FCC Test Report

FCC ID	:	**2AJOTTA-1113**
Equipment	:	**Smart Phone**
Brand Name	:	**NOKIA**
Model Name	:	**TA-1113**
Applicant	:	**HMD Global Oy** **Bertel Jungin aukio 9, 02600 Espoo, Finland**
Manufacturer	:	**HMD Global Oy** **Bertel Jungin aukio 9, 02600 Espoo, Finland**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Jul. 23, 2018, and testing was started from Aug. 21, 2018 and completed on Aug. 31, 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.

Allen Lin

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

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PHOTOGRAPHS OF EUT V01

History of this test report

Report No.	Version	Description	Issued Date
FR871938AC	01	Initial issue of report	Sep. 26, 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: > 20 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Reviewed by: Jackson Tsai

Report Producer: Michelle 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 (HT20)	2412-2462	1-11 [11]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX

Note:
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 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
1	1	-	32ROOW0051A	Monopole	mini Murata

Ant.	Port	Gain (dBi)	
		2.4G	BT
1	1	0.64	0.64

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (1TX/1RX)

Ant. 1 (port 1) and could transmit/receive simultaneously.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 1 (port 1) and could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From AC Adapter / Battery			
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	0.994	0.026	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.97	0.132	1.394m	1k
802.11n HT20	0.964	0.159	1.302m	1k

1.1.5 Table for Multiple Listing

There are two sample of EUT.

Sample No.	Description
Sample 1	Dual SIM with Battery 1 for Model TA-1113
Sample 2	Dual SIM with Battery 2 for Model TA-1113

Note: Sample1 configuration was measured during the test.

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 v05

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	26.5°C / 65%	23/Aug/2018
Radiated	03CH03-HY	Jeff	25°C / 59%	21/Aug/2018
AC Conduction	CO04-HY	Jerry	24.5°C / 55.5%	31/Aug/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	3.8V

2.2 Test Channel Mode

Test Software	-

Mode	PowerSetting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	20
2437MHz	20
2462MHz	20
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	17
2437MHz	17
2462MHz	17
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	16
2437MHz	16
2462MHz	16

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	Adapter Mode without earphone
2	Adapter Mode with earphone
Mode 1 configuration was tested and found to be the worst case and measured during the test.	

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 Receiver Radiated Unwanted Emissions		
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	CTX		
1	Adapter Mode without earphone		
2	Adapter Mode with earphone		
Mode 1 configuration was tested and found to be the worst case and measured during the test.			
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
Worst Planes of EUT			V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Bluetooth+WLAN 2.4GHz
Refer to Sporton Test Report No.: Appendix G for Radiated Emission Co-location.	

2.4 Accessories and Support Equipment

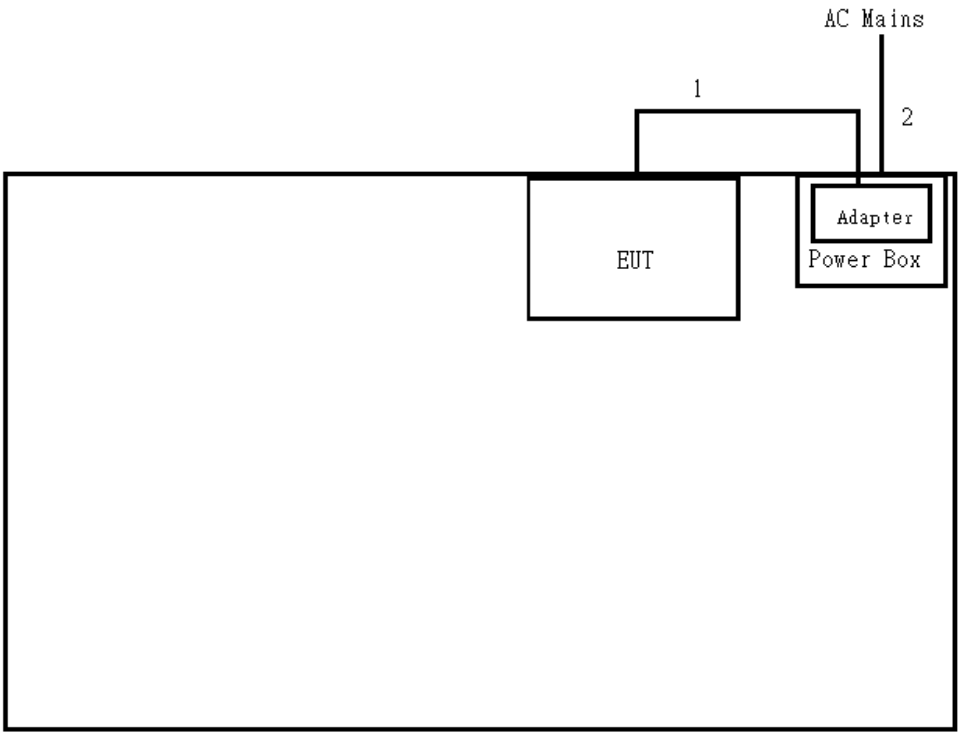
Accessories				
AC Adapter 1	Brand Name	Salcomp	Model Name	AD-10WU
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
AC Adapter 2	Brand Name	Salcomp	Model Name	FC0102
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
AC Adapter 3	Brand Name	DVE	Model Name	AD-10WU
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
Battery 1	Brand Name	SCUD	Model Name	HE362
	Power Rating	4.4 Vdc, 3400 mAh	Type	Li-ion
Battery 2	Brand Name	McNair	Model Name	HE363
	Power Rating	4.4 Vdc, 3400 mAh	Type	Li-ion
Earphone 1	Brand Name	OBO	Model Name	WH-108
	Signal Line	1.5 meter, non-shielded cable, w/o ferrite core		
Earphone 2	Brand Name	FIT	Model Name	WH-108
	Signal Line	1.5 meter, non-shielded cable, w/o ferrite core		
USB Cable 1	Brand Name	Fuconn	Model Name	JCT022-F001
	Signal Line	1.0 meter, non-shielded cable, w/o ferrite core		
USB Cable 2	Brand Name	FIT	Model Name	CUBB01M-FA014-DH
	Signal Line	1.0 meter, non-shielded cable, w/o ferrite core		

Reminder: Regarding to more detail and other information, please refer to user manual.

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	DC Power Supply	GW	GPS-3030DD	-

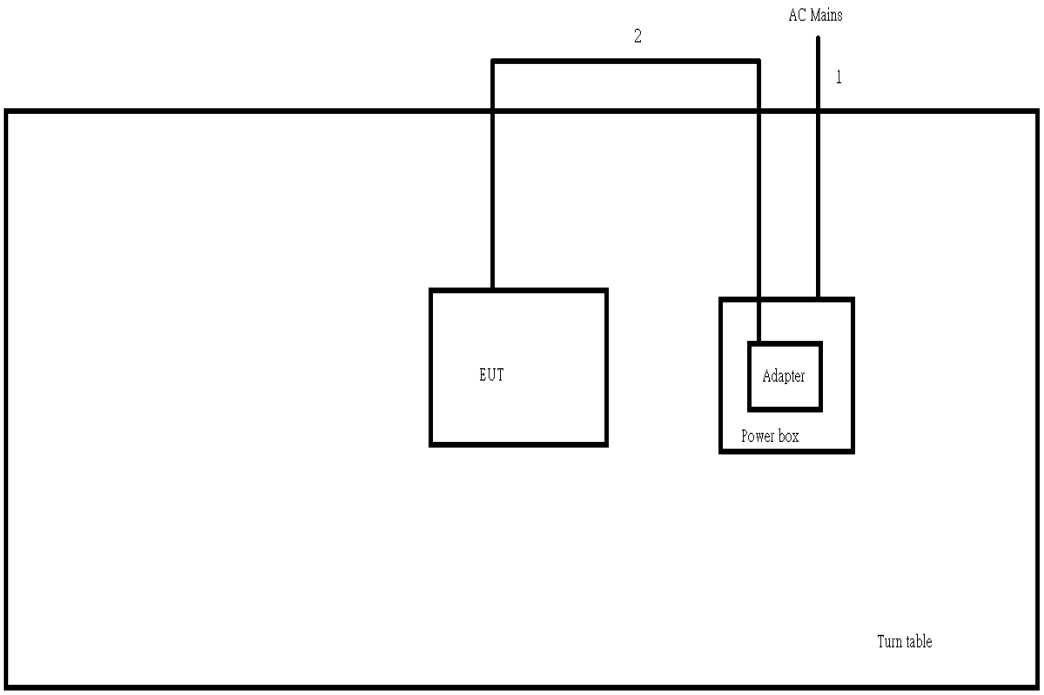
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	USB Cable	No	1.0	-
2	AC Power line	No	1.5	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5	-
2	USB Cable	No	1.0	-

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

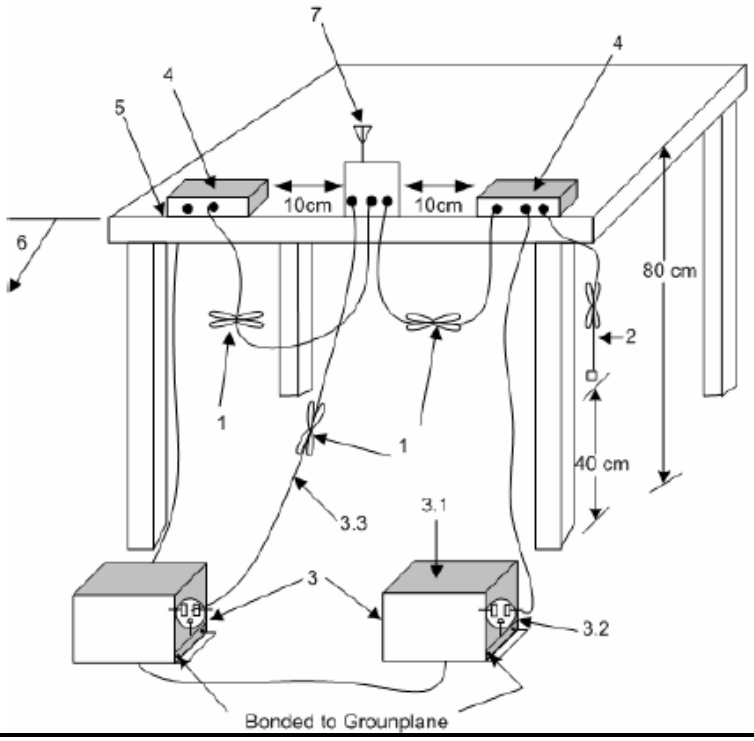
Refer a test equipment and calibration data table in this test report.

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.

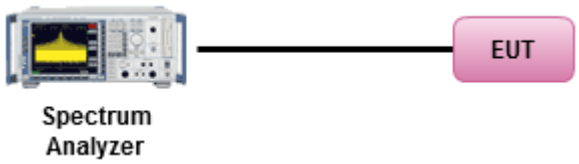
3.2.2 Measuring Instruments

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 8.2 (11.9.2.2 of ANSI C63.10) DTS bandwidth measurement.
	☐ Refer as RSS-Gen, clause 6.7 for 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 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
	☐ Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
	☒ Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
▪ Maximum Average Conducted Output Power	
	☐ Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
	☒ Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a 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

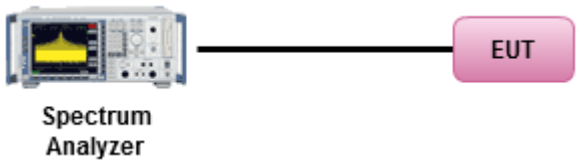
3.4.2 Measuring Instruments

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 8.4 (11.10 of ANSI C63.10) Method PKPSD.	
▪ 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

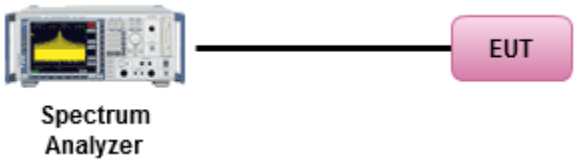
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
▪ Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency 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.

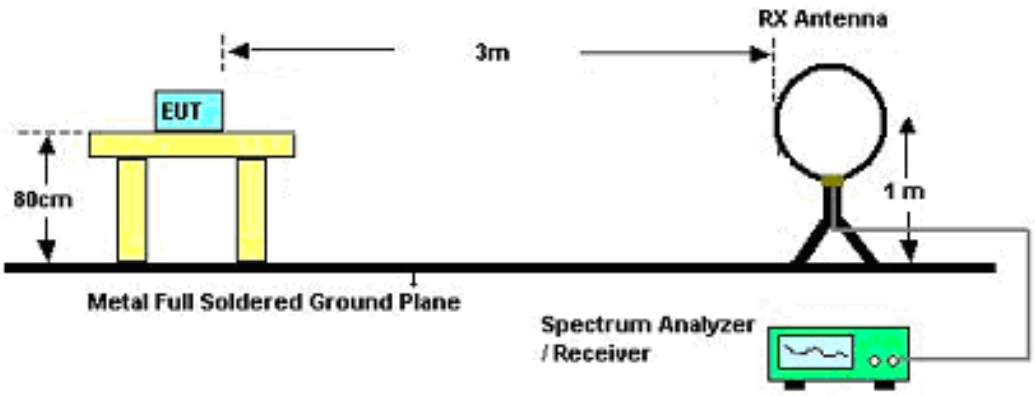
3.6.2 Measuring Instruments

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

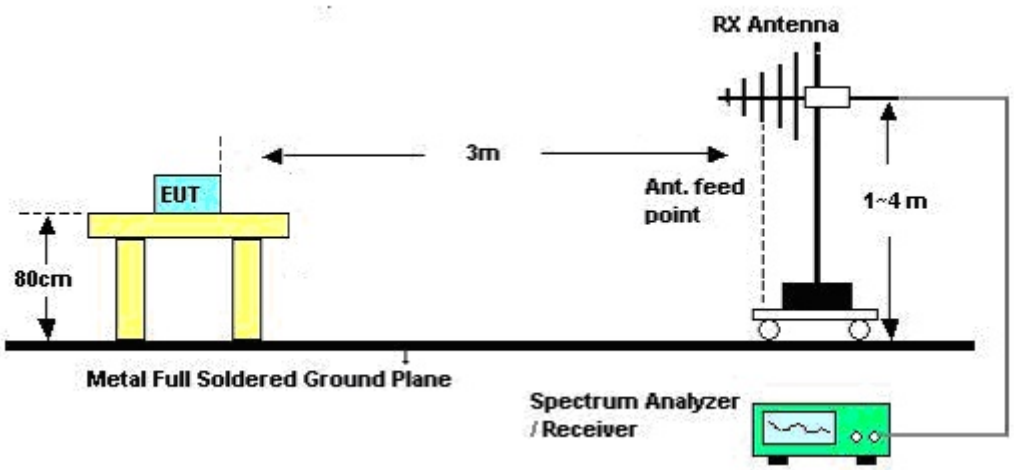
3.6.3 Test Procedures

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 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
▪ For the transmitter band-edge emissions shall be measured using following options below:	
	▪ Refer as KDB 558074 clause 8.7.1, 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 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	▪ Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).

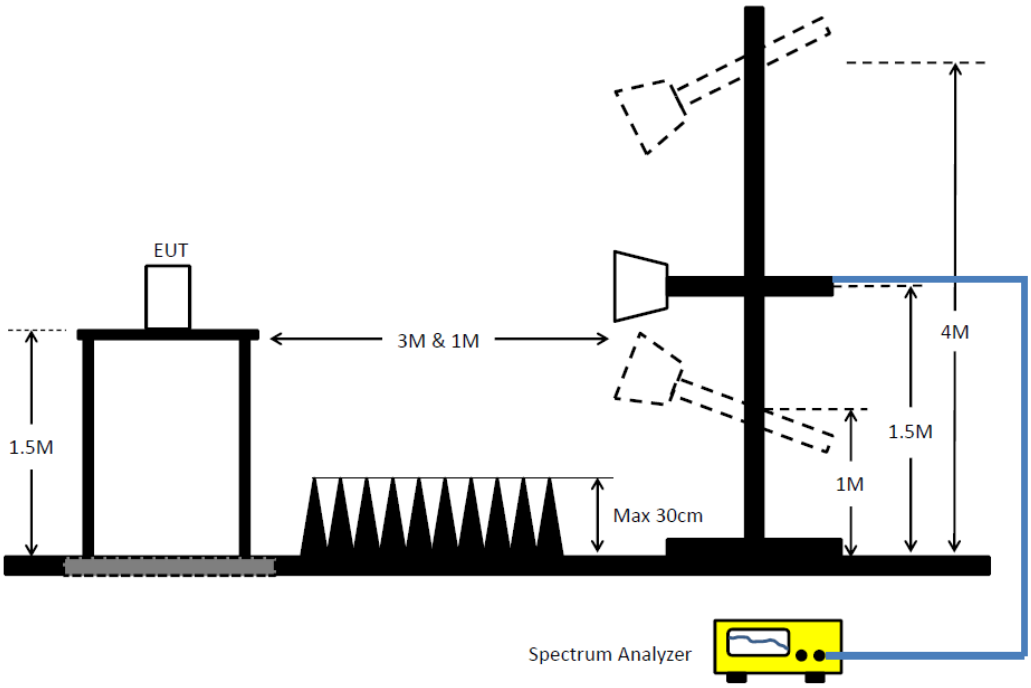
3.6.4 Test Setup

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	ESR	102051	9KHz ~ 3.6GHz	03/May/2018	02/May/2019
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 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

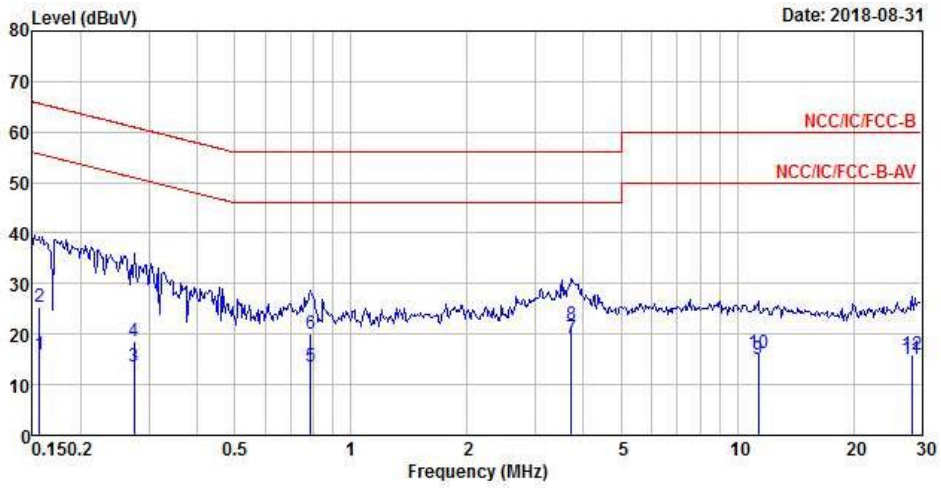
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	31/Oct/2017	30/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	01/Nov/2017	31/Oct/2018
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	19/Apr/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	31/Aug/2017	30/Aug/2018
Signal Analyzer	R&S	FSP40	100305	10Hz ~ 40GHz	04/Jan/2018	03/Jan/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	29/Jan/2018	28/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX 106	CB222	1GHz ~ 40GHz	29/Jan/2018	28/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	2723	30MHz ~ 1GHz	09/Sep/2017	08/Sep/2018
Receiver	R&S	ESCS 30	100354	9kHz ~ 2.75GHz	08/Dec/2017	07/Dec/2018
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	06/Feb/ 2018	05/Feb/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	18/Apr/ 2018	17/Apr/2019
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	28/Mar/2018	27/Mar/2019

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9kHz~40GHz	29/Dec/2017	28/Dec/2018
Signal Generator	R&S	SMR 40	100116	10MHz ~ 40GHz	23/Jul/2018	22/Jul/2019
Pulse Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	27/Feb/2018	26/Feb/2019
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	27/Feb/2018	26/Feb/2019
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	1 to 18GHz	17/Jan/2018	16/Jan/2019
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	30 to 1000MHz	17/Jan/2018	16/Jan/2019
CABLE 0.5m	HUBER	MY37963/4	RF Cable - 22	1 to 18GHz	17/Jan/2018	16/Jan/2019

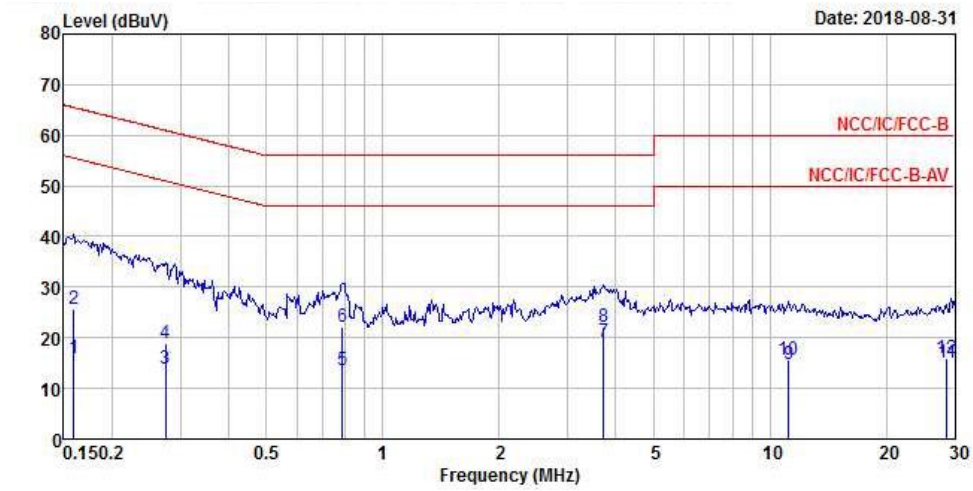
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Adapter Mode without earphone		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	15.87	-39.78	55.65	6.20	9.63	0.04	Average
2	0.16	25.45	-40.20	65.65	15.78	9.63	0.04	QP
3	0.27	13.65	-37.33	50.98	3.98	9.62	0.05	Average
4	0.27	18.71	-42.27	60.98	9.04	9.62	0.05	QP
5	0.79	13.52	-32.48	46.00	3.87	9.62	0.03	Average
6	0.79	20.14	-35.86	56.00	10.49	9.62	0.03	QP
7 MAX	3.72	19.06	-26.94	46.00	9.34	9.64	0.08	Average
8	3.72	21.92	-34.08	56.00	12.20	9.64	0.08	QP
9	11.32	14.94	-35.06	50.00	5.11	9.69	0.14	Average
10	11.32	16.13	-43.87	60.00	6.30	9.69	0.14	QP
11	28.30	15.04	-34.96	50.00	5.14	9.69	0.21	Average
12	28.30	15.90	-44.10	60.00	6.00	9.69	0.21	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	Adapter Mode without earphone		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	15.88	-39.64	55.52	6.23	9.62	0.03	Average
2	0.16	25.55	-39.97	65.52	15.90	9.62	0.03	QP
3	0.27	13.91	-37.07	50.98	4.24	9.62	0.05	Average
4	0.27	19.02	-41.96	60.98	9.35	9.62	0.05	QP
5	0.79	13.63	-32.37	46.00	3.99	9.61	0.03	Average
6	0.79	22.02	-33.98	56.00	12.38	9.61	0.03	QP
7 MAX	3.72	19.05	-26.95	46.00	9.34	9.63	0.08	Average
8	3.72	22.18	-33.82	56.00	12.47	9.63	0.08	QP
9	11.20	14.75	-35.25	50.00	4.96	9.65	0.14	Average
10	11.20	15.52	-44.48	60.00	5.73	9.65	0.14	QP
11	28.60	15.14	-34.86	50.00	5.40	9.51	0.23	Average
12	28.60	15.96	-44.04	60.00	6.22	9.51	0.23	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_Nss1,(1Mbps)_1TX	8.975M	13.543M	13M5G1D	8.525M	13.243M
802.11g_Nss1,(6Mbps)_1TX	16.275M	16.767M	16M8D1D	13.775M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	17.575M	17.816M	17M8D1D	15.05M	17.541M

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

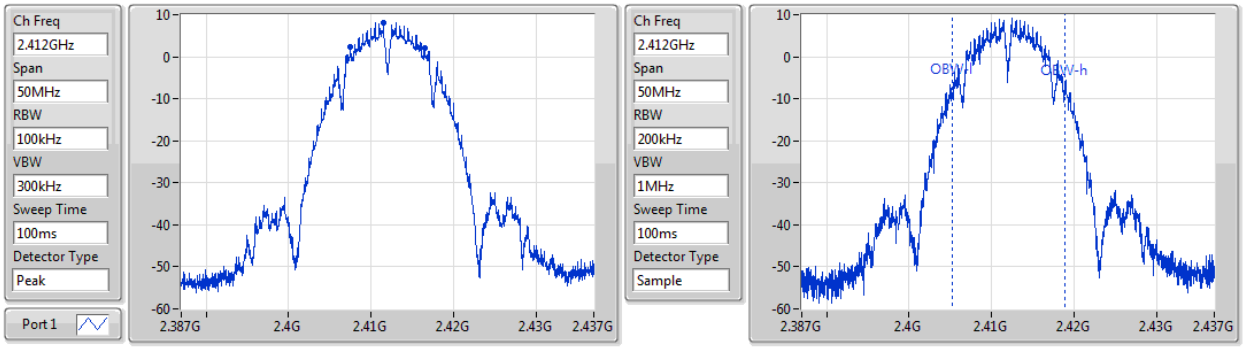
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	8.975M	13.543M
2437MHz_TnomVnom	Pass	500k	8.525M	13.418M
2462MHz_TnomVnom	Pass	500k	8.55M	13.243M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	16.275M	16.767M
2437MHz_TnomVnom	Pass	500k	15.325M	16.442M
2462MHz_TnomVnom	Pass	500k	13.775M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	17.575M	17.816M
2437MHz_TnomVnom	Pass	500k	15.9M	17.541M
2462MHz_TnomVnom	Pass	500k	15.05M	17.591M

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

802.11b_Nss1,(1Mbps)_1TX — EBW

2412MHz

23/08/2018

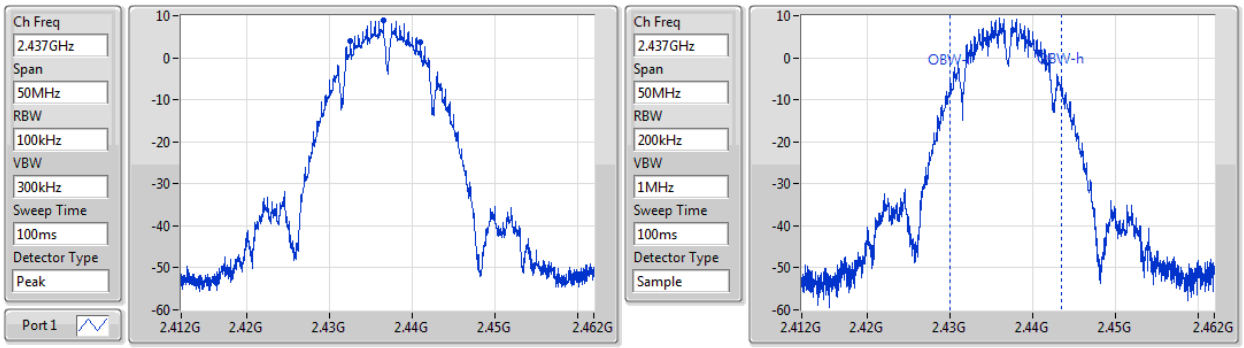


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.975M	2.407525G	2.4165G	13.543M	2.405303G	2.418847G	500k	1

802.11b_Nss1,(1Mbps)_1TX — EBW

2437MHz

23/08/2018

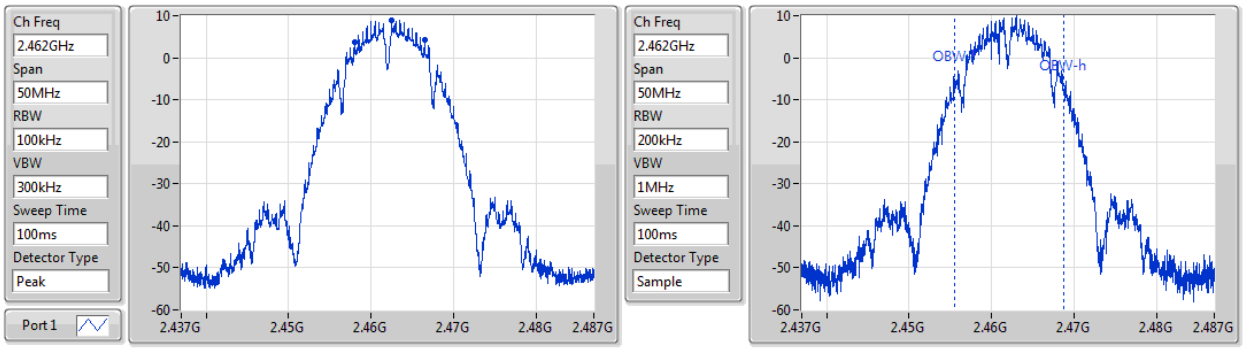


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.525M	2.432475G	2.441G	13.418M	2.430028G	2.443447G	500k	1

802.11b_Nss1,(1Mbps)_1TX — EBW

2462MHz

23/08/2018

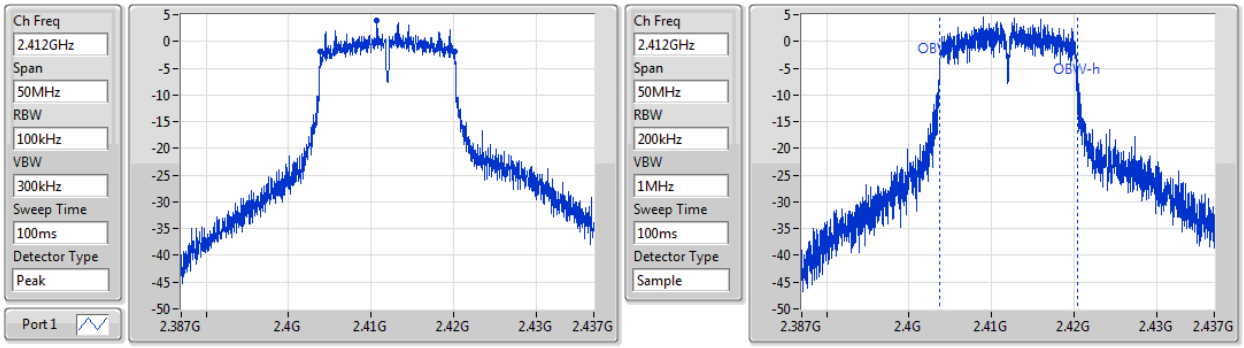


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.55M	2.457975G	2.466525G	13.243M	2.455478G	2.468722G	500k	1

802.11g_Nss1,(6Mbps)_1TX — EBW

2412MHz

23/08/2018

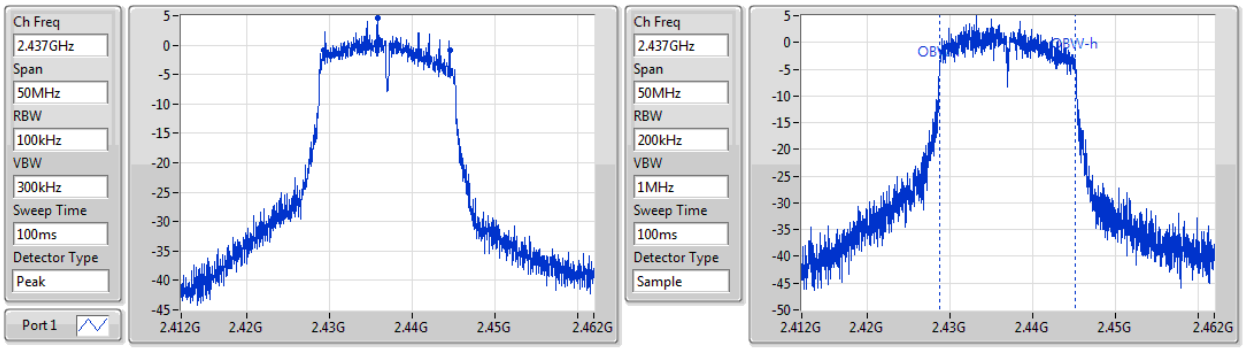


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.275M	2.403875G	2.42015G	16.767M	2.403704G	2.420471G	500k	1

802.11g_Nss1,(6Mbps)_1TX — EBW

2437MHz

23/08/2018

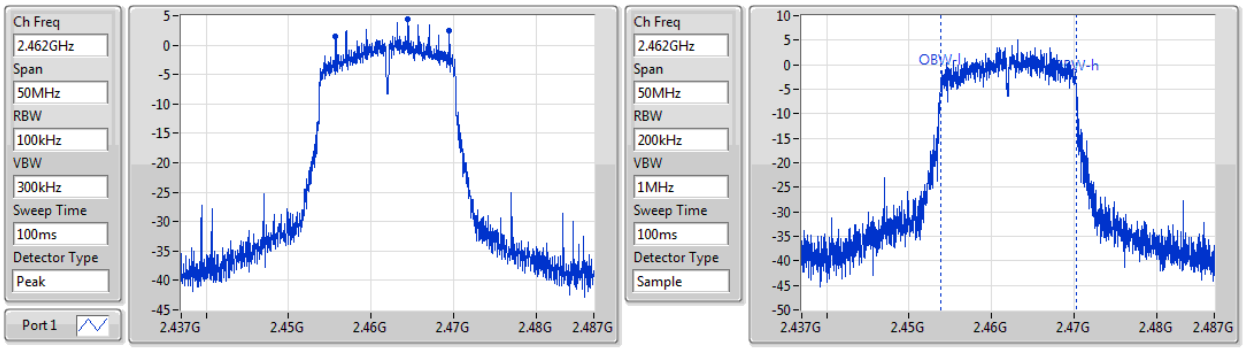


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.325M	2.429225G	2.44455G	16.442M	2.428704G	2.445146G	500k	1

802.11g_Nss1,(6Mbps)_1TX — EBW

2462MHz

23/08/2018

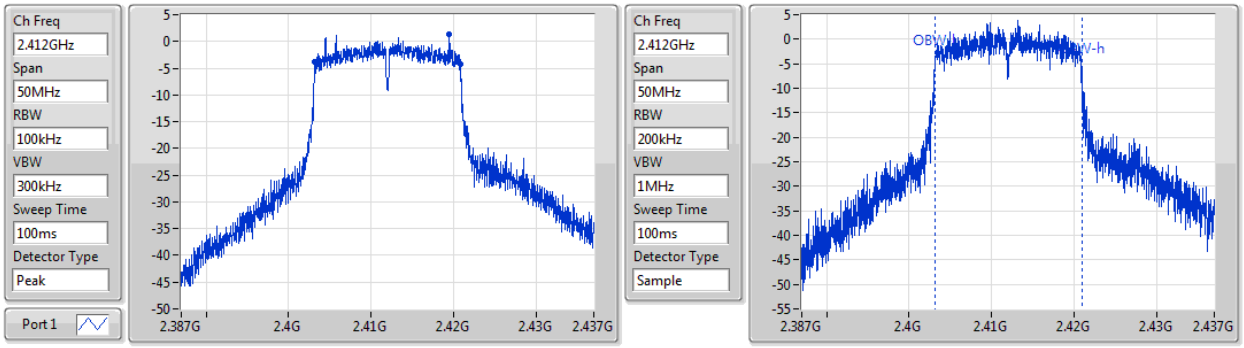


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.775M	2.455725G	2.4695G	16.417M	2.453829G	2.470246G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX — EBW

2412MHz

23/08/2018

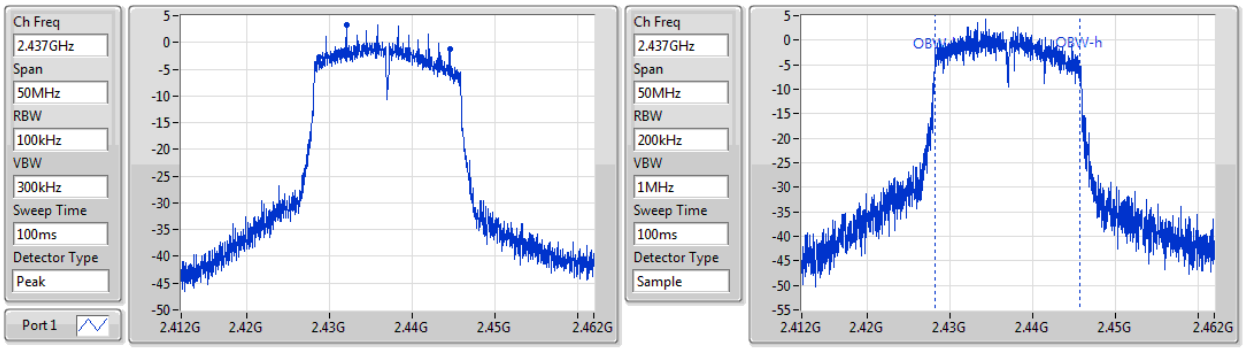


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	2.403225G	2.4208G	17.816M	2.403154G	2.420971G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX — EBW

2437MHz

23/08/2018

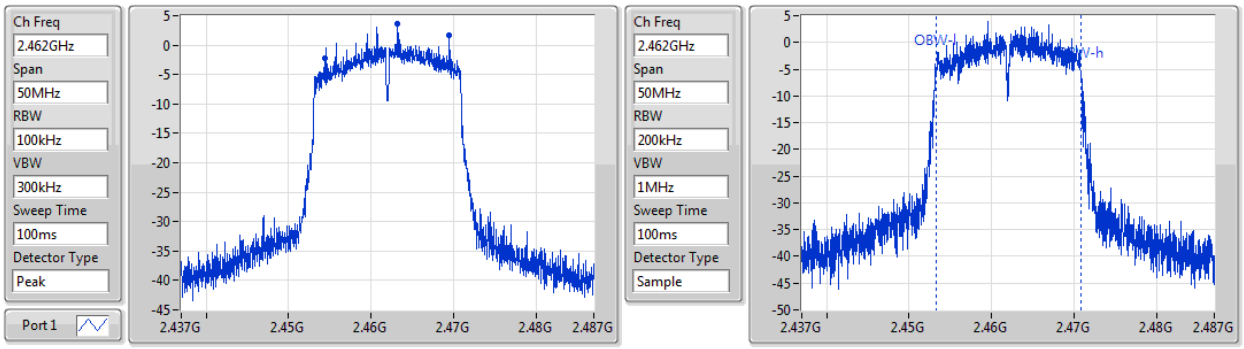


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.9M	2.42865G	2.44455G	17.541M	2.428154G	2.445696G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX — EBW

2462MHz

23/08/2018



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.05M	2.45445G	2.4695G	17.591M	2.453229G	2.470821G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	20.46	0.11117
802.11g_Nss1,(6Mbps)_1TX	24.48	0.28054
802.11n HT20_Nss1,(MCS0)_1TX	24.76	0.29923

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	20.04	20.04	30.00
2437MHz_TnomVnom	Pass	0.64	20.46	20.46	30.00
2462MHz_TnomVnom	Pass	0.64	20.25	20.25	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	24.48	24.48	30.00
2437MHz_TnomVnom	Pass	0.64	24.44	24.44	30.00
2462MHz_TnomVnom	Pass	0.64	24.25	24.25	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	24.76	24.76	30.00
2437MHz_TnomVnom	Pass	0.64	24.61	24.61	30.00
2462MHz_TnomVnom	Pass	0.64	24.47	24.47	30.00

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

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	18.21	0.06622
802.11g_Nss1,(6Mbps)_1TX	15.28	0.03373
802.11n HT20_Nss1,(MCS0)_1TX	14.16	0.02606

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	17.81	17.81	30.00
2437MHz_TnomVnom	Pass	0.64	18.21	18.21	30.00
2462MHz_TnomVnom	Pass	0.64	18.04	18.04	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	15.28	15.28	30.00
2437MHz_TnomVnom	Pass	0.64	15.19	15.19	30.00
2462MHz_TnomVnom	Pass	0.64	14.80	14.80	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	14.04	14.04	30.00
2437MHz_TnomVnom	Pass	0.64	14.16	14.16	30.00
2462MHz_TnomVnom	Pass	0.64	13.80	13.80	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_Nss1,(1Mbps)_1TX	-5.12
802.11g_Nss1,(6Mbps)_1TX	-10.41
802.11n HT20_Nss1,(MCS0)_1TX	-11.28

RBW=3kHz.

Result

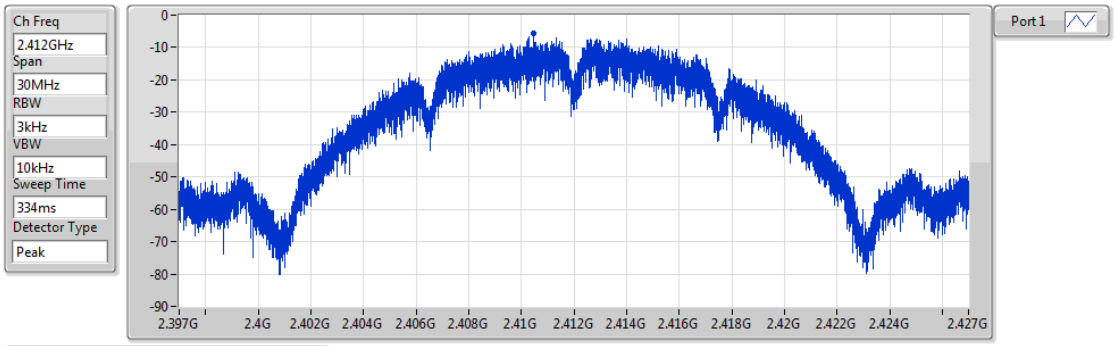
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	-5.80	-5.80	8.00
2437MHz_TnomVnom	Pass	0.64	-5.12	-5.12	8.00
2462MHz_TnomVnom	Pass	0.64	-5.24	-5.24	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	-10.80	-10.80	8.00
2437MHz_TnomVnom	Pass	0.64	-10.41	-10.41	8.00
2462MHz_TnomVnom	Pass	0.64	-10.53	-10.53	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	0.64	-11.63	-11.63	8.00
2437MHz_TnomVnom	Pass	0.64	-11.28	-11.28	8.00
2462MHz_TnomVnom	Pass	0.64	-11.72	-11.72	8.00

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_Nss1,(1Mbps)_1TX PSD

2412MHz

23/08/2018

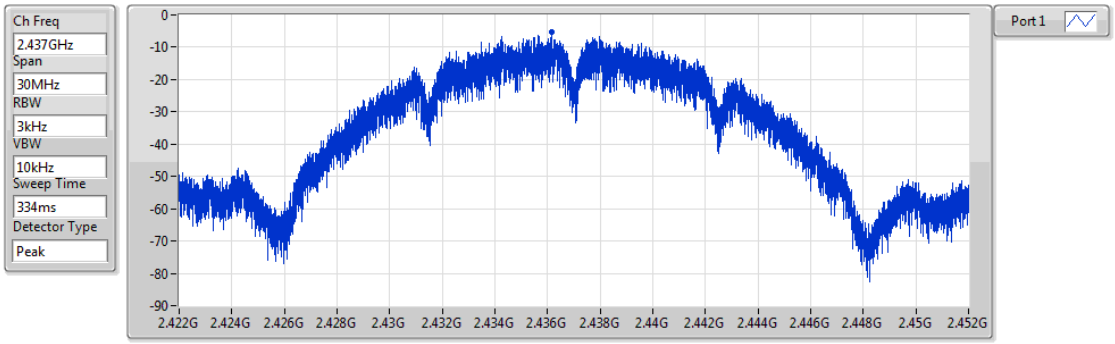


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.80	-5.80	-5.80

802.11b_Nss1,(1Mbps)_1TX PSD

2437MHz

23/08/2018

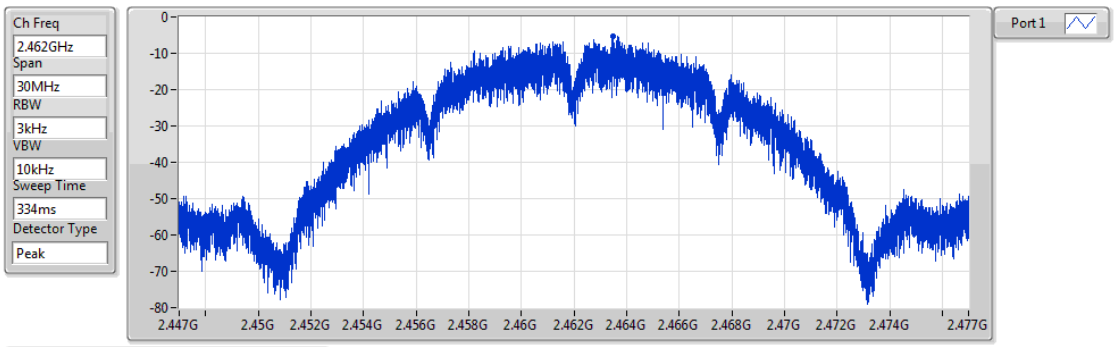


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.12	-5.12	-5.12

802.11b_Nss1,(1Mbps)_1TX PSD

2462MHz

23/08/2018

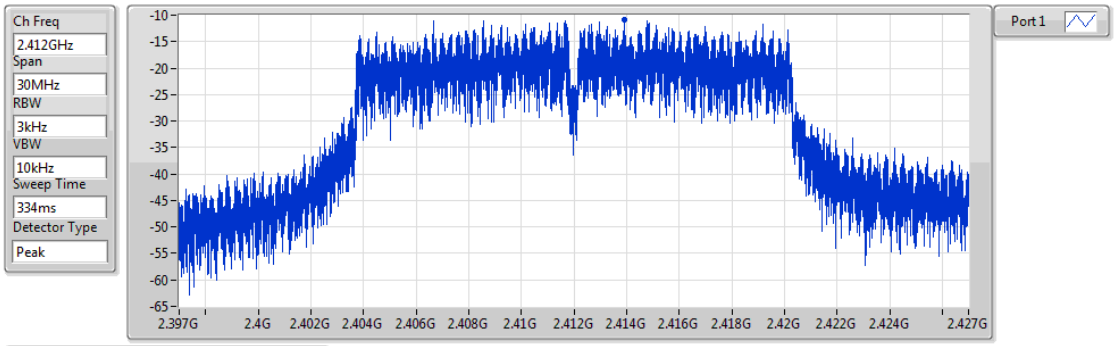


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.24	-5.24	-5.24

802.11g_Nss1,(6Mbps)_1TX PSD

2412MHz

23/08/2018

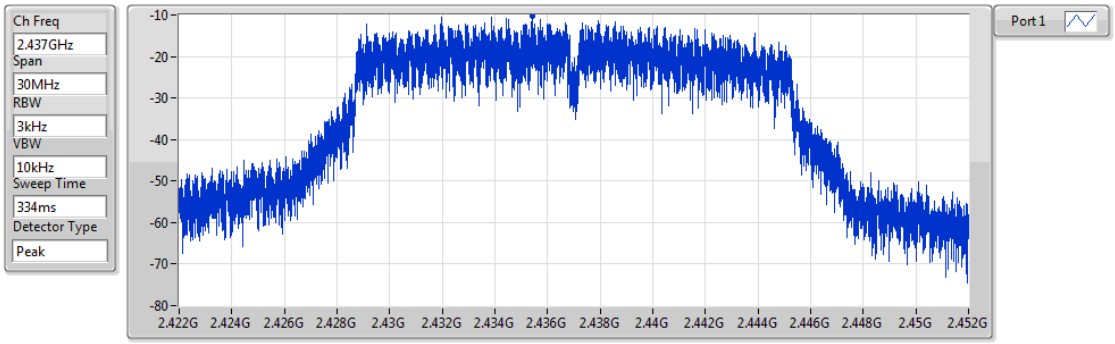


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.80	-10.80	-10.80

802.11g_Nss1,(6Mbps)_1TX PSD

2437MHz

23/08/2018

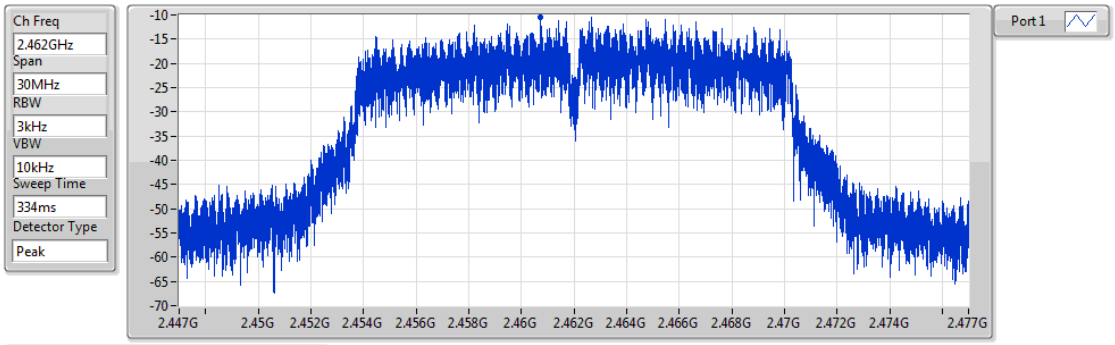


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.41	-10.41	-10.41

802.11g_Nss1,(6Mbps)_1TX PSD

2462MHz

23/08/2018

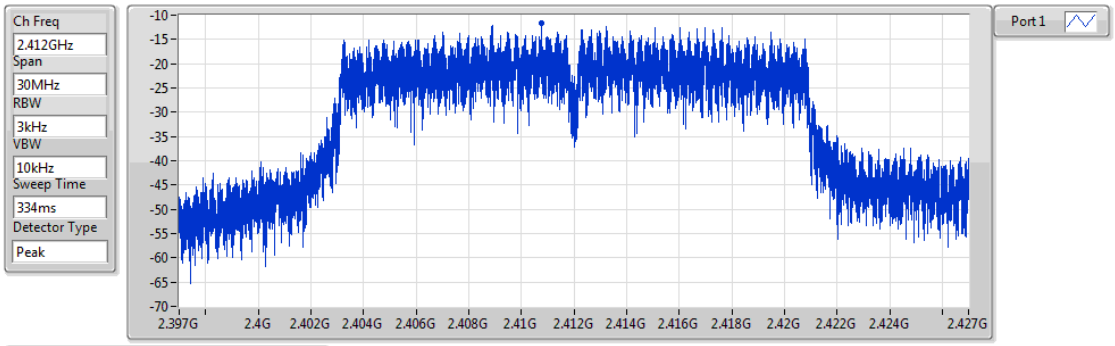


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.53	-10.53	-10.53

802.11n HT20_Nss1,(MCS0)_1TX PSD

2412MHz

23/08/2018

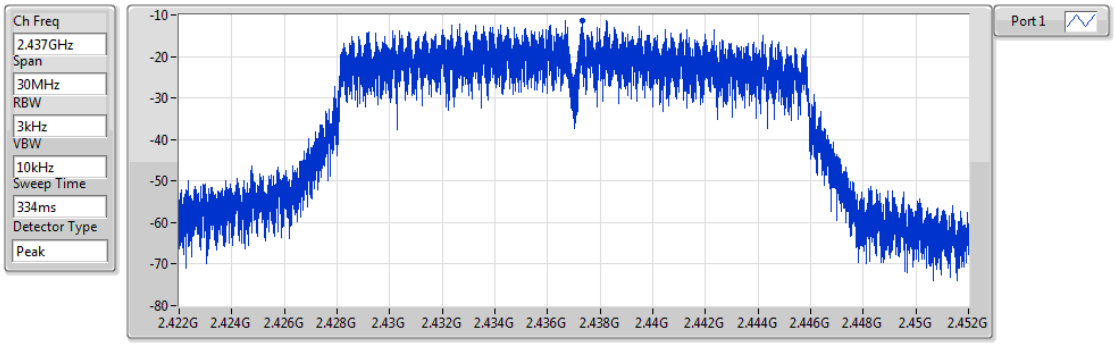


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.63	-11.63	-11.63

802.11n HT20_Nss1,(MCS0)_1TX PSD

2437MHz

23/08/2018

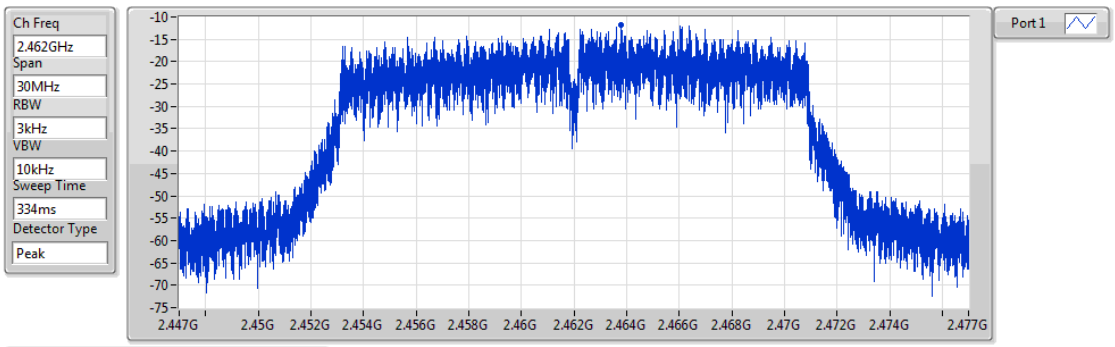


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.28	-11.28	-11.28

802.11n HT20_Nss1,(MCS0)_1TX PSD

2462MHz

23/08/2018



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.72	-11.72	-11.72

Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.410521G	8.71	-11.29	1.988365G	-62.55	2.39904G	-34.29	2.48902G	-53.21	15.200246G	-52.84	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.413193G	2.36	-17.64	1.91264G	-62.12	2.3992G	-24.30	2.4859G	-52.96	16.436454G	-51.66	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.413193G	0.15	-19.85	2.15962G	-62.24	2.39888G	-24.25	2.48726G	-53.63	15.264866G	-52.42	1

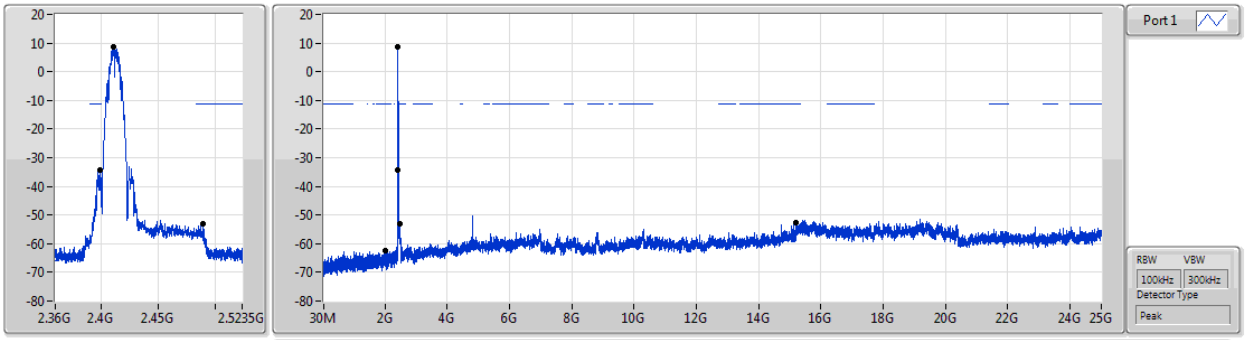
Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.410521G	8.71	-11.29	1.988365G	-62.55	2.39904G	-34.29	2.48902G	-53.21	15.200246G	-52.84	1
2437MHz_TnomVnom	Pass	2.435571G	9.66	-10.34	1.822935G	-62.20	2.39904G	-54.55	2.48494G	-55.09	16.279118G	-51.16	1
2462MHz_TnomVnom	Pass	2.462625G	9.07	-10.93	2.109525G	-62.88	2.39952G	-57.57	2.48486G	-53.48	15.318248G	-52.42	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.413193G	2.36	-17.64	1.91264G	-62.12	2.3992G	-24.30	2.4859G	-52.96	16.436454G	-51.66	1
2437MHz_TnomVnom	Pass	2.438243G	4.55	-15.45	2.100205G	-61.87	2.39744G	-54.30	2.48822G	-52.93	15.340724G	-52.15	1
2462MHz_TnomVnom	Pass	2.466967G	2.58	-17.42	2.060595G	-62.10	2.39984G	-55.41	2.48414G	-46.72	15.219913G	-52.47	1
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.413193G	0.15	-19.85	2.15962G	-62.24	2.39888G	-24.25	2.48726G	-53.63	15.264866G	-52.42	1
2437MHz_TnomVnom	Pass	2.434402G	2.49	-17.51	1.624885G	-61.55	2.39736G	-55.49	2.48822G	-53.37	16.450501G	-52.79	1
2462MHz_TnomVnom	Pass	2.464462G	3.44	-16.56	1.97322G	-61.84	2.39864G	-56.64	2.48414G	-46.48	15.321057G	-51.83	1

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

2412MHz

23/08/2018

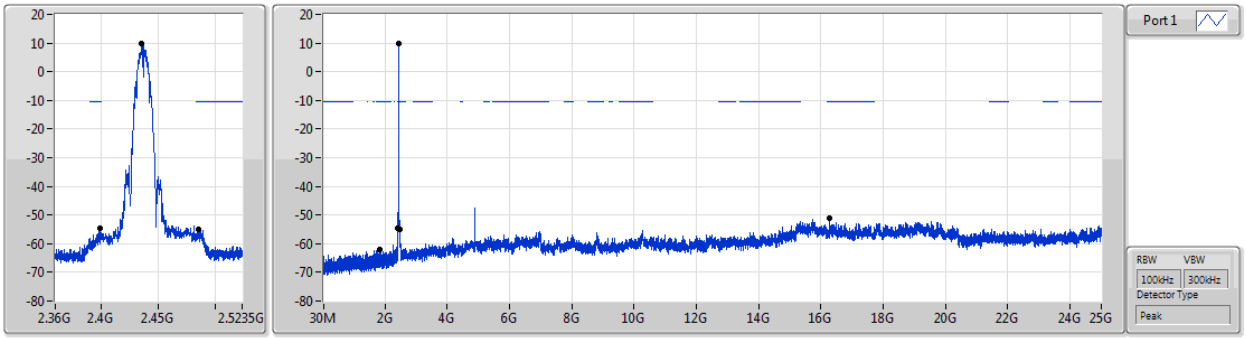


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.410521G	8.71	-11.29	1.988365G	-62.55	2.39904G	-34.29	2.48902G	-53.21	15.200246G	-52.84	1

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

2437MHz

23/08/2018

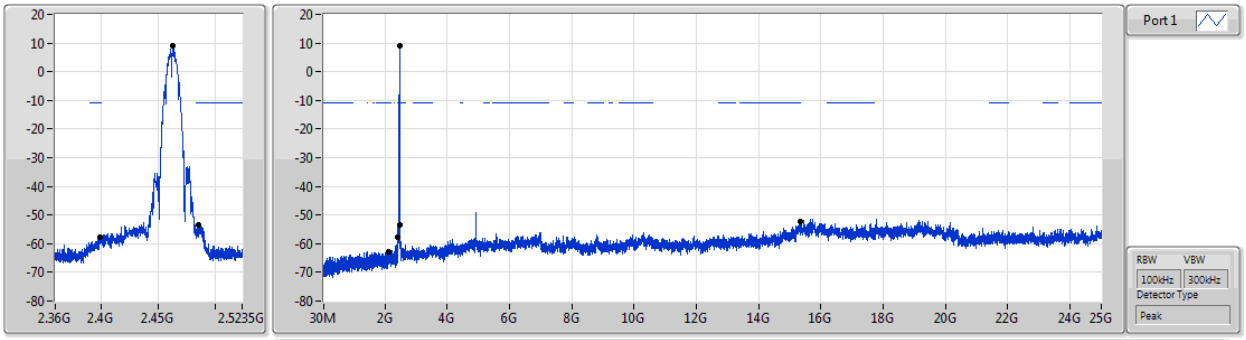


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435571G	9.66	-10.34	1.822935G	-62.20	2.39904G	-54.55	2.48494G	-55.09	16.279118G	-51.16	1

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

2462MHz

23/08/2018

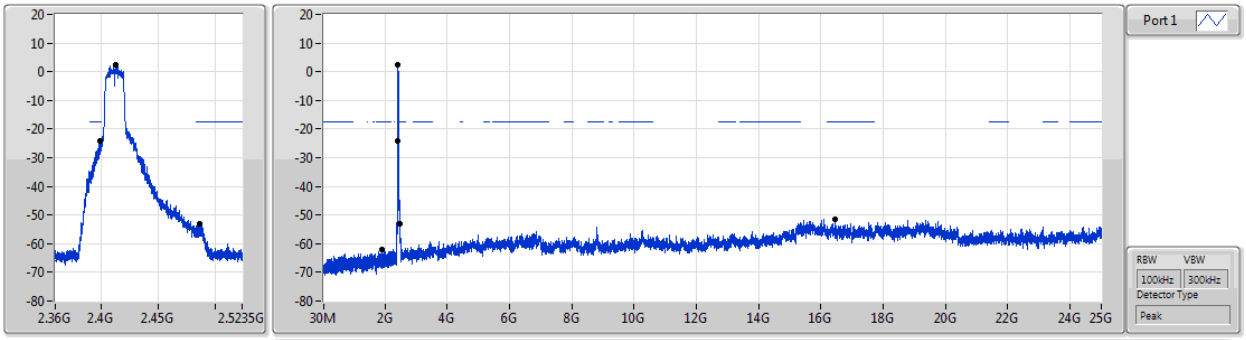


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.462625G	9.07	-10.93	2.109525G	-62.88	2.39952G	-57.57	2.48486G	-53.48	15.318248G	-52.42	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

2412MHz

23/08/2018

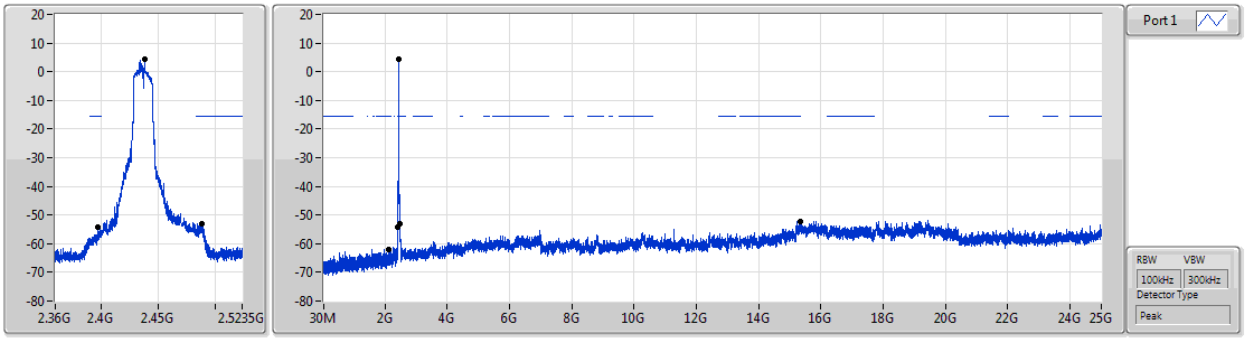


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.413193G	2.36	-17.64	1.91264G	-62.12	2.3992G	-24.30	2.4859G	-52.96	16.436454G	-51.66	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

2437MHz

23/08/2018

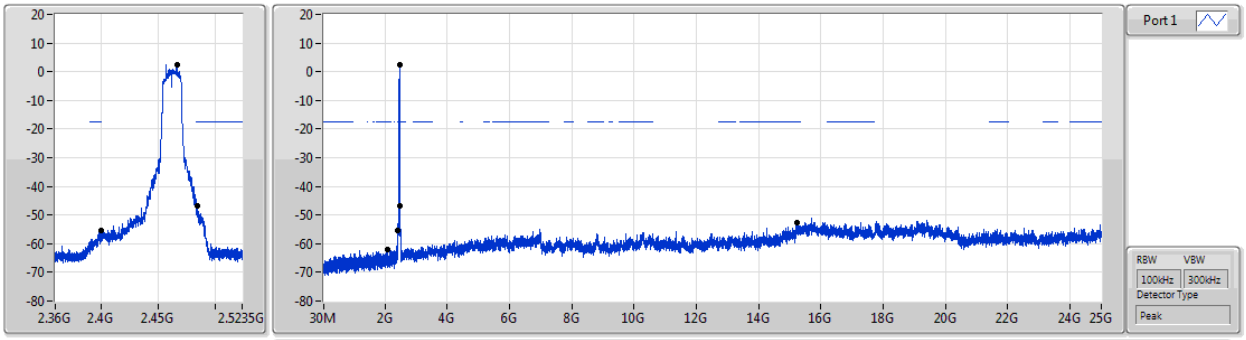


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.438243G	4.55	-15.45	2.100205G	-61.87	2.39744G	-54.30	2.48822G	-52.93	15.340724G	-52.15	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

2462MHz

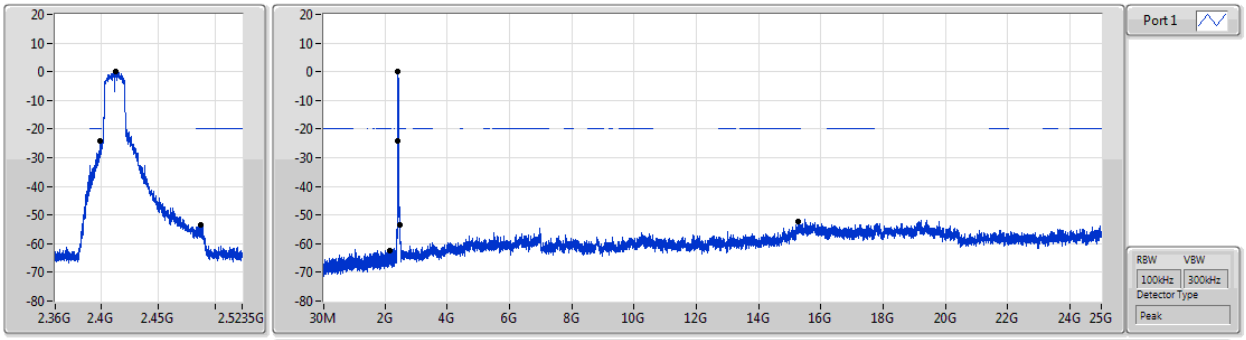
23/08/2018



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.466967G	2.58	-17.42	2.060595G	-62.10	2.39984G	-55.41	2.48414G	-46.72	15.219913G	-52.47	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

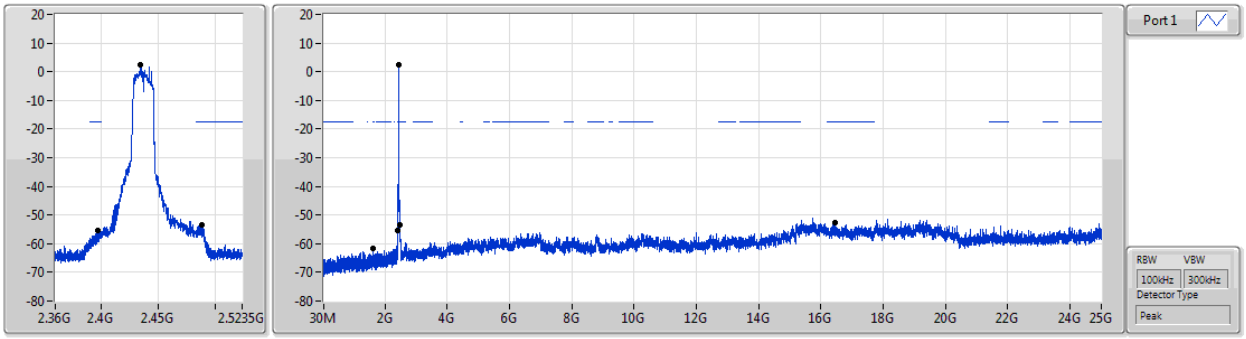
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.413193G	0.15	-19.85	2.15962G	-62.24	2.39888G	-24.25	2.48726G	-53.63	15.264866G	-52.42	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

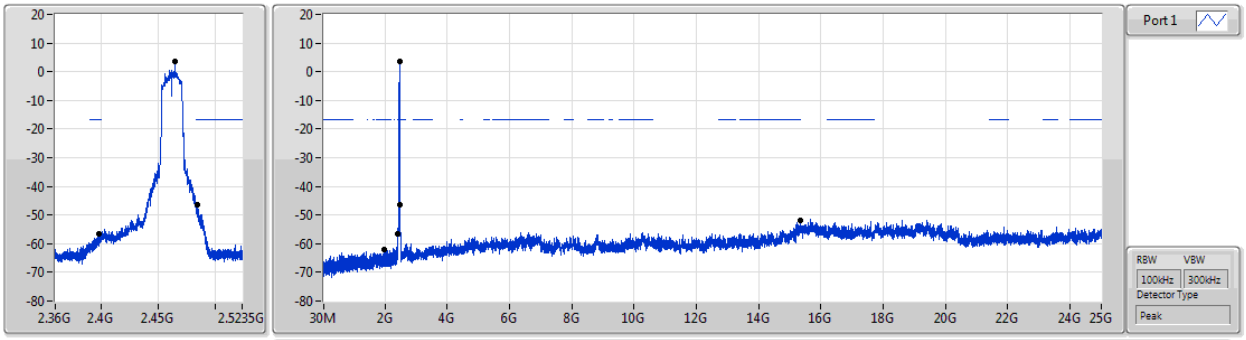
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.434402G	2.49	-17.51	1.624885G	-61.55	2.39736G	-55.49	2.48822G	-53.37	16.450501G	-52.79	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.464462G	3.44	-16.56	1.97322G	-61.84	2.39864G	-56.64	2.48414G	-46.48	15.321057G	-51.83	1

Summary

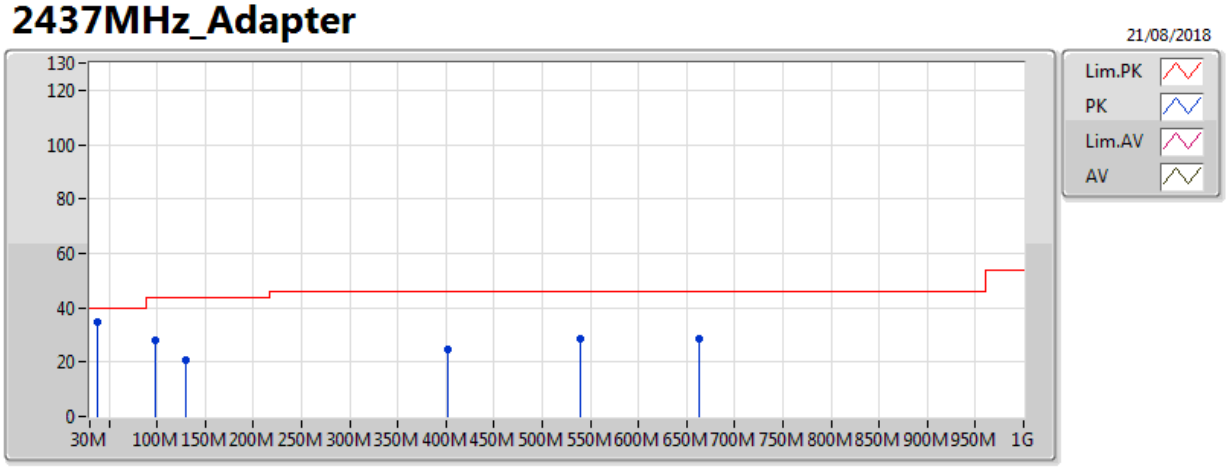
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	PK	37.76M	34.72	40.00	-5.28	-6.82	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2437MHz	Pass	PK	37.76M	34.72	40.00	-5.28	-6.82	3	Vertical	360	1.00	-
2437MHz	Pass	PK	97.9M	28.07	43.50	-15.43	-9.71	3	Vertical	360	1.00	-
2437MHz	Pass	PK	128.94M	20.84	43.50	-22.66	-7.72	3	Vertical	360	1.00	-
2437MHz	Pass	PK	402.48M	24.78	46.00	-21.22	-3.28	3	Vertical	360	1.00	-
2437MHz	Pass	PK	540.22M	28.84	46.00	-17.16	-0.27	3	Vertical	360	1.00	-
2437MHz	Pass	PK	662.44M	28.77	46.00	-17.23	0.23	3	Vertical	360	1.00	-
2437MHz	Pass	PK	33.88M	25.57	40.00	-14.43	-4.73	3	Horizontal	0	1.00	-
2437MHz	Pass	PK	99.84M	22.61	43.50	-20.89	-9.33	3	Horizontal	0	1.00	-
2437MHz	Pass	PK	299.66M	22.93	46.00	-23.07	-5.79	3	Horizontal	0	1.00	-
2437MHz	Pass	PK	410.24M	24.74	46.00	-21.26	-2.92	3	Horizontal	0	1.00	-
2437MHz	Pass	PK	480.08M	27.32	46.00	-18.68	-1.71	3	Horizontal	0	1.00	-
2437MHz	Pass	PK	654.68M	28.97	46.00	-17.03	0.27	3	Horizontal	0	1.00	-

802.11n HT20_Nss1,(MCS0)_1TX

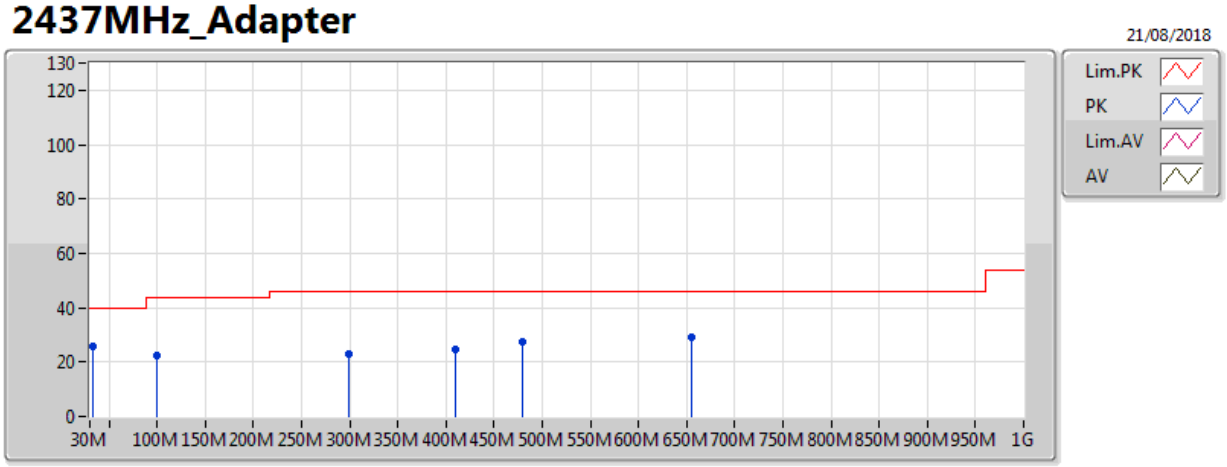
2437MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	37.76M	34.72	40.00	-5.28	-6.82	3	Vertical	360	1.00	-
PK	97.9M	28.07	43.50	-15.43	-9.71	3	Vertical	360	1.00	-
PK	128.94M	20.84	43.50	-22.66	-7.72	3	Vertical	360	1.00	-
PK	402.48M	24.78	46.00	-21.22	-3.28	3	Vertical	360	1.00	-
PK	540.22M	28.84	46.00	-17.16	-0.27	3	Vertical	360	1.00	-
PK	662.44M	28.77	46.00	-17.23	0.23	3	Vertical	360	1.00	-

802.11n HT20_Nss1,(MCS0)_1TX

2437MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	33.88M	25.57	40.00	-14.43	-4.73	3	Horizontal	0	1.00	-
PK	99.84M	22.61	43.50	-20.89	-9.33	3	Horizontal	0	1.00	-
PK	299.66M	22.93	46.00	-23.07	-5.79	3	Horizontal	0	1.00	-
PK	410.24M	24.74	46.00	-21.26	-2.92	3	Horizontal	0	1.00	-
PK	480.08M	27.32	46.00	-18.68	-1.71	3	Horizontal	0	1.00	-
PK	654.68M	28.97	46.00	-17.03	0.27	3	Horizontal	0	1.00	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.487G	46.97	54.00	-7.03	30.71	3	Horizontal	12	1.37	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.483502G	49.66	54.00	-4.34	30.69	3	Vertical	341	2.90	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.483502G	48.77	54.00	-5.23	30.69	3	Horizontal	206	1.55	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3896G	45.61	54.00	-8.39	30.38	3	Vertical	189	2.83	-
2412MHz	Pass	AV	2.4112G	91.24	Inf	-Inf	30.45	3	Vertical	189	2.83	-
2412MHz	Pass	PK	2.3744G	57.97	74.00	-16.03	30.33	3	Vertical	189	2.83	-
2412MHz	Pass	PK	2.4112G	93.29	Inf	-Inf	30.45	3	Vertical	189	2.83	-
2412MHz	Pass	AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	295	1.01	-
2412MHz	Pass	AV	2.4128G	99.28	Inf	-Inf	30.45	3	Horizontal	295	1.01	-
2412MHz	Pass	PK	2.3742G	57.48	74.00	-16.52	30.33	3	Horizontal	295	1.01	-
2412MHz	Pass	PK	2.4128G	101.30	Inf	-Inf	30.45	3	Horizontal	295	1.01	-
2412MHz	Pass	AV	4.82394G	37.83	54.00	-16.17	5.83	3	Vertical	125	1.05	-
2412MHz	Pass	PK	4.82382G	45.26	74.00	-28.74	5.83	3	Vertical	125	1.05	-
2412MHz	Pass	AV	4.824G	40.53	54.00	-13.47	5.83	3	Horizontal	245	1.23	-
2412MHz	Pass	PK	4.8241G	46.86	74.00	-27.14	5.83	3	Horizontal	245	1.23	-
2437MHz	Pass	AV	2.3898G	45.61	54.00	-8.39	30.38	3	Vertical	341	2.95	-
2437MHz	Pass	AV	2.4362G	99.57	Inf	-Inf	30.53	3	Vertical	341	2.95	-
2437MHz	Pass	AV	2.4982G	46.72	54.00	-7.28	30.75	3	Vertical	341	2.95	-
2437MHz	Pass	PK	2.387G	57.41	74.00	-16.59	30.37	3	Vertical	341	2.95	-
2437MHz	Pass	PK	2.4362G	101.64	Inf	-Inf	30.53	3	Vertical	341	2.95	-
2437MHz	Pass	PK	2.487G	58.44	74.00	-15.56	30.71	3	Vertical	341	2.95	-
2437MHz	Pass	AV	2.3886G	45.88	54.00	-8.12	30.37	3	Horizontal	12	1.37	-
2437MHz	Pass	AV	2.4362G	100.03	Inf	-Inf	30.53	3	Horizontal	12	1.37	-
2437MHz	Pass	AV	2.487G	46.97	54.00	-7.03	30.71	3	Horizontal	12	1.37	-
2437MHz	Pass	PK	2.3666G	57.31	74.00	-16.69	30.30	3	Horizontal	12	1.37	-
2437MHz	Pass	PK	2.4362G	102.10	Inf	-Inf	30.53	3	Horizontal	12	1.37	-
2437MHz	Pass	PK	2.4898G	58.52	74.00	-15.48	30.72	3	Horizontal	12	1.37	-
2437MHz	Pass	AV	4.85948G	32.82	54.00	-21.18	5.90	3	Vertical	291	1.50	-
2437MHz	Pass	AV	7.32264G	39.62	54.00	-14.38	11.15	3	Vertical	115	1.50	-
2437MHz	Pass	PK	4.86878G	45.39	74.00	-28.61	5.92	3	Vertical	291	1.50	-
2437MHz	Pass	PK	7.31046G	52.39	74.00	-21.61	11.12	3	Vertical	115	1.50	-
2437MHz	Pass	AV	4.87394G	33.66	54.00	-20.34	5.94	3	Horizontal	248	1.24	-
2437MHz	Pass	AV	7.32132G	39.29	54.00	-14.71	11.15	3	Horizontal	0	1.50	-
2437MHz	Pass	PK	4.86002G	45.29	74.00	-28.71	5.91	3	Horizontal	248	1.24	-
2437MHz	Pass	PK	7.31748G	52.15	74.00	-21.85	11.14	3	Horizontal	0	1.50	-
2462MHz	Pass	AV	2.4628G	90.16	Inf	-Inf	30.62	3	Vertical	188	2.70	-
2462MHz	Pass	AV	2.498G	46.72	54.00	-7.28	30.75	3	Vertical	188	2.70	-
2462MHz	Pass	PK	2.463G	92.24	Inf	-Inf	30.62	3	Vertical	188	2.70	-
2462MHz	Pass	PK	2.486G	58.51	74.00	-15.49	30.71	3	Vertical	188	2.70	-
2462MHz	Pass	AV	2.4628G	99.39	Inf	-Inf	30.62	3	Horizontal	206	1.54	-
2462MHz	Pass	AV	2.4982G	46.72	54.00	-7.28	30.75	3	Horizontal	206	1.54	-
2462MHz	Pass	PK	2.4628G	101.38	Inf	-Inf	30.62	3	Horizontal	206	1.54	-
2462MHz	Pass	PK	2.4872G	58.80	74.00	-15.20	30.71	3	Horizontal	206	1.54	-
2462MHz	Pass	AV	4.91584G	33.09	54.00	-20.91	6.02	3	Vertical	216	1.50	-
2462MHz	Pass	AV	7.37172G	39.25	54.00	-14.75	11.29	3	Vertical	0	1.50	-
2462MHz	Pass	PK	4.91008G	45.36	74.00	-28.64	6.01	3	Vertical	216	1.50	-
2462MHz	Pass	PK	7.37172G	51.72	74.00	-22.28	11.29	3	Vertical	0	1.50	-
2462MHz	Pass	AV	4.924G	37.30	54.00	-16.70	6.04	3	Horizontal	34	1.26	-
2462MHz	Pass	AV	7.37646G	39.12	54.00	-14.88	11.30	3	Horizontal	94	1.50	-
2462MHz	Pass	PK	4.924G	45.97	74.00	-28.03	6.04	3	Horizontal	34	1.26	-

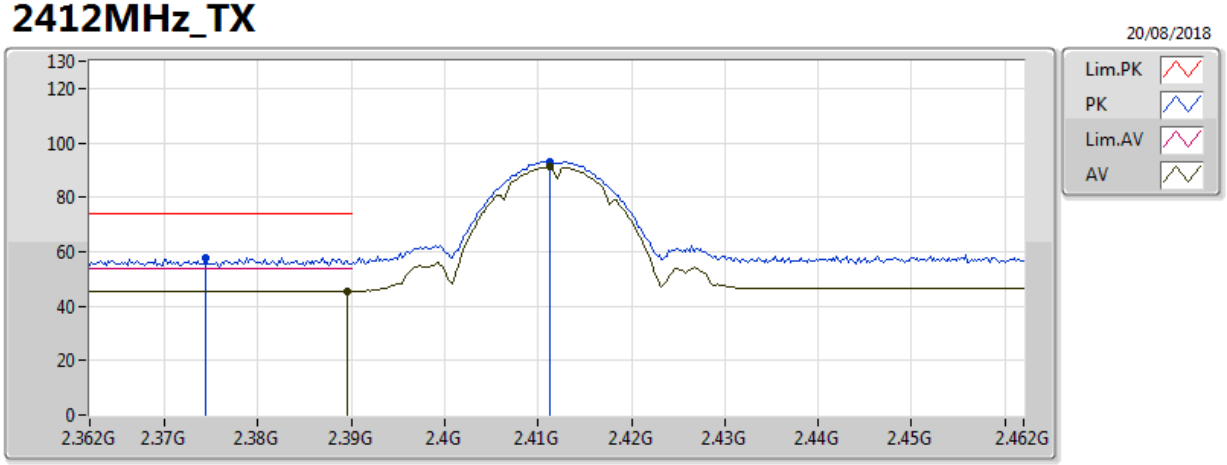
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2462MHz	Pass	PK	7.37838G	51.09	74.00	-22.91	11.31	3	Horizontal	94	1.50	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3898G	47.72	54.00	-6.28	30.38	3	Vertical	341	2.99	-
2412MHz	Pass	AV	2.413G	92.40	Inf	-Inf	30.45	3	Vertical	341	2.99	-
2412MHz	Pass	PK	2.3882G	60.26	74.00	-13.74	30.37	3	Vertical	341	2.99	-
2412MHz	Pass	PK	2.4138G	101.08	Inf	-Inf	30.46	3	Vertical	341	2.99	-
2412MHz	Pass	AV	2.3898G	47.72	54.00	-6.28	30.38	3	Horizontal	207	1.57	-
2412MHz	Pass	AV	2.413G	92.04	Inf	-Inf	30.45	3	Horizontal	207	1.57	-
2412MHz	Pass	PK	2.3896G	61.64	74.00	-12.36	30.38	3	Horizontal	207	1.57	-
2412MHz	Pass	PK	2.418G	100.50	Inf	-Inf	30.47	3	Horizontal	207	1.57	-
2412MHz	Pass	AV	4.81782G	33.54	54.00	-20.46	5.82	3	Vertical	133	1.50	-
2412MHz	Pass	PK	4.81272G	44.88	74.00	-29.12	5.81	3	Vertical	133	1.50	-
2412MHz	Pass	AV	4.81362G	33.38	54.00	-20.62	5.81	3	Horizontal	322	1.50	-
2412MHz	Pass	PK	4.8387G	45.43	74.00	-28.57	5.86	3	Horizontal	322	1.50	-
2437MHz	Pass	AV	2.339G	46.41	54.00	-7.59	30.21	3	Vertical	343	2.99	-
2437MHz	Pass	AV	2.4302G	94.48	Inf	-Inf	30.51	3	Vertical	343	2.99	-
2437MHz	Pass	AV	2.4838G	47.50	54.00	-6.50	30.69	3	Vertical	343	2.99	-
2437MHz	Pass	PK	2.3398G	57.47	74.00	-16.53	30.22	3	Vertical	343	2.99	-
2437MHz	Pass	PK	2.4306G	102.86	Inf	-Inf	30.51	3	Vertical	343	2.99	-
2437MHz	Pass	PK	2.4986G	58.26	74.00	-15.74	30.75	3	Vertical	343	2.99	-
2437MHz	Pass	AV	2.3854G	46.39	54.00	-7.61	30.36	3	Horizontal	9	1.60	-
2437MHz	Pass	AV	2.4298G	94.21	Inf	-Inf	30.51	3	Horizontal	9	1.60	-
2437MHz	Pass	AV	2.4914G	47.54	54.00	-6.46	30.72	3	Horizontal	9	1.60	-
2437MHz	Pass	PK	2.3838G	57.66	74.00	-16.34	30.36	3	Horizontal	9	1.60	-
2437MHz	Pass	PK	2.433G	102.35	Inf	-Inf	30.52	3	Horizontal	9	1.60	-
2437MHz	Pass	PK	2.495G	59.04	74.00	-14.96	30.74	3	Horizontal	9	1.60	-
2437MHz	Pass	AV	4.86746G	33.40	54.00	-20.60	5.92	3	Vertical	247	1.55	-
2437MHz	Pass	AV	7.31388G	40.08	54.00	-13.92	11.13	3	Vertical	87	1.50	-
2437MHz	Pass	PK	4.87064G	45.34	74.00	-28.66	5.93	3	Vertical	247	1.55	-
2437MHz	Pass	PK	7.32438G	51.67	74.00	-22.33	11.16	3	Vertical	87	1.50	-
2437MHz	Pass	AV	4.8872G	33.42	54.00	-20.58	5.96	3	Horizontal	346	1.50	-
2437MHz	Pass	AV	7.32306G	40.03	54.00	-13.97	11.15	3	Horizontal	88	1.46	-
2437MHz	Pass	PK	4.86398G	44.92	74.00	-29.08	5.91	3	Horizontal	346	1.50	-
2437MHz	Pass	PK	7.31892G	51.90	74.00	-22.10	11.14	3	Horizontal	88	1.46	-
2462MHz	Pass	AV	2.463G	93.86	Inf	-Inf	30.62	3	Vertical	341	2.90	-
2462MHz	Pass	AV	2.483502G	49.66	54.00	-4.34	30.69	3	Vertical	341	2.90	-
2462MHz	Pass	PK	2.4638G	101.81	Inf	-Inf	30.63	3	Vertical	341	2.90	-
2462MHz	Pass	PK	2.4852G	62.38	74.00	-11.62	30.70	3	Vertical	341	2.90	-
2462MHz	Pass	AV	2.4632G	93.97	Inf	-Inf	30.62	3	Horizontal	204	1.55	-
2462MHz	Pass	AV	2.483502G	49.00	54.00	-5.00	30.69	3	Horizontal	204	1.55	-
2462MHz	Pass	PK	2.4632G	102.17	Inf	-Inf	30.62	3	Horizontal	204	1.55	-
2462MHz	Pass	PK	2.483502G	63.17	74.00	-10.83	30.69	3	Horizontal	204	1.55	-
2462MHz	Pass	AV	4.9114G	33.90	54.00	-20.10	6.01	3	Vertical	324	1.50	-
2462MHz	Pass	AV	7.3725G	40.22	54.00	-13.78	11.29	3	Vertical	360	1.50	-
2462MHz	Pass	PK	4.93726G	46.05	74.00	-27.95	6.07	3	Vertical	324	1.50	-
2462MHz	Pass	PK	7.37826G	51.75	74.00	-22.25	11.31	3	Vertical	360	1.50	-
2462MHz	Pass	AV	4.909G	33.75	54.00	-20.25	6.01	3	Horizontal	236	1.50	-
2462MHz	Pass	AV	7.37118G	40.07	54.00	-13.93	11.29	3	Horizontal	320	1.50	-
2462MHz	Pass	PK	4.93876G	45.37	74.00	-28.63	6.07	3	Horizontal	236	1.50	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2462MHz	Pass	PK	7.3884G	52.45	74.00	-21.55	11.34	3	Horizontal	320	1.50	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.389998G	46.46	54.00	-7.54	30.38	3	Vertical	179	3.02	-
2412MHz	Pass	AV	2.4112G	81.86	Inf	-Inf	30.45	3	Vertical	179	3.02	-
2412MHz	Pass	PK	2.3896G	58.01	74.00	-15.99	30.38	3	Vertical	179	3.02	-
2412MHz	Pass	PK	2.4118G	90.30	Inf	-Inf	30.45	3	Vertical	179	3.02	-
2412MHz	Pass	AV	2.389998G	47.48	54.00	-6.52	30.38	3	Horizontal	206	1.58	-
2412MHz	Pass	AV	2.413G	90.93	Inf	-Inf	30.45	3	Horizontal	206	1.58	-
2412MHz	Pass	PK	2.3896G	60.69	74.00	-13.31	30.38	3	Horizontal	206	1.58	-
2412MHz	Pass	PK	2.4132G	99.43	Inf	-Inf	30.45	3	Horizontal	206	1.58	-
2412MHz	Pass	AV	4.81734G	33.44	54.00	-20.56	5.82	3	Vertical	258	2.22	-
2412MHz	Pass	PK	4.8315G	45.29	74.00	-28.71	5.85	3	Vertical	258	2.22	-
2412MHz	Pass	AV	4.81224G	33.40	54.00	-20.60	5.81	3	Horizontal	145	1.50	-
2412MHz	Pass	PK	4.83168G	45.71	74.00	-28.29	5.85	3	Horizontal	145	1.50	-
2437MHz	Pass	AV	2.3898G	46.19	54.00	-7.81	30.38	3	Vertical	337	2.92	-
2437MHz	Pass	AV	2.4302G	92.94	Inf	-Inf	30.51	3	Vertical	337	2.92	-
2437MHz	Pass	AV	2.4974G	47.56	54.00	-6.44	30.74	3	Vertical	337	2.92	-
2437MHz	Pass	PK	2.3574G	57.65	74.00	-16.35	30.27	3	Vertical	337	2.92	-
2437MHz	Pass	PK	2.4326G	101.36	Inf	-Inf	30.52	3	Vertical	337	2.92	-
2437MHz	Pass	PK	2.495G	58.25	74.00	-15.75	30.74	3	Vertical	337	2.92	-
2437MHz	Pass	AV	2.353G	46.34	54.00	-7.66	30.26	3	Horizontal	0	1.11	-
2437MHz	Pass	AV	2.4298G	93.48	Inf	-Inf	30.51	3	Horizontal	0	1.11	-
2437MHz	Pass	AV	2.4982G	47.30	54.00	-6.70	30.75	3	Horizontal	0	1.11	-
2437MHz	Pass	PK	2.3794G	58.51	74.00	-15.49	30.34	3	Horizontal	0	1.11	-
2437MHz	Pass	PK	2.4314G	101.65	Inf	-Inf	30.52	3	Horizontal	0	1.11	-
2437MHz	Pass	PK	2.4918G	58.88	74.00	-15.12	30.72	3	Horizontal	0	1.11	-
2437MHz	Pass	AV	4.86206G	33.38	54.00	-20.62	5.91	3	Vertical	262	2.96	-
2437MHz	Pass	AV	7.3227G	39.95	54.00	-14.05	11.15	3	Vertical	0	1.50	-
2437MHz	Pass	PK	4.8656G	45.22	74.00	-28.78	5.92	3	Vertical	262	2.96	-
2437MHz	Pass	PK	7.32468G	51.59	74.00	-22.41	11.16	3	Vertical	0	1.50	-
2437MHz	Pass	AV	4.88726G	33.42	54.00	-20.58	5.96	3	Horizontal	360	1.50	-
2437MHz	Pass	AV	7.32168G	40.11	54.00	-13.89	11.15	3	Horizontal	360	1.50	-
2437MHz	Pass	PK	4.86044G	45.24	74.00	-28.76	5.91	3	Horizontal	360	1.50	-
2437MHz	Pass	PK	7.29882G	52.20	74.00	-21.80	11.09	3	Horizontal	360	1.50	-
2462MHz	Pass	AV	2.4628G	84.68	Inf	-Inf	30.62	3	Vertical	192	3.19	-
2462MHz	Pass	AV	2.4852G	47.52	54.00	-6.48	30.70	3	Vertical	192	3.19	-
2462MHz	Pass	PK	2.4636G	93.55	Inf	-Inf	30.63	3	Vertical	192	3.19	-
2462MHz	Pass	PK	2.4872G	58.66	74.00	-15.34	30.71	3	Vertical	192	3.19	-
2462MHz	Pass	AV	2.4632G	93.02	Inf	-Inf	30.62	3	Horizontal	206	1.55	-
2462MHz	Pass	AV	2.483502G	48.77	54.00	-5.23	30.69	3	Horizontal	206	1.55	-
2462MHz	Pass	PK	2.4634G	100.93	Inf	-Inf	30.63	3	Horizontal	206	1.55	-
2462MHz	Pass	PK	2.4842G	63.59	74.00	-10.41	30.69	3	Horizontal	206	1.55	-
2462MHz	Pass	AV	4.91398G	34.04	54.00	-19.96	6.02	3	Vertical	268	1.50	-
2462MHz	Pass	AV	7.3782G	40.16	54.00	-13.84	11.31	3	Vertical	104	1.50	-
2462MHz	Pass	PK	4.9369G	45.73	74.00	-28.27	6.07	3	Vertical	268	1.50	-
2462MHz	Pass	PK	7.37778G	52.12	74.00	-21.88	11.31	3	Vertical	104	1.50	-
2462MHz	Pass	AV	4.9372G	33.99	54.00	-20.01	6.07	3	Horizontal	360	1.50	-
2462MHz	Pass	AV	7.37232G	40.30	54.00	-13.70	11.29	3	Horizontal	306	1.50	-
2462MHz	Pass	PK	4.91434G	46.12	74.00	-27.88	6.02	3	Horizontal	360	1.50	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2462MHz	Pass	PK	7.38852G	51.92	74.00	-22.08	11.34	3	Horizontal	306	1.50	-

802.11b_Nss1,(1Mbps)_1TX

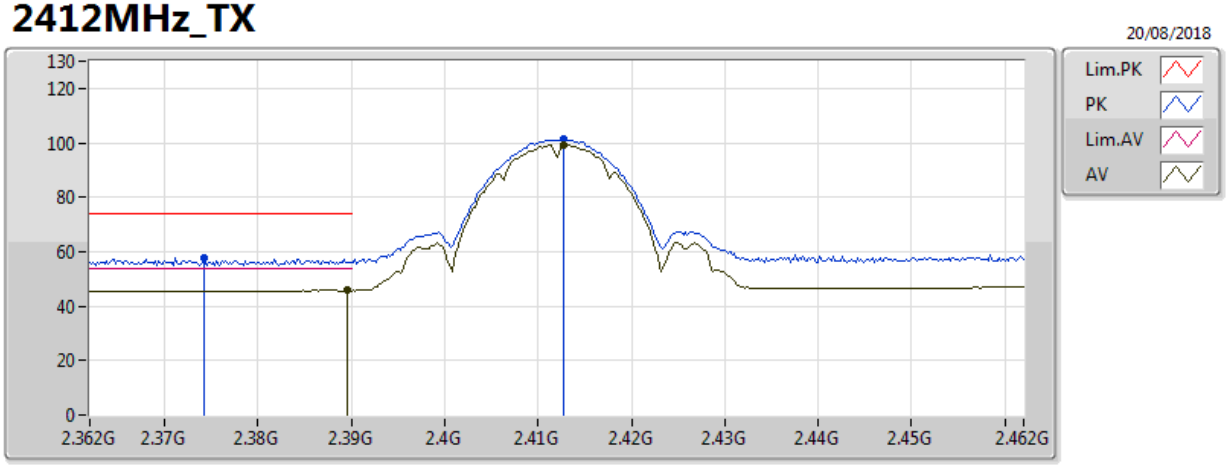
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.61	54.00	-8.39	30.38	3	Vertical	189	2.83	-
AV	2.4112G	91.24	Inf	-Inf	30.45	3	Vertical	189	2.83	-
PK	2.3744G	57.97	74.00	-16.03	30.33	3	Vertical	189	2.83	-
PK	2.4112G	93.29	Inf	-Inf	30.45	3	Vertical	189	2.83	-

802.11b_Nss1,(1Mbps)_1TX

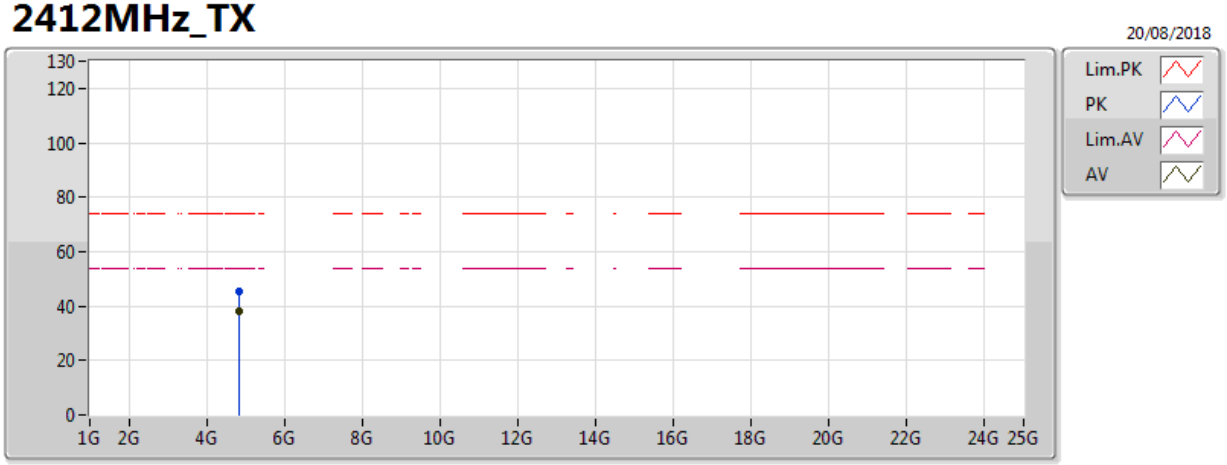
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	295	1.01	-
AV	2.4128G	99.28	Inf	-Inf	30.45	3	Horizontal	295	1.01	-
PK	2.3742G	57.48	74.00	-16.52	30.33	3	Horizontal	295	1.01	-
PK	2.4128G	101.30	Inf	-Inf	30.45	3	Horizontal	295	1.01	-

802.11b_Nss1,(1Mbps)_1TX

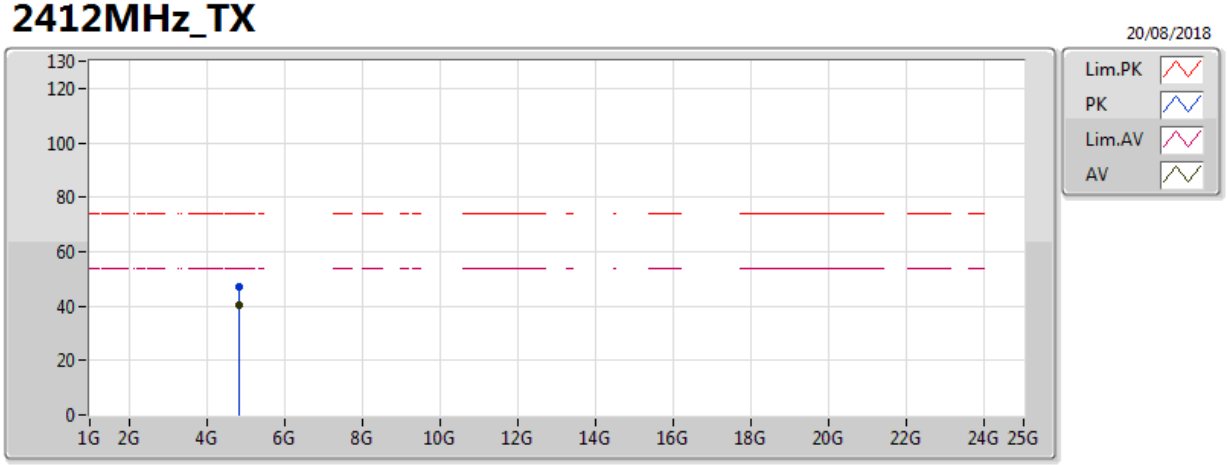
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.82394G	37.83	54.00	-16.17	5.83	3	Vertical	125	1.05	-
PK	4.82382G	45.26	74.00	-28.74	5.83	3	Vertical	125	1.05	-

802.11b_Nss1,(1Mbps)_1TX

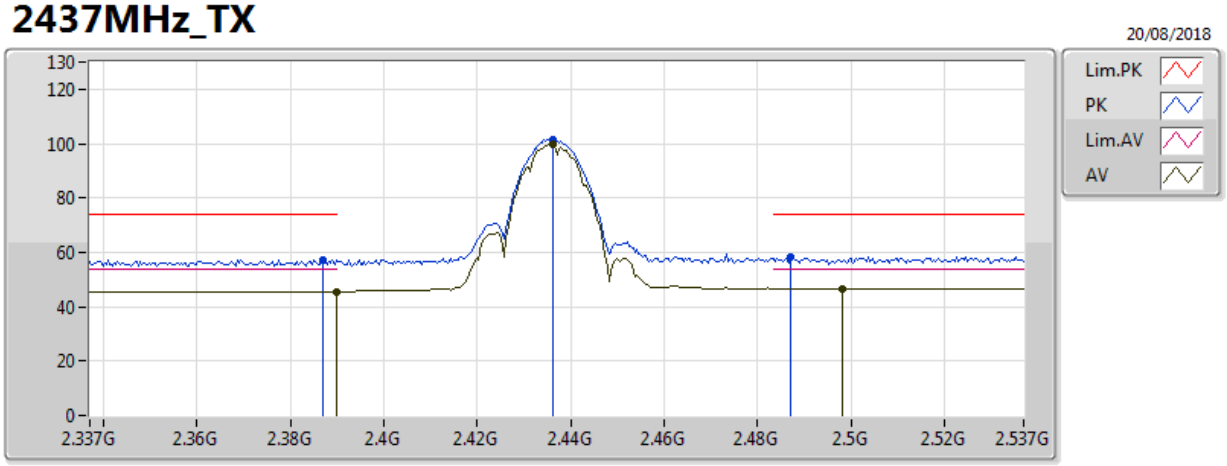
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.824G	40.53	54.00	-13.47	5.83	3	Horizontal	245	1.23	-
PK	4.8241G	46.86	74.00	-27.14	5.83	3	Horizontal	245	1.23	-

802.11b_Nss1,(1Mbps)_1TX

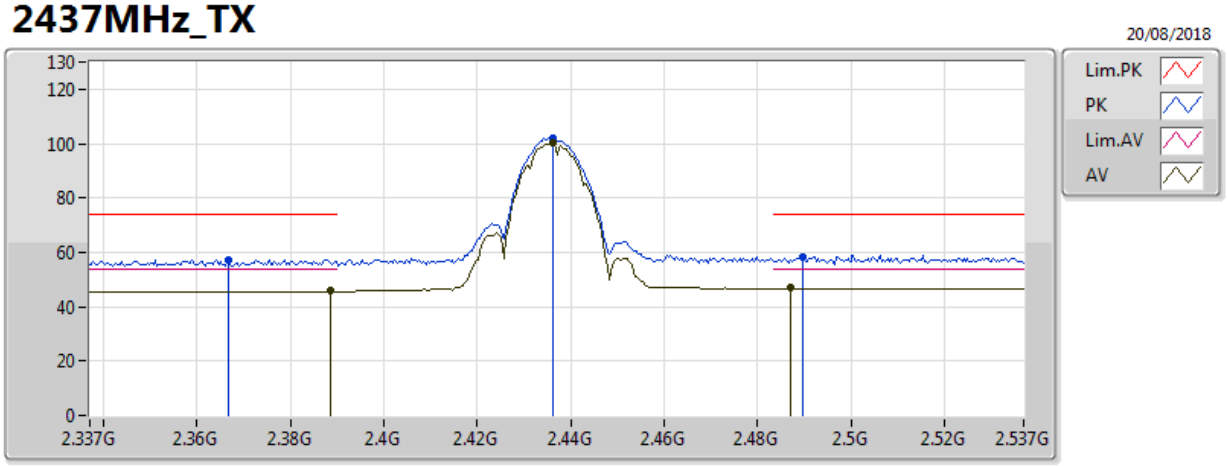
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	45.61	54.00	-8.39	30.38	3	Vertical	341	2.95	-
AV	2.4362G	99.57	Inf	-Inf	30.53	3	Vertical	341	2.95	-
AV	2.4982G	46.72	54.00	-7.28	30.75	3	Vertical	341	2.95	-
PK	2.387G	57.41	74.00	-16.59	30.37	3	Vertical	341	2.95	-
PK	2.4362G	101.64	Inf	-Inf	30.53	3	Vertical	341	2.95	-
PK	2.487G	58.44	74.00	-15.56	30.71	3	Vertical	341	2.95	-

802.11b_Nss1,(1Mbps)_1TX

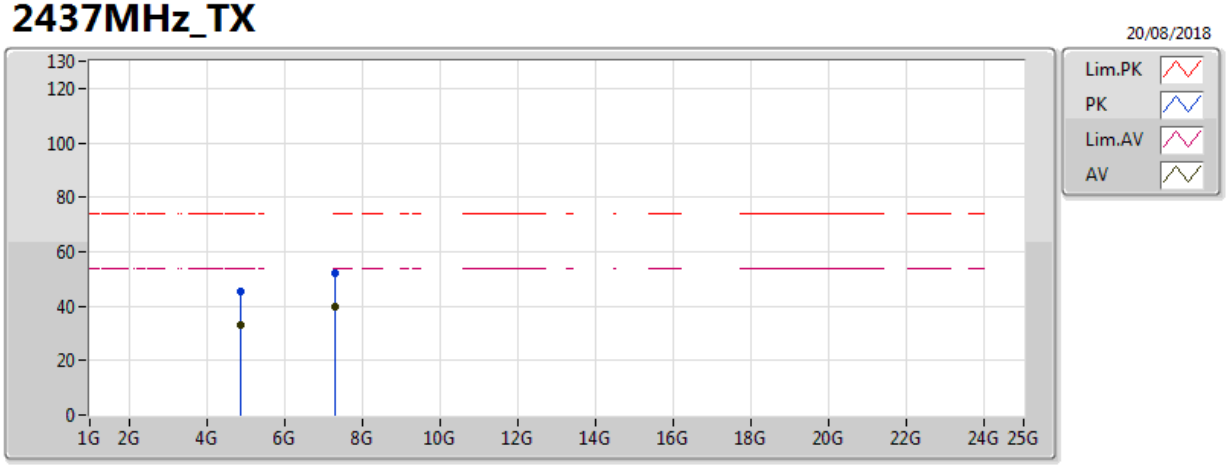
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3886G	45.88	54.00	-8.12	30.37	3	Horizontal	12	1.37	-
AV	2.4362G	100.03	Inf	-Inf	30.53	3	Horizontal	12	1.37	-
AV	2.487G	46.97	54.00	-7.03	30.71	3	Horizontal	12	1.37	-
PK	2.3666G	57.31	74.00	-16.69	30.30	3	Horizontal	12	1.37	-
PK	2.4362G	102.10	Inf	-Inf	30.53	3	Horizontal	12	1.37	-
PK	2.4898G	58.52	74.00	-15.48	30.72	3	Horizontal	12	1.37	-

802.11b_Nss1,(1Mbps)_1TX

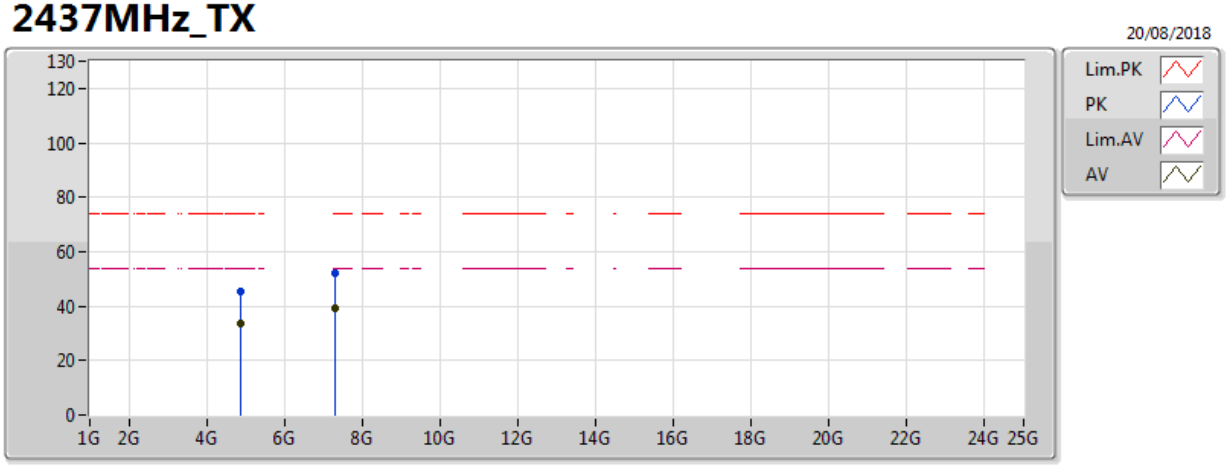
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.85948G	32.82	54.00	-21.18	5.90	3	Vertical	291	1.50	-
AV	7.32264G	39.62	54.00	-14.38	11.15	3	Vertical	115	1.50	-
PK	4.86878G	45.39	74.00	-28.61	5.92	3	Vertical	291	1.50	-
PK	7.31046G	52.39	74.00	-21.61	11.12	3	Vertical	115	1.50	-

802.11b_Nss1,(1Mbps)_1TX

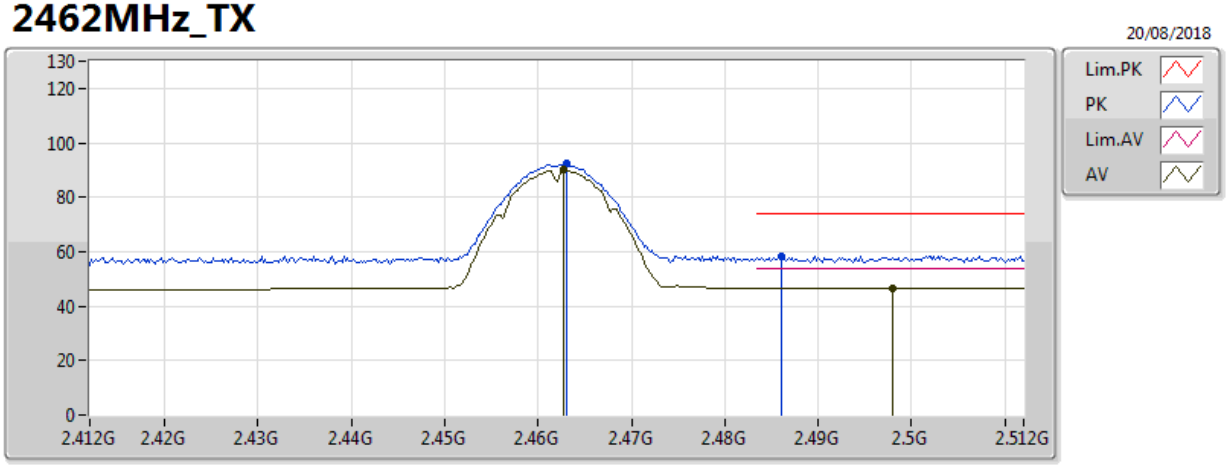
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87394G	33.66	54.00	-20.34	5.94	3	Horizontal	248	1.24	-
AV	7.32132G	39.29	54.00	-14.71	11.15	3	Horizontal	0	1.50	-
PK	4.86002G	45.29	74.00	-28.71	5.91	3	Horizontal	248	1.24	-
PK	7.31748G	52.15	74.00	-21.85	11.14	3	Horizontal	0	1.50	-

802.11b_Nss1,(1Mbps)_1TX

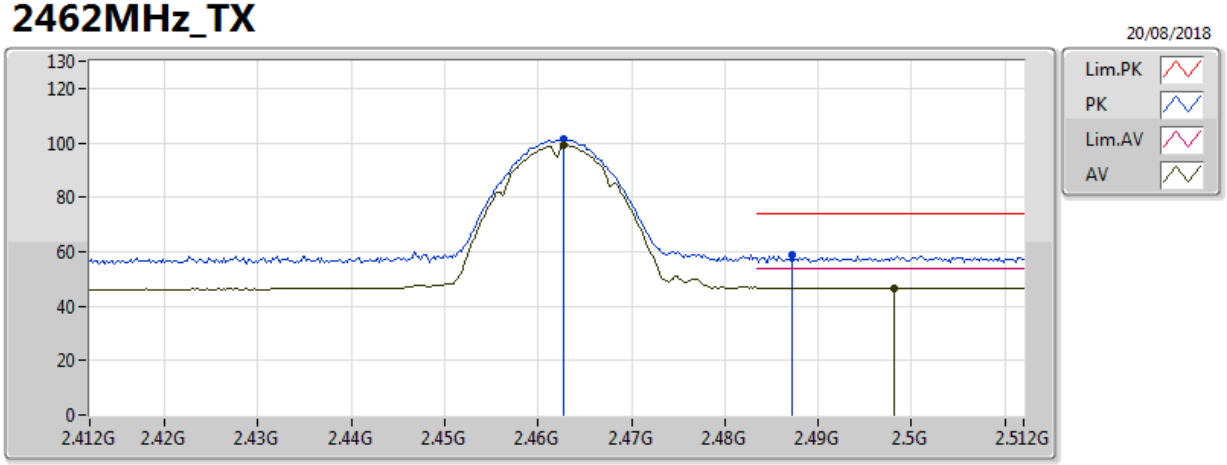
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4628G	90.16	Inf	-Inf	30.62	3	Vertical	188	2.70	-
AV	2.498G	46.72	54.00	-7.28	30.75	3	Vertical	188	2.70	-
PK	2.463G	92.24	Inf	-Inf	30.62	3	Vertical	188	2.70	-
PK	2.486G	58.51	74.00	-15.49	30.71	3	Vertical	188	2.70	-

802.11b_Nss1,(1Mbps)_1TX

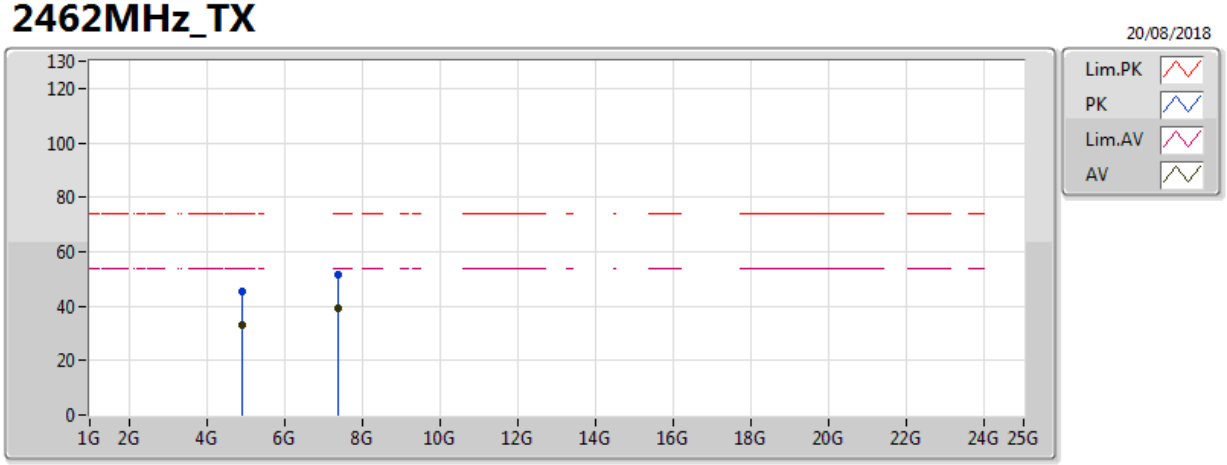
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4628G	99.39	Inf	-Inf	30.62	3	Horizontal	206	1.54	-
AV	2.4982G	46.72	54.00	-7.28	30.75	3	Horizontal	206	1.54	-
PK	2.4628G	101.38	Inf	-Inf	30.62	3	Horizontal	206	1.54	-
PK	2.4872G	58.80	74.00	-15.20	30.71	3	Horizontal	206	1.54	-

802.11b_Nss1,(1Mbps)_1TX

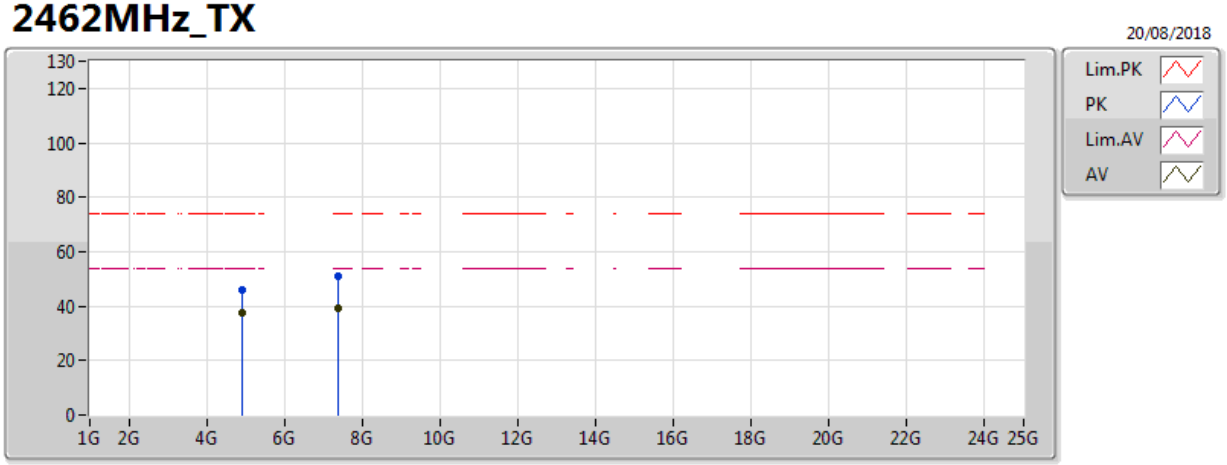
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.91584G	33.09	54.00	-20.91	6.02	3	Vertical	216	1.50	-
AV	7.37172G	39.25	54.00	-14.75	11.29	3	Vertical	0	1.50	-
PK	4.91008G	45.36	74.00	-28.64	6.01	3	Vertical	216	1.50	-
PK	7.37172G	51.72	74.00	-22.28	11.29	3	Vertical	0	1.50	-

802.11b_Nss1,(1Mbps)_1TX

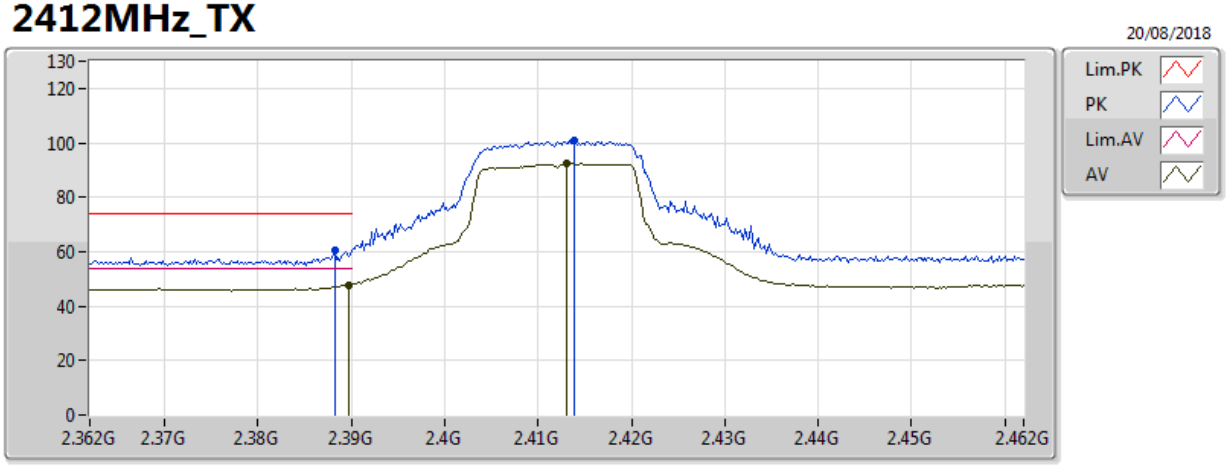
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.924G	37.30	54.00	-16.70	6.04	3	Horizontal	34	1.26	-
AV	7.37646G	39.12	54.00	-14.88	11.30	3	Horizontal	94	1.50	-
PK	4.924G	45.97	74.00	-28.03	6.04	3	Horizontal	34	1.26	-
PK	7.37838G	51.09	74.00	-22.91	11.31	3	Horizontal	94	1.50	-

802.11g_Nss1,(6Mbps)_1TX

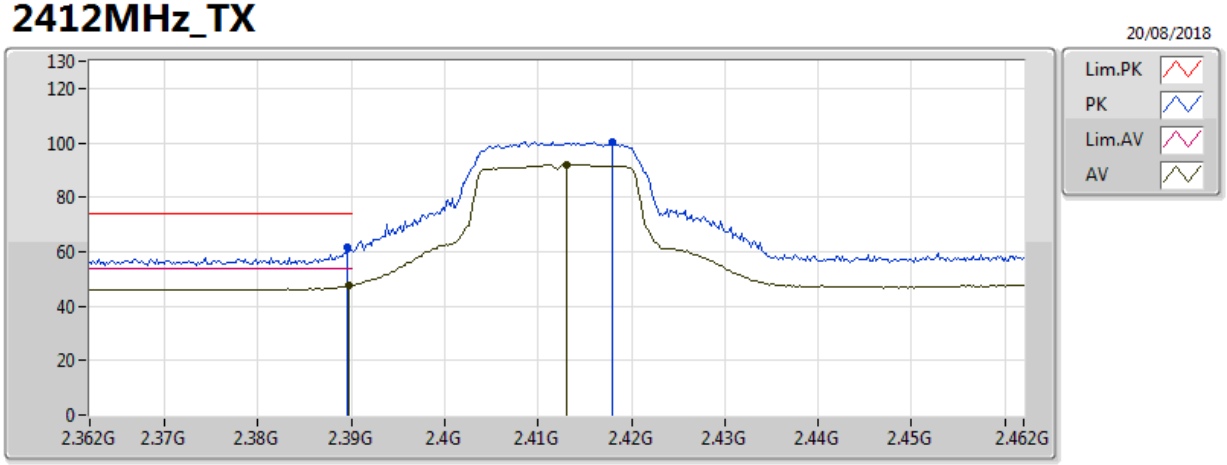
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	47.72	54.00	-6.28	30.38	3	Vertical	341	2.99	-
AV	2.413G	92.40	Inf	-Inf	30.45	3	Vertical	341	2.99	-
PK	2.3882G	60.26	74.00	-13.74	30.37	3	Vertical	341	2.99	-
PK	2.4138G	101.08	Inf	-Inf	30.46	3	Vertical	341	2.99	-

802.11g_Nss1,(6Mbps)_1TX

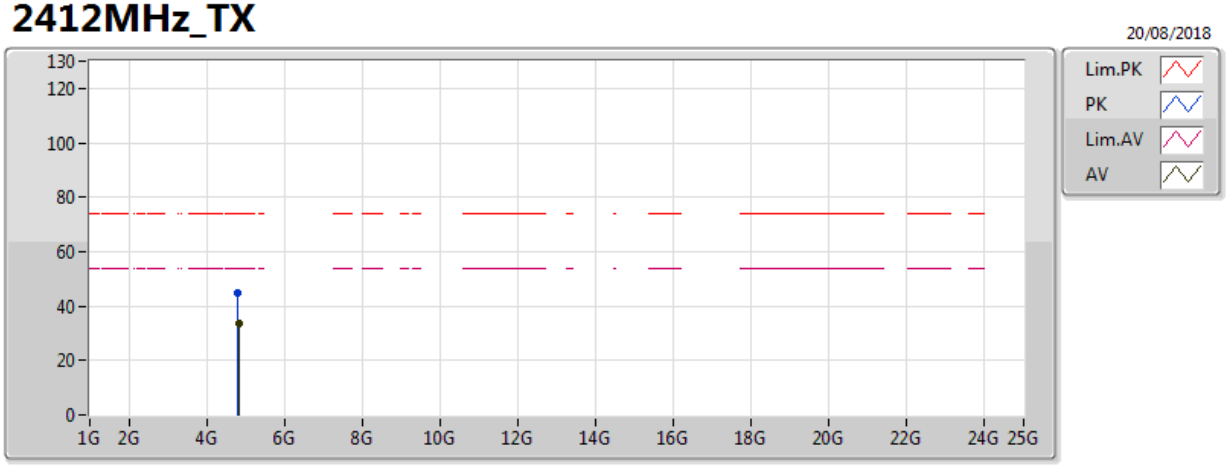
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	47.72	54.00	-6.28	30.38	3	Horizontal	207	1.57	-
AV	2.413G	92.04	Inf	-Inf	30.45	3	Horizontal	207	1.57	-
PK	2.3896G	61.64	74.00	-12.36	30.38	3	Horizontal	207	1.57	-
PK	2.418G	100.50	Inf	-Inf	30.47	3	Horizontal	207	1.57	-

802.11g_Nss1,(6Mbps)_1TX

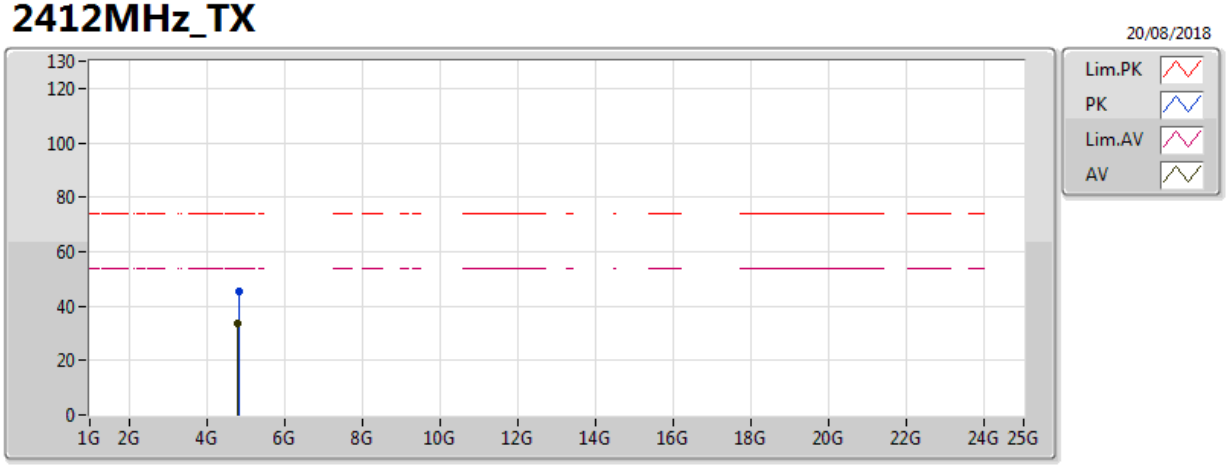
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.81782G	33.54	54.00	-20.46	5.82	3	Vertical	133	1.50	-
PK	4.81272G	44.88	74.00	-29.12	5.81	3	Vertical	133	1.50	-

802.11g_Nss1,(6Mbps)_1TX

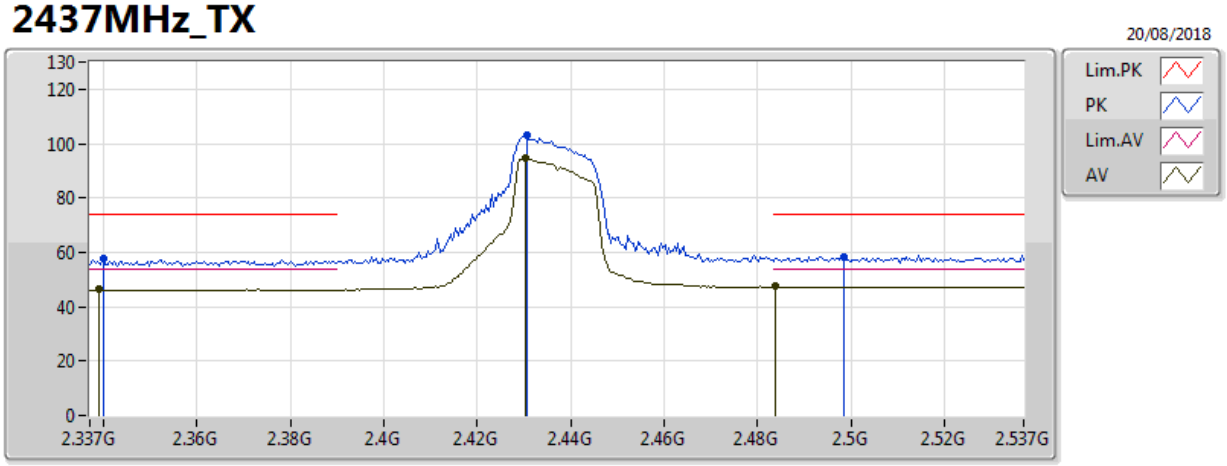
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.81362G	33.38	54.00	-20.62	5.81	3	Horizontal	322	1.50	-
PK	4.8387G	45.43	74.00	-28.57	5.86	3	Horizontal	322	1.50	-

802.11g_Nss1,(6Mbps)_1TX

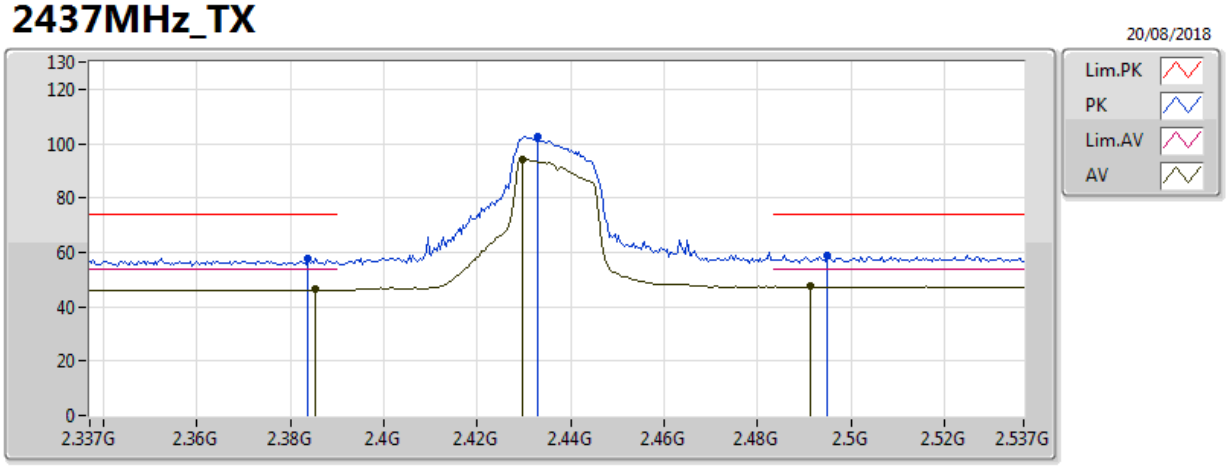
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.339G	46.41	54.00	-7.59	30.21	3	Vertical	343	2.99	-
AV	2.4302G	94.48	Inf	-Inf	30.51	3	Vertical	343	2.99	-
AV	2.4838G	47.50	54.00	-6.50	30.69	3	Vertical	343	2.99	-
PK	2.3398G	57.47	74.00	-16.53	30.22	3	Vertical	343	2.99	-
PK	2.4306G	102.86	Inf	-Inf	30.51	3	Vertical	343	2.99	-
PK	2.4986G	58.26	74.00	-15.74	30.75	3	Vertical	343	2.99	-

802.11g_Nss1,(6Mbps)_1TX

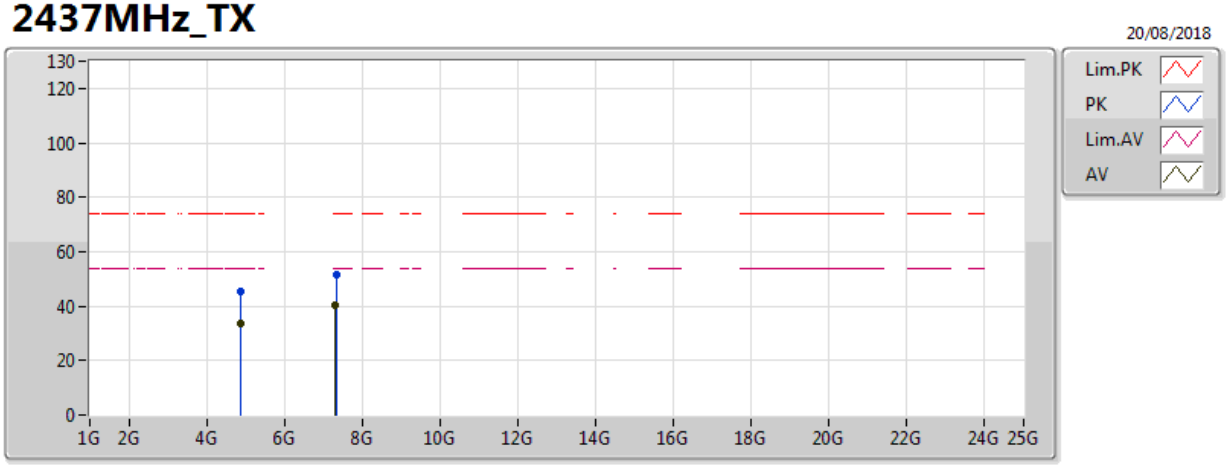
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3854G	46.39	54.00	-7.61	30.36	3	Horizontal	9	1.60	-
AV	2.4298G	94.21	Inf	-Inf	30.51	3	Horizontal	9	1.60	-
AV	2.4914G	47.54	54.00	-6.46	30.72	3	Horizontal	9	1.60	-
PK	2.3838G	57.66	74.00	-16.34	30.36	3	Horizontal	9	1.60	-
PK	2.433G	102.35	Inf	-Inf	30.52	3	Horizontal	9	1.60	-
PK	2.495G	59.04	74.00	-14.96	30.74	3	Horizontal	9	1.60	-

802.11g_Nss1,(6Mbps)_1TX

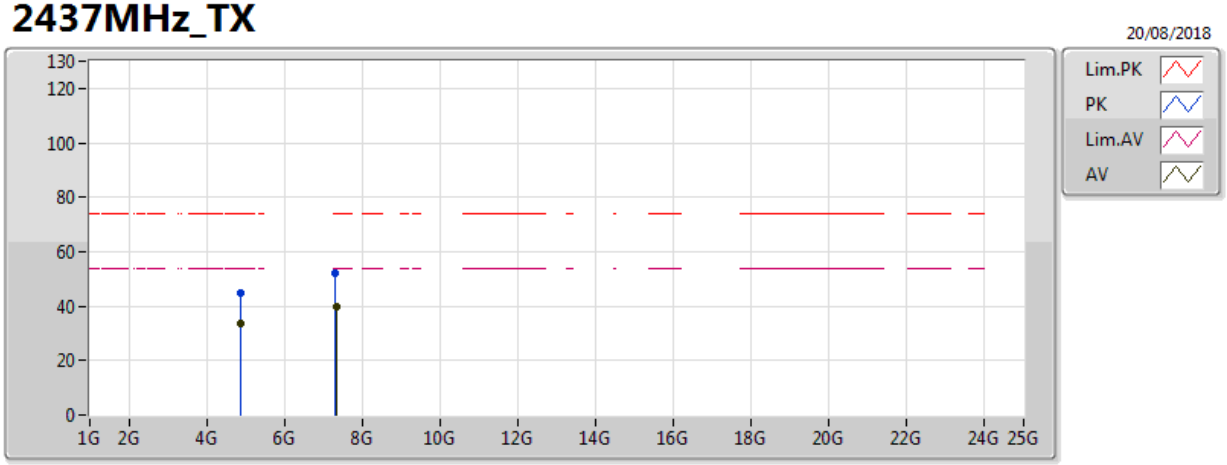
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.86746G	33.40	54.00	-20.60	5.92	3	Vertical	247	1.55	-
AV	7.31388G	40.08	54.00	-13.92	11.13	3	Vertical	87	1.50	-
PK	4.87064G	45.34	74.00	-28.66	5.93	3	Vertical	247	1.55	-
PK	7.32438G	51.67	74.00	-22.33	11.16	3	Vertical	87	1.50	-

802.11g_Nss1,(6Mbps)_1TX

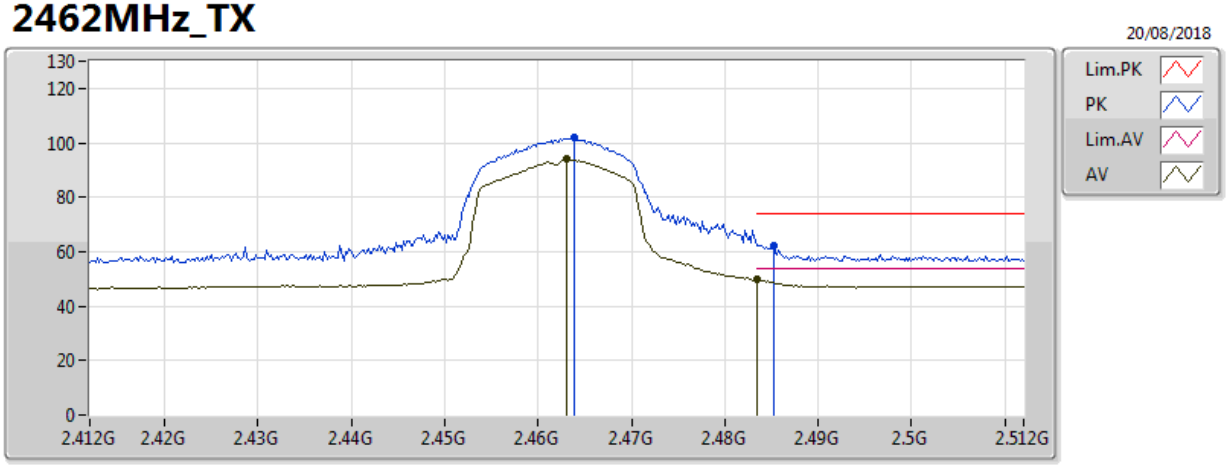
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.8872G	33.42	54.00	-20.58	5.96	3	Horizontal	346	1.50	-
AV	7.32306G	40.03	54.00	-13.97	11.15	3	Horizontal	88	1.46	-
PK	4.86398G	44.92	74.00	-29.08	5.91	3	Horizontal	346	1.50	-
PK	7.31892G	51.90	74.00	-22.10	11.14	3	Horizontal	88	1.46	-

802.11g_Nss1,(6Mbps)_1TX

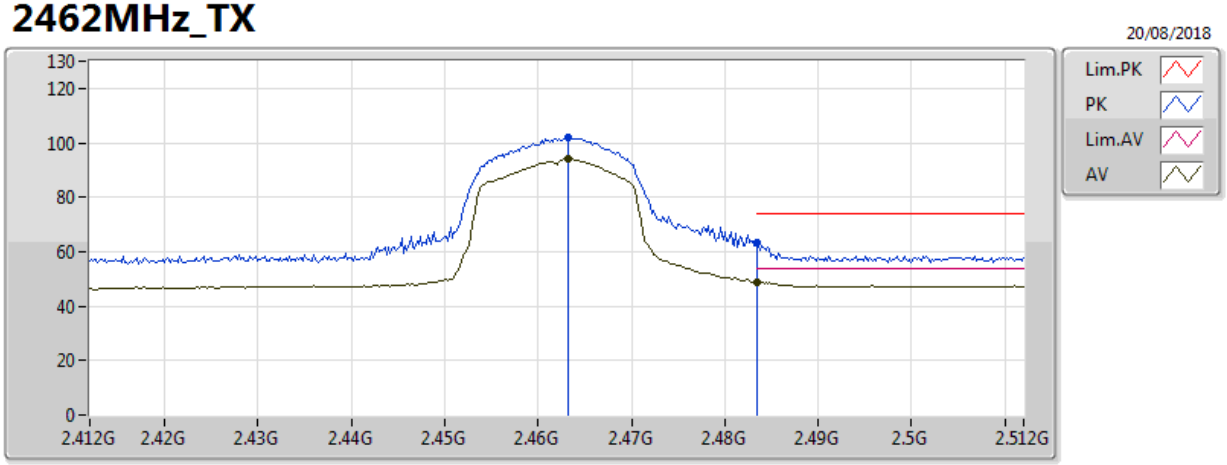
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.463G	93.86	Inf	-Inf	30.62	3	Vertical	341	2.90	-
AV	2.483502G	49.66	54.00	-4.34	30.69	3	Vertical	341	2.90	-
PK	2.4638G	101.81	Inf	-Inf	30.63	3	Vertical	341	2.90	-
PK	2.4852G	62.38	74.00	-11.62	30.70	3	Vertical	341	2.90	-

802.11g_Nss1,(6Mbps)_1TX

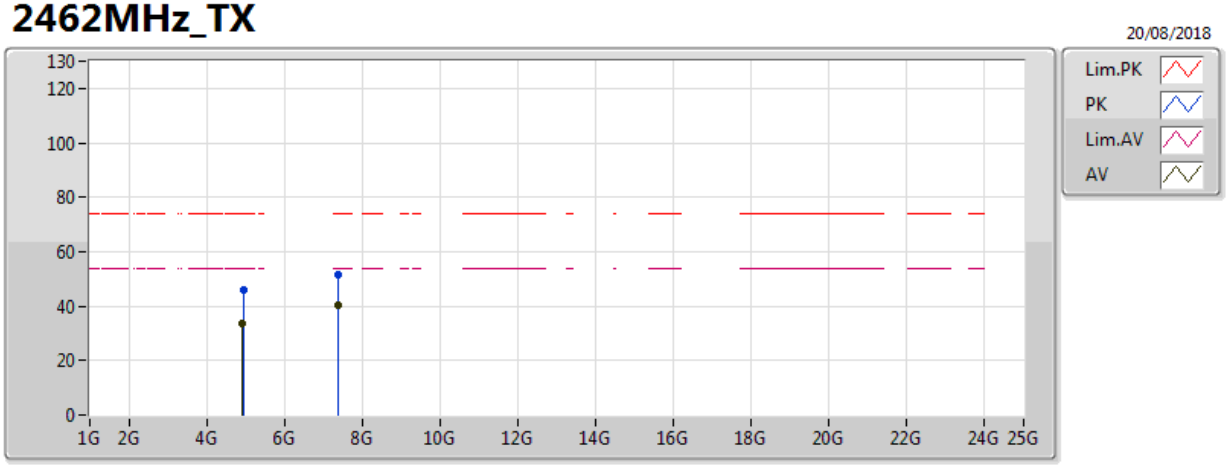
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4632G	93.97	Inf	-Inf	30.62	3	Horizontal	204	1.55	-
AV	2.483502G	49.00	54.00	-5.00	30.69	3	Horizontal	204	1.55	-
PK	2.4632G	102.17	Inf	-Inf	30.62	3	Horizontal	204	1.55	-
PK	2.483502G	63.17	74.00	-10.83	30.69	3	Horizontal	204	1.55	-

802.11g_Nss1,(6Mbps)_1TX

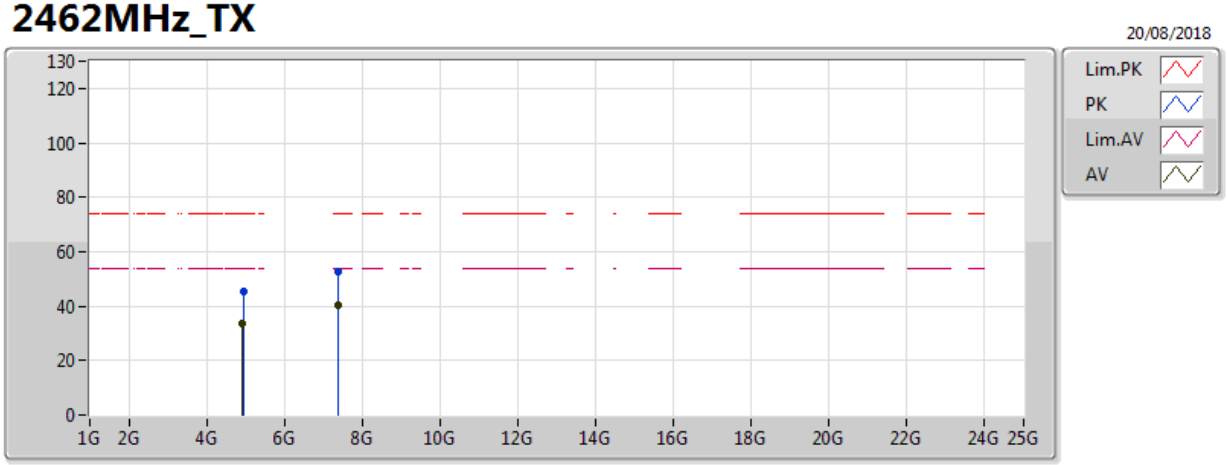
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.9114G	33.90	54.00	-20.10	6.01	3	Vertical	324	1.50	-
AV	7.3725G	40.22	54.00	-13.78	11.29	3	Vertical	360	1.50	-
PK	4.93726G	46.05	74.00	-27.95	6.07	3	Vertical	324	1.50	-
PK	7.37826G	51.75	74.00	-22.25	11.31	3	Vertical	360	1.50	-

802.11g_Nss1,(6Mbps)_1TX

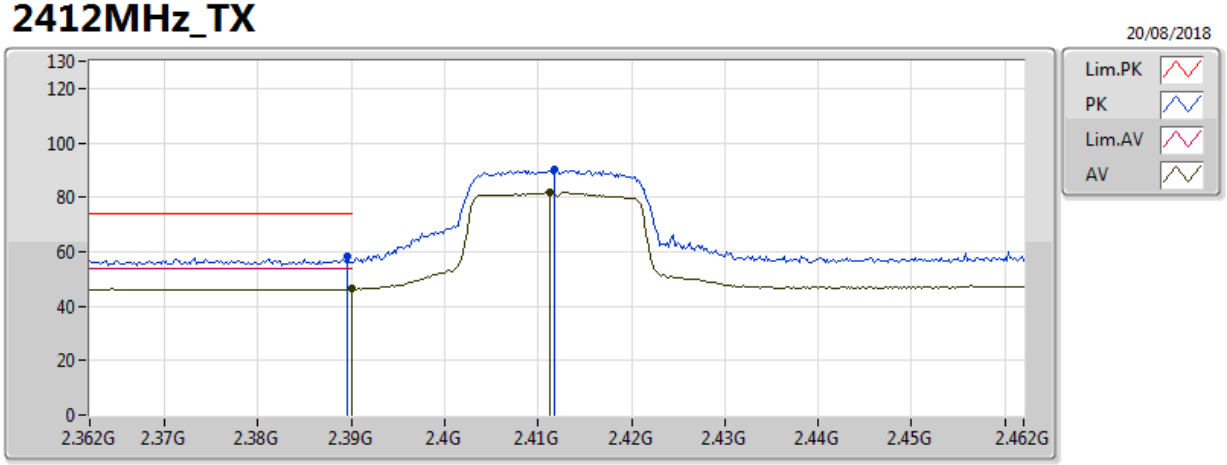
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.909G	33.75	54.00	-20.25	6.01	3	Horizontal	236	1.50	-
AV	7.37118G	40.07	54.00	-13.93	11.29	3	Horizontal	320	1.50	-
PK	4.93876G	45.37	74.00	-28.63	6.07	3	Horizontal	236	1.50	-
PK	7.3884G	52.45	74.00	-21.55	11.34	3	Horizontal	320	1.50	-

802.11n HT20_Nss1,(MCS0)_1TX

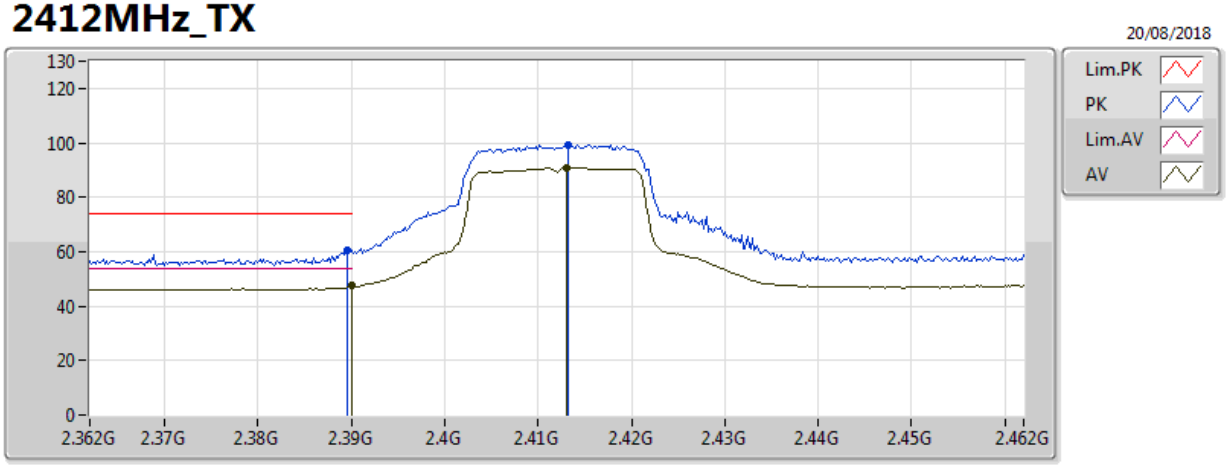
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.389998G	46.46	54.00	-7.54	30.38	3	Vertical	179	3.02	-
AV	2.4112G	81.86	Inf	-Inf	30.45	3	Vertical	179	3.02	-
PK	2.3896G	58.01	74.00	-15.99	30.38	3	Vertical	179	3.02	-
PK	2.4118G	90.30	Inf	-Inf	30.45	3	Vertical	179	3.02	-

802.11n HT20_Nss1,(MCS0)_1TX

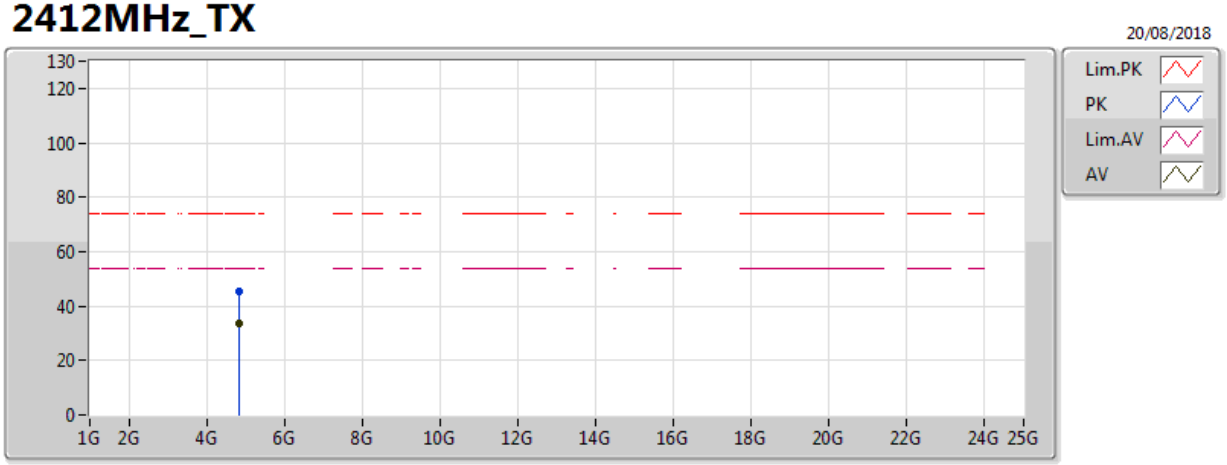
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.389998G	47.48	54.00	-6.52	30.38	3	Horizontal	206	1.58	-
AV	2.413G	90.93	Inf	-Inf	30.45	3	Horizontal	206	1.58	-
PK	2.3896G	60.69	74.00	-13.31	30.38	3	Horizontal	206	1.58	-
PK	2.4132G	99.43	Inf	-Inf	30.45	3	Horizontal	206	1.58	-

802.11n HT20_Nss1,(MCS0)_1TX

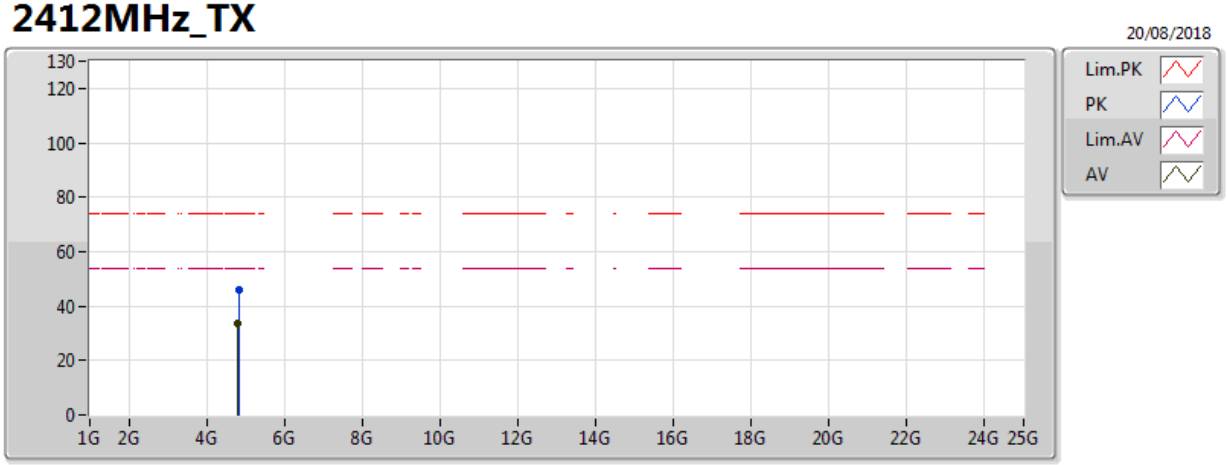
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.81734G	33.44	54.00	-20.56	5.82	3	Vertical	258	2.22	-
PK	4.8315G	45.29	74.00	-28.71	5.85	3	Vertical	258	2.22	-

802.11n HT20_Nss1,(MCS0)_1TX

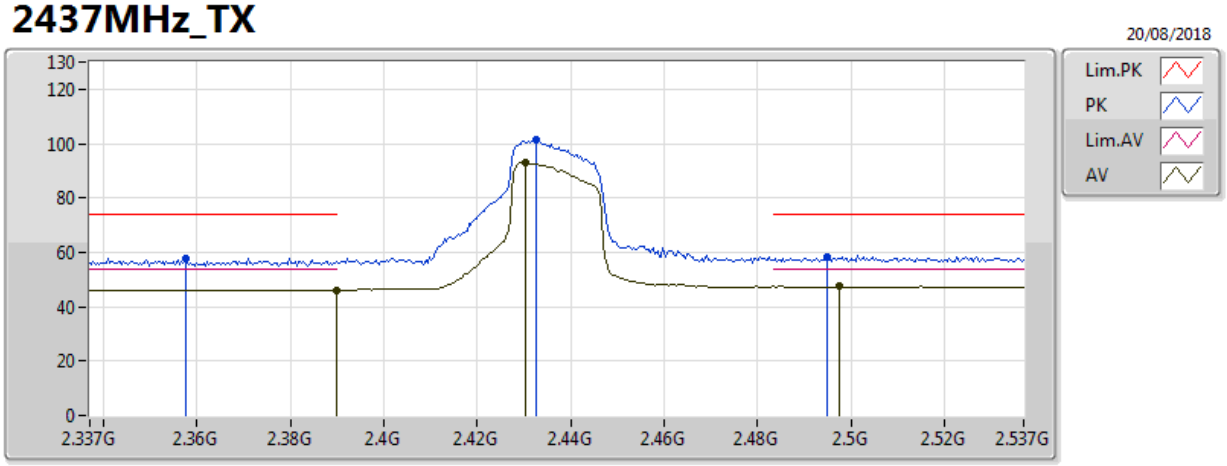
2412MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.81224G	33.40	54.00	-20.60	5.81	3	Horizontal	145	1.50	-
PK	4.83168G	45.71	74.00	-28.29	5.85	3	Horizontal	145	1.50	-

802.11n HT20_Nss1,(MCS0)_1TX

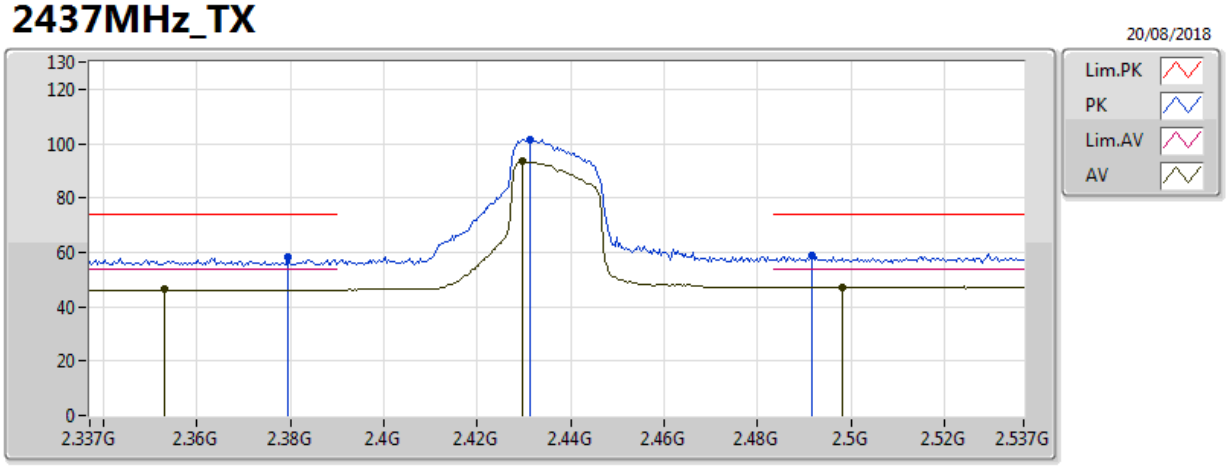
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	46.19	54.00	-7.81	30.38	3	Vertical	337	2.92	-
AV	2.4302G	92.94	Inf	-Inf	30.51	3	Vertical	337	2.92	-
AV	2.4974G	47.56	54.00	-6.44	30.74	3	Vertical	337	2.92	-
PK	2.3574G	57.65	74.00	-16.35	30.27	3	Vertical	337	2.92	-
PK	2.4326G	101.36	Inf	-Inf	30.52	3	Vertical	337	2.92	-
PK	2.495G	58.25	74.00	-15.75	30.74	3	Vertical	337	2.92	-

802.11n HT20_Nss1,(MCS0)_1TX

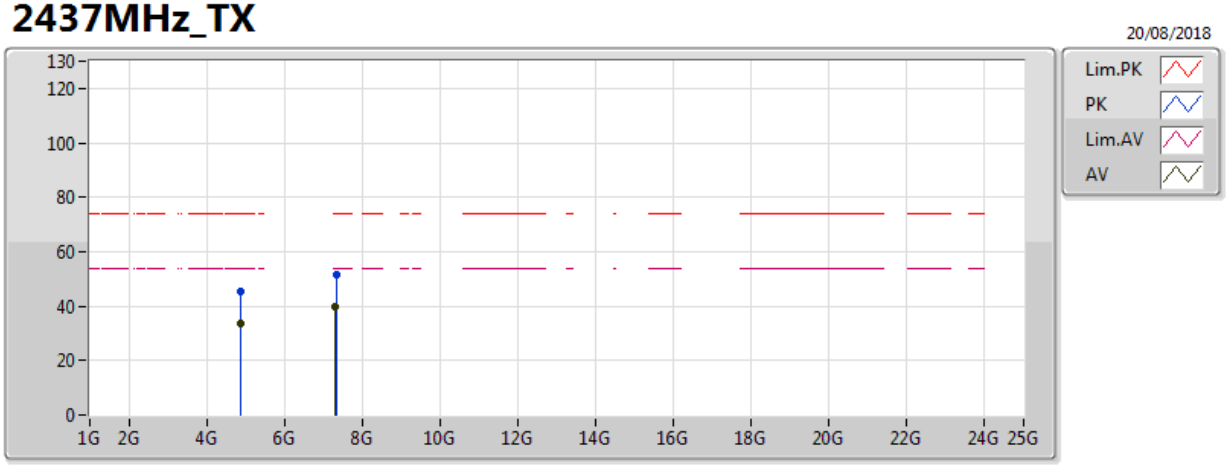
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.353G	46.34	54.00	-7.66	30.26	3	Horizontal	0	1.11	-
AV	2.4298G	93.48	Inf	-Inf	30.51	3	Horizontal	0	1.11	-
AV	2.4982G	47.30	54.00	-6.70	30.75	3	Horizontal	0	1.11	-
PK	2.3794G	58.51	74.00	-15.49	30.34	3	Horizontal	0	1.11	-
PK	2.4314G	101.65	Inf	-Inf	30.52	3	Horizontal	0	1.11	-
PK	2.4918G	58.88	74.00	-15.12	30.72	3	Horizontal	0	1.11	-

802.11n HT20_Nss1,(MCS0)_1TX

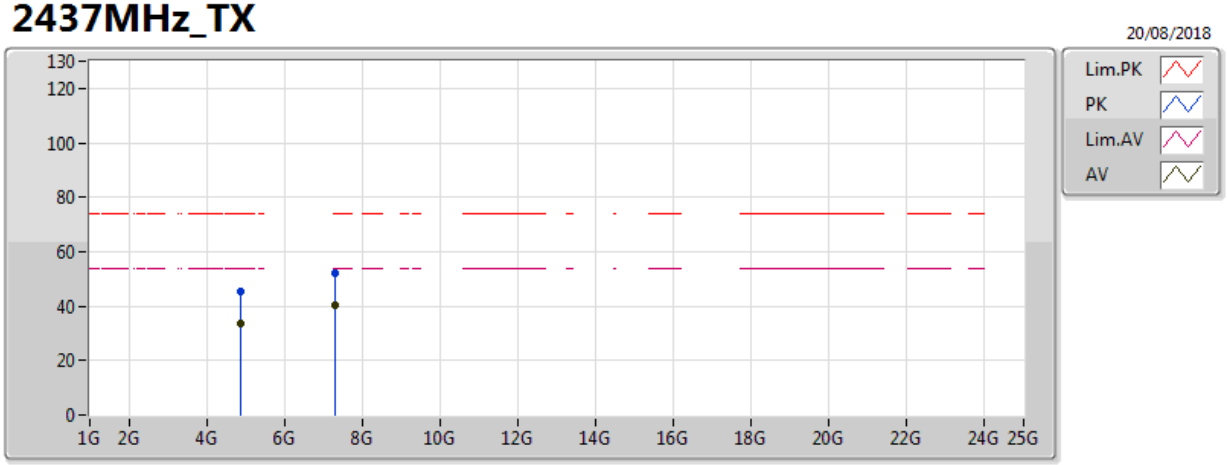
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.86206G	33.38	54.00	-20.62	5.91	3	Vertical	262	2.96	-
AV	7.3227G	39.95	54.00	-14.05	11.15	3	Vertical	0	1.50	-
PK	4.8656G	45.22	74.00	-28.78	5.92	3	Vertical	262	2.96	-
PK	7.32468G	51.59	74.00	-22.41	11.16	3	Vertical	0	1.50	-

802.11n HT20_Nss1,(MCS0)_1TX

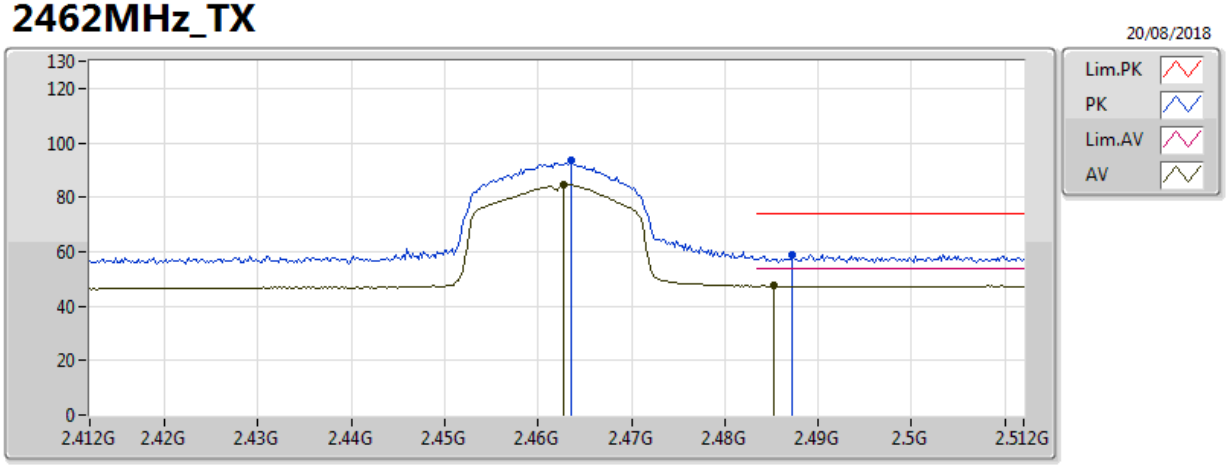
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.88726G	33.42	54.00	-20.58	5.96	3	Horizontal	360	1.50	-
AV	7.32168G	40.11	54.00	-13.89	11.15	3	Horizontal	360	1.50	-
PK	4.86044G	45.24	74.00	-28.76	5.91	3	Horizontal	360	1.50	-
PK	7.29882G	52.20	74.00	-21.80	11.09	3	Horizontal	360	1.50	-

802.11n HT20_Nss1,(MCS0)_1TX

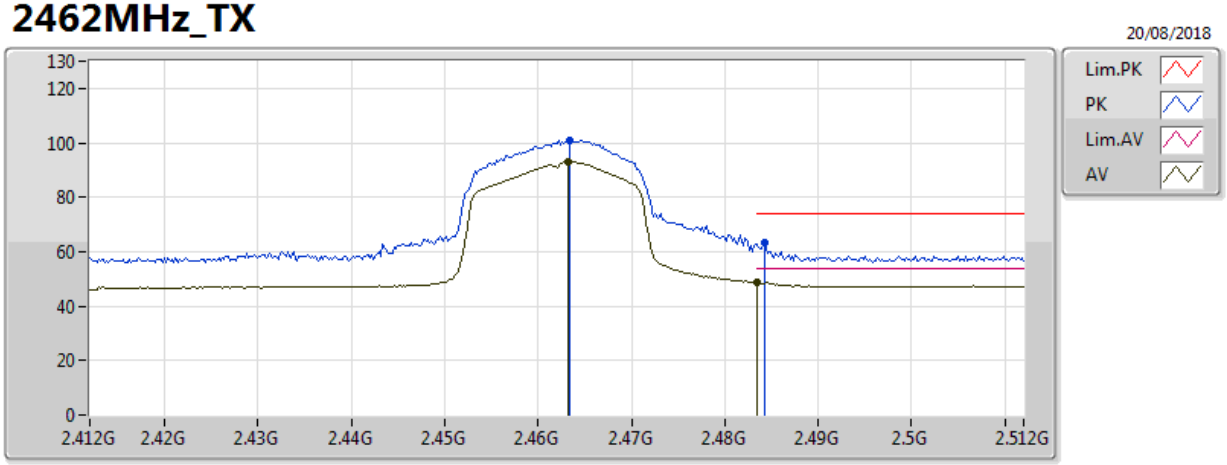
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4628G	84.68	Inf	-Inf	30.62	3	Vertical	192	3.19	-
AV	2.4852G	47.52	54.00	-6.48	30.70	3	Vertical	192	3.19	-
PK	2.4636G	93.55	Inf	-Inf	30.63	3	Vertical	192	3.19	-
PK	2.4872G	58.66	74.00	-15.34	30.71	3	Vertical	192	3.19	-

802.11n HT20_Nss1,(MCS0)_1TX

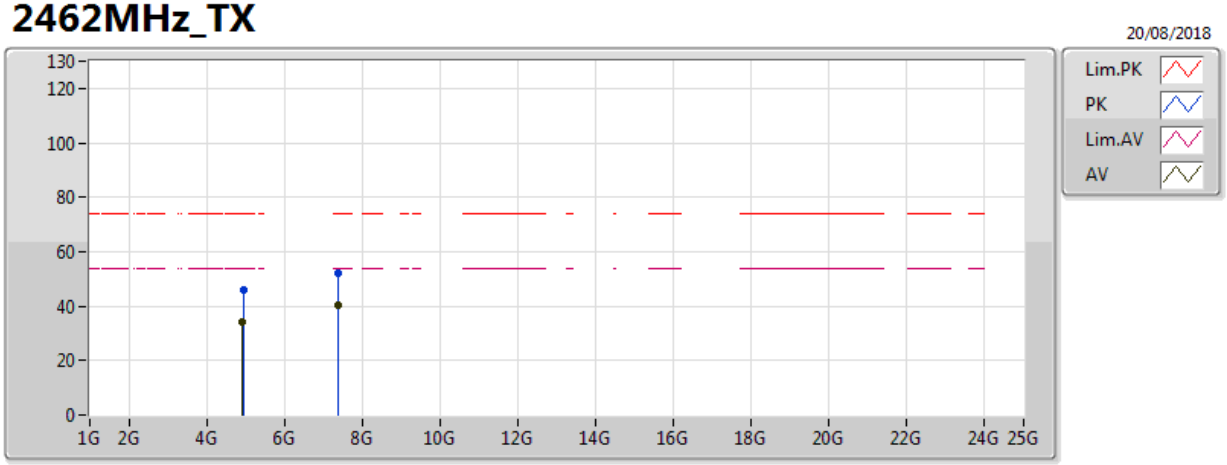
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4632G	93.02	Inf	-Inf	30.62	3	Horizontal	206	1.55	-
AV	2.483502G	48.77	54.00	-5.23	30.69	3	Horizontal	206	1.55	-
PK	2.4634G	100.93	Inf	-Inf	30.63	3	Horizontal	206	1.55	-
PK	2.4842G	63.59	74.00	-10.41	30.69	3	Horizontal	206	1.55	-

802.11n HT20_Nss1,(MCS0)_1TX

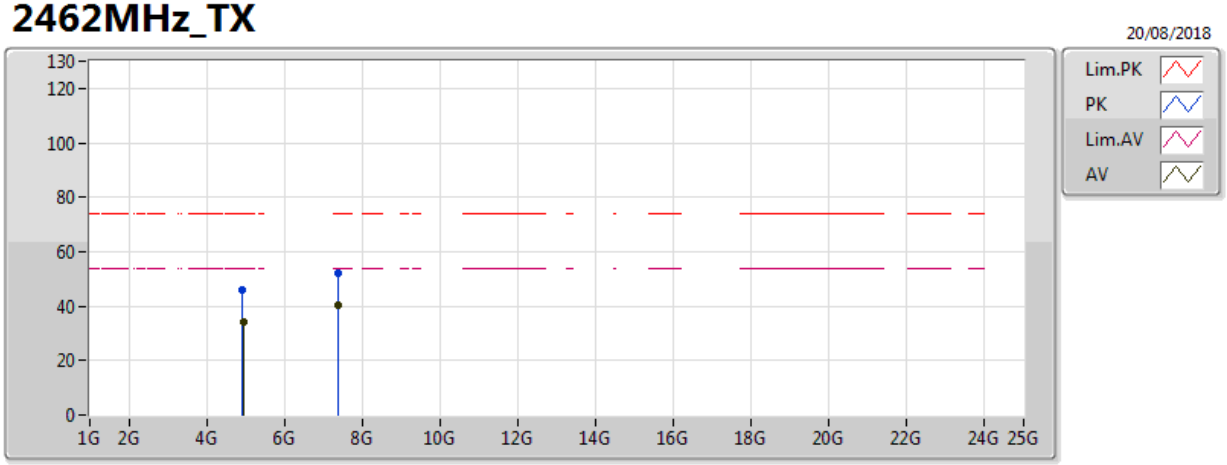
2462MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.91398G	34.04	54.00	-19.96	6.02	3	Vertical	268	1.50	-
AV	7.3782G	40.16	54.00	-13.84	11.31	3	Vertical	104	1.50	-
PK	4.9369G	45.73	74.00	-28.27	6.07	3	Vertical	268	1.50	-
PK	7.37778G	52.12	74.00	-21.88	11.31	3	Vertical	104	1.50	-

802.11n HT20_Nss1,(MCS0)_1TX

2462MHz_TX



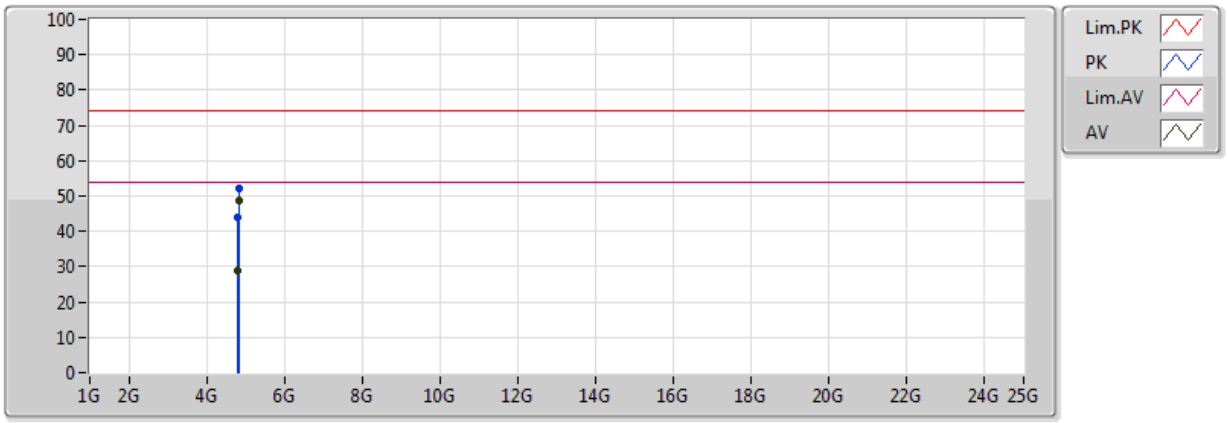
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.9372G	33.99	54.00	-20.01	6.07	3	Horizontal	360	1.50	-
AV	7.37232G	40.30	54.00	-13.70	11.29	3	Horizontal	306	1.50	-
PK	4.91434G	46.12	74.00	-27.88	6.02	3	Horizontal	360	1.50	-
PK	7.38852G	51.92	74.00	-22.08	11.34	3	Horizontal	306	1.50	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
1	Pass	AV	4.824G	48.68	54.00	-5.32	2.13	3	Vertical	201	1.66	-

Radiation-above 1GHz_1

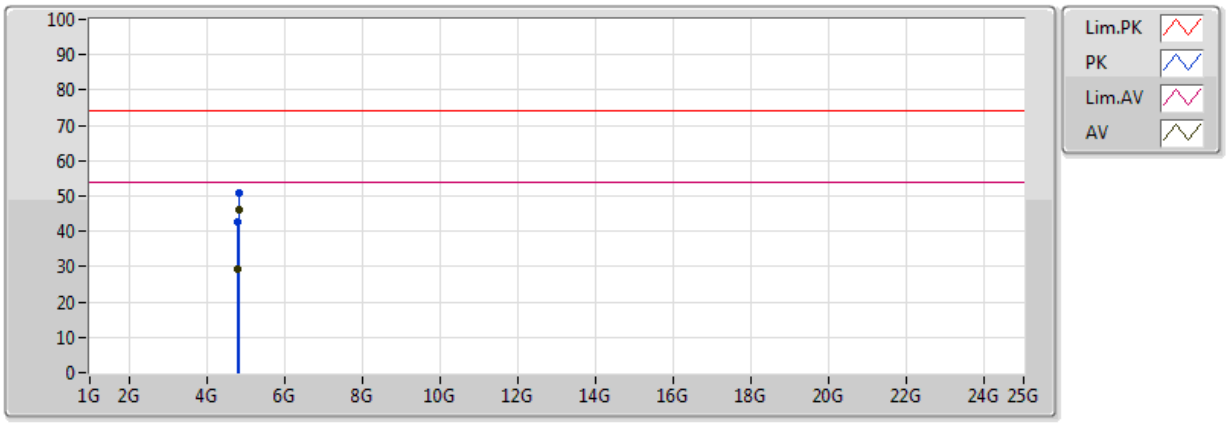
31/08/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80483G	28.82	54.00	-25.18	2.08	3	Vertical	152	1.56	-
AV	4.824G	48.68	54.00	-5.32	2.13	3	Vertical	201	1.66	-
PK	4.80483G	44.13	74.00	-29.87	2.08	3	Vertical	152	1.56	-
PK	4.82404G	51.97	74.00	-22.03	2.13	3	Vertical	201	1.66	-

Radiation-above 1GHz_1

31/08/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80654G	29.21	54.00	-24.79	2.09	3	Horizontal	54	1.39	-
AV	4.824G	45.92	54.00	-8.08	2.13	3	Horizontal	169	1.74	-
PK	4.80654G	42.60	74.00	-31.40	2.09	3	Horizontal	54	1.39	-
PK	4.82406G	50.81	74.00	-23.19	2.13	3	Horizontal	169	1.74	-