

Report No.: FR732918AN

FCC Test Report

Equipment	:	Secured Wireless Access Point
Brand Name	:	Fortinet Inc.

Model No. : FORTIAP-U24JEVxxxxxx, FAP-U24JEVxxxxxx
FCC ID : TVE-121C01

FCC ID : TVE-121C01

Standard : 47 CFR FCC Part 15.407

Operating Band : 5150 MHz – 5250 MHz 5725 MHz – 5850 MHz

Applicant : Fortinet Inc.

899 Kifer Road, Sunnyvale, CA 94086, USA

Manufacturer : Universal Global Scientific Industrial Co., Ltd.

141, Lane 351, Sec. 1, Taiping Road, Tsaotuen, Nantou

54261, Taiwan

Function : Outdoor; Indoor; Fixed P2P

__ Client

The product sample received on Apr. 07, 2017 and completely tested on Oct. 11, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

Phoenix Chen / Assistant Manager







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Summary of Test Result

Conformance Test Specifications						
Report Ref. Std. Clause Description						
1.1.2	15.203	Antenna Requirement	Complied			
3.1	15.207	AC Power-line Conducted Emissions	Complied			
3.2	15.407(a)	Emission Bandwidth Complie				
3.3	15.407(a)	aximum Conducted Output Power Complie				
3.4	15.407(a)	Peak Power Spectral Density	Complied			
3.5	15.407(b)	Unwanted Emissions	Complied			
3.6	15.407(g)	Frequency Stability	Complied			

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Revision History

Report No.	Version	Description	Issued Date
FR732918AN	Rev. 01	Initial issue of report	Jan. 08, 2018
FR732918AN	Rev. 02	Remove standard KDB 644545 and updated standard KDB 789033	Feb. 08, 2018

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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	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11a	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX

Note:

- ◆ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.

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1.1.2 Antenna Information

Ant.	Port	Brand Model Name		Antenna Type	Connector
1	1	Aristotle	RFA-25-AP375-70B-72	PIFA Antenna	I-PEX
2	2	Aristotle	RFA-25-AP513B-70B-56	PIFA Antenna	I-PEX
3	1	Aristotle	RFA-BT-AP375-70-105	PIFA Antenna	I-PEX

Ant		Gain (dBi)	
Ant.	2.4G	5G	ВТ
1	4	4	-
2	1.41	3.77	-
3	-	-	3.2

Note 1: The EUT has three antennas.

For 2.4GHz function:

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

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For 5GHz function:

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

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For BT function:

For BT-LE/BR/EDR (1TX/1RX)

Only Ant. 3 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

	Identify EUT						
RF	chip		BCI	M47452			
				Opera	ational	Co	ndition
EU	T Power T	уре	Fro	m AC Adapter			
Bea	amforming	g Function		With beamform	ing	\boxtimes	Without beamforming
					Туре о	f EU	т
\boxtimes	Stand-alo	ne					
	Combined (EUT where the radio part is fully integrated within another device)						
	Combined Equipment - Brand Name / Model No.:						
	Plug-in radio (EUT intended for a variety of host systems)						
	Host System - Brand Name / Model No.:						
	Other:						

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1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.987	0.057	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20	0.985	0.066	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.966	0.15	955.625u	3k
802.11ac VHT80	0.933	0.301	463.75u	3k

1.1.5 Table for Multiple Listing

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

Model Name	Description
FORTIAP-U24JEVxxxxxx	Where "x" can be used as "A-Z", or "-0-9", or "-", or blank for
FAP-U24JEVxxxxxx	software changes or marking purposes only.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 789033 D02 v02r01
- KDB 662911 D01 v02r01

1.3 Testing Location Information

	Testing Location								
\boxtimes	HWA YA	ADD	:	No. 52, Huaya 1st Rd.,	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)				
		TEL	:	886-3-327-3456	86-3-327-3456 FAX : 886-3-327-0973				
	Test site Designation No. TW1190 with FCC.								
	JHUBEI ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)								
	TEL: 886-3-656-9065 FAX: 886-3-656-9085								
	Test site Designation No. TW0006 with FCC.								

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Gary	21°C / 61%	19/Apr/2017
Radiated	03CH09-HY	Jeff	20.9°C / 58%	28/Apr/2017
AC Conduction	CO04-HY	Eric	20.9°C / 58%	11/Oct/2017

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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)

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Test Items	Uncertainty	Remark	
Conducted Emission (150kHz ~ 30MHz)	3.6 dB	Confidence levels of 95%	
Radiated Emission (30MHz ~ 1,000MHz)	2.1 dB	Confidence levels of 95%	
Radiated Emission (1GHz ~ 18GHz)	2.6 dB	Confidence levels of 95%	
Radiated Emission (18GHz ~ 40GHz)	2.9 dB	Confidence levels of 95%	
Conducted Emission	1.3 dB	Confidence levels of 95%	

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2 Test Configuration of EUT

2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
	Vnom	120V
Freq. Stability	Abbreviation	Remark
0°C		
10°C		
20°C		
30°C		
40°C		
138V		
120V		
102V		

2.2 Test Channel Mode

Test Software Version	accessMTool_REL_3_0_0_2
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Mode	Power Setting
802.11a_(6Mbps)_2TX	-
5180MHz	64
5200MHz	70
5240MHz	74
5745MHz	80
5785MHz	80
5825MHz	80
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5180MHz	66
5200MHz	73
5240MHz	66
5745MHz	80
5785MHz	80
5825MHz	80
802.11ac VHT40_Nss1,(MCS0)_2TX	-
5190MHz	49

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Mode	Power Setting
5230MHz	73
5755MHz	75
5795MHz	80
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5210MHz	50
5775MHz	71

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2.3 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	Adapter mode	

The Worst Case Mode for Following Conformance Tests		
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Frequency Stability	
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	Adapter mode		
Operating Mode > 1GHz	CTX		
	Y Plane Z Plane		
Orthogonal Planes of EUT			
Worst Planes of EUT	V		

The Worst Case Mode for Following Conformance Tests			
Tests Item Simultaneous Transmission Analysis			
Test Condition Radiated measurement			
Operating Mode	Operating Mode Normal Link		
1 WLAN 2.4GHz +WLAN 5GHz			
Refer to Appendix G for Radiated Emission Co-location.			

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The Worst Case Mode for Following Conformance Tests		
Tests Item Simultaneous Transmission Analysis		
Operating Mode Normal Link		
1 Bluetooth+WLAN 2.4GHz+WLAN 5GHz		
Refer to Sporton Test Report No.: FA732918 for Co-location RF Exposure Evaluation.		

2.4 Support Equipment

	Support Equipment - RF Conducted				
No.	No. Equipment Brand Name Model Name FCC ID				
1	Notebook	DELL	E5410	DoC	
2	Adapter for NB	DELL	HA65NM130	DoC	

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	AC adapter	UMEC	UP0451H-54PP	-

Note: Support equipment No.1 was provided by customer.

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	AC adapter	UMEC	UP0451H-54PP	-

Note: Support equipment No.1 was provided by customer.

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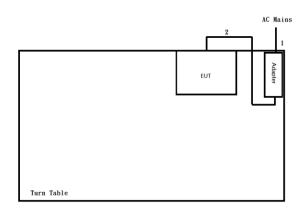
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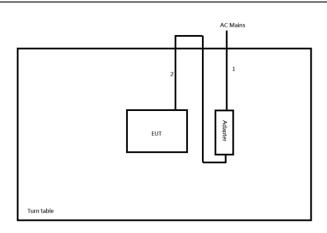
2.5 **Test Setup Diagram**

Test Setup Diagram - AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC power line	No	1.7	-
2	DC power line	No	1.2	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC power line	No	1.7	-
2	DC power line	No	1.2	-

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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

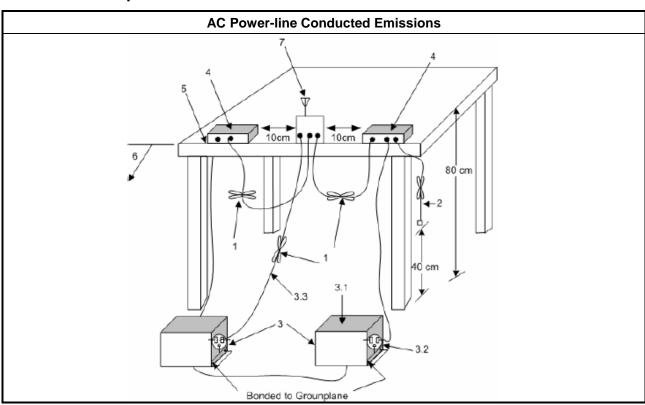
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

	Emission Bandwidth Limit			
UN	UNII Devices			
\boxtimes	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.			
\boxtimes	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.			

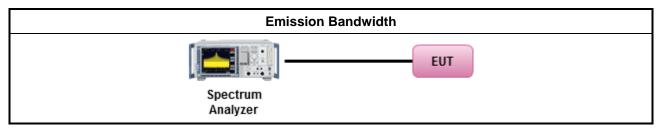
3.2.2 Measuring Instruments

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 KDB 789033, clause C for EBW and clause D for OBW measurement.		
	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.		

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

	Maximum Conducted Output Power Limit				
UNI	UNII Devices				
\boxtimes	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 $P_{Out} = 24 - (G_{TX} - 6)$.				
\boxtimes	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. 				
	t = maximum conducted output power in dBm, = the maximum transmitting antenna directional gain in dBi.				

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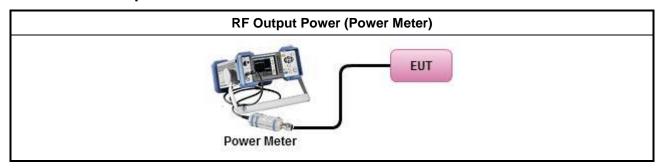
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

	Test Method			
•	Maximum Conducted Output Power			
	Duty cycle ≥ 98%			
	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).			
	Duty cycle < 98%			
Ī	Refer as 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 KDB 789033, clause E Method PM (using an RF average power meter).			
•	For conducted measurement.			
	If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.			
	■ If multiple transmit chains, EIRP calculation could be following as methods: P _{total} = P ₁ + P ₂ + + P _n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP _{total} = P _{total} + DG			

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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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. 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. 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 dB then PPSD= 11 – (G _{TX} – 6)				
For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dB then PPSD= 11 – ($G_{TX} - 6$).				
For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dB 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) \leq 30 dBm/500kHz. $G_{TX} > 6$ 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 outpoower 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.

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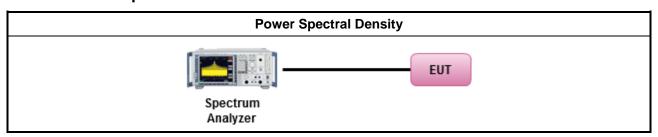
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Test Procedures 3.4.3

	Test Method				
•	outpu funct	eak power spectral density procedures that the same method as used to determine the conducted atput power shall be used to determine the peak power spectral density and use the peak search notion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density hall be measured using below options:			
		Refer as 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%			
		Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).			
	Duty	cycle < 98%			
	\boxtimes	Refer as 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:			
		Measure and sum the spectra across the outputs. Refer as 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.			
	•	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $ PPSD_{total} = PPSD_1 + PPSD_2 + + PPSD_n $ (calculated in linear unit [mW] and transfer to log unit [dBm]) $ EIRP_{total} = PPSD_{total} + DG $			

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3.4.4 Test Setup



3.4.5 **Test Result of Peak Power Spectral Density**

Refer as Appendix D

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3.5 Unwanted Emissions

3.5.1 Transmitter Radiated 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.p27 dBm [68.2 dBuV/m@3m]					
5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
5.725 - 5.85 GHz	5.650-5700 GHz: e.i.r.p27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p27 dBm [68.2 dBuV/m@3m]					

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).

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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 KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
 - Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
 - Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
 - Refer as KDB 789033, clause G)5) (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.

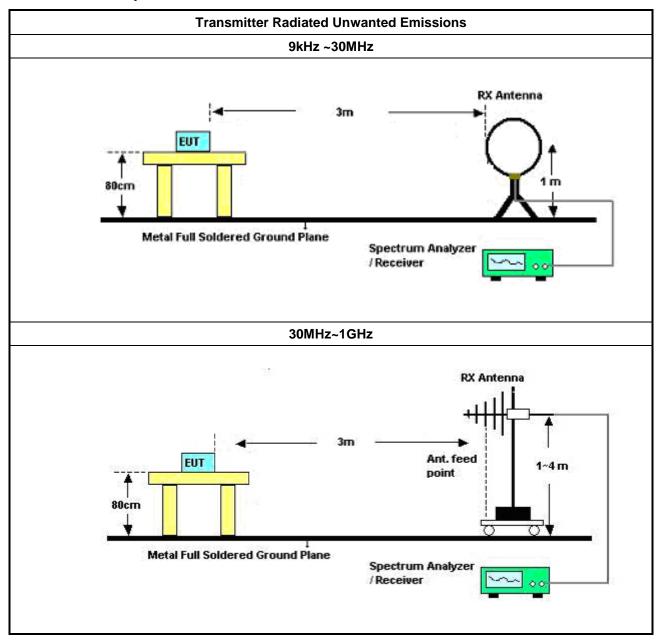
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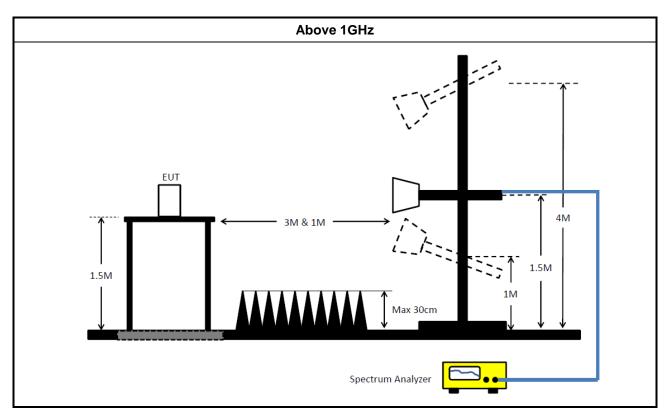
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3.5.4 Test Setup



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3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

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3.6 Frequency Stability

3.6.1 Frequency Stability Limit

Frequency Stability Limit

UNII Devices

 In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

IEEE Std. 802.11

• The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band.

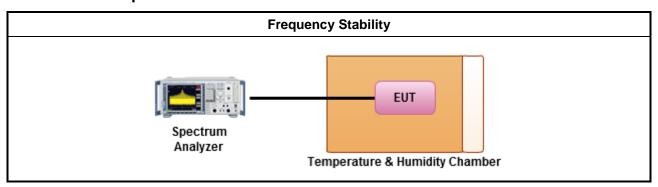
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

	Test Method							
•	Refe	r as ANSI C63.10, clause 6.8 for frequency stability tests						
	•	Frequency stability with respect to ambient temperature						
	•	Frequency stability when varying supply voltage						

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No. Serial No. Spe		Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	15/Nov/2017	14/Nov/2018
RF Cable-CON	HUBER+SUHN ER	RG213/U	07611832020001	9kHz ~ 30MHz	24/Oct/2016	23/Oct/2017
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	R&S	ESH3-Z2	100921	10 kHz ~ 30 MHz	21/Oct/2016	20/Oct/2017

NCR : Non-Calibration Require

Instrument for Radiated Test

Instrument	strument Manufacturer		Serial No.	Spec.	Calibration Date	Calibration Due Date	
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	21/Jun/2016	20/Jun/2017	
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	21/Jun/2016	20/Jun/2017	
Amplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	11/Apr/2017	10/Apr/2018	
Amplifier	EMC	EMC9135	980209	9kHz~1GHz	05/Sep/2016	04/Sep/2017	
Spectrum Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	04/Jul/2016	03/Jul/2017	
Bilog Antenna	TESEQ	CBL 6111D	35418	30MHz~1GHz	01/Oct/2016	30/Sep/2017	
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA9120D 1534	1GHz~18GHz	28/Apr/2017	27/Apr/2018	
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170221	18GHz ~ 40GHz	06/Feb/2017	05/Feb/2018	
Amplifier	MITEQ	JS44-18004000 -33-8P	1840917	18GHz ~ 40GHz	02/Jun/2015	01/Jun/2017	
Loop Antenna	R&S	HFH2-Z2	100330	9 kHz~30 MHz	10/Nov/2016	09/Nov/2017	
Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018	
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	23/Jul/2016	22/Jul/2017	
RF Cable-high	Jye Bao	RG142	03CH09-HY	1GHz ~ 40GHz	23/Jul/2016	22/Jul/2017	

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Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No. Spec.		Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	30/Dec/2016	29/Dec/2017
Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	21/Jul/2016	20/Jul/2017
AC Power Source	G.W	APS-9102	EL920581	AC 0V ~ 300V	04/Jun/2016	03/Jun/2017
Temp. and Humidity Chamber	Giant Force	GTH-225-40-CP-AR	MAA1611-005	-40 ~ 100℃	21/Nov/2016	20/Nov/2018
RF Cable-0.2m	HUBER+ SUHNER	SUCOFLEX_104	MY677/3	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.2m	HUBER+ SUHNER	SUCOFLEX_104	MY678/3	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.5m	Cable-0.5m HUBER+ SUCOF		MY10717/4	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017

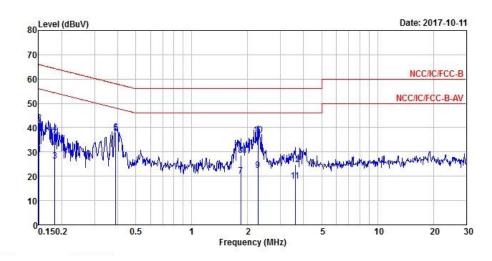
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AC Power-line Conducted Emissions

AC Power-line Conducted Emissions Result							
Operating Mode	1	Power Phase	Neutral				
Operating Function	Adapter mode						



			uver	Limit	кеаа	LTZM	capte	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
-	MHz	dBuV	dB	dBuV	dBuV	dB	dB	-
1	0.15080	29.07	-26.89	55.96	19.47	9.60	0.00	Average
2	0.15080	41.95	-24.01	65.96	32.35	9.60	0.00	QP
3	0.18346	26.21	-28.12	54.33	16.56	9.65	0.00	Average
4	0.18346	37.62	-26.71	64.33	27.97	9.65	0.00	QP
5 MAX	0.38929	37.80	-10.28	48.08	28.17	9.63	0.00	Average
6	0.38929	38.09	-19.99	58.08	28.46	9.63	0.00	QP
7	1.83856	20.09	-25.91	46.00	10.45	9.64	0.00	Average
8	1.83856	28.49	-27.51	56.00	18.85	9.64	0.00	QP
9	2.27258	22.49	-23.51	46.00	12.83	9.66	0.00	Average
10	2.27258	36.89	-19.11	56.00	27.23	9.66	0.00	QP
11	3.60337	18.02	-27.98	46.00	8.32	9.70	0.00	Average
12	3.60337	24.73	-31.27	56.00	15.03	9.70	0.00	QP

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.)

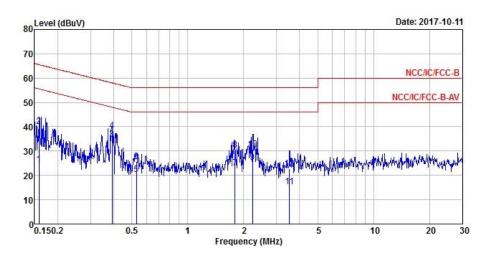
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AC Power-line Conducted Emissions Result						
Operating Mode	1	Power Phase	Line			
Operating Function	Adapter mode					



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	Đ
1	0.15816	24.59	-30.97	55.56	14.93	9.66	0.00	Average
2	0.15816	40.28	-25.28	65.56	30.62	9.66	0.00	QP
3 MAX	0.39136	34.98	-13.05	48.03	25.30	9.68	0.00	Average
4	0.39136	38.26	-19.77	58.03	28.58	9.68	0.00	QP
5	0.52934	20.33	-25.67	46.00	10.67	9.66	0.00	Average
6	0.52934	25.66	-30.34	56.00	16.00	9.66	0.00	QP
7	1.80001	23.01	-22.99	46.00	13.24	9.77	0.00	Average
8	1.80001	30.43	-25.57	56.00	20.66	9.77	0.00	QP
9	2.23675	25.43	-20.57	46.00	15.64	9.79	0.00	Average
10	2.23675	30.59	-25.41	56.00	20.80	9.79	0.00	QP
11	3.52781	15.22	-30.78	46.00	5.45	9.77	0.00	Average
12	3.52781	22.86	-33.14	56.00	13.09	9.77	0.00	QP

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.)

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Appendix B EBW Result

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
802.11a_(6Mbps)_2TX	-	-	-	-	-
5.15-5.25GHz	37.05M	16.992M	17M0D1D	21.9M	16.642M
5.725-5.85GHz	16.325M	22.714M	22M7D1D	16.275M	19.015M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	40.45M	17.991M	18M0D1D	24.45M	17.816M
5.725-5.85GHz	17.575M	23.813M	23M8D1D	17.525M	19.64M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	88.25M	36.732M	36M7D1D	40M	36.232M
5.725-5.85GHz	36.35M	55.172M	55M2D1D	35.75M	39.08M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	81.6M	75.662M	75M7D1D	81.3M	75.562M
5.725-5.85GHz	76.1M	76.362M	76M4D1D	75.1M	76.162M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Min-OBW = Minimum 99% occupied bandwidth;

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Result

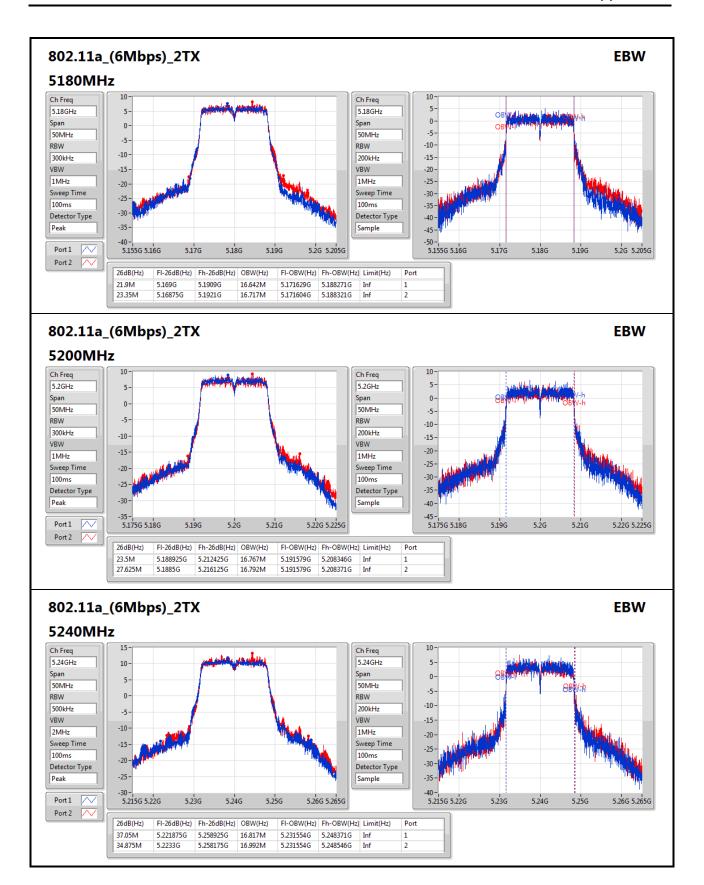
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_(6Mbps)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.9M	16.642M	23.35M	16.717M
5200MHz_TnomVnom	Pass	Inf	23.5M	16.767M	27.625M	16.792M
5240MHz_TnomVnom	Pass	Inf	37.05M	16.817M	34.875M	16.992M
5745MHz_TnomVnom	Pass	500k	16.275M	19.39M	16.325M	22.714M
5785MHz_TnomVnom	Pass	500k	16.325M	19.015M	16.325M	21.514M
5825MHz_TnomVnom	Pass	500k	16.325M	19.39M	16.325M	21.814M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	24.45M	17.841M	25.95M	17.816M
5200MHz_TnomVnom	Pass	Inf	40.45M	17.941M	34.225M	17.991M
5240MHz_TnomVnom	Pass	Inf	26.1M	17.841M	27.2M	17.866M
5745MHz_TnomVnom	Pass	500k	17.525M	19.64M	17.575M	23.813M
5785MHz_TnomVnom	Pass	500k	17.55M	19.765M	17.55M	22.514M
5825MHz_TnomVnom	Pass	500k	17.55M	19.765M	17.575M	23.213M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.2M	36.232M	40M	36.282M
5230MHz_TnomVnom	Pass	Inf	88.25M	36.532M	83.15M	36.732M
5755MHz_TnomVnom	Pass	500k	36.3M	39.08M	36.35M	40.73M
5795MHz_TnomVnom	Pass	500k	35.75M	53.823M	36.3M	55.172M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	=	-	=	=
5210MHz_TnomVnom	Pass	Inf	81.6M	75.662M	81.3M	75.562M
5775MHz_TnomVnom	Pass	500k	75.1M	76.162M	76.1M	76.362M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

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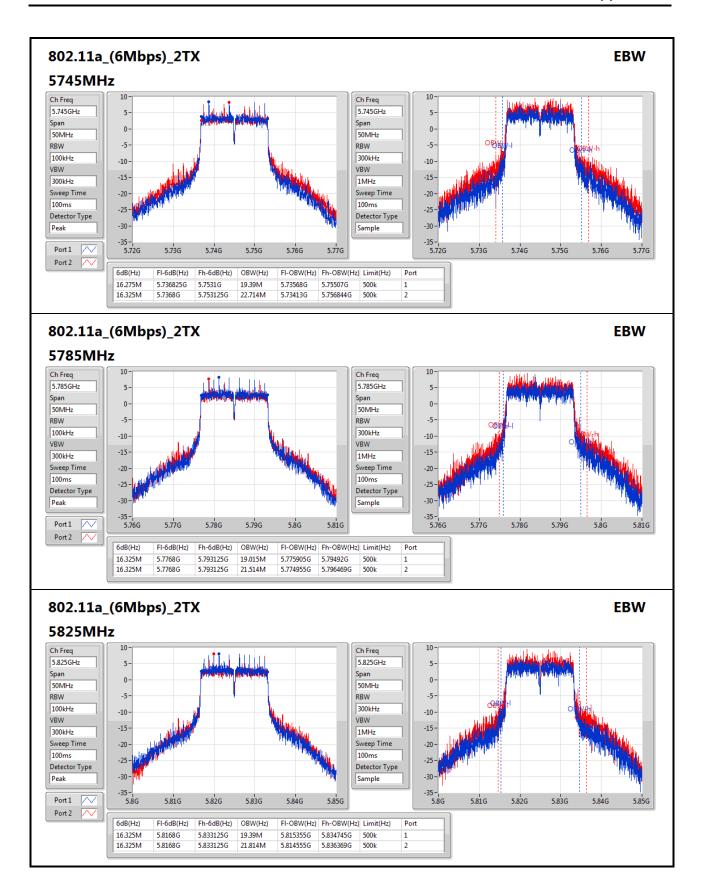
Appendix B EBW Result



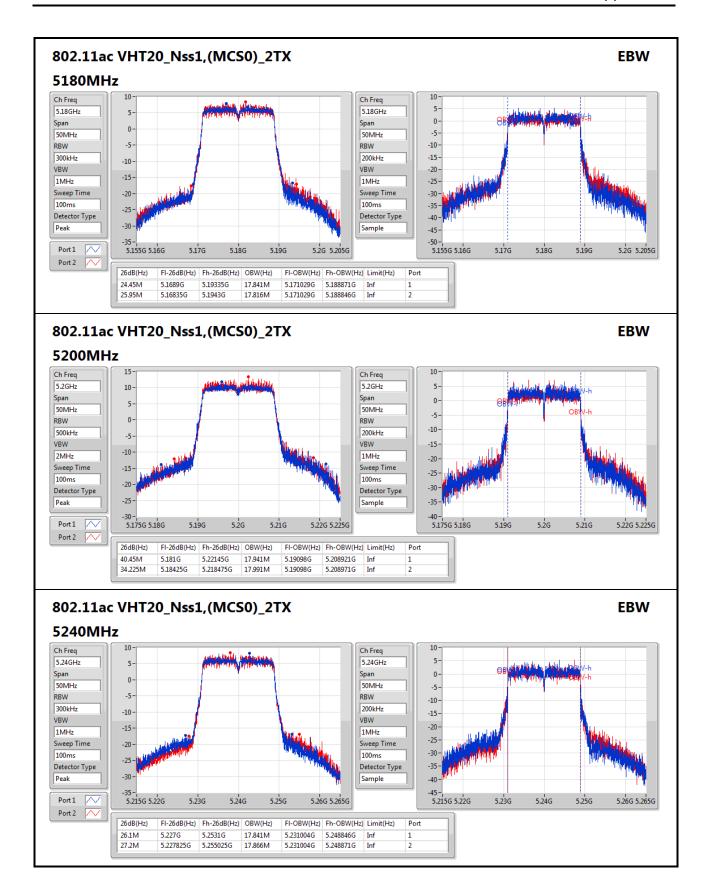
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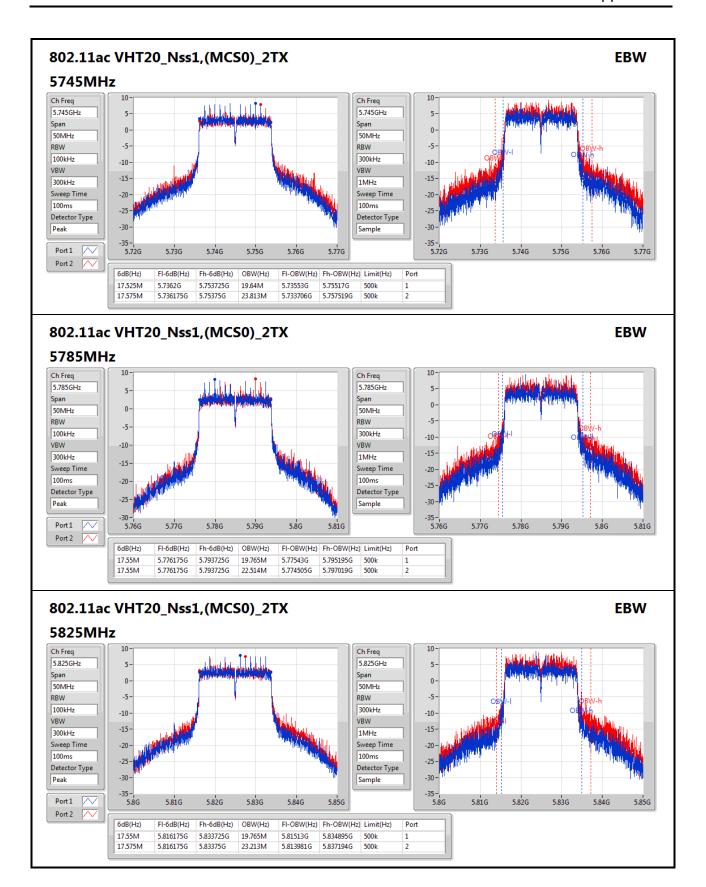
Appendix B EBW Result



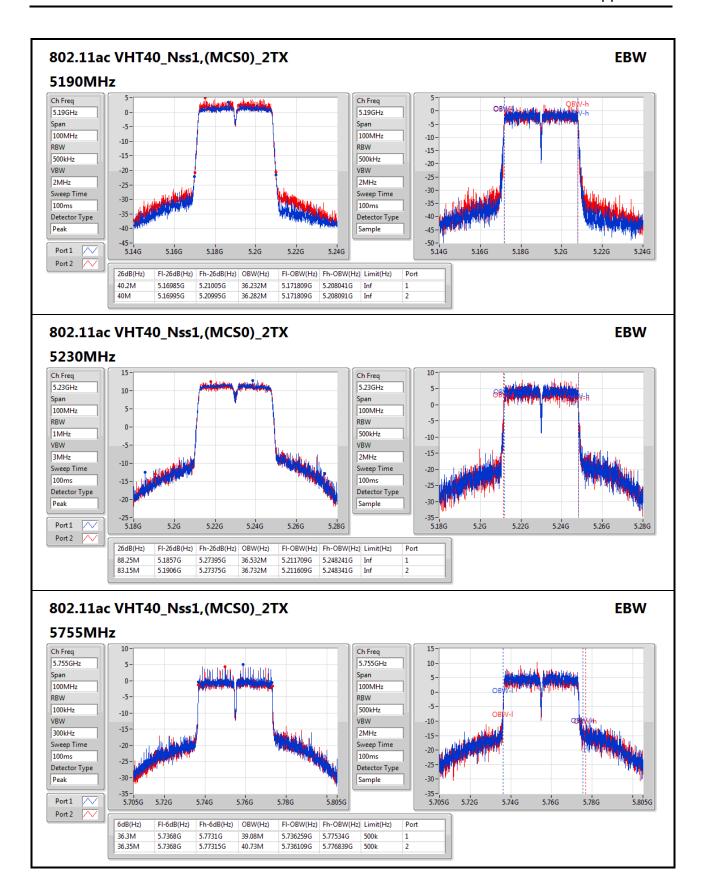
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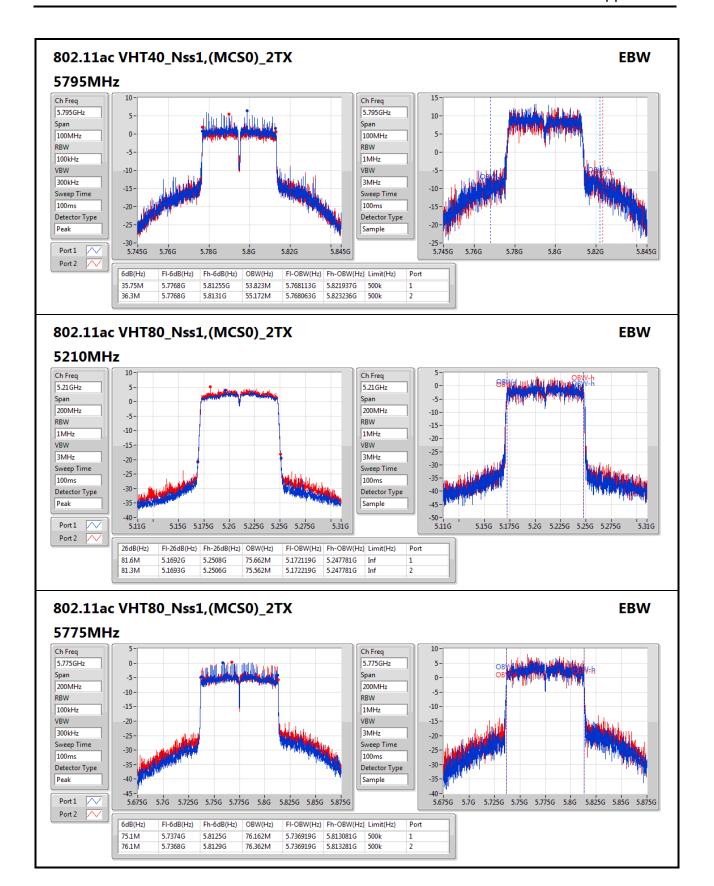


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Power Result Appendix C

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
802.11a_(6Mbps)_2TX	-	-	-	-
5.15-5.25GHz	20.75	0.11885	24.75	0.29854
5.725-5.85GHz	21.85	0.15311	25.85	0.38459
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	20.57	0.11402	24.57	0.28642
5.725-5.85GHz	21.77	0.15031	25.77	0.37757
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	20.75	0.11885	24.75	0.29854
5.725-5.85GHz	22.15	0.16406	26.15	0.41210
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	15.40	0.03467	19.40	0.08710
5.725-5.85GHz	19.63	0.09183	23.63	0.23067

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Power Result Appendix C

Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	4.00	15.74	15.66	18.71	30.00	22.71	36.00
5200MHz_TnomVnom	Pass	4.00	17.13	16.80	19.98	30.00	23.98	36.00
5240MHz_TnomVnom	Pass	4.00	17.95	17.52	20.75	30.00	24.75	36.00
5745MHz_TnomVnom	Pass	4.00	18.93	18.74	21.85	30.00	25.85	36.00
5785MHz_TnomVnom	Pass	4.00	18.54	18.31	21.44	30.00	25.44	36.00
5825MHz_TnomVnom	Pass	4.00	18.52	18.24	21.39	30.00	25.39	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	=	-	-
5180MHz_TnomVnom	Pass	4.00	16.21	15.97	19.11	30.00	23.11	36.00
5200MHz_TnomVnom	Pass	4.00	17.78	17.32	20.57	30.00	24.57	36.00
5240MHz_TnomVnom	Pass	4.00	16.20	15.88	19.05	30.00	23.05	36.00
5745MHz_TnomVnom	Pass	4.00	18.86	18.66	21.77	30.00	25.77	36.00
5785MHz_TnomVnom	Pass	4.00	18.52	18.28	21.41	30.00	25.41	36.00
5825MHz_TnomVnom	Pass	4.00	18.47	18.22	21.36	30.00	25.36	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	4.00	12.25	12.22	15.24	30.00	19.24	36.00
5230MHz_TnomVnom	Pass	4.00	17.97	17.49	20.75	30.00	24.75	36.00
5755MHz_TnomVnom	Pass	4.00	18.36	17.99	21.19	30.00	25.19	36.00
5795MHz_TnomVnom	Pass	4.00	19.37	18.90	22.15	30.00	26.15	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	=	-	-
5210MHz_TnomVnom	Pass	4.00	12.27	12.51	15.40	30.00	19.40	36.00
5775MHz_TnomVnom	Pass	4.00	16.48	16.76	19.63	30.00	23.63	36.00

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

SPORTON INTERNATIONAL INC. Page No. : C2 of C2



Summary

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
802.11a_(6Mbps)_2TX	-	-
5.15-5.25GHz	8.52	15.41
5.725-5.85GHz	8.08	14.98
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	8.20	15.10
5.725-5.85GHz	7.75	14.64
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	4.89	11.79
5.725-5.85GHz	4.76	11.66
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	-3.48	3.42
5.725-5.85GHz	-0.33	6.56

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

SPORTON INTERNATIONAL INC. Page No. : D1 of D8

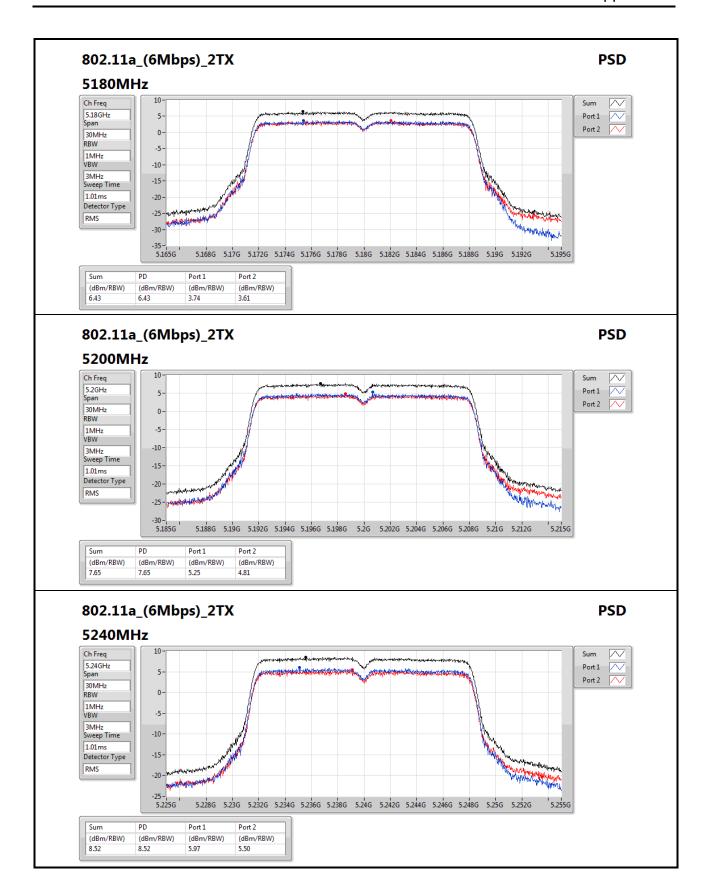


Result

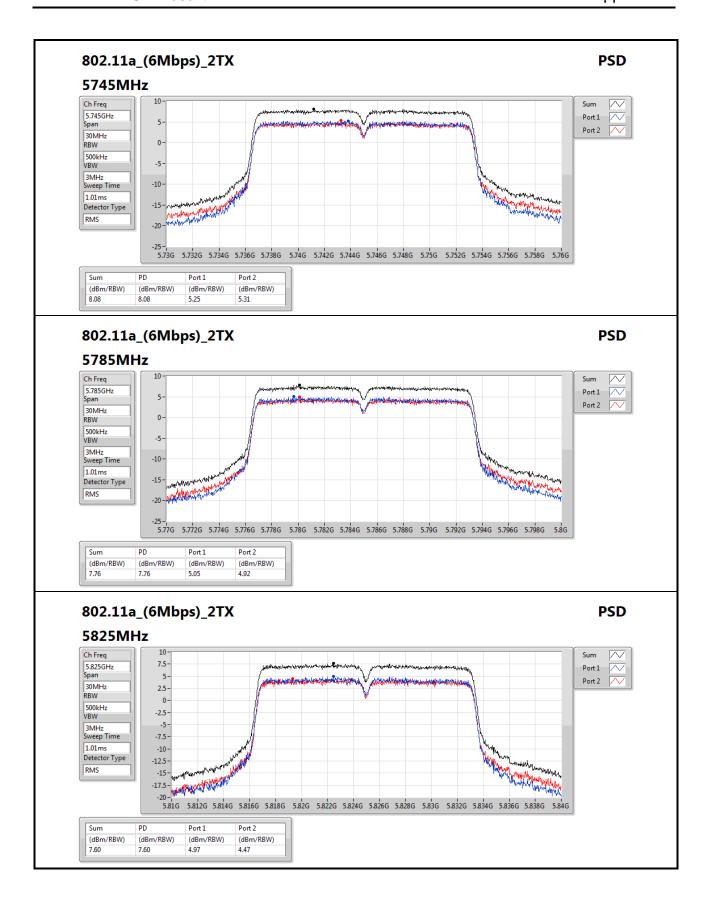
Mode	Result	DG	Port 1	Port 2	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	6.90	3.74	3.61	6.43	16.10	13.33	Inf
5200MHz_TnomVnom	Pass	6.90	5.25	4.81	7.65	16.10	14.55	Inf
5240MHz_TnomVnom	Pass	6.90	5.97	5.50	8.52	16.10	15.41	Inf
5745MHz_TnomVnom	Pass	6.90	5.25	5.31	8.08	29.10	14.98	Inf
5785MHz_TnomVnom	Pass	6.90	5.05	4.92	7.76	29.10	14.66	Inf
5825MHz_TnomVnom	Pass	6.90	4.97	4.47	7.60	29.10	14.50	Inf
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	6.90	4.02	3.66	6.50	16.10	13.39	Inf
5200MHz_TnomVnom	Pass	6.90	5.45	5.06	8.20	16.10	15.10	Inf
5240MHz_TnomVnom	Pass	6.90	3.96	3.48	6.62	16.10	13.52	Inf
5745MHz_TnomVnom	Pass	6.90	4.99	4.93	7.75	29.10	14.64	Inf
5785MHz_TnomVnom	Pass	6.90	4.92	4.45	7.39	29.10	14.28	Inf
5825MHz_TnomVnom	Pass	6.90	4.67	4.38	7.41	29.10	14.31	Inf
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	6.90	-3.91	-3.82	-0.90	16.10	5.99	Inf
5230MHz_TnomVnom	Pass	6.90	2.18	1.60	4.89	16.10	11.79	Inf
5755MHz_TnomVnom	Pass	6.90	1.07	0.69	3.88	29.10	10.78	Inf
5795MHz_TnomVnom	Pass	6.90	1.99	1.56	4.76	29.10	11.66	Inf
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	6.90	-6.58	-6.33	-3.48	16.10	3.42	Inf
5775MHz_TnomVnom	Pass	6.90	-3.43	-3.26	-0.33	29.10	6.56	Inf

SPORTON INTERNATIONAL INC. Page No. : D2 of D8

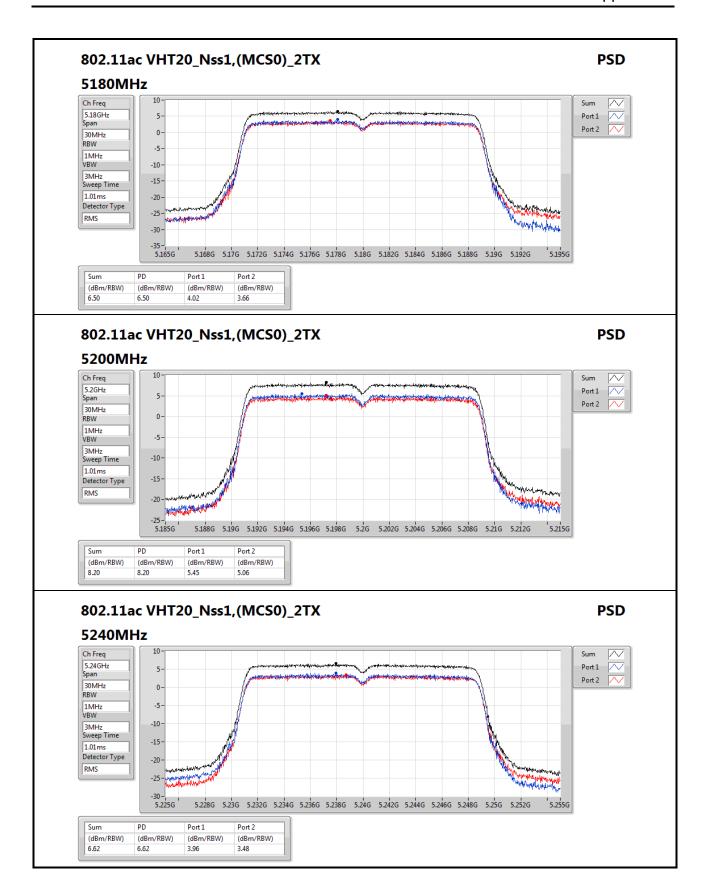
DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;



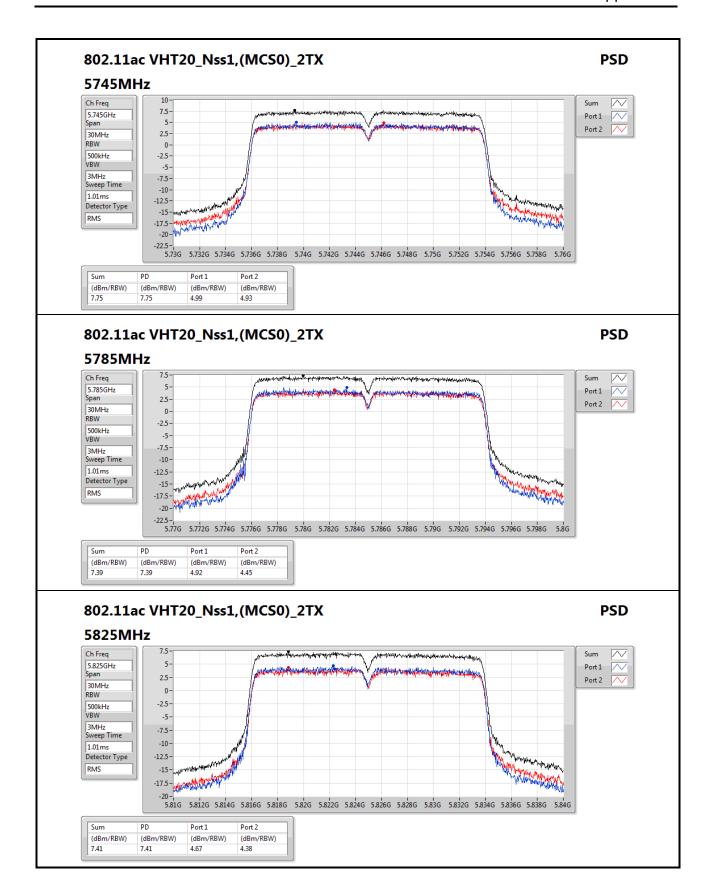
SPORTON INTERNATIONAL INC.



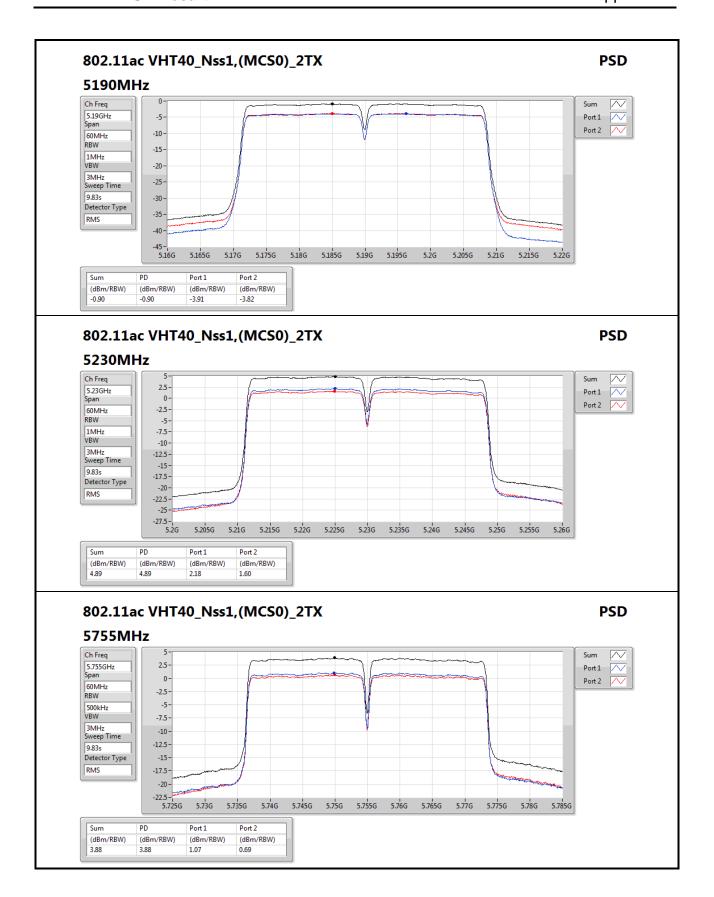
SPORTON INTERNATIONAL INC.



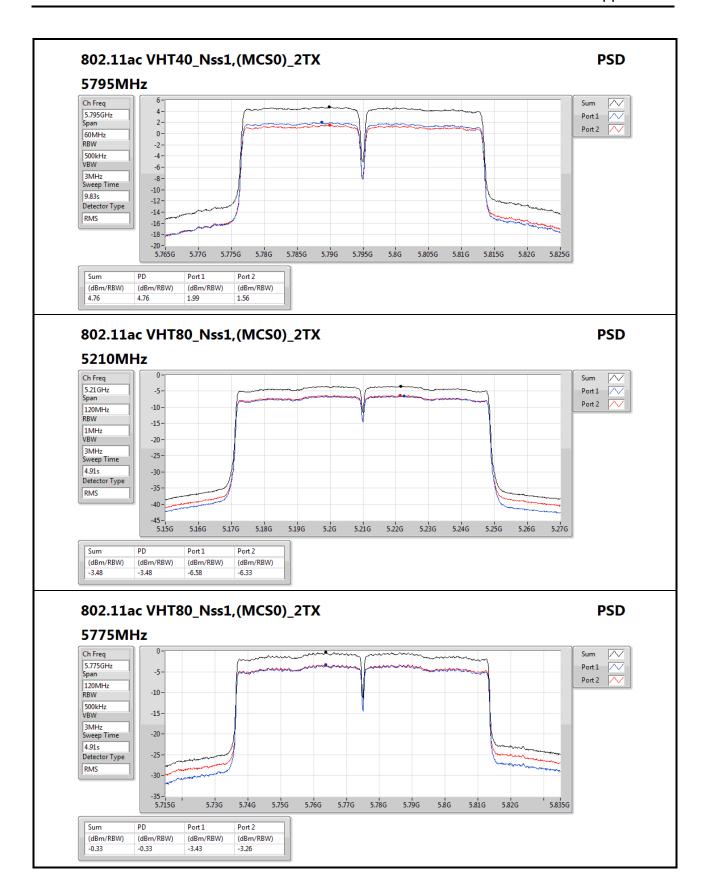
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RSE TX below 1GHz Result

Appendix E.1

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
802.11ac VHT80_Nss1,(MCS0)_2TX	1	-	T.	-	1	1	-	-	ı	-	1	-
5.725-5.85GHz	Pass	QP	35.82M	36.34	40.00	-3.66	-16.20	3	٧	63	1.00	-

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RSE TX below 1GHz Result

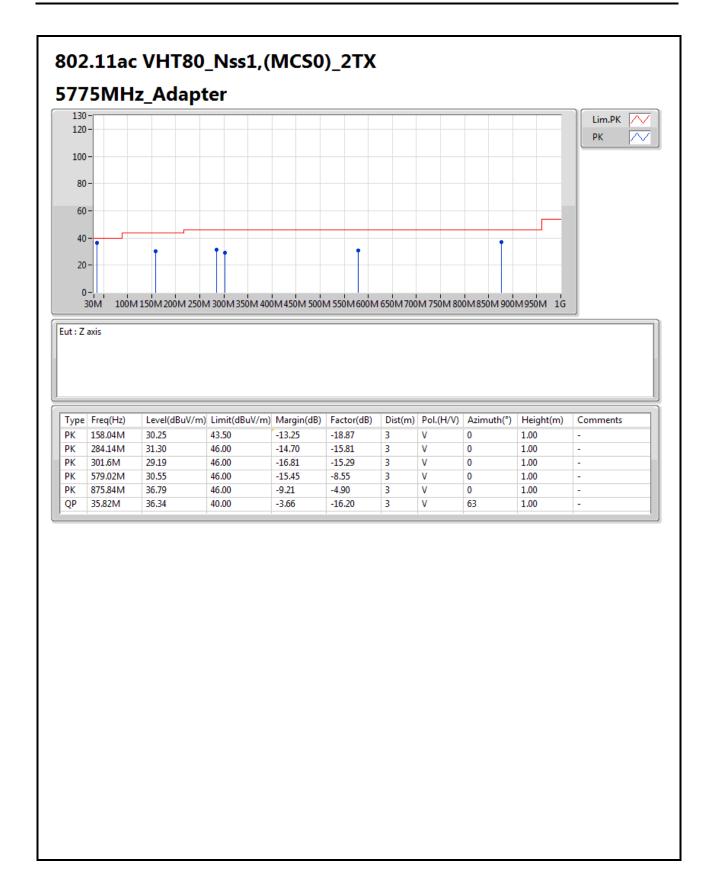
Appendix E.1

Result

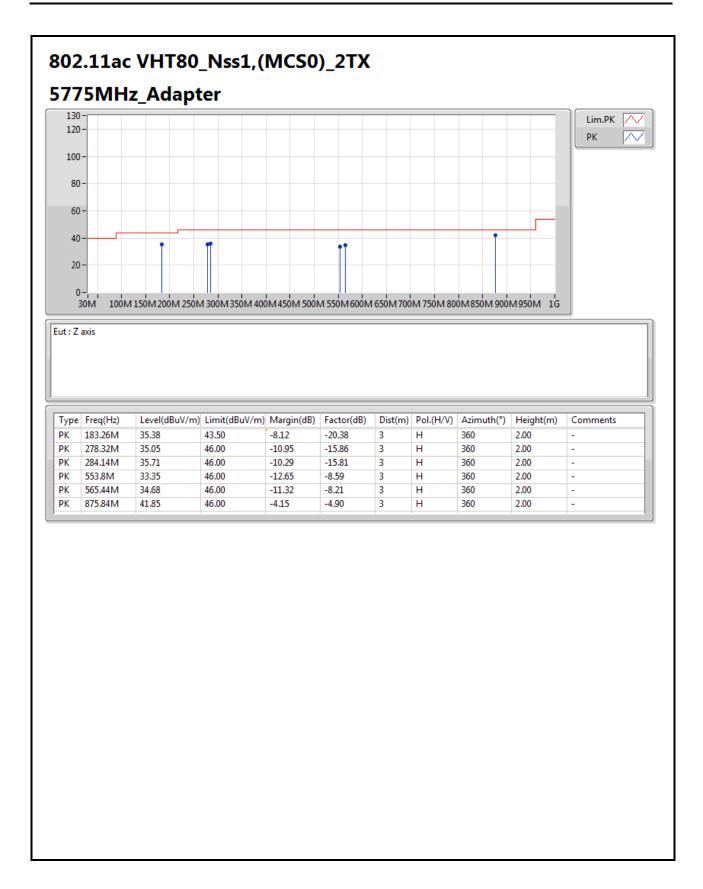
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5775MHz	Pass	PK	183.26M	35.38	43.50	-8.12	-20.38	3	Н	360	2.00	-
5775MHz	Pass	PK	278.32M	35.05	46.00	-10.95	-15.86	3	Н	360	2.00	-
5775MHz	Pass	PK	284.14M	35.71	46.00	-10.29	-15.81	3	Н	360	2.00	-
5775MHz	Pass	PK	553.8M	33.35	46.00	-12.65	-8.59	3	Н	360	2.00	-
5775MHz	Pass	PK	565.44M	34.68	46.00	-11.32	-8.21	3	Н	360	2.00	-
5775MHz	Pass	PK	875.84M	41.85	46.00	-4.15	-4.90	3	Н	360	2.00	-
5775MHz	Pass	PK	158.04M	30.25	43.50	-13.25	-18.87	3	V	0	1.00	-
5775MHz	Pass	PK	284.14M	31.30	46.00	-14.70	-15.81	3	V	0	1.00	-
5775MHz	Pass	PK	301.6M	29.19	46.00	-16.81	-15.29	3	V	0	1.00	-
5775MHz	Pass	PK	579.02M	30.55	46.00	-15.45	-8.55	3	V	0	1.00	-
5775MHz	Pass	PK	875.84M	36.79	46.00	-9.21	-4.90	3	V	0	1.00	-
5775MHz	Pass	QP	35.82M	36.34	40.00	-3.66	-16.20	3	٧	63	1.00	-

SPORTON INTERNATIONAL INC. Page No. : E2 of E4









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Appendix E.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
802.11a_(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5.15-5.25GHz	Pass	AV	5.1498G	53.89	54.00	-0.11	2.88	3	Н	189	1.02	-
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5.725-5.85GHz	Pass	PK	5.649G	67.92	68.20	-0.28	3.41	3	Н	263	1.00	-

SPORTON INTERNATIONAL INC. Page No. : E1 of E79



Appendix E.2

Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	ļ
802.11a_(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	AV	5.1498G	53.89	54.00	-0.11	2.88	3	Н	189	1.02	-
5180MHz	Pass	AV	5.1822G	99.42	Inf	-Inf	2.92	3	Н	189	1.02	-
5180MHz	Pass	PK	5.1482G	69.44	74.00	-4.56	2.88	3	Н	189	1.02	-
5180MHz	Pass	PK	5.1822G	107.85	Inf	-Inf	2.92	3	Н	189	1.02	-
5180MHz	Pass	AV	5.1498G	48.24	54.00	-5.76	2.88	3	V	159	2.85	-
5180MHz	Pass	AV	5.1744G	92.53	Inf	-Inf	2.91	3	V	159	2.85	-
5180MHz	Pass	PK	5.1498G	63.11	74.00	-10.89	2.88	3	V	159	2.85	-
5180MHz	Pass	PK	5.179G	99.59	Inf	-Inf	2.92	3	V	159	2.85	-
5180MHz	Pass	AV	10.36G	52.76	54.00	-1.24	12.86	3	Н	117	1.93	-
5180MHz	Pass	AV	15.54G	50.56	54.00	-3.44	14.75	3	Н	199	1.70	-
5180MHz	Pass	PK	10.36G	64.26	74.00	-9.74	12.86	3	Н	117	1.93	-
5180MHz	Pass	PK	15.54G	64.04	74.00	-9.96	14.75	3	Н	199	1.70	-
5180MHz	Pass	AV	10.36G	46.88	54.00	-7.12	12.86	3	V	107	1.01	-
5180MHz	Pass	AV	15.54G	48.08	54.00	-5.92	14.75	3	V	115	2.98	-
5180MHz	Pass	PK	10.36G	58.81	74.00	-15.19	12.86	3	V	107	1.01	-
5180MHz	Pass	PK	15.54G	61.24	74.00	-12.76	14.75	3	V	115	2.98	-
5200MHz	Pass	AV	5.1492G	53.35	54.00	-0.65	2.88	3	Н	125	2.22	-
5200MHz	Pass	AV	5.1956G	101.12	Inf	-Inf	2.94	3	Н	125	2.22	-
5200MHz	Pass	PK	5.1452G	66.31	74.00	-7.69	2.88	3	Н	125	2.22	-
5200MHz	Pass	PK	5.196G	108.94	Inf	-Inf	2.94	3	Н	125	2.22	-
5200MHz	Pass	AV	5.1492G	47.37	54.00	-6.63	2.88	3	V	179	3.49	-
5200MHz	Pass	AV	5.2068G	97.38	Inf	-Inf	2.95	3	V	179	3.49	-
5200MHz	Pass	PK	5.1308G	57.81	74.00	-16.19	2.86	3	V	179	3.49	-
5200MHz	Pass	PK	5.2064G	104.22	Inf	-Inf	2.95	3	V	179	3.49	-
5200MHz	Pass	AV	10.4G	53.22	54.00	-0.78	12.97	3	Н	316	1.88	-
5200MHz	Pass	AV	15.6G	52.72	54.00	-1.28	14.53	3	Н	219	1.78	-
5200MHz	Pass	PK	10.4G	66.33	68.20	-1.87	12.97	3	Н	316	1.88	-
5200MHz	Pass	PK	15.6G	65.72	74.00	-8.28	14.53	3	Н	219	1.78	-
5200MHz	Pass	AV	10.4G	49.85	54.00	-4.15	12.97	3	٧	269	3.64	-
5200MHz	Pass	AV	15.6G	49.67	54.00	-4.33	14.53	3	٧	129	3.40	-
5200MHz	Pass	PK	10.4G	61.03	74.00	-12.97	12.97	3	٧	269	3.64	-
5200MHz	Pass	PK	15.6G	61.06	74.00	-12.94	14.53	3	V	129	3.40	-
5240MHz	Pass	AV	5.1488G	46.83	54.00	-7.17	2.88	3	Н	29	2.17	-
5240MHz	Pass	AV	5.2352G	100.43	Inf	-Inf	2.98	3	Н	29	2.17	-
5240MHz	Pass	AV	5.36G	45.72	54.00	-8.28	3.12	3	Н	29	2.17	-
5240MHz	Pass	PK	5.135G	58.18	74.00	-15.82	2.87	3	Н	29	2.17	-
5240MHz	Pass	PK	5.2442G	108.52	Inf	-Inf	2.99	3	Н	29	2.17	-
5240MHz	Pass	PK	5.3678G	56.70	74.00	-17.30	3.12	3	Н	29	2.17	-
5240MHz	Pass	AV	5.1236G	46.35	54.00	-7.65	2.86	3	V	298	3.67	-
5240MHz	Pass	AV	5.2382G	97.53	Inf	-Inf	2.98	3	V	298	3.67	-
5240MHz	Pass	AV	5.3576G	45.64	54.00	-8.36	3.11	3	V	298	3.67	-
5240MHz	Pass	PK	5.1026G	58.00	74.00	-16.00	2.83	3	V	298	3.67	-
5240MHz	Pass	PK	5.2382G	105.30	Inf	-Inf	2.98	3	V	298	3.67	-
5240MHz	Pass	PK	5.3558G	58.11	74.00	-15.89	3.11	3	V	298	3.67	-
5240MHz	Pass	AV	10.48G	52.41	54.00	-1.59	13.17	3	Н	313	1.73	-
5240MHz	Pass	AV	15.72G	53.50	54.00	-0.50	14.11	3	Н	39	1.78	-
5240MHz	Pass	PK	10.48G	64.55	74.00	-9.45	13.17	3	Н	313	1.73	-

SPORTON INTERNATIONAL INC.

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Appendix E.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
5240MHz	Pass	PK	15.72G	66.30	74.00	-7.70	14.11	3	Н	39	1.78	-
5240MHz	Pass	AV	10.48G	52.23	54.00	-1.77	13.17	3	٧	273	3.58	-
5240MHz	Pass	AV	15.72G	48.56	54.00	-5.44	14.11	3	٧	33	1.02	-
5240MHz	Pass	PK	10.48G	64.09	74.00	-9.91	13.17	3	V	273	3.58	-
5240MHz	Pass	PK	15.72G	60.45	74.00	-13.55	14.11	3	٧	33	1.02	-
5745MHz	Pass	AV	5.7438G	100.84	Inf	-Inf	3.50	3	Н	249	2.20	-
5745MHz	Pass	PK	5.6418G	57.72	68.20	-10.48	3.41	3	Н	249	2.20	-
5745MHz	Pass	PK	5.7438G	108.65	Inf	-Inf	3.50	3	Н	249	2.20	-
5745MHz	Pass	PK	5.9754G	57.25	68.20	-10.95	3.70	3	Н	249	2.20	-
5745MHz	Pass	AV	5.7498G	96.78	Inf	-Inf	3.50	3	V	302	3.69	-
5745MHz	Pass	PK	5.5926G	58.16	68.20	-10.04	3.36	3	V	302	3.69	-
5745MHz	Pass	PK	5.7402G	104.15	Inf	-Inf	3.49	3	V	302	3.69	_
5745MHz	Pass	PK	5.9406G	57.63	68.20	-10.57	3.67	3	V	302	3.69	_
5745MHz	Pass	AV	11.49G	52.26	54.00	-1.74	13.75	3	Н	298	1.82	_
5745MHz	Pass	AV	17.235G	52.59	54.00	-1.41	18.16	3	н	20	1.78	-
5745MHz	Pass	PK	11.49G	64.12	74.00	-9.88	13.75	3	н	298	1.82	_
5745MHz	Pass	PK	17.235G	65.29	74.00	-8.71	18.16	3	н	20	1.78	_
5745MHz	Pass	AV	11.49G	45.51	54.00	-8.49	13.75	3	V	334	1.93	_
5745MHz	Pass	AV	17.235G	53.57	54.00	-0.43	18.16	3	V	324	1.64	_
5745MHz	Pass	PK	11.49G	57.08	74.00	-16.92	13.75	3	V	334	1.93	-
5745MHz	Pass	PK	17.235G	66.66	74.00	-7.34	18.16	3	V	324	1.64	_
5785MHz	Pass	AV	5.7826G	100.20	Inf	-7.54 -Inf	3.53	3	Н	257	2.15	-
5785MHz	Pass	PK	5.599G	57.98	68.20	-10.22	3.37	3	н	257	2.15	-
5785MHz		PK	5.7826G	108.64	lnf	-10.22 -Inf	3.53	3	Н	257	2.15	-
5785MHz	Pass	PK	5.7626G 5.9614G		68.20	-10.44		3	Н			-
5785MHz	Pass	AV	5.7826G	57.76 96.61			3.69	3	V	257 306	2.15 3.64	
5785MHz	Pass Pass	PK	5.7826G 5.5966G	57.15	Inf 68.20	-Inf -11.05	3.37	3	V	306	3.64	-
5785MHz	Pass	PK	5.7874G	104.37	lnf	-11.05 -Inf	3.53	3	V	306	3.64	-
		PK	5.9722G					3	V	306	3.64	-
5785MHz 5785MHz	Pass			57.18	68.20	-11.02	3.69					-
	Pass	AV	11.57G	52.86	54.00	-1.14	13.63	3	Н	302	1.02	-
5785MHz	Pass	PK	11.57G	64.24	74.00	-9.76	13.63	3	Н	302	1.02	-
5785MHz	Pass	AV	11.57G	51.30	54.00	-2.70	13.63	3	V	70	3.57	-
5785MHz	Pass	PK	11.57G	62.79	74.00	-11.21	13.63	3	V	70	3.57	-
5825MHz	Pass	AV	5.8286G	99.05	Inf	-Inf	3.57	3	Н	259	2.24	-
5825MHz	Pass	PK	5.5946G	58.15	68.20	-10.05	3.37	3	Н	259	2.24	-
5825MHz	Pass	PK	5.8238G	107.30	Inf	-Inf	3.56	3	Н	259	2.24	-
5825MHz	Pass	PK	5.9306G	57.78	68.20	-10.42	3.66	3	Н	259	2.24	-
5825MHz	Pass	AV	5.8214G	93.61	Inf	-Inf	3.56	3	V	282	3.60	-
5825MHz	Pass	PK	5.5922G	58.27	68.20	-9.93	3.36	3	V	282	3.60	-
5825MHz	Pass	PK	5.8214G	102.24	Inf	-Inf	3.56	3	V	282	3.60	-
5825MHz	Pass	PK	5.9642G	57.85	68.20	-10.35	3.69	3	V	282	3.60	-
5825MHz	Pass	AV	11.65G	53.47	54.00	-0.53	13.50	3	Н	306	1.00	-
5825MHz	Pass	PK	11.65G	64.84	74.00	-9.16	13.50	3	Н	306	1.00	-
5825MHz	Pass	AV	11.65G	51.88	54.00	-2.12	13.50	3	V	80	3.28	-
5825MHz	Pass	PK	11.65G	63.49	74.00	-10.51	13.50	3	V	80	3.28	-
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	AV	5.14984G	53.78	54.00	-0.22	2.88	3	Н	258	2.08	-
5180MHz	Pass	AV	5.181872G	98.06	Inf	-Inf	2.92	3	Н	258	2.08	-
5180MHz	Pass	PK	5.149424G	72.14	74.00	-1.86	2.88	3	Н	258	2.08	-

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Appendix E.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
5180MHz	Pass	PK	5.185408G	106.34	Inf	-Inf	2.92	3	н	258	2.08	-
5180MHz	Pass	AV	5.1496G	49.70	54.00	-4.30	2.88	3	V	200	3.59	-
5180MHz	Pass	AV	5.1738G	90.76	Inf	-Inf	2.91	3	V	200	3.59	-
5180MHz	Pass	PK	5.1496G	65.84	74.00	-8.16	2.88	3	V	200	3.59	-
5180MHz	Pass	PK	5.174G	98.52	Inf	-Inf	2.91	3	٧	200	3.59	-
5180MHz	Pass	AV	10.36G	52.18	54.00	-1.82	12.86	3	Н	296	1.88	-
5180MHz	Pass	PK	10.36G	63.99	74.00	-10.01	12.86	3	Н	296	1.88	-
5180MHz	Pass	AV	10.36G	45.65	54.00	-8.35	12.86	3	V	310	1.95	-
5180MHz	Pass	PK	10.36G	57.22	74.00	-16.78	12.86	3	V	310	1.95	-
5200MHz	Pass	AV	5.1496G	53.00	54.00	-1.00	2.88	3	Н	341	1.12	-
5200MHz	Pass	AV	5.1964G	99.94	Inf	-Inf	2.94	3	Н	341	1.12	-
5200MHz	Pass	PK	5.1492G	68.08	74.00	-5.92	2.88	3	Н	341	1.12	-
5200MHz	Pass	PK	5.1988G	109.13	Inf	-Inf	2.94	3	Н	341	1.12	-
5200MHz	Pass	AV	5.1488G	49.99	54.00	-4.01	2.88	3	V	216	3.69	-
5200MHz	Pass	AV	5.206G	92.23	Inf	-Inf	2.95	3	V	216	3.69	_
5200MHz	Pass	PK	5.1496G	63.25	74.00	-10.75	2.88	3	V	216	3.69	_
5200MHz	Pass	PK	5.2008G	100.21	Inf	-Inf	2.94	3	V	216	3.69	_
5200MHz	Pass	AV	10.4G	53.73	54.00	-0.27	12.97	3	Н	300	1.00	_
5200MHz	Pass	PK	10.4G	65.52	74.00	-8.48	12.97	3	Н	300	1.00	_
5200MHz	Pass	AV	10.4G	50.41	54.00	-3.59	12.97	3	V	74	3.51	-
5200MHz	Pass	PK	10.4G	61.80	74.00	-12.20	12.97	3	V	74	3.51	_
5240MHz	Pass	AV	5.1488G	46.20	54.00	-7.80	2.88	3	Н	340	1.08	-
5240MHz	Pass	AV	5.2424G	98.32	Inf	-7.00 -Inf	2.99	3	н	340	1.08	-
5240MHz		AV	5.357G	45.35	54.00	-8.65	3.11	3	Н	340	1.08	-
5240MHz	Pass	PK			74.00			3	Н			-
5240MHz	Pass	PK	5.144G 5.2424G	56.70 106.83		-17.30	2.88	3	Н	340	1.08	
5240MHz	Pass Pass	PK	5.2424G 5.3642G	55.70	74.00	-Inf -18.30	3.12	3	Н	340 340	1.08	-
5240MHz	Pass	AV	5.3042G 5.1134G	46.03	54.00	-7.97	2.84	3	V	261	3.33	-
		AV		90.74		-7.97 -Inf		3	V	261	3.33	-
5240MHz	Pass		5.2418G		Inf		2.99		V			-
5240MHz	Pass	AV	5.3774G	45.20	54.00	-8.80	3.14	3	V	261	3.33	-
5240MHz	Pass	PK	5.1098G	56.27	74.00	-17.73	2.84	3		261	3.33	-
5240MHz	Pass	PK	5.2436G	99.12	Inf	-Inf	2.99	3	V	261	3.33	-
5240MHz	Pass	PK	5.3882G	56.13	74.00	-17.87	3.15	3	V	261	3.33	-
5240MHz	Pass	AV	10.48G	53.44	54.00	-0.56	13.17	3	Н	60	1.09	-
5240MHz	Pass	PK	10.48G	63.11	74.00	-10.89	13.17	3	Н	60	1.09	-
5240MHz	Pass	AV	10.48G	49.52	54.00	-4.48	13.17	3	V	92	3.32	-
5240MHz	Pass	PK	10.48G	61.37	74.00	-12.63	13.17	3	V	92	3.32	-
802.11ac VHT40_Nss1,(MCS0)_2TX	- D	-			- 54.00	- 0.44	-	-	-	- 074	- 4.00	-
5190MHz	Pass	AV	5.1488G	53.89	54.00	-0.11	2.88	3	Н	271	1.02	-
5190MHz	Pass	AV	5.1856G	92.94	Inf	-Inf	2.92	3	Н	271	1.02	-
5190MHz	Pass	PK	5.1464G	68.08	74.00	-5.92	2.88	3	Н	271	1.02	-
5190MHz	Pass	PK	5.1836G	101.65	Inf	-Inf	2.92	3	Н	271	1.02	-
5190MHz	Pass	AV	5.148G	47.74	54.00	-6.26	2.88	3	V	123	3.69	-
5190MHz	Pass	AV	5.1852G	86.04	Inf	-Inf	2.92	3	V	123	3.69	-
5190MHz	Pass	PK	5.1488G	58.61	74.00	-15.39	2.88	3	V	123	3.69	-
5190MHz	Pass	PK	5.1876G	94.28	Inf	-Inf	2.93	3	V	123	3.69	-
5190MHz	Pass	AV	10.38G	46.63	54.00	-7.37	12.91	3	Н	305	1.01	-
5190MHz	Pass	PK	10.38G	57.99	74.00	-16.01	12.91	3	Н	305	1.01	-
5190MHz	Pass	AV	10.38G	45.26	54.00	-8.74	12.91	3	V	64	3.33	-

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Appendix E.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
5190MHz	Pass	PK	10.38G	56.89	74.00	-17.11	12.91	3	V	64	3.33	-
5230MHz	Pass	AV	5.1496G	53.76	54.00	-0.24	2.88	3	Н	269	1.01	-
5230MHz	Pass	AV	5.2356G	98.76	Inf	-Inf	2.98	3	н	269	1.01	-
5230MHz	Pass	PK	5.1464G	66.89	74.00	-7.11	2.88	3	н	269	1.01	-
5230MHz	Pass	PK	5.2244G	107.21	Inf	-Inf	2.97	3	Н	269	1.01	-
5230MHz	Pass	AV	5.1424G	46.70	54.00	-7.30	2.88	3	V	110	3.59	-
5230MHz	Pass	AV	5.2348G	90.38	Inf	-Inf	2.98	3	V	110	3.59	-
5230MHz	Pass	PK	5.142G	58.22	74.00	-15.78	2.88	3	V	110	3.59	_
5230MHz	Pass	PK	5.2348G	98.77	Inf	-Inf	2.98	3	v	110	3.59	-
5230MHz	Pass	AV	10.46G	51.03	54.00	-2.93	13.12	3	Н	299	1.00	_
5230MHz	Pass	PK	10.46G	62.96	74.00	-11.04	13.12	3	н	299	1.00	-
									V			-
5230MHz	Pass	AV	10.46G	48.82	54.00	-5.18	13.12	3		68	3.57	-
5230MHz	Pass	PK	10.46G	60.00	74.00	-14.00	13.12	3	V	68	3.57	-
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-		-	-	-
5210MHz	Pass	AV	5.149G	53.74	54.00	-0.26	2.88	3	Н	262	1.00	-
5210MHz	Pass	AV	5.222G	89.38	Inf	-Inf	2.96	3	Н	262	1.00	-
5210MHz	Pass	AV	5.351G	46.92	54.00	-7.08	3.11	3	Н	262	1.00	-
5210MHz	Pass	PK	5.141G	66.86	74.00	-7.14	2.88	3	Н	262	1.00	-
5210MHz	Pass	PK	5.207G	98.20	Inf	-Inf	2.95	3	Н	262	1.00	-
5210MHz	Pass	PK	5.381G	59.05	74.00	-14.95	3.14	3	Н	262	1.00	-
5210MHz	Pass	AV	5.149G	48.14	54.00	-5.86	2.88	3	V	204	3.56	-
5210MHz	Pass	AV	5.204G	81.64	Inf	-Inf	2.94	3	V	204	3.56	-
5210MHz	Pass	AV	5.459G	45.56	54.00	-8.44	3.23	3	V	204	3.56	-
5210MHz	Pass	PK	5.146G	59.35	74.00	-14.65	2.88	3	V	204	3.56	-
5210MHz	Pass	PK	5.189G	90.49	Inf	-Inf	2.93	3	V	204	3.56	-
5210MHz	Pass	PK	5.384G	57.07	74.00	-16.93	3.14	3	V	204	3.56	-
5210MHz	Pass	AV	10.42G	45.36	54.00	-8.64	13.02	3	Н	295	1.01	-
5210MHz	Pass	PK	10.42G	57.40	74.00	-16.60	13.02	3	Н	295	1.01	-
5210MHz	Pass	AV	10.42G	44.53	54.00	-9.47	13.02	3	V	52	3.69	-
5210MHz	Pass	PK	10.42G	56.12	74.00	-17.88	13.02	3	V	52	3.69	-
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	AV	5.7498G	103.09	Inf	-Inf	3.50	3	Н	259	1.01	-
5745MHz	Pass	PK	5.607G	58.27	68.20	-9.93	3.38	3	Н	259	1.01	-
5745MHz	Pass	PK	5.751G	111.45	Inf	-Inf	3.50	3	Н	259	1.01	-
5745MHz	Pass	PK	5.9262G	58.40	68.20	-9.80	3.65	3	Н	259	1.01	-
5745MHz	Pass	AV	5.7414G	93.40	Inf	-Inf	3.49	3	٧	162	3.69	-
5745MHz	Pass	PK	5.595G	57.67	68.20	-10.53	3.37	3	٧	162	3.69	-
5745MHz	Pass	PK	5.7426G	101.89	Inf	-Inf	3.49	3	V	162	3.69	-
5745MHz	Pass	PK	5.9382G	57.70	68.20	-10.50	3.66	3	V	162	3.69	-
5745MHz	Pass	AV	11.49G	52.60	54.00	-1.40	13.75	3	Н	299	1.00	-
5745MHz	Pass	PK	11.49G	64.43	74.00	-9.57	13.75	3	Н	299	1.00	-
5745MHz	Pass	AV	11.49G	51.59	54.00	-2.41	13.75	3	٧	75	3.45	-
5745MHz	Pass	PK	11.49G	63.72	74.00	-10.28	13.75	3	V	75	3.45	-
5785MHz	Pass	AV	5.7826G	103.54	Inf	-Inf	3.53	3	Н	269	1.01	-
5785MHz	Pass	PK	5.5054G	57.46	68.20	-10.74	3.28	3	н	269	1.01	_
5785MHz	Pass	PK	5.791G	111.77	Inf	-10.74 -Inf	3.53	3	н	269	1.01	_
5785MHz	Pass	PK	5.9362G	57.87	68.20	-10.33	3.66	3	Н	269	1.01	
5785MHz			5.9362G 5.7814G	91.67				3	V	137		-
	Pass	AV			Inf 68.20	-Inf	3.53				3.16	-
5785MHz	Pass	PK	5.6086G	57.38	68.20	-10.82	3.38	3	V	137	3.16	-

SPORTON INTERNATIONAL INC.



Appendix E.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
5785MHz	Pass	PK	5.7814G	100.39	Inf	-Inf	3.53	3	V	137	3.16	-
5785MHz	Pass	PK	5.9782G	57.54	68.20	-10.66	3.70	3	V	137	3.16	-
5785MHz	Pass	AV	11.57G	52.61	54.00	-1.39	13.63	3	н	298	1.03	-
5785MHz	Pass	PK	11.57G	64.22	74.00	-9.78	13.63	3	Н	298	1.03	-
5785MHz	Pass	AV	11.57G	50.97	54.00	-3.03	13.63	3	V	81	3.51	-
5785MHz	Pass	PK	11.57G	62.59	74.00	-11.41	13.63	3	V	81	3.51	-
5825MHz	Pass	AV	5.8238G	102.64	Inf	-Inf	3.56	3	Н	273	1.02	-
5825MHz	Pass	PK	5.5898G	57.56	68.20	-10.64	3.36	3	Н	273	1.02	-
5825MHz	Pass	PK	5.8274G	111.34	Inf	-Inf	3.56	3	Н	273	1.02	-
5825MHz	Pass	PK	5.9786G	57.91	68.20	-10.29	3.70	3	Н	273	1.02	-
5825MHz	Pass	AV	5.819G	91.74	Inf	-Inf	3.56	3	V	140	2.71	-
5825MHz	Pass	PK	5.6006G	58.30	68.20	-9.90	3.37	3	V	140	2.71	-
5825MHz	Pass	PK	5.8214G	99.88	Inf	-Inf	3.56	3	V	140	2.71	-
5825MHz	Pass	PK	5.9354G	57.26	68.20	-10.94	3.66	3	V	140	2.71	-
5825MHz	Pass	AV	11.65G	52.11	54.00	-1.89	13.50	3	Н	311	2.46	-
5825MHz	Pass	PK	11.65G	63.13	74.00	-10.87	13.50	3	н	311	2.46	_
5825MHz	Pass	AV	11.65G	50.86	54.00	-3.14	13.50	3	V	78	3.03	-
5825MHz	Pass	PK	11.65G	61.68	74.00	-12.32	13.50	3	V	78	3.03	-
802.11ac VHT40_Nss1,(MCS0)_2TX	_	-	-	_	_	-	_	_	_	_	-	-
5755MHz	Pass	AV	5.7478G	100.17	Inf	-Inf	3.50	3	Н	256	1.00	-
5755MHz	Pass	PK	5.6494G	67.90	68.20	-0.30	3.41	3	Н	256	1.00	_
5755MHz	Pass	PK	5.7478G	108.63	Inf	-Inf	3.50	3	Н	256	1.00	_
5755MHz	Pass	PK	5.9314G	58.41	68.20	-9.79	3.66	3	н	256	1.00	_
5755MHz	Pass	AV	5.7406G	88.25	Inf	-Inf	3.49	3	V	154	3.34	_
5755MHz	Pass	PK	5.6278G	58.09	68.20	-10.11	3.40	3	V	154	3.34	_
5755MHz	Pass	PK	5.7598G	96.52	Inf	-Inf	3.51	3	V	154	3.34	-
5755MHz	Pass	PK	5.977G	57.47	68.20	-10.73	3.70	3	V	154	3.34	_
5755MHz	Pass	AV	11.51G	49.56	54.00	-4.44	13.72	3	Н	291	1.02	-
5755MHz	Pass	PK	11.51G	61.45	74.00	-12.55	13.72	3	Н	291	1.02	_
5755MHz	Pass	AV	11.51G	47.79	54.00	-6.21	13.72	3	V	60	3.51	_
5755MHz	Pass	PK	11.51G	59.04	74.00	-14.96	13.72	3	V	60	3.51	-
5795MHz	Pass	AV	5.7878G	101.13	Inf	-Inf	3.53	3	Н	262	1.01	_
5795MHz	Pass	PK	5.651G	63.64	68.94	-5.30	3.42	3	Н	262	1.01	_
5795MHz	Pass	PK	5.7902G	109.40	Inf	-Inf	3.53	3	н	262	1.01	_
5795MHz	Pass	PK	5.9354G	62.16	68.20	-6.04	3.66	3	н	262	1.01	_
5795MHz	Pass	AV	5.801G	88.63	Inf	-Inf	3.54	3	V	146	2.15	-
5795MHz	Pass	PK	5.5406G	57.45	68.20	-10.75	3.32	3	V	146	2.15	_
5795MHz	Pass	PK	5.801G	97.30	Inf	-10.75 -Inf	3.54	3	V	146	2.15	_
5795MHz	Pass	PK	5.927G	57.51	68.20	-10.69	3.65	3	V	146	2.15	-
5795MHz	Pass	AV	11.59G	50.64	54.00	-3.36	13.59	3	Н	292	1.01	_
5795MHz	Pass	PK	11.59G	61.70	74.00	-12.30	13.59	3	н	292	1.01	_
5795MHz	Pass	AV	11.59G	49.16	54.00	-4.84	13.59	3	V	69	2.93	-
5795MHz	Pass	PK	11.59G	60.83	74.00	-13.17	13.59	3	V	69	2.93	
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-10.17	-	-	-	-	-	_
5775MHz	Pass	AV	5.763G	95.52	Inf	-Inf	3.51	3	Н	263	1.00	
5775MHz	Pass	PK	5.649G	67.92	68.20	-0.28	3.41	3	н	263	1.00	
5775MHz	Pass	PK	5.7918G	104.73	Inf	-0.26 -Inf	3.53	3	Н	263	1.00	-
5775MHz	Pass	PK	5.7916G 5.925G	63.62	68.20	-4.58	3.65	3	Н	263	1.00	-
									V			-
5775MHz	Pass	AV	5.7642G	84.54	Inf	-Inf	3.51	3	٧	125	2.72	-

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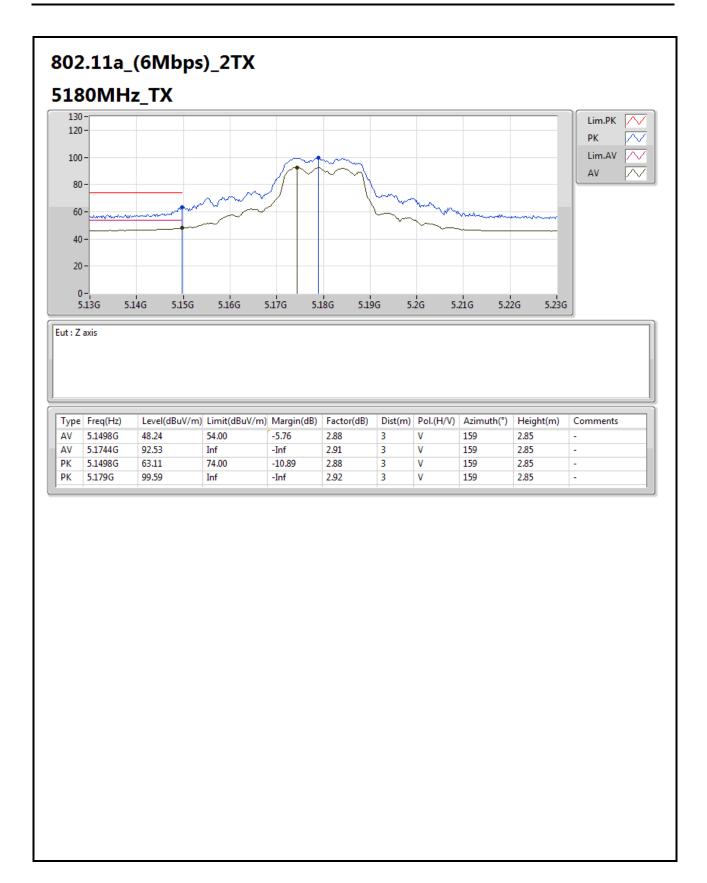


Appendix E.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
5775MHz	Pass	PK	5.649G	59.07	68.20	-9.13	3.41	3	V	125	2.72	-
5775MHz	Pass	PK	5.757G	93.14	Inf	-Inf	3.51	3	٧	125	2.72	-
5775MHz	Pass	PK	5.955G	57.70	68.20	-10.50	3.68	3	V	125	2.72	-
5775MHz	Pass	AV	11.55G	46.50	54.00	-7.50	13.66	3	Н	296	1.00	-
5775MHz	Pass	PK	11.55G	58.38	74.00	-15.62	13.66	3	Н	296	1.00	-
5775MHz	Pass	AV	11.55G	45.59	54.00	-8.41	13.66	3	V	61	3.67	-
5775MHz	Pass	PK	11.55G	57.74	74.00	-16.26	13.66	3	٧	61	3.67	-

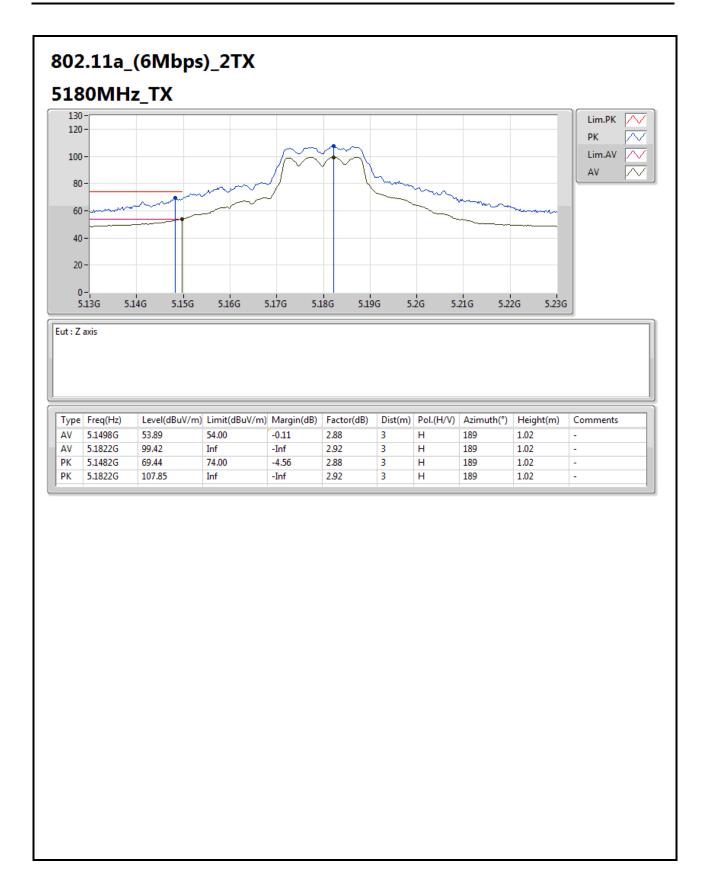
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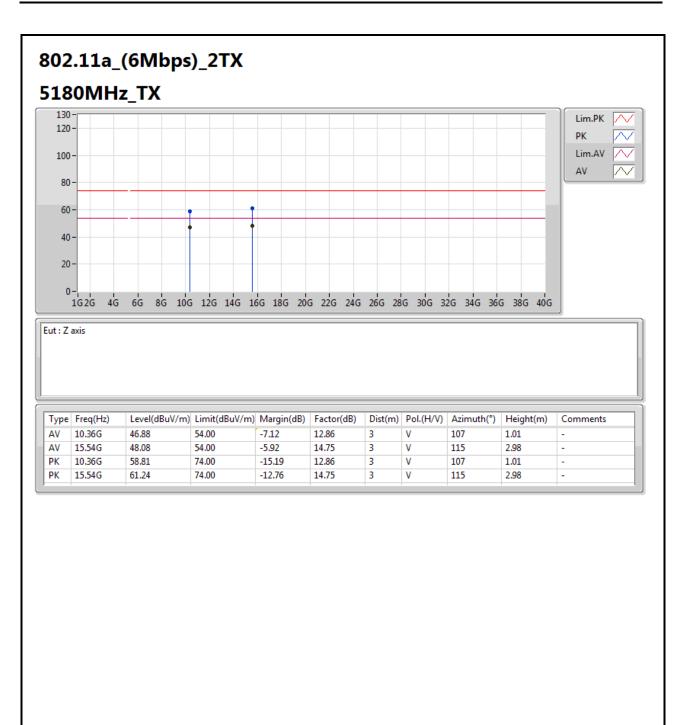
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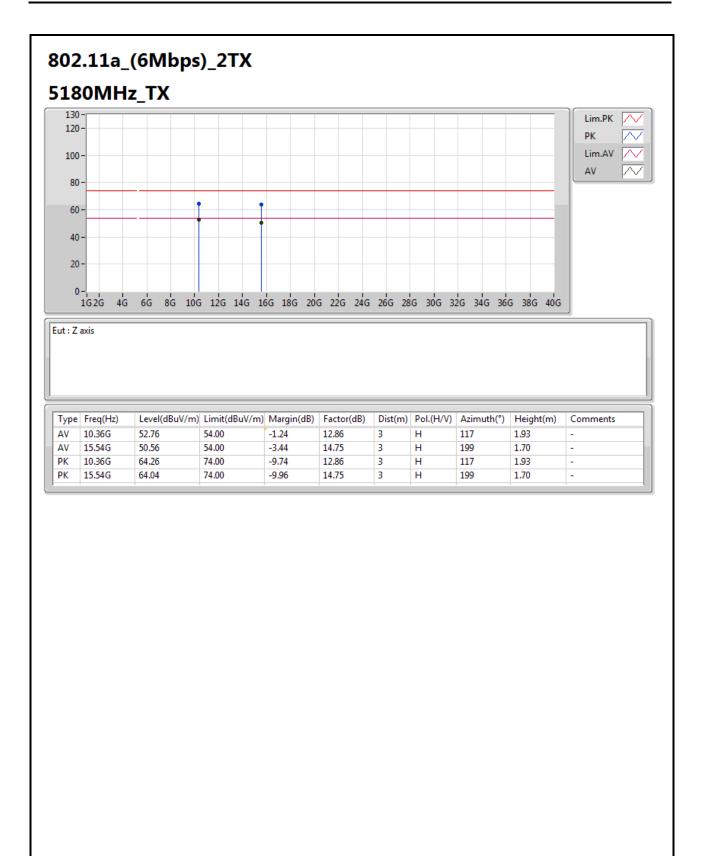


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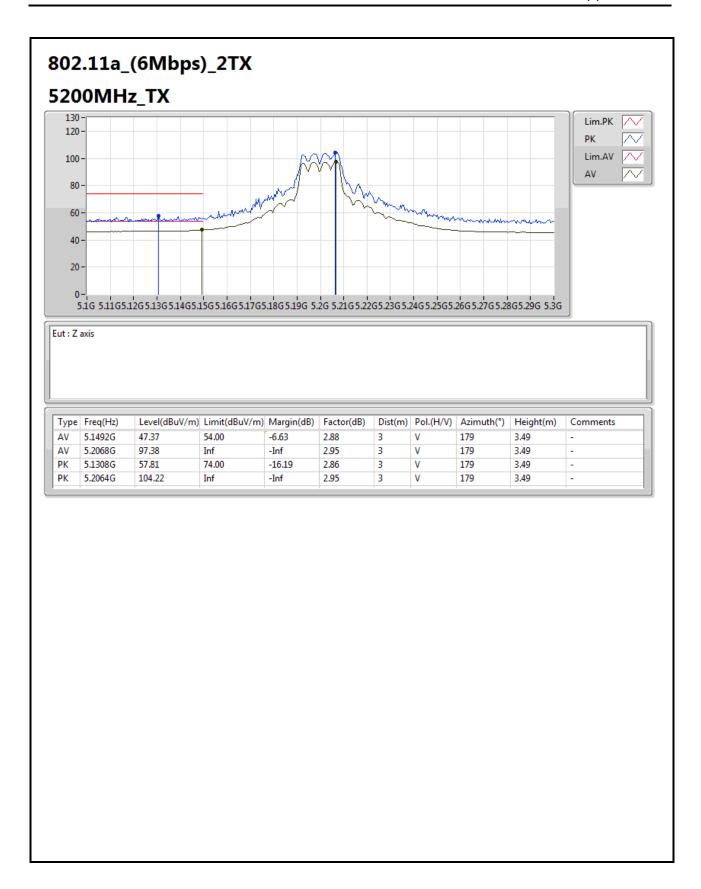
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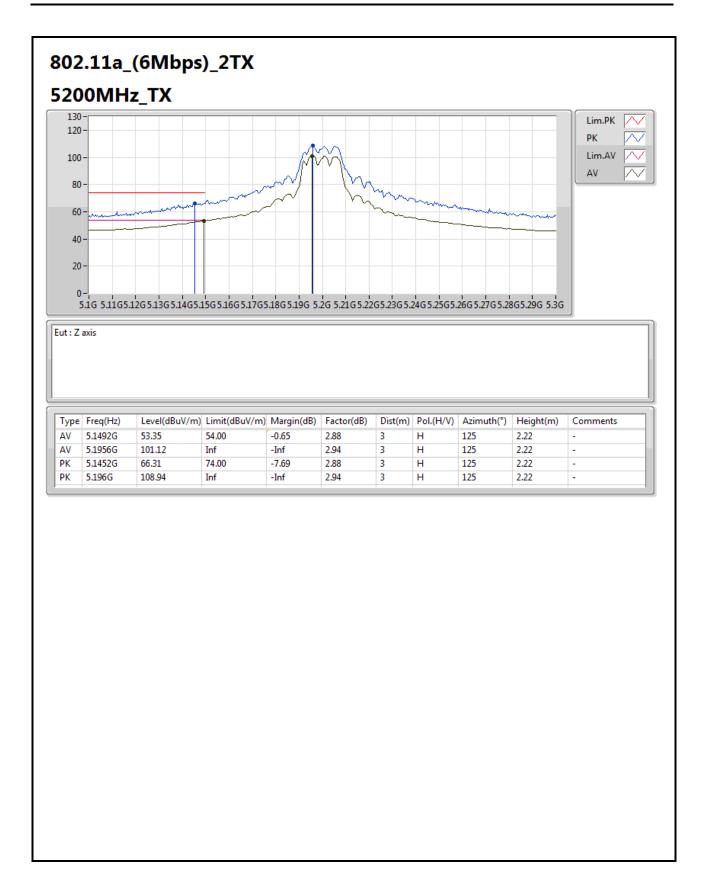
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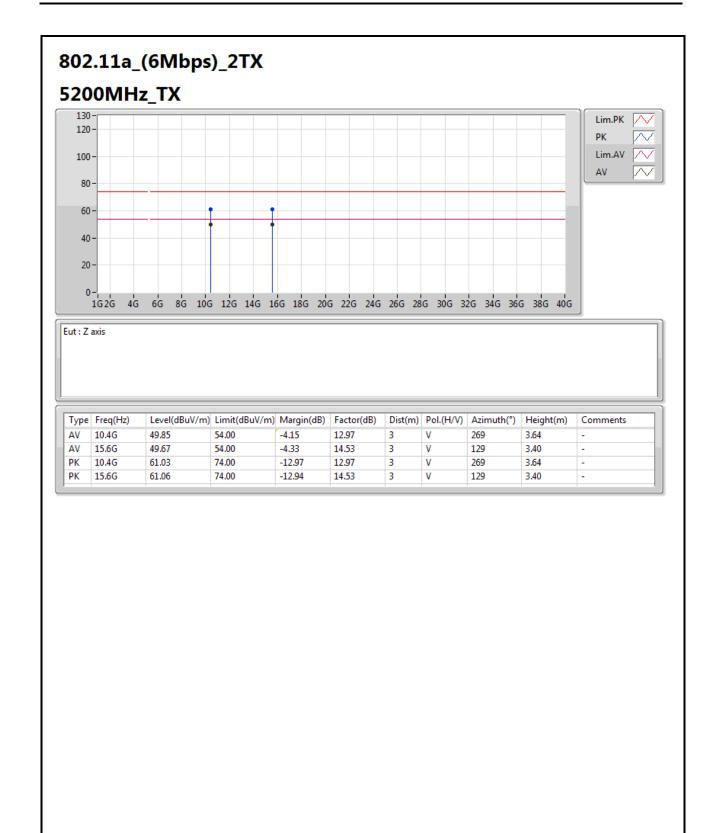
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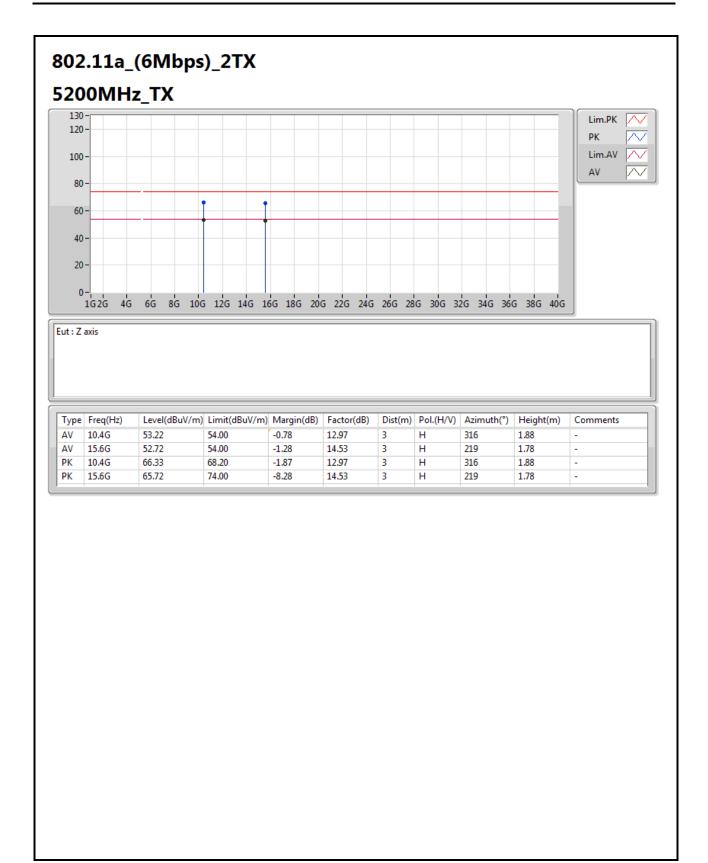
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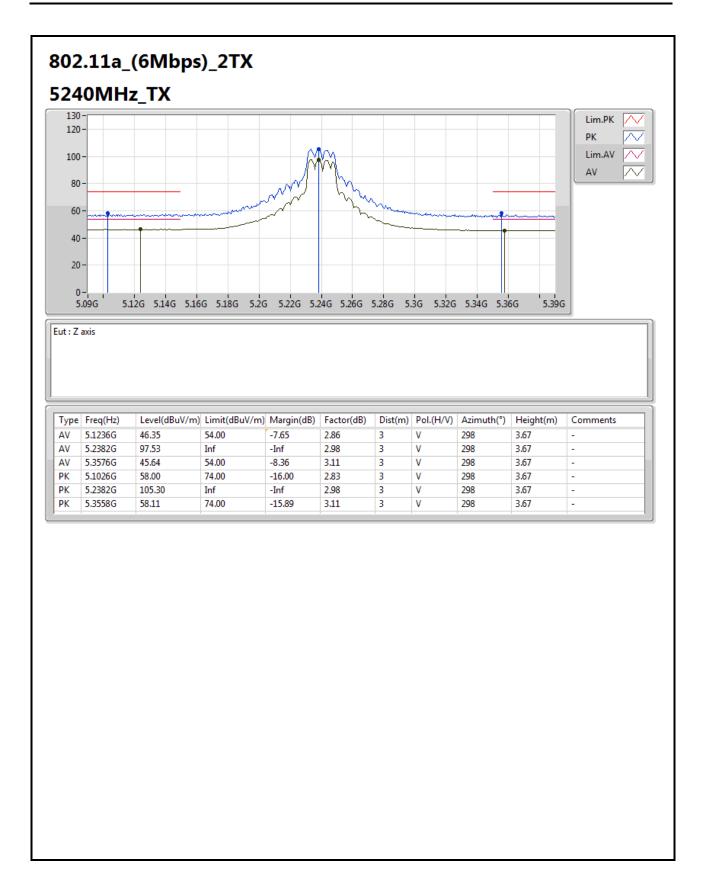
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E14 of E79





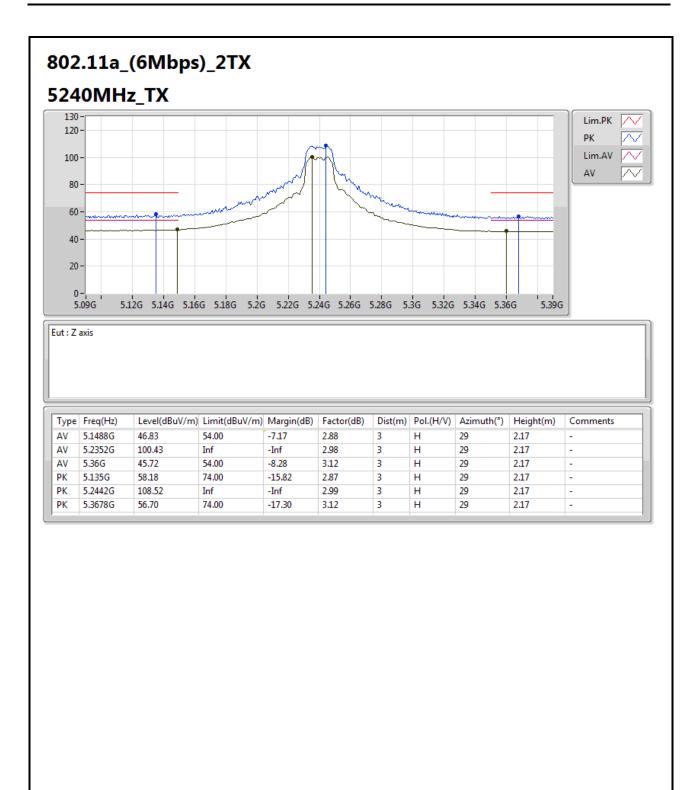
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E15 of E79





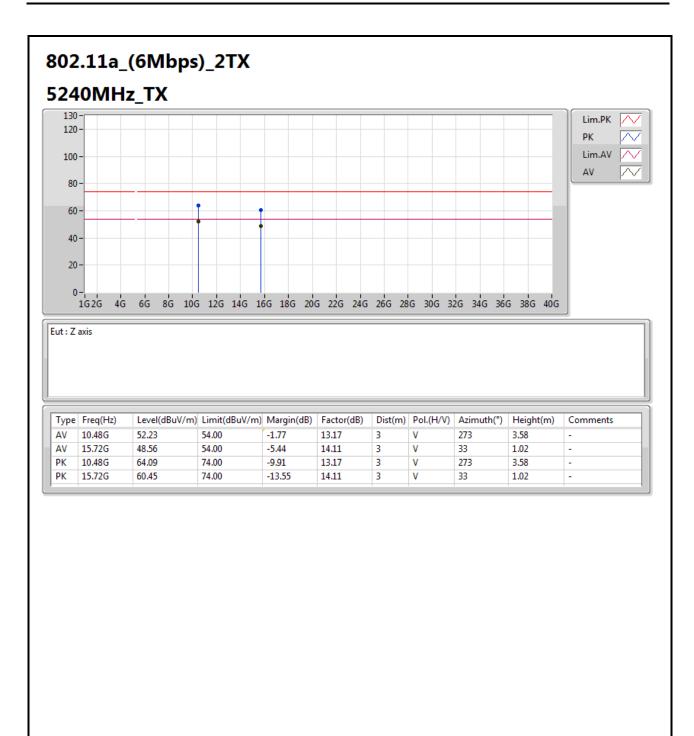
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E16 of E79





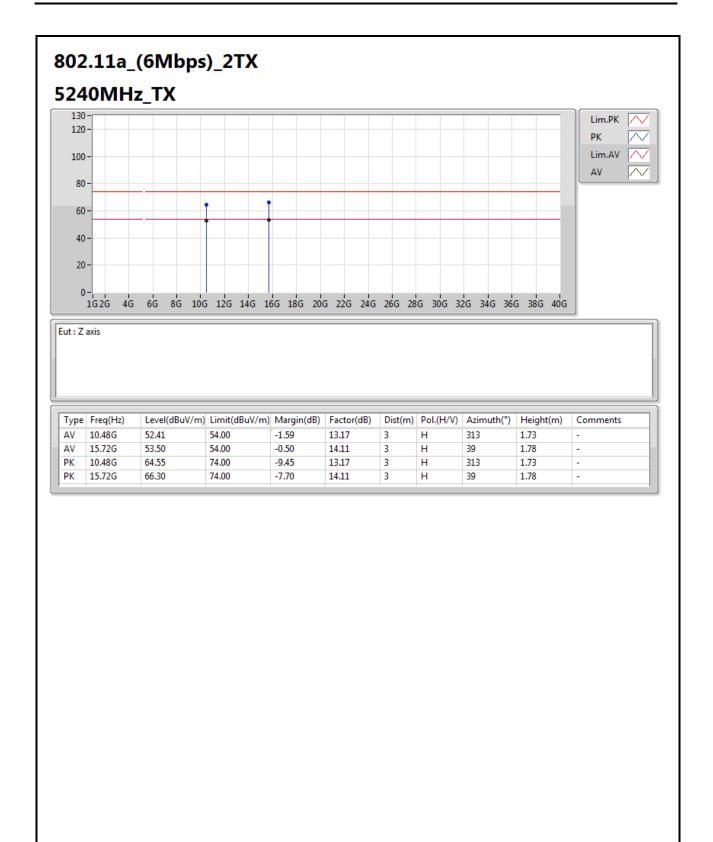
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E17 of E79





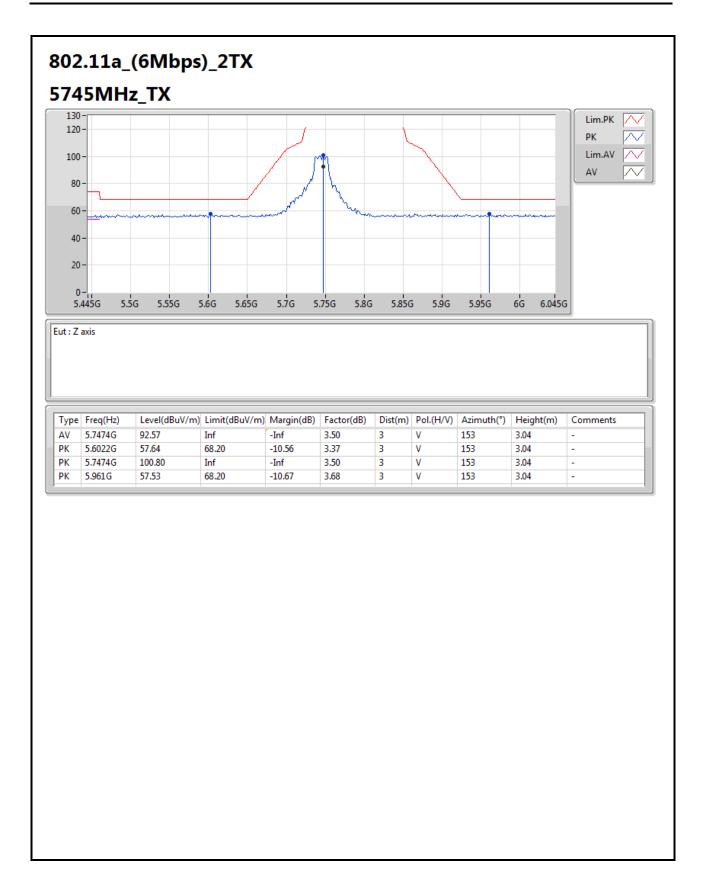
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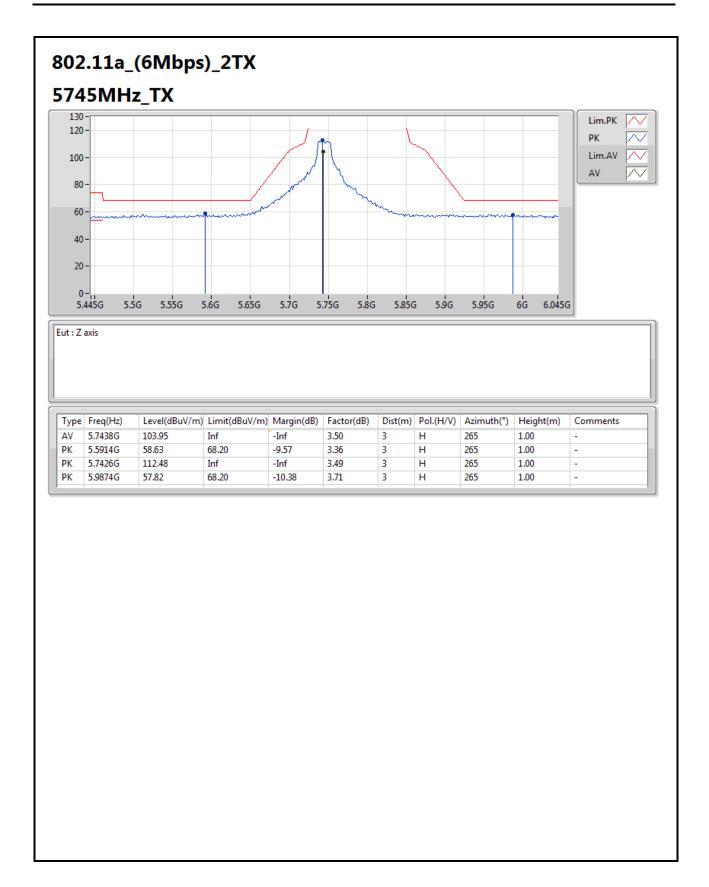
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E19 of E79





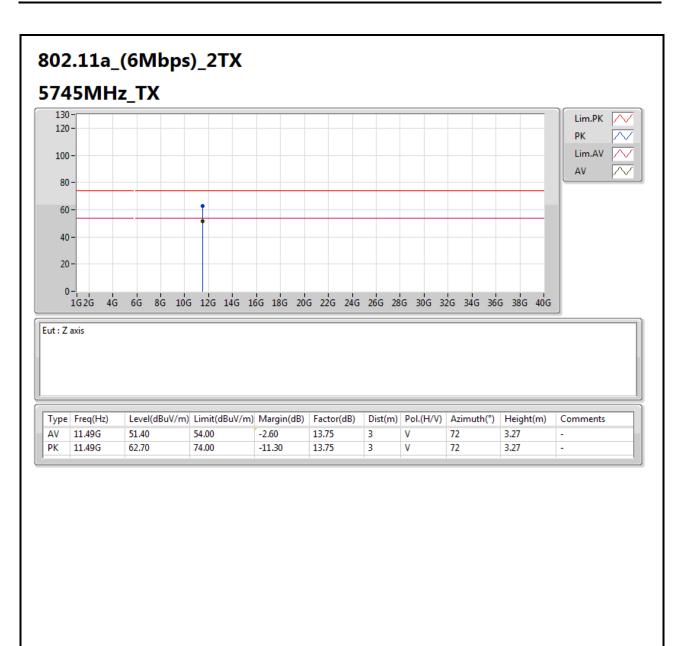
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E20 of E79





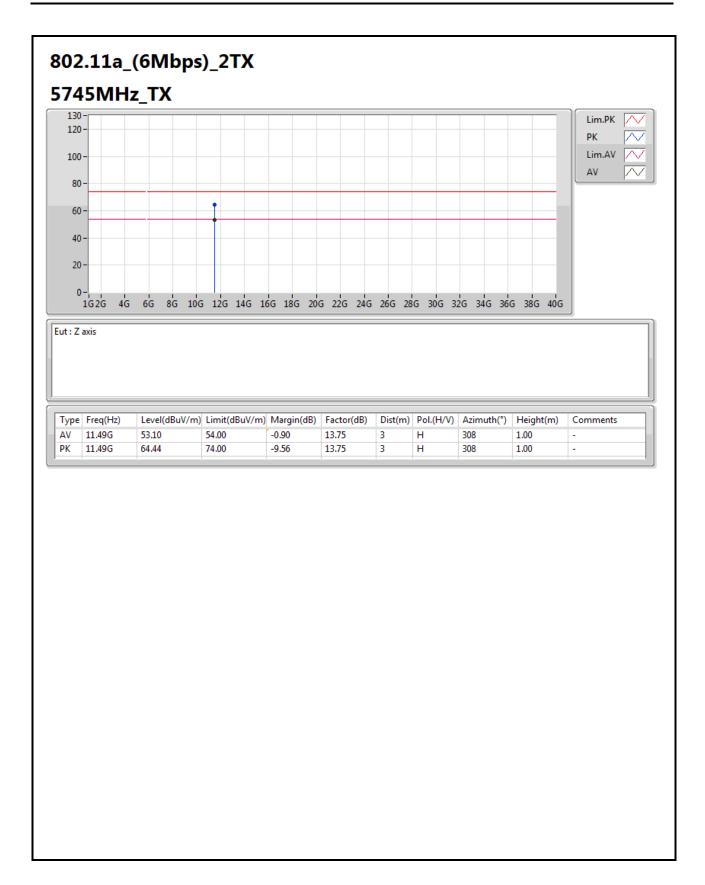
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E21 of E79





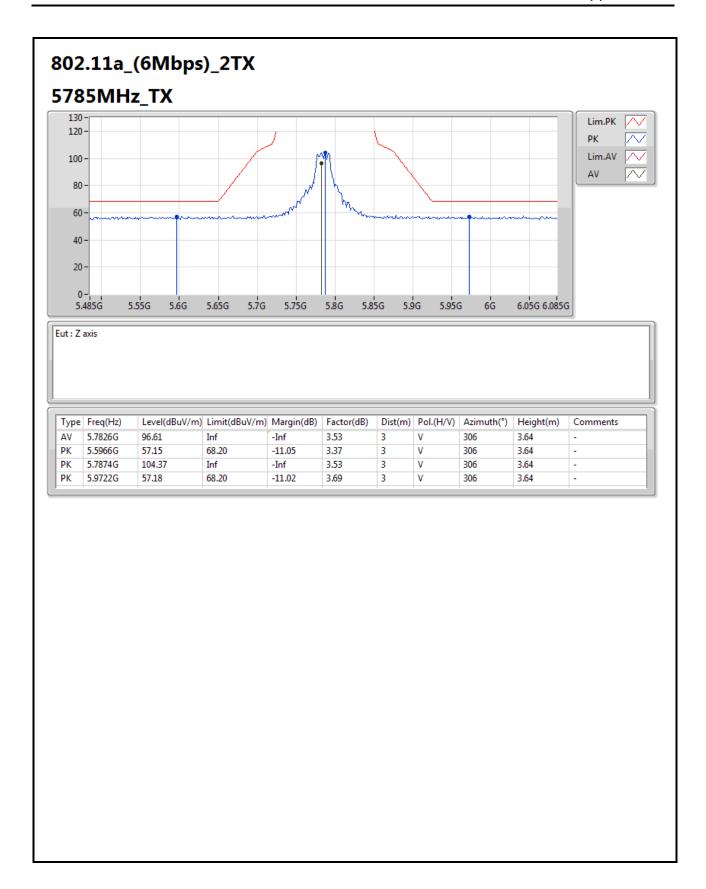
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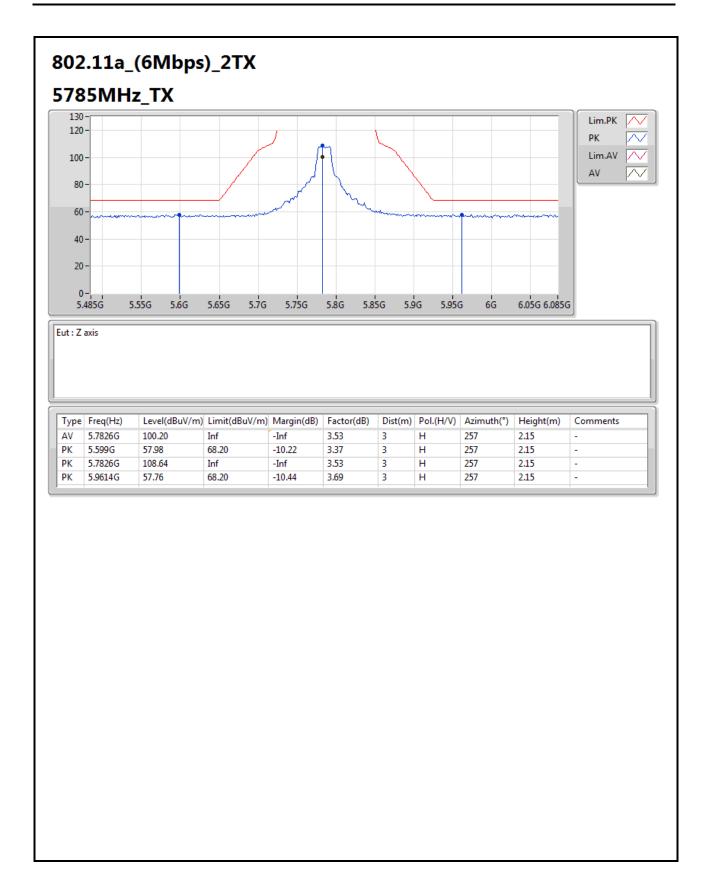
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E23 of E79





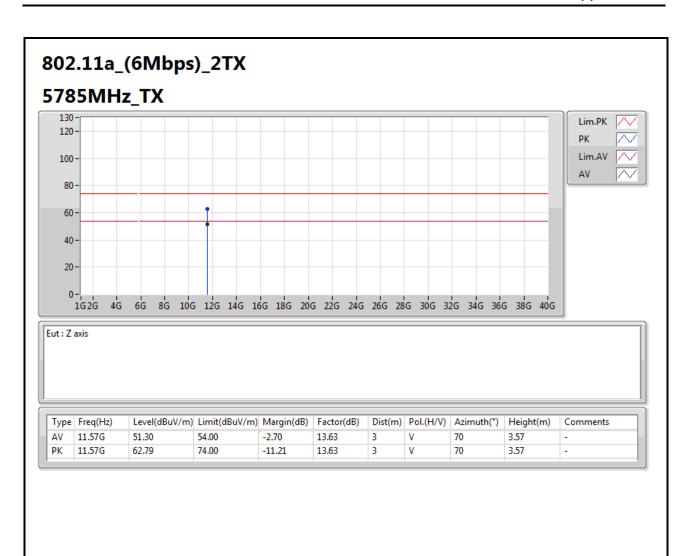
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E24 of E79





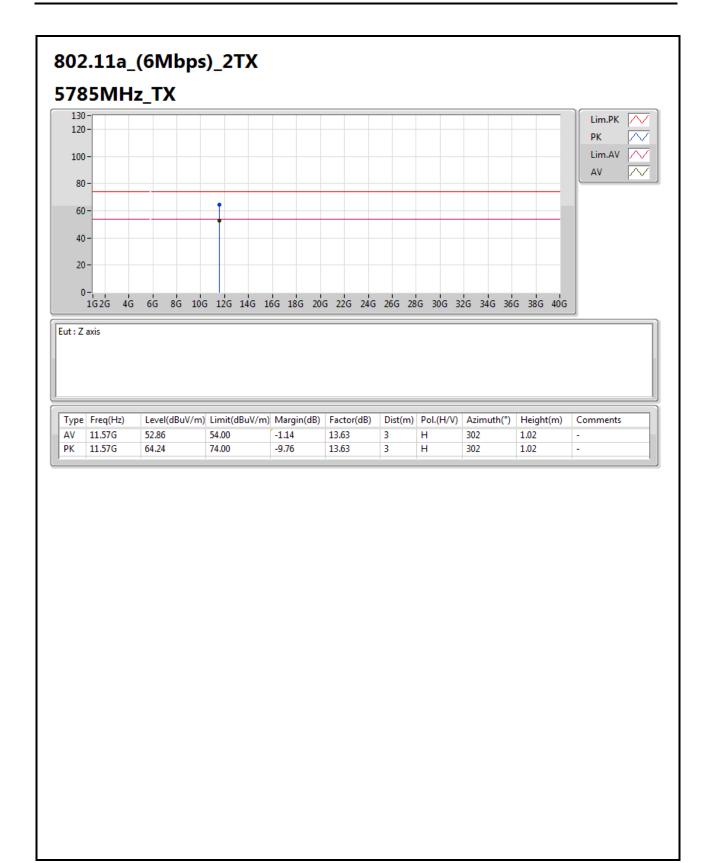
TEL: 886-3-327-3456 FAX: 886-3-327-0973





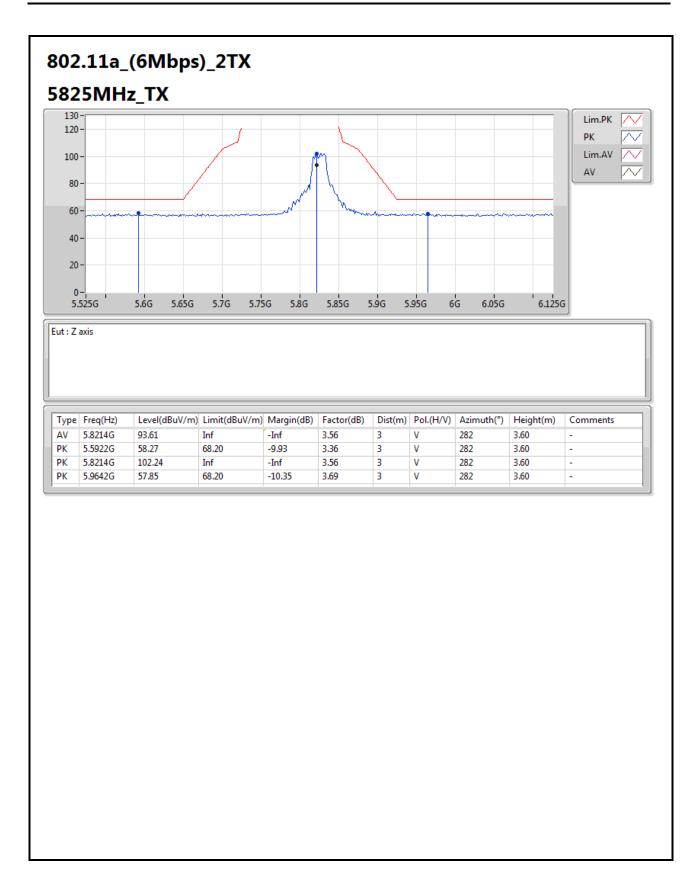
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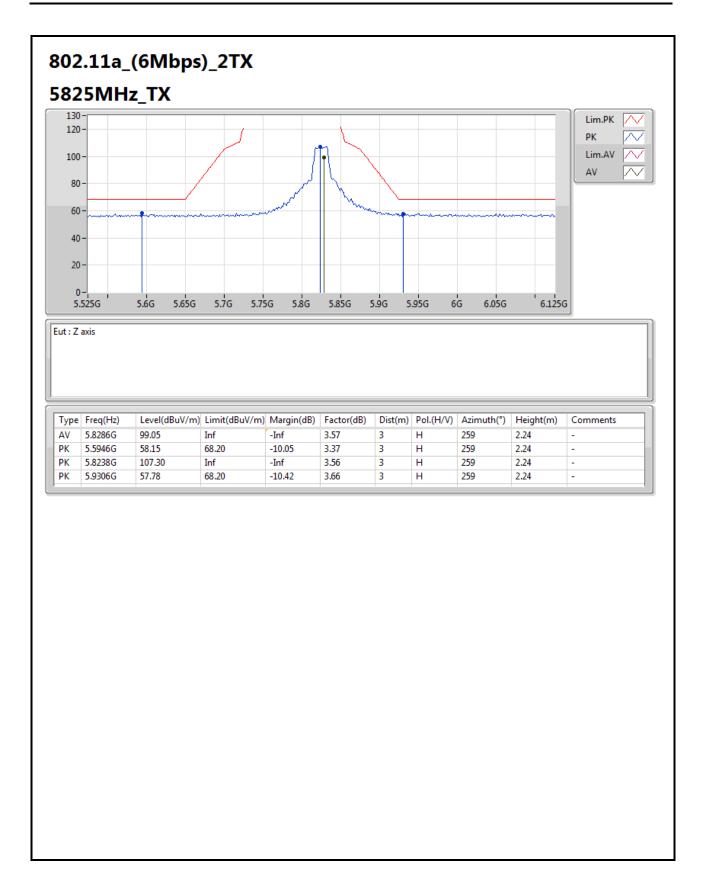
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E27 of E79





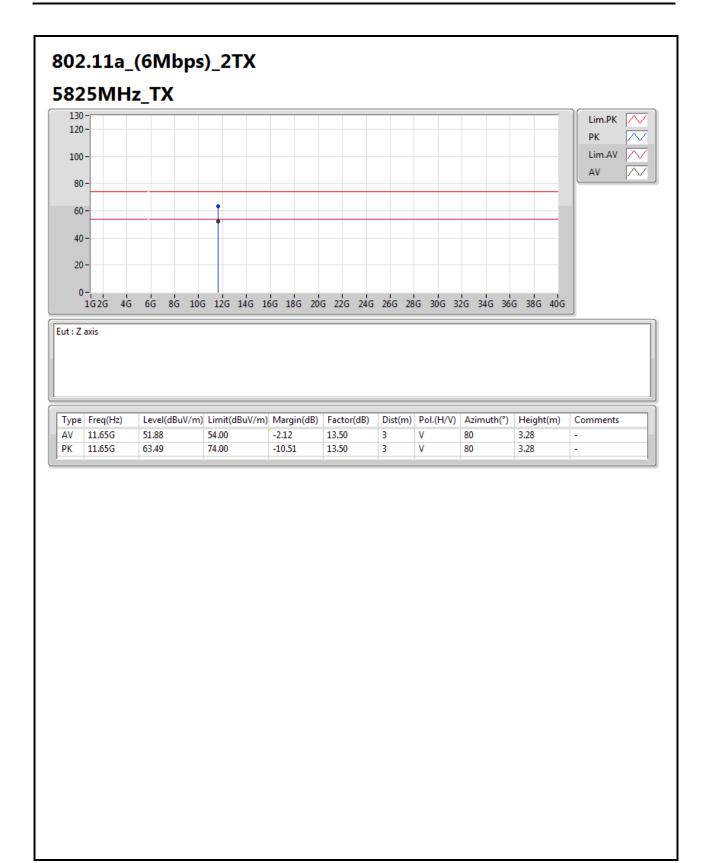
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E28 of E79





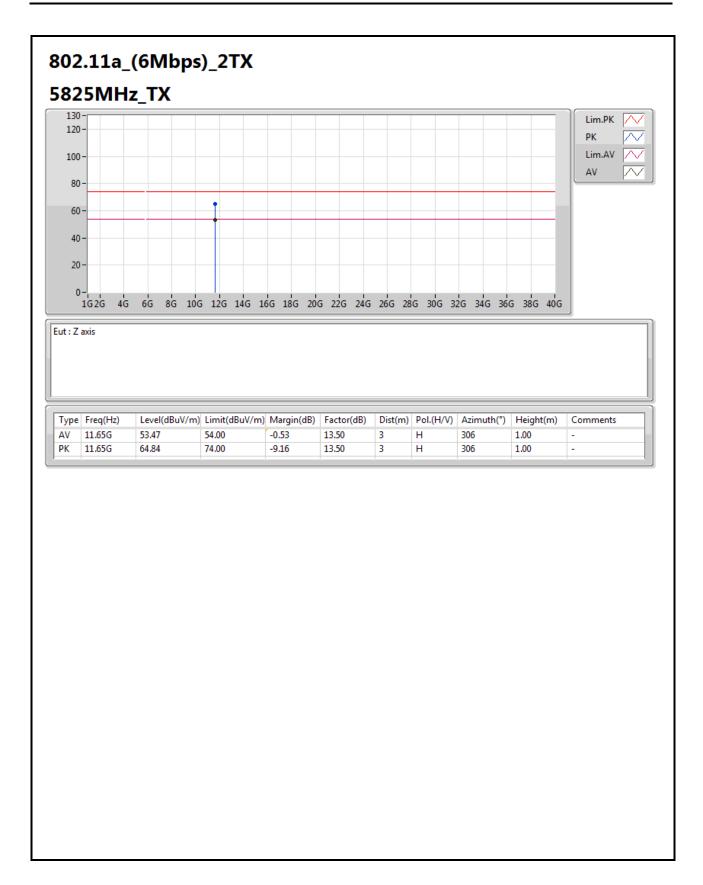
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E29 of E79





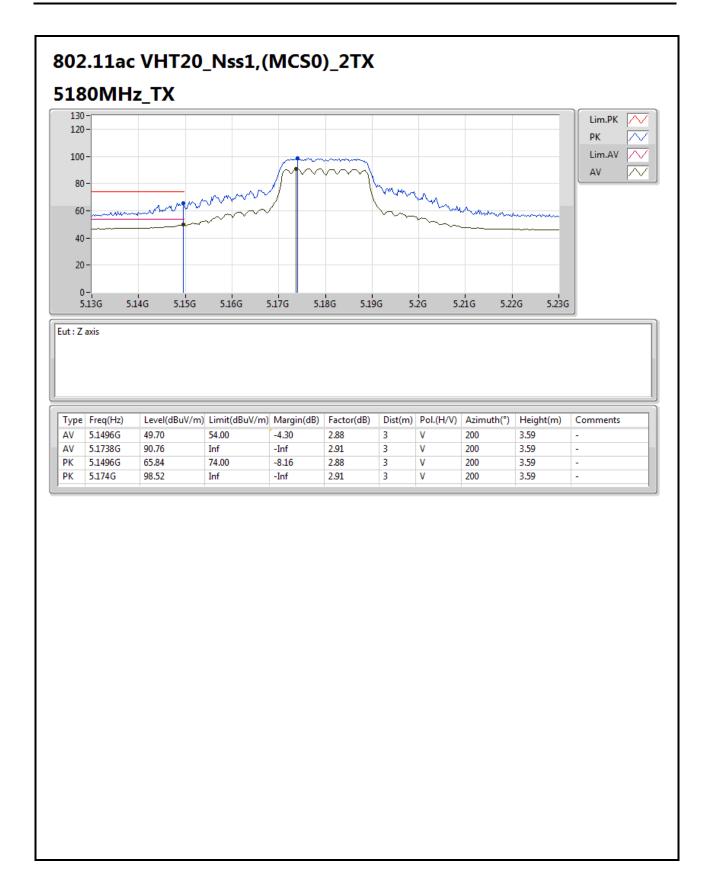
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E30 of E79





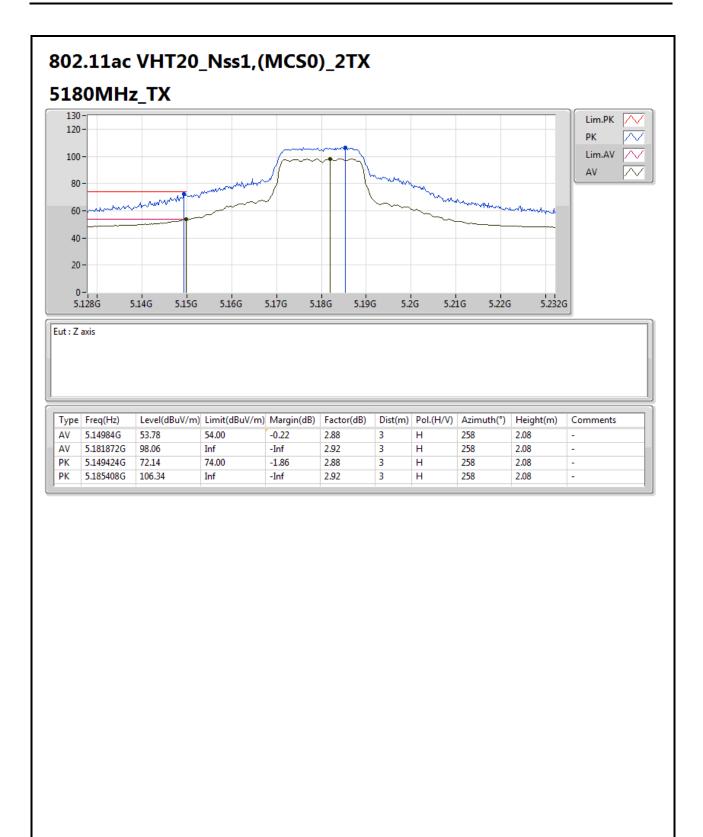
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E31 of E79





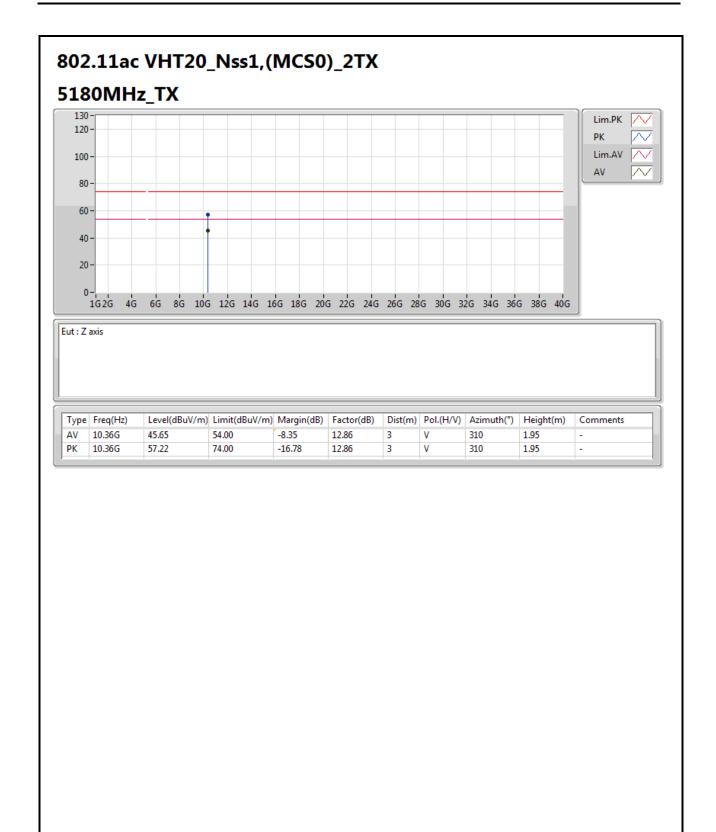
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E32 of E79





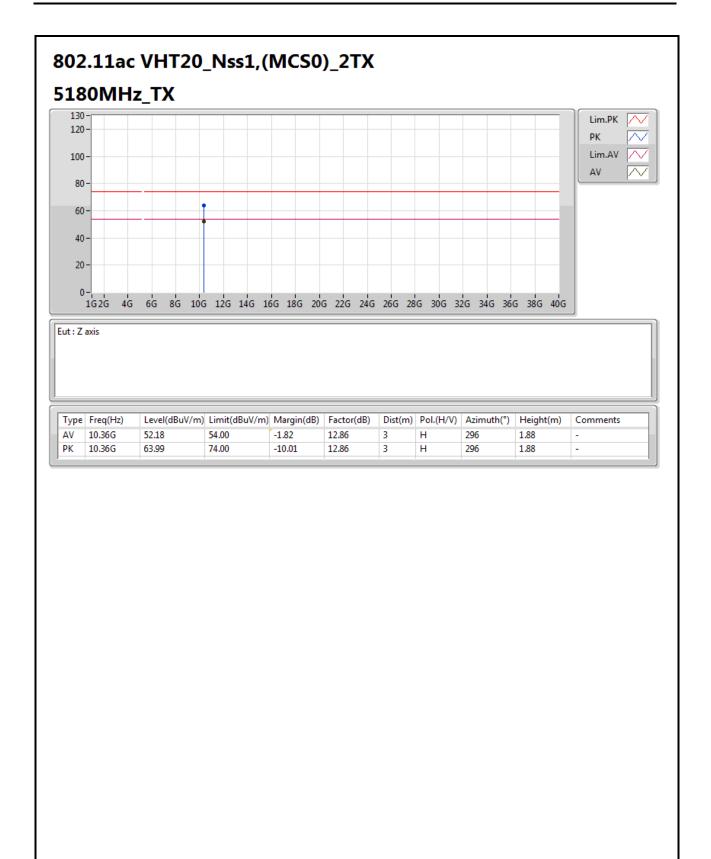
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E33 of E79





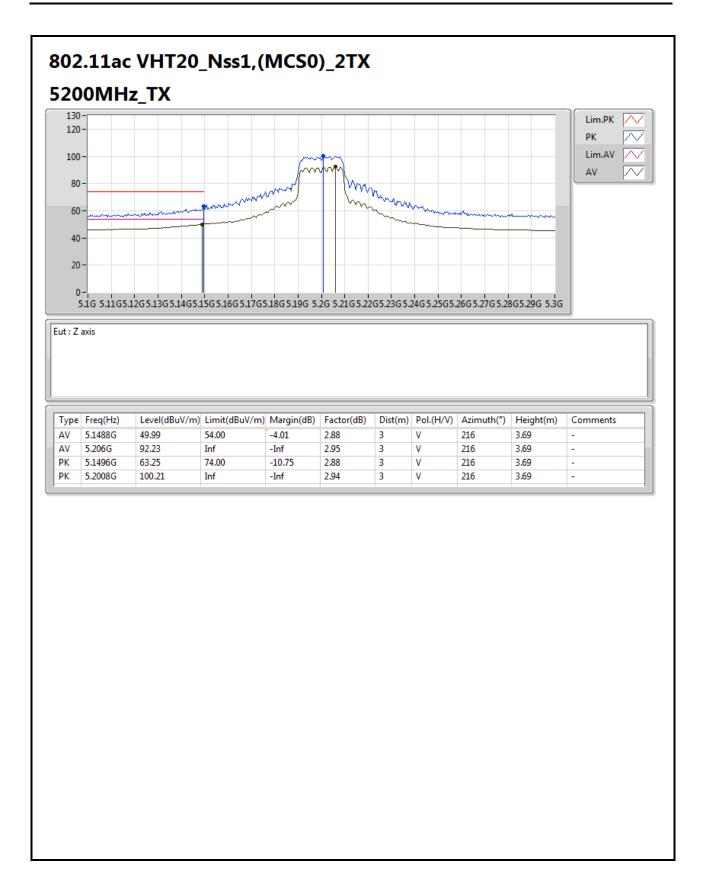
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E34 of E79





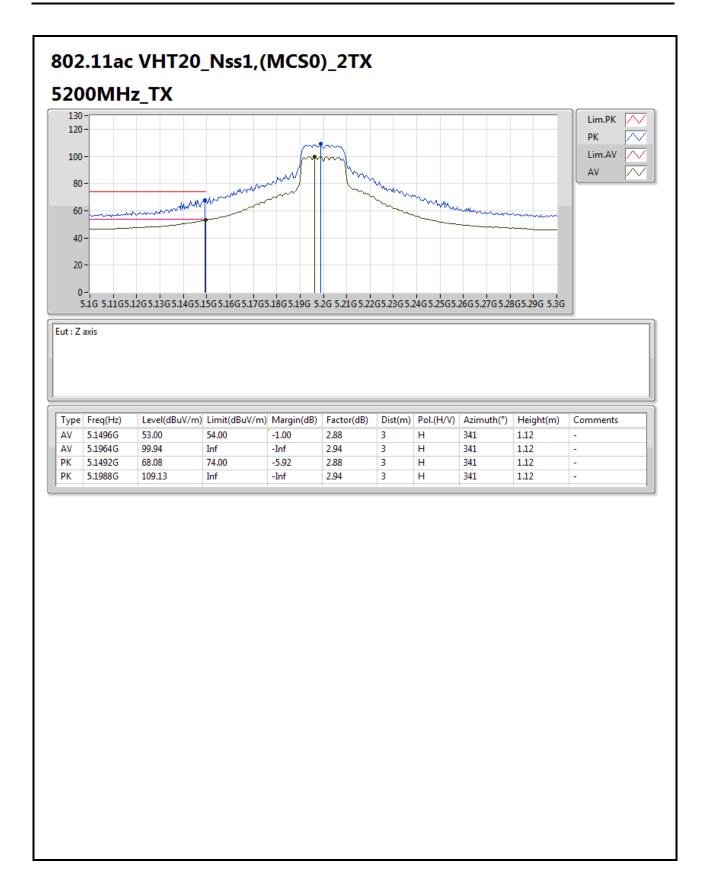
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E35 of E79





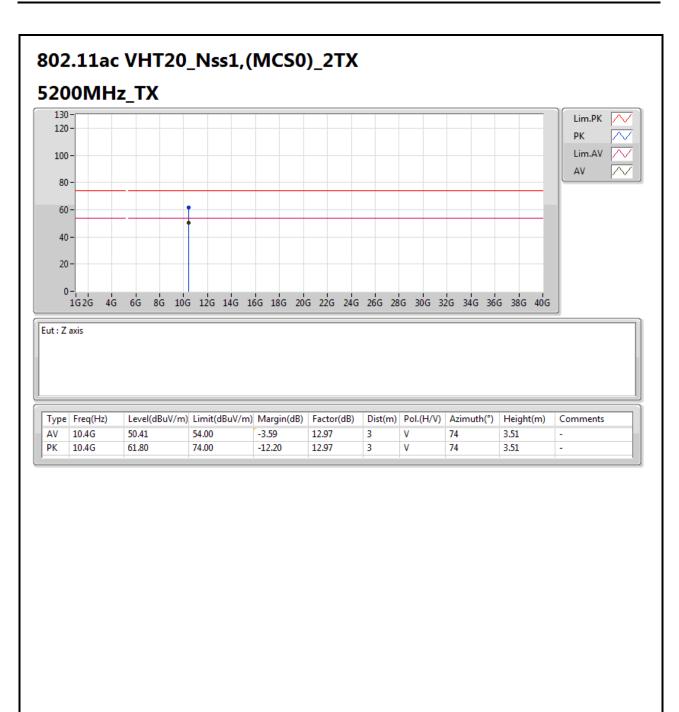
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E36 of E79





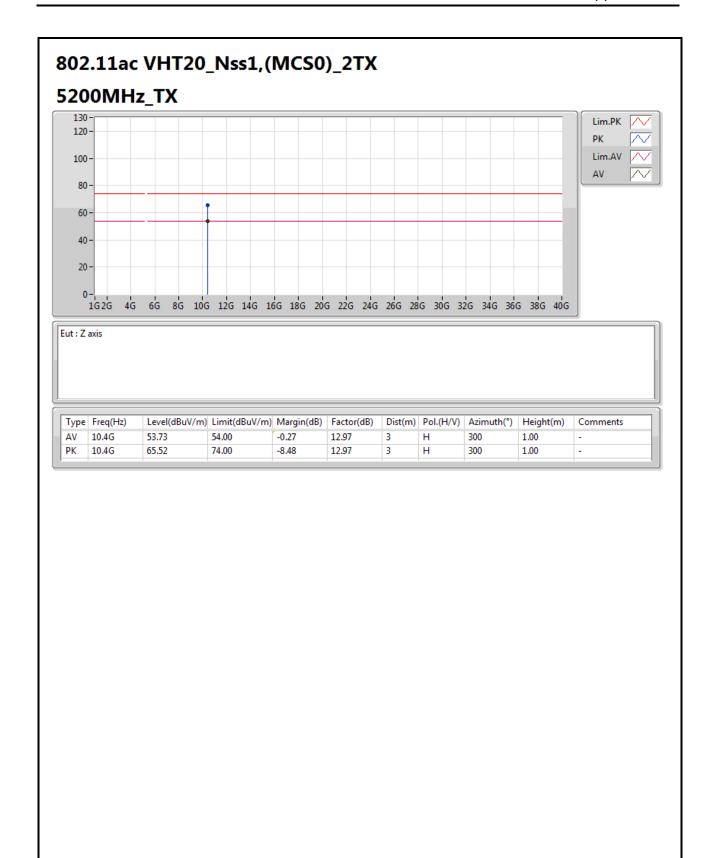
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E37 of E79





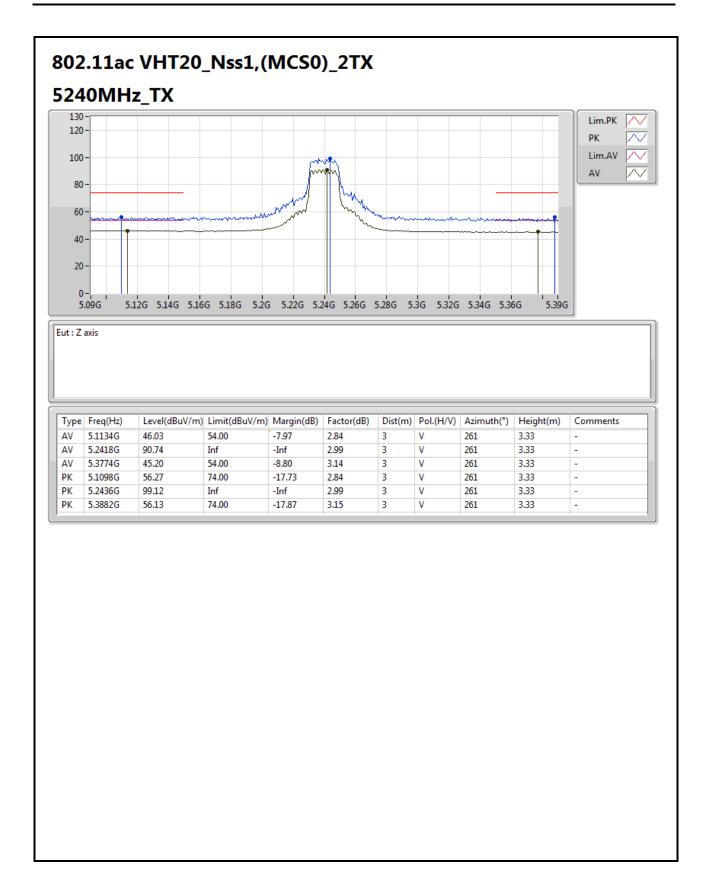
TEL: 886-3-327-3456 FAX: 886-3-327-0973





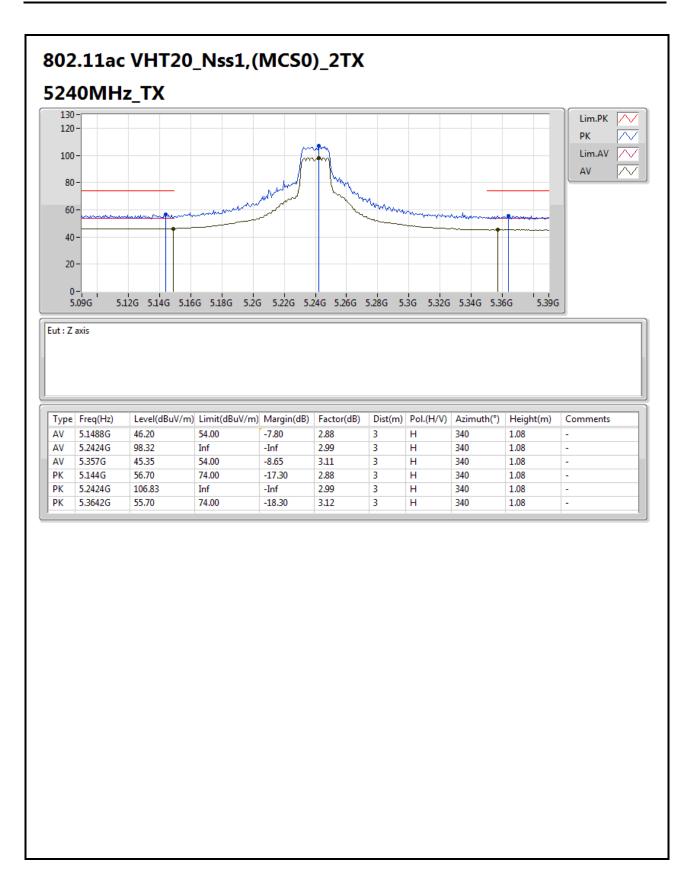
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E39 of E79





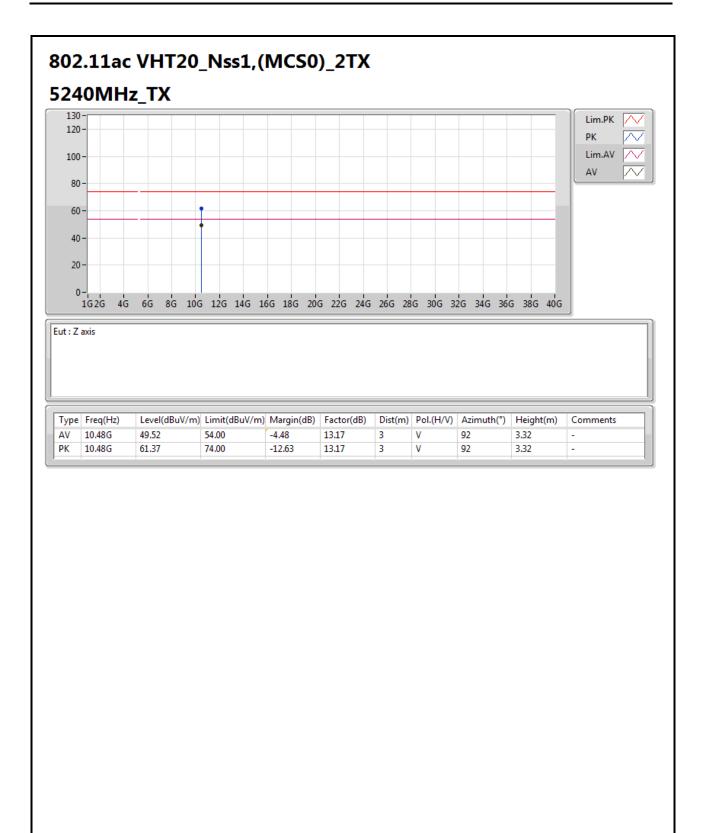
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E40 of E79





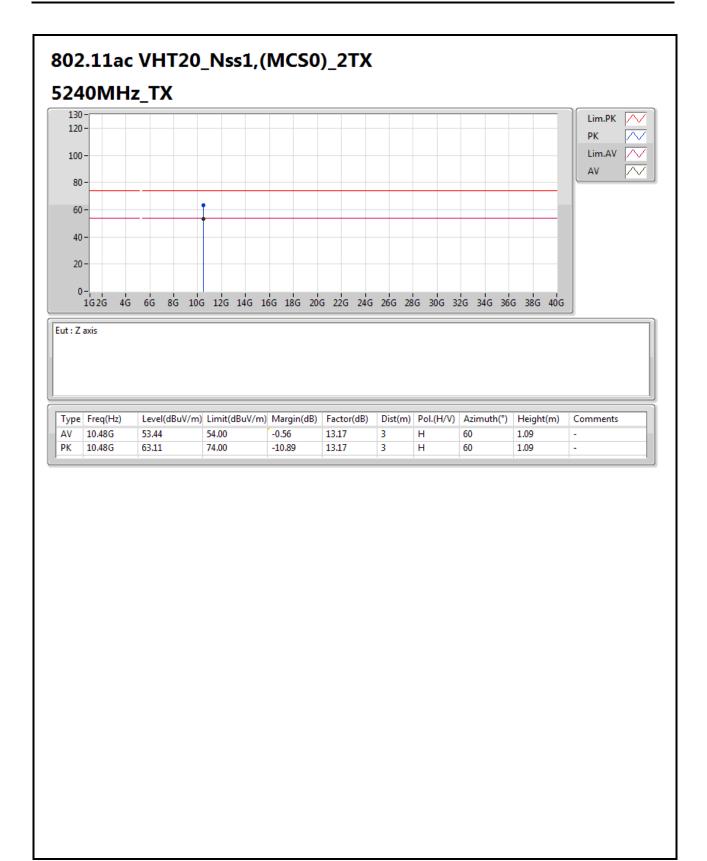
TEL: 886-3-327-3456 FAX: 886-3-327-0973





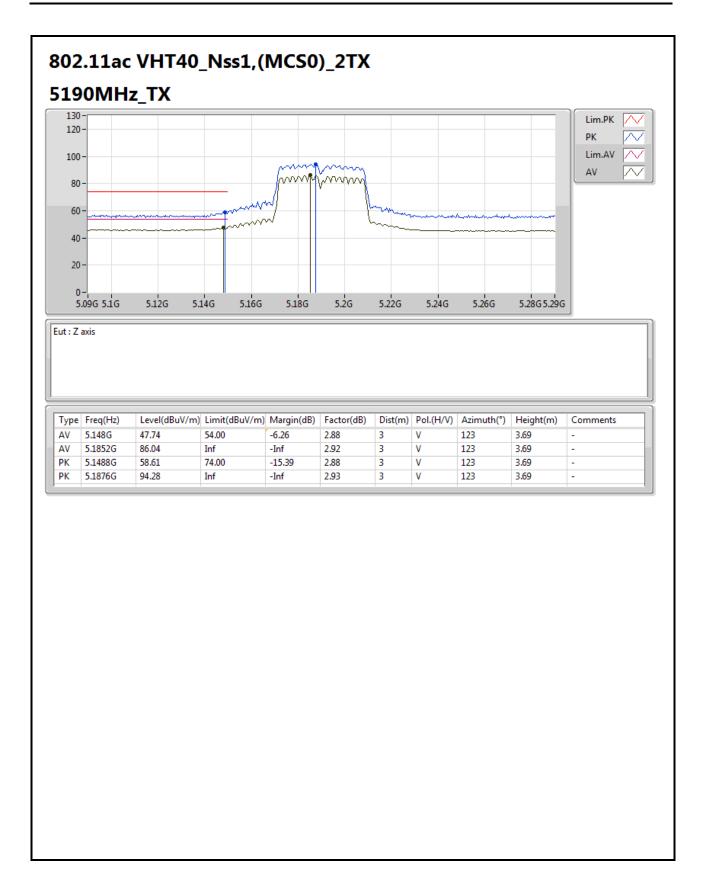
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E42 of E79





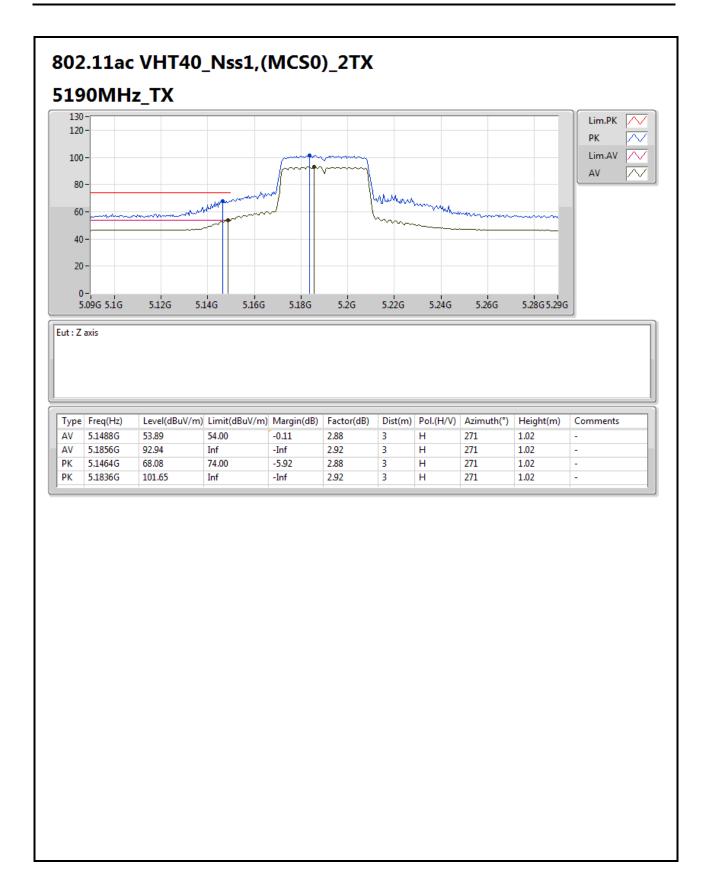
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E43 of E79





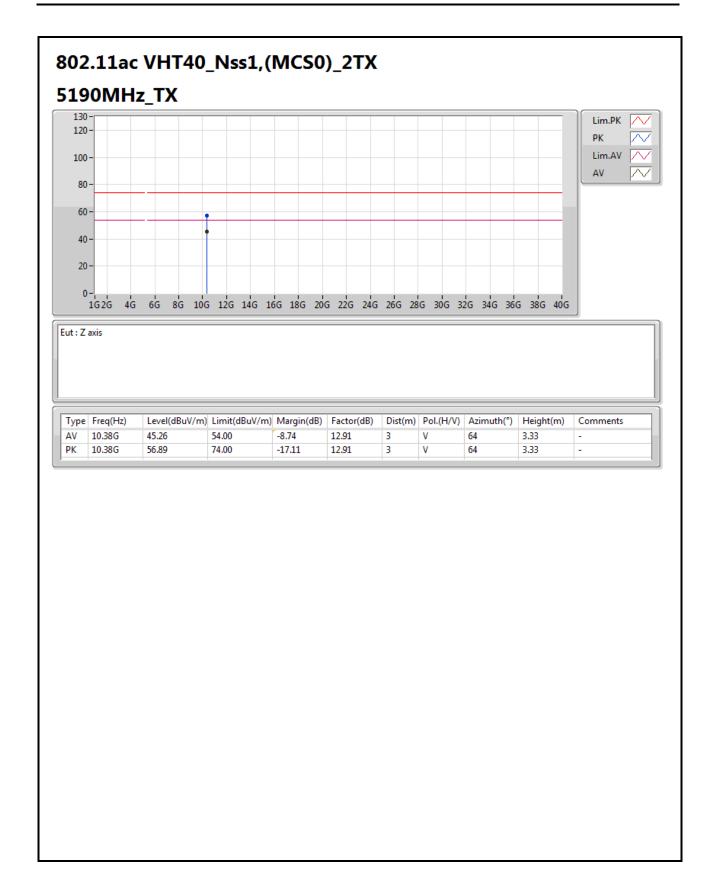
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E44 of E79





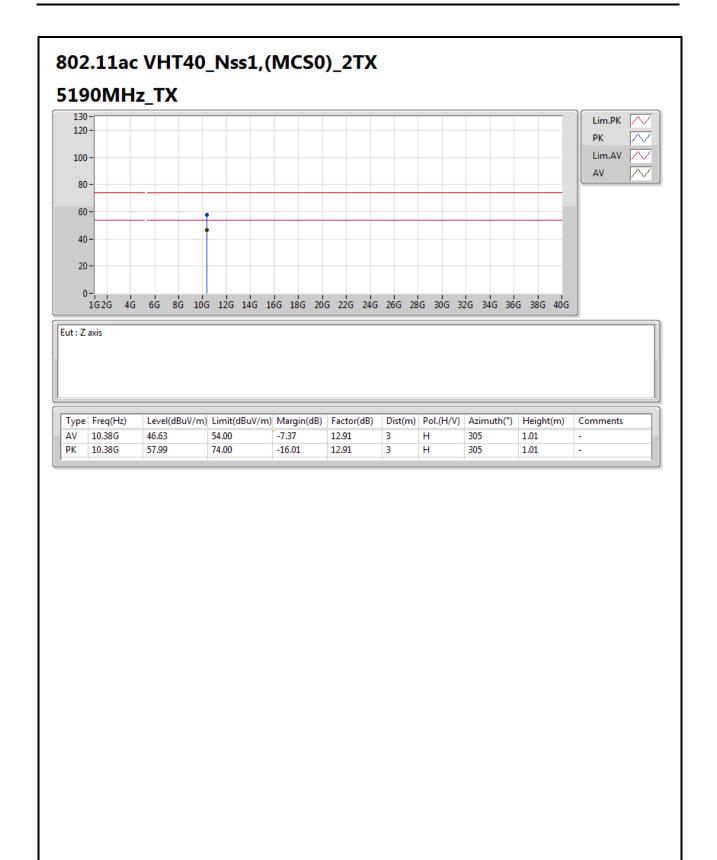
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E45 of E79





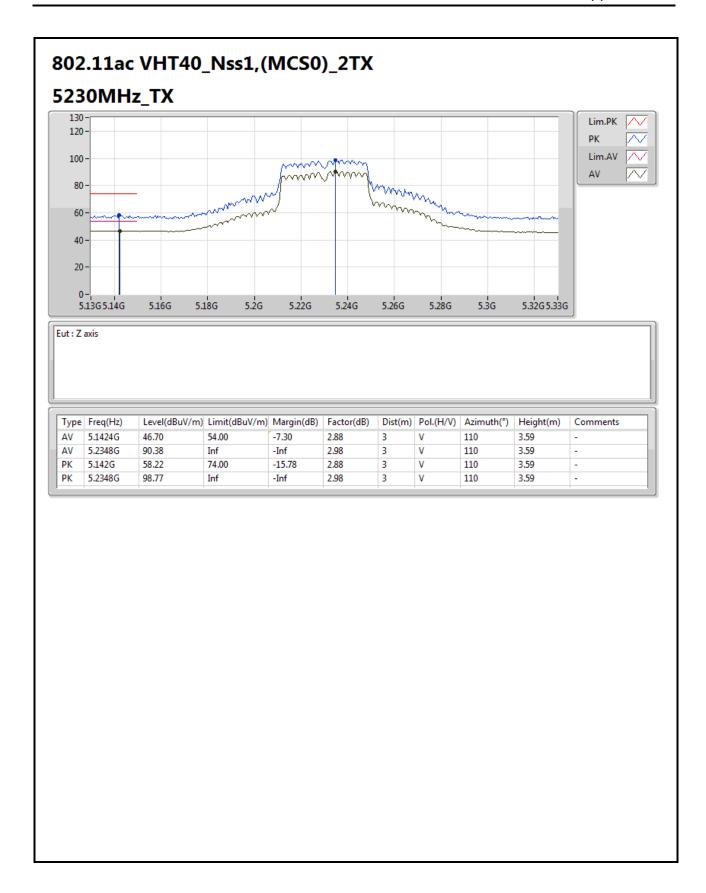
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E46 of E79





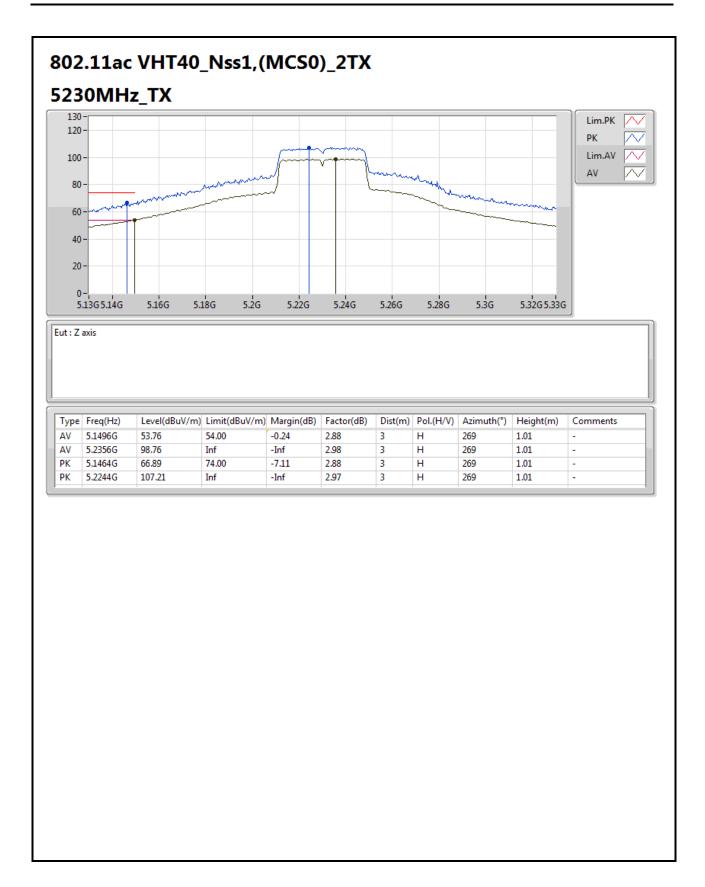
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E47 of E79





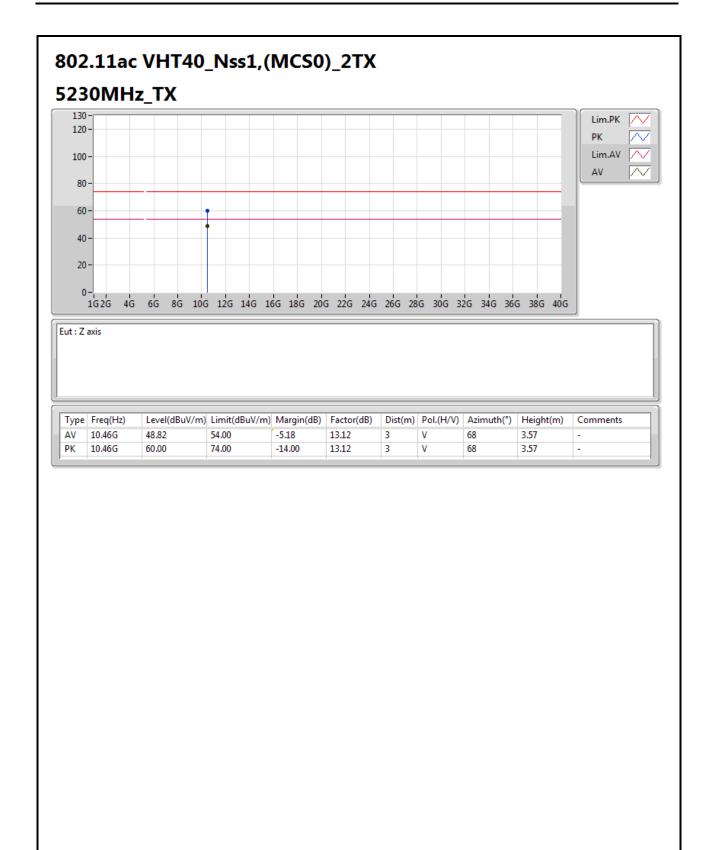
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E48 of E79





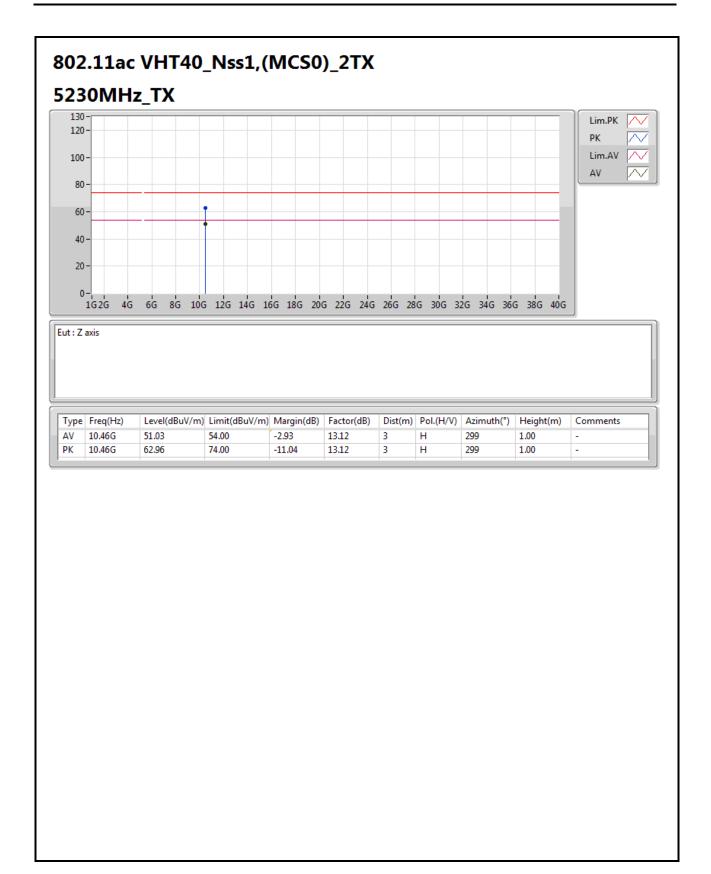
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E49 of E79





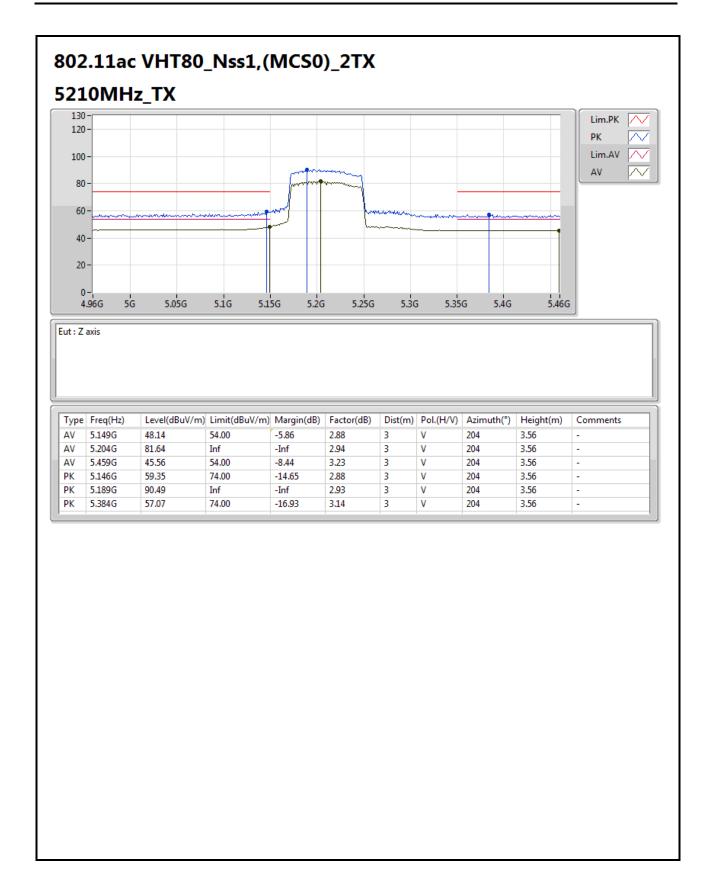
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E50 of E79





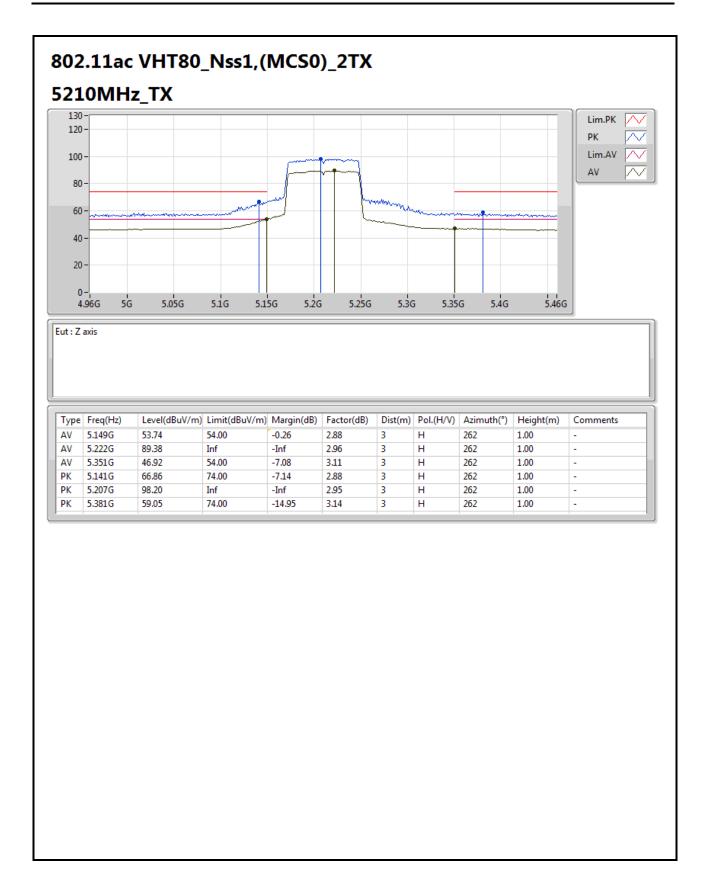
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E51 of E79





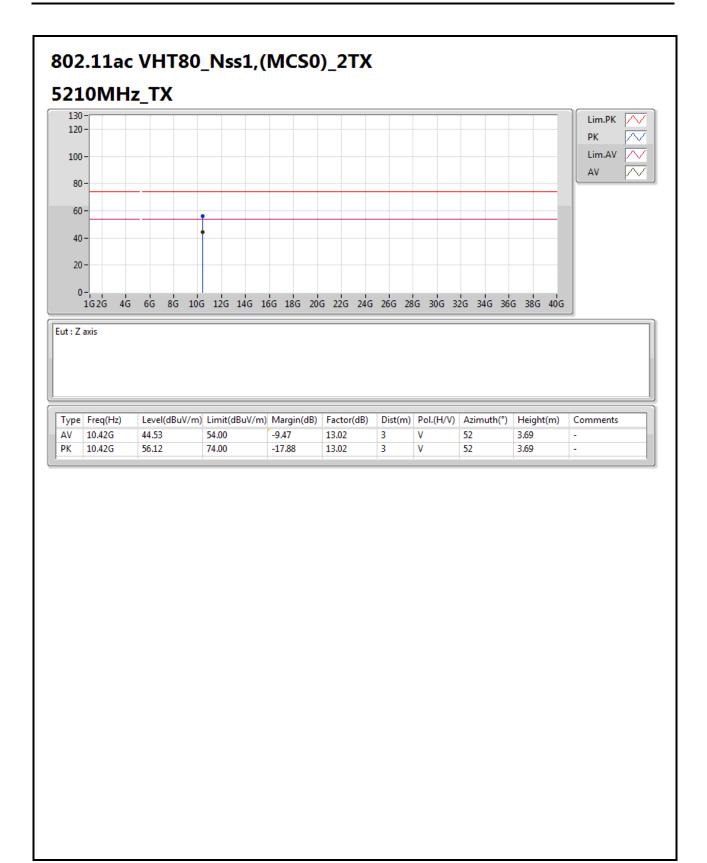
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E52 of E79





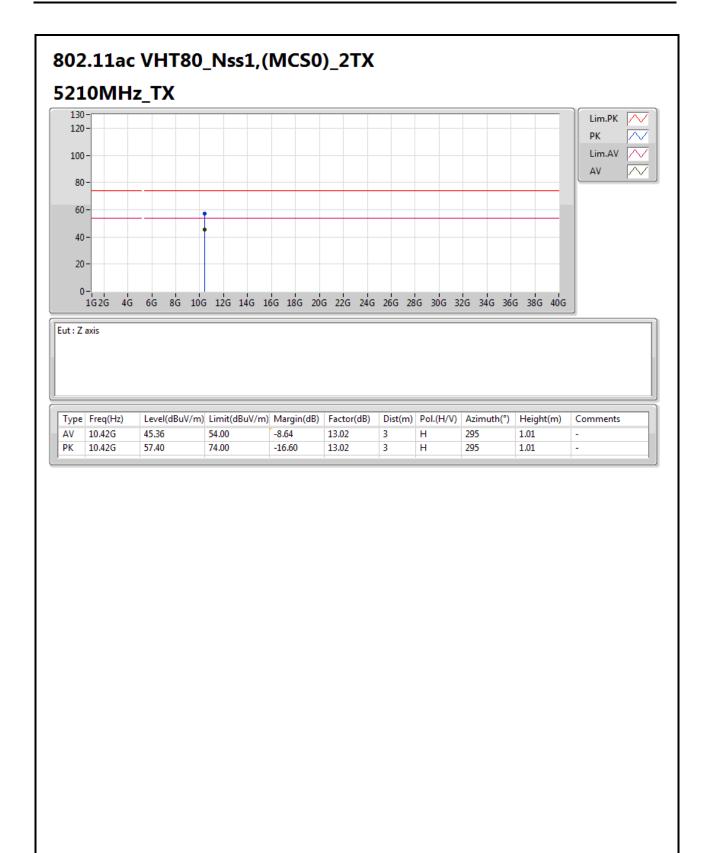
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E53 of E79





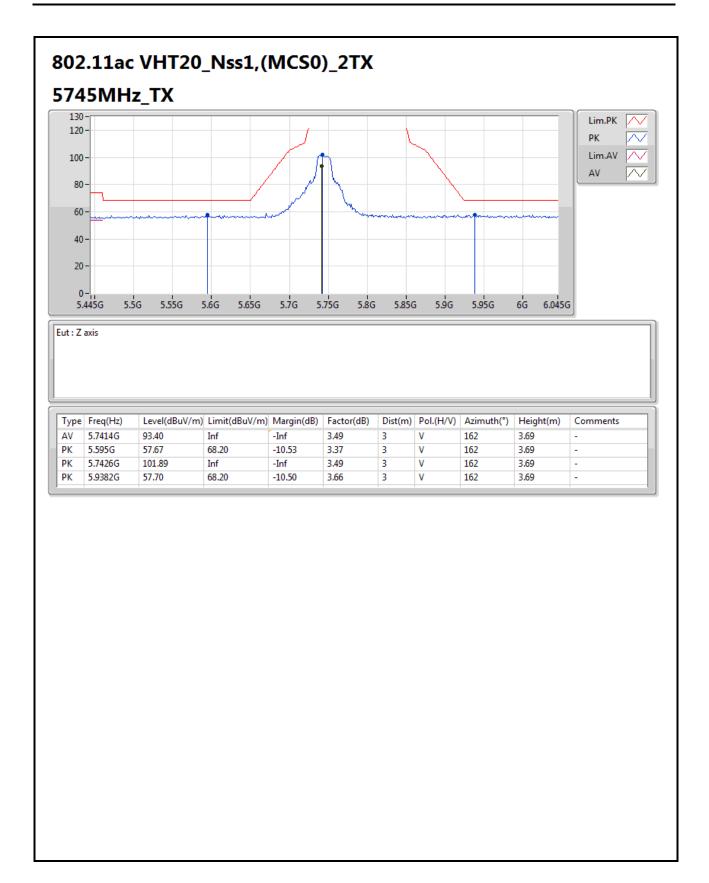
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E54 of E79





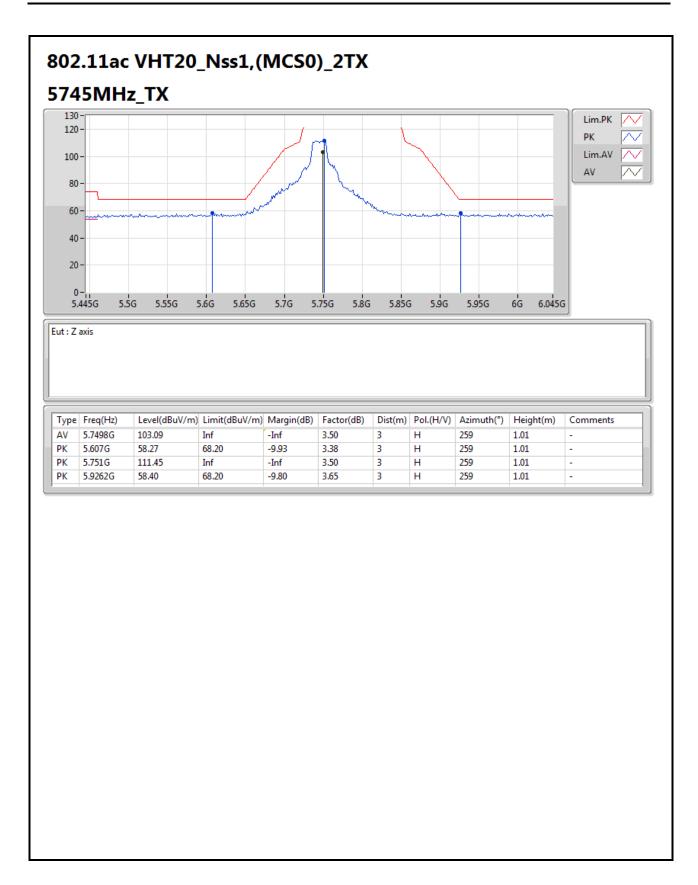
TEL: 886-3-327-3456 FAX: 886-3-327-0973





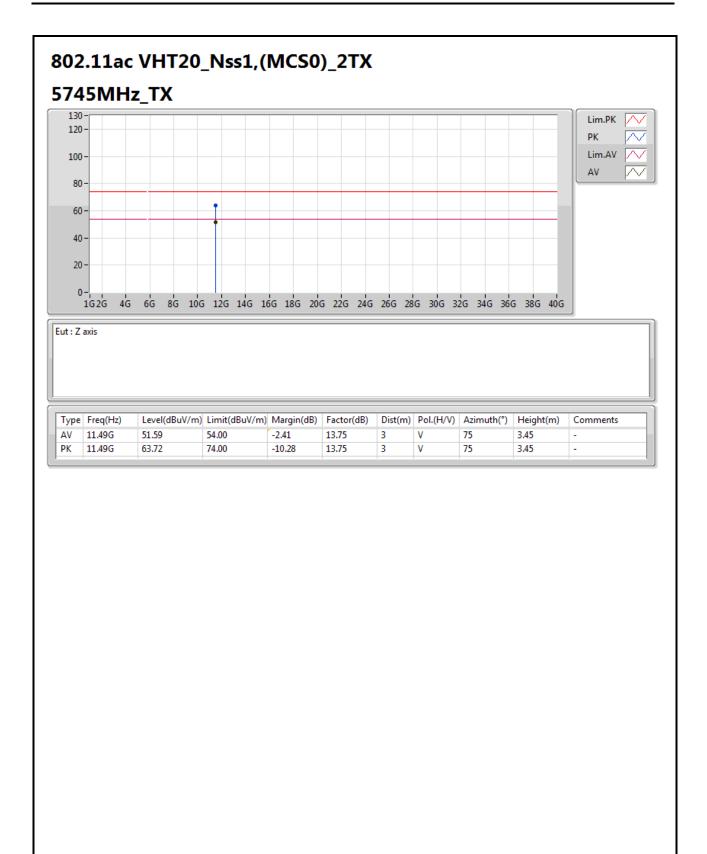
TEL: 886-3-327-3456 FAX: 886-3-327-0973





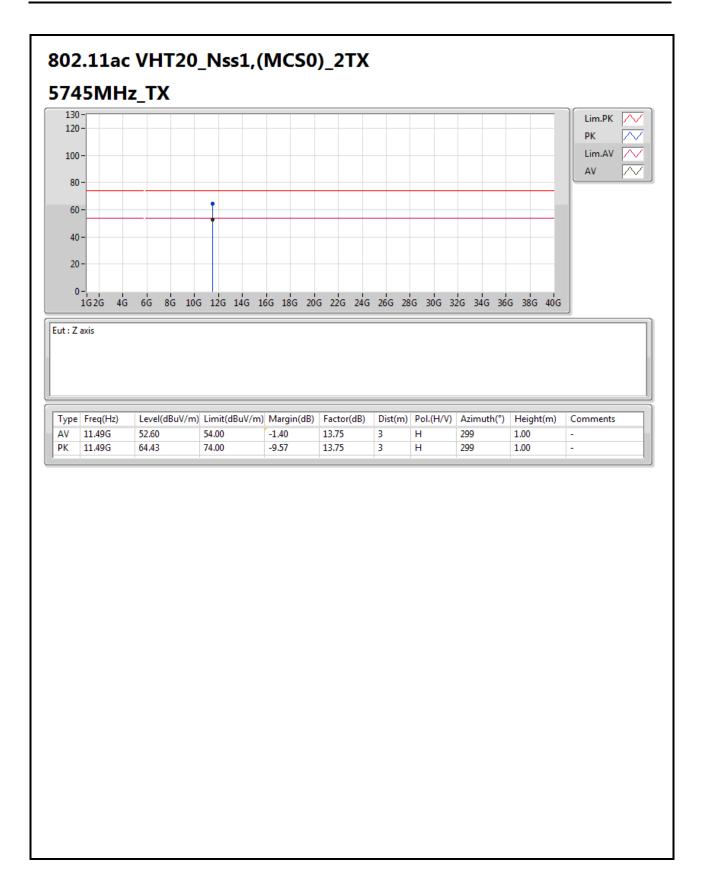
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E57 of E79





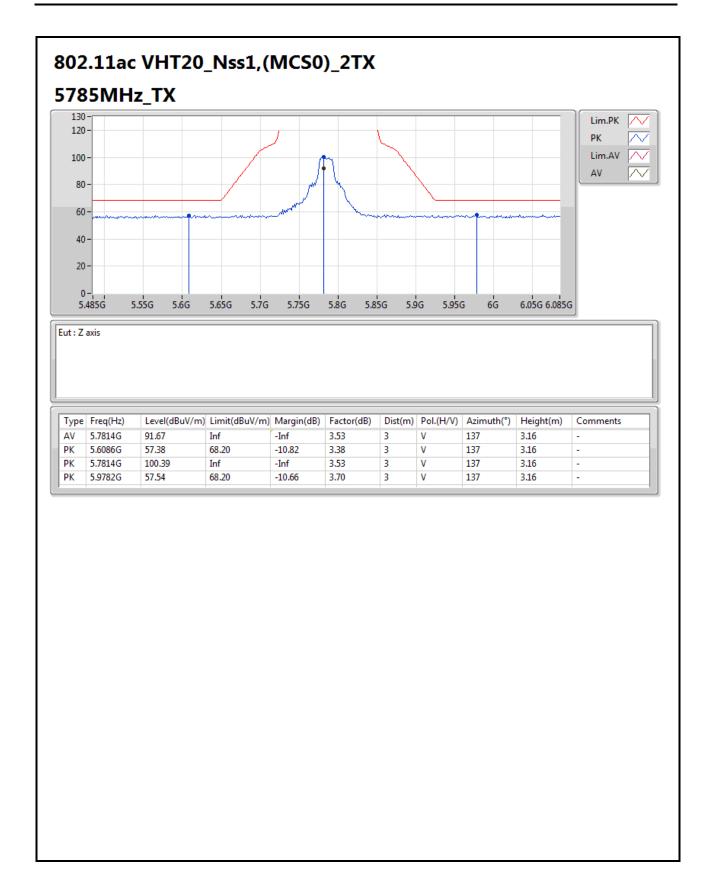
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E58 of E79





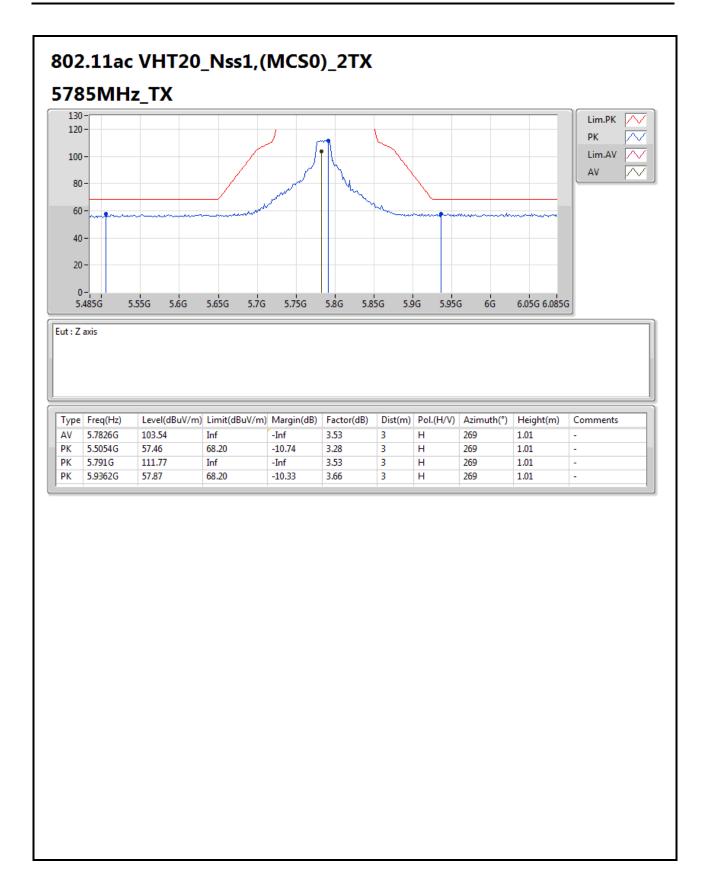
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E59 of E79





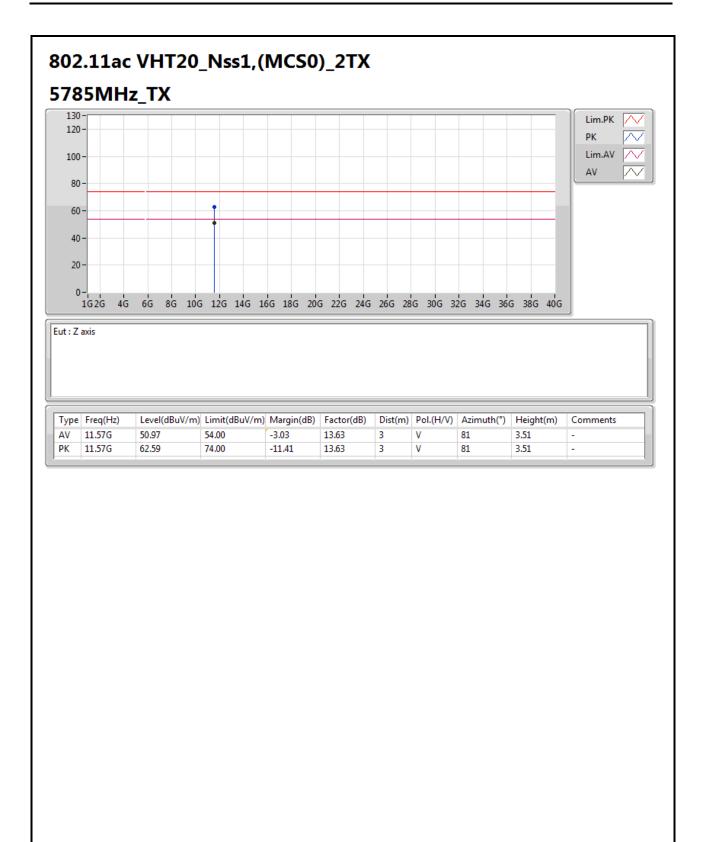
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E60 of E79





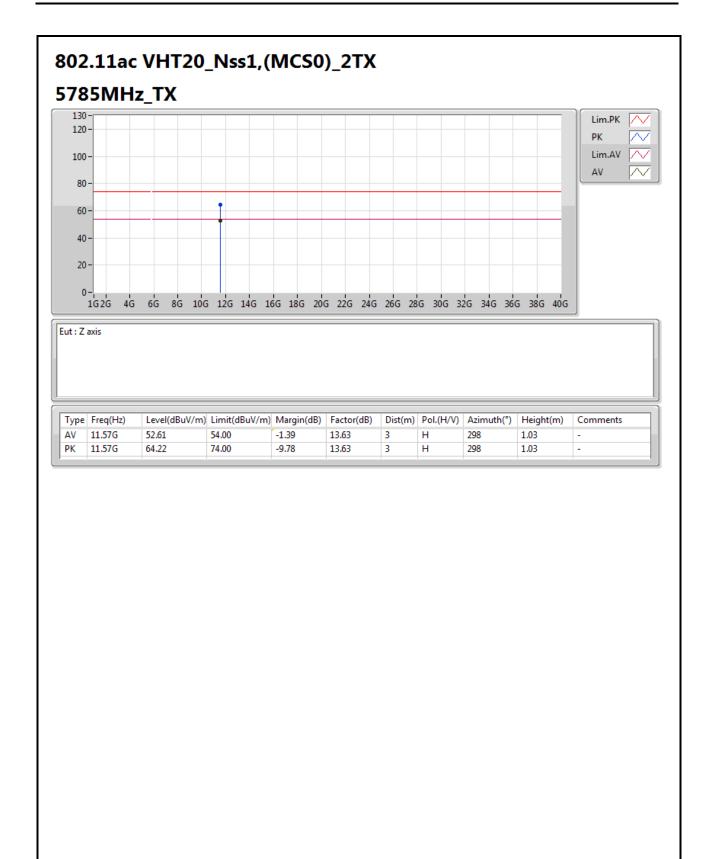
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E61 of E79





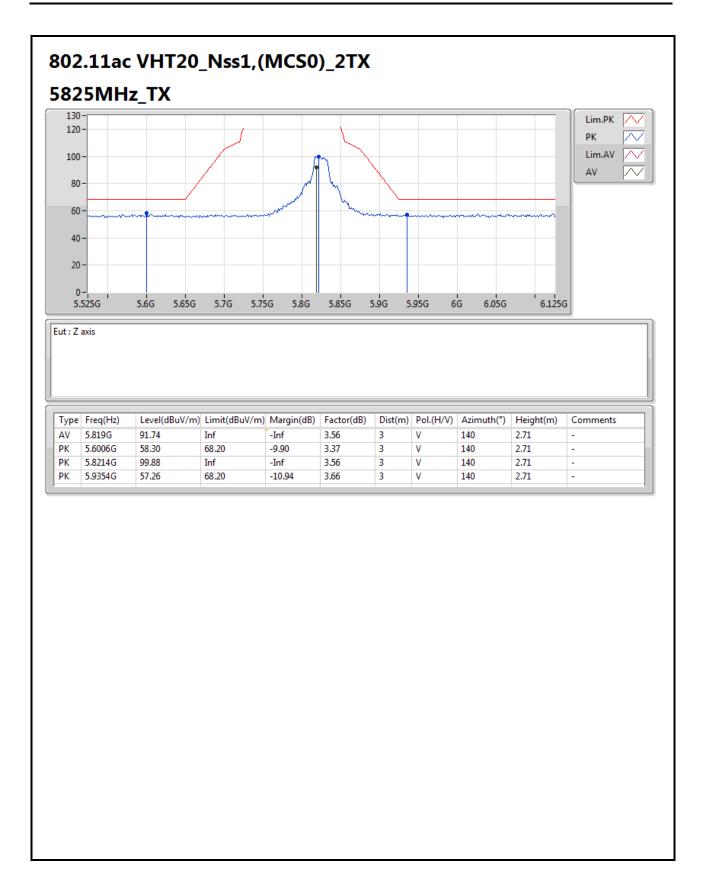
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E62 of E79





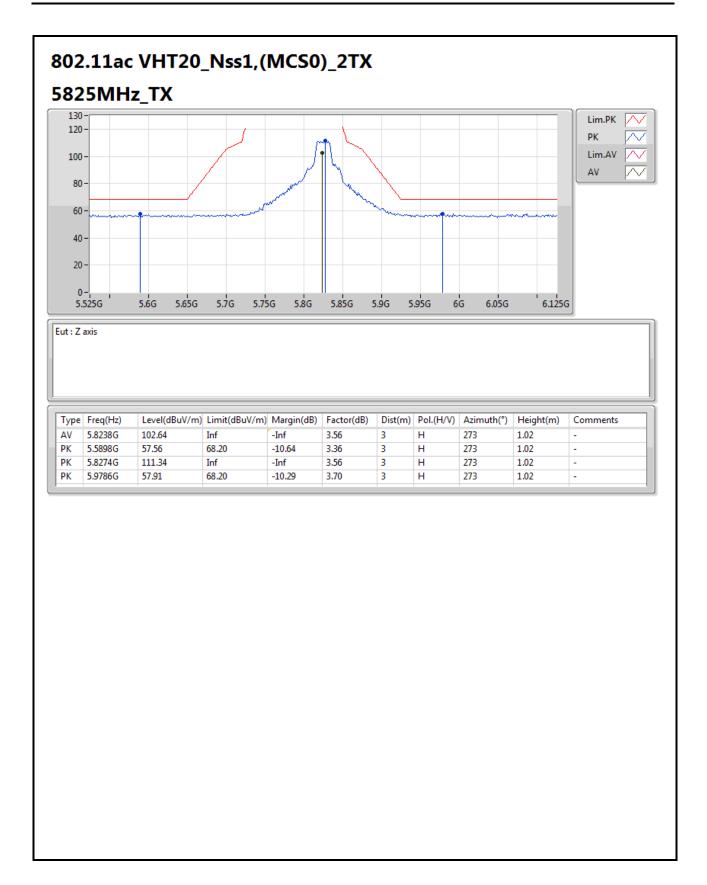
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E63 of E79





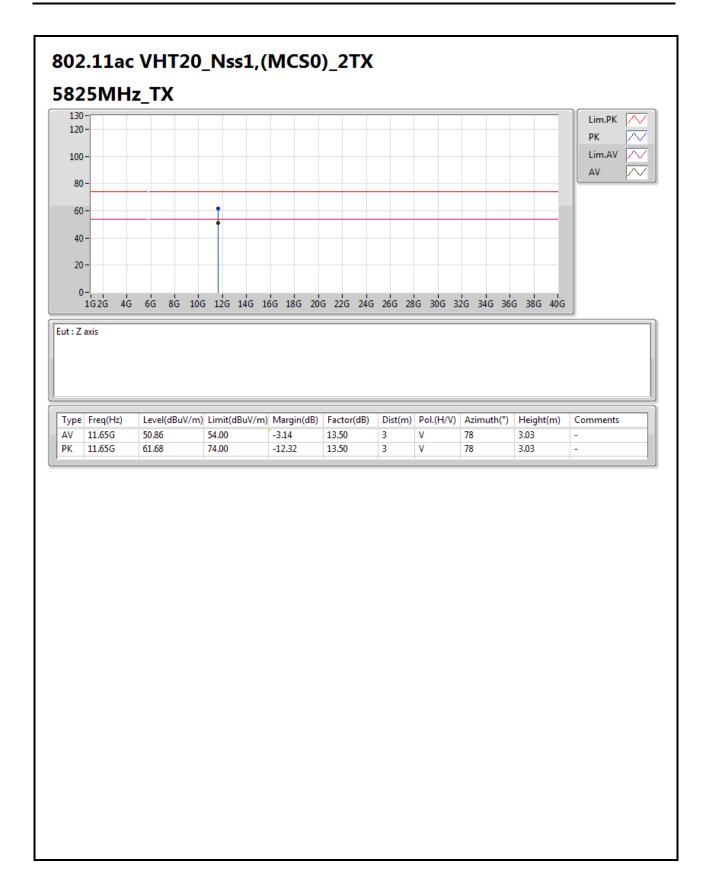
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E64 of E79





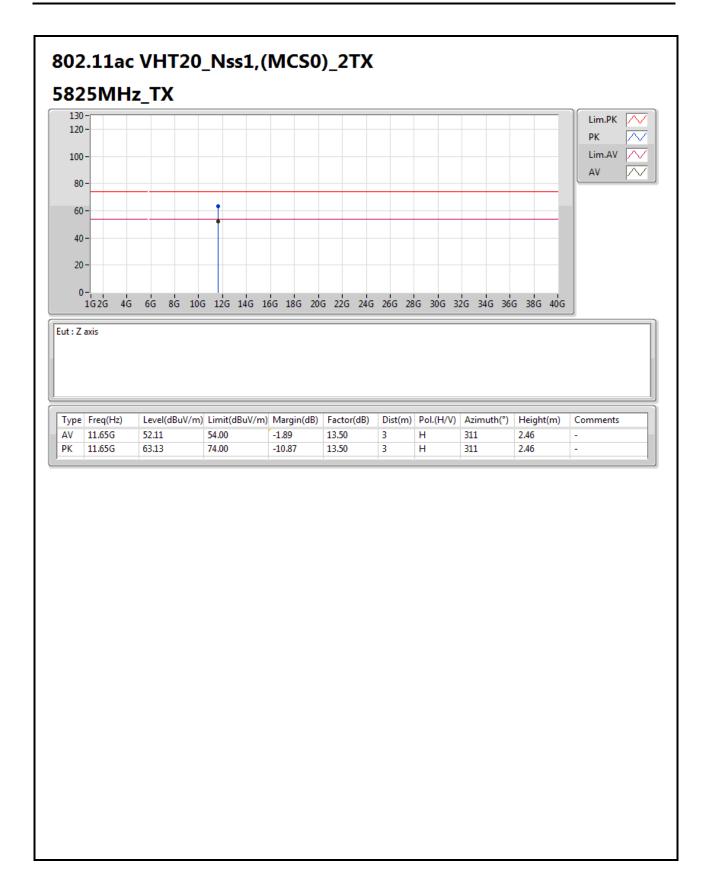
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E65 of E79





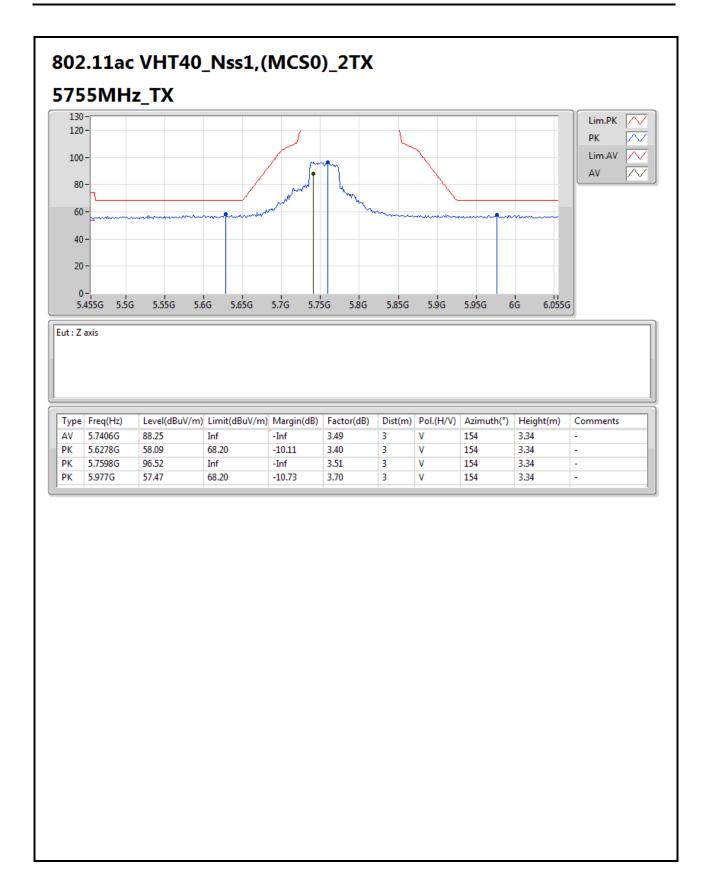
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E66 of E79





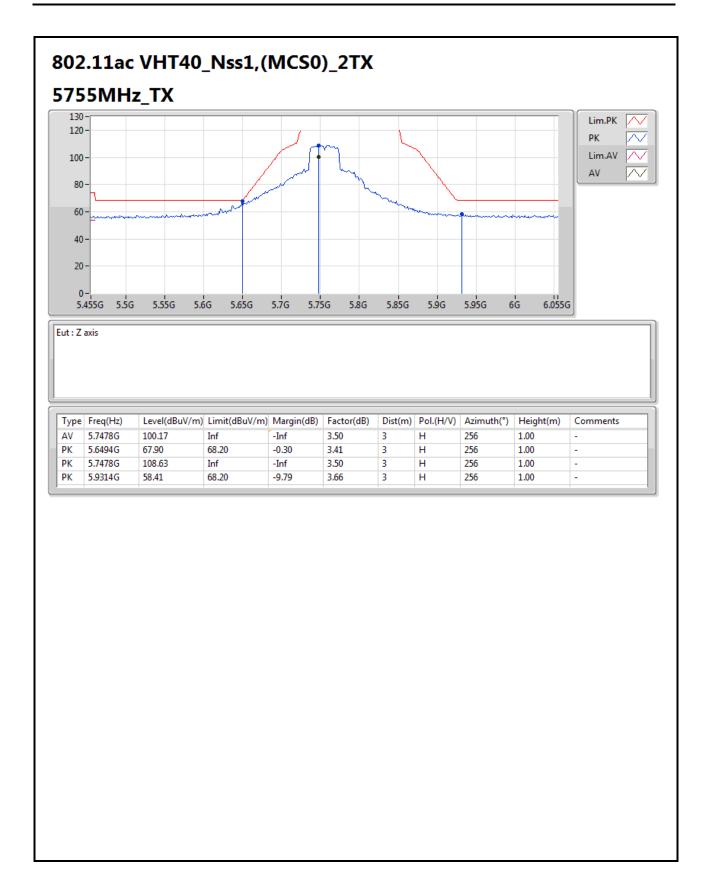
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E67 of E79





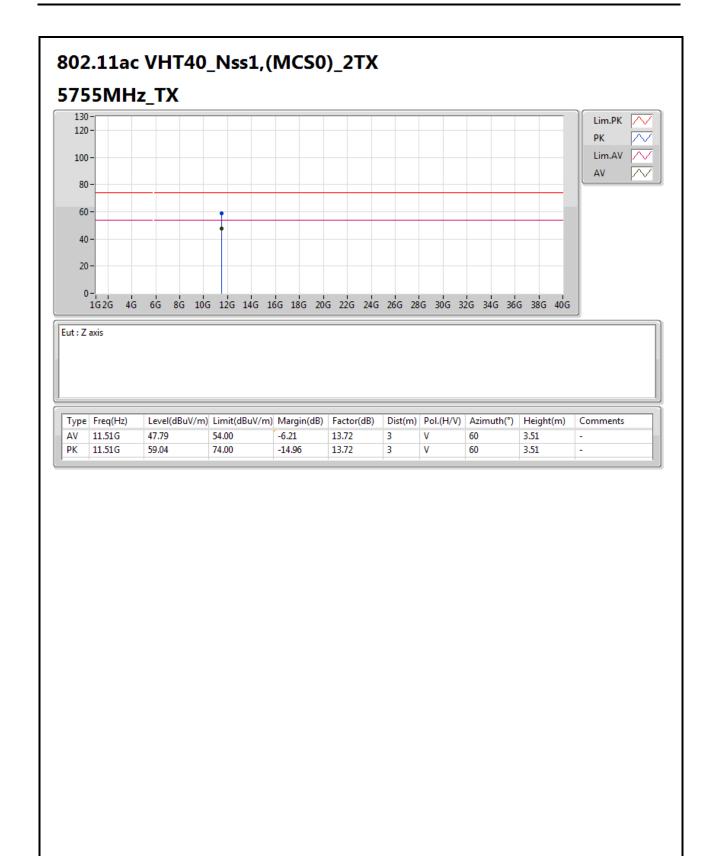
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E68 of E79





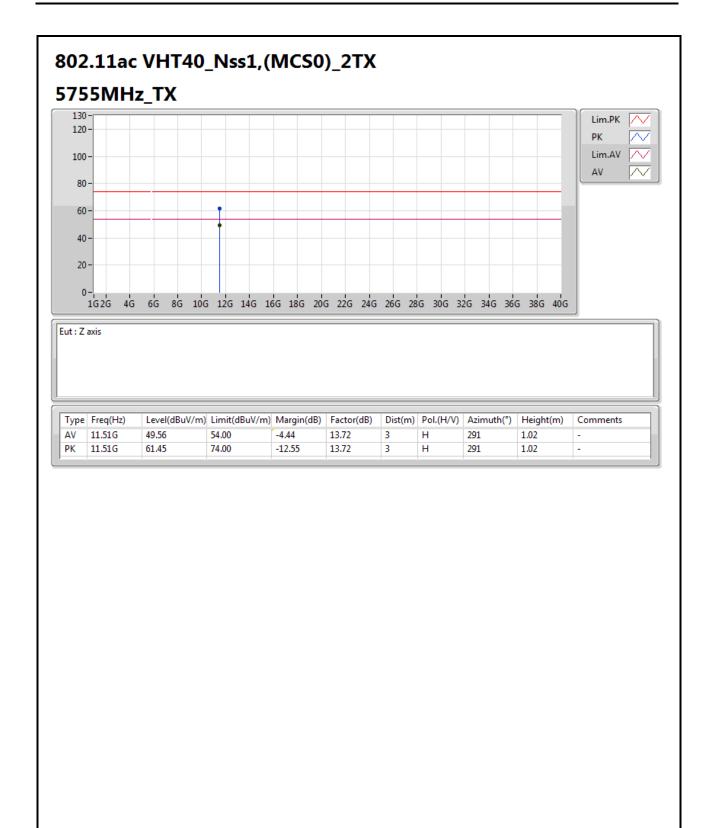
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E69 of E79





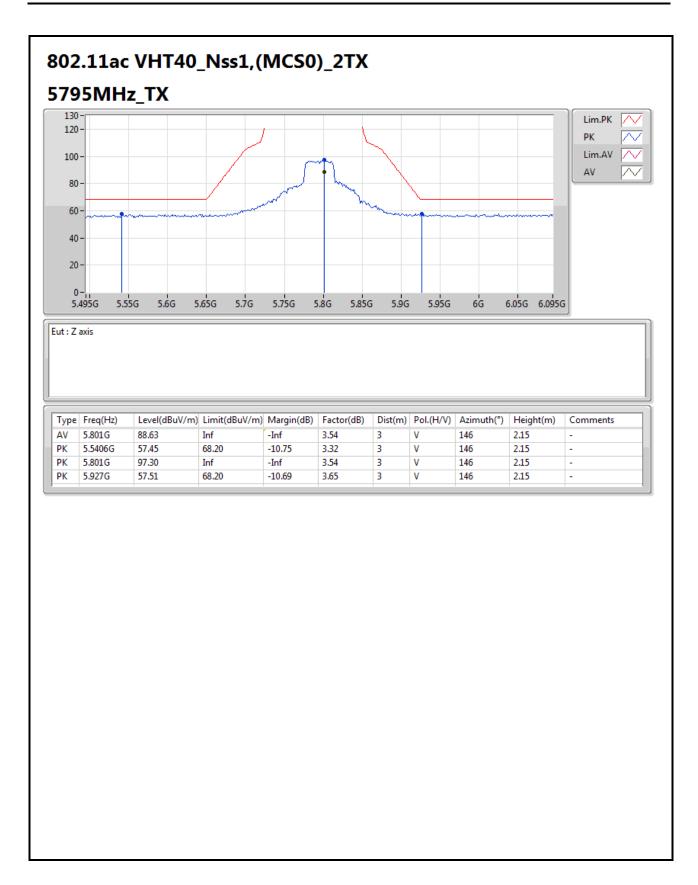
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E70 of E79





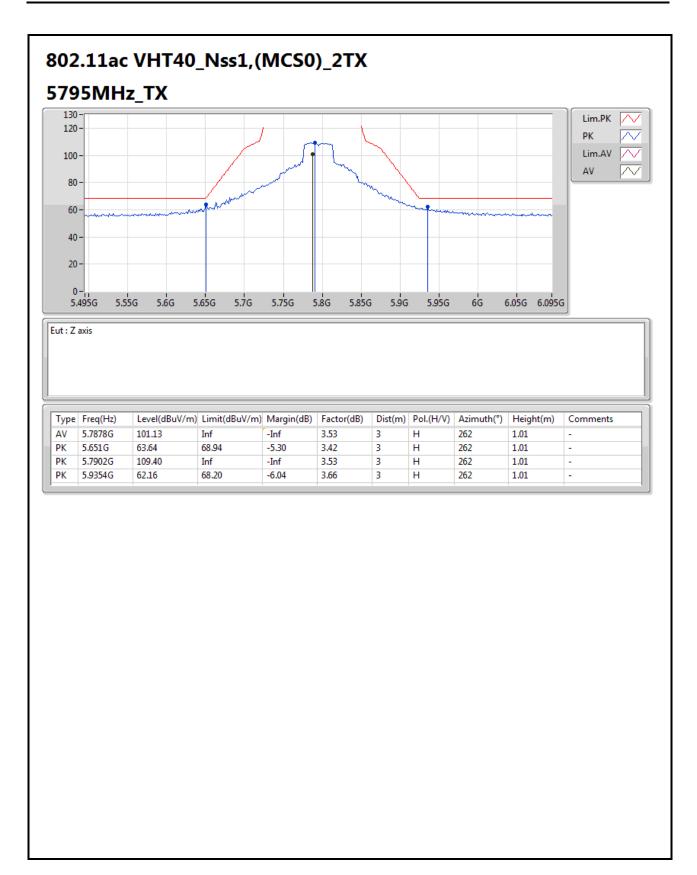
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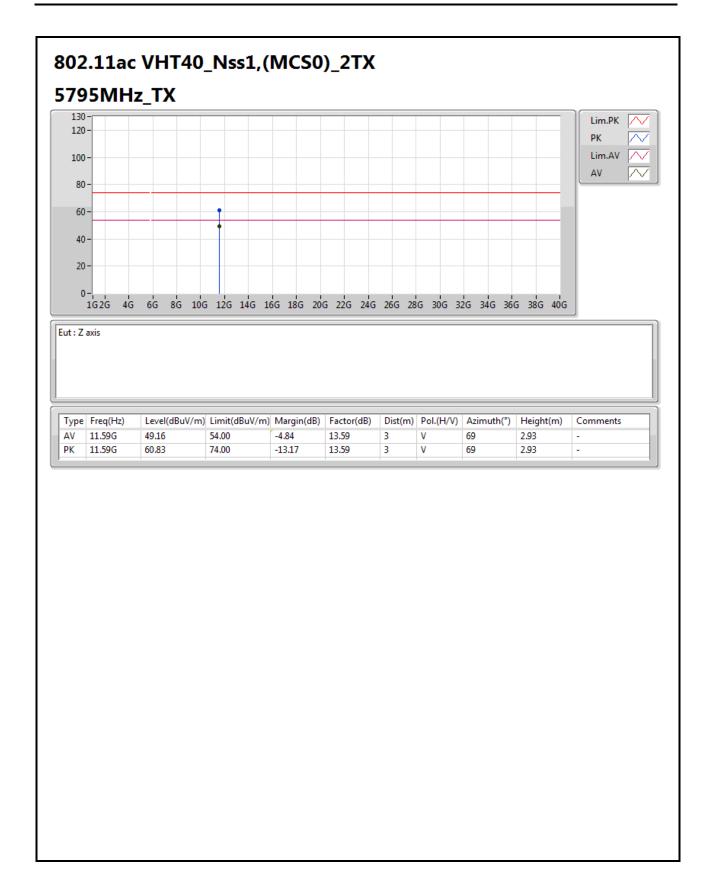




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Appendix E.2

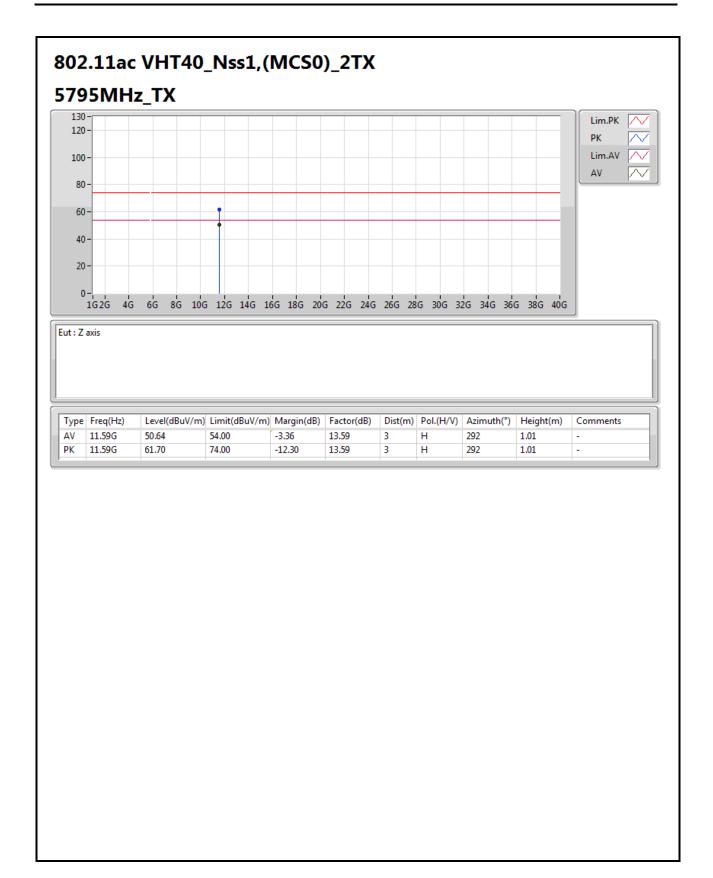




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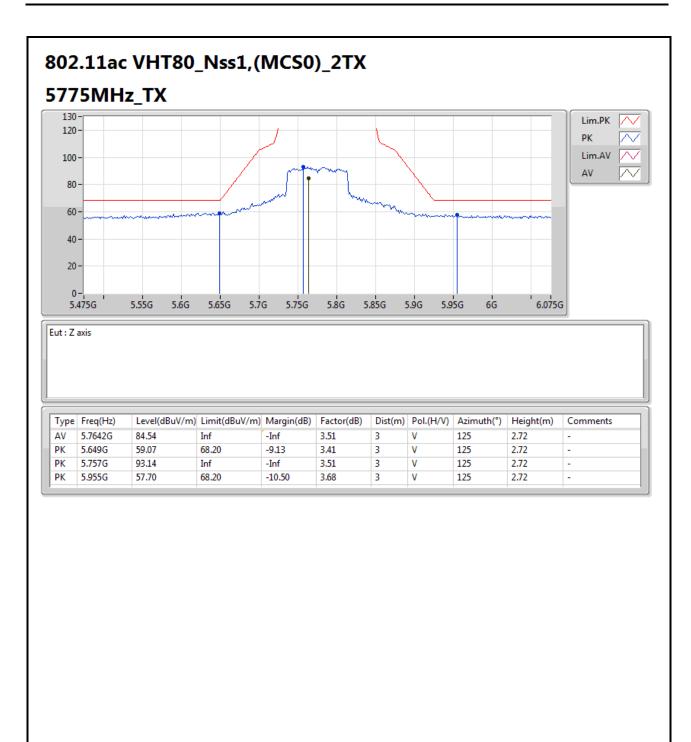
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E74 of E79





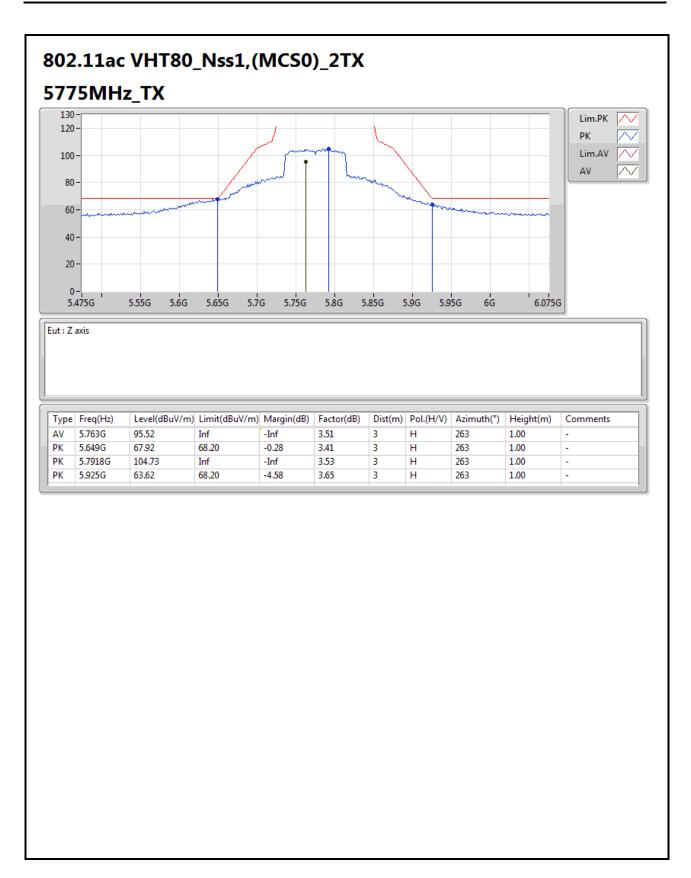
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E75 of E79





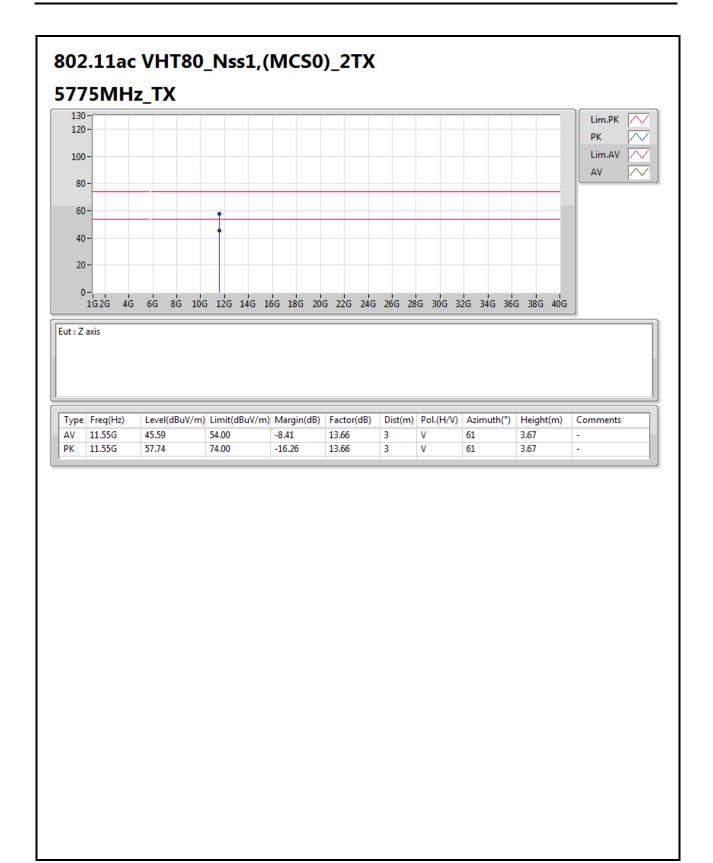
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E76 of E79





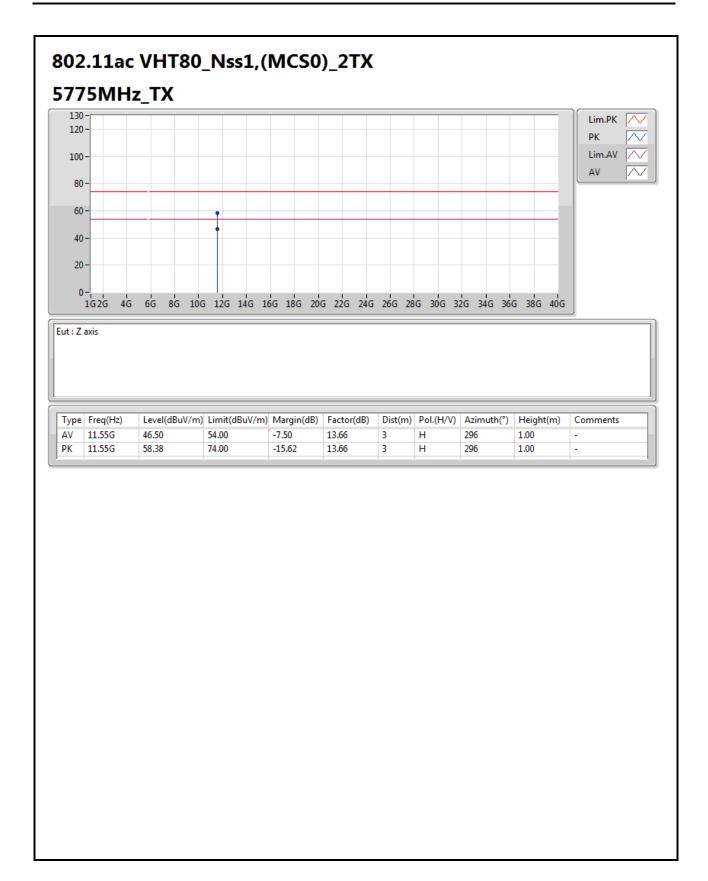
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E77 of E79





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Frequency Stability Result

Appendix F

732918

Summary

Mode	Result	Ch	Center	ppm	Limit	Port	Remark
		(Hz)	(Hz)		(ppm)		
802.11a_(6Mbps)_2TX	-	-	-	=	-	-	-
5.15-5.25GHz	Pass	5.2G	5.1999593G	7.827	20	1	10 min

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Frequency Stability Result

Appendix F

Result

Mode	Result	Ch	Center	ppm	Limit	Port	Remark	
		(Hz)	(Hz)		(ppm)			
802.11a_(6Mbps)_2TX	-	-	-	-	-	-	-	
5200MHz_0°C	Pass	5.2G	5.2000265G	5.096	20	1	0 min	
5200MHz_0°C	Pass	5.2G	5.20002649G	5.094	20	1	2 min	
5200MHz_0°C	Pass	5.2G	5.20002649G	5.094	20	1	5 min	
5200MHz_0°C	Pass	5.2G	5.2000265G	5.096	20	1	10 min	
5200MHz_10°C	Pass	5.2G	5.2000065G	1.25	20	1	0 min	
5200MHz_10°C	Pass	5.2G	5.20000646G	1.243	20	1	2 min	
5200MHz_10°C	Pass	5.2G	5.20000648G	1.246	20	1	5 min	
5200MHz_10°C	Pass	5.2G	5.20000647G	1.245	20	1	10 min	
5200MHz_20°C	Pass	5.2G	5.19998634G	2.628	20	1	0 min	
5200MHz_20°C	Pass	5.2G	5.19998633G	2.629	20	1	2 min	
5200MHz_20°C	Pass	5.2G	5.19998635G	2.626	20	1	5 min	
5200MHz_20°C	Pass	5.2G	5.19998635G	2.625	20	1	10 min	
5200MHz_30°C	Pass	5.2G	5.19997018G	5.735	20	1	0 min	
5200MHz_30°C	Pass	5.2G	5.19997017G	5.736	20	1	2 min	
5200MHz_30°C	Pass	5.2G	5.19997015G	5.739	20	1	5 min	
5200MHz_30°C	Pass	5.2G	5.19997015G	5.741	20	1	10 min	
5200MHz_40°C	Pass	5.2G	5.1999593G	7.826	20	1	0 min	
5200MHz_40°C	Pass	5.2G	5.19995932G	7.824	20	1	2 min	
5200MHz_40°C	Pass	5.2G	5.19995931G	7.824	20	1	5 min	
5200MHz_40°C	Pass	5.2G	5.1999593G	7.827	20	1	10 min	
5200MHz_138V	Pass	5.2G	5.19998384G	3.107	20	1	0 min	
5200MHz_138V	Pass	5.2G	5.19998382G	3.112	20	1	2 min	
5200MHz_138V	Pass	5.2G	5.19998381G	3.113	20	1	5 min	
5200MHz_138V	Pass	5.2G	5.19998382G	3.111	20	1	10 min	
5200MHz_120V	Pass	5.2G	5.19998514G	2.857	20	1	0 min	
5200MHz_120V	Pass	5.2G	5.19998517G	2.851	20	1	2 min	
5200MHz_120V	Pass	5.2G	5.19998516G	2.854	20	1	5 min	
5200MHz_120V	Pass	5.2G	5.19998517G	2.851	20	1	10 min	
5200MHz_102V	Pass	5.2G	5.19999118G	1.696	20	1	0 min	
5200MHz_102V	Pass	5.2G	5.19999118G	1.696	20	1	2 min	
5200MHz_102V	Pass	5.2G	5.19999117G	1.698	20	1	5 min	
5200MHz_102V	Pass	5.2G	5.19999116G	1.699	20	1	10 min	

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Radiated Emission Co-location

Appendix G

732918

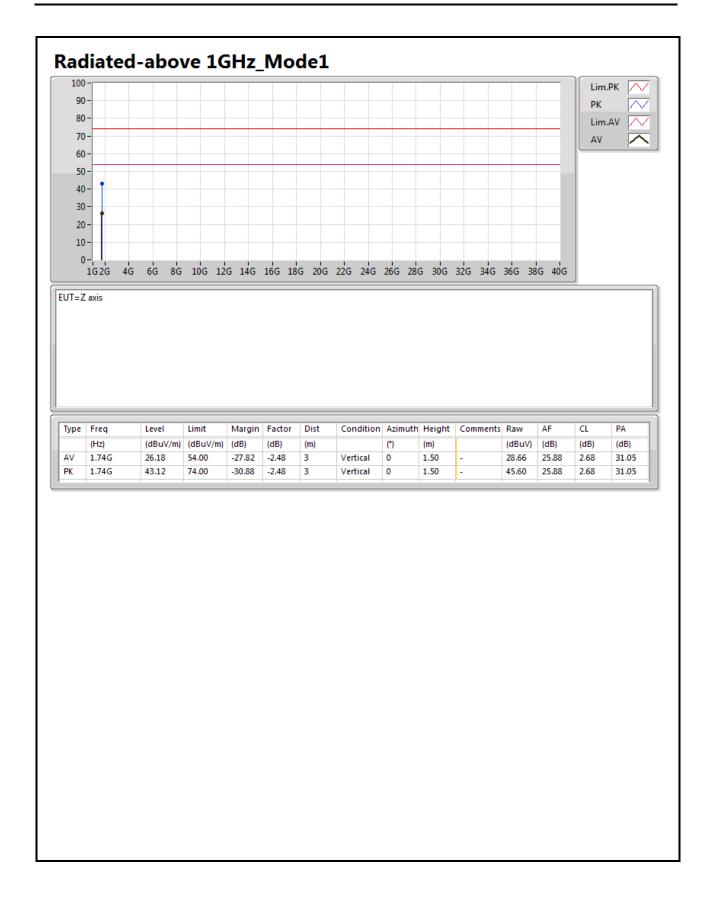
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
Mode1	Pass	AV	2.14G	28.56	54.00	-25.44	-0.97	3	Horizontal	360	1.50	-

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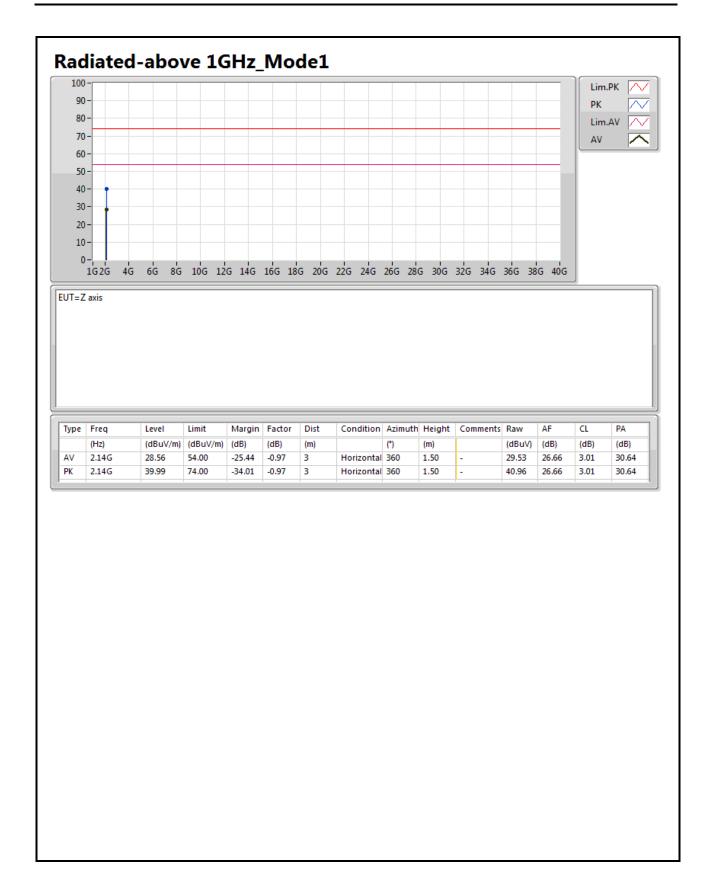
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