



FCC RADIO TEST REPORT

FCC ID : MSQ-RTAXHP00
Equipment : Wireless-AX6000 Dual Band Gigabit Router
Brand Name : ASUS
Model Name : RT-AX88U, RT-AX6000, RT-AX88P, RT-AX88R, RT-AX88A
Applicant : ASUSTeK COMPUTER INC.
4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
Manufacturer (1) : Compal Networking (KunShan) Co., LTD.
No. 520, Nanbang Rd., Economic & Technical Development
Zone Kunshan, Jiangsu Province China
Manufacturer (2) : ASKEY TECHNOLOGY (JIANG SU) LTD
NO1388, Jiao Tong Road, Wujiang Economic Technological
Development Area Jiangsu Province 215200 China
Manufacturer (3) : Arcadyan Technology (Vietnam) Co., Ltd.
Ba Thien Industrial Park, Ba Hien commune, Binh Xuyen
district, Vinh Phuc Province, Viet Nam
Standard : 47 CFR FCC Part 15.407

The product was received on Dec. 26, 2018, and testing was started from Dec. 26, 2018 and completed on Nov. 12, 2019. 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 variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.


Approved by: Cliff Chang

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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



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Photographs of EUT v01



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	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Note: Reference to Sporton Project No.: 780707-05

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Sandy Chuang**



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20), ax (HEW 20)	5180-5240	36-48 [4]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40), ax (HEW 40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW 80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]
5150-5350	ac (VHT160), ax (HEW 160)	5250	50 [1]
5470-5725		5570	114 [1]



Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11n HT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11ax HEW20	20	4TX
5.15-5.25GHz	802.11ax HEW20-BF	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11n HT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ax HEW40	40	4TX
5.15-5.25GHz	802.11ax HEW40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.15-5.25GHz	802.11ax HEW80	80	4TX
5.15-5.25GHz	802.11ax HEW80-BF	80	4TX
5.15-5.25GHz	802.11ac VHT160	80	4TX
5.15-5.25GHz	802.11ac VHT160-BF	80	4TX
5.15-5.25GHz	802.11ac VHT160	160	4TX
5.15-5.25GHz	802.11ac VHT160-BF	160	4TX
5.25-5.35GHz	802.11a	20	4TX
5.25-5.35GHz	802.11n HT20	20	4TX
5.25-5.35GHz	802.11n HT20-BF	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	4TX
5.25-5.35GHz	802.11ax HEW20	20	4TX
5.25-5.35GHz	802.11ax HEW20-BF	20	4TX
5.25-5.35GHz	802.11n HT40	40	4TX
5.25-5.35GHz	802.11n HT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	4TX
5.25-5.35GHz	802.11ax HEW40	40	4TX
5.25-5.35GHz	802.11ax HEW40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	4TX
5.25-5.35GHz	802.11ax HEW80	80	4TX
5.25-5.35GHz	802.11ax HEW80-BF	80	4TX
5.25-5.35GHz	802.11ac VHT160	80	4TX



Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT160-BF	80	4TX
5.25-5.35GHz	802.11ac VHT160	160	4TX
5.25-5.35GHz	802.11ac VHT160-BF	160	4TX
5.47-5.725GHz	802.11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	4TX
5.47-5.725GHz	802.11n HT20-BF	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	4TX
5.47-5.725GHz	802.11ax HEW20	20	4TX
5.47-5.725GHz	802.11ax HEW20-BF	20	4TX
5.47-5.725GHz	802.11n HT40	40	4TX
5.47-5.725GHz	802.11n HT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	4TX
5.47-5.725GHz	802.11ax HEW40	40	4TX
5.47-5.725GHz	802.11ax HEW40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	4TX
5.47-5.725GHz	802.11ax HEW80	80	4TX
5.47-5.725GHz	802.11ax HEW80-BF	80	4TX
5.47-5.725GHz	802.11ac VHT160	80	4TX
5.47-5.725GHz	802.11ac VHT160-BF	80	4TX
5.47-5.725GHz	802.11ac VHT160	160	4TX
5.47-5.725GHz	802.11ac VHT160-BF	160	4TX
5.725-5.85GHz	802.11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11n HT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11ax HEW20	20	4TX
5.725-5.85GHz	802.11ax HEW20-BF	20	4TX
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ax HEW40	40	4TX
5.725-5.85GHz	802.11ax HEW40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11ax HEW80	80	4TX



Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11ax HEW80-BF	80	4TX

Note:

- ◆ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ◆ VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ◆ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 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

Set	2.4G Port	5G Port	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	1	2	M.gear	C660-510411-A	Dipole Antenna	Reverse SMA Plug	Note 1
	2	1					
	3	4					
	4	3					
2	-	-	PSA	RFDPA171300SBLB820	Dipole Antenna	Reverse SMA Plug	

Note1:

Set	2.4G Port	5G Port	Gain (dBi)			
			2.4GHz	5GHz Band 1 / Band 2	5GHz Band 3	5GHz Band 4
1	1	2	1.94	2.33	2.35	1.94
	2	1				
	3	4				
	4	3				
2	-	-	1.85	2.24	2.32	1.86

Note2: The EUT has two sets of antennas because set 1 & set 2 are the same type antennas, only the higher gain antenna "set 1" was tested.

Note3: The above information was declared by manufacturer.

<For 2.4GHz Band>

For IEEE 802.11b/g/n/VHT/ax mode <4TX/4RX>:

Port 1, Port 2, Port 3 and Port 4 will transmit/receive the same signal simultaneously.

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antennas.

<For 5GHz Band>

For IEEE 802.11a/n/ac/ax mode <4TX/4RX>:

Port 1, Port 2, Port 3 and Port 4 will transmit/receive the same signal simultaneously.

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antennas.



1.1.3 Mode Test Duty Cycle

<4T1S>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ax HEW20-BF	0.878	0.57	1.499m	1k
802.11ax HEW40-BF	0.893	0.49	2.215m	1k
802.11ax HEW80-BF	0.465	3.33	746.25u	3k

<4T2S>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ax HEW20-BF	0.907	0.42	2.223m	1k
802.11ax HEW40-BF	0.51	2.92	787.5u	3k
802.11ax HEW80-BF	0.303	5.19	408.75u	3k

Note:

- ◆ DC is Duty Cycle.
- ◆ DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming for 802.11n/VHT/ax in 2.4GHz and 802.11n/ac/ax in 5GHz.	<input type="checkbox"/>	Without beamforming
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
Function	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
TPC Function	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/>	Without TPC
Test Software Version	accessMTool_3_0_0_5			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
RT-AX88U	All the models are identical, the different model names served as marketing strategy.
RT-AX6000	
RT-AX88P	
RT-AX88R	
RT-AX88A	

From the above models, model: RT-AX88U was selected as representative model for the test and its data was recorded in this report.



1.1.6 Table for SKU information

EUT No.	SKU No. / Brand Name	P/N
1	SKU 1 / SWAPnet	NS604804
2	SKU 2 / Mingtek	HN4821CG

1.1.7 Table for EUT information

EUT No.	EUT version	SKU No. / Brand Name	P/N	Power IC	Flash / Brand Name
1	R2.20	SKU 1 / SWAPnet	NS604804	MT3125	Main / MXIC
2	R2.20	SKU 2 / Mingtek	HN4821CG	MT3125	Main / MXIC
3	R2.40	SKU 1 / SWAPnet	NS604804	MP2145	Second / winbond
4	R2.40	SKU 2 / Mingtek	HN4821CG	MP2145	Second / winbond
5	R2.40	SKU 1 / SWAPnet	NS604804	MP2145	Main / MXIC
6	R2.40	SKU 2 / Mingtek	HN4821CG	MP2145	Main / MXIC

1.1.8 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR780707-03.

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Update the test rule of 5GHz Band 4 to "15.407 (b)(4)(i)" from "15.407 (b)(4)(ii)".	1. Emission Bandwidth 2. Maximum Conducted Output Power 3. Peak Power Spectral Density 4. Unwanted Emissions (Above 1GHz)
2. Adding EUT 3~EUT 4 (EUT version R2.40: changing Power IC (MP2145) and Flash (winbond). 3. Adding EUT 5~EUT 6 (EUT version R2.40: changing Power IC (MP2145).	1. AC Power Port Conducted Emission 2. Unwanted Emissions (Below 1GHz) (Note: EUT 5~6 test Unwanted Emissions only.)
4. Adding the manufacturer: Name: Arcadyan Technology (Vietnam) Co., Ltd. / Address: Ba Thien Industrial Park, Ba Hien commune, Binh Xuyen district, Vinh Phuc Province, Viet Nam	It's no need to re-test.



1.2 Applicable 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 789033 D02 v02r01
- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 412172 D01 v01r01
- ◆ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	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
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH03-CB	Serway Li	24.2~24.8°C / 56~62%	Oct. 08, 2019~ Nov. 12, 2019
Radiated (Below 1GHz)	03CH01-CB	RJ Huang	25°C / 64%	Dec. 26, 2018
Radiated (Above 1GHz)	03CH04-CB	Stim Sung	23.7-24.7°C / 57-61%	Oct. 02, 2019~ Oct. 07, 2019
AC Conduction	CO01-CB	Wei Li	22°C / 56%	Dec. 28, 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))

< AC Conduction and Radiated (Below 1GHz)>

For EUT 3 ~ EUT 4

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%

For EUT 3 ~ EUT 6

Test Items	Uncertainty	Remark
Radiated Emissions below 1GHz	3.6 dB	Confidence levels of 95%

<Radiated (Above 1GHz) and RF Conducted>

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

<4T1S>

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5745MHz	101
5785MHz	101
5825MHz	102
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5745MHz	93
5785MHz	93
5825MHz	94
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5755MHz	91
5795MHz	92
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5775MHz	89

<4T2S>

Mode	PowerSetting
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-
5745MHz	99
5785MHz	100
5825MHz	101
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-
5755MHz	97
5795MHz	99
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-
5775MHz	93

Note:

- ◆ There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac/ax in 5GHz, After evaluating, beamforming mode had been evaluated to be the worst case, so it was selected to record in this test report.



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
Adapter 1 has been evaluated to be the worst case on original test report. Consequently, EUT 3~EUT 4 measurement will follow this same test configuration	
1	AP Router (Master) Mode - EUT 3 (SKU1) + Adapter 1
2	AP Router (Master) Mode - EUT 4 (SKU2) + Adapter 1
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	Client without radar detection Mode - EUT 4 (SKU2) + Adapter 1
Mode 3 generated the worst test result, so it was recorded in this report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density
Test Condition	Conducted measurement at transmit chains
Test Mode	EUT 2



The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
Adapter 3 has been evaluated to be the worst case on the original test report Consequently, EUT 3~EUT 6 measurement will follow this same test configuration.	
1	AP Router (Master) Mode - EUT 3 (SKU1) + Adapter 3
2	AP Router (Master) Mode - EUT 4 (SKU2) + Adapter 3
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	Client without radar detection Mode - EUT 4 (SKU2) + Adapter 3
Mode 2 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~5 will follow this same test mode.	
4	AP Router (Master) Mode - EUT 5 (SKU1) + Adapter 3
5	AP Router (Master) Mode - EUT 6 (SKU2) + Adapter 3
Mode 2 generated the worst test result, so it was recorded in this report.	
Operating Mode > 1GHz	CTX
Test Mode	EUT 2



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	EUT 2 + AP Router (Master) Mode + WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA780707-07 for Co-location RF Exposure Evaluation.	

Note:

1. The EUT supports below functions:
 - (1) AP Router (Master)
 - (2) Client without radar detection
 - (3) Bridge (Client without radar detection)
 - (4) Extender (Master)
 - (5) Mesh (Client without radar detection)
2. The EUT only be used at Z axis.



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 "Telnet" 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 Mode:

During the test, the EUT operation to normal function.



2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	type	Rating
Adapter 1	DELTA	ADP-45BW B	-	INPUT: 100-240V ~ 1.2A, 50-60Hz OUTPUT: 19V, 2.37A
Adapter 2	PI	AD883J20	010K-7LF	INPUT: 100-240V ~ 50/60Hz, 1.0A OUTPUT: 19V, 2.37A
Adapter 3	PI	AD2066320	010-1LF	INPUT: 100-240V ~ 50/60Hz, 1.0A OUTPUT: 19V, 2.37A
Adapter 4	DELTA	ADP-45BW Y	-	INPUT: 100-240V ~ 50-60Hz, 1.2A OUTPUT: 19V, 2.37A
Other				
RJ-45 cable*1, Non-shielded, 1.5m				



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	LAN1 NB	DELL	E6430	N/A
2	WAN NB	DELL	E6430	N/A
3	Device NB	DELL	E6430	N/A
4	LAN8 NB	DELL	E6430	N/A
5	Device	ASUS	RT-AX88U	MSQ-RTAXHP00
6	Flash disk3.0	Transcend	JetFlash-700	N/A
7	Flash disk3.0	Transcend	JetFlash-700	N/A

For Radiated (Below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	N/A
2	NB	DELL	E4300	N/A
3	NB	DELL	E4300	N/A
4	NB	DELL	E4300	N/A
5	NB	Apple	Mac Book	N/A
6	Flash disk3.0	Silicon Power	B06	N/A
7	Flash disk3.0	Silicon Power	B06	N/A

For Radiated (Above 1GHz)

<For Non-Beamforming Mode>

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

<For Beamforming Mode>

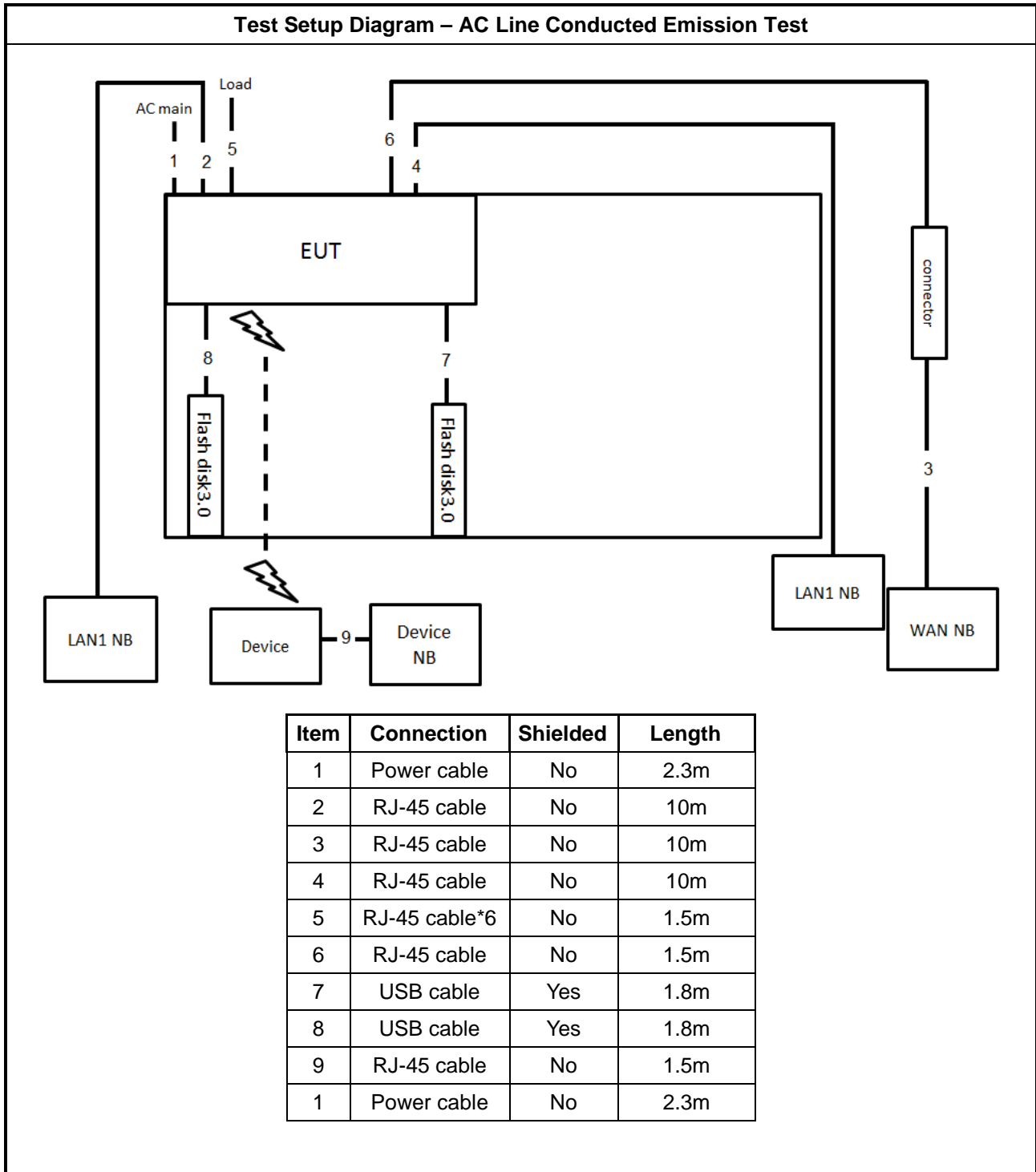
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	N/A
2	Notebook	DELL	E4300	N/A
3	RX Device	ASUS	RT-AX88U	MSQ-RTAXHP00

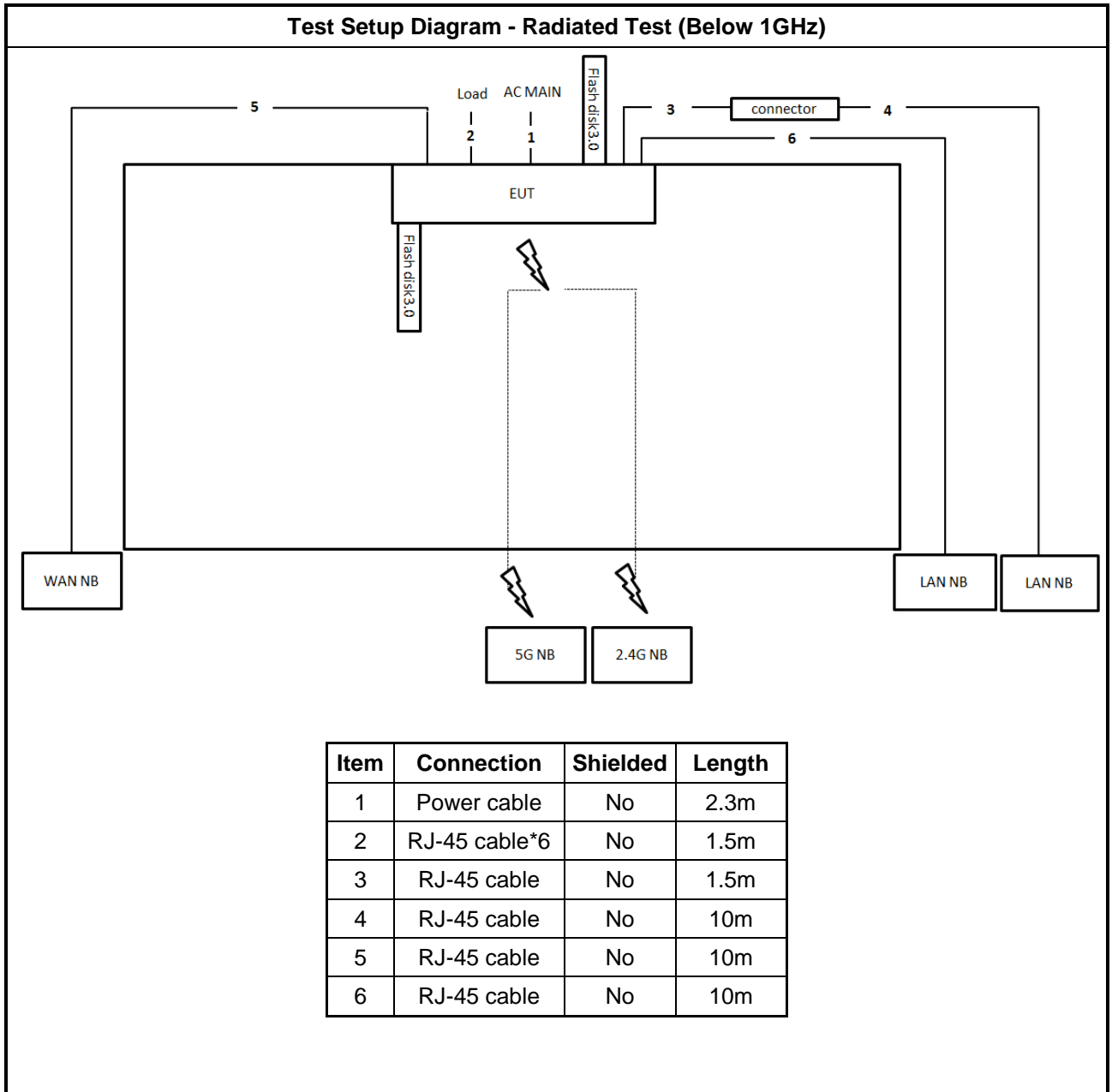


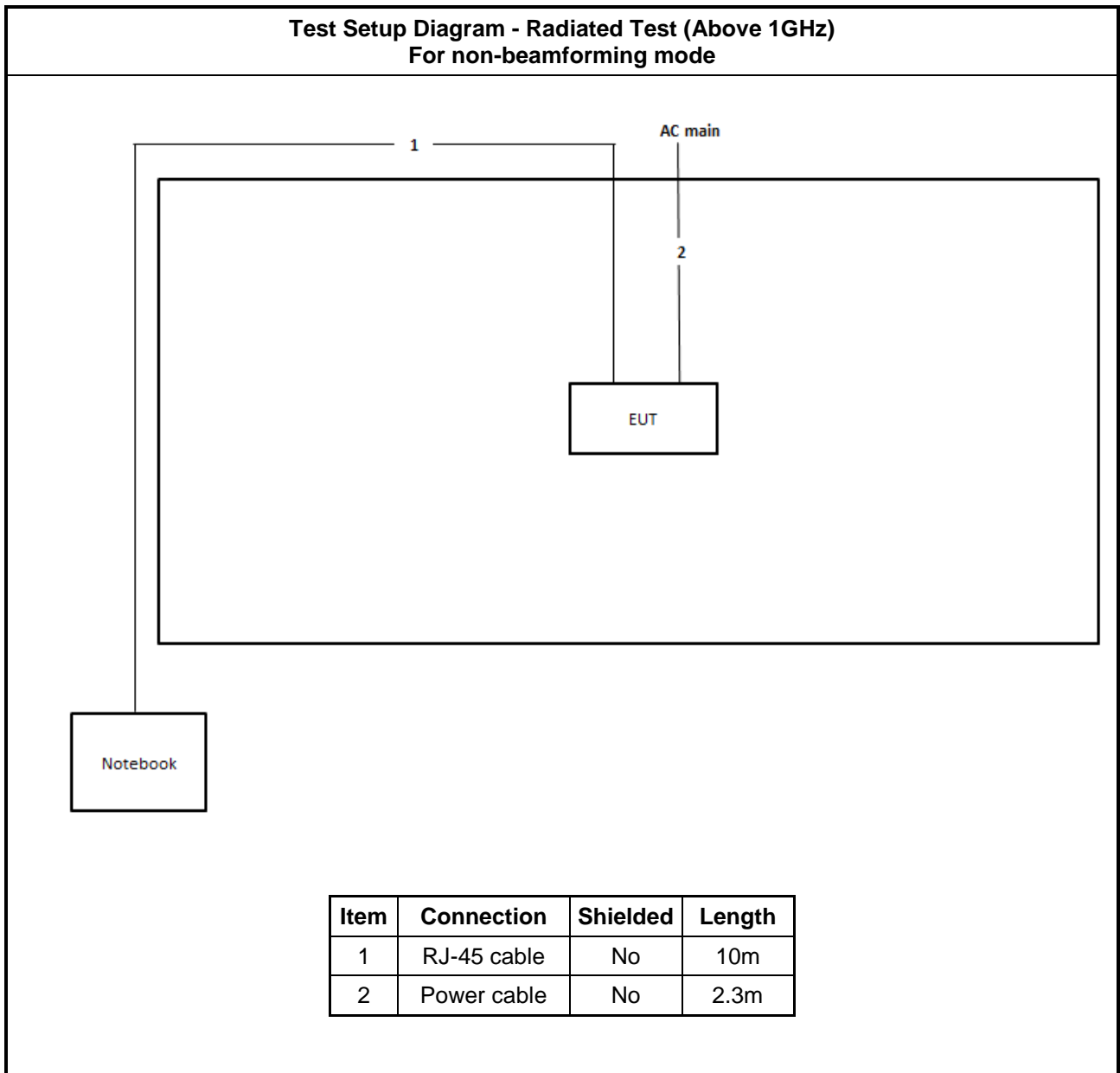
For RF Conducted:

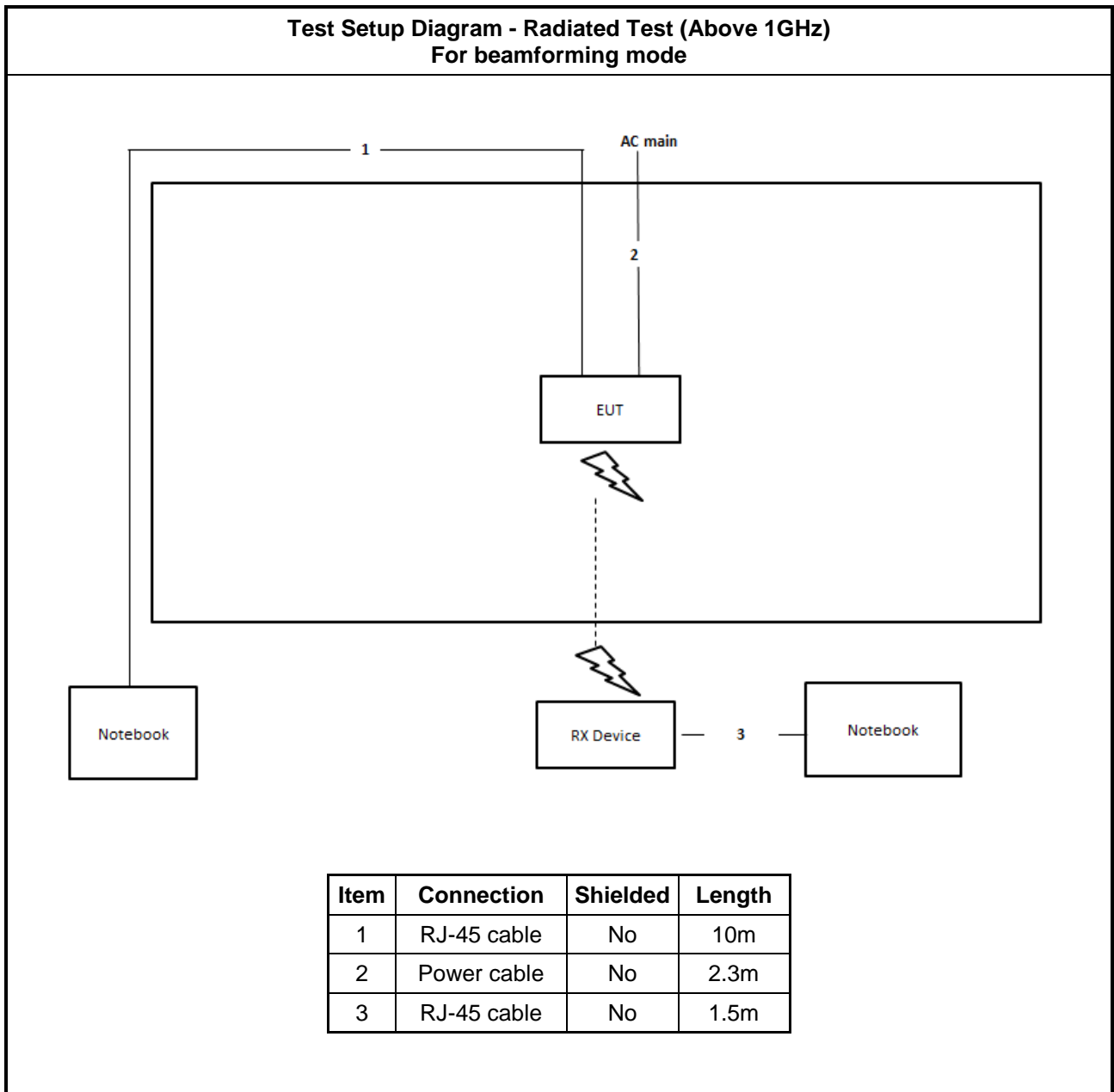
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram











3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

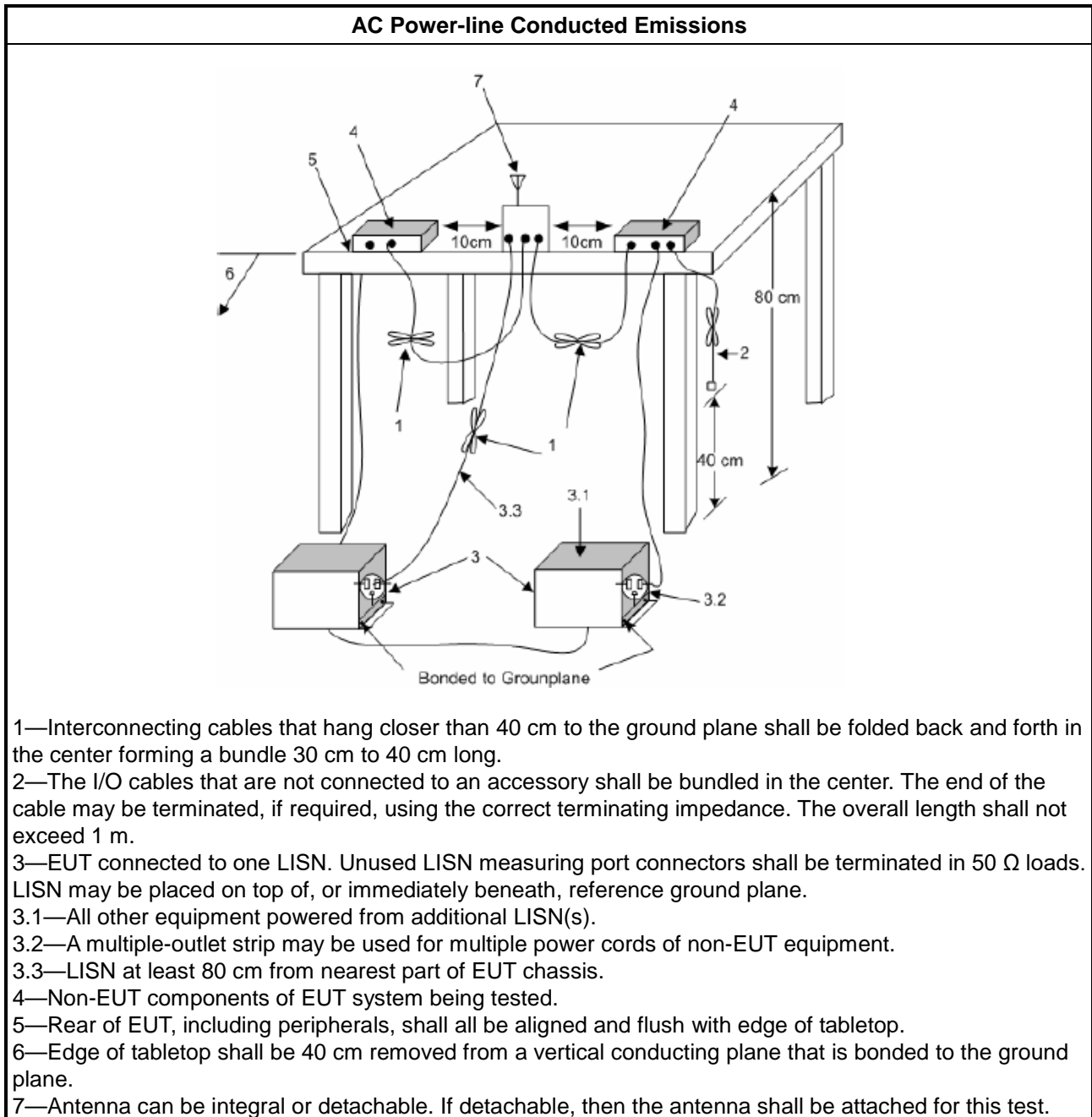
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
<input type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.
LE-LAN Devices	
<input type="checkbox"/>	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

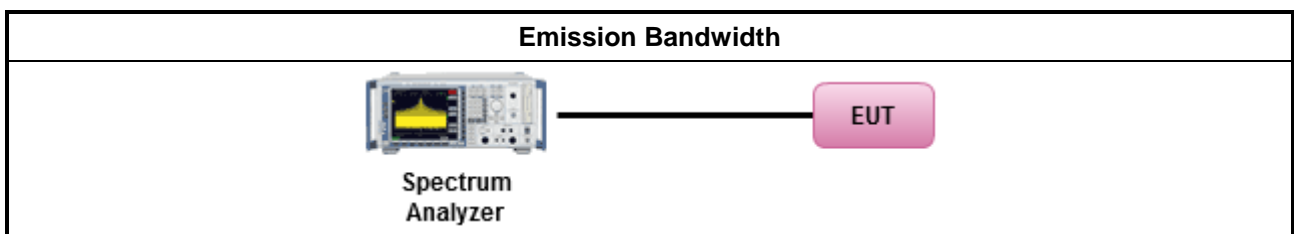
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method							
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;"><input checked="" type="checkbox"/></td> <td>Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.</td> </tr> </table> 		<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.	<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.						
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.						
<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for 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	
UNII Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees $\leq 125mW$ [21dBm] ▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ ▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. ▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

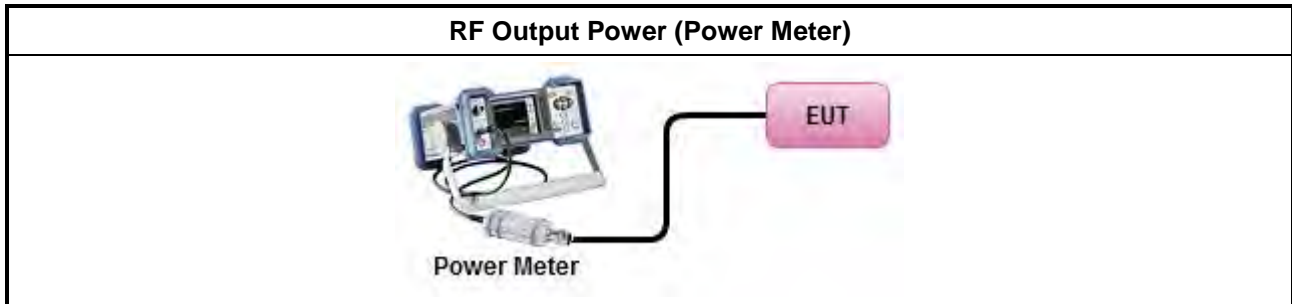
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Conducted Output Power 	
Average over on/off periods with duty factor	
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. 	
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. ▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. ▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. ▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 ($\theta-8$) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 ($\theta-40$) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
<p>PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	



3.4.2 Measuring Instruments

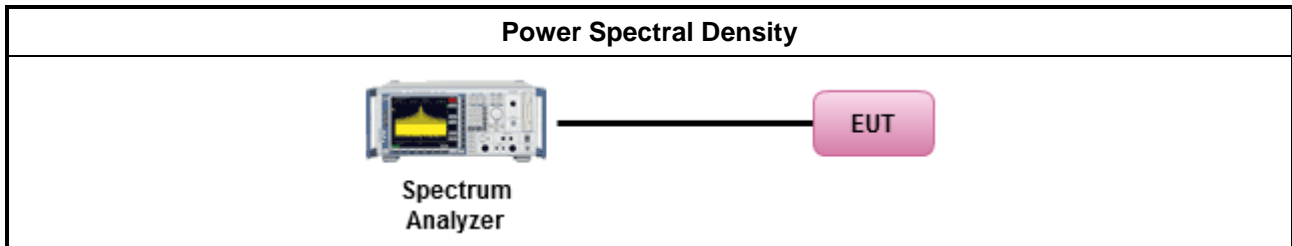
Refer a test equipment and calibration data table in this test report.



3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options: 	
<input type="checkbox"/>	Refer as FCC KDB 789033, F5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
[duty cycle ≥ 98% or external video / power trigger]	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: 	
<input checked="" type="checkbox"/>	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
<input type="checkbox"/>	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/>	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$ 	

3.4.4 Test Setup



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D



3.5 Unwanted Emissions

3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<input type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: 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).

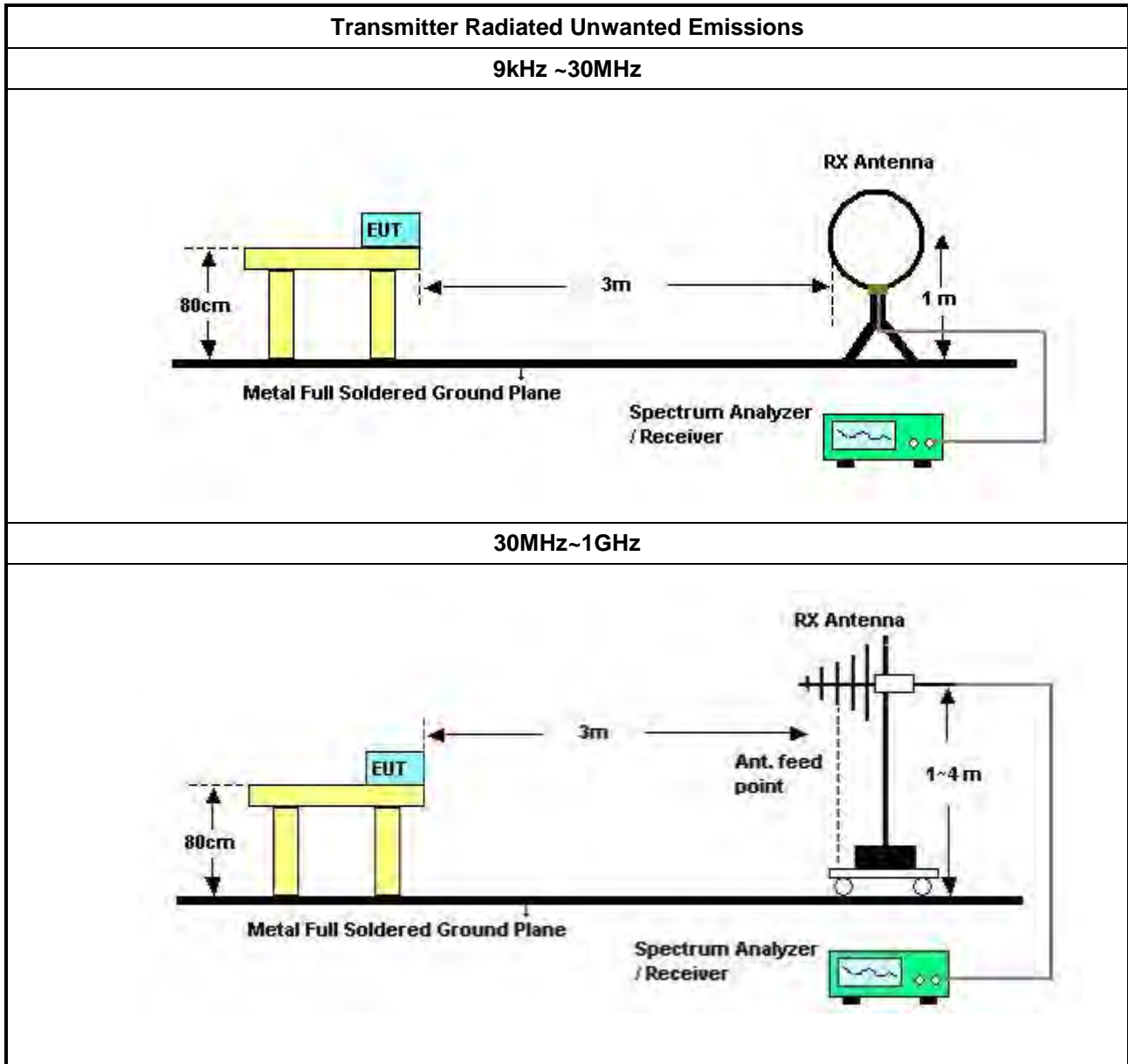
3.5.2 Measuring Instruments

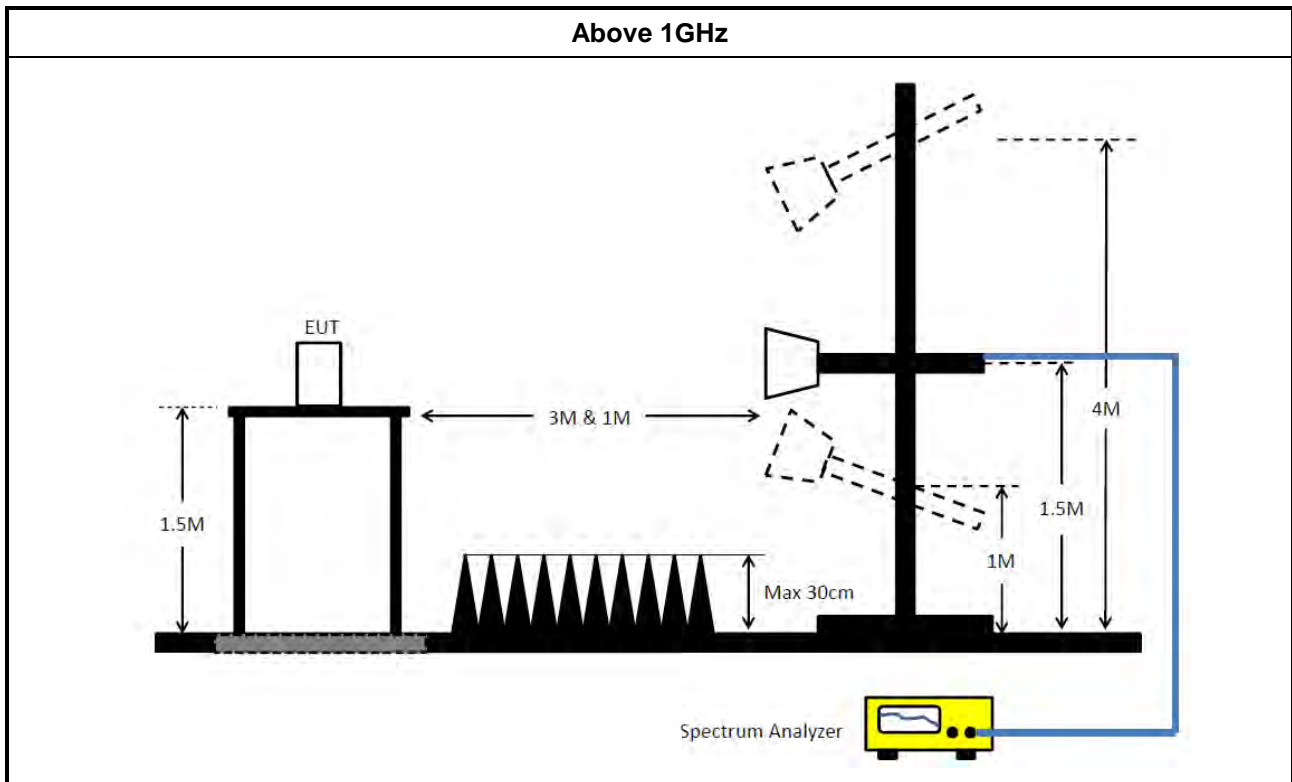
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> ▪ 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. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. 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).
	<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: <ul style="list-style-type: none"> ▪ Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands. ▪ Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands. <ul style="list-style-type: none"> <input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging). <input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW). <input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time. <input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions. <input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit. <input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
	<ul style="list-style-type: none"> ▪ For radiated measurement. <ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m. ▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m. ▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	<ul style="list-style-type: none"> ▪ The any unwanted emissions level shall not exceed the fundamental emission level.
	<ul style="list-style-type: none"> ▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.5.4 Test Setup





3.5.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.5.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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.

3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 17, 2018	Jan. 16, 2019	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 05, 2018	Nov. 04, 2019	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	150kHz ~ 30MHz	May 22, 2018	May 21, 2019	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMC I	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	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)
Horn Antenna	ETS · Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 02, 2019	Jul. 01, 2020	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)

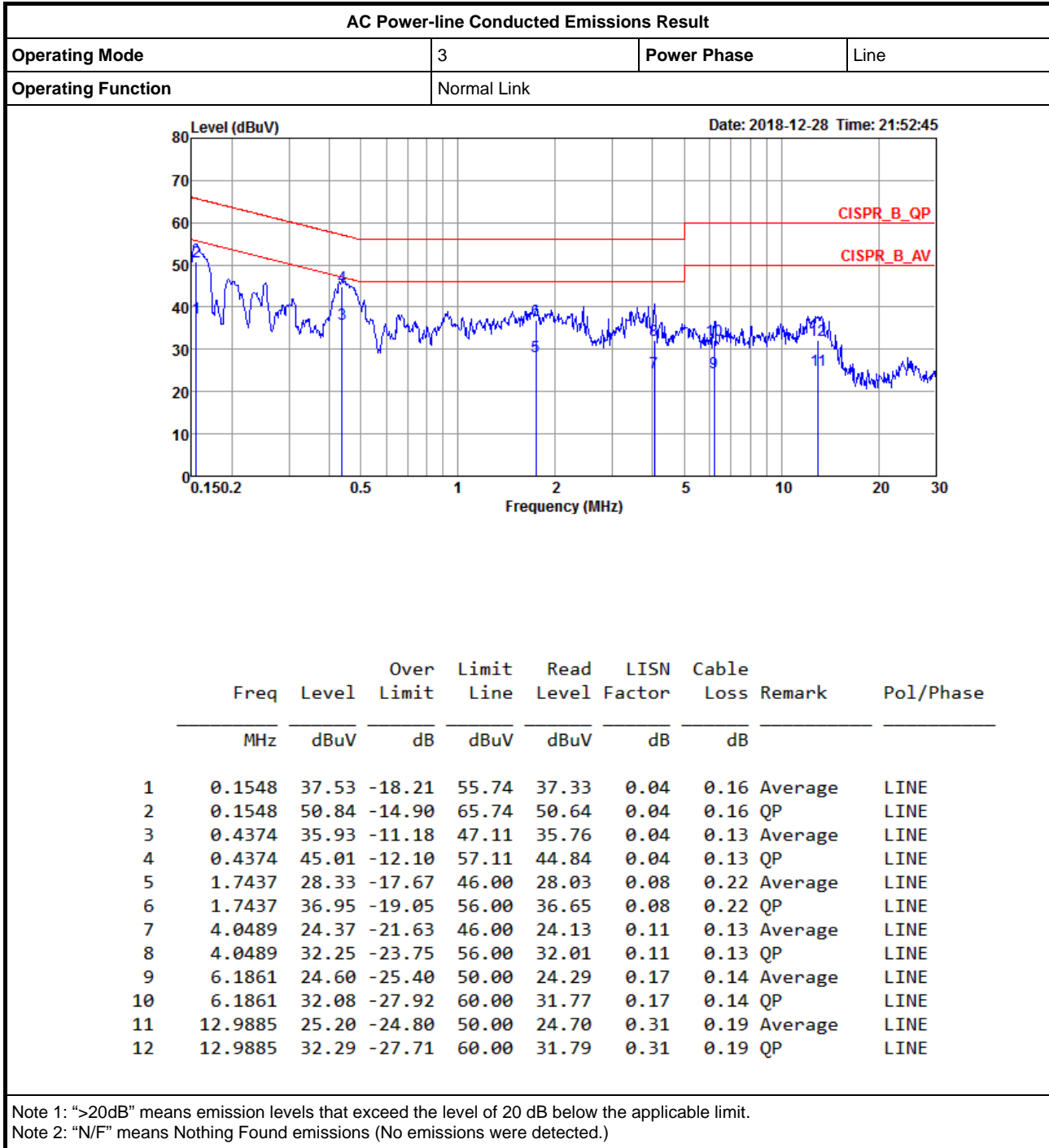
Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.



AC Power-line Conducted Emissions Result

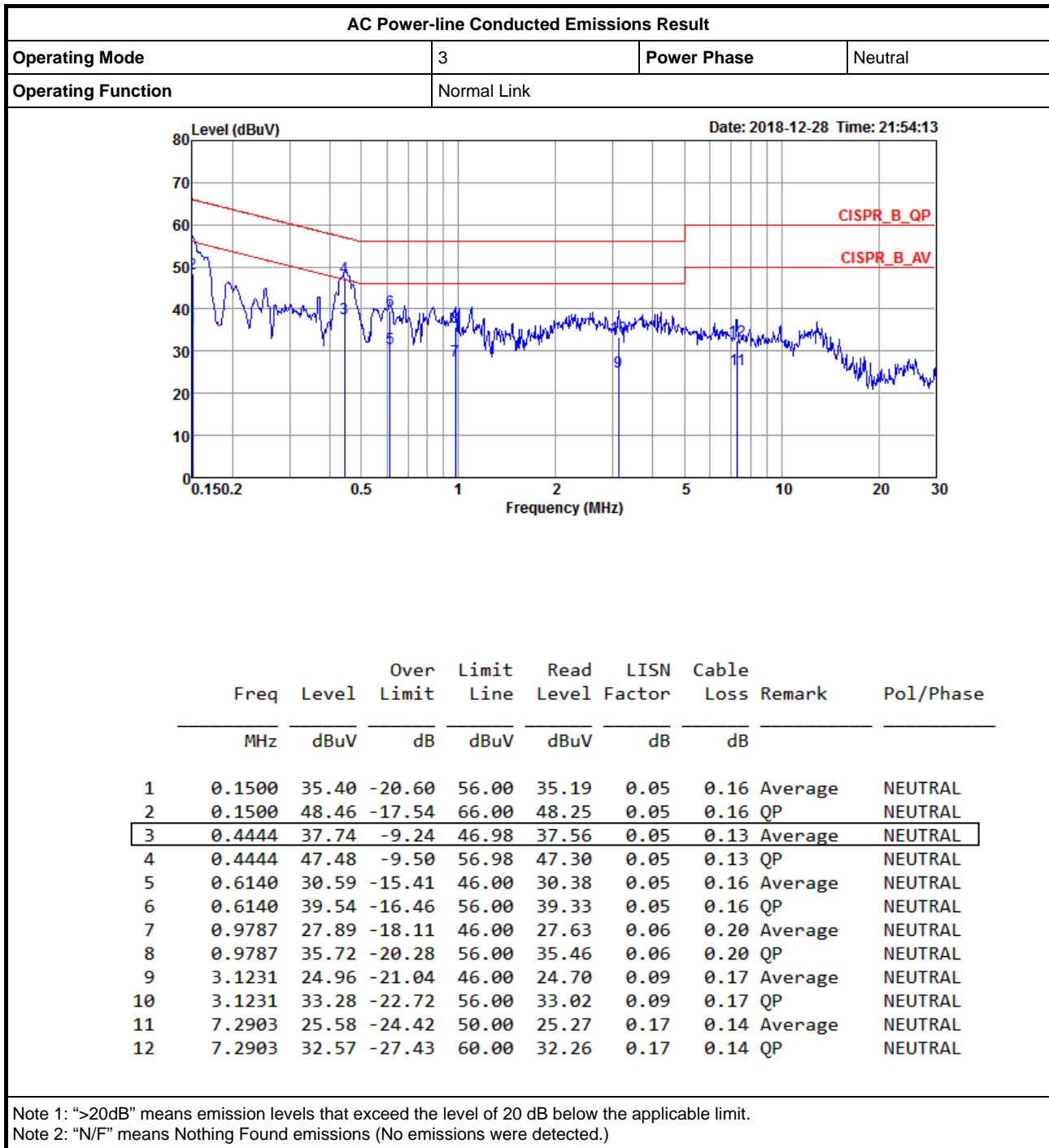
Appendix A





AC Power-line Conducted Emissions Result

Appendix A





<4T1S>
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	16.35M	16.792M	16M8D1D	16.32M	16.582M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	19.05M	19.04M	19MOD1D	18.9M	18.951M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	37.74M	37.721M	37M7D1D	37.14M	37.541M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	76.8M	77.241M	77M2D1D	76.68M	77.001M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	16.35M	16.762M	16.35M	16.672M	16.35M	16.612M	16.32M	16.612M
5785MHz	Pass	500k	16.32M	16.792M	16.35M	16.672M	16.35M	16.612M	16.35M	16.612M
5825MHz	Pass	500k	16.35M	16.672M	16.35M	16.612M	16.35M	16.582M	16.35M	16.642M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	19.05M	18.981M	18.99M	19.01M	18.96M	18.951M	18.9M	18.981M
5785MHz	Pass	500k	19.02M	19.01M	19.02M	19.04M	18.99M	18.981M	18.93M	19.01M
5825MHz	Pass	500k	18.93M	18.981M	18.96M	19.01M	18.96M	18.981M	18.99M	19.01M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	37.62M	37.601M	37.74M	37.601M	37.5M	37.721M	37.44M	37.541M
5795MHz	Pass	500k	37.14M	37.601M	37.56M	37.601M	37.62M	37.661M	37.44M	37.601M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	76.8M	77.121M	76.8M	77.001M	76.68M	77.001M	76.8M	77.241M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

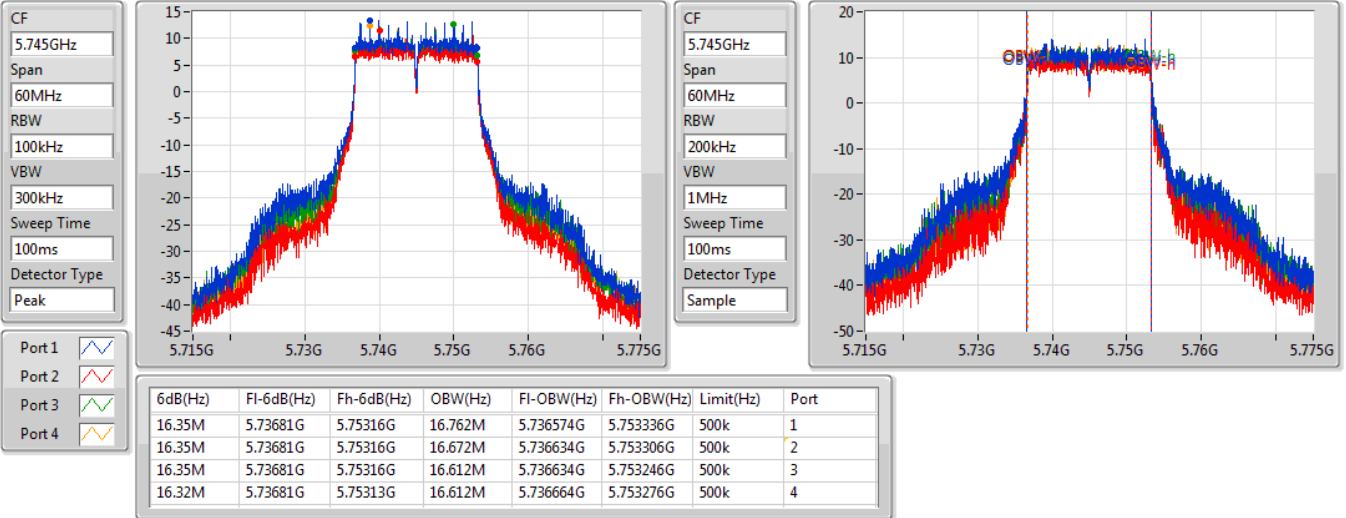
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX

EBW

5745MHz

08/10/2019

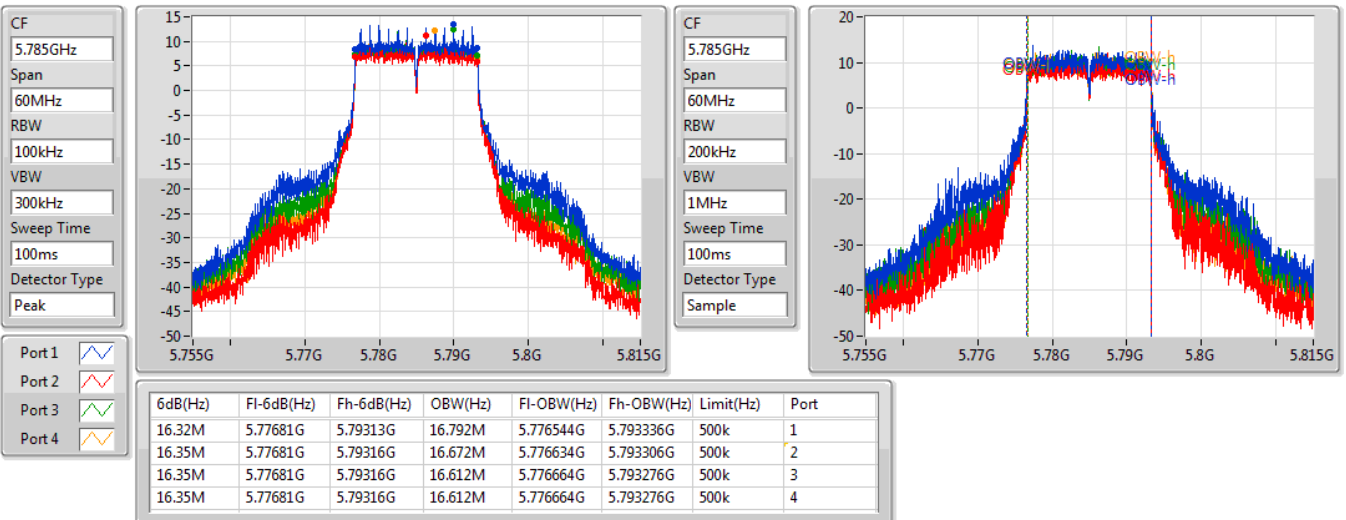


802.11a_Nss1,(6Mbps)_4TX

EBW

5785MHz

08/10/2019



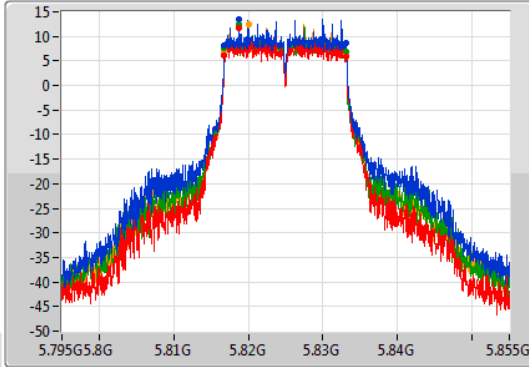
802.11a_Nss1,(6Mbps)_4TX

EBW

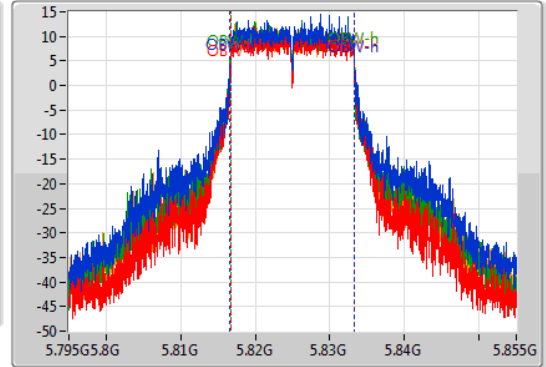
5825MHz

08/10/2019

CF
5.825GHz
Span
60MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.825GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Sample



Port 1
Port 2
Port 3
Port 4

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	5.81681G	5.83316G	16.672M	5.816634G	5.833306G	500k	1
16.35M	5.81681G	5.83316G	16.612M	5.816664G	5.833276G	500k	2
16.35M	5.81681G	5.83316G	16.582M	5.816664G	5.833246G	500k	3
16.35M	5.81681G	5.83316G	16.642M	5.816634G	5.833276G	500k	4

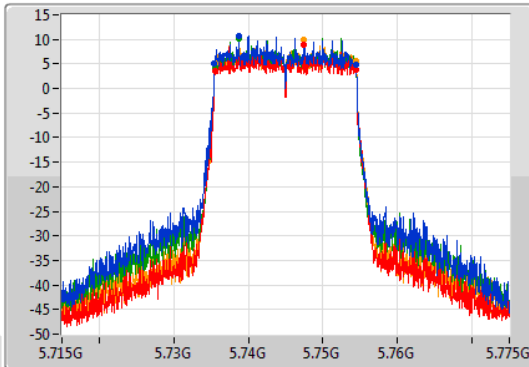
802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

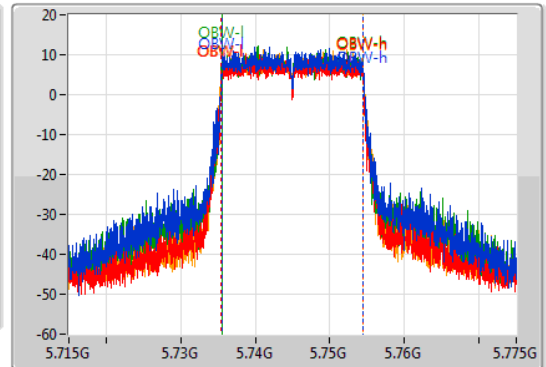
5745MHz

08/10/2019

CF
5.745GHz
Span
60MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.745GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Sample



Port 1
Port 2
Port 3
Port 4

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
19.05M	5.7354G	5.75445G	18.981M	5.735495G	5.754475G	500k	1
18.99M	5.73549G	5.75448G	19.01M	5.735465G	5.754475G	500k	2
18.96M	5.73549G	5.75445G	18.951M	5.735495G	5.754445G	500k	3
18.9M	5.73552G	5.75442G	18.981M	5.735495G	5.754475G	500k	4

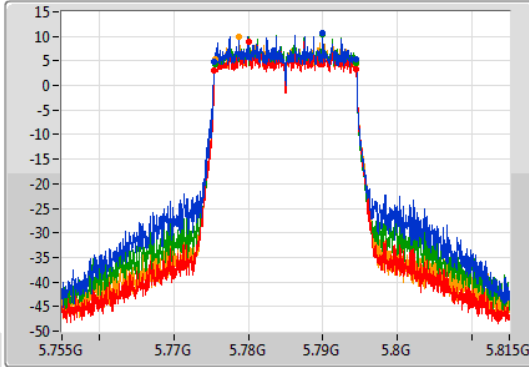
802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

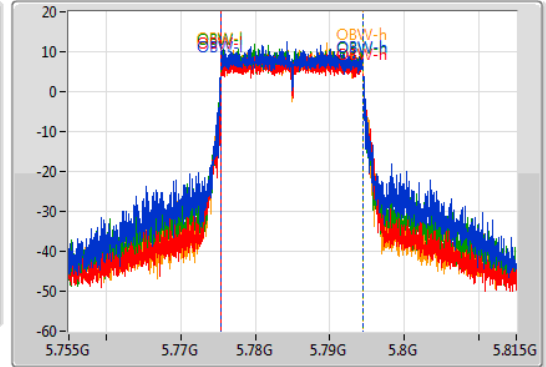
5785MHz

08/10/2019

CF
5.785GHz
Span
60MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.785GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Sample



Port 1
Port 2
Port 3
Port 4

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
19.02M	5.7754G	5.79442G	19.01M	5.775435G	5.794445G	500k	1
19.02M	5.77546G	5.79448G	19.04M	5.775465G	5.794505G	500k	2
18.99M	5.77549G	5.79448G	18.981M	5.775465G	5.794445G	500k	3
18.93M	5.77552G	5.79445G	19.01M	5.775465G	5.794475G	500k	4

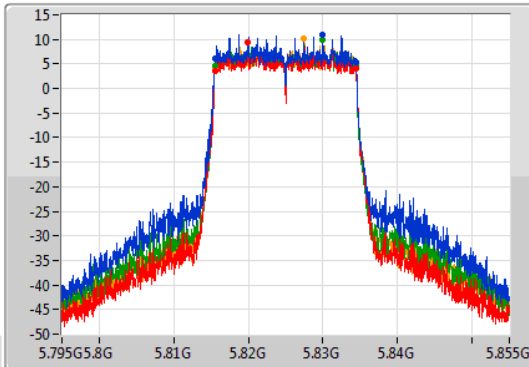
802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

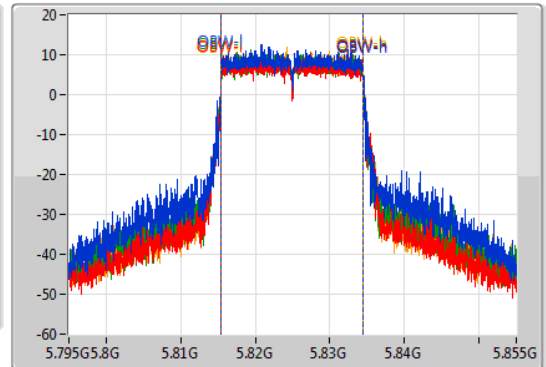
5825MHz

08/10/2019

CF
5.825GHz
Span
60MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.825GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Sample



Port 1
Port 2
Port 3
Port 4

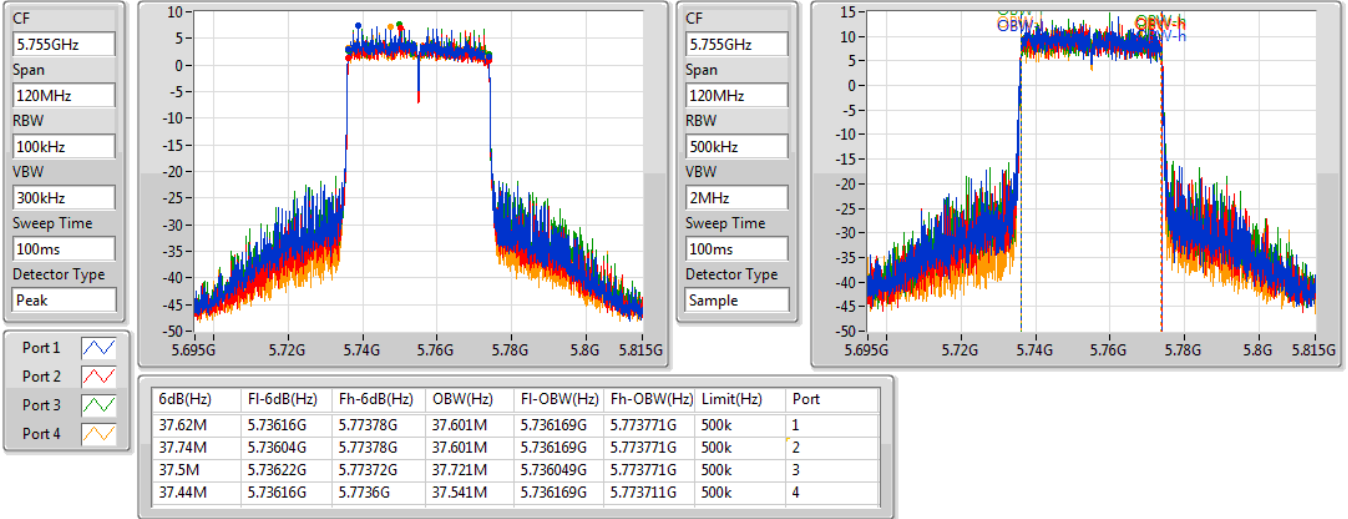
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
18.93M	5.81552G	5.83445G	18.981M	5.815465G	5.834445G	500k	1
18.96M	5.81549G	5.83445G	19.01M	5.815465G	5.834475G	500k	2
18.96M	5.81549G	5.83445G	18.981M	5.815465G	5.834445G	500k	3
18.99M	5.81549G	5.83448G	19.01M	5.815465G	5.834475G	500k	4

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5755MHz

08/10/2019

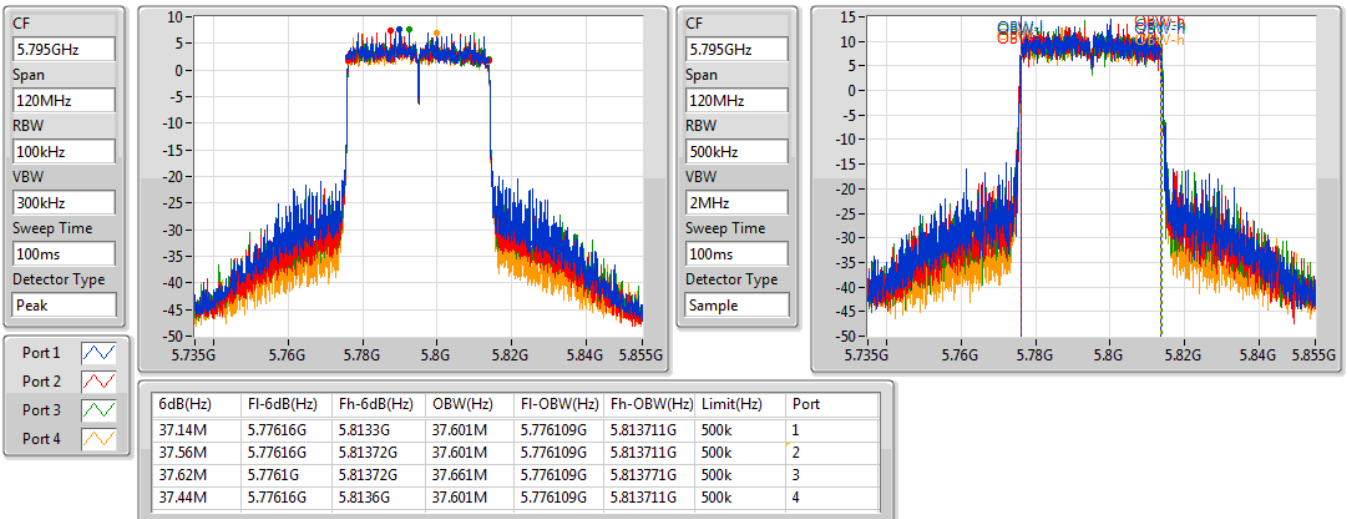


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5795MHz

08/10/2019



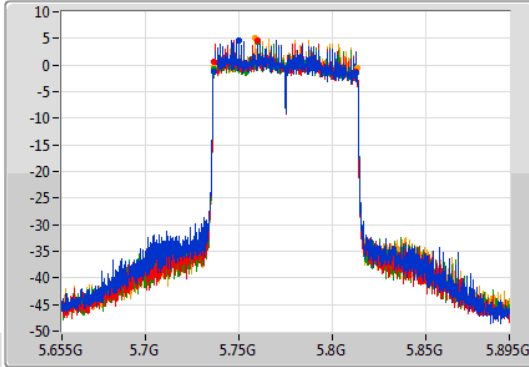
802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

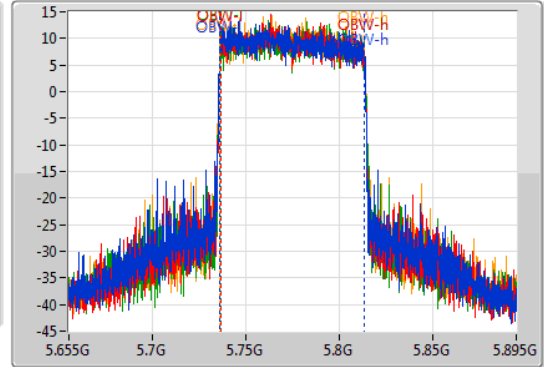
5775MHz

08/10/2019

CF
5.775GHz
Span
240MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.775GHz
Span
240MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Sample



Port 1
Port 2
Port 3
Port 4

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.8M	5.73624G	5.81304G	77.121M	5.736139G	5.813261G	500k	1
76.8M	5.73624G	5.81304G	77.001M	5.736259G	5.813261G	500k	2
76.68M	5.73636G	5.81304G	77.001M	5.736259G	5.813261G	500k	3
76.8M	5.73636G	5.81316G	77.241M	5.736139G	5.813381G	500k	4



<4T2S>
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	18.99M	19.07M	19M1D1D	18.84M	18.981M
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	37.62M	37.721M	37M7D1D	36.84M	37.481M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	77.4M	77.241M	77M2D1D	76.32M	77.001M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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)
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	18.84M	19.04M	18.96M	19.01M	18.96M	19.01M	18.96M	19.01M
5785MHz	Pass	500k	18.9M	19.07M	18.99M	18.981M	18.93M	19.01M	18.99M	19.01M
5825MHz	Pass	500k	18.87M	19.04M	18.99M	19.01M	18.96M	19.01M	18.99M	19.01M
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	37.26M	37.541M	37.62M	37.721M	37.56M	37.601M	37.56M	37.601M
5795MHz	Pass	500k	37.56M	37.601M	36.84M	37.601M	37.38M	37.481M	37.38M	37.541M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	76.32M	77.241M	76.92M	77.121M	77.4M	77.121M	77.28M	77.001M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

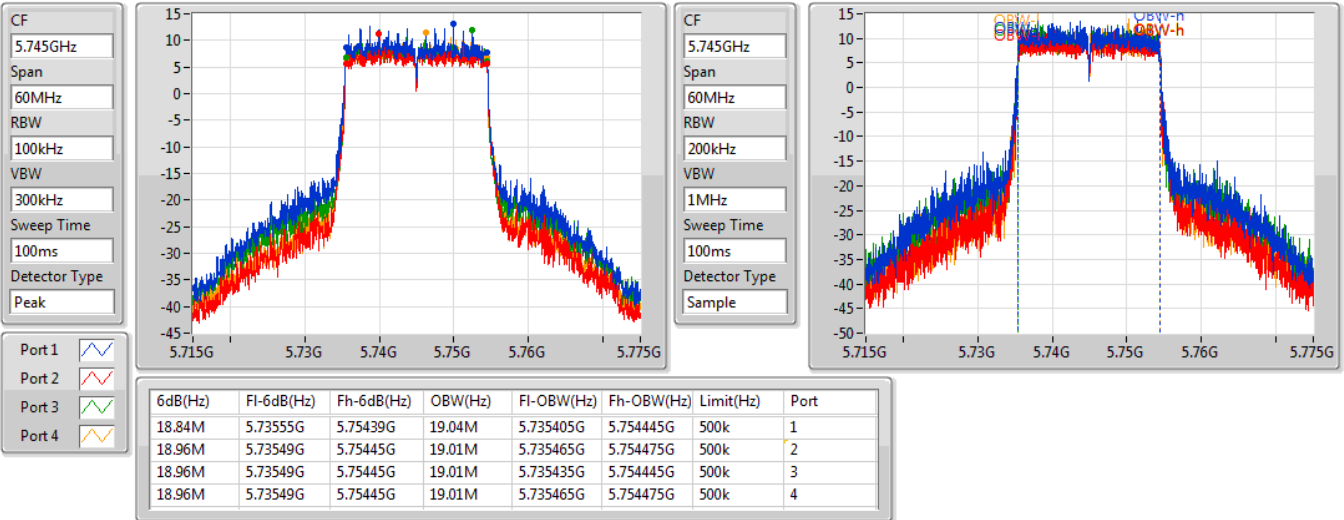
Port X-OBW = Port X 99% occupied bandwidth;

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

EBW

5745MHz

08/10/2019

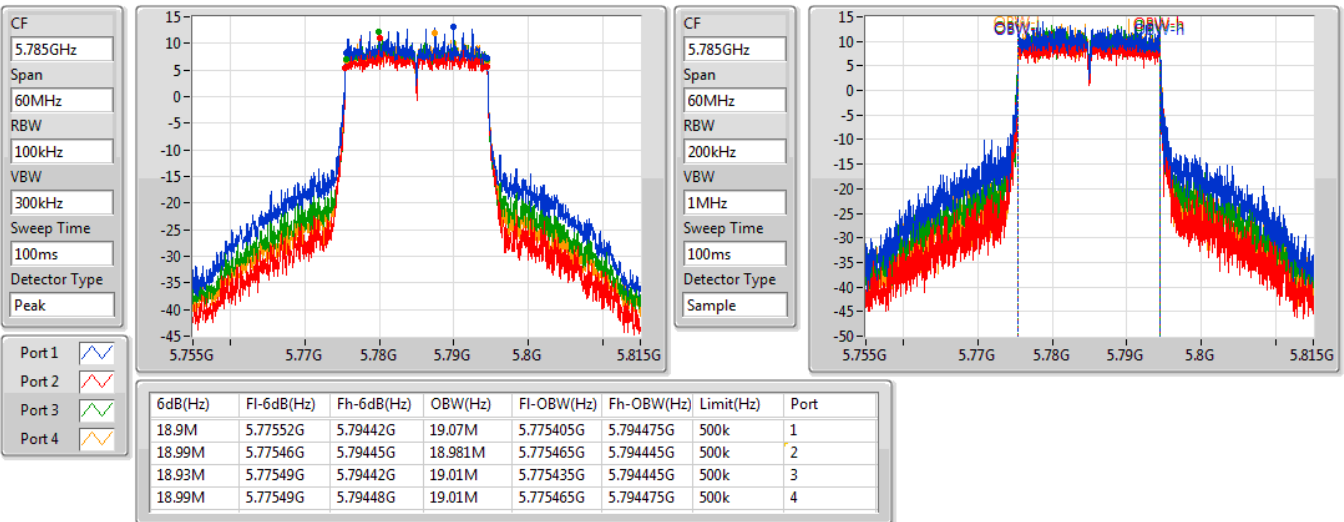


802.11ax HEW20-BF_Nss2,(MCS0)_4TX

EBW

5785MHz

08/10/2019

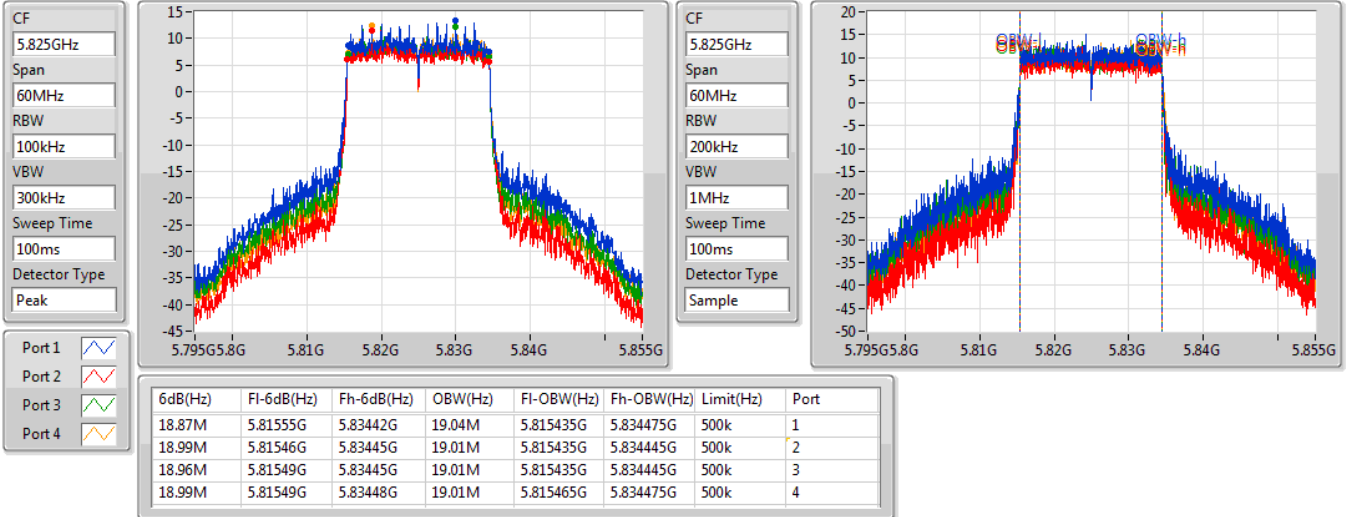


802.11ax HEW20-BF_Nss2,(MCS0)_4TX

EBW

5825MHz

08/10/2019

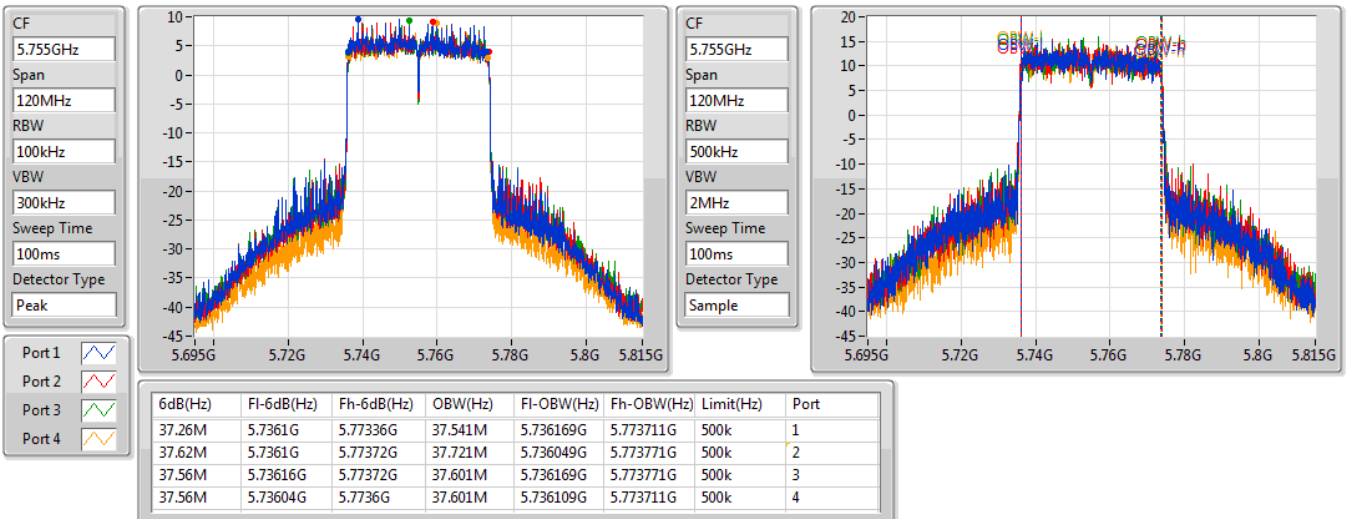


802.11ax HEW40-BF_Nss2,(MCS0)_4TX

EBW

5755MHz

08/10/2019



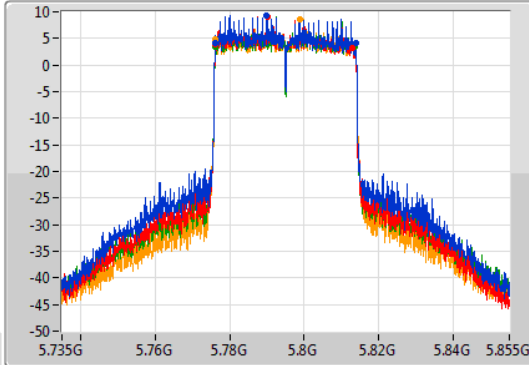
802.11ax HEW40-BF_Nss2,(MCS0)_4TX

EBW

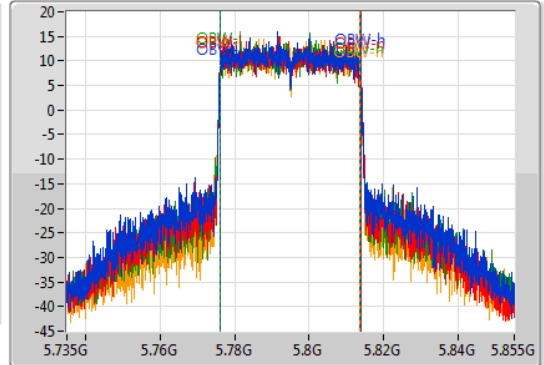
5795MHz

08/10/2019

CF
5.795GHz
Span
120MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.795GHz
Span
120MHz
RBW
500kHz
VBW
2MHz
Sweep Time
100ms
Detector Type
Sample



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
37.56M	5.77616G	5.81372G	37.601M	5.776169G	5.813771G	500k	1
36.84M	5.77616G	5.813G	37.601M	5.776169G	5.813771G	500k	2
37.38M	5.77616G	5.81354G	37.481M	5.776229G	5.813711G	500k	3
37.38M	5.77622G	5.8136G	37.541M	5.776169G	5.813711G	500k	4

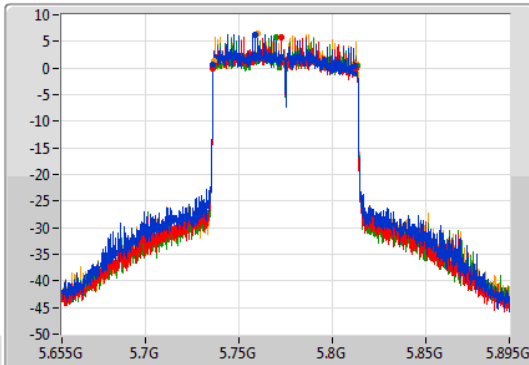
802.11ax HEW80-BF_Nss2,(MCS0)_4TX

EBW

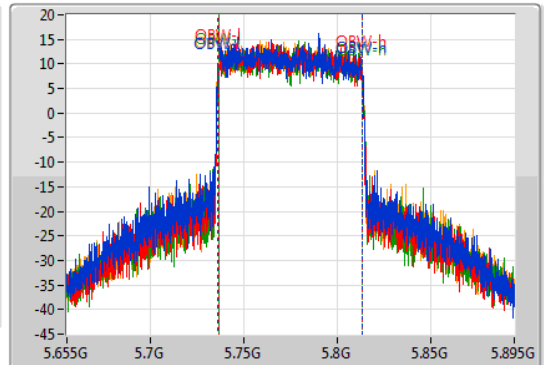
5775MHz

08/10/2019

CF
5.775GHz
Span
240MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak



CF
5.775GHz
Span
240MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Sample



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.32M	5.736G	5.81232G	77.241M	5.736139G	5.813381G	500k	1
76.92M	5.73612G	5.81304G	77.121M	5.736259G	5.813381G	500k	2
77.4M	5.73612G	5.81352G	77.121M	5.736259G	5.813381G	500k	3
77.28M	5.73624G	5.81352G	77.001M	5.736379G	5.813381G	500k	4



**<4T1S>
Summary**

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	29.96	0.99083
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	28.03	0.63533
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	28.00	0.63096
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	28.01	0.63241



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	1.94	24.63	23.05	23.98	23.96	29.96	30.00
5785MHz	Pass	1.94	24.36	23.04	23.83	23.86	29.82	30.00
5825MHz	Pass	1.94	24.62	23.12	23.90	23.79	29.91	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	7.96	22.56	21.20	21.97	21.78	27.93	28.04
5785MHz	Pass	7.96	22.38	21.09	22.03	21.67	27.84	28.04
5825MHz	Pass	7.96	22.81	21.19	22.04	21.85	28.03	28.04
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	7.96	22.14	21.81	21.91	21.65	27.90	28.04
5795MHz	Pass	7.96	22.06	22.02	22.13	21.68	28.00	28.04
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	7.96	21.64	22.07	21.86	22.36	28.01	28.04

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



**<4T2S>
Summary**

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	29.94	0.98628
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	29.86	0.96828
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	29.56	0.90365



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	4.95	24.29	23.06	23.73	23.55	29.70	30.00
5785MHz	Pass	4.95	24.63	23.07	23.94	23.91	29.94	30.00
5825MHz	Pass	4.95	24.72	23.06	24.01	23.72	29.94	30.00
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	4.95	24.05	23.86	23.84	23.47	29.83	30.00
5795MHz	Pass	4.95	24.04	24.06	23.59	23.66	29.86	30.00
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	4.95	23.66	23.45	23.28	23.75	29.56	30.00

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



<4T1S>
Summary

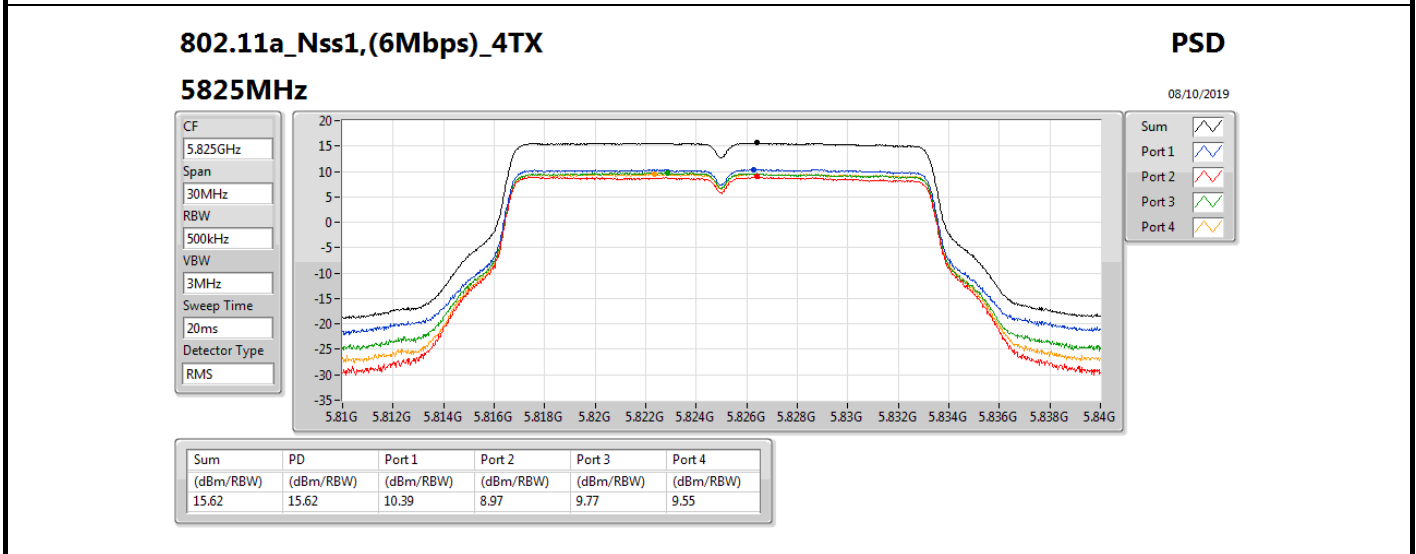
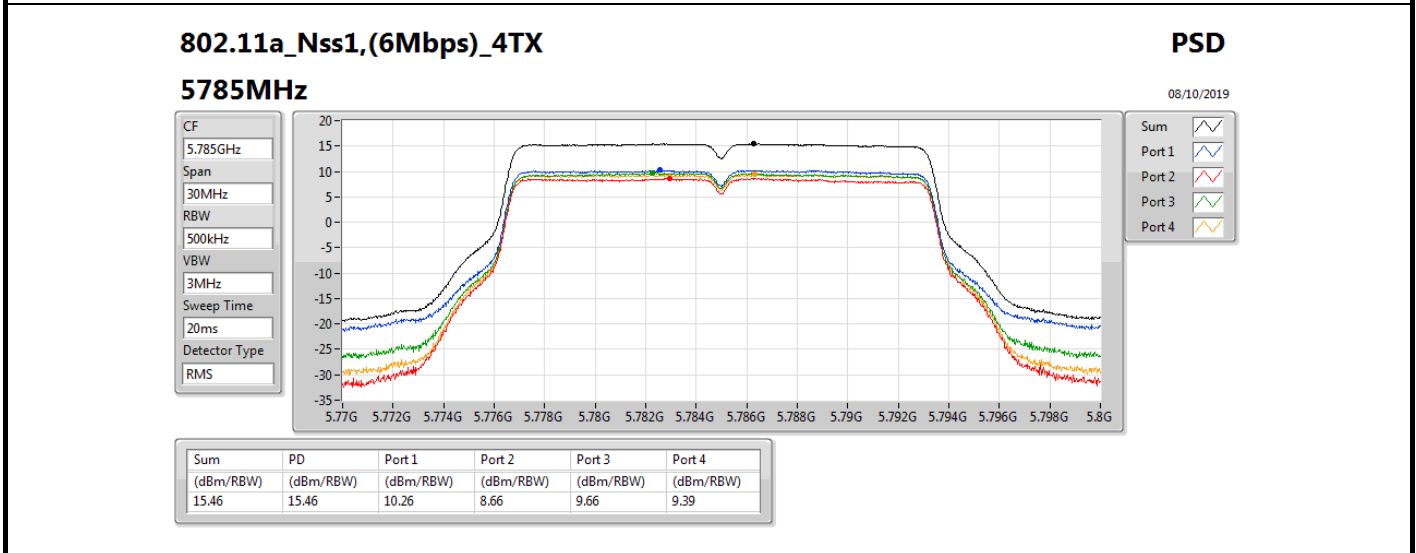
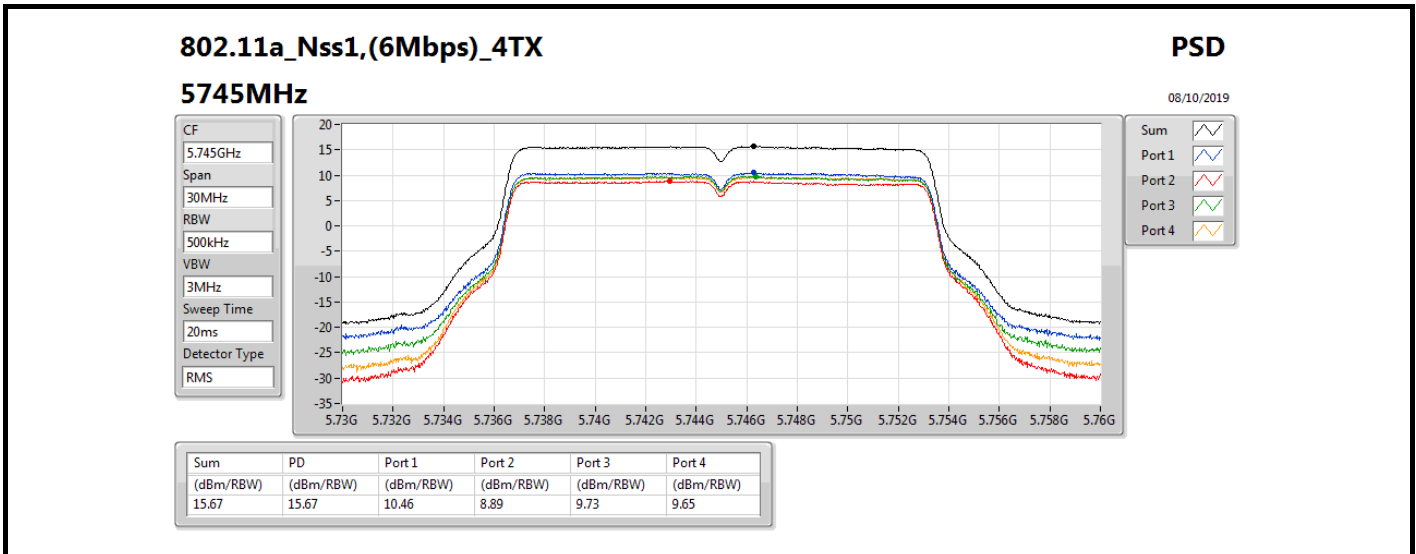
Mode	PD (dBm/RBW)
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_4TX	15.67
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	13.57
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	10.74
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	10.91

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

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)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	7.96	10.46	8.89	9.73	9.65	15.67	28.04
5785MHz	Pass	7.96	10.26	8.66	9.66	9.39	15.46	28.04
5825MHz	Pass	7.96	10.39	8.97	9.77	9.55	15.62	28.04
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	7.96	8.28	6.85	7.84	7.35	13.49	28.04
5785MHz	Pass	7.96	8.11	6.60	7.63	7.39	13.33	28.04
5825MHz	Pass	7.96	8.40	7.04	7.64	7.64	13.57	28.04
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	7.96	4.98	4.75	5.04	4.38	10.74	28.04
5795MHz	Pass	7.96	4.98	4.95	4.94	4.29	10.74	28.04
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	7.96	5.04	5.10	4.65	5.17	10.91	28.04

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

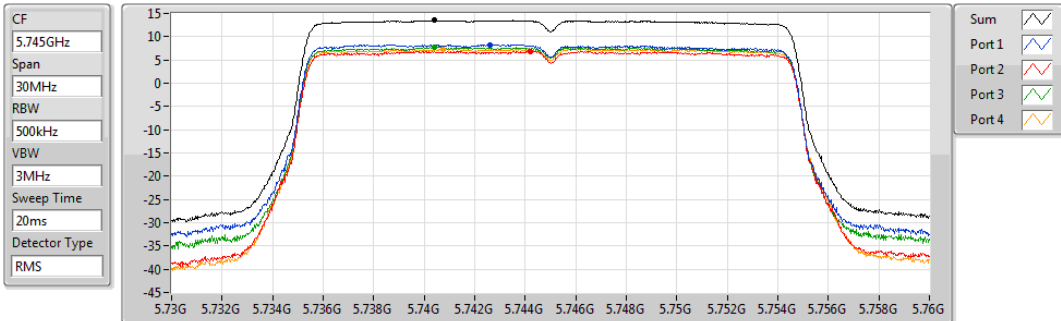


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

5745MHz

08/10/2019



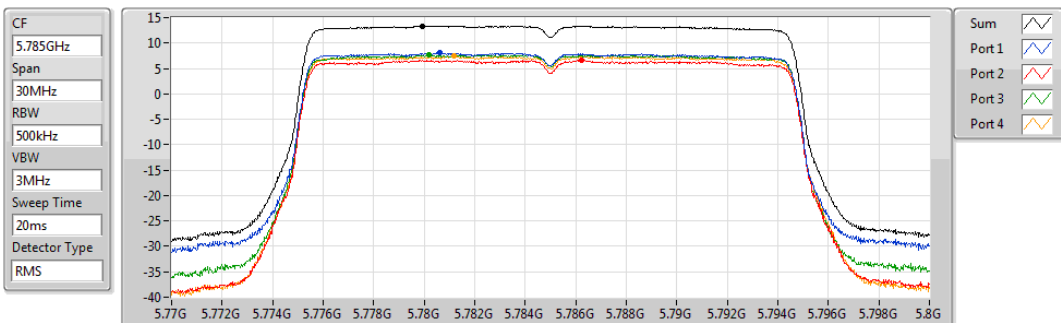
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.49	13.49	8.28	6.85	7.84	7.35

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

5785MHz

08/10/2019



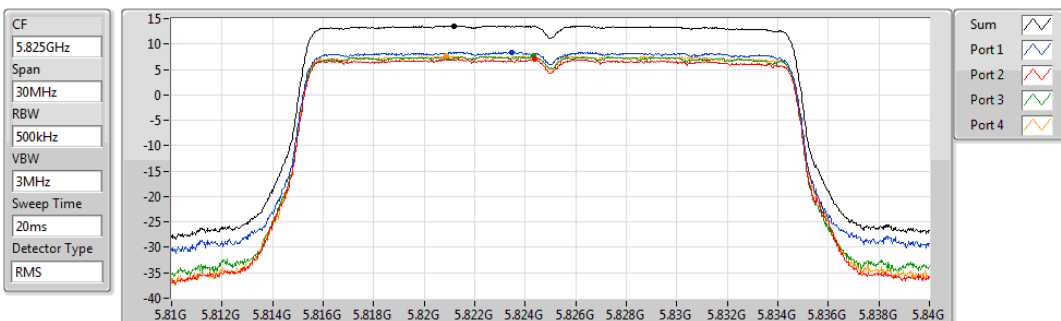
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.33	13.33	8.11	6.60	7.63	7.39

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

5825MHz

08/10/2019



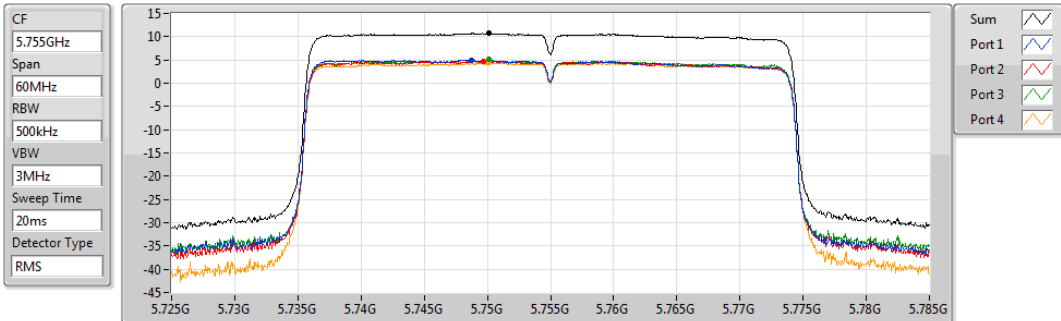
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.57	13.57	8.40	7.04	7.64	7.64

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

PSD

5755MHz

08/10/2019



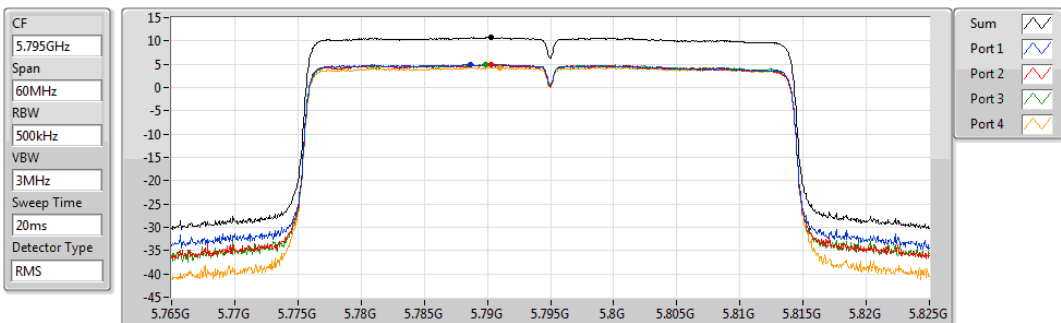
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.74	10.74	4.98	4.75	5.04	4.38

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

PSD

5795MHz

08/10/2019



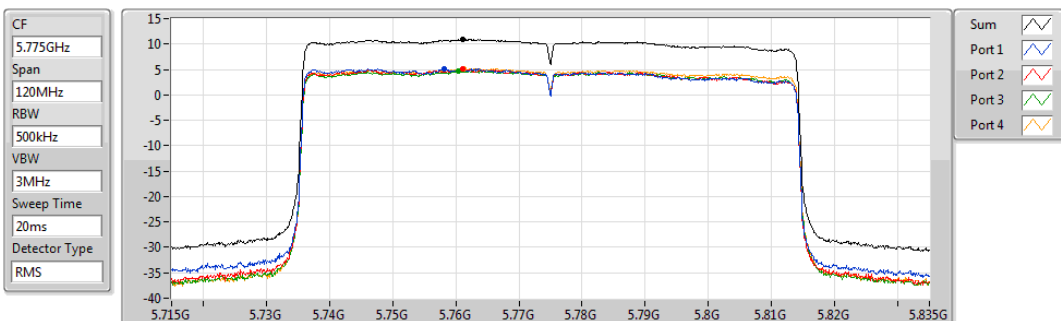
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.74	10.74	4.98	4.95	4.94	4.29

802.11ax HEW80-BF_Nss1,(MCS0)_4TX

PSD

5775MHz

08/10/2019



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.91	10.91	5.04	5.10	4.65	5.17



<4T2S>
Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.725-5.85GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	15.56	20.51
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	15.20	20.15
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	14.29	19.24

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

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)
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	4.95	10.16	8.54	9.49	9.23	15.27	30.00
5785MHz	Pass	4.95	10.23	8.50	9.45	9.33	15.35	30.00
5825MHz	Pass	4.95	10.51	8.68	9.57	9.68	15.56	30.00
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	4.95	9.48	9.37	9.34	8.78	15.20	30.00
5795MHz	Pass	4.95	9.15	8.91	8.47	8.56	14.62	30.00
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	4.95	8.59	8.39	8.04	8.66	14.29	30.00

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

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

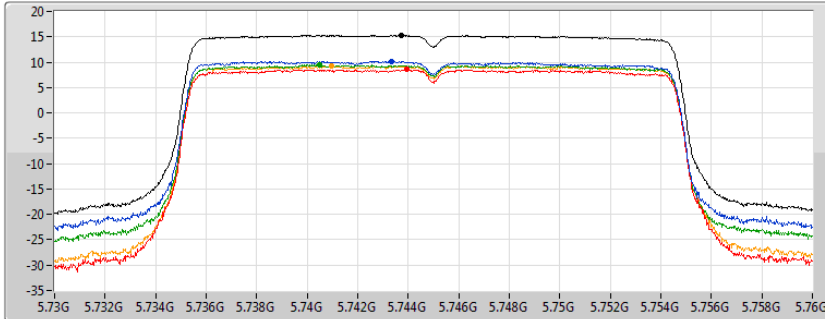
802.11ax HEW20-BF_Nss2,(MCS0)_4TX

PSD

5745MHz

08/10/2019

CF
5.745GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
15.27	15.27	10.16	8.54	9.49	9.23

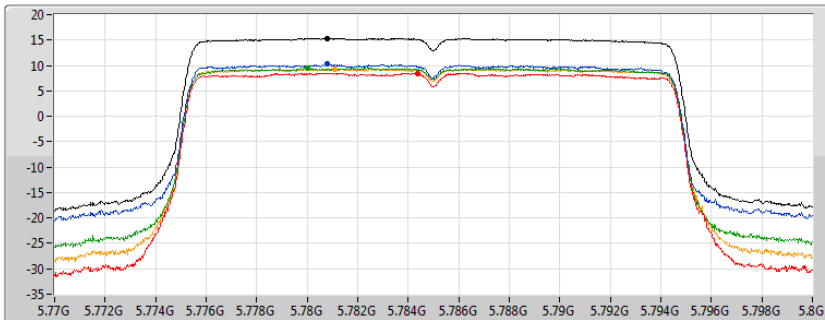
802.11ax HEW20-BF_Nss2,(MCS0)_4TX

PSD

5785MHz

08/10/2019

CF
5.785GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
15.35	15.35	10.23	8.50	9.45	9.33

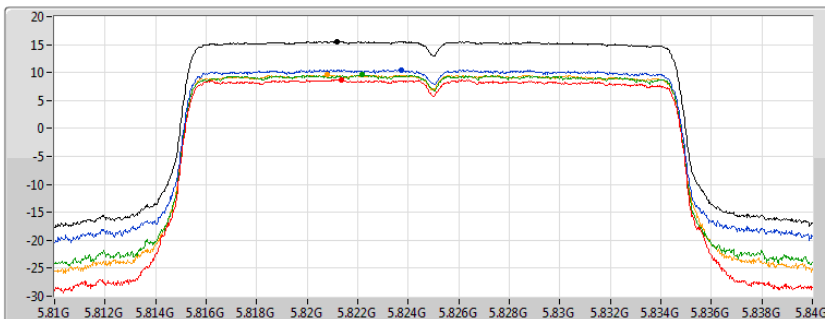
802.11ax HEW20-BF_Nss2,(MCS0)_4TX

PSD

5825MHz

08/10/2019

CF
5.825GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
15.56	15.56	10.51	8.68	9.57	9.68

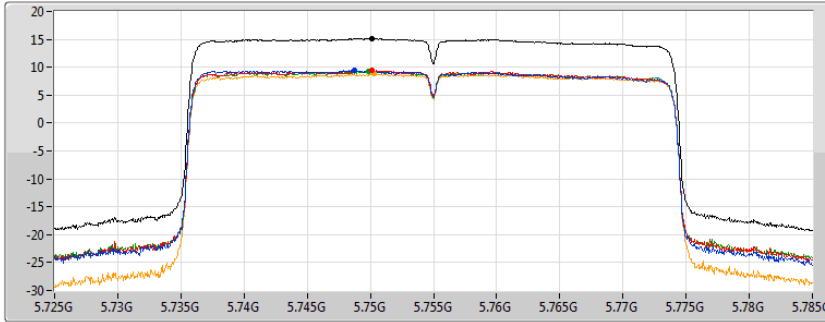
802.11ax HEW40-BF_Nss2,(MCS0)_4TX

PSD

5755MHz

08/10/2019

CF
5.755GHz
Span
60MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
15.20	15.20	9.48	9.37	9.34	8.78

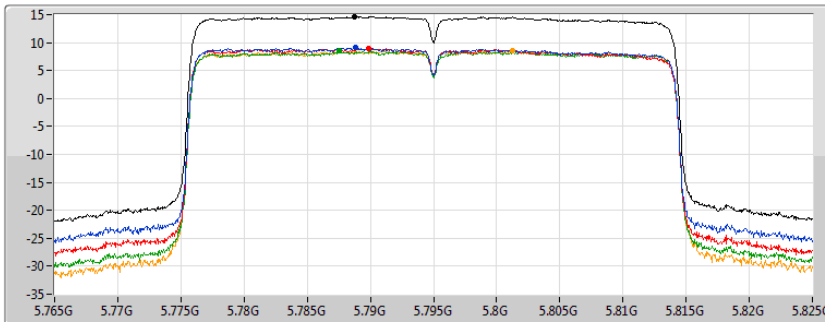
802.11ax HEW40-BF_Nss2,(MCS0)_4TX

PSD

5795MHz

08/10/2019

CF
5.795GHz
Span
60MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.62	14.62	9.15	8.91	8.47	8.56

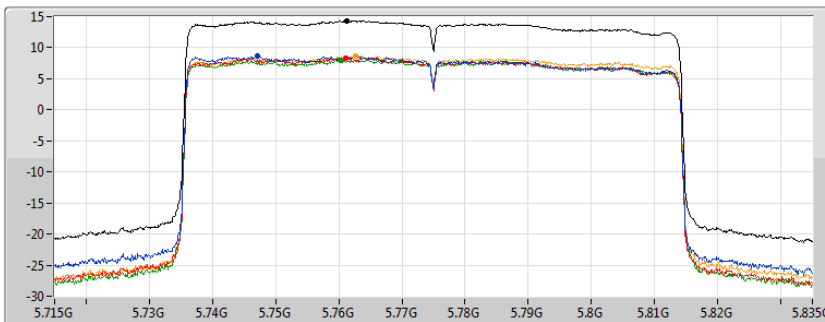
802.11ax HEW80-BF_Nss2,(MCS0)_4TX

PSD

5775MHz

08/10/2019

CF
5.775GHz
Span
120MHz
RBW
500kHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS

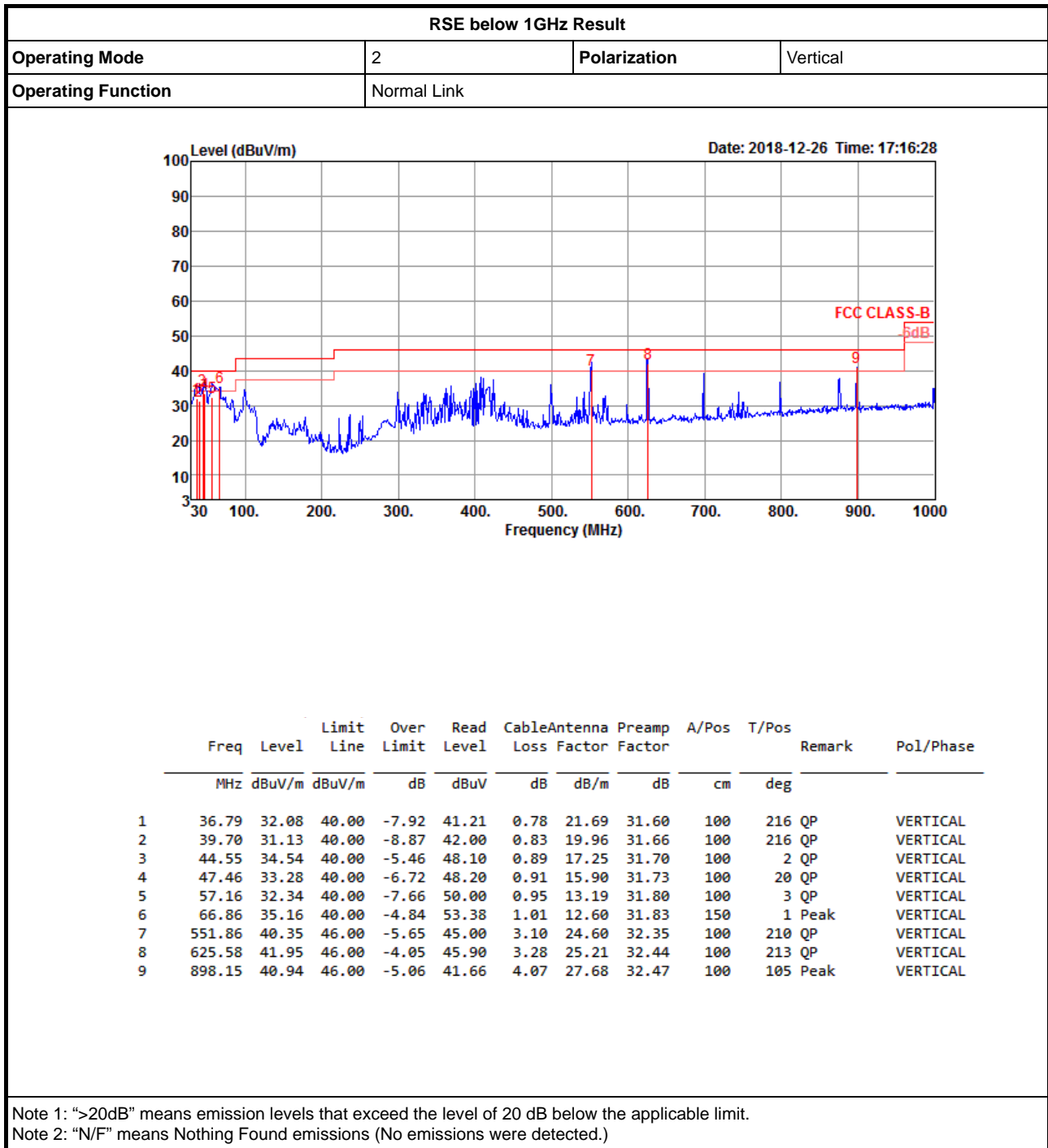


Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.29	14.29	8.59	8.39	8.04	8.66

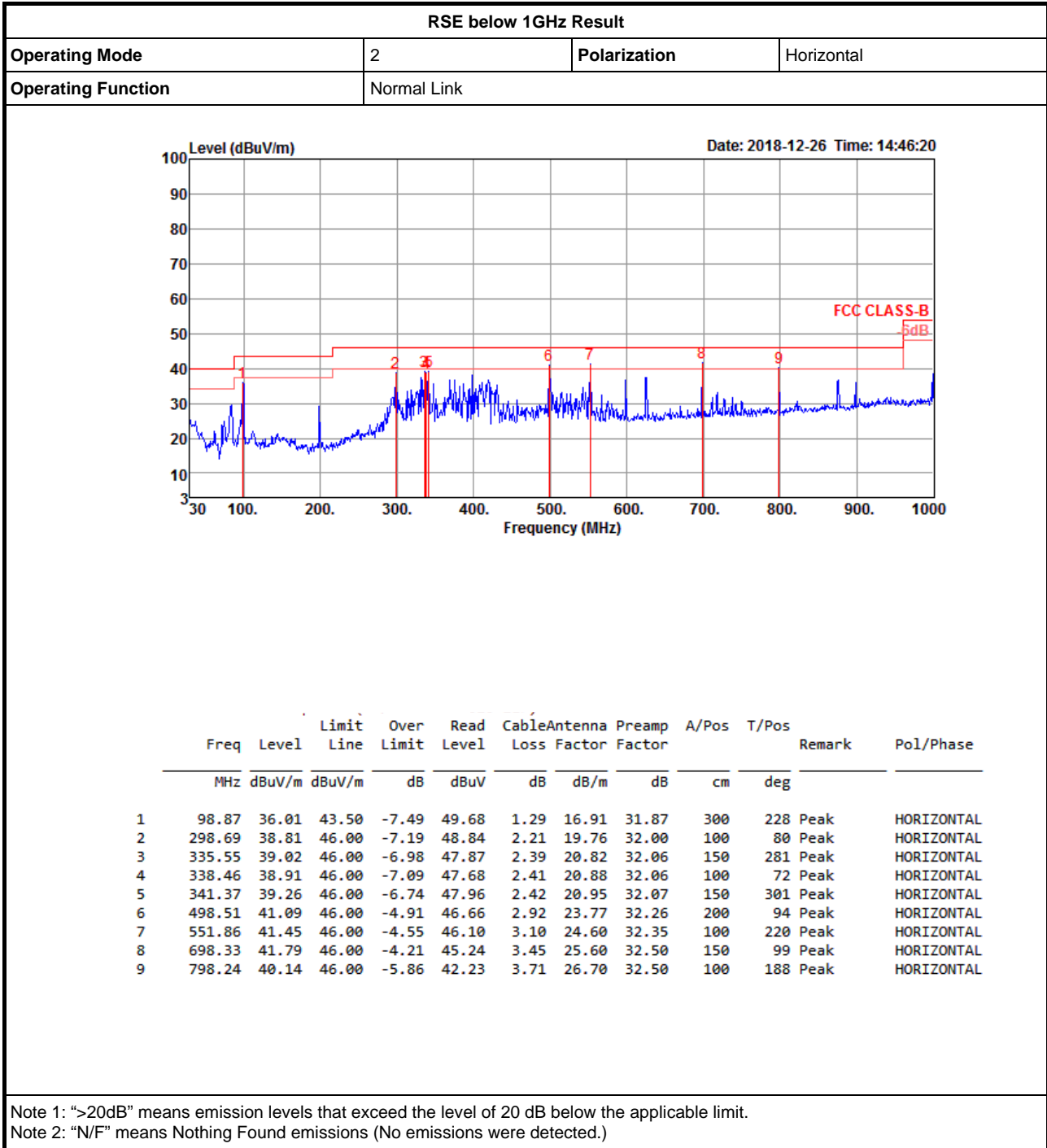


RSE below 1GHz Result





RSE below 1GHz Result





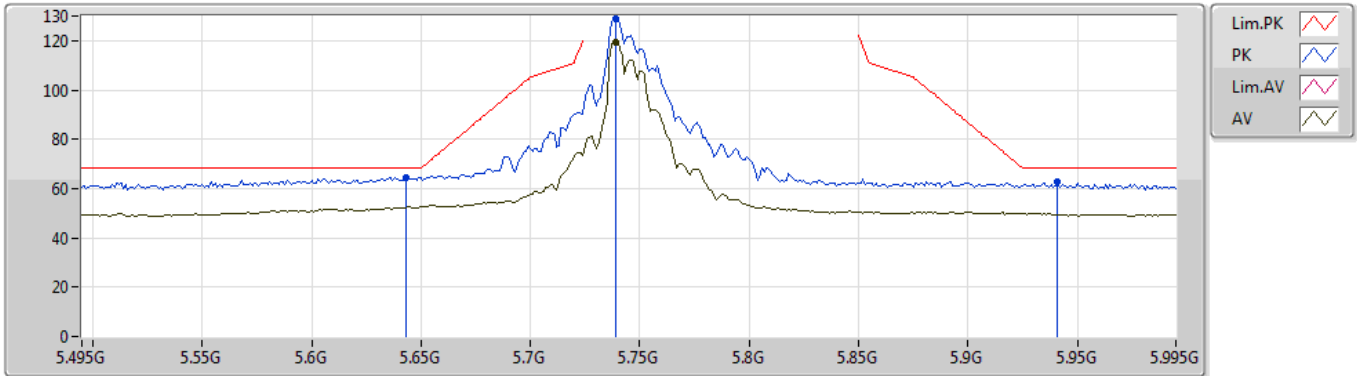
<4T1S>
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	Pass	PK	5.646G	68.18	68.20	-0.02	5.69	3	Vertical	50	2.04	-

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5745MHz_TX



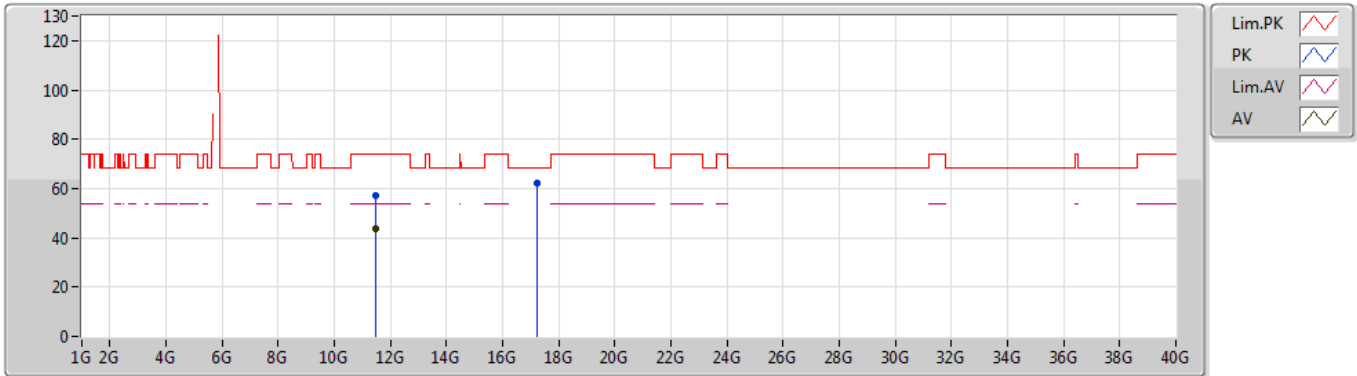
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.643G	64.59	68.20	-3.61	5.68	3	Vertical	23	1.80	-	58.91
PK	5.739G	128.60	Inf	-Inf	5.83	3	Vertical	23	1.80	-	122.77
AV	5.739G	119.53	Inf	-Inf	5.83	3	Vertical	23	1.80	-	113.70
PK	5.941G	62.66	68.20	-5.54	6.88	3	Vertical	23	1.80	-	55.78

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5745MHz_TX



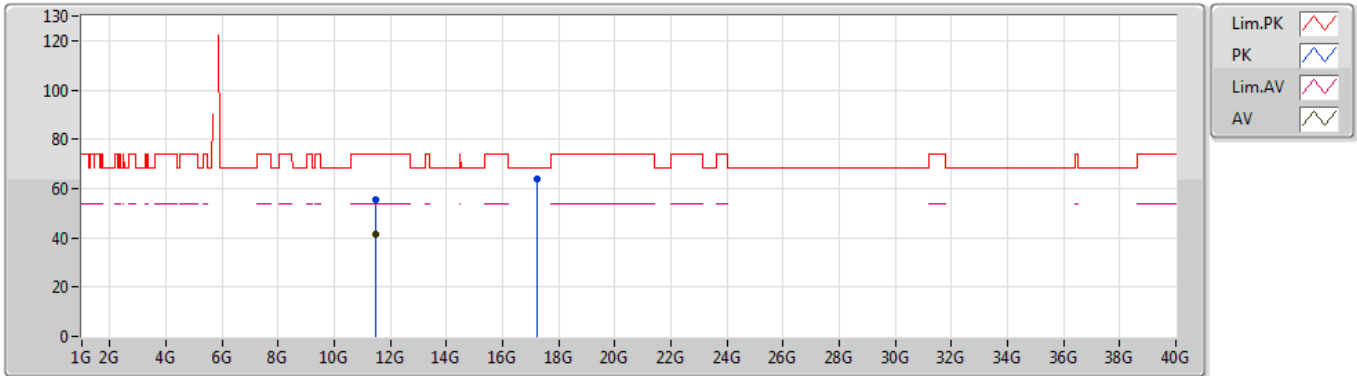
EUT_Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.48996G	57.39	74.00	-16.61	11.93	3	Vertical	163	2.66	-	45.46
AV	11.49072G	43.66	54.00	-10.34	11.93	3	Vertical	163	2.66	-	31.73
PK	17.23416G	62.40	68.20	-5.80	18.05	3	Vertical	287	1.75	-	44.35

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5745MHz_TX



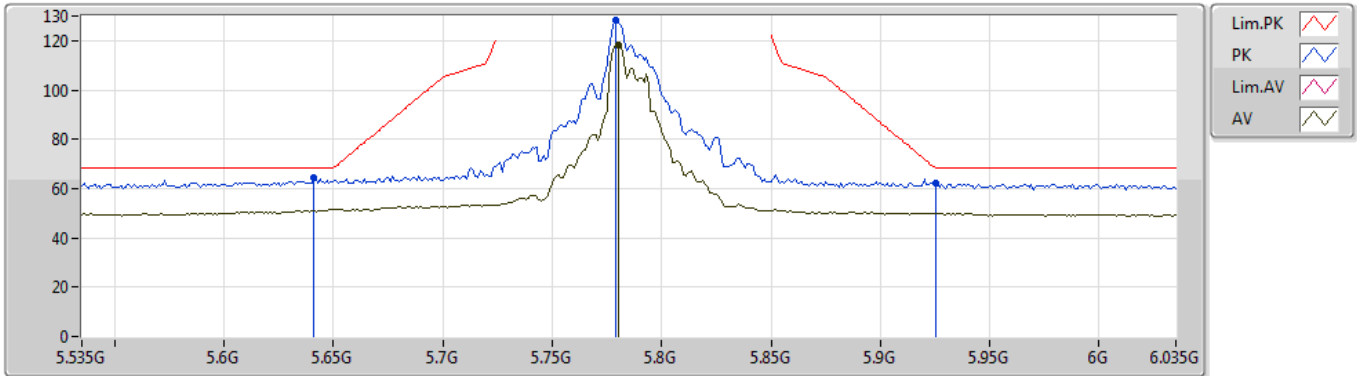
EUT_Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.49096G	55.27	74.00	-18.73	11.93	3	Horizontal	273	2.10	-	43.34
AV	11.49024G	41.52	54.00	-12.48	11.93	3	Horizontal	273	2.10	-	29.59
PK	17.23024G	63.76	68.20	-4.44	18.04	3	Horizontal	168	1.39	-	45.72

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5785MHz_TX



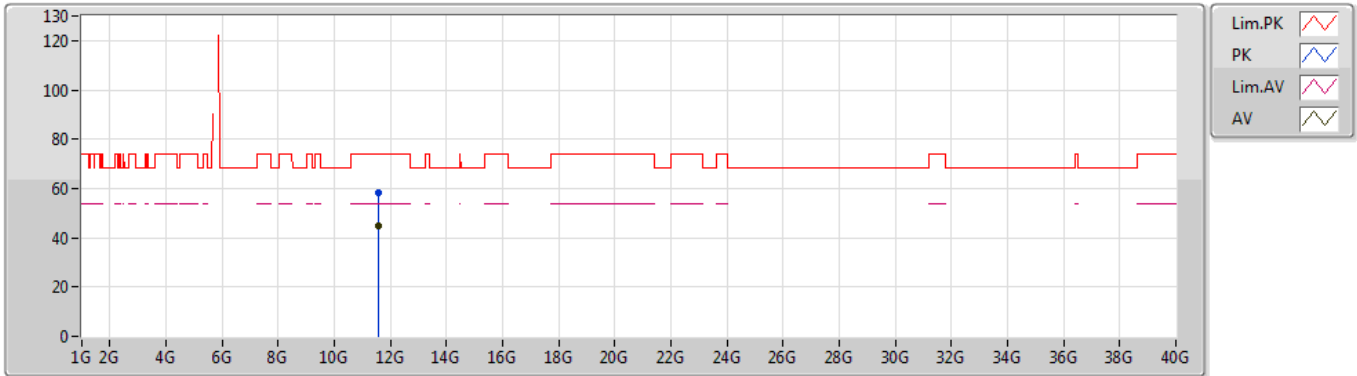
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.641G	64.21	68.20	-3.99	5.68	3	Vertical	336	1.73	-	58.53
PK	5.779G	128.16	Inf	-Inf	5.91	3	Vertical	336	1.73	-	122.25
AV	5.78G	118.37	Inf	-Inf	5.91	3	Vertical	336	1.73	-	112.46
PK	5.925G	62.07	68.20	-6.13	6.81	3	Vertical	336	1.73	-	55.26

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5785MHz_TX



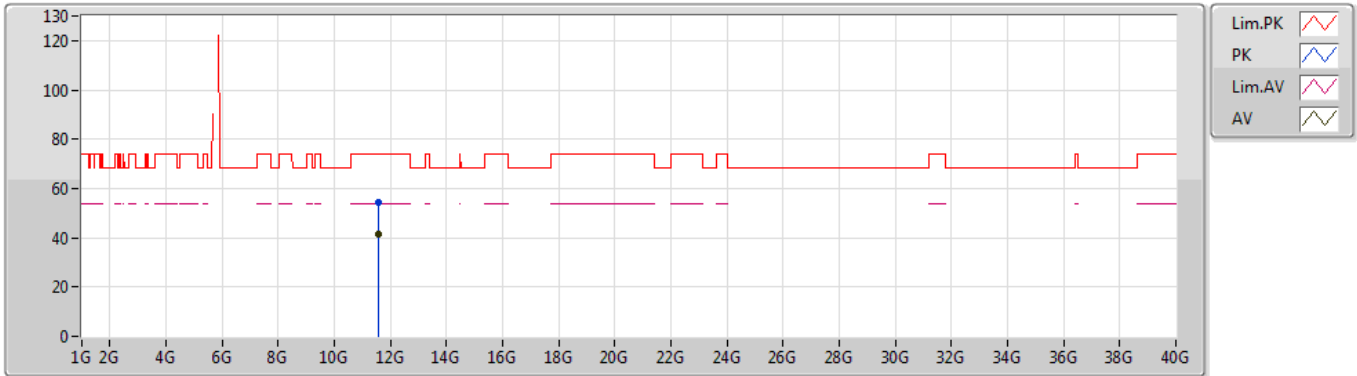
EUT Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.5674G	58.35	74.00	-15.65	11.95	3	Vertical	164	2.60	-	46.40
AV	11.57056G	44.78	54.00	-9.22	11.95	3	Vertical	164	2.60	-	32.83

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5785MHz_TX



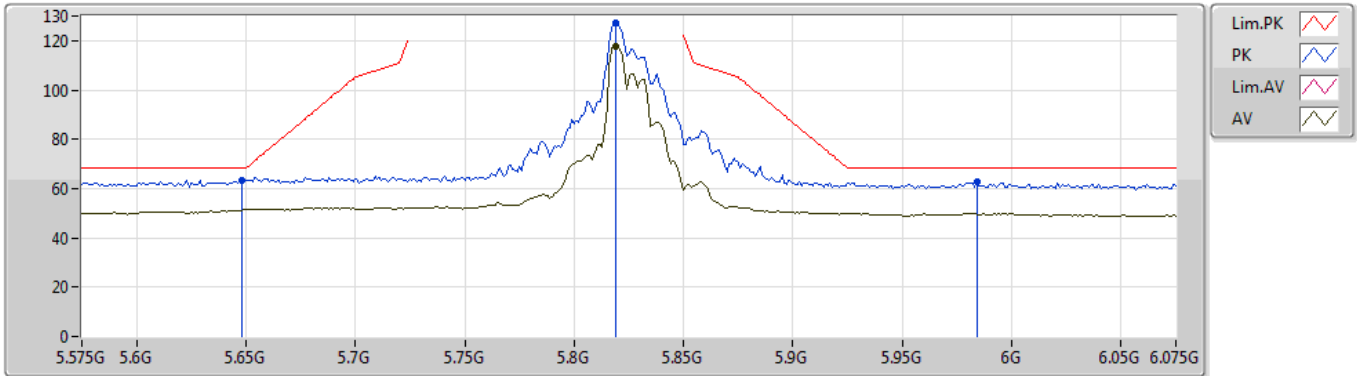
EUT_Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.5726G	54.45	74.00	-19.55	11.95	3	Horizontal	294	2.75	-	42.50
AV	11.56892G	41.36	54.00	-12.64	11.95	3	Horizontal	294	2.75	-	29.41

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5825MHz_TX



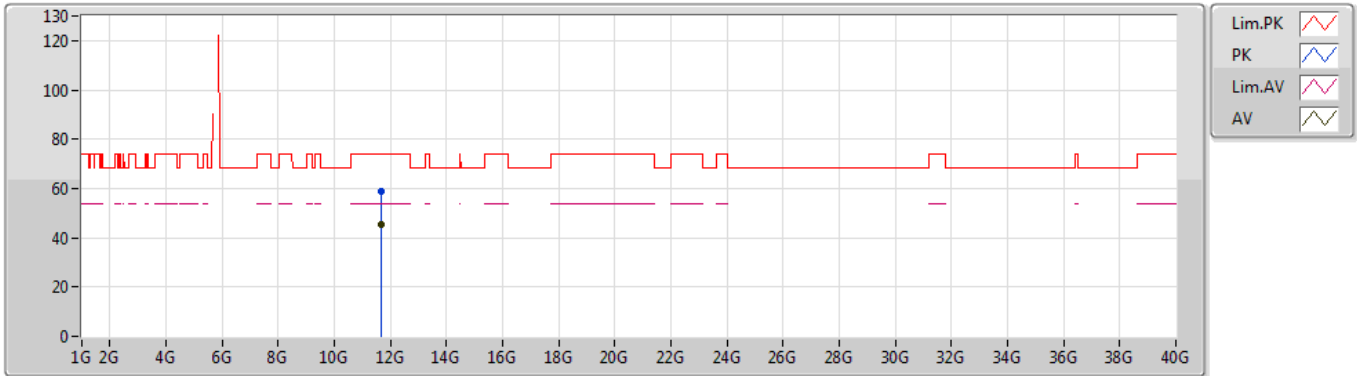
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.648G	63.57	68.20	-4.63	5.69	3	Vertical	334	1.69	-	57.88
PK	5.819G	127.07	Inf	-Inf	6.09	3	Vertical	334	1.69	-	120.98
AV	5.819G	117.90	Inf	-Inf	6.09	3	Vertical	334	1.69	-	111.81
PK	5.984G	62.60	68.20	-5.60	7.07	3	Vertical	334	1.69	-	55.53

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5825MHz_TX



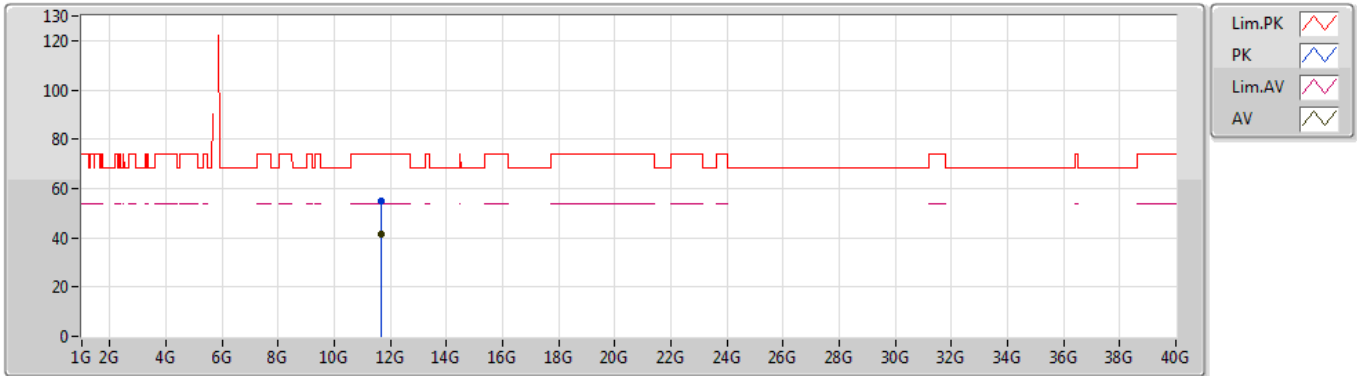
EUT_Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.64764G	58.62	74.00	-15.38	11.99	3	Vertical	311	2.14	-	46.63
AV	11.65056G	45.19	54.00	-8.81	11.99	3	Vertical	311	2.14	-	33.20

802.11a_Nss1,(6Mbps)_4TX

02/10/2019

5825MHz_TX



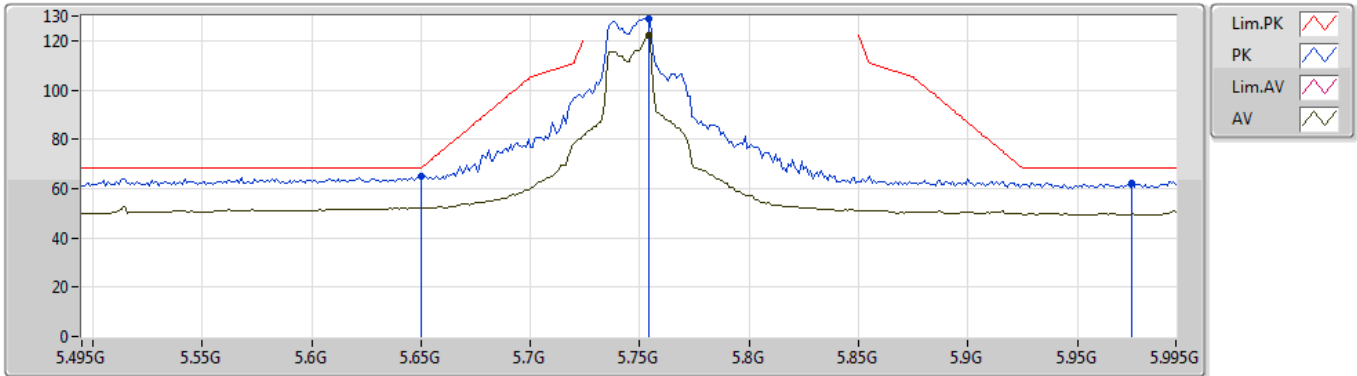
EUT_Z_4TX
Setting 108
01-S-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.6574G	54.70	74.00	-19.30	12.00	3	Horizontal	248	1.26	-	42.70
AV	11.64872G	41.60	54.00	-12.40	11.99	3	Horizontal	248	1.26	-	29.61

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5745MHz_TX



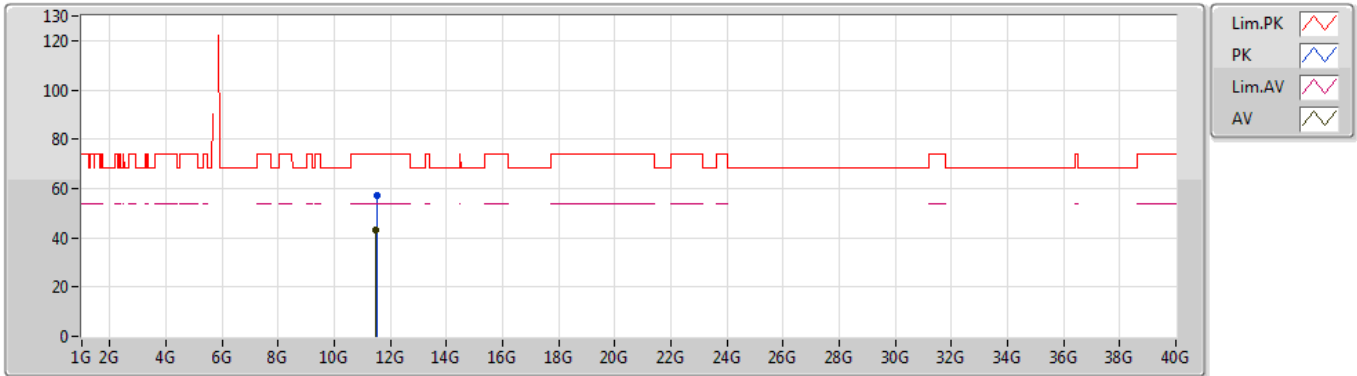
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.65G	64.85	68.20	-3.35	5.69	3	Vertical	16	1.80	-	59.16
PK	5.754G	129.02	Inf	-Inf	5.86	3	Vertical	16	1.80	-	123.16
AV	5.754G	121.98	Inf	-Inf	5.86	3	Vertical	16	1.80	-	116.12
PK	5.975G	62.22	68.20	-5.98	7.05	3	Vertical	16	1.80	-	55.17

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5745MHz_TX



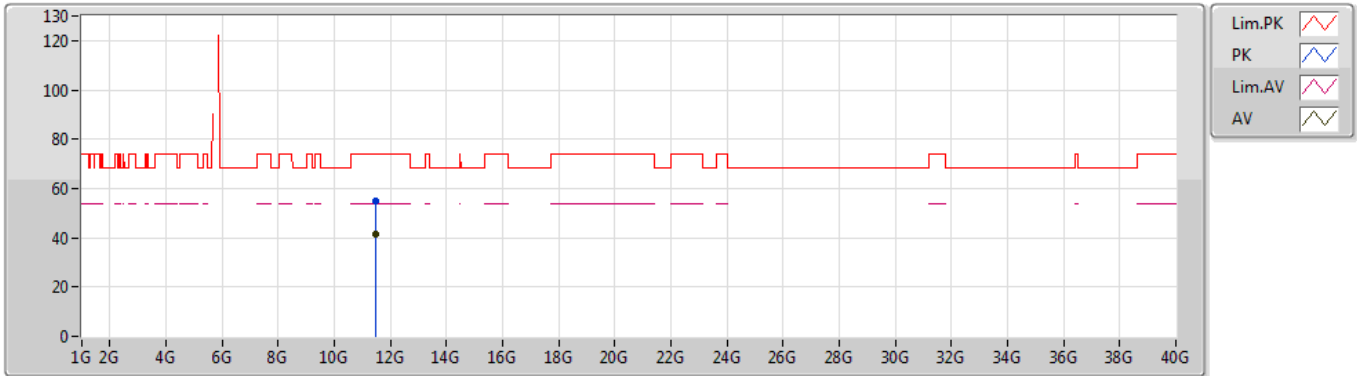
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.50404G	57.32	74.00	-16.68	11.93	3	Vertical	190	2.15	-	45.39
AV	11.49G	43.18	54.00	-10.82	11.93	3	Vertical	190	2.15	-	31.25

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5745MHz_TX



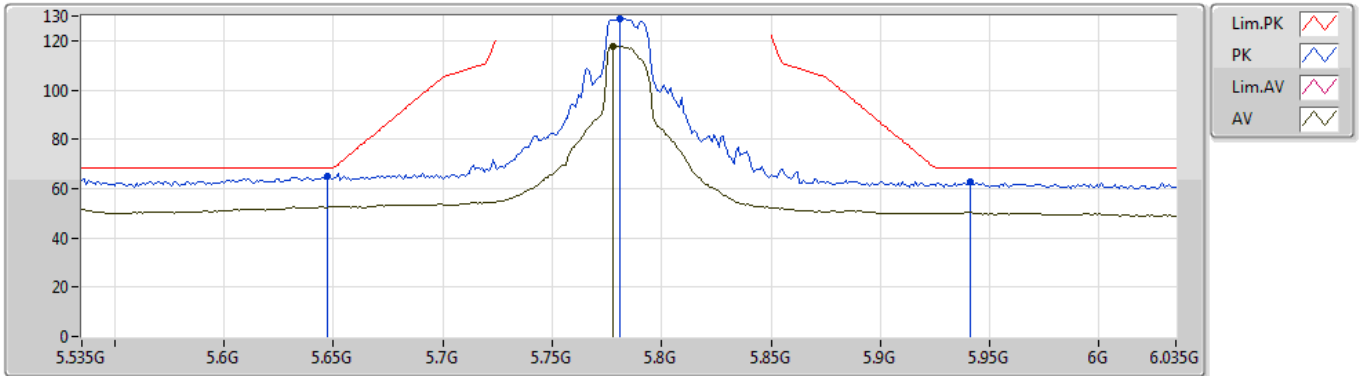
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.48892G	54.89	74.00	-19.11	11.93	3	Horizontal	66	2.99	-	42.96
AV	11.49096G	41.34	54.00	-12.66	11.93	3	Horizontal	66	2.99	-	29.41

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5785MHz_TX



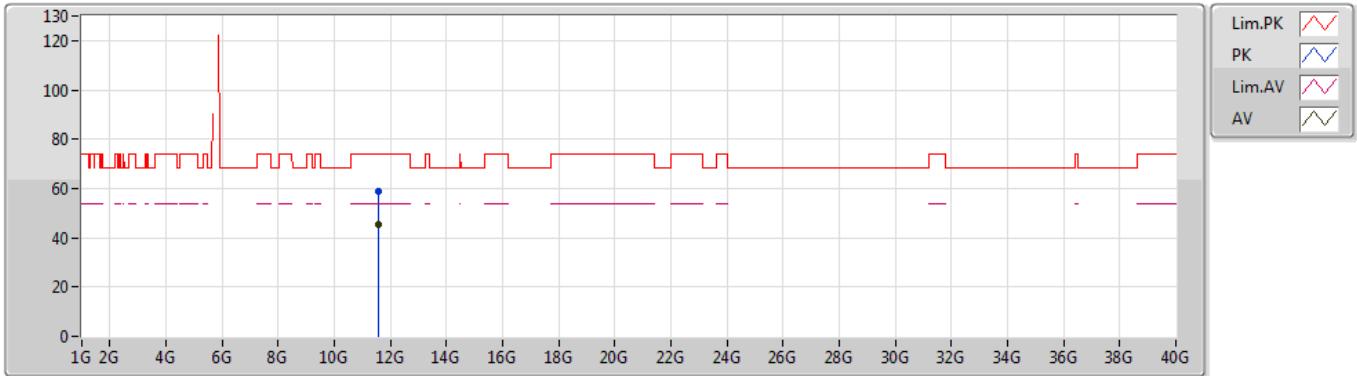
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.647G	64.95	68.20	-3.25	5.69	3	Vertical	355	1.77	-	59.26
PK	5.781G	128.64	Inf	-Inf	5.91	3	Vertical	355	1.77	-	122.73
AV	5.778G	117.84	Inf	-Inf	5.91	3	Vertical	355	1.77	-	111.93
PK	5.941G	62.55	68.20	-5.65	6.88	3	Vertical	355	1.77	-	55.67

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5785MHz_TX



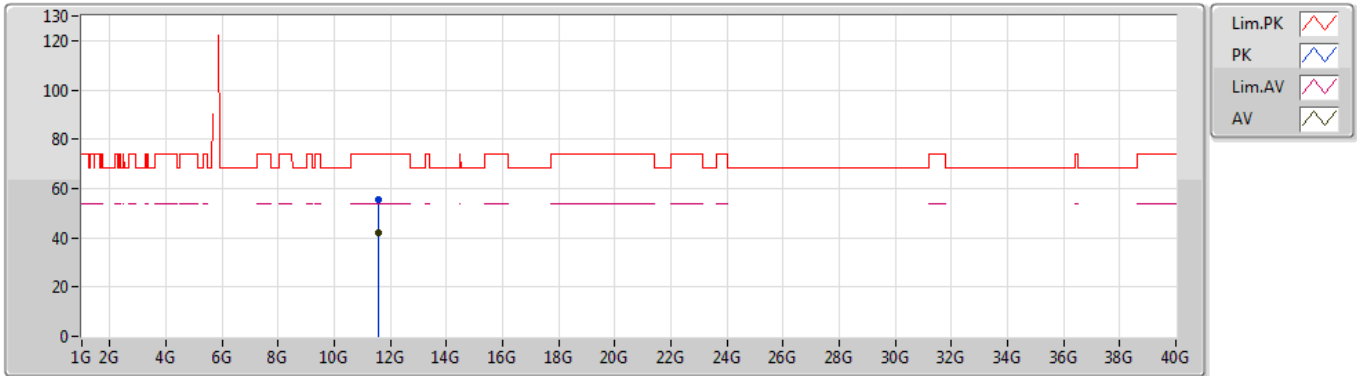
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.56352G	58.61	74.00	-15.39	11.96	3	Vertical	152	2.14	-	46.65
AV	11.56754G	45.23	54.00	-8.77	11.95	3	Vertical	152	2.14	-	33.28

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5785MHz_TX



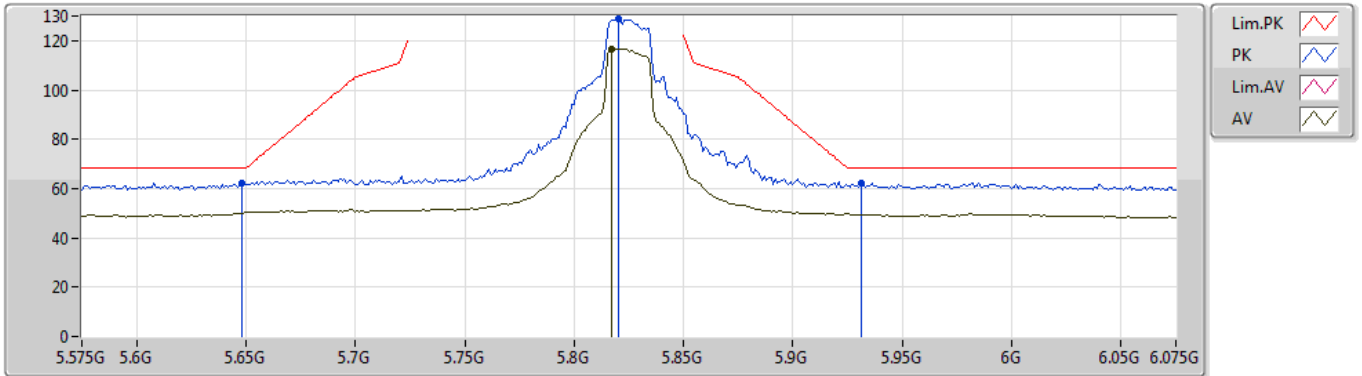
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.56346G	55.38	74.00	-18.62	11.96	3	Horizontal	131	2.55	-	43.42
AV	11.57696G	41.95	54.00	-12.05	11.97	3	Horizontal	131	2.55	-	29.98

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5825MHz_TX



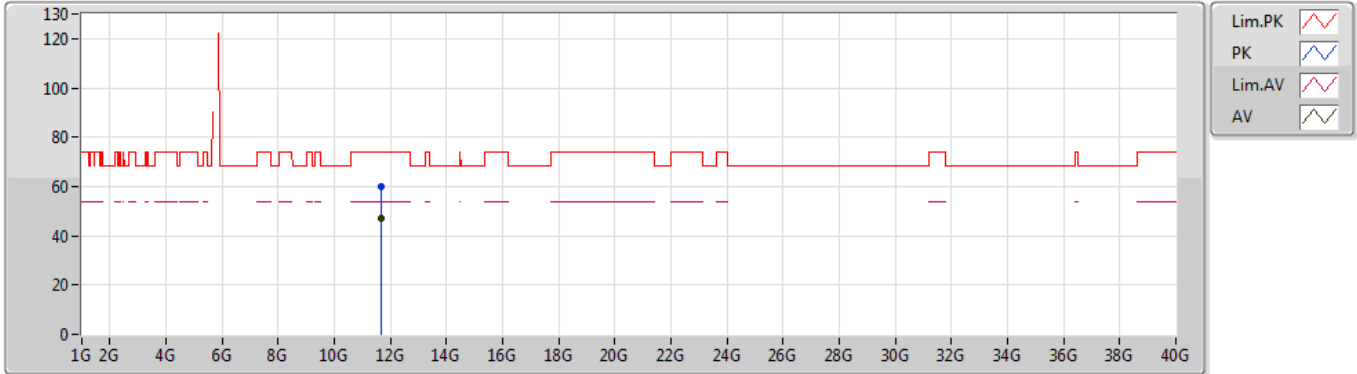
EUT_Z_4TX
Setting 108
01-S-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.648G	62.08	68.20	-6.12	5.69	3	Vertical	51	2.44	-	56.39
PK	5.82G	128.64	Inf	-Inf	6.10	3	Vertical	51	2.44	-	122.54
AV	5.817G	116.53	Inf	-Inf	6.08	3	Vertical	51	2.44	-	110.45
PK	5.931G	62.43	68.20	-5.77	6.83	3	Vertical	51	2.44	-	55.60

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5825MHz_TX



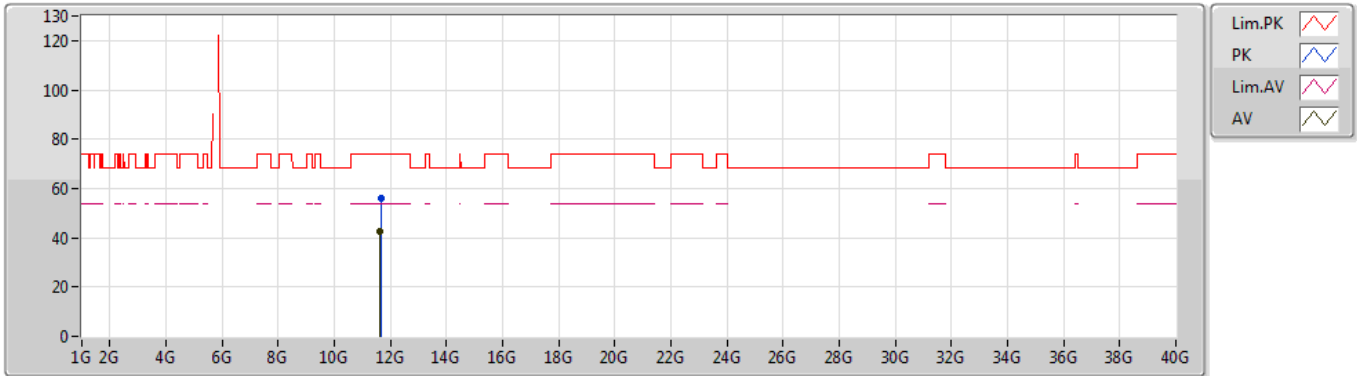
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.64862G	60.15	74.00	-13.85	11.99	3	Vertical	214	2.19	-	48.16
AV	11.64892G	47.09	54.00	-6.91	11.99	3	Vertical	214	2.19	-	35.10

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

07/10/2019

5825MHz_TX



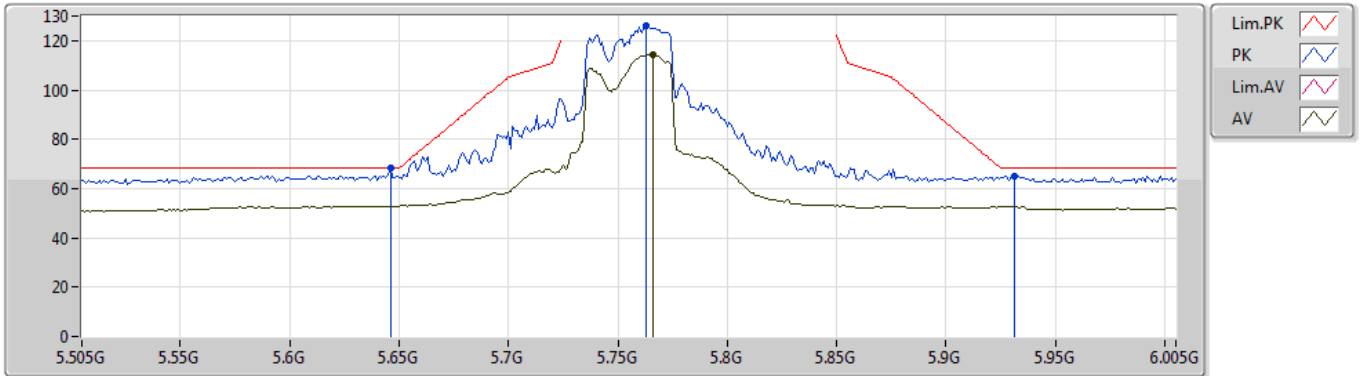
EUT Z_4TX
Setting 108
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.64856G	56.25	74.00	-17.75	11.99	3	Horizontal	275	2.82	-	44.26
AV	11.64652G	42.65	54.00	-11.35	11.99	3	Horizontal	275	2.82	-	30.66

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5755MHz_TX



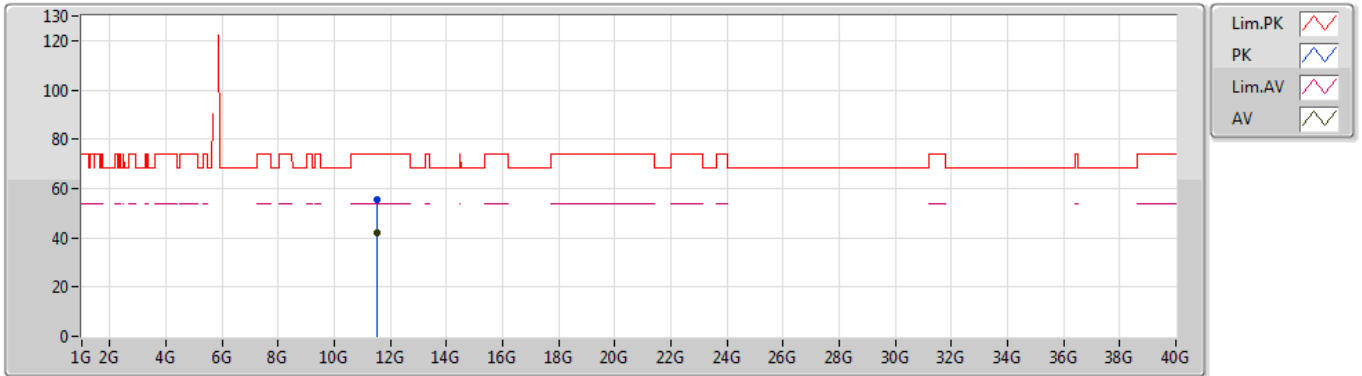
EUT_Z_4TX
Setting 98
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.646G	68.18	68.20	-0.02	5.69	3	Vertical	50	2.04	-	62.49
PK	5.763G	125.99	Inf	-Inf	5.89	3	Vertical	50	2.04	-	120.10
AV	5.766G	114.35	Inf	-Inf	5.89	3	Vertical	50	2.04	-	108.46
PK	5.931G	65.04	68.20	-3.16	6.83	3	Vertical	50	2.04	-	58.21

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5755MHz_TX



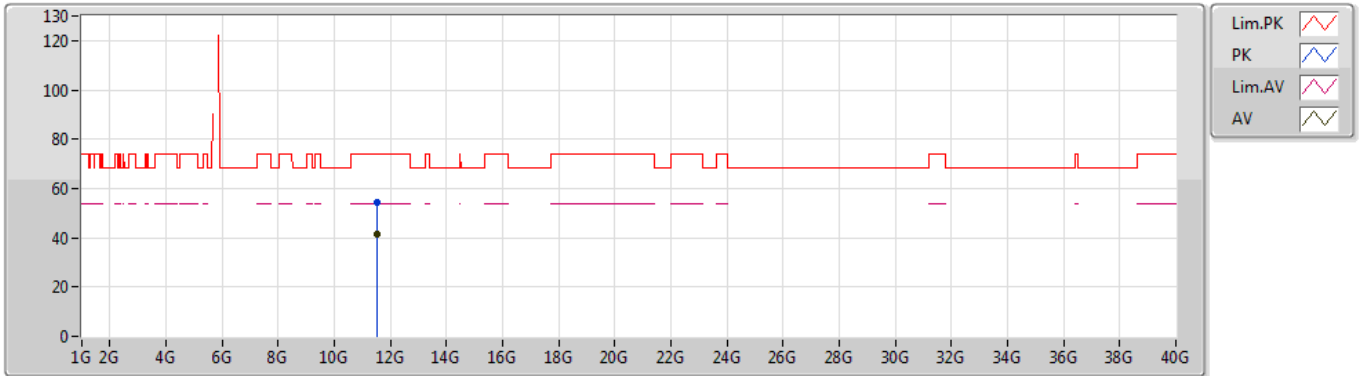
EUT_Z_4TX
Setting 98
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.50742G	55.66	74.00	-18.34	11.93	3	Vertical	149	2.07	-	43.73
AV	11.51234G	42.30	54.00	-11.70	11.93	3	Vertical	149	2.07	-	30.37

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5755MHz_TX



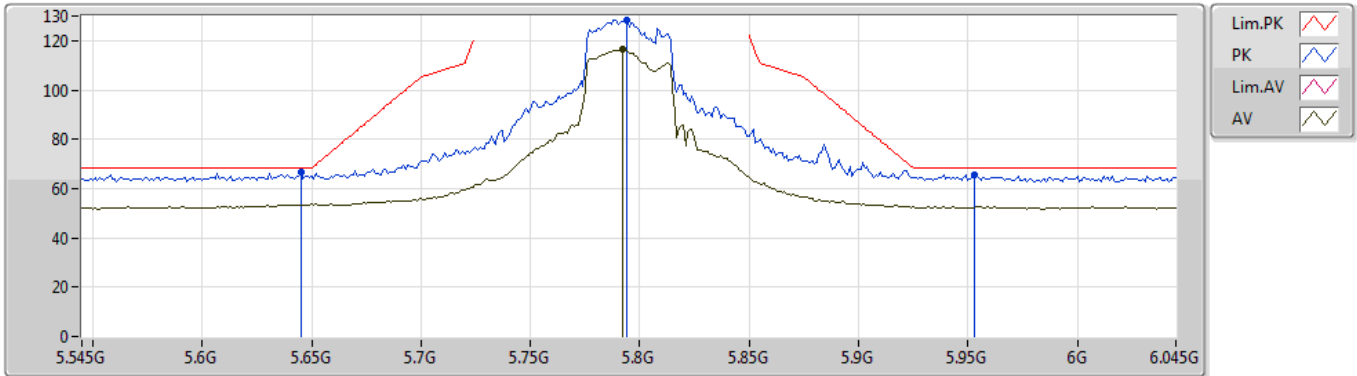
EUT Z_4TX
Setting 98
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.52026G	54.14	74.00	-19.86	11.93	3	Horizontal	124	1.11	-	42.21
AV	11.52002G	41.19	54.00	-12.81	11.93	3	Horizontal	124	1.11	-	29.26

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5795MHz_TX



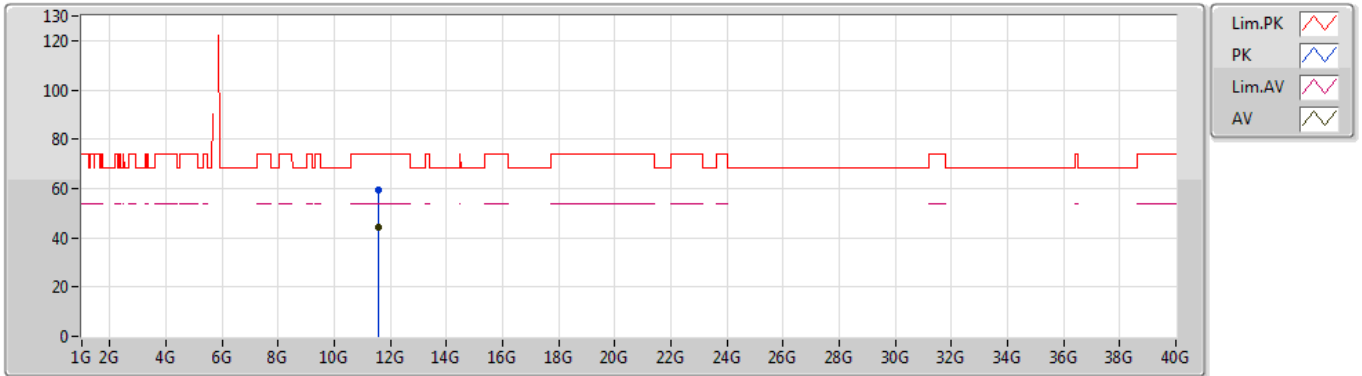
EUT_Z_4TX
Setting 100
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.645G	66.69	68.20	-1.51	5.68	3	Vertical	308	1.84	-	61.01
PK	5.794G	128.34	Inf	-Inf	5.95	3	Vertical	308	1.84	-	122.39
AV	5.792G	116.30	Inf	-Inf	5.94	3	Vertical	308	1.84	-	110.36
PK	5.953G	65.67	68.20	-2.53	6.94	3	Vertical	308	1.84	-	58.73

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5795MHz_TX



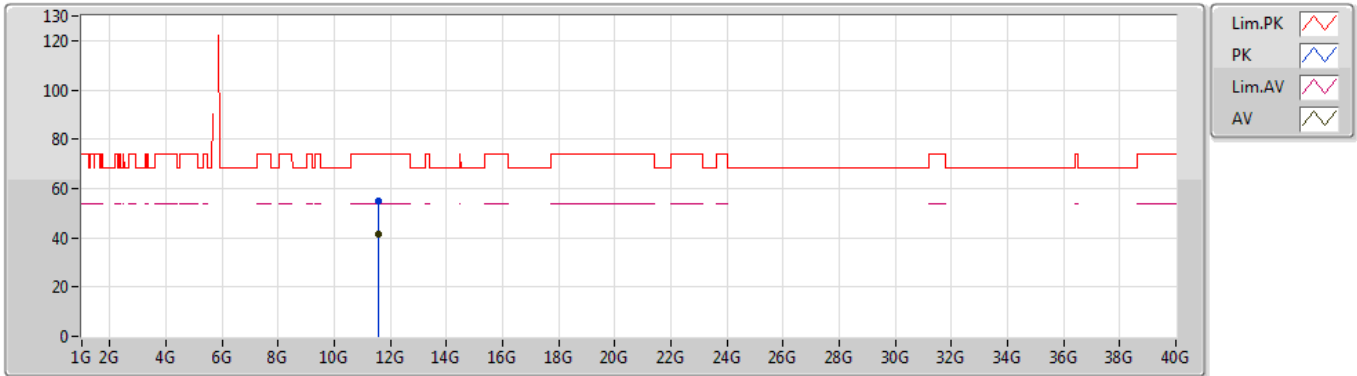
EUT Z_4TX
Setting 100
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.59G	59.48	74.00	-14.52	11.97	3	Vertical	183	2.18	-	47.51
AV	11.59114G	44.09	54.00	-9.91	11.97	3	Vertical	183	2.18	-	32.12

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

07/10/2019

5795MHz_TX



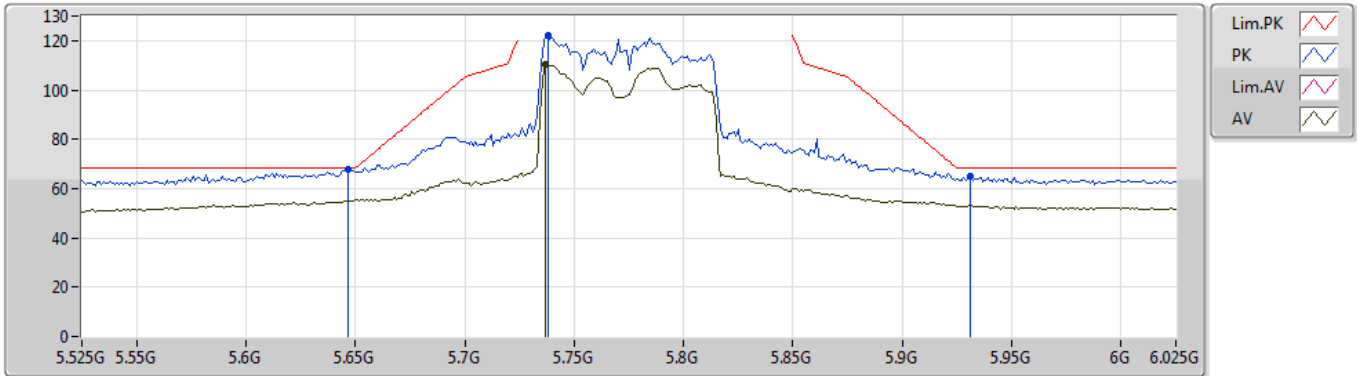
EUT Z_4TX
Setting 100
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.59254G	55.07	74.00	-18.93	11.97	3	Horizontal	42	2.76	-	43.10
AV	11.58952G	41.60	54.00	-12.40	11.97	3	Horizontal	42	2.76	-	29.63

802.11ax HEW80-BF_Nss1,(MCS0)_4TX

07/10/2019

5775MHz_TX



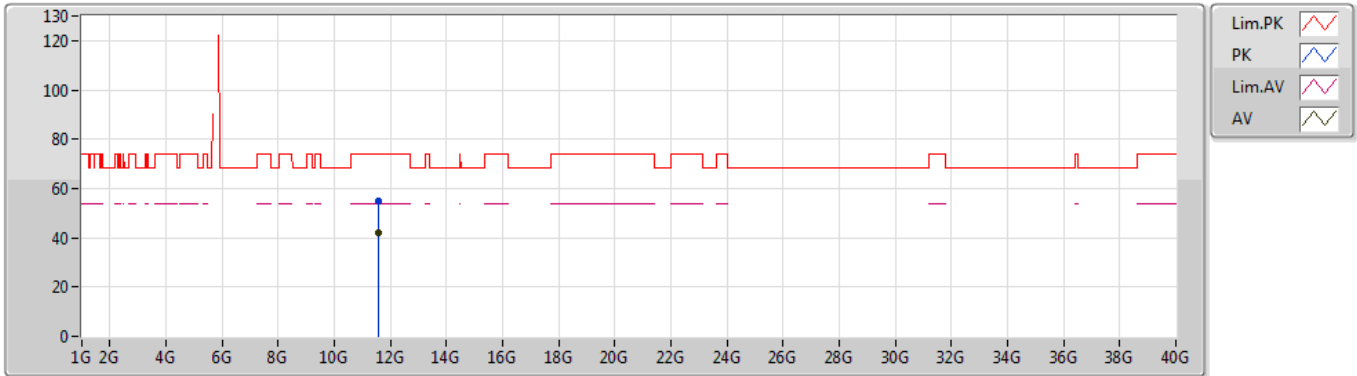
EUT_Z_4TX
 Setting 90
 01-J-5-13
 FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.647G	67.61	68.20	-0.59	5.69	3	Vertical	45	1.64	-	61.92
PK	5.738G	122.06	Inf	-Inf	5.83	3	Vertical	45	1.64	-	116.23
AV	5.737G	110.15	Inf	-Inf	5.81	3	Vertical	45	1.64	-	104.34
PK	5.931G	64.74	68.20	-3.46	6.83	3	Vertical	45	1.64	-	57.91

802.11ax HEW80-BF_Nss1,(MCS0)_4TX

07/10/2019

5775MHz_TX



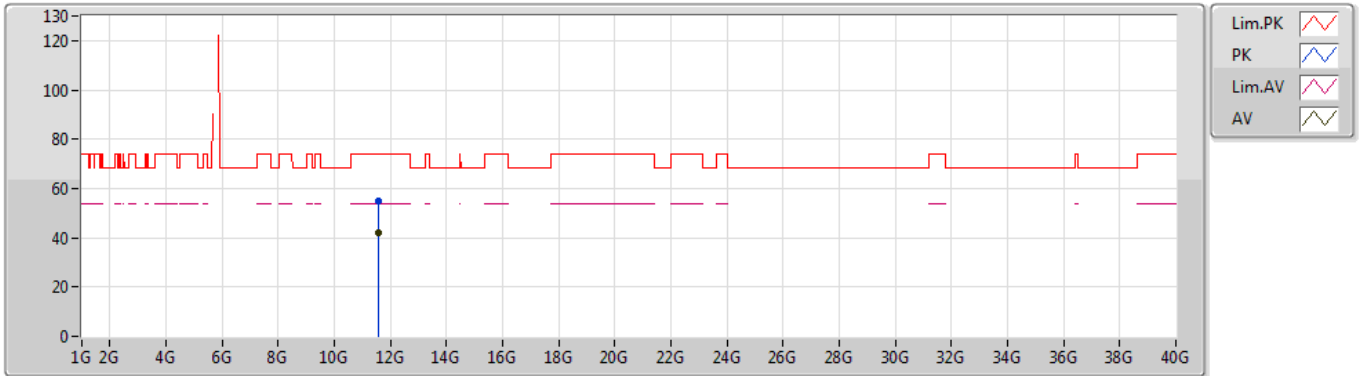
EUT Z_4TX
Setting 90
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.55672G	55.07	74.00	-18.93	11.96	3	Vertical	349	1.50	-	43.11
AV	11.55654G	42.10	54.00	-11.90	11.96	3	Vertical	349	1.50	-	30.14

802.11ax HEW80-BF_Nss1,(MCS0)_4TX

07/10/2019

5775MHz_TX



EUT Z_4TX
 Setting 90
 01-J-5
 FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.55606G	54.99	74.00	-19.01	11.96	3	Horizontal	85	2.95	-	43.03
AV	11.5581G	42.20	54.00	-11.80	11.96	3	Horizontal	85	2.95	-	30.24



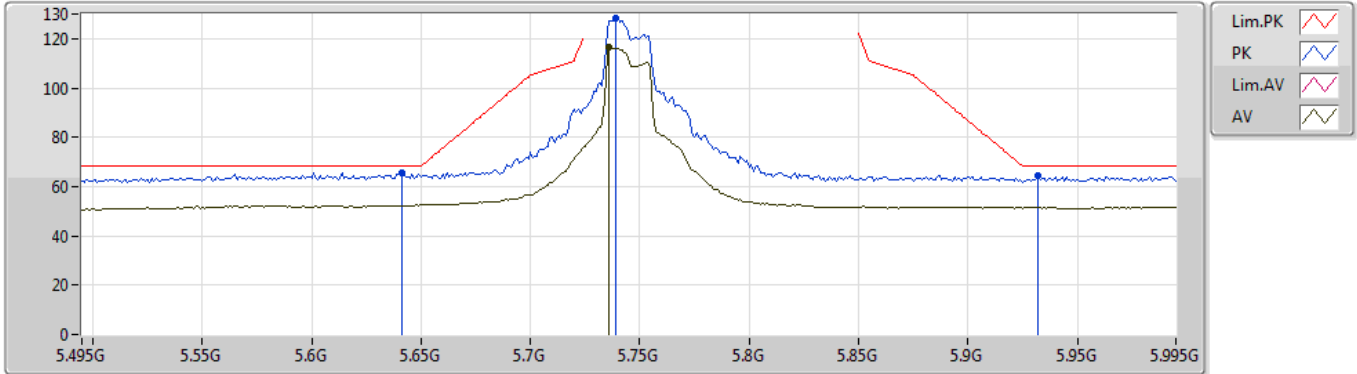
<4T2S>
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	Pass	PK	5.642G	67.72	68.20	-0.48	5.68	3	Vertical	31	1.74	-

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5745MHz_TX



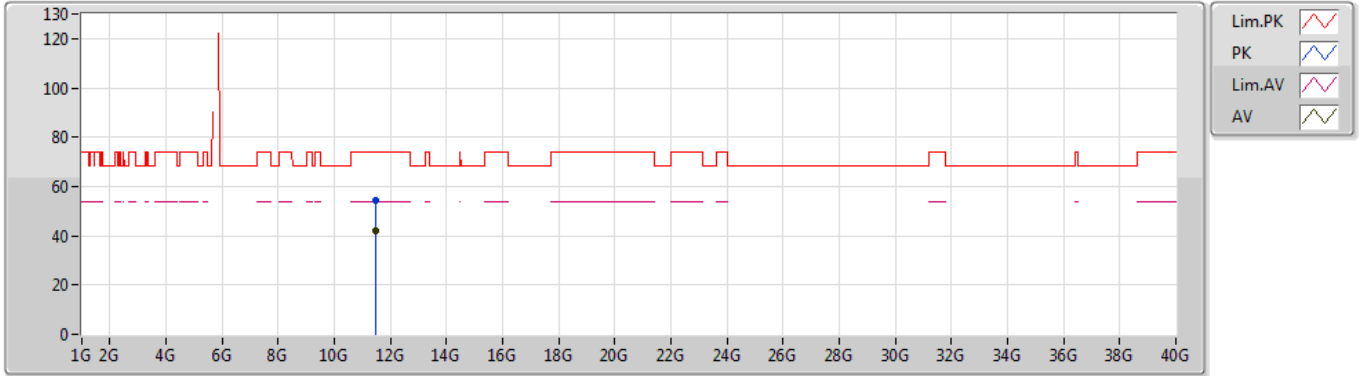
EUT_Z_4TX
Setting 102
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.641G	65.48	68.20	-2.72	5.68	3	Vertical	46	1.88	-	59.80
PK	5.739G	128.36	Inf	-Inf	5.83	3	Vertical	46	1.88	-	122.53
AV	5.736G	116.39	Inf	-Inf	5.81	3	Vertical	46	1.88	-	110.58
PK	5.932G	64.46	68.20	-3.74	6.84	3	Vertical	46	1.88	-	57.62

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5745MHz_TX



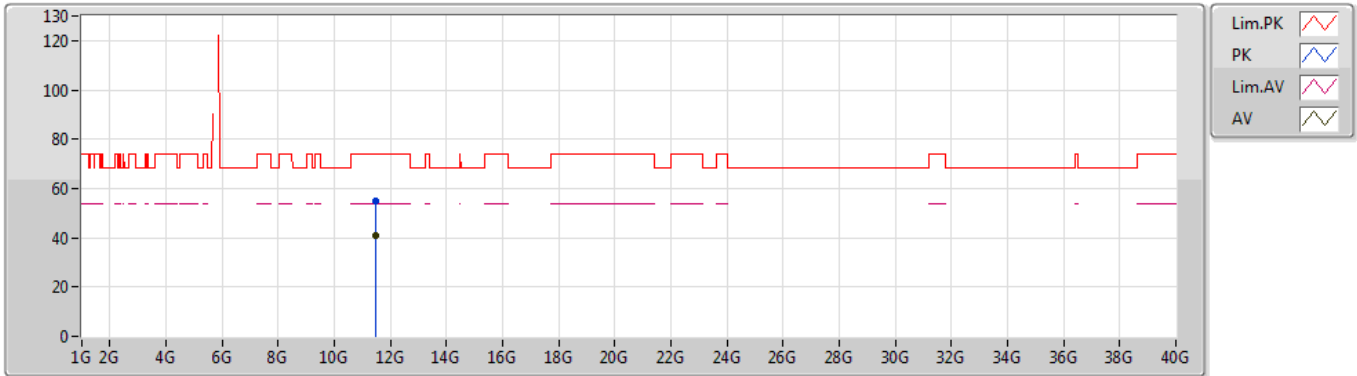
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.48958G	54.59	74.00	-19.41	11.93	3	Vertical	36	1.22	-	42.66
AV	11.48976G	41.79	54.00	-12.21	11.93	3	Vertical	36	1.22	-	29.86

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5745MHz_TX



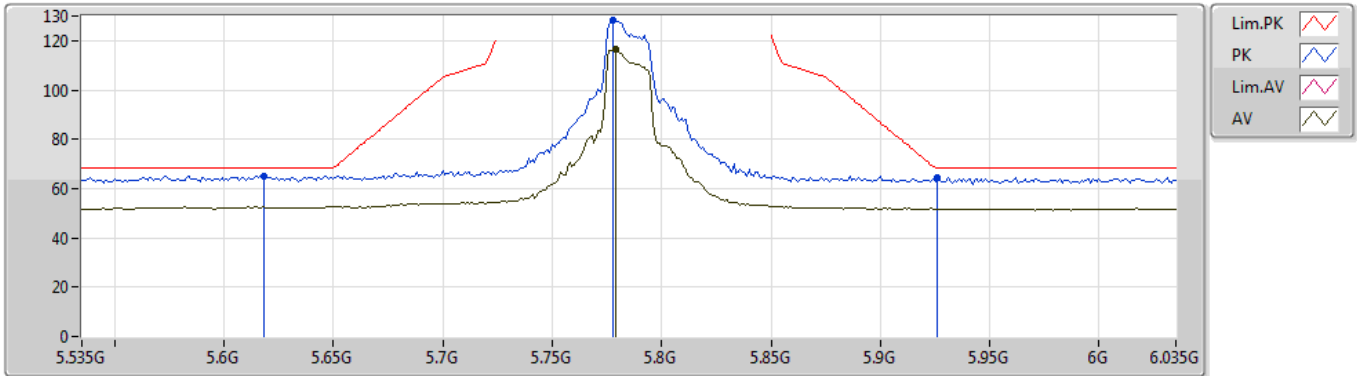
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.47524G	54.68	74.00	-19.32	11.93	3	Horizontal	53	1.90	-	42.75
AV	11.4861G	41.07	54.00	-12.93	11.93	3	Horizontal	53	1.90	-	29.14

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5785MHz_TX



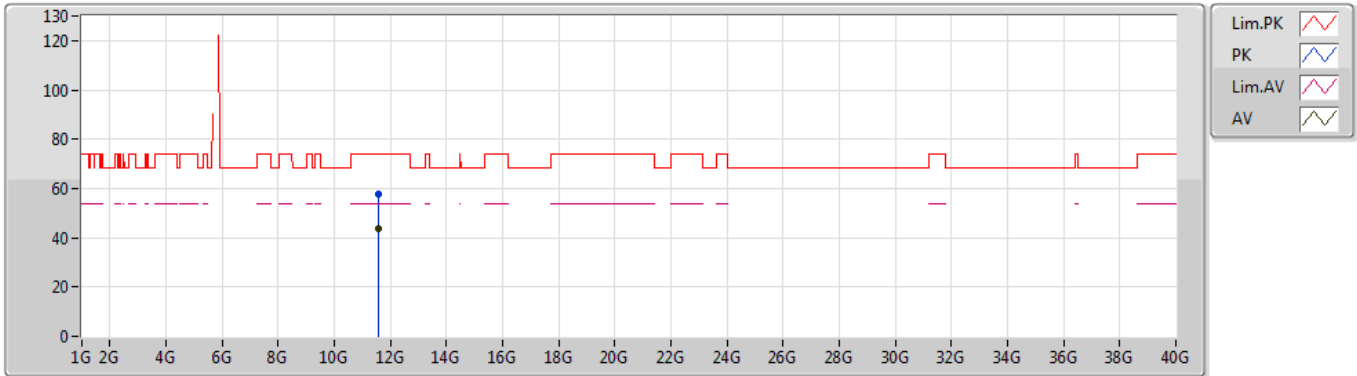
EUT_Z_4TX
Setting 102
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.618G	65.18	68.20	-3.02	5.66	3	Vertical	1	2.02	-	59.52
PK	5.778G	128.30	Inf	-Inf	5.91	3	Vertical	1	2.02	-	122.39
AV	5.779G	116.38	Inf	-Inf	5.91	3	Vertical	1	2.02	-	110.47
PK	5.926G	64.29	68.20	-3.91	6.81	3	Vertical	1	2.02	-	57.48

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5785MHz_TX



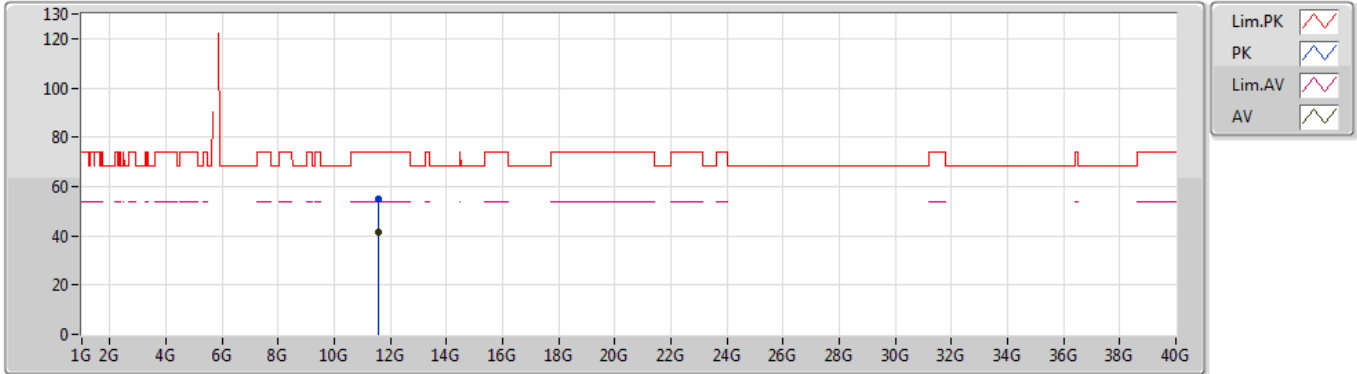
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.5742G	57.58	74.00	-16.42	11.95	3	Vertical	150	2.05	-	45.63
AV	11.57084G	43.62	54.00	-10.38	11.95	3	Vertical	150	2.05	-	31.67

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5785MHz_TX



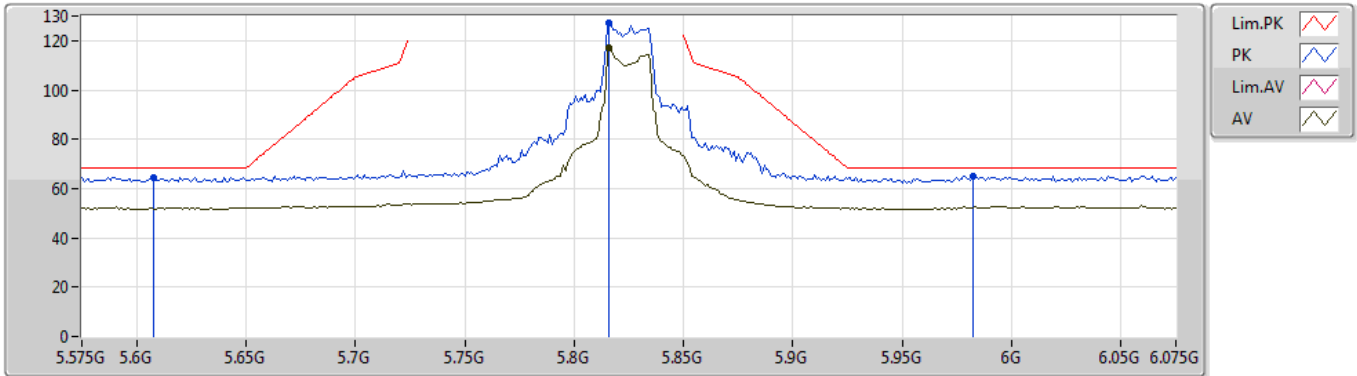
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.57678G	54.99	74.00	-19.01	11.96	3	Horizontal	256	1.50	-	43.03
AV	11.585G	41.51	54.00	-12.49	11.97	3	Horizontal	256	1.50	-	29.54

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5825MHz_TX



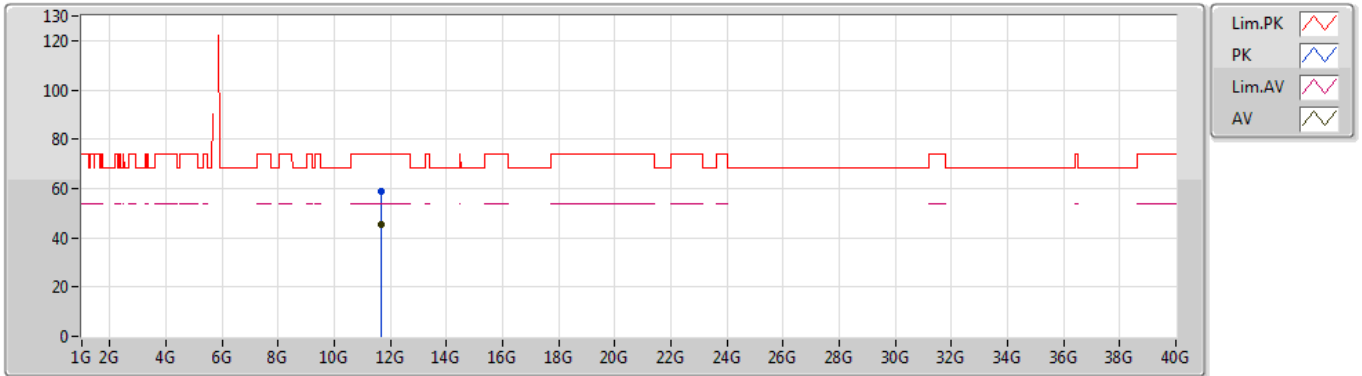
EUT_Z_4TX
Setting 102
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.608G	64.64	68.20	-3.56	5.65	3	Vertical	31	1.94	-	58.99
PK	5.816G	127.19	Inf	-Inf	6.09	3	Vertical	31	1.94	-	121.10
AV	5.816G	116.84	Inf	-Inf	6.09	3	Vertical	31	1.94	-	110.75
PK	5.982G	65.00	68.20	-3.20	7.07	3	Vertical	31	1.94	-	57.93

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5825MHz_TX



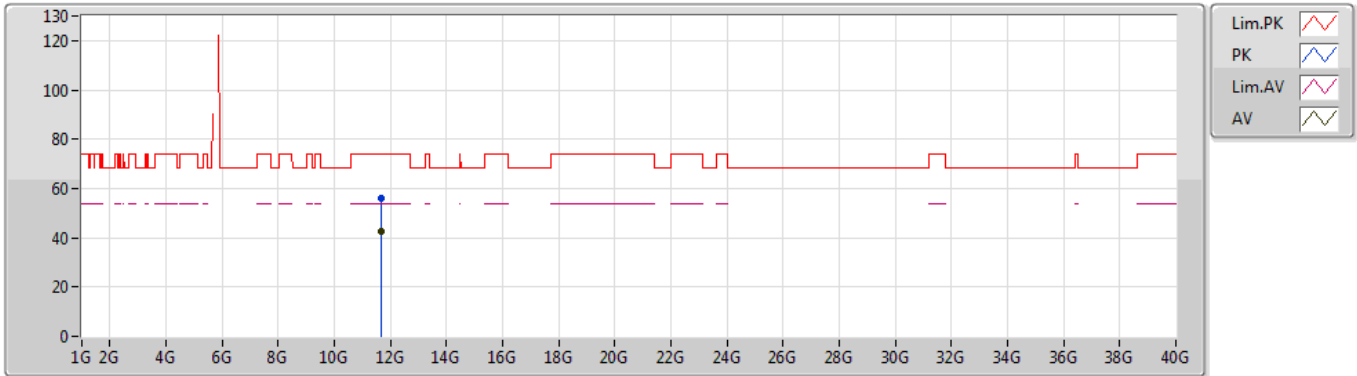
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.64832G	58.62	74.00	-15.38	11.99	3	Vertical	183	2.97	-	46.63
AV	11.64784G	45.56	54.00	-8.44	11.99	3	Vertical	183	2.97	-	33.57

802.11ax HEW20-BF_Nss2,(MCS0)_4TX

07/10/2019

5825MHz_TX



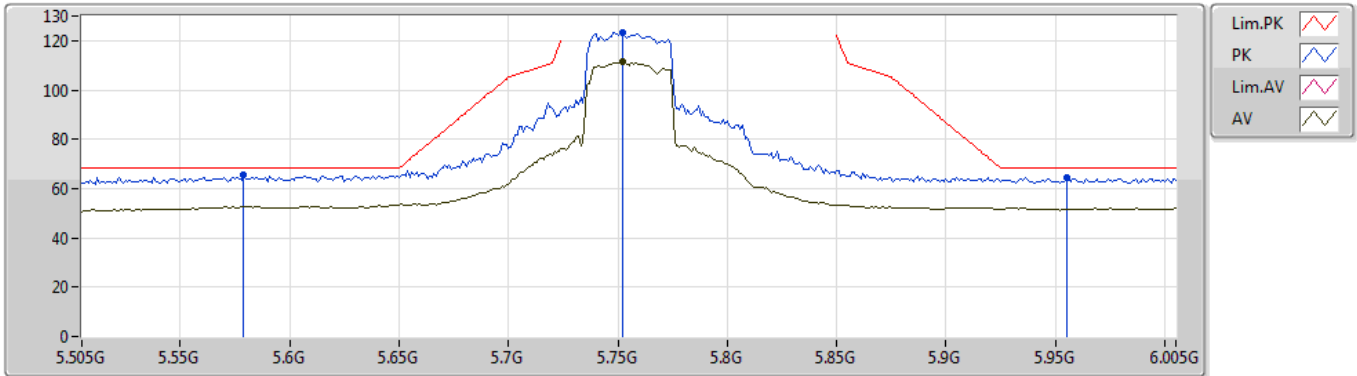
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.65276G	55.93	74.00	-18.07	11.99	3	Horizontal	131	2.07	-	43.94
AV	11.64916G	42.43	54.00	-11.57	11.99	3	Horizontal	131	2.07	-	30.44

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5755MHz_TX



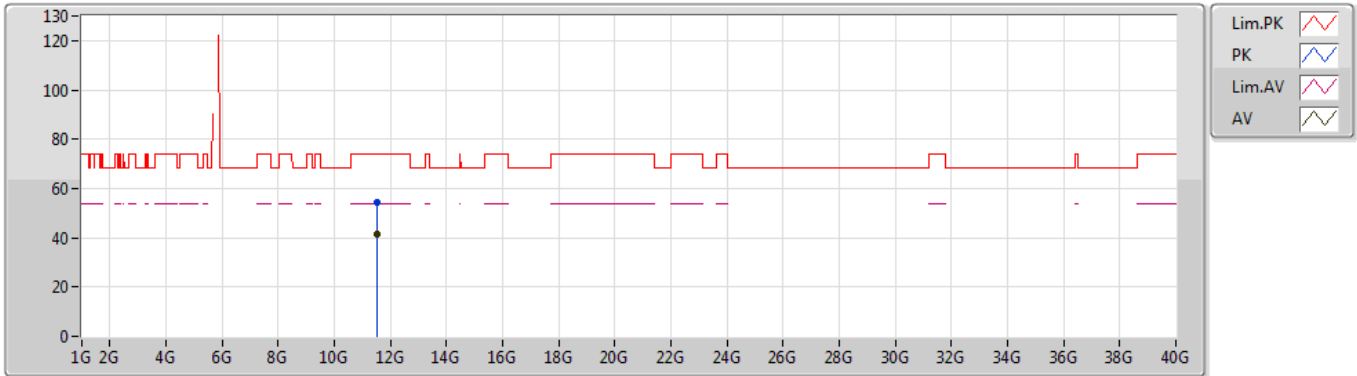
EUT_Z_4TX
Setting 100
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.579G	65.62	68.20	-2.58	5.58	3	Vertical	11	1.98	-	60.04
PK	5.752G	123.36	Inf	-Inf	5.85	3	Vertical	11	1.98	-	117.51
AV	5.752G	111.52	Inf	-Inf	5.85	3	Vertical	11	1.98	-	105.67
PK	5.955G	64.63	68.20	-3.57	6.95	3	Vertical	11	1.98	-	57.68

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5755MHz_TX



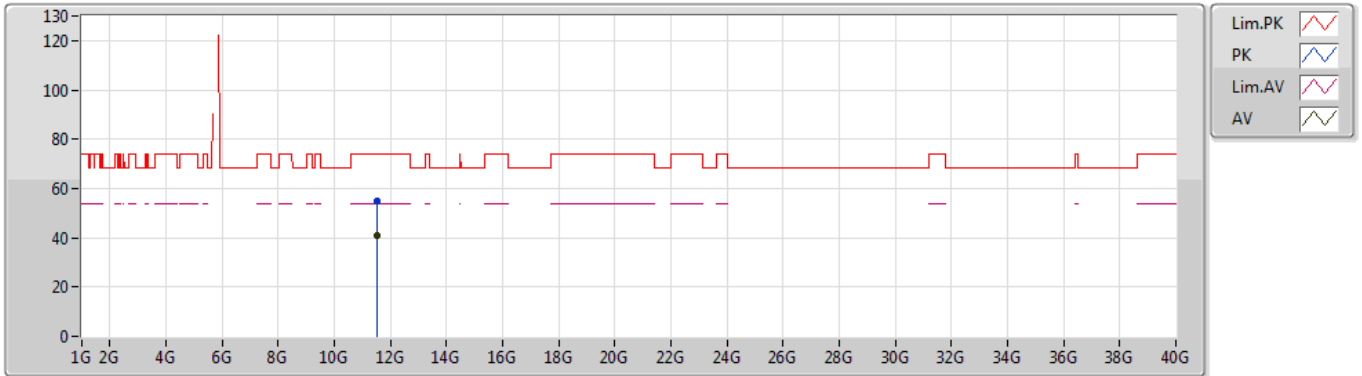
EUT Z_4TX
 Setting 100
 01-J-5
 FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.5143G	54.54	74.00	-19.46	11.93	3	Vertical	296	2.04	-	42.61
AV	11.5184G	41.26	54.00	-12.74	11.93	3	Vertical	296	2.04	-	29.33

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5755MHz_TX



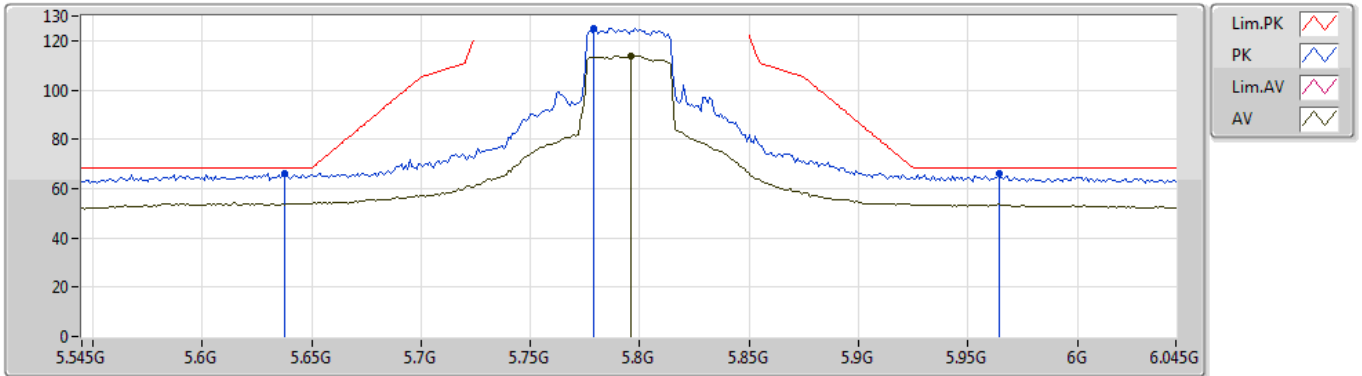
EUT Z_4TX
Setting 100
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.52554G	54.66	74.00	-19.34	11.94	3	Horizontal	42	2.97	-	42.72
AV	11.52134G	41.08	54.00	-12.92	11.93	3	Horizontal	42	2.97	-	29.15

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5795MHz_TX



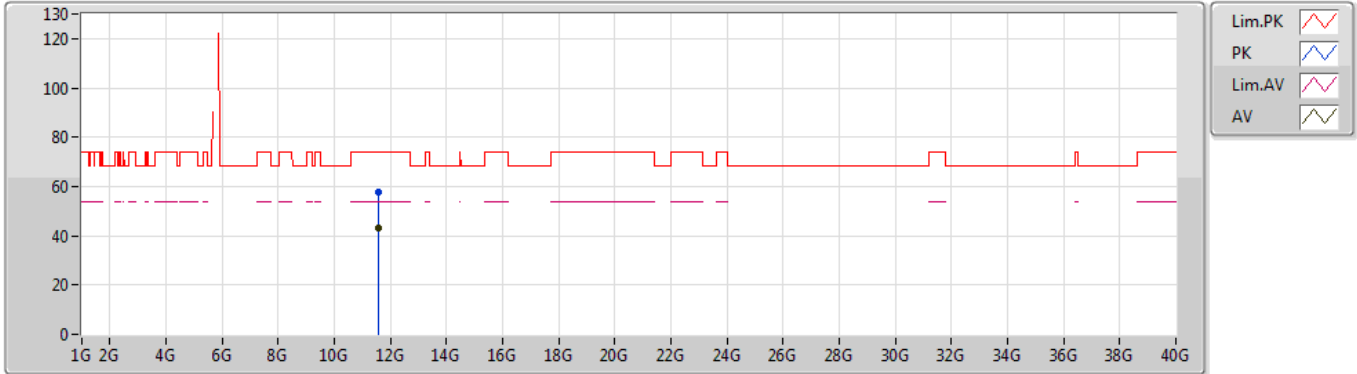
EUT_Z_4TX
 Setting 102
 01-J-5-13
 FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.638G	66.04	68.20	-2.16	5.68	3	Vertical	335	1.96	-	60.36
PK	5.779G	125.08	Inf	-Inf	5.91	3	Vertical	335	1.96	-	119.17
AV	5.796G	113.82	Inf	-Inf	5.95	3	Vertical	335	1.96	-	107.87
PK	5.964G	66.03	68.20	-2.17	6.99	3	Vertical	335	1.96	-	59.04

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5795MHz_TX



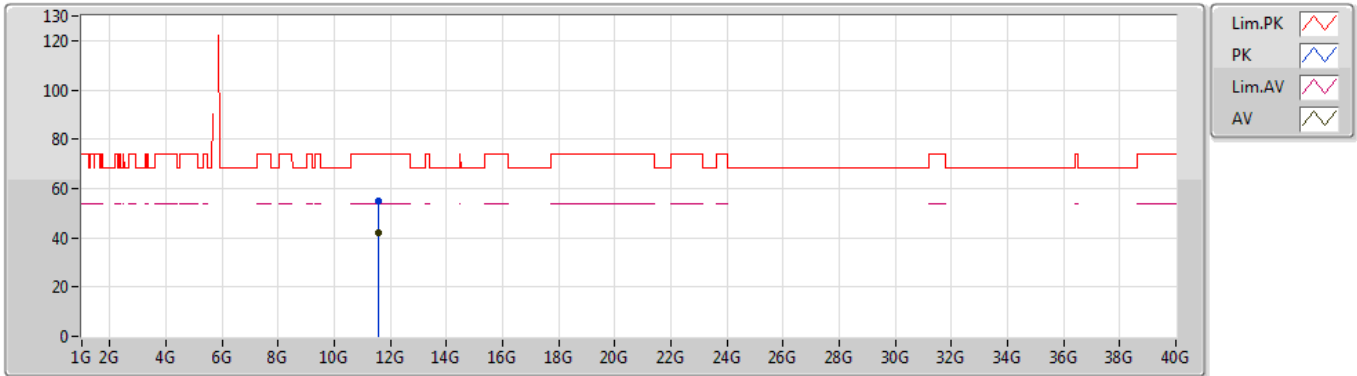
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.59012G	57.51	74.00	-16.49	11.97	3	Vertical	256	1.01	-	45.54
AV	11.58994G	43.26	54.00	-10.74	11.97	3	Vertical	256	1.01	-	31.29

802.11ax HEW40-BF_Nss2,(MCS0)_4TX

07/10/2019

5795MHz_TX



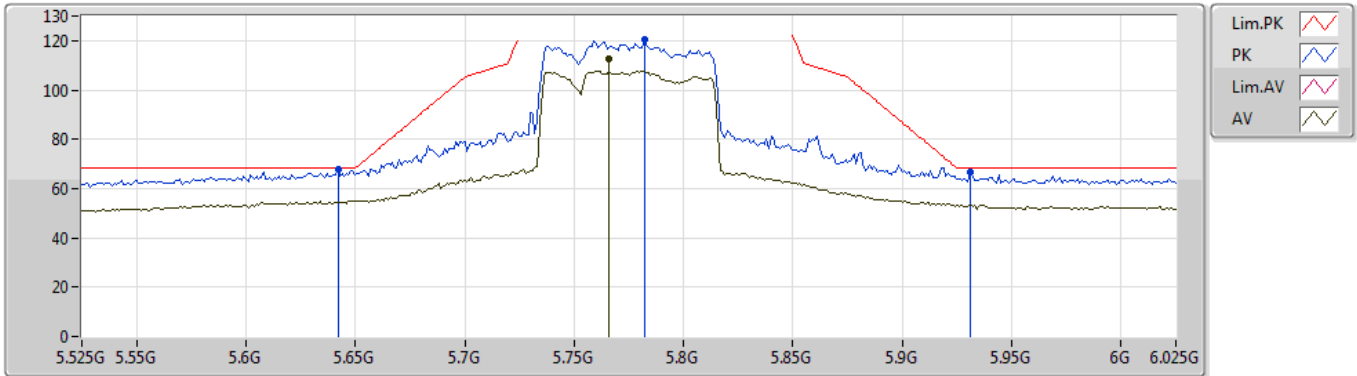
EUT Z_4TX
Setting 102
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.5983G	54.82	74.00	-19.18	11.97	3	Horizontal	305	1.50	-	42.85
AV	11.59438G	42.28	54.00	-11.72	11.97	3	Horizontal	305	1.50	-	30.31

802.11ax HEW80-BF_Nss2,(MCS0)_4TX

07/10/2019

5775MHz_TX



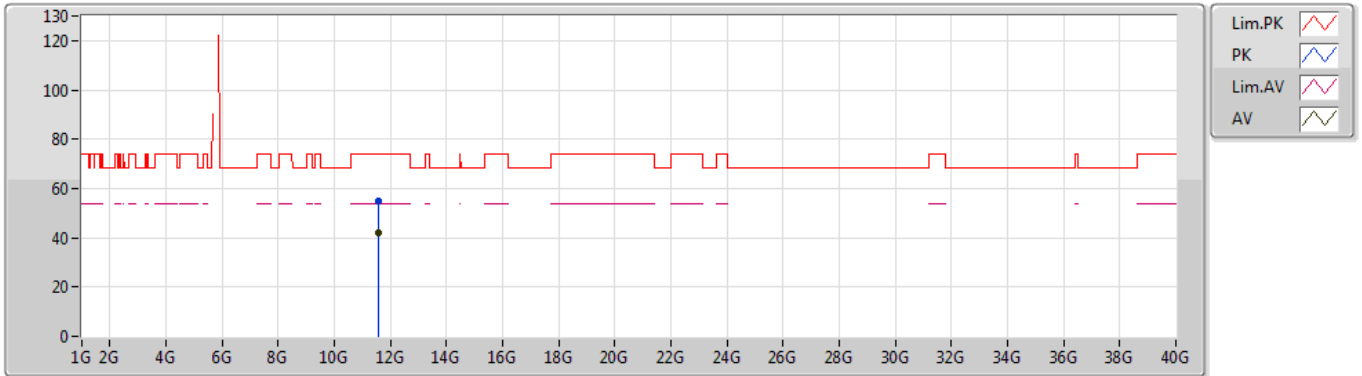
EUT_Z_4TX
Setting 93
01-J-5-13
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	5.642G	67.72	68.20	-0.48	5.68	3	Vertical	31	1.74	-	62.04
PK	5.782G	120.21	Inf	-Inf	5.91	3	Vertical	31	1.74	-	114.30
AV	5.766G	112.64	Inf	-Inf	5.89	3	Vertical	31	1.74	-	106.75
PK	5.931G	66.77	68.20	-1.43	6.83	3	Vertical	31	1.74	-	59.94

802.11ax HEW80-BF_Nss2,(MCS0)_4TX

07/10/2019

5775MHz_TX



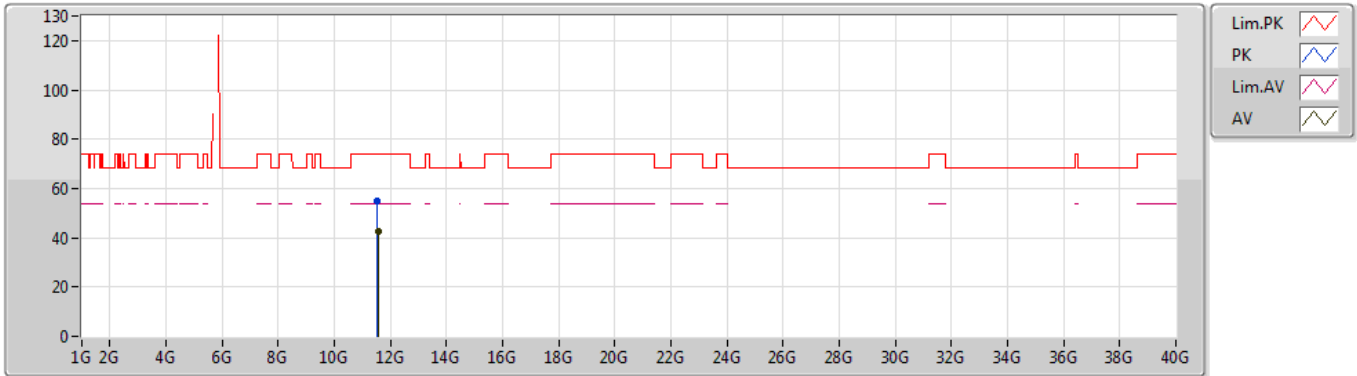
EUT Z_4TX
Setting 93
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.55102G	55.05	74.00	-18.95	11.95	3	Vertical	310	1.50	-	43.10
AV	11.5614G	42.23	54.00	-11.77	11.96	3	Vertical	310	1.50	-	30.27

802.11ax HEW80-BF_Nss2,(MCS0)_4TX

07/10/2019

5775MHz_TX



EUT Z_4TX
Setting 93
01-J-5
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	11.542G	54.72	74.00	-19.28	11.95	3	Horizontal	209	1.77	-	42.77
AV	11.552G	42.61	54.00	-11.39	11.96	3	Horizontal	209	1.77	-	30.65