

FCC Test Report

Equipment : DBDC ROUTER
Brand Name : Charter
Model No. : RAC2V1K
FCC ID : H8NRAC2V1K
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
Function : ☒ Point-to-multipoint; ☐ Point-to-point
Applicant : Askey Computer Corp.
10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW
TAIPEI CITY 23585, TAIWAN
Manufacturer : Askey Computer Corp.
10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW
TAIPEI CITY 23585, TAIWAN

The product sample received on Feb. 15, 2017 and completely tested on Mar. 02, 2017. 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.

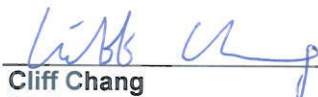

Cliff Chang
SPORTON INTERNATIONAL INC.



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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

Revision History

[illegible]

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
2.4-2.4835GHz	802.11b	20	4TX
2.4-2.4835GHz	802.11g	20	4TX
2.4-2.4835GHz	802.11n HT20	20	4TX
2.4-2.4835GHz	802.11n HT20-BF	20	4TX
2.4-2.4835GHz	802.11n HT40	40	4TX
2.4-2.4835GHz	802.11n HT40-BF	40	4TX

Note:

- 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.
- BWch is the nominal channel bandwidth.
- 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	Part Number	Antenna Type	Connector	Gain (dBi)	Remark
1	Airgain	N2420GS	PCB Antenna	I-PEX	4.30	2.4GHz TX/RX
2	Airgain	N2420GS	PCB Antenna	I-PEX	3.40	2.4GHz TX/RX
3	Airgain	N2420GS	PCB Antenna	I-PEX	3.50	2.4GHz TX/RX
4	Airgain	N2420GS	PCB Antenna	I-PEX	4.20	2.4GHz TX/RX
5	Airgain	M5x05C (Longer)	PCB Antenna	I-PEX	5.00	5GHz TX/RX
6	Airgain	M5x05C	PCB Antenna	I-PEX	5.60	5GHz TX/RX
7	Airgain	M5x05C	PCB Antenna	I-PEX	4.50	5GHz TX/RX
8	Airgain	M5x05C (Longer)	PCB Antenna	I-PEX	4.10	5GHz TX/RX

Note: The EUT has eight antennas.

For 2.4GHz function (4TX/4RX):

Ant. 1 (P1), Ant. 2 (P2), Ant. 3 (P3) and Ant. 4 (P4) could transmit/receive simultaneously.

For 5GHz function (4TX/4RX):

Ant. 5 (P1), Ant. 6 (P2), Ant. 7 (P3) and Ant. 8 (P4) could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)
802.11n HT20-BF	0.929	0.32
802.11n HT40-BF	0.913	0.40

1.1.4 EUT Operational Condition

EUT Power Type	From power adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for 802.11n/ac.			

Note: There are two functions of EUT, one is beamforming function, and the other is non-beamforming function for 802.11n/ac. The beamforming function was tested and recorded in this report, and the non-beamforming function was tested and recorded in Report No.: FR711935-01AA.

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
- ◆ FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location				
☐	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
☒	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	Serway Li	22°C / 55%	Feb. 20, 2017~Mar. 02, 2017
Radiated	03CH01-CB	Jay Luo	22°C / 54%	Feb. 15, 2017 ~Feb. 24, 2017
AC Conduction	CO01-CB	Deven Huang	23°C / 66%	Feb. 17, 2017

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%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11n HT20-BF_Nss1,(MCS0)_4TX	-
2412MHz	30
2437MHz	25
2462MHz	23
802.11n HT40-BF_Nss1,(MCS0)_4TX	-
2422MHz	21
2437MHz	28
2452MHz	23

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	Normal Link
1	EUT + Adapter 1
2	EUT + Adapter 2
For operating mode 1 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 Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT + Adapter 1
2	EUT + Adapter 2
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX

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
Refer to Sporton Test Report No.: FA711935-01 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

Note: The EUT can only be used at Y axis position.

2.3 EUT Operation during Test

For CTX Mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 7 were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less 98%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model No.	Rating
1	Adapter 1	Sunny	SYS1564-3012-W2	INPUT: 100-240Vac, 50-60Hz, 1.0A MAX. OUTPUT: 12Vdc, 2.5A
2	Adapter 2	Ktec	KSA-36W-120250HU	INPUT: 100-240Vac, 50/60Hz, 1.0A OUTPUT: 12Vdc, 2.5A

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*4	DELL	E6430	DoC
2	Flash disk3.0	Transcend	639205 7755	DoC

For Test Site No: 03CH01-CB (below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*4	DELL	E4300	DoC
2	Flash disk3.0	Transcend	JetFlash-700	DoC

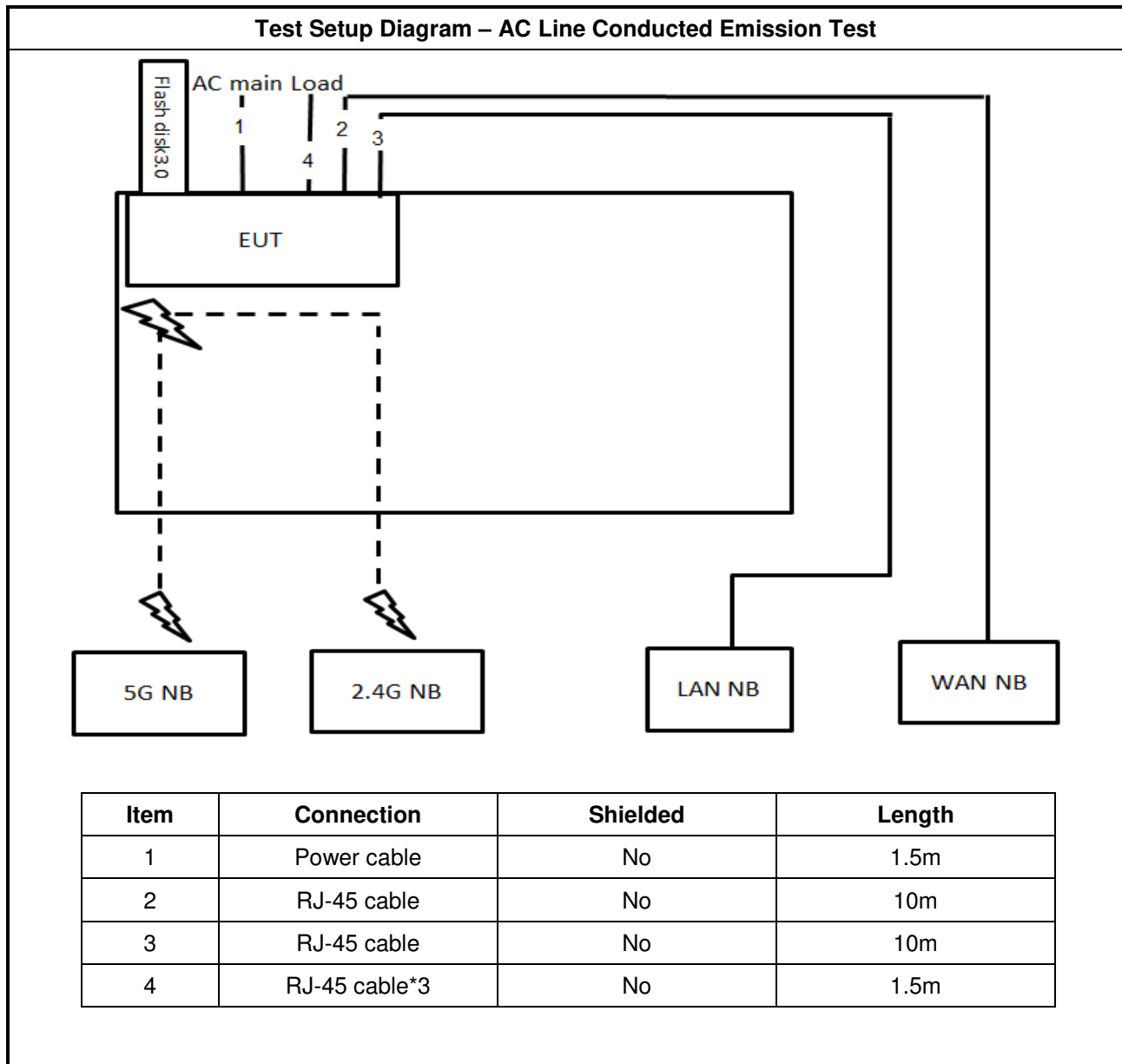
For Test Site No: 03CH01-CB (above 1GHz)

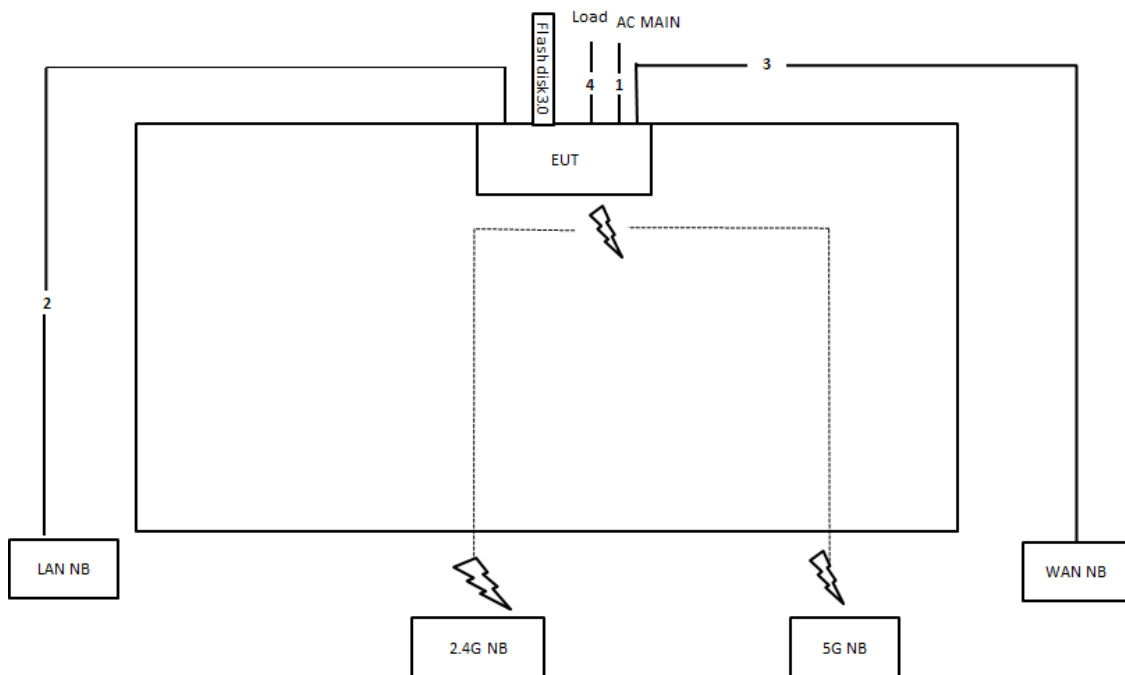
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*2	DELL	E4300	DoC
2	RX Device (DBDC ROUTER)	Charter	RAC2V1K	H8NRAC2V1K

For Test Site No: TH01-CB

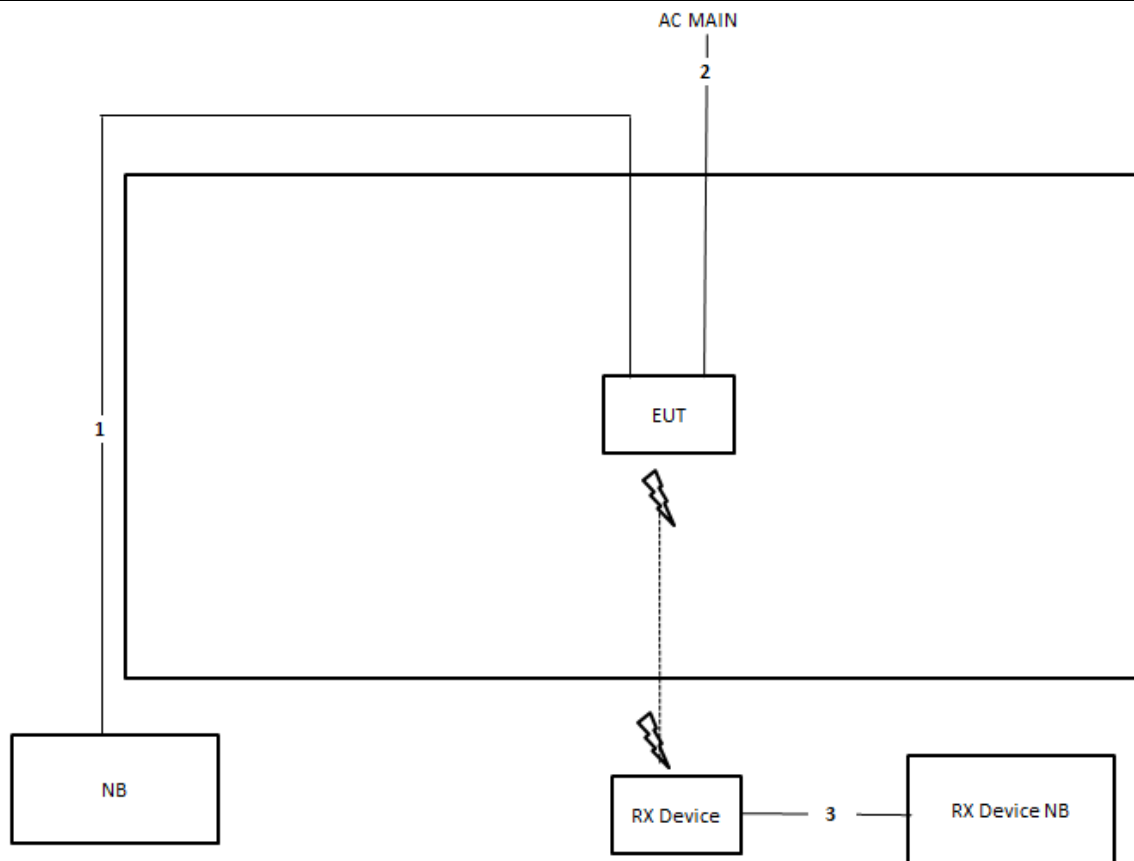
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-45 cable*3	No	1m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m
3	RJ-45 cable	No	10m

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.

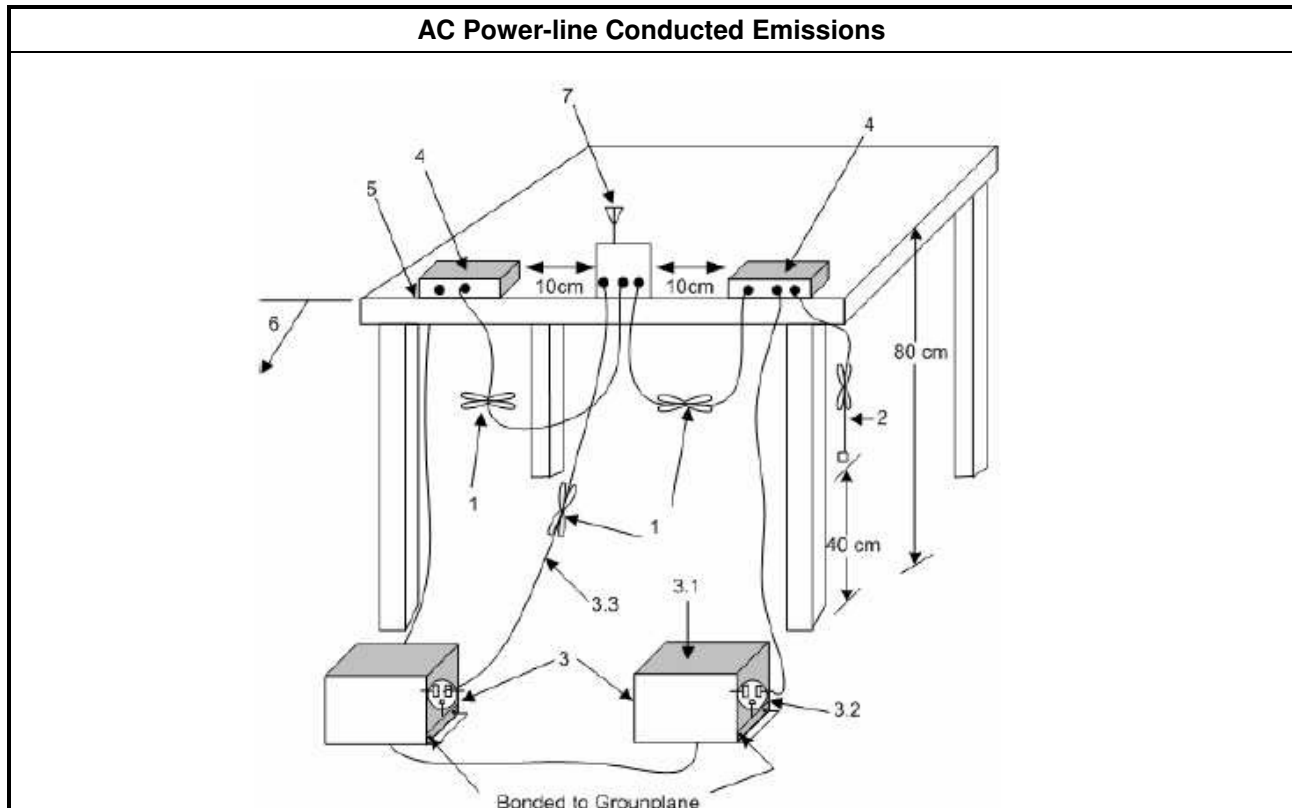
3.1.2 Measuring Instruments

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





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 $\geq$ 500 kHz.

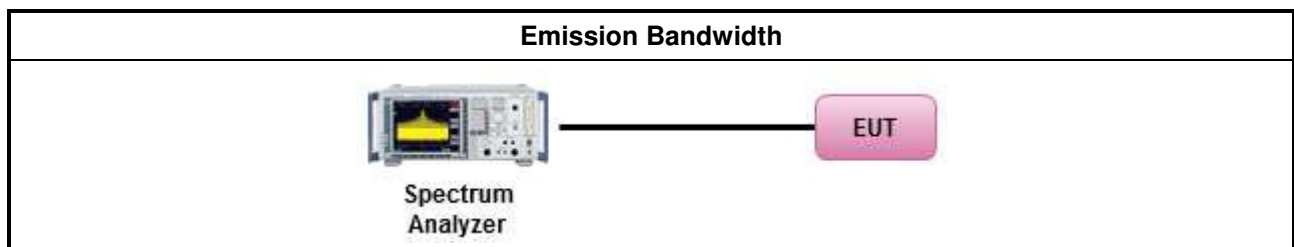
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
☐	Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
☐	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	
	▪ 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
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

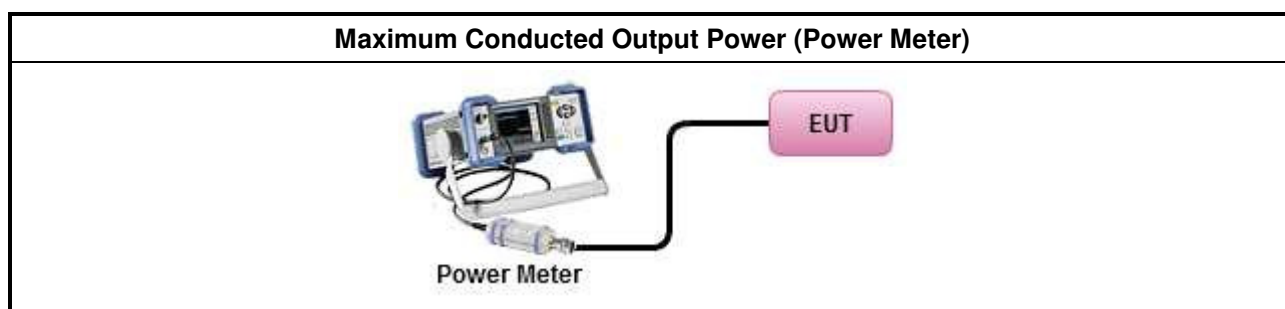
3.3.2 Measuring Instruments

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 FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
☐	Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)
Maximum Conducted Output Power	
[duty cycle ≥ 98% or external video / power trigger]	
☐	Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
☐	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	
☐	Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
☐	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	
☒	Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).
☐	Refer as FCC KDB 558074, clause 9.1.2 PKPM1 Peak power meter method.
For conducted measurement.	
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.	
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	
▪	Power Spectral Density (PSD) $\leq$ 8 dBm/3kHz

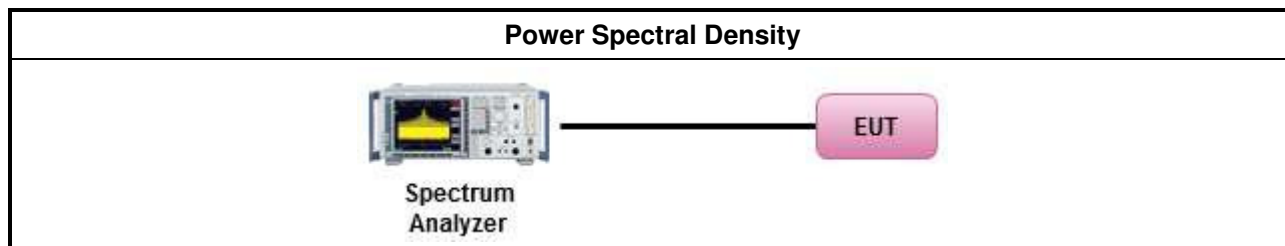
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
▪	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 FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak). [duty cycle $\geq$ 98% or external video / power trigger]
☐	Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).
☐	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
☐	Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).
☐	Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
☒	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.
☐	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,
☐	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.	

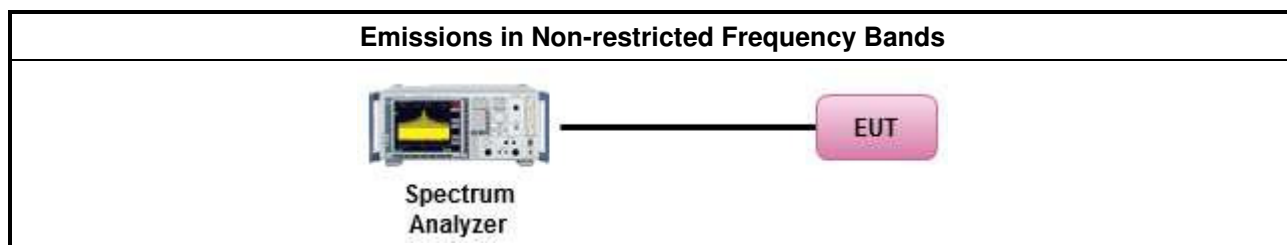
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
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.

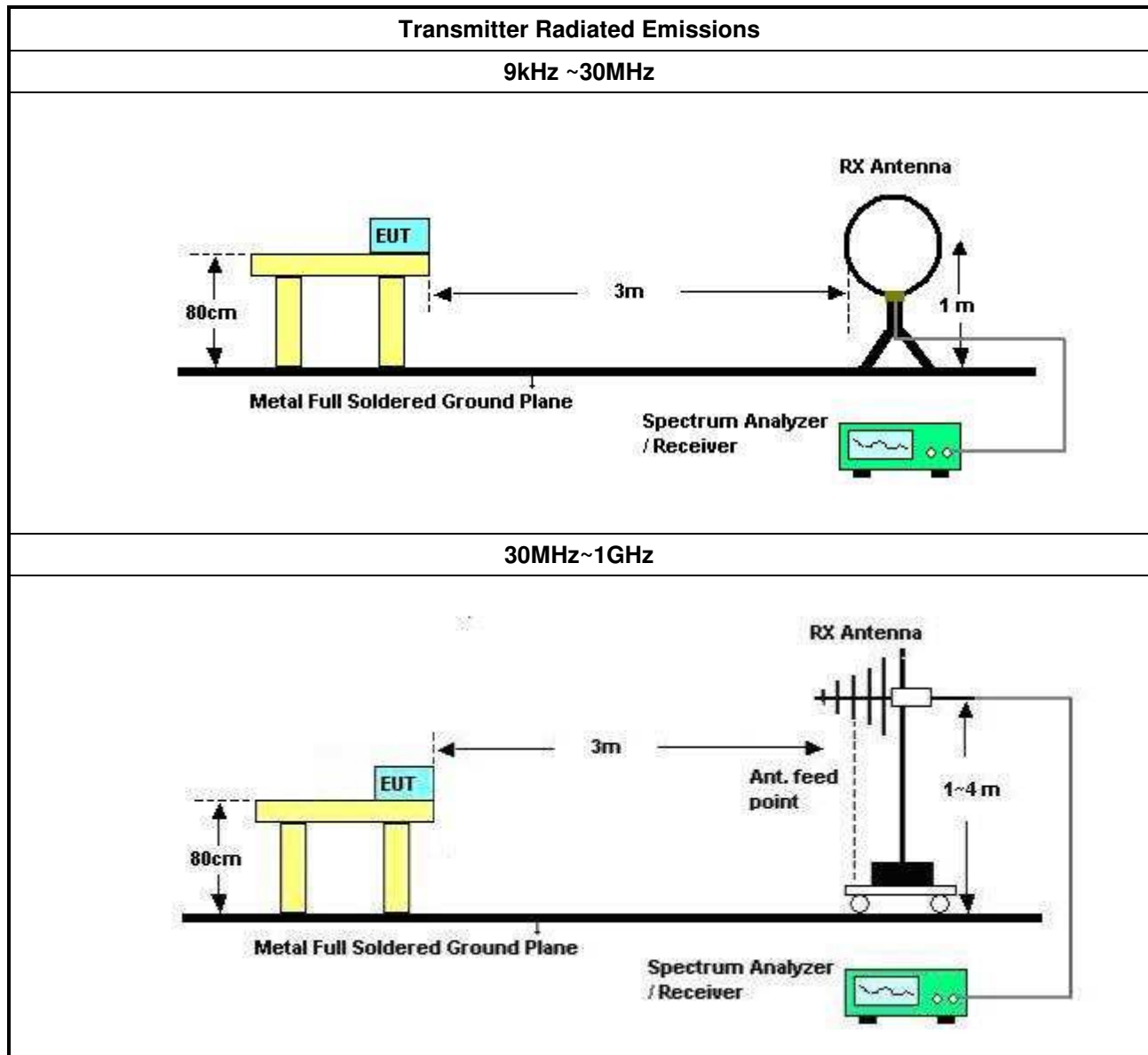
3.6.2 Measuring Instruments

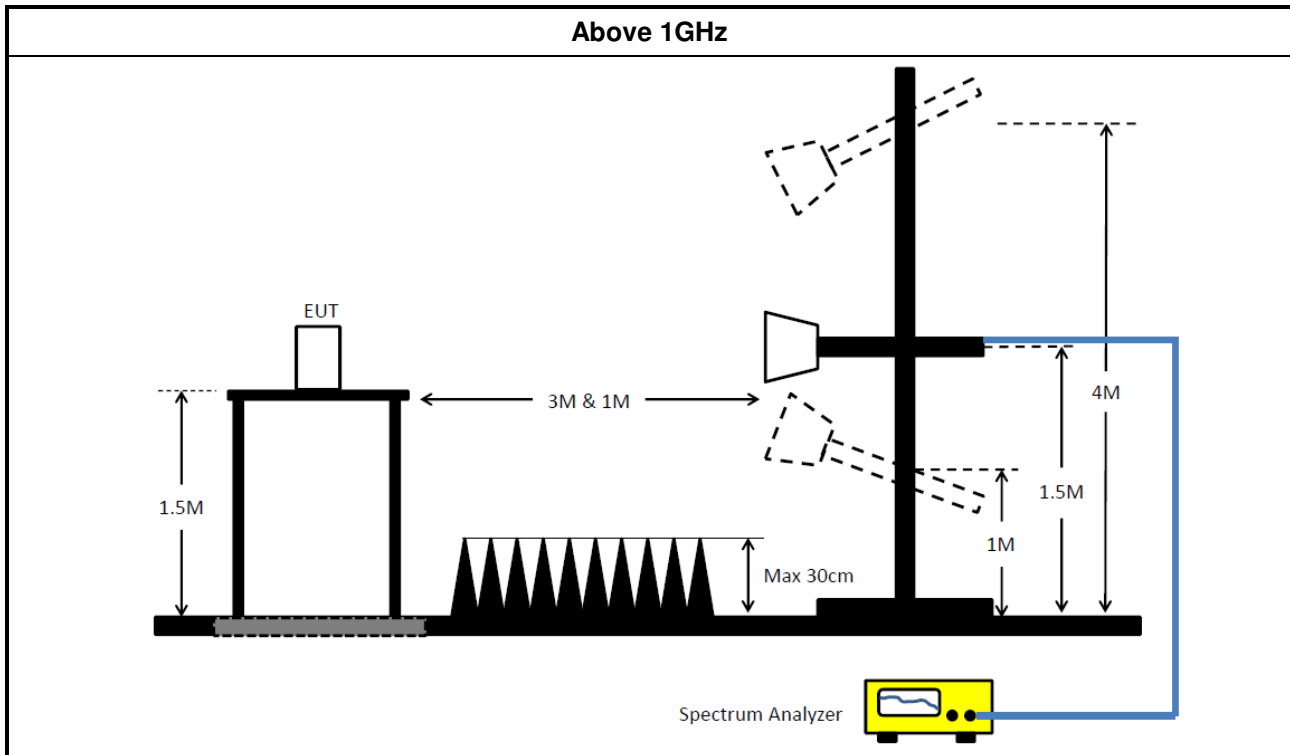
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
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.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq 98\%$)
	☐ Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
	☒ Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	☒ Refer as FCC KDB 558074, clause 12.2.4 measurement procedure peak limit.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as 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.
	Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method for band-edge measurements.
	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).
For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2.	
	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add $10 \log(N)$ dB
	For 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. 23, 2017	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	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 with 6dB Attenuator	TESEQ & EMC	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 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	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 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-16+17	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-16+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)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-10-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	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)



FCC Test Report

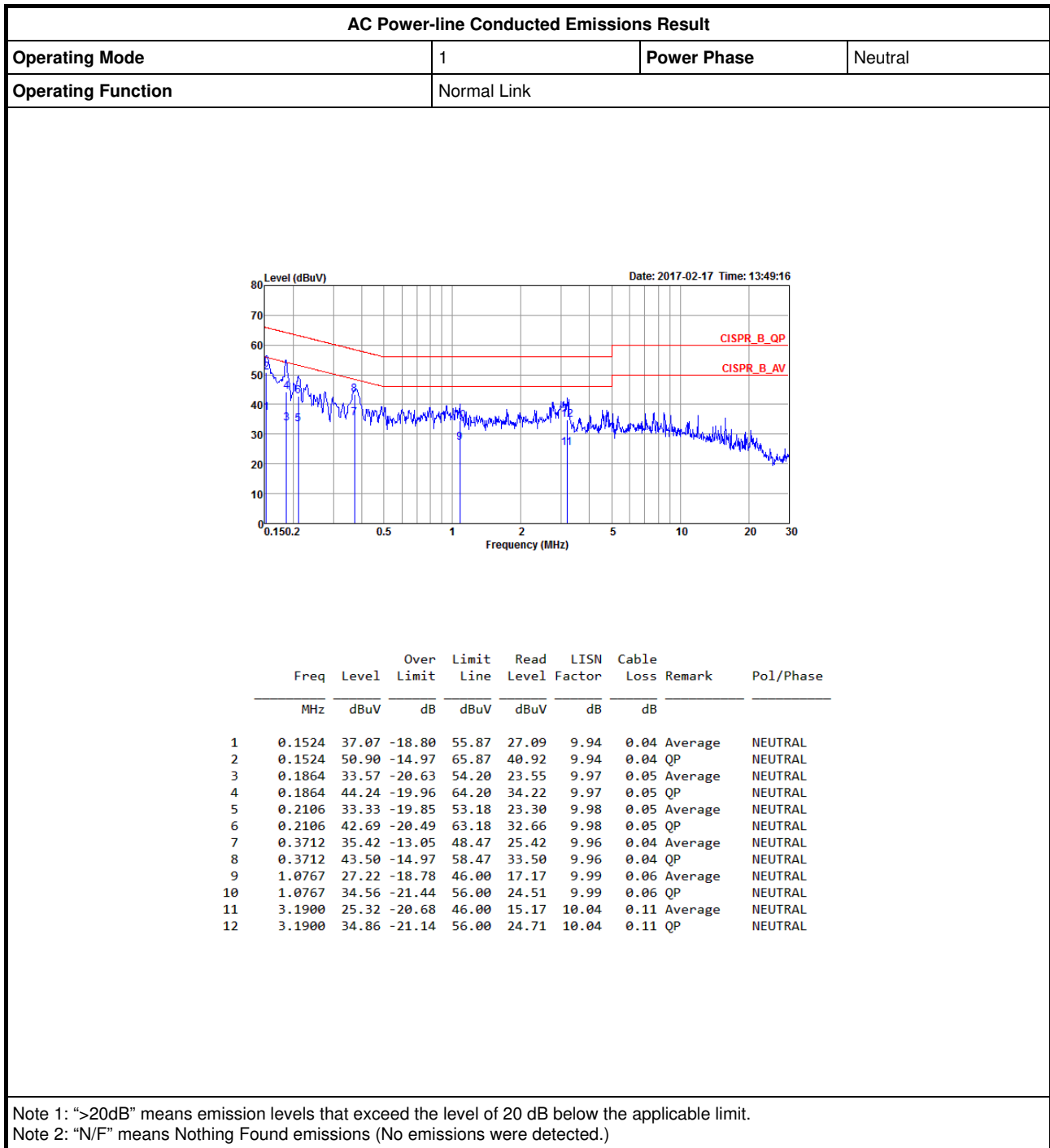
Report No. : FR711935-01AC

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
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	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

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

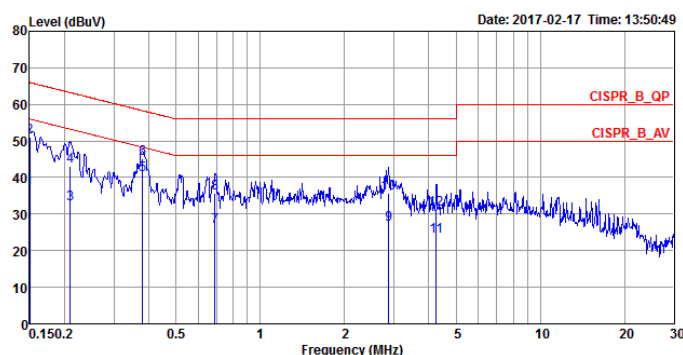
“*” Calibration Interval of instruments listed above is two years.

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



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Normal Link		



	Freq	Level	Over	Limit	Read	LISN	Cable		
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
			dB	dBuV	dBuV	dB	dB		
1	0.1500	37.25	-18.75	56.00	27.26	9.95	0.04	Average	LINE
2	0.1500	50.99	-15.01	66.00	41.00	9.95	0.04	QP	LINE
3	0.2094	32.82	-20.41	53.23	22.84	9.93	0.05	Average	LINE
4	0.2094	43.01	-20.22	63.23	33.03	9.93	0.05	QP	LINE
5	0.3791	40.86	-7.44	48.30	30.93	9.89	0.04	Average	LINE
6	0.3791	45.12	-13.18	58.30	35.19	9.89	0.04	QP	LINE
7	0.6899	26.64	-19.36	46.00	16.65	9.94	0.05	Average	LINE
8	0.6899	35.74	-20.26	56.00	25.75	9.94	0.05	QP	LINE
9	2.8692	27.08	-18.92	46.00	17.00	9.98	0.10	Average	LINE
10	2.8692	35.74	-20.26	56.00	25.66	9.98	0.10	QP	LINE
11	4.2466	23.89	-22.11	46.00	13.80	9.96	0.13	Average	LINE
12	4.2466	31.18	-24.82	56.00	21.09	9.96	0.13	QP	LINE

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)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
2.4-2.4835GHz	17.525M	17.741M	17M7D1D	12.5M	17.491M
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
2.4-2.4835GHz	35M	36.582M	36M6D1D	24.6M	35.332M

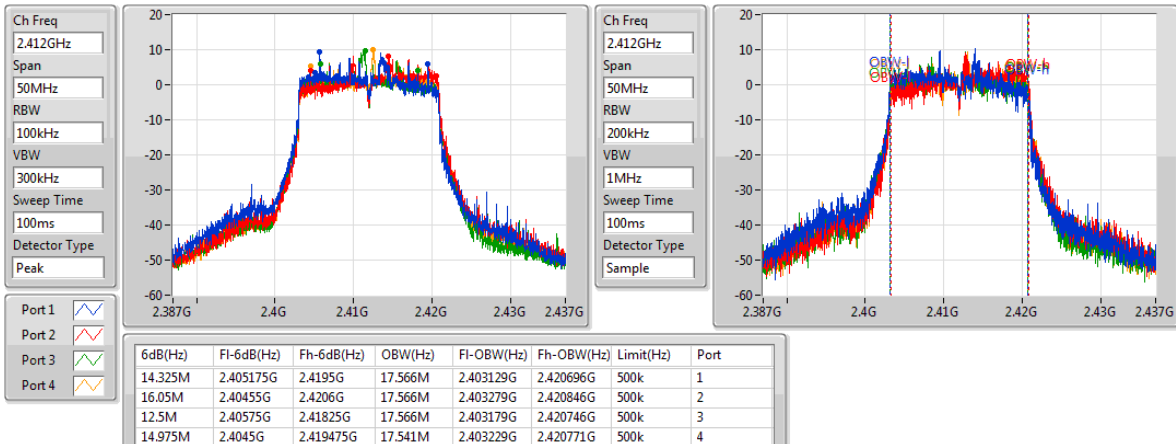
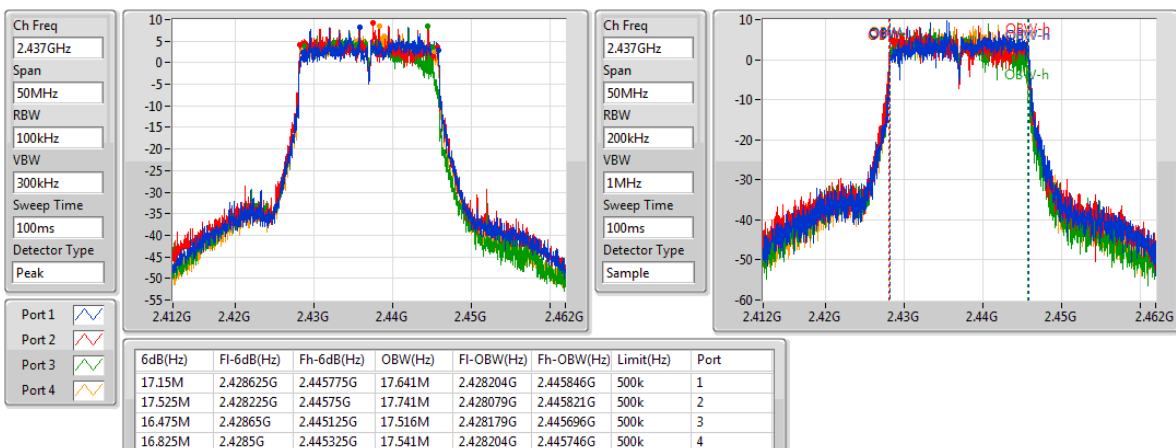
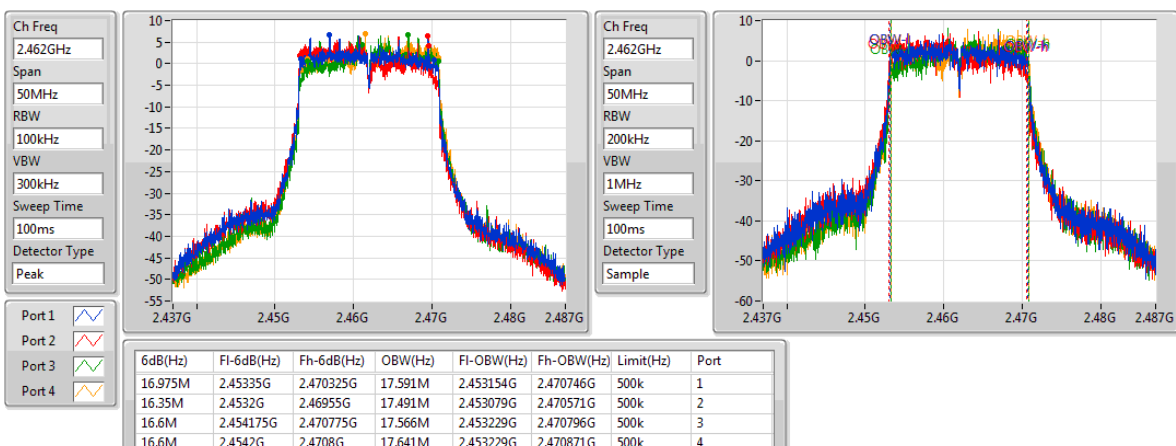
Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

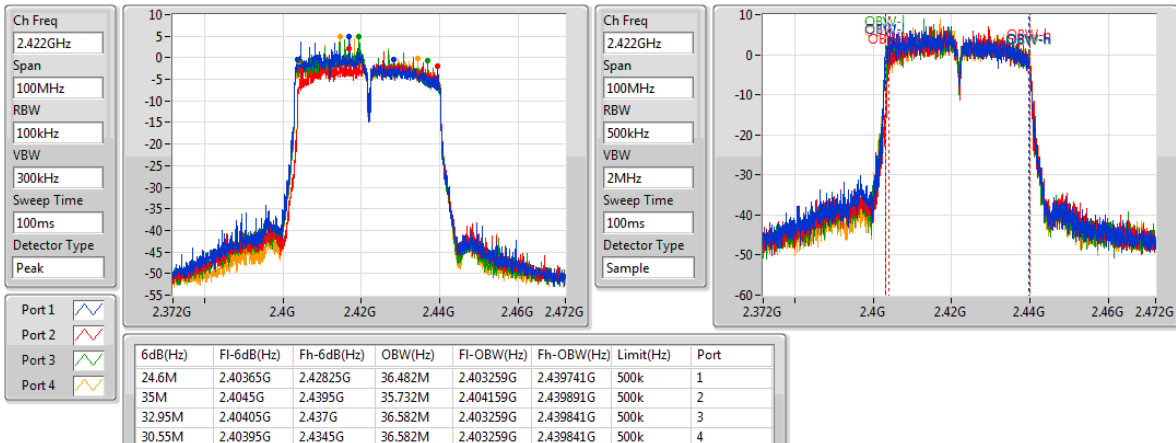
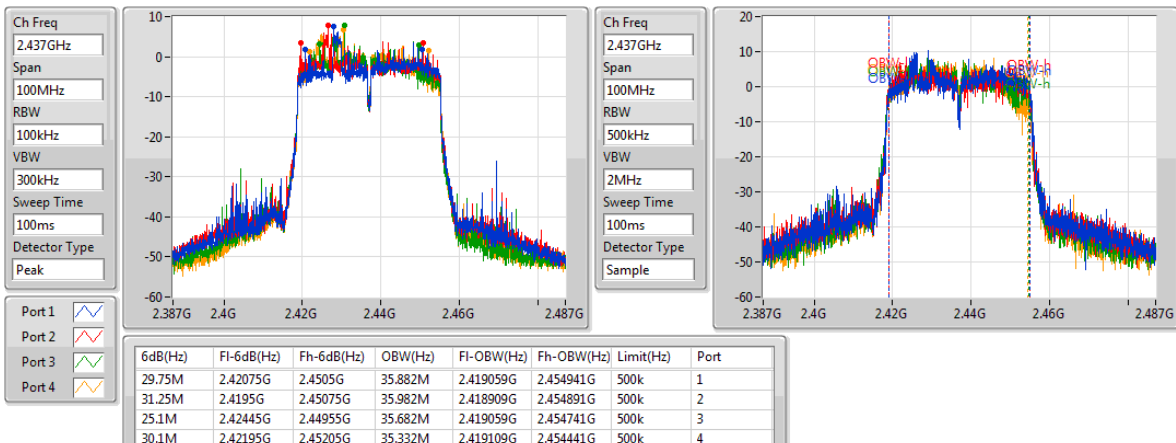
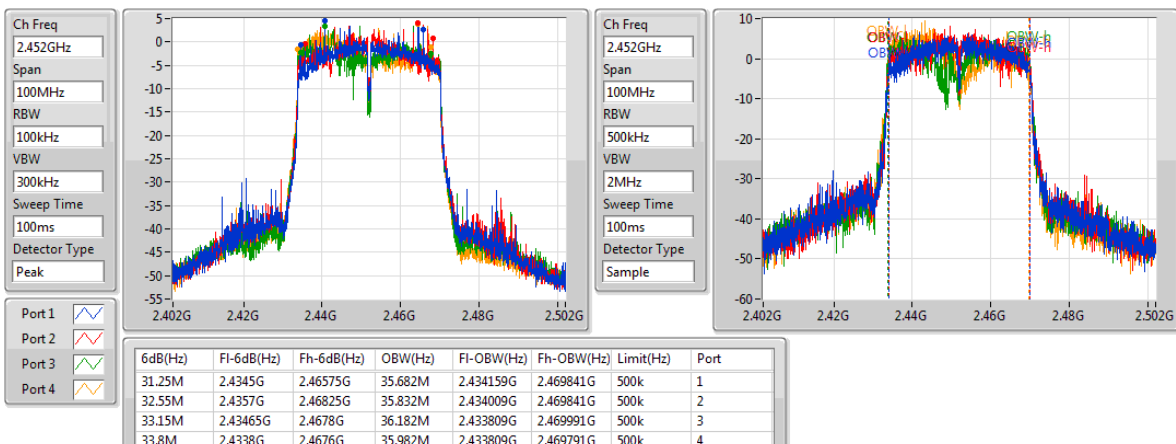
Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	14.325M	17.566M	16.05M	17.566M	12.5M	17.566M	14.975M	17.541M
2437MHz	Pass	500k	17.15M	17.641M	17.525M	17.741M	16.475M	17.516M	16.825M	17.541M
2462MHz	Pass	500k	16.975M	17.591M	16.35M	17.491M	16.6M	17.566M	16.6M	17.641M
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	24.6M	36.482M	35M	35.732M	32.95M	36.582M	30.55M	36.582M
2437MHz	Pass	500k	29.75M	35.882M	31.25M	35.982M	25.1M	35.682M	30.1M	35.332M
2452MHz	Pass	500k	31.25M	35.682M	32.55M	35.832M	33.15M	36.182M	33.8M	35.982M

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

802.11n HT20-BF_Nss1,(MCS0)_4TX
EBW
2412MHz

802.11n HT20-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

802.11n HT20-BF_Nss1,(MCS0)_4TX
EBW
2462MHz


802.11n HT40-BF_Nss1,(MCS0)_4TX
EBW
2422MHz

802.11n HT40-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

802.11n HT40-BF_Nss1,(MCS0)_4TX
EBW
2452MHz


Summary

Mode	Total Power (dBm)	Total Power (W)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-
2.4-2.4835GHz	25.54	0.35810
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-
2.4-2.4835GHz	23.41	0.21928

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	9.88	16.95	17.08	16.86	17.34	23.08	26.12
2437MHz	Pass	9.88	19.23	19.45	19.38	19.98	25.54	26.12
2462MHz	Pass	9.88	17.68	17.84	17.49	18.12	23.81	26.12
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	9.88	15.25	15.67	15.51	15.38	21.48	26.12
2437MHz	Pass	9.88	17.49	17.57	17.34	17.13	23.41	26.12
2452MHz	Pass	9.88	17.14	17.45	17.08	17.32	23.27	26.12

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

Summary

Mode	PD (dBm/RBW)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-
2.4-2.4835GHz	-3.21
802.11n HT40-BF_Nss1,(MCS0)_4TX	-
2.4-2.4835GHz	-4.28

RBW=3kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	9.88	-7.03	-6.15	-6.92	-5.90	-4.64	4.12
2437MHz	Pass	9.88	-7.34	-7.09	-5.46	-5.85	-3.21	4.12
2462MHz	Pass	9.88	-9.17	-7.26	-8.83	-6.99	-5.39	4.12
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	9.88	-10.51	-11.36	-11.45	-10.61	-8.05	4.12
2437MHz	Pass	9.88	-4.86	-5.69	-5.93	-5.15	-4.28	4.12
2452MHz	Pass	9.88	-8.98	-6.85	-11.50	-9.80	-5.24	4.12

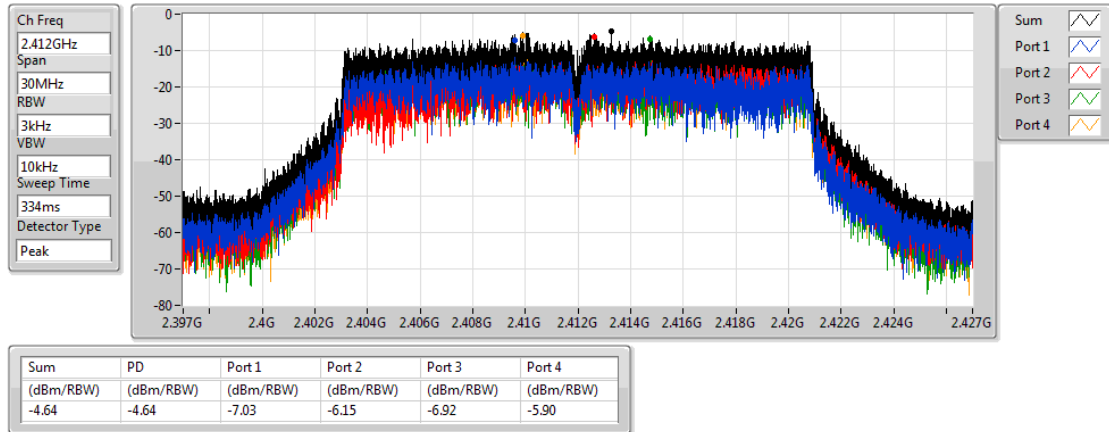
DG = Directional Gain; RBW=3kHz;

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

802.11n HT20-BF_Nss1,(MCS0)_4TX

PSD

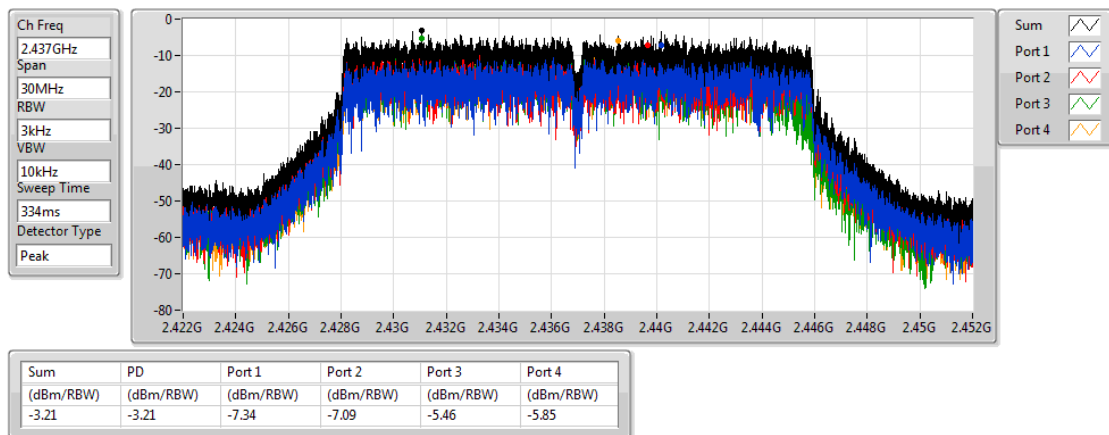
2412MHz



802.11n HT20-BF_Nss1,(MCS0)_4TX

PSD

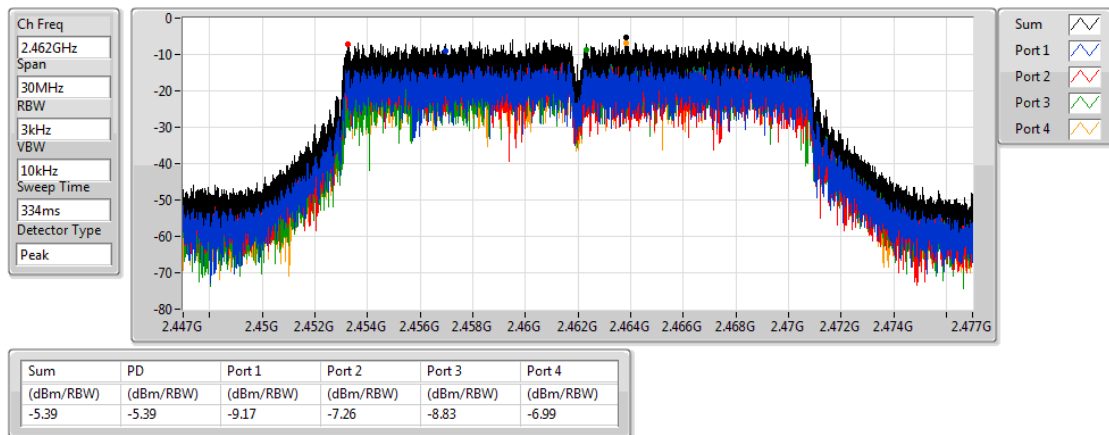
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802.11n HT20-BF_Nss1,(MCS0)_4TX

PSD

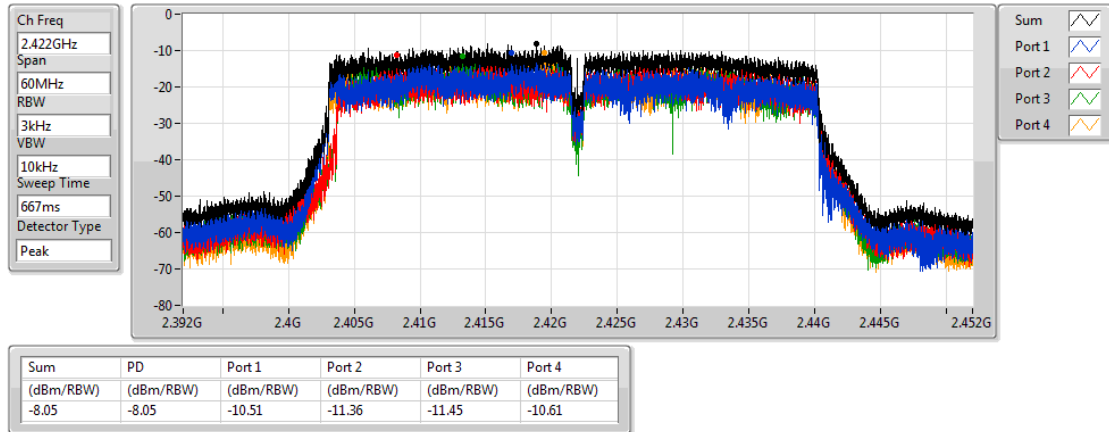
2462MHz



802.11n HT40-BF_Nss1,(MCS0)_4TX

PSD

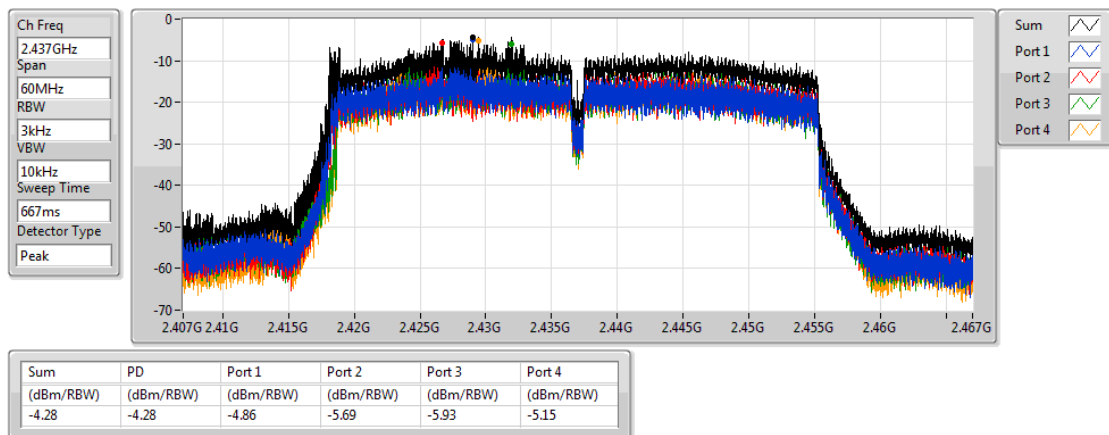
2422MHz



802.11n HT40-BF_Nss1,(MCS0)_4TX

PSD

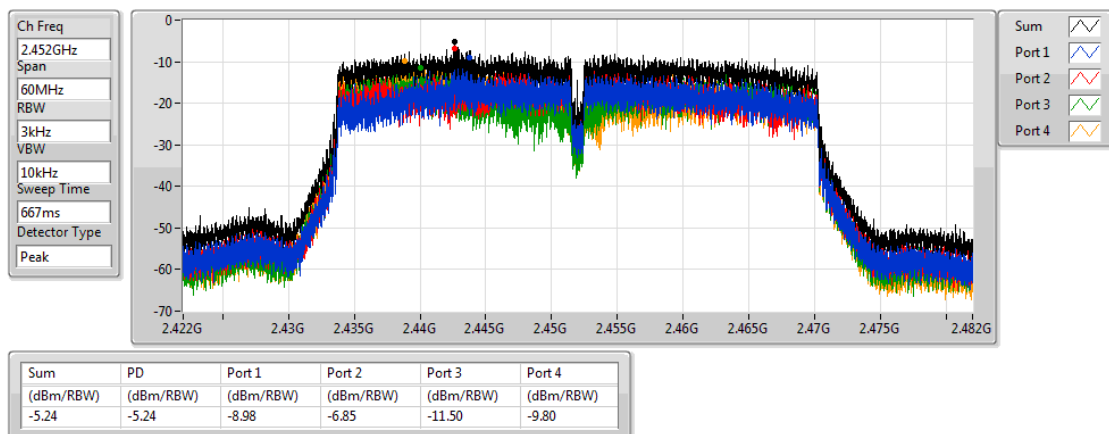
2437MHz



802.11n HT40-BF_Nss1,(MCS0)_4TX

PSD

2452MHz



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
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.429392G	7.14	-22.86	2.305115G	-56.51	2.39072G	-33.27	2.50798G	-56.24	3.228181G	-51.83	1

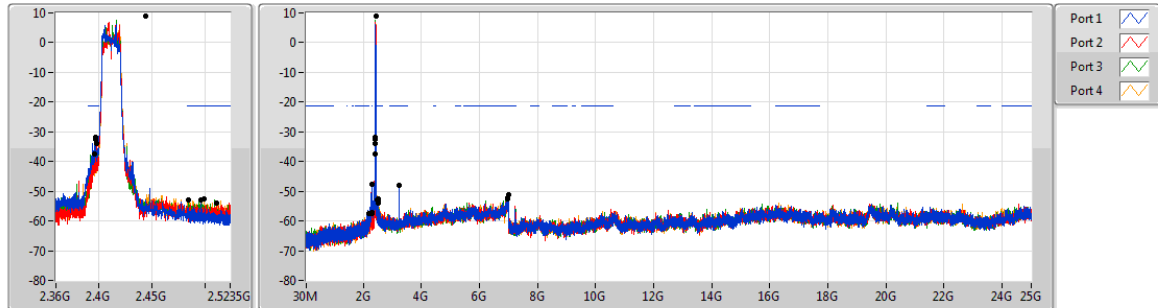
Result

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
802.11n HT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.444422G	8.86	-21.14	2.30408G	-47.61	2.39704G	-31.86	2.49598G	-53.09	3.214652G	-48.11	1
2412MHz	Pass	2.444422G	8.86	-21.14	2.181755G	-57.54	2.39696G	-32.62	2.51038G	-53.95	6.979466G	-52.12	2
2412MHz	Pass	2.444422G	8.86	-21.14	2.30175G	-57.49	2.39824G	-34.05	2.48422G	-52.83	6.973847G	-52.67	3
2412MHz	Pass	2.444422G	8.86	-21.14	2.30641G	-57.11	2.39576G	-37.36	2.4995G	-52.73	6.996324G	-51.16	4
2437MHz	Pass	2.444422G	8.86	-21.14	2.30408G	-45.83	2.39576G	-51.08	2.48374G	-53.37	3.248367G	-51.68	1
2437MHz	Pass	2.444422G	8.86	-21.14	2.30408G	-52.84	2.39336G	-52.12	2.48566G	-51.54	6.95699G	-52.11	2
2437MHz	Pass	2.444422G	8.86	-21.14	2.30408G	-55.42	2.39912G	-52.24	2.48406G	-52.84	6.976657G	-51.51	3
2437MHz	Pass	2.444422G	8.86	-21.14	2.30641G	-56.45	2.39928G	-52.93	2.5195G	-53.13	6.971037G	-52.42	4
2462MHz	Pass	2.444422G	8.86	-21.14	2.30408G	-51.86	2.39272G	-55.06	2.48414G	-43.48	6.808083G	-53.13	1
2462MHz	Pass	2.444422G	8.86	-21.14	2.11302G	-59.29	2.398G	-57.31	2.48382G	-45.26	6.976657G	-53.08	2
2462MHz	Pass	2.444422G	8.86	-21.14	2.307575G	-57.16	2.3996G	-54.48	2.48358G	-44.50	6.987895G	-52.67	3
2462MHz	Pass	2.444422G	8.86	-21.14	2.302915G	-58.03	2.39056G	-55.77	2.4839G	-45.79	6.965418G	-52.69	4
802.11n HT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.429392G	7.14	-22.86	2.305115G	-56.51	2.39072G	-33.27	2.50798G	-56.24	3.228181G	-51.83	1
2422MHz	Pass	2.429392G	7.14	-22.86	2.112755G	-57.79	2.39072G	-35.46	2.5275G	-54.73	6.977881G	-50.95	2
2422MHz	Pass	2.429392G	7.14	-22.86	2.307405G	-57.50	2.39088G	-39.49	2.49262G	-53.56	6.781562G	-52.59	3
2422MHz	Pass	2.429392G	7.14	-22.86	1.920395G	-56.82	2.39072G	-38.85	2.48462G	-53.92	6.994709G	-51.14	4
2437MHz	Pass	2.429392G	7.14	-22.86	2.305115G	-47.76	2.39888G	-38.42	2.48366G	-52.33	3.247813G	-51.89	1
2437MHz	Pass	2.429392G	7.14	-22.86	2.305115G	-57.03	2.39808G	-40.97	2.48654G	-51.48	6.955445G	-52.34	2
2437MHz	Pass	2.429392G	7.14	-22.86	2.30397G	-56.56	2.39952G	-38.32	2.4859G	-52.12	6.963859G	-52.70	3
2437MHz	Pass	2.429392G	7.14	-22.86	1.760095G	-59.29	2.39856G	-45.77	2.5011G	-51.74	6.991904G	-51.08	4
2452MHz	Pass	2.429392G	7.14	-22.86	2.305115G	-48.78	2.39456G	-46.45	2.4843G	-36.25	6.969468G	-51.28	1
2452MHz	Pass	2.429392G	7.14	-22.86	2.305115G	-56.07	2.3984G	-48.49	2.48686G	-33.32	6.958249G	-52.89	2
2452MHz	Pass	2.429392G	7.14	-22.86	2.30626G	-56.90	2.39328G	-49.75	2.48942G	-35.79	6.963859G	-52.86	3
2452MHz	Pass	2.429392G	7.14	-22.86	2.309695G	-59.09	2.3976G	-54.23	2.48814G	-39.22	6.983491G	-51.62	4

802.11n HT20-BF_Nss1,(MCS0)_4TX

CSE NdB

2412MHz

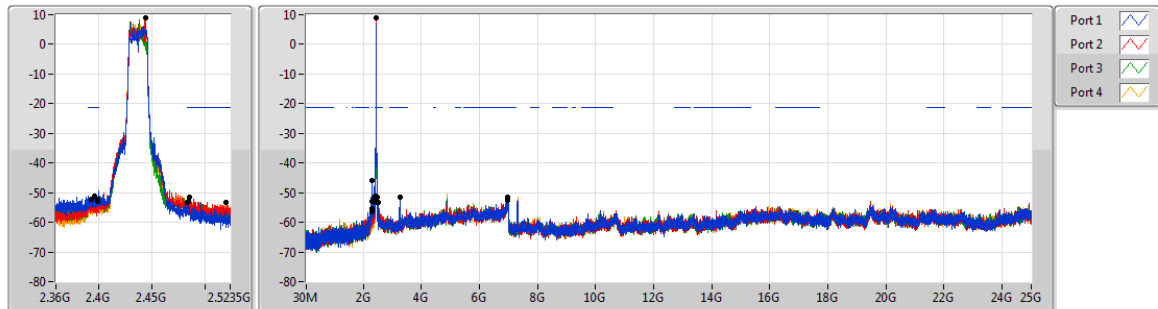


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	8.86	-21.14	2.30408G	-47.61	2.39704G	-31.86	2.49598G	-53.09	3.214652G	-48.11	1
2.444422G	8.86	-21.14	2.181755G	-57.54	2.39696G	-32.62	2.51038G	-53.95	6.979466G	-52.12	2
2.444422G	8.86	-21.14	2.30175G	-57.49	2.39824G	-34.05	2.48422G	-52.83	6.973847G	-52.67	3
2.444422G	8.86	-21.14	2.30641G	-57.11	2.39576G	-37.36	2.4995G	-52.73	6.996324G	-51.16	4

802.11n HT20-BF_Nss1,(MCS0)_4TX

CSE NdB

2437MHz

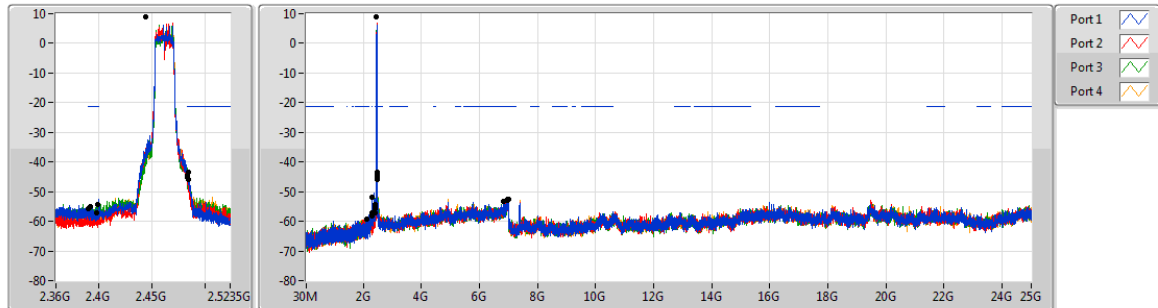


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	8.86	-21.14	2.30408G	-45.83	2.39576G	-51.08	2.48374G	-53.37	3.248367G	-51.68	1
2.444422G	8.86	-21.14	2.30408G	-52.84	2.39336G	-52.12	2.48566G	-51.54	6.95699G	-52.11	2
2.444422G	8.86	-21.14	2.30408G	-55.42	2.39912G	-52.24	2.48406G	-52.84	6.976657G	-51.51	3
2.444422G	8.86	-21.14	2.30641G	-56.45	2.39928G	-52.93	2.5195G	-53.13	6.971037G	-52.42	4

802.11n HT20-BF_Nss1,(MCS0)_4TX

CSE NdB

2462MHz

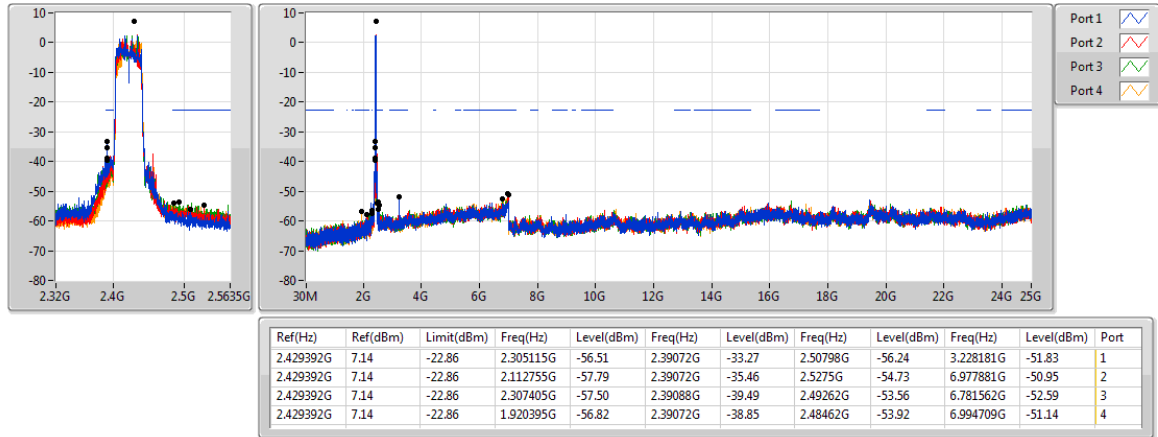


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	8.86	-21.14	2.30408G	-51.86	2.39272G	-55.06	2.48414G	-43.48	6.808083G	-53.13	1
2.444422G	8.86	-21.14	2.11302G	-59.29	2.398G	-57.31	2.48382G	-45.26	6.976657G	-53.08	2
2.444422G	8.86	-21.14	2.307575G	-57.16	2.3996G	-54.48	2.48358G	-44.50	6.987895G	-52.67	3
2.444422G	8.86	-21.14	2.302915G	-58.03	2.39056G	-55.77	2.4839G	-45.79	6.965418G	-52.69	4

802.11n HT40-BF_Nss1,(MCS0)_4TX

CSE NdB

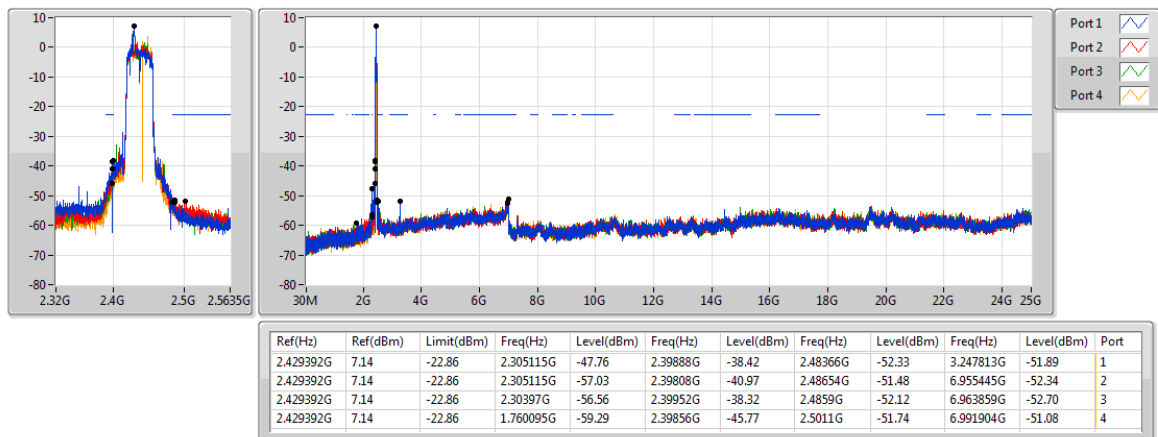
2422MHz



802.11n HT40-BF_Nss1,(MCS0)_4TX

CSE NdB

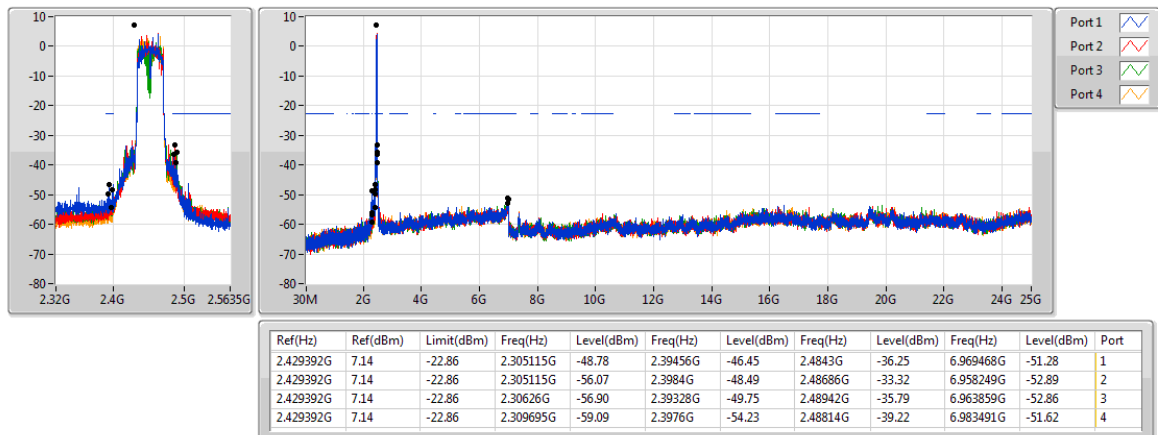
2437MHz

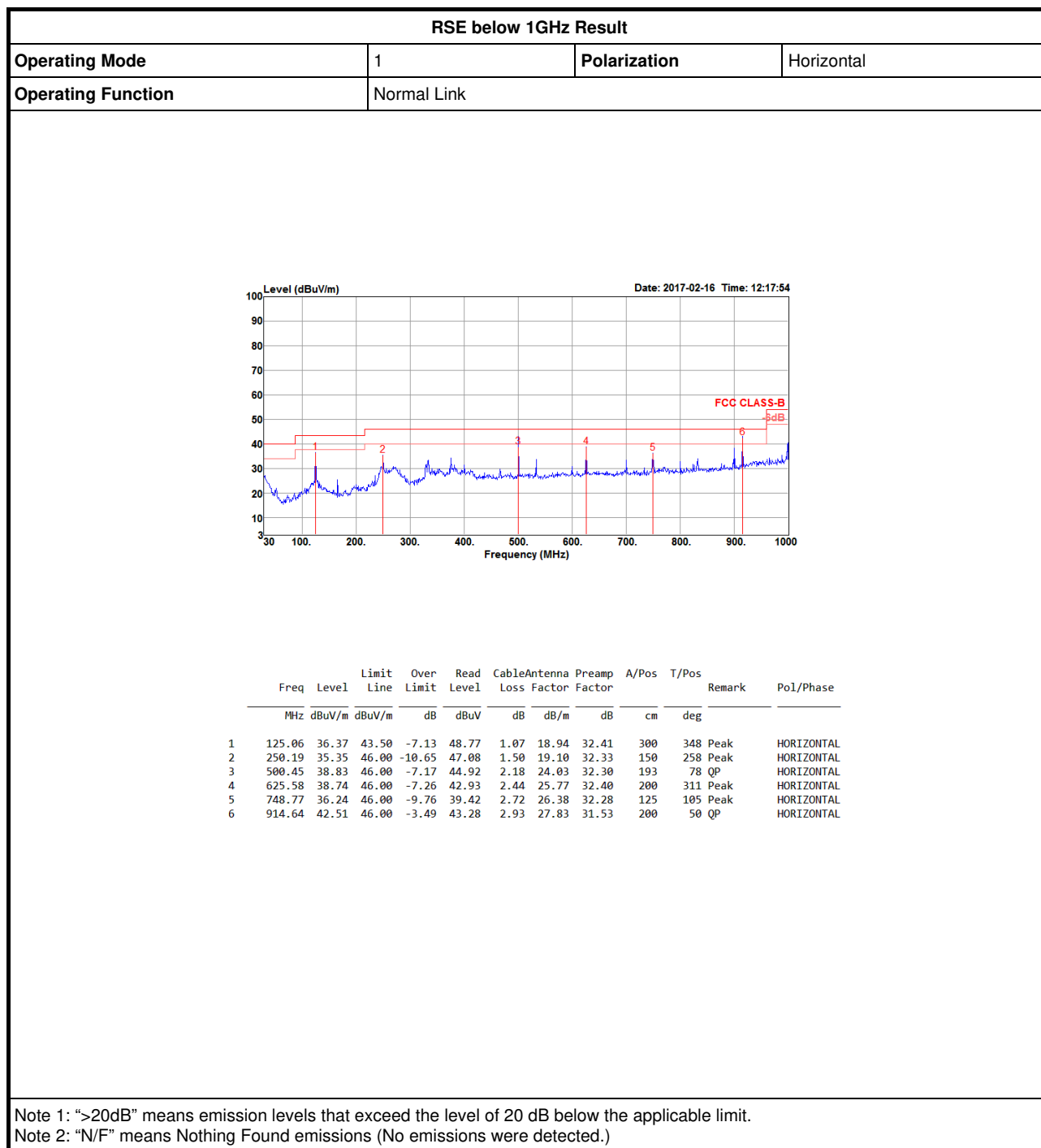


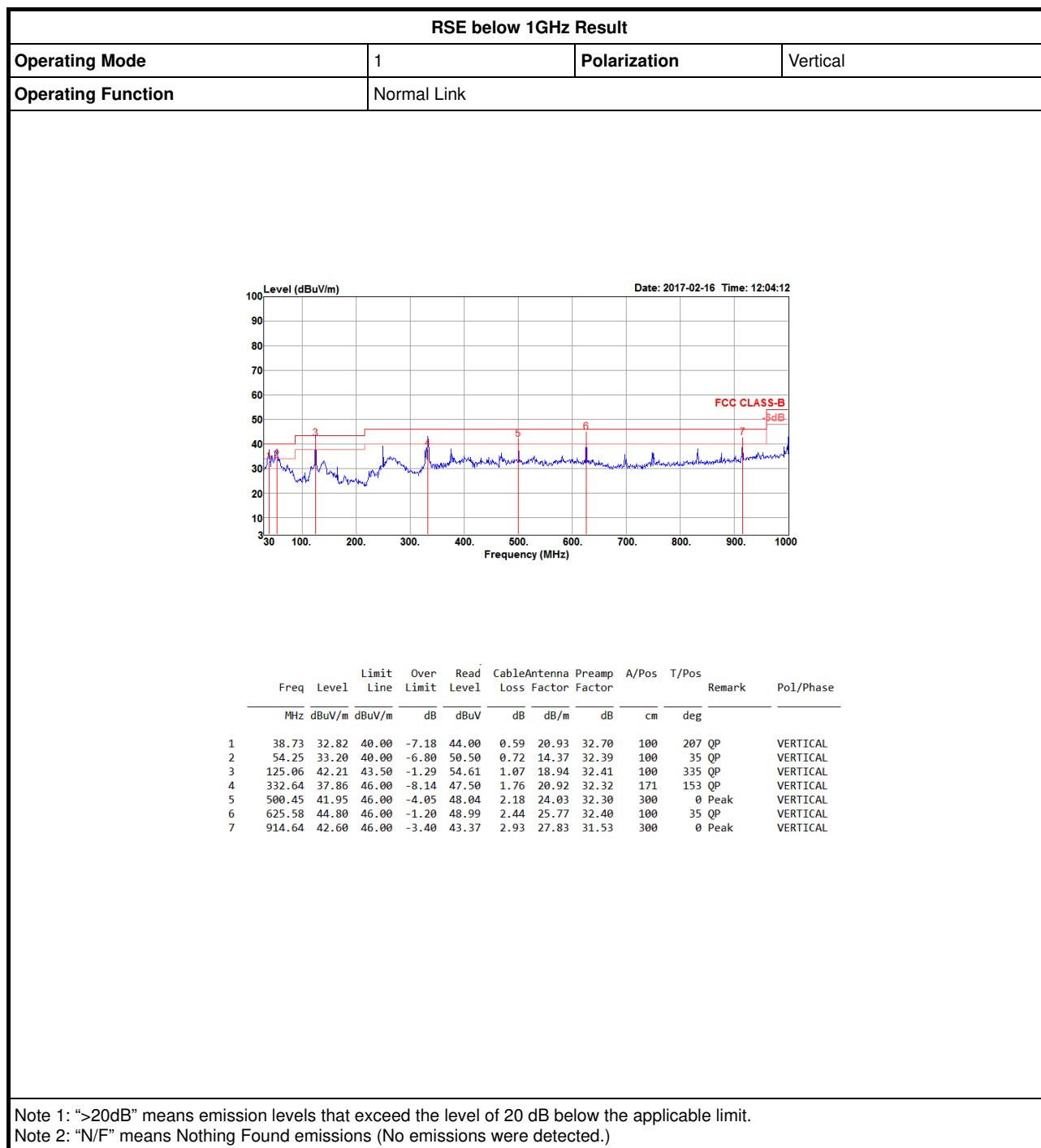
802.11n HT40-BF_Nss1,(MCS0)_4TX

CSE NdB

2452MHz





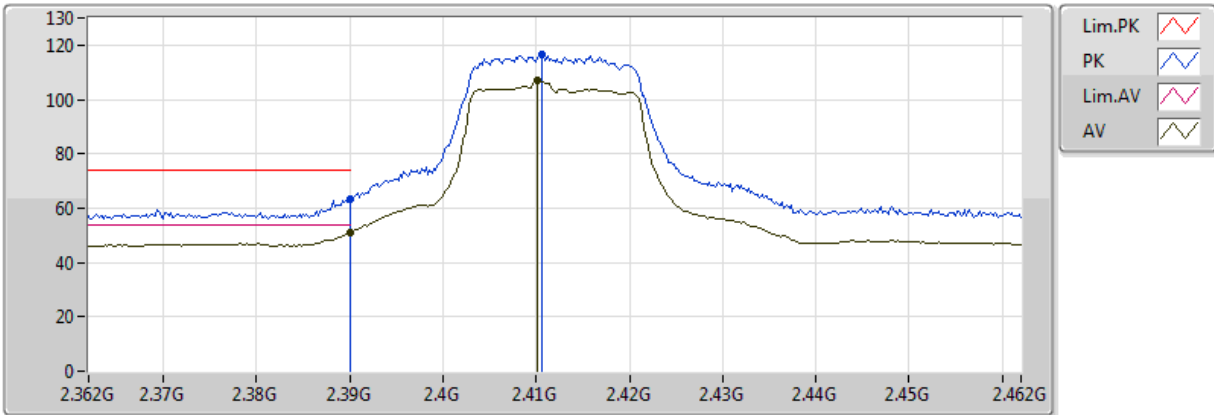


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
HT20,TXBF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	AV	2.483502G	53.99	54.00	-0.01	32.81	3	V	122	1.53	-

HT20,TXBF_Nss1,(MCS0)_4TX

2412MHz_TX

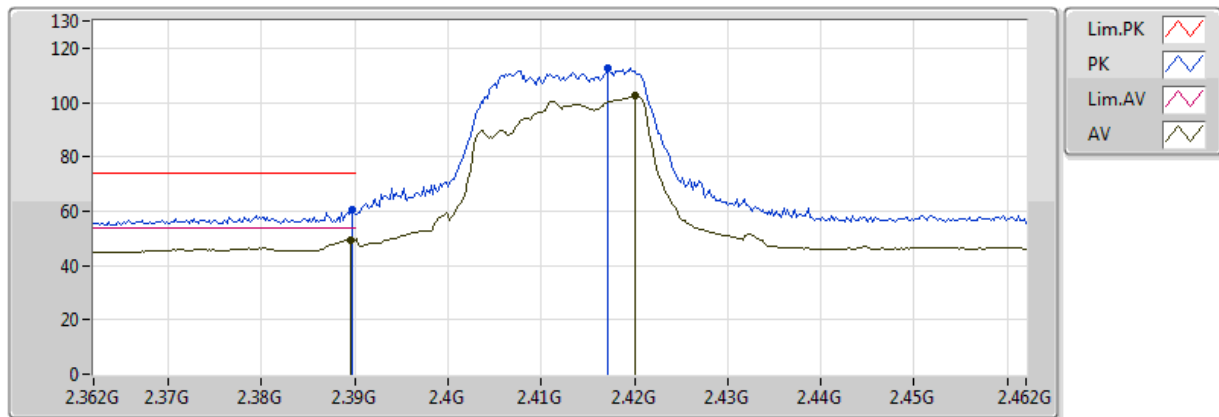


20170221
EUT Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.39G	51.18	54.00	-2.82	32.55	3	V	121	1.84	-
AV	2.4102G	106.98	Inf	-Inf	32.61	3	V	121	1.84	-
PK	2.39G	63.10	74.00	-10.90	32.55	3	V	121	1.84	-
PK	2.4106G	116.78	Inf	-Inf	32.61	3	V	121	1.84	-

HT20,TXBF_Nss1,(MCS0)_4TX

2412MHz_TX

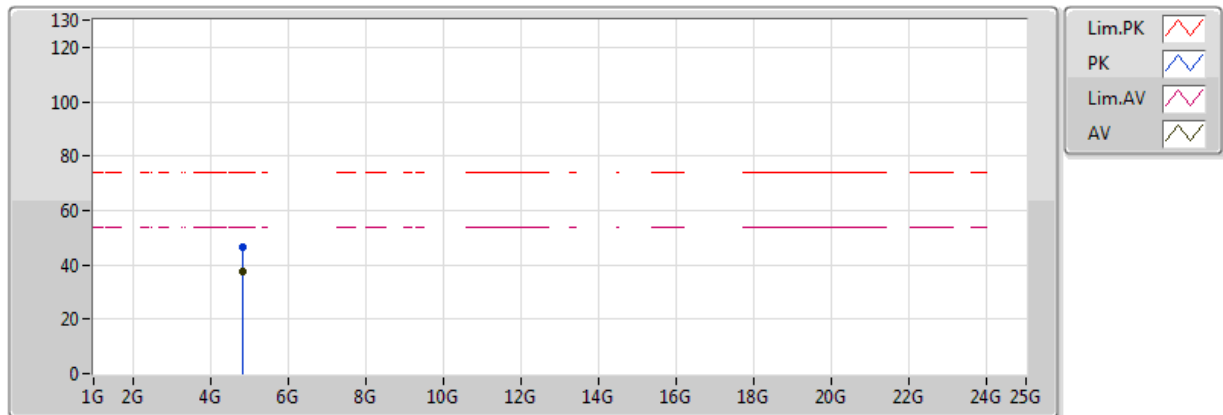


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3896G	49.59	54.00	-4.41	32.55	3	H	264	2.45	-
AV	2.42G	102.43	Inf	-Inf	32.64	3	H	264	2.45	-
PK	2.3898G	60.79	74.00	-13.21	32.55	3	H	264	2.45	-
PK	2.4172G	112.86	Inf	-Inf	32.63	3	H	264	2.45	-

HT20,TXBF_Nss1,(MCS0)_4TX

2412MHz_TX

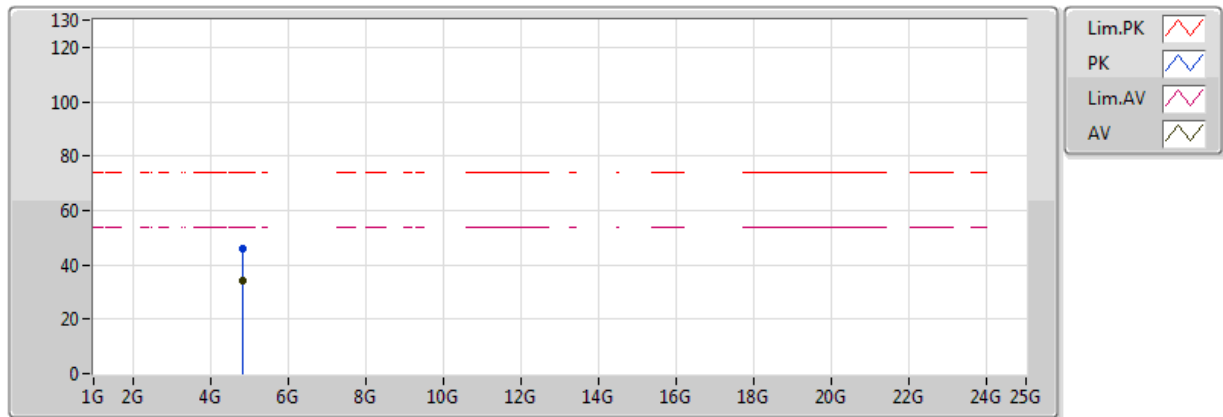


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.824036G	37.36	54.00	-16.64	7.69	3	V	252	1.40	-
PK	4.823916G	46.48	74.00	-27.52	7.69	3	V	252	1.40	-

HT20,TXBF_Nss1,(MCS0)_4TX

2412MHz_TX

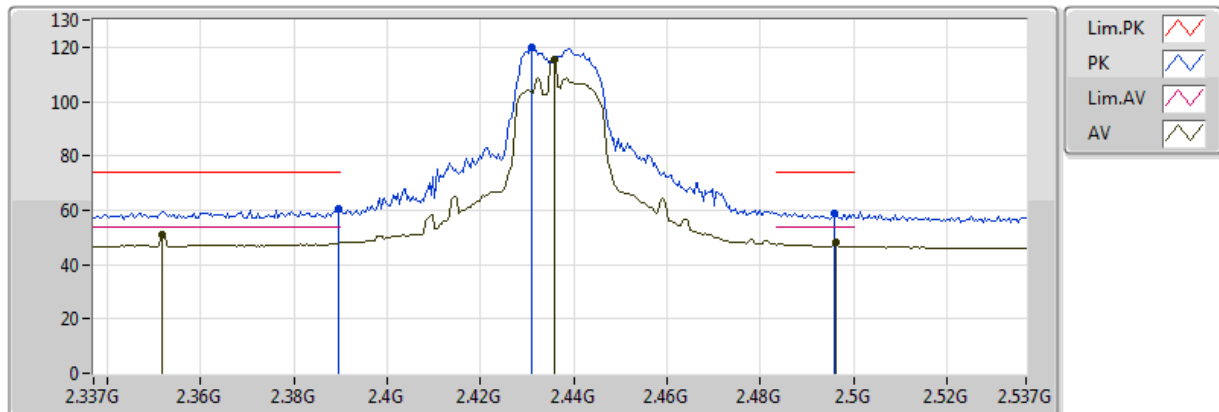


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.823896G	34.46	54.00	-19.54	7.69	3	H	103	2.86	-
PK	4.824748G	45.99	74.00	-28.01	7.69	3	H	103	2.86	-

HT20,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

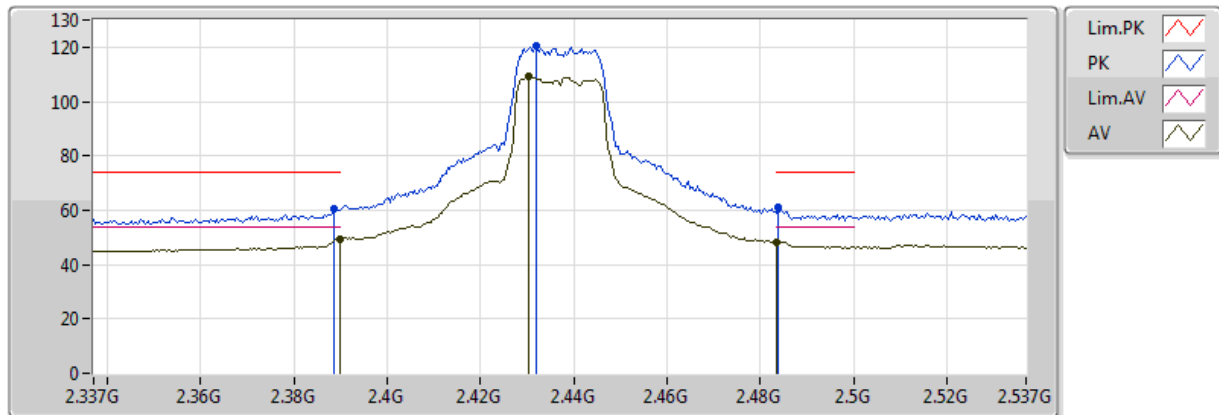


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3518G	50.93	54.00	-3.07	32.45	3	V	298	1.28	-
AV	2.4358G	115.24	Inf	-Inf	32.68	3	V	298	1.28	-
AV	2.4962G	48.09	54.00	-5.91	32.85	3	V	298	1.28	-
PK	2.3894G	60.40	74.00	-13.60	32.55	3	V	298	1.28	-
PK	2.431G	119.80	Inf	-Inf	32.67	3	V	298	1.28	-
PK	2.4958G	58.81	74.00	-15.19	32.85	3	V	298	1.28	-

HT20,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

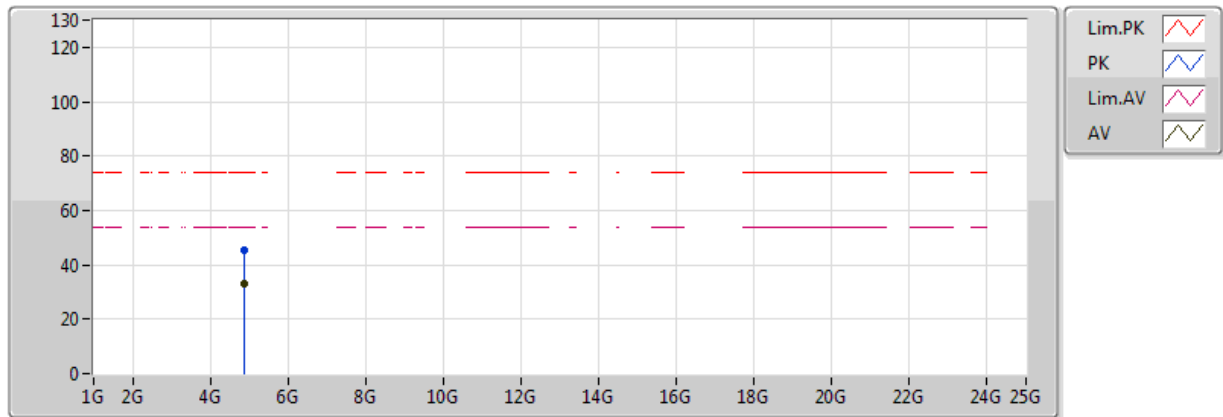


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.389998G	49.58	54.00	-4.42	32.55	3	H	145	1.64	-
AV	2.4302G	109.08	Inf	-Inf	32.66	3	H	145	1.64	-
AV	2.483502G	48.43	54.00	-5.57	32.81	3	H	145	1.64	-
PK	2.3886G	60.27	74.00	-13.73	32.55	3	H	145	1.64	-
PK	2.4318G	120.67	Inf	-Inf	32.67	3	H	145	1.64	-
PK	2.4838G	61.22	74.00	-12.78	32.81	3	H	145	1.64	-

HT20,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

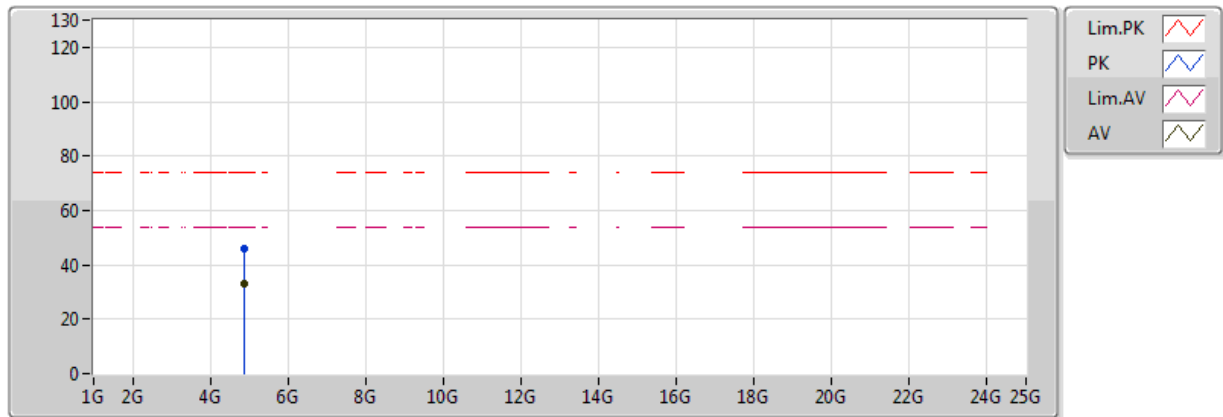


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.87408G	33.26	54.00	-20.74	7.91	3	V	360	1.22	-
PK	4.873948G	45.65	74.00	-28.35	7.91	3	V	360	1.22	-

HT20,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

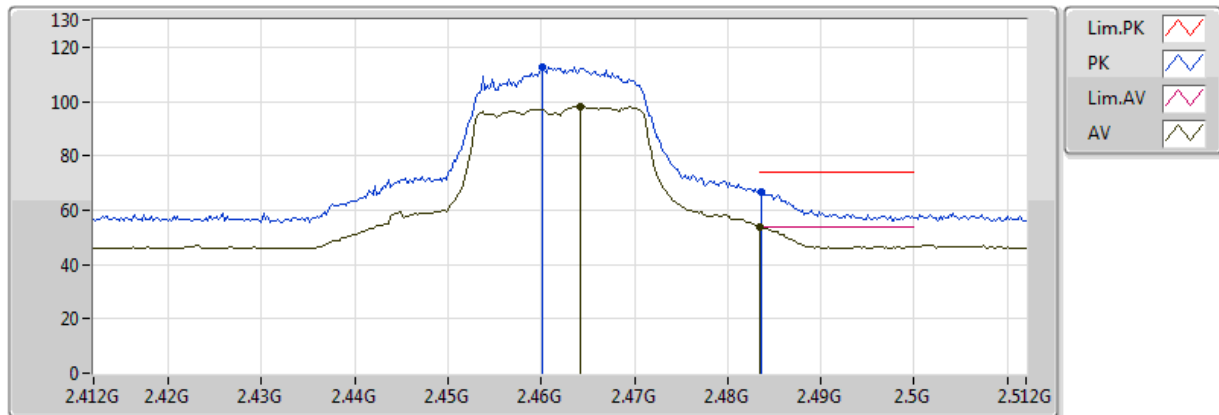


20170221
EUT_Y_4TX TXBF
Setting 30 Maxsetting
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.873892G	33.29	54.00	-20.71	7.91	3	H	294	1.35	-
PK	4.87344G	46.20	74.00	-27.80	7.91	3	H	294	1.35	-

HT20,TXBF_Nss1,(MCS0)_4TX

2462MHz_TX

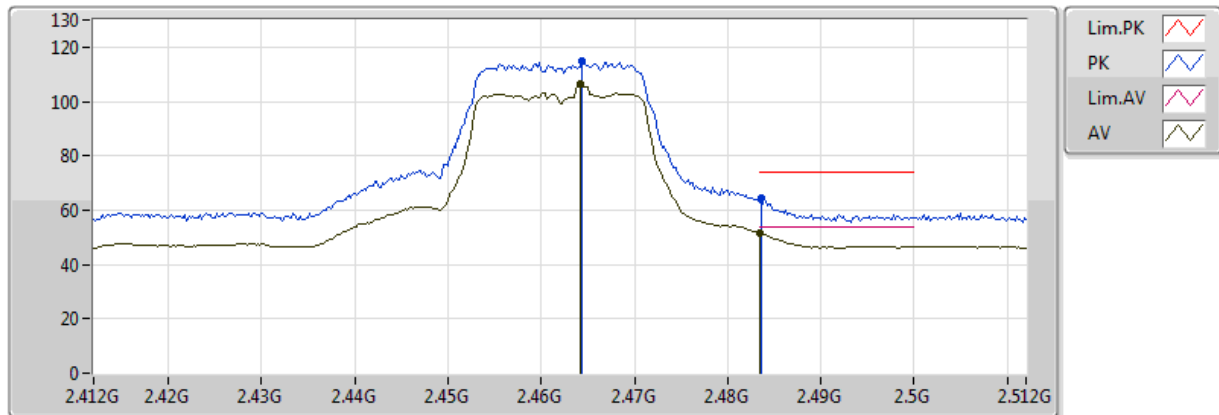


20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.4642G	98.05	Inf	-Inf	32.76	3	V	122	1.53	-
PK	2.4602G	112.68	Inf	-Inf	32.75	3	V	122	1.53	-
PK	2.4836G	66.66	74.00	-7.34	32.81	3	V	122	1.53	-
AV	2.483502G	53.99	54.00	-0.01	32.81	3	V	122	1.53	-

HT20, TXBF_Nss1,(MCS0)_4TX

2462MHz_TX

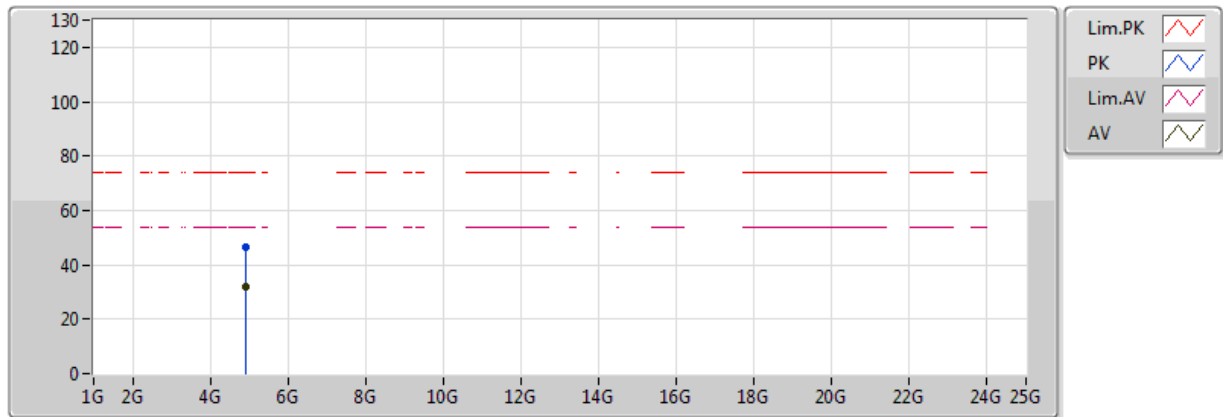


20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.4642G	106.47	Inf	-Inf	32.76	3	H	144	1.89	-
AV	2.483502G	51.51	54.00	-2.49	32.81	3	H	144	1.89	-
PK	2.4644G	114.85	Inf	-Inf	32.76	3	H	144	1.89	-
PK	2.4836G	64.54	74.00	-9.46	32.81	3	H	144	1.89	-

HT20,TXBF_Nss1,(MCS0)_4TX

2462MHz_TX

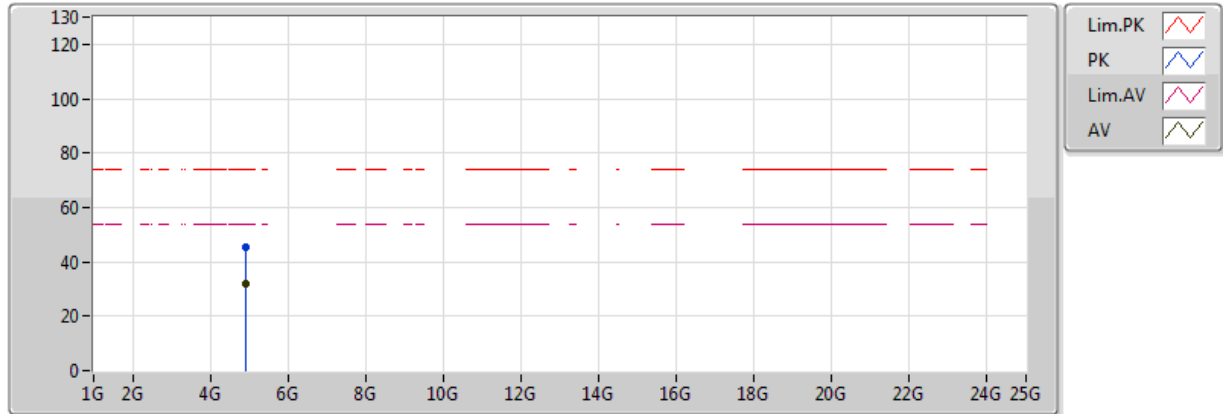


20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.924768G	32.03	54.00	-21.97	8.15	3	V	143	1.26	-
PK	4.92348G	46.30	74.00	-27.70	8.15	3	V	143	1.26	-

HT20,TXBF_Nss1,(MCS0)_4TX

2462MHz_TX

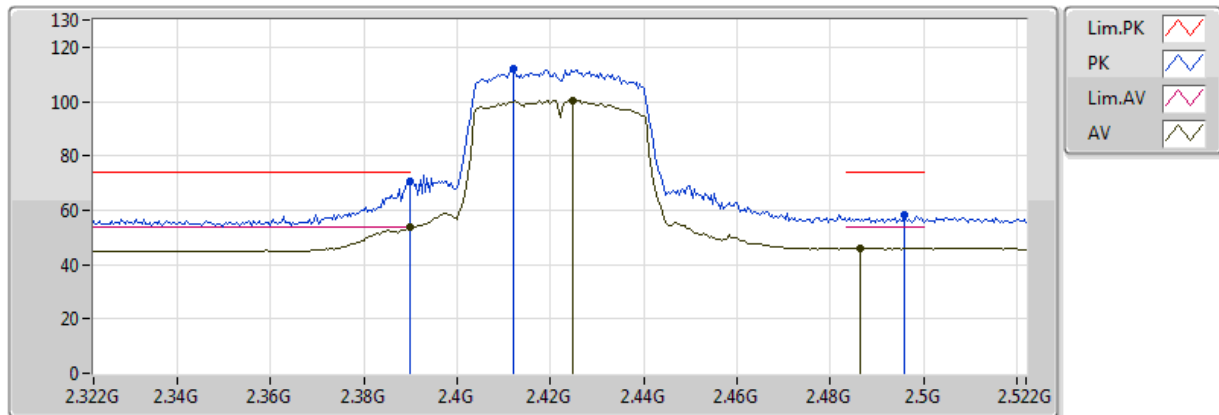


20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.924844G	32.15	54.00	-21.85	8.15	3	H	277	1.27	-
PK	4.924636G	45.17	74.00	-28.83	8.15	3	H	277	1.27	-

HT40,TXBF_Nss1,(MCS0)_4TX

2422MHz_TX

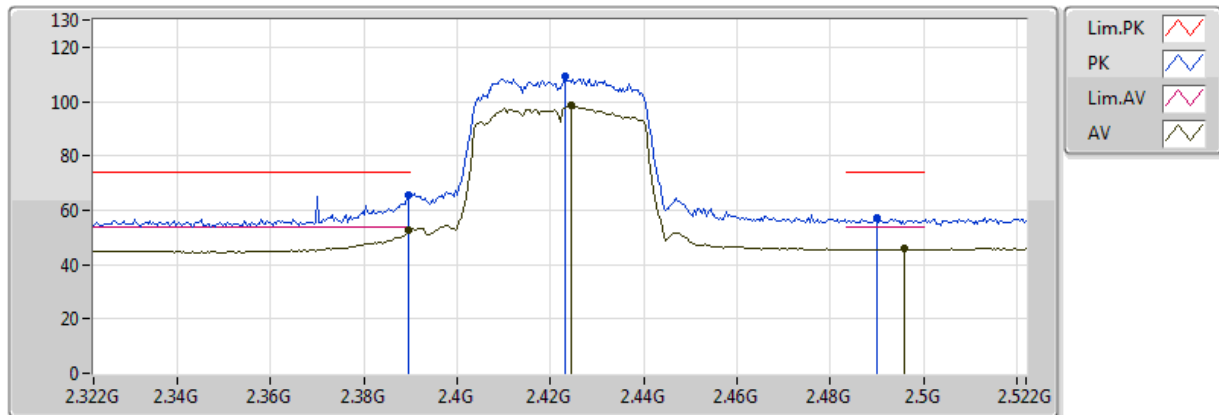


20170221
EUT_Y_4TX_TXBF
Setting 21
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.39G	53.74	54.00	-0.26	32.55	3	V	131	1.87	-
AV	2.4248G	100.47	Inf	-Inf	32.65	3	V	131	1.87	-
AV	2.4864G	46.17	54.00	-7.83	32.82	3	V	131	1.87	-
PK	2.39G	70.63	74.00	-3.37	32.55	3	V	131	1.87	-
PK	2.412G	112.11	Inf	-Inf	32.61	3	V	131	1.87	-
PK	2.496G	58.27	74.00	-15.73	32.85	3	V	131	1.87	-

HT40,TXBF_Nss1,(MCS0)_4TX

2422MHz_TX

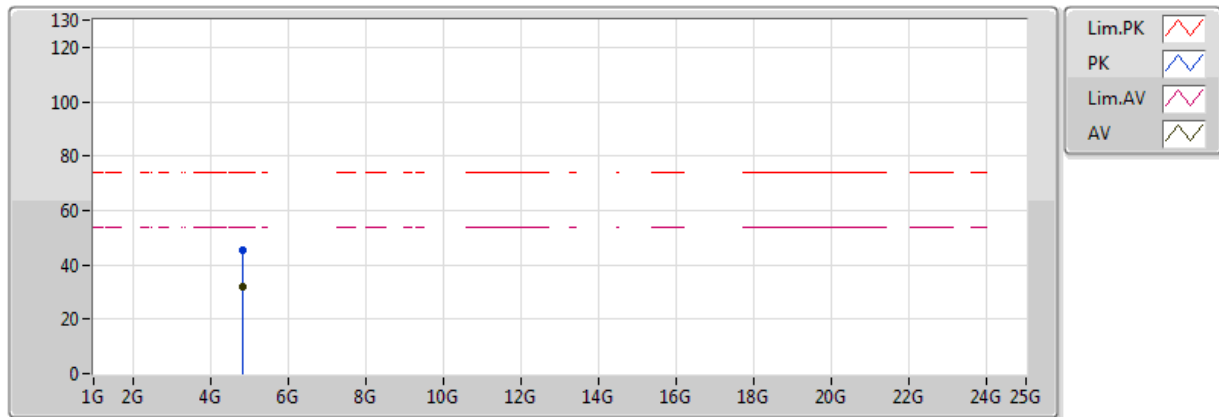


20170221
EUT_Y_4TX TXBF
Setting 21
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3896G	52.58	54.00	-1.42	32.55	3	H	124	1.45	-
AV	2.4244G	98.47	Inf	-Inf	32.65	3	H	124	1.45	-
AV	2.496G	45.71	54.00	-8.29	32.85	3	H	124	1.45	-
PK	2.3896G	65.60	74.00	-8.40	32.55	3	H	124	1.45	-
PK	2.4232G	109.50	Inf	-Inf	32.64	3	H	124	1.45	-
PK	2.49G	56.95	74.00	-17.05	32.83	3	H	124	1.45	-

HT40,TXBF_Nss1,(MCS0)_4TX

2422MHz_TX

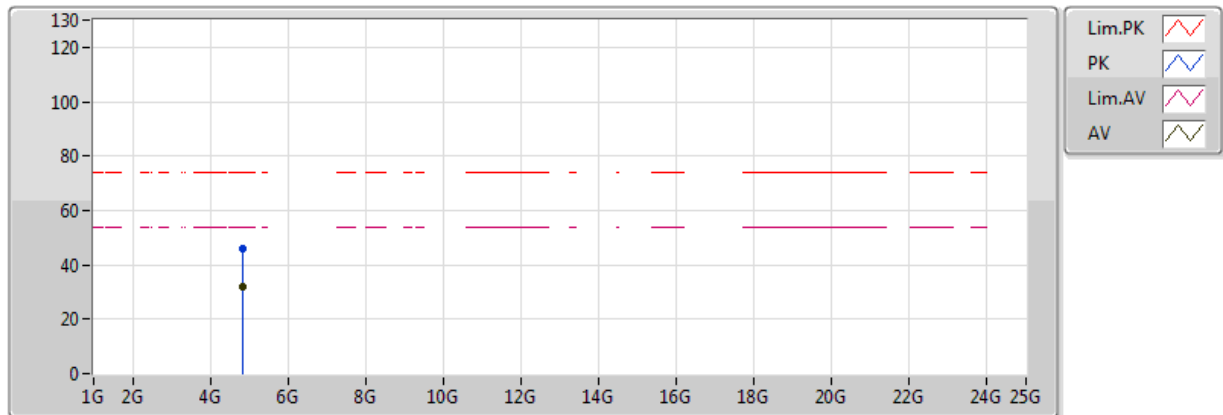


20170221
EUT_Y_4TX TXBF
Setting 21
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.844372G	31.81	54.00	-22.19	7.78	3	V	230	1.14	-
PK	4.84324G	45.26	74.00	-28.74	7.77	3	V	230	1.14	-

HT40,TXBF_Nss1,(MCS0)_4TX

2422MHz_TX

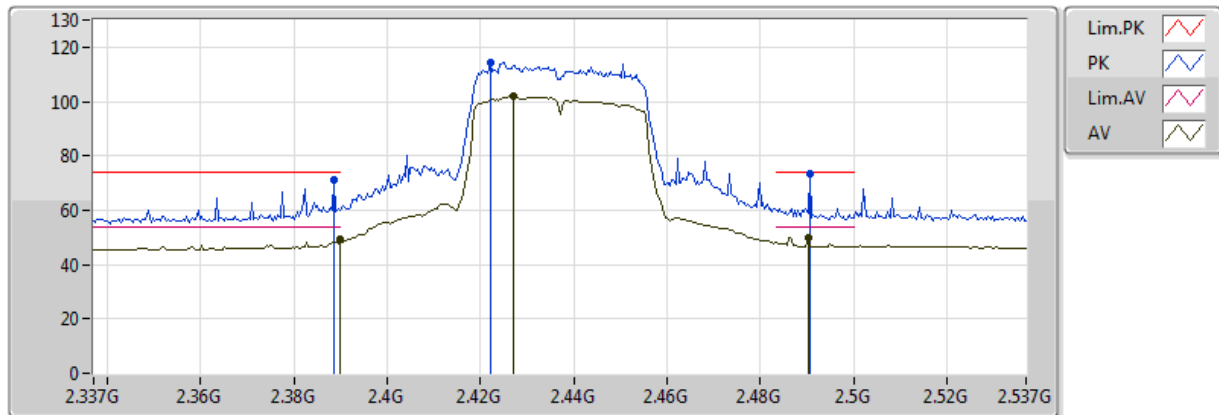


20170221
EUT_Y_4TX TXBF
Setting 21
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.843356G	31.72	54.00	-22.28	7.78	3	H	304	1.15	-
PK	4.8439G	45.71	74.00	-28.29	7.78	3	H	304	1.15	-

HT40,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

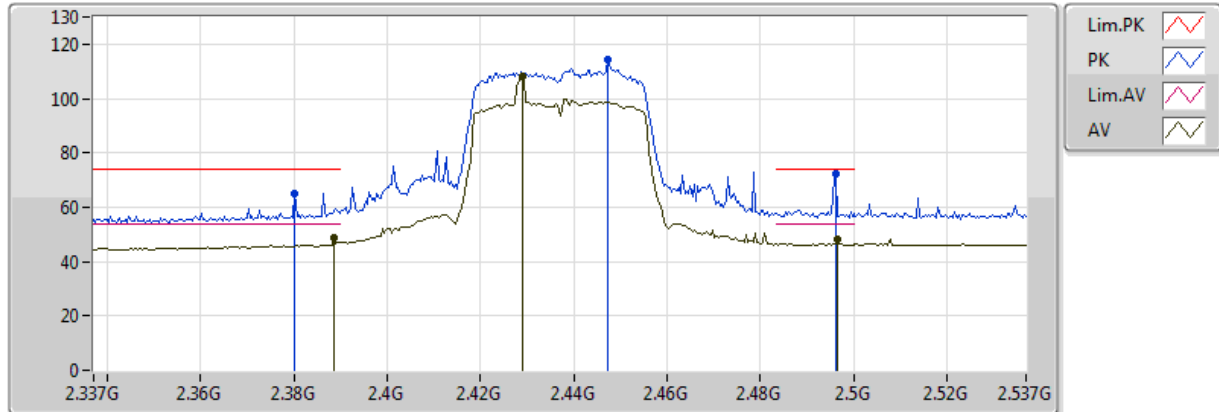


20170221
EUT_Y_4TX_TXBF
Setting 28
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.389998G	49.33	54.00	-4.67	32.55	3	V	148	2.13	-
AV	2.427G	102.19	Inf	-Inf	32.66	3	V	148	2.13	-
AV	2.4902G	49.98	54.00	-4.02	32.83	3	V	148	2.13	-
PK	2.3886G	70.92	74.00	-3.08	32.55	3	V	148	2.13	-
PK	2.4222G	114.52	Inf	-Inf	32.64	3	V	148	2.13	-
PK	2.4906G	73.51	74.00	-0.49	32.83	3	V	148	2.13	-

HT40,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

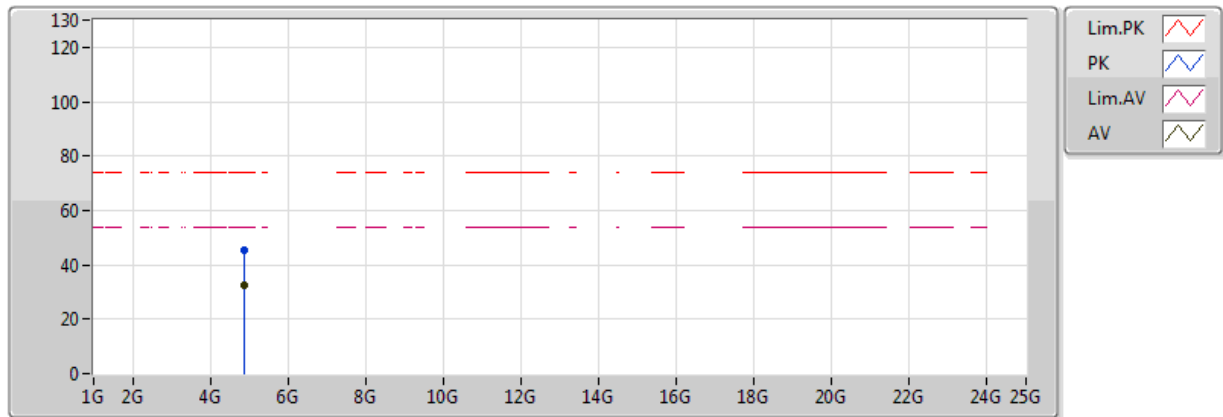


20170221
EUT_Y_4TX_TXBF
Setting 28
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3886G	48.55	54.00	-5.45	32.55	3	H	152	1.94	-
AV	2.429G	108.00	Inf	-Inf	32.66	3	H	152	1.94	-
AV	2.4966G	48.40	54.00	-5.60	32.85	3	H	152	1.94	-
PK	2.3802G	65.24	74.00	-8.76	32.53	3	H	152	1.94	-
PK	2.4474G	114.07	Inf	-Inf	32.71	3	H	152	1.94	-
PK	2.4962G	72.22	74.00	-1.78	32.85	3	H	152	1.94	-

HT40,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

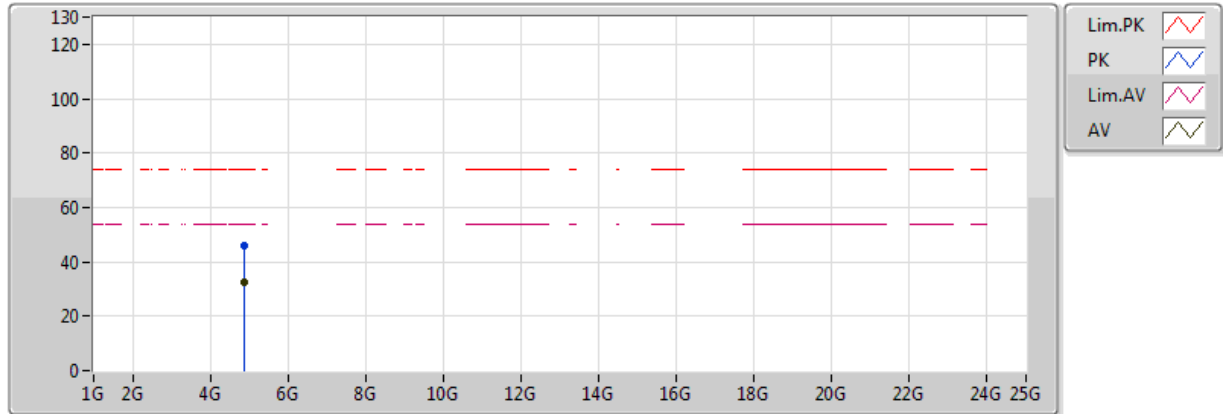


20170221
EUT_Y_4TX TXBF
Setting 28
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.873788G	32.28	54.00	-21.72	7.91	3	V	162	1.21	-
PK	4.874872G	45.49	74.00	-28.51	7.92	3	V	162	1.21	-

HT40,TXBF_Nss1,(MCS0)_4TX

2437MHz_TX

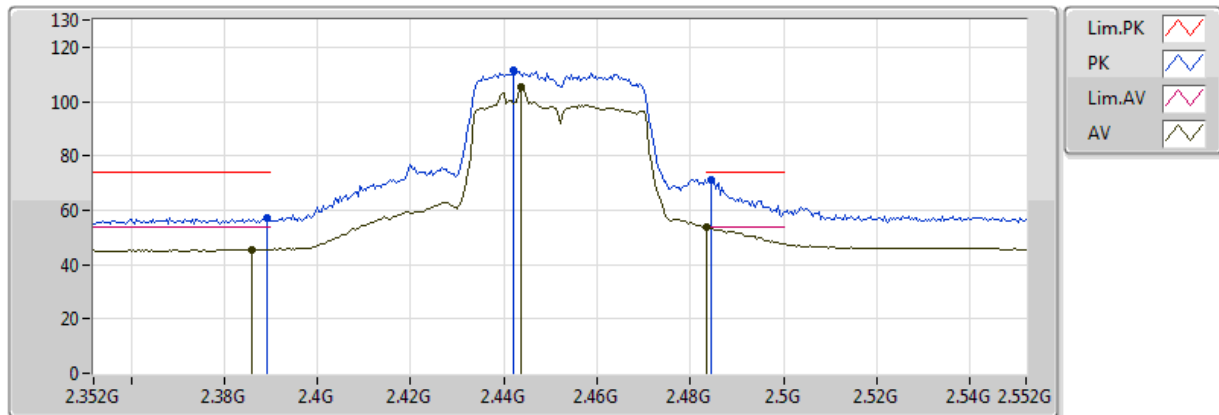


20170221
EUT_Y_4TX TXBF
Setting 28
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.874088G	32.47	54.00	-21.53	7.91	3	H	152	1.55	-
PK	4.873784G	45.84	74.00	-28.16	7.91	3	H	152	1.55	-

HT40,TXBF_Nss1,(MCS0)_4TX

2452MHz_TX

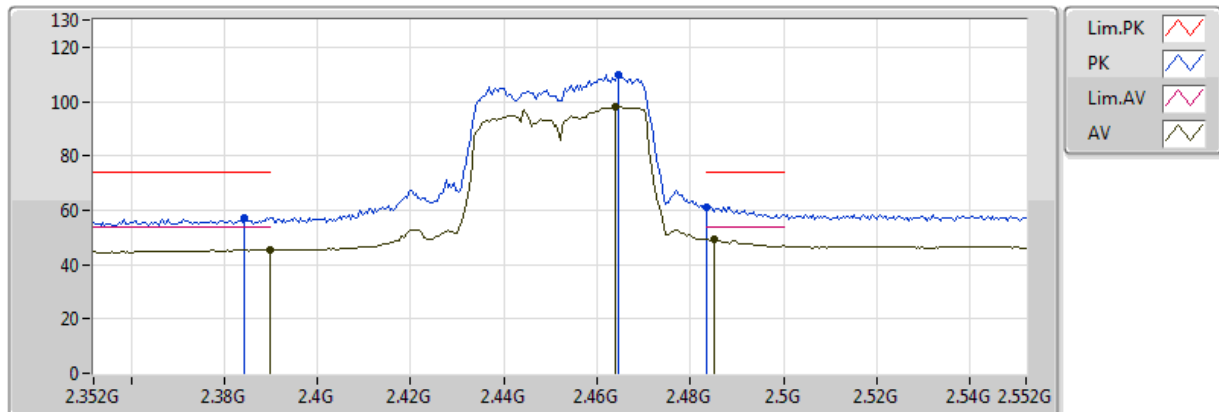


20170221
EUT_Y_4TX_TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.386G	45.47	54.00	-8.53	32.54	3	V	122	1.64	-
AV	2.4436G	105.42	Inf	-Inf	32.70	3	V	122	1.64	-
AV	2.4836G	53.80	54.00	-0.20	32.81	3	V	122	1.64	-
PK	2.3892G	57.39	74.00	-16.61	32.55	3	V	122	1.64	-
PK	2.442G	111.40	Inf	-Inf	32.70	3	V	122	1.64	-
PK	2.4844G	71.07	74.00	-2.93	32.82	3	V	122	1.64	-

HT40,TXBF_Nss1,(MCS0)_4TX

2452MHz_TX

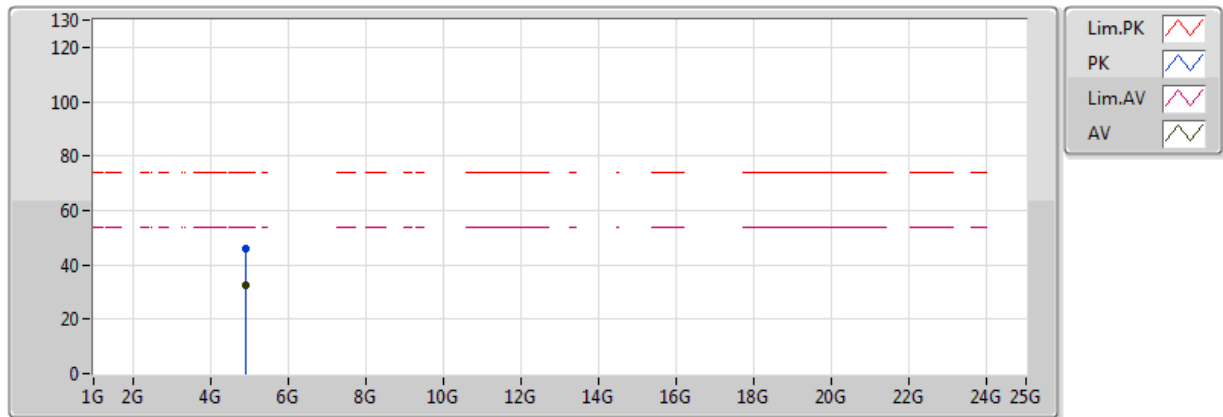


20170221
EUT_Y_4TX_TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.39G	45.47	54.00	-8.53	32.55	3	H	248	2.03	-
AV	2.464G	98.01	Inf	-Inf	32.76	3	H	248	2.03	-
AV	2.4852G	49.45	54.00	-4.55	32.82	3	H	248	2.03	-
PK	2.3844G	57.29	74.00	-16.71	32.54	3	H	248	2.03	-
PK	2.4644G	110.03	Inf	-Inf	32.76	3	H	248	2.03	-
PK	2.4836G	61.17	74.00	-12.83	32.81	3	H	248	2.03	-

HT40,TXBF_Nss1,(MCS0)_4TX

2452MHz_TX

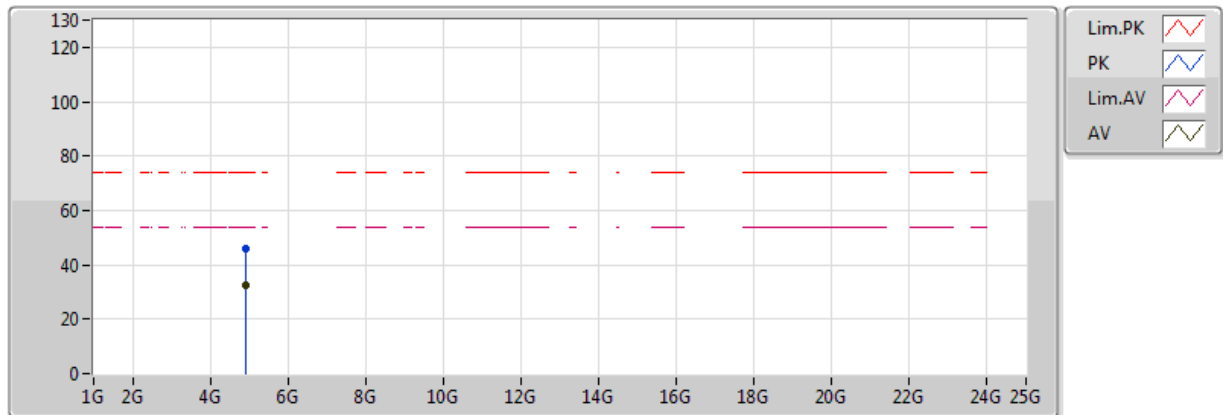


20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.904288G	32.58	54.00	-21.42	8.05	3	V	161	2.21	-
PK	4.90358G	46.03	74.00	-27.97	8.05	3	V	161	2.21	-

HT40,TXBF_Nss1,(MCS0)_4TX

2452MHz_TX



20170221
EUT_Y_4TX TXBF
Setting 23
03-M-1
FSP(100019)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.903736G	32.51	54.00	-21.49	8.05	3	H	184	2.02	-
PK	4.90384G	46.18	74.00	-27.82	8.05	3	H	184	2.02	-