



FCC RADIO TEST REPORT

FCC ID		2ABLP-RE1XYZN
Equipment		Viasat Smart Home WiFi Extender
Brand Name		Viasat
Model Name		RE1XXXN-030 (Where "X", may be 0~9, A~Z, blank or dash)
Applicant		Viasat, Inc. 6155 El Camino Real Carlsbad, CA 92009 USA
Manufacturer	:	CyberTAN Technology, Inc. No. 99, Park Avenue III, Science-based Industrial Park, Hsinchu, 308 Taiwan
Standard		47 CFR FCC Part 15.247

The product was received on Jul. 24, 2018, and testing was started from Jul. 24, 2018 and completed on Nov. 01, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

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

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Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

TEL : 886-3-656-9065 FAX : 886-3-656-9085 Report Template No.: CB Ver1.0 Page Number: 1 of 36Issued Date: Dec. 24, 2018Report Version: 02



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History of this test report

Report No.	Version	Description	Issued Date
FR750330-05AA	01	Initial issue of report	Nov. 13, 2018
FR750330-05AA	02	Removing a Model Name (Model Name: RE1100N-030)	Dec. 24, 2018



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Reviewed by: Sam Chen Report Producer: Vicky Huang



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), ac (VHT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), ac (VHT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g-Non BF	20	2TX
2.4-2.4835GHz	802.11g-BF	20	2TX
2.4-2.4835GHz	802.11n HT20-Non BF	20	2TX
2.4-2.4835GHz	802.11n HT20-BF	20	2TX
2.4-2.4835GHz	802.11ac VHT20-Non BF	20	2TX
2.4-2.4835GHz	802.11ac VHT20-BF	20	2TX
2.4-2.4835GHz	802.11n HT40-Non BF	40	2TX
2.4-2.4835GHz	802.11n HT40-BF	40	2TX
2.4-2.4835GHz	802.11ac VHT40-Non BF	40	2TX
2.4-2.4835GHz	802.11ac VHT40-BF	40	2TX

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.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM 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

					Gain (dBi)			
Ant.	Brand	Model Name	Antenna Type	Connector	2.4GHz	5GHz Band 1	5GHz Band 4	
1	N/A	N/A	PIFA Antenna	N/A	2.7	2.9	3.2	
2	Airgain	N2420DCBL	Dipole Antenna	I-PEX	3.9	5.1	4.9	

Note: The EUT has two antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n/ac mode (2TX, 2RX):

Ant. 1(Port 1) and Ant. 2(Port 2) will transmit/receive the same signal simultaneously. Ant. 1(Port 1) and Ant. 2(Port 2) can be used as transmitting/receiving antennas.

For 5GHz function:

For IEEE 802.11 a/n/ac mode (2TX, 2RX):

Ant. 1(Port 1) and Ant. 2(Port 2) will transmit/receive the same signal simultaneously. Ant. 1(Port 1) and Ant. 2(Port 2) can be used as transmitting/receiving antennas

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.952	0.214	5.083m	300
802.11g-BF	0.907	0.424	1.52m	1k
802.11ac VHT40-BF	0.894	0.487	1.853m	1k
802.11ac VHT20-BF	0.898	0.467	1.998m	1k

Note:

DC is Duty Cycle.

DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	Fro	From Power Adapter			
Beamforming Function	\boxtimes	With beamforming		Without beamforming	
Function	\boxtimes	Point-to-multipoint		Point-to-point	
Test Software Version	3.0.187.0				

Note: The product has beamforming function for 802.11a/g/n/ac in 2.4GHz and 5GHz.



1.1.5 Table for Multiple Listing

The model number detail information for the following table

Model Name	Description
	All the models are identical, the difference model served as
RE1XXXN-030	marketing strategy.
	(The "X" in model name can be 0 to 9, A to Z, blank or dash, for
	marking purpose)

Model Name	Power Module	Match Adapter
	Custom Power Module	Adapter 1(Without DC power cable)
RE1111N-030	Custom Power Module	Adapter 1(With DC power cable)
RE1121N-030	Standard Power Module	Adapter 2

For AC Power-line Conducted Emissions and Emissions in Restricted Frequency Bands(below 1GHz) tests: From the above models, model name: RE1121N-030 and RE1111N-030 was selected as representative model for the test and its data was recorded in this report.

For other tests:

From the above models, model name: RE1121N-030 was selected as representative model for the test and its data was recorded in this report.



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 v05
- FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

	Testing Location							
	HWA YA	ADD	:	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)				
		TEL	:	886-3-327-3456 FAX : 886-3-327-0973				
\boxtimes	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 / 54%	Sep. 01, 2018~Sep. 03, 2018
Radiated below 1GHz	03CH01-CB	Lance Wu	24°C / 56%	Jul. 24, 2018~Oct. 31, 2018
Radiated above 1GHz	03CH01-CB	Lance Wu	24°C / 56%	Jul. 24, 2018~Sep. 26, 2018
AC Conduction	CO02-CB	Wei Li	23°C / 60%	Sep. 26, 2018~Nov. 01, 2018

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 x10 ⁻⁸	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	24
2437MHz	24
2462MHz	24
802.11g-BF_Nss1,(6Mbps)_2TX	-
2412MHz	18.5
2417MHz	22
2422MHz	23
2427MHz	24
2437MHz	24
2452MHz	24
2457MHz	23
2462MHz	19.5
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	18
2417MHz	22
2422MHz	23.5
2427MHz	24
2437MHz	24
2452MHz	24
2457MHz	22.5
2462MHz	19
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
2422MHz	17.5
2427MHz	18
2432MHz	18.5
2437MHz	20.5
2442MHz	19
2447MHz	19
2452MHz	18

Note1:The product has beamforming function for 802.11a/g/n/ac in 2.4GHz and 5GHz. One is beamforming mode, and the other is non-beamforming mode, after evaluating, beamforming mode has been evaluated to be the worst case, so it was selected to test and record in this test report.

Note2:VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.



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 AP Router mode-EUT(model:RE1111N-030)+Adapter1(With DC power cable)			
2 AP Router mode-EUT(model:RE1121N-030)+Adapter2			
3 AP Router mode-EUT(model:RE1111N-030)+Adapter1(Without DC power cable)			

The Worst Case Mode for Following Conformance Tests		
Tests ItemDTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands		
Test Condition Conducted measurement at transmit chains		
Operating Mode CTX		
1	EUT(model:RE1121N-030)+Adapter2	

The Worst Case Mode for Following Conformance Tests				
Tests Item	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	AP Router mode-EUT at Y-axis(model:RE1111N-030)+Adapter1(With DC power cable)			
2 AP Router mode-EUT at Z-axis(model:RE1111N-030)+Adapter1(With DC po cable)				
Mode 2 has been evaluate follow this same test mode	d to be the worst case between Mode $1\sim2$, thus measurement for Mode $3\sim4$ will			
3	AP Router mode-EUT at Z-axis(model:RE1121N-030)+Adapter2			
4	AP Router mode-EUT at Z-axis(model:RE1111N-030)+Adapter1(Without DC power cable)			
For operating mode 2 v mo	bde 3 and mode 4 is the worst case and it was record in this test report.			
Operating Mode > 1GHz CTX				
	The EUT was performed at Y axis and Z axis position. The worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.			
1	EUT at Z-axis(model:RE1121N-030)+Adapter2			



The Worst Case Mode for Following Conformance Tests			
Tests Item	Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location		
Test Condition	Test Condition Radiated measurement		
Operating Mode	Operating Mode Normal Link		
The EUT was performed at Y axis and Z axis position for Emissions in Restricted Frequency Bands below 1GHz. The worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.			
1 EUT at Z-axis(model:RE1121N-030)+Adapter2-WLAN 2.4GHz + WLAN 5GHz			
Refer to Appendix G for Radiated Emission Co-location.			

The Worst Case Mode for Following Conformance Tests				
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation				
Operating Mode	Operating Mode			
1 EUT(model:RE1121N-030)-WLAN 2.4GHz + WLAN 5GHz				
Refer to Sporton Test Report No.: FA750330-05 for Co-location RF Exposure Evaluation.				

Note: The EUT supports AP Router

Extender and Mesh mode, only AP Router mode was tested and recorded in this test report for customer's request.



2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming 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 than 98%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories					
Equipment Name	Brand Name	Model Name	Rating		
Adapter 1	LEI	MU13-3050250-A1	Input: 100-240V~50/60Hz, 0.3A Output: 5V, 2.5A		
Adapter 2	DVE	DSA-13PFD-05 FUS 050250	Input: 100-240V~50/60Hz, 0.5A Output: 5V, 2.5A		
Other					
DC power cable*1, non-shielded 1.8m (for Adapter 1 use only)					



2.5 Support Equipment

For Test Site No: CO02-CB

	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
1	NB*3	DELL	E6430	N/A	

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

	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
1	NB	DELL	E4300	N/A		
2	2 NB*2 Apple Mac Book N/A					

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

Support Equipment							
No.	No. Equipment Brand Name Model Name FCC ID						
1	1 NB DELL E4300 N/A						

For beamforming mode

Support Equipment					
No. Equipment Brand Name Model Name FCC ID				FCC ID	
1	NB	DELL	E4300	N/A	
2	Afterburner Wireless Home Gateway (RX Device)	Viasat	RE1121N-030	2ABLP-RE1XYZN	

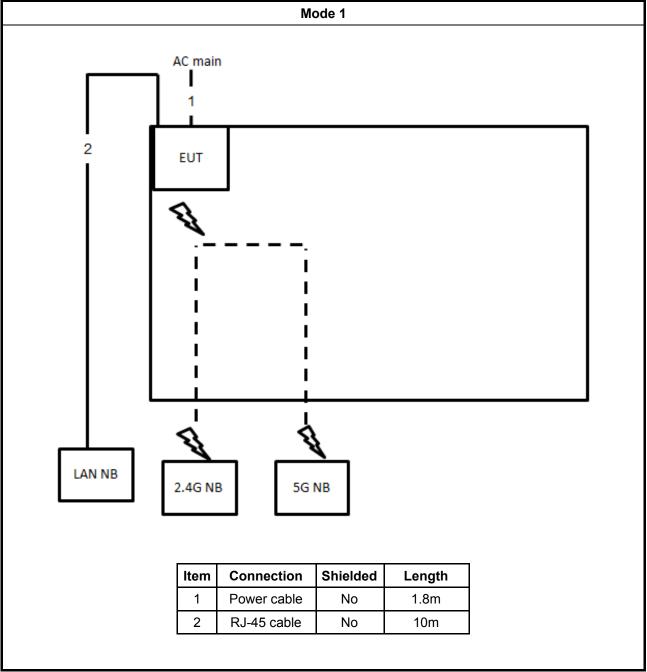
For Test Site No: TH01-CB

Support Equipment				
No. Equipment Brand Name Model Name FCC ID				
1	NB	DELL	E4300	N/A

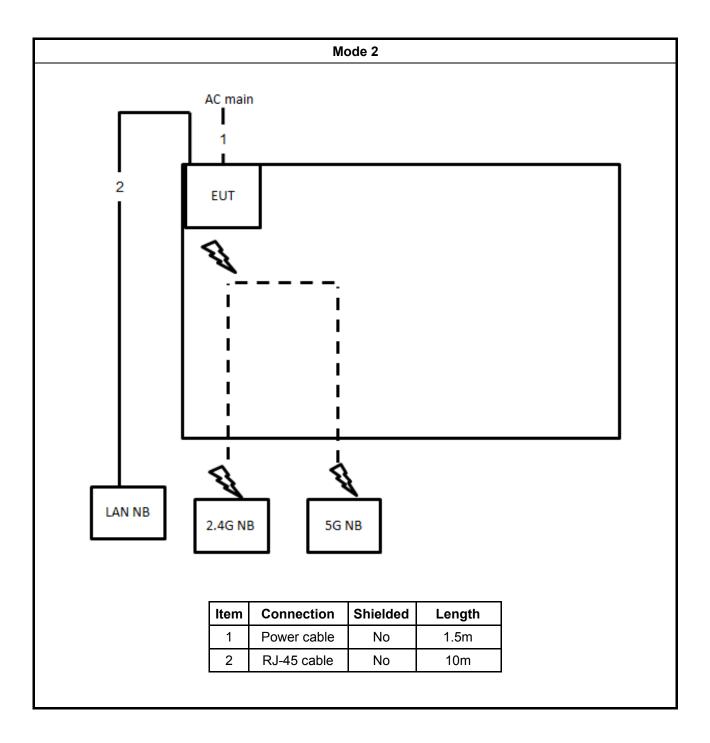


2.6 Test Setup Diagram

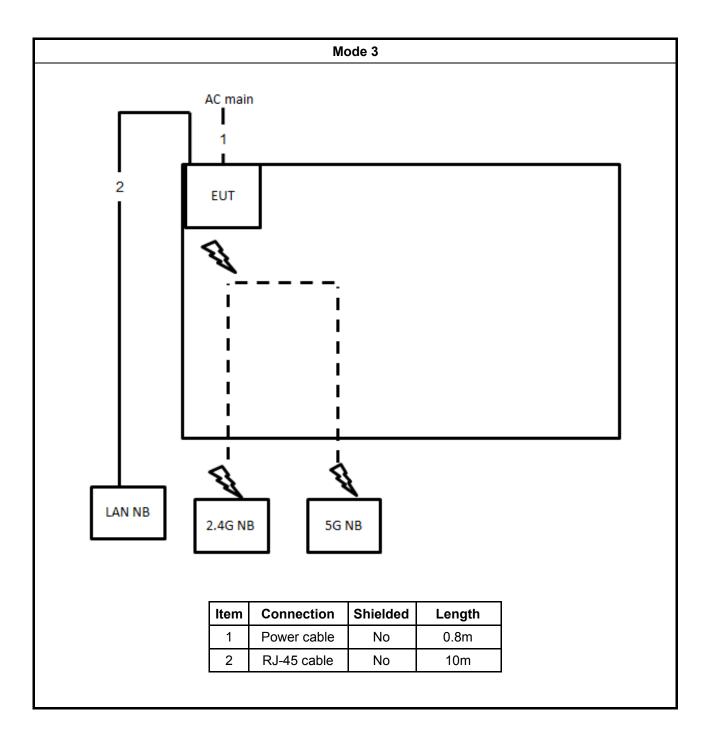
For Test Setup Diagram – AC Line Conducted Emission Test:



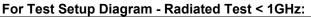


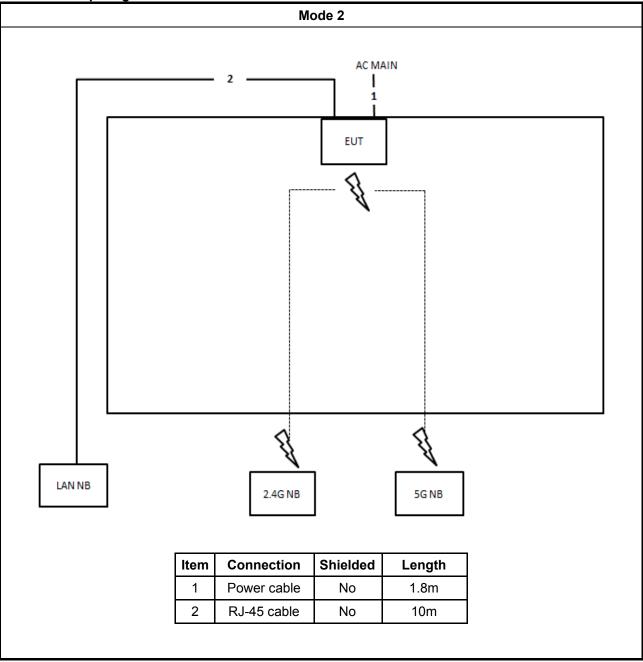




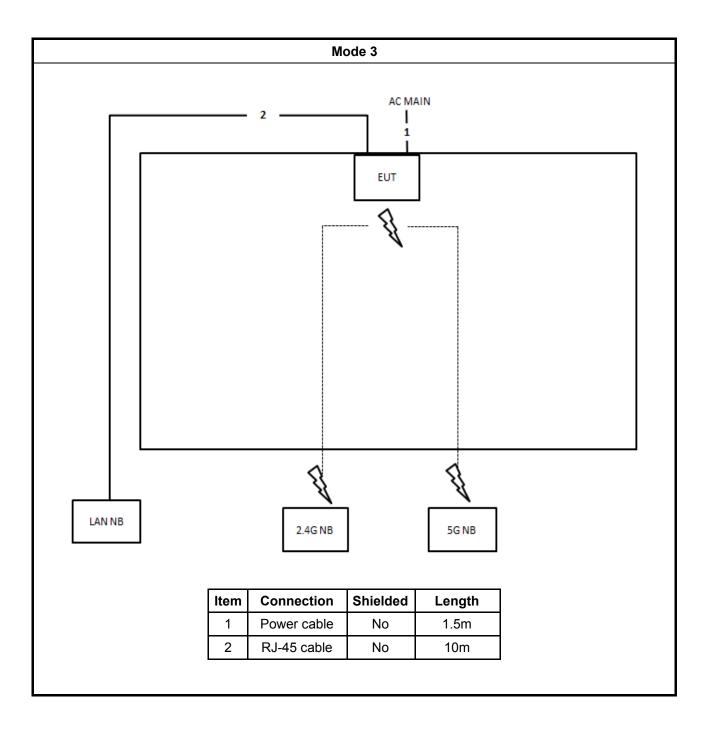




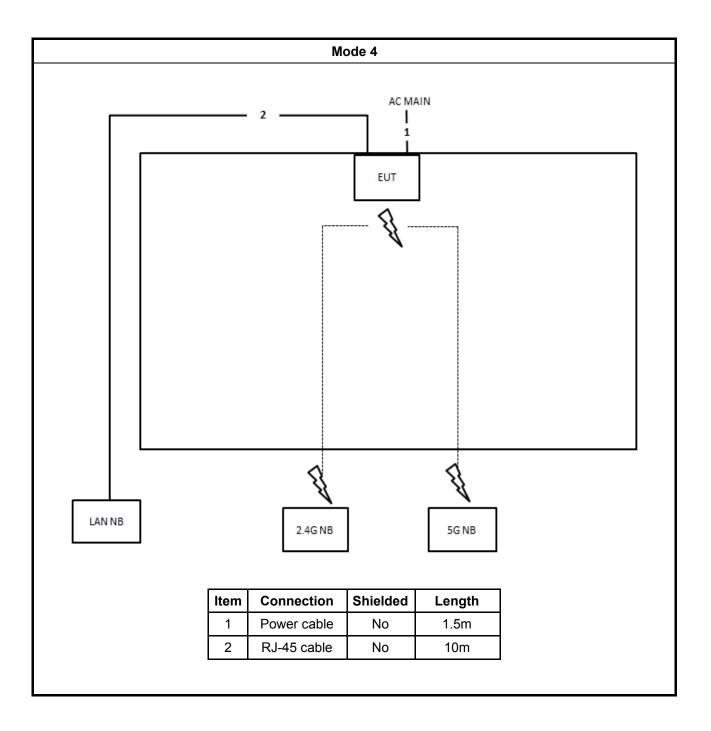




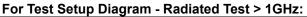


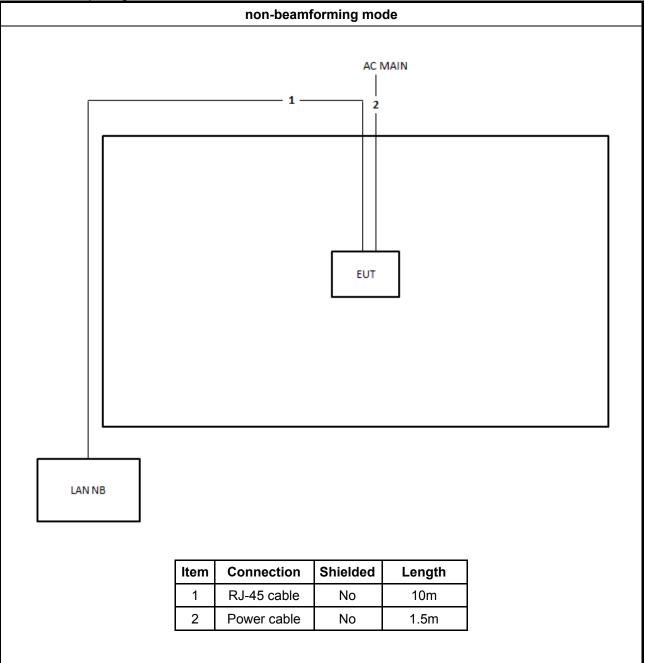




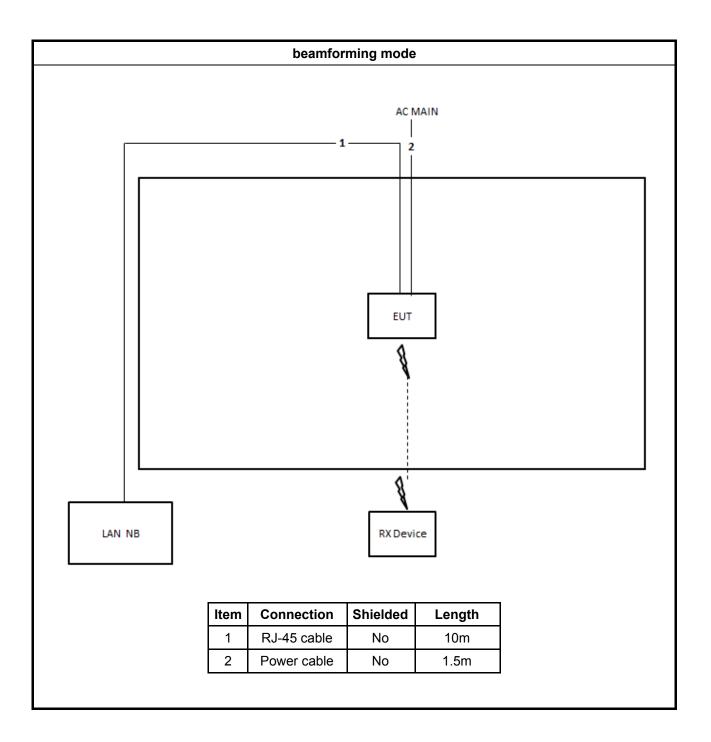














3 Transmitter Test Result

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.					

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3.1.2 Measuring Instruments

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

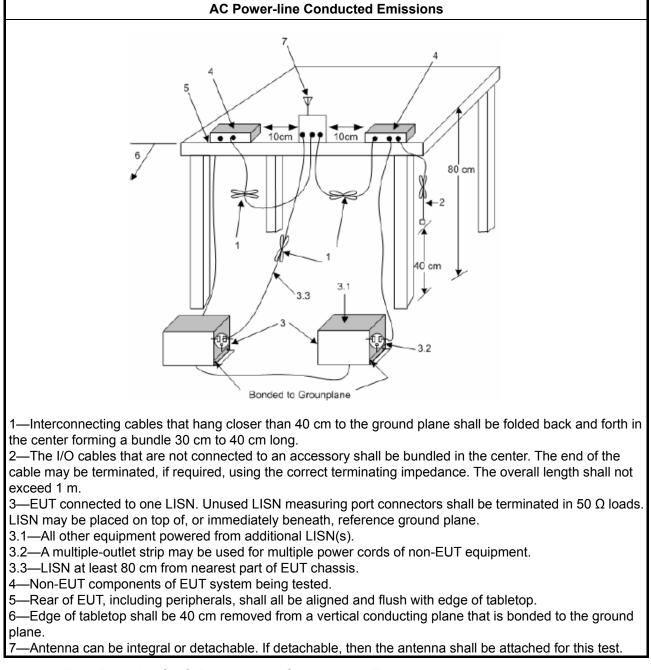
3.1.3 Test Procedures

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 ≥ 500 kHz. 		

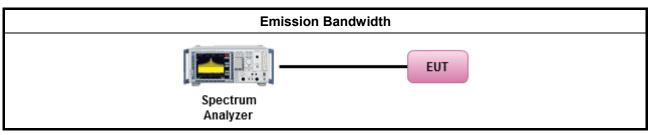
3.2.2 Measuring Instruments

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: 					
	\boxtimes	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.				
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 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

•	Point-to-multipoint systems (P2N	/l): If G _{TX} > 6 dBi	i, 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 $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 \text{ dBm}$

- Aggregate power on all beams: If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8 \text{dB dBm}$

 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.

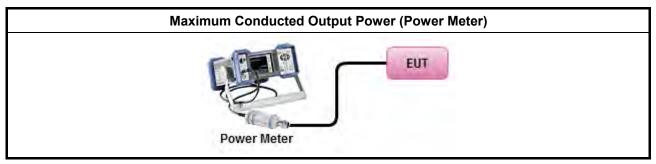


3.3.3 Test Procedures

		Test Method
•	Max	imum Peak Conducted Output Power
		Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
		Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
•	Max	imum Conducted Output Power
	[duty	/ cycle ≥ 98% or external video / power trigger]
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty	cycle < 98% and average over on/off periods with duty factor
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Меа	surement using a power meter (PM)
	\boxtimes	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
		Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
•	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: $P_{total} = P_1 + P_2 + + P_n$ (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) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

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

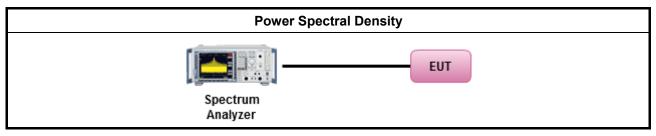
3.4.3 Test Procedures

	Test Method			
•	outp the c conc of th	k power spectral density procedures that the same method as used to determine the conducted ut power. If maximum peak conducted output power was measured to demonstrate compliance to output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum ducted output power was measured to demonstrate compliance to the output power limit, then one e average PSD procedures shall be used, as applicable based on the following criteria (the peak procedure is also an acceptable option).		
	\square	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD.		
	[duty	/ cycle ≥ 98% or external video / power trigger]		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.		
	duty	cycle < 98% and average over on/off periods with duty factor		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)		
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-3A. (alternative)		
•	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,		
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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

Limit (dB)
20
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

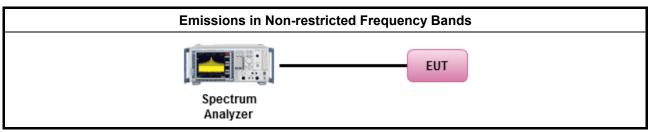
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method

Refer as FCC KDB 558074, clause 8.5 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						
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300			
0.490~1.705	24000/F(kHz)	33.8 - 23	30			
1.705~30.0	30	29	30			
30~88	100	40	3			
88~216	150	43.5	3			
216~960	200	46	3			
Above 960	500	54	3			

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

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

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

3.6.2 Measuring Instruments

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

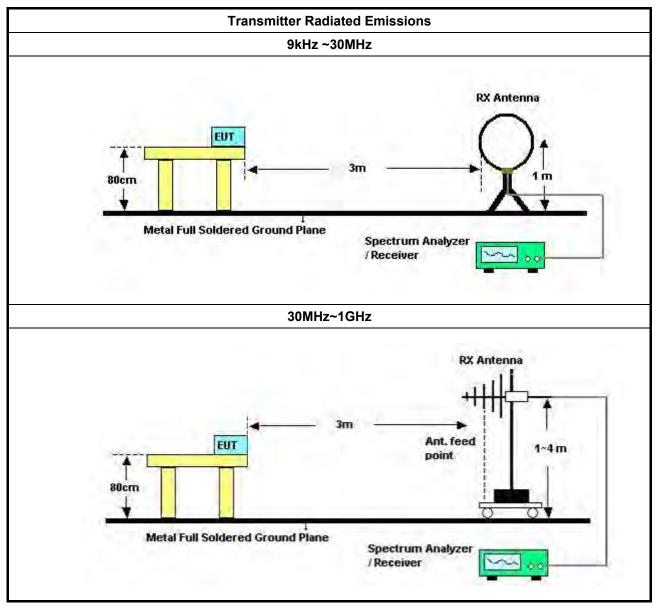


3.6.3 Test Procedures

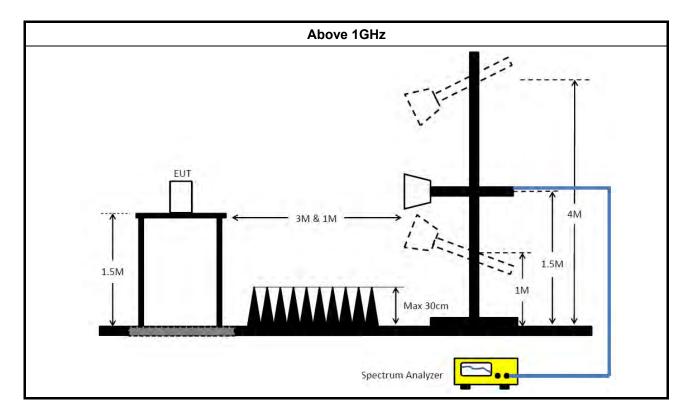
	Test Method									
•	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].									
•	 Refer as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 									
•	 For the transmitter unwanted emissions shall be measured using following options below: 									
	Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.									
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).									
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).									
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥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 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.									
•	For the transmitter band-edge emissions shall be measured using following options below:									
	 Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, 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 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements. 									
	 Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz). 									
	 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.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.6.6 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix F



Test Equipment and Calibration Data 4

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 24, 2017	Nov. 23, 2018	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 13, 2017	Nov. 12, 2018	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 17, 2018	Jan. 16, 2019	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Nov. 10, 2017	Nov. 09, 2018	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2018	May 01, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 09, 2018	Jan. 08, 2019	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 23, 2017	Nov. 22, 2018	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100354	9kHz ~ 2.75GHz	Dec. 08, 2017	Dec. 07, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)

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: Dec. 24, 2018

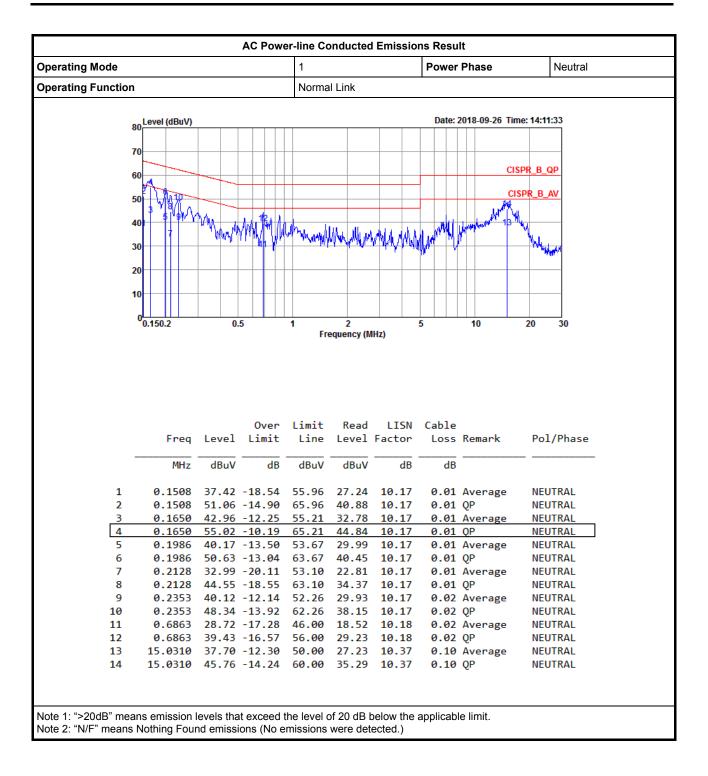
Issued Date Report Version : 02



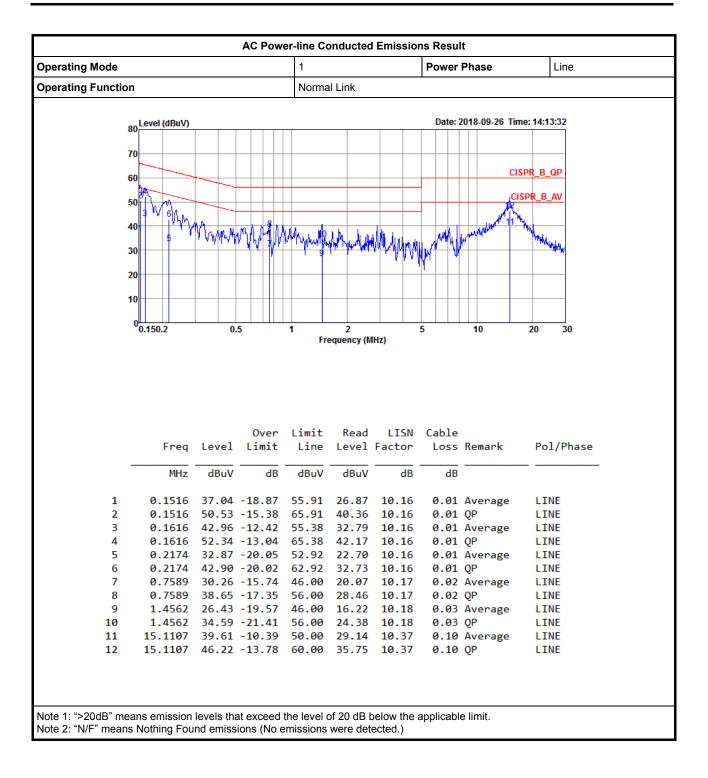
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 21, 2017	Dec. 20, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 20, 2017	Nov. 19, 2018	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year. NCR means Non-Calibration required.

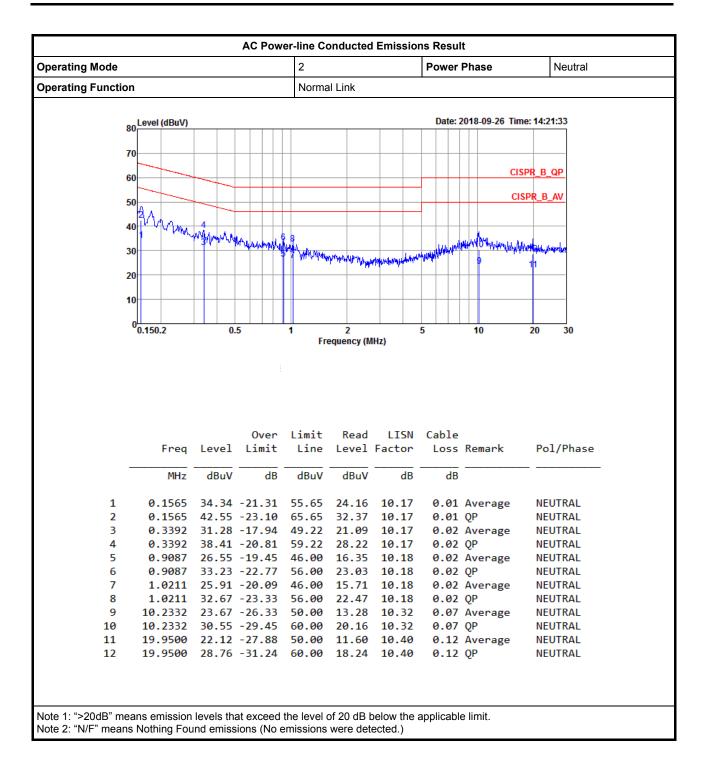




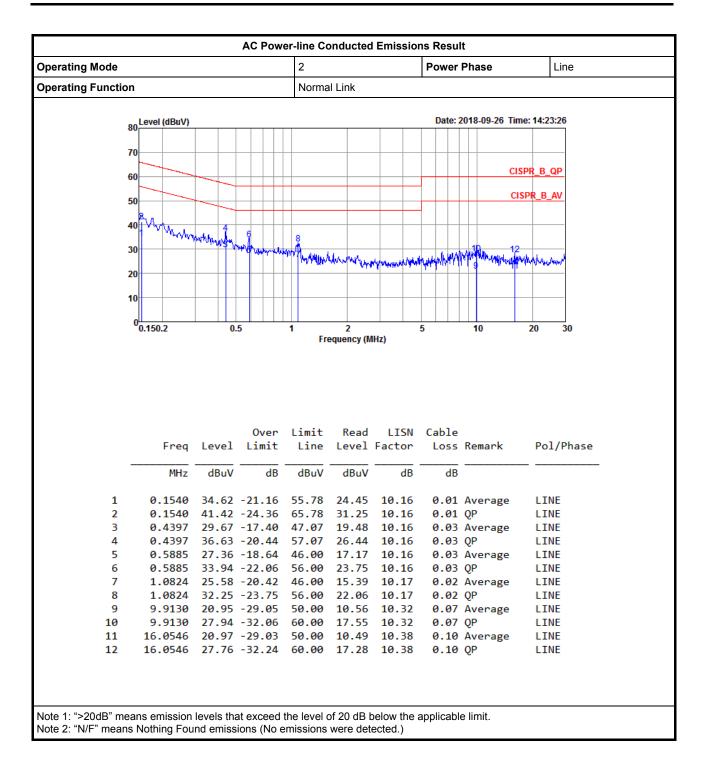




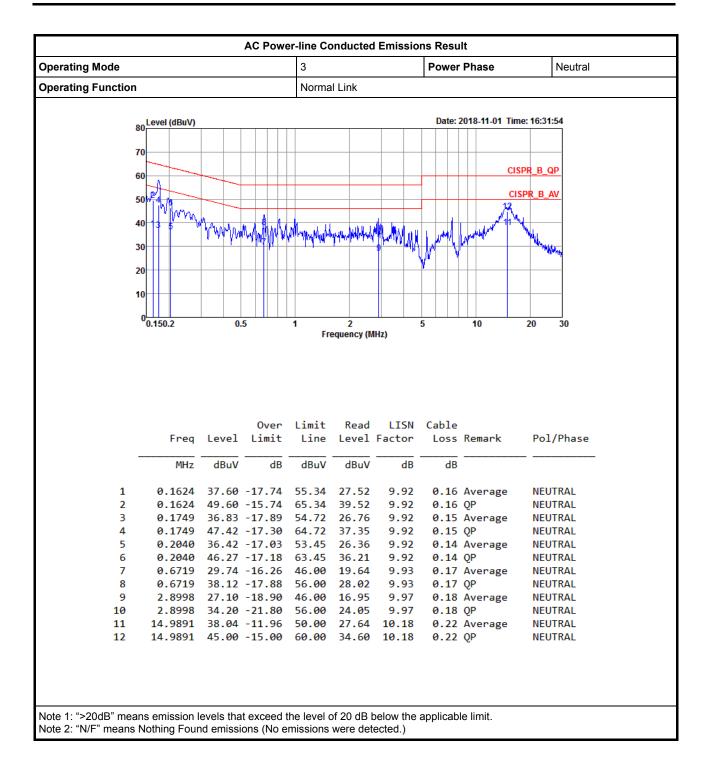




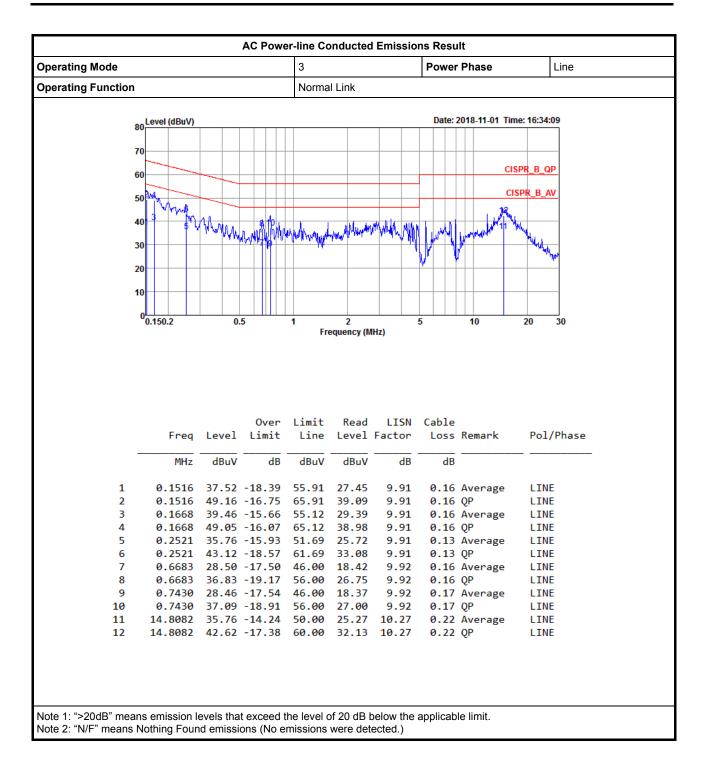














Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	9.025M	13.418M	13M4G1D	7.075M	13.268M
802.11g-BF_Nss1,(6Mbps)_2TX	16.325M	22.464M	22M5D1D	16.275M	16.492M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	17.575M	26.362M	26M4D1D	17.325M	17.691M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	36.35M	36.482M	36M5D1D	35.65M	36.232M

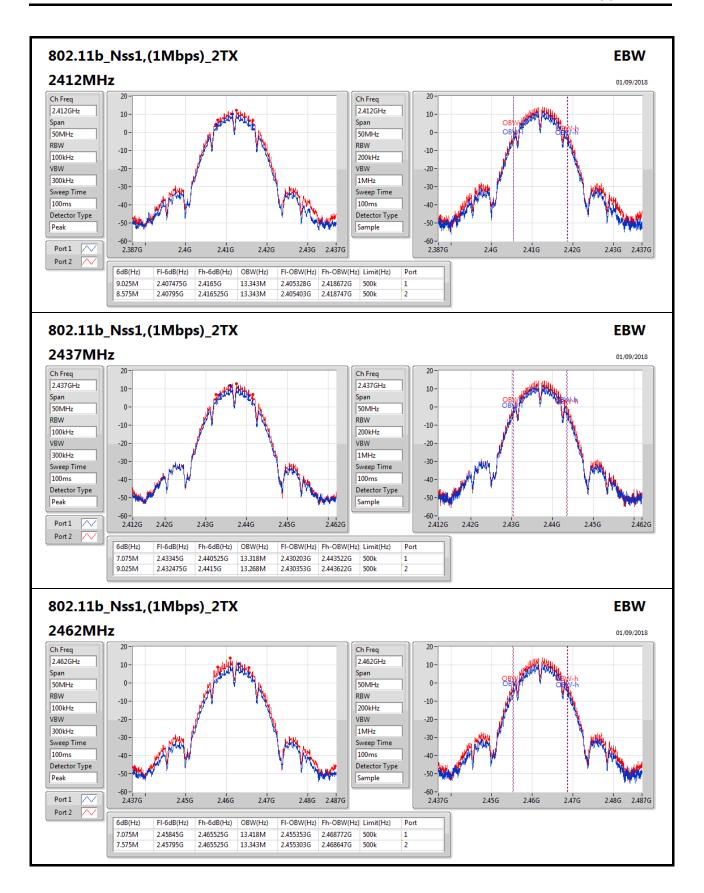
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth;

Result

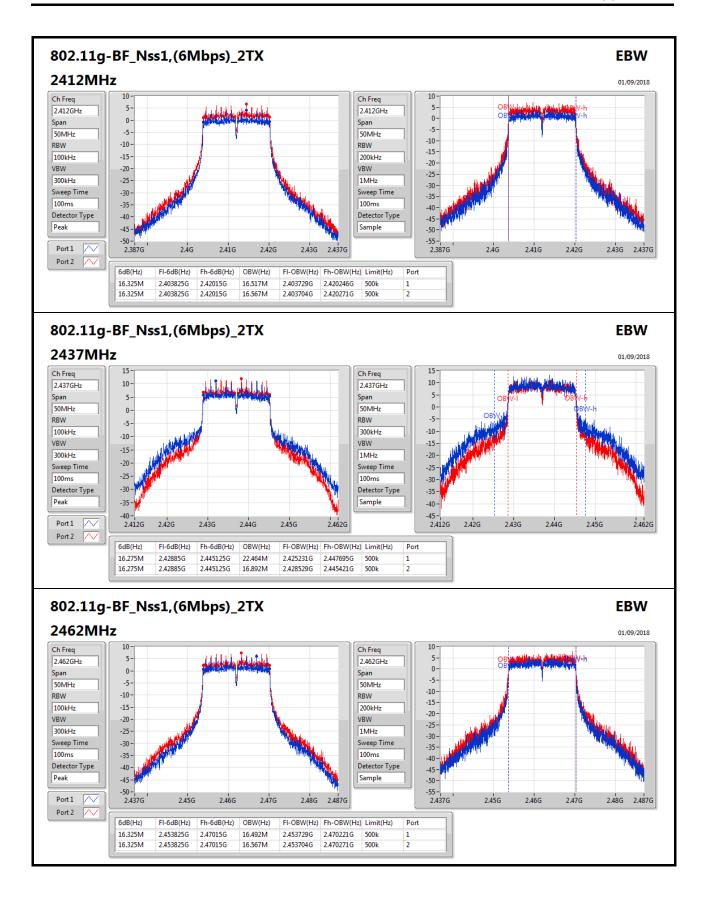
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	9.025M	13.343M	8.575M	13.343M
2437MHz	Pass	500k	7.075M	13.318M	9.025M	13.268M
2462MHz	Pass	500k	7.075M	13.418M	7.575M	13.343M
802.11g-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.325M	16.517M	16.325M	16.567M
2437MHz	Pass	500k	16.275M	22.464M	16.275M	16.892M
2462MHz	Pass	500k	16.325M	16.492M	16.325M	16.567M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.716M	17.55M	17.816M
2437MHz	Pass	500k	17.325M	26.362M	17.575M	18.016M
2462MHz	Pass	500k	17.575M	17.691M	17.575M	17.791M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.3M	36.232M	35.95M	36.232M
2437MHz	Pass	500k	36.35M	36.482M	35.65M	36.282M
2452MHz	Pass	500k	35.95M	36.332M	36.3M	36.382M

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

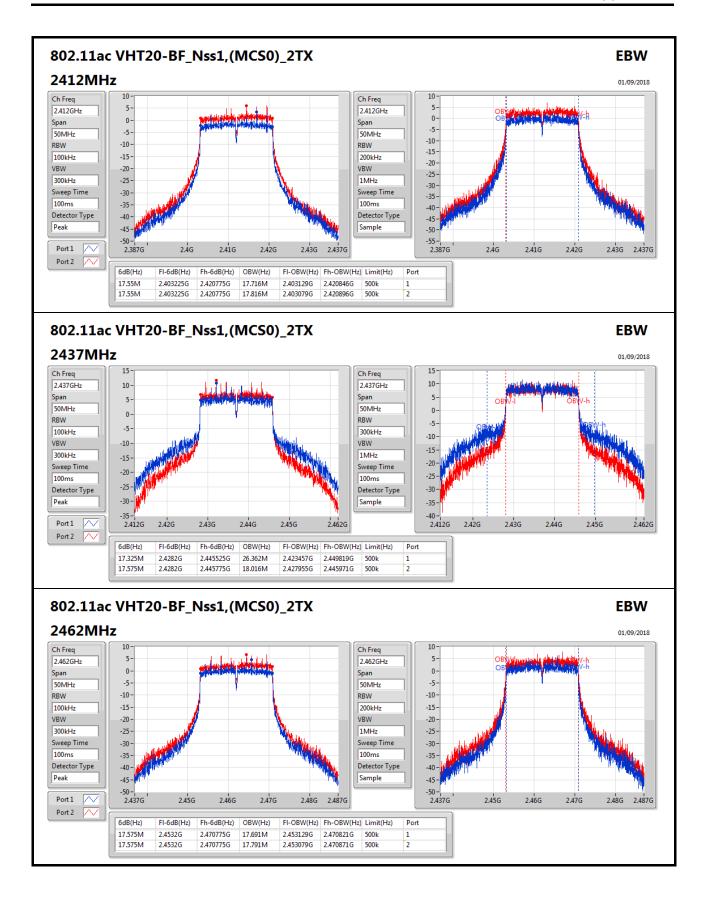




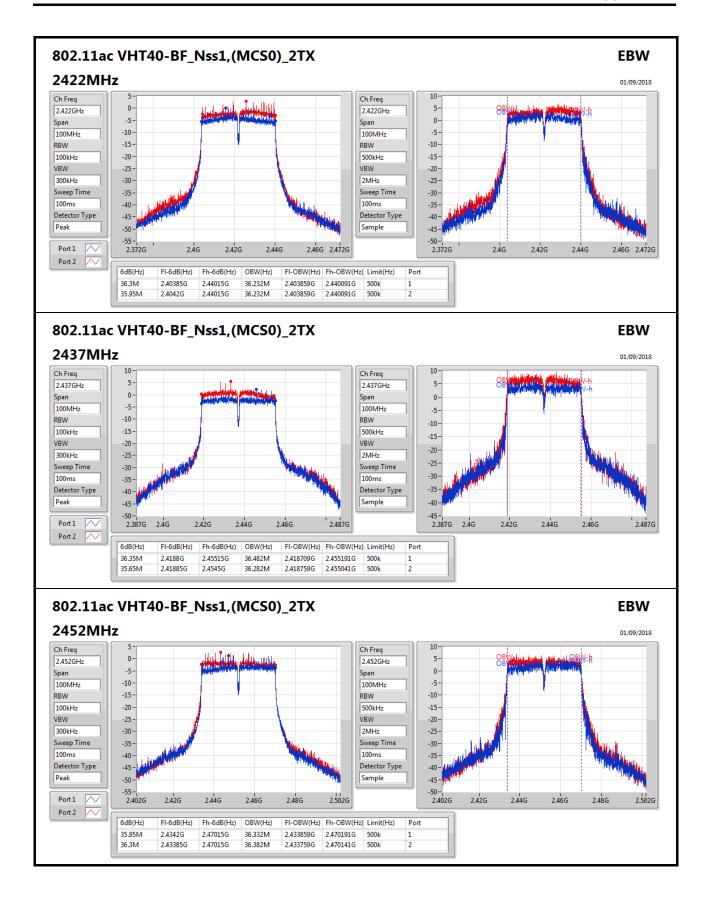














Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	26.89	0.48865
802.11g-BF_Nss1,(6Mbps)_2TX	26.76	0.47424
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	26.97	0.49774
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	23.85	0.24266

Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	
2412MHz	Pass	3.90	23.57	24.16	26.89	30.00	
2437MHz	Pass	3.90	23.57	24.10	26.85	30.00	
2462MHz	Pass	3.90	23.35	23.83	26.61	30.00	
802.11g-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	
2412MHz	Pass	6.33	19.09	19.67	22.40	29.67	
2417MHz	Pass	6.33	22.33	22.57	25.46	29.67	
2422MHz	Pass	6.33	23.02	23.47	26.26	29.67	
2427MHz	Pass	6.33	23.68	23.81	26.76	29.67	
2437MHz	Pass	6.33	23.65	23.79	26.73	29.67	
2452MHz	Pass	6.33	23.03	23.58	26.32	29.67	
2457MHz	Pass	6.33	22.98	23.22	26.11	29.67	
2462MHz	Pass	6.33	20.03	20.35	23.20	29.67	
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	
2412MHz	Pass	6.33	18.77	19.28	22.04	29.67	
2417MHz	Pass	6.33	22.70	22.54	25.63	29.67	
2422MHz	Pass	6.33	23.35	23.79	26.59	29.67	
2427MHz	Pass	6.33	23.79	23.85	26.83	29.67	
2437MHz	Pass	6.33	23.95	23.96	26.97	29.67	
2452MHz	Pass	6.33	23.47	23.89	26.70	29.67	
2457MHz	Pass	6.33	22.69	22.98	25.85	29.67	
2462MHz	Pass	6.33	19.68	19.93	22.82	29.67	
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	
2422MHz	Pass	6.33	18.02	18.38	21.21	29.67	
2427MHz	Pass	6.33	18.74	18.87	21.82	29.67	
2432MHz	Pass	6.33	19.30	19.38	22.35	29.67	
2437MHz	Pass	6.33	20.64	21.03	23.85	29.67	
2442MHz	Pass	6.33	19.45	19.84	22.66	29.67	
2447MHz	Pass	6.33	19.44	19.81	22.64	29.67	
2452MHz	Pass	6.33	18.36	19.00	21.70	29.67	

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



PSD Result

Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	-2.68
802.11g-BF_Nss1,(6Mbps)_2TX	-3.59
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-3.31
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-8.81

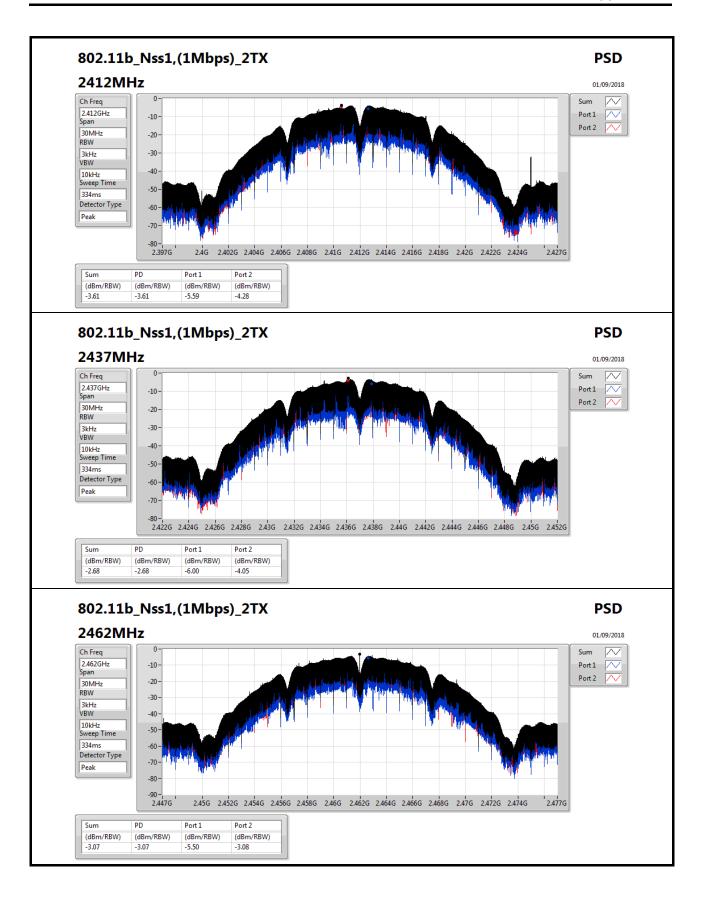
RBW=3kHz.

Result

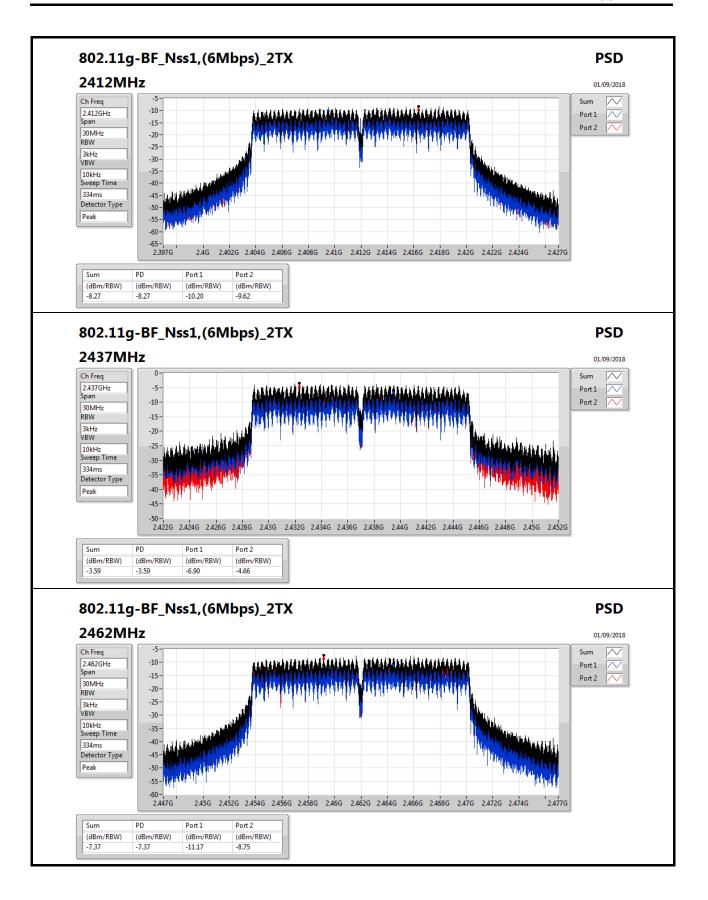
Mode	Result	DG	Port 1	Port 2	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.33	-5.59	-4.28	-3.61	7.67
2437MHz	Pass	6.33	-6.00	-4.05	-2.68	7.67
2462MHz	Pass	6.33	-5.50	-3.08	-3.07	7.67
802.11g-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.33	-10.20	-9.62	-8.27	7.67
2437MHz	Pass	6.33	-6.90	-4.66	-3.59	7.67
2462MHz	Pass	6.33	-11.17	-8.75	-7.37	7.67
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.33	-11.97	-10.53	-8.73	7.67
2437MHz	Pass	6.33	-7.55	-4.58	-3.31	7.67
2462MHz	Pass	6.33	-10.65	-9.63	-7.63	7.67
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	6.33	-14.76	-12.60	-10.97	7.67
2437MHz	Pass	6.33	-13.15	-10.31	-8.81	7.67
2452MHz	Pass	6.33	-12.69	-13.15	-10.47	7.67

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

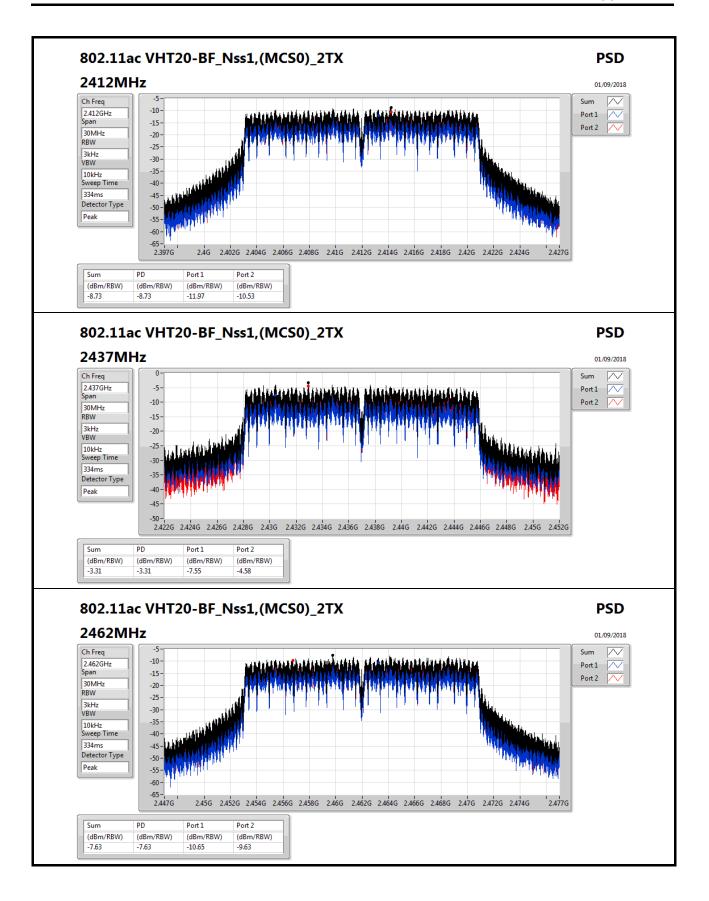




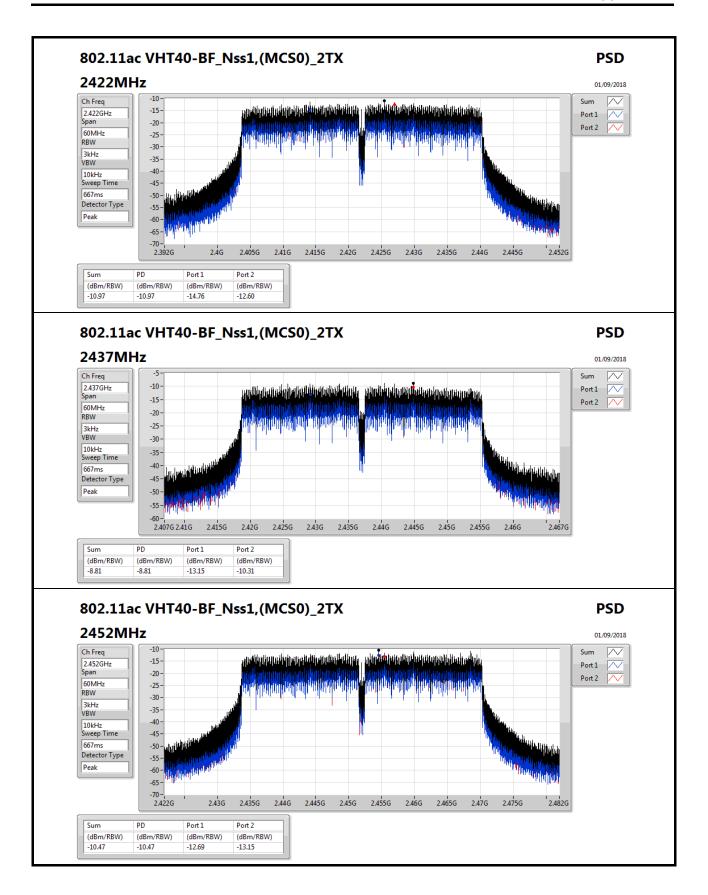














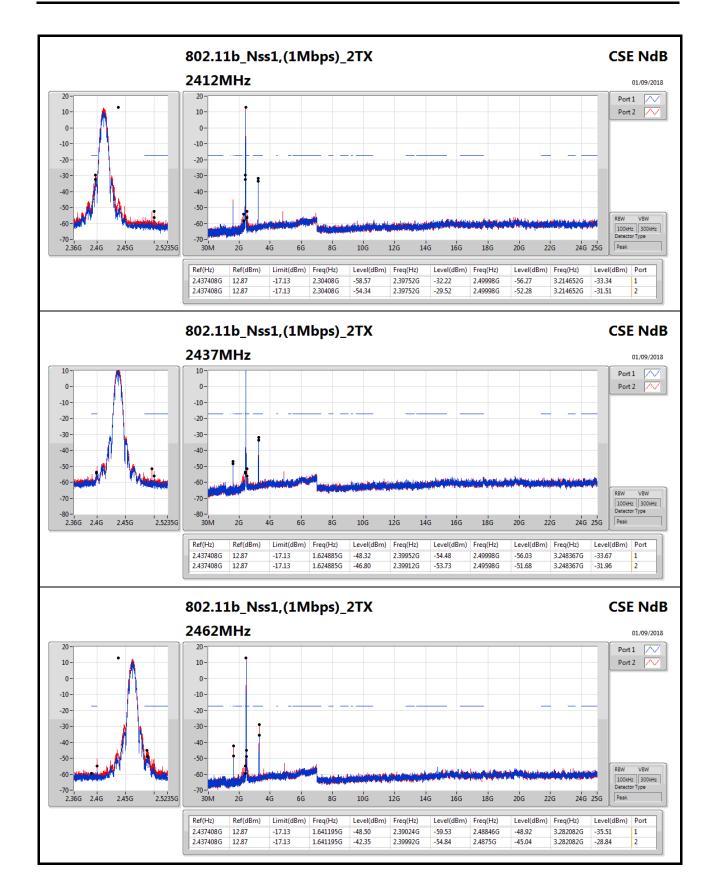
CSE Non-restricted Band Result

Appendix E

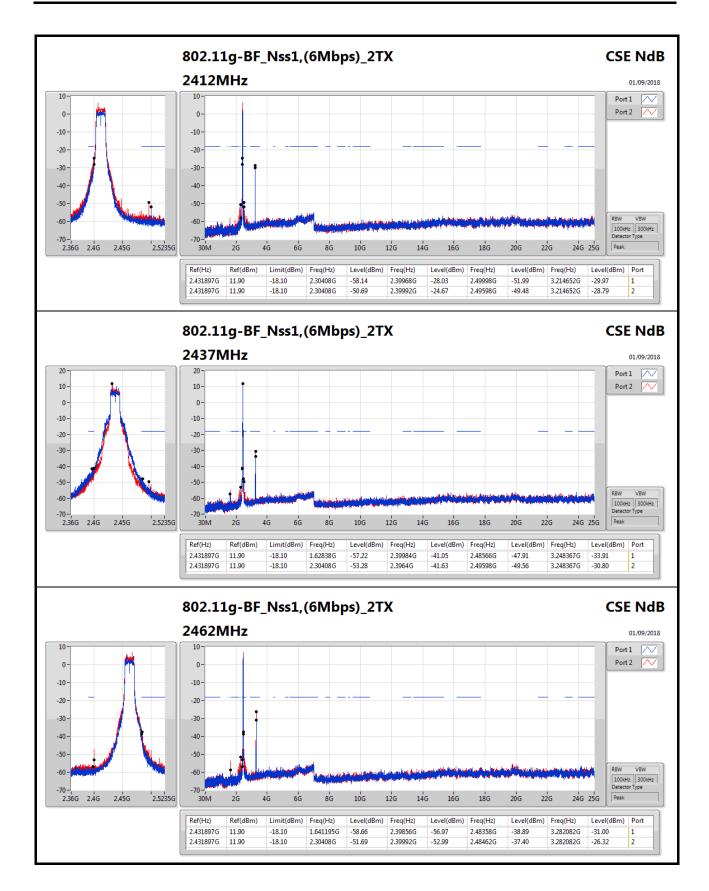
Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	2.437408G	12.87	-17.13	1.641195G	-42.35	2.39992G	-54.84	2.4875G	-45.04	3.282082G	-28.84	2
802.11g-BF_Nss1,(6Mbps)_2TX	Pass	2.431897G	11.90	-18.10	2.30408G	-50.69	2.39992G	-24.67	2.49598G	-49.48	3.214652G	-28.79	2
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	Pass	2.438243G	11.25	-18.75	1.641195G	-53.70	2.39992G	-52.27	2.48358G	-35.36	3.282082G	-26.26	2
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	Pass	2.442084G	5.01	-24.99	2.305115G	-51.02	2.39744G	-47.31	2.48446G	-36.33	3.267445G	-26.55	2
Result													
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-		-	-
2412MHz	Pass	2.437408G	12.87	-17.13	2.30408G	-58.57	2.39752G	-32.22	2.49998G	-56.27	3.214652G	-33.34	1
2412MHz	Pass	2.437408G	12.87	-17.13	2.30408G	-54.34	2.39752G	-29.52	2.49998G	-52.28	3.214652G	-31.51	2
2437MHz	Pass	2.437408G	12.87	-17.13	1.624885G	-48.32	2.39952G	-54.48	2.49998G	-56.03	3.248367G	-33.67	1
2437MHz	Pass	2.437408G	12.87	-17.13	1.624885G	-46.80	2.39912G	-53.73	2.49598G	-51.68	3.248367G	-31.96	2
2462MHz	Pass	2.437408G	12.87	-17.13	1.641195G	-48.50	2.39024G	-59.53	2.48846G	-48.92	3.282082G	-35.51	1
2462MHz	Pass	2.437408G	12.87	-17.13	1.641195G	-42.35	2.39992G	-54.84	2.4875G	-45.04	3.282082G	-28.84	2
802.11g-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.431897G	11.90	-18.10	2.30408G	-58.14	2.39968G	-28.03	2.49998G	-51.99	3.214652G	-29.97	1
2412MHz	Pass	2.431897G	11.90	-18.10	2.30408G	-50.69	2.39992G	-24.67	2.49598G	-49.48	3.214652G	-28.79	2
2437MHz	Pass	2.431897G	11.90	-18.10	1.62838G	-57.22	2.39984G	-41.05	2.48566G	-47.91	3.248367G	-33.91	1
2437MHz	Pass	2.431897G	11.90	-18.10	2.30408G	-53.28	2.3964G	-41.63	2.49598G	-49.56	3.248367G	-30.80	2
2462MHz	Pass	2.431897G	11.90	-18.10	1.641195G	-58.66	2.39856G	-56.97	2.48358G	-38.89	3.282082G	-31.00	1
2462MHz	Pass	2.431897G	11.90	-18.10	2.30408G	-51.69	2.39992G	-52.99	2.48462G	-37.40	3.282082G	-26.32	2
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.438243G	11.25	-18.75	2.309905G	-58.61	2.39992G	-28.95	2.49998G	-54.21	3.214652G	-29.98	1
2412MHz	Pass	2.438243G	11.25	-18.75	2.30408G	-52.15	2.39992G	-27.30	2.49598G	-49.97	3.214652G	-28.90	2
2437MHz	Pass	2.438243G	11.25	-18.75	1.624885G	-59.26	2.39824G	-38.32	2.48414G	-47.94	3.248367G	-33.21	1
2437MHz	Pass	2.438243G	11.25	-18.75	2.30408G	-53.98	2.39984G	-42.10	2.49598G	-49.57	3.248367G	-30.70	2
2462MHz	Pass	2.438243G	11.25	-18.75	1.641195G	-59.12	2.39872G	-57.92	2.48382G	-38.42	3.282082G	-31.01	1
2462MHz	Pass	2.438243G	11.25	-18.75	1.641195G	-53.70	2.39992G	-52.27	2.48358G	-35.36	3.282082G	-26.26	2
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.442084G	5.01	-24.99	2.30855G	-58.34	2.39872G	-33.69	2.49998G	-53.03	3.228181G	-29.41	1
2422MHz	Pass	2.442084G	5.01	-24.99	2.305115G	-52.75	2.39952G	-30.66	2.49998G	-49.96	3.228181G	-28.88	2
2437MHz	Pass	2.442084G	5.01	-24.99	1.624985G	-59.30	2.39984G	-33.47	2.48414G	-41.26	3.247813G	-30.61	1
2437MHz	Pass	2.442084G	5.01	-24.99	2.305115G	-52.44	2.3984G	-33.18	2.48382G	-39.38	3.247813G	-29.47	2
2452MHz	Pass	2.442084G	5.01	-24.99	1.64445G	-59.23	2.39888G	-47.50	2.48446G	-37.97	3.267445G	-30.52	1
2452MHz	Pass	2.442084G	5.01	-24.99	2.305115G	-51.02	2.39744G	-47.31	2.48446G	-36.33	3.267445G	-26.55	2

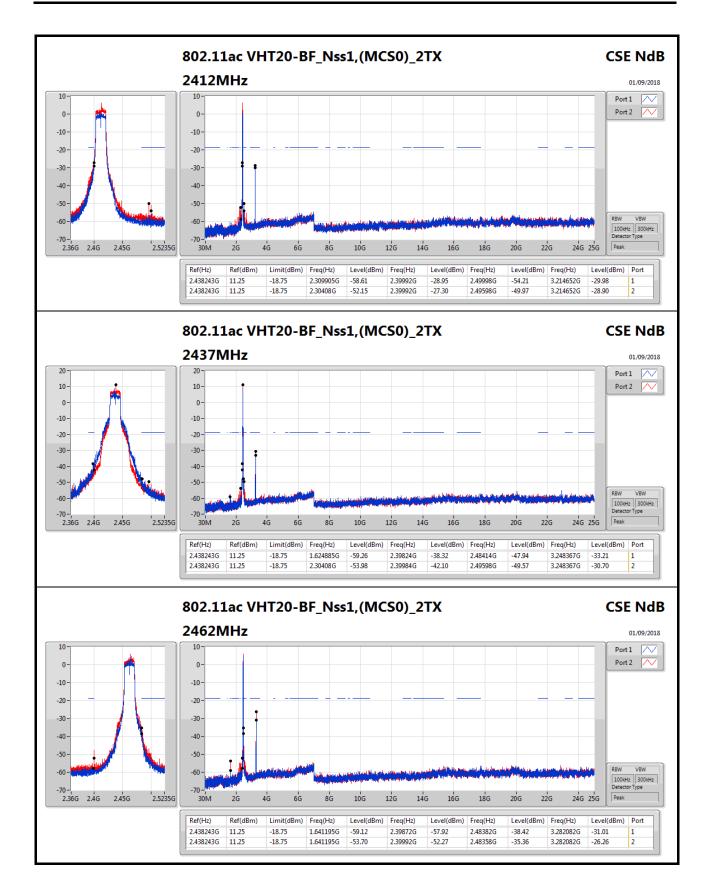




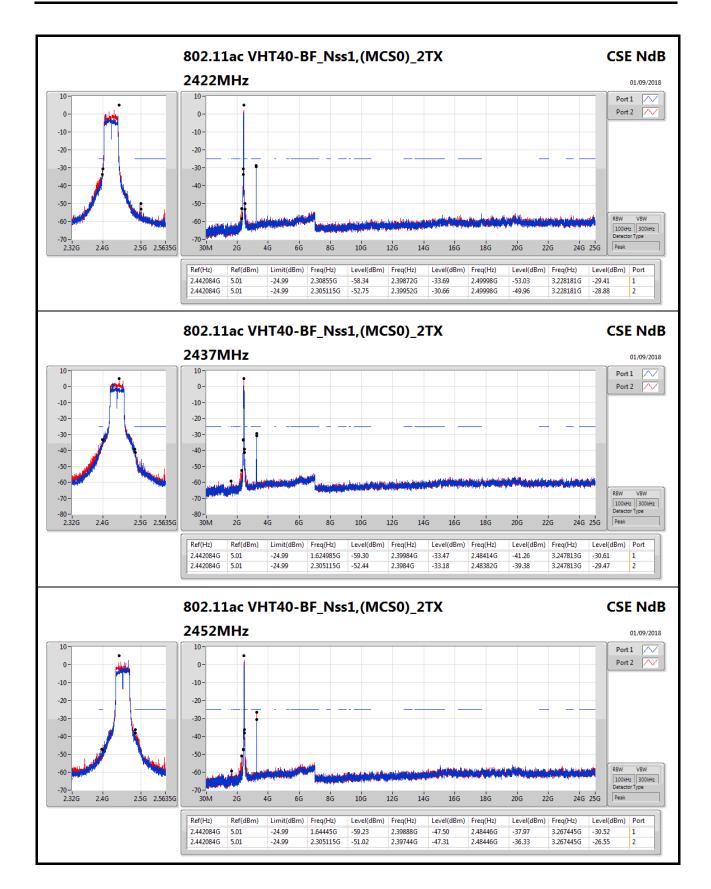




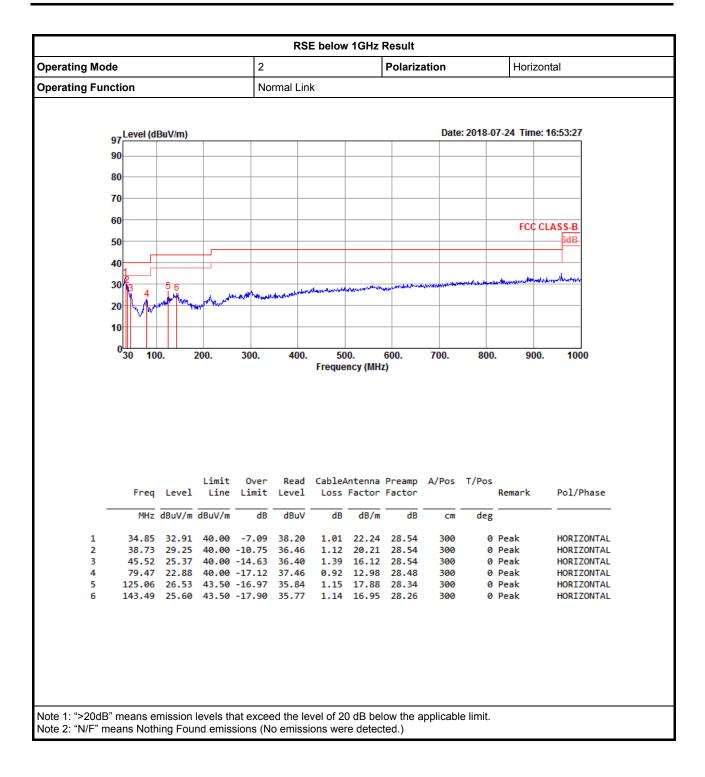




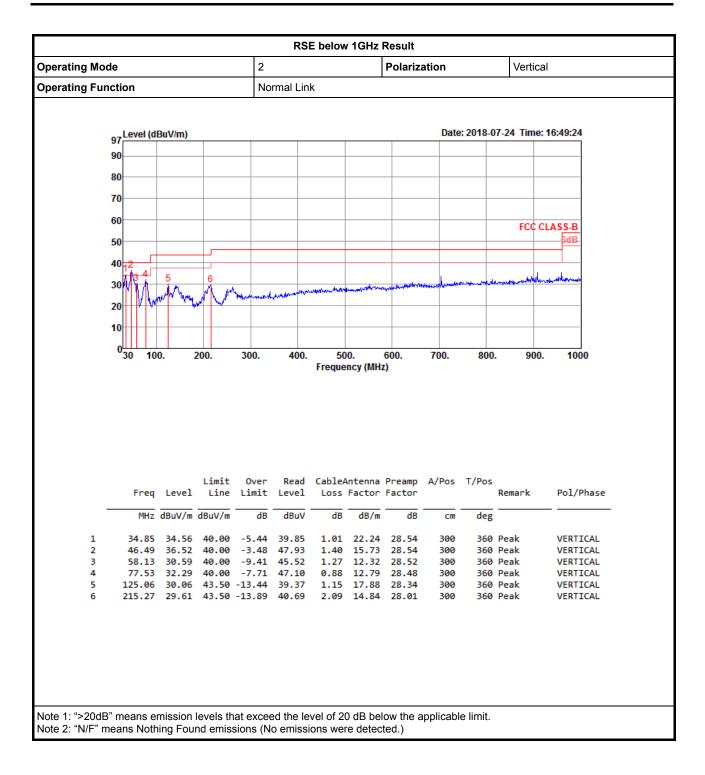




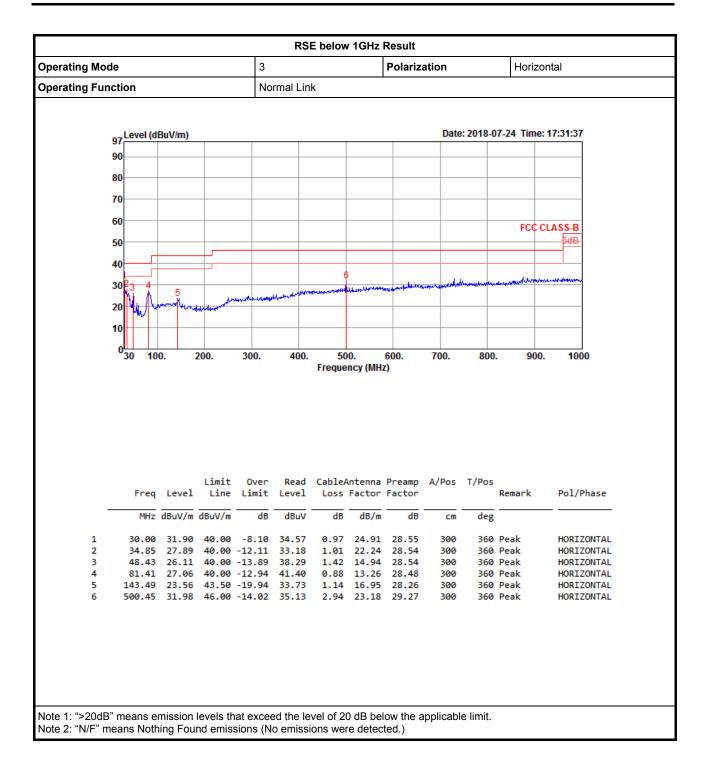




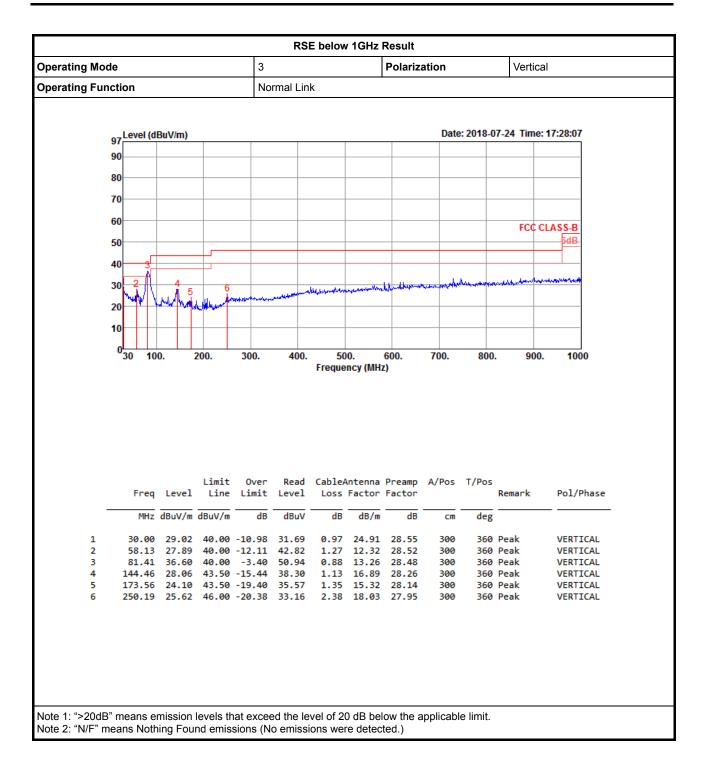




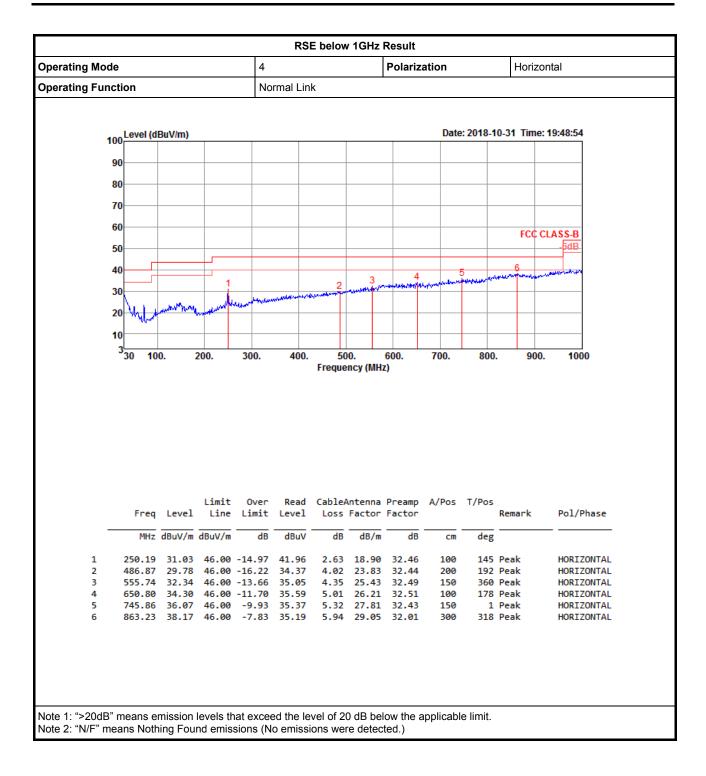




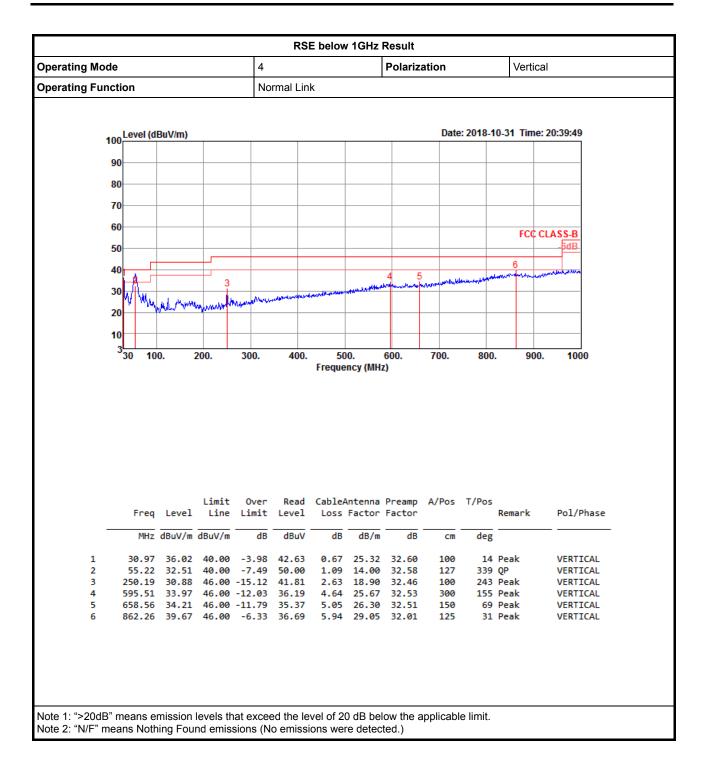














RSE TX above 1GHz Result

Appendix F.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11g-BF_Nss1,(6Mbps)_2TX	Pass	PK	2.483502G	73.46	74.00	-0.54	31.17	3	Horizontal	79	1.11	-



