



FCC Test Report

Equipment : AC1750 Wi-Fi Range Extender , AV1200 Powerline Edition
Brand Name : TP-Link
Model No. : TL-WPA8730
FCC ID : TE7WPA8730
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
Function : Point-to-multipoint; Point-to-point
Applicant : TP-Link Technologies Co., Ltd.
Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China
Manufacturer : TP-Link Technologies Co., Ltd.
Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China

The product sample received on Aug. 19, 2016 and completely tested on Nov. 21, 2016. We, SPORTON, 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 test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Sam Chen
SPORTON INTERNATIONAL INC.





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Summary of Test Result

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



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]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4G	11b	20	3
2.4G	11g	20	3
2.4G	HT20	20	3
2.4G	HT40	40	3

Note:

- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Brand	Product Model	Antenna Type	Connector	Gain (dBi)		
					2.4G	5G B1	5G B4
1	TP-LINK	2051500109	Dipole Antenna	I-PEX	1.86	2.83	2.60
2	TP-LINK	2051500109	Dipole Antenna	I-PEX	1.86	2.83	2.60
3	TP-LINK	2051500109	Printed Antenna	N/A	1.83	-	-
4	TP-LINK	2051500109	Monopole Antenna	N/A	-	1.77	1.85

Note: The EUT has four antennas.

For IEEE 802.11b/g/n mode (3TX, 3RX):

Ant. 1, Ant. 2 and Ant. 3 could transmit/receive simultaneously.

For IEEE 802.11a/n/ac mode (3TX, 3RX):

Ant. 1, Ant. 2 and Ant. 4 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	T(s)	VBW(Hz) ≥ 1/T
11b	0.983	n/a (DC>=0.98)	n/a (DC>=0.98)
11g	0.993	n/a (DC>=0.98)	n/a (DC>=0.98)
HT20	0.99	n/a (DC>=0.98)	n/a (DC>=0.98)
HT40	0.985	n/a (DC>=0.98)	n/a (DC>=0.98)

1.1.4 EUT Operational Condition

EUT Power Type	Internal power supply		
Beamforming Function	<input type="checkbox"/> With beamforming	<input checked="" type="checkbox"/> Without beamforming	



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
- ◆ FCC KDB 558074 D01 v03r05
- ◆ FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Gino Huang	20°C / 60%	Oct. 26, 2016 & Nov. 21, 2016
Radiated	03CH01-CB	Nyle Chang / Stim Sung	22°C / 54%	Oct. 16, 2016~Nov. 16, 2016
AC Conduction	CO01-CB	GN Hou	23°C / 62%	Oct. 17, 20 16

Test site Designation No. TW0006 with FCC.
Test site registered number IC 4086D with Industry Canada.



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)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Band	Mode	BWch (MHz)	Nss-Min	Nant	Ch. (MHz)	Range	Power Setting
2.4G	11b	20	1	3	2412	L	17
2.4G	11b	20	1	3	2417	L	19.5
2.4G	11b	20	1	3	2437	M	23.5
2.4G	11b	20	1	3	2457	H	19.5
2.4G	11b	20	1	3	2462	H	17
2.4G	11g	20	1	3	2412	L	14
2.4G	11g	20	1	3	2417	L	17
2.4G	11g	20	1	3	2437	M	23
2.4G	11g	20	1	3	2457	H	15.5
2.4G	11g	20	1	3	2462	H	13
2.4G	HT20	20	1,(M0)	3	2412	L	12
2.4G	HT20	20	1,(M0)	3	2417	L	16
2.4G	HT20	20	1,(M0)	3	2437	M	21
2.4G	HT20	20	1,(M0)	3	2457	H	16
2.4G	HT20	20	1,(M0)	3	2462	H	13
2.4G	HT40	40	1,(M0)	3	2422	L	8.5
2.4G	HT40	40	1,(M0)	3	2427	L	12
2.4G	HT40	40	1,(M0)	3	2437	M	14.5
2.4G	HT40	40	1,(M0)	3	2447	H	14.5
2.4G	HT40	40	1,(M0)	3	2452	H	10

Note:

- ♦ Test range channel consist of L (Low Ch.), M (Middle Ch.), H (High Ch.), S (Single Ch.) and C (Straddle Band Ch.).



2.2 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	CTX - 2.4G
2	CTX - 5G
For operating mode 2 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Non-restricted Frequency Bands 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 The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	CTX - 2.4G EUT in Y axis
2	CTX - 5G EUT in Y axis
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
1	CTX - 2.4G EUT in Y axis
2	CTX - 2.4G EUT in Z axis
Mode 1 has been evaluated to be the worst case after evaluating. Consequently, measurement will follow this same test mode.	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	WLAN 2.4GHz + WLAN 5GHz EUT in Y axis
2	WLAN 2.4GHz + WLAN 5GHz EUT in Z axis
For operating mode 1 is the worst case and it was record in this test report.	
Refer to Sporton Test Report No.: FA681910 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	



2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E6430	DoC

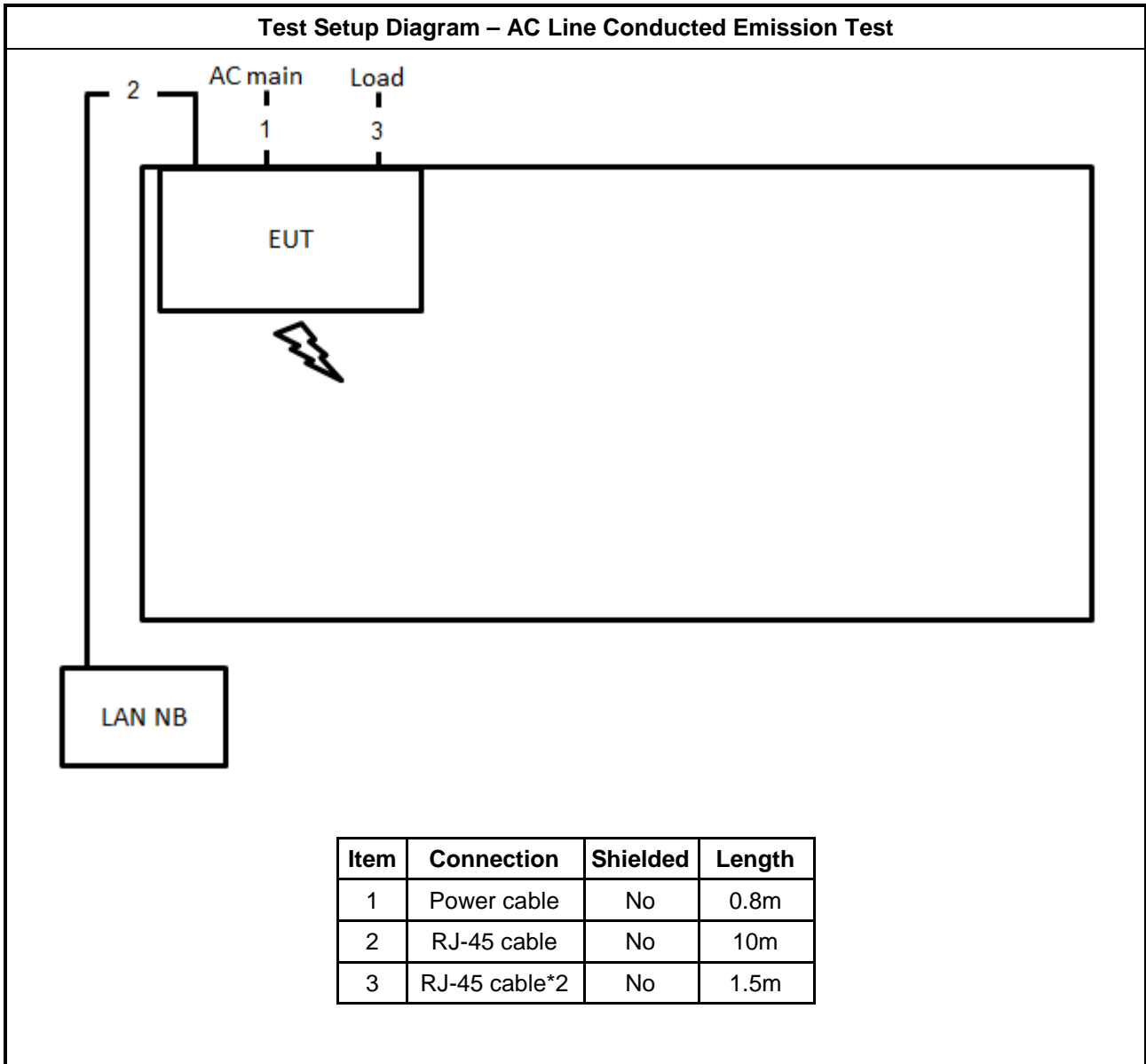
For Test Site No: 03CH01-CB

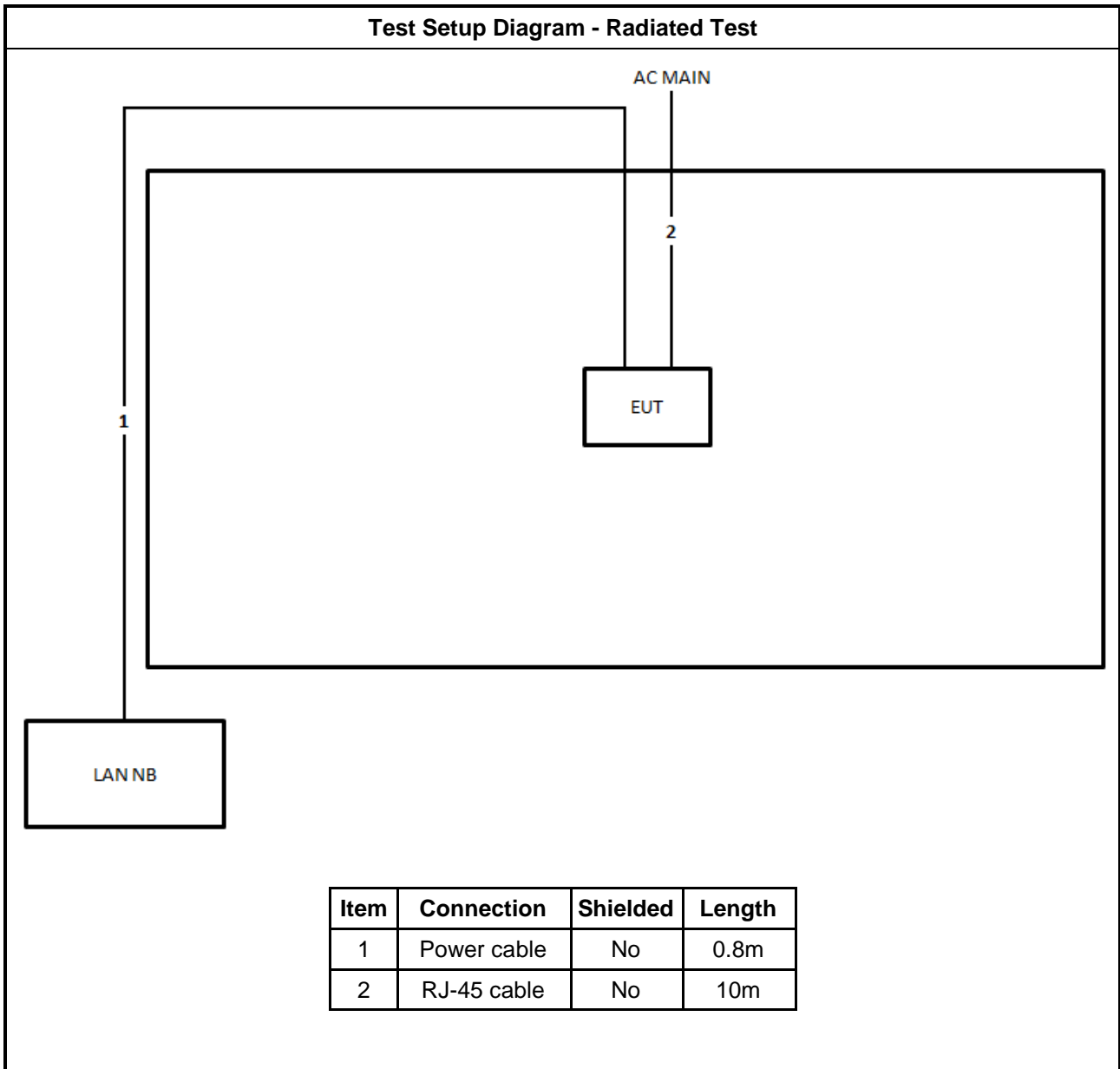
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC

For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC

2.6 Test Setup Diagram





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.

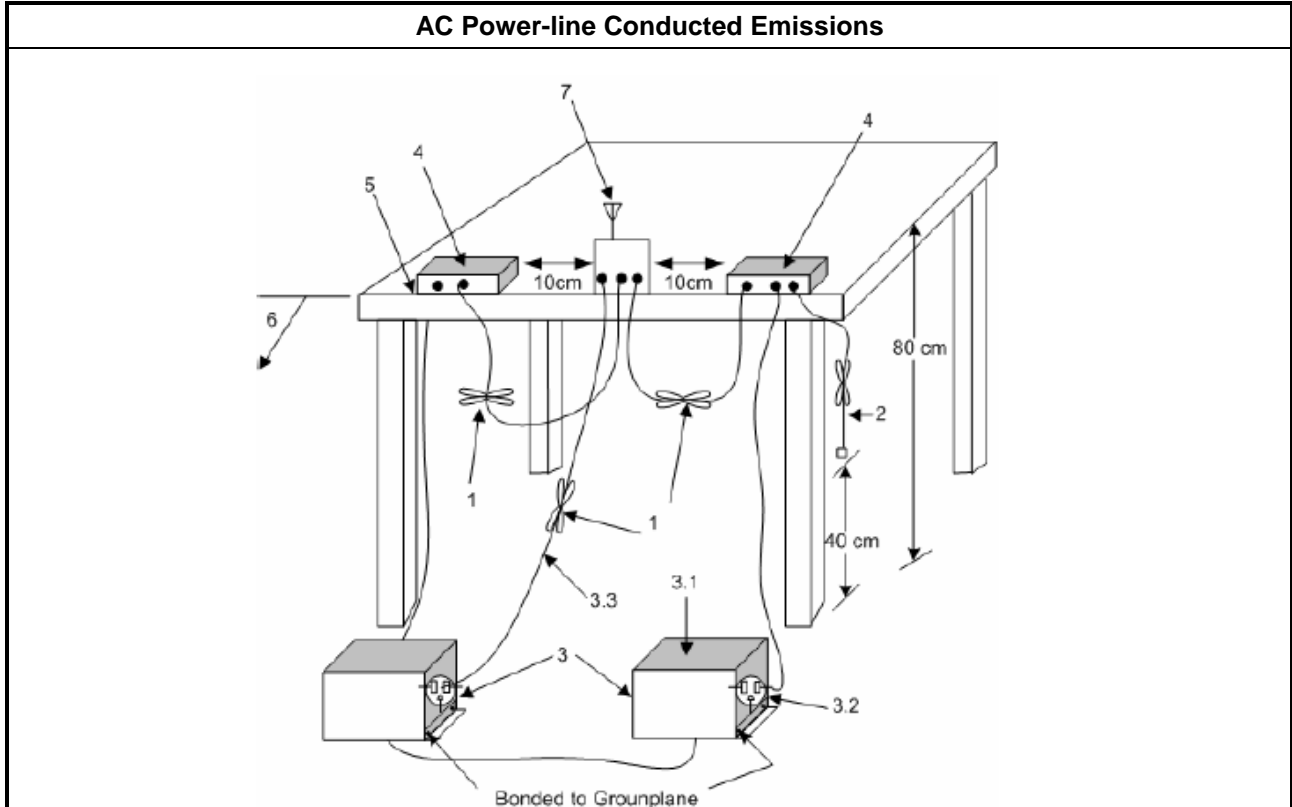
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup





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:
<ul style="list-style-type: none"> ▪ 6 dB bandwidth \geq 500 kHz.

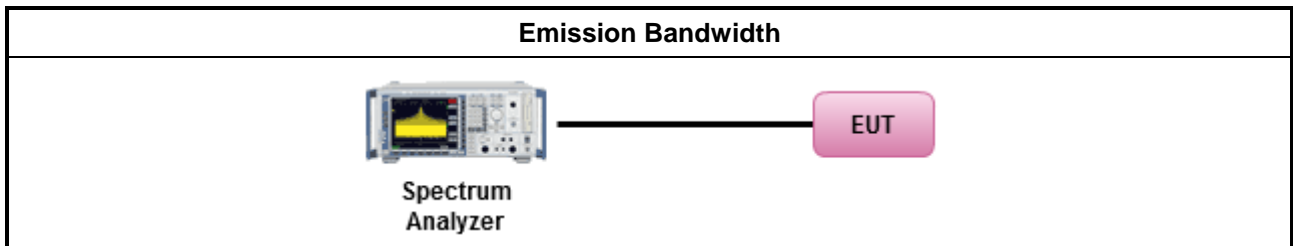
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



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	
	<ul style="list-style-type: none">▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none">▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none">▪ Smart antenna system (SAS):
	<ul style="list-style-type: none">- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none">- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none">- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB 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.

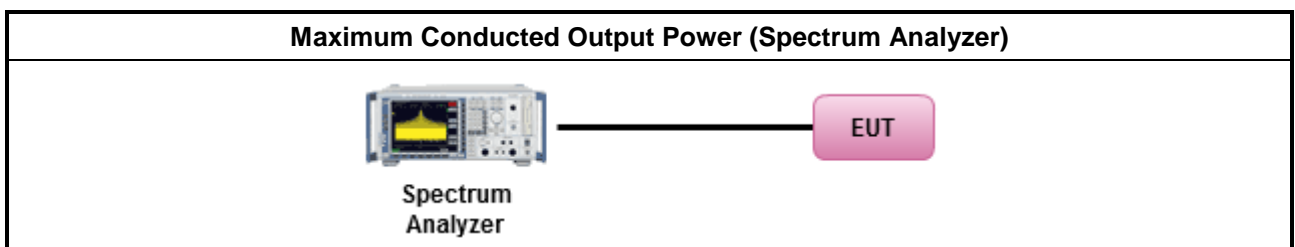
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)
<ul style="list-style-type: none"> ▪ Maximum Conducted Output Power 	
[duty cycle ≥ 98% or external video / power trigger]	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC 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	
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.2 PKPM1 Peak power meter method.
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC 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. 	
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.3.4 Test Setup



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
<ul style="list-style-type: none"> ▪ Power Spectral Density (PSD) \leq 8 dBm/3kHz

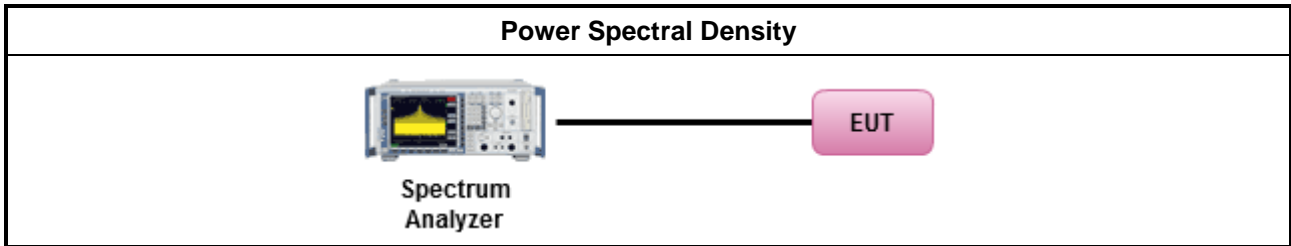
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ 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).
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak). [duty cycle \geq 98% or external video / power trigger]
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed) duty cycle < 98% and average over on/off periods with duty factor
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)
<ul style="list-style-type: none"> ▪ For conducted measurement.
<ul style="list-style-type: none"> ▪ If The EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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. <input type="checkbox"/> Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits, <input type="checkbox"/> Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup



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.

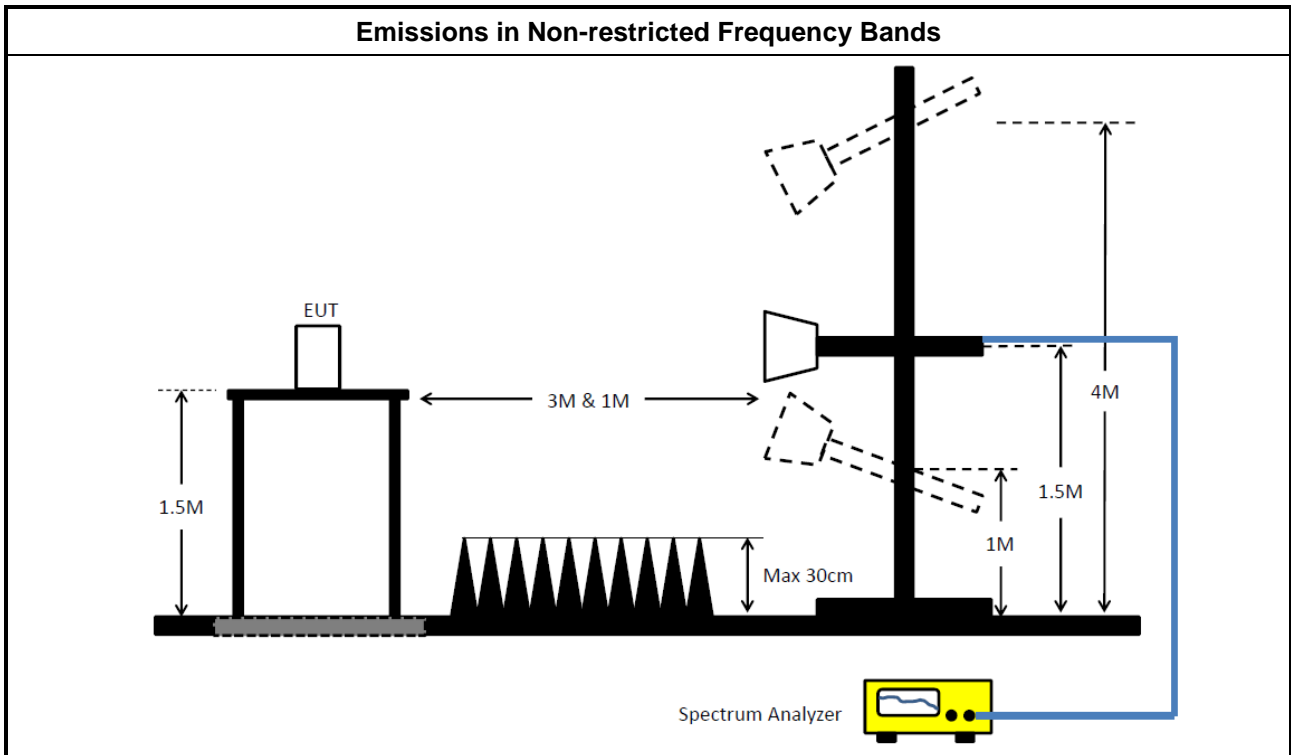
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup





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.

3.6.2 Measuring Instruments

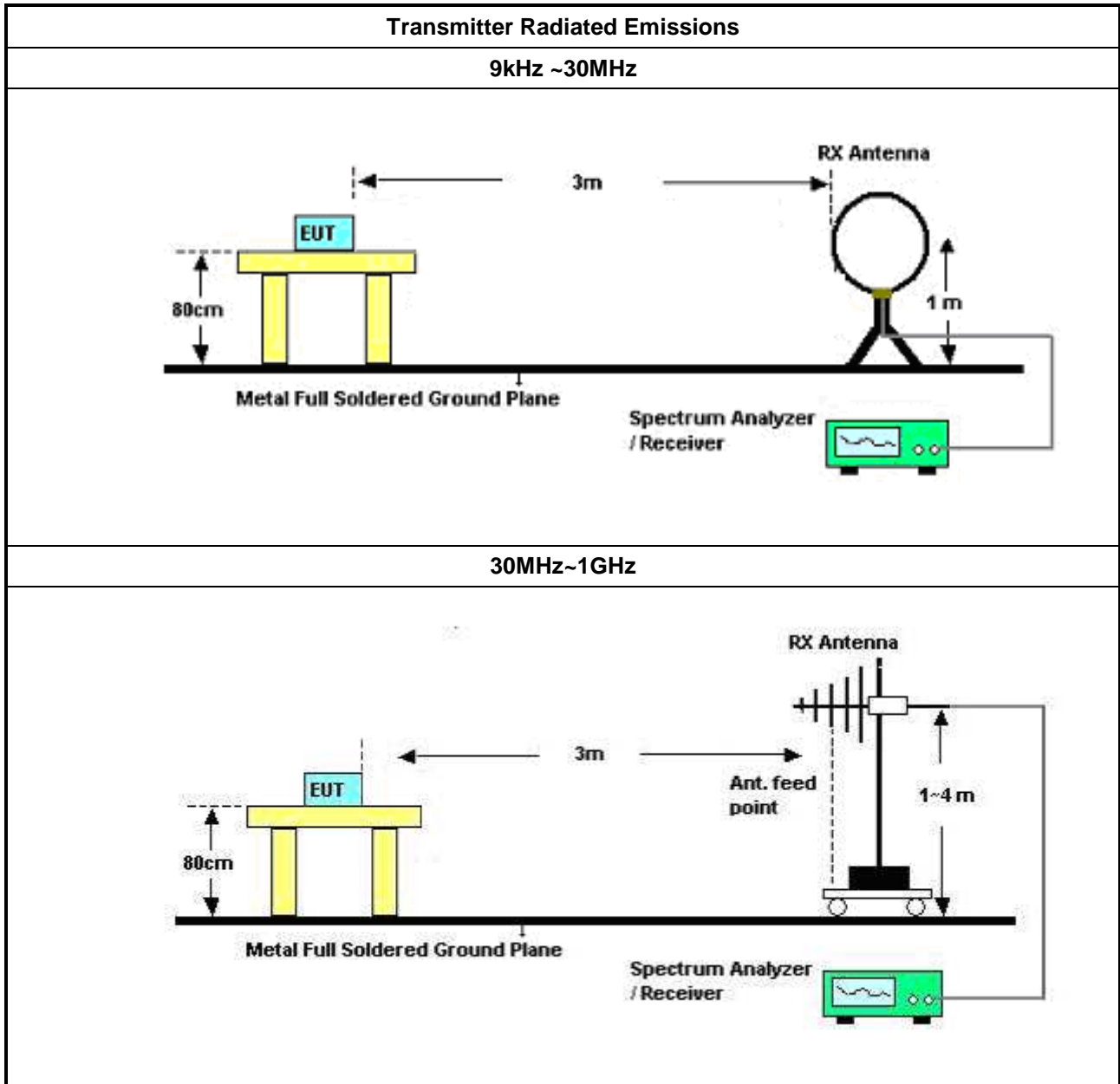
Refer a test equipment and calibration data table in this test report.

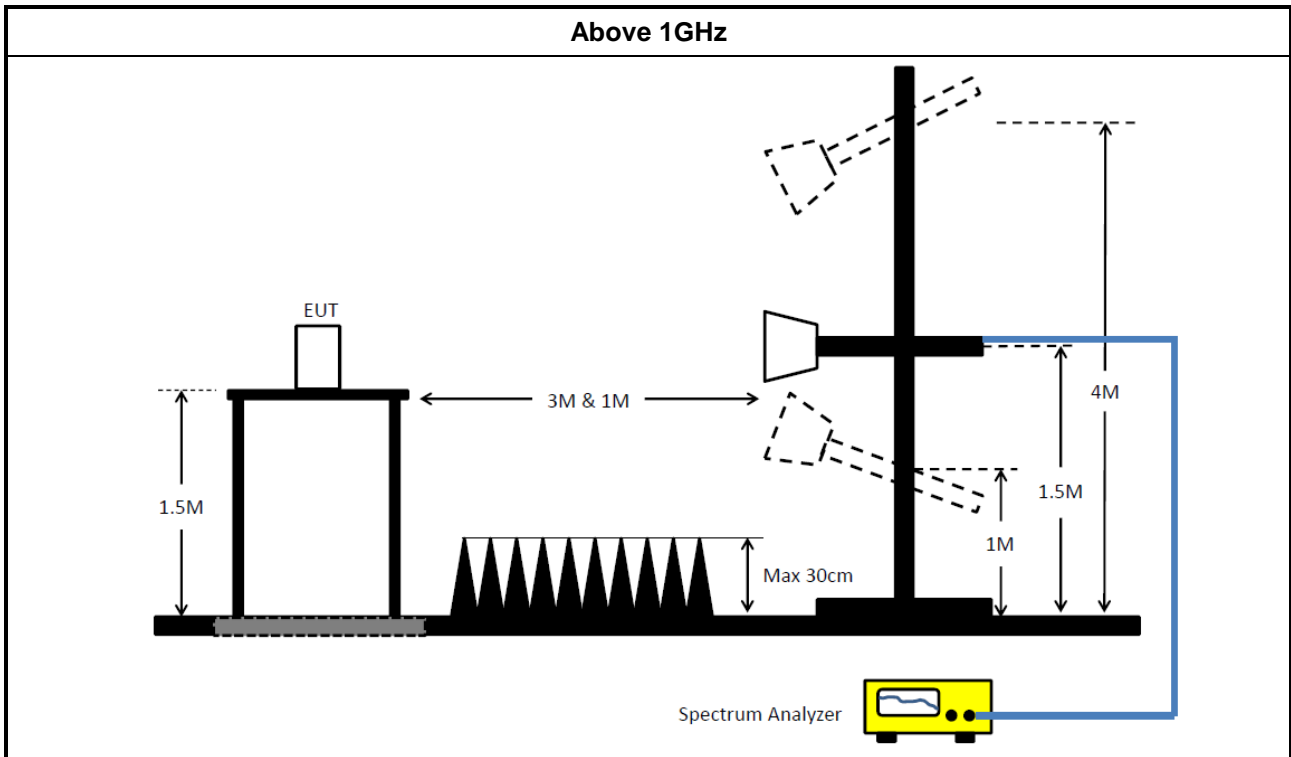


3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 	
<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle \geq 98%)
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW \geq 1/T).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.4 measurement procedure peak limit.
<ul style="list-style-type: none"> ▪ For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as FCC 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.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
<ul style="list-style-type: none"> ▪ For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2. 	
	<ul style="list-style-type: none"> ▪ 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
	<ul style="list-style-type: none"> ▪ For FCC 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





3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

3.6.6 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 27, 2016	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 08, 2015	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 24, 2016	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	TESEQ	CBL6112D	37880	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 25, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 13, 2015	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 13, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP-40	100019	9kHz ~ 40GHz	Apr. 21, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)

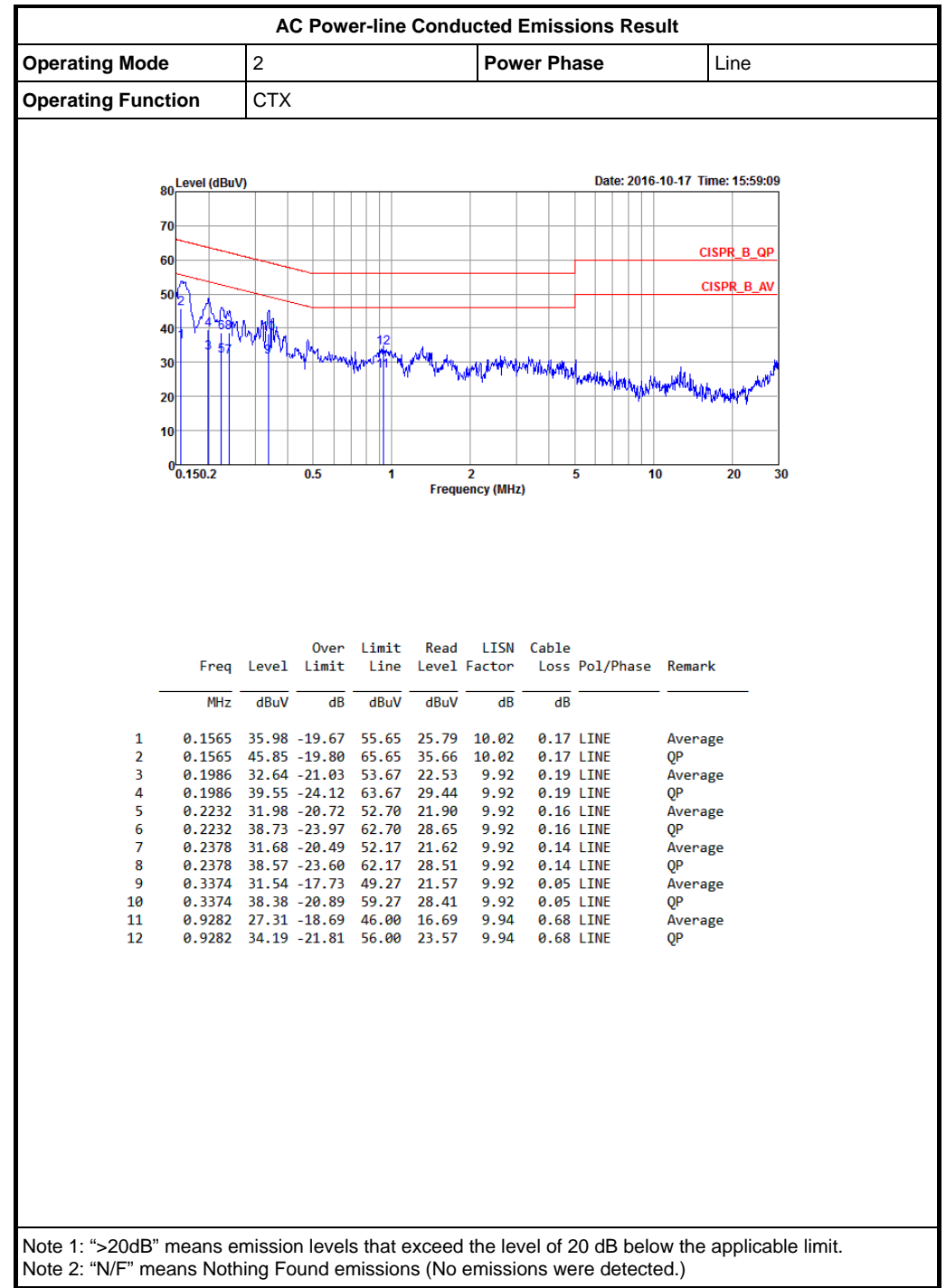
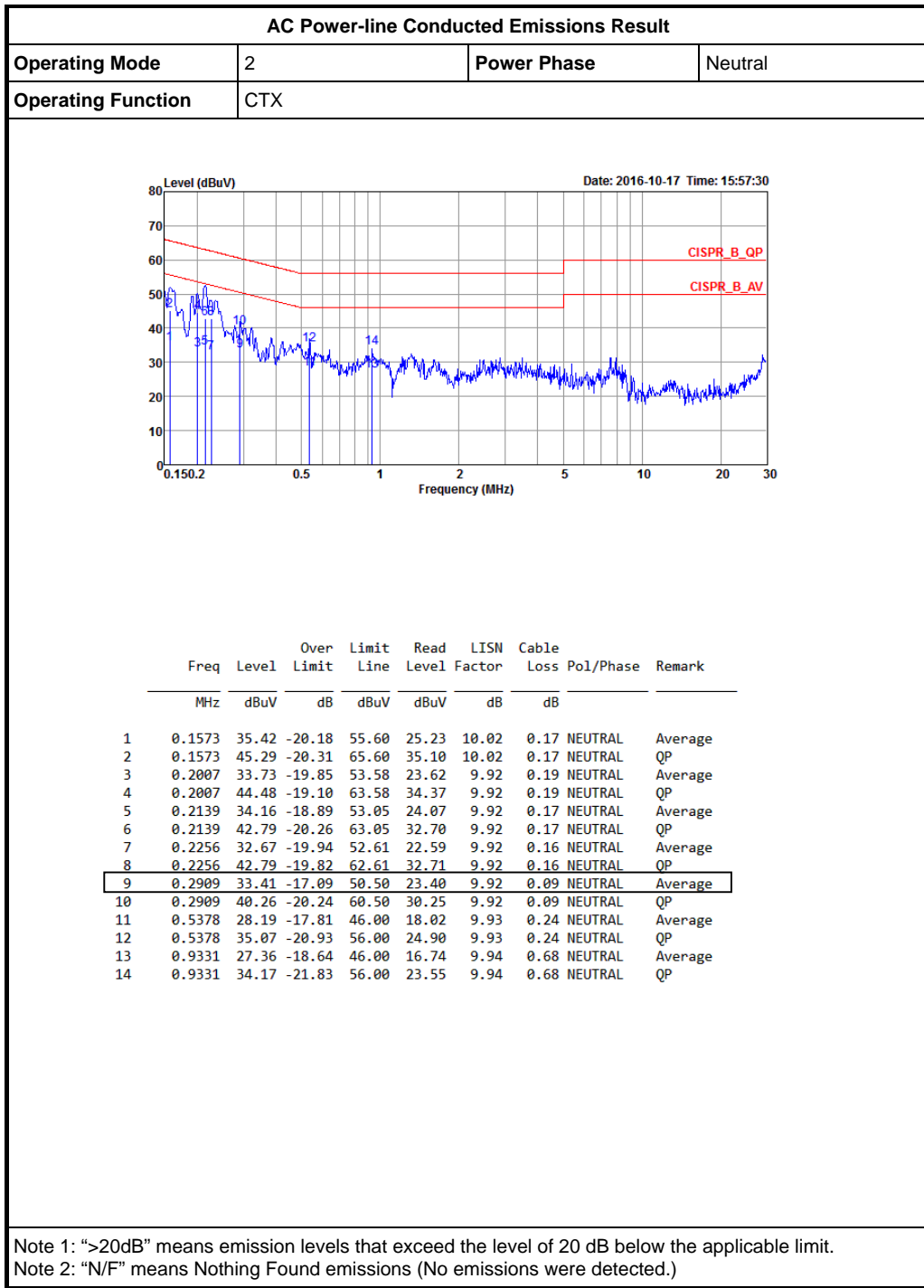


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-I0-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY54320014	50MHz-18GHz	Apr. 20, 2016	Conducted (TH01-CB)

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

“**” Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.





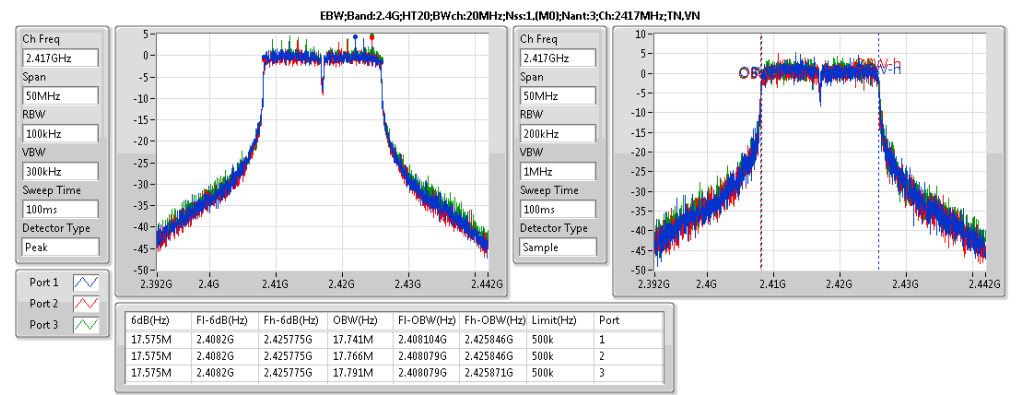
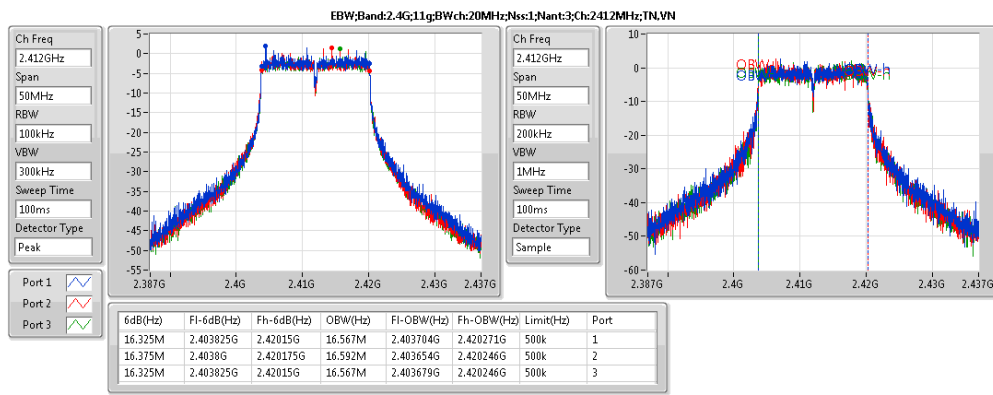
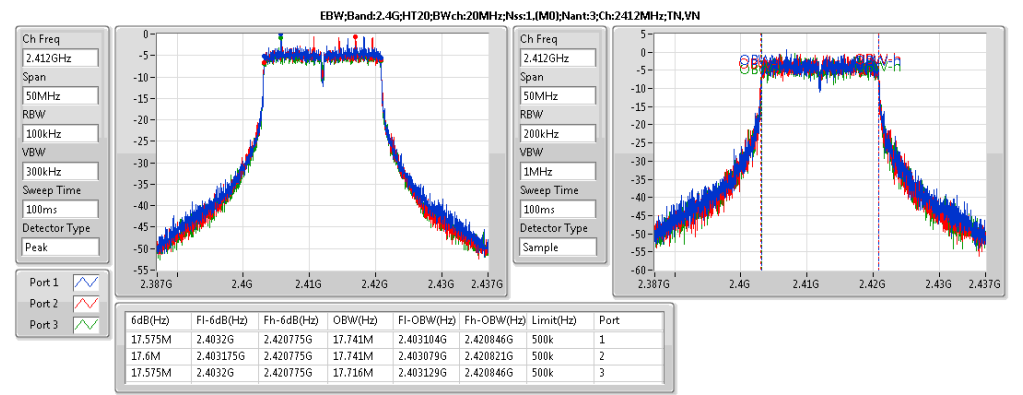
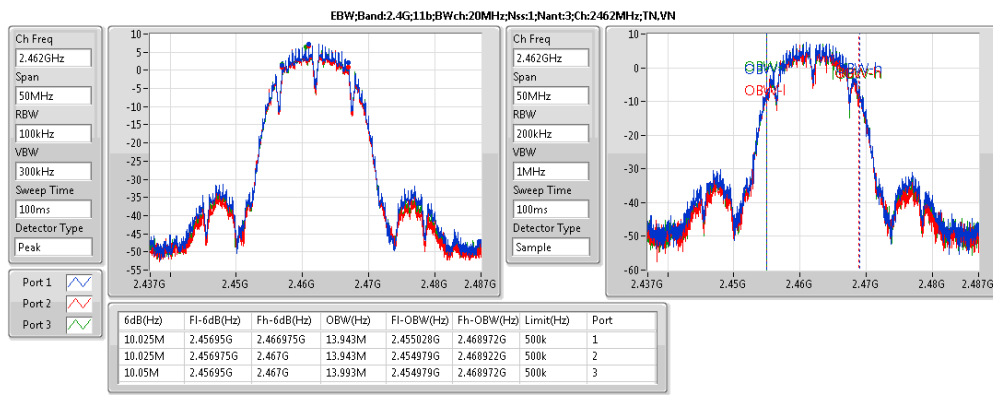
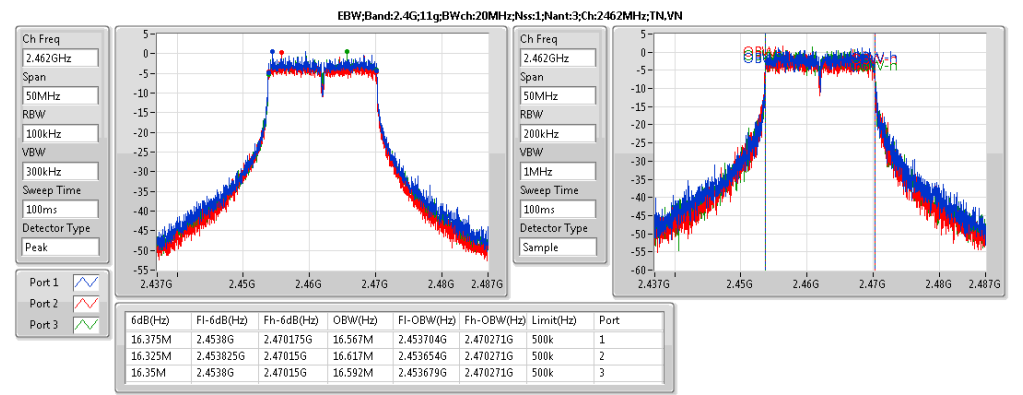
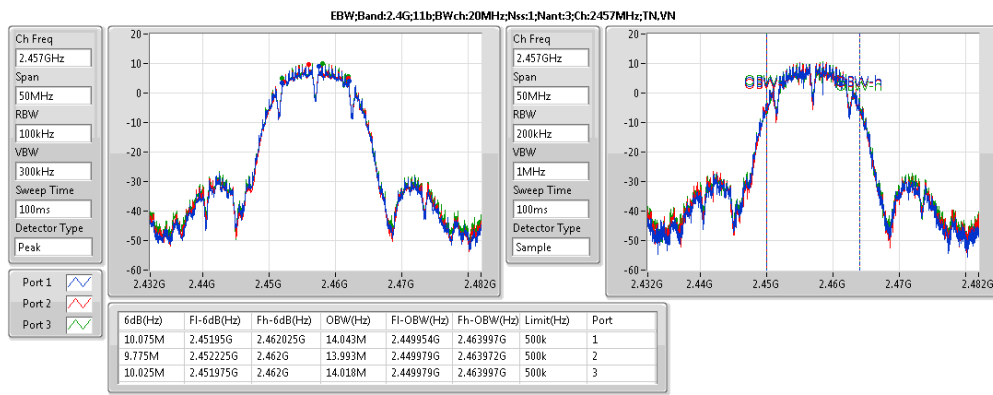
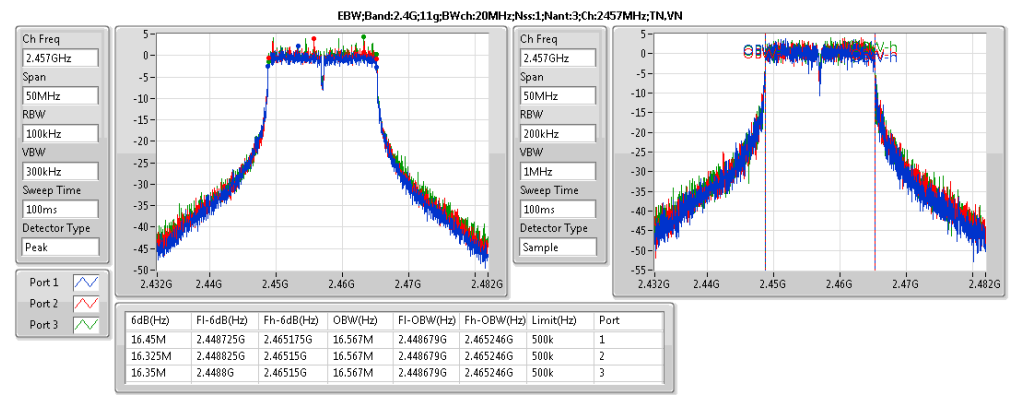
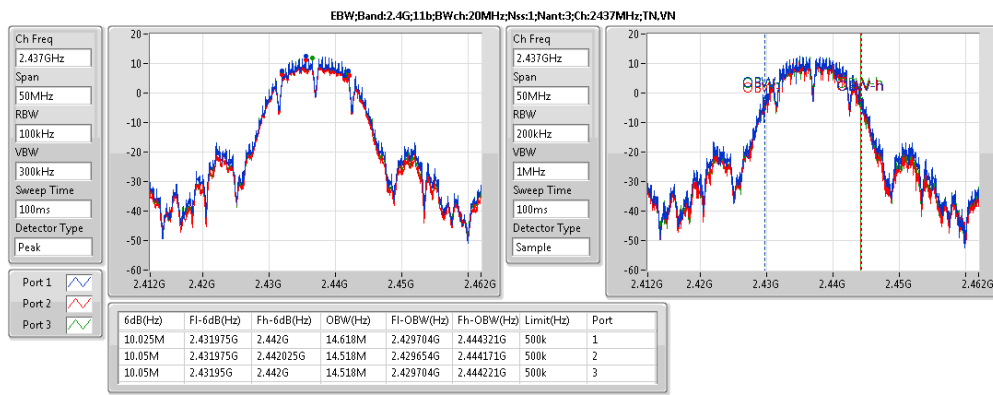
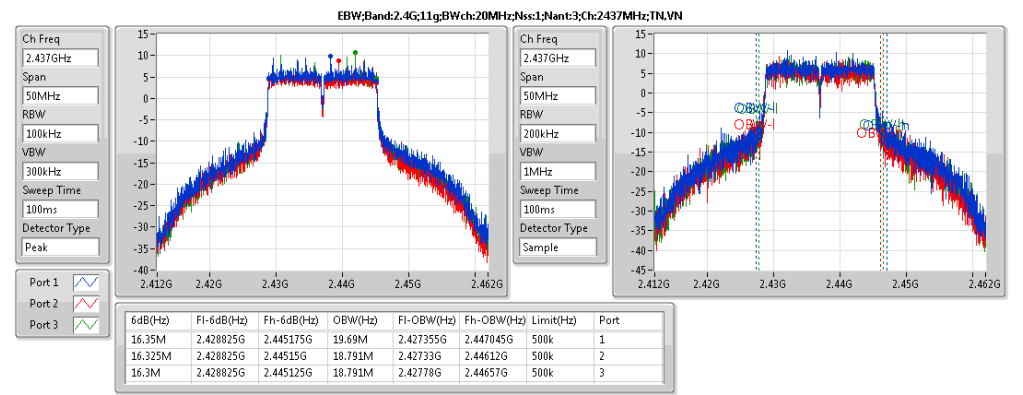
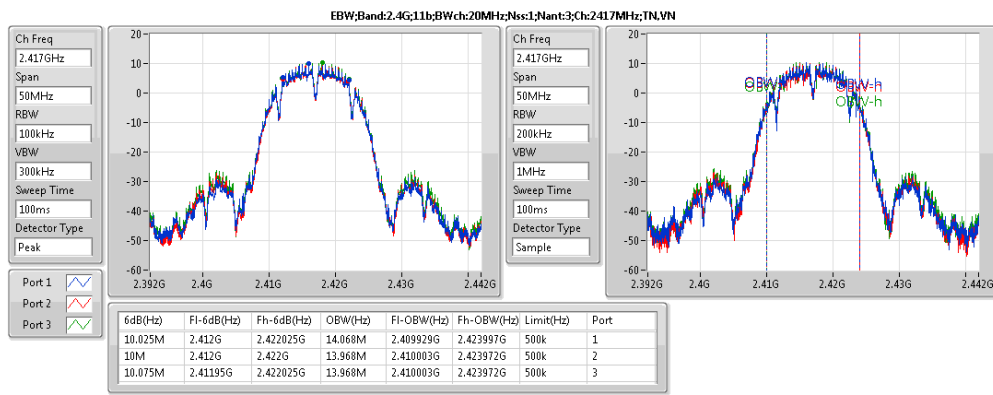
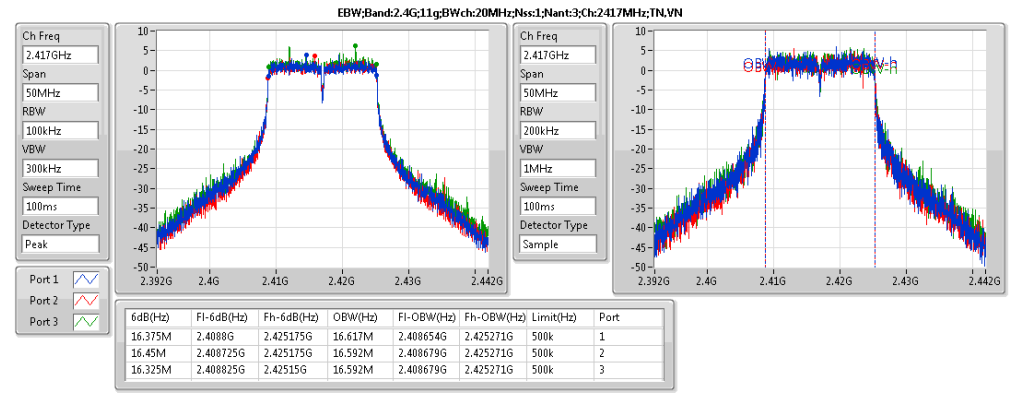
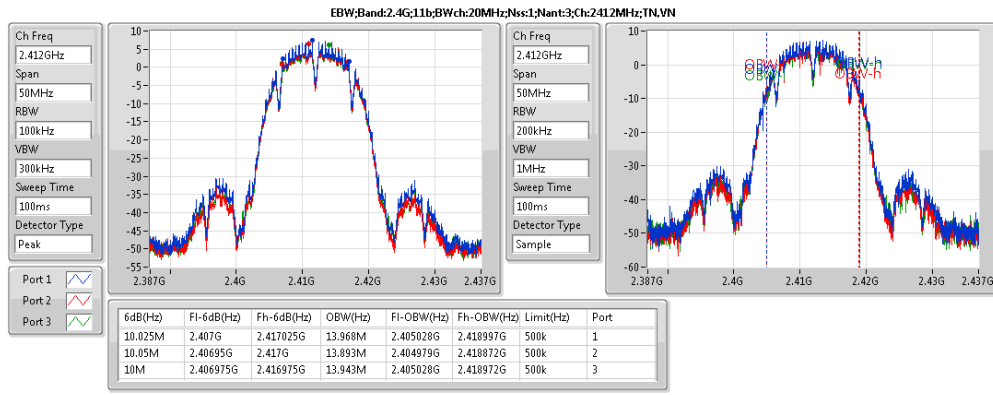
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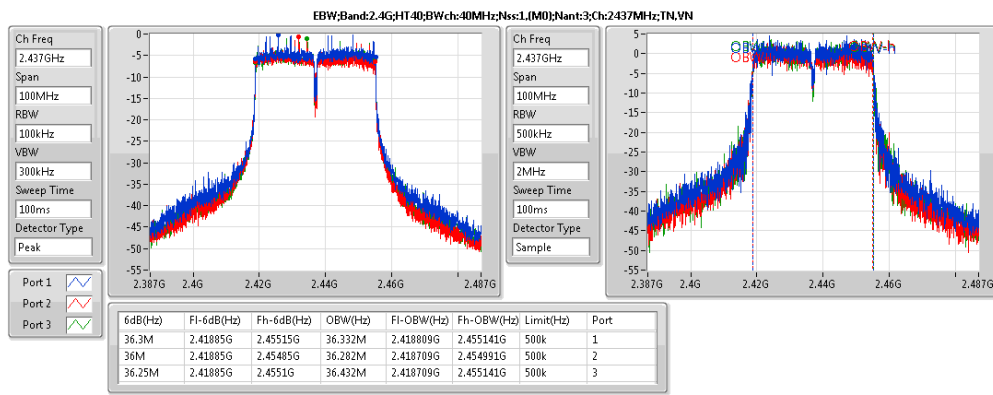
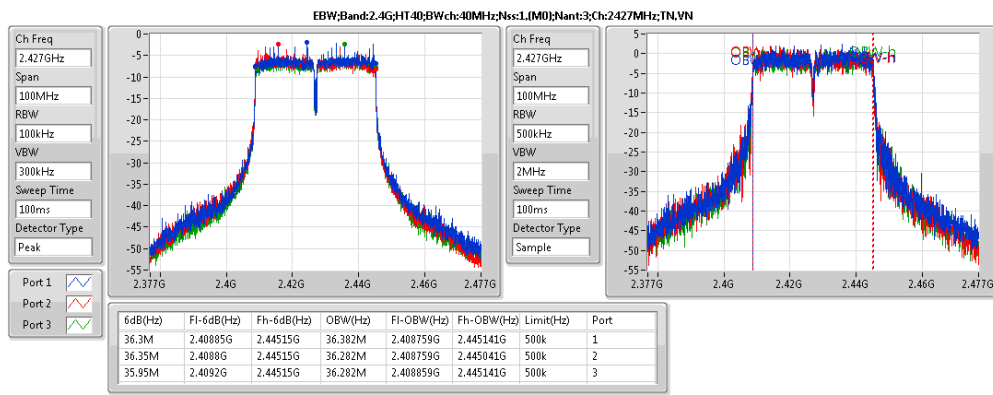
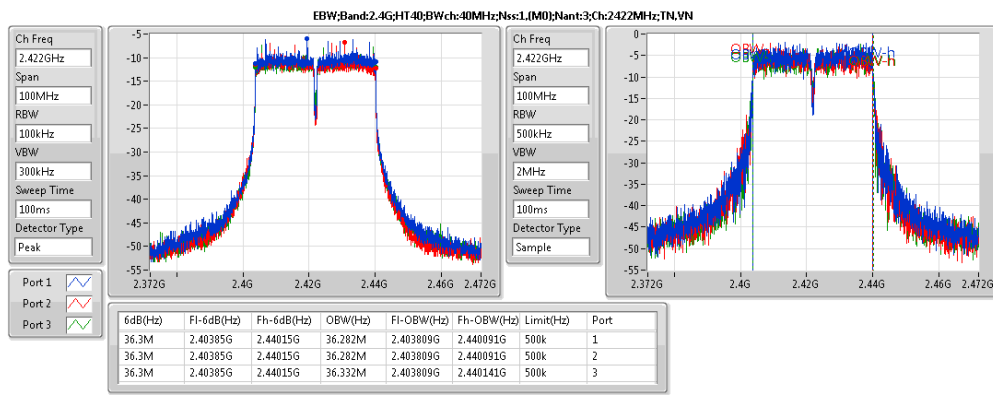
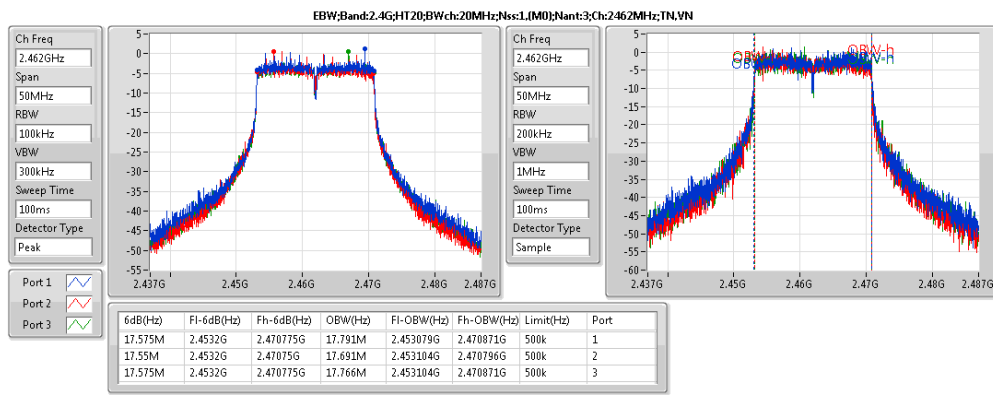
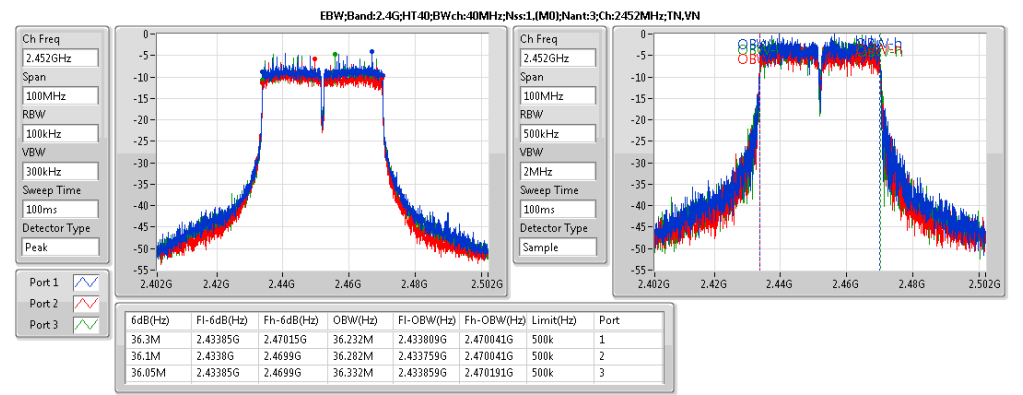
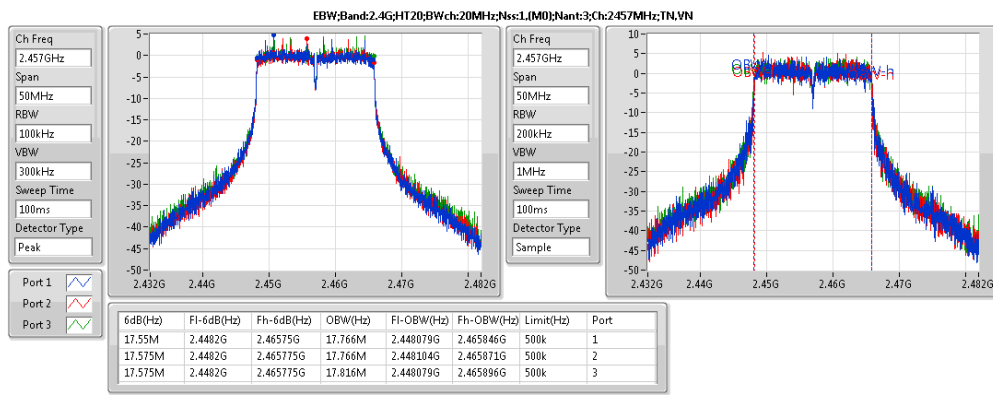
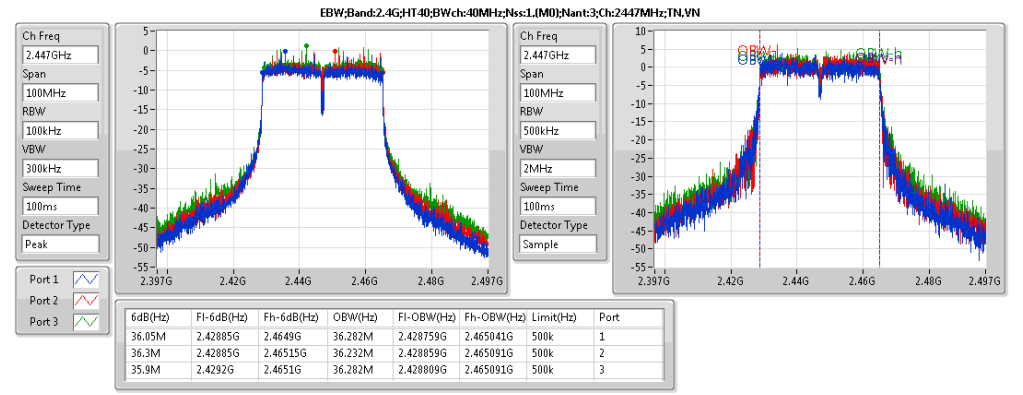
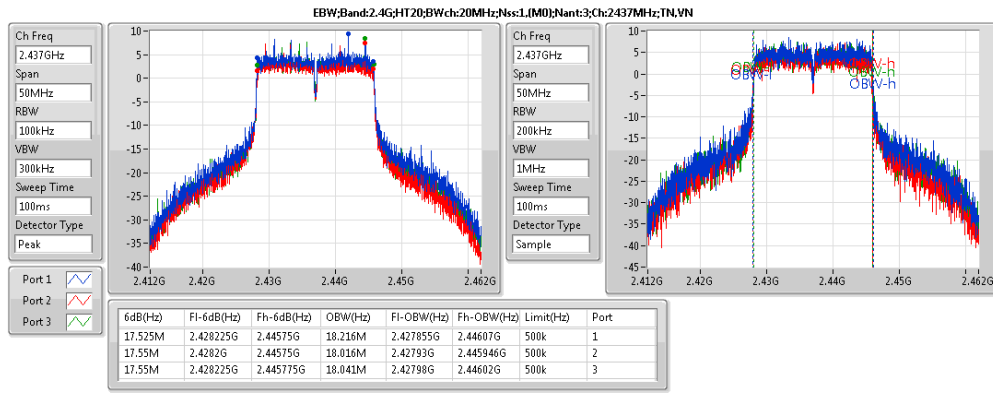
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4G;11b;Nss1;Ntx3	10.075M	14.618M	14M6G1D	9.775M	13.893M
2.4G;11g;Nss1;Ntx3	16.45M	19.69M	19M7D1D	16.3M	16.567M
2.4G;HT20;Nss1,(M0);Ntx3	17.6M	18.216M	18M2D1D	17.525M	17.691M
2.4G;HT40;Nss1,(M0);Ntx3	36.35M	36.432M	36M4D1D	35.9M	36.232M



Result

Mode	Result	Limit (Hz)	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)	P3-N dB (Hz)	P3-OBW (Hz)
2.4G;11b;Nss1;Ntx3;2412	Pass	500k	10.025M	13.968M	10.05M	13.893M	10M	13.943M
2.4G;11b;Nss1;Ntx3;2417	Pass	500k	10.025M	14.068M	10M	13.968M	10.075M	13.968M
2.4G;11b;Nss1;Ntx3;2437	Pass	500k	10.025M	14.618M	10.05M	14.518M	10.05M	14.518M
2.4G;11b;Nss1;Ntx3;2457	Pass	500k	10.075M	14.043M	9.775M	13.993M	10.025M	14.018M
2.4G;11b;Nss1;Ntx3;2462	Pass	500k	10.025M	13.943M	10.025M	13.943M	10.05M	13.993M
2.4G;11g;Nss1;Ntx3;2412	Pass	500k	16.325M	16.567M	16.375M	16.592M	16.325M	16.567M
2.4G;11g;Nss1;Ntx3;2417	Pass	500k	16.375M	16.617M	16.45M	16.592M	16.325M	16.592M
2.4G;11g;Nss1;Ntx3;2437	Pass	500k	16.35M	19.69M	16.325M	18.791M	16.3M	18.791M
2.4G;11g;Nss1;Ntx3;2457	Pass	500k	16.45M	16.567M	16.325M	16.567M	16.35M	16.567M
2.4G;11g;Nss1;Ntx3;2462	Pass	500k	16.375M	16.567M	16.325M	16.617M	16.35M	16.592M
2.4G;HT20;Nss1,(M0);Ntx3;2412	Pass	500k	17.575M	17.741M	17.6M	17.741M	17.575M	17.716M
2.4G;HT20;Nss1,(M0);Ntx3;2417	Pass	500k	17.575M	17.741M	17.575M	17.766M	17.575M	17.791M
2.4G;HT20;Nss1,(M0);Ntx3;2437	Pass	500k	17.525M	18.216M	17.55M	18.016M	17.55M	18.041M
2.4G;HT20;Nss1,(M0);Ntx3;2457	Pass	500k	17.55M	17.766M	17.575M	17.766M	17.575M	17.816M
2.4G;HT20;Nss1,(M0);Ntx3;2462	Pass	500k	17.575M	17.791M	17.55M	17.691M	17.575M	17.766M
2.4G;HT40;Nss1,(M0);Ntx3;2422	Pass	500k	36.3M	36.282M	36.3M	36.282M	36.3M	36.332M
2.4G;HT40;Nss1,(M0);Ntx3;2427	Pass	500k	36.3M	36.382M	36.35M	36.282M	35.95M	36.282M
2.4G;HT40;Nss1,(M0);Ntx3;2437	Pass	500k	36.3M	36.332M	36M	36.282M	36.25M	36.432M
2.4G;HT40;Nss1,(M0);Ntx3;2447	Pass	500k	36.05M	36.282M	36.3M	36.232M	35.9M	36.282M
2.4G;HT40;Nss1,(M0);Ntx3;2452	Pass	500k	36.3M	36.232M	36.1M	36.282M	36.05M	36.332M







Summary

Mode	Sum (dBm)	Sum (W)	EIRP (dBm)	EIRP (W)
2.4G;11b;Nss1;Ntx3	28.56	0.71779	30.42	1.10154
2.4G;11g;Nss1;Ntx3	27.69	0.58749	29.55	0.90157
2.4G;HT20;Nss1,(M0);Ntx3	26.53	0.44978	28.39	0.69024
2.4G;HT40;Nss1,(M0);Ntx3	21.21	0.13213	23.07	0.20277



Result

Mode	Result	DG (dBi)	Sum (dBm)	Sum Lim. (dBm)	EIRP (dBm)	EIRP Lim. (dBm)	P1 (dBm)	P2 (dBm)	P3 (dBm)
2.4G;11b;Nss1;Ntx3;2412	Pass	1.86	23.36	30.00	25.22	36.00	18.32	18.87	18.57
2.4G;11b;Nss1;Ntx3;2417	Pass	1.86	25.55	30.00	27.41	36.00	20.72	21.03	20.58
2.4G;11b;Nss1;Ntx3;2437	Pass	1.86	28.56	30.00	30.42	36.00	23.72	24.27	23.32
2.4G;11b;Nss1;Ntx3;2457	Pass	1.86	25.61	30.00	27.47	36.00	20.83	21.17	20.48
2.4G;11b;Nss1;Ntx3;2462	Pass	1.86	23.16	30.00	25.02	36.00	18.5	18.72	17.91
2.4G;11g;Nss1;Ntx3;2412	Pass	1.86	20.38	30.00	22.24	36.00	15.4	15.92	15.48
2.4G;11g;Nss1;Ntx3;2417	Pass	1.86	23.12	30.00	24.98	36.00	18.15	18.58	18.32
2.4G;11g;Nss1;Ntx3;2437	Pass	1.86	27.69	30.00	29.55	36.00	22.86	23.39	22.44
2.4G;11g;Nss1;Ntx3;2457	Pass	1.86	21.94	30.00	23.80	36.00	17.02	17.67	16.76
2.4G;11g;Nss1;Ntx3;2462	Pass	1.86	19.80	30.00	21.66	36.00	15.16	15.29	14.62
2.4G;HT20;Nss1,(M0);Ntx3;2412	Pass	1.86	18.61	30.00	20.47	36.00	13.49	14.22	13.79
2.4G;HT20;Nss1,(M0);Ntx3;2417	Pass	1.86	22.41	30.00	24.27	36.00	17.42	17.96	17.51
2.4G;HT20;Nss1,(M0);Ntx3;2437	Pass	1.86	26.53	30.00	28.39	36.00	21.76	22.16	21.31
2.4G;HT20;Nss1,(M0);Ntx3;2457	Pass	1.86	22.55	30.00	24.41	36.00	17.78	17.97	17.57
2.4G;HT20;Nss1,(M0);Ntx3;2462	Pass	1.86	19.67	30.00	21.53	36.00	14.78	15.26	14.62
2.4G;HT40;Nss1,(M0);Ntx3;2422	Pass	1.86	15.38	30.00	17.24	36.00	10.23	11.02	10.55
2.4G;HT40;Nss1,(M0);Ntx3;2427	Pass	1.86	18.49	30.00	20.35	36.00	13.49	13.93	13.72
2.4G;HT40;Nss1,(M0);Ntx3;2437	Pass	1.86	21.21	30.00	23.07	36.00	16.46	16.78	16.03
2.4G;HT40;Nss1,(M0);Ntx3;2447	Pass	1.86	20.88	30.00	22.74	36.00	16.07	16.66	15.51
2.4G;HT40;Nss1,(M0);Ntx3;2452	Pass	1.86	17.00	30.00	18.86	36.00	12.37	12.88	11.28



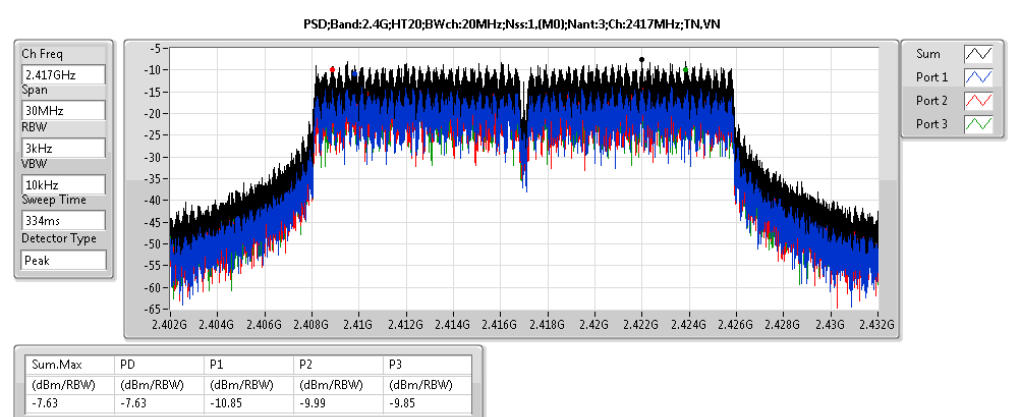
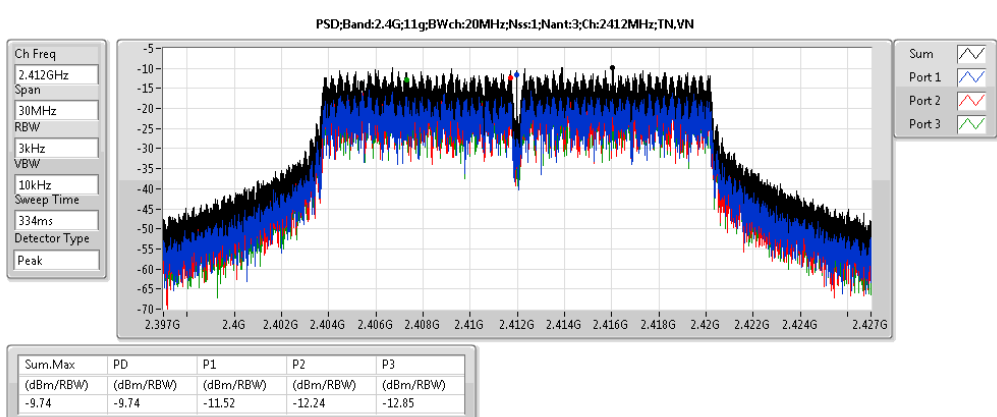
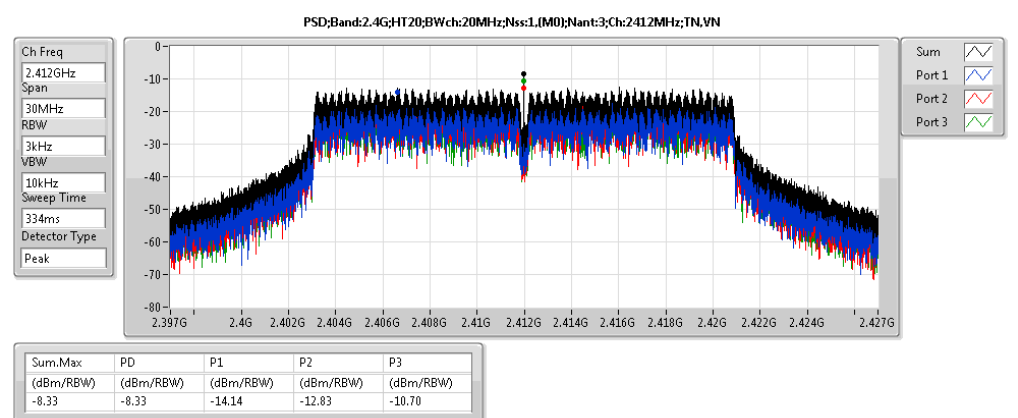
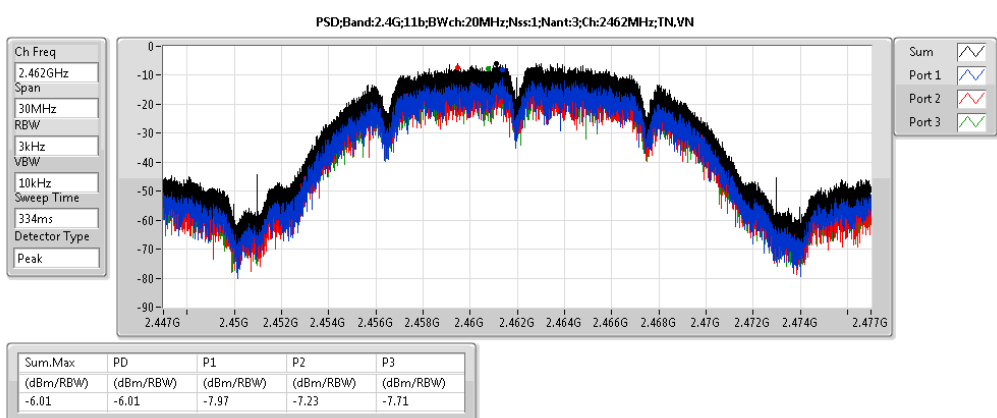
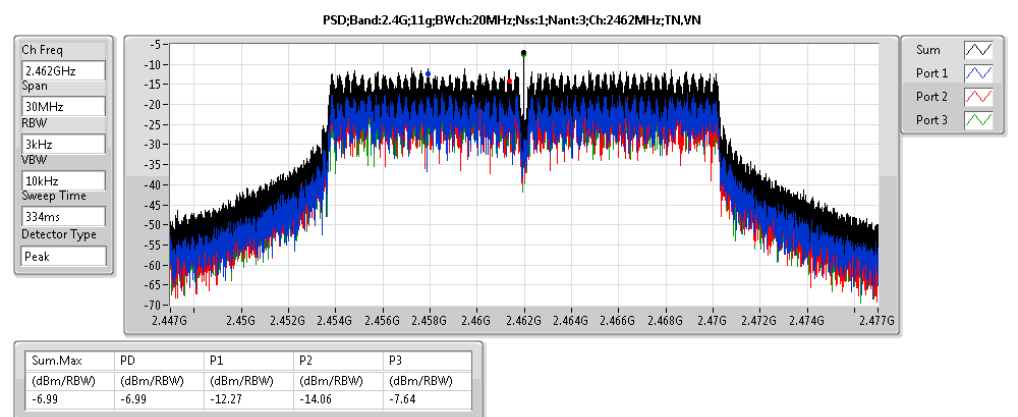
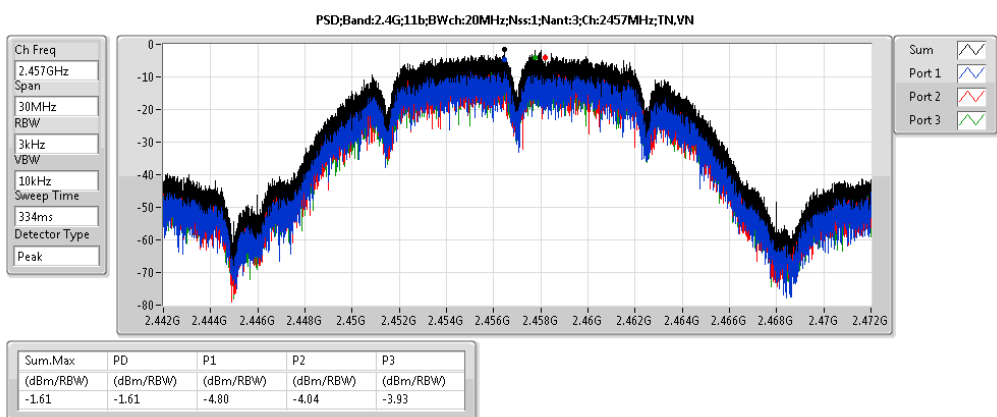
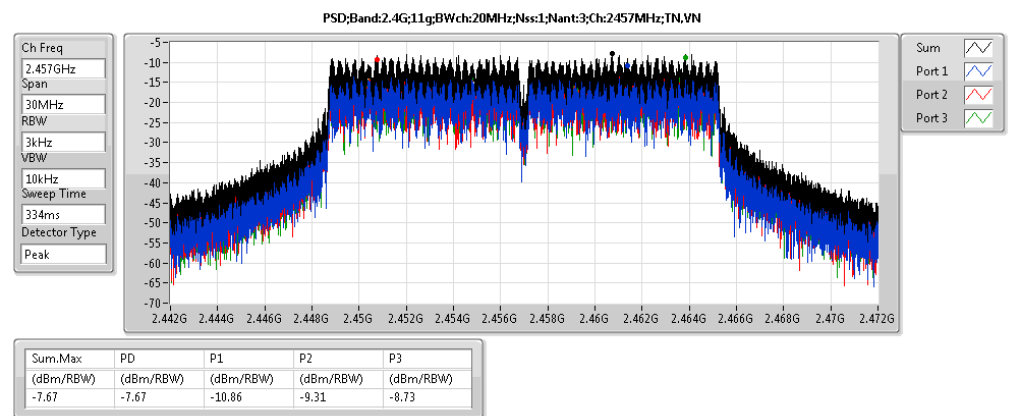
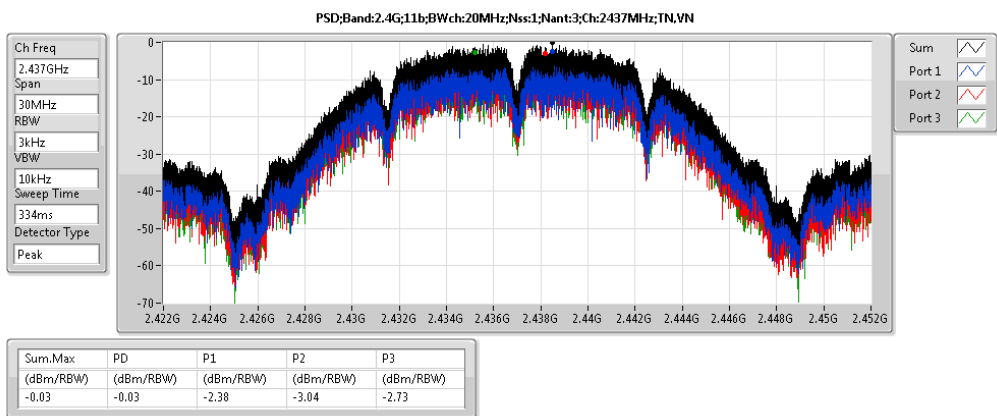
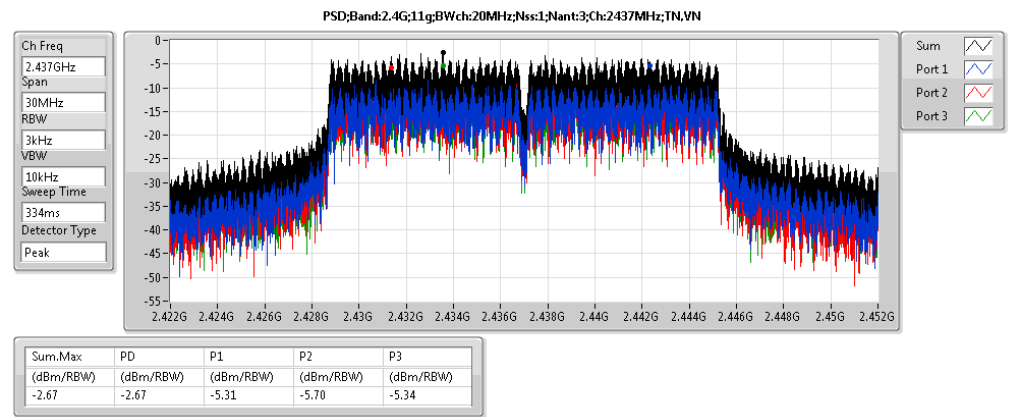
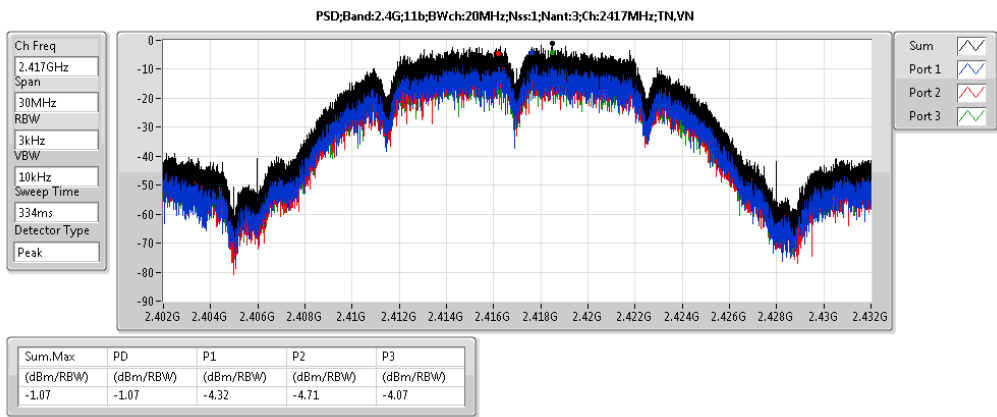
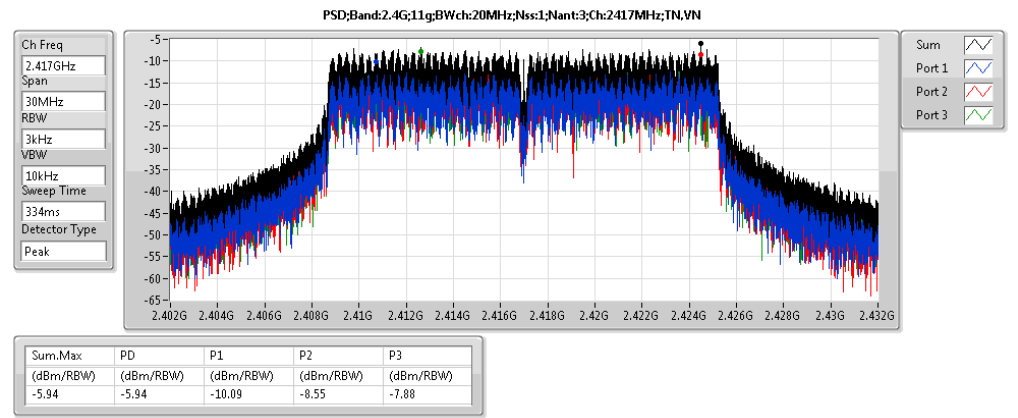
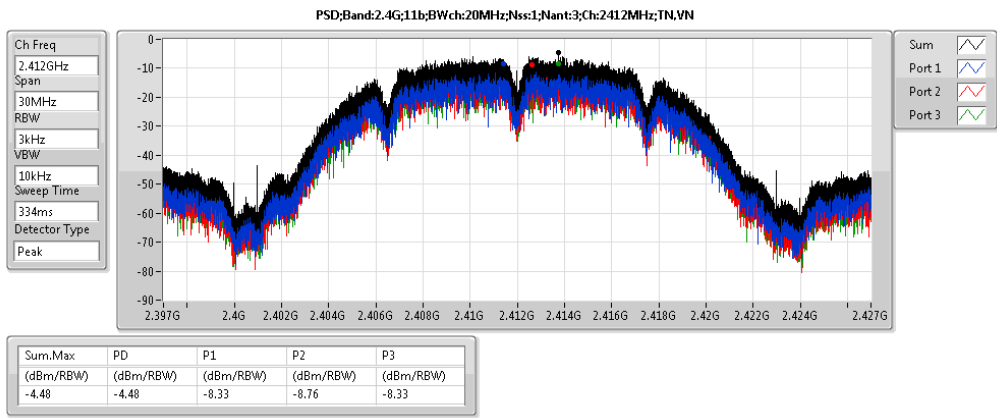


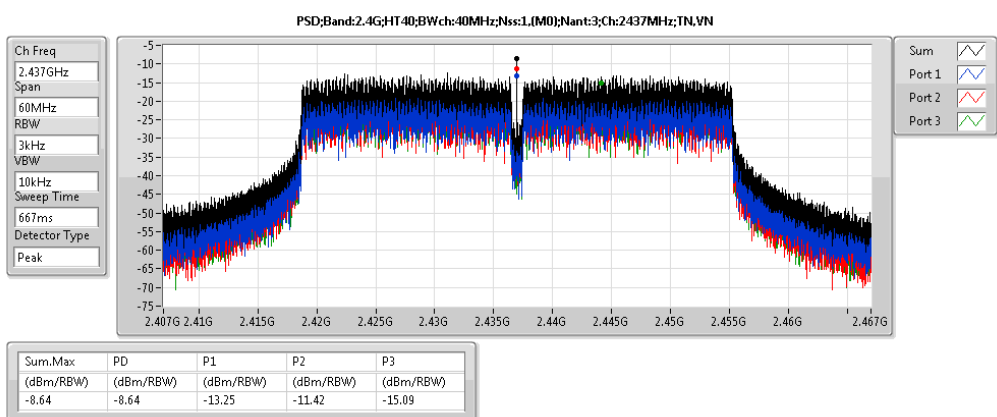
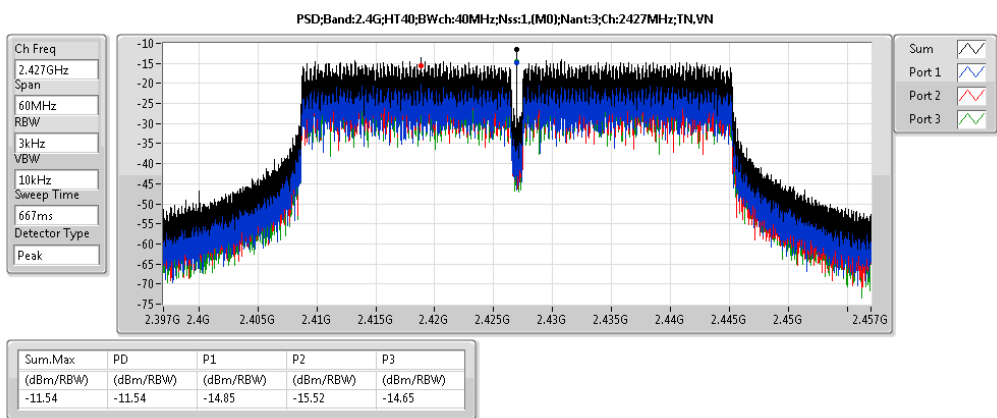
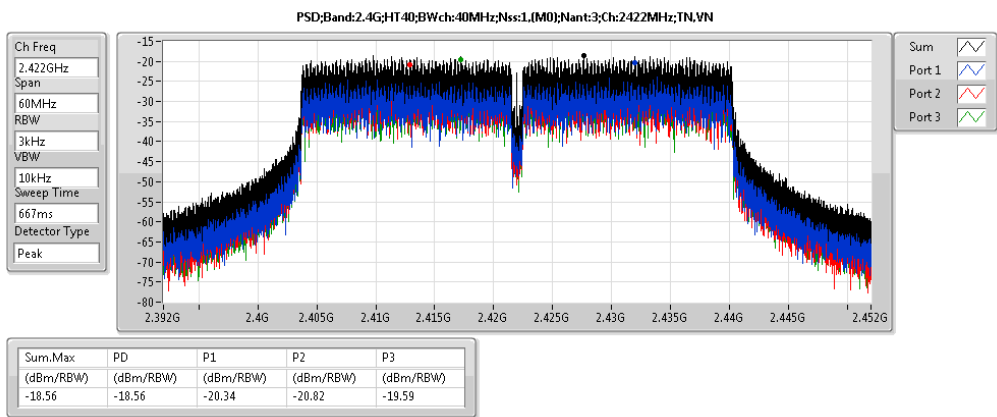
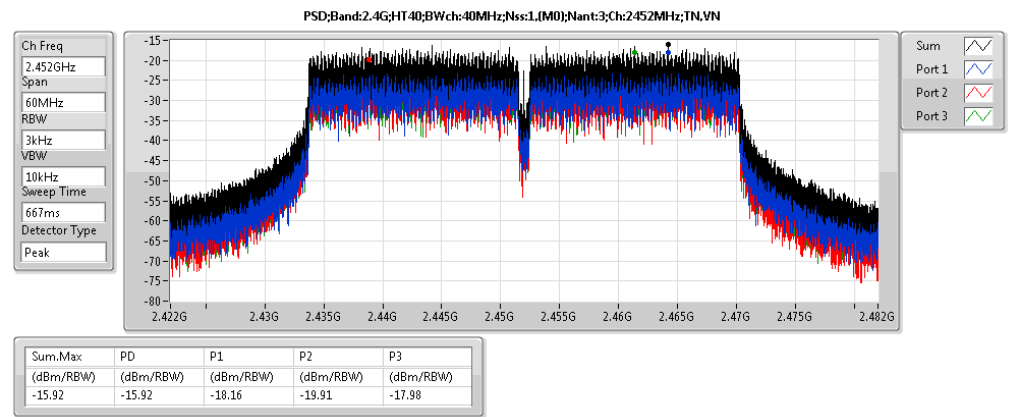
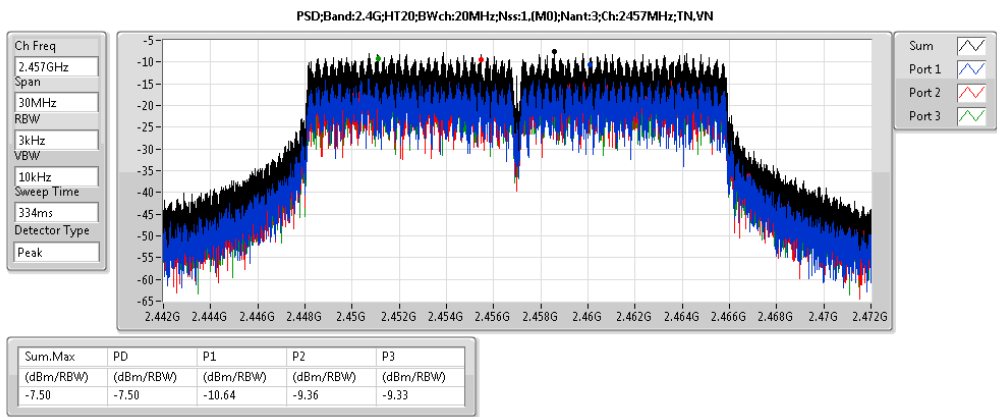
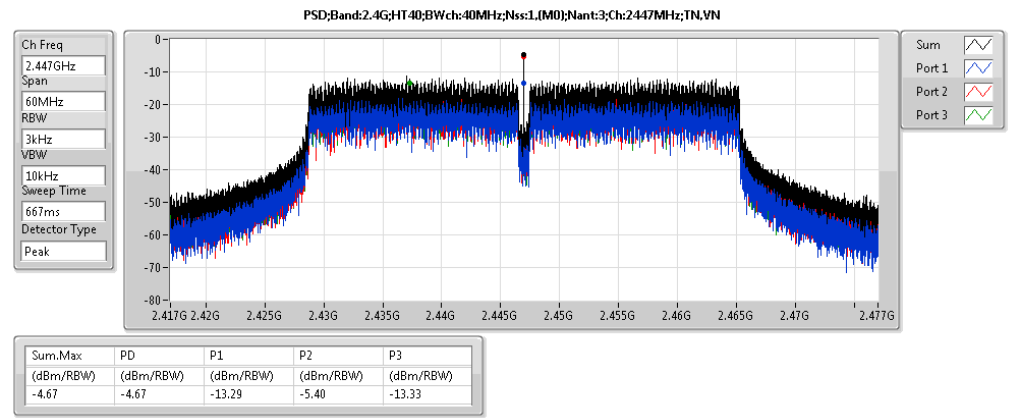
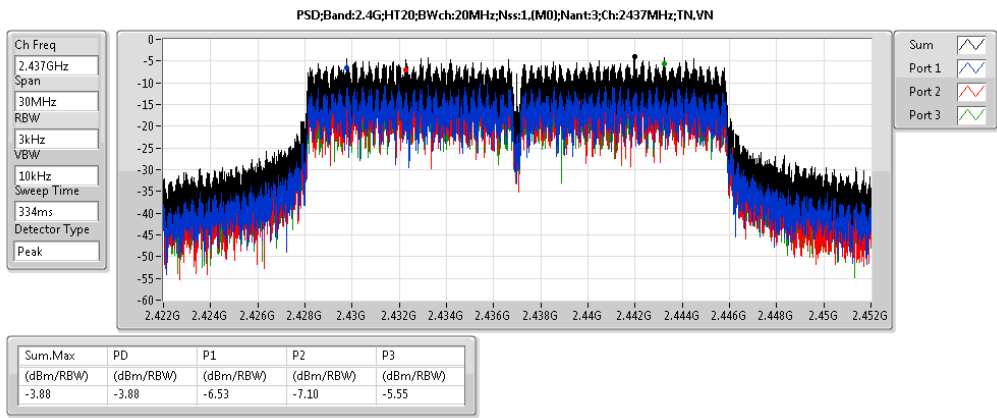
Summary

Mode	PD (dBm/RBW)	EIRP.PD (dBm/RBW)
2.4G;11b;Nss1;Ntx3	-0.03	6.59
2.4G;11g;Nss1;Ntx3	-2.67	3.95
2.4G;HT20;Nss1,(M0);Ntx3	-3.88	2.74
2.4G;HT40;Nss1,(M0);Ntx3	-4.67	1.95

Result

Mode	Result	Meas.RBW (Hz)	Lim.RBW (Hz)	BWCF (dB)	DG (dBi)	PD (dBm/RBW)	PD.Limit (dBm/RBW)	EIRP.PD (dBm/RBW)	EIRP.PD.Lim (dBm/RBW)	P1 (dBm/RBW)	P2 (dBm/RBW)	P3 (dBm/RBW)
2.4G;11b;Nss1;Ntx3;2412	Pass	3k	3k	0.00	6.62	-4.48	7.38	2.14	Inf	-8.33	-8.76	-8.33
2.4G;11b;Nss1;Ntx3;2417	Pass	3k	3k	0.00	6.62	-1.07	7.38	5.55	Inf	-4.32	-4.71	-4.07
2.4G;11b;Nss1;Ntx3;2437	Pass	3k	3k	0.00	6.62	-0.03	7.38	6.59	Inf	-2.38	-3.04	-2.73
2.4G;11b;Nss1;Ntx3;2457	Pass	3k	3k	0.00	6.62	-1.61	7.38	5.01	Inf	-4.80	-4.04	-3.93
2.4G;11b;Nss1;Ntx3;2462	Pass	3k	3k	0.00	6.62	-6.01	7.38	0.61	Inf	-7.97	-7.23	-7.71
2.4G;11g;Nss1;Ntx3;2412	Pass	3k	3k	0.00	6.62	-9.74	7.38	-3.12	Inf	-11.52	-12.24	-12.85
2.4G;11g;Nss1;Ntx3;2417	Pass	3k	3k	0.00	6.62	-5.94	7.38	0.68	Inf	-10.09	-8.55	-7.88
2.4G;11g;Nss1;Ntx3;2437	Pass	3k	3k	0.00	6.62	-2.67	7.38	3.95	Inf	-5.31	-5.70	-5.34
2.4G;11g;Nss1;Ntx3;2457	Pass	3k	3k	0.00	6.62	-7.67	7.38	-1.05	Inf	-10.86	-9.31	-8.73
2.4G;11g;Nss1;Ntx3;2462	Pass	3k	3k	0.00	6.62	-6.99	7.38	-0.37	Inf	-12.27	-14.06	-7.64
2.4G;HT20;Nss1,(M0);Ntx3;2412	Pass	3k	3k	0.00	6.62	-8.33	7.38	-1.71	Inf	-14.14	-12.83	-10.70
2.4G;HT20;Nss1,(M0);Ntx3;2417	Pass	3k	3k	0.00	6.62	-7.63	7.38	-1.01	Inf	-10.85	-9.99	-9.85
2.4G;HT20;Nss1,(M0);Ntx3;2437	Pass	3k	3k	0.00	6.62	-3.88	7.38	2.74	Inf	-6.53	-7.10	-5.55
2.4G;HT20;Nss1,(M0);Ntx3;2457	Pass	3k	3k	0.00	6.62	-7.50	7.38	-0.88	Inf	-10.64	-9.36	-9.33
2.4G;HT20;Nss1,(M0);Ntx3;2462	Pass	3k	3k	0.00	6.62	-8.60	7.38	-1.98	Inf	-13.58	-9.10	-13.37
2.4G;HT40;Nss1,(M0);Ntx3;2422	Pass	3k	3k	0.00	6.62	-18.56	7.38	-11.93	Inf	-20.34	-20.82	-19.59
2.4G;HT40;Nss1,(M0);Ntx3;2427	Pass	3k	3k	0.00	6.62	-11.54	7.38	-4.92	Inf	-14.85	-15.52	-14.65
2.4G;HT40;Nss1,(M0);Ntx3;2437	Pass	3k	3k	0.00	6.62	-8.64	7.38	-2.02	Inf	-13.25	-11.42	-15.09
2.4G;HT40;Nss1,(M0);Ntx3;2447	Pass	3k	3k	0.00	6.62	-4.67	7.38	1.95	Inf	-13.29	-5.40	-13.33
2.4G;HT40;Nss1,(M0);Ntx3;2452	Pass	3k	3k	0.00	6.62	-15.92	7.38	-9.30	Inf	-18.16	-19.91	-17.98







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
2.4G;HT40;Nss1,(M0);Ntx3;2422	Pass	2.425718G	0.54	-19.46	2.160845G	-55.68	2.39872G	-35.84	2.51998G	-53.62	17.332326G	-53.32	3



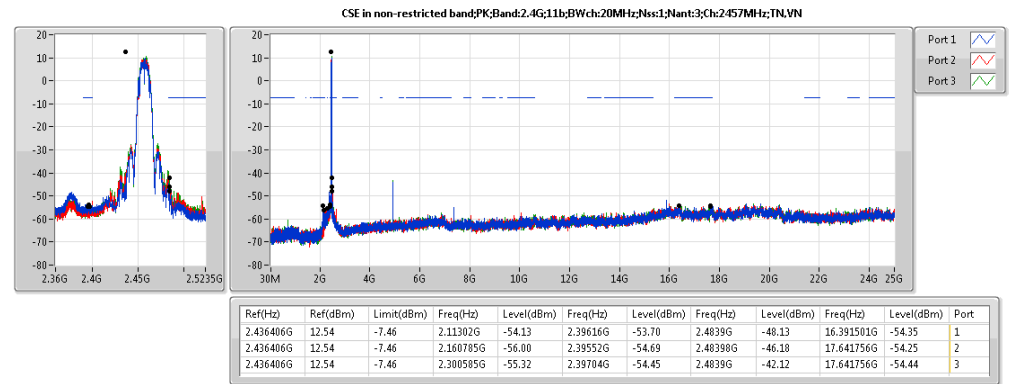
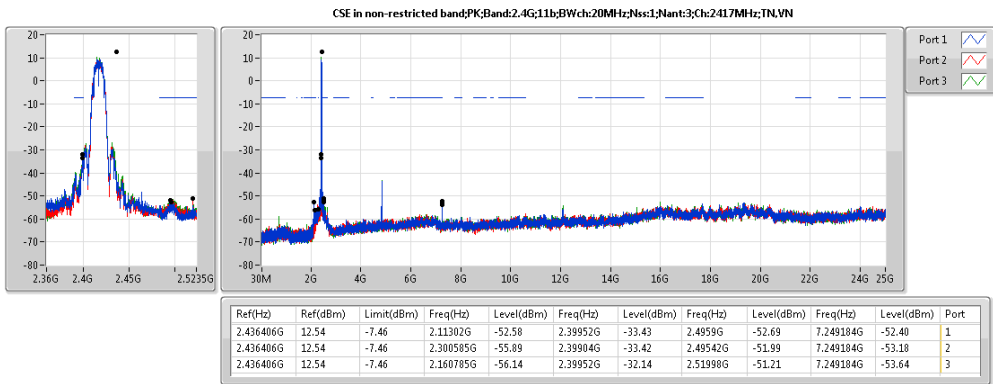
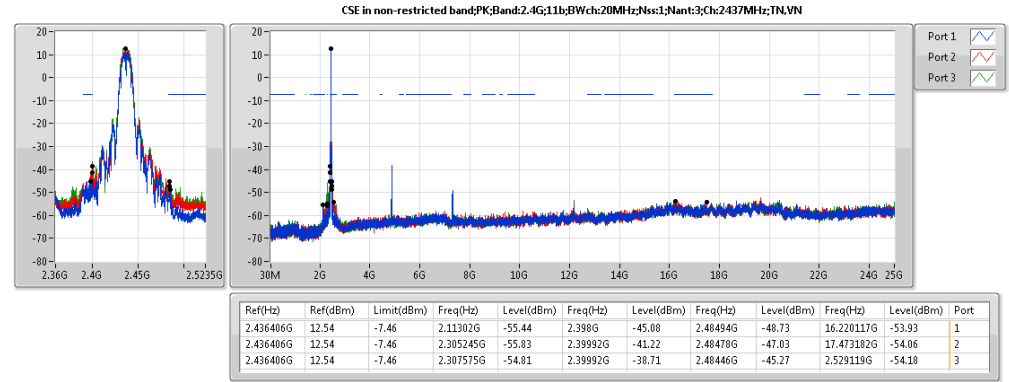
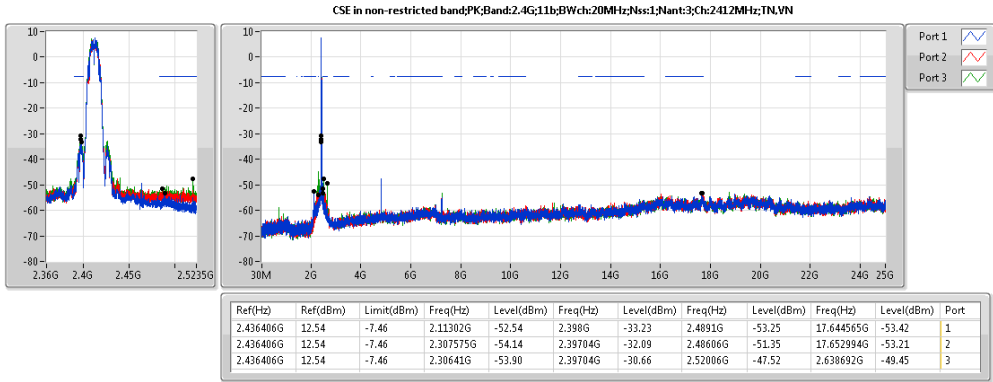
Result

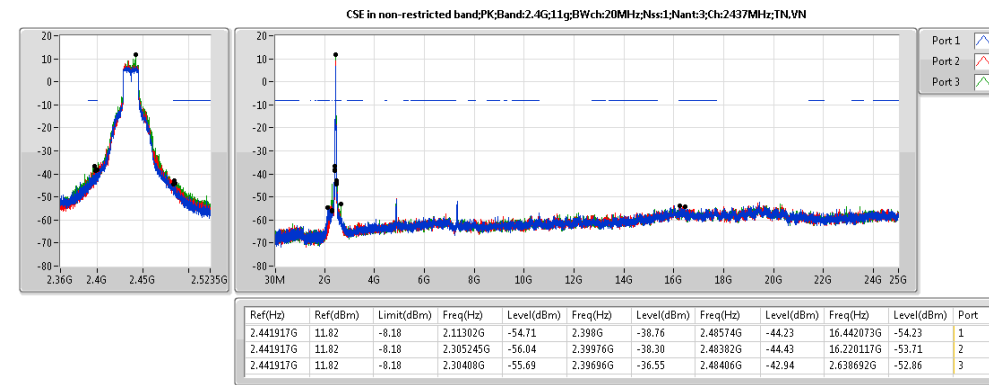
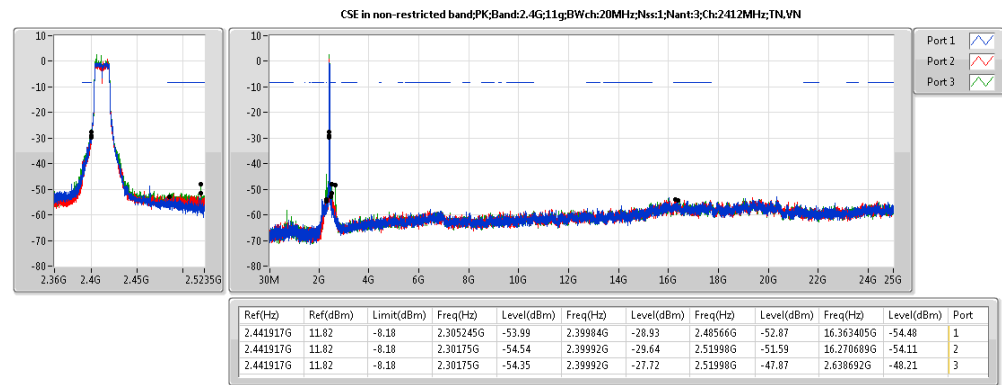
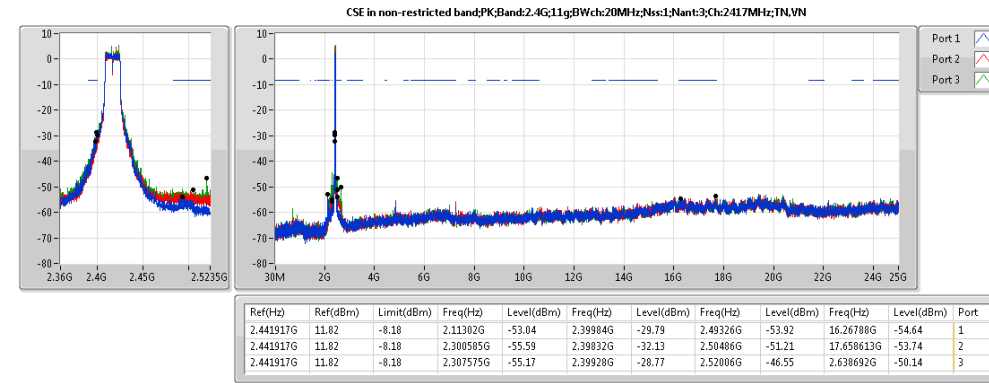
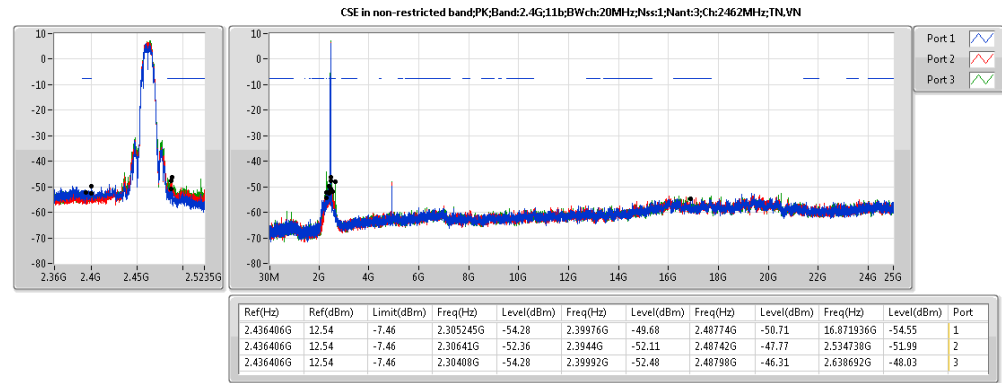
Table with 14 columns: Mode, Result, Ref (Hz), Ref (dBm), Limit (dBm), Freq (Hz), Level (dBm), Freq (Hz), Level (dBm), Freq (Hz), Level (dBm), Freq (Hz), Level (dBm), Port. Rows include various 2.4G and 2.4G:HT20/HT40 configurations with results like Pass and values such as 2.436406G, 12.54, -7.46, etc.

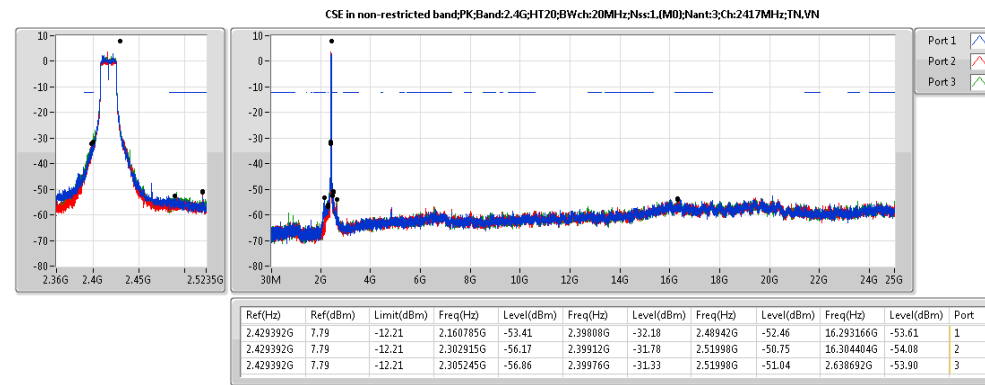
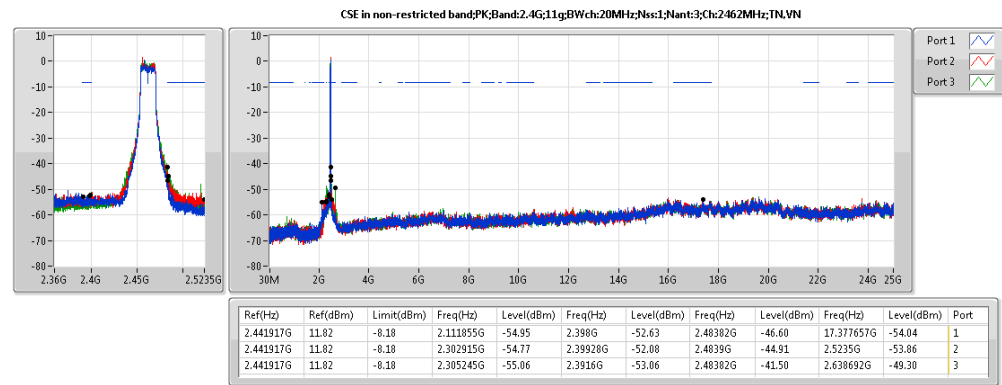
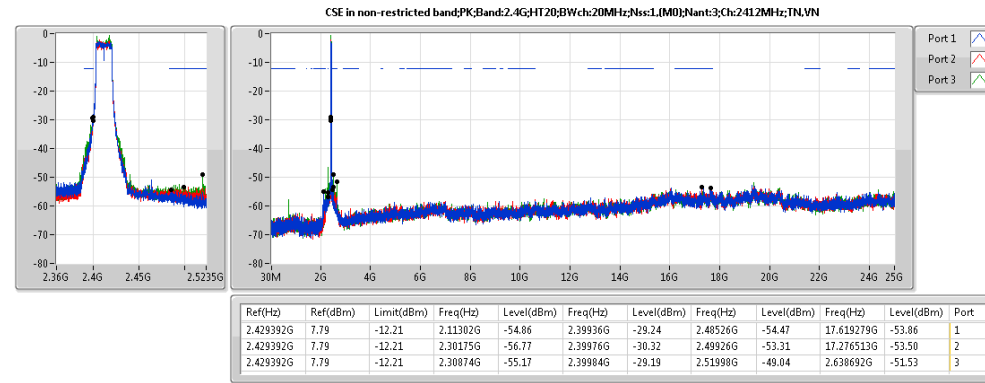
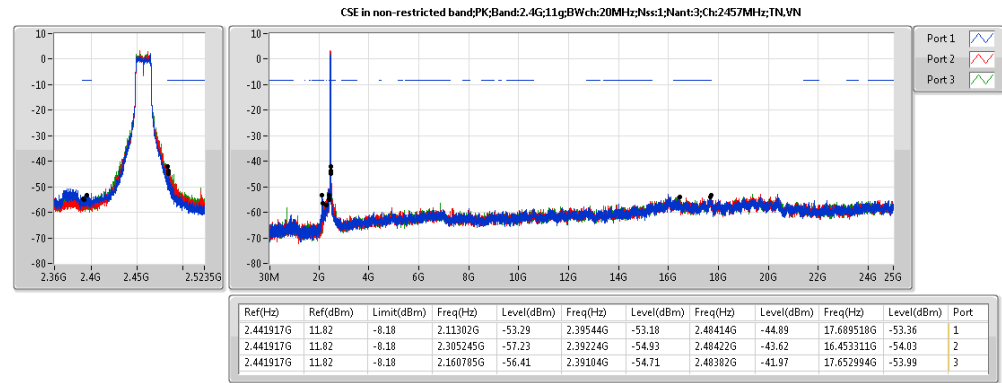


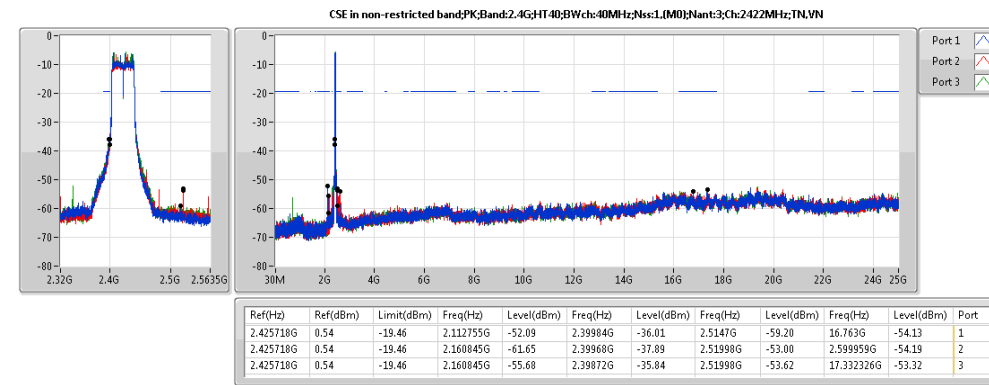
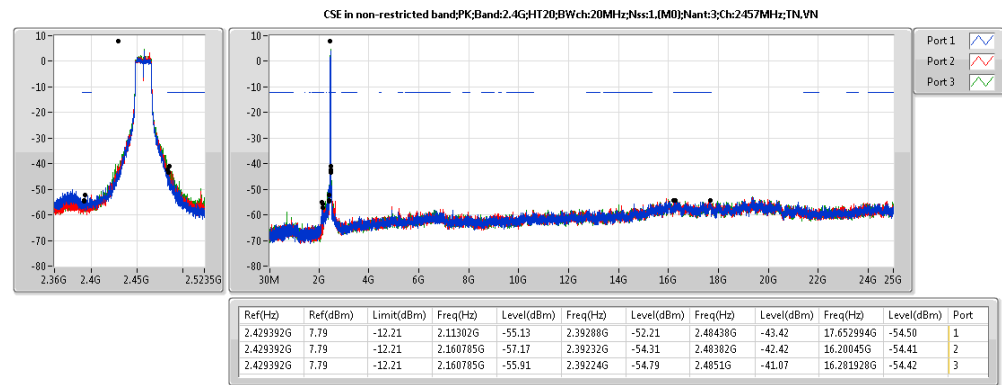
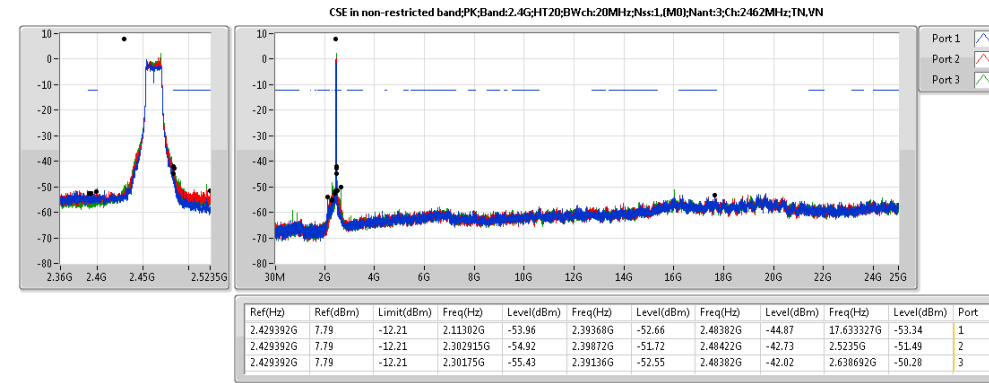
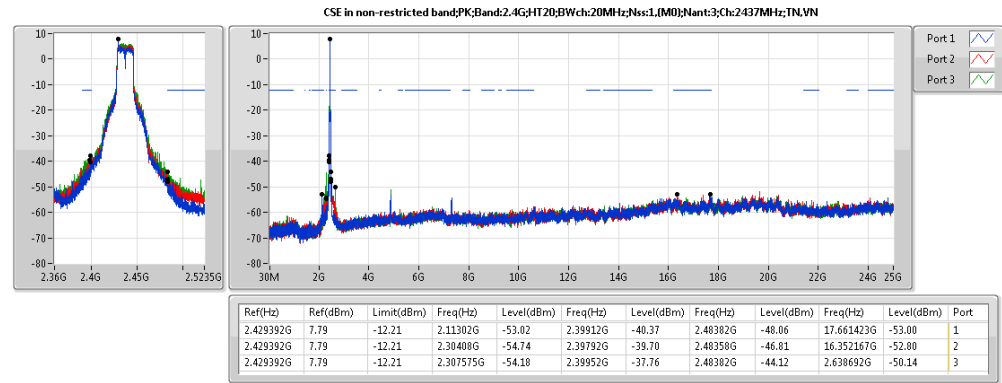
CSEndB Result

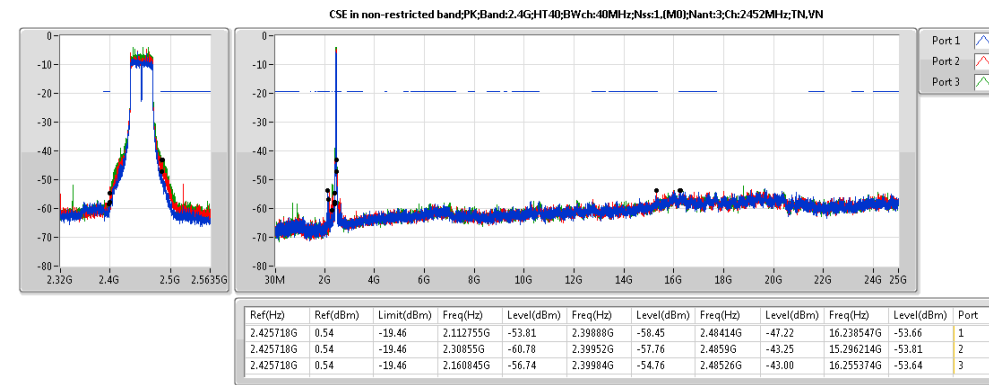
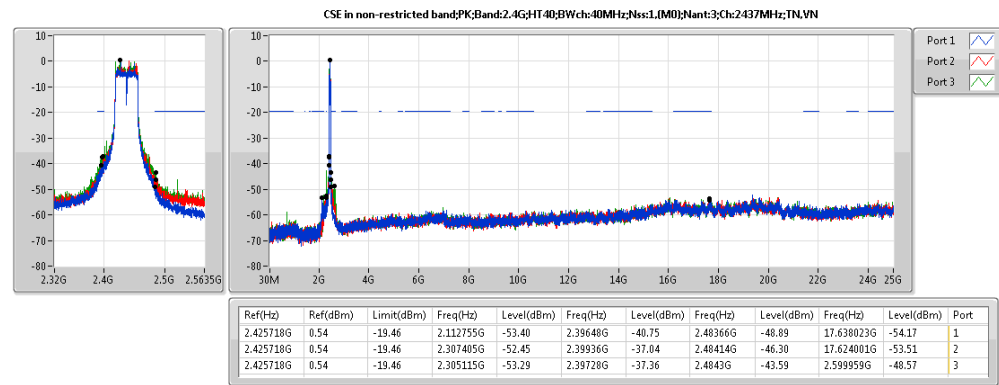
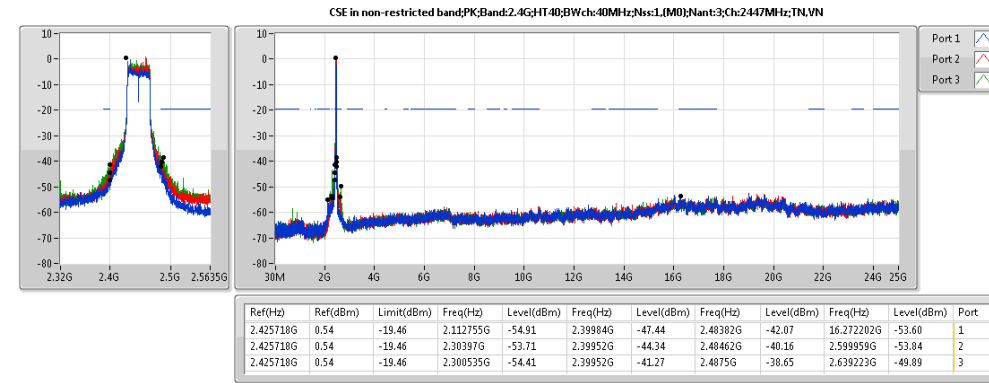
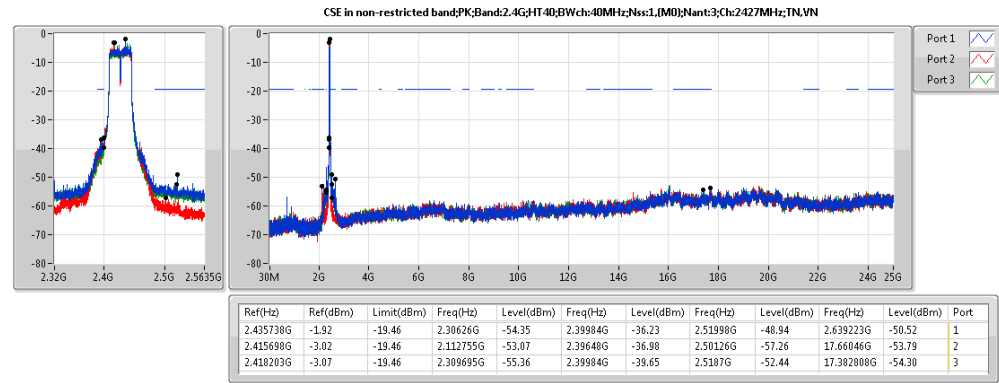
Appendix E

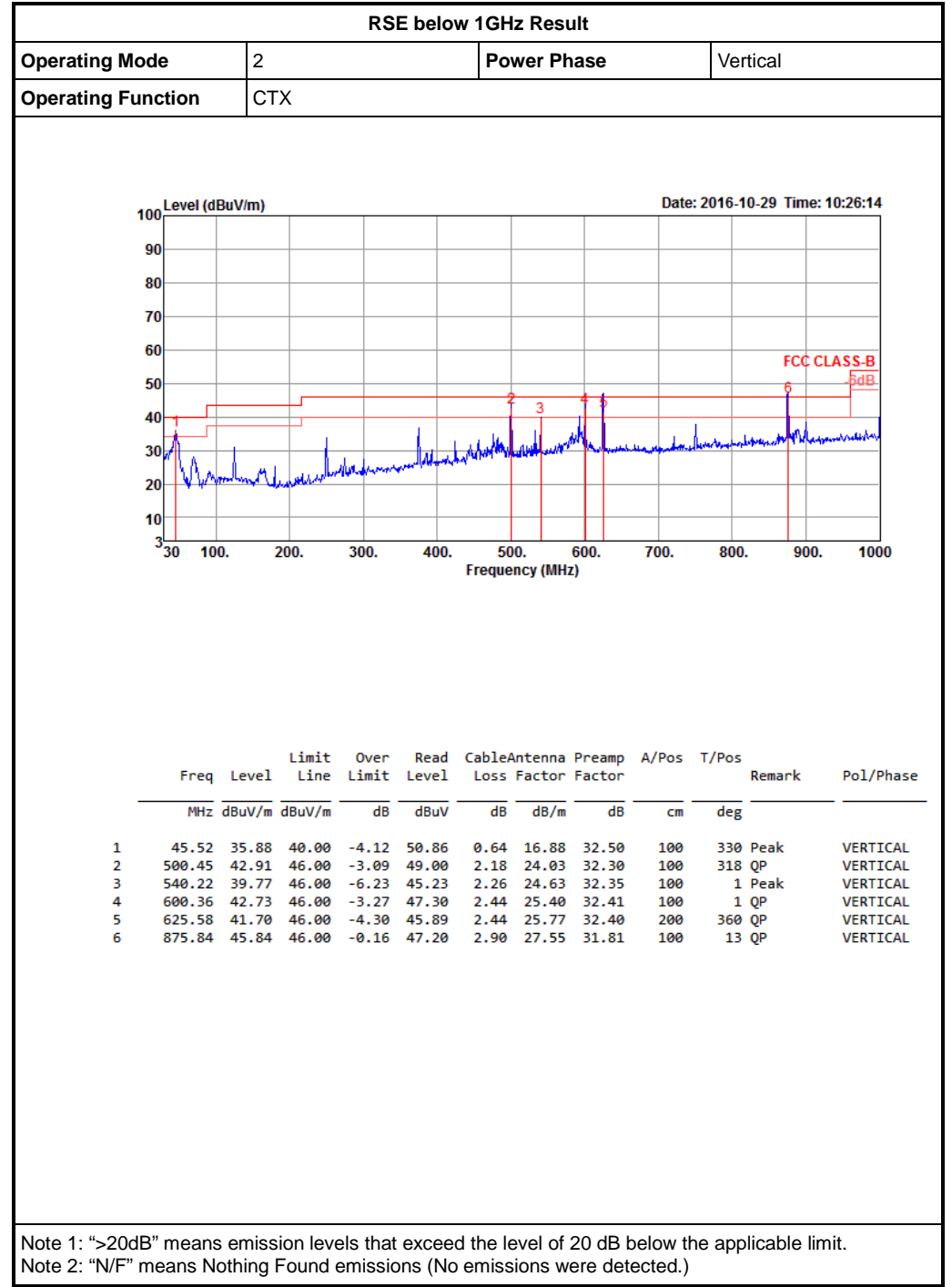
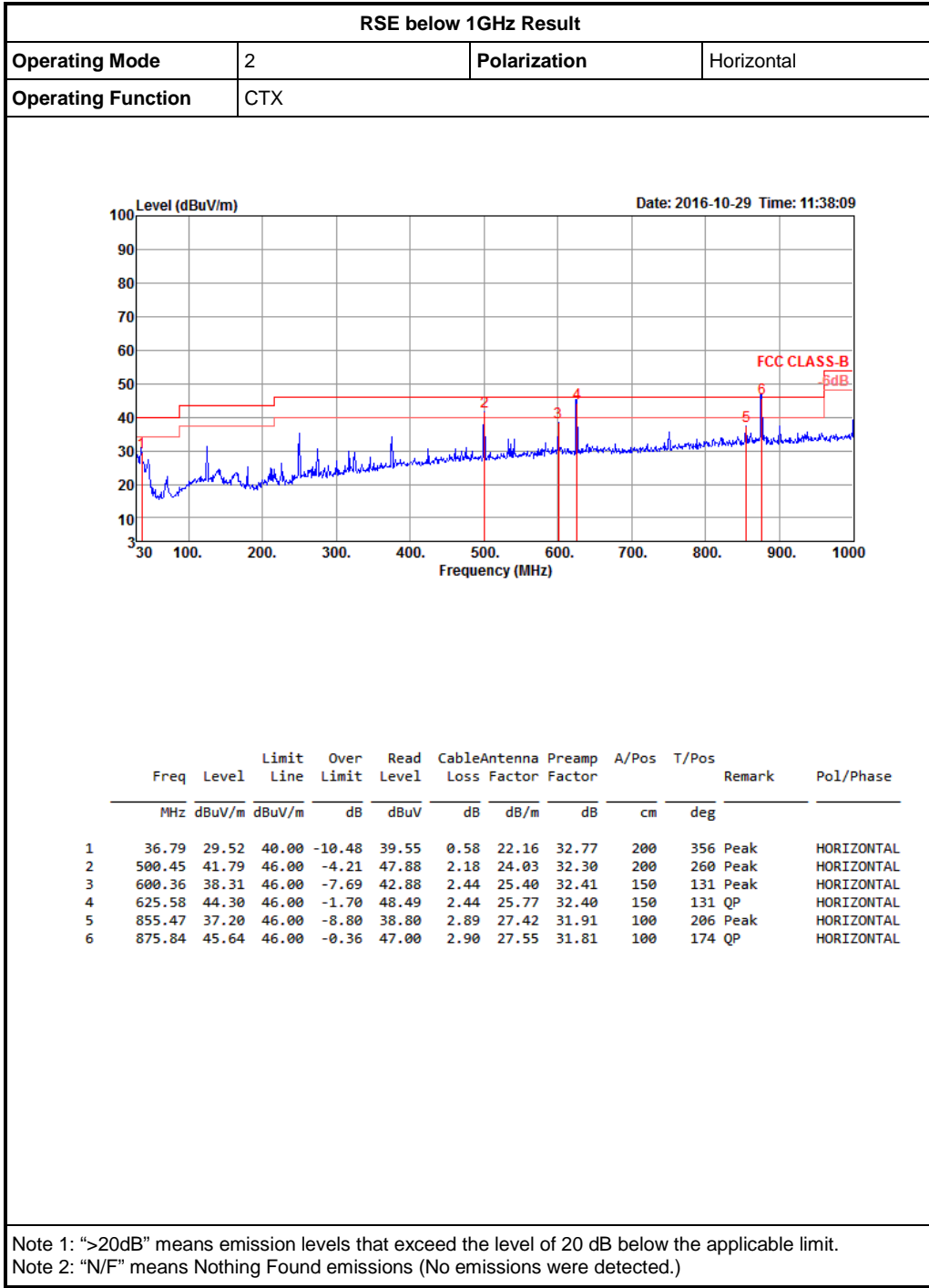














Radiated Emissions (1GHz~10th Harmonic)

Configurations	IEEE 802.11b CH 1 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.97	39.40	54.00	-14.60	36.16	4.94	32.82	34.52	174	85	Average	HORIZONTAL
2	4824.07	46.56	74.00	-27.44	43.32	4.94	32.82	34.52	174	85	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.90	48.13	74.00	-25.87	44.89	4.94	32.82	34.52	150	33	Peak	VERTICAL
2	4824.00	42.21	54.00	-11.79	38.97	4.94	32.82	34.52	150	33	Average	VERTICAL

Configurations	IEEE 802.11b CH 2 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4833.99	42.13	54.00	-11.87	38.42	7.75	32.61	36.65	250	27	Average	HORIZONTAL
2	4834.09	49.78	74.00	-24.22	46.07	7.75	32.61	36.65	250	27	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4833.98	47.22	54.00	-6.78	43.51	7.75	32.61	36.65	225	53	Average	VERTICAL
2	4834.12	50.46	74.00	-23.54	46.75	7.75	32.61	36.65	225	53	Peak	VERTICAL

Configurations	IEEE 802.11b CH 6 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.01	55.36	74.00	-18.64	52.02	4.94	32.91	34.51	212	5	Peak	HORIZONTAL
2	4874.01	53.36	54.00	-0.64	50.02	4.94	32.91	34.51	212	5	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.97	53.91	54.00	-0.09	50.57	4.94	32.91	34.51	163	53	Average	VERTICAL
2	4874.01	55.72	74.00	-18.28	52.38	4.94	32.91	34.51	163	53	Peak	VERTICAL



Configurations	IEEE 802.11b CH 10 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4913.94	48.25	54.00	-5.75	44.29	7.85	32.75	36.64	291	19	Average	HORIZONTAL
2	4913.98	52.77	74.00	-21.23	48.81	7.85	32.75	36.64	291	19	Peak	HORIZONTAL
3 @	7369.28	50.43	54.00	-3.57	40.01	9.18	37.33	36.09	250	158	Average	HORIZONTAL
4	7369.48	57.63	74.00	-16.37	47.21	9.18	37.33	36.09	250	158	Peak	HORIZONTAL
5	12283.56	47.96	54.00	-6.04	33.00	12.22	38.86	36.12	260	313	Average	HORIZONTAL
6	12287.48	58.26	74.00	-15.74	43.30	12.22	38.86	36.12	260	313	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4913.88	51.66	74.00	-22.34	47.70	7.85	32.75	36.64	211	79	Peak	VERTICAL
2	4913.95	46.56	54.00	-7.44	42.60	7.85	32.75	36.64	211	79	Average	VERTICAL
3 @	7372.76	49.71	54.00	-4.29	39.28	9.18	37.33	36.08	250	18	Average	VERTICAL
4	7373.00	57.19	74.00	-16.81	46.76	9.18	37.33	36.08	250	18	Peak	VERTICAL
5	12285.64	48.75	54.00	-5.25	33.79	12.22	38.86	36.12	239	289	Average	VERTICAL
6	12285.92	58.90	74.00	-15.10	43.94	12.22	38.86	36.12	239	289	Peak	VERTICAL

Configurations	IEEE 802.11b CH 11 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.05	41.38	54.00	-12.62	37.94	4.94	32.99	34.49	228	147	Average	HORIZONTAL
2	4924.12	48.12	74.00	-25.88	44.68	4.94	32.99	34.49	228	147	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.97	41.77	54.00	-12.23	38.33	4.94	32.99	34.49	185	261	Average	VERTICAL
2	4924.13	48.16	74.00	-25.84	44.72	4.94	32.99	34.49	185	261	Peak	VERTICAL



Configurations	IEEE 802.11g CH 1 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.38	43.10	54.00	-10.90	39.86	4.94	32.82	34.52	194	6	Average	HORIZONTAL
2	4823.62	55.78	74.00	-18.22	52.54	4.94	32.82	34.52	194	6	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4822.99	43.20	54.00	-10.80	39.96	4.94	32.82	34.52	198	57	Average	VERTICAL
2	4823.33	55.54	74.00	-18.46	52.30	4.94	32.82	34.52	198	57	Peak	VERTICAL

Configurations	IEEE 802.11g CH 2 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4836.48	33.71	54.00	-20.29	30.00	7.75	32.61	36.65	264	27	Average	HORIZONTAL
2	4836.96	46.64	74.00	-27.36	42.93	7.75	32.61	36.65	264	27	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4829.00	34.34	54.00	-19.66	30.63	7.75	32.61	36.65	216	56	Average	VERTICAL
2	4834.54	47.15	74.00	-26.85	43.44	7.75	32.61	36.65	216	56	Peak	VERTICAL

Configurations	IEEE 802.11g CH 6 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.71	39.40	54.00	-14.60	36.06	4.94	32.91	34.51	212	12	Average	HORIZONTAL
2	4874.00	52.49	74.00	-21.51	49.15	4.94	32.91	34.51	212	12	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.72	55.02	74.00	-18.98	51.68	4.94	32.91	34.51	189	34	Peak	VERTICAL
2	4872.97	40.90	54.00	-13.10	37.56	4.94	32.91	34.51	189	34	Average	VERTICAL



Configurations	IEEE 802.11g CH 10 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1 @	4915.34	33.72	54.00	-20.28	29.76	7.85	32.75	36.64	250	245 Average	HORIZONTAL
2	4915.96	46.98	74.00	-27.02	43.02	7.85	32.75	36.64	250	245 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4916.80	47.09	74.00	-26.91	43.13	7.85	32.75	36.64	250	52 Peak	VERTICAL
2 @	4918.14	33.03	54.00	-20.97	29.07	7.85	32.75	36.64	250	52 Average	VERTICAL

Configurations	IEEE 802.11g CH 11 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4927.72	31.67	54.00	-22.33	28.23	4.94	32.99	34.49	178	291 Average	HORIZONTAL
2	4931.95	44.23	74.00	-29.77	40.79	4.94	32.99	34.49	178	291 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4924.87	31.47	54.00	-22.53	28.03	4.94	32.99	34.49	165	217 Average	VERTICAL
2	4928.01	44.74	74.00	-29.26	41.30	4.94	32.99	34.49	165	217 Peak	VERTICAL



Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4814.99	31.34	54.00	-22.66	28.10	4.94	32.82	34.52	193	110	Average	HORIZONTAL
2	4830.86	43.97	74.00	-30.03	40.71	4.94	32.84	34.52	193	110	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4814.99	44.02	74.00	-29.98	40.78	4.94	32.82	34.52	205	184	Peak	VERTICAL
2	4831.44	31.53	54.00	-22.47	28.27	4.94	32.84	34.52	205	184	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 2 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4832.64	33.58	54.00	-20.42	29.87	7.75	32.61	36.65	250	181	Average	HORIZONTAL
2	4832.64	48.31	74.00	-25.69	44.60	7.75	32.61	36.65	250	181	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4834.40	47.85	74.00	-26.15	44.14	7.75	32.61	36.65	220	44	Peak	VERTICAL
2 @	4838.60	32.80	54.00	-21.20	29.09	7.75	32.61	36.65	220	44	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.91	50.04	74.00	-23.96	46.70	4.94	32.91	34.51	220	11	Peak	HORIZONTAL
2	4873.20	36.31	54.00	-17.69	32.97	4.94	32.91	34.51	220	11	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.17	37.36	54.00	-16.64	34.02	4.94	32.91	34.51	192	46	Average	VERTICAL
2	4873.55	50.58	74.00	-23.42	47.24	4.94	32.91	34.51	192	46	Peak	VERTICAL



Configurations	IEEE 802.11n MCS0 HT20 CH 10 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4915.86	47.48	74.00	-26.52	43.52	7.85	32.75	36.64	171	19	Peak	HORIZONTAL
2 @	4917.46	33.22	54.00	-20.78	29.26	7.85	32.75	36.64	171	19	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	4910.32	32.12	54.00	-21.88	28.16	7.85	32.75	36.64	299	80	Average	VERTICAL
2	4917.16	47.01	74.00	-26.99	43.05	7.85	32.75	36.64	299	80	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.03	31.47	54.00	-22.53	28.03	4.94	32.99	34.49	205	163	Average	HORIZONTAL
2	4931.37	43.67	74.00	-30.33	40.23	4.94	32.99	34.49	205	163	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4932.40	44.02	74.00	-29.98	40.58	4.94	32.99	34.49	190	75	Peak	VERTICAL
2	4933.58	31.25	54.00	-22.75	27.81	4.94	32.99	34.49	190	75	Average	VERTICAL



Configurations	IEEE 802.11n MCS0 HT40 CH 3 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4815.86	31.27	54.00	-22.73	28.03	4.94	32.82	34.52	167	310	Average	HORIZONTAL
2	4820.25	44.12	74.00	-29.88	40.88	4.94	32.82	34.52	167	310	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4816.89	31.01	54.00	-22.99	27.77	4.94	32.82	34.52	179	223	Average	VERTICAL
2	4823.55	44.17	74.00	-29.83	40.93	4.94	32.82	34.52	179	223	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 4 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4853.96	33.22	54.00	-20.78	26.68	6.27	33.20	32.93	148	147	Average	HORIZONTAL
2	4863.44	47.07	74.00	-26.93	40.53	6.27	33.20	32.93	148	147	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4846.44	47.04	74.00	-26.96	40.53	6.27	33.17	32.93	186	198	Peak	VERTICAL
2	4853.24	33.36	54.00	-20.64	26.82	6.27	33.20	32.93	186	198	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 6 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4865.22	44.27	74.00	-29.73	40.96	4.94	32.88	34.51	156	174	Peak	HORIZONTAL
2	4880.70	31.06	54.00	-22.94	27.71	4.94	32.91	34.50	156	174	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4879.00	44.57	74.00	-29.43	41.22	4.94	32.91	34.50	181	244	Peak	VERTICAL
2	4881.37	31.12	54.00	-22.88	27.75	4.94	32.93	34.50	181	244	Average	VERTICAL



Configurations	IEEE 802.11n MCS0 HT40 CH 8 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4898.54	41.65	74.00	-32.35	37.74	7.83	32.73	36.65	250	227	Peak	HORIZONTAL
2 @	4898.94	32.13	54.00	-21.87	28.22	7.83	32.73	36.65	250	227	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4894.00	33.40	54.00	-20.60	29.53	7.81	32.71	36.65	156	40	Average	VERTICAL
2	4896.10	46.69	74.00	-27.31	42.78	7.83	32.73	36.65	156	40	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 9 / Ant. 1 + Ant. 2 + Ant. 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4898.42	31.38	54.00	-22.62	27.99	4.94	32.95	34.50	203	49	Average	HORIZONTAL
2	4910.25	44.24	74.00	-29.76	40.82	4.94	32.97	34.49	203	49	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4895.99	44.40	74.00	-29.60	41.01	4.94	32.95	34.50	198	106	Peak	VERTICAL
2	4907.30	31.34	54.00	-22.66	27.95	4.94	32.95	34.50	198	106	Average	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

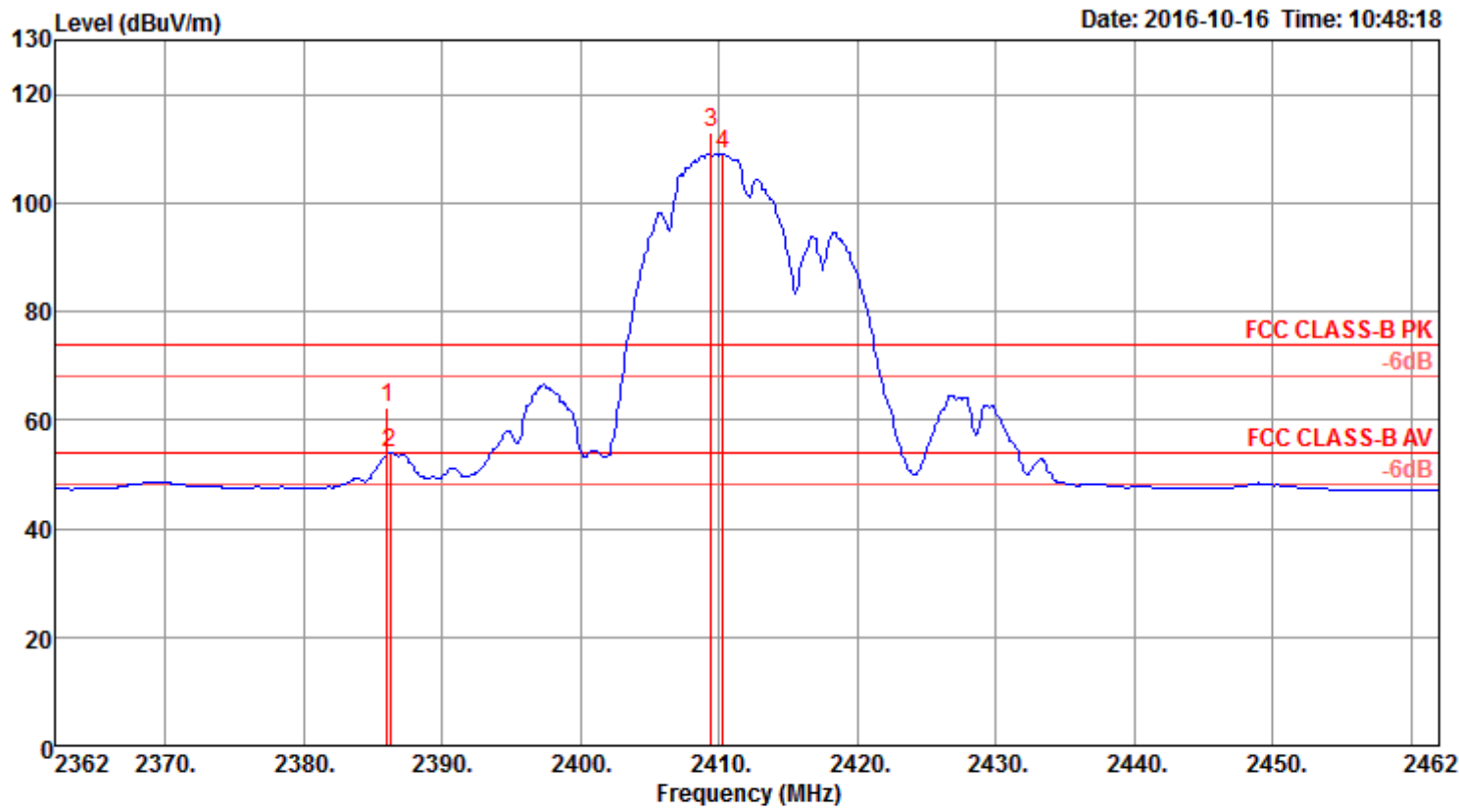
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.



Band Edge Emissions

Configurations	IEEE 802.11b CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3
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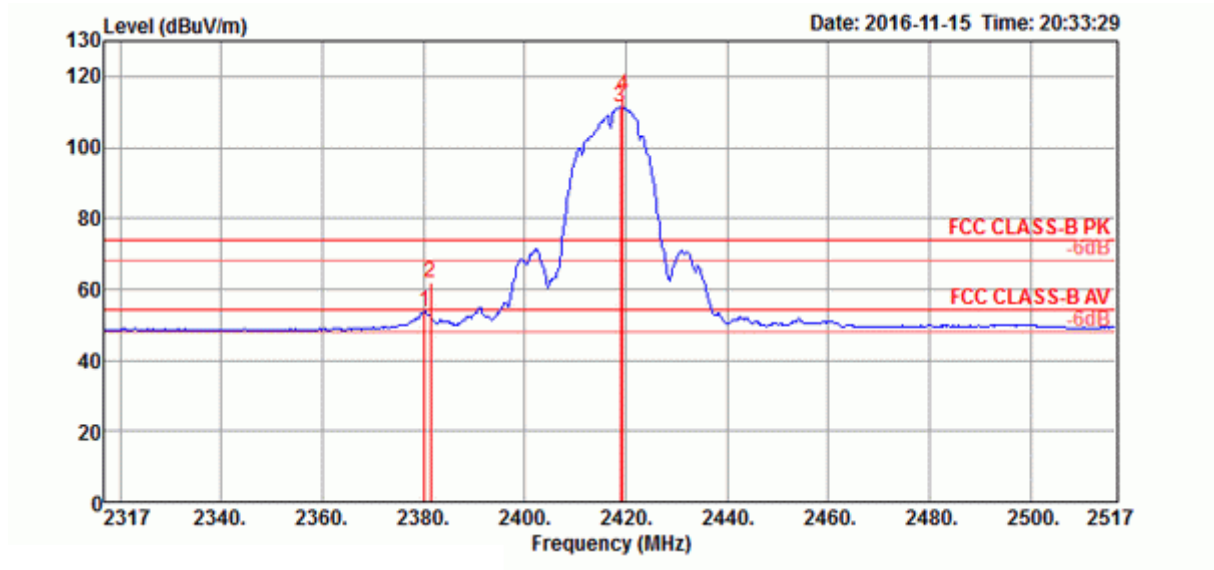
Channel 1



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2386.04	62.41	74.00	-11.59	31.04	3.35	28.02	0.00	219	53	Peak	VERTICAL
2	2386.20	53.87	54.00	-0.13	22.50	3.35	28.02	0.00	219	53	Average	VERTICAL
3	2409.44	113.03			81.66	3.37	28.00	0.00	219	53	Peak	VERTICAL
4	2410.24	109.18			77.81	3.37	28.00	0.00	219	53	Average	VERTICAL

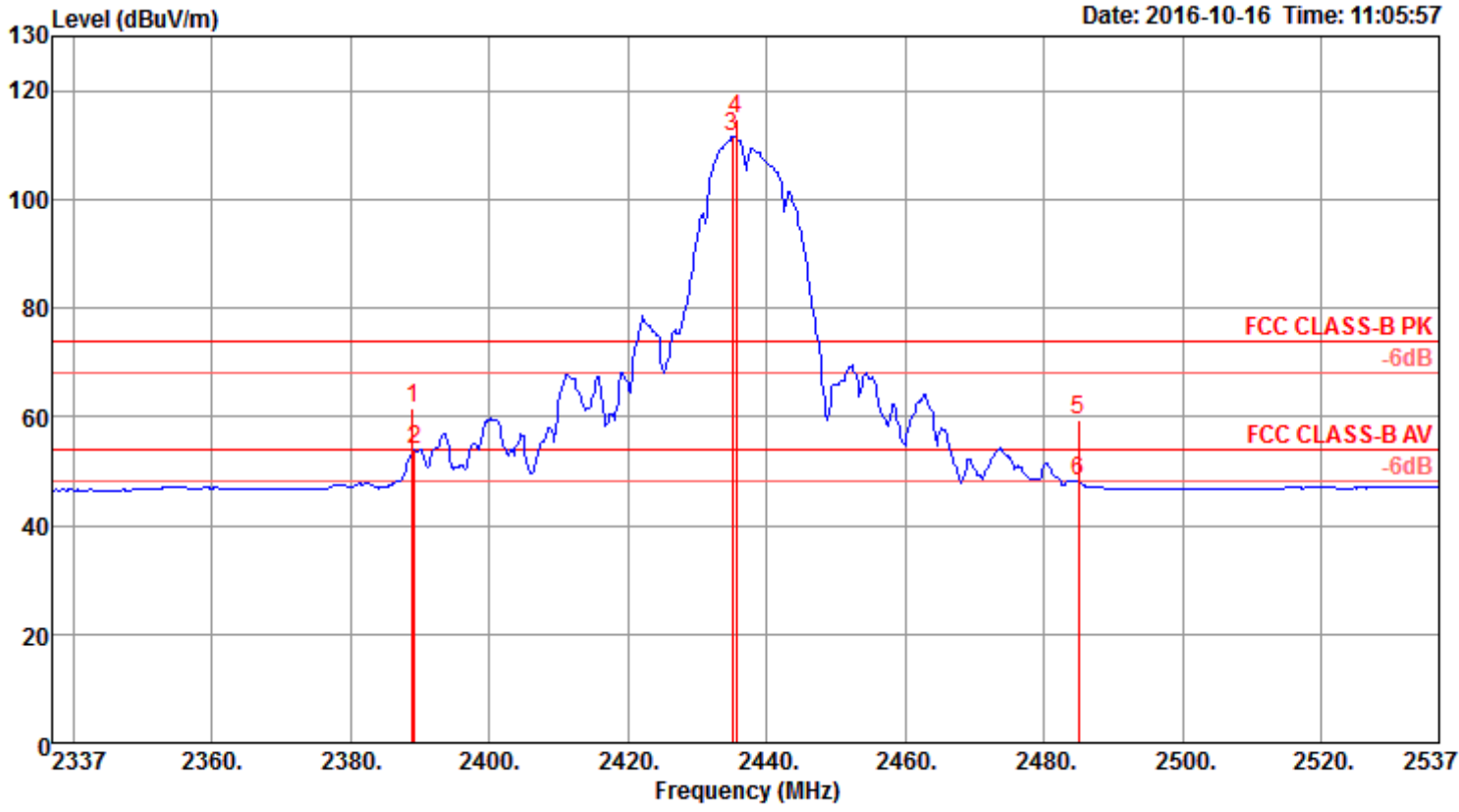
Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 2



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2380.20	53.80	54.00	-0.20	19.72	6.17	27.91	0.00	211	297	Average	VERTICAL
2	2381.40	62.06	74.00	-11.94	27.98	6.17	27.91	0.00	211	297	Peak	VERTICAL
3 @	2419.00	111.44			77.33	6.24	27.87	0.00	211	297	Average	VERTICAL
4	2419.40	114.63			80.52	6.24	27.87	0.00	211	297	Peak	VERTICAL

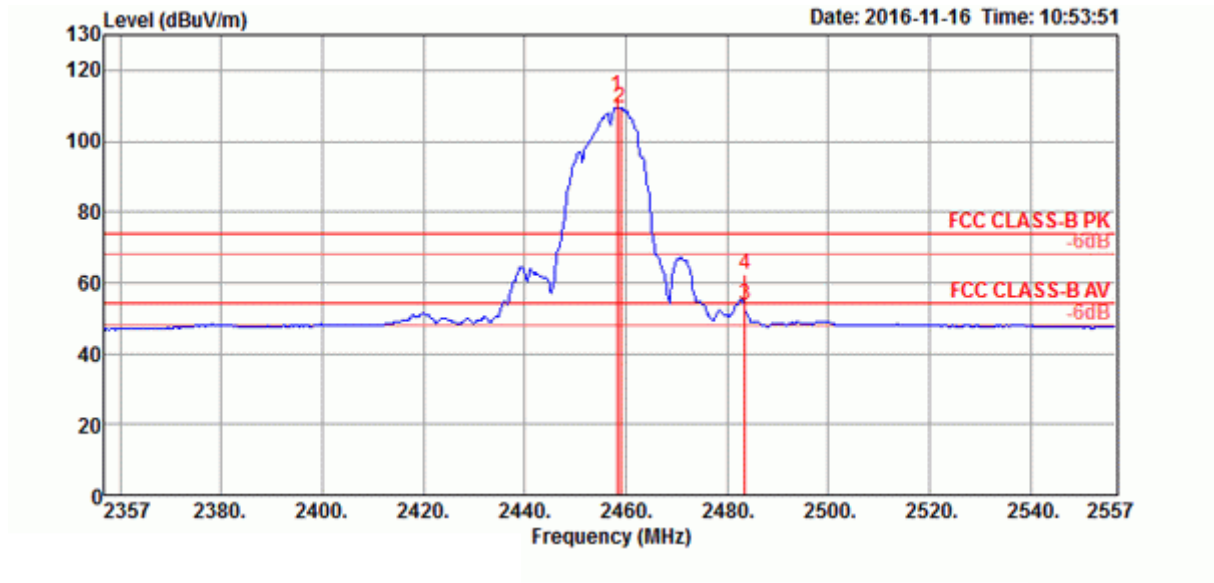
Channel 6



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.92	61.74	74.00	-12.26	30.37	3.35	28.02	0.00	241	294	Peak	VERTICAL
2	2389.20	53.88	54.00	-0.12	22.51	3.35	28.02	0.00	241	294	Average	VERTICAL
3	2435.08	111.38			80.02	3.39	27.97	0.00	241	294	Average	VERTICAL
4	2435.72	114.82			83.46	3.39	27.97	0.00	241	294	Peak	VERTICAL
5	2485.00	59.22	74.00	-14.78	27.87	3.43	27.92	0.00	241	294	Peak	VERTICAL
6	2485.00	48.22	54.00	-5.78	16.87	3.43	27.92	0.00	241	294	Average	VERTICAL

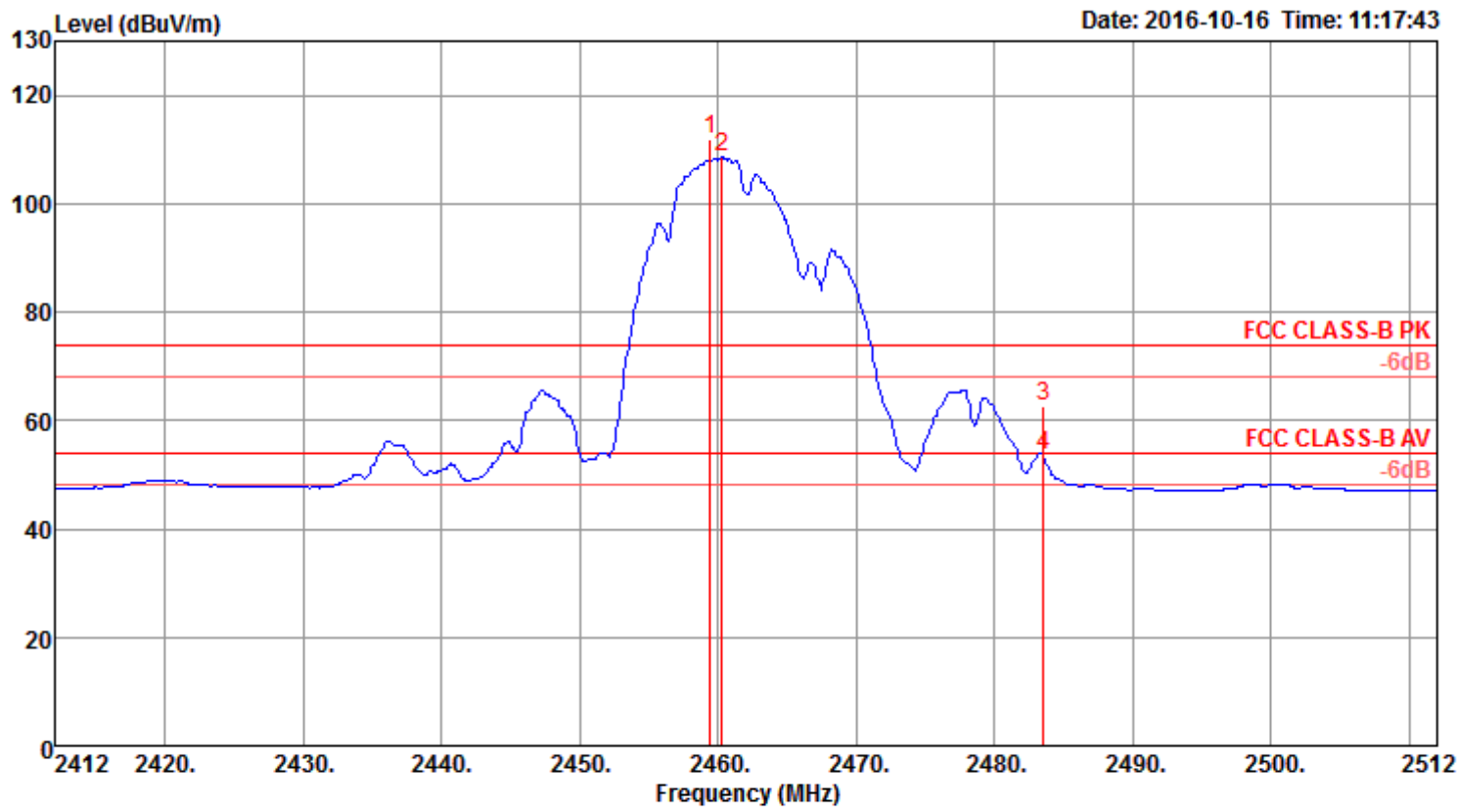
Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 10



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2458.20	112.66			78.08	6.74	27.84	0.00	223	26	Peak	HORIZONTAL
2 @	2459.00	109.28			74.70	6.74	27.84	0.00	223	26	Average	HORIZONTAL
3	2483.50	53.68	54.00	-0.32	19.06	6.81	27.81	0.00	223	26	Average	HORIZONTAL
4	2483.50	62.39	74.00	-11.61	27.77	6.81	27.81	0.00	223	26	Peak	HORIZONTAL

Channel 11



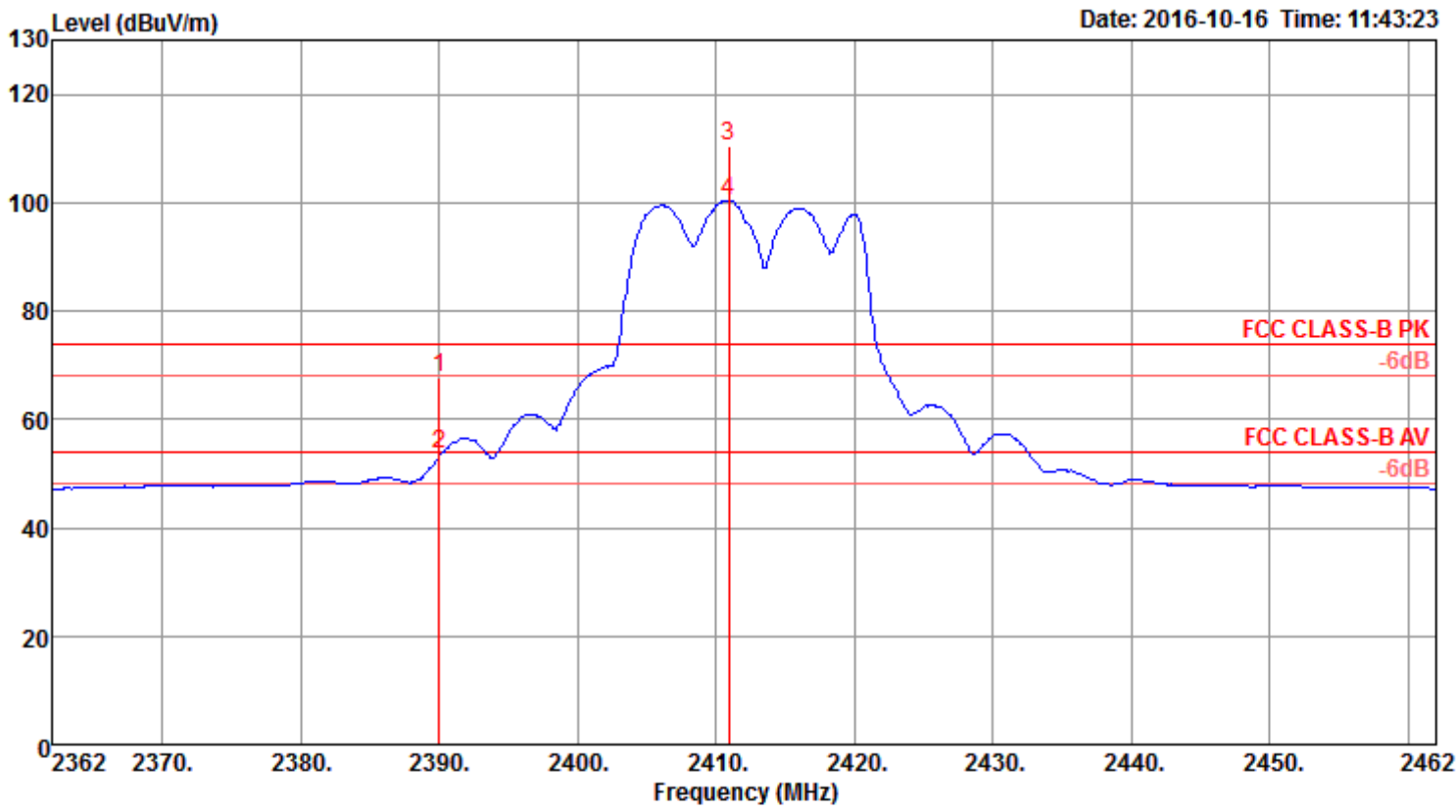
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2459.44	111.96			80.60	3.41	27.95	0.00	210	55 Peak	VERTICAL
2	2460.24	108.60			77.24	3.41	27.95	0.00	210	55 Average	VERTICAL
3	2483.50	62.69	74.00	-11.31	31.34	3.43	27.92	0.00	210	55 Peak	VERTICAL
4	2483.50	53.74	54.00	-0.26	22.39	3.43	27.92	0.00	210	55 Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.



Configurations	IEEE 802.11g CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3
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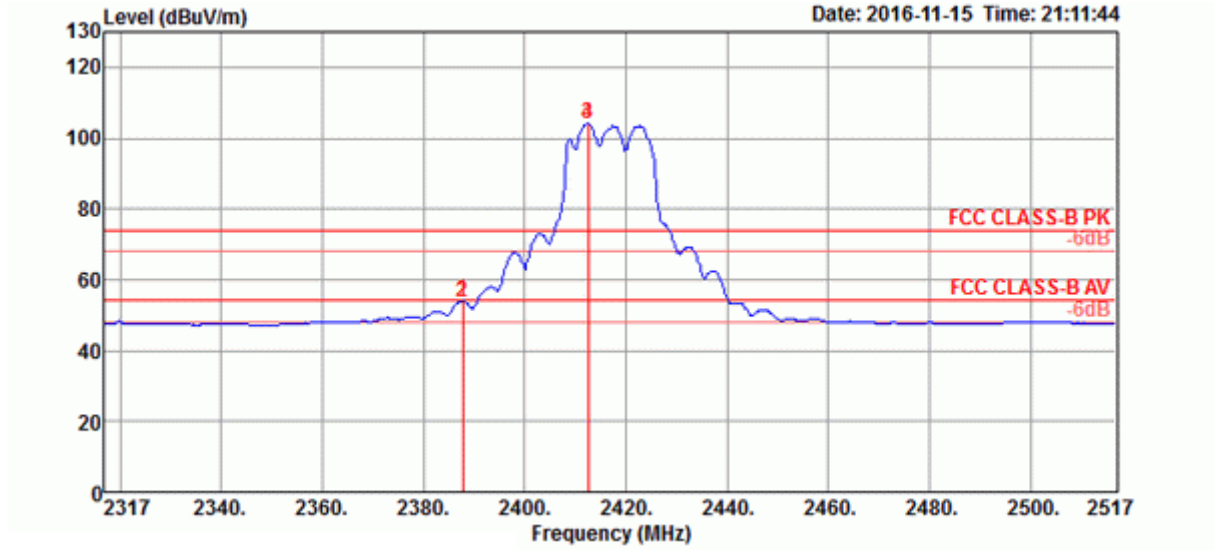
Channel 1



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2390.00	67.71	74.00	-6.29	36.34	3.35	28.02	0.00	264	78 Peak	VERTICAL
2	2390.00	53.56	54.00	-0.44	22.19	3.35	28.02	0.00	264	78 Average	VERTICAL
3	2410.88	110.46			79.09	3.37	28.00	0.00	264	78 Peak	VERTICAL
4	2410.88	100.40			69.03	3.37	28.00	0.00	264	78 Average	VERTICAL

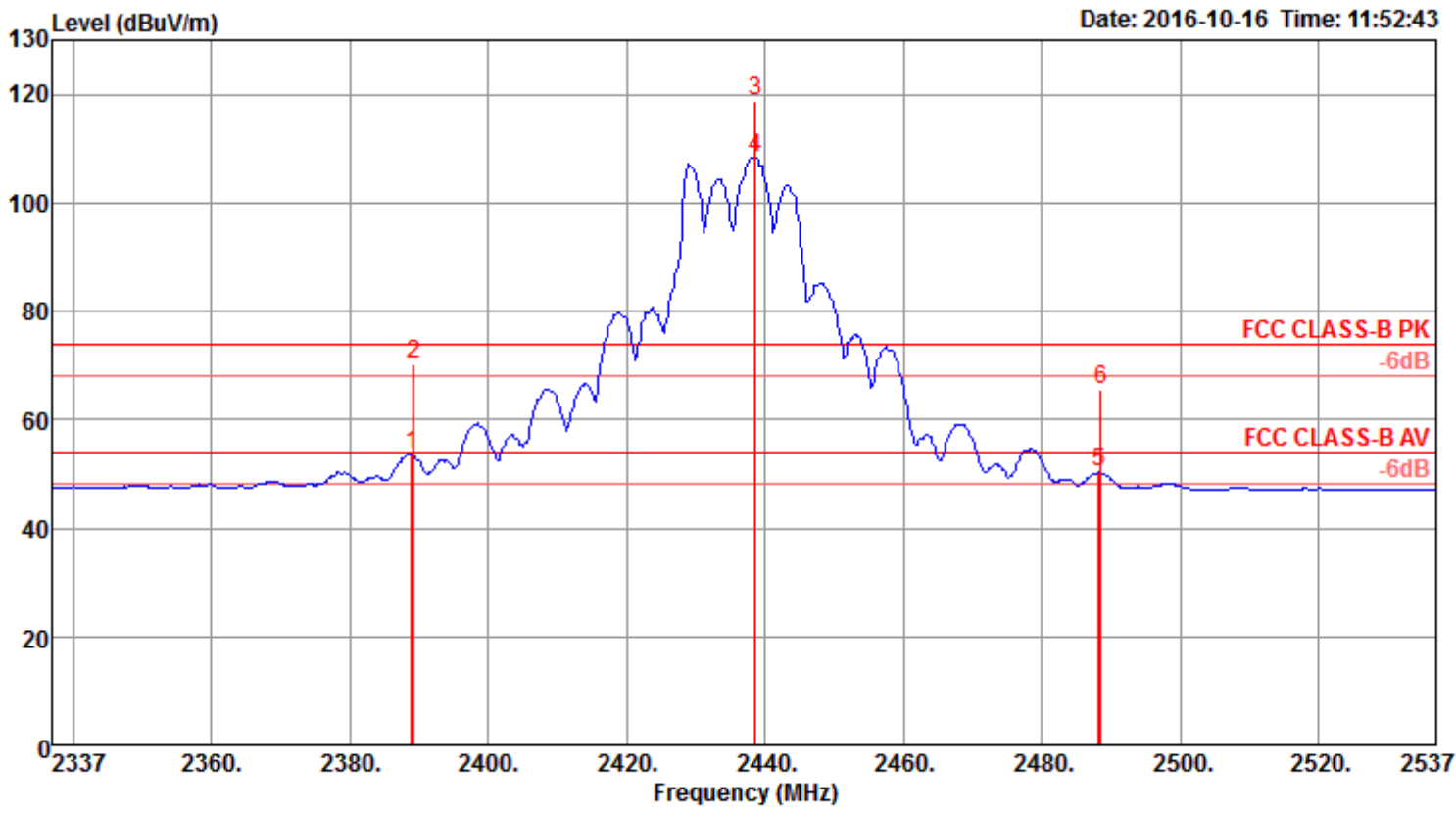
Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 2



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2387.80	53.99	54.00	-0.01	19.52	6.57	27.90	0.00	150	69 Average	VERTICAL
2	2387.80	53.58	74.00	-20.42	19.11	6.57	27.90	0.00	150	69 Peak	VERTICAL
3 @	2412.60	103.87			69.36	6.63	27.88	0.00	150	69 Average	VERTICAL
4	2412.60	103.87			69.36	6.63	27.88	0.00	150	69 Peak	VERTICAL

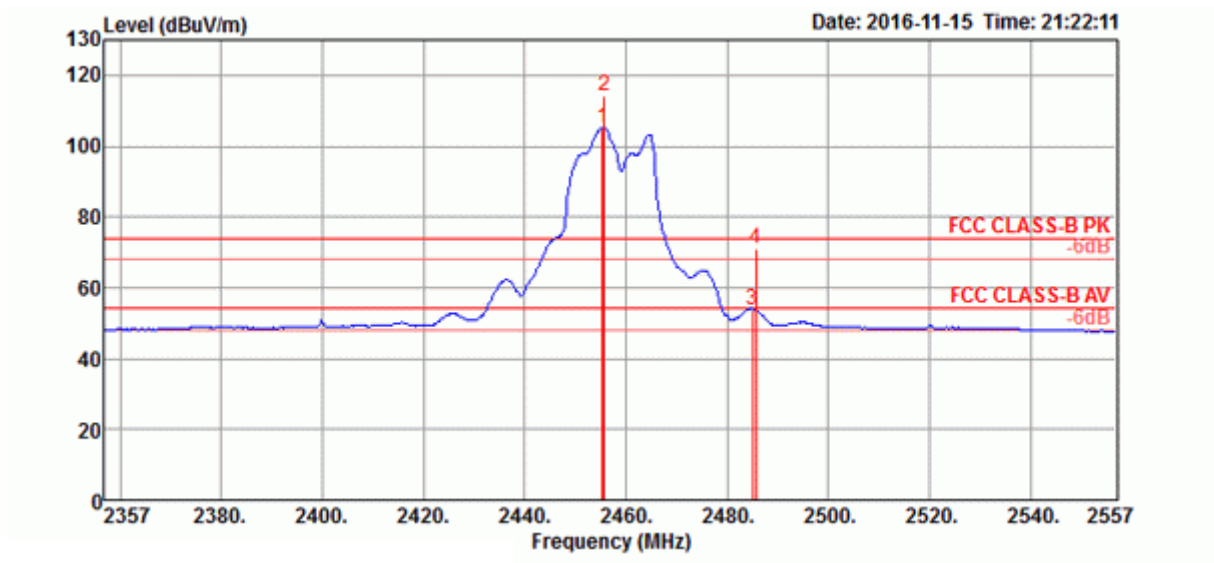
Channel 6



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2388.92	53.60	54.00	-0.40	22.23	3.35	28.02	0.00	239	54 Average	VERTICAL
2	2389.24	70.26	74.00	-3.74	38.89	3.35	28.02	0.00	239	54 Peak	VERTICAL
3	2438.60	118.74			87.38	3.39	27.97	0.00	239	54 Peak	VERTICAL
4	2438.60	108.37			77.01	3.39	27.97	0.00	239	54 Average	VERTICAL
5	2488.28	50.38	54.00	-3.62	19.03	3.43	27.92	0.00	239	54 Average	VERTICAL
6	2488.60	65.68	74.00	-8.32	34.33	3.43	27.92	0.00	239	54 Peak	VERTICAL

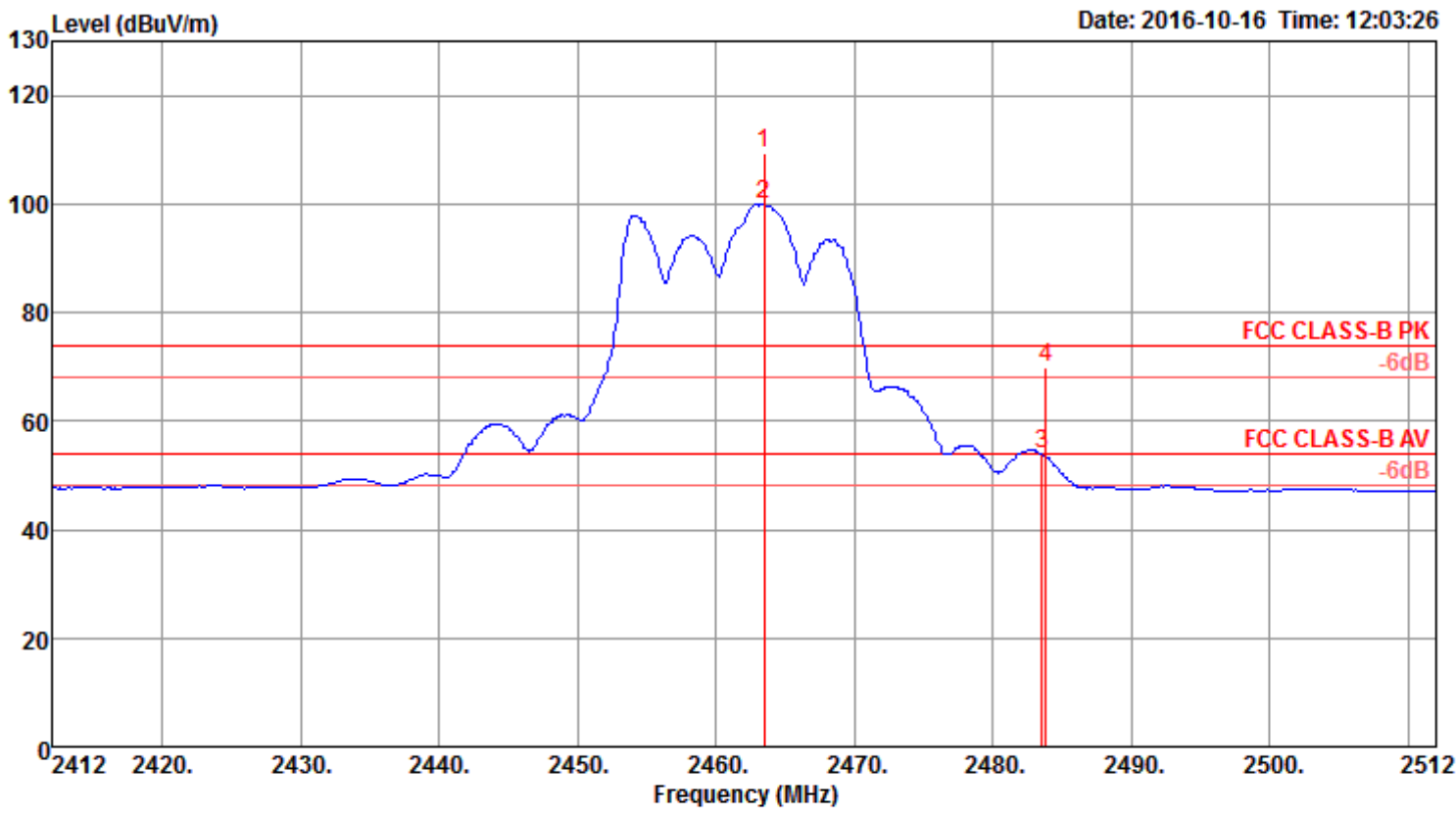
Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 10



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1 @	2455.40	105.26			70.68	6.74	27.84	0.00	251	21 Average	VERTICAL
2	2455.80	113.97			79.39	6.74	27.84	0.00	251	21 Peak	VERTICAL
3	2485.00	53.93	54.00	-0.07	19.31	6.81	27.81	0.00	251	21 Average	VERTICAL
4	2485.80	71.09	74.00	-2.91	36.47	6.81	27.81	0.00	251	21 Peak	VERTICAL

Channel 11



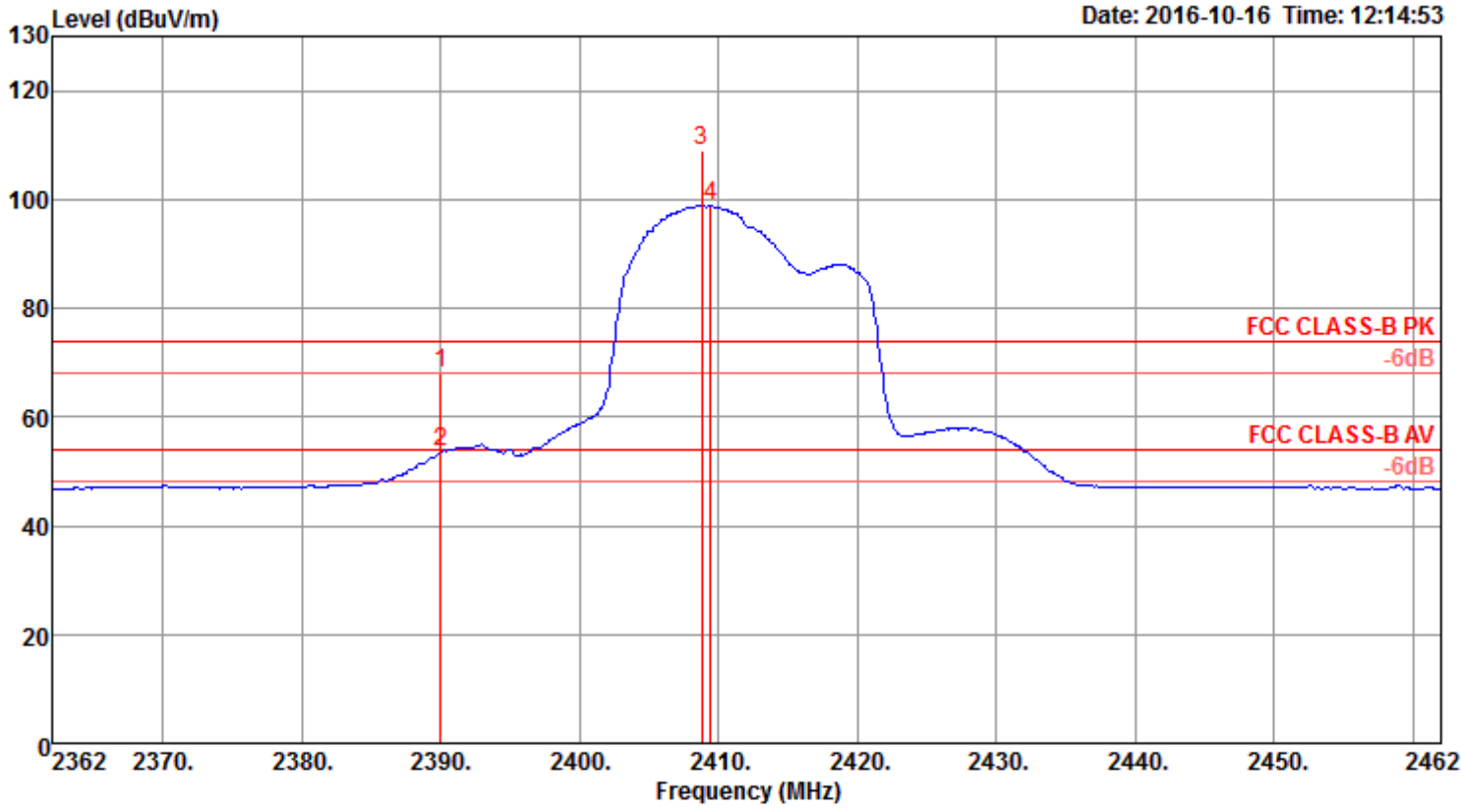
Item	Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	CableAntenna Loss dB	Antenna Factor dB/m	Preamp Factor dB	A/Pos cm	T/Pos deg	Remark	Pol/Phase
1	2463.44	109.49			78.14	3.41	27.94	0.00	208	57	Peak	VERTICAL
2	2463.44	99.96			68.61	3.41	27.94	0.00	208	57	Average	VERTICAL
3	2483.50	53.93	54.00	-0.07	22.58	3.43	27.92	0.00	208	57	Average	VERTICAL
4	2483.80	69.80	74.00	-4.20	38.45	3.43	27.92	0.00	208	57	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.



Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3
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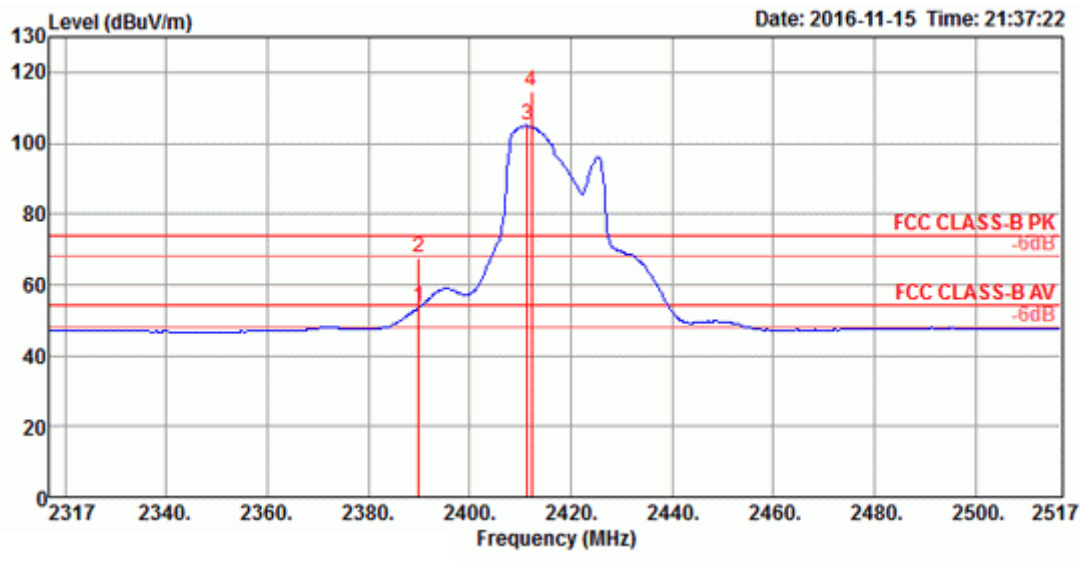
Channel 1



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	68.22	74.00	-5.78	36.85	3.35	28.02	0.00	244	299	Peak	VERTICAL
2	2390.00	53.54	54.00	-0.46	22.17	3.35	28.02	0.00	244	299	Average	VERTICAL
3	2408.80	108.91			77.54	3.37	28.00	0.00	244	299	Peak	VERTICAL
4	2409.44	98.97			67.60	3.37	28.00	0.00	244	299	Average	VERTICAL

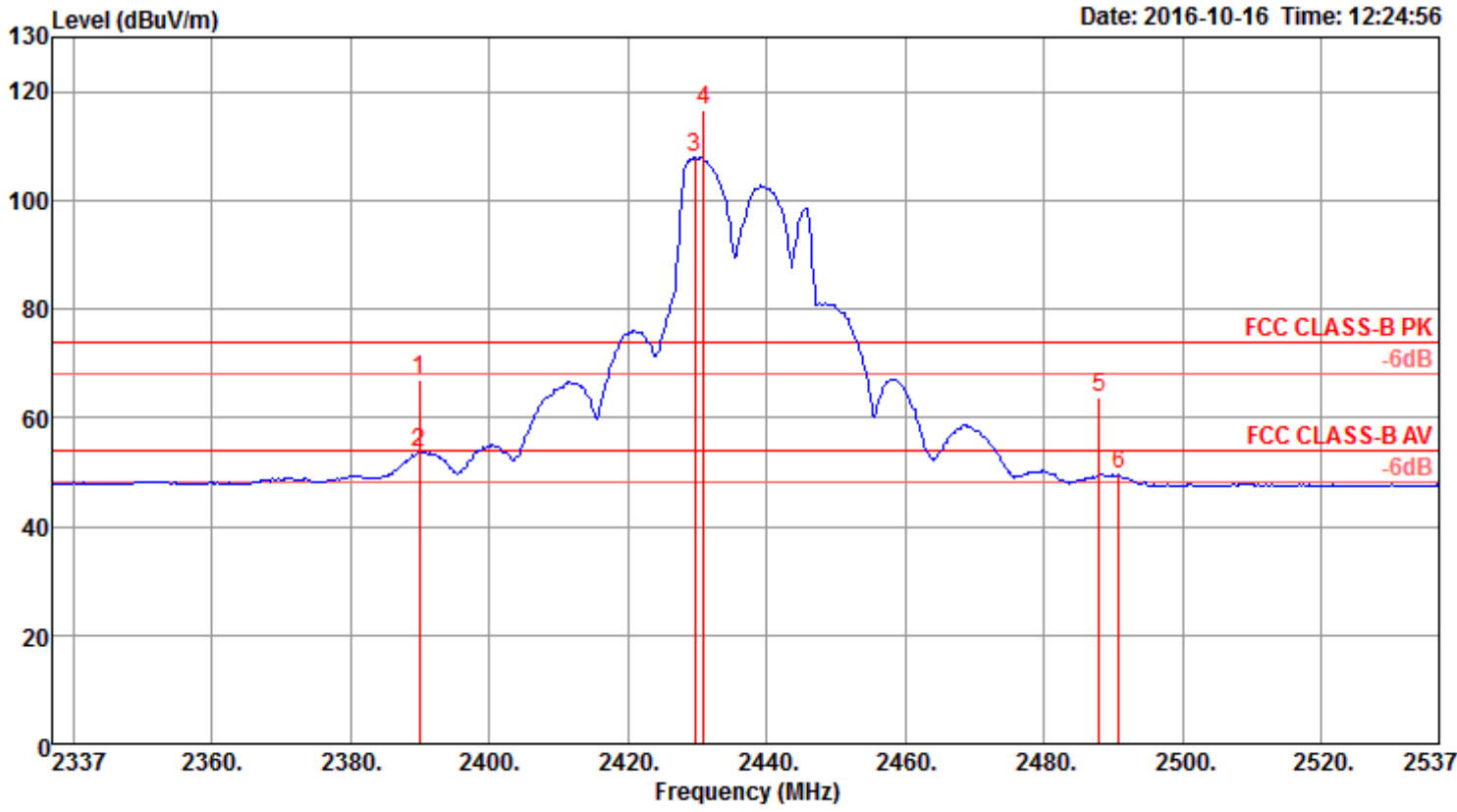
Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 2



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2390.00	53.82	54.00	-0.18	19.35	6.57	27.90	0.00	197	334	Average VERTICAL
2	2390.00	67.67	74.00	-6.33	33.20	6.57	27.90	0.00	197	334	Peak VERTICAL
3 @	2411.40	104.90			70.39	6.63	27.88	0.00	197	334	Average VERTICAL
4	2412.70	114.52			80.01	6.63	27.88	0.00	197	334	Peak VERTICAL

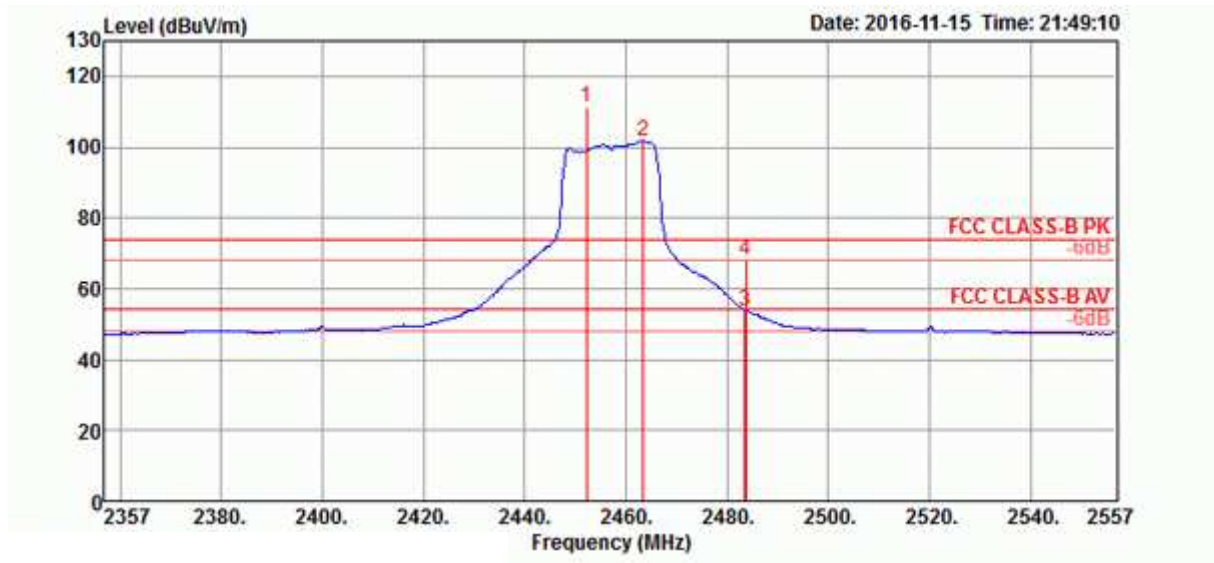
Channel 6



Item	Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss dB	Antenna Factor dB/m	Preamp Factor dB	A/Pos cm	T/Pos deg	Remark	Pol/Phase
1	2390.00	67.04	74.00	-6.96	35.67	3.35	28.02	0.00	236	59	Peak	VERTICAL
2	2390.00	53.68	54.00	-0.32	22.31	3.35	28.02	0.00	236	59	Average	VERTICAL
3	2429.63	107.84			76.48	3.38	27.98	0.00	236	59	Average	VERTICAL
4	2430.91	116.51			85.14	3.39	27.98	0.00	236	59	Peak	VERTICAL
5	2487.96	63.82	74.00	-10.18	32.47	3.43	27.92	0.00	236	59	Peak	VERTICAL
6	2490.85	49.57	54.00	-4.43	18.23	3.43	27.91	0.00	236	59	Average	VERTICAL

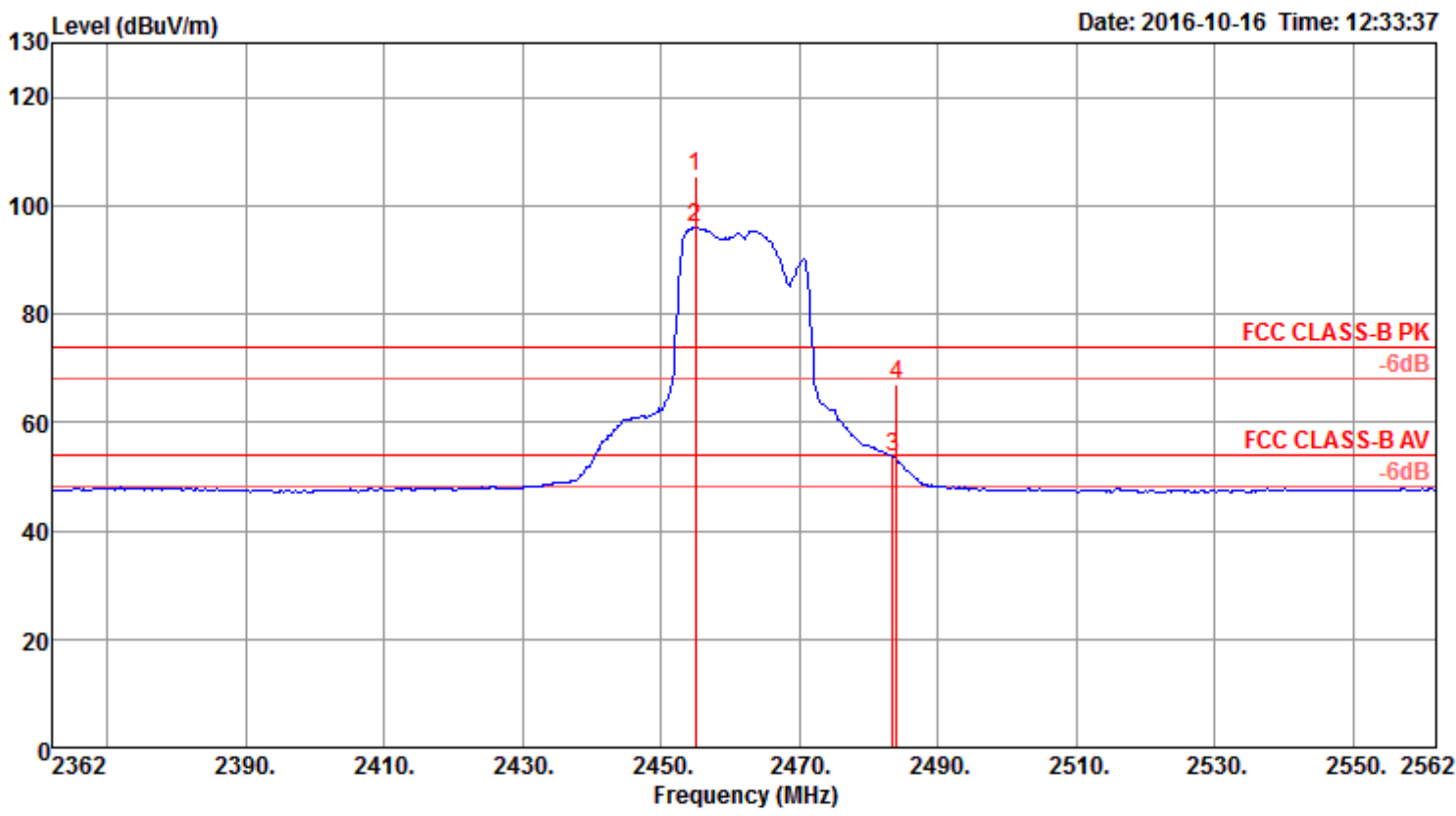
Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 10



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2452.20	111.13			76.56	6.72	27.85	0.00	187	287	Peak	VERTICAL
2	2463.40	101.50			66.91	6.76	27.83	0.00	187	287	Average	VERTICAL
3	2483.50	53.64	54.00	-0.36	19.02	6.81	27.81	0.00	187	287	Average	VERTICAL
4	2483.80	68.01	74.00	-5.99	33.39	6.81	27.81	0.00	187	287	Peak	VERTICAL

Channel 11



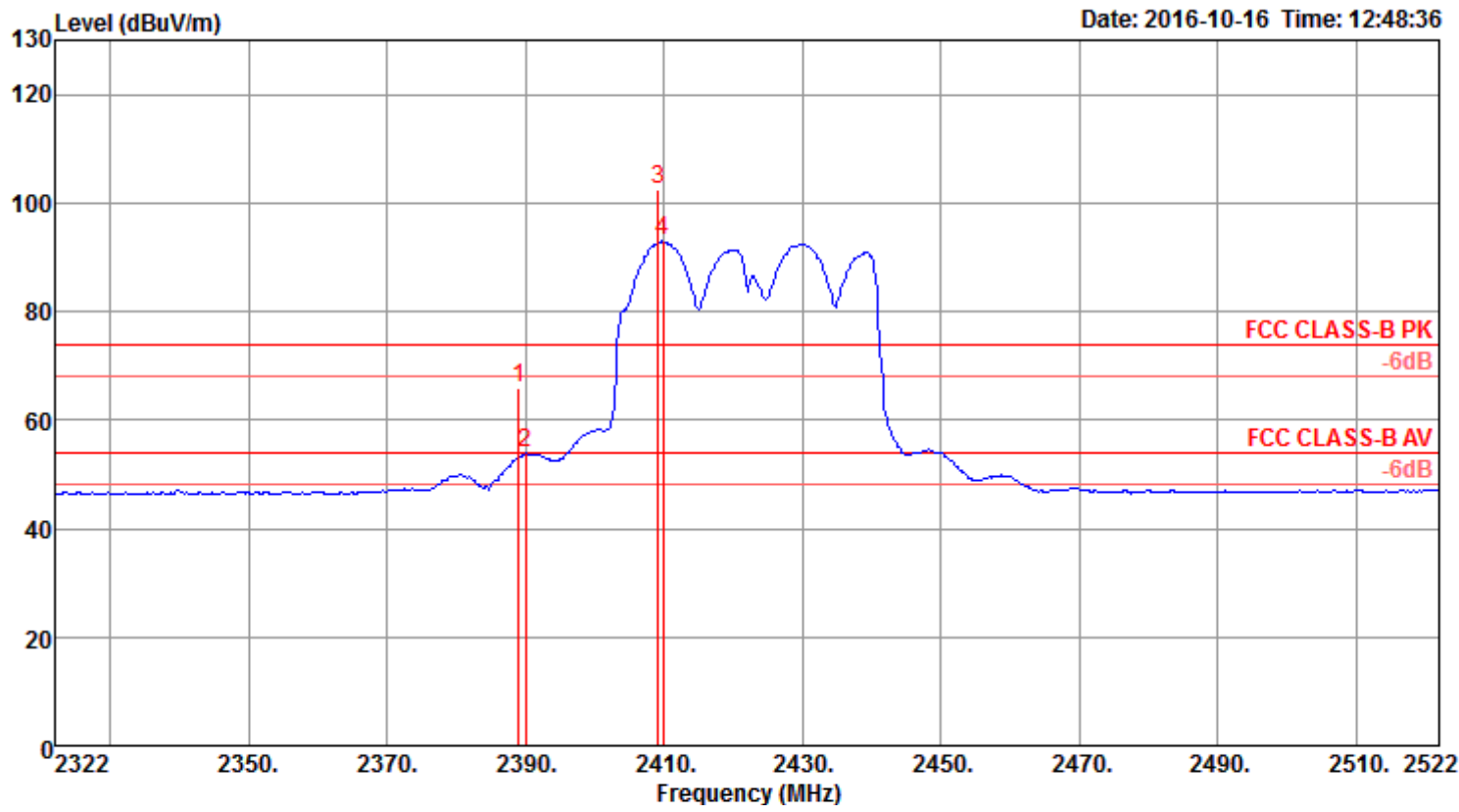
	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2454.95	105.23			73.87	3.41	27.95	0.00	257	304	Peak	VERTICAL
2	2454.95	95.88			64.52	3.41	27.95	0.00	257	304	Average	VERTICAL
3	2483.50	53.64	54.00	-0.36	22.29	3.43	27.92	0.00	257	304	Average	VERTICAL
4	2484.12	66.88	74.00	-7.12	35.53	3.43	27.92	0.00	257	304	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.



Configurations	IEEE 802.11n MCS0 HT40 CH 3, 6, 9 / Ant. 1 + Ant. 2 + Ant. 3
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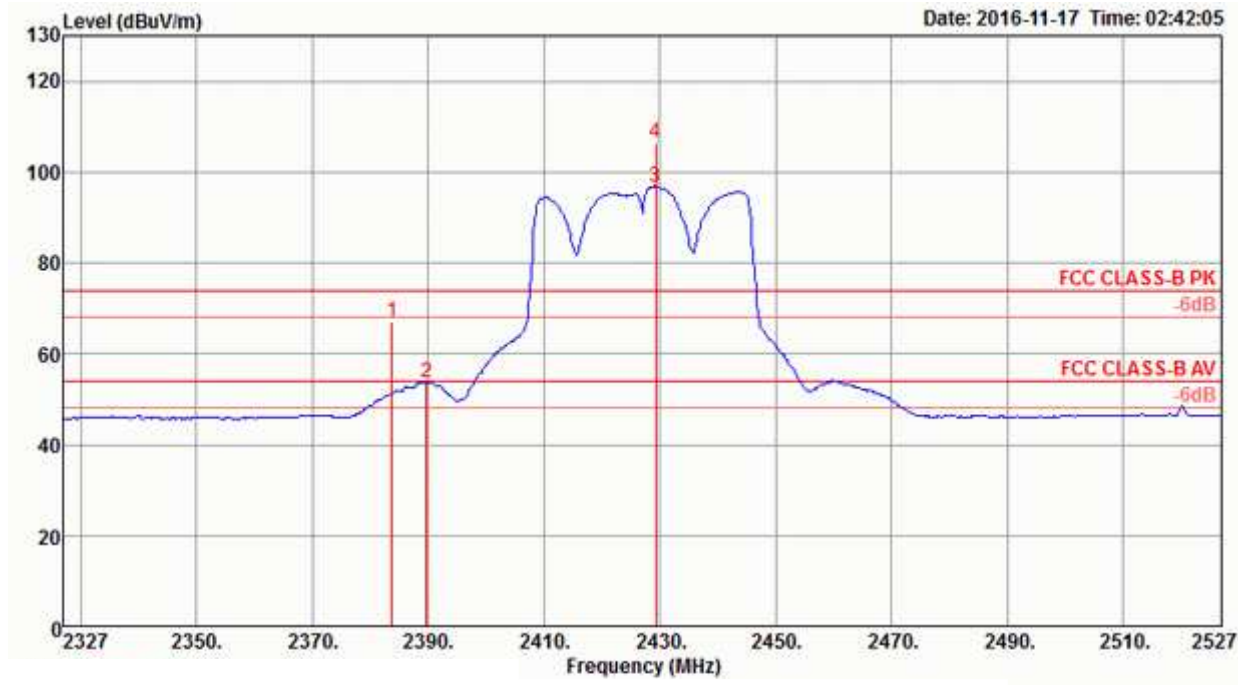
Channel 3



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.99	65.80	74.00	-8.20	34.43	3.35	28.02	0.00	238	59	Peak	VERTICAL
2	2390.00	53.86	54.00	-0.14	22.49	3.35	28.02	0.00	238	59	Average	VERTICAL
3	2409.18	102.40			71.03	3.37	28.00	0.00	238	59	Peak	VERTICAL
4	2409.82	92.94			61.57	3.37	28.00	0.00	238	59	Average	VERTICAL

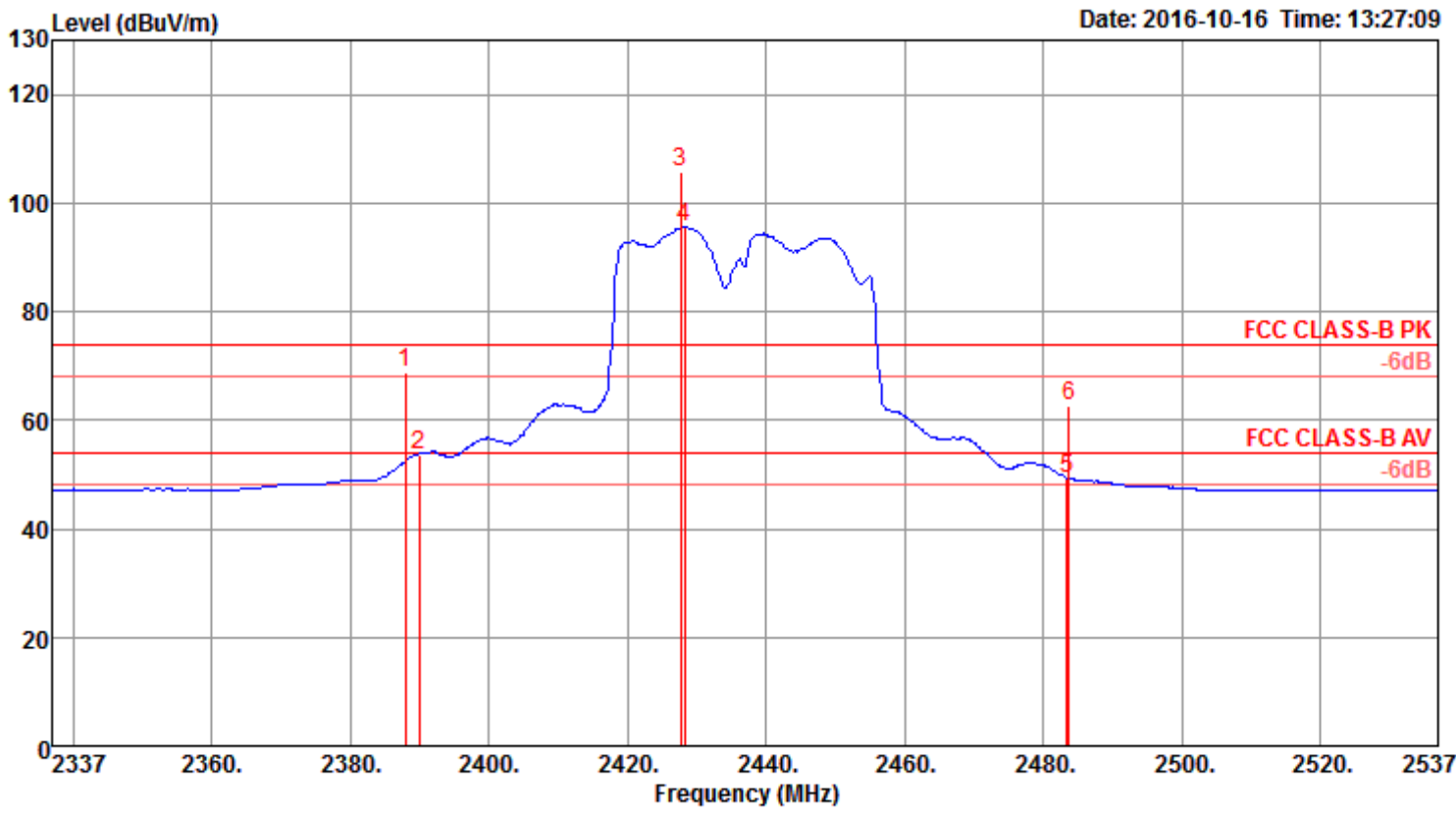
Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 4



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2383.80	67.06	74.00	-6.94	34.47	4.28	28.31	0.00	239	358 Peak	VERTICAL
2	2389.80	53.67	54.00	-0.33	21.08	4.28	28.31	0.00	239	358 Average	VERTICAL
3 @	2429.40	96.70			64.00	4.32	28.38	0.00	239	358 Average	VERTICAL
4 @	2429.40	106.32			73.62	4.32	28.38	0.00	239	358 Peak	VERTICAL

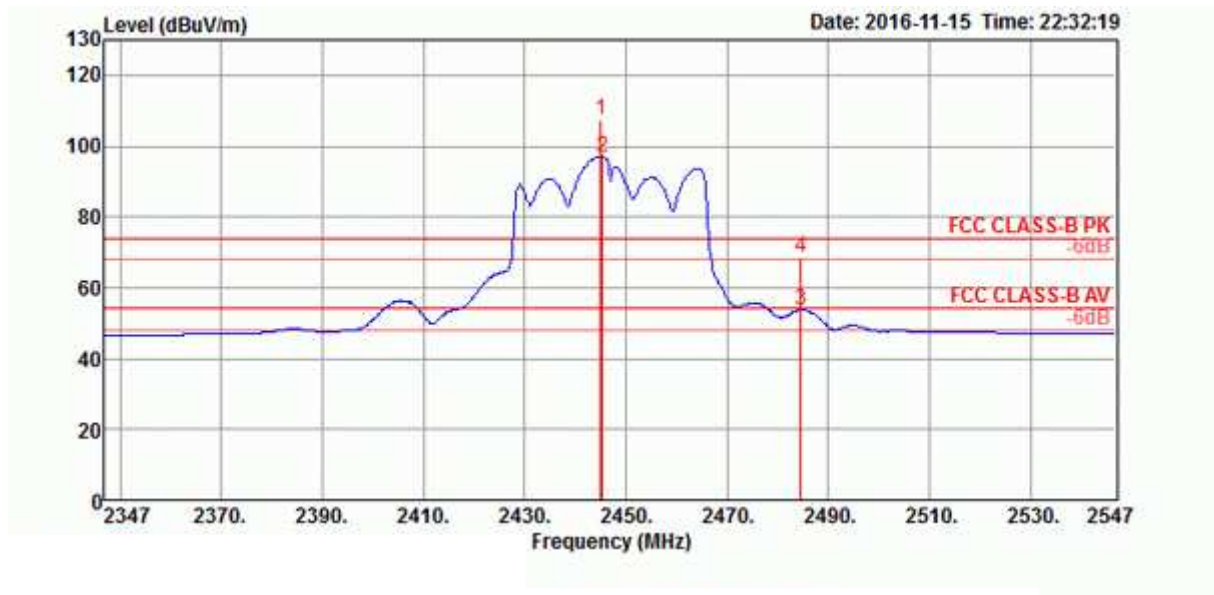
Channel 6



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2387.96	68.80	74.00	-5.20	37.43	3.35	28.02	0.00	238	306	Peak	VERTICAL
2	2390.00	53.69	54.00	-0.31	22.32	3.35	28.02	0.00	238	306	Average	VERTICAL
3	2427.71	105.90			74.54	3.38	27.98	0.00	238	306	Peak	VERTICAL
4	2428.35	95.61			64.25	3.38	27.98	0.00	238	306	Average	VERTICAL
5	2483.50	49.32	54.00	-4.68	17.97	3.43	27.92	0.00	238	306	Average	VERTICAL
6	2483.80	62.49	74.00	-11.51	31.14	3.43	27.92	0.00	238	306	Peak	VERTICAL

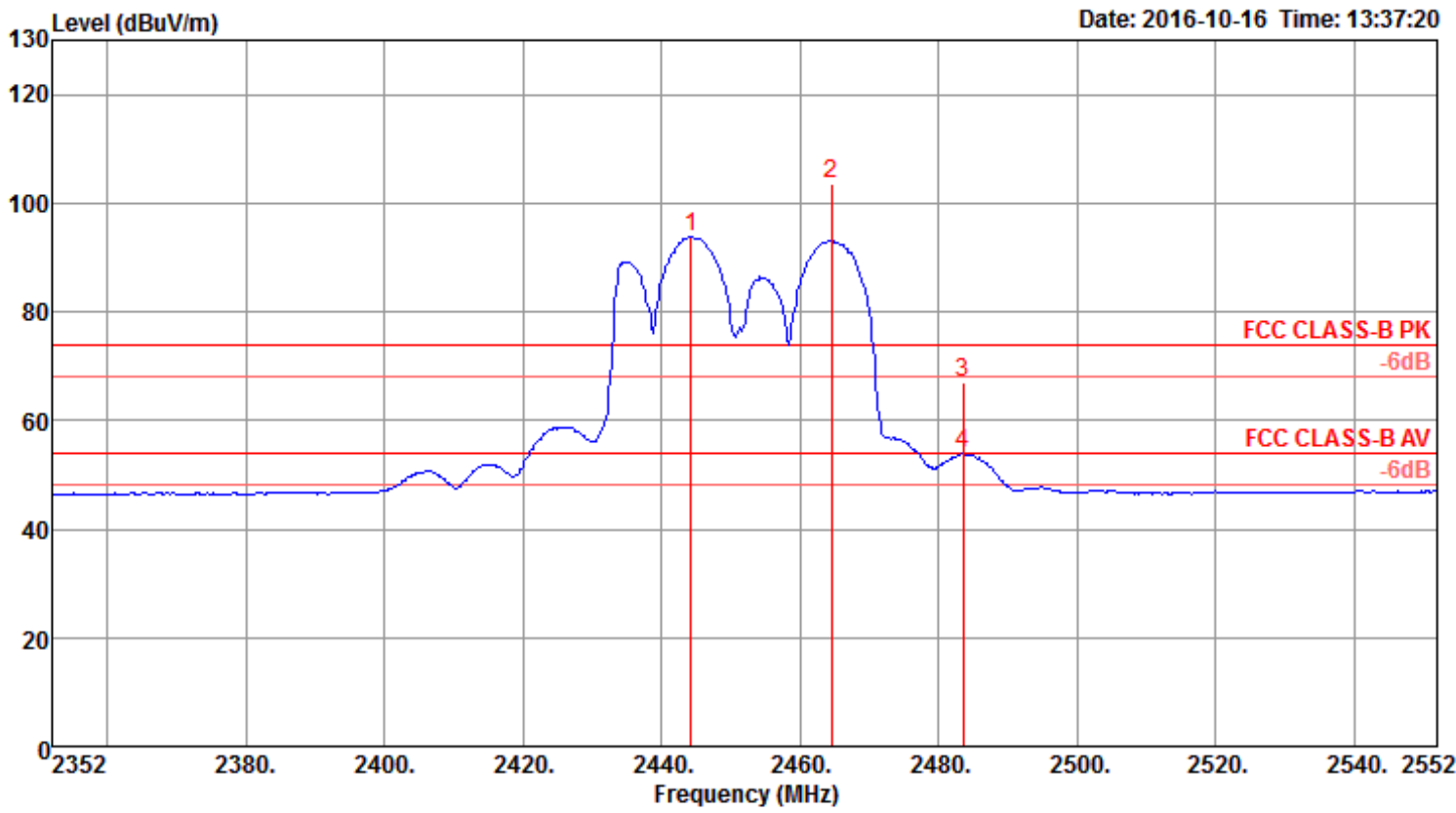
Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 8



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2445.00	107.31			72.76	6.70	27.85	0.00	205	19 Peak	HORIZONTAL
2	2445.40	97.12			62.57	6.70	27.85	0.00	205	19 Average	HORIZONTAL
3	2484.60	53.80	54.00	-0.20	19.18	6.81	27.81	0.00	205	19 Average	HORIZONTAL
4	2484.60	68.41	74.00	-5.59	33.79	6.81	27.81	0.00	205	19 Peak	HORIZONTAL

Channel 9



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2444.31	93.73			62.37	3.40	27.96	0.00	215	54 Average	VERTICAL
2	2464.50	103.41			72.06	3.41	27.94	0.00	215	54 Peak	VERTICAL
3	2483.50	66.89	74.00	-7.11	35.54	3.43	27.92	0.00	215	54 Peak	VERTICAL
4	2483.50	53.80	54.00	-0.20	22.45	3.43	27.92	0.00	215	54 Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.