FCC RADIO TEST REPORT

FCC ID	:	MSQ-RT0M00
Equipment	:	Wireless-AC3200 Tri-band Gigabit Router
Brand Name	:	ASUS
Model Name	:	RT-AC3200, RT-AC3200R, RT-AC3200W
Applicant	:	ASUSTeK COMPUTER INC. 4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
Manufacturer (1)	:	ASKEY TECHNOLOGH(JIANGSU)LTD. N0.1388, JiaoTong Road, WuKiang Economic-Technological Development Area,Jangus Province,P.R.C
Manufacturer (2)	:	Compal Networking (KunShan) Co., LTD. No. 520, Nabbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China
Standard	:	47 CFR FCC Part 15.407

The product was received on Oct. 22, 2019, and testing was started from Dec. 05, 2019 and completed on Dec. 13, 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: Sam Chen

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

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History of this test report

Report No.	Version	Description	Issued Date
FR471703-12	01	Initial issue of report	Dec. 18, 2019

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	-

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: Cindy Peng

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)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	3TX
5.15-5.25GHz	802.11n HT20	20	3TX
5.15-5.25GHz	802.11n HT20-BF	20	3TX
5.15-5.25GHz	802.11ac VHT20	20	3TX
5.15-5.25GHz	802.11ac VHT20-BF	20	3TX
5.15-5.25GHz	802.11n HT40	40	3TX
5.15-5.25GHz	802.11n HT40-BF	40	3TX
5.15-5.25GHz	802.11ac VHT40	40	3TX
5.15-5.25GHz	802.11ac VHT40-BF	40	3TX
5.15-5.25GHz	802.11ac VHT80	80	3TX
5.15-5.25GHz	802.11ac VHT80-BF	80	3TX
5.725-5.85GHz	802.11a	20	3TX
5.725-5.85GHz	802.11n HT20	20	3TX
5.725-5.85GHz	802.11n HT20-BF	20	3TX
5.725-5.85GHz	802.11ac VHT20	20	3TX
5.725-5.85GHz	802.11ac VHT20-BF	20	3TX
5.725-5.85GHz	802.11n HT40	40	3TX
5.725-5.85GHz	802.11n HT40-BF	40	3TX
5.725-5.85GHz	802.11ac VHT40	40	3TX
5.725-5.85GHz	802.11ac VHT40-BF	40	3TX
5.725-5.85GHz	802.11ac VHT80	80	3TX
5.725-5.85GHz	802.11ac VHT80-BF	80	3TX

Note:
- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)			Remark
					2.4GHz	5GHz (Band 1)	5GHz (Band 4)	
1	M.gear	C660-510331-A	Dipole Ant.	Reversed-SMA	-	-	3.47	support single band
2	M.gear	C660-510331-A	Dipole Ant.	Reversed-SMA	-	-	3.47	support single band
3	PSA	RFDPA181300SBLB805	Dipole Ant.	Reversed-SMA	2.6	3.37	2.89	support dual band
4	M.gear	C660-510331-A	Dipole Ant.	Reversed-SMA	-	-	3.47	support single band
5	M.gear	C660-510324-A	Dipole Ant.	Reversed-SMA	1.87	3.23	3.33	support dual band

Note1: The above information was declared by manufacturer.
Note2: Above antennas are the same type antenna, thus only the highest antenna gain Ant. 3 for 2.4GHz/5GHz band1 and Ant. 1, 2, 4 for 5GHz band 4 tested and recorded in the report.
Note3:

<For 2.4GHz and 5GHz Band 1>

For 802.11b/g/a/n/ac mode (3TX/3RX):

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

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

<For 5GHz Band 4>

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

Port 1 (Ant. 4), Port 2 (Ant. 2) and Port 3 (Ant. 1) can be used as transmitting/receiving antenna.

Port 1 (Ant. 4), Port 2 (Ant. 2) and Port 3 (Ant. 1) could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.952	0.21	2.065m	1k
802.11ac VHT20	0.986	0.06	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20-BF	0.986	0.06	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.972	0.12	952.5u	3k
802.11ac VHT40-BF	0.972	0.12	952.5u	3k
802.11ac VHT80	0.943	0.25	460.625u	3k
802.11ac VHT80-BF	0.943	0.25	460.625u	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	☒	With beamforming for 802 11n/ac in 2.4GHz/5GHz.	☐	Without beamforming
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
Operate Mode	☒	Master (AP Router)		
	☐	Slave with radar detection		
	☒	Slave without radar detection(Bridge)		
Test Software Version	For non-beamforming mode: Mtool_2.0.1.8			
	For beamforming mode: Telnet			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

The EUT has three model names which are identical to each other in all aspects except for the following table:

Model Name	Description
RT-AC3200	All the models are identical, the difference model for difference brand served as marketing strategy.
RT-AC3200R	
RT-AC3200W	

From the above models, model: RT-AC3200 was selected as representative model for the test and its data was recorded in this report.

1.1.6 Table for SKU List

The EUT has two SKU which are identical to each other in all aspects except for the following table:

SKU	Description
1	The difference between SKU 1 and SKU 2 is LAN transformer
2	

1.1.7 Table for Housing List

The EUT has two housing and which are identical to each other in all aspects except for the following table:

Housing	With Hole	Without Hole
1	V	X
2	X	V

From the above models, housing 2 was selected as representative model for the test and its data was recorded in this report.

1.1.8 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR471703-01

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

Modifications	Performance Checking
1. Updating 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 two adapters (Brand: Delta, Model: ADP-45BW B / Brand: PI, Model: AD883J20).	1. AC Power-line Conducted Emissions. 2. Unwanted Emissions Below 1GHz.

a. Changing the adapter (model: AD883J20). The difference between adapter 1 and new adapter 4 as below:

Adapter 1	Adapter 4
Type: 010KLF BAH	Type: 010K-3LF

b. Changing the adapter (model: ADP-45BW B). The difference between adapter 2 and adapter 3 as below:

Adapter 2			
Design No	**MFG TITLE**	**MFG PART**	**DESCRIPTION**
Q1	AUK	SMK0760F	FET 600V 7A 1.2ohm TO-220F-3P
Q1	ST	STP6NK60ZFP	FET 600V 6A 1.2ohm TO-220FP-3P
Q1	TOSHIBA	TK10A60DR(STA4,X)	FET 600V 10A 750mohm TO-220SIS-3P
D101	ST	STPS20S100CT	DIO SBD 20A 100V TO-220AB-3P C.C.
D101	ST	STPS20SM100ST	DIO SBD 20A 100V TO-220AB-3P
D101	ST	STPS30SM100ST	DIO SBD 30A 100V TO-220AB-3P
IC31	ON	DAP022ASN65T1G	IC ASIC PWM CURRENT MODE TSOP-6P SMD
IC131	TI	TL432BIDBZR	IC VOL REF ADJ 2.495V 100mA 0.5%
IC131	NXP	TL431BMFDT	IC VOL REF ADJ 2.495V 100mA 0.5%
IC131	DIODES	AS431ANTR-G1	IC VOL REF ADJ 2.5V 100mA 0.5% SOT-23-3P
IC32	EVERLIGHT	EL816M(Y)(D)-VG	PHOTO TR 50mA 80V DIP-4P 150%-300%
IC32	SHARP	PC123Y92FZ0F	PHOTO TR 50mA 70V DIP-4P 160%-300%
IC32	Renesas	PS2561DL1-1Y-V-A(G)	EOL PHOTO TR 40mA 80V DIP-4P 150%-300%
CX1	EUROPTRONIC	MPX2224K30B15LXD20	CAP X2 MP PC 305VAC 0.22uF K S15
CX1	OKAYA	LE224-MX-30-C3.2	CAP X2 MP PC 300VAC 0.22uF K S15
CX1	HUA	MKP-224K0275AB115S-G	CAP X2 MP PC 275VAC 0.22uF K S15
FL1	DELTA	HFV-MP13202	LINE FILTER T14 14mH MIN
FL101	DELTA	LFV-MP13303	LINE FILTER T10 17uH MIN
T1	DELTA	MV-MP13167	TRANSFORMER MAIN RM10 1mH +/-5%
C1	NICHICON	UPT2G680MHD3	CAP AL 400V 68uF M 16*25 P7.5

C1	NCC	EKMG401ELL680ML25S	CAP AL 400V 68uF M 16*25 P7.5
C1	L-Tec	TYJ2GM680K25O	CAP AL 400V 68uF M 16*25 P7.5
CY1	MURATA	DE1B3KX221KNHAN99F	CAP Y1/X1 CD 250VAC 220pF K B TP VI10
CY1	TDK	CD70-B2GA221KYVK	CAP Y1/X1 CD 250VAC 220pF K B TP VI10
CY1	WALSIN	YP0AH221K061DASDAB	CAP Y1/X1 CD 250VAC 220pF K B TP VI10
Adapter 3			
Design No	**MFG TITLE**	**MFG PART**	**DESCRIPTION**
Q1	TOSHIBA	TK10A60DR(STA4,X)	FET 600V 10A 750mohm TO-220SIS-3P
Q1	FUJI	FMV11N60ES	FET 600V 11A 750mohm TO-220F-3P
D101	ST	STPS20S100CT	DIO SBD 20A 100V TO-220AB-3P C.C.
D101	ST	STPS20H100CT	DIO SBD 20A 100V TO-220AB-3P C.C.
D101	ST	STPS30H100CT	DIO SBD 30A 100V TO-220AB-3P C.C.
IC31	NeoEnergy	DAP022AT	IC ASIC PWM CURRENT MODE SOT-26-6P SMD
IC131	LITE-ON	LA431OCRPA	IC REGU ADJ 2.495V 100mA 0.4% SOT-23R-3P
IC131	TI	TL432BIDBZR	IC VOL REF ADJ 2.495V 100mA 0.5%
IC131	NXP	TL431BMFDT	IC VOL REF ADJ 2.495V 100mA 0.5%
IC32	EVERLIGHT	EL816M(Y)(D)-VG	PHOTO TR 50mA 80V DIP-4P 150%-300%
IC32	SHARP	PC123Y92FZ0F	PHOTO TR 50mA 70V DIP-4P 160%-300%
IC32	TOSHIBA	TLP785F(D4-GRH,F	PHOTO TR 60mA 80V DIP-4P 150%-300%
CX1	HUA	MKP-334K0275AB115S-G	CAP X2 MP PC 275VAC 0.33uF K S15
CX1	HUA	MKP-334K0275AB115S-P	CAP X2 MP PC 275VAC 0.33uF K S15
CX1	EUROPTRONIC	MPX2334K30B15LXD31	CAP X2 MP PC 305VAC 0.33uF K S15
FL1	DELTA	HFV-MP15027	LINE FILTER T16 12.7mH MIN
FL101	DELTA	LFV-MP13171	LINE FILTER T6 1.55uH MIN
T1	DELTA	MV-MP15037	TRANSFORMER MAIN RM10 1000uH +/-5%
C1	NCC	EKMG401ELL680ML25S	CAP AL 400V 68uF M 16*25 P7.5
CY1	MURATA	DE1B3KX221KNHAN99F	CAP Y1/X1 CD 250VAC 220pF K B TP VI10
CY1	WALSIN	YP0AH221K061DASDAB	CAP Y1/X1 CD 250VAC 220pF K B TP VI10

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			
☐	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
☒	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	TH02-CB	Brian Sun	20.1~22.1°C / 58~61%	Dec. 05, 2019
Radiated Below 1GHz	03CH05-CB	Andy Zou	24.1~25.1°C / 48~50%	Dec. 06, 2019~Dec. 13, 2019
Radiated Above 1GHz	03CH06-CB	Andy Zou	20.2~21.3°C / 59~60%	Dec. 06, 2019~Dec. 13, 2019
AC Conduction	CO01-CB	Wei Li	23~24.3°C / 57~63%	Dec. 11, 2019

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

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
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

Mode	Power Setting
802.11a_Nss1,(6Mbps)_3TX	-
5745MHz	97
5785MHz	96
5825MHz	97
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5745MHz	95
5785MHz	94
5825MHz	96
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5755MHz	91
5795MHz	96
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5775MHz	83
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	-
5745MHz	86
5785MHz	85
5825MHz	85
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	-
5755MHz	87
5795MHz	87
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	-
5775MHz	82

Note:
- VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
- There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802 11n/ac in 2.4GHz / 5GHz. Beamforming mode and non-beamforming mode has been test and 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	CTX
1. The EUT has two SKU (SKU 1 and SKU 2). After evaluating, "SKU1" was the worst case for Unwanted Emissions Below 1GHz test, Consequently, measurement for AC power-line conducted emissions will follow this same test mode. 2. There are three modes of EUT (2.4G, 5GHz band 1 and 5GHz band 4). After evaluating, "5GHz band 4" was the worst case for Unwanted Emissions Below 1GHz test, Consequently, measurement for AC power-line conducted emissions will follow this same test mode.	
1	EUT (SKU 1) + 5GHz Band 4 + Adapter 3
2	EUT (SKU 1) + 5GHz Band 4 + Adapter 4
For operating mode 2 is the worst case and it was record in this test report.	

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

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	CTX
1. The EUT has two SKU (SKU 1 and SKU 2). After evaluating, "SKU1" was the worst case for original, Consequently, measurement for Unwanted Emissions Below 1GHz will follow this same test mode. 2. There are three modes of EUT (2.4G, 5GHz band 1 and 5GHz band 4). After evaluating, "5GHz band 4" was the worst case for original, Consequently, measurement for Unwanted Emissions Below 1GHz will follow this same test mode.	
1	EUT (SKU 1) + 5GHz Band 4 + Adapter 3
2	EUT (SKU 1) + 5GHz Band 4 + Adapter 4
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz band 1 + WLAN 5GHz band 4
Refer to Sporton Test Report No.: FA471703-12 for Co-location RF Exposure Evaluation.	

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

2.3 EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

During the test, the following programs under WIN XP were executed.
The program was executed as follows:
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less than 98%.

2.4 Accessories

Accessories						
No.	**Equipment Name**	**Brand Name**	**Model Name**	**Type**	**Rating**	**Adapter Level**
1	Adapter 1	PI	AD883J20	010KLF BAH	Input: 100-240V~50/60Hz 1.0A Output: 19V, 2.37A	Level 5
2	Adapter 2	Delta	ADP-45BW B	-	Input: 100-240V~50-60Hz 1.2A Output: 19V, 2.37A	Level 5
3	Adapter 1	Delta	ADP-45BW B	-	Input: 100-240V~50-60Hz 1.2A Output: 19V, 2.37A	Level 6
4	Adapter 2	PI	AD883J20	010K-3LF	Input: 100-240V~50/60Hz 1.0A Output: 19V, 2.37A	Level 6
No.	**Other**					
5	RJ-45 cable*1: Shielded, 1.5m					

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E6430	N/A
B	Flash disk3.0	Transcend	JetFlash-700	N/A
C	Flash disk	Kingston	DTSE9H	N/A

For Radiated (below 1GHz):

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

For Radiated (above 1GHz) and RF Conducted:
For non-beamforming mode:

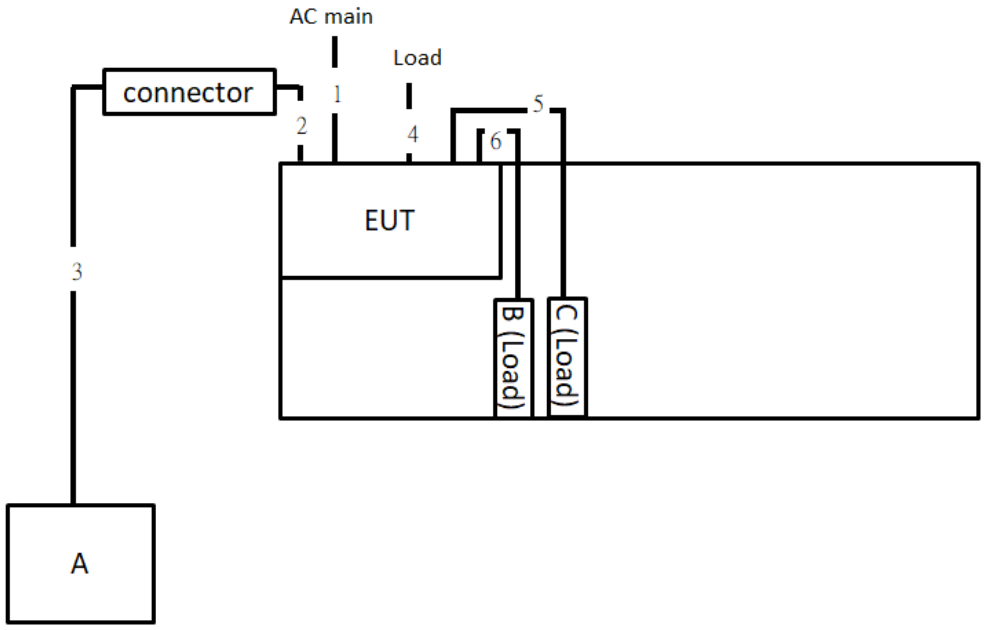
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A

For beamforming mode:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	RX Device	Boardcom	BCM943162ZP	QDS-BRCM1075

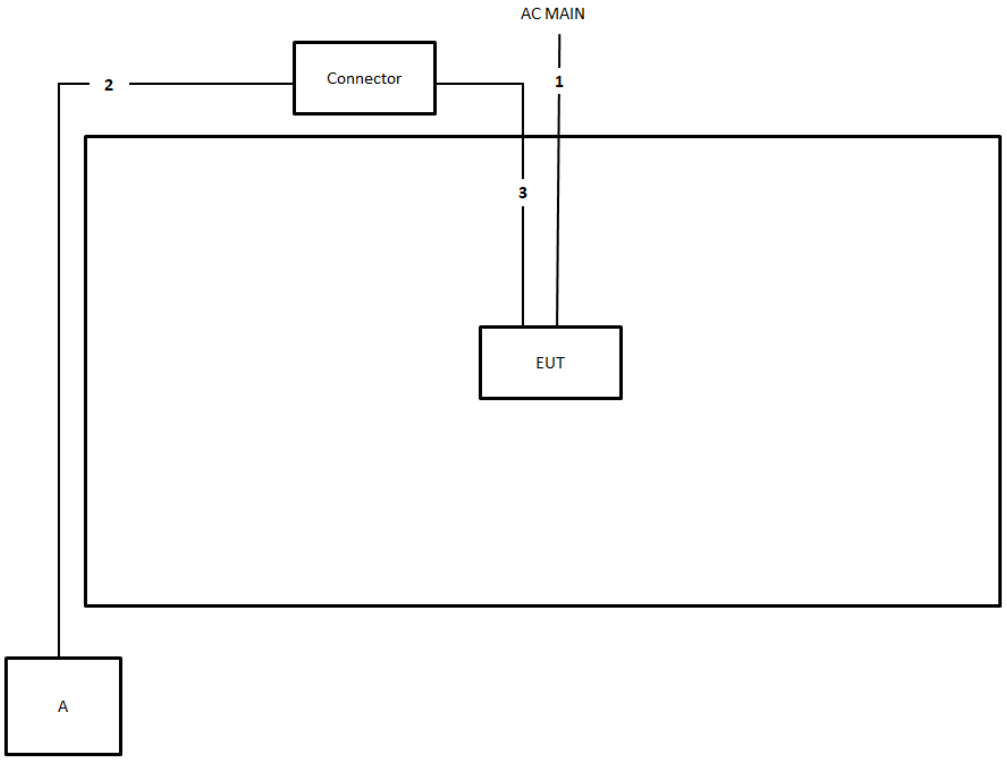
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable*4	No	1.5m
5	USB cable	Yes	1.8m
6	USB cable	Yes	1.8m

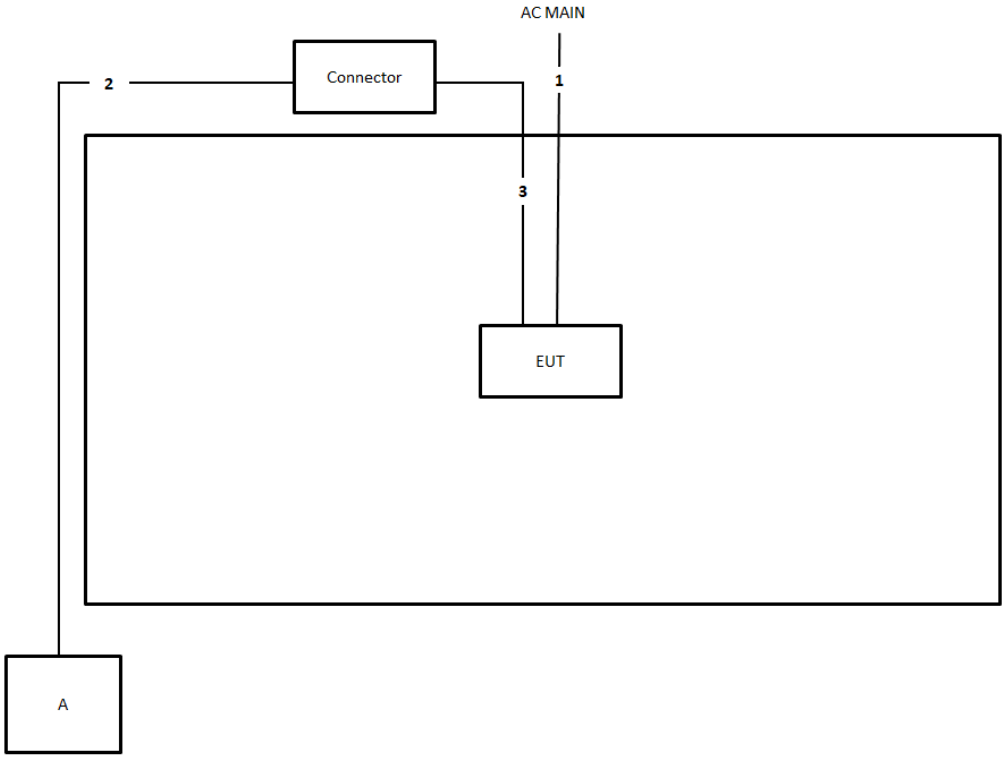
Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	10m
3	RJ-45 cable	Yes	1.5m

Test Setup Diagram - Radiated Test > 1GHz

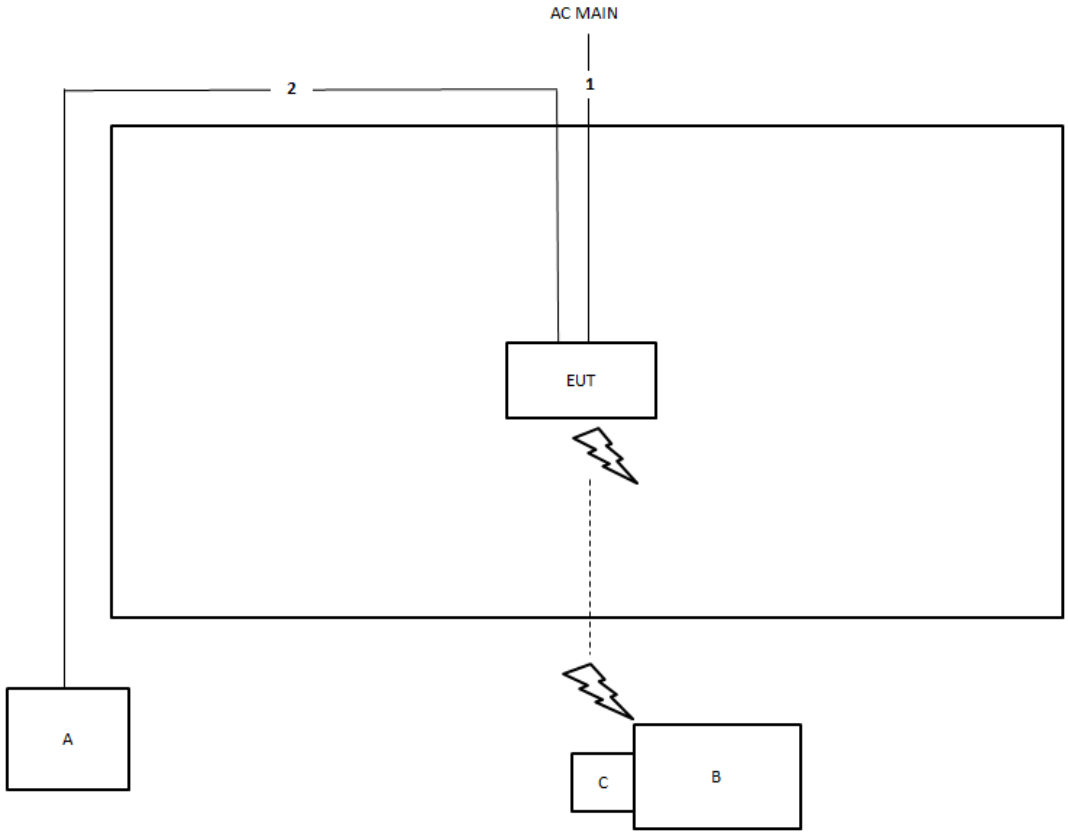
For non-beamforming mode:



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	10m
3	RJ-45 cable	Yes	1.5m

Test Setup Diagram - Radiated Test > 1GHz

For beamforming mode:



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	10m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

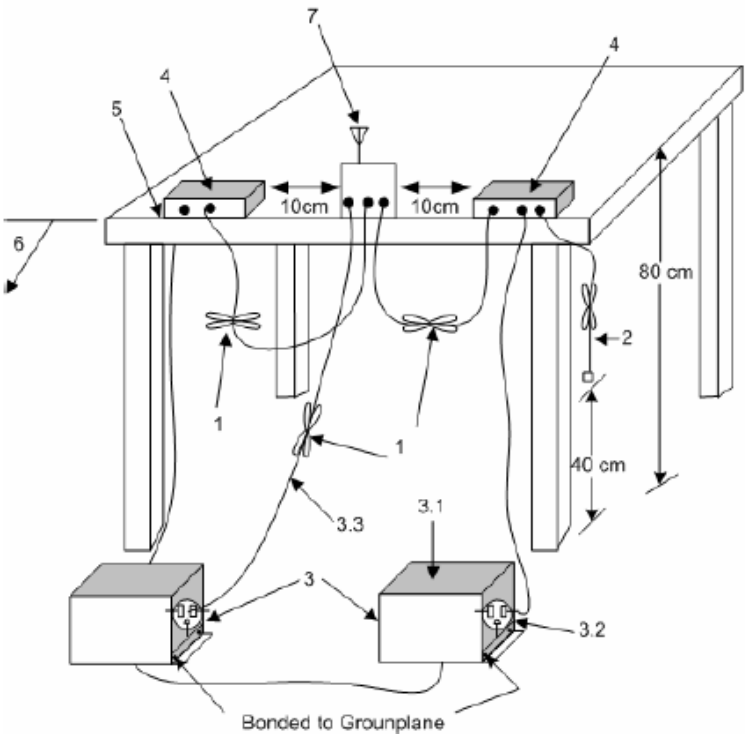
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

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	
☐	For the 5.15-5.25 GHz band, N/A
☐	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.
☐	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.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.
LE-LAN Devices	
☐	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.
☐	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
☐	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
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

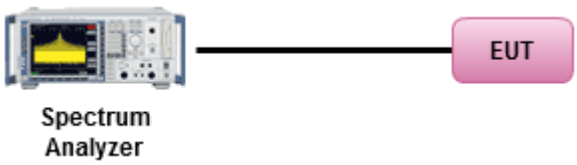
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method		
▪	For the emission bandwidth shall be measured using one of the options below:	
	☒	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
	☐	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☐	For the 5.15-5.25 GHz band:
	▪ 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 ≤ 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).
☐	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).
☐	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).
☒	For the 5.725-5.85 GHz band:
	▪ 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	
☐	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.
☐	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
☐	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
☐	For the 5.725-5.85 GHz band:
	▪ 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	
▪ Maximum Conducted Output Power	
	Average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
	☐ 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
	☒ Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Power Meter)


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	
☐	For the 5.15-5.25 GHz band:
	▪ 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)..
☐	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).
☐	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).
☒	For the 5.725-5.85 GHz band:
	▪ 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	
☐	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
	▪ 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° ≤ θ < 8° ; -13 − 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 − 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45° ; -42 dBW/MHz for θ > 45°
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
☐	For the 5.725-5.85 GHz band:
	▪ 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.
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.	

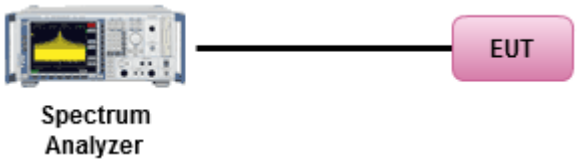
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power 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:		
	☐ Refer as FCC KDB 789033, F)5) 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]	
	☒ Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).	
	☐ 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	
	☒ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).	
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
▪ For conducted measurement.		
	▪ If the EUT supports multiple transmit chains using options given below:	
		☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	▪	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup

Power Spectral Density


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**
☐ 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 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.

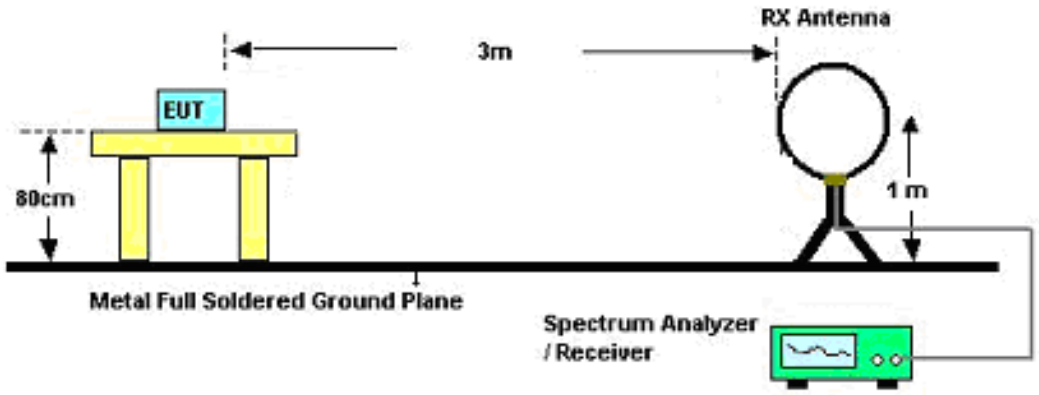
3.5.3 Test Procedures

Test Method		
▪ 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).		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ 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.	
		☐ Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
		☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
▪ For radiated measurement.		
	▪ 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.	
▪ The any unwanted emissions level shall not exceed the fundamental emission level.		
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

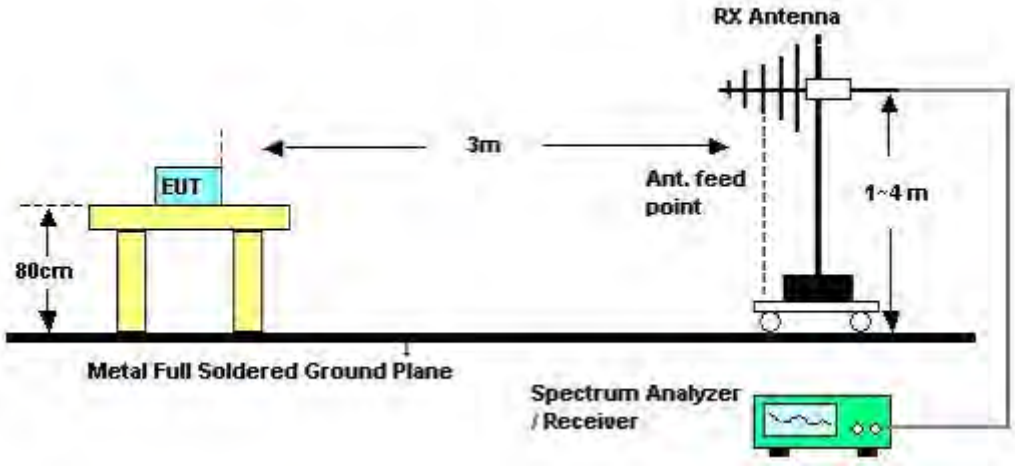
3.5.4 Test Setup

Transmitter Radiated Unwanted Emissions

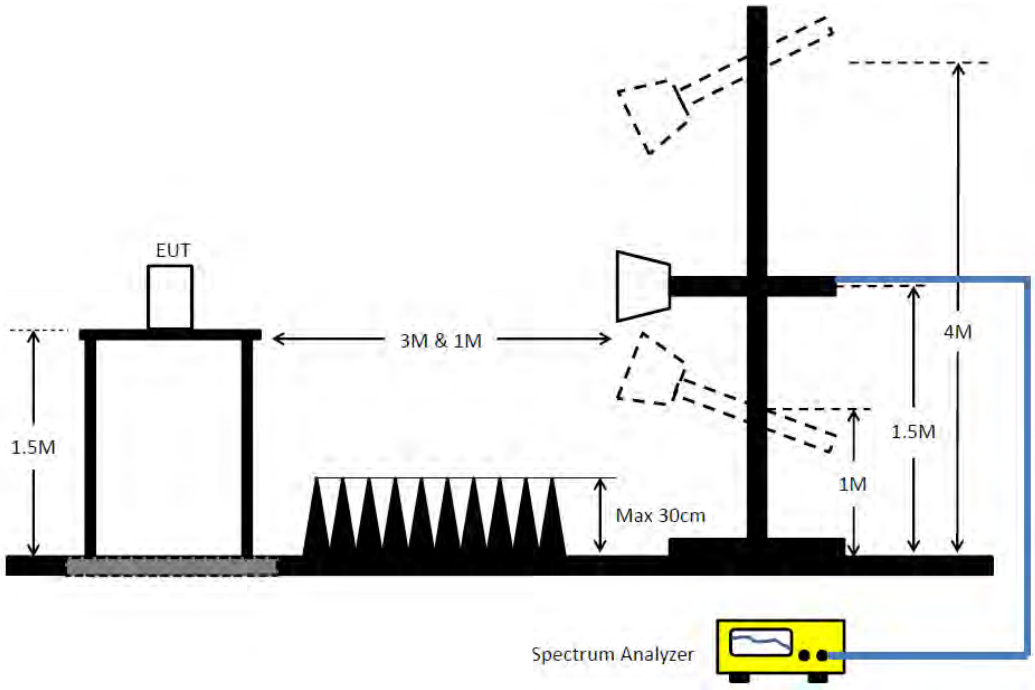
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



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

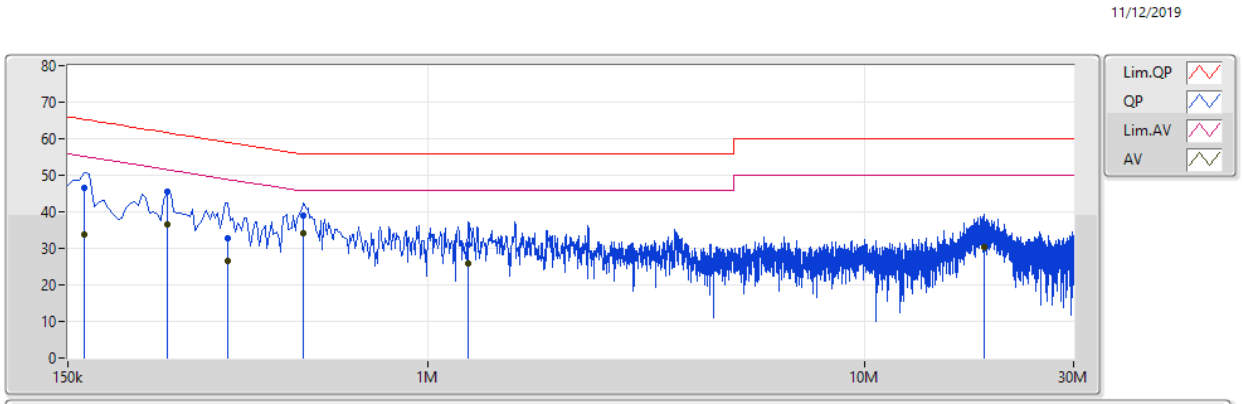
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	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. 29, 2019	Mar. 28, 2020	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESE & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 28, 2019	Mar. 27, 2020	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 01, 2019	Apr. 30, 2020	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Aug. 15, 2019	Aug. 14, 2020	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	LOW Cable-04+23	30MHz~1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1292	1GHz~18GHz	Jul. 17, 2019	Jul. 16, 2020	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 08, 2019	May 07, 2020	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 21, 2019	Oct. 20, 2020	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUHNER	RG402	High Cable-05	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUHNER	RG402	High Cable-05+24	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 02, 2019	Jul. 01, 2020	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 11, 2019	Sep. 10, 2020	Conducted (TH02-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 11, 2019	Sep. 10, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)

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

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

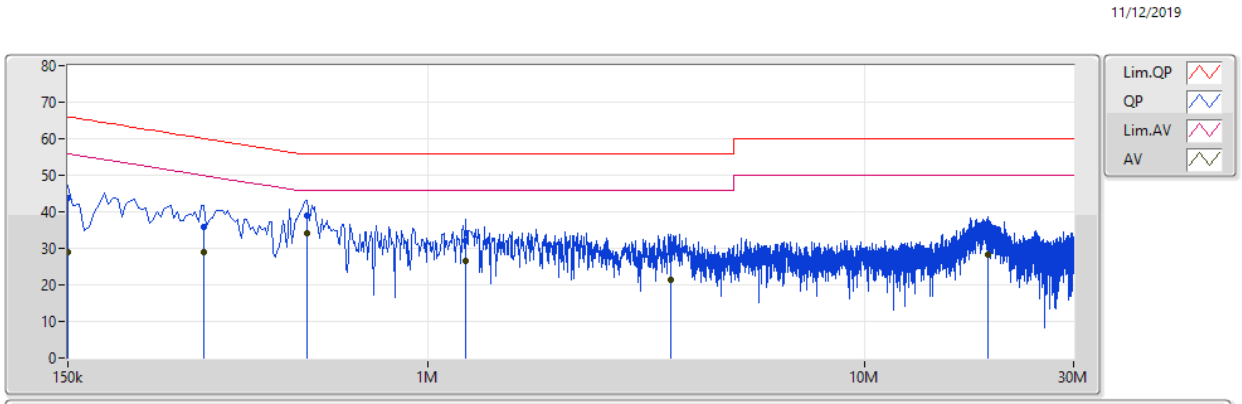
AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Line
Operating Function	CTX		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	163.5k	46.58	65.27	-18.69	9.90	Line	-	36.68	0.05	0.06	9.79
AV	163.5k	33.65	55.27	-21.62	9.90	Line	-	23.75	0.05	0.06	9.79
QP	253.5k	45.49	61.64	-16.15	9.92	Line	-	35.57	0.06	0.06	9.80
AV	253.5k	36.40	51.64	-15.24	9.92	Line	-	26.48	0.06	0.06	9.80
QP	348k	32.60	59.00	-26.40	9.93	Line	-	22.67	0.06	0.06	9.81
AV	348k	26.40	49.00	-22.60	9.93	Line	-	16.47	0.06	0.06	9.81
QP	519k	38.83	56.00	-17.17	9.94	Line	-	28.89	0.06	0.07	9.81
AV	519k	34.04	46.00	-11.96	9.94	Line	"Worst"	24.10	0.06	0.07	9.81
QP	1.235M	30.88	56.00	-25.12	10.00	Line	-	20.88	0.08	0.10	9.82
AV	1.235M	25.80	46.00	-20.20	10.00	Line	-	15.80	0.08	0.10	9.82
QP	18.785M	35.47	60.00	-24.53	10.49	Line	-	24.98	0.28	0.24	9.97
AV	18.785M	30.30	50.00	-19.70	10.49	Line	-	19.81	0.28	0.24	9.97

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Neutral
Operating Function	CTX		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	43.63	66.00	-22.37	9.89	Neutral	-	33.74	0.04	0.06	9.79
AV	150k	28.84	56.00	-27.16	9.89	Neutral	-	18.95	0.04	0.06	9.79
QP	307.5k	35.88	60.03	-24.15	9.90	Neutral	-	25.98	0.04	0.06	9.80
AV	307.5k	28.82	50.03	-21.21	9.90	Neutral	-	18.92	0.04	0.06	9.80
QP	528k	39.01	56.00	-16.99	9.93	Neutral	-	29.08	0.05	0.07	9.81
AV	528k	34.25	46.00	-11.75	9.93	Neutral	"Worst"	24.32	0.05	0.07	9.81
QP	1.221M	32.13	56.00	-23.87	9.98	Neutral	-	22.15	0.06	0.10	9.82
AV	1.221M	26.70	46.00	-19.30	9.98	Neutral	-	16.72	0.06	0.10	9.82
QP	3.584M	30.18	56.00	-25.82	10.07	Neutral	-	20.11	0.10	0.16	9.81
AV	3.584M	21.37	46.00	-24.63	10.07	Neutral	-	11.30	0.10	0.16	9.81
QP	19.073M	36.49	60.00	-23.51	10.47	Neutral	-	26.02	0.25	0.24	9.98
AV	19.073M	28.17	50.00	-21.83	10.47	Neutral	-	17.70	0.25	0.24	9.98

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_3TX	16.41M	18.538M	18M5D1D	16.29M	16.685M
802.11ac VHT20_Nss1,(MCS0)_3TX	17.61M	18.234M	18M2D1D	17.55M	17.747M
802.11ac VHT40_Nss1,(MCS0)_3TX	36.3M	36.737M	36M7D1D	36.24M	36.243M
802.11ac VHT80_Nss1,(MCS0)_3TX	76.32M	75.984M	76M0D1D	76.2M	75.537M
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	17.61M	17.8M	17M8D1D	17.55M	17.717M
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	36.36M	36.364M	36M4D1D	36.3M	36.185M
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	76.32M	75.85M	75M8D1D	75.72M	75.57M

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

Result

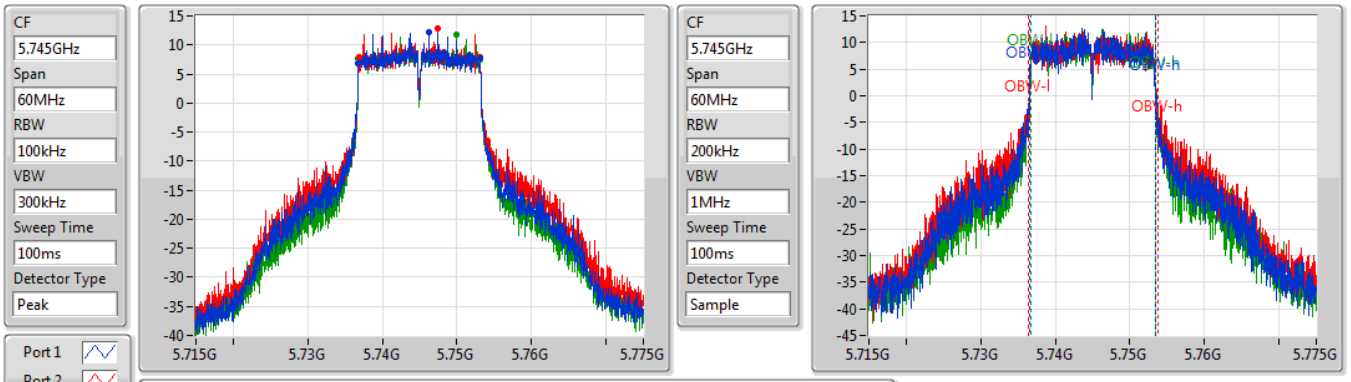
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	16.32M	16.782M	16.29M	17.313M	16.32M	16.685M
5785MHz	Pass	500k	16.32M	17.074M	16.32M	16.799M	16.35M	16.703M
5825MHz	Pass	500k	16.32M	18.538M	16.35M	17.062M	16.41M	16.731M
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	17.55M	17.851M	17.58M	18.005M	17.58M	17.759M
5785MHz	Pass	500k	17.55M	17.951M	17.55M	17.906M	17.58M	17.747M
5825MHz	Pass	500k	17.55M	18.234M	17.55M	17.953M	17.61M	17.918M
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	36.3M	36.426M	36.3M	36.381M	36.3M	36.243M
5795MHz	Pass	500k	36.24M	36.737M	36.3M	36.551M	36.3M	36.489M
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	76.2M	75.984M	76.2M	75.563M	76.32M	75.537M
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	17.55M	17.731M	17.58M	17.776M	17.58M	17.717M
5785MHz	Pass	500k	17.55M	17.8M	17.61M	17.725M	17.58M	17.737M
5825MHz	Pass	500k	17.55M	17.779M	17.61M	17.722M	17.58M	17.738M
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	36.3M	36.363M	36.3M	36.325M	36.3M	36.185M
5795MHz	Pass	500k	36.3M	36.364M	36.3M	36.364M	36.36M	36.256M
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	75.72M	75.85M	76.32M	75.57M	76.2M	75.783M

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

802.11a_Nss1,(6Mbps)_3TX EBW

5745MHz

05/12/2019

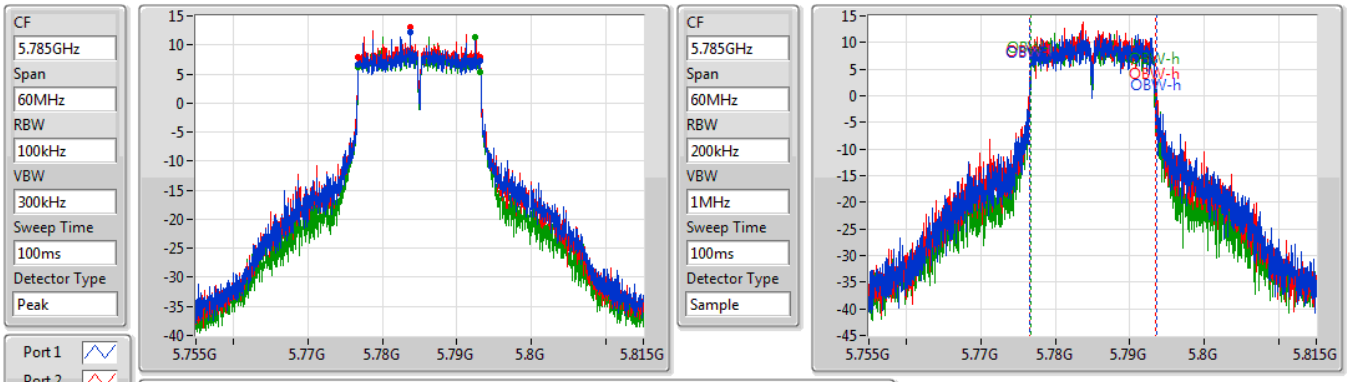


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.32M	5.73681G	5.75313G	16.782M	5.736601G	5.753383G	500k	1
16.29M	5.73684G	5.75313G	17.313M	5.736437G	5.753751G	500k	2
16.32M	5.73681G	5.75313G	16.685M	5.73668G	5.753365G	500k	3

802.11a_Nss1,(6Mbps)_3TX EBW

5785MHz

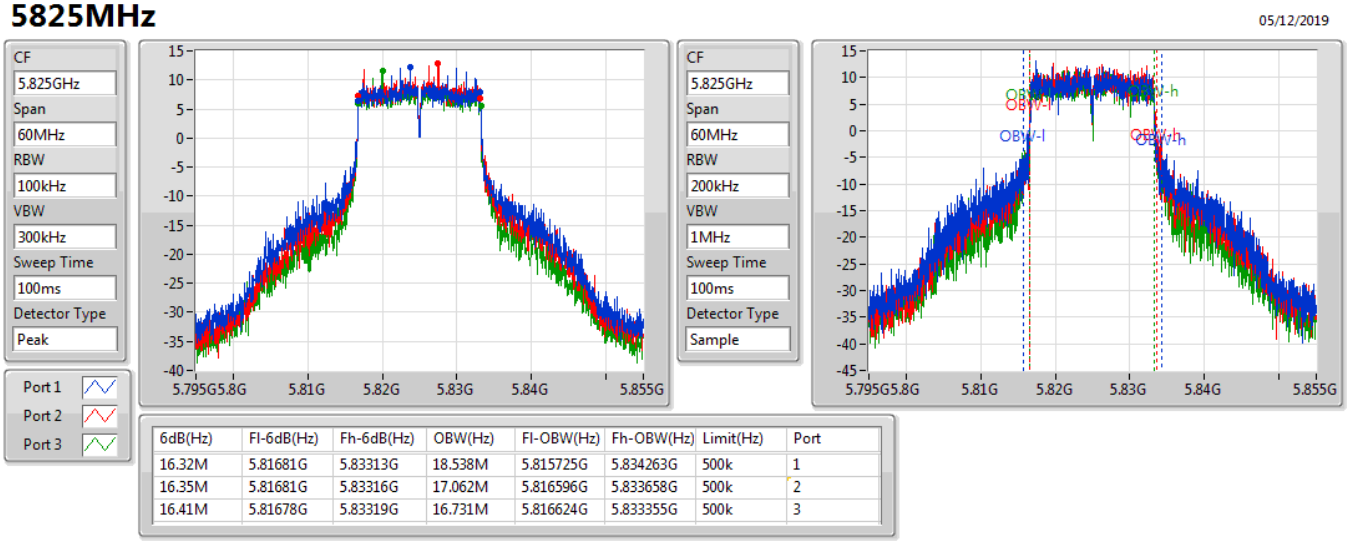
05/12/2019



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.32M	5.77681G	5.79313G	17.074M	5.776552G	5.793626G	500k	1
16.32M	5.77681G	5.79313G	16.799M	5.776616G	5.793414G	500k	2
16.35M	5.77681G	5.79316G	16.703M	5.776656G	5.79336G	500k	3

802.11a_Nss1,(6Mbps)_3TX EBW

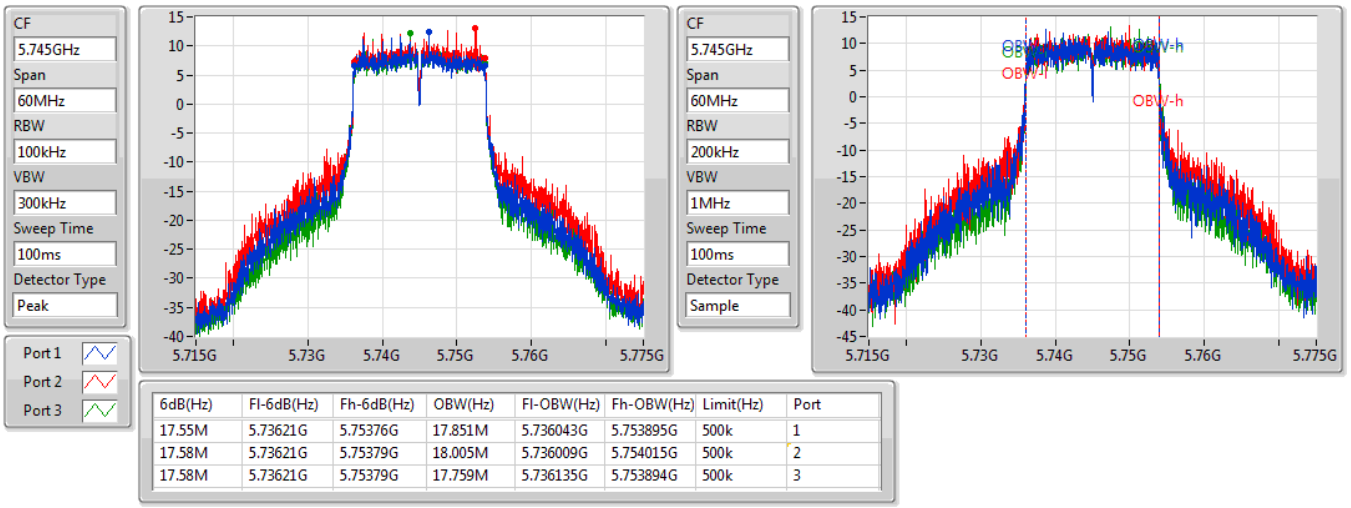
5825MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.32M	5.81681G	5.83313G	18.538M	5.815725G	5.834263G	500k	1
16.35M	5.81681G	5.83316G	17.062M	5.816596G	5.833658G	500k	2
16.41M	5.81678G	5.83319G	16.731M	5.816624G	5.833355G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

5745MHz



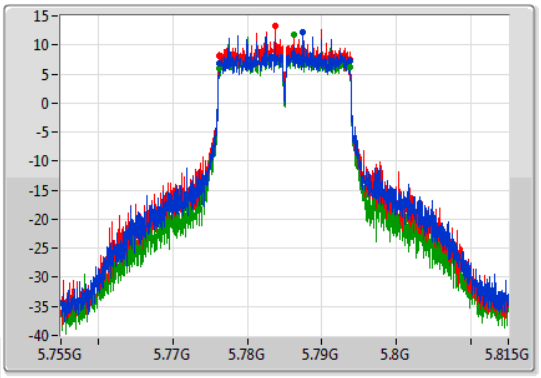
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.73621G	5.75376G	17.851M	5.736043G	5.753895G	500k	1
17.58M	5.73621G	5.75379G	18.005M	5.736009G	5.754015G	500k	2
17.58M	5.73621G	5.75379G	17.759M	5.736135G	5.753894G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

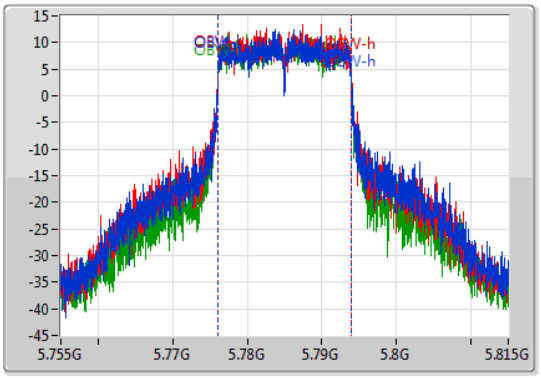
5785MHz

05/12/2019

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

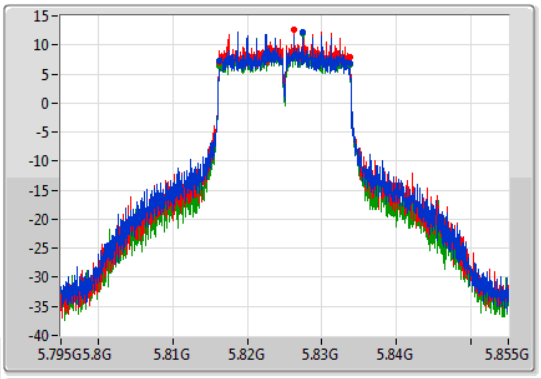
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.77621G	5.79376G	17.951M	5.776041G	5.793992G	500k	1
17.55M	5.77621G	5.79376G	17.906M	5.776054G	5.793961G	500k	2
17.58M	5.77618G	5.79376G	17.747M	5.776118G	5.793864G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

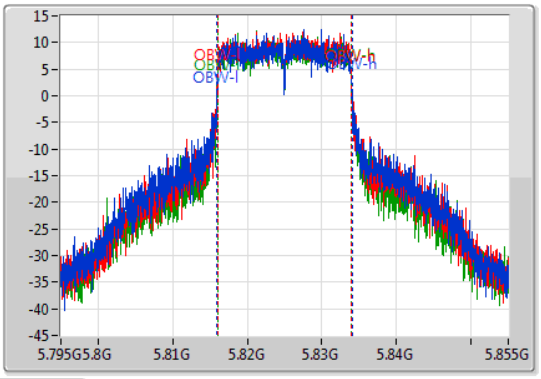
5825MHz

05/12/2019

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

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.81621G	5.83376G	18.234M	5.815901G	5.834135G	500k	1
17.55M	5.81621G	5.83376G	17.953M	5.81603G	5.833984G	500k	2
17.61M	5.81618G	5.83379G	17.918M	5.816038G	5.833956G	500k	3

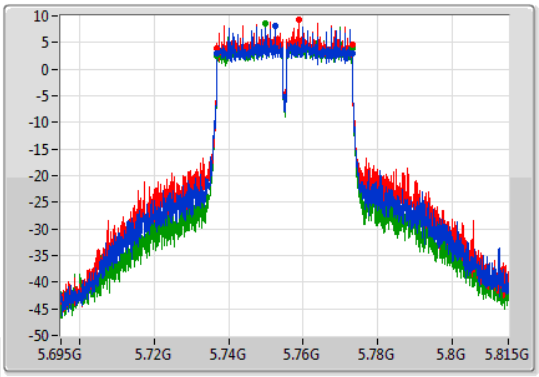
802.11ac VHT40_Nss1,(MCS0)_3TX EBW

5755MHz

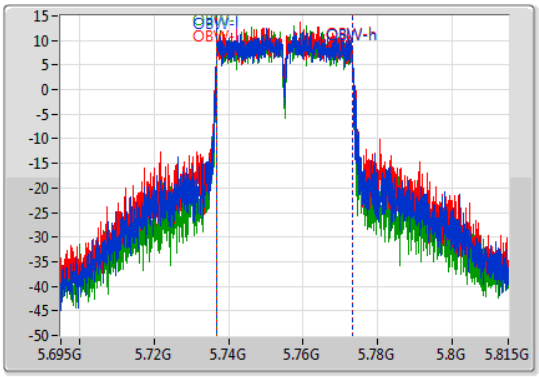
05/12/2019

CF	5.755GHz
Span	120MHz
RBW	100kHz
VBW	300kHz
Sweep Time	100ms
Detector Type	Peak

Port 1
Port 2
Port 3



CF	5.755GHz
Span	120MHz
RBW	510kHz
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
36.3M	5.73682G	5.77312G	36.426M	5.736766G	5.773192G	500k	1
36.3M	5.73682G	5.77312G	36.381M	5.736802G	5.773183G	500k	2
36.3M	5.73682G	5.77312G	36.243M	5.736872G	5.773115G	500k	3

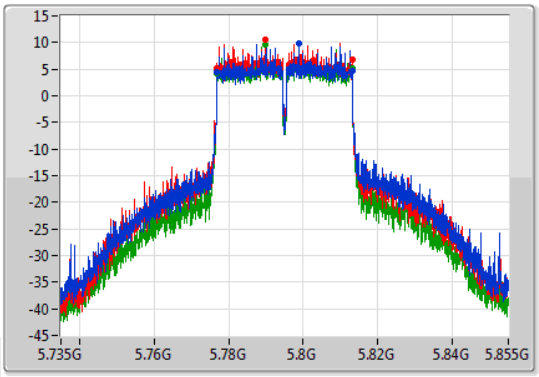
802.11ac VHT40_Nss1,(MCS0)_3TX EBW

5795MHz

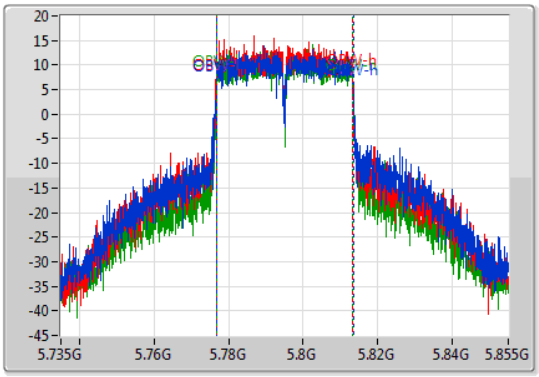
05/12/2019

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

Port 1
Port 2
Port 3



CF	5.795GHz
Span	120MHz
RBW	510kHz
VBW	2MHz
Sweep Time	100ms
Detector Type	Sample

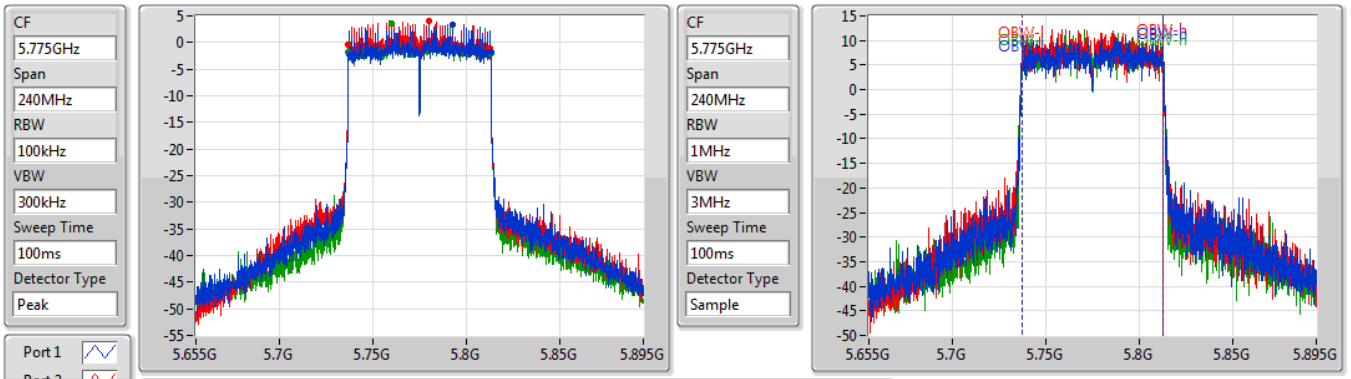


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.24M	5.77688G	5.81312G	36.737M	5.776736G	5.813473G	500k	1
36.3M	5.77682G	5.81312G	36.551M	5.776695G	5.813246G	500k	2
36.3M	5.77682G	5.81312G	36.489M	5.776766G	5.813255G	500k	3

802.11ac VHT80_Nss1,(MCS0)_3TX EBW

5775MHz

05/12/2019

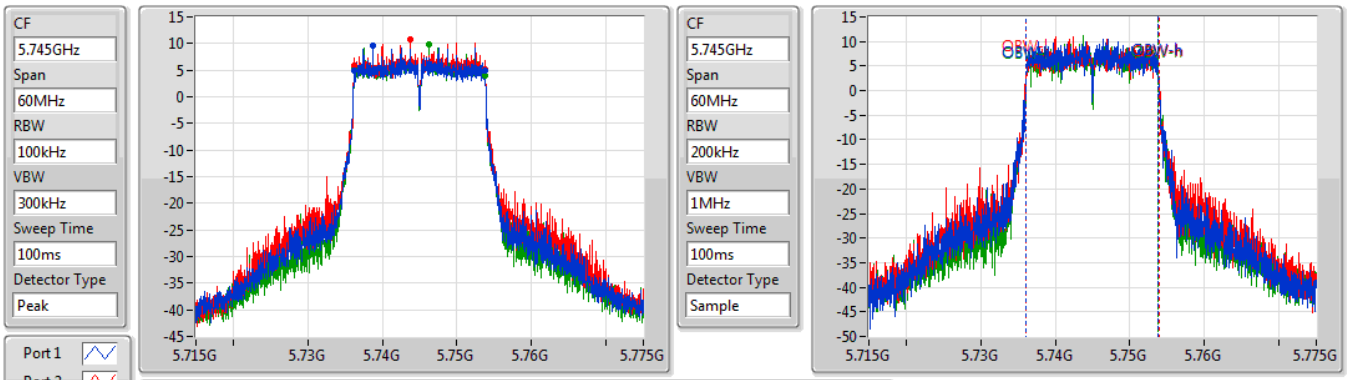


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.2M	5.73696G	5.81316G	75.984M	5.737039G	5.813022G	500k	1
76.2M	5.73684G	5.81304G	75.563M	5.7371145G	5.812709G	500k	2
76.32M	5.73684G	5.81316G	75.537M	5.737242G	5.812779G	500k	3

802.11ac VHT20-BF_Nss1,(MCS0)_3TX EBW

5745MHz

05/12/2019

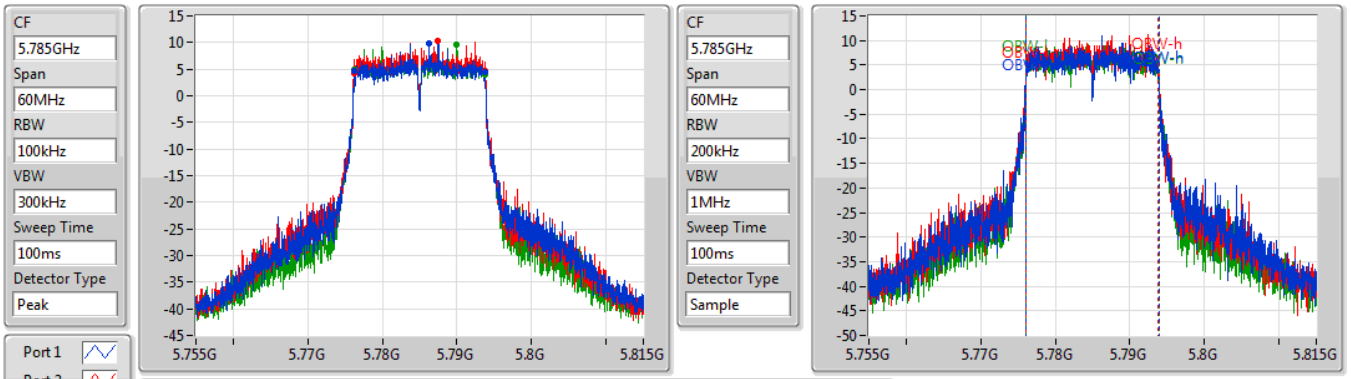


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.73621G	5.75376G	17.731M	5.736118G	5.753848G	500k	1
17.58M	5.73621G	5.75379G	17.776M	5.736102G	5.753879G	500k	2
17.58M	5.73621G	5.75379G	17.717M	5.736126G	5.753843G	500k	3

802.11ac VHT20-BF_Nss1,(MCS0)_3TX EBW

5785MHz

05/12/2019

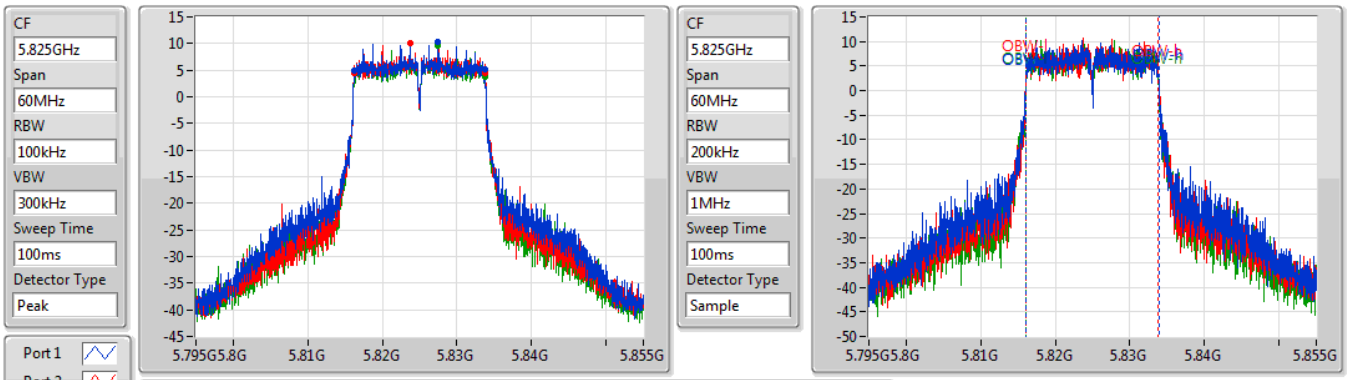


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.77624G	5.79379G	17.8M	5.776081G	5.793881G	500k	1
17.61M	5.77618G	5.79379G	17.725M	5.776131G	5.793856G	500k	2
17.58M	5.77621G	5.79379G	17.737M	5.776136G	5.793873G	500k	3

802.11ac VHT20-BF_Nss1,(MCS0)_3TX EBW

5825MHz

05/12/2019

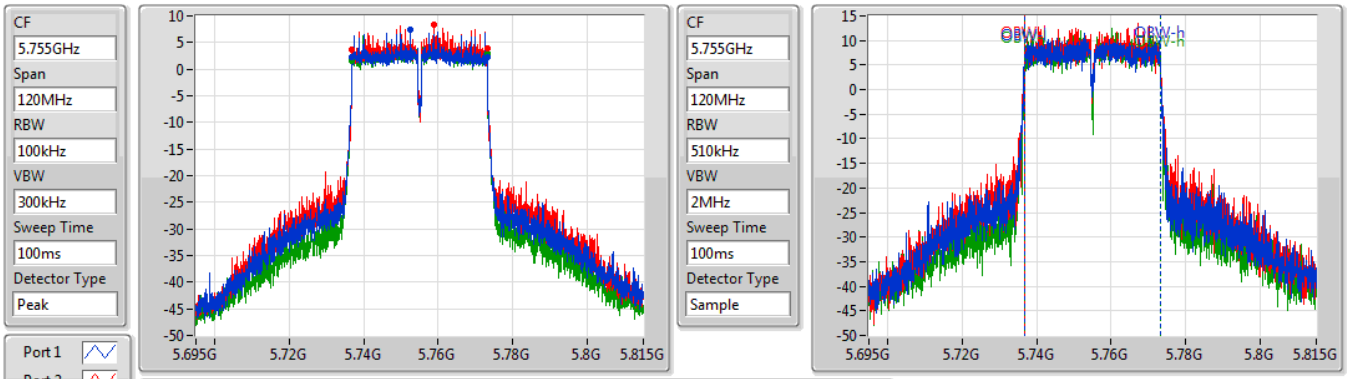


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.81621G	5.83376G	17.779M	5.816095G	5.833875G	500k	1
17.61M	5.81618G	5.83379G	17.722M	5.816122G	5.833844G	500k	2
17.58M	5.81621G	5.83379G	17.738M	5.816118G	5.833856G	500k	3

802.11ac VHT40-BF_Nss1,(MCS0)_3TX EBW

5755MHz

05/12/2019

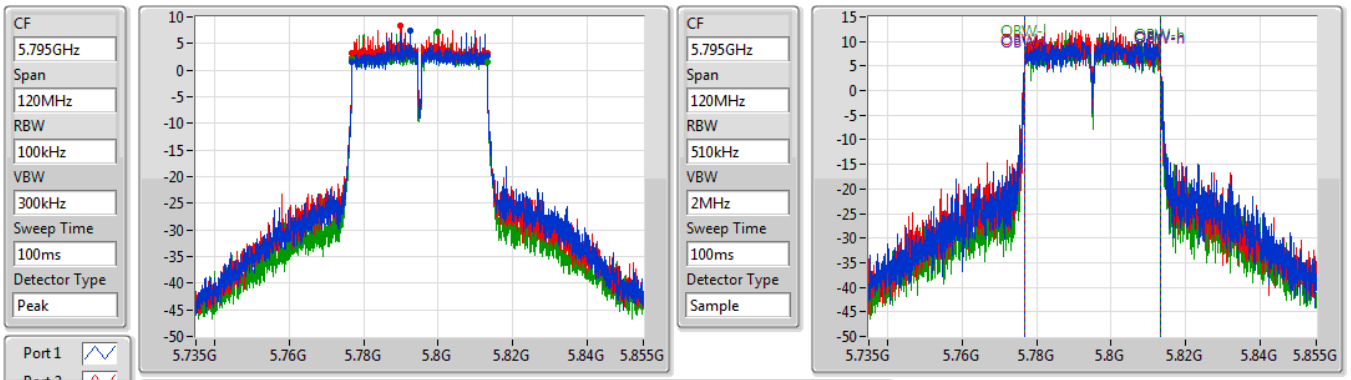


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.73682G	5.77312G	36.363M	5.736804G	5.773167G	500k	1
36.3M	5.73682G	5.77312G	36.325M	5.736843G	5.773168G	500k	2
36.3M	5.73682G	5.77312G	36.185M	5.736923G	5.773107G	500k	3

802.11ac VHT40-BF_Nss1,(MCS0)_3TX EBW

5795MHz

05/12/2019

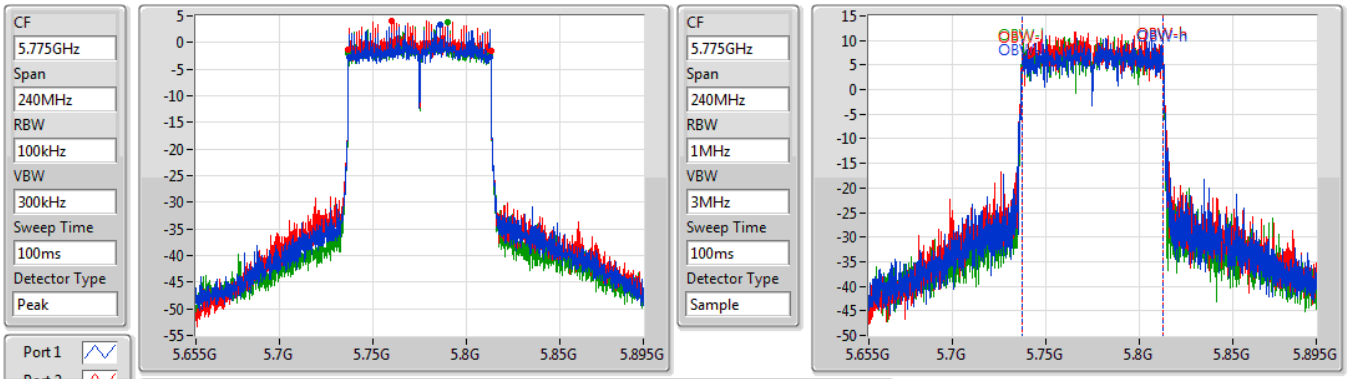


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.77682G	5.81312G	36.364M	5.776852G	5.813216G	500k	1
36.3M	5.77682G	5.81312G	36.364M	5.776814G	5.813179G	500k	2
36.36M	5.77682G	5.81318G	36.256M	5.776865G	5.813121G	500k	3

802.11ac VHT80-BF_Nss1,(MCS0)_3TX **EBW**

5775MHz

05/12/2019



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75.72M	5.73708G	5.8128G	75.85M	5.737142G	5.812991G	500k	1
76.32M	5.73684G	5.81316G	75.57M	5.737159G	5.812729G	500k	2
76.2M	5.73684G	5.81304G	75.783M	5.737089G	5.812872G	500k	3

Summary

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_3TX	29.93	0.98401
802.11ac VHT20_Nss1,(MCS0)_3TX	29.93	0.98401
802.11ac VHT40_Nss1,(MCS0)_3TX	29.74	0.94189
802.11ac VHT80_Nss1,(MCS0)_3TX	26.95	0.49545
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	27.72	0.59156
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	27.72	0.59156
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	26.75	0.47315

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	3.47	24.87	25.11	25.21	29.84	30.00
5785MHz	Pass	3.47	25.13	24.96	25.19	29.87	30.00
5825MHz	Pass	3.47	25.23	25.23	25.01	29.93	30.00
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	3.47	24.68	25.13	25.15	29.76	30.00
5785MHz	Pass	3.47	25.04	25.03	25.08	29.82	30.00
5825MHz	Pass	3.47	25.22	25.21	25.04	29.93	30.00
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5755MHz	Pass	3.47	23.83	23.65	23.96	28.59	30.00
5795MHz	Pass	3.47	25.09	24.84	24.96	29.74	30.00
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5775MHz	Pass	3.47	22.23	21.89	22.39	26.95	30.00
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	8.24	22.88	22.92	23.05	27.72	27.76
5785MHz	Pass	8.24	22.81	22.91	23.09	27.71	27.76
5825MHz	Pass	8.24	22.78	22.87	22.97	27.65	27.76
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5755MHz	Pass	8.24	22.83	23.02	22.98	27.72	27.76
5795MHz	Pass	8.24	22.79	22.95	22.86	27.64	27.76
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5775MHz	Pass	8.24	22.03	21.79	22.12	26.75	27.76

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

Summary

Mode	PD (dBm/RBW)
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_3TX	15.01
802.11ac VHT20_Nss1,(MCS0)_3TX	14.82
802.11ac VHT40_Nss1,(MCS0)_3TX	11.58
802.11ac VHT80_Nss1,(MCS0)_3TX	5.64
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	12.74
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	9.55
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	5.51

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

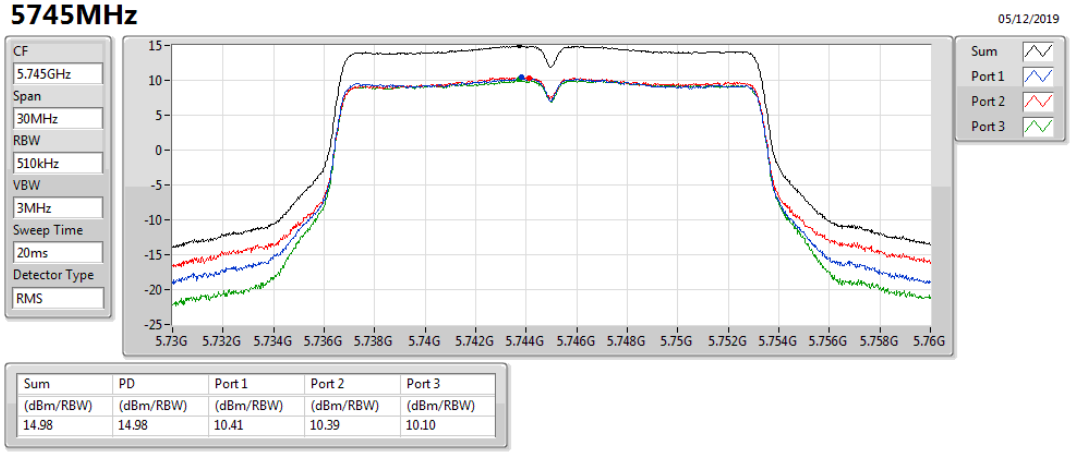
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	8.24	10.41	10.39	10.10	14.98	27.76
5785MHz	Pass	8.24	10.05	10.72	10.14	14.92	27.76
5825MHz	Pass	8.24	10.40	10.78	10.03	15.01	27.76
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	8.24	9.91	10.51	9.97	14.82	27.76
5785MHz	Pass	8.24	9.59	10.58	9.67	14.68	27.76
5825MHz	Pass	8.24	9.67	10.53	9.80	14.66	27.76
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5755MHz	Pass	8.24	5.37	6.30	5.41	10.43	27.76
5795MHz	Pass	8.24	6.79	7.49	6.59	11.58	27.76
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5775MHz	Pass	8.24	0.92	1.50	0.95	5.64	27.76
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5745MHz	Pass	8.24	7.79	8.49	7.92	12.74	27.76
5785MHz	Pass	8.24	7.50	8.46	7.77	12.63	27.76
5825MHz	Pass	8.24	7.72	8.14	7.59	12.48	27.76
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5755MHz	Pass	8.24	4.66	5.43	4.71	9.52	27.76
5795MHz	Pass	8.24	4.73	5.35	4.61	9.55	27.76
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5775MHz	Pass	8.24	0.60	1.55	0.65	5.51	27.76

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;

802.11a_Nss1,(6Mbps)_3TX PSD

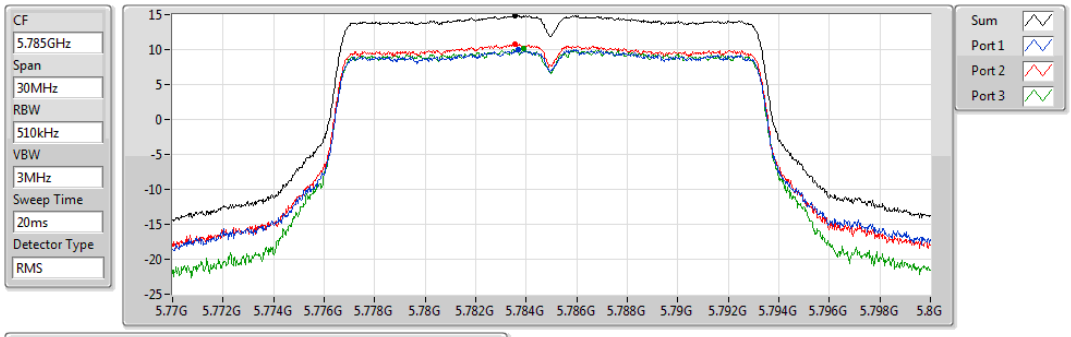
5745MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.98	14.98	10.41	10.39	10.10

802.11a_Nss1,(6Mbps)_3TX PSD

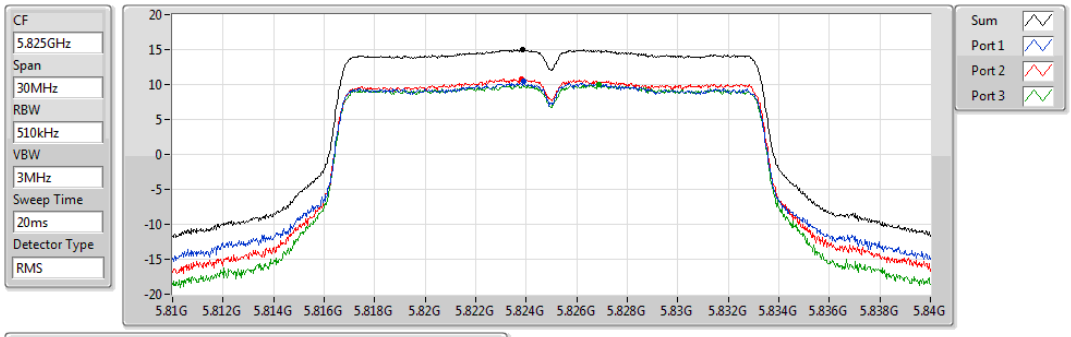
5785MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.92	14.92	10.05	10.72	10.14

802.11a_Nss1,(6Mbps)_3TX PSD

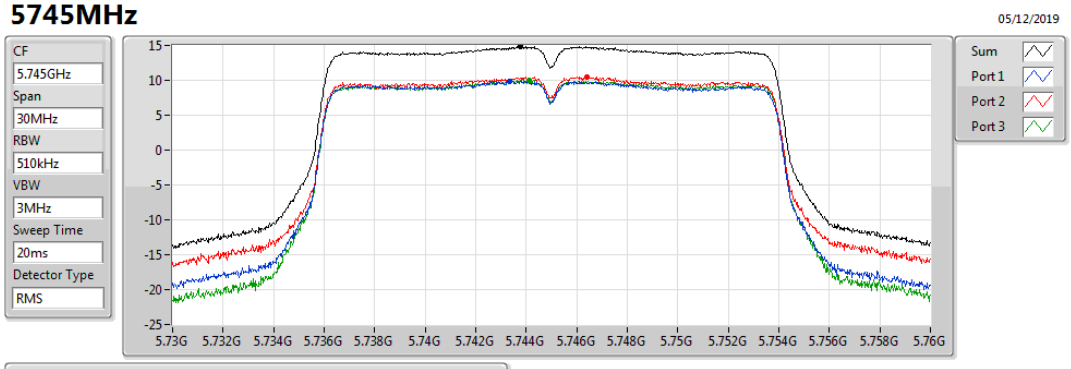
5825MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
15.01	15.01	10.40	10.78	10.03

802.11ac VHT20_Nss1,(MCS0)_3TX **PSD**

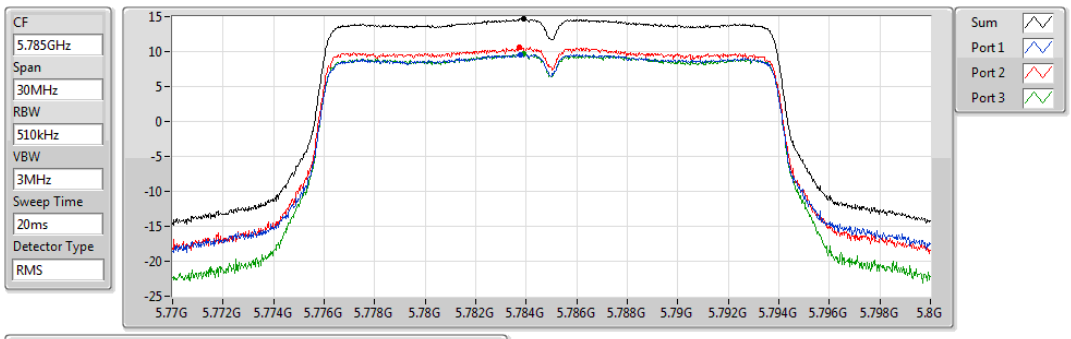
5745MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.82	14.82	9.91	10.51	9.97

802.11ac VHT20_Nss1,(MCS0)_3TX **PSD**

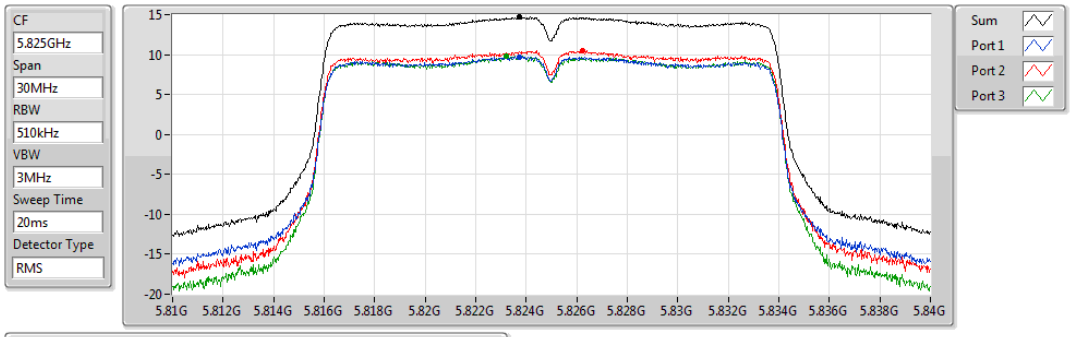
5785MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.68	14.68	9.59	10.58	9.67

802.11ac VHT20_Nss1,(MCS0)_3TX **PSD**

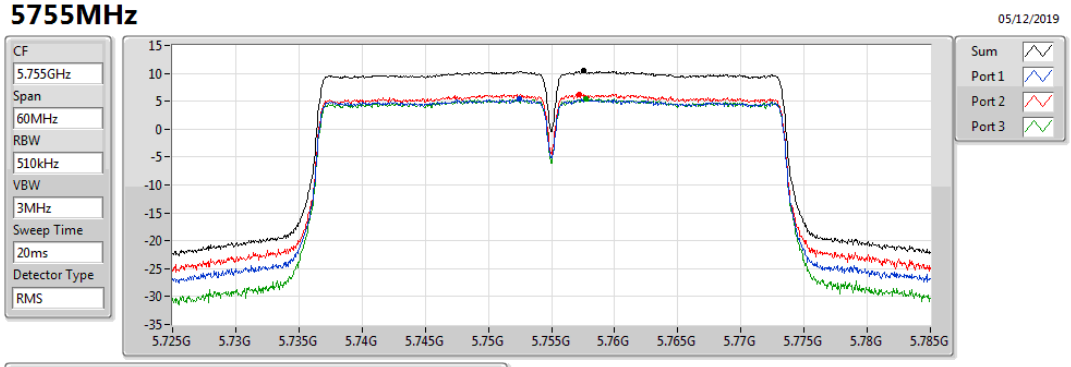
5825MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.66	14.66	9.67	10.53	9.80

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

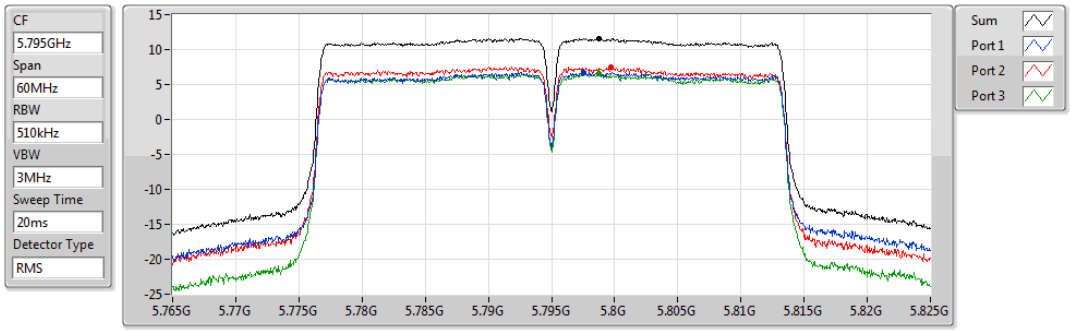
5755MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.43	10.43	5.37	6.30	5.41

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

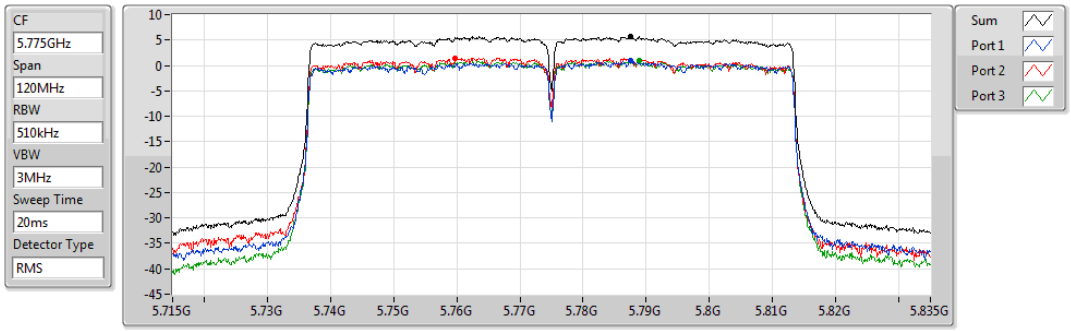
5795MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.58	11.58	6.79	7.49	6.59

802.11ac VHT80_Nss1,(MCS0)_3TX PSD

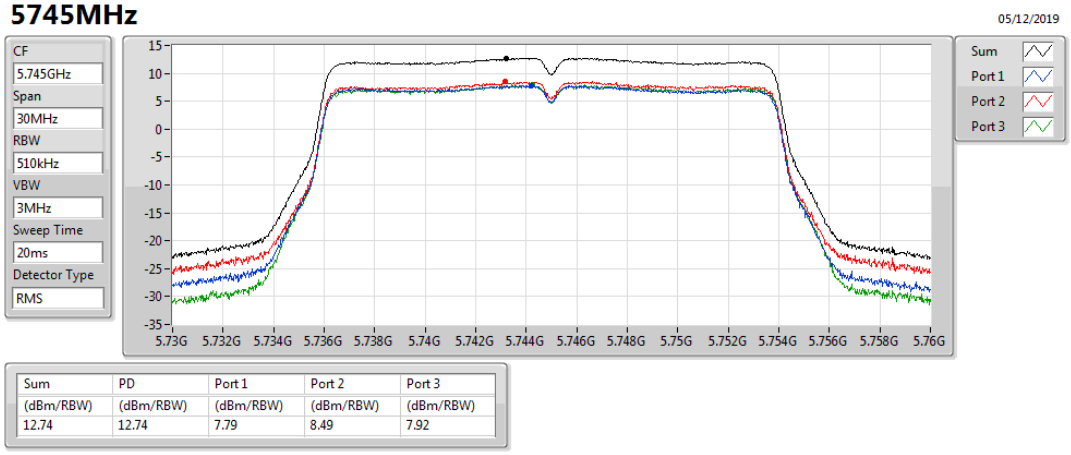
5775MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.64	5.64	0.92	1.50	0.95

802.11ac VHT20-BF_Nss1,(MCS0)_3TX **PSD**

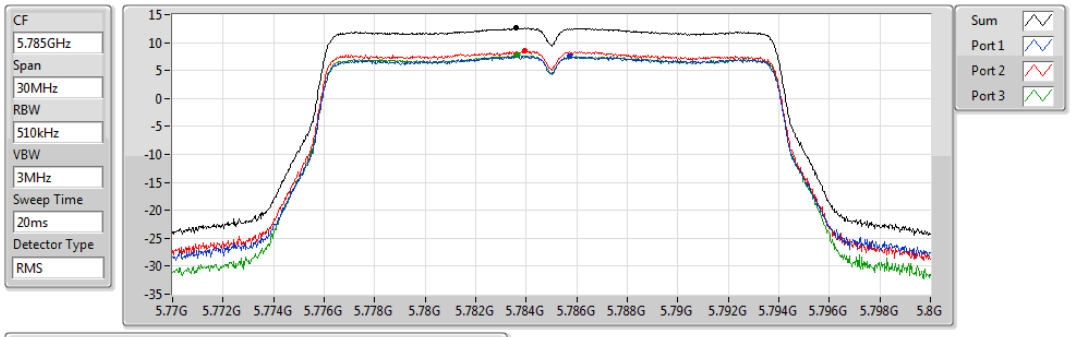
5745MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.74	12.74	7.79	8.49	7.92

802.11ac VHT20-BF_Nss1,(MCS0)_3TX **PSD**

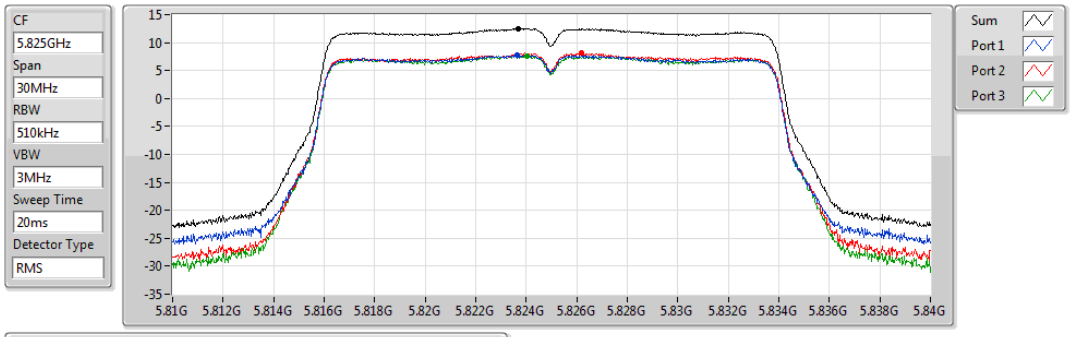
5785MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.63	12.63	7.50	8.46	7.77

802.11ac VHT20-BF_Nss1,(MCS0)_3TX **PSD**

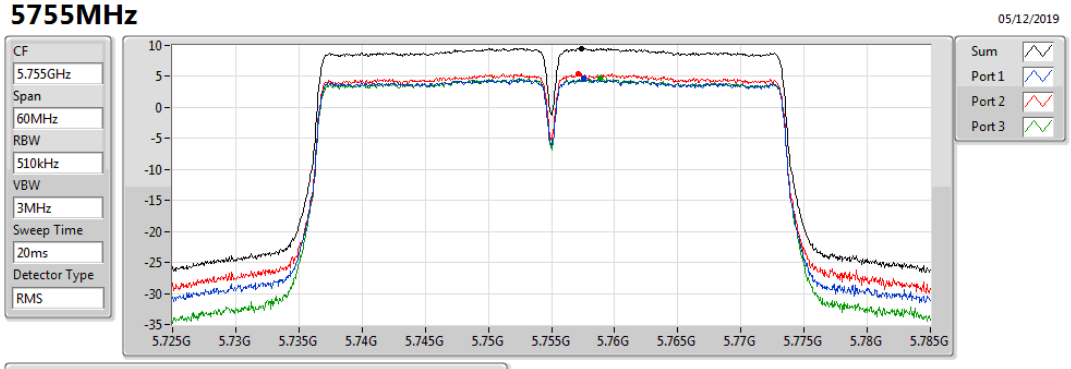
5825MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.48	12.48	7.72	8.14	7.59

802.11ac VHT40-BF_Nss1,(MCS0)_3TX **PSD**

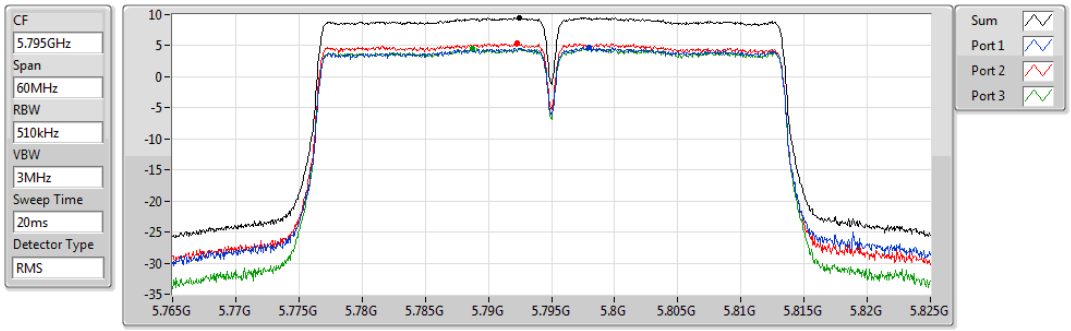
5755MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.52	9.52	4.66	5.43	4.71

802.11ac VHT40-BF_Nss1,(MCS0)_3TX **PSD**

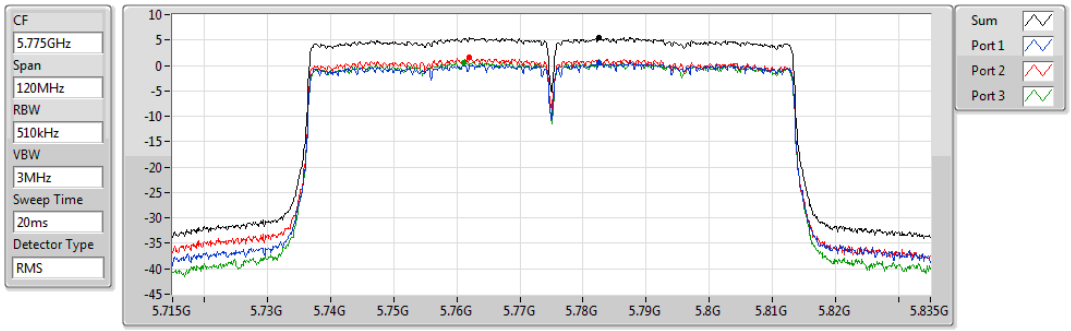
5795MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.55	9.55	4.73	5.35	4.61

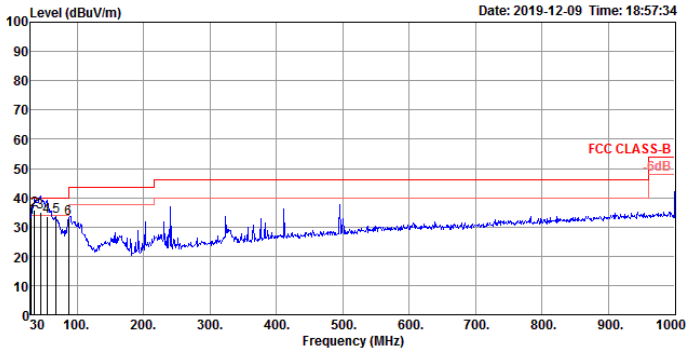
802.11ac VHT80-BF_Nss1,(MCS0)_3TX **PSD**

5775MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.51	5.51	0.60	1.55	0.65

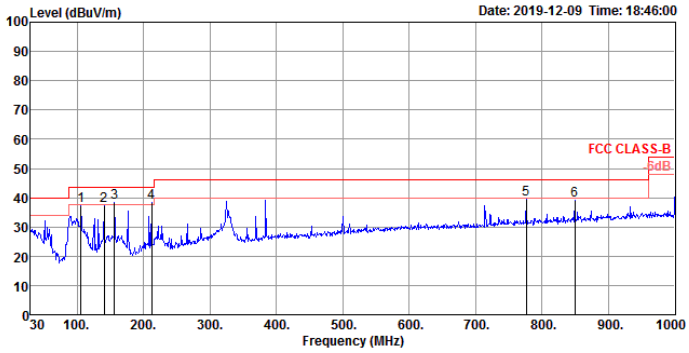
RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.97	33.34	40.00	-6.66	39.10	0.69	25.11	31.56	100	226	QP	VERTICAL
2	35.82	35.63	40.00	-4.37	44.10	0.77	22.25	31.49	100	291	QP	VERTICAL
3	44.55	35.15	40.00	-4.85	48.60	0.89	17.25	31.59	125	265	QP	VERTICAL
4	54.25	33.66	40.00	-6.34	50.70	0.92	13.83	31.79	125	360	QP	VERTICAL
5	68.80	33.52	40.00	-6.48	51.78	1.02	12.60	31.88	300	333	Peak	VERTICAL
6	87.23	32.79	40.00	-7.21	48.81	1.18	14.68	31.88	125	108	Peak	VERTICAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	105.66	37.40	43.50	-6.10	50.25	1.34	17.73	31.92	200	294	Peak	HORIZONTAL
2	140.58	37.33	43.50	-6.17	50.17	1.51	17.75	32.10	125	286	Peak	HORIZONTAL
3	156.10	38.50	43.50	-5.00	52.13	1.58	16.66	31.87	125	286	Peak	HORIZONTAL
4	212.36	38.43	43.50	-5.07	52.18	1.81	16.40	31.96	125	284	Peak	HORIZONTAL
5	775.93	39.45	46.00	-6.55	41.61	3.68	26.48	32.32	100	284	Peak	HORIZONTAL
6	849.65	39.25	46.00	-6.75	40.58	3.76	27.30	32.39	125	286	Peak	HORIZONTAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

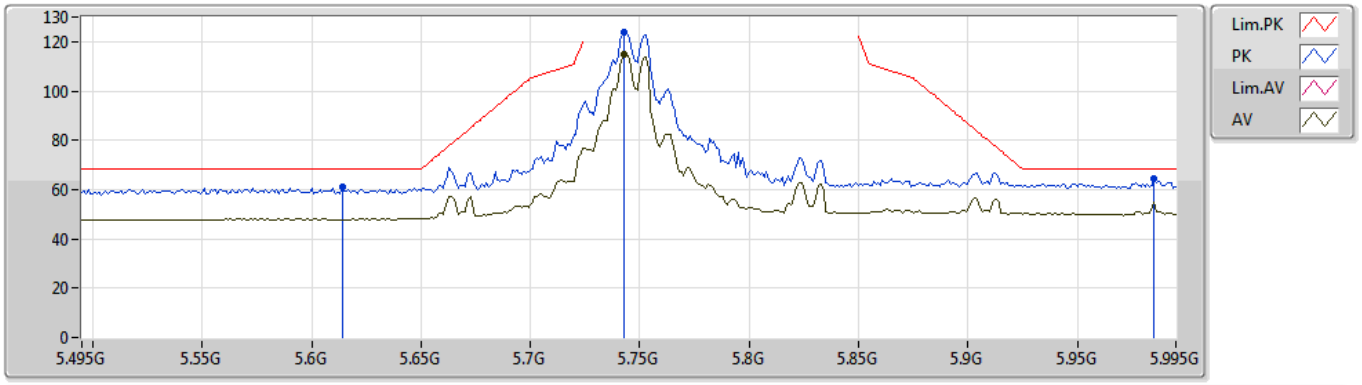
Summary

Mode	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	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	Pass	PK	5.932G	66.48	68.20	-1.72	6.34	3	Vertical	305	2.49	-

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

06/12/2019



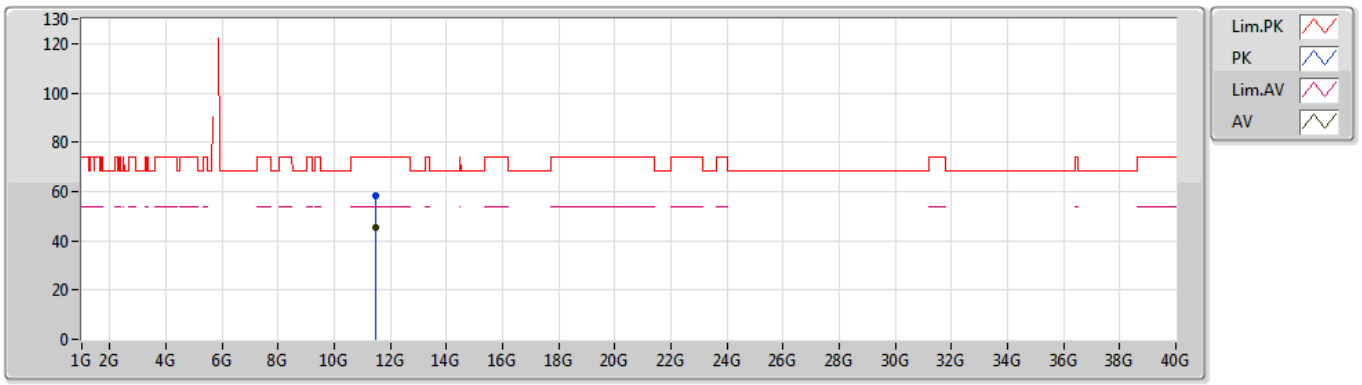
EUT Z_3TX
Setting 97
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.614G	60.87	68.20	-7.33	5.39	3	Vertical	21	2.24	-	55.48
PK	5.743G	123.79	Inf	-Inf	5.48	3	Vertical	21	2.24	-	118.31
AV	5.743G	114.95	Inf	-Inf	5.48	3	Vertical	21	2.24	-	109.47
PK	5.985G	64.42	68.20	-3.78	6.52	3	Vertical	21	2.24	-	57.90

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

06/12/2019



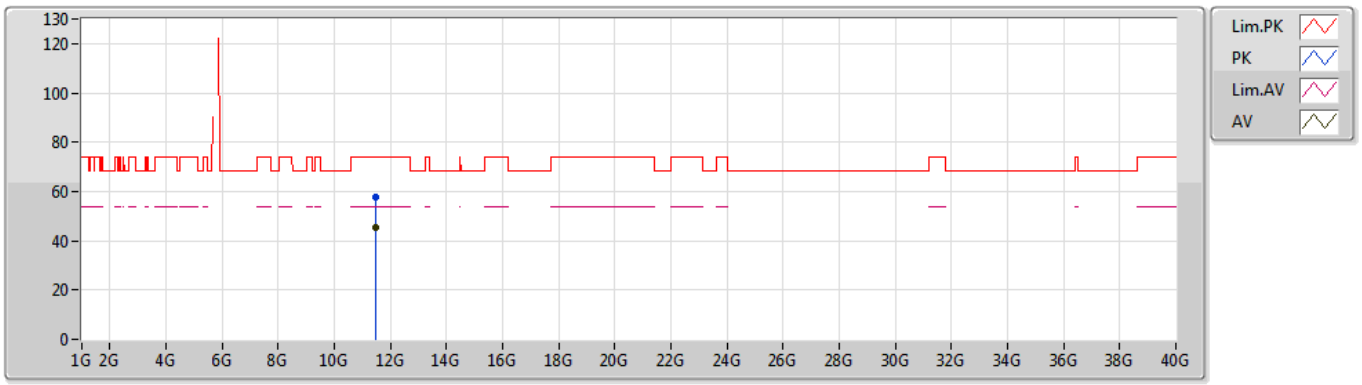
EUT Z_3TX
Setting 97
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.48658G	58.00	74.00	-16.00	11.64	3	Vertical	68	1.77	-	46.36
AV	11.48634G	45.44	54.00	-8.56	11.64	3	Vertical	68	1.77	-	33.80

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

06/12/2019



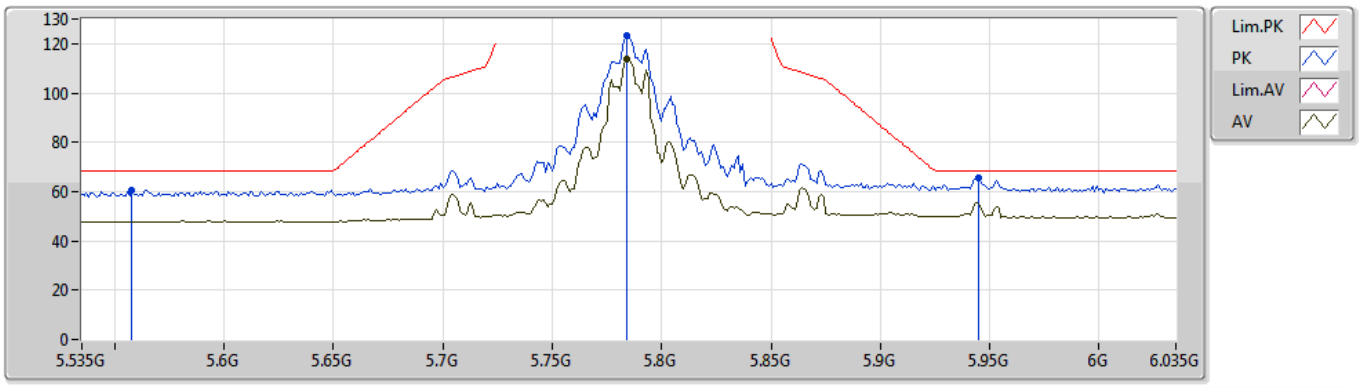
EUT Z_3TX
Setting 97
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.49228G	57.62	74.00	-16.38	11.63	3	Horizontal	139	2.14	-	45.99
AV	11.4864G	45.18	54.00	-8.82	11.64	3	Horizontal	139	2.14	-	33.54

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

06/12/2019



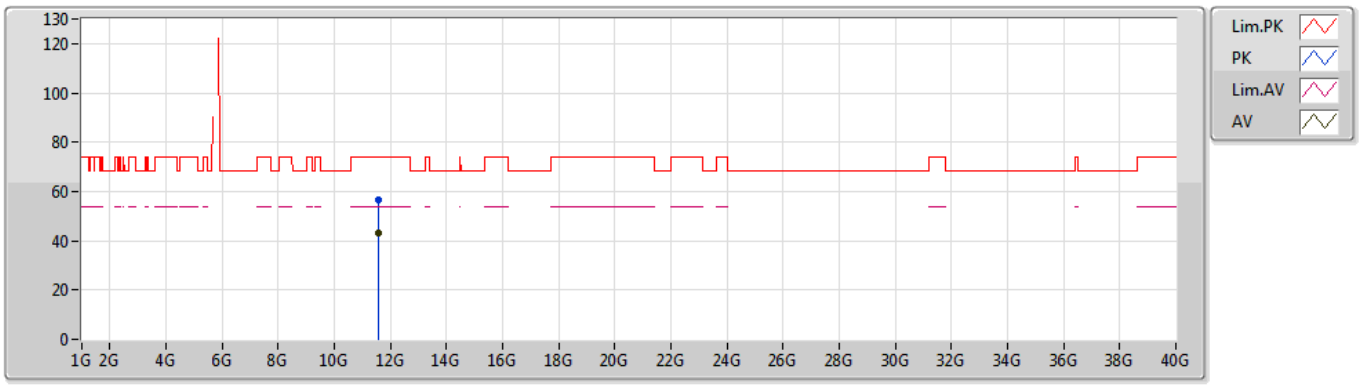
EUT Z_3TX
Setting 96
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.558G	60.77	68.20	-7.43	5.24	3	Vertical	66	2.32	-	55.53
PK	5.784G	123.07	Inf	-Inf	5.52	3	Vertical	66	2.32	-	117.55
AV	5.784G	113.98	Inf	-Inf	5.52	3	Vertical	66	2.32	-	108.46
PK	5.945G	65.64	68.20	-2.56	6.36	3	Vertical	66	2.32	-	59.28

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

06/12/2019



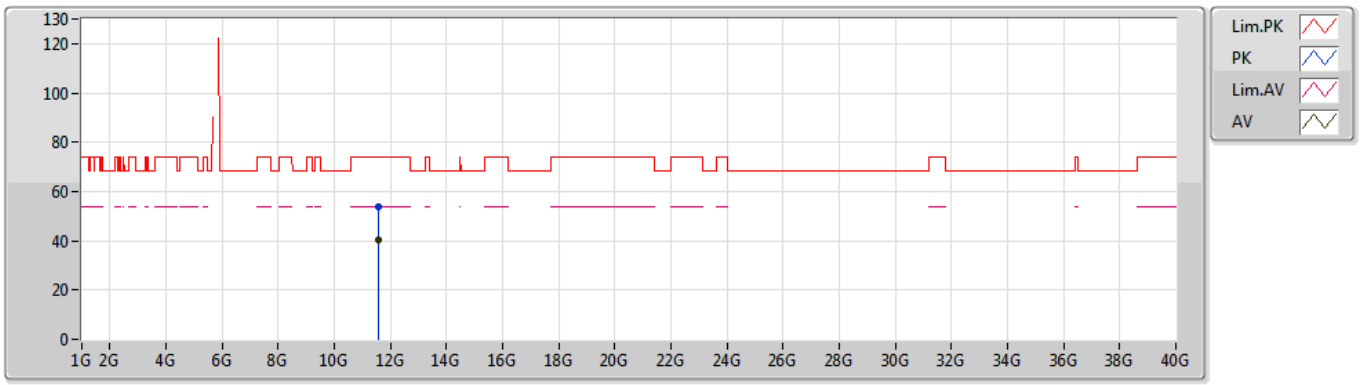
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.56532G	56.60	74.00	-17.40	11.55	3	Vertical	72	1.50	-	45.05
AV	11.5655G	43.42	54.00	-10.58	11.55	3	Vertical	72	1.50	-	31.87

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

06/12/2019



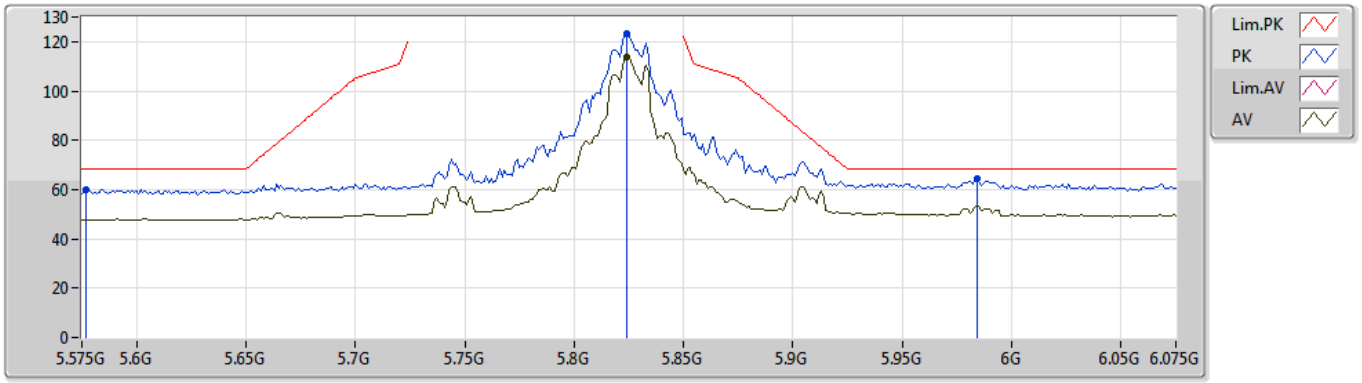
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.57762G	53.75	74.00	-20.25	11.53	3	Horizontal	60	2.13	-	42.22
AV	11.57072G	40.53	54.00	-13.47	11.54	3	Horizontal	60	2.13	-	28.99

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

06/12/2019



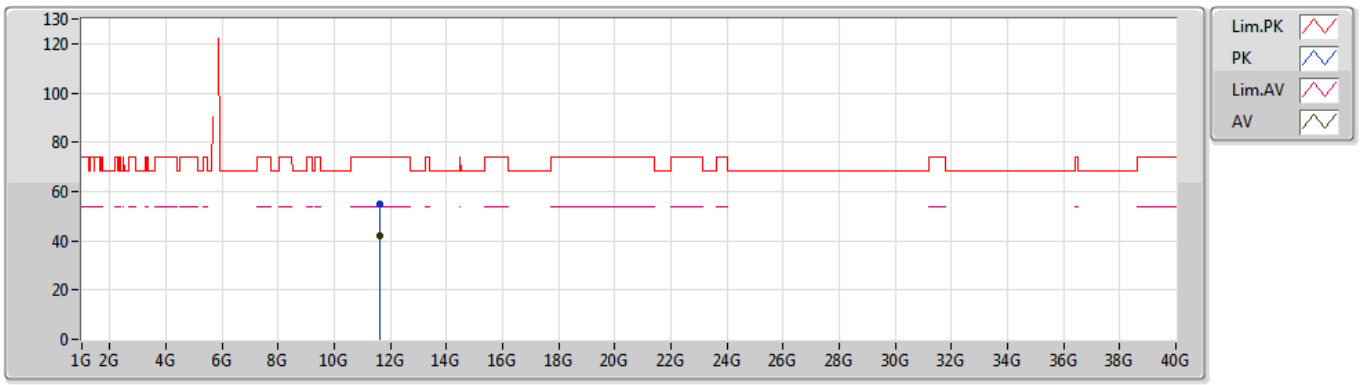
EUT Z_3TX
Setting 97
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.577G	60.04	68.20	-8.16	5.30	3	Vertical	72	2.42	-	54.74
PK	5.824G	123.17	Inf	-Inf	5.69	3	Vertical	72	2.42	-	117.48
AV	5.824G	113.97	Inf	-Inf	5.69	3	Vertical	72	2.42	-	108.28
PK	5.984G	64.33	68.20	-3.87	6.52	3	Vertical	72	2.42	-	57.81

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

06/12/2019



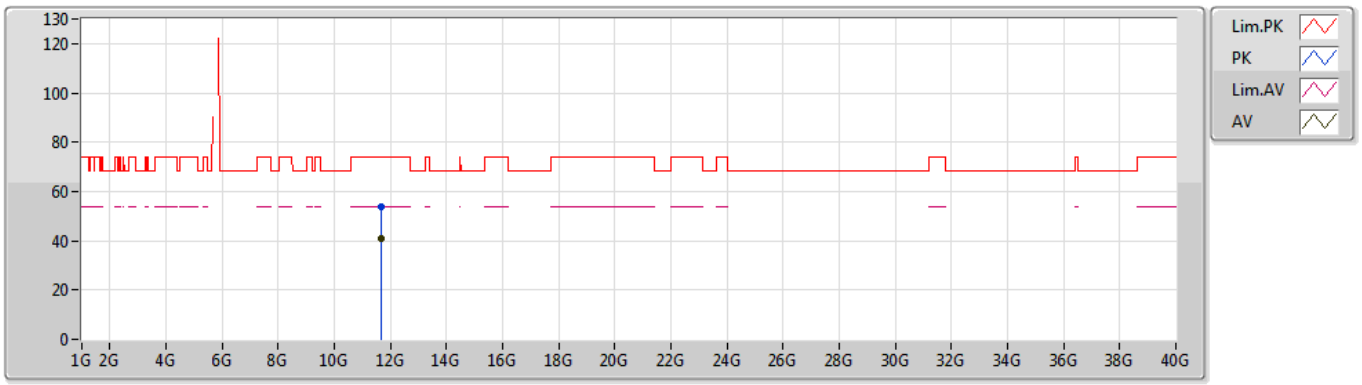
EUT Z_3TX
Setting 97
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.64586G	54.89	74.00	-19.11	11.45	3	Vertical	74	1.37	-	43.44
AV	11.64562G	41.95	54.00	-12.05	11.45	3	Vertical	74	1.37	-	30.50

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

06/12/2019



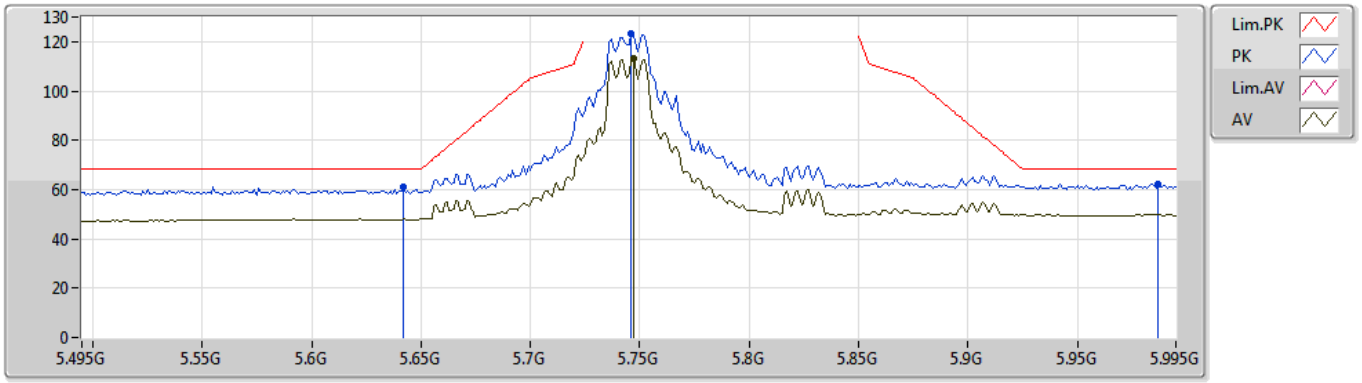
EUT Z_3TX
Setting 97
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.64934G	53.52	74.00	-20.48	11.45	3	Horizontal	71	2.15	-	42.07
AV	11.64772G	40.78	54.00	-13.22	11.45	3	Horizontal	71	2.15	-	29.33

802.11ac VHT20_Nss1,(MCS0)_3TX

5745MHz_TX

06/12/2019



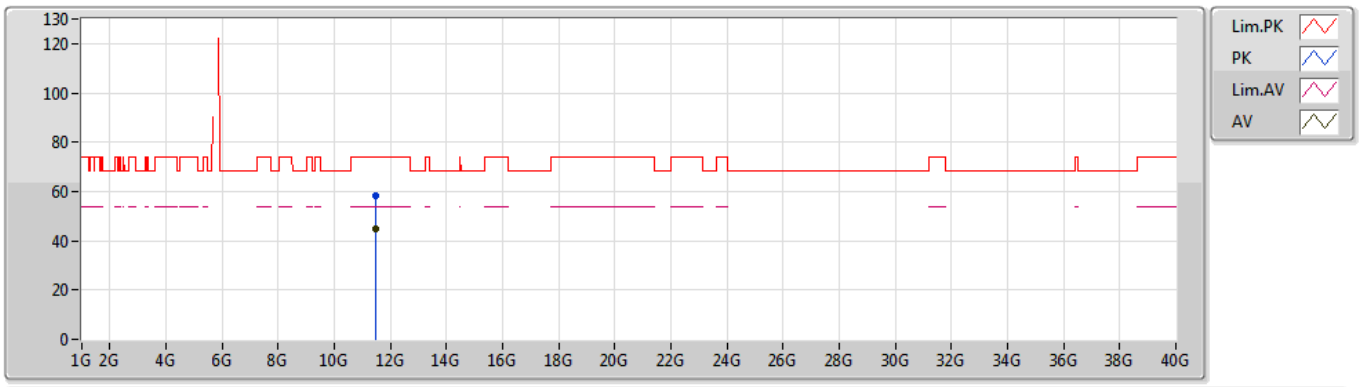
EUT Z_3TX
Setting 95
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.642G	60.95	68.20	-7.25	5.40	3	Vertical	26	2.04	-	55.55
PK	5.746G	123.26	Inf	-Inf	5.48	3	Vertical	26	2.04	-	117.78
AV	5.747G	113.32	Inf	-Inf	5.48	3	Vertical	26	2.04	-	107.84
PK	5.987G	62.32	68.20	-5.88	6.53	3	Vertical	26	2.04	-	55.79

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5745MHz_TX



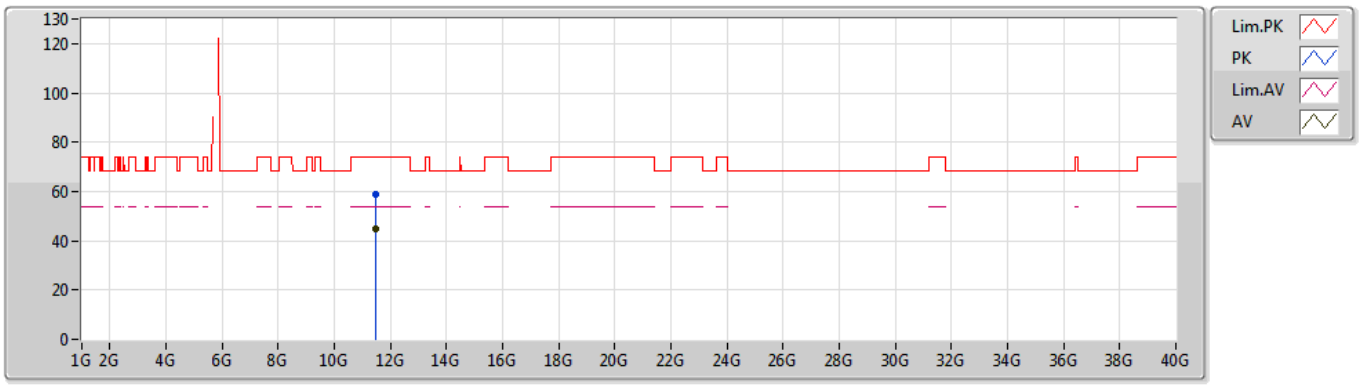
EUT Z_3TX
Setting 95
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.49186G	58.06	74.00	-15.94	11.63	3	Vertical	72	1.48	-	46.43
AV	11.49168G	44.78	54.00	-9.22	11.63	3	Vertical	72	1.48	-	33.15

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5745MHz_TX



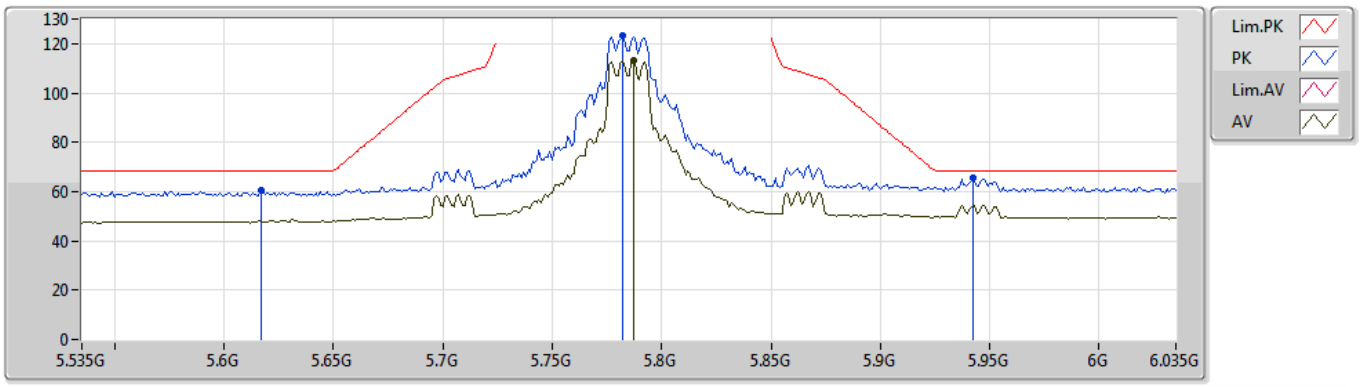
EUT Z_3TX
Setting 95
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.48718G	58.97	74.00	-15.03	11.64	3	Horizontal	139	2.13	-	47.33
AV	11.4873G	45.06	54.00	-8.94	11.64	3	Horizontal	139	2.13	-	33.42

802.11ac VHT20_Nss1,(MCS0)_3TX

5785MHz_TX

06/12/2019



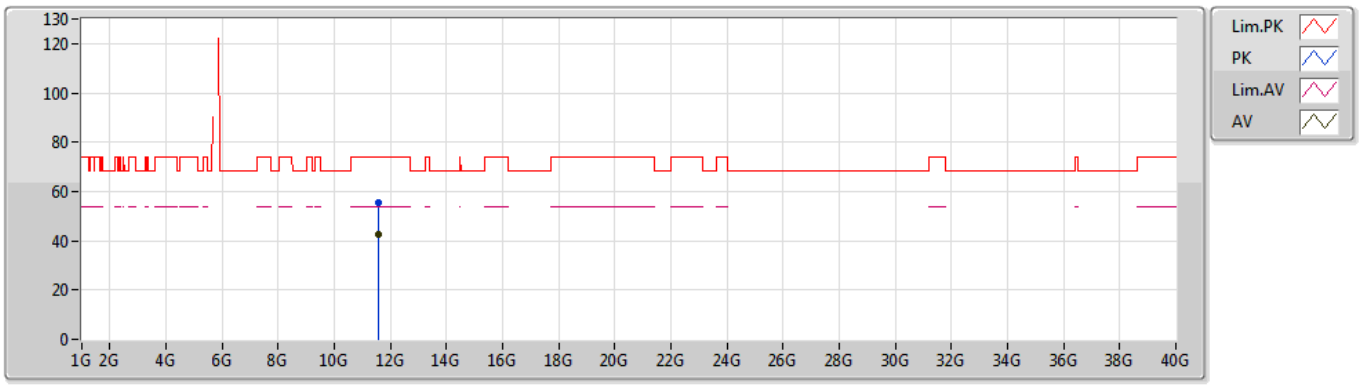
EUT Z_3TX
Setting 94
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.617G	60.29	68.20	-7.91	5.40	3	Vertical	346	2.90	-	54.89
PK	5.782G	123.02	Inf	-Inf	5.52	3	Vertical	346	2.90	-	117.50
AV	5.787G	113.21	Inf	-Inf	5.52	3	Vertical	346	2.90	-	107.69
PK	5.942G	65.75	68.20	-2.45	6.35	3	Vertical	346	2.90	-	59.40

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5785MHz_TX



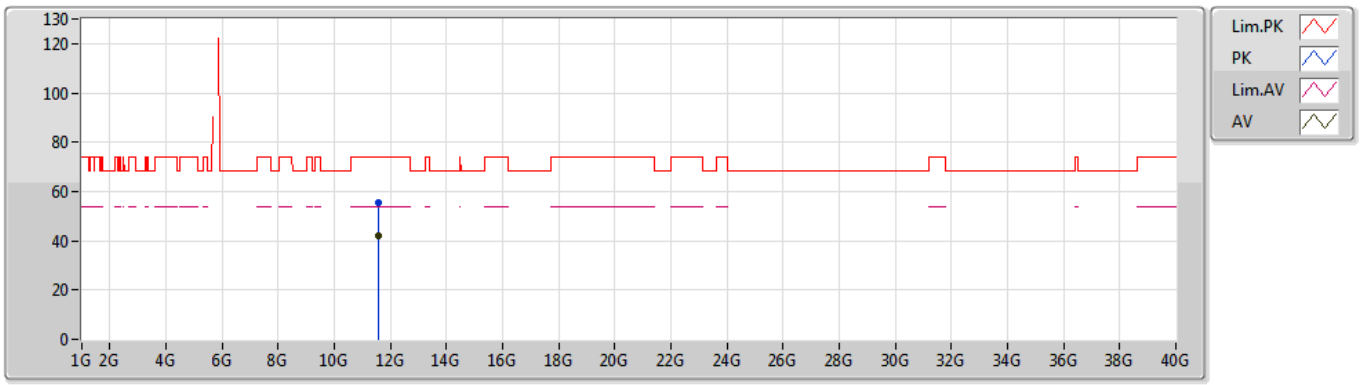
EUT Z_3TX
Setting 94
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.56748G	55.57	74.00	-18.43	11.55	3	Vertical	69	1.75	-	44.02
AV	11.567G	42.84	54.00	-11.16	11.55	3	Vertical	69	1.75	-	31.29

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5785MHz_TX



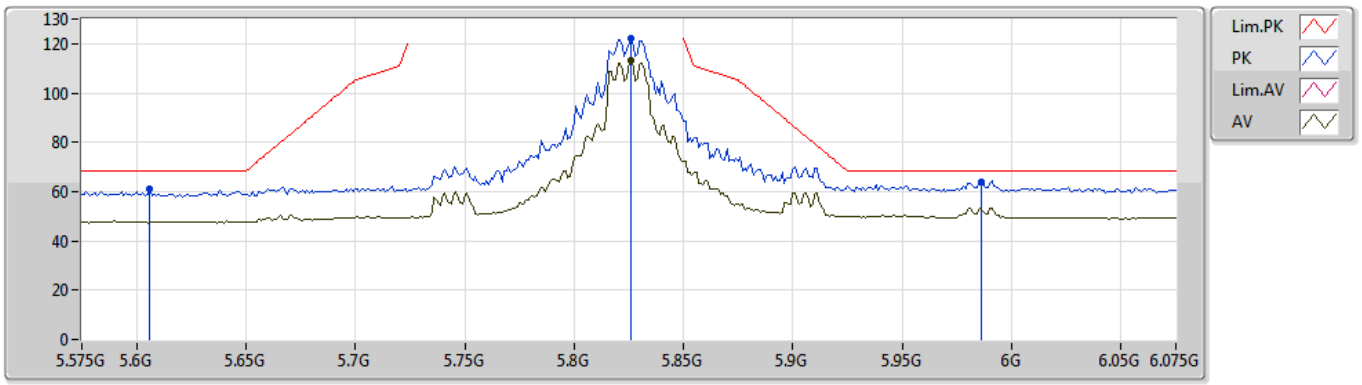
EUT Z_3TX
Setting 94
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.569G	55.47	74.00	-18.53	11.55	3	Horizontal	134	2.23	-	43.92
AV	11.569G	42.21	54.00	-11.79	11.55	3	Horizontal	134	2.23	-	30.66

802.11ac VHT20_Nss1,(MCS0)_3TX

5825MHz_TX

06/12/2019



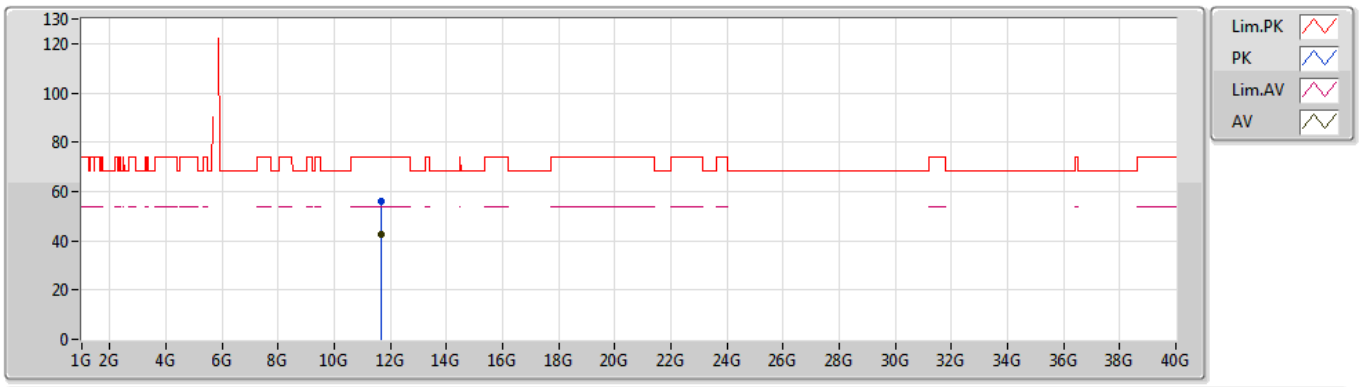
EUT Z_3TX
Setting 96
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.606G	60.88	68.20	-7.32	5.40	3	Vertical	14	2.21	-	55.48
PK	5.826G	122.24	Inf	-Inf	5.70	3	Vertical	14	2.21	-	116.54
AV	5.826G	112.93	Inf	-Inf	5.70	3	Vertical	14	2.21	-	107.23
PK	5.986G	63.80	68.20	-4.40	6.52	3	Vertical	14	2.21	-	57.28

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5825MHz_TX



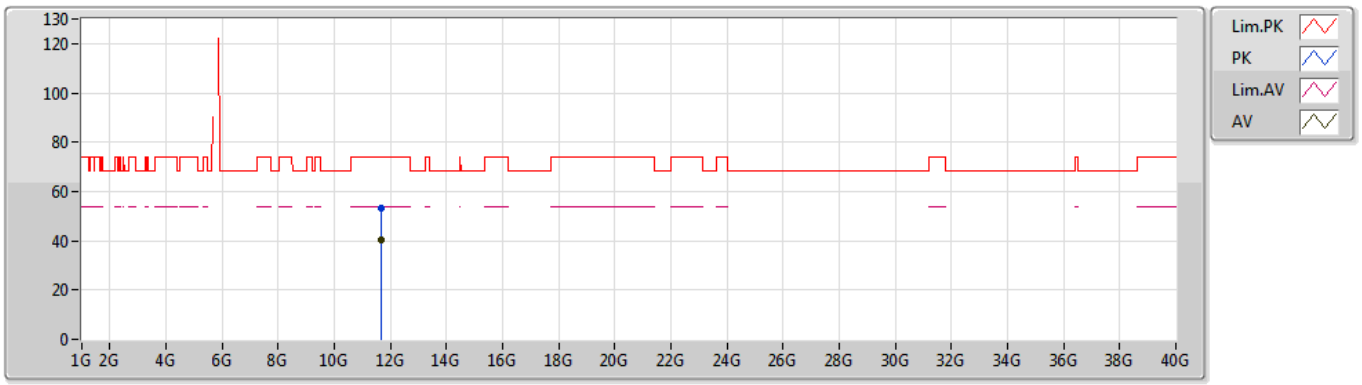
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.6548G	55.77	74.00	-18.23	11.45	3	Vertical	24	1.82	-	44.32
AV	11.64898G	42.49	54.00	-11.51	11.45	3	Vertical	24	1.82	-	31.04

802.11ac VHT20_Nss1,(MCS0)_3TX

06/12/2019

5825MHz_TX



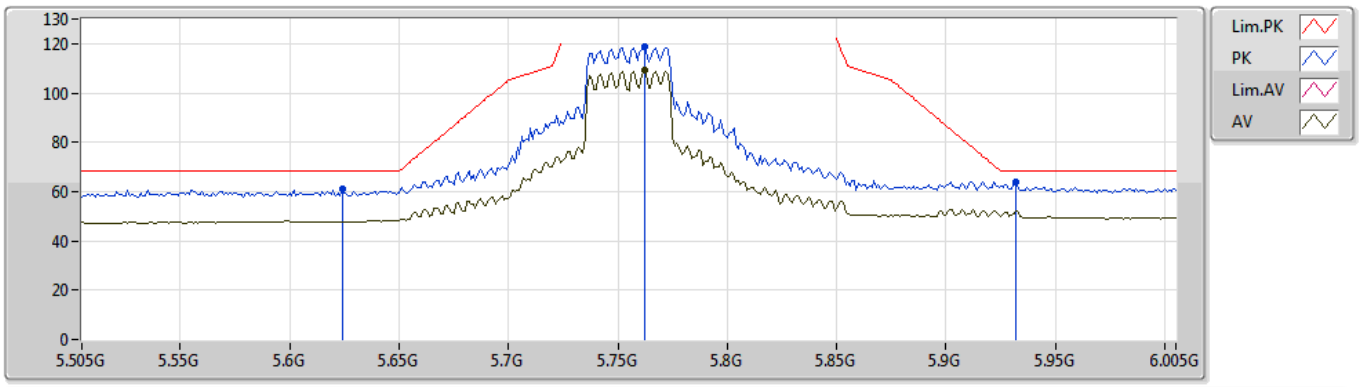
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.64934G	53.35	74.00	-20.65	11.45	3	Horizontal	75	1.02	-	41.90
AV	11.64766G	40.11	54.00	-13.89	11.45	3	Horizontal	75	1.02	-	28.66

802.11ac VHT40_Nss1,(MCS0)_3TX

06/12/2019

5755MHz_TX



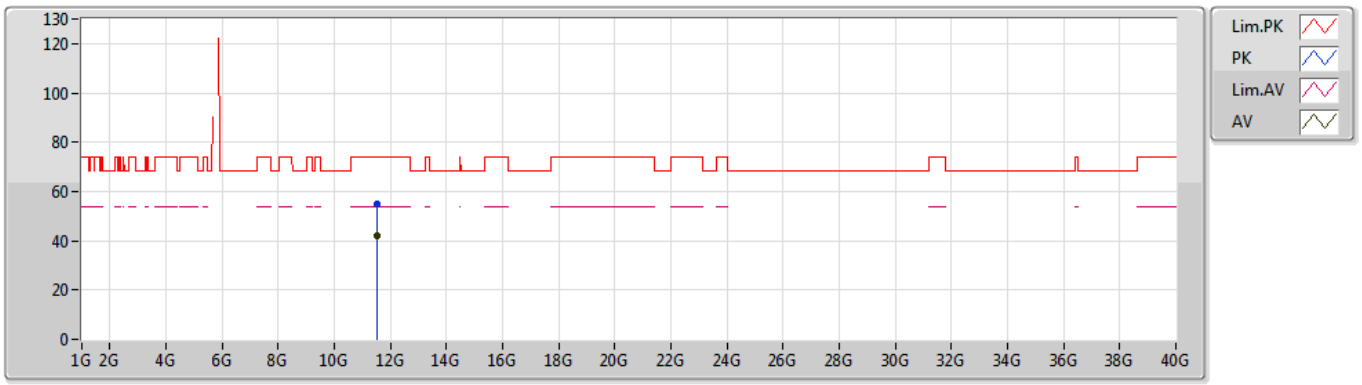
EUT Z_3TX
Setting 91
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.624G	60.88	68.20	-7.32	5.40	3	Vertical	346	2.91	-	55.48
PK	5.762G	118.96	Inf	-Inf	5.49	3	Vertical	346	2.91	-	113.47
AV	5.762G	109.21	Inf	-Inf	5.49	3	Vertical	346	2.91	-	103.72
PK	5.932G	63.81	68.20	-4.39	6.31	3	Vertical	346	2.91	-	57.50

802.11ac VHT40_Nss1,(MCS0)_3TX

5755MHz_TX

06/12/2019



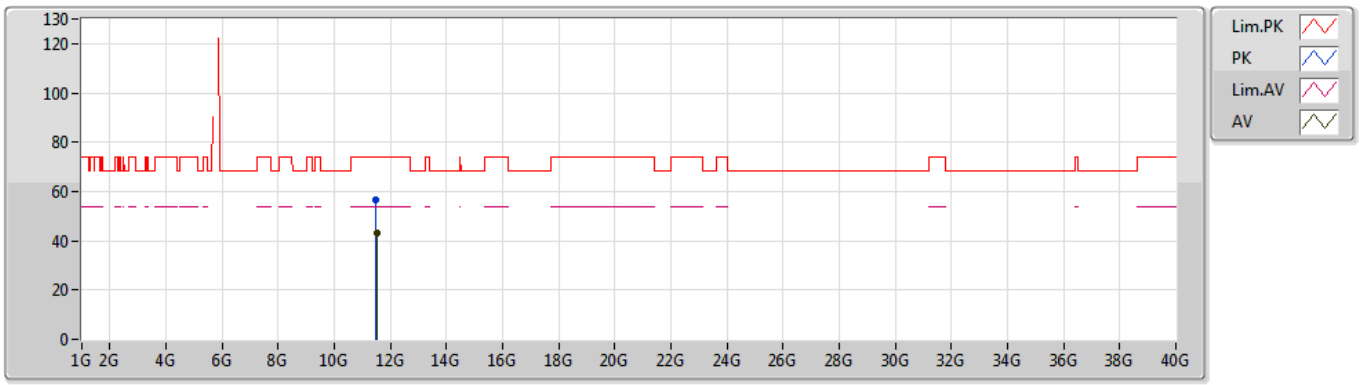
EUT Z_3TX
Setting 91
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.503G	55.14	74.00	-18.86	11.62	3	Vertical	72	1.50	-	43.52
AV	11.501G	42.16	54.00	-11.84	11.62	3	Vertical	72	1.50	-	30.54

802.11ac VHT40_Nss1,(MCS0)_3TX

06/12/2019

5755MHz_TX



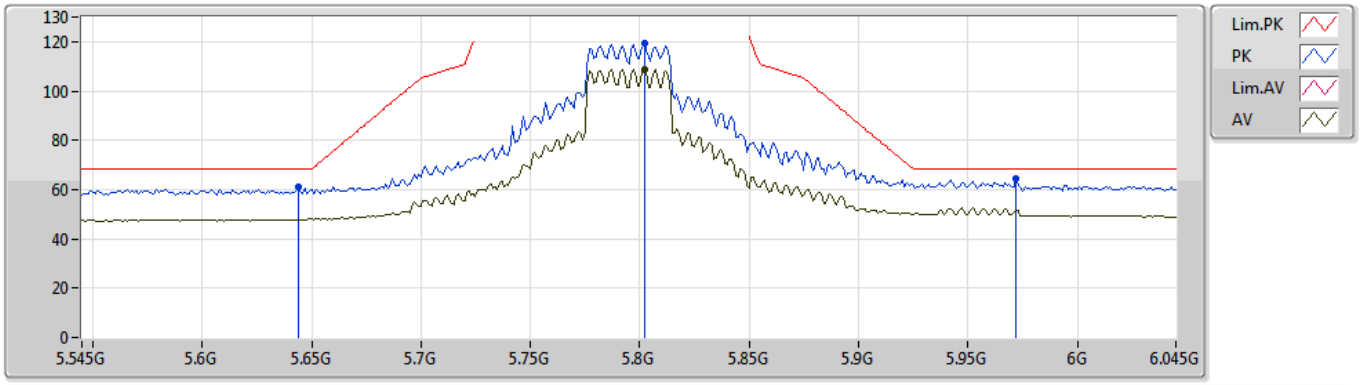
EUT Z_3TX
Setting 91
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.49764G	56.40	74.00	-17.60	11.62	3	Horizontal	138	2.19	-	44.78
AV	11.50226G	43.32	54.00	-10.68	11.62	3	Horizontal	138	2.19	-	31.70

802.11ac VHT40_Nss1,(MCS0)_3TX

5795MHz_TX

06/12/2019



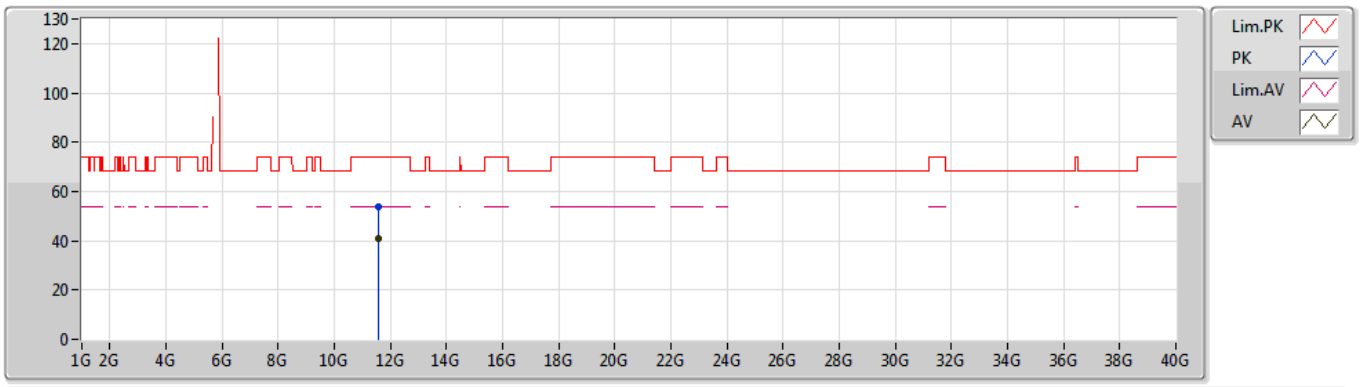
EUT Z_3TX
Setting 96
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.644G	60.82	68.20	-7.38	5.40	3	Vertical	23	1.91	-	55.42
PK	5.802G	119.39	Inf	-Inf	5.55	3	Vertical	23	1.91	-	113.84
AV	5.802G	108.89	Inf	-Inf	5.55	3	Vertical	23	1.91	-	103.34
PK	5.972G	64.16	68.20	-4.04	6.48	3	Vertical	23	1.91	-	57.68

802.11ac VHT40_Nss1,(MCS0)_3TX

06/12/2019

5795MHz_TX



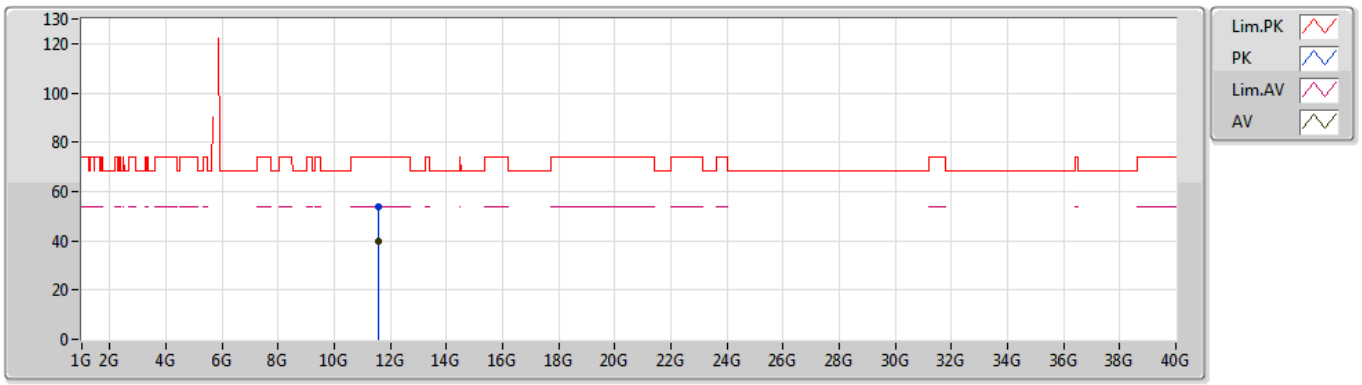
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.5852G	53.93	74.00	-20.07	11.53	3	Vertical	73	1.44	-	42.40
AV	11.58244G	40.87	54.00	-13.13	11.53	3	Vertical	73	1.44	-	29.34

802.11ac VHT40_Nss1,(MCS0)_3TX

06/12/2019

5795MHz_TX



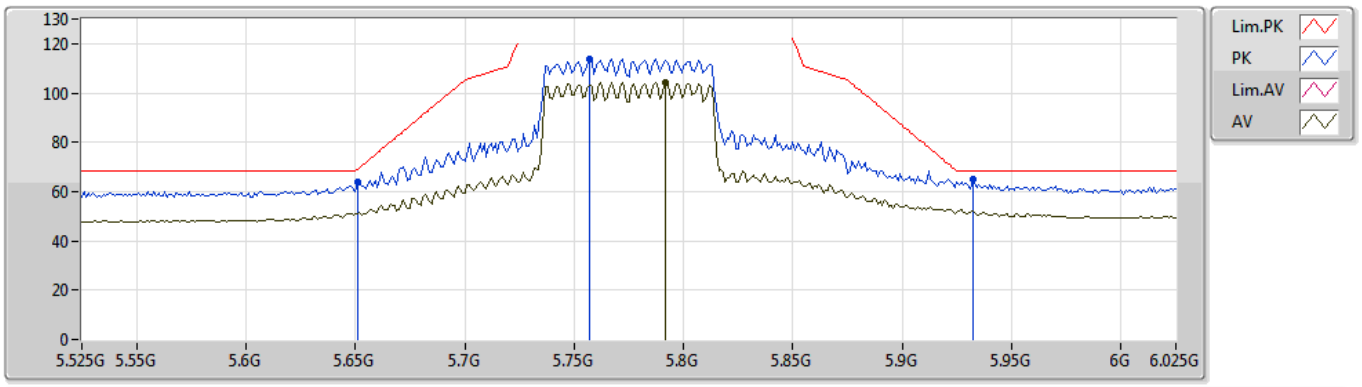
EUT Z_3TX
Setting 96
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.57794G	53.57	74.00	-20.43	11.53	3	Horizontal	140	2.23	-	42.04
AV	11.58772G	39.96	54.00	-14.04	11.53	3	Horizontal	140	2.23	-	28.43

802.11ac VHT80_Nss1,(MCS0)_3TX

06/12/2019

5775MHz_TX



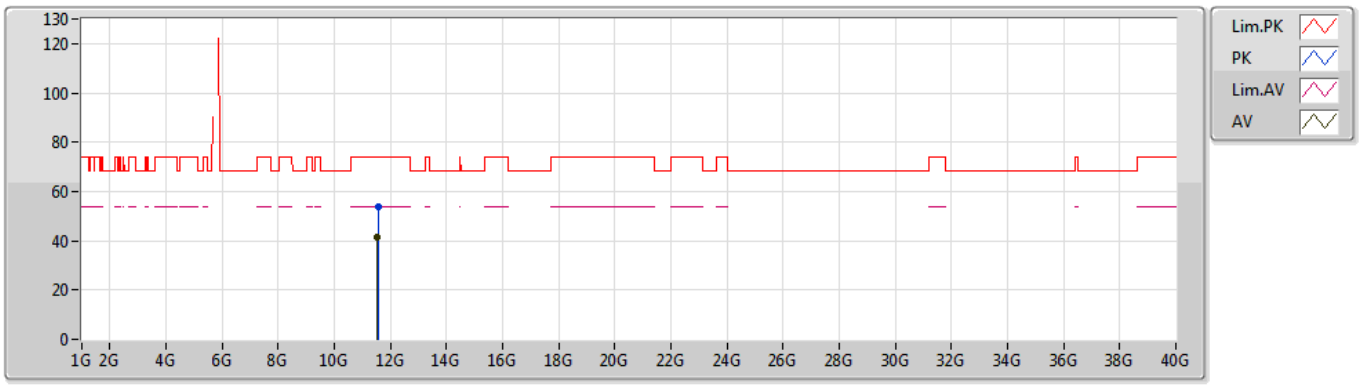
EUT Z_3TX
Setting 83
04-F-Z-1-13

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.651G	64.05	68.94	-4.89	5.40	3	Vertical	346	2.77	-	58.65
PK	5.757G	113.58	Inf	-Inf	5.48	3	Vertical	346	2.77	-	108.10
AV	5.792G	104.19	Inf	-Inf	5.52	3	Vertical	346	2.77	-	98.67
PK	5.932G	65.23	68.20	-2.97	6.31	3	Vertical	346	2.77	-	58.92

802.11ac VHT80_Nss1,(MCS0)_3TX

06/12/2019

5775MHz_TX



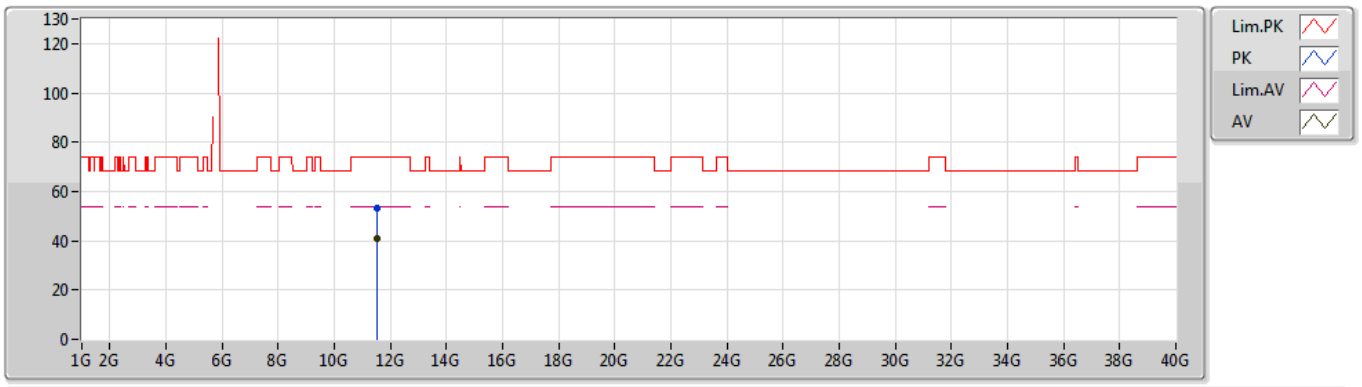
EUT Z_3TX
Setting 83
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.55732G	53.58	74.00	-20.42	11.56	3	Vertical	102	1.12	-	42.02
AV	11.54058G	41.30	54.00	-12.70	11.57	3	Vertical	102	1.12	-	29.73

802.11ac VHT80_Nss1,(MCS0)_3TX

5775MHz_TX

06/12/2019



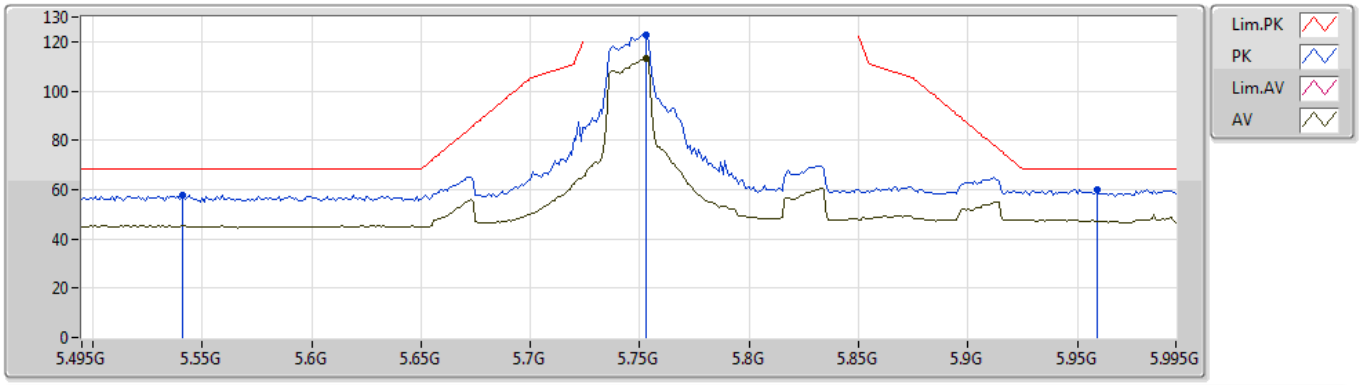
EUT Z_3TX
Setting 83
04-F-Z-1

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.54322G	53.40	74.00	-20.60	11.57	3	Horizontal	171	1.79	-	41.83
AV	11.5401G	41.01	54.00	-12.99	11.57	3	Horizontal	171	1.79	-	29.44

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5745MHz_TX

06/12/2019



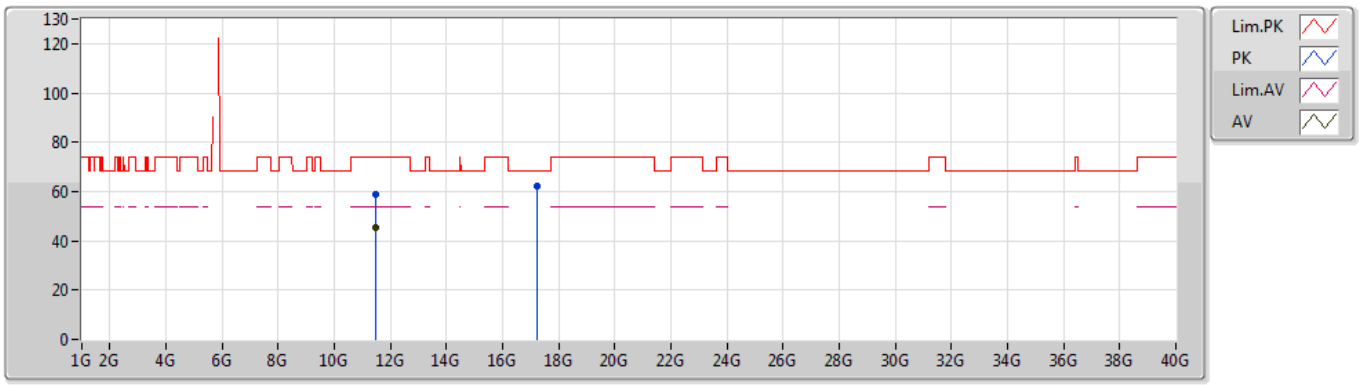
EUT Z_3TX
Setting 86
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.541G	57.98	68.20	-10.22	5.69	3	Vertical	164	2.23	-	52.29
PK	5.753G	122.73	Inf	-Inf	5.94	3	Vertical	164	2.23	-	116.79
AV	5.753G	113.35	Inf	-Inf	5.94	3	Vertical	164	2.23	-	107.41
PK	5.959G	59.96	68.20	-8.24	6.32	3	Vertical	164	2.23	-	53.64

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5745MHz_TX

06/12/2019



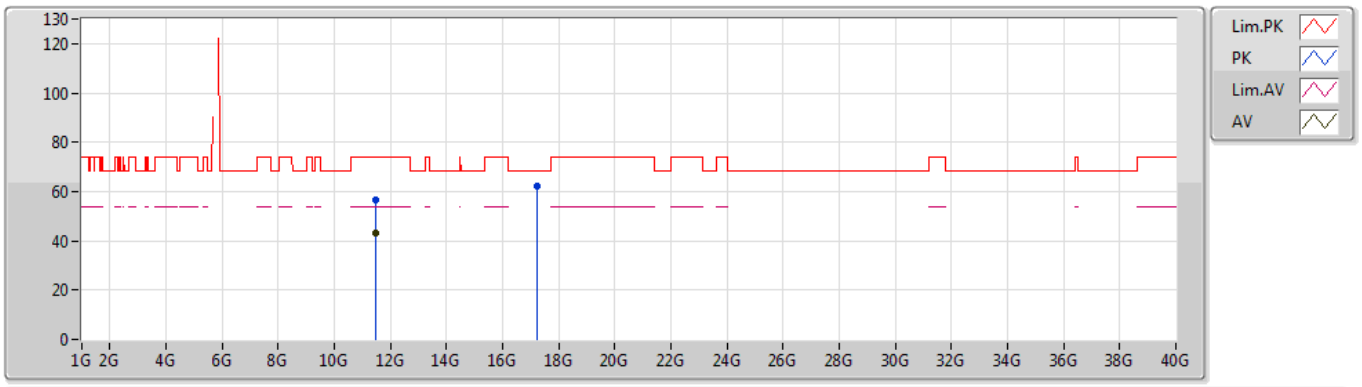
EUT Z_3TX
Setting 86
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.48964G	58.76	74.00	-15.24	14.02	3	Vertical	87	1.50	-	44.74
AV	11.48934G	45.46	54.00	-8.54	14.02	3	Vertical	87	1.50	-	31.44
PK	17.23342G	62.41	68.20	-5.79	18.70	3	Vertical	359	1.50	-	43.71

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5745MHz_TX

06/12/2019



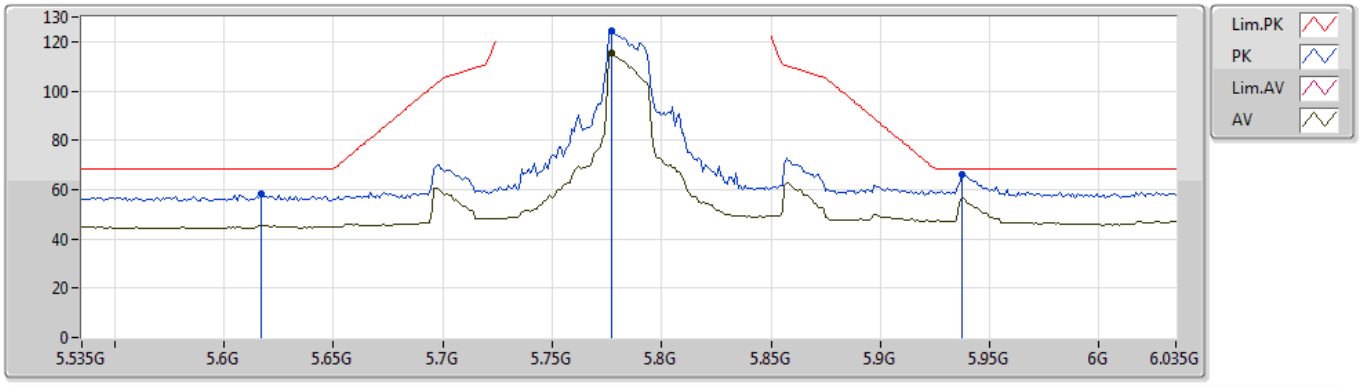
EUT Z_3TX
Setting 86
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.48256G	56.47	74.00	-17.53	14.03	3	Horizontal	326	2.73	-	42.44
AV	11.481G	43.35	54.00	-10.65	14.03	3	Horizontal	326	2.73	-	29.32
PK	17.24616G	62.42	68.20	-5.78	18.84	3	Horizontal	11	1.50	-	43.58

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5785MHz_TX

06/12/2019



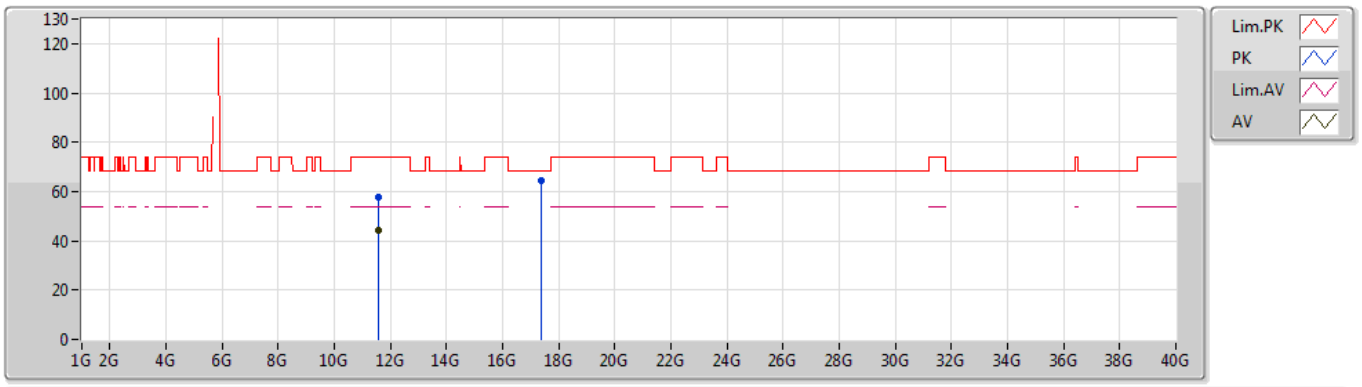
EUT Z_3TX
Setting 85
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.617G	58.25	68.20	-9.95	5.58	3	Vertical	308	2.26	-	52.67
PK	5.777G	124.51	Inf	-Inf	6.05	3	Vertical	308	2.26	-	118.46
AV	5.777G	115.52	Inf	-Inf	6.05	3	Vertical	308	2.26	-	109.47
PK	5.937G	66.08	68.20	-2.12	6.34	3	Vertical	308	2.26	-	59.74

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5785MHz_TX

06/12/2019



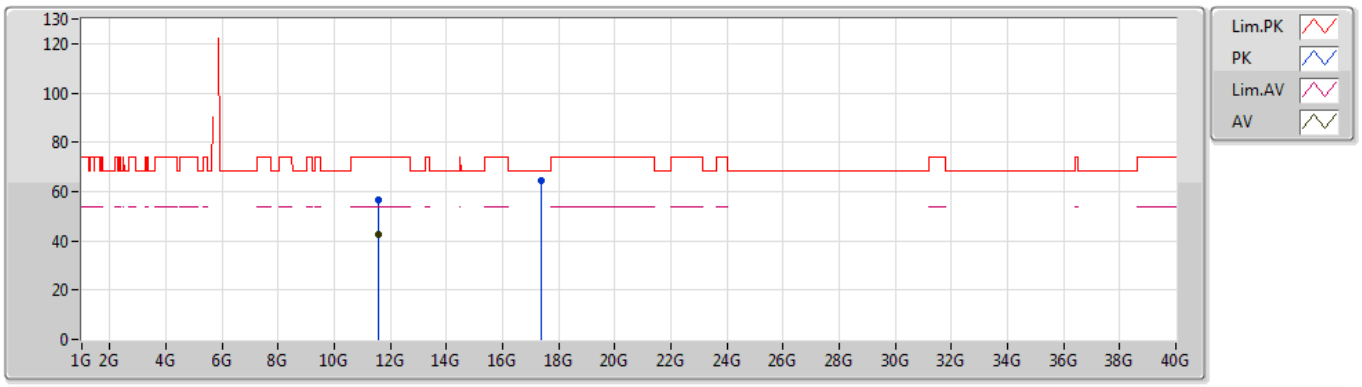
EUT Z_3TX
Setting 85
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.56958G	57.99	74.00	-16.01	13.90	3	Vertical	87	1.91	-	44.09
AV	11.5661G	44.15	54.00	-9.85	13.91	3	Vertical	87	1.91	-	30.24
PK	17.3622G	64.61	68.20	-3.59	20.11	3	Vertical	360	2.63	-	44.50

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5785MHz_TX

06/12/2019



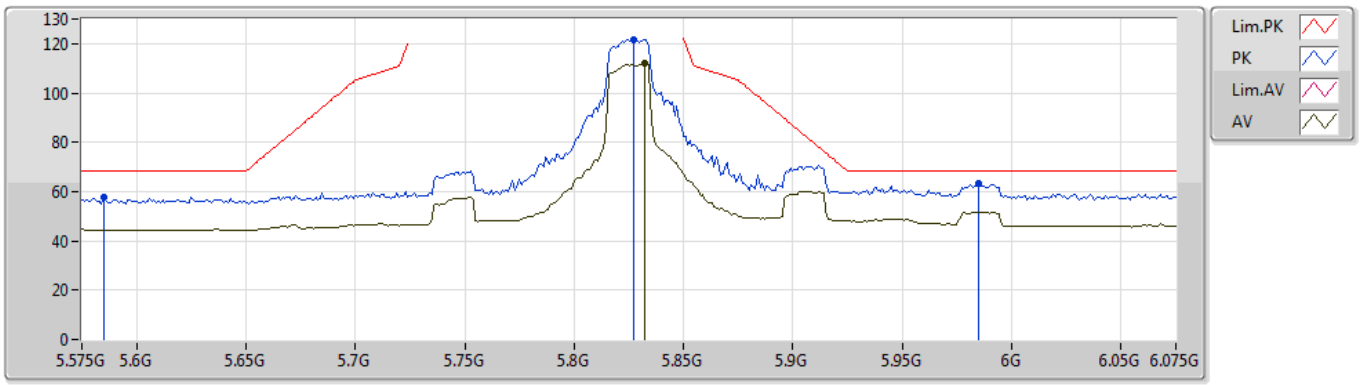
EUT Z_3TX
Setting 85
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.57324G	56.32	74.00	-17.68	13.89	3	Horizontal	21	1.73	-	42.43
AV	11.57156G	42.31	54.00	-11.69	13.89	3	Horizontal	0	1.73	-	28.42
PK	17.35734G	64.31	68.20	-3.89	20.05	3	Horizontal	316	1.50	-	44.26

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5825MHz_TX

06/12/2019



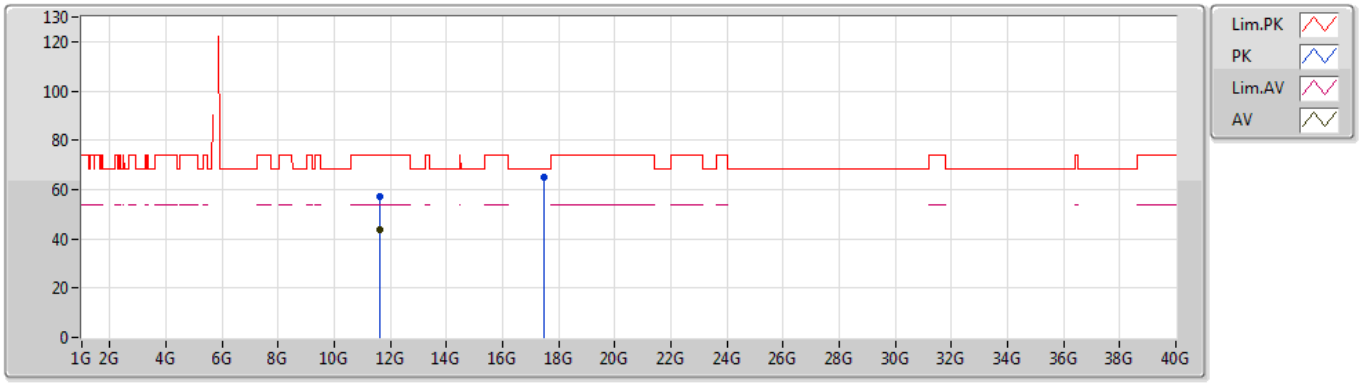
EUT Z_3TX
Setting 85
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.585G	57.53	68.20	-10.67	5.59	3	Vertical	79	1.99	-	51.94
PK	5.827G	121.71	Inf	-Inf	6.22	3	Vertical	79	1.99	-	115.49
AV	5.832G	111.91	Inf	-Inf	6.23	3	Vertical	79	1.99	-	105.68
PK	5.985G	63.33	68.20	-4.87	6.30	3	Vertical	79	1.99	-	57.03

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5825MHz_TX

06/12/2019



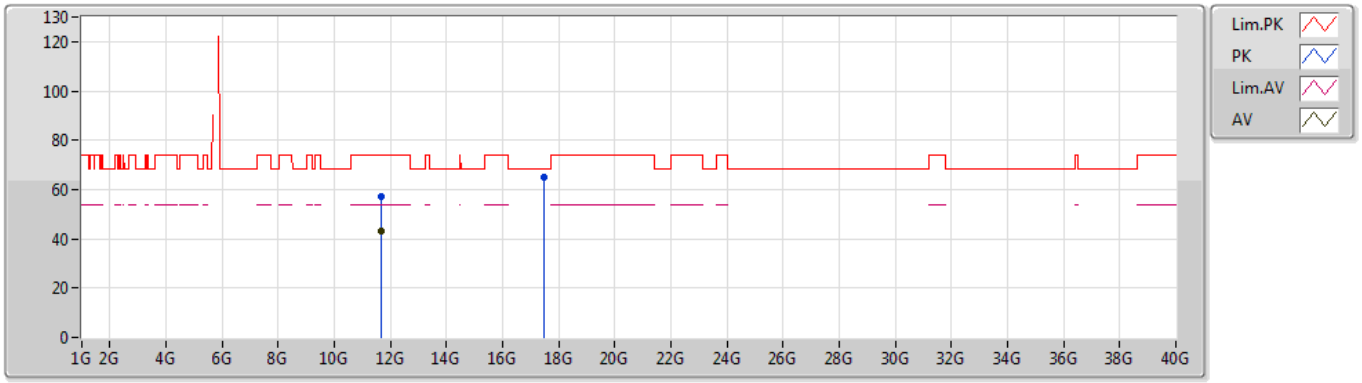
EUT Z_3TX
Setting 85
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.6374G	57.03	74.00	-16.97	13.80	3	Vertical	87	1.71	-	43.23
AV	11.63524G	43.80	54.00	-10.20	13.81	3	Vertical	87	1.71	-	29.99
PK	17.47716G	65.14	68.20	-3.06	21.36	3	Vertical	0	1.73	-	43.78

802.11ac VHT20-BF_Nss1,(MCS0)_3TX

5825MHz_TX

06/12/2019



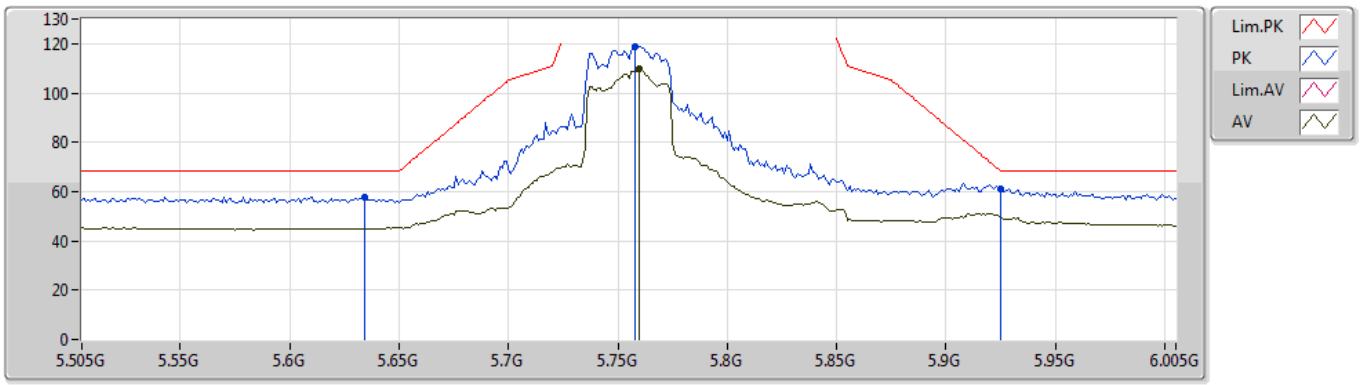
EUT Z_3TX
Setting 85
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.6485G	57.06	74.00	-16.94	13.79	3	Horizontal	118	1.75	-	43.27
AV	11.6509G	43.18	54.00	-10.82	13.78	3	Horizontal	118	1.75	-	29.40
PK	17.46918G	65.26	68.20	-2.94	21.27	3	Horizontal	144	1.57	-	43.99

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5755MHz_TX

06/12/2019



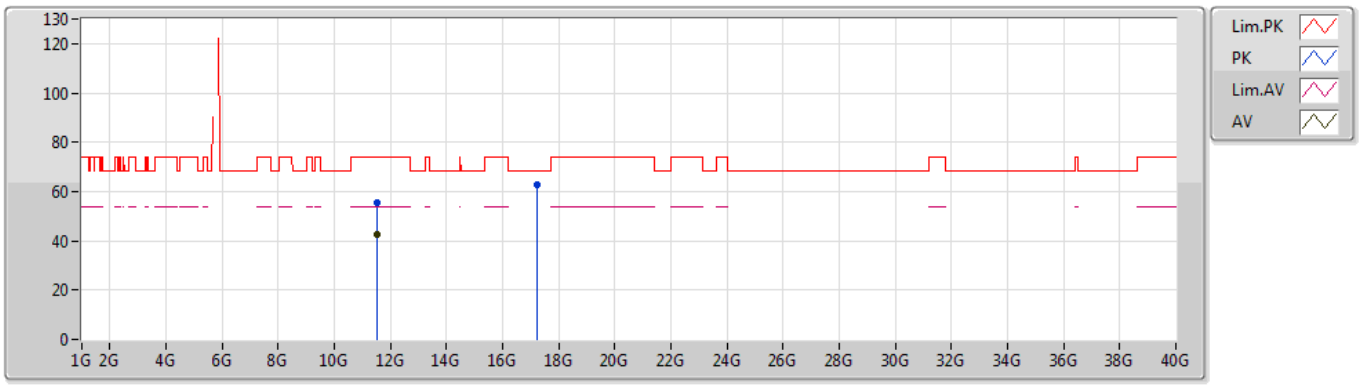
EUT Z_3TX
Setting 87
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.634G	57.91	68.20	-10.29	5.60	3	Vertical	165	2.24	-	52.31
PK	5.758G	118.98	Inf	-Inf	5.96	3	Vertical	165	2.24	-	113.02
AV	5.76G	109.59	Inf	-Inf	5.98	3	Vertical	165	2.24	-	103.61
PK	5.925G	61.12	68.20	-7.08	6.35	3	Vertical	165	2.24	-	54.77

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5755MHz_TX

06/12/2019



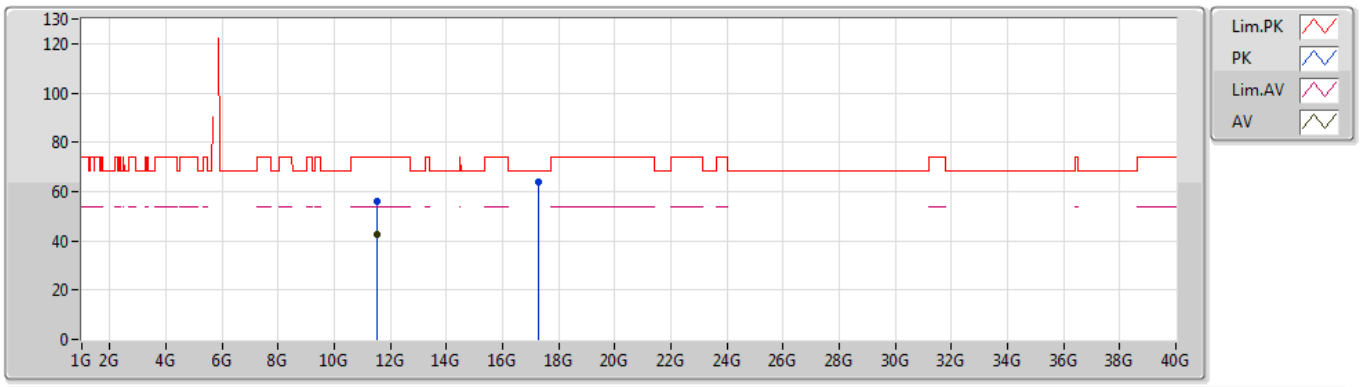
EUT Z_3TX
Setting 87
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.52032G	55.58	74.00	-18.42	13.97	3	Vertical	59	1.28	-	41.61
AV	11.5109G	42.57	54.00	-11.43	13.98	3	Vertical	59	1.28	-	28.59
PK	17.25396G	62.93	68.20	-5.27	18.93	3	Vertical	0	1.72	-	44.00

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5755MHz_TX

06/12/2019



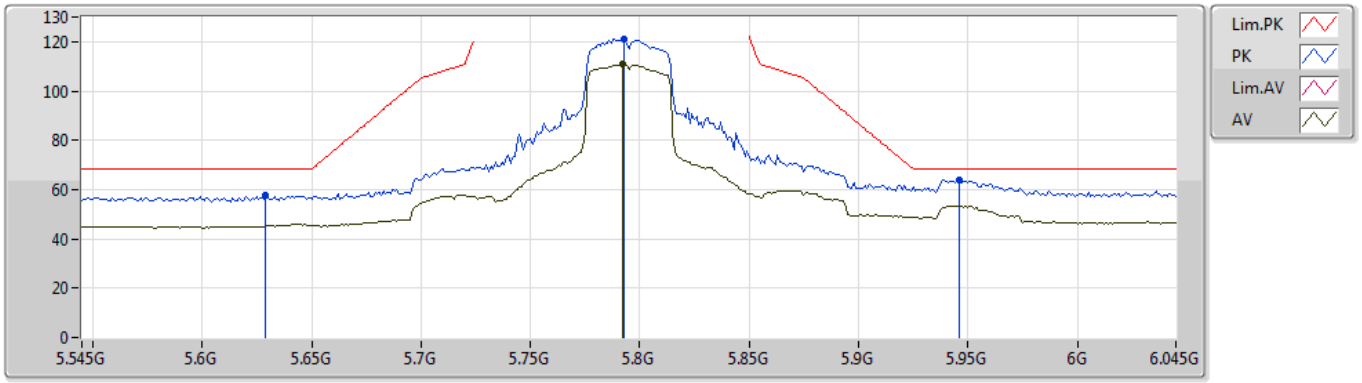
EUT Z_3TX
Setting 87
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.50934G	56.19	74.00	-17.81	13.99	3	Horizontal	118	1.54	-	42.20
AV	11.50826G	42.35	54.00	-11.65	13.99	3	Horizontal	118	1.54	-	28.36
PK	17.2551G	64.11	68.20	-4.09	18.94	3	Horizontal	106	1.65	-	45.17

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5795MHz_TX

06/12/2019



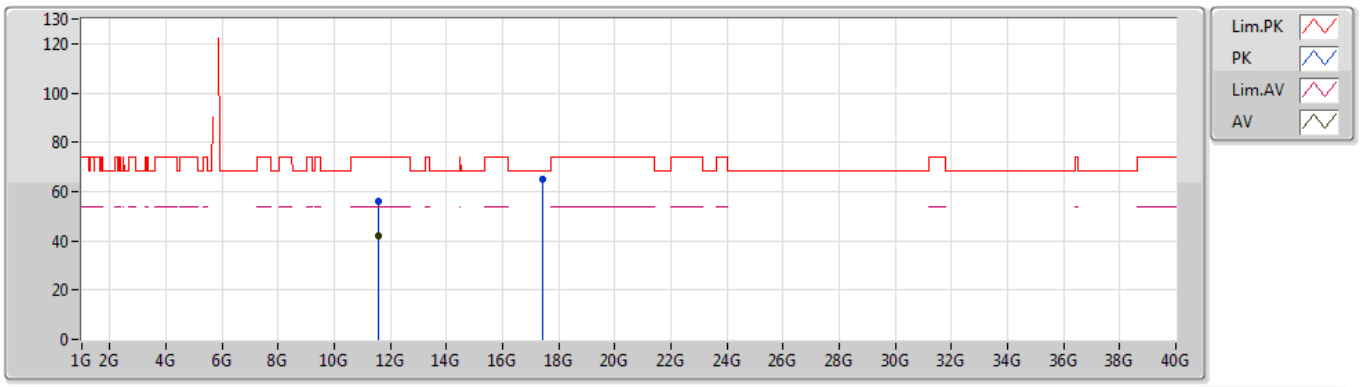
EUT Z_3TX
Setting 87
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.629G	57.54	68.20	-10.66	5.60	3	Vertical	77	2.22	-	51.94
PK	5.793G	121.04	Inf	-Inf	6.12	3	Vertical	77	2.22	-	114.92
AV	5.792G	110.71	Inf	-Inf	6.12	3	Vertical	77	2.22	-	104.59
PK	5.946G	63.98	68.20	-4.22	6.33	3	Vertical	77	2.22	-	57.65

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5795MHz_TX

06/12/2019



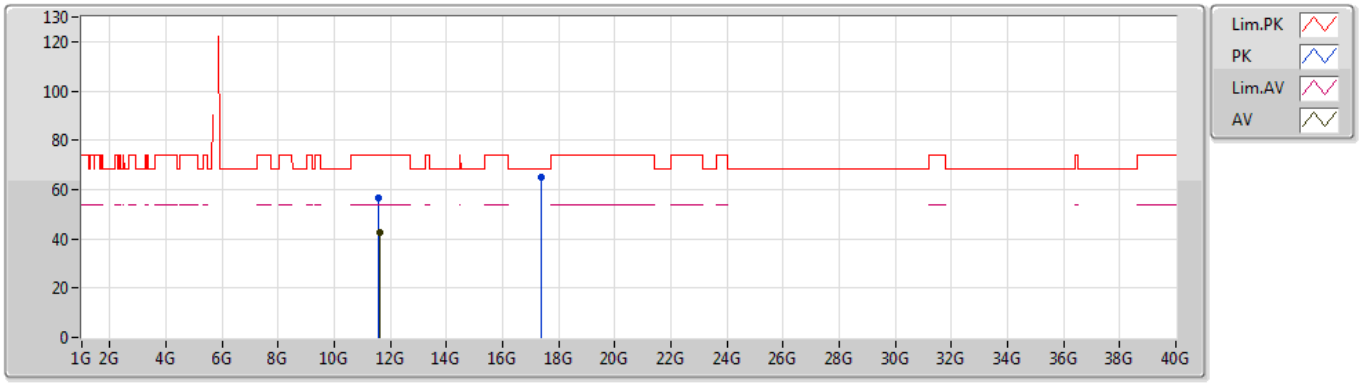
EUT Z_3TX
Setting 87
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.5953G	56.11	74.00	-17.89	13.87	3	Vertical	122	1.70	-	42.24
AV	11.5685G	42.27	54.00	-11.73	13.91	3	Vertical	122	1.70	-	28.36
PK	17.4026G	64.72	68.20	-3.48	20.55	3	Vertical	0	1.50	-	44.17

802.11ac VHT40-BF_Nss1,(MCS0)_3TX

5795MHz_TX

06/12/2019



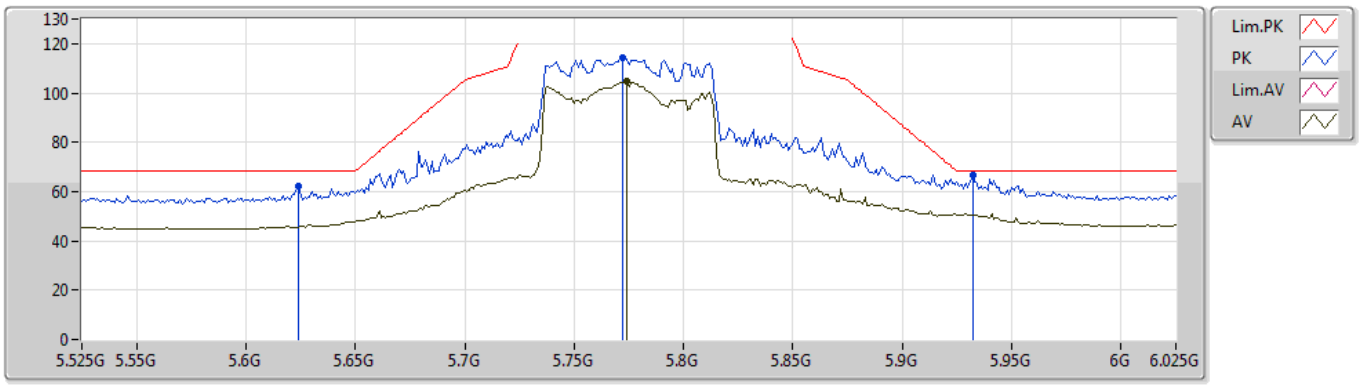
EUT Z_3TX
Setting 87
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.5956G	56.33	74.00	-17.67	13.87	3	Horizontal	187	1.01	-	42.46
AV	11.6088G	42.53	54.00	-11.47	13.84	3	Horizontal	187	1.01	-	28.69
PK	17.3816G	64.79	68.20	-3.41	20.33	3	Horizontal	134	1.55	-	44.46

802.11ac VHT80-BF_Nss1,(MCS0)_3TX

5775MHz_TX

06/12/2019



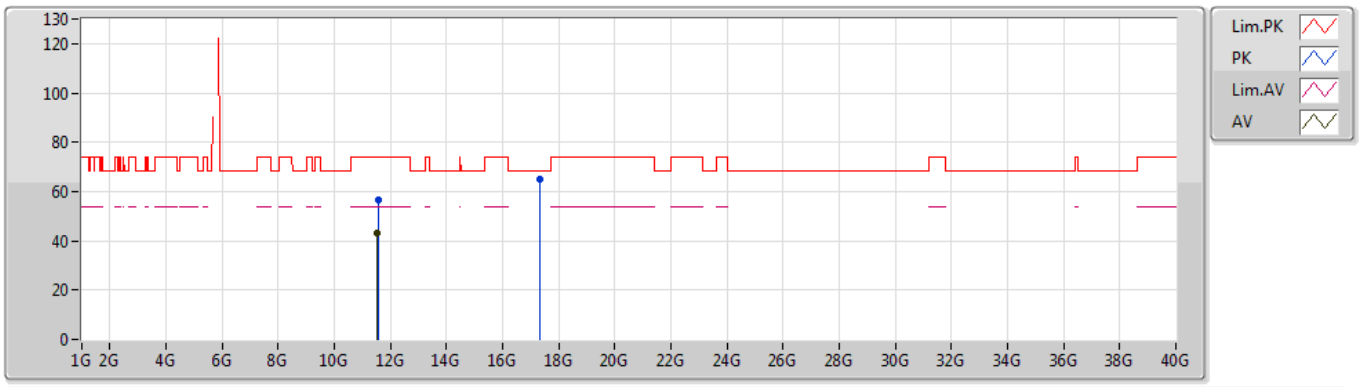
EUT Z_3TX
Setting 82
06-D-S-5-10

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	5.624G	62.00	68.20	-6.20	5.58	3	Vertical	305	2.49	-	56.42
PK	5.772G	114.55	Inf	-Inf	6.03	3	Vertical	305	2.49	-	108.52
AV	5.774G	104.56	Inf	-Inf	6.04	3	Vertical	305	2.49	-	98.52
PK	5.932G	66.48	68.20	-1.72	6.34	3	Vertical	305	2.49	-	60.14

802.11ac VHT80-BF_Nss1,(MCS0)_3TX

5775MHz_TX

06/12/2019



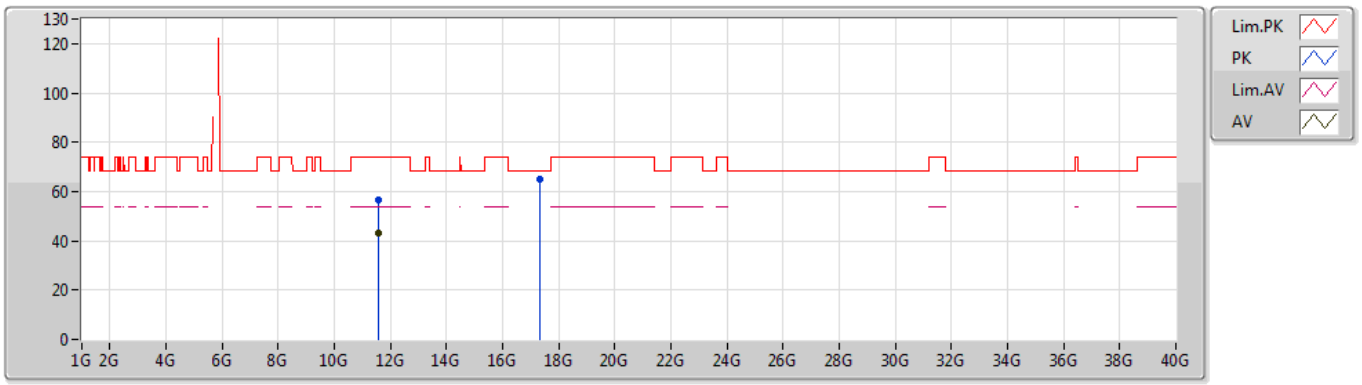
EUT Z_3TX
Setting 82
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.5633G	56.67	74.00	-17.33	13.92	3	Vertical	214	1.57	-	42.75
AV	11.5395G	43.23	54.00	-10.77	13.94	3	Vertical	214	1.57	-	29.29
PK	17.3371G	64.72	68.20	-3.48	19.83	3	Vertical	187	1.14	-	44.89

802.11ac VHT80-BF_Nss1,(MCS0)_3TX

5775MHz_TX

06/12/2019



EUT Z_3TX
Setting 82
06-D-A-3

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	11.5564G	56.36	74.00	-17.64	13.92	3	Horizontal	107	1.50	-	42.44
AV	11.5547G	43.28	54.00	-10.72	13.92	3	Horizontal	107	1.50	-	29.36
PK	17.3472G	64.87	68.20	-3.33	19.95	3	Horizontal	0	1.50	-	44.92