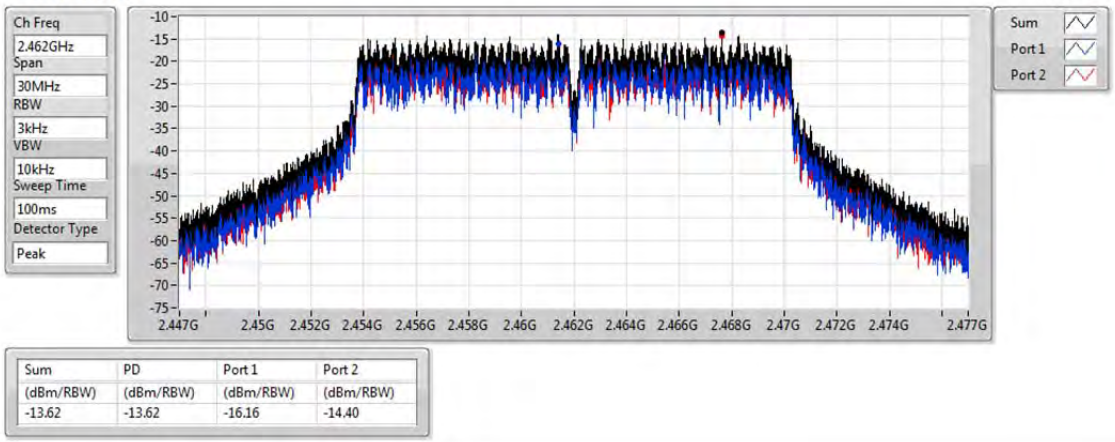
2437MHz



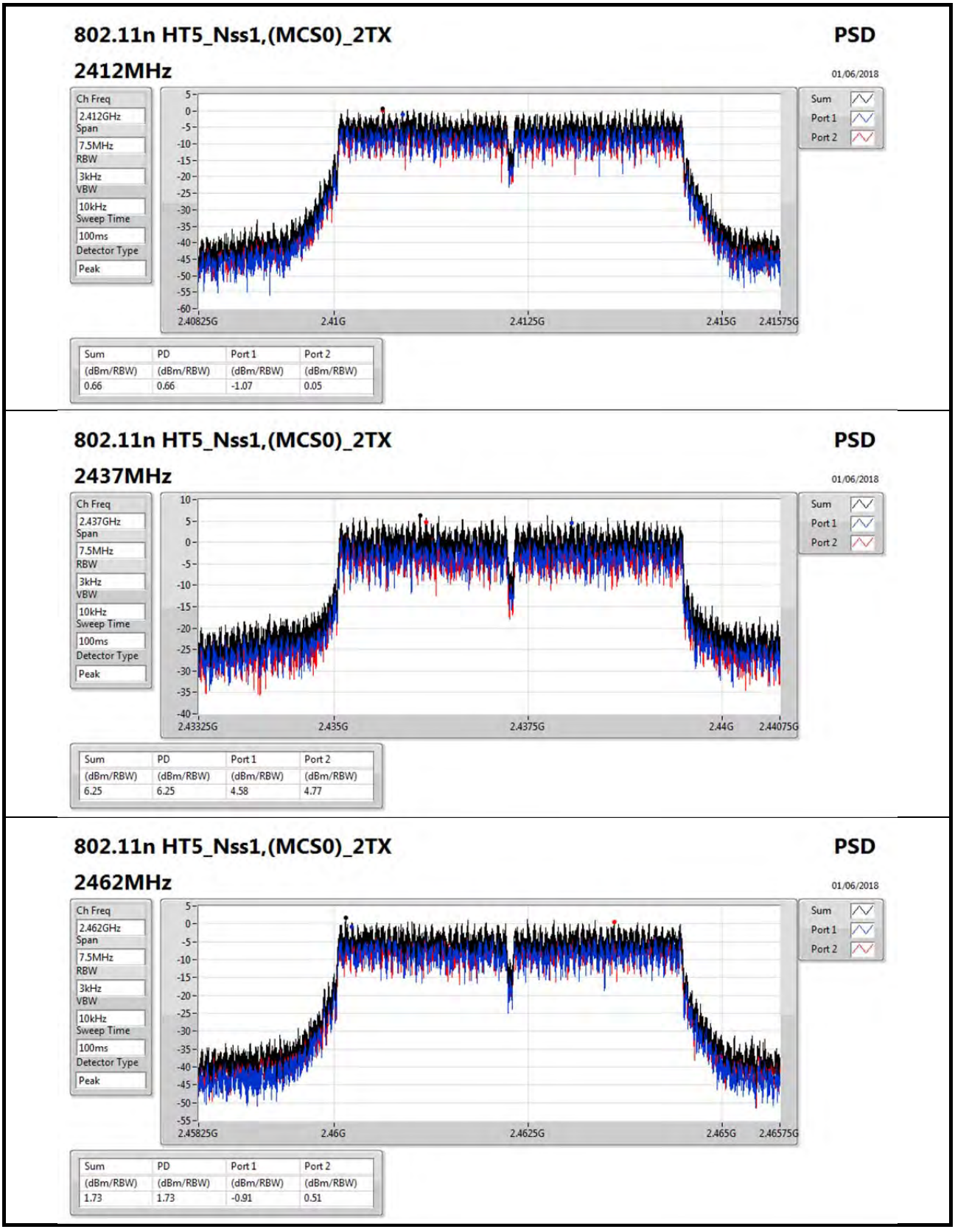
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.14	-9.14	-10.10	-10.66

802.11g 20M_Nss1,(6Mbps)_2TX PSD

2462MHz

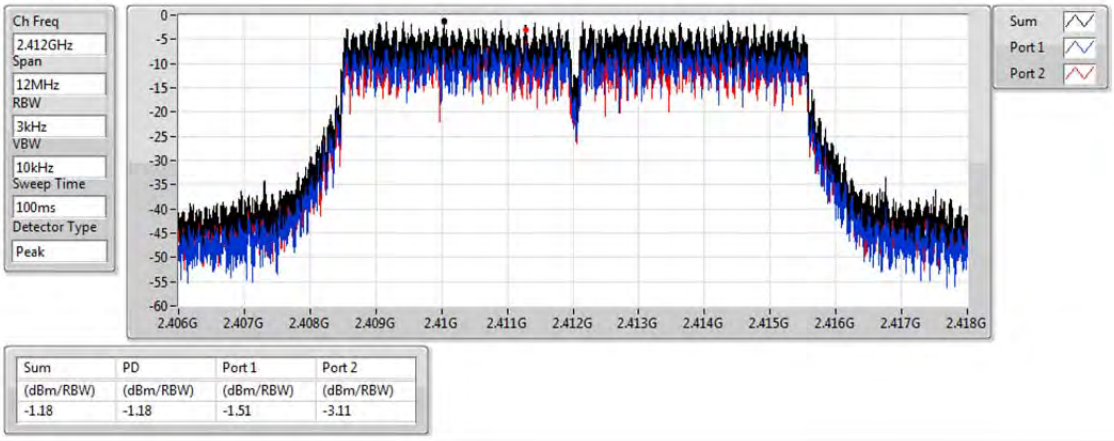


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.62	-13.62	-16.16	-14.40


802.11n HT5_Nss1,(MCS0)_2TX
PSD
2412MHz
01/06/2018
Ch Freq
2.412GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
2.40825G
2.41G
2.4125G
2.415G
2.41575G
Sum (dBm/RBW) 0.66
PD (dBm/RBW) 0.66
Port 1 (dBm/RBW) -1.07
Port 2 (dBm/RBW) 0.05
802.11n HT5_Nss1,(MCS0)_2TX
PSD
2437MHz
01/06/2018
Ch Freq
2.437GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
2.43325G
2.435G
2.4375G
2.44G
2.44075G
Sum (dBm/RBW) 6.25
PD (dBm/RBW) 6.25
Port 1 (dBm/RBW) 4.58
Port 2 (dBm/RBW) 4.77
802.11n HT5_Nss1,(MCS0)_2TX
PSD
2462MHz
01/06/2018
Ch Freq
2.462GHz
Span
7.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
100ms
Detector Type
Peak
Sum
Port 1
Port 2
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
2.45825G
2.46G
2.4625G
2.465G
2.46575G
Sum (dBm/RBW) 1.73
PD (dBm/RBW) 1.73
Port 1 (dBm/RBW) -0.91
Port 2 (dBm/RBW) 0.51

802.11n HT8_Nss1,(MCS0)_2TX PSD

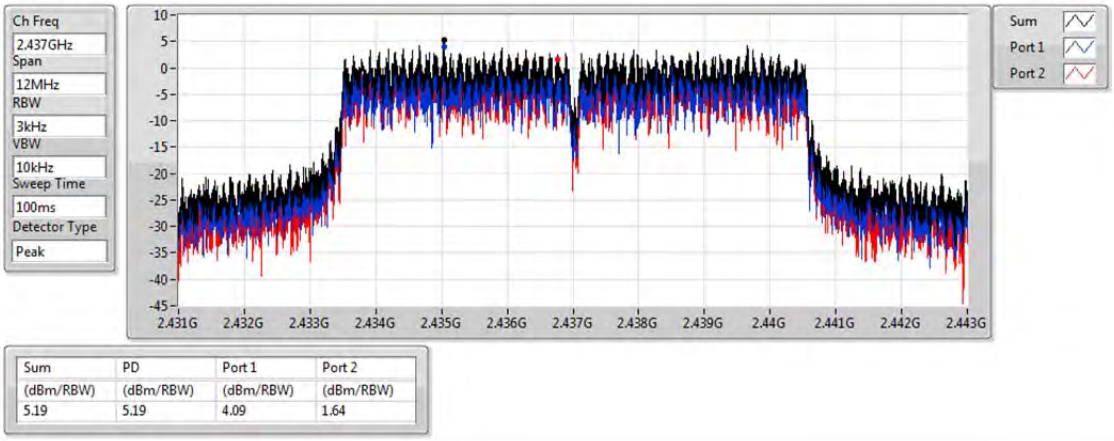
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.18	-1.18	-1.51	-3.11

802.11n HT8_Nss1,(MCS0)_2TX PSD

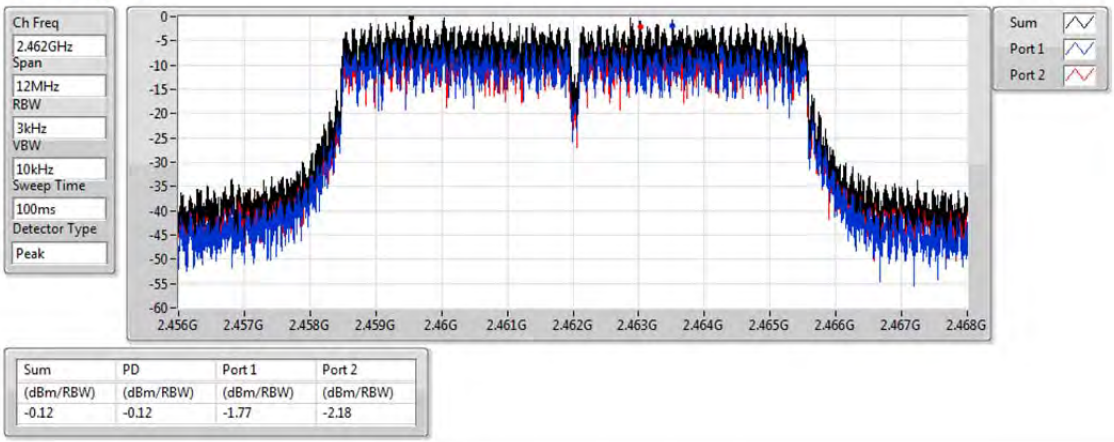
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.19	5.19	4.09	1.64

802.11n HT8_Nss1,(MCS0)_2TX PSD

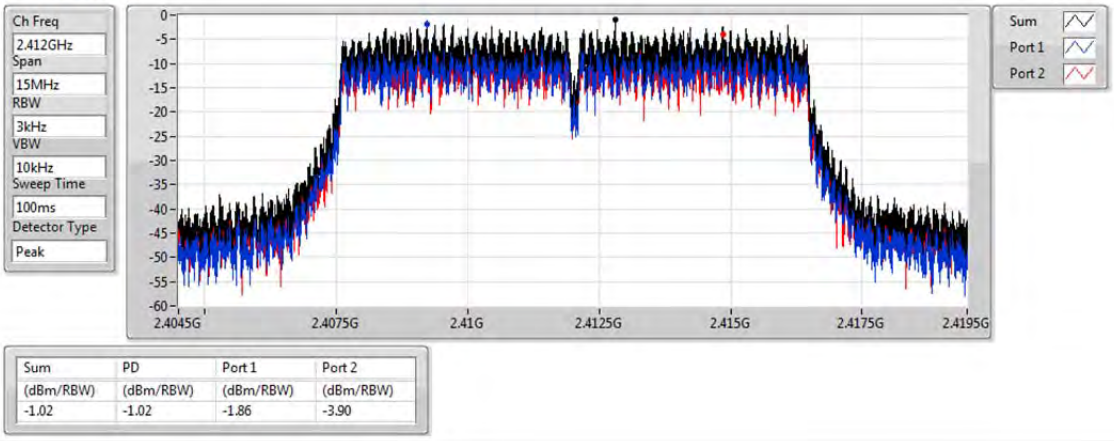
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.12	-0.12	-1.77	-2.18

802.11n HT10_Nss1,(MCS0)_2TX **PSD**

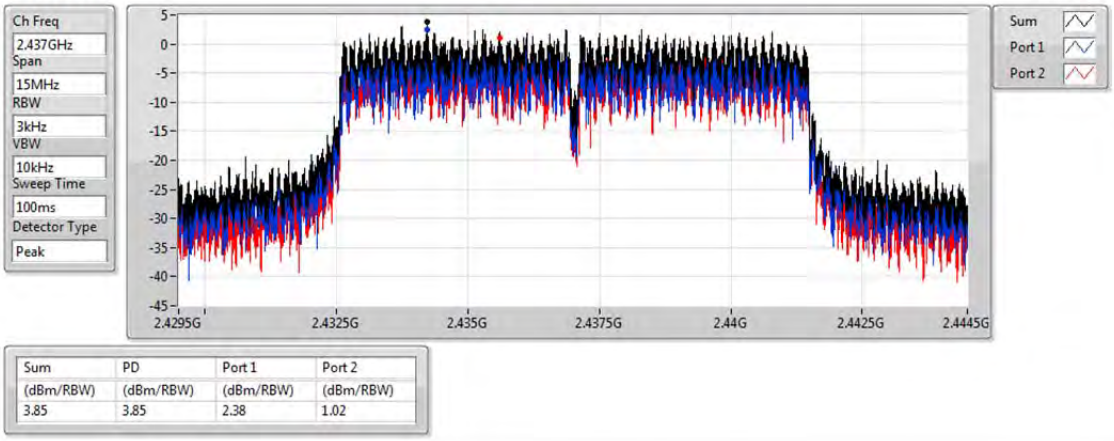
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.02	-1.02	-1.86	-3.90

802.11n HT10_Nss1,(MCS0)_2TX **PSD**

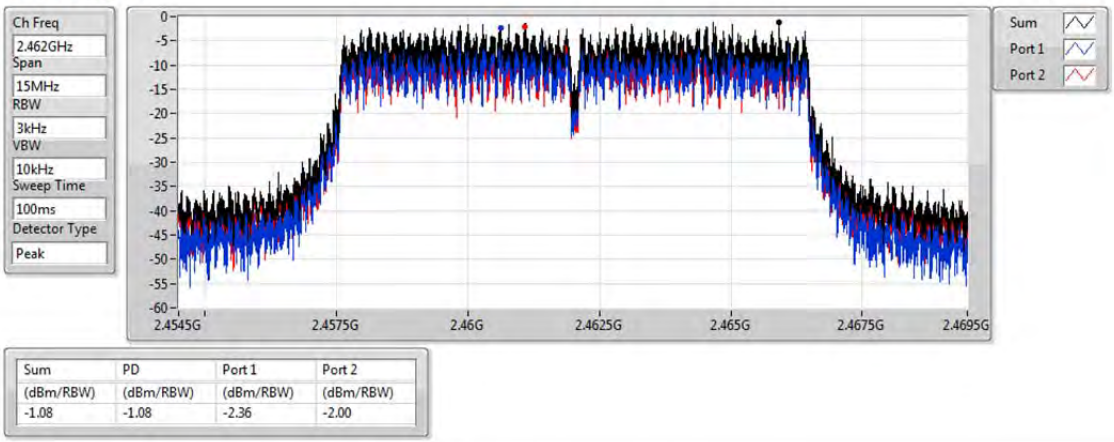
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.85	3.85	2.38	1.02

802.11n HT10_Nss1,(MCS0)_2TX **PSD**

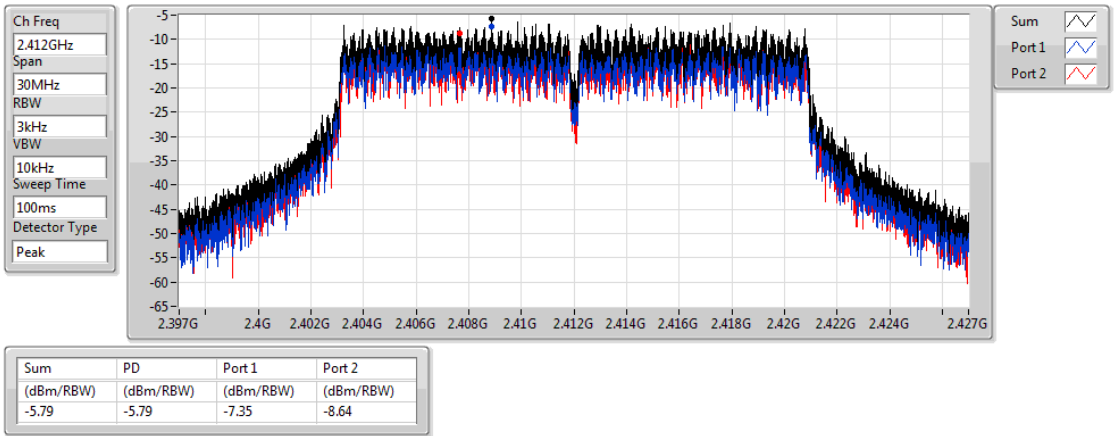
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.08	-1.08	-2.36	-2.00

802.11n HT20_Nss1,(MCS0)_2TX PSD

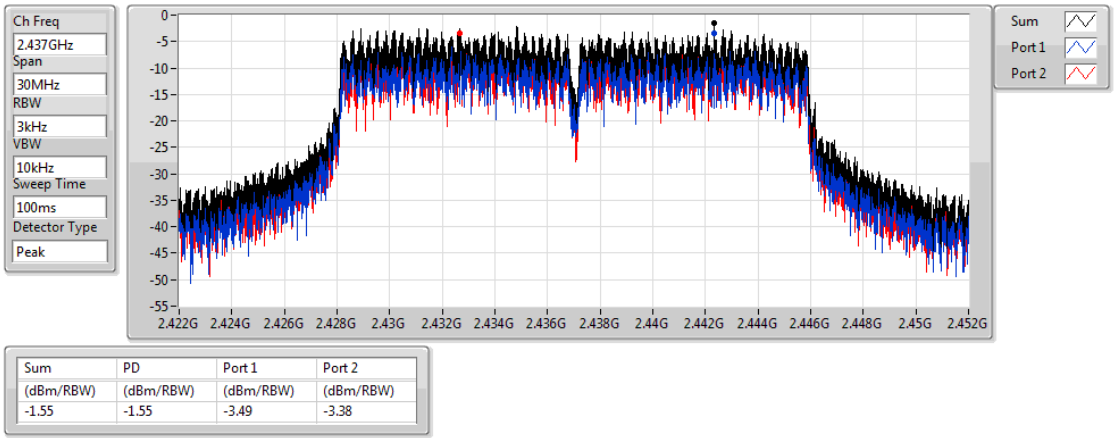
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.79	-5.79	-7.35	-8.64

802.11n HT20_Nss1,(MCS0)_2TX PSD

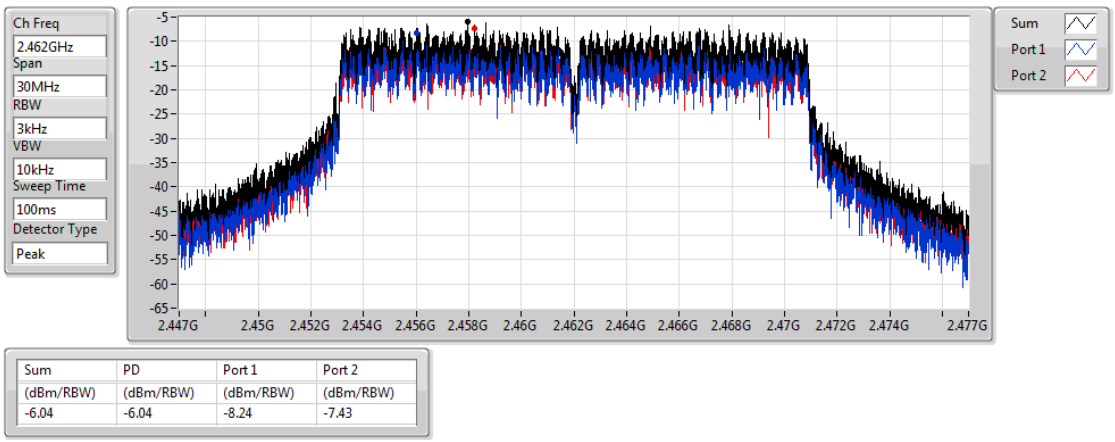
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.55	-1.55	-3.49	-3.38

802.11n HT20_Nss1,(MCS0)_2TX PSD

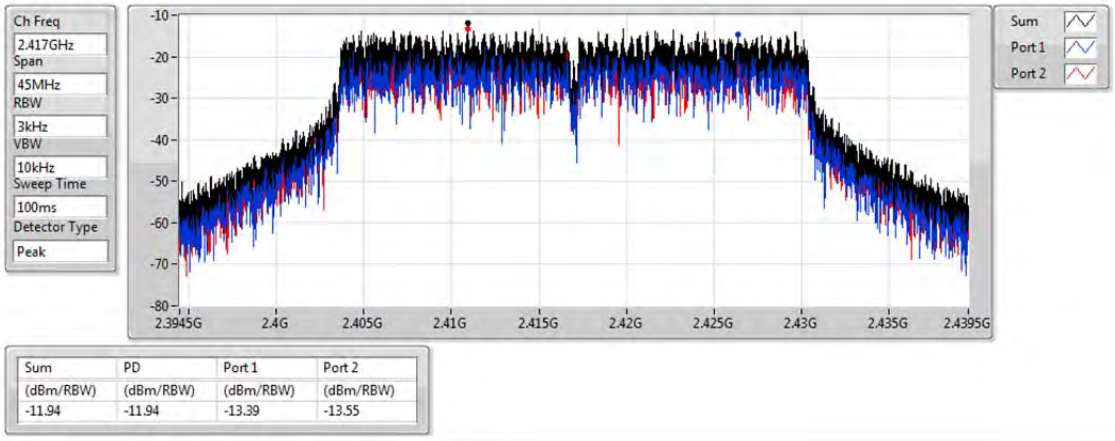
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.04	-6.04	-8.24	-7.43

802.11n HT30_Nss1,(MCS0)_2TX **PSD**

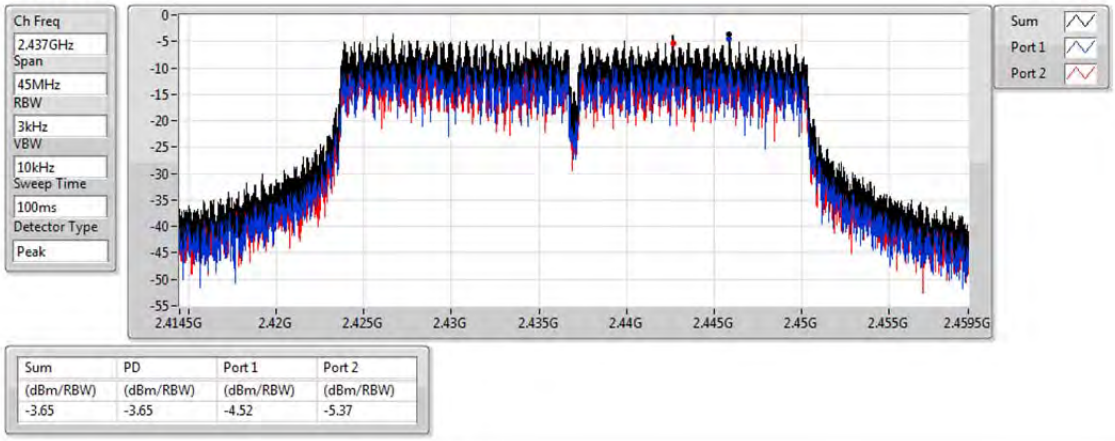
2417MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.94	-11.94	-13.39	-13.55

802.11n HT30_Nss1,(MCS0)_2TX **PSD**

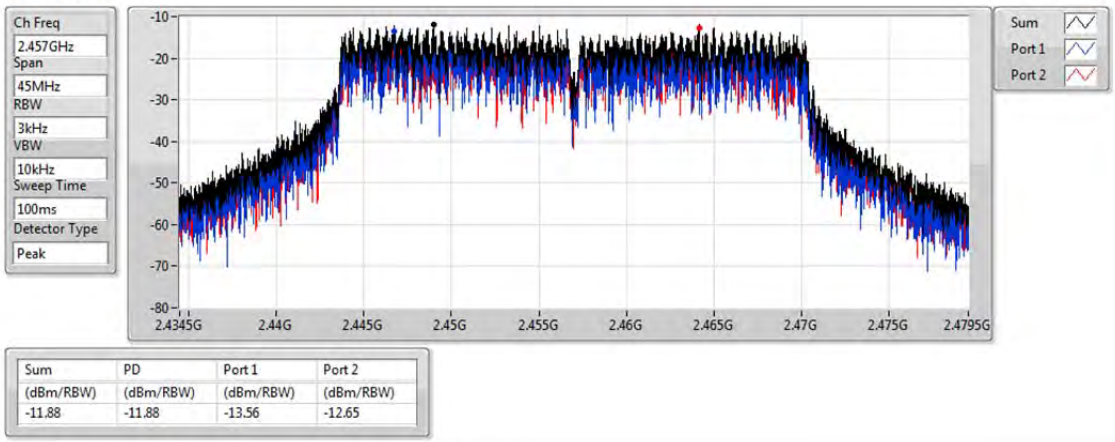
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.65	-3.65	-4.52	-5.37

802.11n HT30_Nss1,(MCS0)_2TX **PSD**

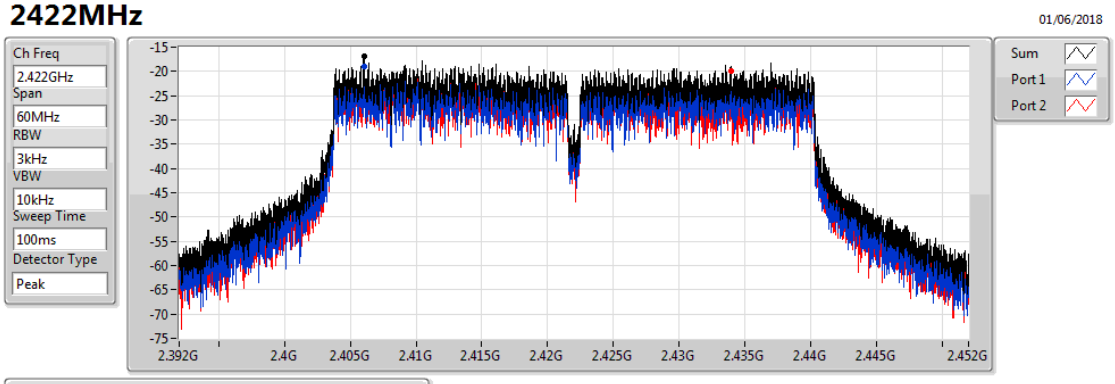
2457MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.88	-11.88	-13.56	-12.65

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

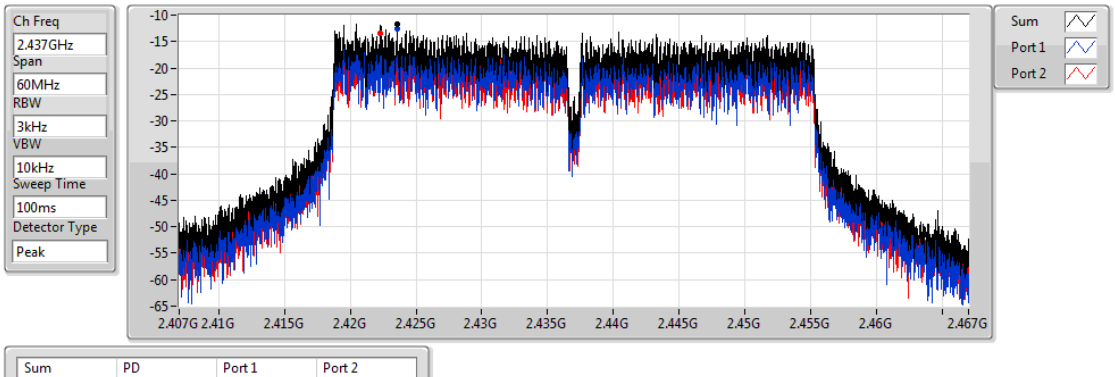
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.83	-16.83	-19.09	-19.89

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

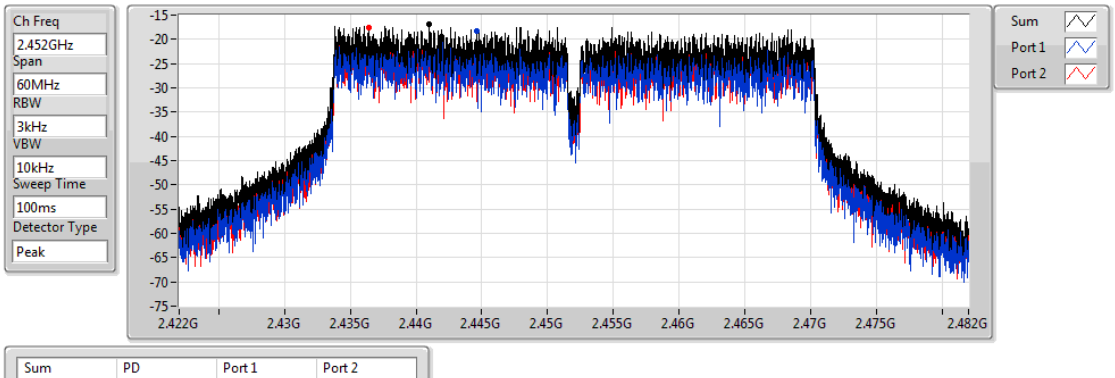
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.67	-11.67	-12.48	-13.47

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.78	-16.78	-18.21	-17.55